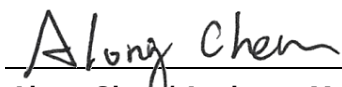


FCC Test Report

FCC ID : I88NBG6818
Equipment : AC2600 Multi-Gigabit Security WiFi Router
Model No. : NBG6818
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 : Sep. 23, 2019
Tested Date : Nov. 11 ~ Nov. 14, 2019

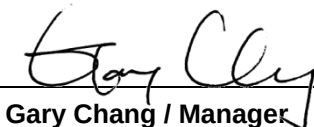
We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval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

Reviewed by:



Along Chen / Assistant Manager

Approved by:



Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR992302AN	Rev. 01	Initial issue	Jan. 07, 2020
FR992302AN	Rev. 02	Updated model name of antenna	Jan. 09, 2020

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.189MHz 49.17 (Margin -14.89dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 53.84 (Margin -0.16dB) - AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: Non-beamforming mode 5150-5250MHz: 27.66 5725-5850MHz: 29.22 Beamforming mode 5150-5250MHz: 18.63 5725-5850MHz: 20.19	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

Declaration of Conformity:

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

Comments and Explanations:

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

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	Data Rate / MCS
5150-5250 5725-5850	a	5180-5240 5745-5825	36-48 [4] 149-165 [5]	8	6-54 Mbps
5150-5250 5725-5850	n (HT20)	5180-5240 5745-5825	36-48 [4] 149-165 [5]	8	MCS 0-31
5150-5250 5725-5850	n (HT40)	5190-5230 5755-5795	38-46 [2] 151-159 [2]	8	MCS 0-31
5150-5250 5725-5850	ac (VHT20)	5180-5240 5745-5825	36-48 [4] 149-165 [5]	8	MCS 0-9
5150-5250 5725-5850	ac (VHT40)	5190-5230 5755-5795	38-46 [2] 151-159 [2]	8	MCS 0-9
5150-5250 5725-5850	ac (VHT80)	5210 5775	42 [1] 155 [1]	8	MCS 0-9

Note 1: RF output power specifies that Maximum Conducted Output Power.
 Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
 Note 3: 802.11ac supports beamforming function.

1.1.2 Antenna Details

Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)		
			2400~2483.5	5150~5250	5725~5850
ALX19M-126AA1-A	PIFA	IPEX	0	0	0
ALX19M-126AA1-A	PIFA	IPEX	0	0	0
ALX19M-126AA1-A	PIFA	IPEX	0	0	0
ALX19M-126AA1-A	PIFA	IPEX	0	0	0
ALX19M-126AA1-A	PIFA	IPEX	---	0	0
ALX19M-126AA1-A	PIFA	IPEX	---	0	0
ALX19M-126AA1-A	PIFA	IPEX	---	0	0
ALX19M-126AA1-A	PIFA	IPEX	---	0	0

1.1.3 Power Supply Type of Equipment under Test (EUT)

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

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	Adapter	Brand: APD Model: WA-36N12R Power Rating: I/P: 100-240Vac, 50-60Hz 0.9Max O/P: 12Vdc, 3A Power Line: 1.8m non-shielded without core
2	RJ45 cable	Brand: EKSON Model: ZP01-C333 Power Line: 2.15m non-shielded without core

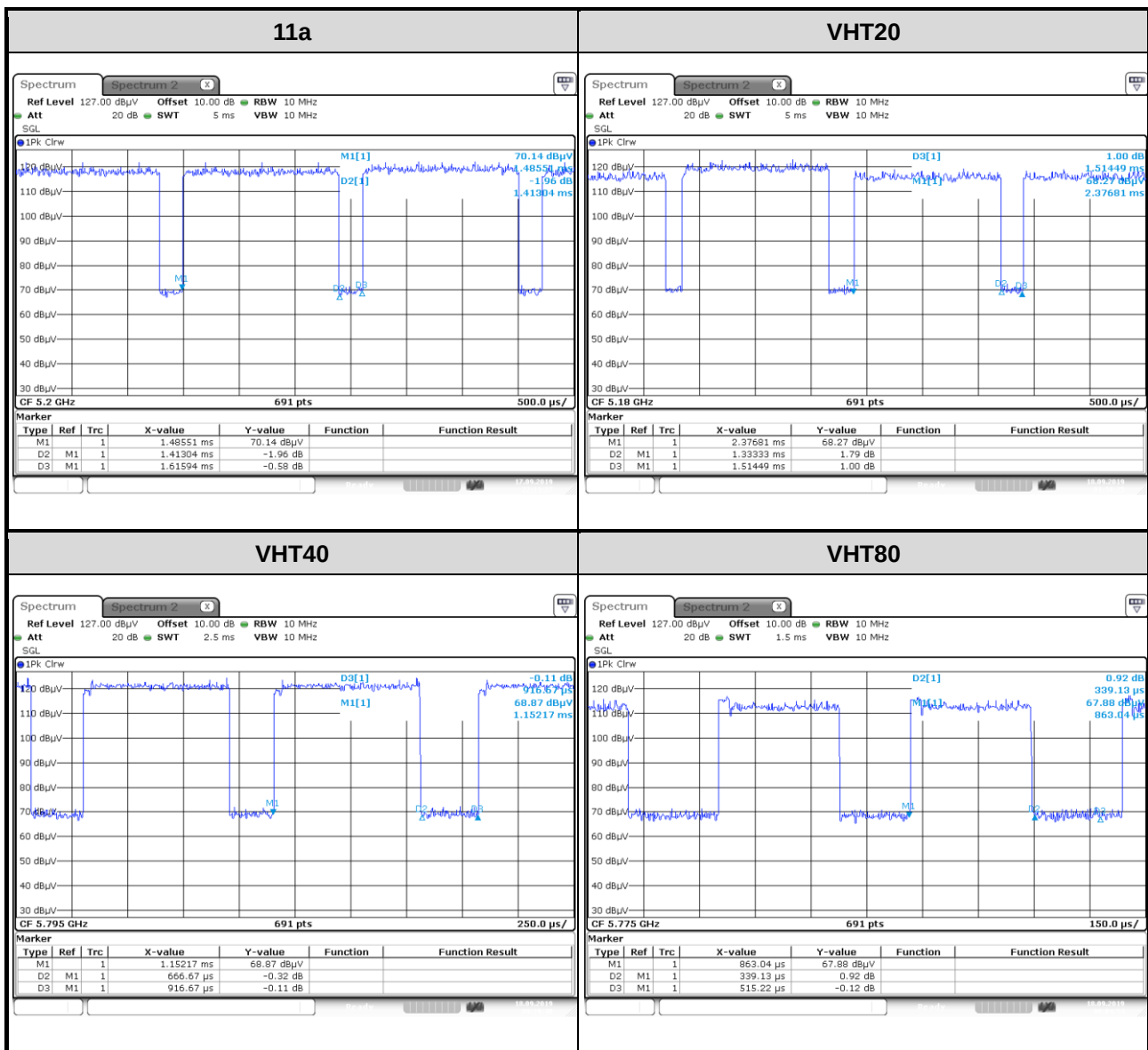
1.1.5 Channel List

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:1.3.8.0		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	87.44%	0.58
	VHT20	88.04%	0.55
	VHT40	72.73%	1.38
	VHT80	65.82%	1.82



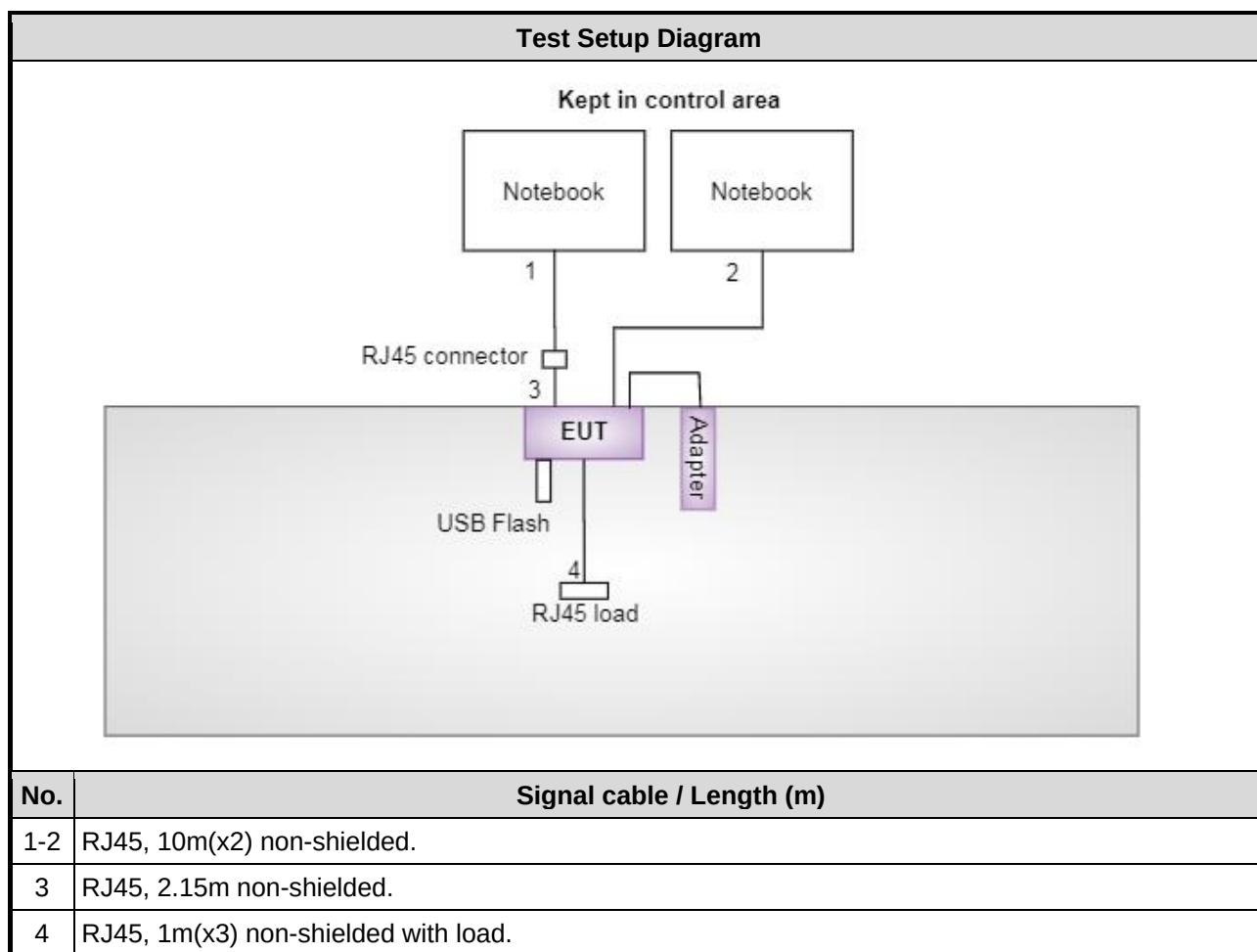
1.1.7 Power Index of Test Tool

Modulation Mode	Test Frequency (MHz)	Power Index
		Non-Beamforming
11a	5180	78/71/76/71
11a	5200	77/70/75/70
11a	5240	76/69/75/70
11a	5745	83/76/74/76
11a	5785	84/77/74/78
11a	5825	86/77/78/82
VHT20	5180	79/72/76/71
VHT20	5200	79/72/76/71
VHT20	5240	78/71/76/71
VHT20	5745	85/76/77/78
VHT20	5785	85/76/77/78
VHT20	5825	87/78/79/80
VHT40	5190	72/66/70/66
VHT40	5230	86/82/86/82
VHT40	5755	91/83/79/84
VHT40	5795	91/83/79/86
VHT80	5210	57/51/59/54
VHT80	5775	76/69/68/67

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Remarks
1	USB Flash	Transcend	JetFlash 500 16G	---	---
2	Notebook	DELL	Latitude E6430	DoC	---
3	Notebook	DELL	Latitude E6440	DoC	---
4	RJ45 load	---	---	---	---

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Nov. 11, 2019				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Jan. 08, 2019	Jan. 07, 2020
LISN	R&S	ENV216	101579	Mar. 08, 2019	Mar. 07, 2020
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Oct. 22, 2019	Oct. 21, 2020
Measurement Software	AUDIX	e3	6.120210k	NA	NA

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

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Nov. 11 ~ Nov. 14, 2019				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 27, 2018	Dec. 26, 2019
Receiver	R&S	ESR3	101658	Dec. 11, 2018	Dec. 10, 2019
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 12, 2019	Jul. 11, 2020
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 18, 2018	Dec. 17, 2019
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2018	Nov. 14, 2019
Loop Antenna	R&S	HFH2-Z2	100315	Jan. 11, 2019	Jan. 10, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980225	Jul. 09, 2019	Jul. 08, 2020
Preamplifier	Agilent	83017A	MY39501308	Oct. 08, 2019	Oct. 07, 2020
Preamplifier	EMC	EMC184045B	980192	Aug. 01, 2019	Jul. 31, 2020
RF Cable	EMC	EMC104-SM-SM-8000	181106	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 07, 2019	Oct. 06, 2020
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	160502	Oct. 07, 2019	Oct. 06, 2020
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 07, 2019	Oct. 06, 2020
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Oct. 07, 2019	Oct. 06, 2020
Measurement Software	AUDIX	e3	6.120210g	NA	NA

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

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Nov. 14, 2019				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Apr. 17, 2019	Apr. 16, 2020
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 05, 2018	Dec. 04, 2019
Power Meter	Anritsu	ML2495A	1241002	Oct. 23, 2019	Oct. 22, 2020
Power Sensor	Anritsu	MA2411B	1207366	Oct. 23, 2019	Oct. 22, 2020
AC POWER SOURCE	APC	AFC-500W	F312060012	Nov. 29, 2018	Nov. 28, 2019
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 Deviation from Test Standard and Measurement Procedure

None

1.7 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	± 34.130 Hz
Conducted power	± 0.808 dB
Frequency error	$\pm 1 \times 10^{-9}$
Power density	± 0.583 dB
Conducted emission	± 2.715 dB
AC conducted emission	± 2.92 dB
Radiated emission ≤ 1 GHz	± 3.41 dB
Radiated emission > 1 GHz	± 4.59 dB
Time	$\pm 0.1\%$
Temperature	± 0.4 °C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	23°C / 68%	Akun Chung
Radiated Emissions	03CH01-WS	23-24°C / 63-64%	Roger Lu Aska Huang
RF Conducted	TH01-WS	22°C / 64%	Brad Wu

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

2.2 The Worst Test Modes and Channel Details

For Frequency band 5150-5250 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT40	5230	MCS 0	1
Radiated Emissions ≤1GHz	VHT40	5230	MCS 0	1
RF Output Power	11a VHT20 VHT40 VHT80	5180 / 5200 / 5240 5180 / 5200 / 5240 5190 / 5230 5210	6 Mbps MCS 0 MCS 0 MCS 0	1
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a VHT20 VHT40 VHT80	5180 / 5200 / 5240 5180 / 5200 / 5240 5190 / 5230 5210	6 Mbps MCS 0 MCS 0 MCS 0	1
Frequency Stability	Un-modulation	5200	---	1
RF Output Power	VHT20 VHT40 VHT80	5180 / 5200 / 5240 5190 / 5230 5210	MCS 0 MCS 0 MCS 0	2

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **X-plane** results were found as the worst case and were shown in this report.
2. The EUT had been tested by following test configurations.
 - 1) Configuration 1: Non-Beamforming
 - 2) Configuration 2: Beamforming

For Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	VHT20	5745	MCS 0	1
Radiated Emissions ≤ 1 GHz	VHT20	5745	MCS 0	1
RF Output Power	11a VHT20 VHT40 VHT80	5745 / 5785 / 5825 5745 / 5785 / 5825 5755 / 5795 5775	6 Mbps MCS 0 MCS 0 MCS 0	1
Radiated Emissions > 1 GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a VHT20 VHT40 VHT80	5745 / 5785 / 5825 5745 / 5785 / 5825 5755 / 5795 5775	6 Mbps MCS 0 MCS 0 MCS 0	1
Frequency Stability	Un-modulation	5785	---	1
RF Output Power	VHT20 VHT40 VHT80	5745 / 5785 / 5825 5755 / 5795 5775	MCS 0 MCS 0 MCS 0	2
NOTE: 1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report. 2. The EUT had been tested by following test configurations. 1) Configuration 1: Non-Beamforming 2) Configuration 2: Beamforming				

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

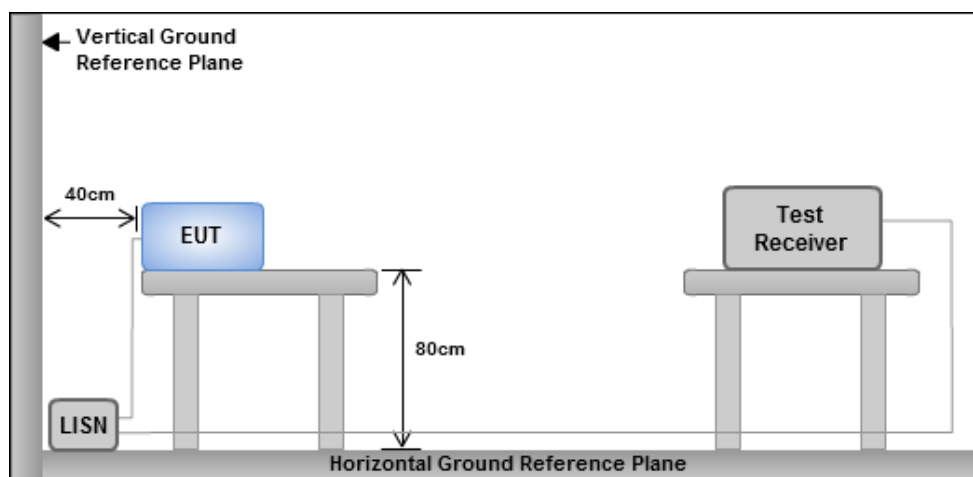
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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.

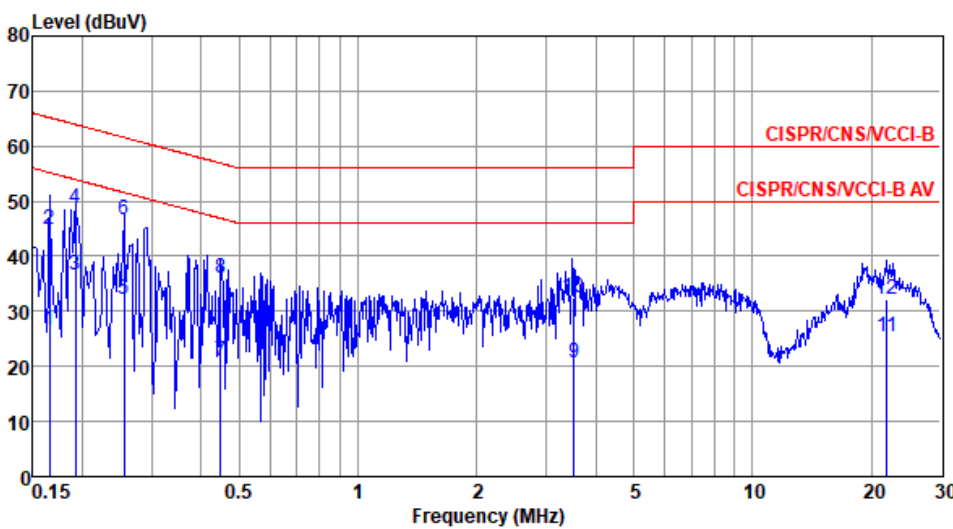
3.1.3 Test Setup



- 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

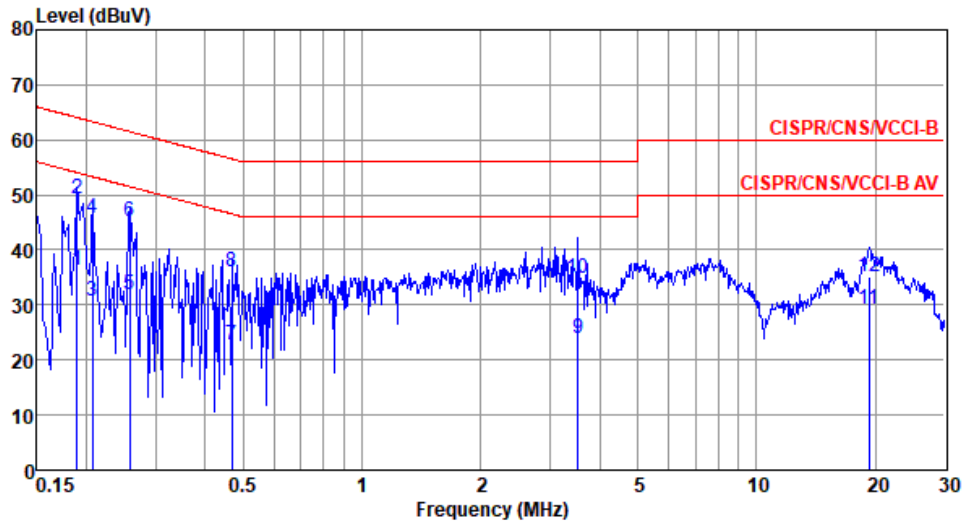
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Line		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.165	26.61	55.21	-28.60	16.86	9.53	0.05	Average
2	0.165	44.89	65.21	-20.32	35.14	9.53	0.05	QP
3	0.192	36.62	53.93	-17.31	26.83	9.54	0.06	Average
4	0.192	48.74	63.93	-15.19	38.95	9.54	0.06	QP
5	0.255	32.22	51.60	-19.38	22.39	9.55	0.07	Average
6*	0.255	46.50	61.60	-15.10	36.67	9.55	0.07	QP
7	0.449	20.99	46.89	-25.90	11.08	9.57	0.08	Average
8	0.449	35.92	56.89	-20.97	26.01	9.57	0.08	QP
9	3.528	20.71	46.00	-25.29	10.47	9.61	0.27	Average
10	3.528	32.54	56.00	-23.46	22.30	9.61	0.27	QP
11	21.946	25.31	50.00	-24.69	14.33	9.65	0.68	Average
12	21.946	32.29	60.00	-27.71	21.31	9.65	0.68	QP

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

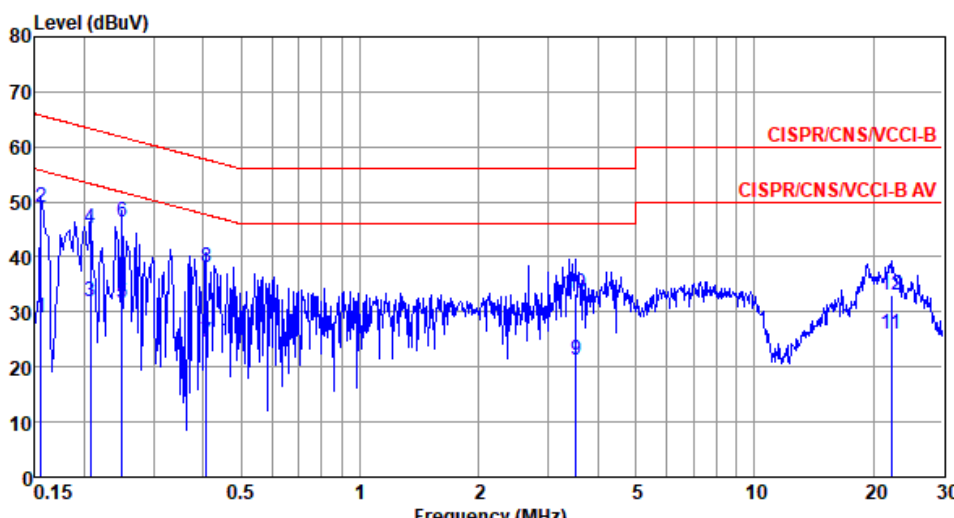
Modulation	VHT40	Test Freq. (MHz)	5230
Power Phase	Neutral		



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.189	36.18	54.06	-17.88	26.40	9.58	0.06	Average
2*	0.189	49.17	64.06	-14.89	39.39	9.58	0.06	QP
3	0.207	30.78	53.32	-22.54	20.99	9.58	0.06	Average
4	0.207	45.76	63.32	-17.56	35.97	9.58	0.06	QP
5	0.258	31.93	51.51	-19.58	22.11	9.59	0.07	Average
6	0.258	45.14	61.51	-16.37	35.32	9.59	0.07	QP
7	0.469	22.59	46.54	-23.95	12.70	9.62	0.09	Average
8	0.469	35.88	56.54	-20.66	25.99	9.62	0.09	QP
9	3.528	23.94	46.00	-22.06	13.75	9.66	0.27	Average
10	3.528	34.91	56.00	-21.09	24.72	9.66	0.27	QP
11	19.326	29.20	50.00	-20.80	18.24	9.81	0.65	Average
12	19.326	35.03	60.00	-24.97	24.07	9.81	0.65	QP

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

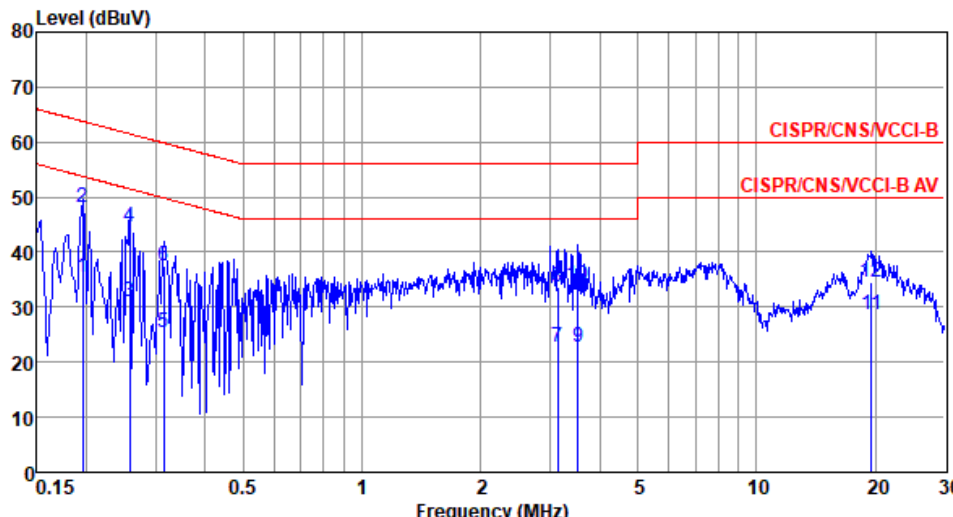
Modulation	VHT20	Test Freq. (MHz)	5745
Power Phase	Line		



Freq	Level	Limit	Over	Read	LISN	cable	Remark	
MHz	dBuV	Line	Limit	Level	factor	loss		
		dBuV	dB	dBuV	dB	dB		
1	0.156	29.01	55.69	-26.68	19.27	9.53	0.05	Average
2	0.156	48.92	65.69	-16.77	39.18	9.53	0.05	QP
3	0.207	31.93	53.32	-21.39	22.14	9.54	0.06	Average
4	0.207	45.31	63.32	-18.01	35.52	9.54	0.06	QP
5	0.249	31.62	51.78	-20.16	21.79	9.55	0.07	Average
6*	0.249	46.42	61.78	-15.36	36.59	9.55	0.07	QP
7	0.408	24.55	47.68	-23.13	14.65	9.57	0.08	Average
8	0.408	38.21	57.68	-19.47	28.31	9.57	0.08	QP
9	3.528	21.27	46.00	-24.73	11.03	9.61	0.27	Average
10	3.528	33.37	56.00	-22.63	23.13	9.61	0.27	QP
11	22.180	25.88	50.00	-24.12	14.90	9.65	0.68	Average
12	22.180	33.08	60.00	-26.92	22.10	9.65	0.68	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)	5745
Power Phase	Neutral		



	Freq	Level	Limit	Over	Read	LISN	cable	Remark
	MHz	dBuV	Line	Limit	Level	factor	loss	
			dBuV	dB	dBuV	dB	dB	
1	0.195	35.39	53.80	-18.41	25.60	9.58	0.06	Average
2*	0.195	48.00	63.80	-15.80	38.21	9.58	0.06	QP
3	0.258	30.95	51.51	-20.56	21.13	9.59	0.07	Average
4	0.258	44.50	61.51	-17.01	34.68	9.59	0.07	QP
5	0.315	25.31	49.84	-24.53	15.48	9.60	0.07	Average
6	0.315	37.46	59.84	-22.38	27.63	9.60	0.07	QP
7	3.140	22.86	46.00	-23.14	12.69	9.66	0.25	Average
8	3.140	33.66	56.00	-22.34	23.49	9.66	0.25	QP
9	3.528	22.74	46.00	-23.26	12.55	9.66	0.27	Average
10	3.528	33.90	56.00	-22.10	23.71	9.66	0.27	QP
11	19.532	28.49	50.00	-21.51	17.52	9.81	0.65	Average
12	19.532	34.56	60.00	-25.44	23.59	9.81	0.65	QP

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

3.2 Emission Bandwidth

3.2.1 Limit of Emission bandwidth

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

3.2.2 Test Procedures

26dB Bandwidth

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

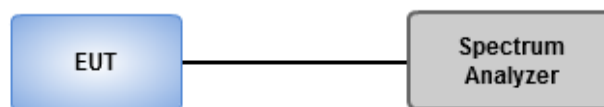
Occupied Bandwidth

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

6dB Bandwidth

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

3.2.3 Test Setup



3.2.4 Test Result of Emission Bandwidth

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)_8TX	20.6M	16.392M	16M4D1D	18.95M	16.292M
802.11ac VHT20_Nss1,(MCS0)_8TX	21.525M	17.566M	17M6D1D	21.15M	17.466M
802.11ac VHT40_Nss1,(MCS0)_8TX	40.2M	35.732M	35M7D1D	39.85M	35.582M
802.11ac VHT80_Nss1,(MCS0)_8TX	80.7M	74.863M	74M9D1D	80.4M	74.463M
5.725-5.85GHz	-	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	15.625M	16.367M	16M4D1D	14.15M	16.267M
802.11ac VHT20_Nss1,(MCS0)_8TX	16.05M	17.566M	17M6D1D	14.1M	17.491M
802.11ac VHT40_Nss1,(MCS0)_8TX	35.1M	35.782M	35M8D1D	32.55M	35.582M
802.11ac VHT80_Nss1,(MCS0)_8TX	75.1M	74.863M	74M9D1D	70M	74.463M

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 2 -N dB (Hz)	Port 3 -N dB (Hz)	Port 4 -N dB (Hz)	Port 5 -N dB (Hz)	Port 6 -N dB (Hz)	Port 7 -N dB (Hz)	Port 8 -N dB (Hz)
802.11a_Nss1 ,(6Mbps)_8TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	19.35M	20.6M	19.85M	19.375M	19.15M	19.35M	18.975M	19.3M
5200MHz	Pass	Inf	19.3M	20.475M	19.875M	19.3M	18.95M	19.25M	19.5M	19.5M
5240MHz	Pass	Inf	19.325M	19.6M	19.9M	19.35M	19.65M	19.575M	19.475M	19.5M
5745MHz	Pass	500k	15M	15.1M	14.15M	14.95M	15.275M	15.125M	15.625M	15.075M
5785MHz	Pass	500k	15.275M	14.7M	14.975M	15.025M	15.1M	15.025M	14.925M	15.1M
5825MHz	Pass	500k	15.1M	15.075M	15.25M	15.05M	15.05M	15.025M	15.075M	15.15M
802.11ac VHT20_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	21.45M	21.35M	21.375M	21.375M	21.4M	21.425M	21.4M	21.35M
5200MHz	Pass	Inf	21.25M	21.3M	21.4M	21.35M	21.475M	21.525M	21.3M	21.45M
5240MHz	Pass	Inf	21.475M	21.15M	21.325M	21.45M	21.425M	21.475M	21.325M	21.4M
5745MHz	Pass	500k	15.1M	15.05M	14.1M	15.075M	15.075M	15.35M	16.05M	14.9M
5785MHz	Pass	500k	15.45M	15.05M	15.075M	15.025M	15M	15.425M	15.475M	15.65M
5825MHz	Pass	500k	15M	15.05M	15.05M	15.05M	15.1M	15.3M	15.05M	14.2M
802.11ac VHT40_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	40.15M	39.85M	40.1M	40.05M	40M	40.05M	40.05M	40.2M
5230MHz	Pass	Inf	39.95M	40M	40.05M	40.05M	39.9M	40.2M	40.1M	40.2M
5755MHz	Pass	500k	35.05M	33.75M	35.05M	35.05M	35.05M	33.75M	33.75M	34.9M
5795MHz	Pass	500k	35.1M	32.55M	33.8M	32.55M	35M	35M	35.1M	35.05M
802.11ac VHT80_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	80.7M	80.6M	80.6M	80.7M	80.4M	80.6M	80.5M	80.5M
5775MHz	Pass	500k	74.9M	70M	73.9M	72.6M	73.7M	73.8M	75.1M	72.5M

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;

Mode	Result	Limit (Hz)	Port 1 -OBW (Hz)	Port 2 -OBW (Hz)	Port 3 -OBW (Hz)	Port 4 -OBW (Hz)	Port 5 -OBW (Hz)	Port 6 -OBW (Hz)	Port 7 -OBW (Hz)	Port 8 -OBW (Hz)
802.11a_Nss1 ,(6Mbps)_8TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	16.317M	16.292M	16.392M	16.317M	16.317M	16.342M	16.317M	16.317M
5200MHz	Pass	Inf	16.342M	16.342M	16.367M	16.292M	16.317M	16.317M	16.292M	16.317M
5240MHz	Pass	Inf	16.317M	16.292M	16.367M	16.317M	16.342M	16.367M	16.292M	16.317M
5745MHz	Pass	500k	16.342M	16.342M	16.292M	16.267M	16.342M	16.342M	16.317M	16.342M
5785MHz	Pass	500k	16.342M	16.367M	16.342M	16.292M	16.342M	16.317M	16.342M	16.342M
5825MHz	Pass	500k	16.342M	16.367M	16.317M	16.292M	16.317M	16.367M	16.342M	16.317M
802.11ac VHT20 _Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	Inf	17.516M	17.491M	17.516M	17.491M	17.516M	17.541M	17.491M	17.491M
5200MHz	Pass	Inf	17.516M	17.516M	17.516M	17.516M	17.516M	17.491M	17.491M	17.516M
5240MHz	Pass	Inf	17.516M	17.466M	17.491M	17.566M	17.516M	17.541M	17.541M	17.516M
5745MHz	Pass	500k	17.541M	17.516M	17.516M	17.516M	17.541M	17.541M	17.491M	17.541M
5785MHz	Pass	500k	17.541M	17.516M	17.541M	17.516M	17.516M	17.491M	17.491M	17.541M
5825MHz	Pass	500k	17.491M	17.516M	17.566M	17.541M	17.491M	17.516M	17.516M	17.516M
802.11ac VHT40 _Nss1,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	Inf	35.632M	35.582M	35.732M	35.632M	35.682M	35.582M	35.682M	35.682M
5230MHz	Pass	Inf	35.582M	35.682M	35.732M	35.682M	35.682M	35.682M	35.682M	35.682M
5755MHz	Pass	500k	35.682M	35.732M	35.632M	35.632M	35.632M	35.632M	35.582M	35.732M
5795MHz	Pass	500k	35.632M	35.632M	35.632M	35.782M	35.682M	35.632M	35.682M	35.682M
802.11ac VHT80_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	Inf	74.763M	74.463M	74.763M	74.863M	74.663M	74.663M	74.763M	74.763M
5775MHz	Pass	500k	74.463M	74.663M	74.863M	74.863M	74.863M	74.663M	74.563M	74.563M

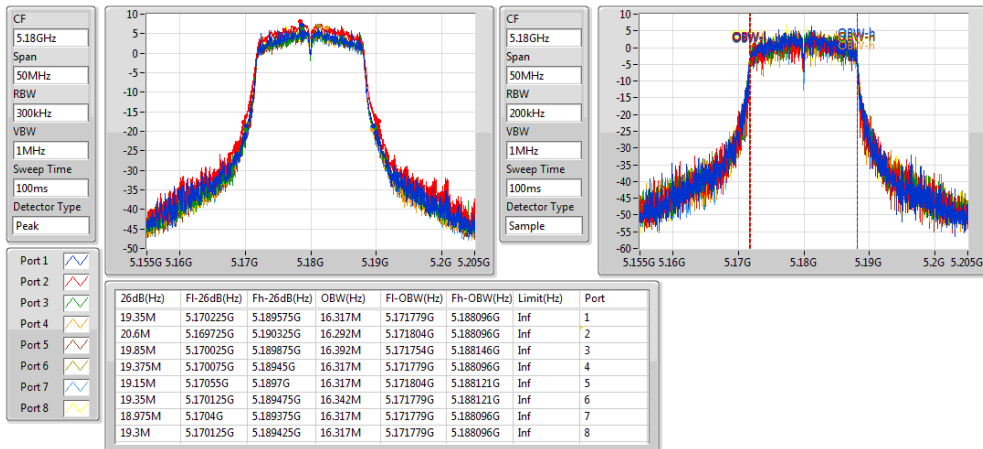
Port X-N dB = Port X 6dB down bandwidth for 5.725-5.85GHz band / 26dB down bandwidth for other band

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

802.11a_Nss1,(6Mbps)_8TX

EBW

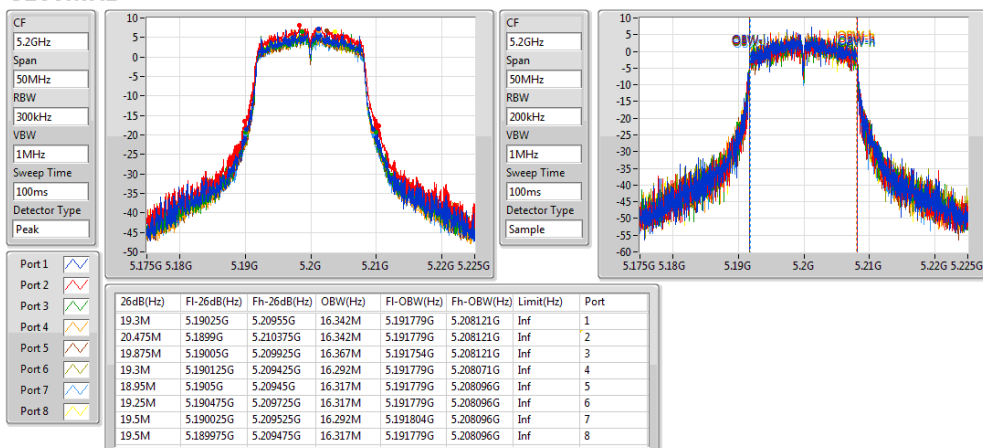
5180MHz



802.11a_Nss1,(6Mbps)_8TX

EBW

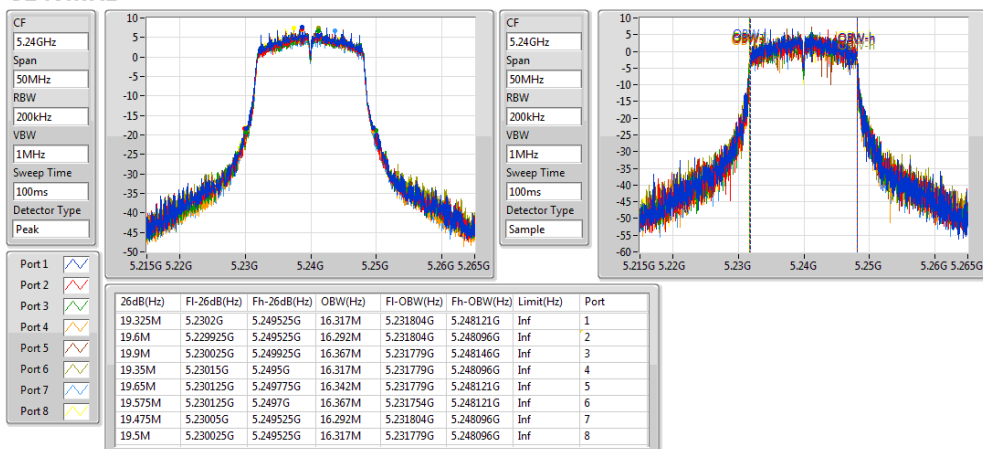
5200MHz



802.11a_Nss1,(6Mbps)_8TX

EBW

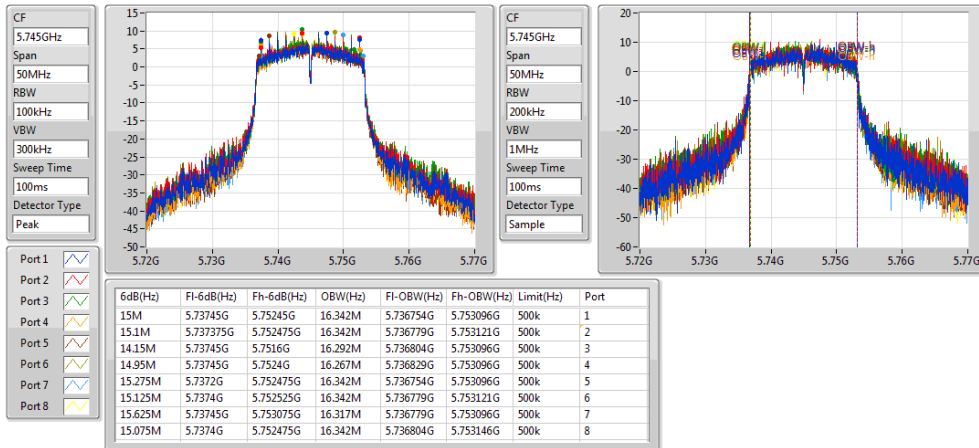
5240MHz



802.11a_Nss1,(6Mbps)_8TX

EBW

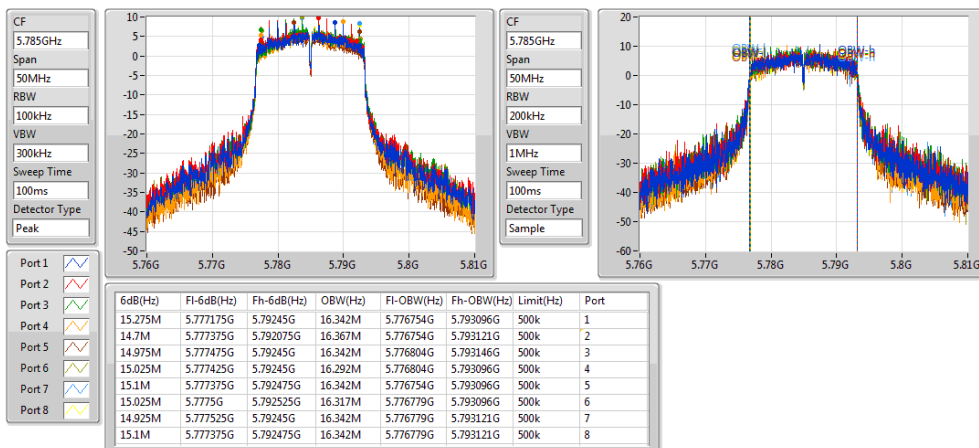
5745MHz



802.11a_Nss1,(6Mbps)_8TX

EBW

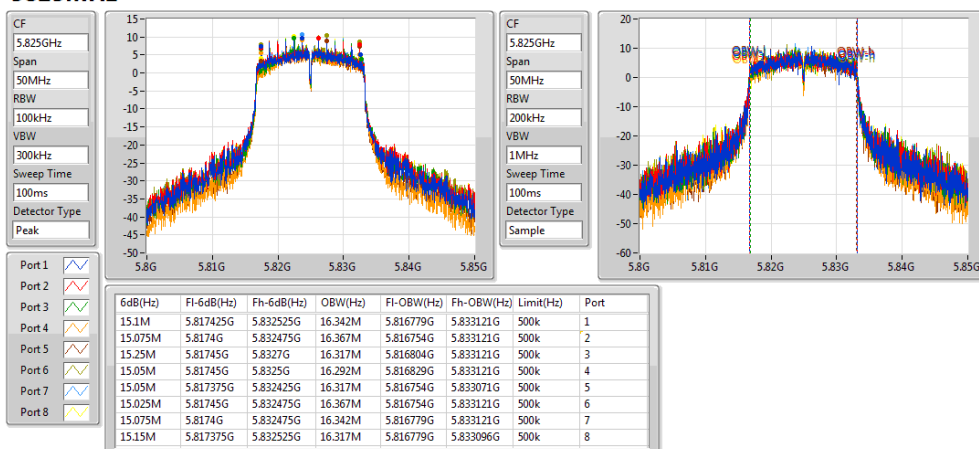
5785MHz



802.11a_Nss1,(6Mbps)_8TX

EBW

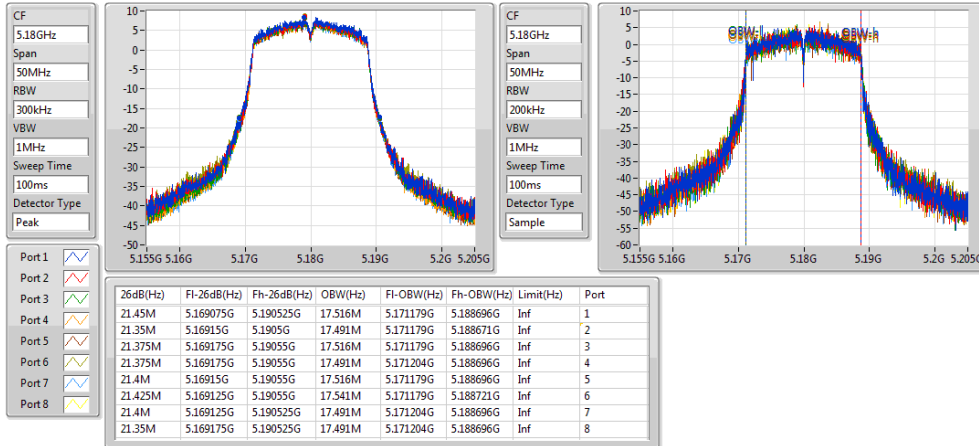
5825MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

EBW

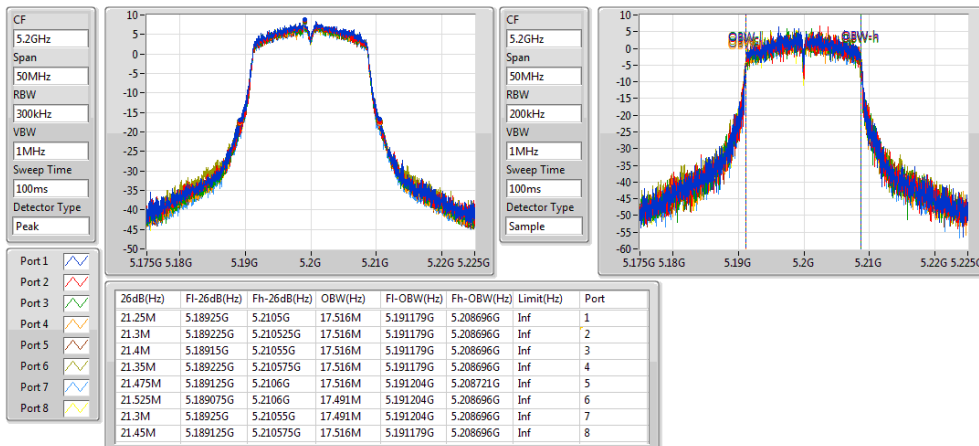
5180MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

EBW

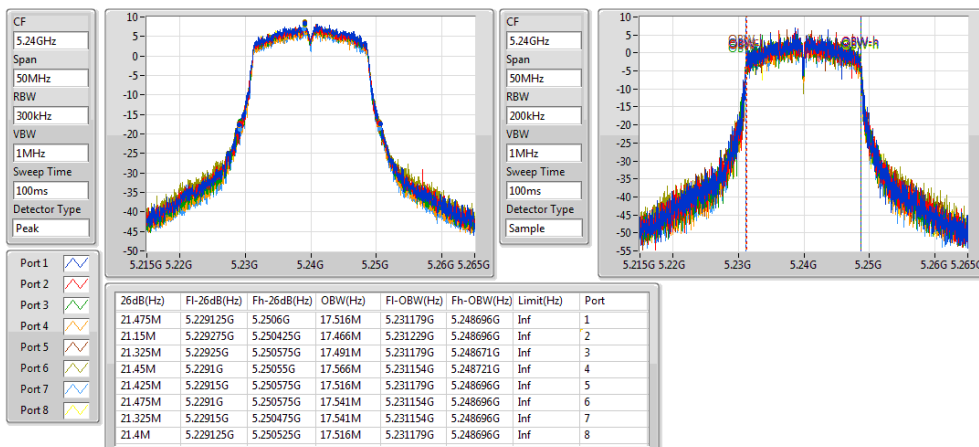
5200MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

EBW

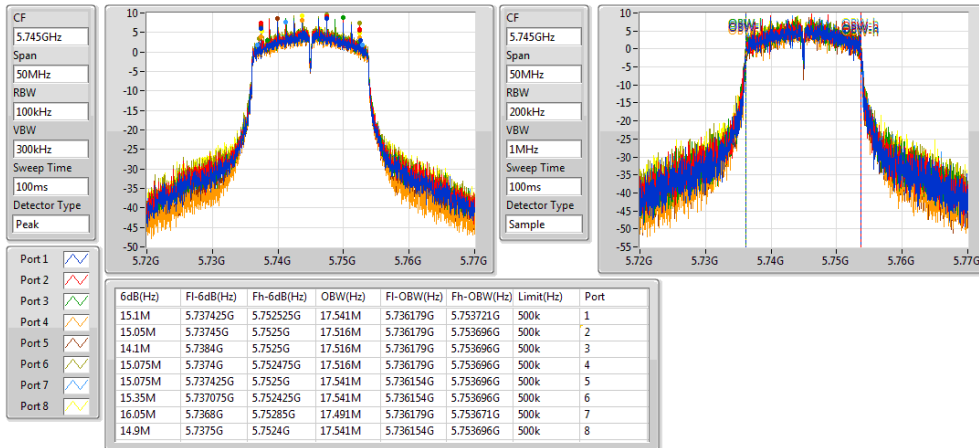
5240MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

EBW

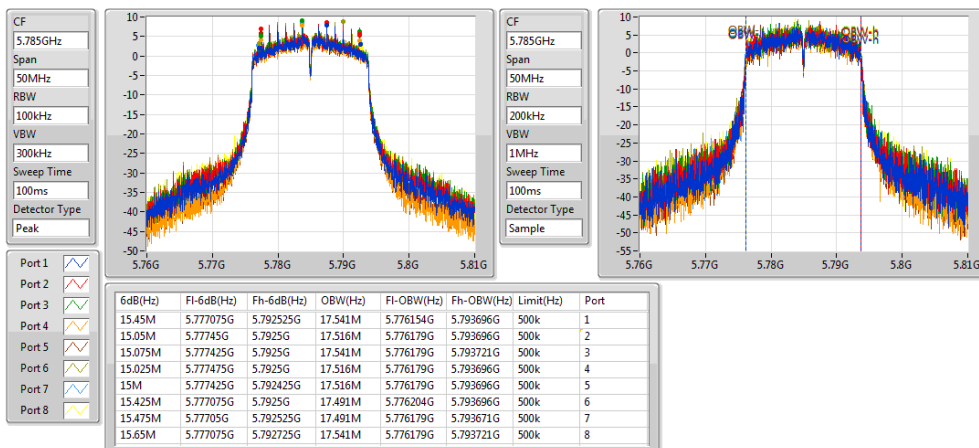
5745MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

EBW

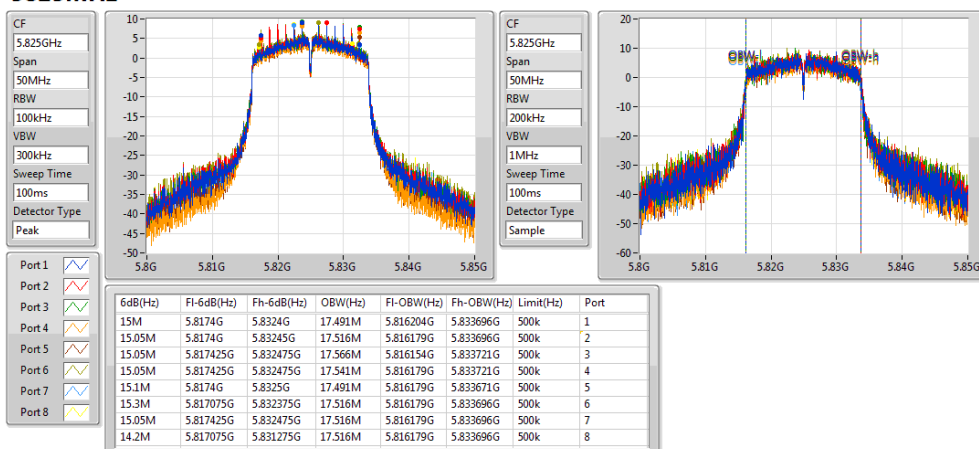
5785MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

EBW

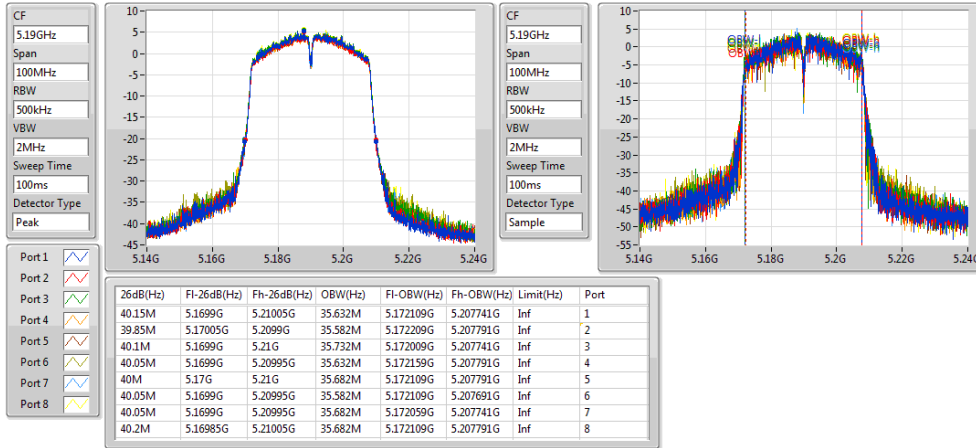
5825MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

EBW

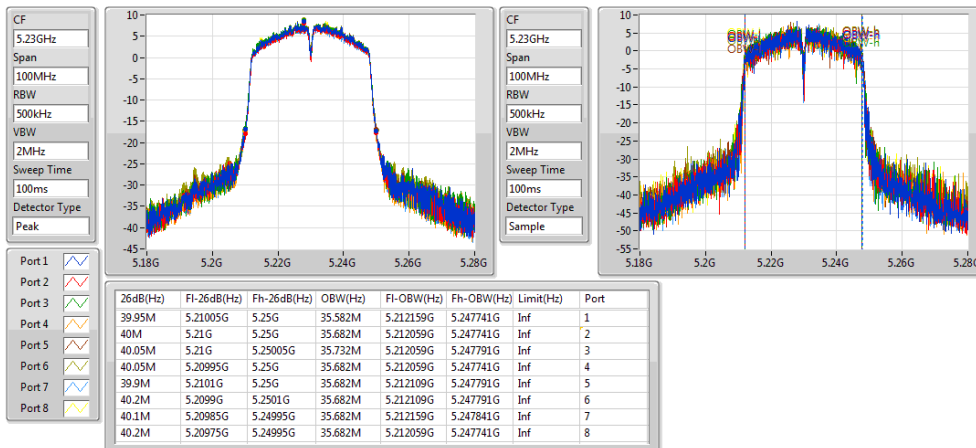
5190MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

EBW

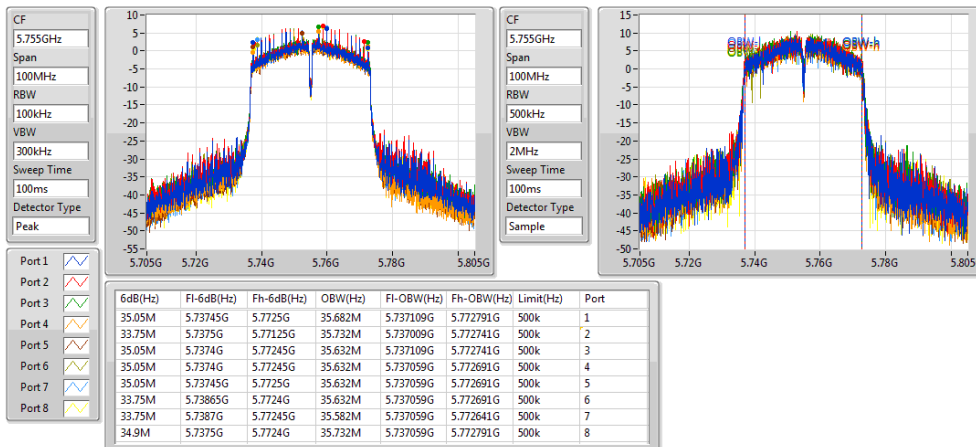
5230MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

EBW

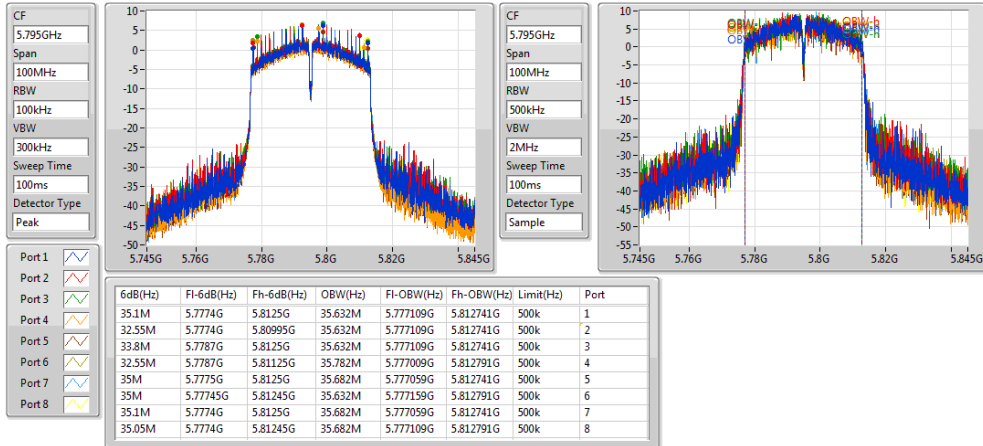
5755MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

EBW

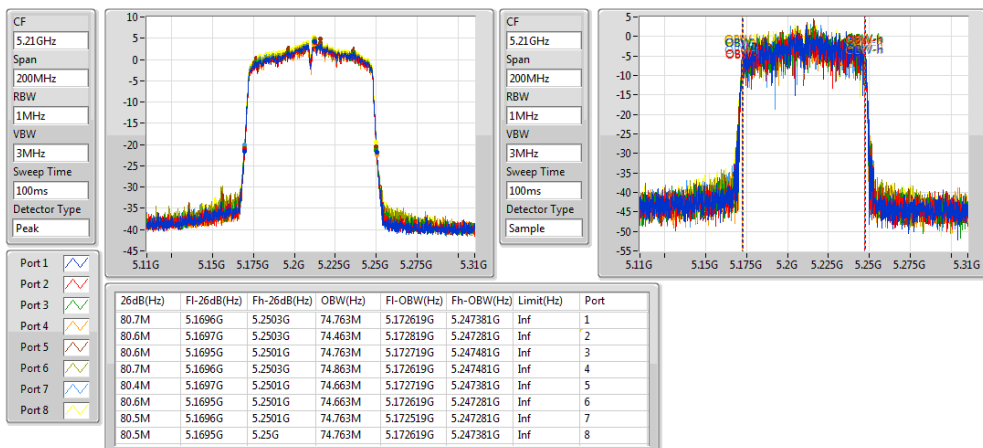
5795MHz



802.11ac VHT80_Nss1,(MCS0)_8TX

EBW

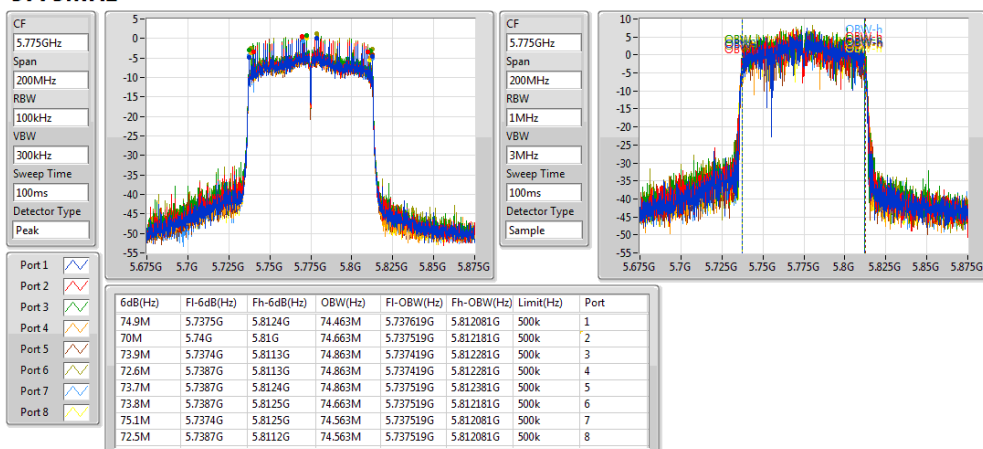
5210MHz



802.11ac VHT80_Nss1,(MCS0)_8TX

EBW

5775MHz



3.3 RF Output Power

3.3.1 Limit of RF Output Power

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

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

3.3.2 Test Procedures

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

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

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

Non-beamforming mode

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	25.87	0.38637	28.87	0.77090
802.11ac VHT20_Nss1,(MCS0)_8TX	25.80	0.38019	28.80	0.75858
802.11ac VHT40_Nss1,(MCS0)_8TX	27.66	0.58345	27.66	0.58345
802.11ac VHT80_Nss1,(MCS0)_8TX	20.14	0.10328	20.14	0.10328
5.725-5.85GHz	-	-	-	-
802.11a_Nss1,(6Mbps)_8TX	29.21	0.83368	32.21	1.66341
802.11ac VHT20_Nss1,(MCS0)_8TX	29.22	0.83560	32.22	1.66725
802.11ac VHT40_Nss1,(MCS0)_8TX	29.21	0.83368	29.21	0.83368
802.11ac VHT80_Nss1,(MCS0)_8TX	26.60	0.45709	26.60	0.45709

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Port 5 (dBm)	Port 6 (dBm)	Port 7 (dBm)	Port 8 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11a_Nss1, (6Mbps)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	3.00	17.14	16.83	16.79	16.68	16.54	16.82	16.59	17.28	25.87	30.00	28.87	36.00
5200MHz	Pass	3.00	16.98	16.64	16.56	16.45	16.56	16.74	16.28	17.11	25.70	30.00	28.70	36.00
5240MHz	Pass	3.00	16.92	16.75	16.38	16.49	16.74	16.95	16.12	16.98	25.71	30.00	28.71	36.00
5745MHz	Pass	3.00	20.03	20.45	20.65	19.59	19.48	20.65	19.86	20.06	29.15	30.00	32.15	36.00
5785MHz	Pass	3.00	19.92	20.31	20.61	19.58	19.34	20.38	20.15	20.14	29.10	30.00	32.10	36.00
5825MHz	Pass	3.00	20.12	20.41	20.46	19.61	19.35	20.51	20.43	20.36	29.21	30.00	32.21	36.00
802.11ac VHT20_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	3.00	16.95	16.64	16.68	16.59	16.36	16.85	16.36	16.94	25.71	30.00	28.71	36.00
5200MHz	Pass	3.00	16.98	16.74	16.65	16.67	16.32	16.65	16.39	16.82	25.69	30.00	28.69	36.00
5240MHz	Pass	3.00	17.02	17.06	16.79	16.91	16.65	16.76	16.06	16.84	25.80	30.00	28.80	36.00
5745MHz	Pass	3.00	20.04	20.46	20.35	19.38	19.39	20.64	20.35	20.68	29.22	30.00	32.22	36.00
5785MHz	Pass	3.00	20.02	20.15	20.16	19.33	19.36	20.58	20.25	20.55	29.10	30.00	32.10	36.00
5825MHz	Pass	3.00	20.12	20.39	20.41	19.58	19.22	20.56	20.12	20.24	29.13	30.00	32.13	36.00
802.11ac VHT40_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	0.00	14.26	14.48	15.03	14.52	13.88	14.21	14.79	15.02	23.57	30.00	23.57	36.00
5230MHz	Pass	0.00	18.35	18.51	19.12	18.61	18.06	18.39	18.71	19.19	27.66	30.00	27.66	36.00
5755MHz	Pass	0.00	20.25	20.69	20.62	19.69	19.57	20.68	19.94	19.85	29.21	30.00	29.21	36.00
5795MHz	Pass	0.00	20.12	20.48	20.49	19.62	19.46	20.55	20.22	20.19	29.19	30.00	29.19	36.00
802.11ac VHT80_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	0.00	11.15	10.68	11.43	10.97	11.28	11.43	10.55	11.32	20.14	30.00	20.14	36.00
5775MHz	Pass	0.00	17.24	17.56	18.29	17.24	17.01	18.22	17.29	17.48	26.60	30.00	26.60	36.00

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

For 20-MHz channel widths with $N_{ANT} \geq 5$

Array Gain = $5 \log(8/1) = 4.52$ dB or 3 dB, whichever is less

Beamforming mode

Summary

Mode	Total Power (dBm)	Total Power (W)	EIRP (dBm)	EIRP (W)
5.15-5.25GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_8TX	16.77	0.04753	25.80	0.38019
802.11ac VHT40-BF_Nss1,(MCS0)_8TX	18.63	0.07295	27.66	0.58345
802.11ac VHT80-BF_Nss1,(MCS0)_8TX	11.11	0.01291	20.14	0.10328
5.725-5.85GHz	-	-	-	-
802.11ac VHT20-BF_Nss1,(MCS0)_8TX	20.19	0.10447	29.22	0.83560
802.11ac VHT40-BF_Nss1,(MCS0)_8TX	20.18	0.10423	29.21	0.83368
802.11ac VHT80-BF_Nss1,(MCS0)_8TX	17.57	0.05715	26.60	0.45709

Result

Mode	Result	DG (dBi)	Port 1 (dBm)	Port 2 (dBm)	Port 3 (dBm)	Port 4 (dBm)	Port 5 (dBm)	Port 6 (dBm)	Port 7 (dBm)	Port 8 (dBm)	Total Power (dBm)	Power Limit (dBm)	EIRP (dBm)	EIRP Limit (dBm)
802.11ac VHT20-BF_Nss1 ,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	9.03	7.92	7.61	7.65	7.56	7.33	7.82	7.33	7.91	16.68	26.97	25.71	36.00
5200MHz	Pass	9.03	7.95	7.71	7.62	7.64	7.29	7.62	7.36	7.79	16.66	26.97	25.69	36.00
5240MHz	Pass	9.03	7.99	8.03	7.76	7.88	7.62	7.73	7.03	7.81	16.77	26.97	25.80	36.00
5745MHz	Pass	9.03	11.01	11.43	11.32	10.35	10.36	11.61	11.32	11.65	20.19	26.97	29.22	36.00
5785MHz	Pass	9.03	10.99	11.12	11.13	10.3	10.33	11.55	11.22	11.52	20.07	26.97	29.10	36.00
5825MHz	Pass	9.03	11.09	11.36	11.38	10.55	10.19	11.53	11.09	11.21	20.10	26.97	29.13	36.00
802.11ac VHT40-BF_Nss1 ,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	9.03	5.23	5.45	6	5.49	4.85	5.18	5.76	5.99	14.54	26.97	23.57	36.00
5230MHz	Pass	9.03	9.32	9.48	10.09	9.58	9.03	9.36	9.68	10.16	18.63	26.97	27.66	36.00
5755MHz	Pass	9.03	11.22	11.66	11.59	10.66	10.54	11.65	10.91	10.82	20.18	26.97	29.21	36.00
5795MHz	Pass	9.03	11.09	11.45	11.46	10.59	10.43	11.52	11.19	11.16	20.16	26.97	29.19	36.00
802.11ac VHT80-BF_Nss1 ,(MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	9.03	2.12	1.65	2.4	1.94	2.25	2.4	1.52	2.29	11.11	26.97	20.14	36.00
5775MHz	Pass	9.03	8.21	8.53	9.26	8.21	7.98	9.19	8.26	8.45	17.57	26.97	26.60	36.00

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

Note:

Directional gain = 0 dBi + 10*log(8/1) = 9.03 dBi > 6 dBi,

Limit shall be reduced to 30 dBm – (9.03 dBi – 6 dBi) = 26.97 dBm

3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

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

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

3.4.2 Test Procedures

For 5150 ~ 5250 MHz

Duty cycle $\geq 98\%$

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

Duty cycle $< 98\%$

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

For 5725 ~ 5850 MHz

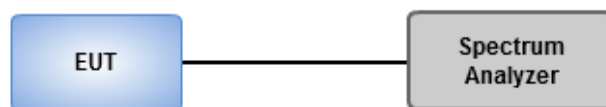
Duty cycle $\geq 98\%$

1. Set RBW = 500 kHz, VBW = 3 MHz, Sweep time = auto, Detector = RMS.
2. Trace average 100 traces.
3. Use the peak marker function to determine the maximum amplitude level.

Duty cycle $< 98\%$

1. Set RBW = 500 kHz, VBW = 3 MHz, Detector = RMS.
2. Set sweep time $\geq 10 \times (\text{number of points in sweep}) \times (\text{total on/off period of the transmitted signal})$.
3. Perform a single sweep.
4. Use the peak marker function to determine the maximum amplitude level.
5. Add $10 \log(1/x)$, where x is the duty cycle.

3.4.3 Test Setup



3.4.4 Test Result of Peak Power Spectral Density

Summary

Mode	PD (dBm/RBW)	EIRP PD (dBm/RBW)
5.15-5.25GHz	-	-
802.11a_Nss1,(6Mbps)_8TX	13.75	22.78
802.11ac VHT20_Nss1,(MCS0)_8TX	13.52	22.55
802.11ac VHT40_Nss1,(MCS0)_8TX	12.37	21.40
802.11ac VHT80_Nss1,(MCS0)_8TX	0.53	9.56
5.725-5.85GHz	-	-
802.11a_Nss1,(6Mbps)_8TX	15.94	24.97
802.11ac VHT20_Nss1,(MCS0)_8TX	14.48	23.51
802.11ac VHT40_Nss1,(MCS0)_8TX	12.07	21.10
802.11ac VHT80_Nss1,(MCS0)_8TX	5.84	14.87

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

Result

Mode	Result	DG (dBi)	Port 1 (dBm/ RBW)	Port 2 (dBm/ RBW)	Port 3 (dBm/ RBW)	Port 4 (dBm/ RBW)	Port 5 (dBm/ RBW)	Port 6 (dBm/ RBW)	Port 7 (dBm/ RBW)	Port 8 (dBm/ RBW)	PD (dBm/ RBW)	PD Limit (dBm/ RBW)	EIRP PD (dBm/ RBW)	EIRP PD Limit (dBm/ RBW)
802.11a_Nss1, (6Mbps)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	9.03	4.90	5.10	5.15	4.14	4.37	4.78	5.32	4.79	13.75	13.97	22.78	23.00
5200MHz	Pass	9.03	4.69	4.90	4.95	4.21	4.16	4.54	5.17	4.50	13.55	13.97	22.58	23.00
5240MHz	Pass	9.03	5.09	5.17	4.98	4.54	4.29	4.94	5.15	4.25	13.74	13.97	22.77	23.00
5745MHz	Pass	9.03	6.42	6.88	7.41	6.39	6.17	7.26	6.82	7.11	15.82	26.97	24.85	36.00
5785MHz	Pass	9.03	6.46	6.76	7.42	6.48	5.88	6.87	7.16	7.29	15.80	26.97	24.83	36.00
5825MHz	Pass	9.03	6.76	6.93	7.13	6.16	6.17	7.44	7.53	7.67	15.94	26.97	24.97	36.00
802.11ac VHT20_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5180MHz	Pass	9.03	4.54	4.72	4.92	3.94	3.98	4.25	4.77	4.08	13.41	13.97	22.44	23.00
5200MHz	Pass	9.03	4.87	4.93	5.02	4.27	3.98	4.31	4.74	3.96	13.52	13.97	22.55	23.00
5240MHz	Pass	9.03	5.05	4.68	4.96	4.45	4.03	4.58	4.67	3.71	13.52	13.97	22.55	23.00
5745MHz	Pass	9.03	5.16	5.60	5.52	4.56	4.87	6.20	5.77	6.09	14.48	26.97	23.51	36.00
5785MHz	Pass	9.03	5.08	5.43	5.61	4.46	4.68	5.92	5.65	5.85	14.36	26.97	23.39	36.00
5825MHz	Pass	9.03	5.58	5.80	5.71	4.66	4.87	6.17	5.48	5.55	14.48	26.97	23.51	36.00
802.11ac VHT40_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5190MHz	Pass	9.03	0.37	0.05	0.05	-0.20	-1.33	-1.06	-0.25	0.27	8.73	13.97	17.76	23.00
5230MHz	Pass	9.03	3.29	2.88	3.98	3.59	2.99	3.49	3.84	2.98	12.37	13.97	21.40	23.00
5755MHz	Pass	9.03	3.07	3.53	3.60	2.55	2.58	3.63	2.78	2.70	12.07	26.97	21.10	36.00
5795MHz	Pass	9.03	2.89	3.34	3.41	2.19	2.58	3.44	3.25	3.10	12.06	26.97	21.09	36.00
802.11ac VHT80_Nss1, (MCS0)_8TX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5210MHz	Pass	9.03	-8.62	-8.98	-8.67	-9.04	-8.41	-8.33	-8.26	-7.81	0.53	13.97	9.56	23.00
5775MHz	Pass	9.03	-3.52	-3.17	-2.46	-3.61	-3.67	-2.44	-3.51	-3.24	5.84	26.97	14.87	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;

Note:

For 5150~5250MHz:

Directional gain = 0 dBi + 10*log(8/1) = 9.03 dB

Limit shall be reduced to 17 dBm – (9.03 dBi – 6 dBi) = 13.97 dBm

For 5725~5850MHz:

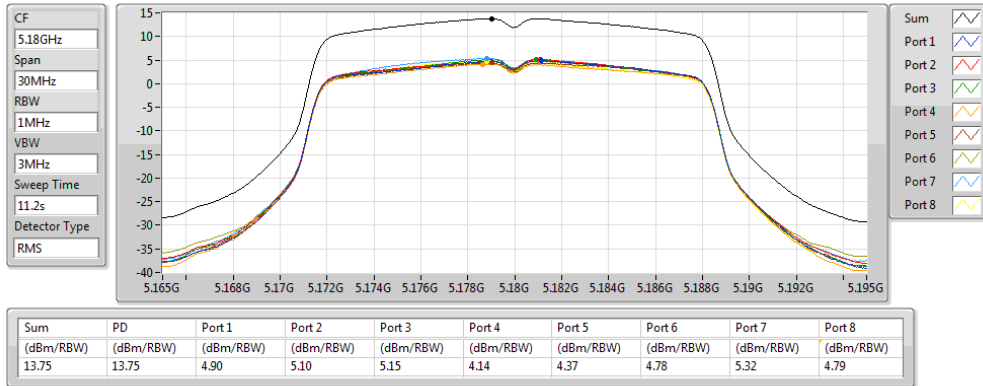
Directional gain = 0 dBi + 10*log(8/1) = 9.03 dB

Limit shall be reduced to 30 dBm – (9.03 dBi – 6 dBi) = 26.97 dBm

802.11a_Nss1,(6Mbps)_8TX

PSD

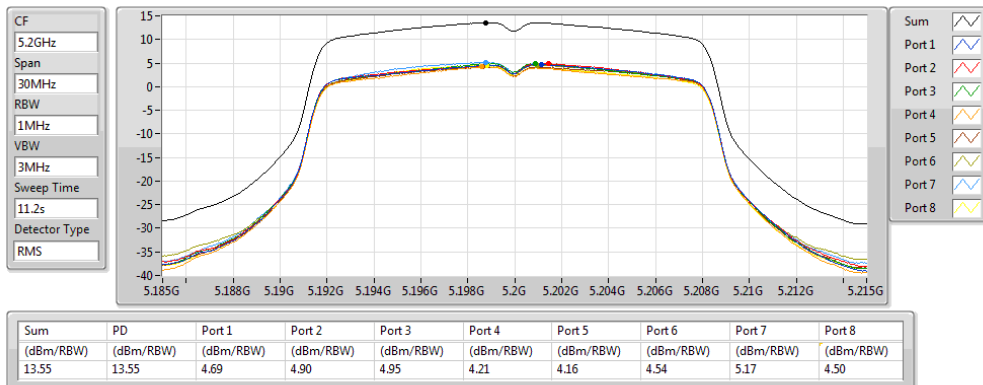
5180MHz



802.11a_Nss1,(6Mbps)_8TX

PSD

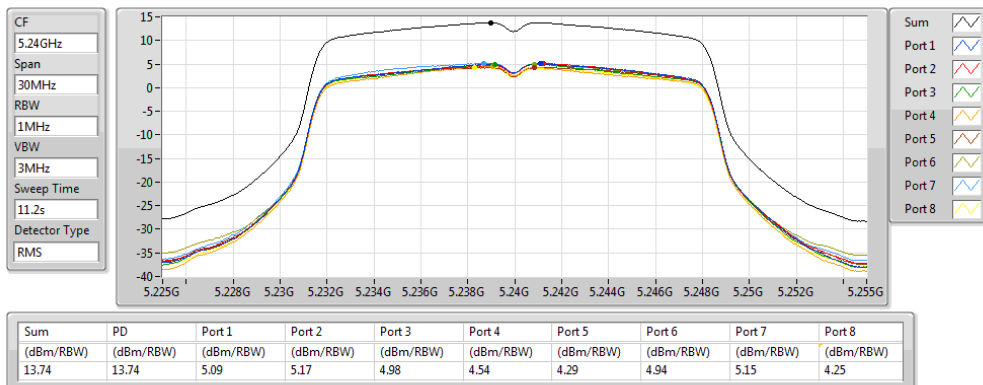
5200MHz



802.11a_Nss1,(6Mbps)_8TX

PSD

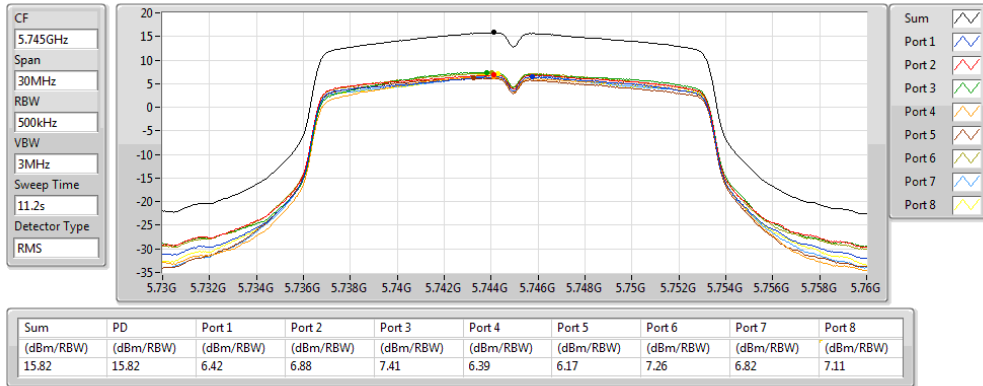
5240MHz



802.11a_Nss1,(6Mbps)_8TX

PSD

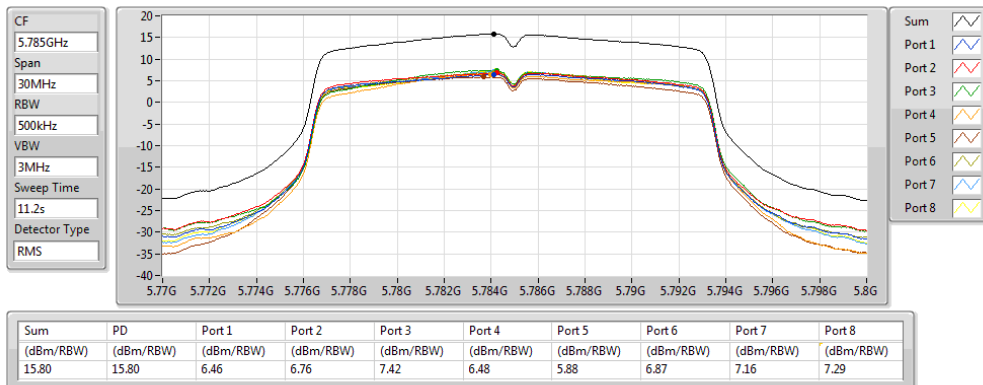
5745MHz



802.11a_Nss1,(6Mbps)_8TX

PSD

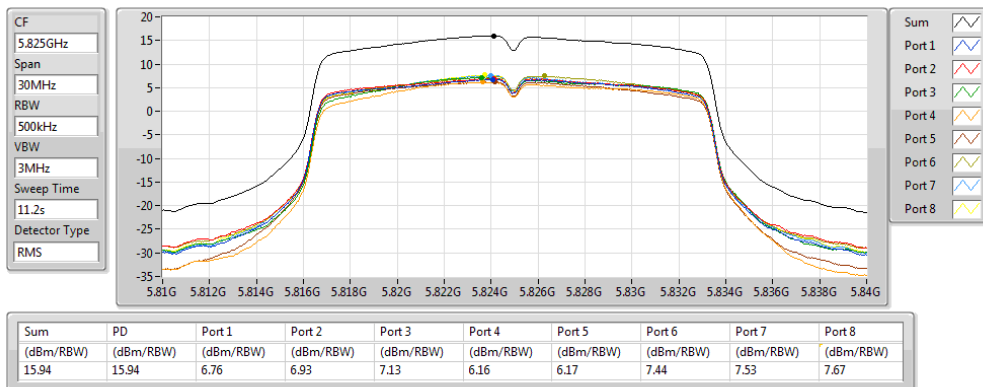
5785MHz



802.11a_Nss1,(6Mbps)_8TX

PSD

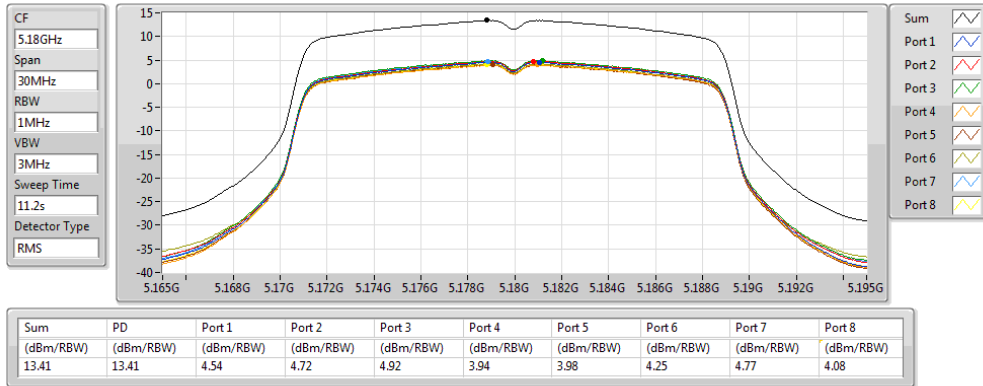
5825MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

PSD

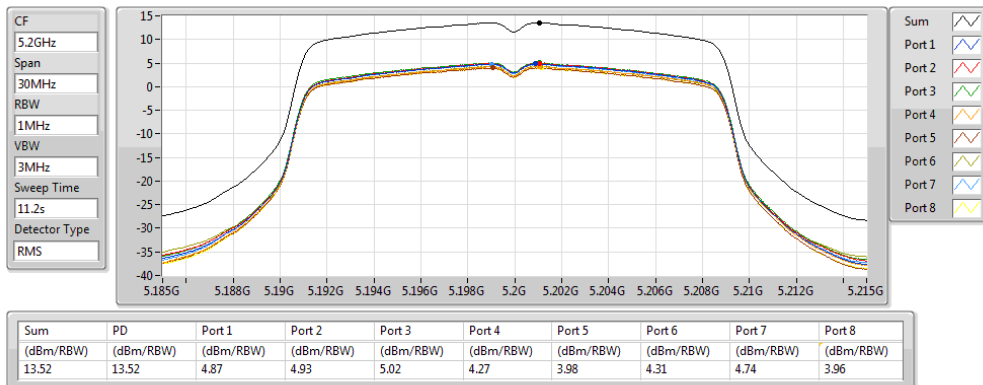
5180MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

PSD

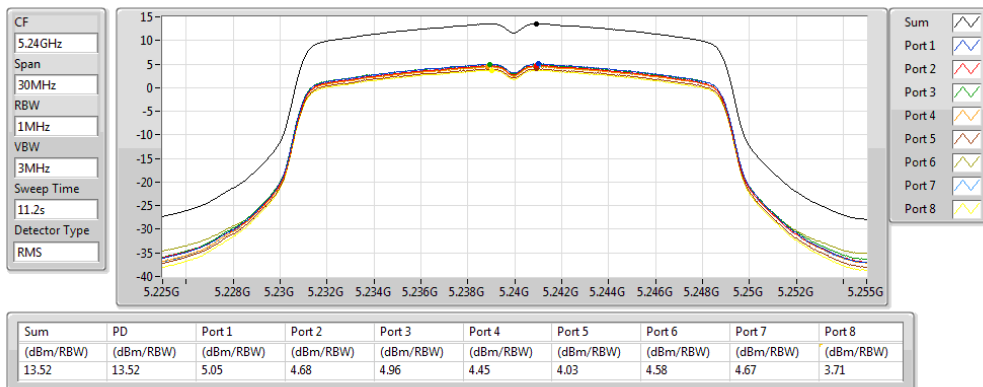
5200MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

PSD

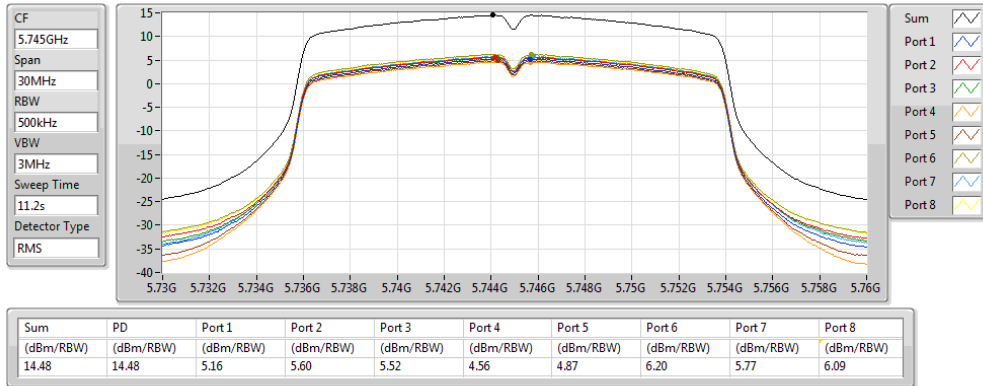
5240MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

PSD

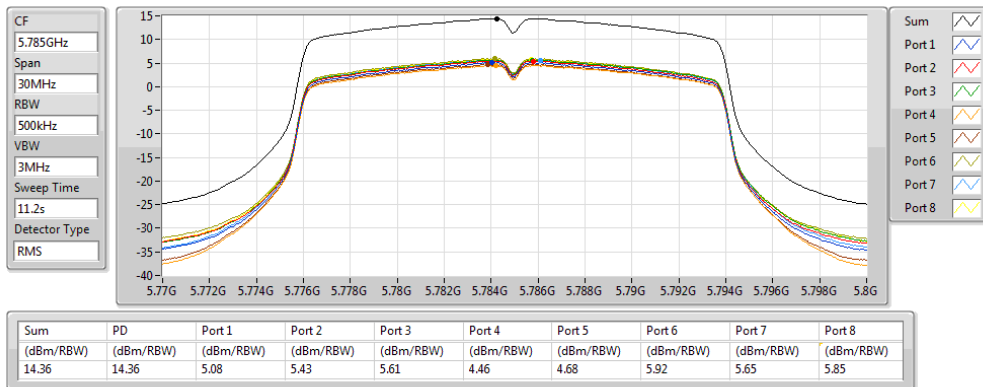
5745MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

PSD

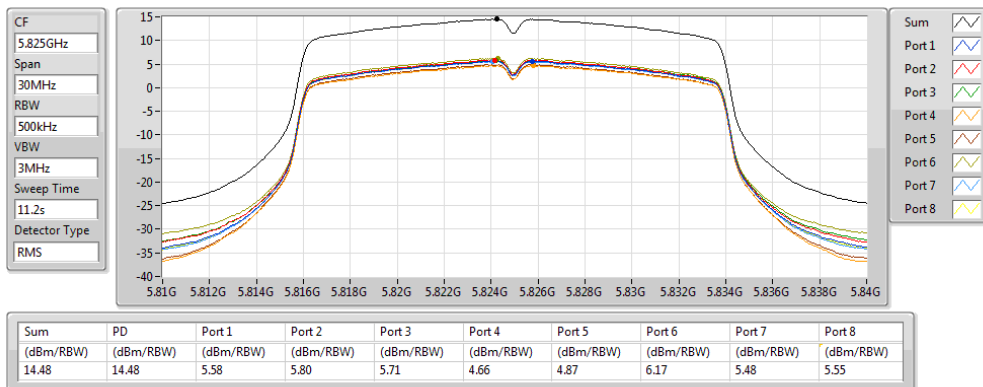
5785MHz



802.11ac VHT20_Nss1,(MCS0)_8TX

PSD

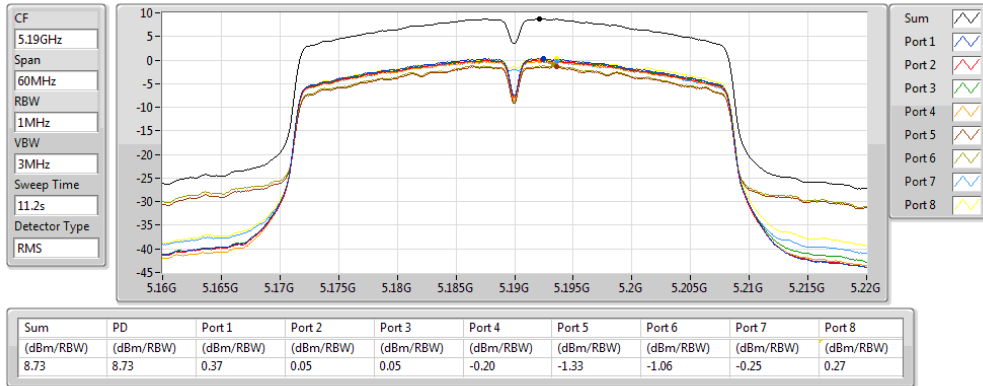
5825MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

PSD

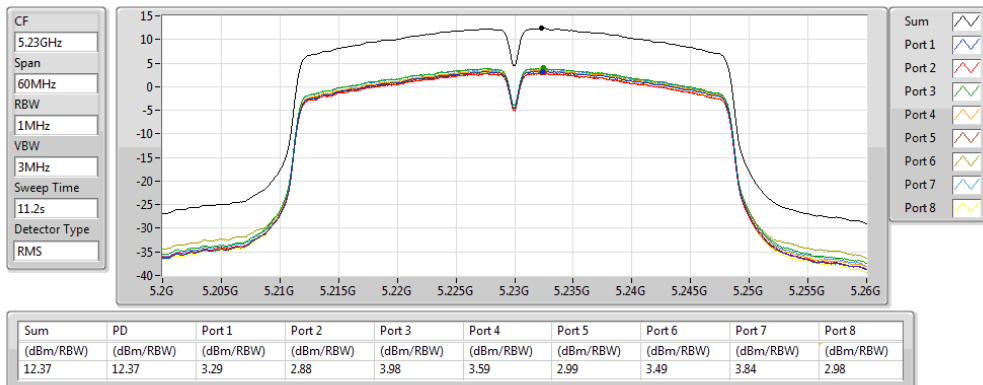
5190MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

PSD

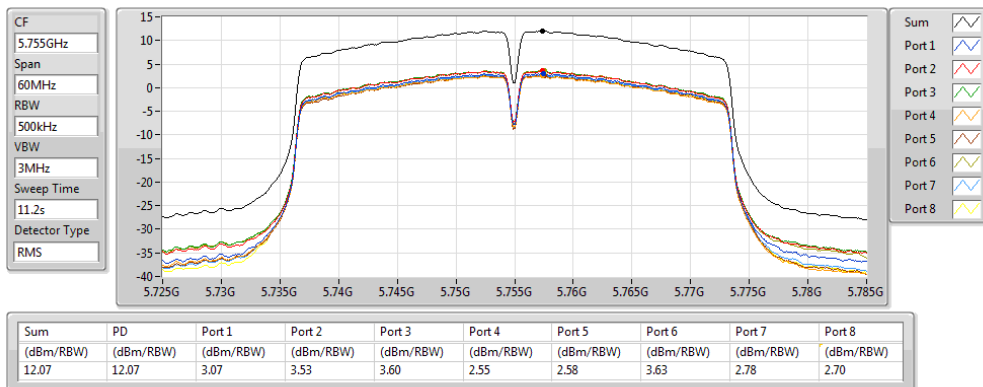
5230MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

PSD

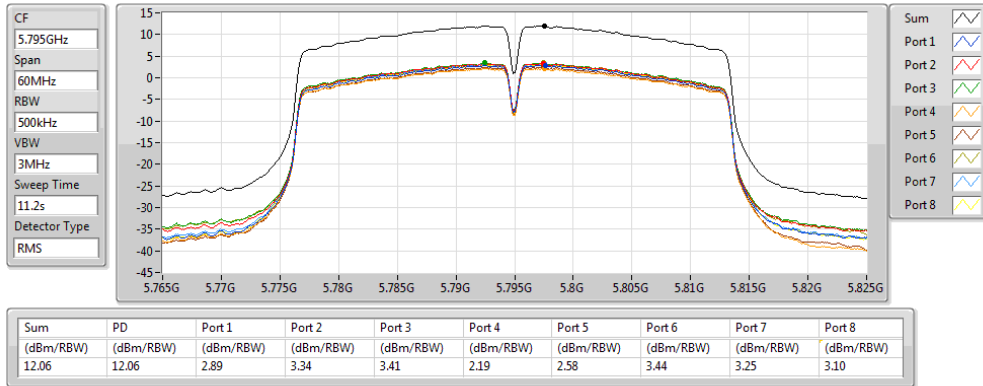
5755MHz



802.11ac VHT40_Nss1,(MCS0)_8TX

PSD

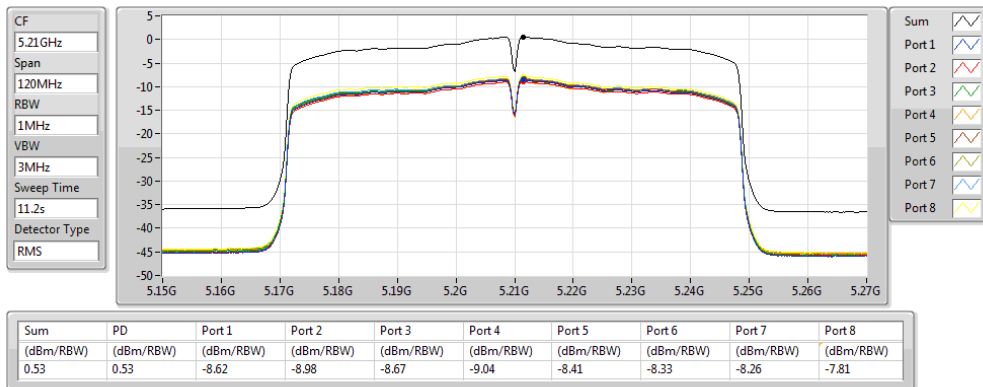
5795MHz



802.11ac VHT80_Nss1,(MCS0)_8TX

PSD

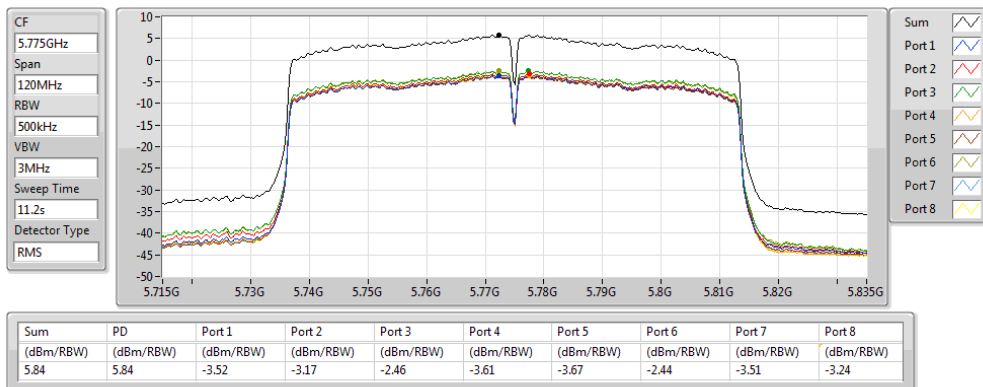
5210MHz



802.11ac VHT80_Nss1,(MCS0)_8TX

PSD

5775MHz



3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

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

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

Un-restricted band emissions above 1GHz Limit	
Operating Band	Limit
5.15 - 5.25 GHz	e.i.r.p. -27 dBm [68.2 dBuV/m@3m]
5.725 - 5.850 GHz	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

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

3.5.2 Test Procedures

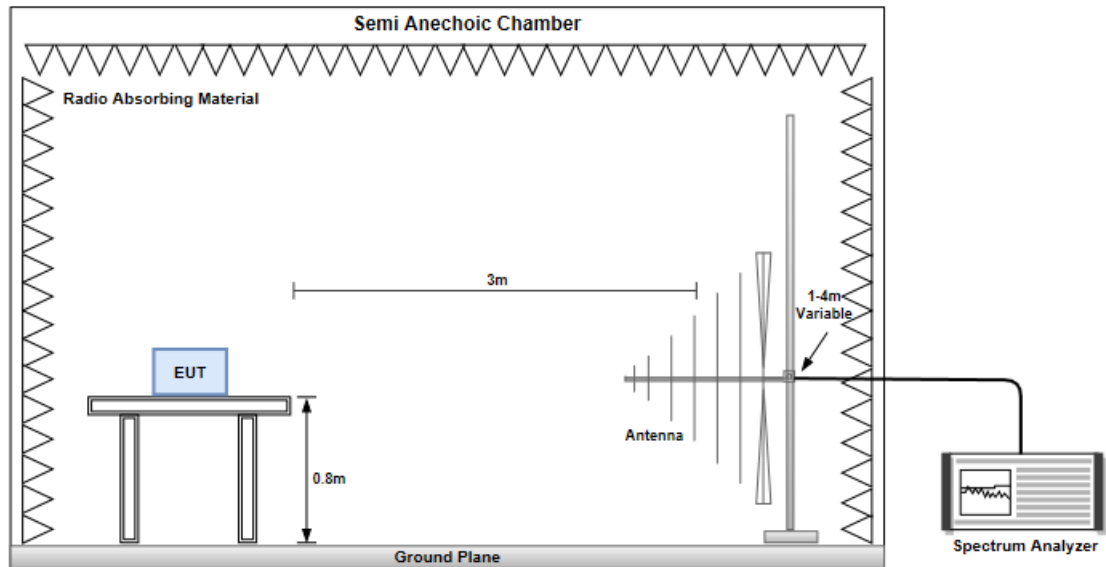
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

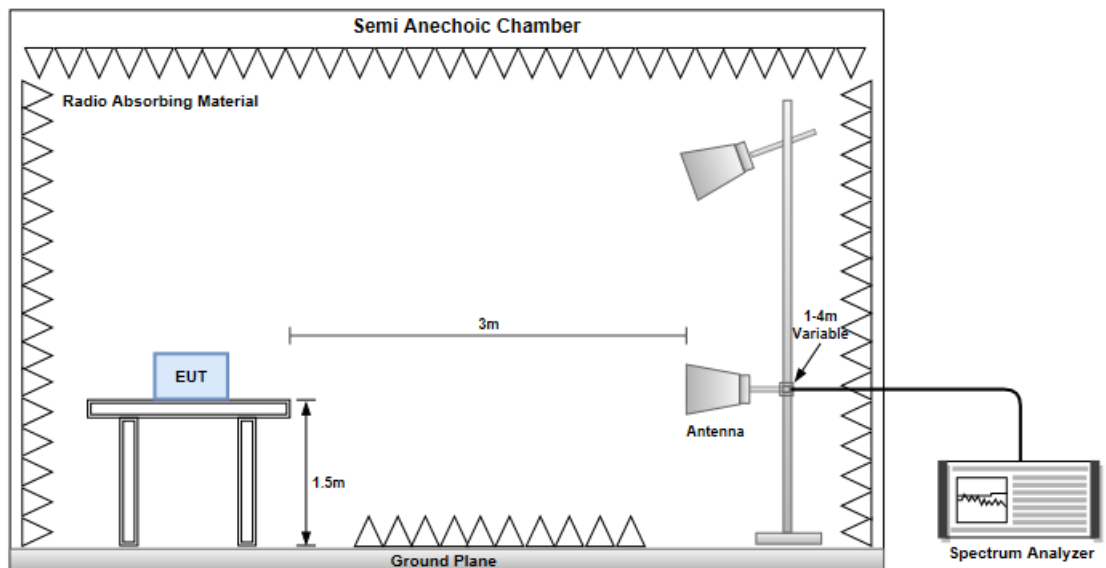
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

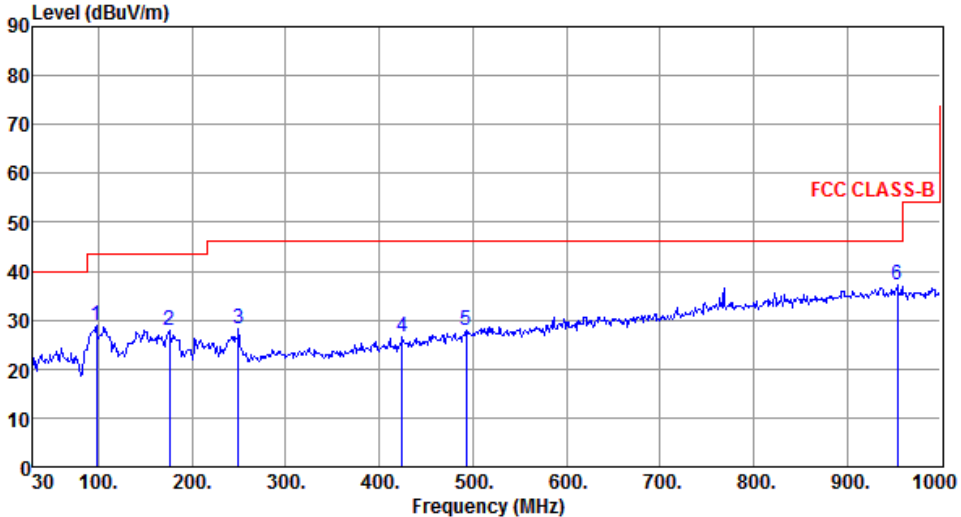


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		

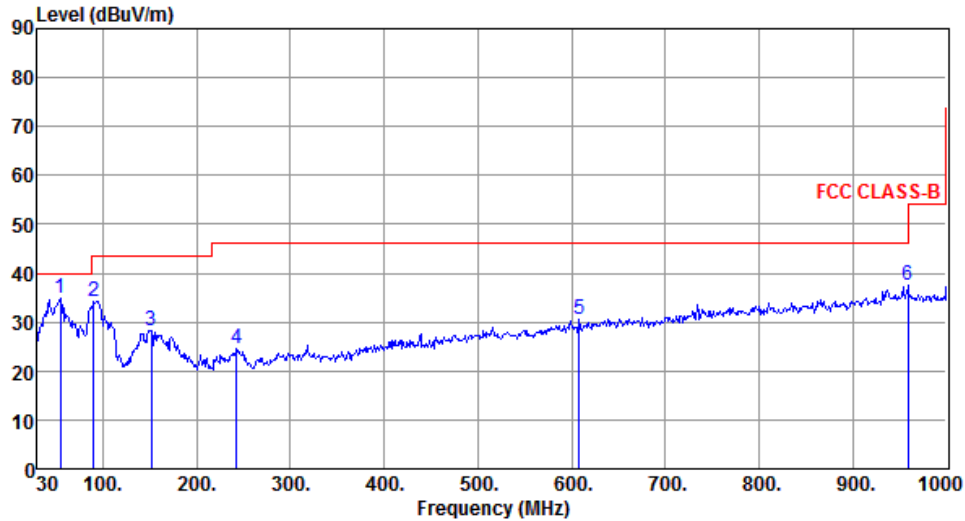


The graph displays the radiated unwanted emissions of a transmitter. The y-axis represents the Level in dBuV/m, ranging from 0 to 90. The x-axis represents the Frequency in MHz, ranging from 30 to 1000. A red line indicates the FCC CLASS-B limit, which is 40 dBuV/m from 30 MHz to 100 MHz, 45 dBuV/m from 100 MHz to 200 MHz, and 50 dBuV/m from 200 MHz to 1000 MHz. A blue line shows the measured emission level, which is generally below the limit. Six specific peaks are identified and numbered 1 through 6.

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	97.90	28.83	43.50	-14.67	42.14	-13.31	Peak	---	---
2	175.50	27.76	43.50	-15.74	37.10	-9.34	Peak	---	---
3	249.22	28.18	46.00	-17.82	38.14	-9.96	Peak	---	---
4	424.79	26.62	46.00	-19.38	31.41	-4.79	Peak	---	---
5	492.69	27.95	46.00	-18.05	31.19	-3.24	Peak	---	---
6	953.44	37.14	46.00	-8.86	32.36	4.78	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)	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	54.25	34.88	40.00	-5.12	43.42	-8.54	Peak	---	---
2	90.14	34.27	43.50	-9.23	48.54	-14.27	Peak	---	---
3	151.25	28.33	43.50	-15.17	36.70	-8.37	Peak	---	---
4	242.43	24.51	46.00	-21.49	34.58	-10.07	Peak	---	---
5	608.12	30.49	46.00	-15.51	31.27	-0.78	Peak	---	---
6	959.26	37.58	46.00	-8.42	32.75	4.83	Peak	---	---

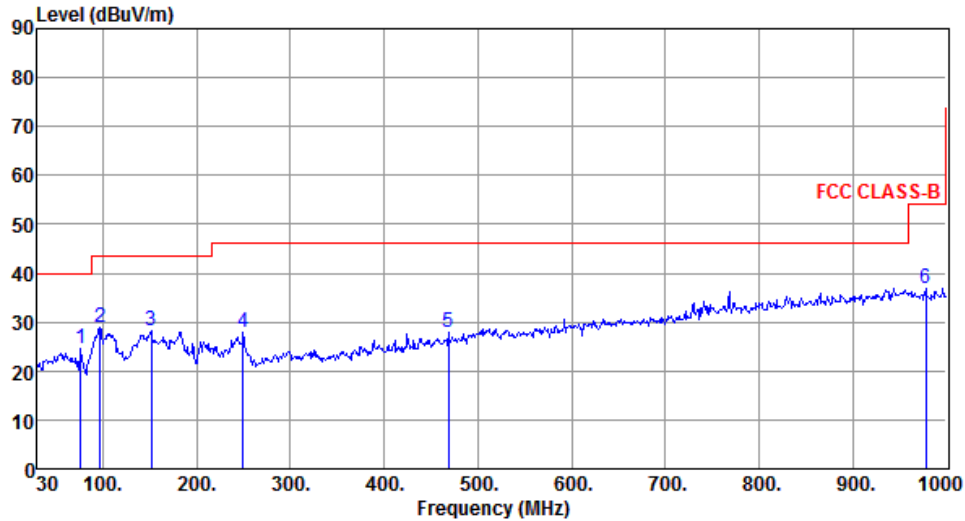
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	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	76.56	24.47	40.00	-15.53	36.62	-12.15	Peak	---	---
2	96.93	28.76	43.50	-14.74	42.09	-13.33	Peak	---	---
3	151.25	28.27	43.50	-15.23	36.64	-8.37	Peak	---	---
4	249.22	28.03	46.00	-17.97	37.99	-9.96	Peak	---	---
5	468.44	28.03	46.00	-17.97	31.70	-3.67	Peak	---	---
6	977.69	36.93	54.00	-17.07	31.98	4.95	Peak	---	---

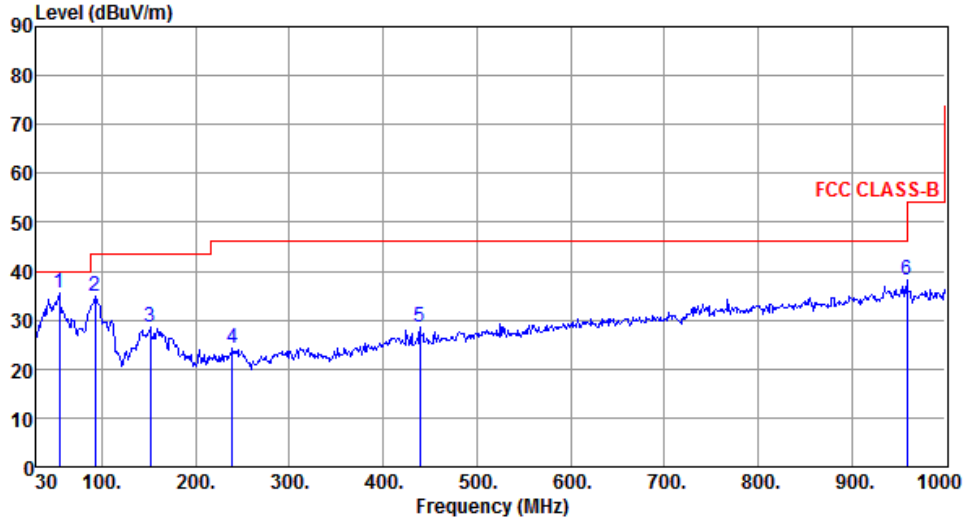
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	5745
Polarization	Vertical		

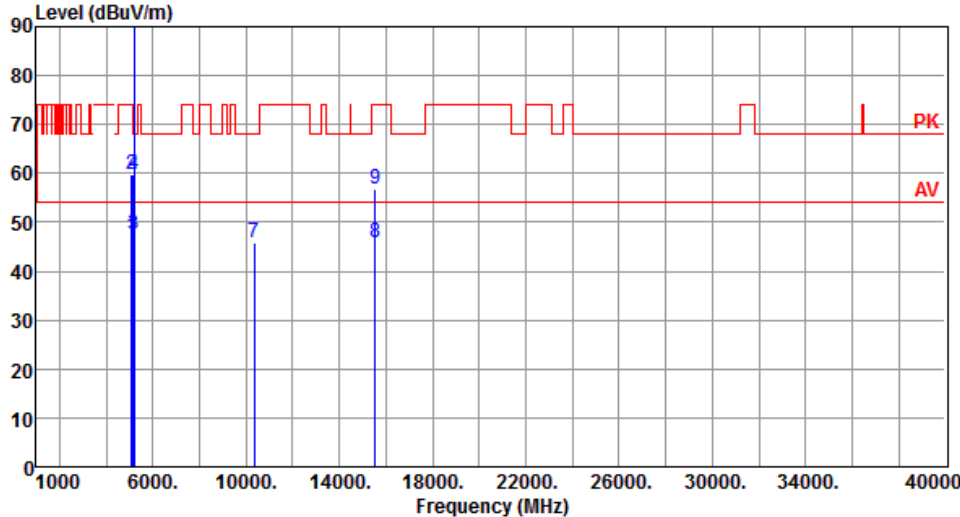


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	54.25	35.68	40.00	-4.32	44.22	-8.54	Peak	---	---
2	93.05	34.80	43.50	-8.70	48.78	-13.98	Peak	---	---
3	151.25	28.55	43.50	-14.95	36.92	-8.37	Peak	---	---
4	239.52	24.27	46.00	-21.73	34.52	-10.25	Peak	---	---
5	439.34	28.45	46.00	-17.55	32.79	-4.34	Peak	---	---
6	959.26	38.04	46.00	-7.96	33.21	4.83	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

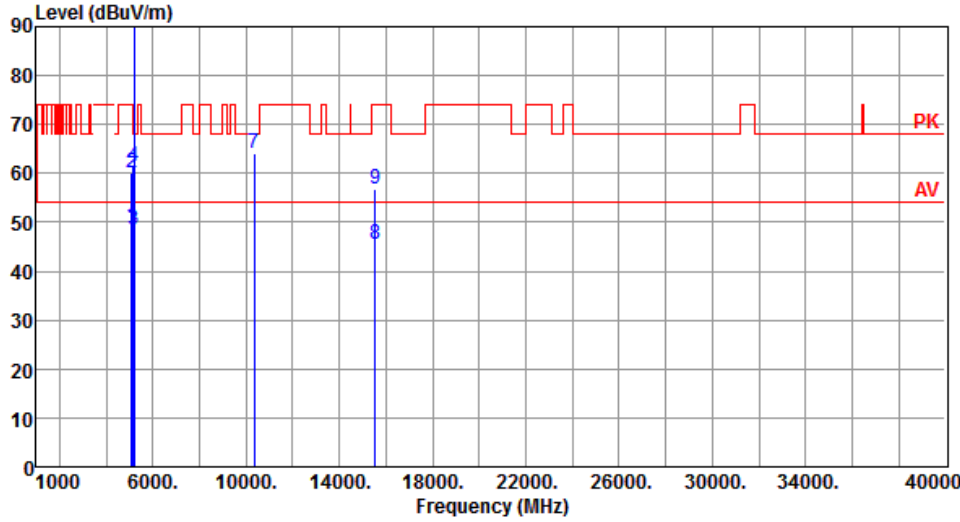
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	47.19	54.00	-6.81	42.66	4.53	Average	242	304
2	5100.00	59.65	74.00	-14.35	55.12	4.53	Peak	242	304
3	5150.00	47.37	54.00	-6.63	42.93	4.44	Average	242	304
4	5150.00	59.65	74.00	-14.35	55.21	4.44	Peak	242	304
5 *	5180.00	106.60			102.34	4.26	Average	242	304
6 *	5180.00	116.90			112.64	4.26	Peak	242	304
7	10360.00	45.80	68.20	-22.40	31.51	14.29	Peak	100	38
8	15540.00	45.80	54.00	-8.20	31.25	14.55	Average	100	34
9	15540.00	56.87	74.00	-17.13	42.32	14.55	Peak	100	34

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

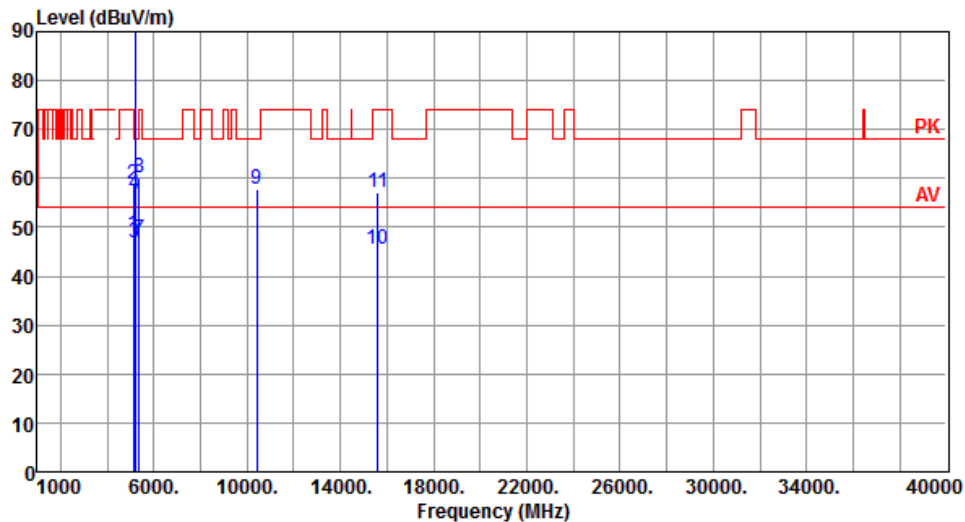
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	49.31	54.00	-4.69	44.78	4.53	Average	274	321
2	5100.00	60.22	74.00	-13.78	55.69	4.53	Peak	274	321
3	5150.00	48.65	54.00	-5.35	44.21	4.44	Average	274	321
4	5150.00	61.33	74.00	-12.67	56.89	4.44	Peak	271	321
5 *	5180.00	109.62			105.36	4.26	Average	274	321
6 *	5180.00	119.83			115.57	4.26	Peak	274	321
7	10360.00	64.17	68.20	-4.03	49.88	14.29	Peak	306	9
8	15540.00	45.57	54.00	-8.43	31.02	14.55	Average	100	14
9	15540.00	56.91	74.00	-17.09	42.36	14.55	Peak	100	14

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	5120.00	48.35	54.00	-5.65	43.85	4.50	Average	251	300
2	5120.00	58.75	74.00	-15.25	54.25	4.50	Peak	251	300
3	5150.00	46.95	54.00	-7.05	42.51	4.44	Average	251	300
4	5150.00	56.74	74.00	-17.26	52.30	4.44	Peak	251	300
5 *	5200.00	106.90			102.75	4.15	Average	251	300
6 *	5200.00	116.86			112.71	4.15	Peak	251	300
7	5360.00	47.56	54.00	-6.44	43.57	3.99	Average	251	300
8	5360.00	60.23	74.00	-13.77	56.24	3.99	Peak	251	300
9	10400.00	57.63	68.20	-10.57	43.23	14.40	Peak	100	41
10	15600.00	45.34	54.00	-8.66	31.00	14.34	Average	100	38
11	15600.00	57.24	74.00	-16.76	42.90	14.34	Peak	100	38

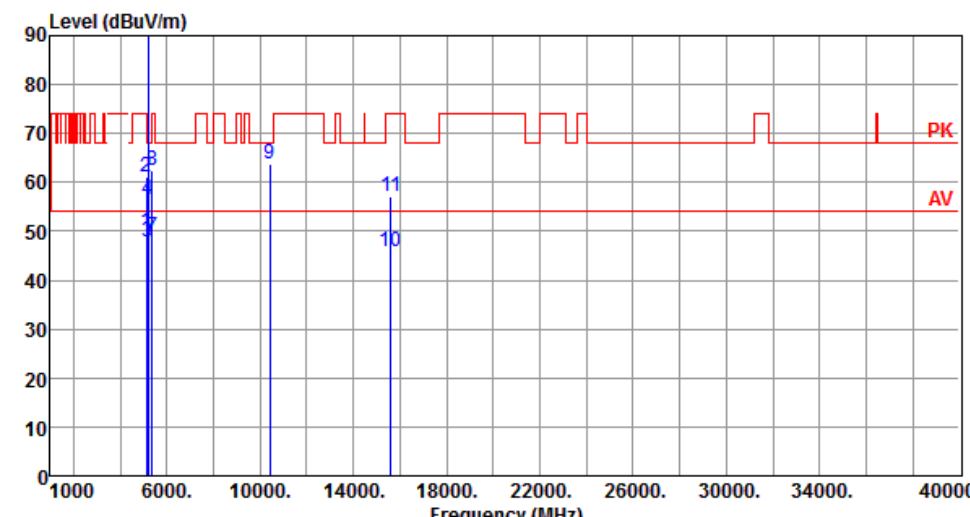
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: "*" is Peak / Average value of fundamental frequency

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



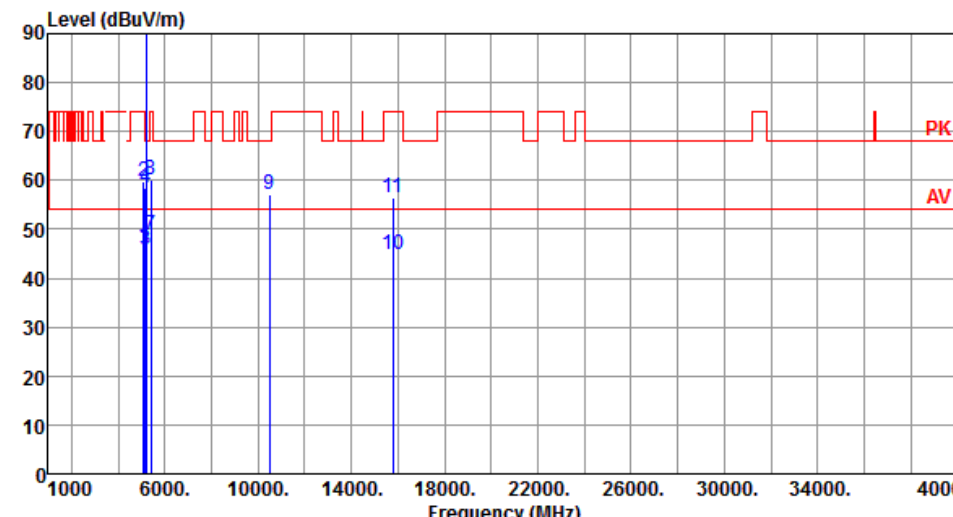
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	49.75	54.00	-4.25	45.25	4.50	Average	271	325
2	5120.00	61.15	74.00	-12.85	56.65	4.50	Peak	281	325
3	5150.00	47.69	54.00	-6.31	43.25	4.44	Average	271	325
4	5150.00	56.32	74.00	-17.68	51.88	4.44	Peak	271	325
5 *	5200.00	110.11			105.96	4.15	Average	271	325
6 *	5200.00	120.04			115.89	4.15	Peak	271	325
7	5360.00	48.93	54.00	-5.07	44.94	3.99	Average	271	325
8	5360.00	62.40	74.00	-11.60	58.41	3.99	Peak	271	325
9	10400.00	63.91	68.20	-4.29	49.51	14.40	Peak	306	9
10	15600.00	45.83	54.00	-8.17	31.49	14.34	Average	100	15
11	15600.00	57.19	74.00	-16.81	42.85	14.34	Peak	100	15

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

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

Note 3: "*" is Peak / Average value of fundamental frequency

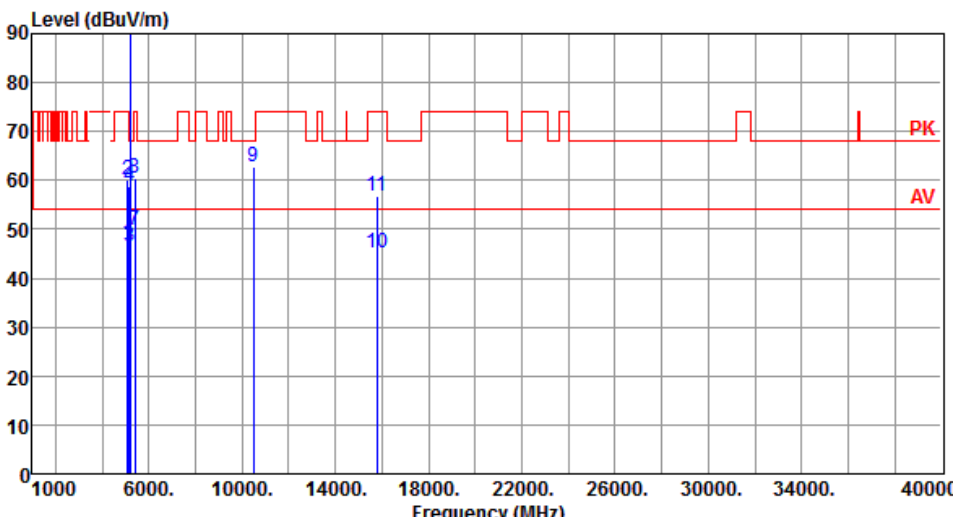
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5080.00	46.34	54.00	-7.66	41.89	4.45	Average	254	304
2	5080.00	59.66	74.00	-14.34	55.21	4.45	Peak	254	304
3	5150.00	45.85	54.00	-8.15	41.41	4.44	Average	254	304
4	5150.00	58.32	74.00	-15.68	53.88	4.44	Peak	254	304
5 *	5240.00	108.25			104.24	4.01	Average	254	304
6 *	5240.00	119.22			115.21	4.01	Peak	254	304
7	5400.00	48.82	54.00	-5.18	44.66	4.16	Average	254	304
8	5400.00	60.04	74.00	-13.96	55.88	4.16	Peak	254	304
9	10480.00	57.24	68.20	-10.96	42.84	14.40	Peak	100	32
10	15780.00	44.84	54.00	-9.16	30.84	14.00	Average	100	35
11	15780.00	56.39	74.00	-17.61	42.39	14.00	Peak	100	35

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

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

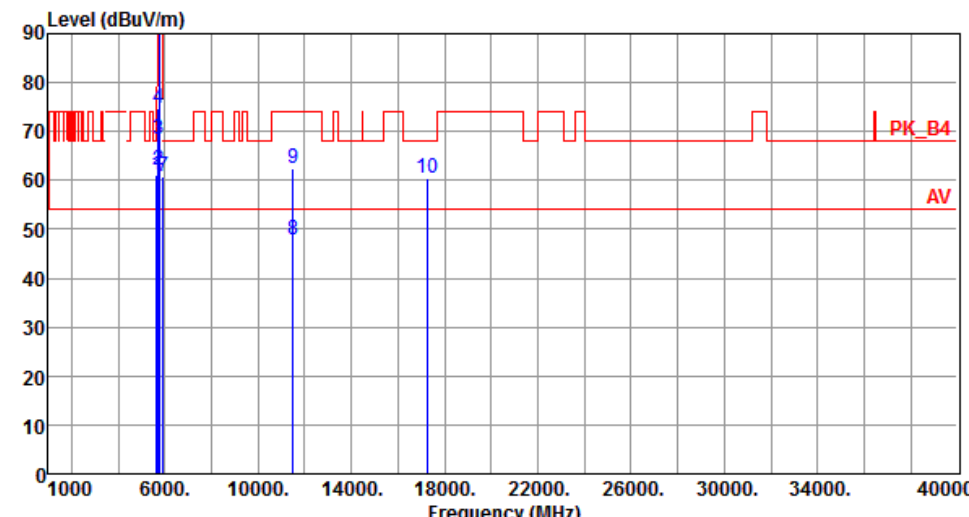


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5080.00	47.30	54.00	-6.70	42.85	4.45	Average	279	326
2	5080.00	60.03	74.00	-13.97	55.58	4.45	Peak	279	326
3	5150.00	46.49	54.00	-7.51	42.05	4.44	Average	279	326
4	5150.00	58.91	74.00	-15.09	54.47	4.44	Peak	279	326
5 *	5240.00	111.57			107.56	4.01	Average	229	326
6 *	5240.00	122.54			118.53	4.01	Peak	279	326
7	5400.00	49.68	54.00	-4.32	45.52	4.16	Average	279	326
8	5400.00	60.41	74.00	-13.59	56.25	4.16	Peak	279	326
9	10480.00	62.77	68.20	-5.43	48.37	14.40	Peak	345	9
10	15780.00	45.28	54.00	-8.72	31.28	14.00	Average	100	13
11	15780.00	56.85	74.00	-17.15	42.85	14.00	Peak	100	13

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

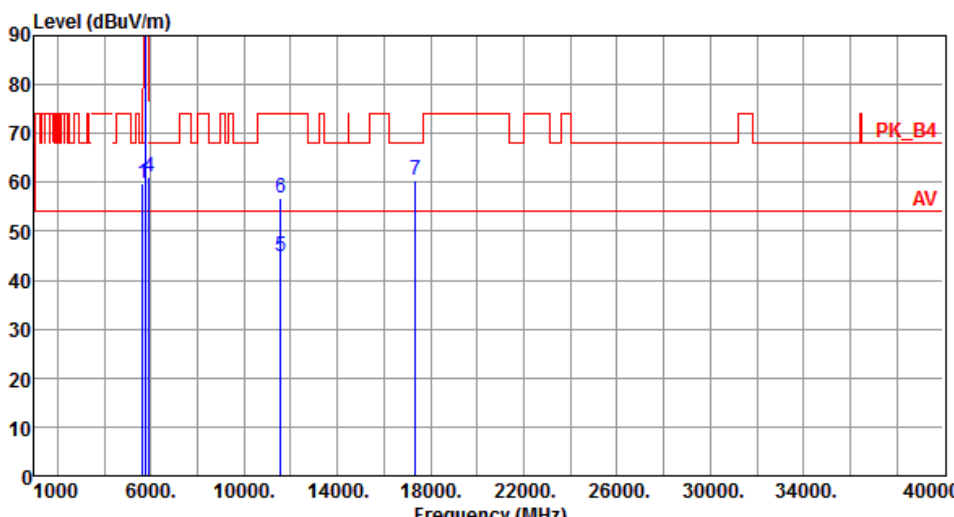
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		
Level (dBuV/m)			

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

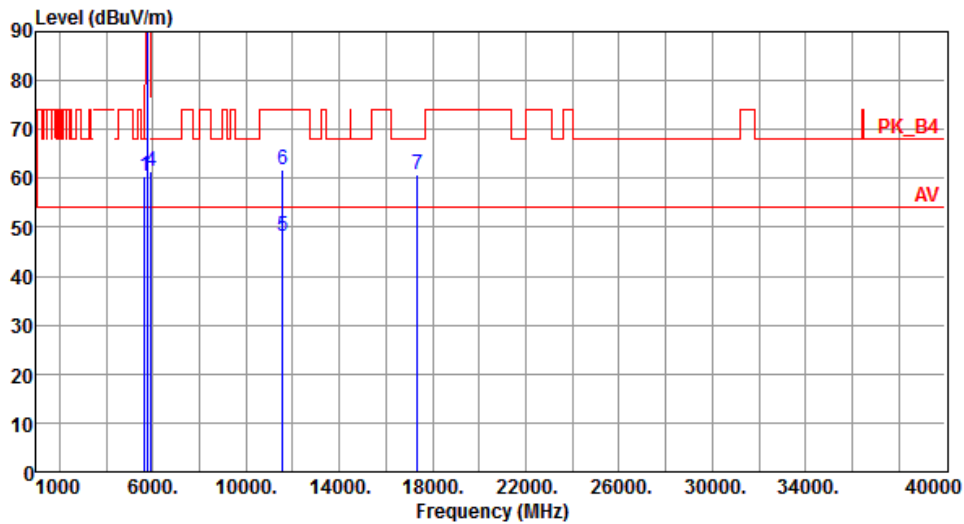


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	61.12	68.20	-7.08	56.58	4.54	Peak	323	331
2	5700.00	62.15	105.20	-43.05	57.47	4.68	Peak	323	331
3	5720.00	68.31	110.80	-42.49	63.58	4.73	Peak	323	331
4	5725.00	74.59	122.20	-47.61	69.84	4.75	Peak	323	331
5 *	5745.00	111.40			106.59	4.81	Average	323	331
6 *	5745.00	121.27			116.46	4.81	Peak	323	331
7	5925.00	60.69	68.20	-7.51	55.41	5.28	Peak	323	331
8	11490.00	47.76	54.00	-6.24	33.05	14.71	Average	100	259
9	11490.00	62.58	74.00	-11.42	47.87	14.71	Peak	100	259
10	17235.00	60.37	68.20	-7.83	42.84	17.53	Peak	100	245

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	59.76	68.20	-8.44	55.22	4.54	Peak	100	102
2 *	5785.00	108.13			103.15	4.98	Average	100	102
3 *	5785.00	118.40			113.42	4.98	Peak	100	102
4	5925.00	61.14	68.20	-7.06	55.86	5.28	Peak	100	102
5	11570.00	44.93	54.00	-9.07	30.40	14.53	Average	100	106
6	11570.00	56.93	74.00	-17.07	42.40	14.53	Peak	100	106
7	17355.00	60.28	68.20	-7.92	42.33	17.95	Peak	100	102
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									

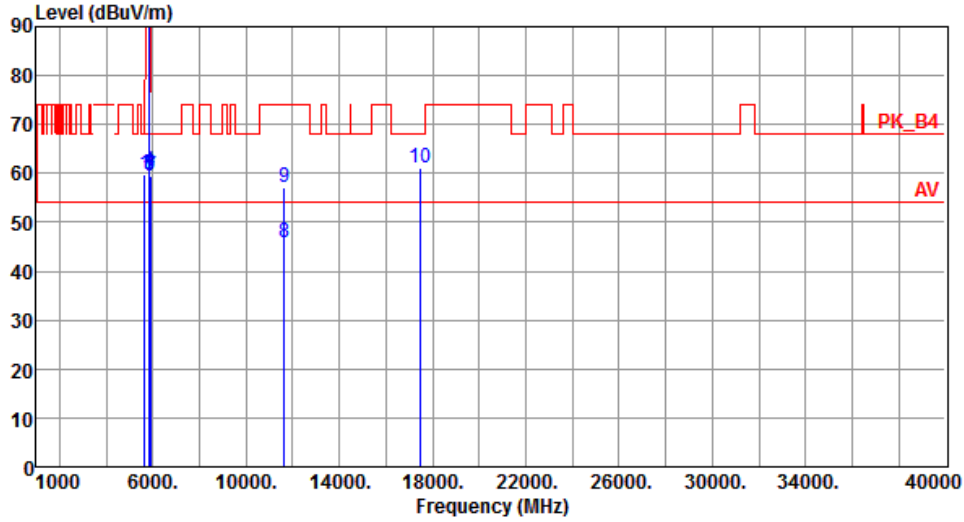
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



	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	60.28	68.20	-7.92	55.74	4.54	Peak	311	324
2	* 5785.00	111.50			106.52	4.98	Average	311	324
3	* 5785.00	121.83			116.85	4.98	Peak	311	324
4	5925.00	61.48	68.20	-6.72	56.20	5.28	Peak	311	324
5	11570.00	48.04	54.00	-5.96	33.51	14.53	Average	219	250
6	11570.00	61.76	74.00	-12.24	47.23	14.53	Peak	219	250
7	17355.00	60.81	68.20	-7.39	42.86	17.95	Peak	100	244

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

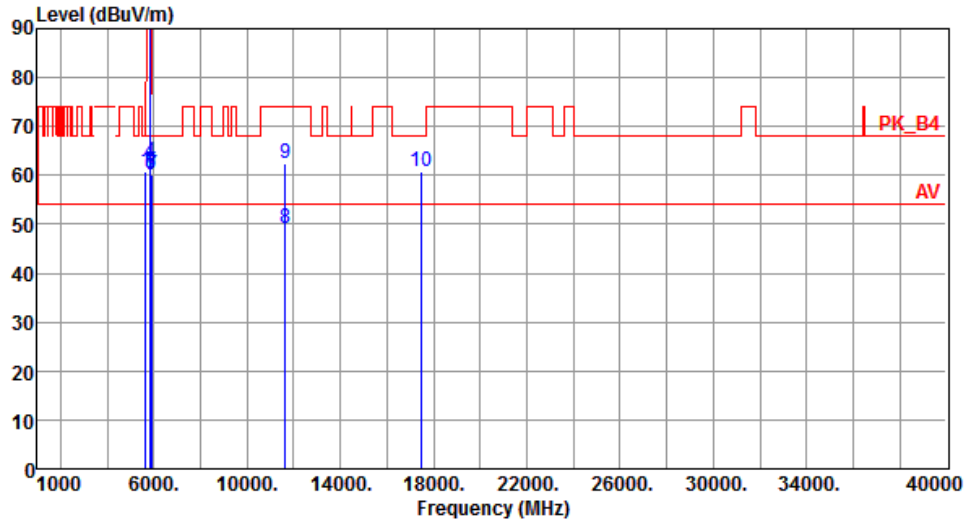
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



	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	59.65	68.20	-8.55	55.11	4.54	Peak	103	108
2	* 5825.00	108.21			103.12	5.09	Average	103	108
3	* 5825.00	117.33			112.24	5.09	Peak	103	108
4	5850.00	60.39	122.20	-61.81	55.24	5.15	Peak	103	108
5	5855.00	59.67	110.80	-51.13	54.52	5.15	Peak	103	108
6	5875.00	59.44	105.20	-45.76	54.25	5.19	Peak	103	108
7	5925.00	59.50	68.20	-8.70	54.22	5.28	Peak	103	108
8	11650.00	45.73	54.00	-8.27	31.52	14.21	Average	100	110
9	11650.00	57.06	74.00	-16.94	42.85	14.21	Peak	100	110
10	17475.00	60.99	68.20	-7.21	42.71	18.28	Peak	100	102

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	60.74	68.20	-7.46	56.20	4.54	Peak	318	339
2 *	5825.00	111.34			106.25	5.09	Average	318	339
3 *	5825.00	120.61			115.52	5.09	Peak	318	339
4	5850.00	62.66	122.20	-59.54	57.51	5.15	Peak	318	339
5	5855.00	60.40	110.80	-50.40	55.25	5.15	Peak	318	339
6	5875.00	60.14	105.20	-45.06	54.95	5.19	Peak	318	339
7	5925.00	60.09	68.20	-8.11	54.81	5.28	Peak	318	339
8	11650.00	49.06	54.00	-4.94	34.85	14.21	Average	220	251
9	11650.00	62.57	74.00	-11.43	48.36	14.21	Peak	220	251
10	17475.00	60.82	68.20	-7.38	42.54	18.28	Peak	100	249

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

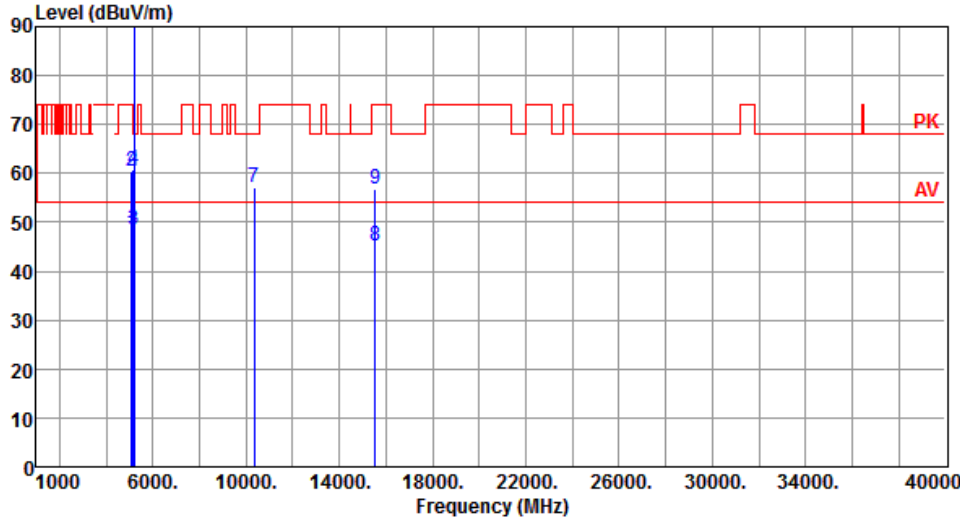
*Factor includes antenna factor , cable loss and amplifier gain

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

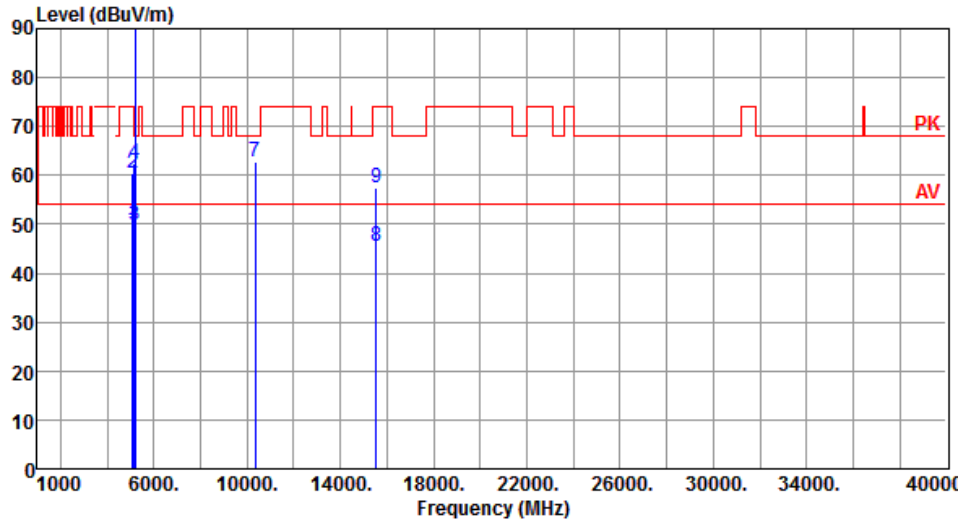
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	47.74	54.00	-6.26	43.21	4.53	Average	251	309
2	5100.00	60.33	74.00	-13.67	55.80	4.53	Peak	251	309
3	5150.00	48.33	54.00	-5.67	43.89	4.44	Average	251	309
4	5150.00	60.64	74.00	-13.36	56.20	4.44	Peak	251	309
5 *	5180.00	106.02			101.76	4.26	Average	251	309
6 *	5180.00	116.29			112.03	4.26	Peak	251	309
7	10360.00	57.13	68.20	-11.07	42.84	14.29	Peak	100	30
8	15540.00	45.10	54.00	-8.90	30.55	14.55	Average	100	38
9	15540.00	56.65	74.00	-17.35	42.10	14.55	Peak	100	38

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



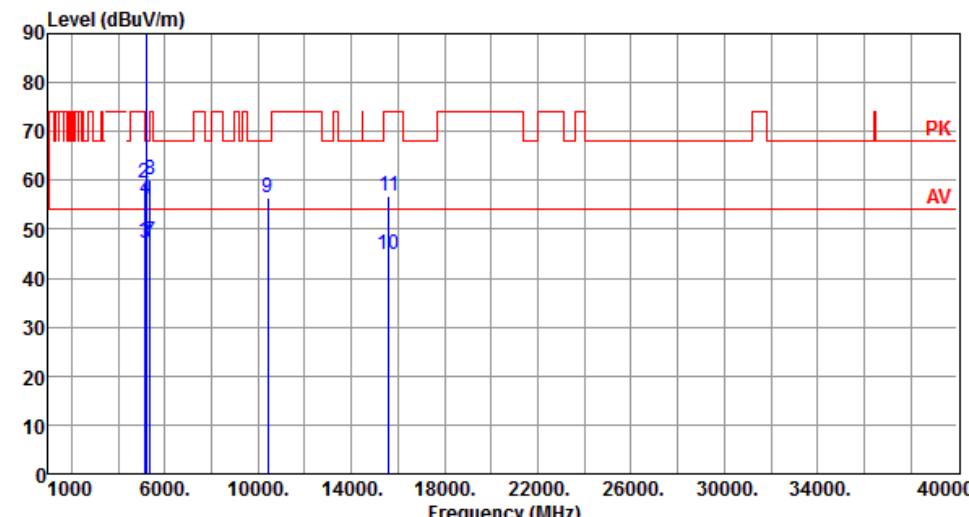
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5100.00	48.73	54.00	-5.27	44.20	4.53	Average	276	324
2	5100.00	60.57	74.00	-13.43	56.04	4.53	Peak	276	324
3	5150.00	49.70	54.00	-4.30	45.26	4.44	Average	276	324
4	5150.00	62.34	74.00	-11.66	57.90	4.44	Peak	276	324
5 *	5180.00	109.23			104.97	4.26	Average	276	324
6 *	5180.00	119.42			115.16	4.26	Peak	276	324
7	10360.00	62.81	68.20	-5.39	48.52	14.29	Peak	342	10
8	15540.00	45.37	54.00	-8.63	30.82	14.55	Average	100	11
9	15540.00	57.36	74.00	-16.64	42.81	14.55	Peak	100	11

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

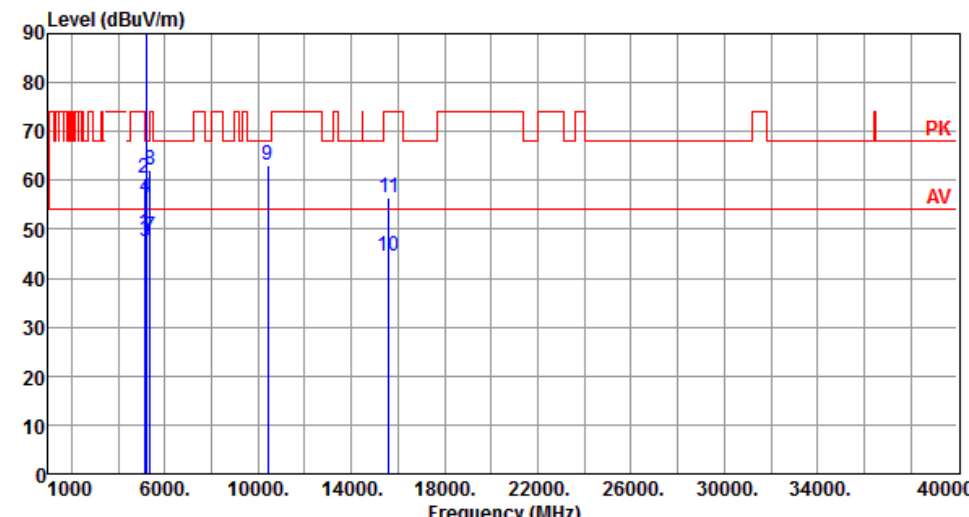
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	47.60	54.00	-6.40	43.10	4.50	Average	257	301
2	5120.00	59.38	74.00	-14.62	54.88	4.50	Peak	257	301
3	5150.00	47.29	54.00	-6.71	42.85	4.44	Average	257	301
4	5150.00	56.29	74.00	-17.71	51.85	4.44	Peak	257	301
5 *	5200.00	106.90			102.75	4.15	Average	257	301
6 *	5200.00	116.84			112.69	4.15	Peak	257	301
7	5360.00	47.56	54.00	-6.44	43.57	3.99	Average	257	301
8	5360.00	60.09	74.00	-13.91	56.10	3.99	Peak	257	301
9	10400.00	56.55	68.20	-11.65	42.15	14.40	Peak	100	26
10	15600.00	44.90	54.00	-9.10	30.56	14.34	Average	100	30
11	15600.00	56.71	74.00	-17.29	42.37	14.34	Peak	100	30

Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).
Note 3: "*" is Peak / Average value of fundamental frequency

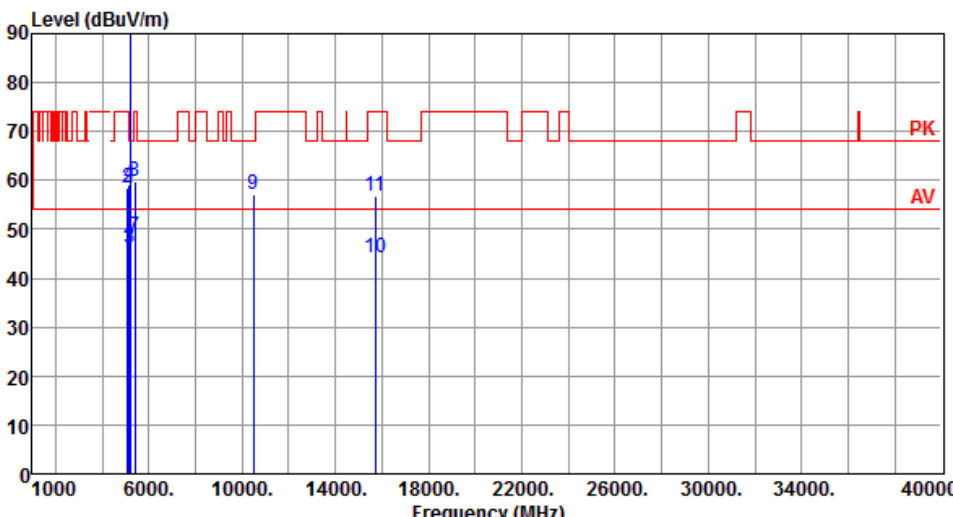
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5120.00	49.26	54.00	-4.74	44.76	4.50	Average	272	326
2	5120.00	60.42	74.00	-13.58	55.92	4.50	Peak	272	326
3	5150.00	47.65	54.00	-6.35	43.21	4.44	Average	272	326
4	5150.00	56.44	74.00	-17.56	52.00	4.44	Peak	272	326
5 *	5200.00	109.95			105.80	4.15	Average	272	326
6 *	5200.00	119.94			115.79	4.15	Peak	272	326
7	5360.00	48.60	54.00	-5.40	44.61	3.99	Average	272	326
8	5360.00	62.02	74.00	-11.98	58.03	3.99	Peak	272	326
9	10400.00	63.12	68.20	-5.08	48.72	14.40	Peak	337	8
10	15600.00	44.60	54.00	-9.40	30.26	14.34	Average	100	9
11	15600.00	56.36	74.00	-17.64	42.02	14.34	Peak	100	9

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

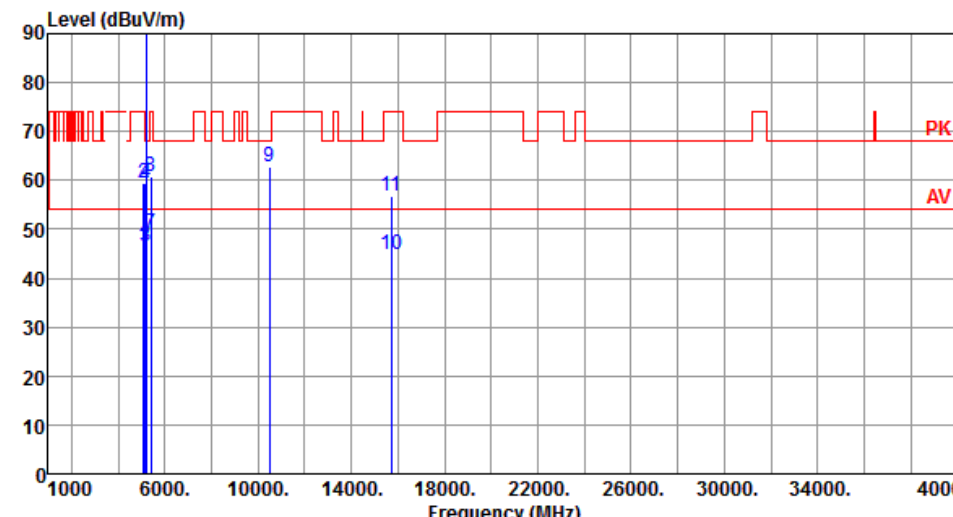
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5080.00	46.33	54.00	-7.67	41.88	4.45	Average	266	303
2	5080.00	58.45	74.00	-15.55	54.00	4.45	Peak	266	303
3	5150.00	46.32	54.00	-7.68	41.88	4.44	Average	266	303
4	5150.00	58.96	74.00	-15.04	54.52	4.44	Peak	266	303
5 *	5240.00	108.02			104.01	4.01	Average	266	303
6 *	5240.00	118.03			114.02	4.01	Peak	266	303
7	5400.00	48.41	54.00	-5.59	44.25	4.16	Average	266	303
8	5400.00	59.72	74.00	-14.28	55.56	4.16	Peak	266	303
9	10480.00	57.11	68.20	-11.09	42.71	14.40	Peak	100	35
10	15720.00	44.23	54.00	-9.77	30.14	14.09	Average	100	39
11	15720.00	56.75	74.00	-17.25	42.66	14.09	Peak	100	39

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

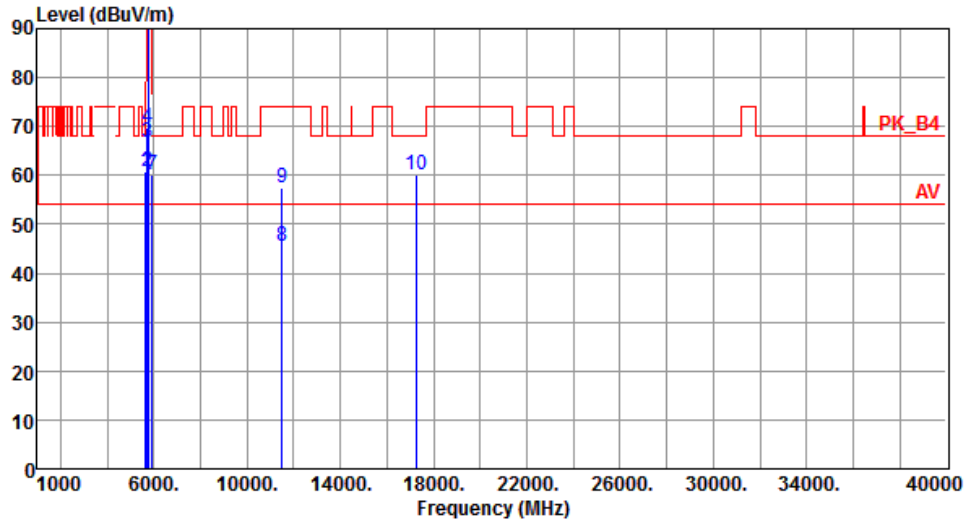
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5080.00	46.58	54.00	-7.42	42.13	4.45	Average	288	324
2	5080.00	59.43	74.00	-14.57	54.98	4.45	Peak	288	324
3	5150.00	46.44	54.00	-7.56	42.00	4.44	Average	288	324
4	5150.00	59.31	74.00	-14.69	54.87	4.44	Peak	288	324
5 *	5240.00	111.22			107.21	4.01	Average	288	324
6 *	5240.00	121.27			117.26	4.01	Peak	288	324
7	5400.00	49.17	54.00	-4.83	45.01	4.16	Average	288	324
8	5400.00	60.61	74.00	-13.39	56.45	4.16	Peak	288	324
9	10480.00	62.65	68.20	-5.55	48.25	14.40	Peak	321	11
10	15720.00	44.80	54.00	-9.20	30.71	14.09	Average	100	13
11	15720.00	56.93	74.00	-17.07	42.84	14.09	Peak	100	13

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	5650.00	60.80	68.20	-7.40	56.26	4.54	Peak	100	107
2	5700.00	60.88	105.20	-44.32	56.20	4.68	Peak	100	107
3	5720.00	66.61	110.80	-44.19	61.88	4.73	Peak	100	107
4	5725.00	69.86	122.20	-52.34	65.11	4.75	Peak	100	107
5 *	5745.00	108.05			103.24	4.81	Average	100	107
6 *	5745.00	118.34			113.53	4.81	Peak	100	107
7	5925.00	60.17	68.20	-8.03	54.89	5.28	Peak	100	107
8	11490.00	45.42	54.00	-8.58	30.71	14.71	Average	100	108
9	11490.00	57.53	74.00	-16.47	42.82	14.71	Peak	100	108
10	17235.00	60.18	68.20	-8.02	42.65	17.53	Peak	100	102

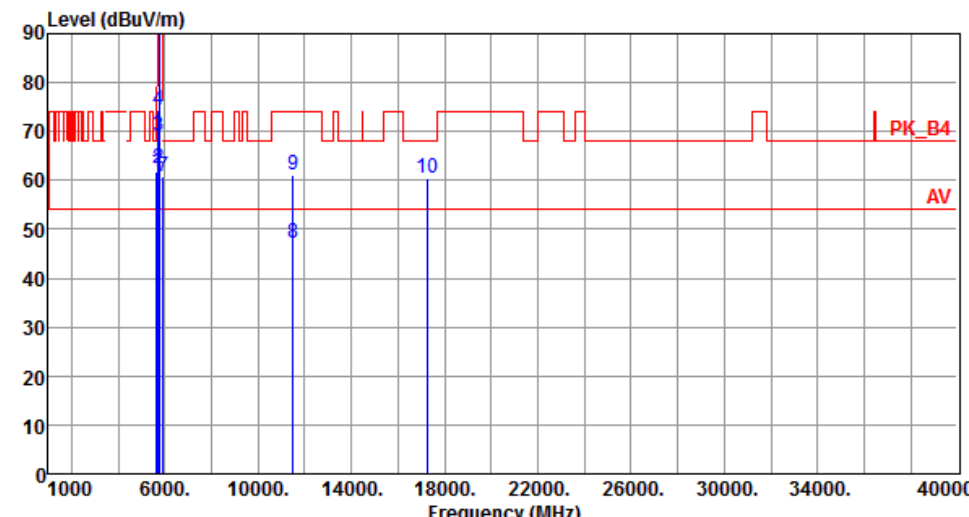
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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

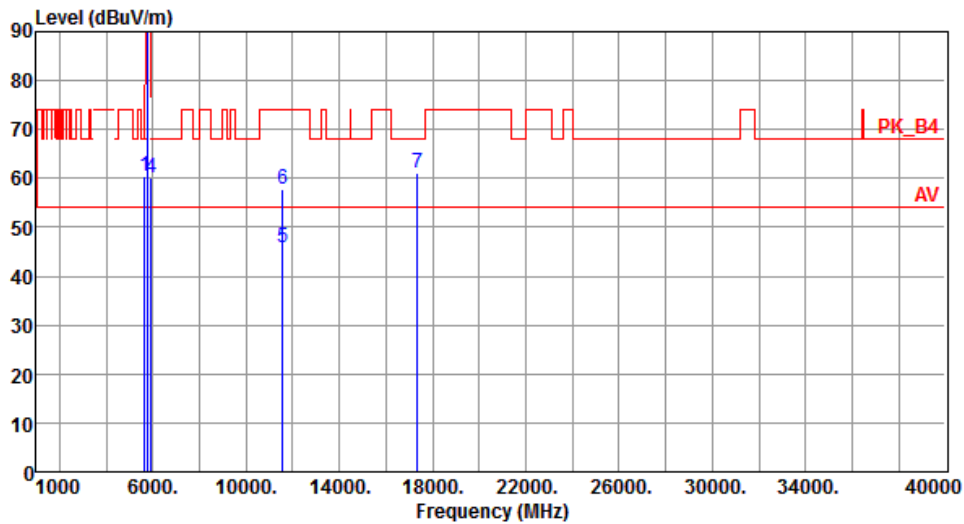
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	61.80	68.20	-6.40	57.26	4.54	Peak	362	318
2	5700.00	62.42	105.20	-42.78	57.74	4.68	Peak	362	318
3	5720.00	68.93	110.80	-41.87	64.20	4.73	Peak	362	318
4	5725.00	74.27	122.20	-47.93	69.52	4.75	Peak	362	318
5 *	5745.00	111.37			106.56	4.81	Average	362	318
6 *	5745.00	121.46			116.65	4.81	Peak	362	318
7	5925.00	60.69	68.20	-7.51	55.41	5.28	Peak	362	318
8	11490.00	47.24	54.00	-6.76	32.53	14.71	Average	201	254
9	11490.00	61.24	74.00	-12.76	46.53	14.71	Peak	200	254
10	17235.00	60.37	68.20	-7.83	42.84	17.53	Peak	100	250

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

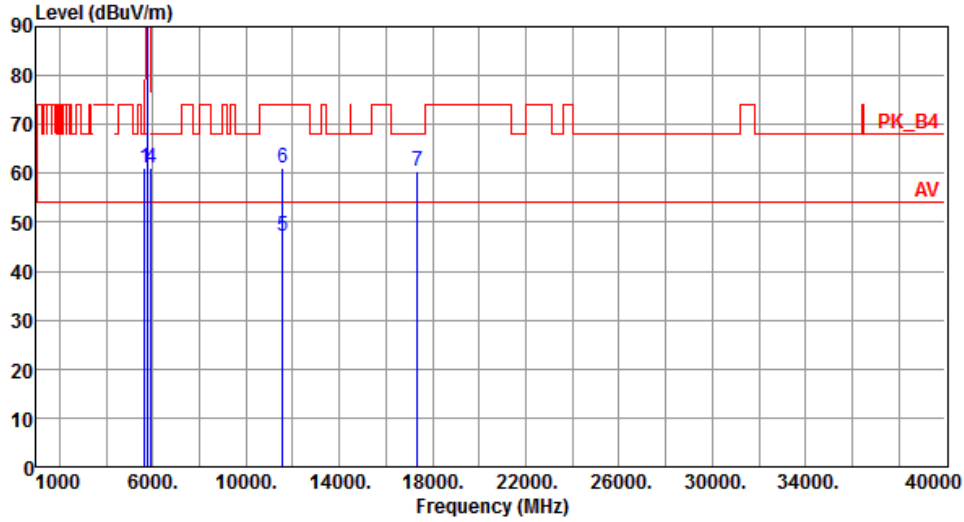
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



	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	60.40	68.20	-7.80	55.86	4.54	Peak	100	109
2	* 5785.00	108.12			103.14	4.98	Average	100	109
3	* 5785.00	118.20			113.22	4.98	Peak	100	109
4	5925.00	60.16	68.20	-8.04	54.88	5.28	Peak	100	109
5	11570.00	45.74	54.00	-8.26	31.21	14.53	Average	100	101
6	11570.00	57.75	74.00	-16.25	43.22	14.53	Peak	100	101
7	17355.00	61.16	68.20	-7.04	43.21	17.95	Peak	100	103

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

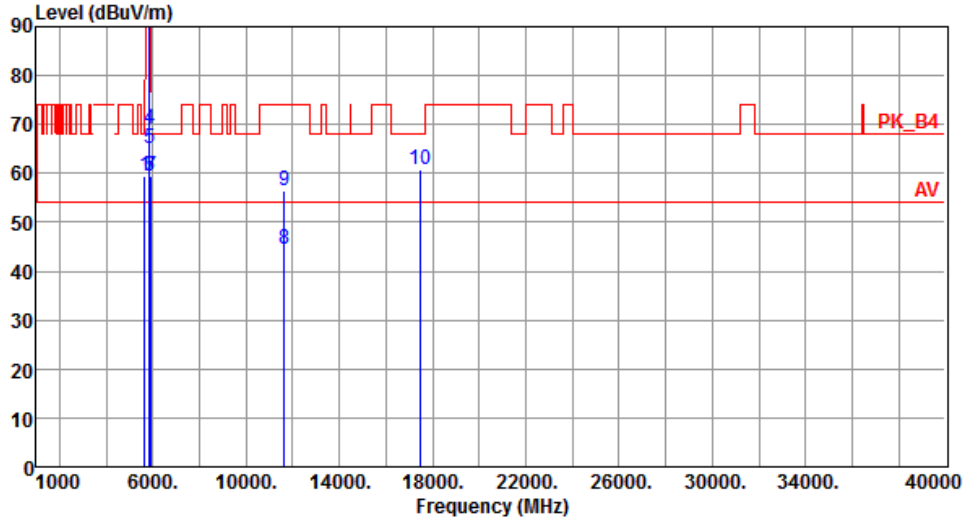
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	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	60.94	68.20	-7.26	56.40	4.54	Peak	347	332
2 *	5785.00	111.23			106.25	4.98	Average	347	332
3 *	5785.00	121.48			116.50	4.98	Peak	347	332
4	5925.00	61.16	68.20	-7.04	55.88	5.28	Peak	347	332
5	11570.00	47.10	54.00	-6.90	32.57	14.53	Average	197	216
6	11570.00	61.10	74.00	-12.90	46.57	14.53	Peak	197	216
7	17355.00	60.36	68.20	-7.84	42.41	17.95	Peak	100	233

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

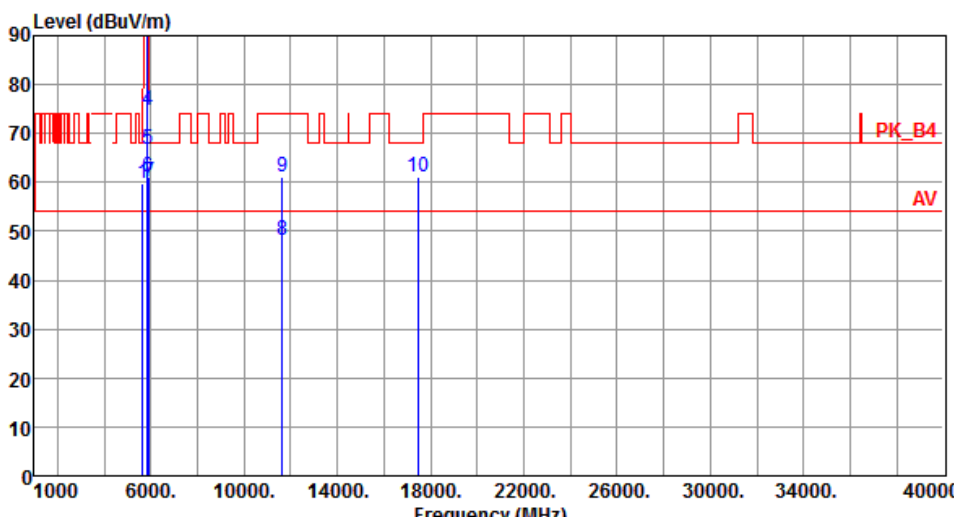
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



	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	59.56	68.20	-8.64	55.02	4.54	Peak	100	104
2	* 5825.00	108.21			103.12	5.09	Average	100	104
3	* 5825.00	118.25			113.16	5.09	Peak	100	104
4	5850.00	69.15	122.20	-53.05	64.00	5.15	Peak	100	104
5	5855.00	65.03	110.80	-45.77	59.88	5.15	Peak	100	104
6	5875.00	59.52	105.20	-45.68	54.33	5.19	Peak	100	104
7	5925.00	59.53	68.20	-8.67	54.25	5.28	Peak	100	104
8	11650.00	44.53	54.00	-9.47	30.32	14.21	Average	100	102
9	11650.00	56.56	74.00	-17.44	42.35	14.21	Peak	100	102
10	17475.00	60.75	68.20	-7.45	42.47	18.28	Peak	100	105

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	59.74	68.20	-8.46	55.20	4.54	Peak	357	326
2	* 5825.00	111.35			106.26	5.09	Average	357	326
3	* 5825.00	121.35			116.26	5.09	Peak	357	326
4	5850.00	74.68	122.20	-47.52	69.53	5.15	Peak	357	326
5	5855.00	66.85	110.80	-43.95	61.70	5.15	Peak	357	326
6	5875.00	60.96	105.20	-44.24	55.77	5.19	Peak	357	326
7	5925.00	60.14	68.20	-8.06	54.86	5.28	Peak	357	326
8	11650.00	48.01	54.00	-5.99	33.80	14.21	Average	244	242
9	11650.00	61.04	74.00	-12.96	46.83	14.21	Peak	244	242
10	17475.00	61.09	68.20	-7.11	42.81	18.28	Peak	100	250

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

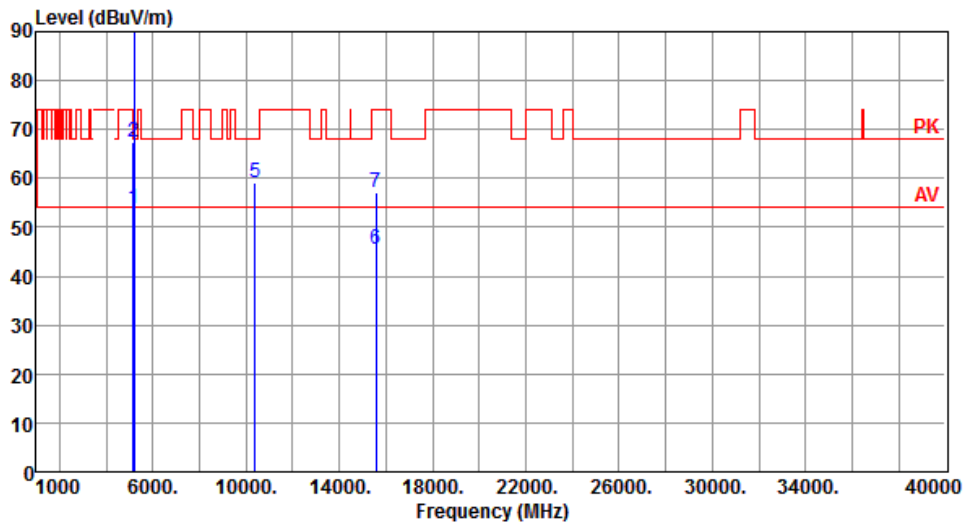
3.5.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT40

Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		

	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
	MHz	level	dBuV/m	dB	reading	dB		High	Table
		dBuV/m			dBuV			cm	deg
1	5150.00	51.99	54.00	-2.01	47.55	4.44	Average	271	205
2	5150.00	64.55	74.00	-9.45	60.11	4.44	Peak	271	205
3 *	5190.00	101.63			97.42	4.21	Average	271	205
4 *	5190.00	111.73			107.52	4.21	Peak	271	205
5	10380.00	56.68	68.20	-11.52	42.34	14.34	Peak	100	32
6	15570.00	44.97	54.00	-9.03	30.52	14.45	Average	100	35
7	15570.00	56.86	74.00	-17.14	42.41	14.45	Peak	100	35

Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).
 Note 3: "*" is Peak / Average value of fundamental frequency

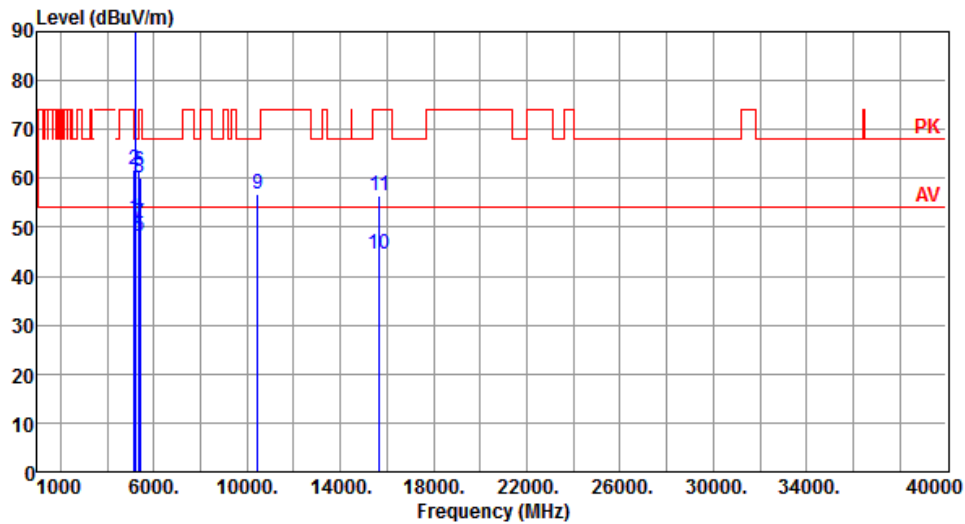
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	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	53.71	54.00	-0.29	49.27	4.44	Average	255	267
2	5150.00	67.29	74.00	-6.71	62.85	4.44	Peak	255	267
3 *	5190.00	104.83			100.62	4.21	Average	255	267
4 *	5190.00	114.44			110.23	4.21	Peak	255	267
5	10380.00	59.21	68.20	-8.99	44.87	14.34	Peak	305	8
6	15570.00	45.34	54.00	-8.66	30.89	14.45	Average	100	10
7	15570.00	57.29	74.00	-16.71	42.84	14.45	Peak	100	10

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	51.85	54.00	-2.15	47.41	4.44	Average	253	302
2	5150.00	61.68	74.00	-12.32	57.24	4.44	Peak	253	302
3 *	5230.00	104.93			100.88	4.05	Average	253	302
4 *	5230.00	114.30			110.25	4.05	Peak	253	302
5	5350.00	48.19	54.00	-5.81	44.25	3.94	Average	253	302
6	5350.00	61.36	74.00	-12.64	57.42	3.94	Peak	253	302
7	5390.00	50.96	54.00	-3.04	46.85	4.11	Average	253	302
8	5390.00	60.23	74.00	-13.77	56.12	4.11	Peak	253	302
9	10460.00	56.65	68.20	-11.55	42.25	14.40	Peak	100	30
10	15690.00	44.55	54.00	-9.45	30.41	14.14	Average	100	32
11	15690.00	56.44	74.00	-17.56	42.30	14.14	Peak	100	32

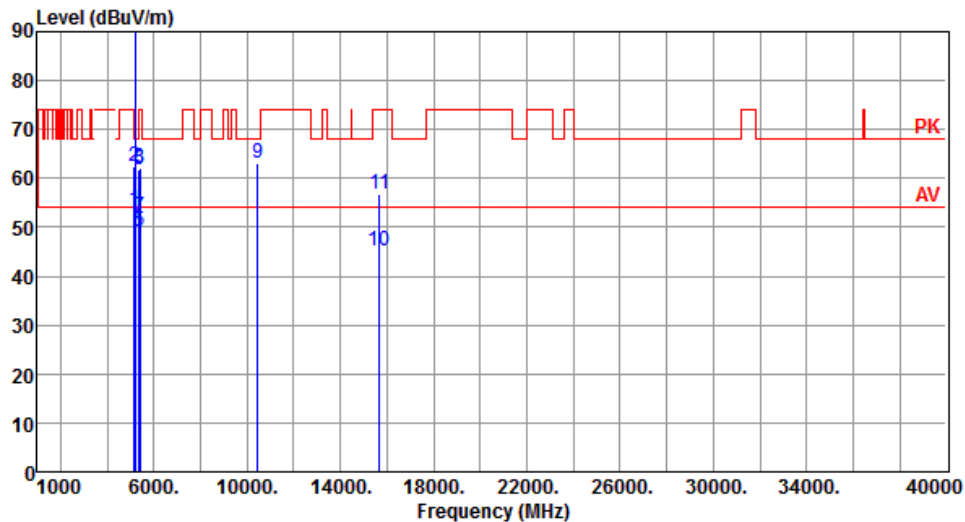
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*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	53.50	54.00	-0.50	49.06	4.44	Average	241	326
2	5150.00	62.44	74.00	-11.56	58.00	4.44	Peak	241	326
3 *	5230.00	108.03			103.98	4.05	Average	241	326
4 *	5230.00	117.78			113.73	4.05	Peak	241	326
5	5350.00	49.11	54.00	-4.89	45.17	3.94	Average	241	326
6	5350.00	61.86	74.00	-12.14	57.92	3.94	Peak	241	326
7	5390.00	52.29	54.00	-1.71	48.18	4.11	Average	241	326
8	5390.00	62.26	74.00	-11.74	58.15	4.11	Peak	241	326
9	10460.00	63.11	68.20	-5.09	48.71	14.40	Peak	307	10
10	15690.00	45.04	54.00	-8.96	30.90	14.14	Average	100	12
11	15690.00	56.96	74.00	-17.04	42.82	14.14	Peak	100	12

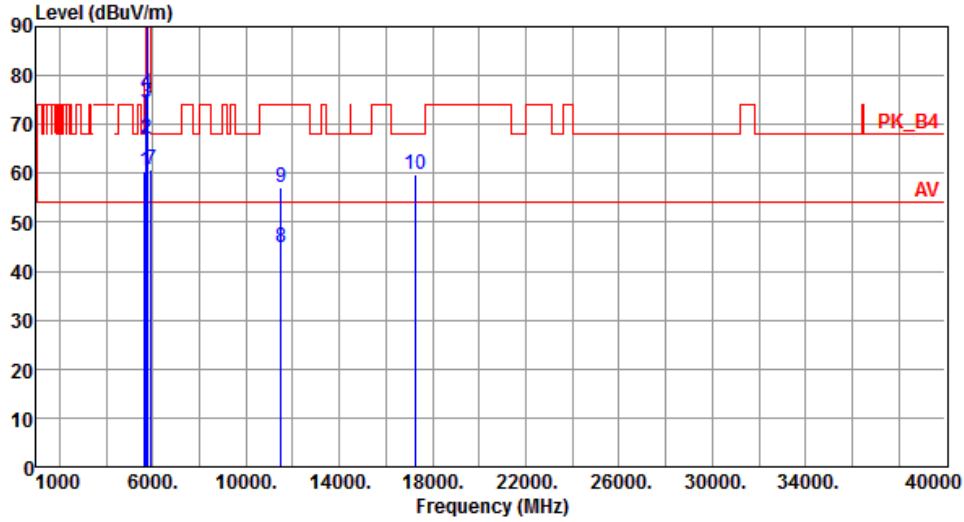
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*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

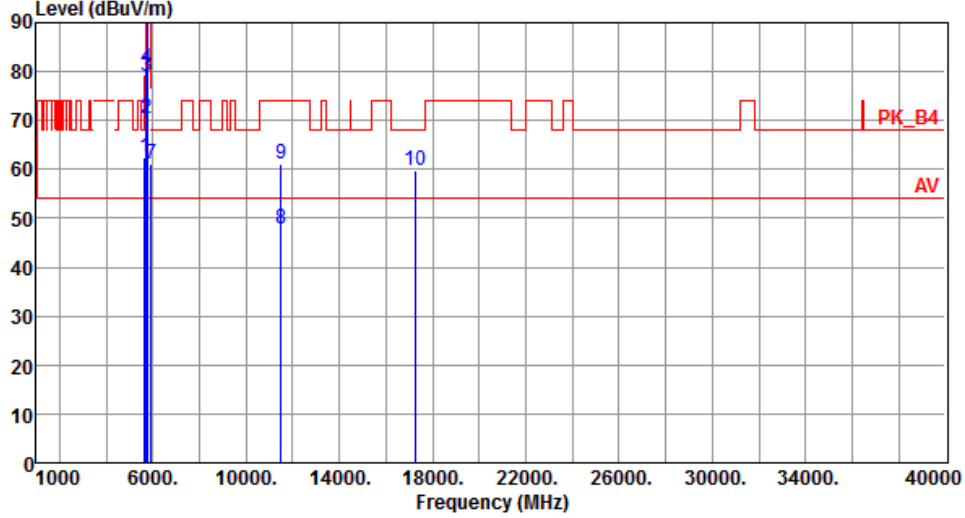
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	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	60.39	68.20	-7.81	55.85	4.54	Peak	100	110
2	5700.00	67.20	105.20	-38.00	62.52	4.68	Peak	100	110
3	5700.00	74.26	105.20	-30.94	69.58	4.68	Peak	100	110
4	5725.00	76.27	122.20	-45.93	71.52	4.75	Peak	100	110
5 *	5755.00	107.10			102.27	4.83	Average	100	110
6 *	5755.00	116.94			112.11	4.83	Peak	100	110
7	5925.00	60.70	68.20	-7.50	55.42	5.28	Peak	100	110
8	11510.00	44.94	54.00	-9.06	30.24	14.70	Average	100	102
9	11510.00	57.02	74.00	-16.98	42.32	14.70	Peak	100	102
10	17265.00	59.84	68.20	-8.36	42.23	17.61	Peak	100	105

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

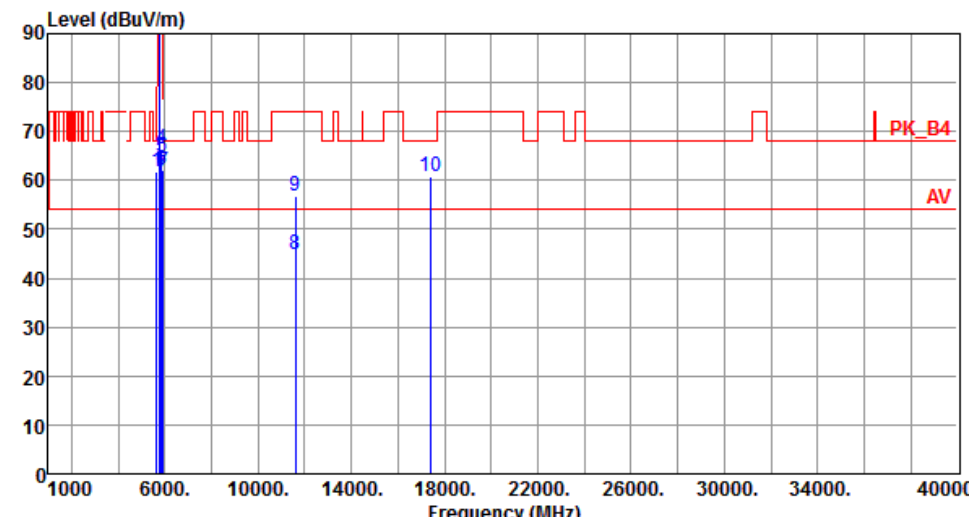
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



	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	62.39	68.20	-5.81	57.85	4.54	Peak	349	330
2	5700.00	70.39	105.20	-34.81	65.71	4.68	Peak	349	330
3	5700.00	78.93	105.20	-26.27	74.25	4.68	Peak	349	330
4	5725.00	80.64	122.20	-41.56	75.89	4.75	Peak	349	330
5 *	5755.00	110.34			105.51	4.83	Average	349	330
6 *	5755.00	120.08			115.25	4.83	Peak	349	330
7	5925.00	61.13	68.20	-7.07	55.85	5.28	Peak	349	330
8	11510.00	47.95	54.00	-6.05	33.25	14.70	Average	233	250
9	11510.00	60.95	74.00	-13.05	46.25	14.70	Peak	233	250
10	17265.00	59.86	68.20	-8.34	42.25	17.61	Peak	100	252

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

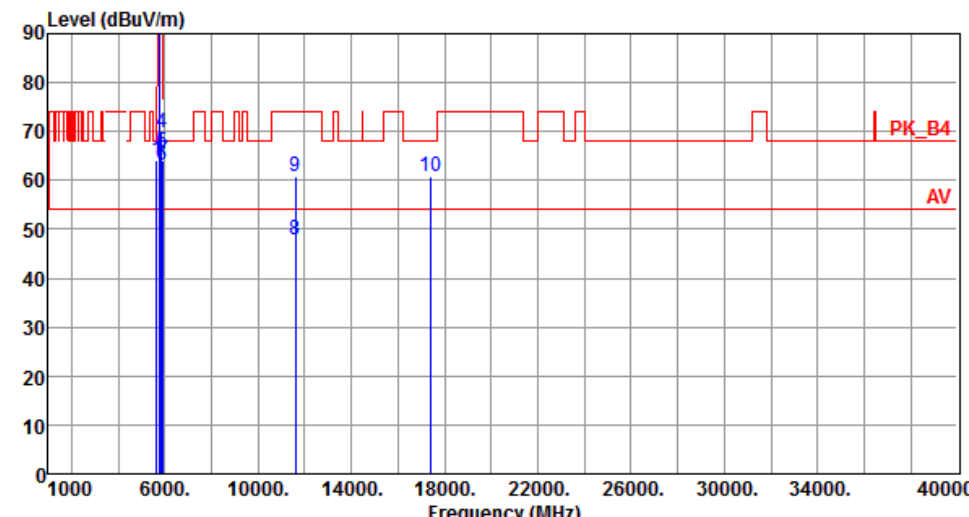
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



	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	61.76	68.20	-6.44	57.22	4.54	Peak	100	105
2	* 5795.00	107.28			102.26	5.02	Average	100	105
3	* 5795.00	116.99			111.97	5.02	Peak	100	105
4	5850.00	66.38	122.20	-55.82	61.23	5.15	Peak	100	105
5	5855.00	64.67	110.80	-46.13	59.52	5.15	Peak	100	105
6	5875.00	62.04	105.20	-43.16	56.85	5.19	Peak	100	105
7	5925.00	61.78	68.20	-6.42	56.50	5.28	Peak	100	105
8	11590.00	44.72	74.00	-29.28	30.25	14.47	Peak	100	101
9	11590.00	56.83	74.00	-17.17	42.36	14.47	Peak	100	101
10	17385.00	60.61	68.20	-7.59	42.52	18.09	Peak	100	105

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		

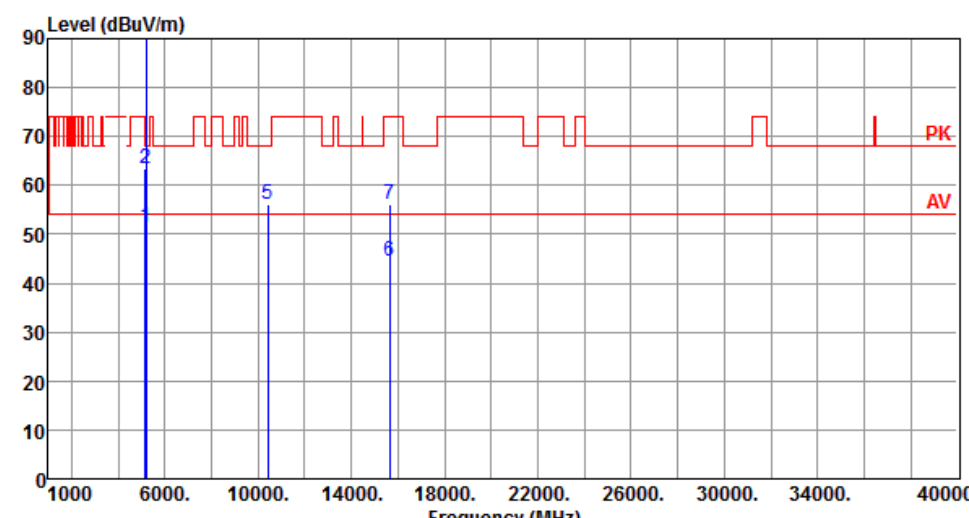


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	63.94	68.20	-4.26	59.40	4.54	Peak	332	331
2	* 5795.00	110.37			105.35	5.02	Average	332	331
3	* 5795.00	120.15			115.13	5.02	Peak	332	331
4	5850.00	69.88	122.20	-52.32	64.73	5.15	Peak	332	331
5	5855.00	65.89	110.80	-44.91	60.74	5.15	Peak	332	331
6	5875.00	63.09	105.20	-42.11	57.90	5.19	Peak	332	331
7	5925.00	64.08	68.20	-4.12	58.80	5.28	Peak	332	331
8	11590.00	47.72	54.00	-6.28	33.25	14.47	Average	254	249
9	11590.00	60.69	74.00	-13.31	46.22	14.47	Peak	254	249
10	17385.00	60.61	68.20	-7.59	42.52	18.09	Peak	100	250

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

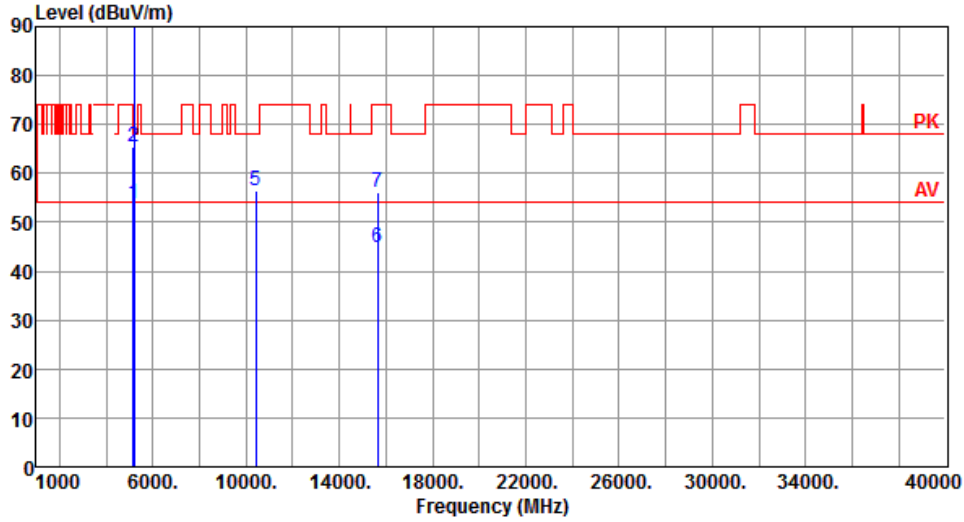
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	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	51.50	54.00	-2.50	47.06	4.44	Average	242	304
2	5150.00	63.39	74.00	-10.61	58.95	4.44	Peak	242	304
3 *	5210.00	96.79			92.67	4.12	Average	242	304
4 *	5210.00	107.40			103.28	4.12	Peak	242	304
5	10420.00	56.24	68.20	-11.96	41.84	14.40	Peak	100	30
6	15630.00	44.45	54.00	-9.55	30.18	14.27	Average	100	33
7	15630.00	55.99	74.00	-18.01	41.72	14.27	Peak	100	33

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

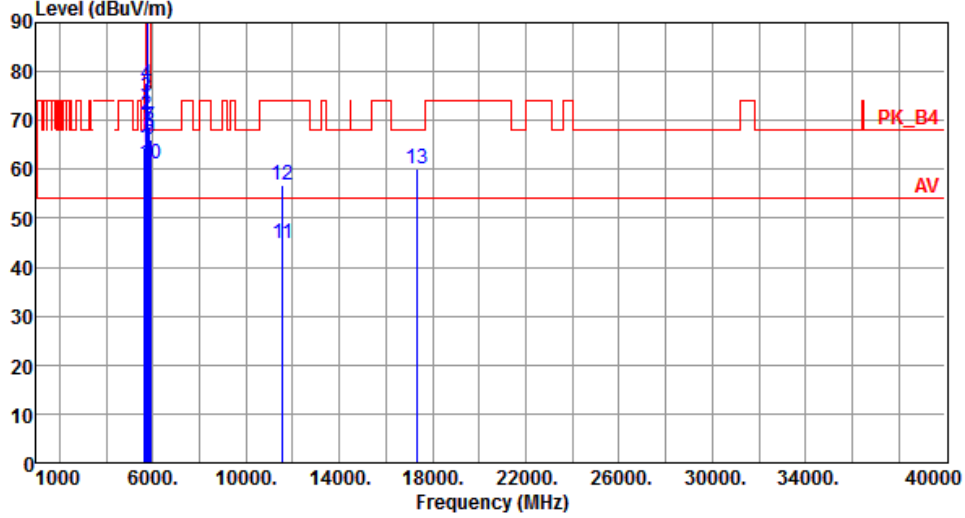
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	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	53.84	54.00	-0.16	49.40	4.44	Average	326	180
2	5150.00	65.31	74.00	-8.69	60.87	4.44	Peak	326	180
3 *	5210.00	98.94			94.82	4.12	Average	326	180
4 *	5210.00	108.79			104.67	4.12	Peak	326	180
5	10420.00	56.60	68.20	-11.60	42.20	14.40	Peak	100	8
6	15630.00	44.99	54.00	-9.01	30.72	14.27	Average	100	9
7	15630.00	56.28	74.00	-17.72	42.01	14.27	Peak	100	9

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

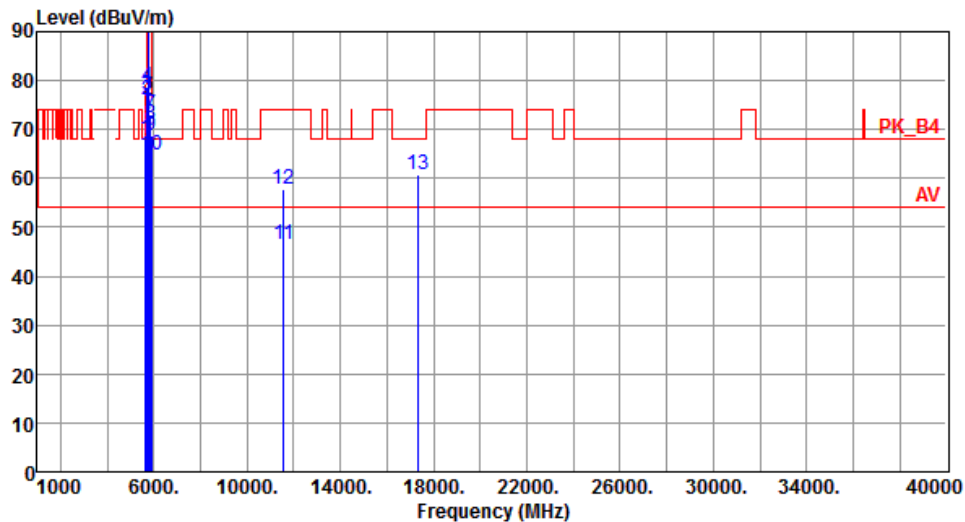
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	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	64.47	68.20	-3.73	59.93	4.54	Peak	100	103
2	5700.00	71.23	105.20	-33.97	66.55	4.68	Peak	100	103
3	5720.00	74.85	110.80	-35.95	70.12	4.73	Peak	100	103
4	5725.00	77.22	122.20	-44.98	72.47	4.75	Peak	100	103
5	* 5775.00	102.50			97.57	4.93	Average	100	103
6	* 5775.00	112.74			107.81	4.93	Peak	100	103
7	5850.00	68.75	122.20	-53.45	63.60	5.15	Peak	100	103
8	5855.00	67.79	110.80	-43.01	62.64	5.15	Peak	100	103
9	5875.00	66.06	105.20	-39.14	60.87	5.19	Peak	100	103
10	5925.00	61.20	68.20	-7.00	55.92	5.28	Peak	100	103
11	11550.00	44.81	54.00	-9.19	30.23	14.58	Average	100	105
12	11550.00	56.90	74.00	-17.10	42.32	14.58	Peak	100	105
13	17325.00	60.06	68.20	-8.14	42.24	17.82	Peak	100	106

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	68.01	68.20	-0.19	63.47	4.54	Peak	352	327
2	5700.00	75.94	105.20	-29.26	71.26	4.68	Peak	352	327
3	5720.00	77.04	110.80	-33.76	72.31	4.73	Peak	385	327
4	5725.00	78.76	122.20	-43.44	74.01	4.75	Peak	352	327
5 *	5775.00	105.85			100.92	4.93	Average	352	327
6 *	5775.00	116.40			111.47	4.93	Peak	352	327
7	5850.00	73.00	122.20	-49.20	67.85	5.15	Peak	352	327
8	5855.00	71.05	110.80	-39.75	65.90	5.15	Peak	352	327
9	5875.00	68.85	105.20	-36.35	63.66	5.19	Peak	352	327
10	5925.00	64.73	68.20	-3.47	59.45	5.28	Peak	352	327
11	11550.00	46.47	54.00	-7.53	31.89	14.58	Average	242	251
12	11550.00	57.95	74.00	-16.05	43.37	14.58	Peak	242	251
13	17325.00	60.63	68.20	-7.57	42.81	17.82	Peak	100	252

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

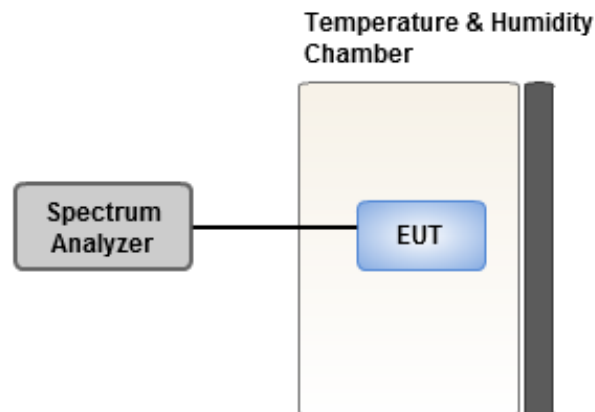
3.6.1 Limit of Frequency Stability

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°C Vmax	0.42	0.50	0.82	0.51
T20°C Vmin	-0.74	-0.40	-0.63	-0.28
T50°C Vnom	-1.52	-1.11	-0.89	-1.41
T40°C Vnom	0.12	0.18	0.78	0.16
T30°C Vnom	-0.24	-0.42	-0.57	-0.52
T20°C Vnom	-0.72	-0.46	-0.07	-0.76
T10°C Vnom	-3.38	-3.53	-3.11	-2.82
T0°C Vnom	-4.40	-3.91	-3.64	-4.17
T-10°C Vnom	-2.69	-2.33	-2.32	-2.85
T-20°C Vnom	-6.48	-6.17	-6.55	-6.12
T-30°C Vnom	-6.51	-6.20	-6.57	-6.17
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	0.04	0.15	-0.10	-0.18
T20°C Vmin	-0.15	-0.28	-0.16	-0.39
T50°C Vnom	-0.29	-0.15	-0.10	-0.31
T40°C Vnom	-0.27	-0.13	-0.08	-0.29
T30°C Vnom	-0.30	-0.18	-0.10	-0.34
T20°C Vnom	0.66	1.09	1.08	0.67
T10°C Vnom	-2.87	-2.96	-2.47	-2.39
T0°C Vnom	-3.94	-3.71	-4.31	-3.59
T-10°C Vnom	-2.44	-2.32	-2.50	-2.38
T-20°C Vnom	-5.39	-5.42	-5.39	-5.09
T-30°C Vnom	-7.78	-7.88	-7.62	-7.51
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corp (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

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City 333, Taiwan, R.O.C.

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

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