FCC C2PC Test Report

FCC ID	:	**SWX-UAPACIWP**
Equipment	:	**UniFi AC In-Wall Pro Wi-Fi Access Point**
Model No.	:	**UAP-AC-IW-PRO**
Brand Name	:	**UBIQUITI**
Applicant	:	**Ubiquiti Networks, Inc.**
Address	:	**685 Third Avenue, 27th Floor New York, New York 10017 USA**
Standard	:	**47 CFR FCC Part 15.407**
Received Date	:	**Jun. 23, 2017**
Tested Date	:	**Jun. 16 ~ Jul. 03, 2017**

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: **Approved by:**

Along Chen / Assistant Manager **Gary Chang / Manager**

Testing Laboratory 2732

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Release Record

Report No.	Version	Description	Issued Date
FR761701-01AN	Rev. 01	Initial issue	Aug. 04, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.491MHz 41.61 (Margin -4.53dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5470.00MHz 67.86 (Margin -0.340dB) - PK	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: 5250~5350MHz: 22.03 5470~5725MHz: 23.09	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

1 General Description

1.1 Information

This report is issued as a FCC Class II Permissive Change. The modification is only concerned with adding 5250~5350MHz and 5470~5725 MHz band by software setting.

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**
5250-5350 5470-5725	a	5260-5320 5500-5720	52-64 [4] 100-144 [12]	3	6-54 Mbps
5250-5350 5470-5725	n (HT20)	5260-5320 5500-5720	52-64 [4] 100-144 [12]	3	MCS 0-23
5250-5350 5470-5725	n (HT40)	5270-5310 5510-5710	54-62 [2] 102-142 [6]	3	MCS 0-23
5250-5350 5470-5725	ac (VHT20)	5260-5320 5500-5720	52-64 [4] 100-144 [12]	3	MCS 0-9
5250-5350 5470-5725	ac (VHT40)	5270-5310 5510-5710	54-62 [2] 102-142 [6]	3	MCS 0-9
5250-5350 5470-5725	ac (VHT80)	5290 5530-5690	58 [1] 106-138 [3]	3	MCS 0-9
Note 1: RF output power specifies that Maximum Conducted Output Power. Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.					

1.1.2 Antenna Details

Ant. No.	**Type**	**Connector**	**Operating Frequencies (MHz) / Antenna Gain (dBi)**	
			5250~5350	**5470~5725**
1	internal antenna	I-Pex	6.5	

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	48Vdc from POE

1.1.4 Accessories

N/A

1.1.5 Channel List

802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	**Frequency(MHz)**	**Channel**	**Frequency(MHz)**
52	5260	54	5270
56	5280	62	5310
60	5300	102	5510
64	5320	110	5550
100	5500	118	5590
104	5520	126	5630
108	5540	134	5670
112	5560	142	5710
116	5580	**VHT80**	
120	5600	58	5290
124	5620	106	5530
128	5640	122	5610
132	5660	138	5690
136	5680	---	---
140	5700	---	---
144	5720	---	---

1.1.6 Test Tool and Duty Cycle

Test Tool	cart		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	95.91%	0.18
	VHT20	95.68%	0.19
	VHT40	90.91%	0.41
	VHT80	84.21%	0.75

1.1.7 Power Setting

For Frequency band 5250~5350 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5260	16.50
11a	5300	16.00
11a	5320	16.00
HT20	5260	16.50
HT20	5300	16.00
HT20	5320	16.00
HT40	5270	19.00
HT40	5310	17.00
VHT20	5260	16.50
VHT20	5300	16.00
VHT20	5320	16.00
VHT40	5270	19.00
VHT40	5310	17.00
VHT80	5290	14.50

For Frequency band 5470~5725 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5500	15.00
11a	5580	14.50
11a	5700	14.50
HT20	5500	15.50
HT20	5580	15.00
HT20	5700	15.00
HT40	5510	13.50
HT40	5590	18.50
HT40	5670	17.00
VHT20	5500	15.50
VHT20	5580	15.00
VHT20	5700	15.00
VHT40	5510	13.50
VHT40	5590	18.50
VHT40	5670	17.00
VHT80	5530	12.00
VHT80	5610	19.50

Channel that extends across the 5.725 GHz boundary

For Frequency band 5470~5725 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5720	14.50
HT20	5720	15.00
HT40	5710	19.00
VHT20	5720	15.00
VHT40	5710	19.00
VHT80	5690	19.50

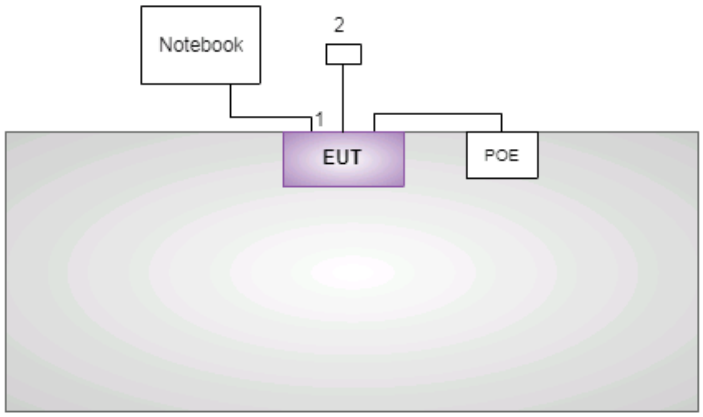
1.2 Local Support Equipment List

Support Equipment List					
No.	**Equipment**	**Brand**	**Model**	**FCC ID**	**Signal cable / Length (m)**
1	Notebook	DELL	Latitude E6430	DoC	RJ45, 10m non-shielded.
2	POE	UBIQUITI	GP-B480-050	---	----

Note: No. 2 was provided by applicant..

1.3 Test Setup Chart

Test Setup Diagram



1. RJ45, 10m non-shielded
2. RJ45, 1m non-shielded with load

1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Receiver	R&S	ESR3	101657	Dec. 21, 2016	Dec. 20, 2017
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 08, 2016	Nov. 07, 2017
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 20, 2016	Dec. 19, 2017
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)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 04, 2016	Aug. 03, 2017
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 21, 2016	Dec. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 09, 2016	Dec. 08, 2017
Preamplifier	EMC	EMC02325	980225	Aug. 05, 2016	Aug. 04, 2017
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2016	Oct. 05, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 24, 2016	Aug. 23, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	16052	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 09, 2016	Dec. 08, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101063	Mar. 15, 2017	Mar. 14, 2018
Power Meter	Anritsu	ML2495A	1241002	Oct. 06, 2016	Oct. 05, 2017
Power Sensor	Anritsu	MA2411B	1207366	Oct. 06, 2016	Oct. 05, 2017
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 28, 2016	Oct. 27, 2017
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 v01r04
FCC KDB 644545 D03 Guidance for IEEE 802 11ac New Rules v01
FCC KDB 662911 D01 Multiple Transmitter Output v02r01
FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 Measurement Uncertainty

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

Measurement Uncertainty	
Parameters	**Uncertainty**
Bandwidth	±34.134 Hz
Conducted power	±0.808 dB
Frequency error	±34.134 Hz
Power density	±0.463 dB
Conducted emission	±2.670 dB
AC conducted emission	±2.90 dB
Radiated emission ≤ 1GHz	±3.66 dB
Radiated emission > 1GHz	±5.63 dB
Time	±0.1%
Temperature	±0.6 ^{o}C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	24°C / 55%	Alex Huang
Radiated Emissions	03CH01-WS	24°C / 64%	Vincent Yeh
RF Conducted	TH01-WS	23°C / 65%	Brad Wu

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- IC site registration No.: 10807A-1

2.2 The Worst Test Modes and Channel Details

For Frequency band 5250-5350 MHz, 5470-5725 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate**	**Test Configuration**
Conducted Emissions	VHT80	5610	MCS 0	---
Radiated Emissions ≤1GHz	VHT80	5610	MCS 0	---
RF Output Power	11a	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	6 Mbps	---
	HT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	HT40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5610 / 5690	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	6 Mbps	---
	VHT20	5260 / 5300 / 5320 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5270 / 5310 5510 / 5590 / 5670 / 5710	MCS 0	
	VHT80	5290 / 5530 / 5610 / 5690	MCS 0	
Frequency Stability	Un-modulation	5320	---	---

NOTE:

1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The **Y-plane** results were found as the worst case and were shown in this report.

3 Transmitter Test Results

3.1 Conducted Emissions

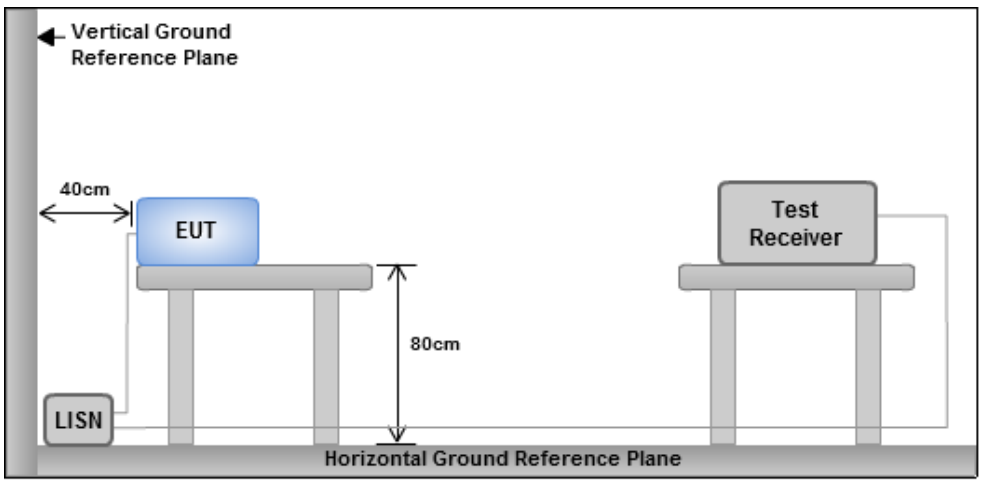
3.1.1 Limit of Conducted Emissions

Conducted Emissions Limit		
Frequency Emission (MHz)	**Quasi-Peak**	**Average**
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50
Note 1: * Decreases with the logarithm of the frequency.		

3.1.2 Test Procedures

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

3.1.3 Test Setup

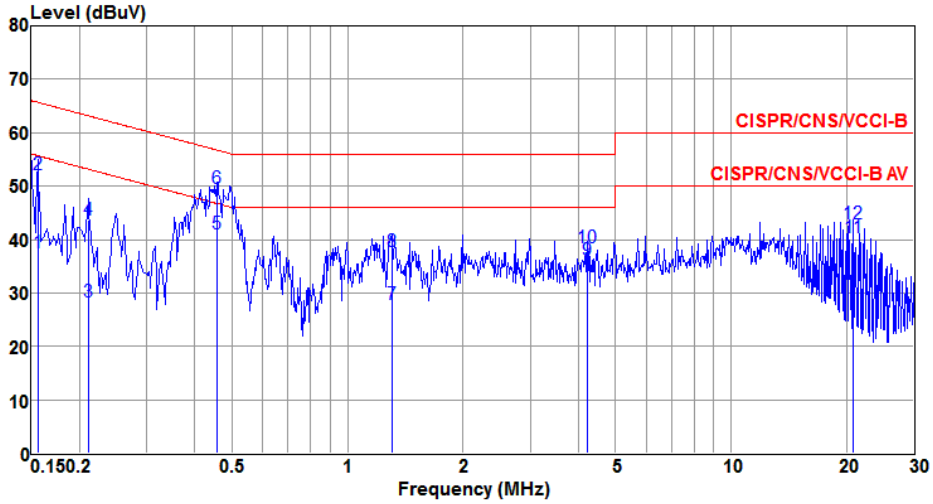


Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

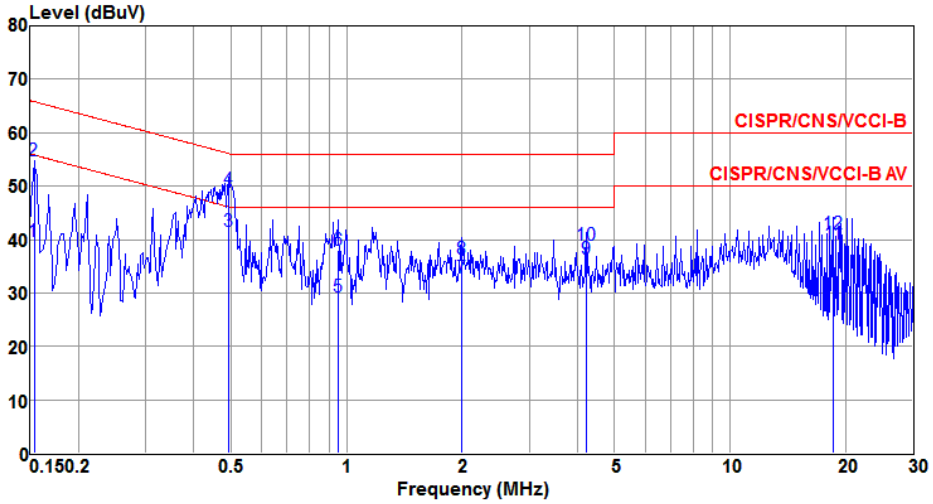
Modulation	VHT80	Test Freq. (MHz)	5610
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	37.49	55.69	-18.20	37.38	0.07	0.04	Average
2	0.156	52.13	65.69	-13.56	52.02	0.07	0.04	QP
3	0.211	28.35	53.18	-24.83	28.21	0.10	0.04	Average
4	0.211	43.62	63.18	-19.56	43.48	0.10	0.04	QP
5@	0.456	41.04	46.76	-5.72	40.94	0.06	0.04	Average
6	0.456	49.58	56.76	-7.18	49.48	0.06	0.04	QP
7	1.303	27.96	46.00	-18.04	27.83	0.09	0.04	Average
8	1.303	37.67	56.00	-18.33	37.54	0.09	0.04	QP
9	4.224	36.03	46.00	-9.97	35.70	0.17	0.16	Average
10	4.224	38.49	56.00	-17.51	38.16	0.17	0.16	QP
11	20.859	40.47	50.00	-9.53	39.79	0.41	0.27	Average
12	20.859	42.98	60.00	-17.02	42.30	0.41	0.27	QP

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

Modulation	VHT80	Test Freq. (MHz)	5610
Power Phase	Neutral		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.153	39.72	55.82	-16.10	39.58	0.10	0.04	Average
2	0.153	54.81	65.82	-11.01	54.67	0.10	0.04	QP
3@	0.491	41.61	46.14	-4.53	41.45	0.12	0.04	Average
4	0.491	49.26	56.14	-6.88	49.10	0.12	0.04	QP
5	0.953	29.38	46.00	-16.62	29.25	0.09	0.04	Average
6	0.953	38.00	56.00	-18.00	37.87	0.09	0.04	QP
7	1.991	32.90	46.00	-13.10	32.70	0.16	0.04	Average
8	1.991	36.33	56.00	-19.67	36.13	0.16	0.04	QP
9	4.224	36.33	46.00	-9.67	36.02	0.15	0.16	Average
10	4.224	38.86	56.00	-17.14	38.55	0.15	0.16	QP
11	18.624	39.21	50.00	-10.79	38.56	0.40	0.25	Average
12	18.624	40.99	60.00	-19.01	40.34	0.40	0.25	QP

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

3.2 Emission Bandwidth

3.2.1 Test Procedures

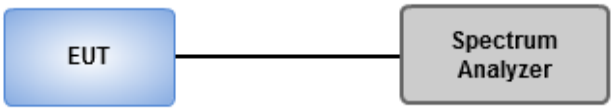
26dB Bandwidth

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

Occupied Bandwidth

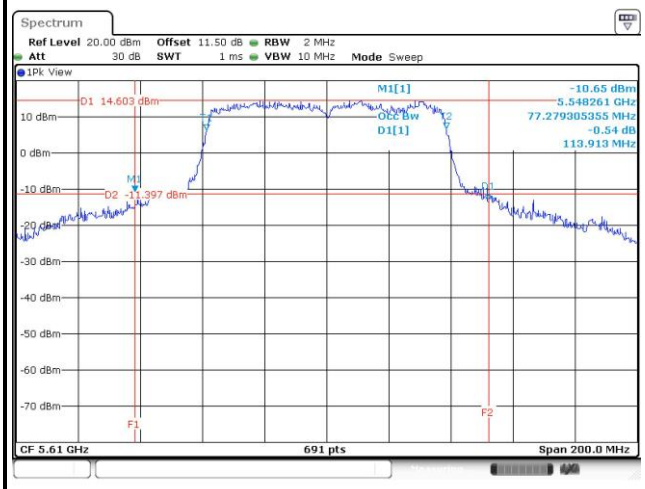
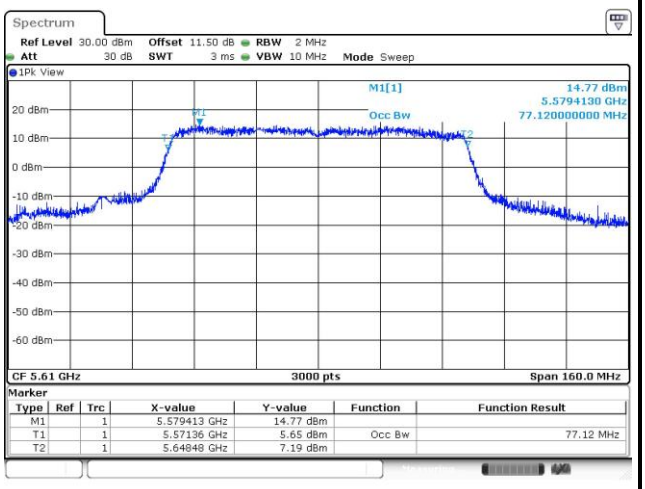
1. Set RBW = 1 % to 5 % of the OBW
2. Set VBW ≥ 3 RBW
3. Sample detection and single sweep mode shall be used
4. Use the 99 % power bandwidth function of the instrument

3.2.2 Test Setup



3.2.3 Test Result of Emission Bandwidth

Emission Bandwidth									
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)			Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2	
11a	3	5260	23.36	22.49	22.43	16.75	16.88	16.71	24.00
11a	3	5300	22.43	22.43	22.20	16.85	16.91	16.72	24.00
11a	3	5320	22.90	21.57	21.62	16.76	16.69	16.72	24.00
VHT20	3	5260	23.36	22.55	23.77	18.15	18.23	17.95	24.00
VHT20	3	5300	23.25	23.36	22.55	18.35	18.23	17.91	24.00
VHT20	3	5320	23.65	23.94	22.96	17.85	18.16	17.84	24.00
VHT40	3	5270	46.96	43.36	46.03	37.25	36.72	37.04	24.00
VHT40	3	5310	44.75	43.83	45.10	36.59	37.07	36.88	24.00
VHT80	3	5290	85.33	87.65	87.19	74.88	76.64	76.59	24.00
11a	3	5500	22.84	22.14	21.80	16.81	16.75	16.69	24.00
11a	3	5580	22.90	21.80	21.68	16.83	16.79	16.69	24.00
11a	3	5700	22.61	21.91	21.97	16.81	16.79	16.69	24.00
VHT20	3	5500	22.43	22.61	23.13	18.00	17.69	17.87	24.00
VHT20	3	5580	23.59	23.13	23.07	17.96	17.99	17.87	24.00
VHT20	3	5700	21.74	23.07	23.54	18.12	17.87	17.87	24.00
VHT40	3	5510	45.80	45.33	45.80	36.99	36.43	36.99	24.00
VHT40	3	5590	54.61	45.68	47.42	37.39	36.96	37.09	24.00
VHT40	3	5670	45.91	44.87	47.42	36.85	36.83	36.91	24.00
VHT80	3	5530	90.20	86.96	89.51	76.16	76.43	76.43	24.00
VHT80	3	5610	113.91	91.30	101.45	77.12	76.69	76.85	24.00

Worst Plot of 26dB Bandwidth	Worst Plot of 99% Bandwidth
	

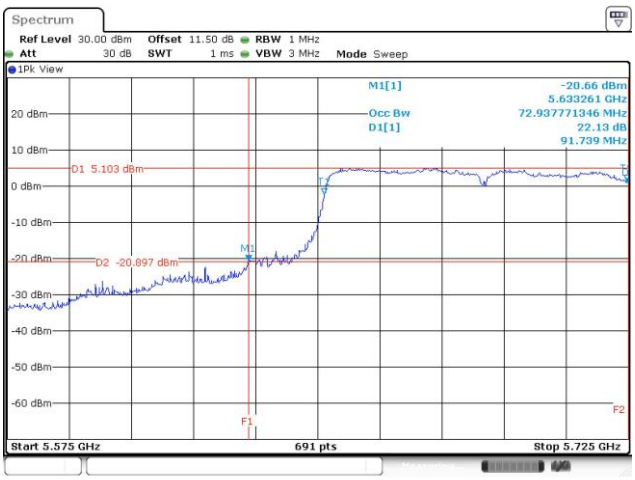
Channel that extends across the 5.725 GHz boundary

UNII Emission Bandwidth Result (Within 5470-5725MHz band)									
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)			Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2	
11a	3	5720	16.88	16.51	15.89	13.53	13.41	13.33	23.01
VHT20	3	5720	15.46	16.51	16.94	13.75	14.01	13.91	22.89
VHT40	3	5710	38.15	38.75	38.35	33.87	33.60	33.49	24.00
VHT80	3	5690	91.74	83.26	81.96	73.64	73.69	73.43	24.00

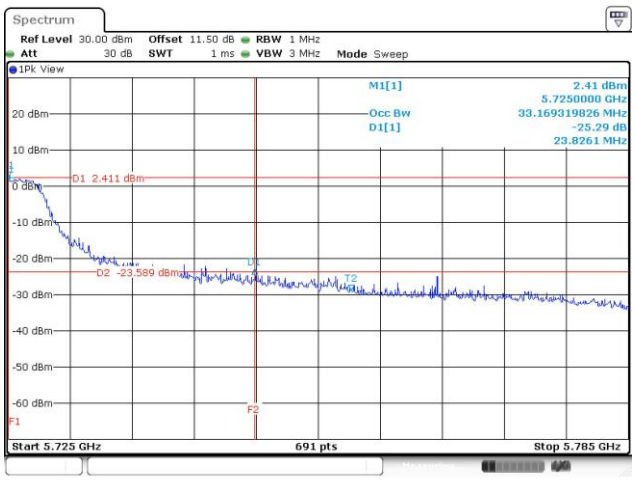
UNII Emission Bandwidth Result (Extends across 5725MHz band)								
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)			99% Bandwidth (MHz)		
			Chain 0	Chain 1	Chain 2	Chain 0	Chain 1	Chain 2
11a	3	5720	6.17	6.28	6.39	3.18	3.38	3.38
VHT20	3	5720	6.50	7.26	6.80	3.93	3.98	3.93
VHT40	3	5710	21.51	10.78	11.13	3.39	3.60	3.55
VHT80	3	5690	23.48	23.83	19.48	2.84	3.32	3.32

Worst Plots

Within 5470-5725MHz band



Extends across 5725MHz band



3.3 RF Output Power

3.3.1 Limit of RF Output Power

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

3.3.2 Test Procedures

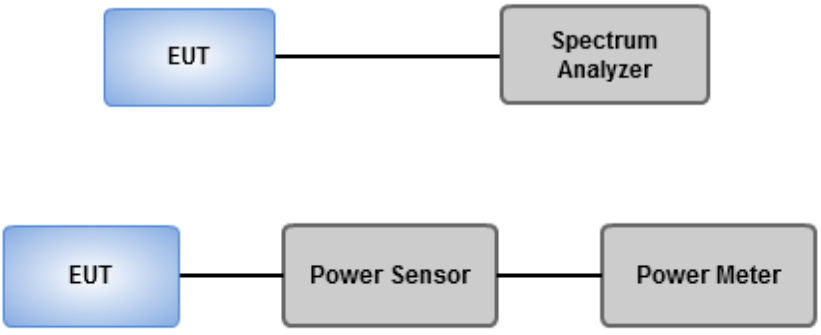
☒ Power meter (For channel that does not extends across the 5.725 GHz boundary)

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

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

1. Set RBW=1MHz, VBW=3MHz , Sweep time= Auto, Detector = RMS
2. Trace average at least 100 traces in power averaging mode
3. Compute power by integrating the spectrum across the 26 dB EBW

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

Mode	N_{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	3	5260	15.31	15.5	14.35	---	96.671	19.85	23.50
11a	3	5300	15.45	14.81	14.12	---	91.167	19.60	23.50
11a	3	5320	15.58	14.82	13.82	---	90.579	19.57	23.50
HT20	3	5260	15.31	15.42	14.45	---	96.657	19.85	23.50
HT20	3	5300	15.11	15.06	14.09	---	90.141	19.55	23.50
HT20	3	5320	15.42	15.03	14.02	---	91.911	19.63	23.50
HT40	3	5270	17.86	17.02	16.29	---	154.004	21.88	23.50
HT40	3	5310	15.41	15.52	14.51	---	98.648	19.94	23.50
VHT20	3	5260	15.45	15.55	14.61	---	99.874	19.99	23.50
VHT20	3	5300	15.22	15.13	14.24	---	92.396	19.66	23.50
VHT20	3	5320	15.57	15.18	14.19	---	95.261	19.79	23.50
VHT40	3	5270	18.04	17.15	16.42	---	159.413	**22.03**	23.50
VHT40	3	5310	15.59	15.64	14.63	---	101.908	20.08	23.50
VHT80	3	5290	13.19	12.85	12.11	---	56.376	17.51	23.50
11a	3	5500	15.13	14.18	14.56	---	87.341	19.41	23.50
11a	3	5580	15.04	13.88	13.55	---	78.996	18.98	23.50
11a	3	5700	15.45	13.92	13.89	---	84.226	19.25	23.50
HT20	3	5500	15.61	14.56	14.58	---	93.675	19.72	23.50
HT20	3	5580	15.51	14.03	14.02	---	86.091	19.35	23.50
HT20	3	5700	15.48	14.06	14.03	---	86.080	19.35	23.50
HT40	3	5510	12.91	12.15	11.62	---	50.470	17.03	23.50
HT40	3	5590	17.61	17.24	17.06	---	161.459	22.08	23.50
HT40	3	5670	16.39	15.41	15.43	---	113.219	20.54	23.50
VHT20	3	5500	15.72	14.69	14.71	---	96.349	19.84	23.50
VHT20	3	5580	15.65	14.17	14.14	---	88.792	19.48	23.50
VHT20	3	5700	15.62	14.21	14.15	---	88.840	19.49	23.50
VHT40	3	5510	13.04	12.32	11.74	---	52.126	17.17	23.50
VHT40	3	5590	17.75	17.36	17.15	---	165.896	22.20	23.50
VHT40	3	5670	16.52	15.57	15.59	---	117.157	20.69	23.50
VHT80	3	5530	11.29	10.56	10.21	---	35.330	15.48	23.50
VHT80	3	5610	18.92	18.16	17.81	---	203.841	**23.09**	23.50

Note: Directional gain is 6.5 dBi > 6 dBi, limit shall be reduced to 24 dBm – (6.5 dBi –6 dBi) = 23.5 dBm

Channel that extends across the 5.725 GHz boundary

Maximum Conducted Output Power (Within 5470-5725MHz band)											
Mode	N_{TX}	Freq. (MHz)	Conducted Power without duty factor					Duty factor (dB)	Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (dBm)				
11a	3	5720	13.84	11.38	11.25	---	17.10	0.18	53.456	17.28	22.51
HT20	3	5720	12.76	11.50	11.56	---	16.75	0.19	49.444	16.94	22.39
HT40	3	5710	16.82	15.86	15.87	---	20.98	0.41	137.671	21.39	23.50
VHT20	3	5720	12.77	11.78	11.59	---	16.85	0.19	50.576	17.04	22.39
VHT40	3	5710	17.27	15.90	15.91	---	21.18	0.41	144.225	21.59	23.50
VHT80	3	5690	17.59	15.90	15.85	---	21.30	0.75	160.181	22.05	23.50

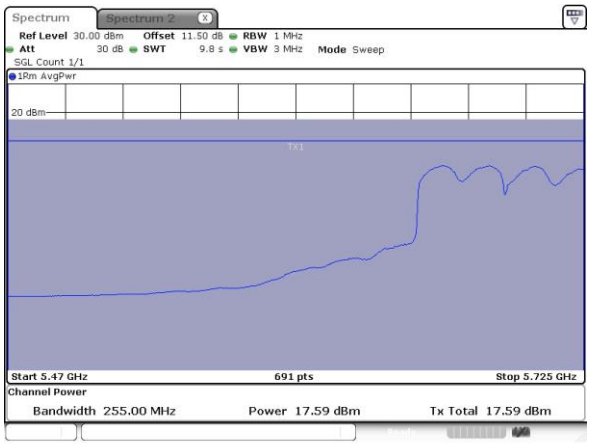
Note: Directional gain is 6.5 dBi > 6 dBi, limit shall be reduced 0.5 dB (6.5 dBi – 6 dBi)

Maximum Conducted Output Power (Extends across 5725MHz band)											
Mode	N_{TX}	Freq. (MHz)	Conducted Power without duty factor					Duty factor (dB)	Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Total Power (dBm)				
11a	3	5720	7.02	4.92	5.29	---	10.61	0.18	12.008	10.79	29.50
HT20	3	5720	7.49	6.14	5.98	---	11.36	0.19	14.297	11.55	29.50
HT40	3	5710	6.46	4.88	5.12	---	10.32	0.41	11.817	10.73	29.50
VHT20	3	5720	7.54	6.39	6.13	---	11.50	0.19	14.765	11.69	29.50
VHT40	3	5710	6.90	4.91	5.25	---	10.55	0.41	12.468	10.96	29.50
VHT80	3	5690	3.19	1.23	1.27	---	6.77	0.75	5.647	7.52	29.50

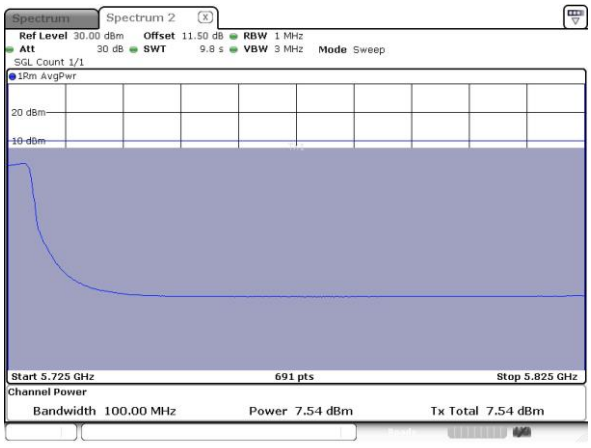
Note: Directional gain is 6.5 dBi > 6 dBi, limit shall be reduced to 30 dBm – (6.5 dBi –6 dBi) = 29.5 dBm

Worst Channel Power Plots

Within 5470-5725MHz band



Extends across 5725MHz band



3.4 Peak Power Spectral Density

3.4.1 Limit of Peak Power Spectral Density

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

3.4.2 Test Procedures

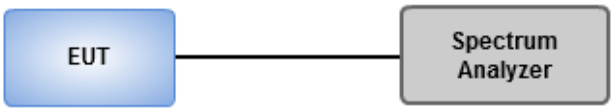
☐ Method SA-1

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.

☒ Method SA-2 Alternative

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

3.4.3 Test Setup

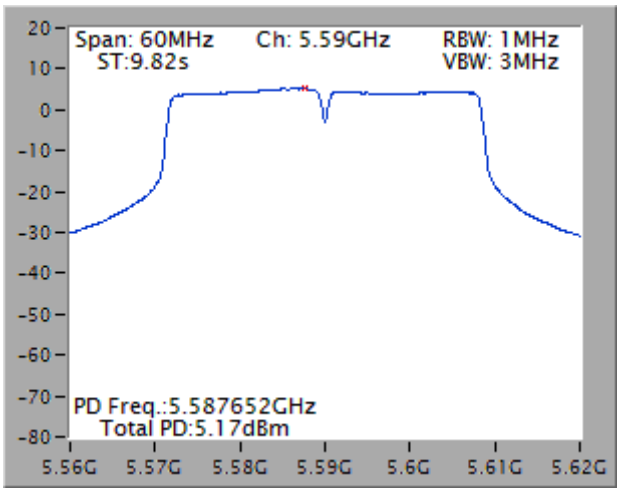


3.4.4 Test Result of Peak Power Spectral Density

Condition			Peak Power Spectral Density (dBm/MHz)			
Mode	N_{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/MHz)	Duty Factor (dB)	PPSD with D.F (dBm/MHz)	PPSD Limit (dBm/MHz)
11a	3	5260	5.02	0.18	5.20	5.73
11a	3	5300	5.33	0.18	5.51	5.73
11a	3	5320	5.35	0.18	5.53	5.73
VHT20	3	5260	5.09	0.19	5.28	5.73
VHT20	3	5300	5.16	0.19	5.35	5.73
VHT20	3	5320	5.37	0.19	5.56	5.73
VHT40	3	5270	4.70	0.41	5.11	5.73
VHT40	3	5310	3.41	0.41	3.82	5.73
VHT80	3	5290	-1.91	0.75	-1.16	5.73
11a	3	5500	5.36	0.18	5.54	5.73
11a	3	5580	4.95	0.18	5.13	5.73
11a	3	5700	5.20	0.18	5.38	5.73
11a	3	5720	5.31	0.18	5.49	5.73
VHT20	3	5500	5.20	0.19	5.39	5.73
VHT20	3	5580	5.14	0.19	5.33	5.73
VHT20	3	5700	5.09	0.19	5.28	5.73
VHT20	3	5720	5.38	0.19	5.57	5.73
VHT40	3	5510	0.97	0.41	1.38	5.73
VHT40	3	5590	5.17	0.41	5.58	5.73
VHT40	3	5670	4.00	0.41	4.41	5.73
VHT40	3	5710	4.87	0.41	5.28	5.73
VHT80	3	5530	-4.36	0.75	-3.61	5.73
VHT80	3	5610	2.24	0.75	2.99	5.73
VHT80	3	5690	2.12	0.75	2.87	5.73

Note:

1. Test result are bin-by-bin summing measured value of each TX port.
2. Directional gain = 6.5 + 10* log(3/1) = 11.27 dBi > 6dBi
   Limit shall be reduced to 11 dBm – (11.27 dBi – 6 dBi) = 5.73 dBm

Worst Plot


Note: Test plot without duty factor

3.5 Transmitter Radiated and Band Edge Emissions

3.5.1 Limit of Transmitter Radiated and Band Edge Emissions

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

Note 1:
Qusai-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit
Note 2:
Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

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

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

3.5.2 Test Procedures

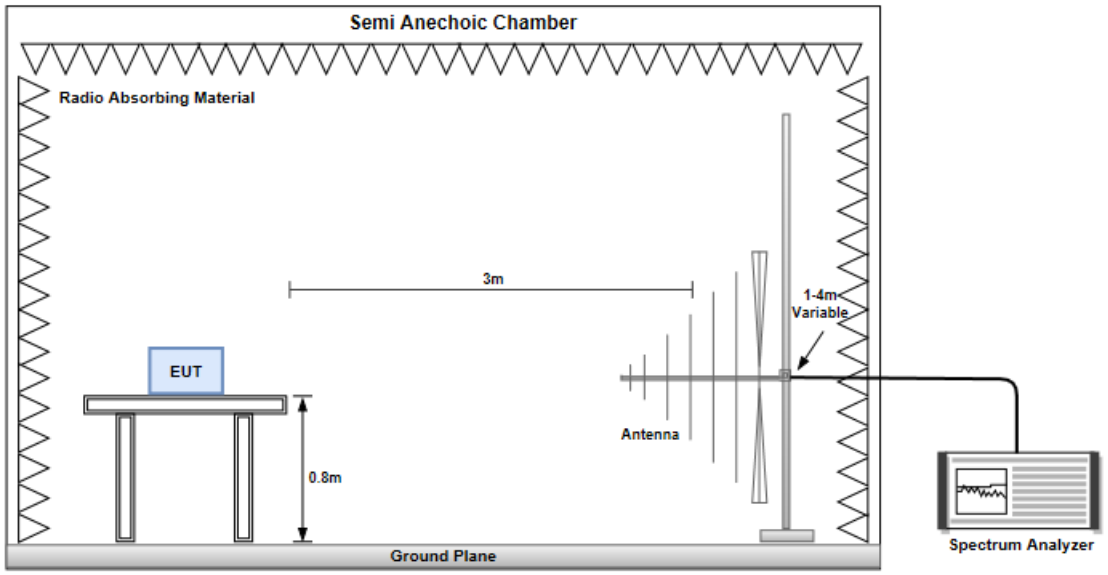
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

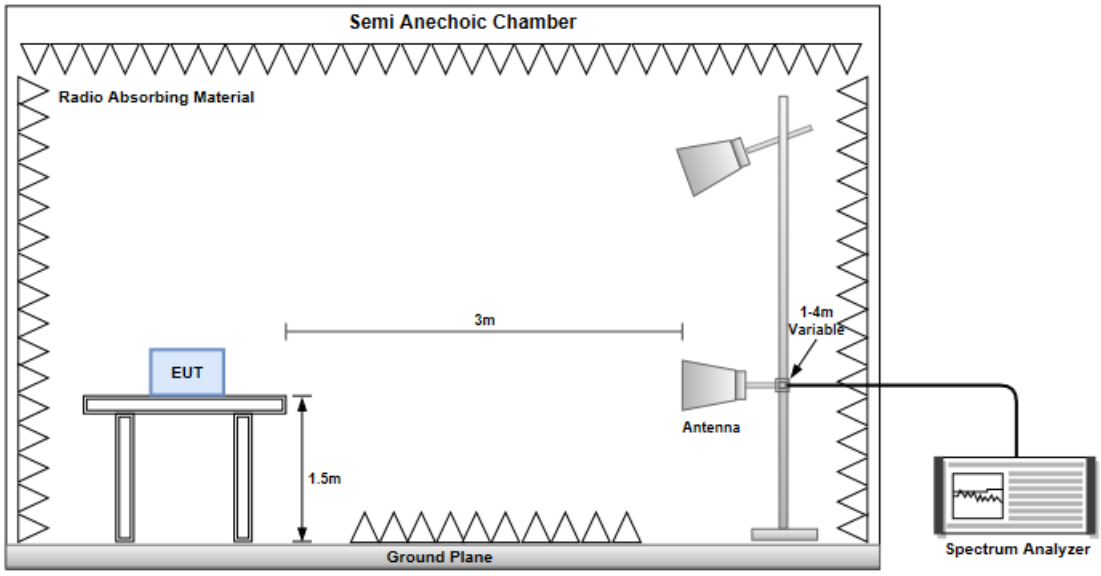
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

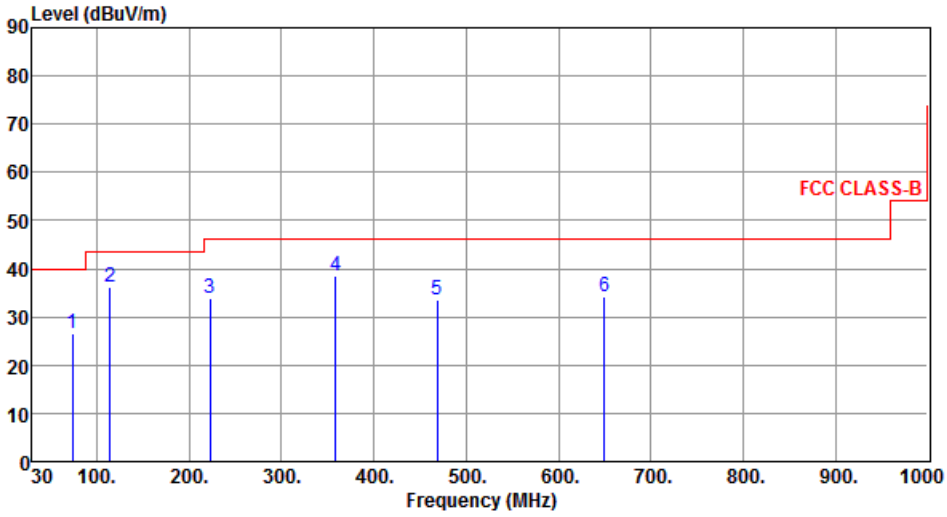


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

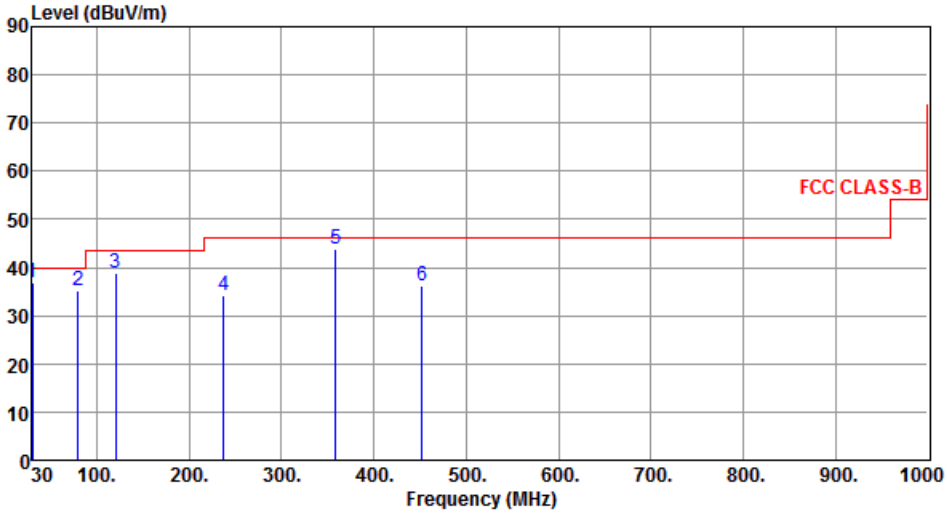
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	73.65	26.45	40.00	-13.55	37.83	-11.38	Peak	---	---
2	114.39	36.17	43.50	-7.33	46.88	-10.71	Peak	---	---
3	223.03	33.79	46.00	-12.21	44.08	-10.29	Peak	---	---
4	358.83	38.63	46.00	-7.37	44.66	-6.03	QP	100	241
5	468.44	33.57	46.00	-12.43	36.96	-3.39	Peak	---	---
6	649.83	34.15	46.00	-11.85	34.19	-0.04	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	VHT80	Test Freq. (MHz)	5610
Polarization	Vertical		

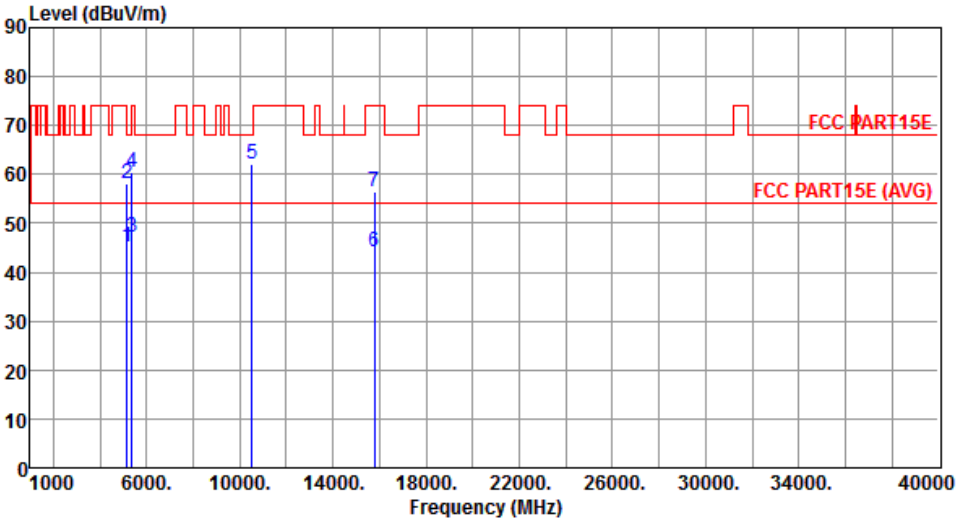


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	30.00	36.82	40.00	-3.18	45.70	-8.88	Peak	---	---
2	79.47	35.33	40.00	-4.67	47.79	-12.46	Peak	---	---
3	120.21	38.95	43.50	-4.55	49.08	-10.13	Peak	---	---
4	237.58	34.27	46.00	-11.73	43.69	-9.42	Peak	---	---
5	358.73	43.76	46.00	-2.24	49.79	-6.03	QP	126	152
6	451.95	36.13	46.00	-9.87	39.84	-3.71	Peak	---	---

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

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

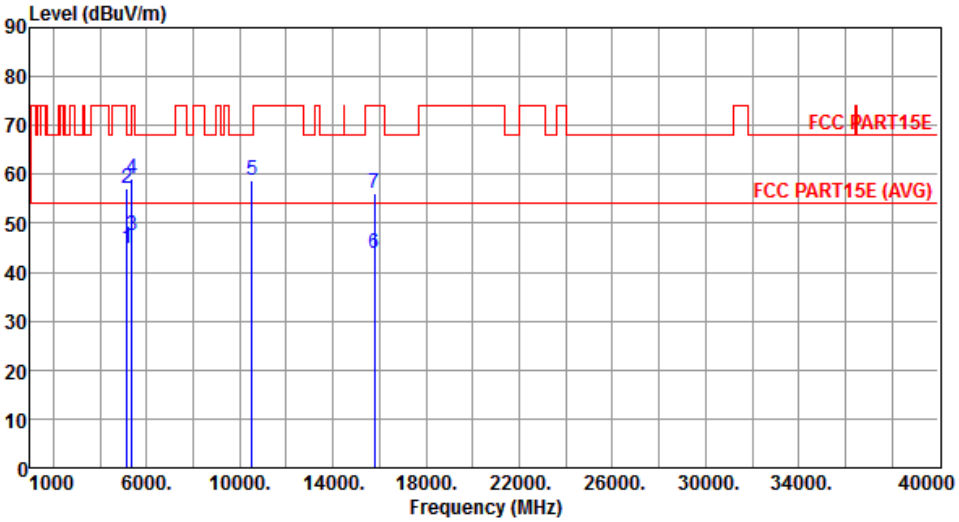
Modulation	11a	Test Freq. (MHz)	5260
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.16	54.00	-8.84	40.68	4.48	Average	256	43
2	5150.00	58.20	74.00	-15.80	53.72	4.48	Peak	256	43
3	5350.00	47.31	54.00	-6.69	42.57	4.74	Average	256	43
4	5350.00	60.45	74.00	-13.55	55.71	4.74	Peak	256	43
5	10520.00	62.08	68.20	-6.12	48.07	14.01	Peak	187	307
6	15780.00	44.08	54.00	-9.92	30.07	14.01	Average	100	117
7	15780.00	56.33	74.00	-17.67	42.32	14.01	Peak	100	117

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

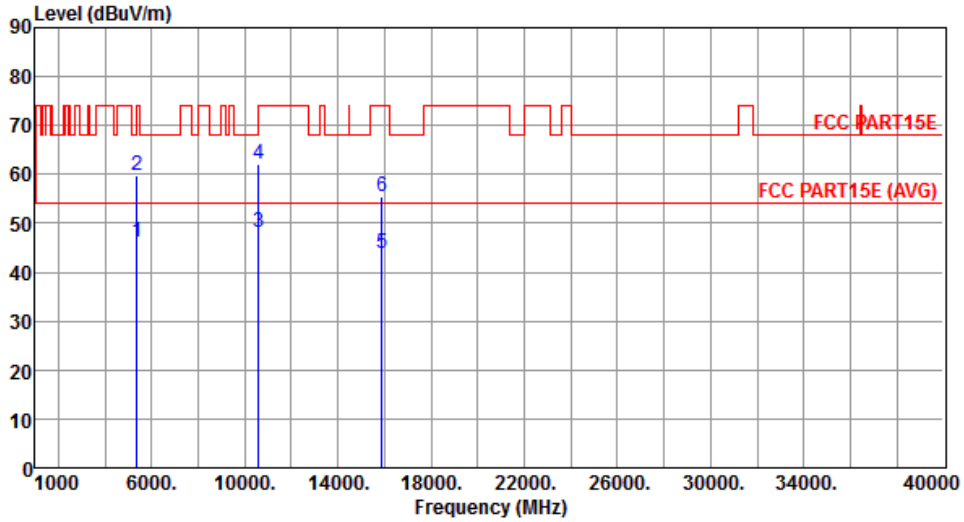
Modulation	11a	Test Freq. (MHz)	5260
Polarization	Vertical		



	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	44.70	54.00	-9.30	40.22	4.48	Average	151	38
2	5150.00	57.13	74.00	-16.87	52.65	4.48	Peak	151	38
3	5350.00	47.57	54.00	-6.43	42.83	4.74	Average	151	38
4	5350.00	59.22	74.00	-14.78	54.48	4.74	Peak	151	38
5	10520.00	58.85	68.20	-9.35	44.84	14.01	Peak	205	5
6	15780.00	43.85	54.00	-10.15	29.84	14.01	Average	100	192
7	15780.00	56.06	74.00	-17.94	42.05	14.01	Peak	100	192

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

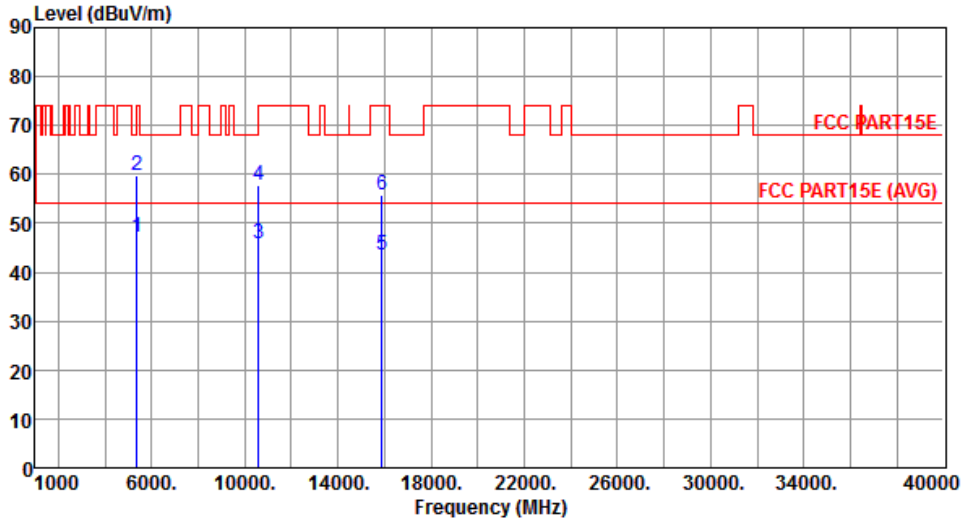
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.21	54.00	-7.79	41.47	4.74	Average	261	48
2	5350.00	59.63	74.00	-14.37	54.89	4.74	Peak	261	48
3	10600.00	48.14	54.00	-5.86	34.02	14.12	Average	185	312
4	10600.00	62.08	74.00	-11.92	47.96	14.12	Peak	185	312
5	15900.00	43.77	54.00	-10.23	29.95	13.82	Average	100	165
6	15900.00	55.57	74.00	-18.43	41.75	13.82	Peak	100	165

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

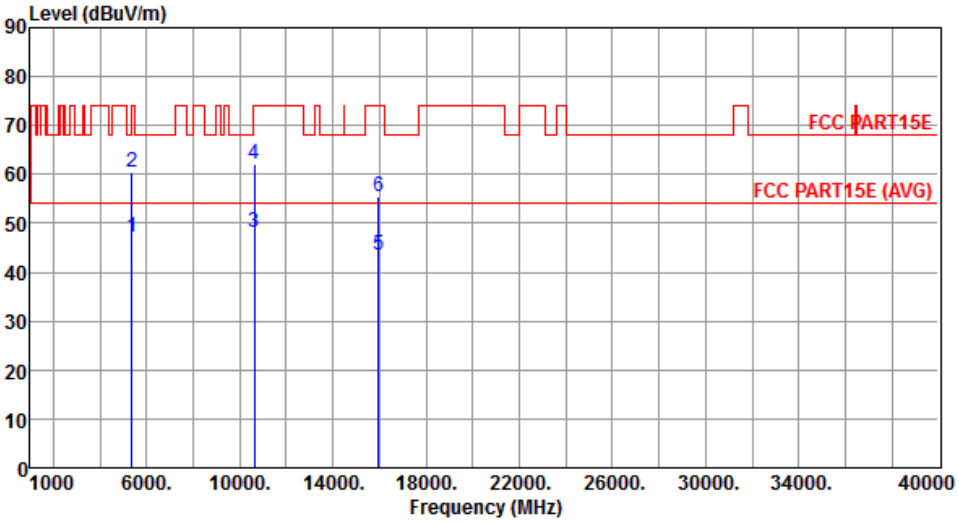
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.05	54.00	-6.95	42.31	4.74	Average	100	35
2	5350.00	59.69	74.00	-14.31	54.95	4.74	Peak	100	35
3	10600.00	45.69	54.00	-8.31	31.57	14.12	Average	215	11
4	10600.00	57.78	74.00	-16.22	43.66	14.12	Peak	215	11
5	15900.00	43.51	54.00	-10.49	29.69	13.82	Average	100	186
6	15900.00	55.70	74.00	-18.30	41.88	13.82	Peak	100	186

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

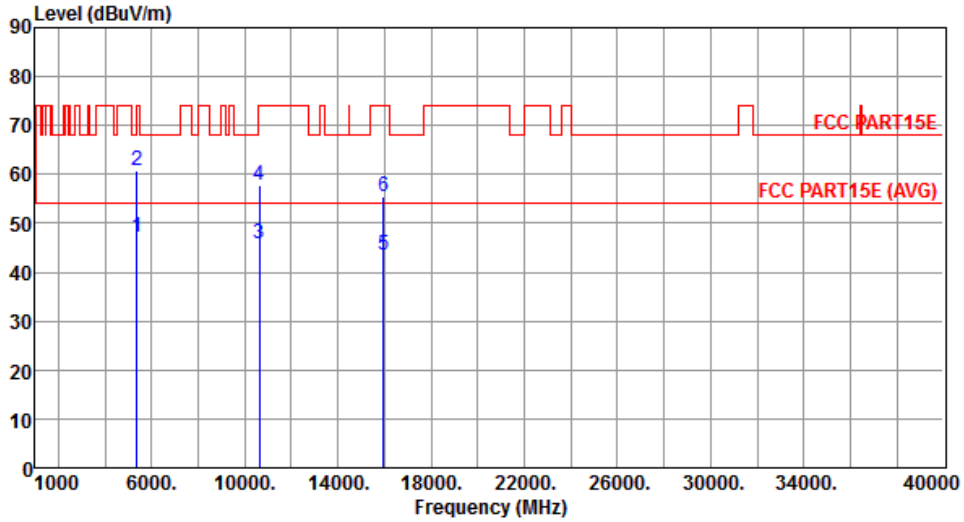
Modulation	11a	Test Freq. (MHz)	5320
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.31	54.00	-6.69	42.57	4.74	Average	122	14
2	5350.00	60.43	74.00	-13.57	55.69	4.74	Peak	122	14
3	10640.00	48.07	54.00	-5.93	33.89	14.18	Average	191	317
4	10640.00	62.21	74.00	-11.79	48.03	14.18	Peak	191	317
5	15960.00	43.54	54.00	-10.46	29.81	13.73	Average	100	162
6	15960.00	55.36	74.00	-18.64	41.63	13.73	Peak	100	162

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

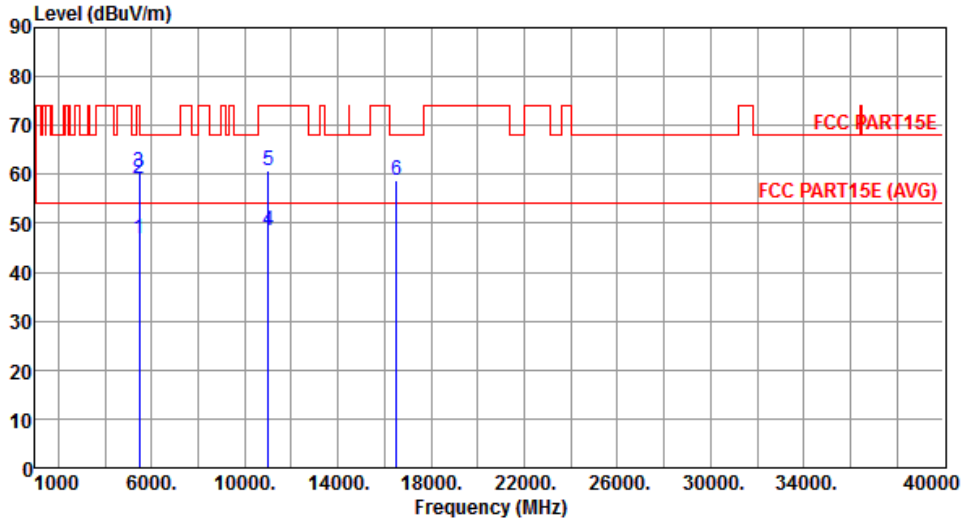
Modulation	11a	Test Freq. (MHz)	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.07	54.00	-6.93	42.33	4.74	Average	159	38
2	5350.00	60.69	74.00	-13.31	55.95	4.74	Peak	159	38
3	10640.00	45.81	54.00	-8.19	31.63	14.18	Average	213	27
4	10640.00	57.76	74.00	-16.24	43.58	14.18	Peak	213	27
5	15960.00	43.65	54.00	-10.35	29.92	13.73	Average	100	189
6	15960.00	55.31	74.00	-18.69	41.58	13.73	Peak	100	189

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

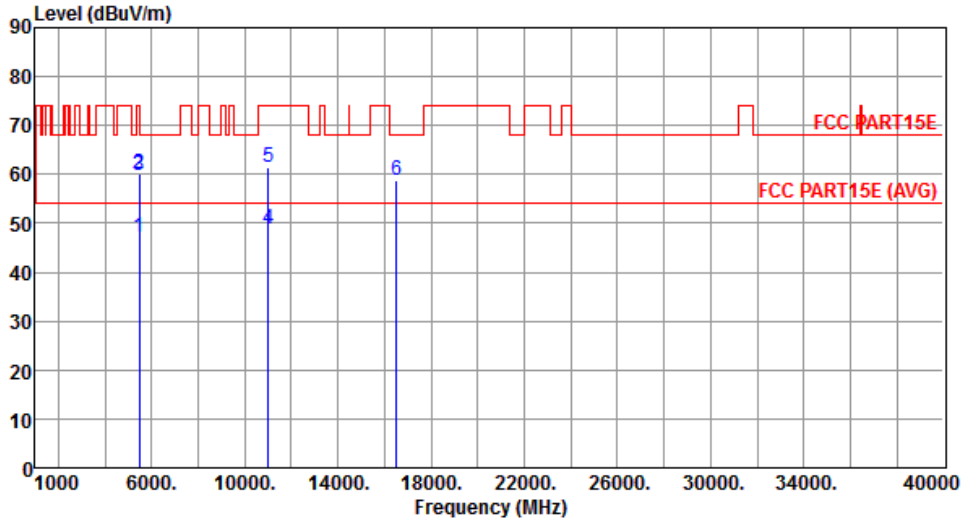
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.68	54.00	-7.32	41.79	4.89	Average	226	33
2	5460.00	59.21	74.00	-14.79	54.32	4.89	Peak	226	33
3	5470.00	60.32	68.20	-7.88	55.41	4.91	Peak	226	33
4	11000.00	48.63	54.00	-5.37	33.95	14.68	Average	166	22
5	11000.00	60.87	74.00	-13.13	46.19	14.68	Peak	166	22
6	16500.00	58.67	68.20	-9.53	42.81	15.86	Peak	100	174

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

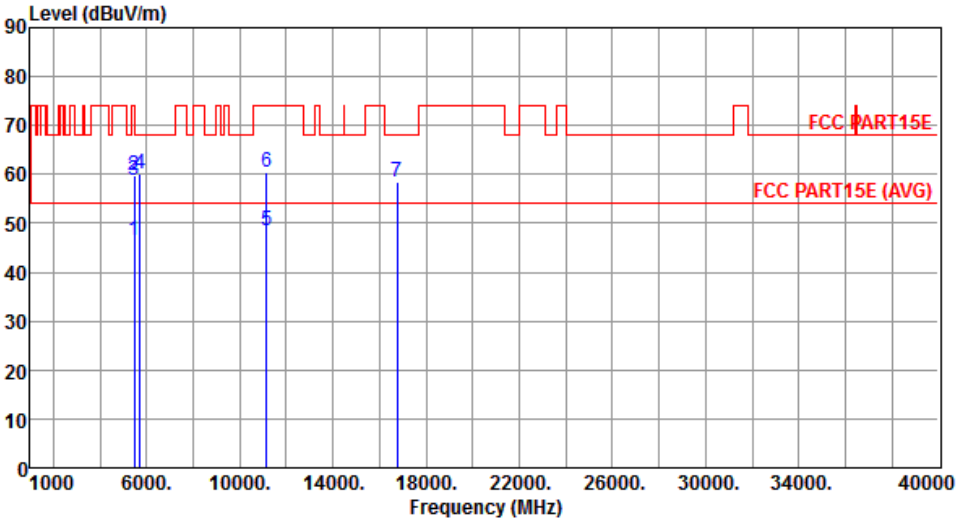
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.04	54.00	-6.96	42.15	4.89	Average	346	292
2	5460.00	60.25	74.00	-13.75	55.36	4.89	Peak	346	292
3	5470.00	59.81	68.20	-8.39	54.90	4.91	Peak	346	292
4	11000.00	48.87	54.00	-5.13	34.19	14.68	Average	155	343
5	11000.00	61.47	74.00	-12.53	46.79	14.68	Peak	155	343
6	16500.00	58.71	68.20	-9.49	42.85	15.86	Peak	100	118

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

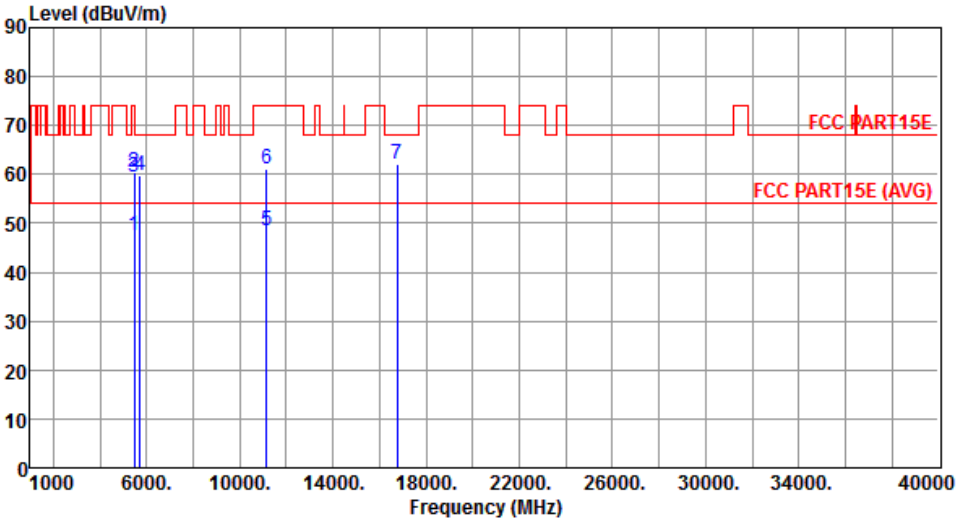
Modulation	11a	Test Freq. (MHz)	5580
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.46	54.00	-7.54	41.57	4.89	Average	175	338
2	5460.00	59.86	74.00	-14.14	54.97	4.89	Peak	175	338
3	5470.00	58.65	68.20	-9.55	53.74	4.91	Peak	175	338
4	5725.00	60.09	68.20	-8.11	54.77	5.32	Peak	175	338
5	11160.00	48.48	54.00	-5.52	33.76	14.72	Average	135	2
6	11160.00	60.38	74.00	-13.62	45.66	14.72	Peak	135	2
7	16740.00	58.55	68.20	-9.65	42.07	16.48	Peak	100	135

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

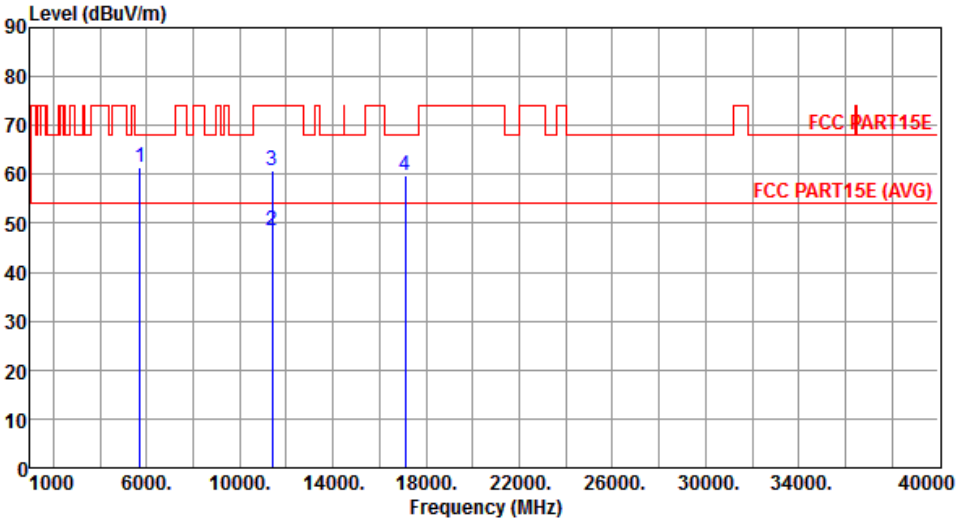
Modulation	11a	Test Freq. (MHz)	5580
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.37	54.00	-6.63	42.48	4.89	Average	359	335
2	5460.00	60.45	74.00	-13.55	55.56	4.89	Peak	359	335
3	5470.00	59.45	68.20	-8.75	54.54	4.91	Peak	359	335
4	5725.00	59.79	68.20	-8.41	54.47	5.32	Peak	359	335
5	11160.00	48.43	54.00	-5.57	33.71	14.72	Average	152	351
6	11160.00	61.07	74.00	-12.93	46.35	14.72	Peak	152	351
7	16740.00	62.23	68.20	-5.97	45.75	16.48	Peak	100	129

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

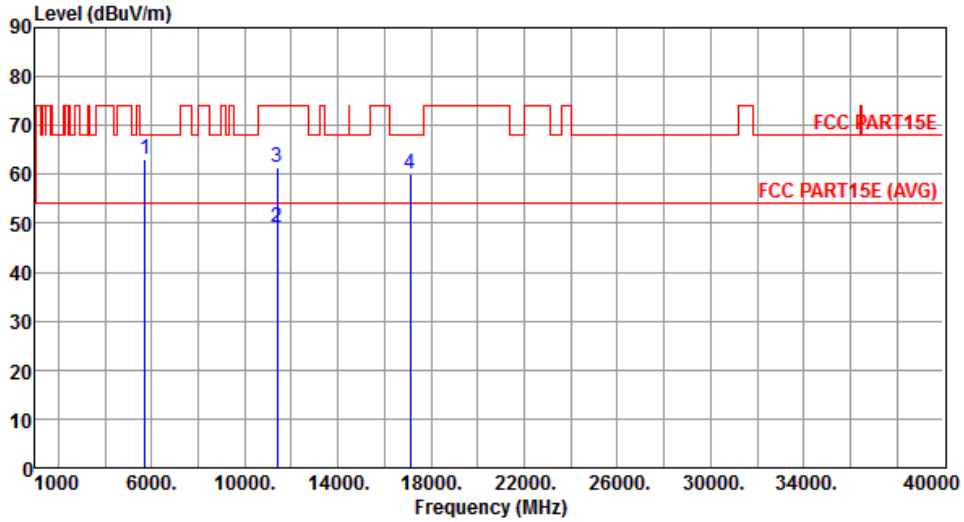
Modulation	11a	**Test Freq. (MHz)**	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	61.28	68.20	-6.92	55.96	5.32	Peak	221	30
2	11400.00	48.42	54.00	-5.58	33.63	14.79	Average	139	342
3	11400.00	60.65	74.00	-13.35	45.86	14.79	Peak	139	342
4	17100.00	59.72	68.20	-8.48	42.35	17.37	Peak	100	189

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

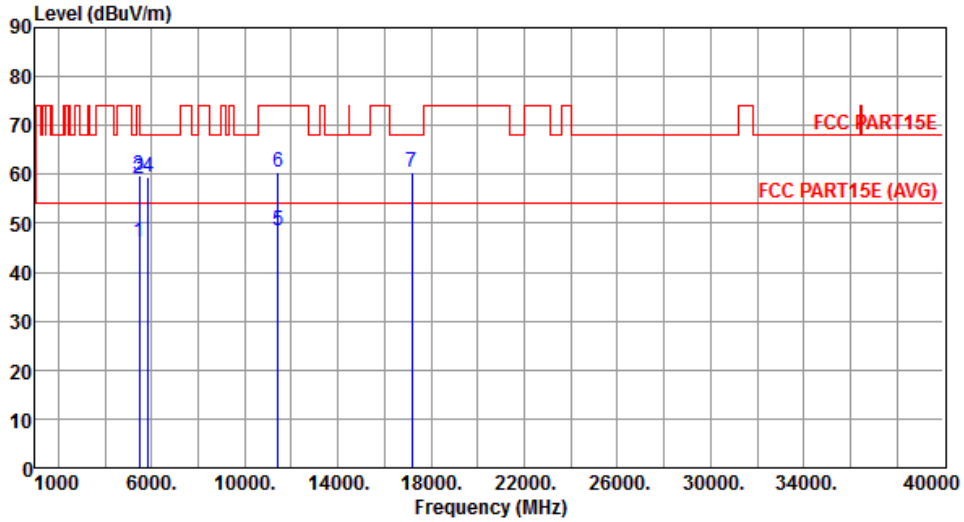
Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	63.12	68.20	-5.08	57.80	5.32	Peak	100	49
2	11400.00	49.02	54.00	-4.98	34.23	14.79	Average	145	353
3	11400.00	61.30	74.00	-12.70	46.51	14.79	Peak	145	353
4	17100.00	60.22	68.20	-7.98	42.85	17.37	Peak	100	161

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

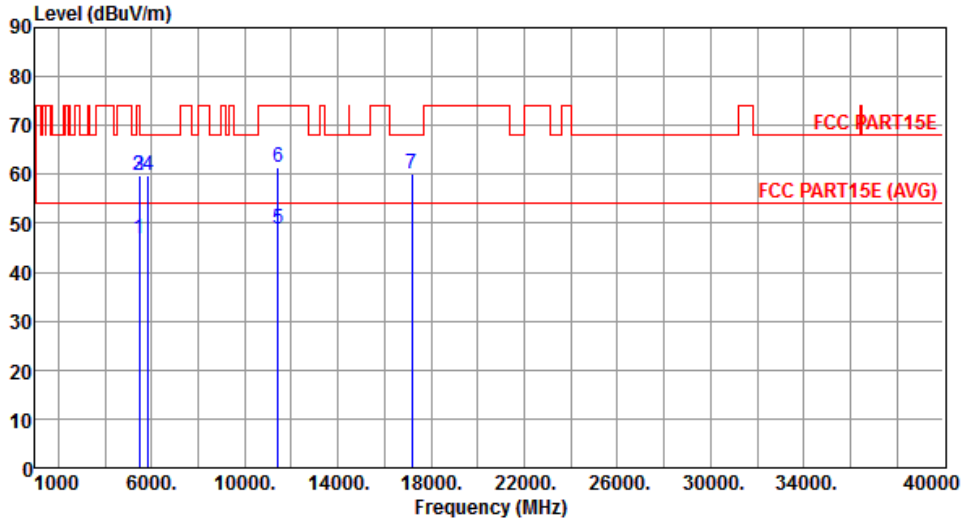
Modulation	11a	Test Freq. (MHz)	5720
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.21	54.00	-7.79	41.32	4.89	Average	215	28
2	5460.00	59.10	74.00	-14.90	54.21	4.89	Peak	215	28
3	5470.00	59.67	68.20	-8.53	54.76	4.91	Peak	215	28
4	5850.00	59.55	68.20	-8.65	54.03	5.52	Peak	215	28
5	11440.00	48.39	54.00	-5.61	33.59	14.80	Average	141	329
6	11440.00	60.47	74.00	-13.53	45.67	14.80	Peak	141	329
7	17160.00	60.38	68.20	-7.82	42.86	17.52	Peak	100	196

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

Modulation	11a	Test Freq. (MHz)	5720
Polarization	Vertical		

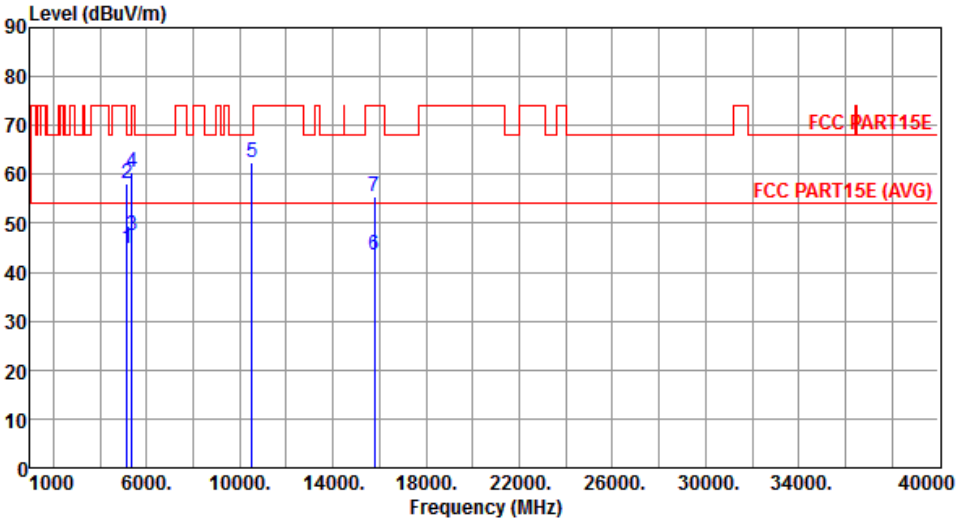


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.67	54.00	-7.33	41.78	4.89	Average	369	51
2	5460.00	59.90	74.00	-14.10	55.01	4.89	Peak	369	51
3	5470.00	59.64	68.20	-8.56	54.73	4.91	Peak	369	51
4	5850.00	59.63	68.20	-8.57	54.11	5.52	Peak	369	51
5	11440.00	48.96	54.00	-5.04	34.16	14.80	Average	141	349
6	11440.00	61.30	74.00	-12.70	46.50	14.80	Peak	141	349
7	17160.00	60.25	68.20	-7.95	42.73	17.52	Peak	100	164

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

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

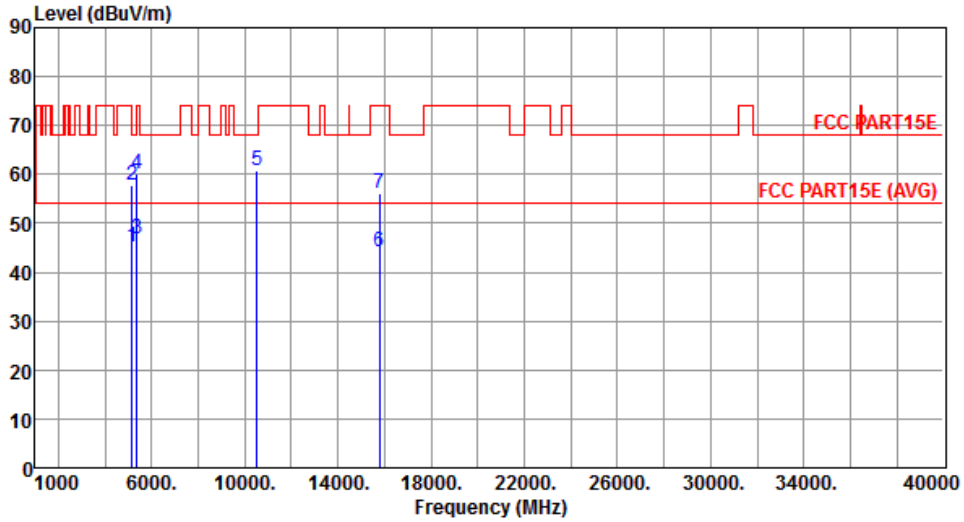
Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Horizontal		



	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	44.88	54.00	-9.12	40.40	4.48	Average	268	19
2	5150.00	58.00	74.00	-16.00	53.52	4.48	Peak	268	19
3	5350.00	47.46	54.00	-6.54	42.72	4.74	Average	268	19
4	5350.00	60.31	74.00	-13.69	55.57	4.74	Peak	268	19
5	10520.00	62.52	68.20	-5.68	48.51	14.01	Peak	131	304
6	15780.00	43.62	54.00	-10.38	29.61	14.01	Average	100	171
7	15780.00	55.59	74.00	-18.41	41.58	14.01	Peak	100	171

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

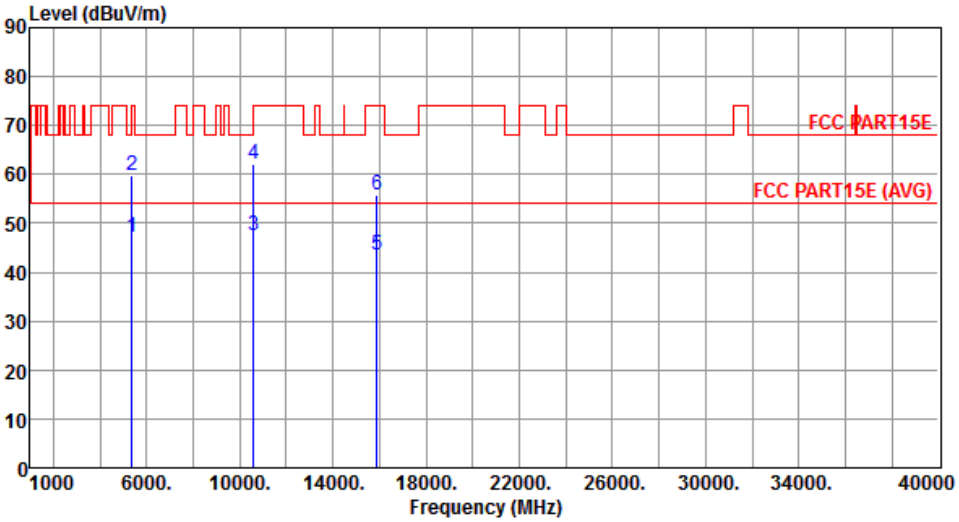
Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Vertical		



	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	45.15	54.00	-8.85	40.67	4.48	Average	100	38
2	5150.00	57.81	74.00	-16.19	53.33	4.48	Peak	100	38
3	5350.00	46.77	54.00	-7.23	42.03	4.74	Average	100	38
4	5350.00	59.96	74.00	-14.04	55.22	4.74	Peak	100	38
5	10520.00	60.92	68.20	-7.28	46.91	14.01	Peak	100	358
6	15780.00	44.24	54.00	-9.76	30.23	14.01	Average	162	145
7	15780.00	55.98	74.00	-18.02	41.97	14.01	Peak	162	145

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

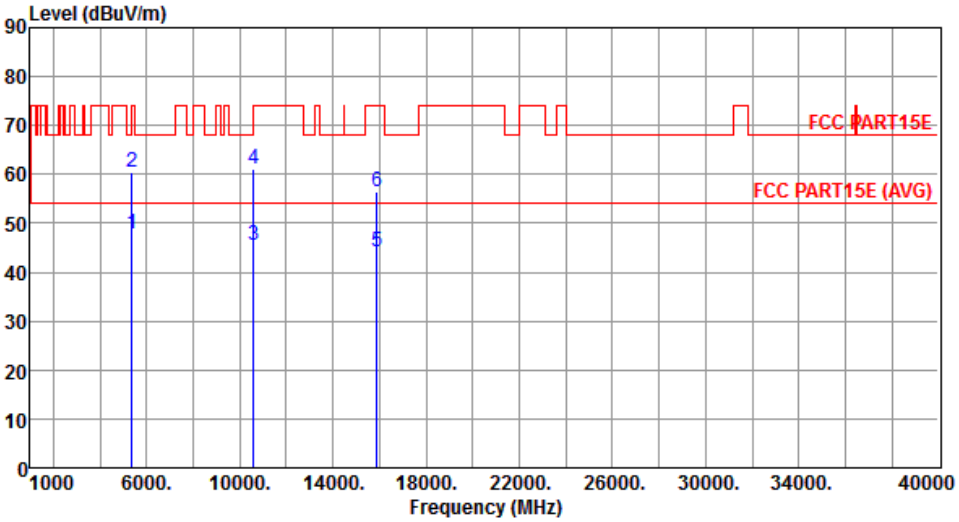
Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.28	54.00	-6.72	42.54	4.74	Average	266	26
2	5350.00	59.70	74.00	-14.30	54.96	4.74	Peak	266	26
3	10600.00	47.48	54.00	-6.52	33.36	14.12	Average	135	311
4	10600.00	62.20	74.00	-11.80	48.08	14.12	Peak	135	311
5	15900.00	43.36	54.00	-10.64	29.54	13.82	Average	100	164
6	15900.00	55.71	74.00	-18.29	41.89	13.82	Peak	100	164

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

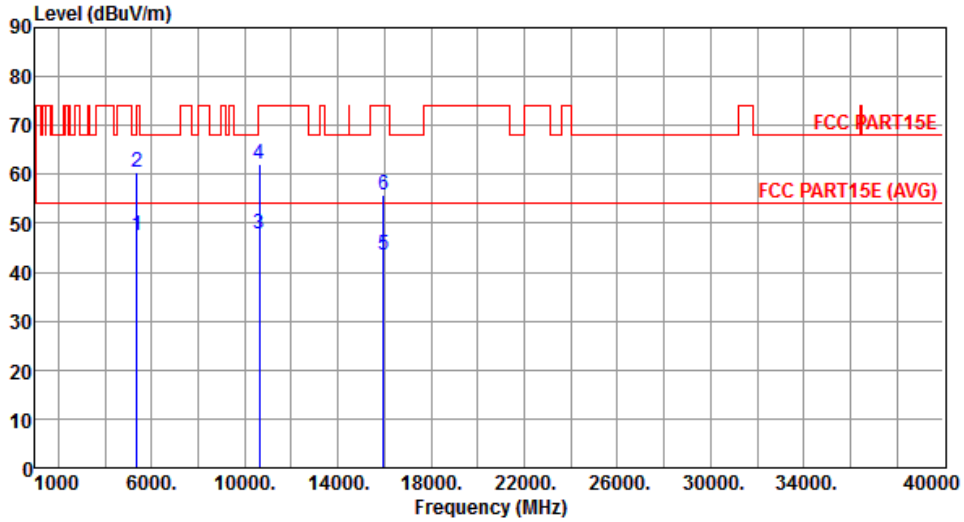
Modulation	VHT20	**Test Freq. (MHz)**	5300
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.70	54.00	-6.30	42.96	4.74	Average	100	42
2	5350.00	60.38	74.00	-13.62	55.64	4.74	Peak	100	42
3	10600.00	45.41	54.00	-8.59	31.29	14.12	Average	100	355
4	10600.00	60.97	74.00	-13.03	46.85	14.12	Peak	100	355
5	15900.00	44.01	54.00	-9.99	30.19	13.82	Average	100	292
6	15900.00	56.59	74.00	-17.41	42.77	13.82	Peak	100	292

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

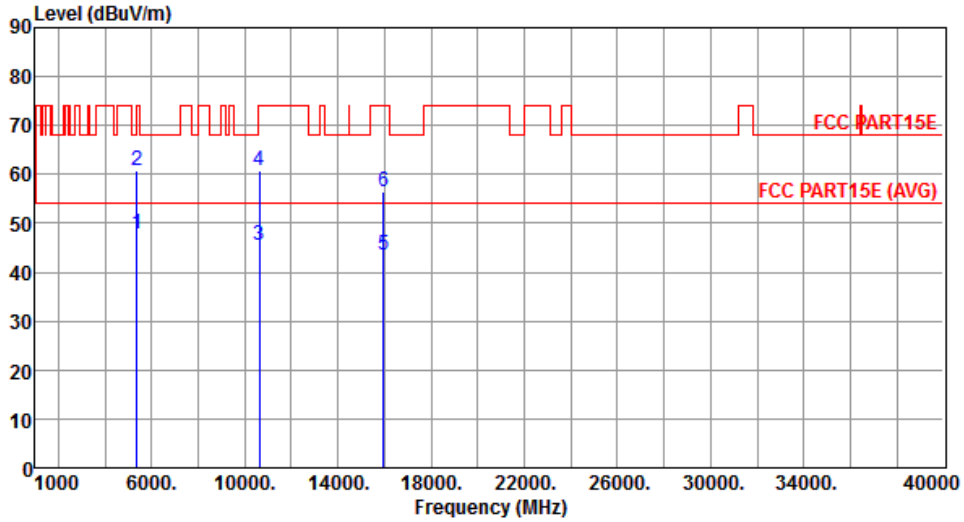
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.55	54.00	-6.45	42.81	4.74	Average	107	16
2	5350.00	60.54	74.00	-13.46	55.80	4.74	Peak	107	16
3	10640.00	47.71	54.00	-6.29	33.53	14.18	Average	135	314
4	10640.00	62.02	74.00	-11.98	47.84	14.18	Peak	135	314
5	15960.00	43.54	54.00	-10.46	29.81	13.73	Average	100	169
6	15960.00	55.64	74.00	-18.36	41.91	13.73	Peak	100	169

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

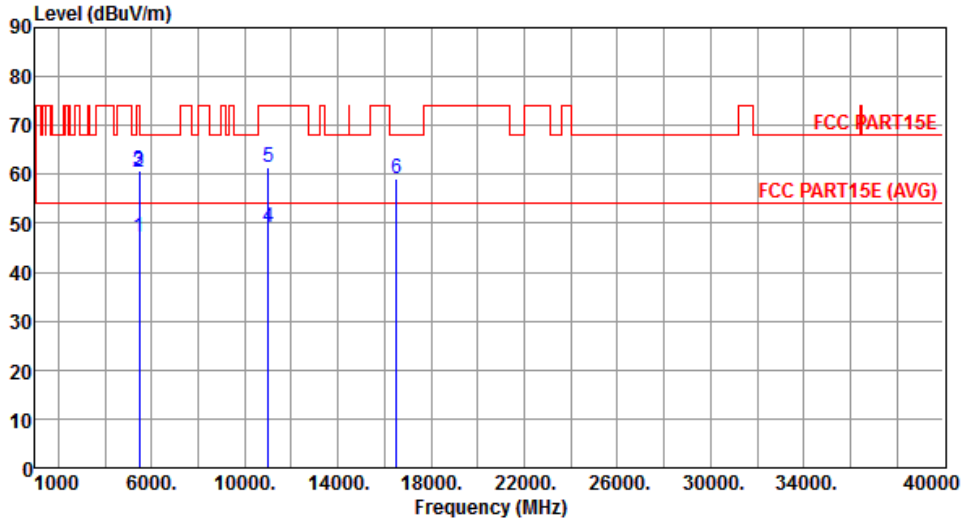
Modulation	VHT20	Test Freq. (MHz)	5320
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	47.91	54.00	-6.09	43.17	4.74	Average	100	43
2	5350.00	60.74	74.00	-13.26	56.00	4.74	Peak	100	43
3	10640.00	45.48	54.00	-8.52	31.30	14.18	Average	100	358
4	10640.00	60.90	74.00	-13.10	46.72	14.18	Peak	100	358
5	15960.00	43.47	54.00	-10.53	29.74	13.73	Average	100	289
6	15960.00	56.38	74.00	-17.62	42.65	13.73	Peak	100	289

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

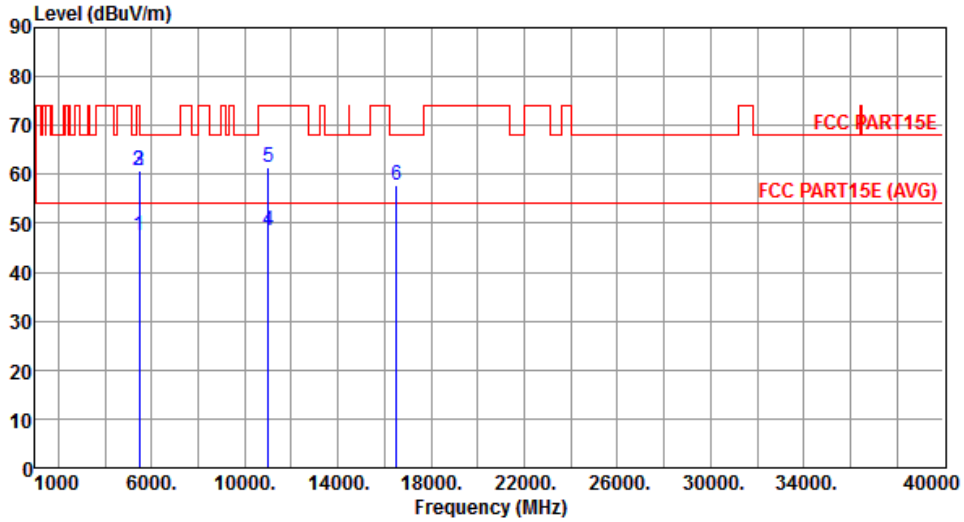
Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.17	54.00	-6.83	42.28	4.89	Average	180	32
2	5460.00	60.29	74.00	-13.71	55.40	4.89	Peak	180	32
3	5470.00	60.72	68.20	-7.48	55.81	4.91	Peak	180	32
4	11000.00	49.30	54.00	-4.70	34.62	14.68	Average	139	4
5	11000.00	61.32	74.00	-12.68	46.64	14.68	Peak	139	4
6	16500.00	59.10	68.20	-9.10	43.24	15.86	Peak	100	215

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

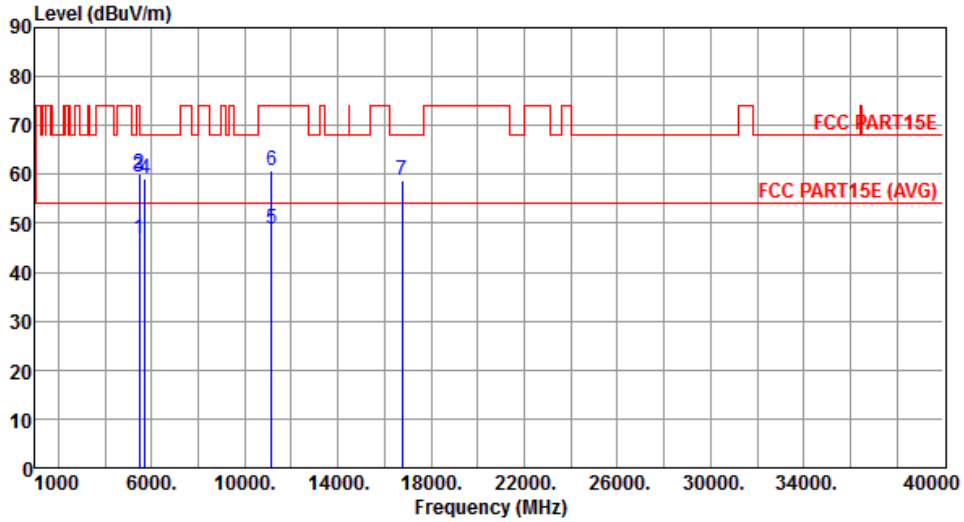
Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.49	54.00	-6.51	42.60	4.89	Average	348	285
2	5460.00	60.93	74.00	-13.07	56.04	4.89	Peak	348	285
3	5470.00	60.81	68.20	-7.39	55.90	4.91	Peak	348	285
4	11000.00	48.58	54.00	-5.42	33.90	14.68	Average	133	343
5	11000.00	61.54	74.00	-12.46	46.86	14.68	Peak	133	343
6	16500.00	57.78	68.20	-10.42	41.92	15.86	Peak	100	172

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

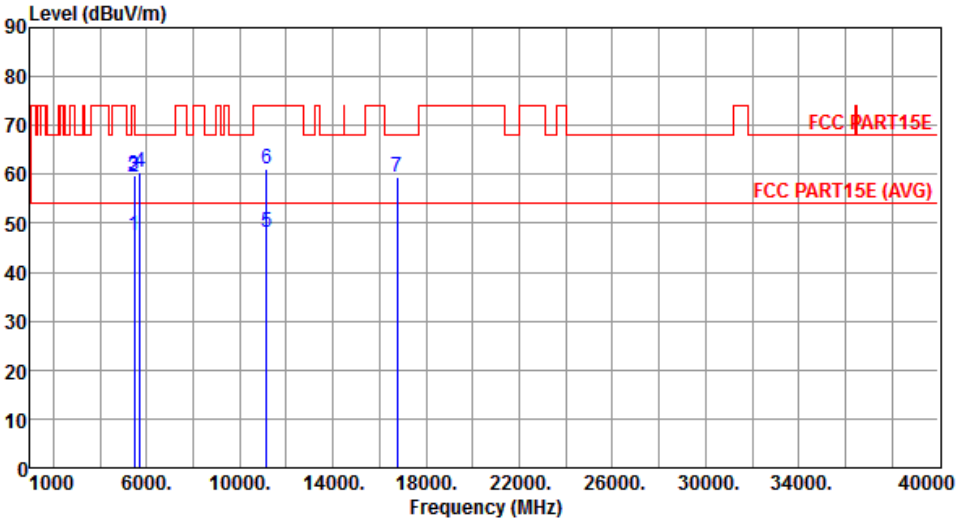
Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.69	54.00	-7.31	41.80	4.89	Average	185	40
2	5460.00	60.23	74.00	-13.77	55.34	4.89	Peak	185	40
3	5470.00	59.45	68.20	-8.75	54.54	4.91	Peak	185	40
4	5725.00	59.27	68.20	-8.93	53.95	5.32	Peak	185	40
5	11160.00	48.75	54.00	-5.25	34.03	14.72	Average	133	1
6	11160.00	60.81	74.00	-13.19	46.09	14.72	Peak	133	1
7	16740.00	58.75	68.20	-9.45	42.27	16.48	Peak	100	129

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

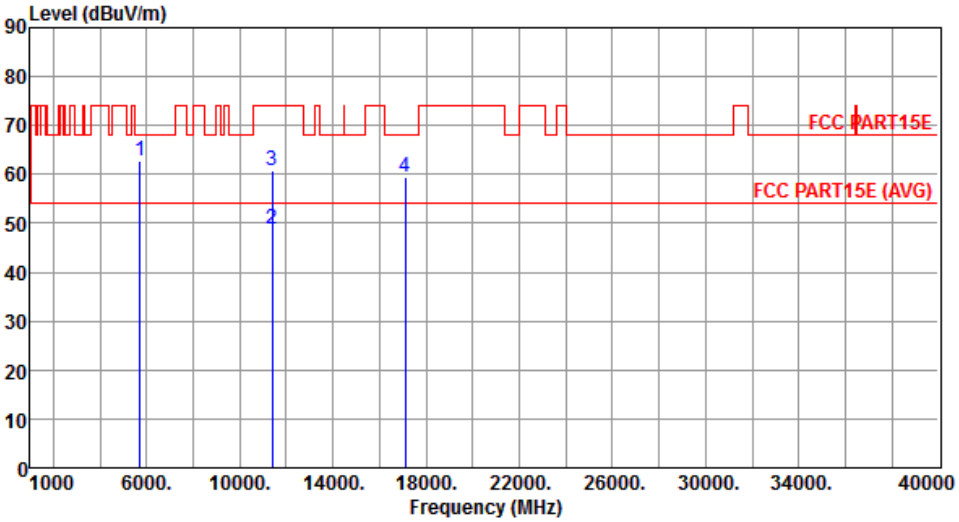
Modulation	VHT20	**Test Freq. (MHz)**	5580
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.58	54.00	-6.42	42.69	4.89	Average	321	52
2	5460.00	59.49	74.00	-14.51	54.60	4.89	Peak	321	52
3	5470.00	59.81	68.20	-8.39	54.90	4.91	Peak	321	52
4	5725.00	60.52	68.20	-7.68	55.20	5.32	Peak	321	52
5	11160.00	48.19	54.00	-5.81	33.47	14.72	Average	135	339
6	11160.00	61.25	74.00	-12.75	46.53	14.72	Peak	135	339
7	16740.00	59.38	68.20	-8.82	42.90	16.48	Peak	100	168

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

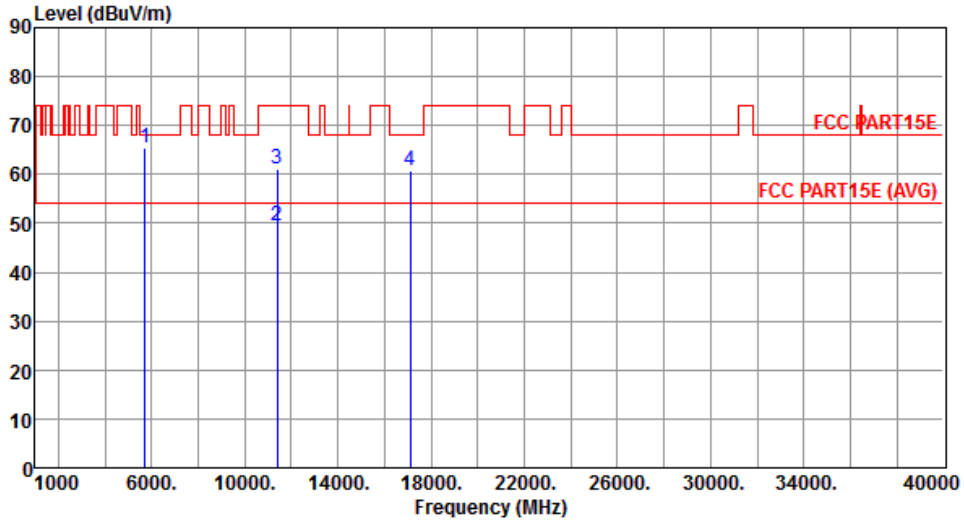
Modulation	VHT20	**Test Freq. (MHz)**	5700
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	62.63	68.20	-5.57	57.31	5.32	Peak	116	21
2	11400.00	48.96	54.00	-5.04	34.17	14.79	Average	135	357
3	11400.00	60.90	74.00	-13.10	46.11	14.79	Peak	135	357
4	17100.00	59.34	68.20	-8.86	41.97	17.37	Peak	100	184

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

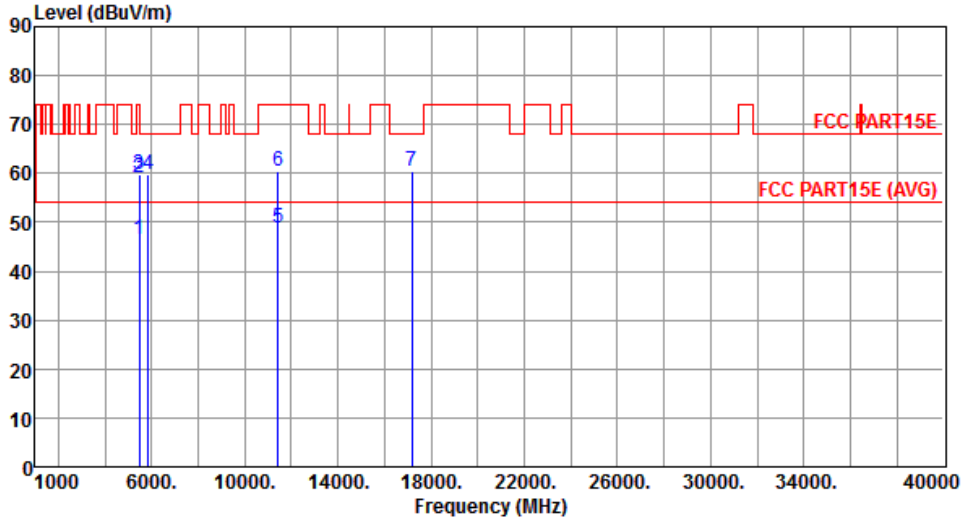
Modulation	VHT20	**Test Freq. (MHz)**	5700
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	65.50	68.20	-2.70	60.18	5.32	Peak	375	46
2	11400.00	49.34	54.00	-4.66	34.55	14.79	Average	142	351
3	11400.00	61.27	74.00	-12.73	46.48	14.79	Peak	142	351
4	17100.00	60.64	68.20	-7.56	43.27	17.37	Peak	100	152

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

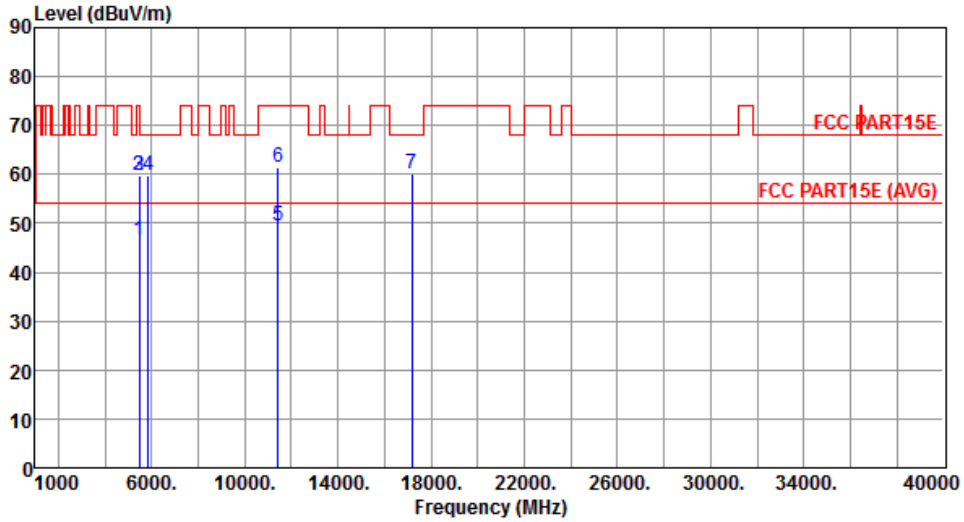
Modulation	VHT20	Test Freq. (MHz)	5720
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.34	54.00	-7.66	41.45	4.89	Average	223	12
2	5460.00	59.18	74.00	-14.82	54.29	4.89	Peak	223	12
3	5470.00	59.75	68.20	-8.45	54.84	4.91	Peak	223	12
4	5850.00	59.74	68.20	-8.46	54.22	5.52	Peak	223	12
5	11440.00	48.82	54.00	-5.18	34.02	14.80	Average	100	334
6	11440.00	60.57	74.00	-13.43	45.77	14.80	Peak	100	334
7	17160.00	60.60	68.20	-7.60	43.08	17.52	Peak	173	185

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

Modulation	VHT20	Test Freq. (MHz)	5720
Polarization	Vertical		

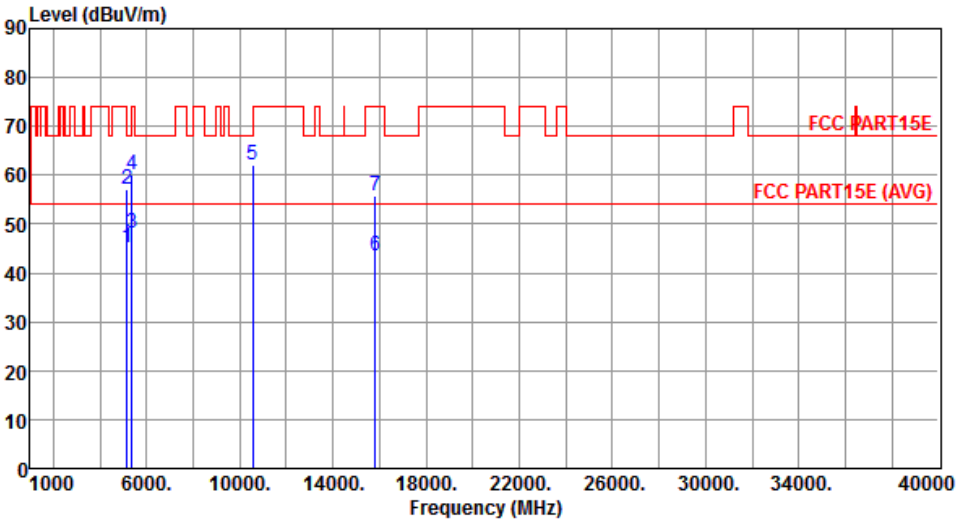


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.57	54.00	-7.43	41.68	4.89	Average	358	42
2	5460.00	59.72	74.00	-14.28	54.83	4.89	Peak	358	42
3	5470.00	59.80	68.20	-8.40	54.89	4.91	Peak	358	42
4	5850.00	59.83	68.20	-8.37	54.31	5.52	Peak	358	42
5	11440.00	49.54	54.00	-4.46	34.74	14.80	Average	147	343
6	11440.00	61.43	74.00	-12.57	46.63	14.80	Peak	147	343
7	17160.00	60.11	68.20	-8.09	42.59	17.52	Peak	100	127

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

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

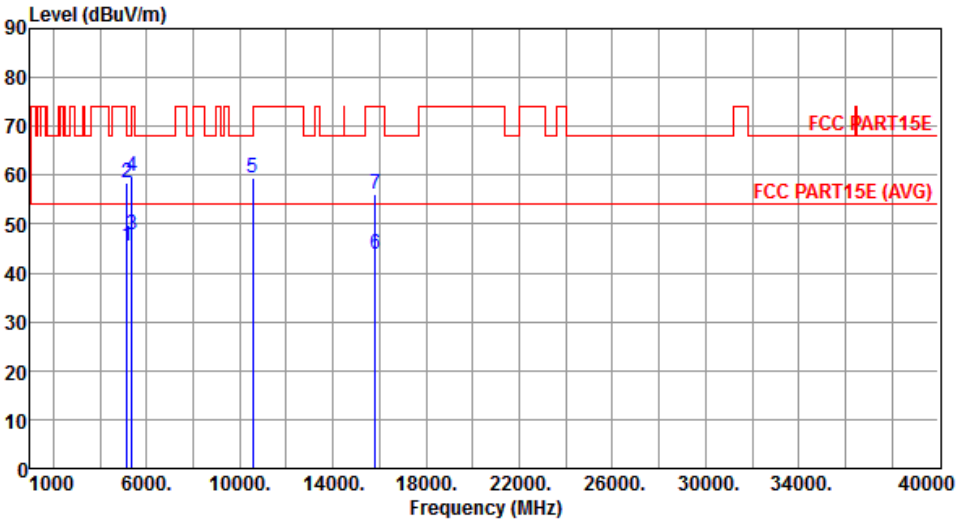
Modulation	VHT40	**Test Freq. (MHz)**	5270
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.22	54.00	-8.78	40.74	4.48	Average	102	13
2	5150.00	57.07	74.00	-16.93	52.59	4.48	Peak	102	13
3	5350.00	48.12	54.00	-5.88	43.38	4.74	Average	102	13
4	5350.00	60.25	74.00	-13.75	55.51	4.74	Peak	102	13
5	10540.00	62.25	68.20	-5.95	48.21	14.04	Peak	100	312
6	15810.00	43.59	54.00	-10.41	29.62	13.97	Average	100	198
7	15810.00	55.91	74.00	-18.09	41.94	13.97	Peak	100	198

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

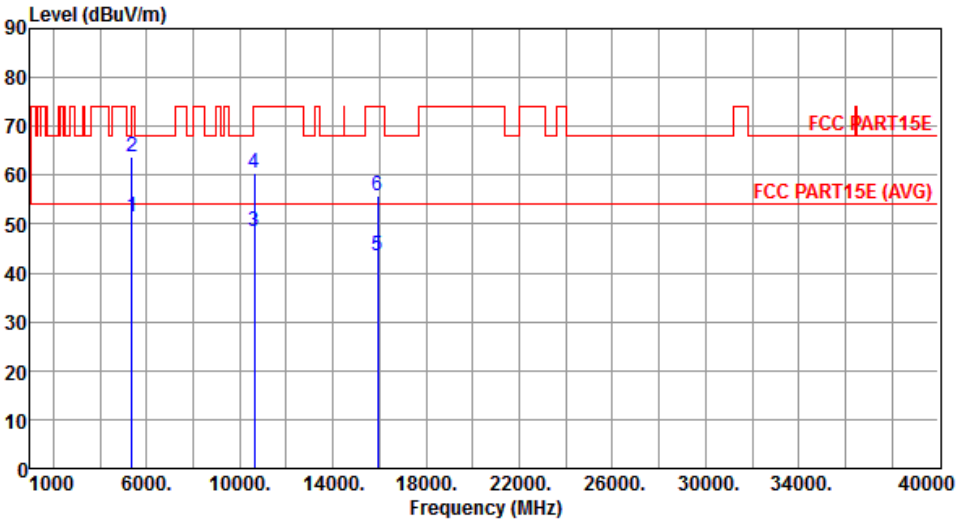
Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Vertical		



	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	45.55	54.00	-8.45	41.07	4.48	Average	116	41
2	5150.00	58.38	74.00	-15.62	53.90	4.48	Peak	116	41
3	5350.00	47.89	54.00	-6.11	43.15	4.74	Average	116	41
4	5350.00	59.88	74.00	-14.12	55.14	4.74	Peak	116	41
5	10540.00	59.61	68.20	-8.59	45.57	14.04	Peak	355	274
6	15810.00	43.80	54.00	-10.20	29.83	13.97	Average	100	193
7	15810.00	56.19	74.00	-17.81	42.22	13.97	Peak	100	193

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

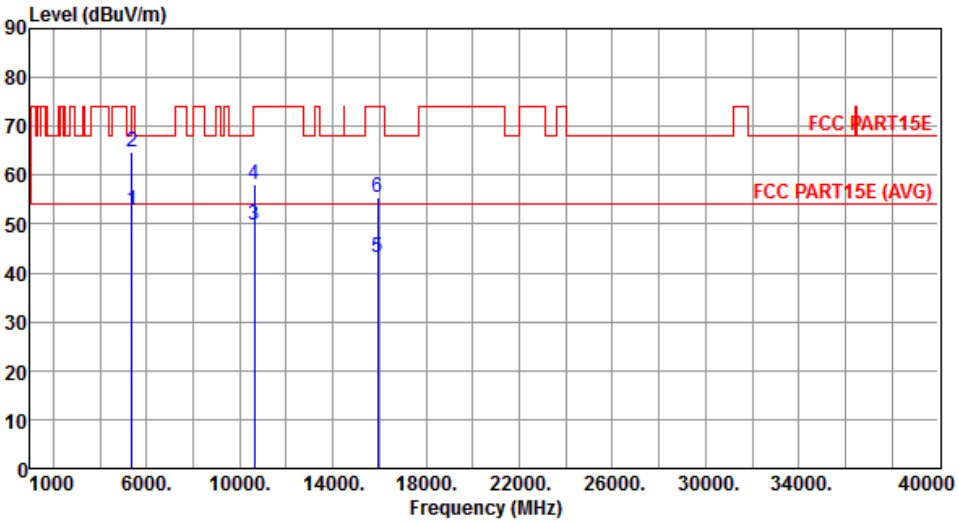
Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	51.38	54.00	-2.62	46.64	4.74	Average	100	13
2	5350.00	63.92	74.00	-10.08	59.18	4.74	Peak	100	13
3	10620.00	48.52	54.00	-5.48	34.38	14.14	Average	100	315
4	10620.00	60.49	74.00	-13.51	46.35	14.14	Peak	100	315
5	15930.00	43.60	54.00	-10.40	29.82	13.78	Average	100	194
6	15930.00	55.75	74.00	-18.25	41.97	13.78	Peak	100	194

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

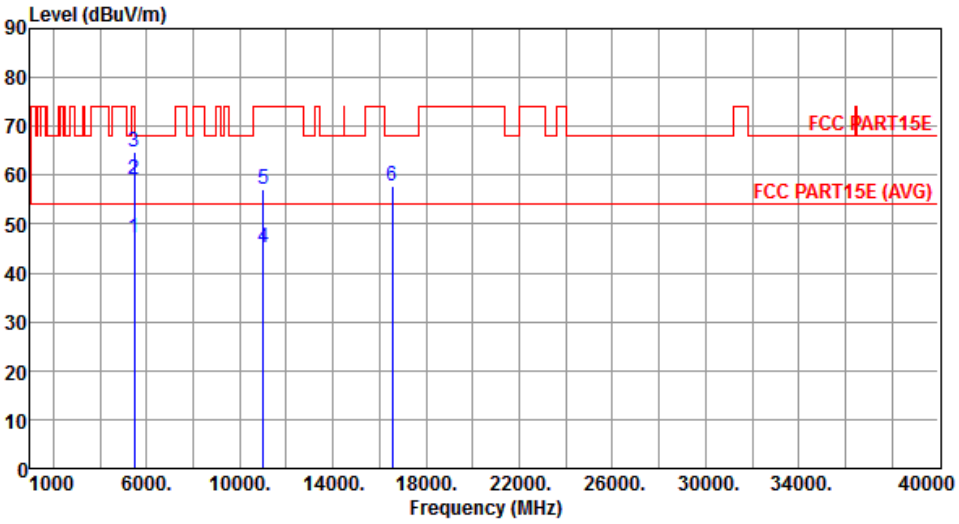
Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	52.82	54.00	-1.18	48.08	4.74	Average	108	41
2	5350.00	64.71	74.00	-9.29	59.97	4.74	Peak	108	41
3	10620.00	49.78	54.00	-4.22	35.64	14.14	Average	352	278
4	10620.00	58.23	74.00	-15.77	44.09	14.14	Peak	352	278
5	15930.00	43.33	54.00	-10.67	29.55	13.78	Average	100	151
6	15930.00	55.42	74.00	-18.58	41.64	13.78	Peak	100	151

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

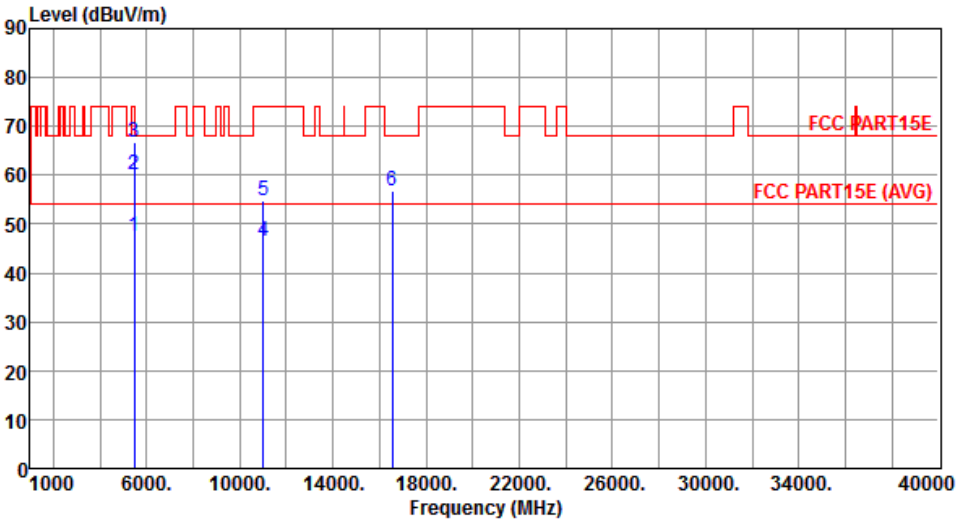
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.23	54.00	-6.77	42.34	4.89	Average	231	33
2	5460.00	58.99	74.00	-15.01	54.10	4.89	Peak	231	33
3	5470.00	64.66	68.20	-3.54	59.75	4.91	Peak	231	33
4	11020.00	45.18	54.00	-8.82	30.49	14.69	Average	100	321
5	11020.00	57.17	74.00	-16.83	42.48	14.69	Peak	100	321
6	16530.00	57.80	68.20	-10.40	41.87	15.93	Peak	100	198

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

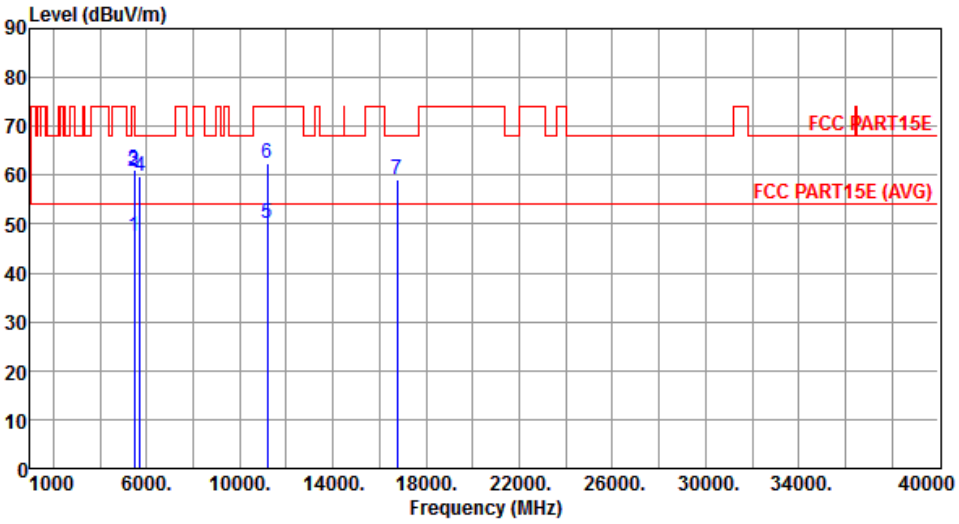
Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.38	54.00	-6.62	42.49	4.89	Average	390	316
2	5460.00	59.98	74.00	-14.02	55.09	4.89	Peak	390	316
3	5470.00	66.76	68.20	-1.44	61.85	4.91	Peak	390	316
4	11020.00	46.37	54.00	-7.63	31.68	14.69	Average	348	281
5	11020.00	54.84	74.00	-19.16	40.15	14.69	Peak	348	281
6	16530.00	56.66	68.20	-11.54	40.73	15.93	Peak	100	144

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

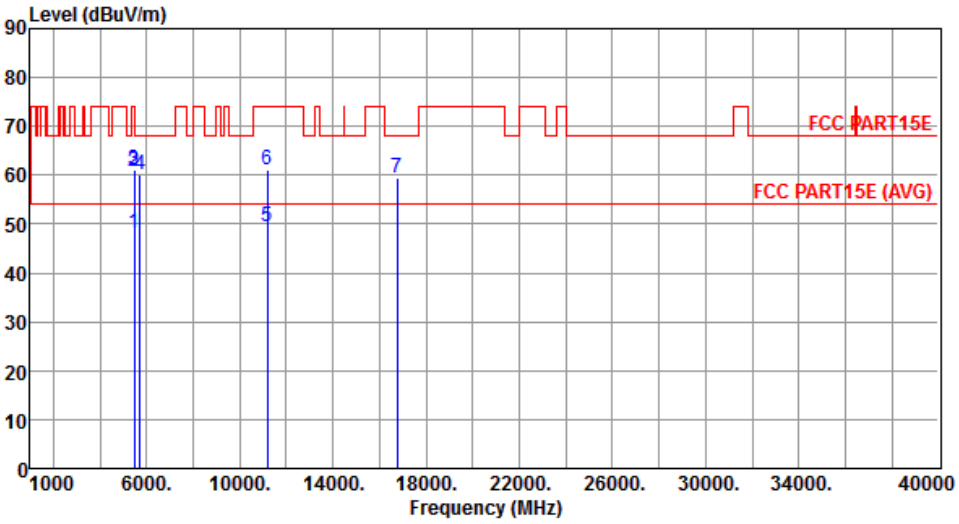
Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.46	54.00	-6.54	42.57	4.89	Average	208	27
2	5460.00	60.72	74.00	-13.28	55.83	4.89	Peak	208	27
3	5470.00	60.99	68.20	-7.21	56.08	4.91	Peak	208	27
4	5725.00	59.83	68.20	-8.37	54.51	5.32	Peak	208	27
5	11180.00	50.00	54.00	-4.00	35.27	14.73	Average	140	33
6	11180.00	62.57	74.00	-11.43	47.84	14.73	Peak	140	33
7	16770.00	59.15	68.20	-9.05	42.61	16.54	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).

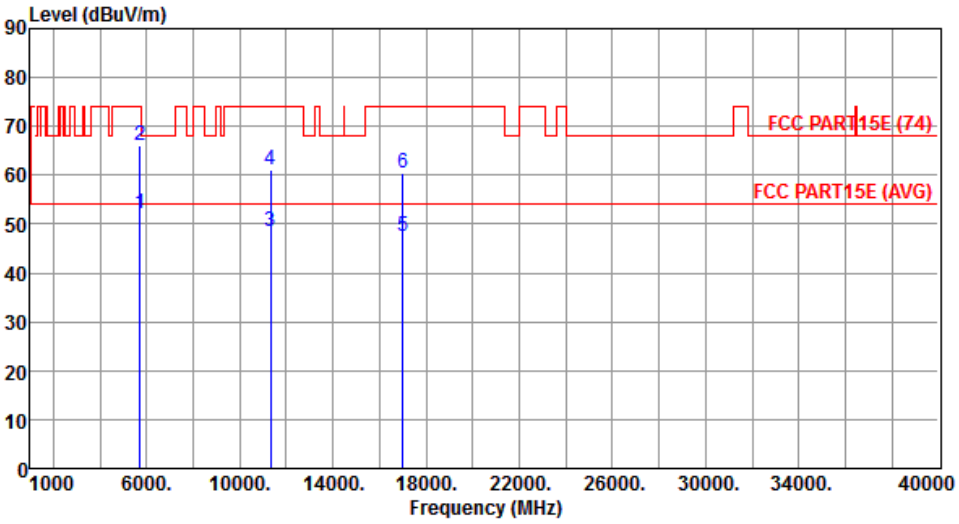
Modulation	VHT40	Test Freq. (MHz)	5590
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	48.20	54.00	-5.80	43.31	4.89	Average	367	351
2	5460.00	60.63	74.00	-13.37	55.74	4.89	Peak	367	351
3	5470.00	61.08	68.20	-7.12	56.17	4.91	Peak	367	351
4	5725.00	60.07	68.20	-8.13	54.75	5.32	Peak	367	351
5	11180.00	49.54	54.00	-4.46	34.81	14.73	Average	182	358
6	11180.00	61.13	74.00	-12.87	46.40	14.73	Peak	182	358
7	16770.00	59.51	68.20	-8.69	42.97	16.54	Peak	141	173

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

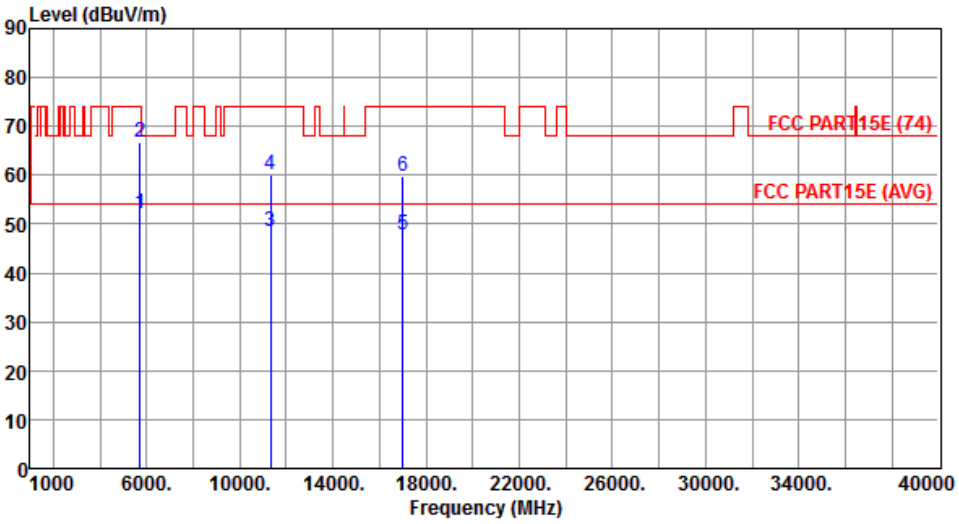
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	52.08	54.00	-1.92	46.76	5.32	Average	216	30
2	5725.00	66.00	74.00	-8.00	60.68	5.32	Peak	216	30
3	11340.00	48.59	54.00	-5.41	33.81	14.78	Average	141	35
4	11340.00	61.17	74.00	-12.83	46.39	14.78	Peak	141	35
5	17010.00	47.43	54.00	-6.57	30.28	17.15	Average	100	258
6	17010.00	60.36	74.00	-13.64	43.21	17.15	Peak	100	258

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

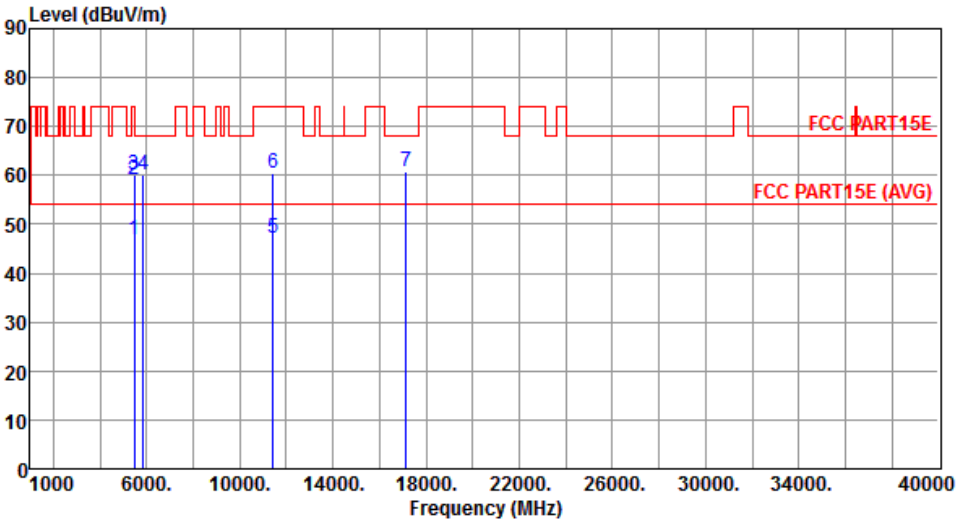
Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	52.15	54.00	-1.85	46.83	5.32	Average	109	341
2	5725.00	66.89	74.00	-7.11	61.57	5.32	Peak	109	341
3	11340.00	48.61	54.00	-5.39	33.83	14.78	Average	191	353
4	11340.00	60.28	74.00	-13.72	45.50	14.78	Peak	191	353
5	17010.00	47.97	54.00	-6.03	30.82	17.15	Average	100	159
6	17010.00	59.70	74.00	-14.30	42.55	17.15	Peak	100	159

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

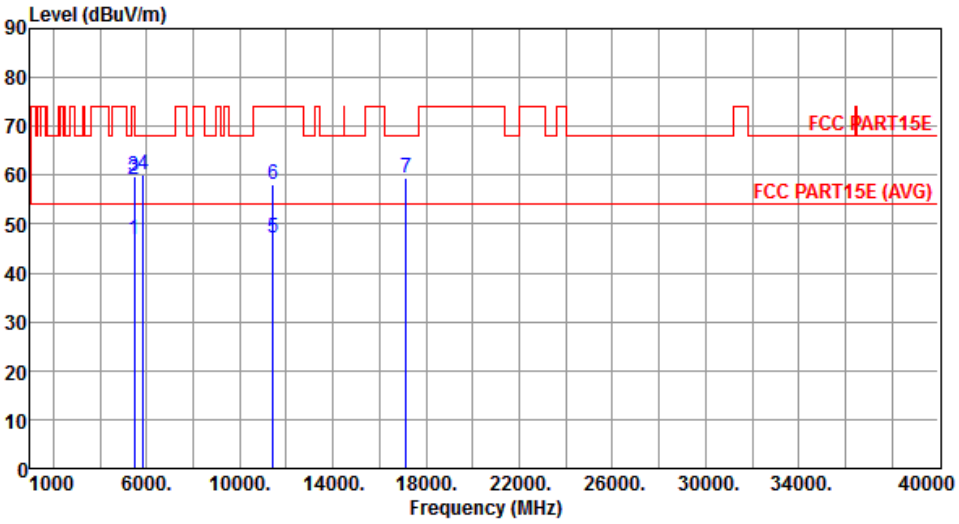
Modulation	VHT40	Test Freq. (MHz)	5710
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.68	54.00	-7.32	41.79	4.89	Average	218	11
2	5460.00	59.20	74.00	-14.80	54.31	4.89	Peak	218	11
3	5470.00	59.99	68.20	-8.21	55.08	4.91	Peak	218	11
4	5850.00	60.11	68.20	-8.09	54.59	5.52	Peak	218	11
5	11420.00	47.20	54.00	-6.80	32.40	14.80	Average	137	348
6	11420.00	60.52	74.00	-13.48	45.72	14.80	Peak	137	348
7	17130.00	60.84	68.20	-7.36	43.39	17.45	Peak	100	183

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

Modulation	VHT40	Test Freq. (MHz)	5710
Polarization	Vertical		

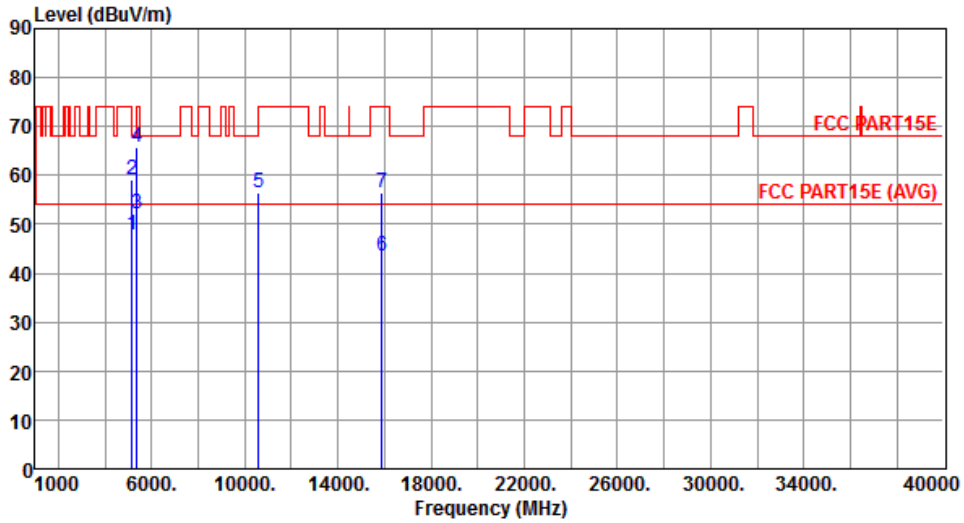


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.71	54.00	-7.29	41.82	4.89	Average	100	48
2	5460.00	59.14	74.00	-14.86	54.25	4.89	Peak	100	48
3	5470.00	59.90	68.20	-8.30	54.99	4.91	Peak	100	48
4	5850.00	59.97	68.20	-8.23	54.45	5.52	Peak	100	48
5	11420.00	47.21	54.00	-6.79	32.41	14.80	Average	236	354
6	11420.00	58.20	74.00	-15.80	43.40	14.80	Peak	236	354
7	17130.00	59.49	68.20	-8.71	42.04	17.45	Peak	100	213

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

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

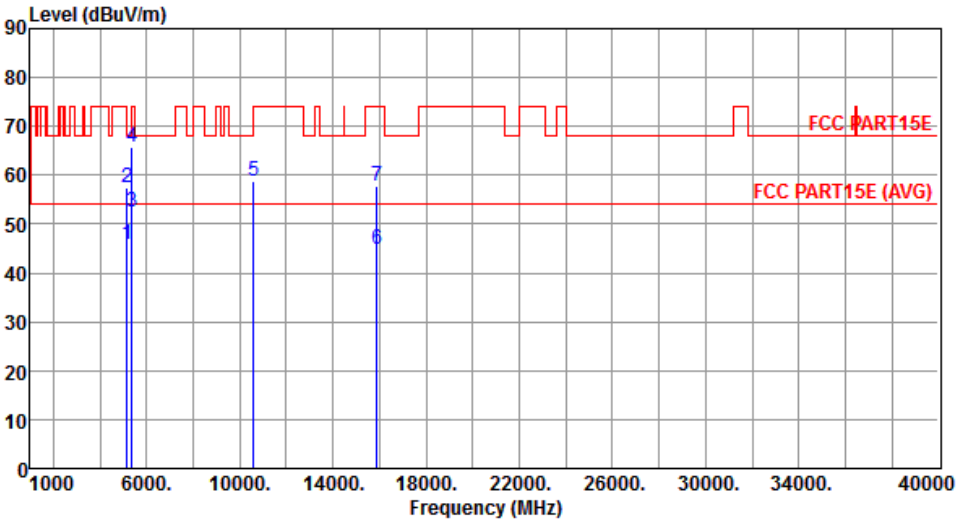
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	47.75	54.00	-6.25	43.27	4.48	Average	100	328
2	5150.00	59.11	74.00	-14.89	54.63	4.48	Peak	100	328
3	5350.00	52.12	54.00	-1.88	47.38	4.74	Average	100	328
4	5350.00	65.66	74.00	-8.34	60.92	4.74	Peak	100	328
5	10580.00	56.60	68.20	-11.60	42.50	14.10	Peak	125	241
6	15870.00	43.63	54.00	-10.37	29.76	13.87	Average	100	163
7	15870.00	56.51	74.00	-17.49	42.64	13.87	Peak	100	163

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

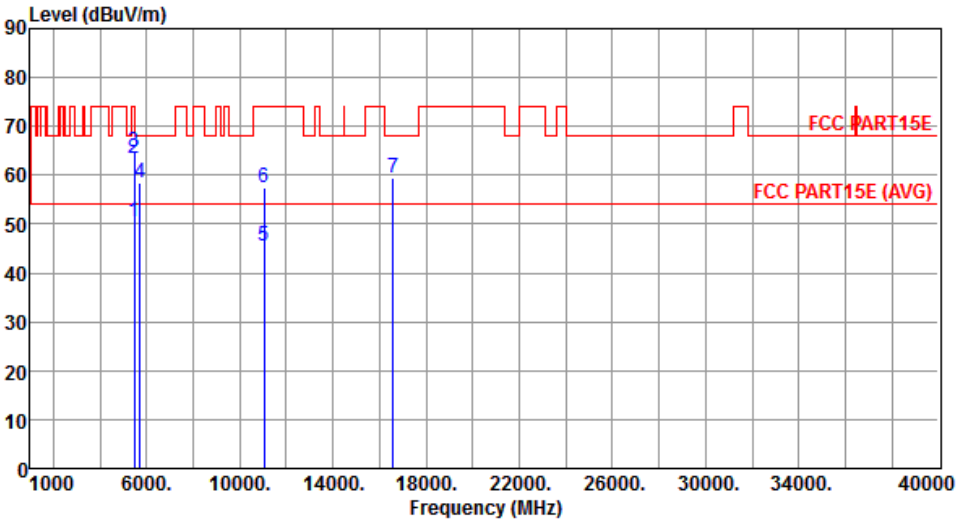
Modulation	VHT80	Test Freq. (MHz)	5290
Polarization	Vertical		



	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	45.94	54.00	-8.06	41.46	4.48	Average	342	31
2	5150.00	57.47	74.00	-16.53	52.99	4.48	Peak	342	31
3	5350.00	52.58	54.00	-1.42	47.84	4.74	Average	342	41
4	5350.00	65.89	74.00	-8.11	61.15	4.74	Peak	342	41
5	10580.00	58.77	68.20	-9.43	44.67	14.10	Peak	152	183
6	15870.00	44.81	54.00	-9.19	30.94	13.87	Average	100	127
7	15870.00	57.65	74.00	-16.35	43.78	13.87	Peak	100	127

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

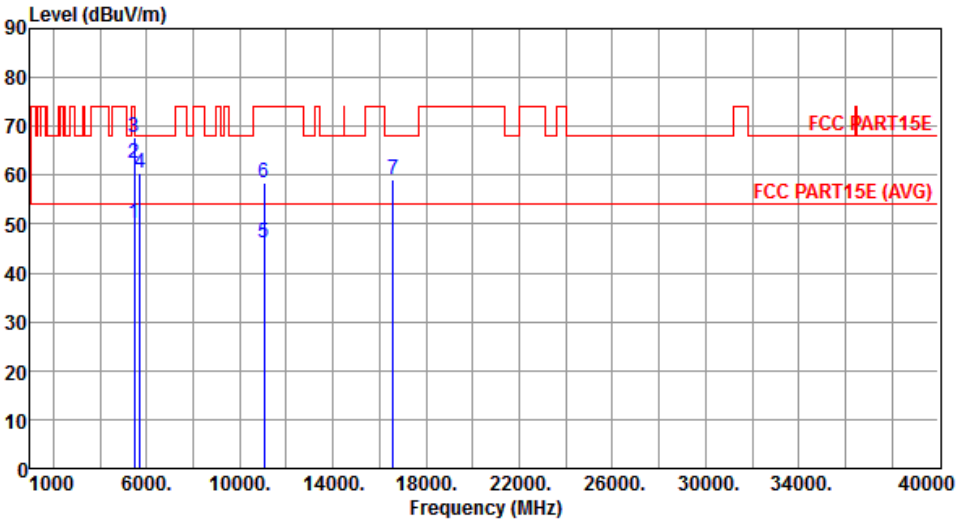
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.44	54.00	-3.56	45.55	4.89	Average	280	29
2	5460.00	63.44	74.00	-10.56	58.55	4.89	Peak	280	29
3	5470.00	64.91	68.20	-3.29	60.00	4.91	Peak	280	29
4	5725.00	58.40	68.20	-9.80	53.08	5.32	Peak	100	29
5	11060.00	45.49	54.00	-8.51	30.79	14.70	Average	152	147
6	11060.00	57.56	74.00	-16.44	42.86	14.70	Peak	152	147
7	16590.00	59.30	68.20	-8.90	43.21	16.09	Peak	100	248

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

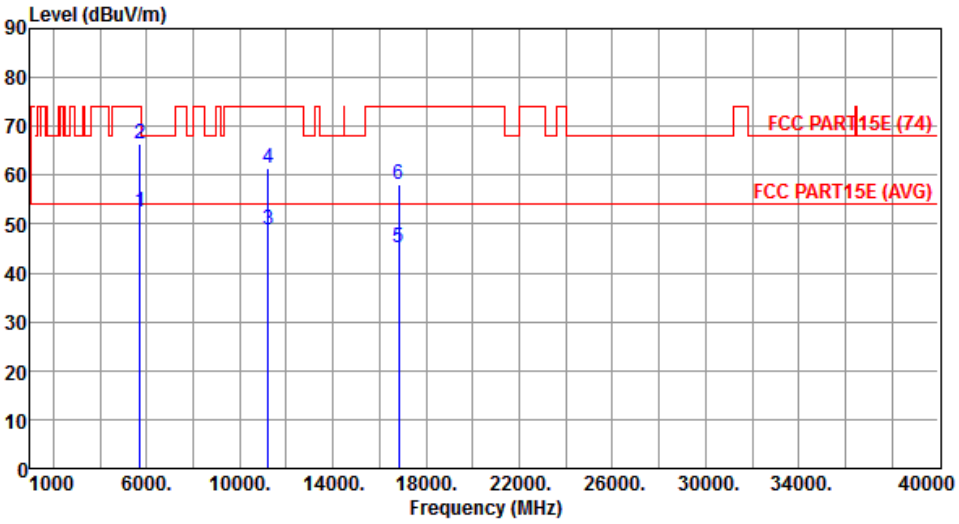
Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	50.14	54.00	-3.86	45.25	4.89	Average	244	336
2	5460.00	62.51	74.00	-11.49	57.62	4.89	Peak	244	336
3	5470.00	67.86	68.20	-0.34	62.95	4.91	Peak	244	336
4	5725.00	60.57	68.20	-7.63	55.25	5.32	Peak	282	340
5	11060.00	46.11	54.00	-7.89	31.41	14.70	Average	100	34
6	11060.00	58.29	74.00	-15.71	43.59	14.70	Peak	100	34
7	16590.00	59.27	68.20	-8.93	43.18	16.09	Peak	100	268

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

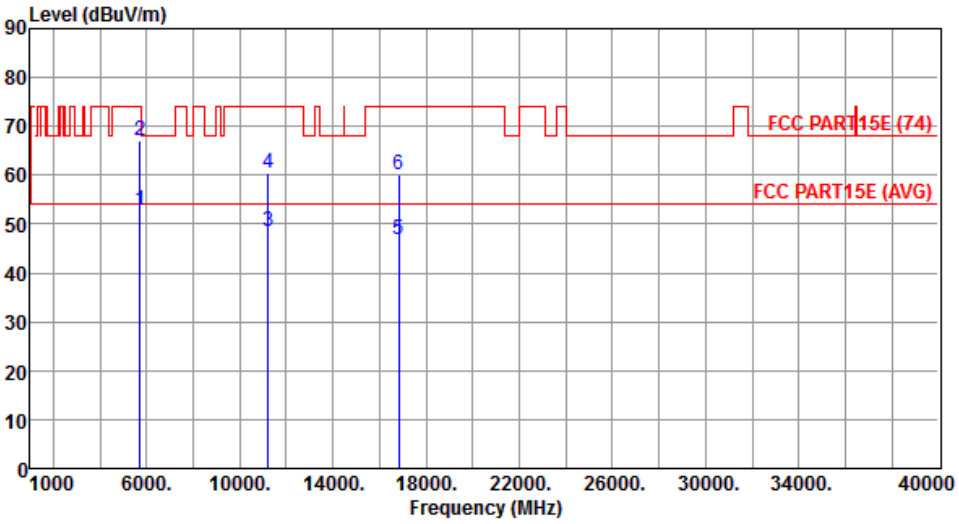
Modulation	VHT80	Test Freq. (MHz)	5610
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	52.44	54.00	-1.56	47.12	5.32	Average	215	28
2	5725.00	66.44	74.00	-7.56	61.12	5.32	Peak	215	28
3	11220.00	48.70	54.00	-5.30	33.96	14.74	Average	140	41
4	11220.00	61.57	74.00	-12.43	46.83	14.74	Peak	140	41
5	16830.00	45.24	54.00	-8.76	28.55	16.69	Average	100	255
6	16830.00	58.01	74.00	-15.99	41.32	16.69	Peak	100	255

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

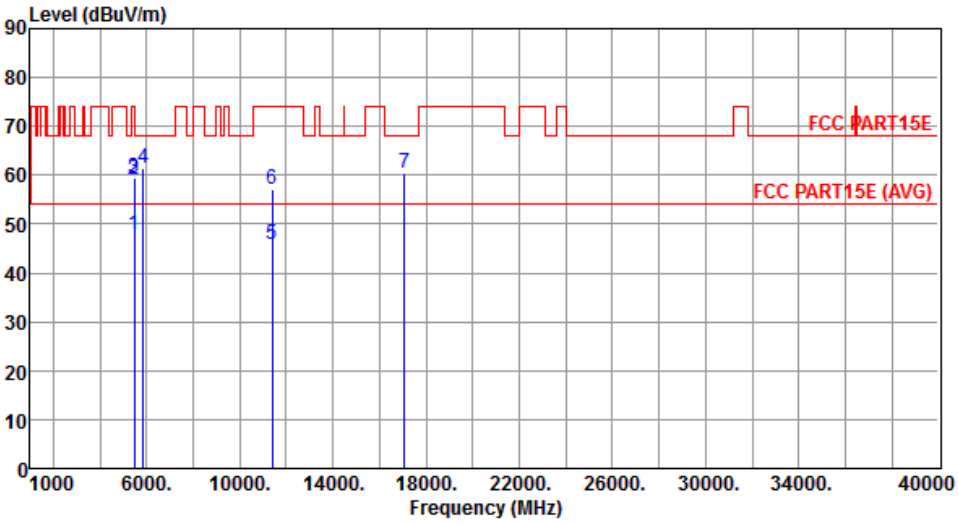
Modulation	VHT80	**Test Freq. (MHz)**	5610
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	52.70	54.00	-1.30	47.38	5.32	Average	110	340
2	5725.00	67.15	74.00	-6.85	61.83	5.32	Peak	110	340
3	11220.00	48.39	54.00	-5.61	33.65	14.74	Average	188	351
4	11220.00	60.47	74.00	-13.53	45.73	14.74	Peak	188	351
5	16830.00	46.94	54.00	-7.06	30.25	16.69	Average	100	160
6	16830.00	60.08	74.00	-13.92	43.39	16.69	Peak	100	160

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

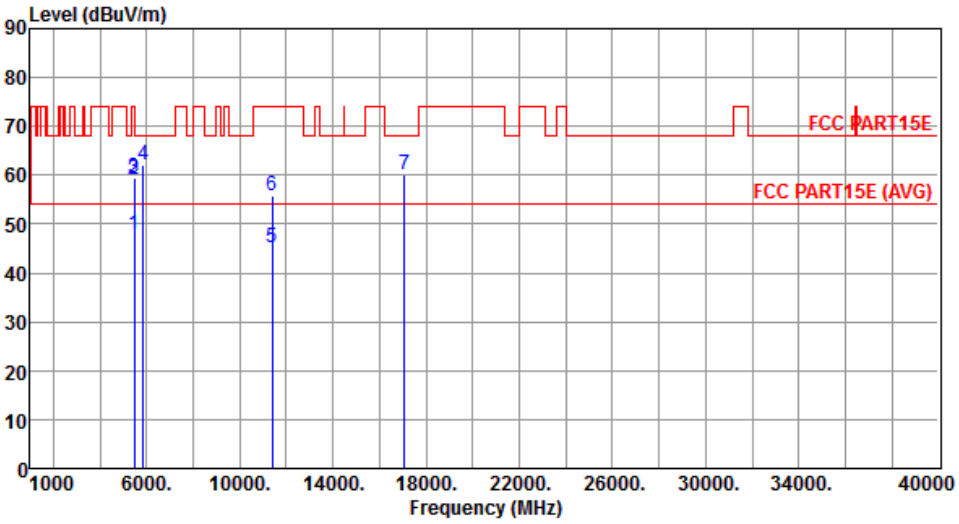
Modulation	VHT80	Test Freq. (MHz)	5690
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.87	54.00	-6.13	42.98	4.89	Average	221	29
2	5460.00	59.18	74.00	-14.82	54.29	4.89	Peak	221	29
3	5470.00	59.48	68.20	-8.72	54.57	4.91	Peak	221	29
4	5850.00	61.46	68.20	-6.74	55.94	5.52	Peak	221	29
5	11380.00	45.75	54.00	-8.25	30.96	14.79	Average	125	130
6	11380.00	56.98	74.00	-17.02	42.19	14.79	Peak	125	130
7	17070.00	60.42	68.20	-7.78	43.11	17.31	Peak	100	171

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

Modulation	VHT80	Test Freq. (MHz)	5690
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.98	54.00	-6.02	43.09	4.89	Average	100	47
2	5460.00	59.20	74.00	-14.80	54.31	4.89	Peak	100	47
3	5470.00	59.55	68.20	-8.65	54.64	4.91	Peak	100	47
4	5850.00	61.94	68.20	-6.26	56.42	5.52	Peak	100	47
5	11380.00	45.02	54.00	-8.98	30.23	14.79	Average	100	269
6	11380.00	55.87	74.00	-18.13	41.08	14.79	Peak	100	269
7	17070.00	60.04	68.20	-8.16	42.73	17.31	Peak	100	184

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

3.6 Frequency Stability

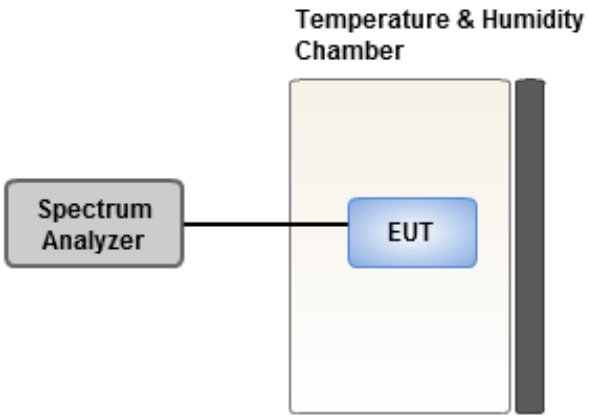
3.6.1 Limit of Frequency Stability

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 50 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 -30 to 50 centigrade and 85 to 115 percent of the nominal voltage. Change setting of chamber and external power source to complete all conditions.

3.6.3 Test Setup



3.6.4 Test Result of Frequency Stability

Frequency: 5320 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	9.63	10.08	9.64	9.98
T20°CVmin	9.47	9.18	9.90	9.57
T50°CVnom	10.12	10.47	10.75	9.98
T40°CVnom	9.36	9.99	9.58	9.78
T30°CVnom	10.14	10.48	10.66	10.23
T20°CVnom	9.72	10.00	9.75	9.71
T10°CVnom	9.76	9.51	9.50	9.77
T0°CVnom	8.92	9.80	8.85	9.49
T-10°CVnom	8.69	8.95	9.13	8.83
T-20°CVnom	10.00	9.82	9.60	10.44
T-30°CVnom	7.53	7.11	7.51	7.26
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 50		Tmin [°C]: -30

4 Test laboratory information

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

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

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

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

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

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

==END==