FCC Test Report

FCC ID	:	**RYK-WPEQ257ACN**
Equipment	:	**802.11ac/b/g/n Mini PCIe Module**
Model No.	:	**WPEQ-257ACN**
Brand Name	:	**SparkLAN**
Applicant	:	**SparkLAN Communications, Inc.**
Address	:	**8F., No.257, Sec. 2, Tiding Blvd., Neihu District, Taipei City 11493, Taiwan.**
Standard	:	**47 CFR FCC Part 15.407**
Received Date	:	**Jun. 06, 2016**
Tested Date	:	**Jul. 29 ~ Aug. 08, 2016**

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
FR660602AN	Rev. 01	Initial issue	Sep. 14, 2016

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.369MHz 41.24 (Margin -7.28dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 52.99 (Margin -1.01dB) - AV	Pass
15.407(a)	Emission Bandwidth	Meet the requirement of limit	Pass
15.407(e)	6dB bandwidth	Meet the requirement of limit	Pass
15.407(a)	RF Output Power	Max Power [dBm]: 5150-5250MHz: 22.84 5725-5850MHz: 20.44	Pass
15.407(a)	Peak Power Spectral Density	Meet the requirement of limit	Pass
15.407(g)	Frequency Stability	Meet the requirement of limit	Pass
15.203	Antenna Requirement	Meet the requirement of limit	Pass

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

RF General Information					
Frequency Range (MHz)	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**Data Rate / MCS**
5150-5250	a	5180-5240	36-48 [4]	2	6-54 Mbps
5150-5250	n (HT20)	5180-5240	36-48 [4]	2	MCS 0-15
5150-5250	n (HT40)	5190-5230	38-46 [2]	2	MCS 0-15
5150-5250	ac (VHT20)	5180-5240	36-48 [4]	2	MCS 0-9
5150-5250	ac (VHT40)	5190-5230	38-46 [2]	2	MCS 0-9
5150-5250	ac (VHT80)	5210	42 [1]	2	MCS 0-9
Note 1: RF output power specifies that Maximum Conducted Output Power. Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.					

RF General Information					
Frequency Range (MHz)	**IEEE Std. 802.11**	**Ch. Freq. (MHz)**	**Channel Number**	**Transmit Chains (N_{TX})**	**Data Rate / MCS**
5725-5850	a	5745-5825	149-165 [5]	2	6-54 Mbps
5725-5850	n (HT20)	5745-5825	149-165 [5]	2	MCS 0-15
5725-5850	n (HT40)	5755-5795	151-159 [2]	2	MCS 0-15
5725-5850	ac (VHT20)	5745-5825	149-165 [5]	2	MCS 0-9
5725-5850	ac (VHT40)	5755-5795	151-159 [2]	2	MCS 0-9
5725-5850	ac (VHT80)	5775	155 [1]	2	MCS 0-9
Note 1: RF output power specifies that Maximum Conducted Output Power. Note 2: 802.11a/n/ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.					

1.1.2 Antenna Details

Ant. No.	Brand	Model	Type	Connector	Operating Frequencies / Antenna Gain (dBi)		
					2400~2483.5MHz	5150~5250MHz	5725~5850MHz
1	Wanshih Electronic Co., Ltd.	WSS038	Dipole	RP-SMA	4.6	5	5
2	Long Cheng Tech. Int'l Co., Ltd.	DB B-SMA THIN PADDLE Ant. GEC6200	Dipole	RP-SMA	3	5	5

1.1.3 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	3.3Vdc from host

1.1.4 Accessories

N/A

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	VHT 80	
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	ART2-GUI, Version: 2.3		
Duty Cycle and Duty Factor	**Mode**	**Duty cycle (%)**	**Duty factor (dB)**
	11a	100.00%	0.00
	HT20	100.00%	0.00
	HT40	100.00%	0.00
	VHT20	100.00%	0.00
	VHT40	100.00%	0.00
	VHT80	100.00%	0.00

1.1.7 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5180	13
11a	5200	20
11a	5240	15.5
HT20	5180	13
HT20	5200	17
HT20	5240	15.5
HT40	5190	8
HT40	5230	17.5
VHT20	5180	13
VHT20	5200	17
VHT20	5240	15.5
VHT40	5190	8
VHT40	5230	17.5
VHT80	5210	6

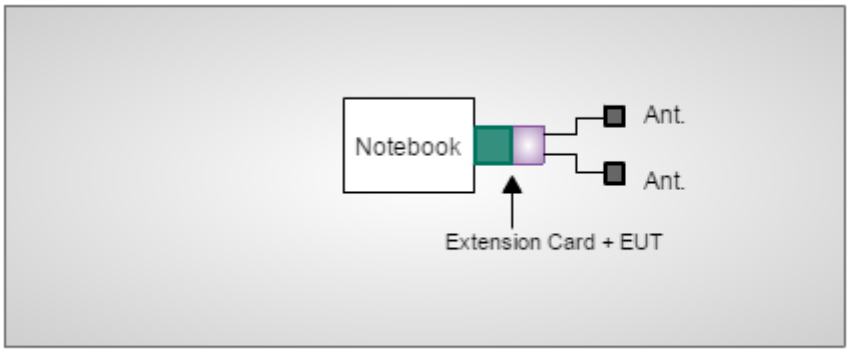
For Frequency band 5725~5850 MHz		
Modulation Mode	**Test Frequency (MHz)**	**Power Set**
11a	5745	20
11a	5785	20
11a	5825	20
HT20	5745	20
HT20	5785	20
HT20	5825	20
HT40	5755	20
HT40	5795	20
VHT20	5745	20
VHT20	5785	20
VHT20	5825	20
VHT40	5755	20
VHT40	5795	20
VHT80	5775	13

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	---
2.	Extension Card	---	---	---	---

1.3 Test Setup Chart

Test Setup Diagram



**Antenna distance 5cm

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**
EMC Receiver	R&S	ESCS 30	100169	Oct. 21, 2015	Oct. 20, 2016
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 13, 2015	Nov. 12, 2016
RF Cable-CON	EMC	EMCCFD300-BM-BM-6000	50821	Dec. 21, 2015	Dec. 20, 2016
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	Dec. 13, 2015	Dec. 12, 2016
Receiver	R&S	ESR3	101658	Nov. 04, 2015	Nov. 03, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Aug. 20, 2015	Aug. 19, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 16, 2015	Dec. 15, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Preamplifier	Burgeon	BPA-530	SN:100219	Sep. 10, 2015	Sep. 09, 2016
Preamplifier	Agilent	83017A	MY39501308	Oct. 02, 2015	Oct. 01, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 10, 2015	Dec. 09, 2016
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 10, 2015	Dec. 09, 2016
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	Feb. 17, 2016	Feb. 16, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 27, 2015	Nov. 26, 2016
Power Meter	Anritsu	ML2495A	1241002	Sep. 21, 2015	Sep. 20, 2016
Power Sensor	Anritsu	MA2411B	1207366	Sep. 21, 2015	Sep. 20, 2016
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 v01r03
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	21°C / 60%	Howard Huang
Radiated Emissions	03CH01-WS	24°C / 62%	Kevin Lee
RF Conducted	TH01-WS	23°C / 66%	Alex Huang

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

2.2 The Worst Test Modes and Channel Details

For Frequency band 5150-5250 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate (Mbps) / MCS**	**Test Configuration**
Conducted Emissions	11a	5200	6 Mbps	---
Radiated Emissions ≤1GHz	11a	5200	6 Mbps	---
RF Output Power	11a	5180 / 5200 / 5240	6 Mbps	---
	HT20	5180 / 5200 / 5240	MCS 0	
	HT40	5190 / 5230	MCS 0	
	VHT20	5180 / 5200 / 5240	MCS 0	
	VHT40	5190 / 5230	MCS 0	
	VHT80	5210	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240	6 Mbps	---
	VHT20	5180 / 5200 / 5240	MCS 0	
	VHT40	5190 / 5230	MCS 0	
	VHT80	5210	MCS 0	
Frequency Stability	Un-modulation	5200	---	---

For Frequency band 5725-5850 MHz				
Test item	**Modulation Mode**	**Test Frequency (MHz)**	**Data Rate (Mbps) / MCS**	**Test Configuration**
Conducted Emissions	11a	5745	6 Mbps	---
Radiated Emissions ≤1GHz	11a	5745	6 Mbps	---
RF Output Power	11a	5745 / 5785 / 5825	6 Mbps	---
	HT20	5745 / 5785 / 5825	MCS 0	
	HT40	5755 / 5795	MCS 0	
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a	5745 / 5785 / 5825	6 Mbps	---
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Frequency Stability	Un-modulation	5785	---	---

3 Transmitter Test Results

3.1 Conducted Emissions

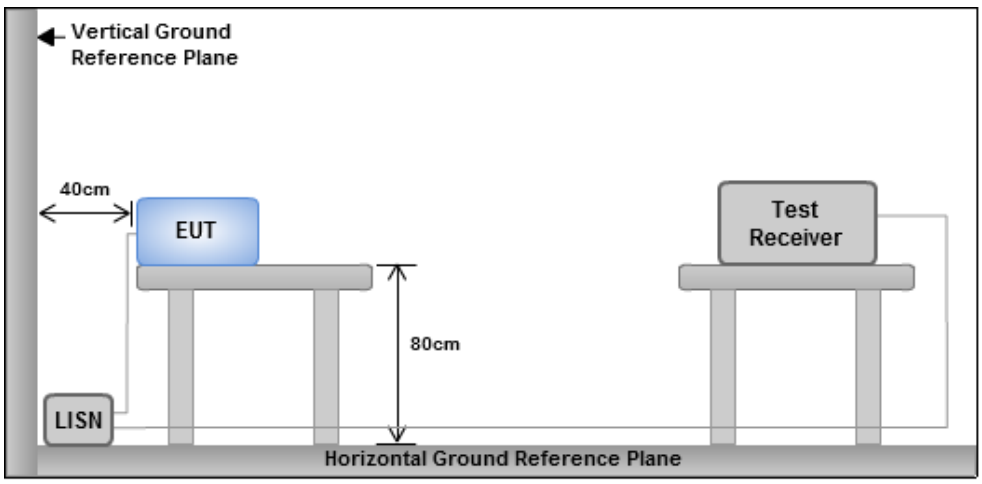
3.1.1 Limit of Conducted Emissions

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

3.1.2 Test Procedures

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

3.1.3 Test Setup

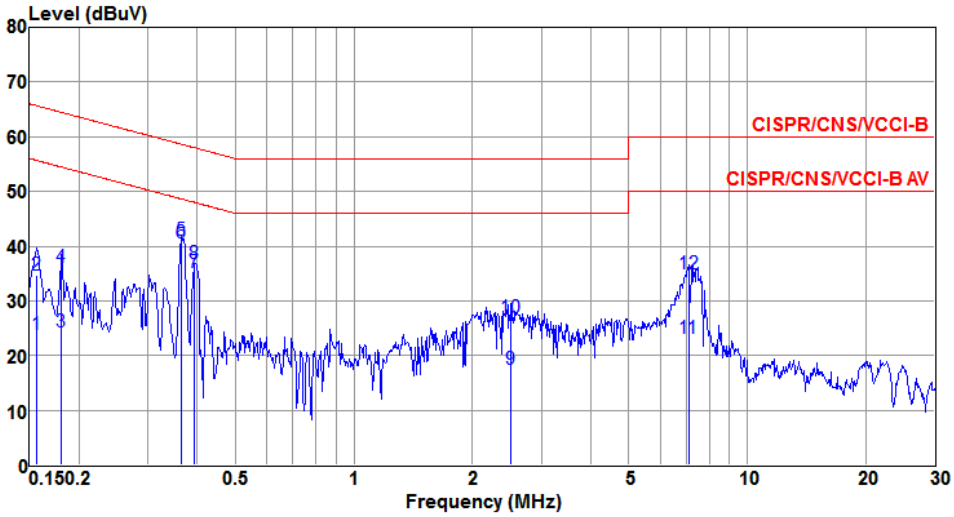


Note: 1. Support units were connected to second LISN.

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

3.1.4 Test Result of Conducted Emissions

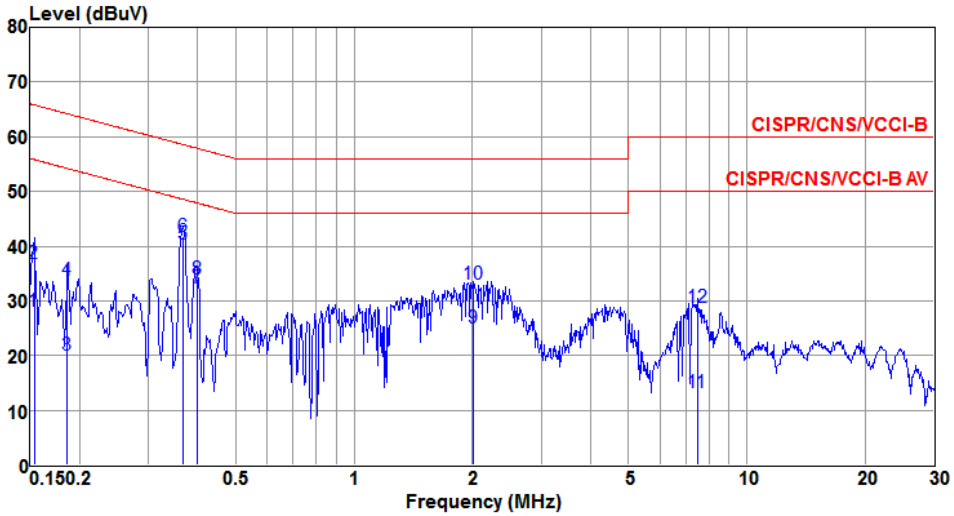
Modulation	11a	Test Freq. (MHz)	5200
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.156	23.86	55.65	-31.79	23.73	0.11	0.02	Average
2	0.156	34.60	65.65	-31.05	34.47	0.11	0.02	QP
3	0.181	24.38	54.46	-30.08	24.25	0.11	0.02	Average
4	0.181	36.15	64.46	-28.31	36.02	0.11	0.02	QP
5@	0.363	41.19	48.65	-7.46	41.03	0.13	0.03	Average
6	0.363	40.66	58.65	-17.99	40.50	0.13	0.03	QP
7	0.393	35.10	47.99	-12.89	34.94	0.13	0.03	Average
8	0.393	36.86	57.99	-21.13	36.70	0.13	0.03	QP
9	2.513	17.44	46.00	-28.56	17.18	0.17	0.09	Average
10	2.513	26.83	56.00	-29.17	26.57	0.17	0.09	QP
11	7.100	23.06	50.00	-26.94	22.70	0.22	0.14	Average
12	7.100	34.94	60.00	-25.06	34.58	0.22	0.14	QP

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

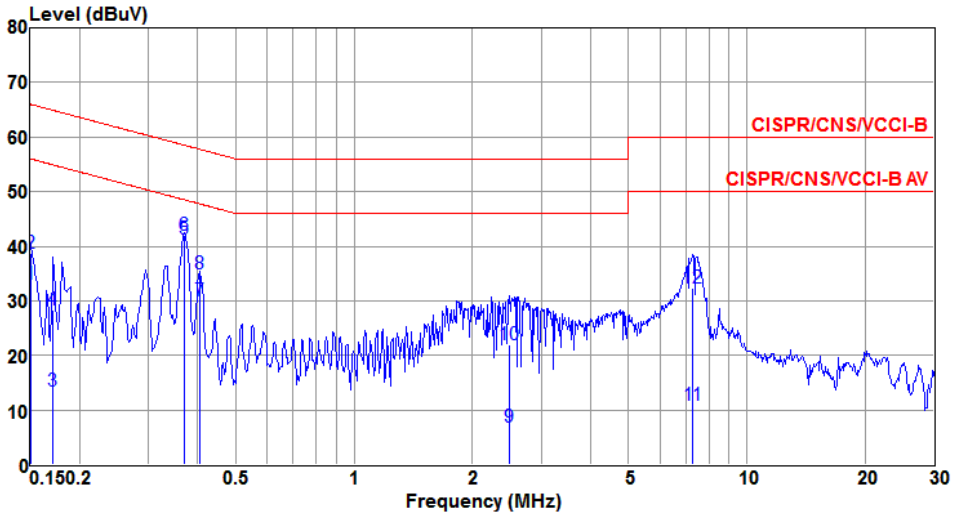
Modulation	11a	Test Freq. (MHz)	5200
Power Phase	Neutral		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.153	28.16	55.82	-27.66	28.01	0.13	0.02	Average
2	0.153	36.94	65.82	-28.88	36.79	0.13	0.02	QP
3	0.186	20.14	54.20	-34.06	20.01	0.11	0.02	Average
4	0.186	33.68	64.20	-30.52	33.55	0.11	0.02	QP
5@	0.367	40.36	48.56	-8.20	40.20	0.13	0.03	Average
6	0.367	41.73	58.56	-16.83	41.57	0.13	0.03	QP
7	0.398	32.35	47.90	-15.55	32.18	0.14	0.03	Average
8	0.398	34.04	57.90	-23.86	33.87	0.14	0.03	QP
9	2.012	25.14	46.00	-20.86	24.89	0.17	0.08	Average
10	2.012	33.09	56.00	-22.91	32.84	0.17	0.08	QP
11	7.486	13.31	50.00	-36.69	12.92	0.24	0.15	Average
12	7.486	28.72	60.00	-31.28	28.33	0.24	0.15	QP

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

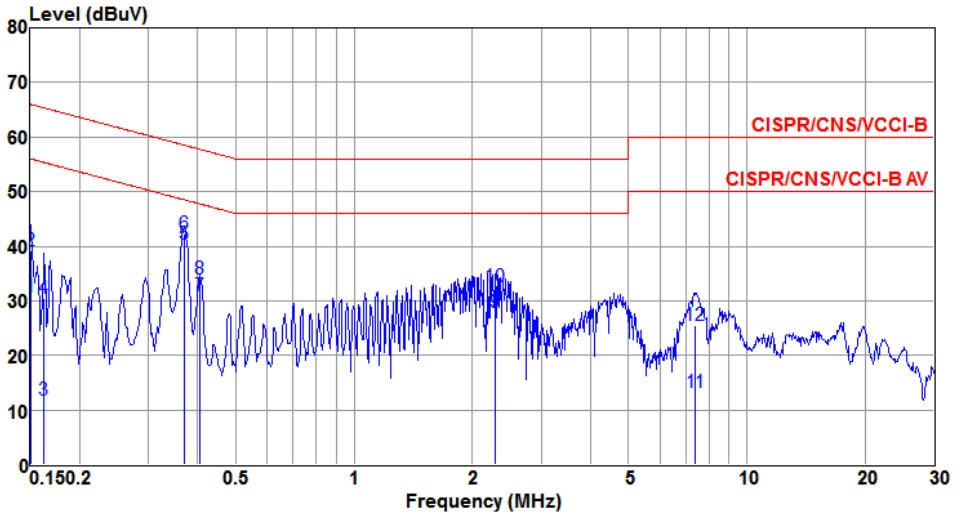
Modulation	11a	Test Freq. (MHz)	5745
Power Phase	Line		



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.150	33.13	56.00	-22.87	33.00	0.11	0.02	Average
2	0.150	38.63	66.00	-27.37	38.50	0.11	0.02	QP
3	0.171	13.52	54.90	-41.38	13.39	0.11	0.02	Average
4	0.171	28.44	64.90	-36.46	28.31	0.11	0.02	QP
5@	0.369	41.24	48.52	-7.28	41.08	0.13	0.03	Average
6	0.369	42.01	58.52	-16.51	41.85	0.13	0.03	QP
7	0.404	29.93	47.77	-17.84	29.77	0.13	0.03	Average
8	0.404	34.92	57.77	-22.85	34.76	0.13	0.03	QP
9	2.487	6.74	46.00	-39.26	6.48	0.17	0.09	Average
10	2.487	21.90	56.00	-34.10	21.64	0.17	0.09	QP
11	7.290	10.97	50.00	-39.03	10.60	0.22	0.15	Average
12	7.290	32.34	60.00	-27.66	31.97	0.22	0.15	QP

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

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



	Freq	Level	Limit Line	Over Limit	Read Level	LISN factor	cable loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.150	30.70	56.00	-25.30	30.55	0.13	0.02	Average
2	0.150	39.09	66.00	-26.91	38.94	0.13	0.02	QP
3	0.162	11.88	55.34	-43.46	11.74	0.12	0.02	Average
4	0.162	30.53	65.34	-34.81	30.39	0.12	0.02	QP
5@	0.369	40.41	48.52	-8.11	40.24	0.14	0.03	Average
6	0.369	42.35	58.52	-16.17	42.18	0.14	0.03	QP
7	0.404	30.89	47.77	-16.88	30.72	0.14	0.03	Average
8	0.404	34.07	57.77	-23.70	33.90	0.14	0.03	QP
9	2.285	27.75	46.00	-18.25	27.49	0.17	0.09	Average
10	2.285	32.64	56.00	-23.36	32.38	0.17	0.09	QP
11	7.407	13.20	50.00	-36.80	12.81	0.24	0.15	Average
12	7.407	25.39	60.00	-34.61	25.00	0.24	0.15	QP

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

3.2 Emission Bandwidth

3.2.1 Limit of Emission bandwidth

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

3.2.2 Test Procedures

26dB Bandwidth

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

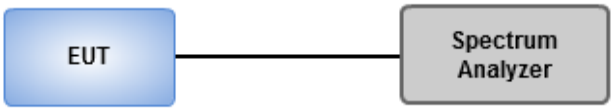
Occupied Bandwidth

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

6dB Bandwidth

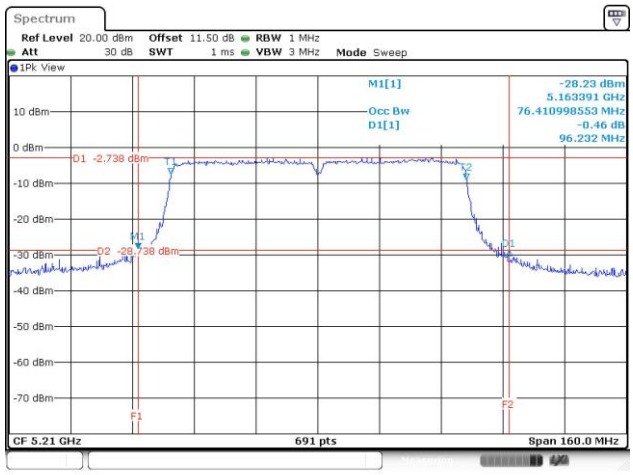
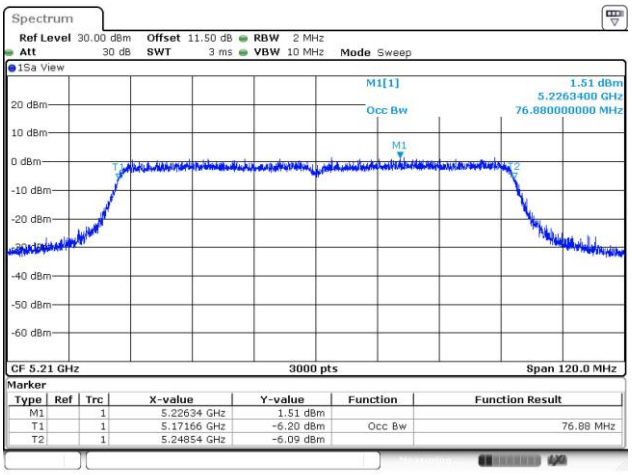
1. Set RBW = 100kHz, VBW = 300kHz
2. Detector = Peak,Trace mode = max hold.
3. Allow the trace to stabilize.
4. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB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

3.2.3 Test Setup

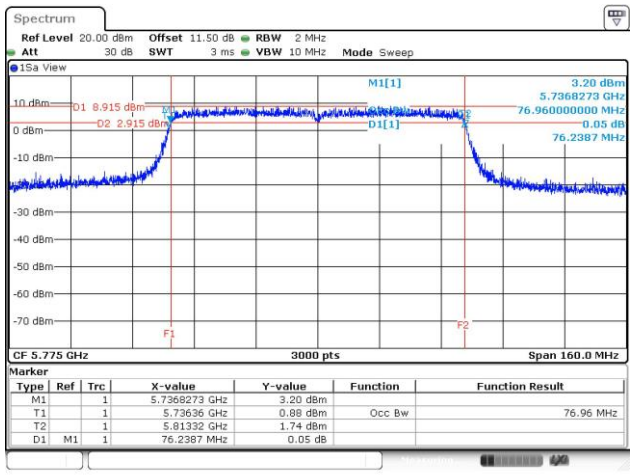
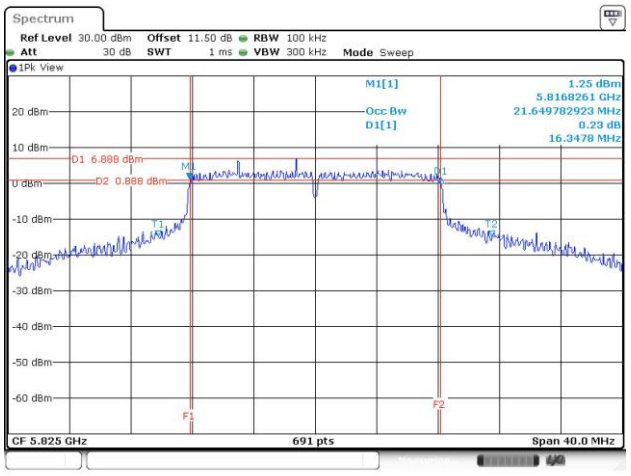


3.2.4 Test Result of Emission Bandwidth

For Frequency band 5150-5250 MHz										
Emission Bandwidth										
Mode	N_{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	2	5180	23.59	22.14	---	---	16.85	16.68	---	---
11a	2	5200	52.17	46.23	---	---	25.63	23.73	---	---
11a	2	5240	44.35	32.68	---	---	18.50	16.81	---	---
VHT20	2	5180	24.87	23.77	---	---	17.93	17.90	---	---
VHT20	2	5200	49.13	42.46	---	---	23.55	18.42	---	---
VHT20	2	5240	47.68	30.80	---	---	18.33	17.94	---	---
VHT40	2	5190	47.42	46.15	---	---	36.82	36.76	---	---
VHT40	2	5230	94.49	84.64	---	---	38.94	37.66	---	---
VHT80	2	5210	90.90	96.23	---	---	76.60	76.88	---	---

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

For Frequency band 5725-5850 MHz											
Emission Bandwidth											
Mode	N_{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	6dB BW Limit (MHz)
11a	2	5745	23.01	20.76	---	---	16.46	16.35	---	---	0.5
11a	2	5785	21.80	19.91	---	---	16.52	16.35	---	---	0.5
11a	2	5825	21.63	18.36	---	---	16.35	16.35	---	---	0.5
VHT20	2	5745	22.04	21.76	---	---	16.35	16.41	---	---	0.5
VHT20	2	5785	22.16	19.52	---	---	17.62	17.68	---	---	0.5
VHT20	2	5825	20.97	19.39	---	---	17.04	17.57	---	---	0.5
VHT40	2	5755	39.17	39.44	---	---	36.41	35.94	---	---	0.5
VHT40	2	5795	39.49	37.92	---	---	35.48	35.83	---	---	0.5
VHT80	2	5775	76.80	76.96	---	---	75.83	76.52	---	---	0.5

Worst Plots of 99% Bandwidth	Worst Plots of 6dB Bandwidth
	

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
☐	Mobile and portable client devices	Conducted Power: 250 mW

Frequency Band (MHz)		**Limit**
☐	5250 ~ 5350	250mW or 11dBm+10 log B
☐	5470 ~ 5725	250mW or 11dBm+10 log B
☒	5725 ~ 5850	1 W
Note: “B” is the 26dB emission bandwidth in MHz.		

3.3.2 Test Procedures

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

☒ Measurements may 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

For Frequency band 5150-5250 MHz									
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	2	5180	13.89	12.77	---	---	43.414	16.38	30.00
11a	2	5200	19.86	19.8	---	---	192.327	**22.84**	30.00
11a	2	5240	16.53	15.74	---	---	82.475	19.16	30.00
HT20	2	5180	13.24	12.81	---	---	40.185	16.04	30.00
HT20	2	5200	18.88	16.91	---	---	126.359	21.02	30.00
HT20	2	5240	16.39	15.66	---	---	80.364	19.05	30.00
HT40	2	5190	8.51	8.01	---	---	13.420	11.28	30.00
HT40	2	5230	17.06	16.95	---	---	100.361	20.02	30.00
VHT20	2	5180	13.77	12.35	---	---	41.002	16.13	30.00
VHT20	2	5200	18.92	16.97	---	---	127.757	21.06	30.00
VHT20	2	5240	16.44	15.70	---	---	81.209	19.10	30.00
VHT40	2	5190	8.63	8.05	---	---	13.677	11.36	30.00
VHT40	2	5230	17.11	16.97	---	---	101.178	20.05	30.00
VHT80	2	5210	7.44	5.98	---	---	9.509	9.78	30.00

For Frequency band 5725-5850 MHz									
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	2	5745	17.2	17.65	---	---	110.691	**20.44**	30.00
11a	2	5785	17.2	17.33	---	---	106.556	20.28	30.00
11a	2	5825	17.02	17.48	---	---	106.326	20.27	30.00
HT20	2	5745	16.84	17.33	---	---	102.381	20.10	30.00
HT20	2	5785	17.25	17.11	---	---	104.493	20.19	30.00
HT20	2	5825	16.80	17.14	---	---	99.624	19.98	30.00
HT40	2	5755	17.21	17.17	---	---	104.721	20.20	30.00
HT40	2	5795	16.91	16.97	---	---	98.864	19.95	30.00
VHT20	2	5745	16.87	17.37	---	---	103.217	20.14	30.00
VHT20	2	5785	17.31	17.16	---	---	105.827	20.25	30.00
VHT20	2	5825	16.86	17.22	---	---	101.252	20.05	30.00
VHT40	2	5755	17.3	17.24	---	---	106.670	20.28	30.00
VHT40	2	5795	16.98	17.03	---	---	100.355	20.02	30.00
VHT80	2	5775	13.1	13.26	---	---	41.601	16.19	30.00

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
☐	Mobile and portable client devices	11 dBm / MHz

Frequency Band (MHz)		**Limit**
☐	5250 ~ 5350	11 dBm / MHz
☐	5470 ~ 5725	11 dBm / MHz
☒	5725 ~ 5850	30 dBm / 500 kHz

3.4.2 Test Procedures

For 5150 ~ 5250 MHz

☒ 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.

For 5725 ~ 5850 MHz

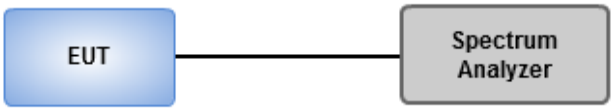
☒ Method SA-1

1. Set RBW = 500 kHz, VBW = 2 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 = 500 kHz, VBW = 2 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

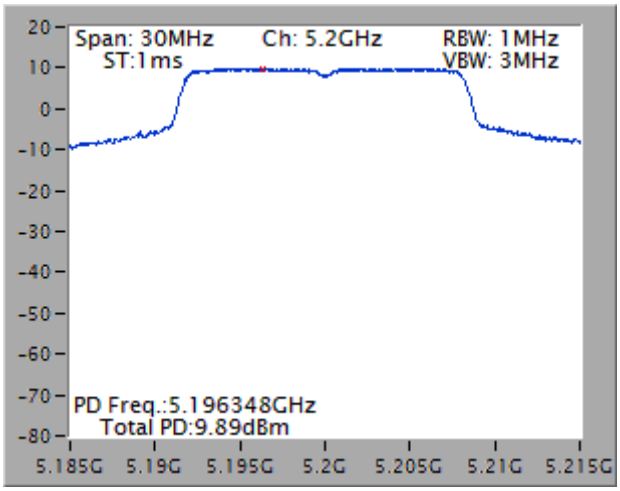


3.4.4 Test Result of Peak Power Spectral Density

For Frequency band 5150-5250 MHz						
Condition			Peak Power Spectral Density (dBm/MHz)			
Modulation 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	2	5180	4.18	0.00	4.18	14.99
11a	2	5200	9.89	0.00	9.89	14.99
11a	2	5240	6.41	0.00	6.41	14.99
VHT20	2	5180	3.75	0.00	3.75	14.99
VHT20	2	5200	8.17	0.00	8.17	14.99
VHT20	2	5240	6.11	0.00	6.11	14.99
VHT40	2	5190	-4.46	0.00	-4.46	14.99
VHT40	2	5230	4.86	0.00	4.86	14.99
VHT80	2	5210	-9.23	0.00	-9.23	14.99

Note:
1. D.F is duty factor.
2. Test results are bin-by-bin summing measured value of each TX port.
3. Directional gain = 5+10* log(2/1) = 8.01 dBi > 6 dBi.
   Limit shall be reduced to 17 dBm – (8.01 dBi – 6 dBi) = 14.99 dBm.

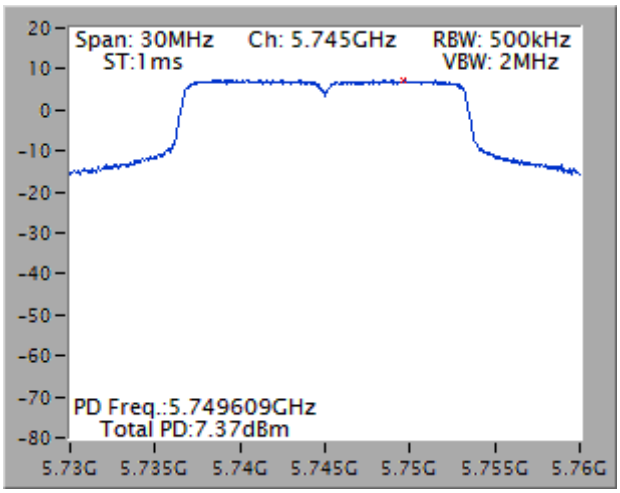
Worst Plot



For Frequency band 5725-5850 MHz						
Condition			Peak Power Spectral Density (dBm/500kHz)			
Modulation Mode	N_{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
11a	2	5745	7.37	0.00	7.37	27.99
11a	2	5785	6.86	0.00	6.86	27.99
11a	2	5825	6.65	0.00	6.65	27.99
VHT20	2	5745	6.55	0.00	6.55	27.99
VHT20	2	5785	6.44	0.00	6.44	27.99
VHT20	2	5825	6.19	0.00	6.19	27.99
VHT40	2	5755	3.05	0.00	3.05	27.99
VHT40	2	5795	2.83	0.00	2.83	27.99
VHT80	2	5775	-4.16	0.00	-4.16	27.99

Note:
1. D.F is duty factor.
2. Test results for VHT20 / VHT40 / VHT80 are bin-by-bin summing measured value of each TX port.
3. Directional gain = 5+10* log(2/1) = 8.01 dBi > 6 dBi.
   Limit shall be reduced to 30 dBm – (8.01 dBi – 6 dBi) = 27.99 dBm.

Worst Plot



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	☒	15.407(b)(4)(i) 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.
	☐	15.407(b)(4)(ii) ,compliance with the emission limits in § 15.247(d) Shall be at least 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power,. Attenuation below the general limits specified in §15.209(a) is not required. In addition,radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see § 15.205(c))
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

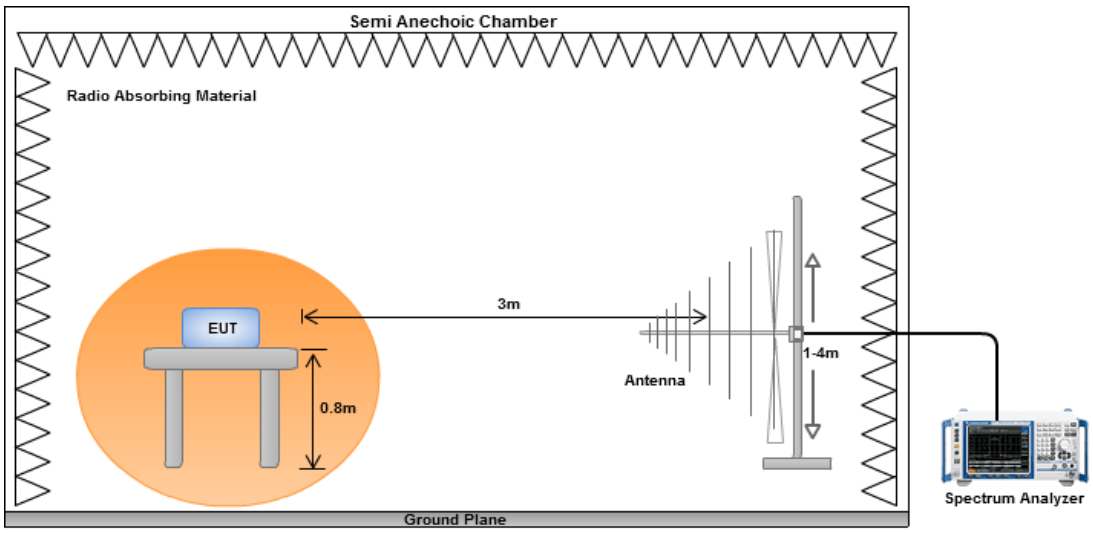
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

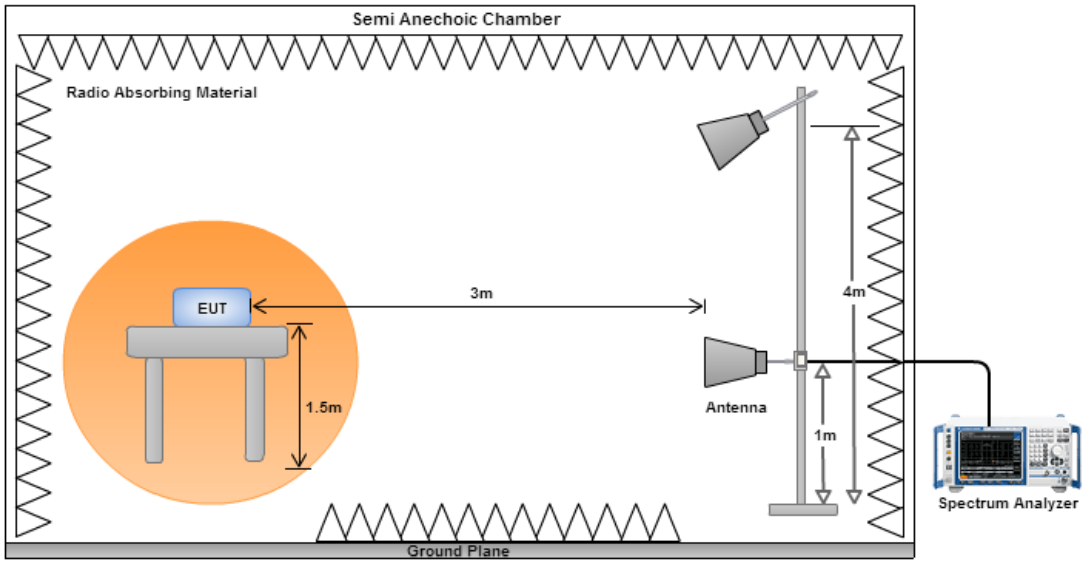
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz



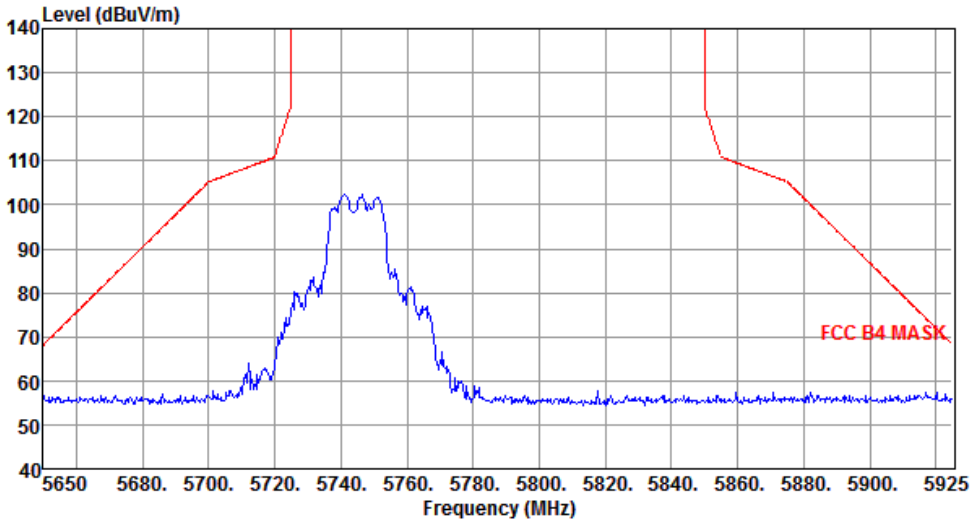
Radiated Emissions above 1 GHz



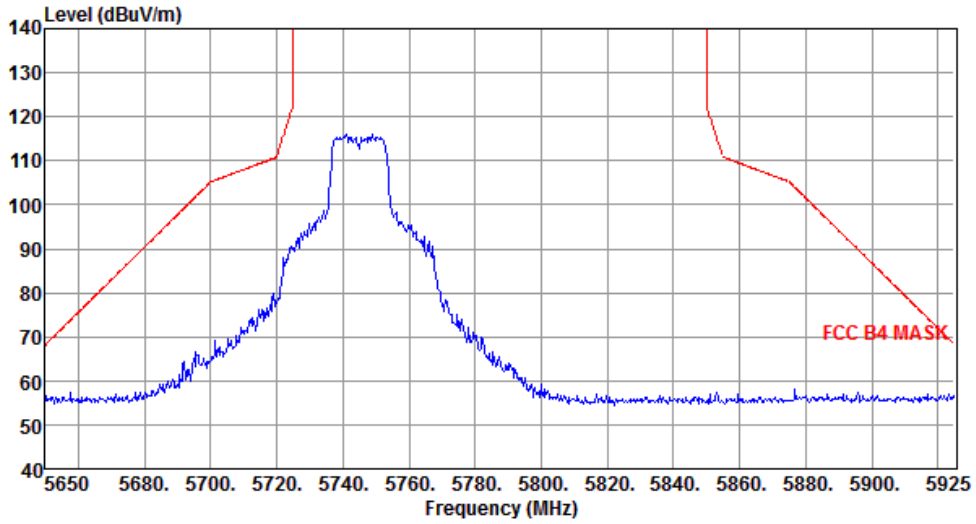
3.5.4 Transmitter Radiated Band Edge for 11a

3.5.5 Transmitter Radiated Band Edge for 11a

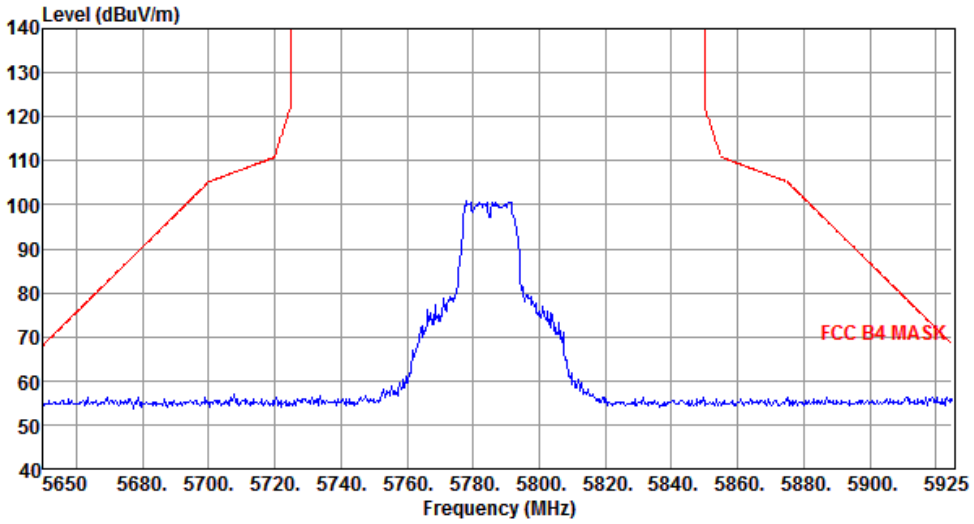
Modulation	11a	**Test Freq. (MHz)**	5745
Polarization	Horizontal		



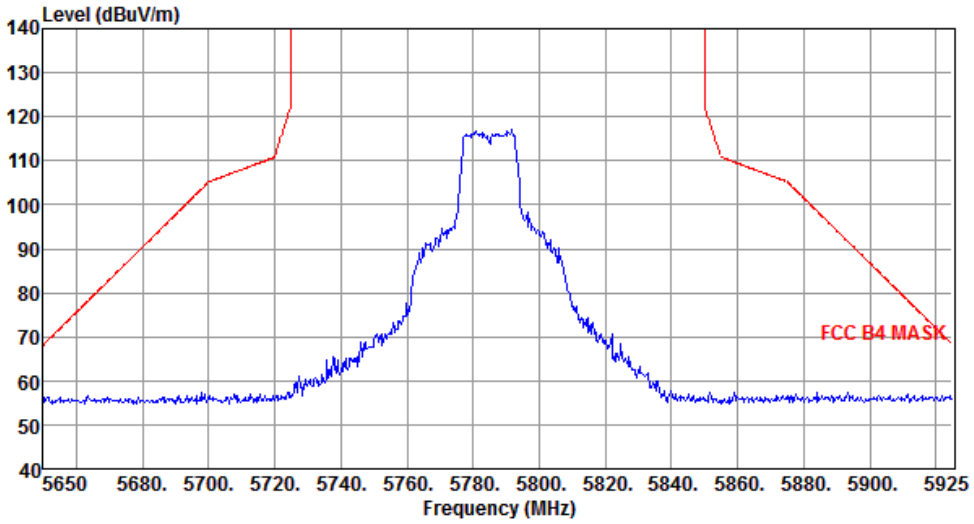
Modulation	11a	**Test Freq. (MHz)**	5745
Polarization	Vertical		



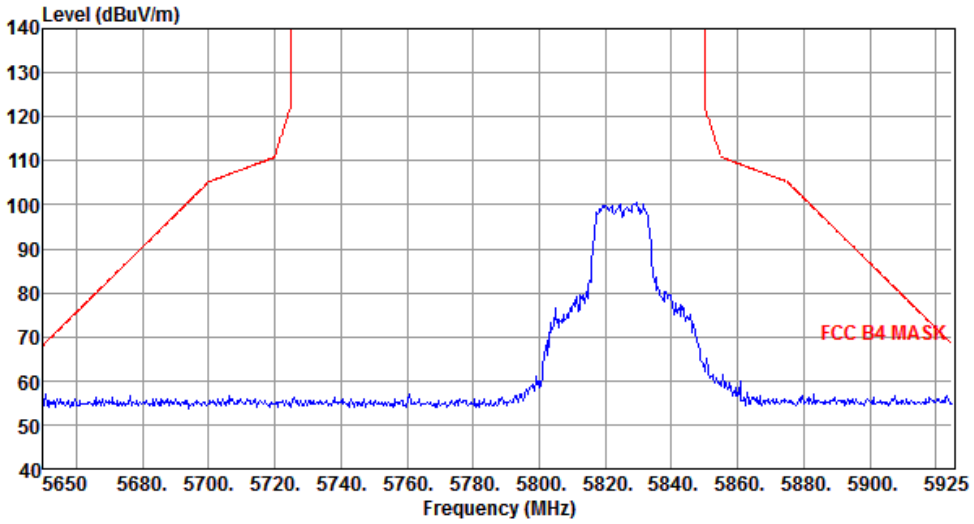
Modulation	11a	**Test Freq. (MHz)**	5785
Polarization	Horizontal		



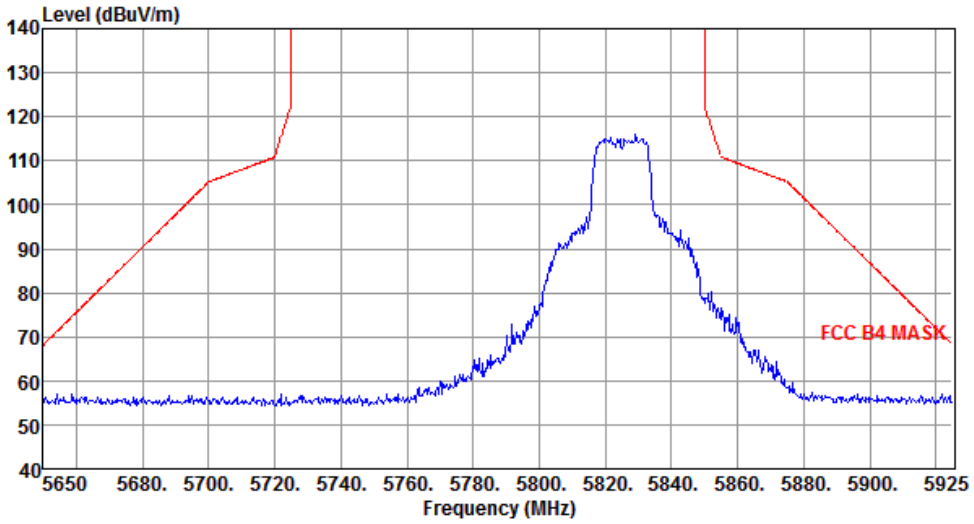
Modulation	11a	**Test Freq. (MHz)**	5785
Polarization	Vertical		



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

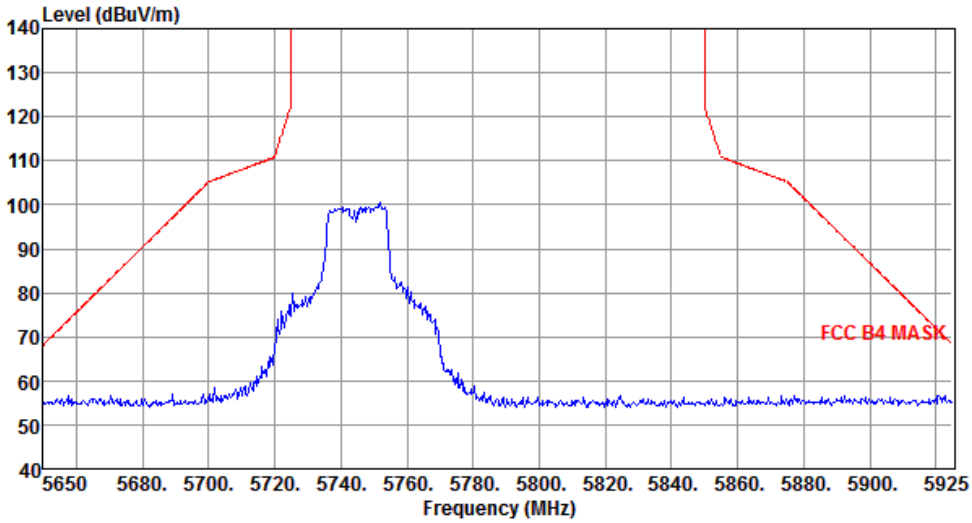


Modulation	11a	**Test Freq. (MHz)**	5825
Polarization	Vertical		

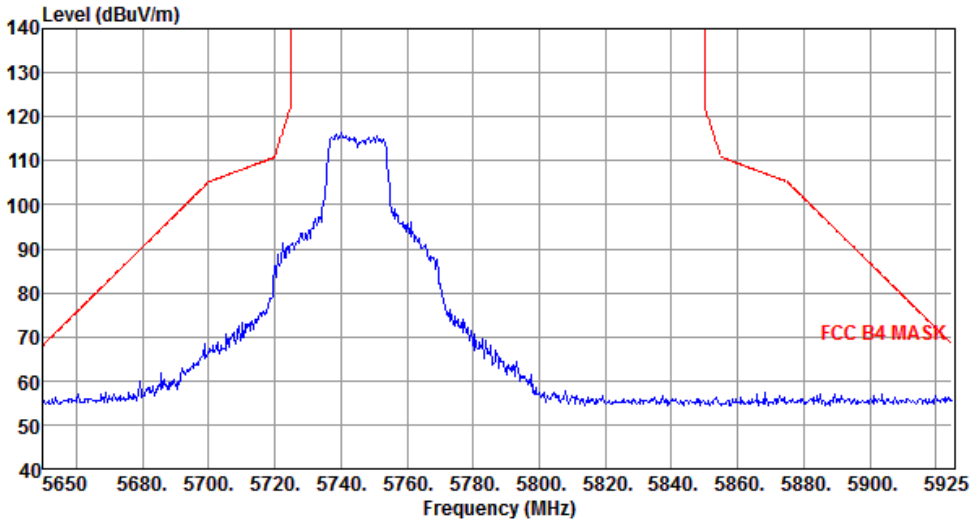


3.5.6 Transmitter Radiated Band Edge for VHT20

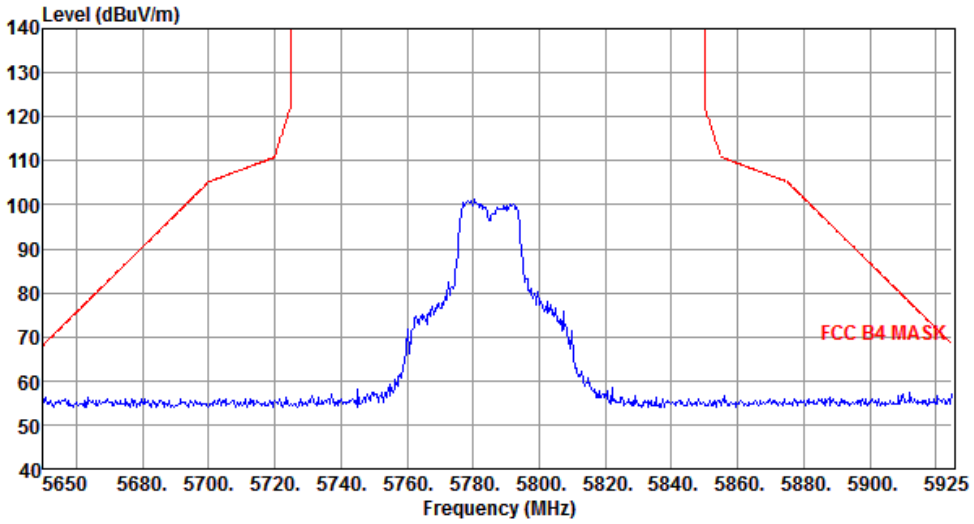
Modulation	VHT20	**Test Freq. (MHz)**	5745
Polarization	Horizontal		



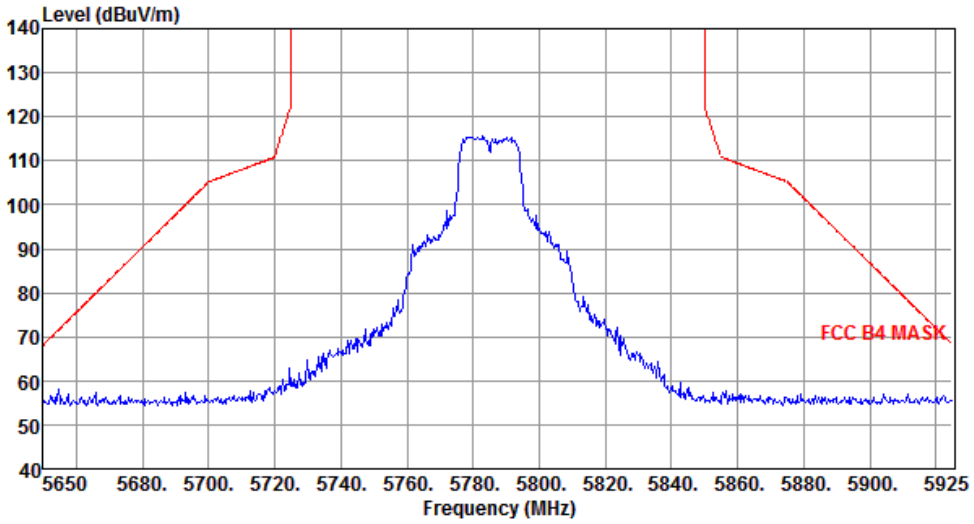
Modulation	VHT20	**Test Freq. (MHz)**	5745
Polarization	Vertical		



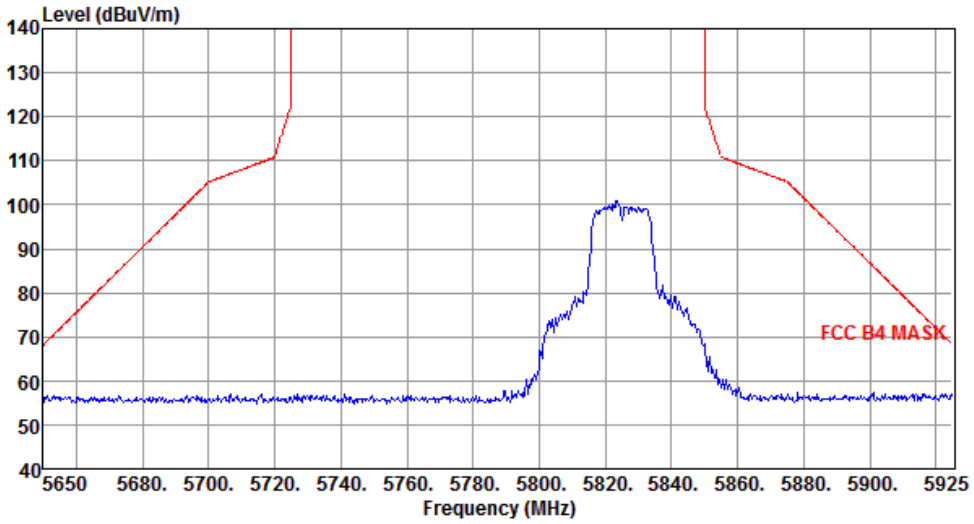
Modulation	VHT20	**Test Freq. (MHz)**	5785
Polarization	Horizontal		



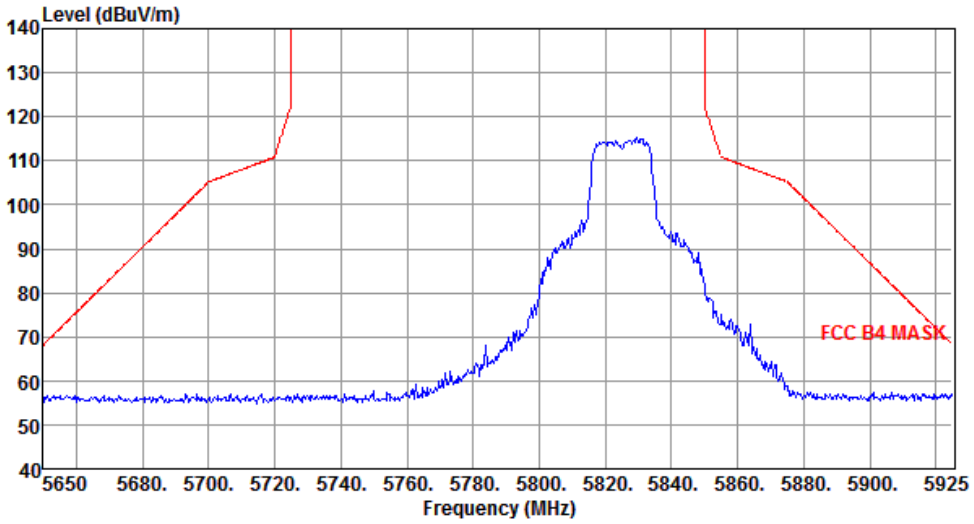
Modulation	VHT20	**Test Freq. (MHz)**	5785
Polarization	Vertical		



Modulation	VHT20	**Test Freq. (MHz)**	5825
Polarization	Horizontal		

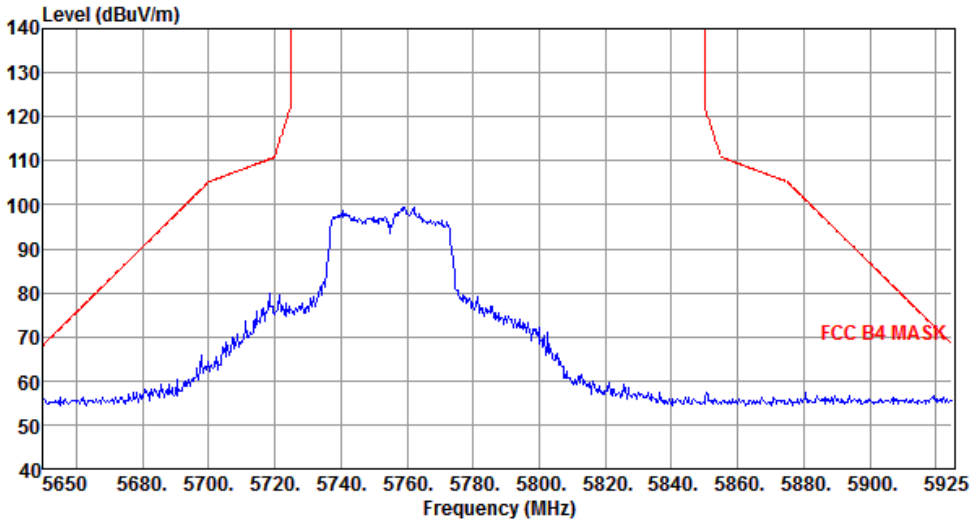


Modulation	VHT20	**Test Freq. (MHz)**	5825
Polarization	Vertical		

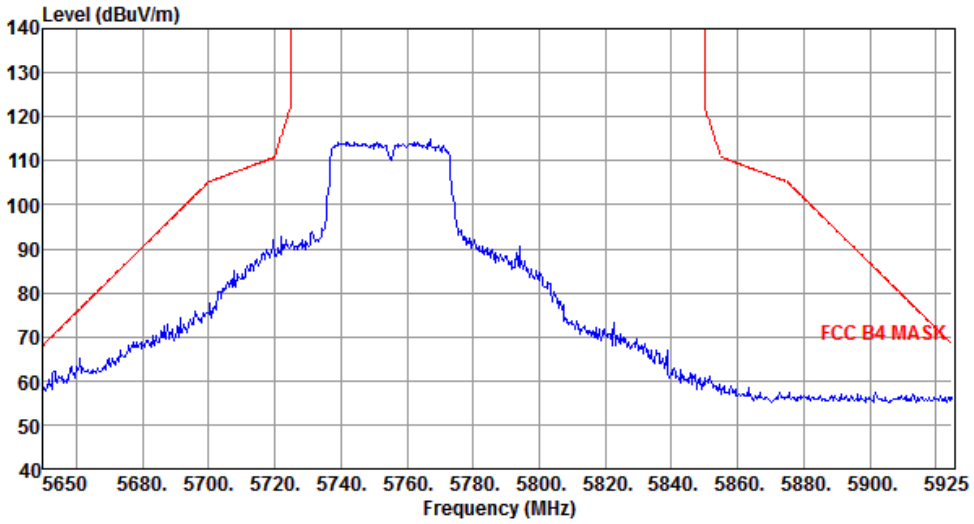


3.5.7 Transmitter Radiated Band Edge for VHT40

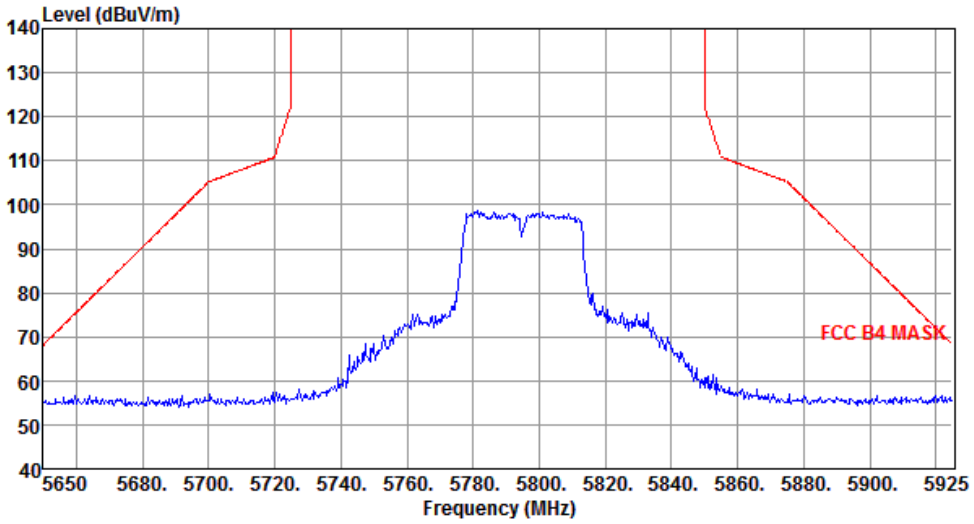
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



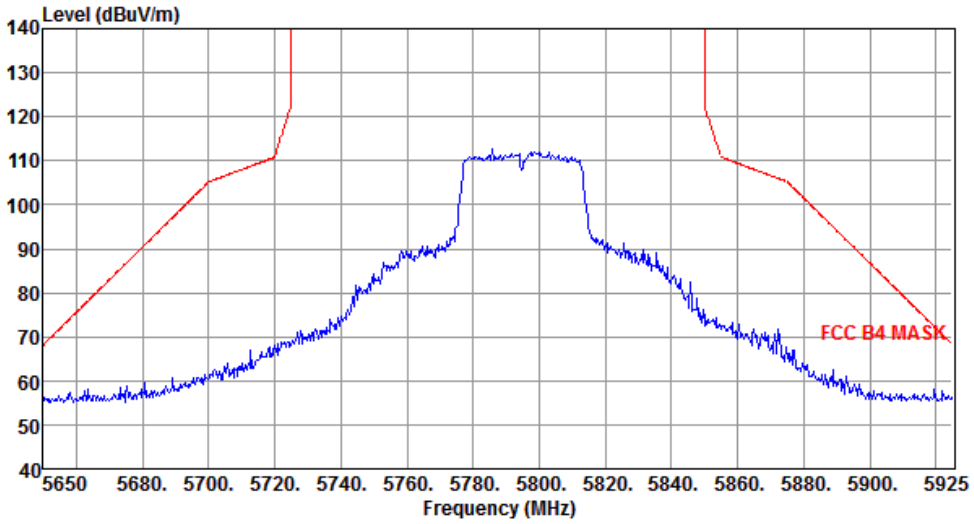
Modulation	VHT40	**Test Freq. (MHz)**	5755
Polarization	Vertical		



Modulation	VHT40	**Test Freq. (MHz)**	5795
Polarization	Horizontal		

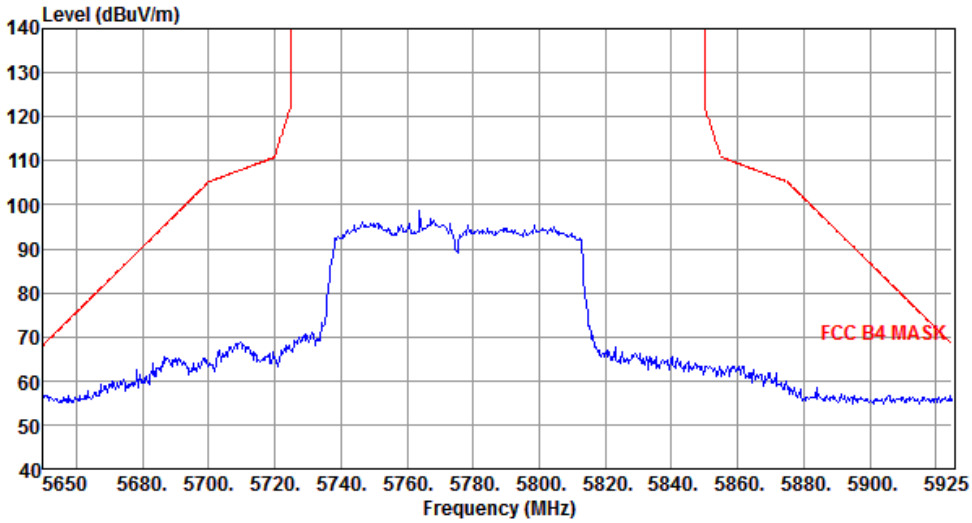


Modulation	VHT40	**Test Freq. (MHz)**	5795
Polarization	Vertical		

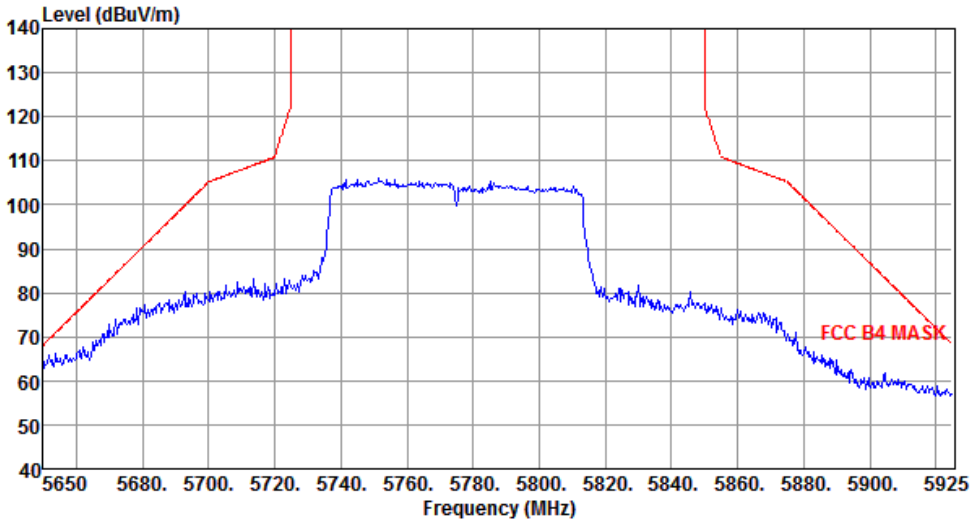


3.5.8 Transmitter Radiated Band Edge for VHT80

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		

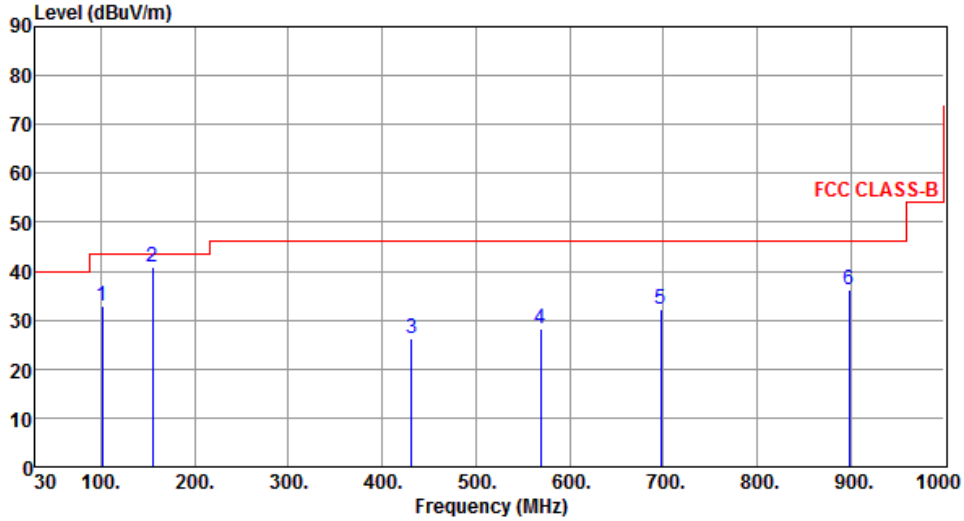


Modulation	VHT80	**Test Freq. (MHz)**	5775
Polarization	Vertical		



3.5.9 Transmitter Radiated Unwanted Emissions (Below 1GHz)

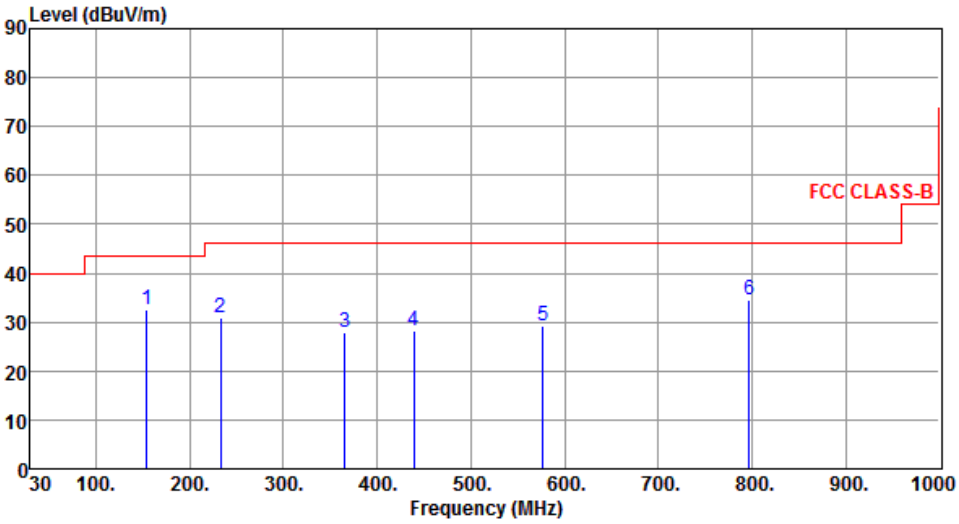
Modulation	11a	**Test Freq. (MHz)**	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	101.78	33.00	43.50	-10.50	49.13	-16.13	Peak	---	---
2	155.13	40.82	43.50	-2.68	52.44	-11.62	QP	100	335
3	431.58	26.26	46.00	-19.74	34.06	-7.80	Peak	---	---
4	569.32	28.38	46.00	-17.62	33.44	-5.06	Peak	---	---
5	697.36	32.06	46.00	-13.94	35.17	-3.11	Peak	---	---
6	898.15	36.34	46.00	-9.66	36.78	-0.44	Peak	---	---

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

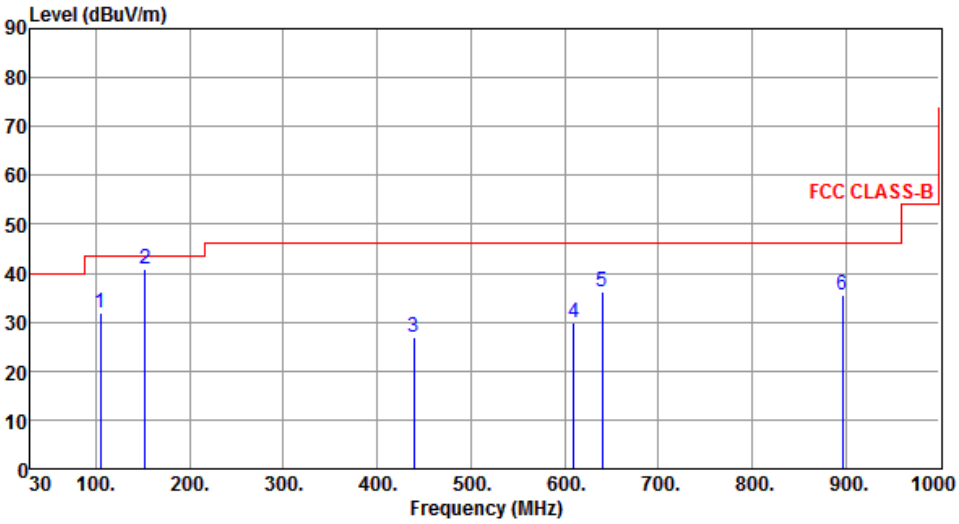
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	154.16	32.70	43.50	-10.80	44.34	-11.64	Peak	---	---
2	232.73	31.00	46.00	-15.00	44.46	-13.46	Peak	---	---
3	365.62	27.74	46.00	-18.26	37.20	-9.46	Peak	---	---
4	439.34	28.13	46.00	-17.87	35.74	-7.61	Peak	---	---
5	577.08	29.36	46.00	-16.64	34.26	-4.90	Peak	---	---
6	797.27	34.70	46.00	-11.30	36.44	-1.74	Peak	---	---

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

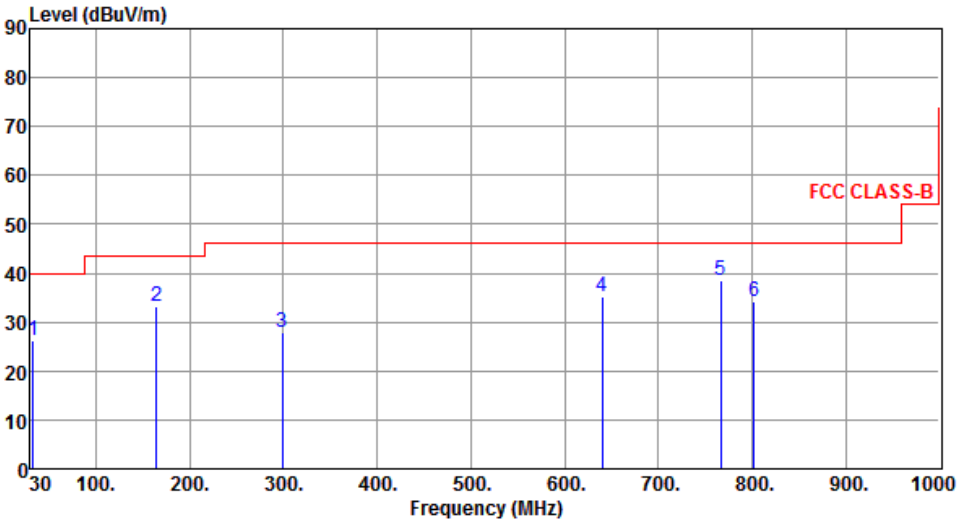
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	104.69	31.95	43.50	-11.55	47.59	-15.64	Peak	---	---
2	152.22	40.84	43.50	-2.66	52.53	-11.69	QP	100	341
3	439.34	26.96	46.00	-19.04	34.57	-7.61	Peak	---	---
4	610.06	29.76	46.00	-16.24	34.07	-4.31	Peak	---	---
5	640.13	36.32	46.00	-9.68	40.30	-3.98	Peak	---	---
6	896.21	35.43	46.00	-10.57	35.91	-0.48	Peak	---	---

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

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

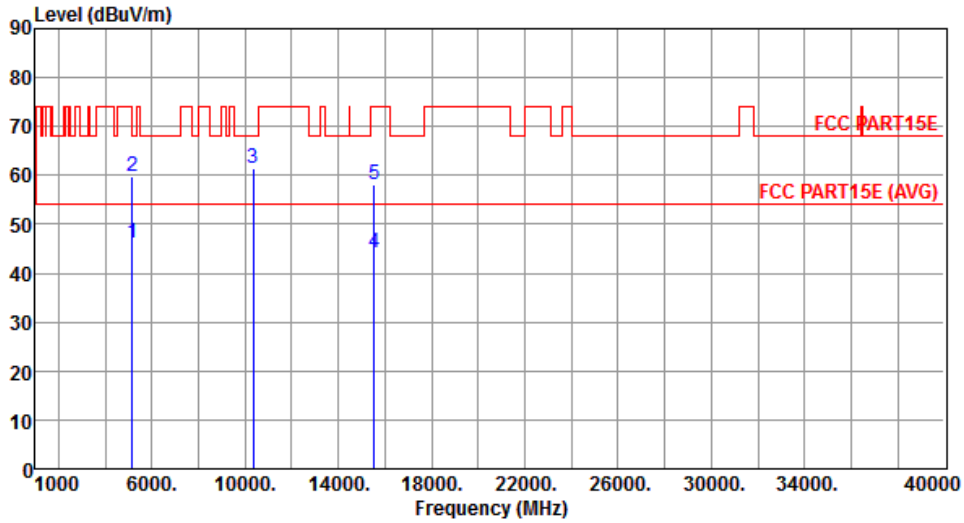


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	32.91	26.36	40.00	-13.64	38.84	-12.48	Peak	---	---
2	164.83	33.05	43.50	-10.45	44.68	-11.63	Peak	---	---
3	298.69	27.99	46.00	-18.01	39.00	-11.01	Peak	---	---
4	640.13	35.26	46.00	-10.74	39.24	-3.98	Peak	---	---
5	766.23	38.61	46.00	-7.39	40.68	-2.07	Peak	---	---
6	802.12	34.26	46.00	-11.74	35.95	-1.69	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.

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

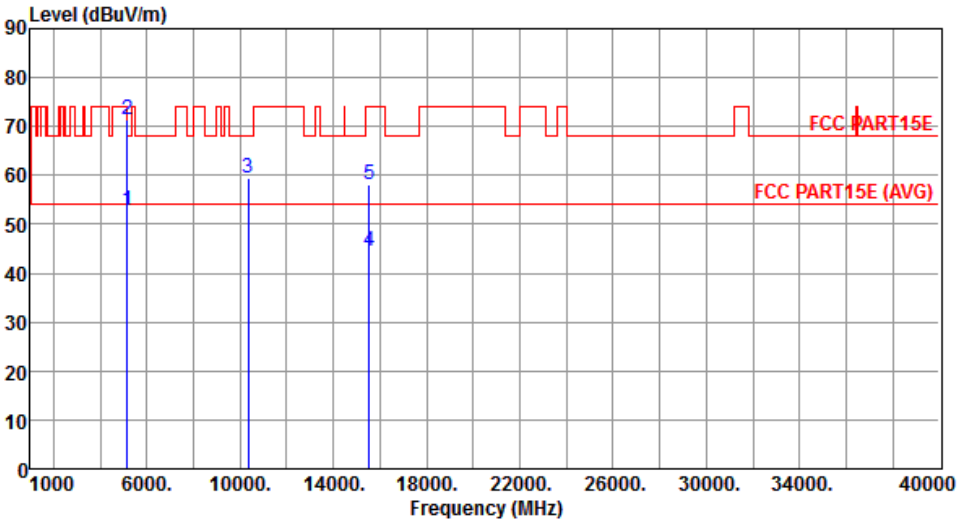
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.29	54.00	-7.71	41.89	4.40	Average	283	178
2	5150.00	59.79	74.00	-14.21	55.39	4.40	Peak	283	178
3	10360.00	61.44	68.20	-6.76	47.24	14.20	Peak	391	282
4	15540.00	44.32	54.00	-9.68	29.21	15.11	Average	145	91
5	15540.00	58.07	74.00	-15.93	42.96	15.11	Peak	145	91

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).

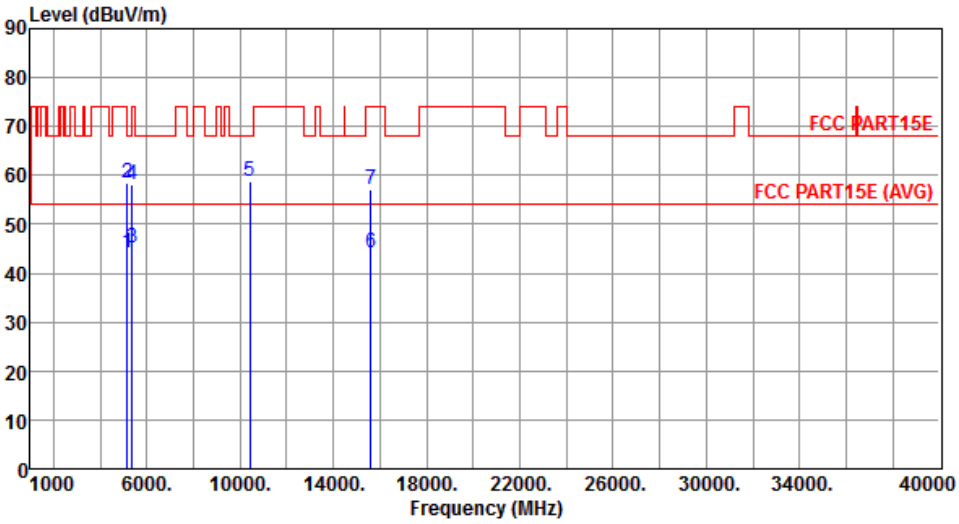
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.86	54.00	-1.14	48.46	4.40	Average	223	303
2	5150.00	71.29	74.00	-2.71	66.89	4.40	Peak	223	303
3	10360.00	59.41	68.20	-8.79	45.21	14.20	Peak	231	146
4	15540.00	44.57	54.00	-9.43	29.46	15.11	Average	150	75
5	15540.00	58.21	74.00	-15.79	43.10	15.11	Peak	150	75

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

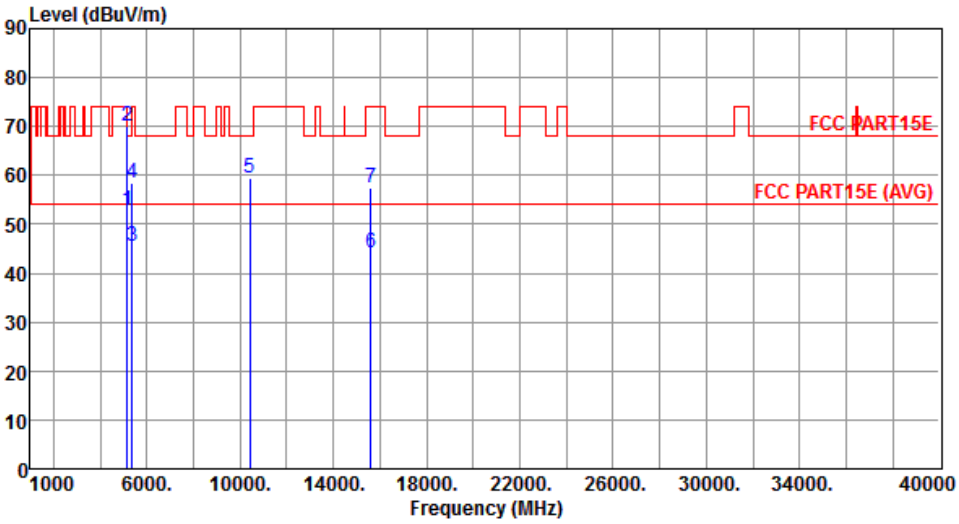
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	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	44.30	54.00	-9.70	39.90	4.40	Average	100	169
2	5150.00	58.51	74.00	-15.49	54.11	4.40	Peak	100	169
3	5350.00	45.16	54.00	-8.84	40.52	4.64	Average	100	169
4	5350.00	58.26	74.00	-15.74	53.62	4.64	Peak	100	169
5	10400.00	58.90	68.20	-9.30	44.62	14.28	Peak	210	112
6	15600.00	44.13	54.00	-9.87	29.11	15.02	Average	100	203
7	15600.00	57.27	74.00	-16.73	42.25	15.02	Peak	100	203

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

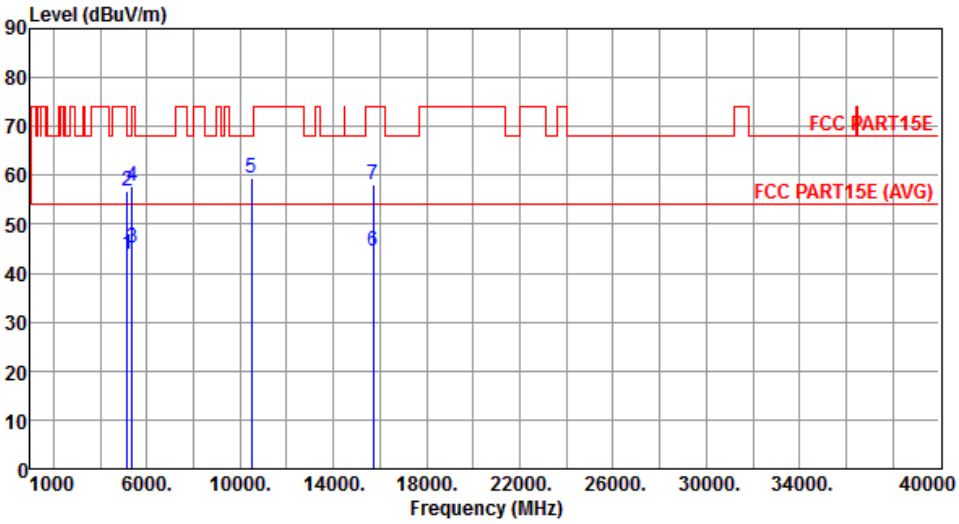
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.76	54.00	-1.24	48.36	4.40	Average	177	70
2	5150.00	70.21	74.00	-3.79	65.81	4.40	Peak	177	70
3	5350.00	45.37	54.00	-8.63	40.73	4.64	Average	177	70
4	5350.00	58.46	74.00	-15.54	53.82	4.64	Peak	177	70
5	10400.00	59.56	68.20	-8.64	45.28	14.28	Peak	220	71
6	15600.00	44.20	54.00	-9.80	29.18	15.02	Average	175	84
7	15600.00	57.36	74.00	-16.64	42.34	15.02	Peak	175	84

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

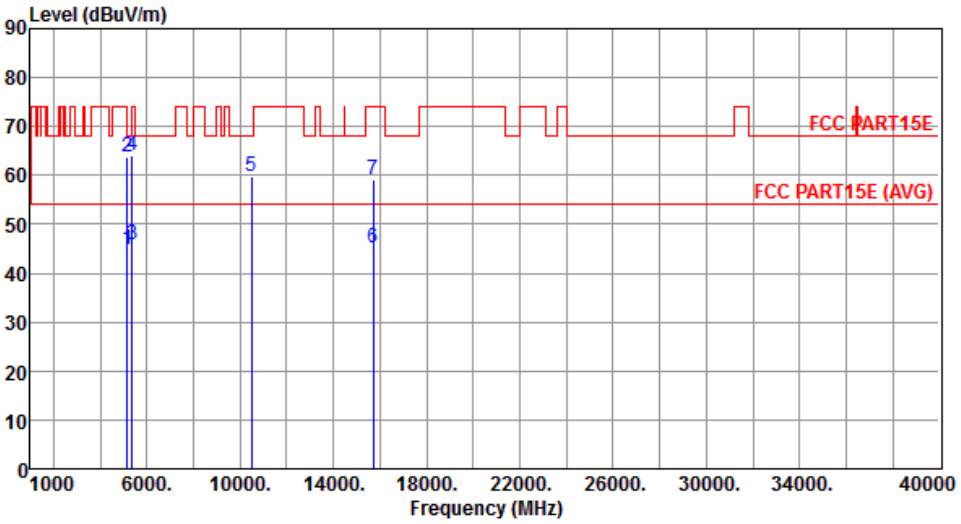
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		



	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	43.90	54.00	-10.10	39.50	4.40	Average	120	169
2	5150.00	56.64	74.00	-17.36	52.24	4.40	Peak	120	169
3	5350.00	45.01	54.00	-8.99	40.37	4.64	Average	120	169
4	5350.00	57.91	74.00	-16.09	53.27	4.64	Peak	120	169
5	10480.00	59.35	68.20	-8.85	44.92	14.43	Peak	100	121
6	15720.00	44.43	54.00	-9.57	29.56	14.87	Average	100	153
7	15720.00	57.98	74.00	-16.02	43.11	14.87	Peak	100	153

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

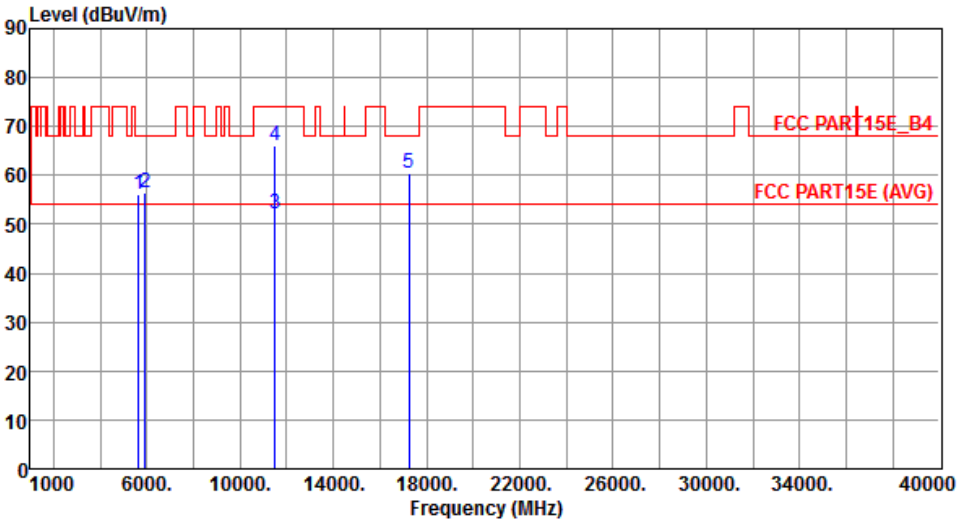
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



	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	44.75	54.00	-9.25	40.35	4.40	Average	179	68
2	5150.00	63.65	74.00	-10.35	59.25	4.40	Peak	179	68
3	5350.00	45.99	54.00	-8.01	41.35	4.64	Average	179	68
4	5350.00	63.98	74.00	-10.02	59.34	4.64	Peak	179	68
5	10480.00	59.78	68.20	-8.42	45.35	14.43	Peak	212	131
6	15720.00	45.29	54.00	-8.71	30.42	14.87	Average	193	328
7	15720.00	59.03	74.00	-14.97	44.16	14.87	Peak	193	328

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

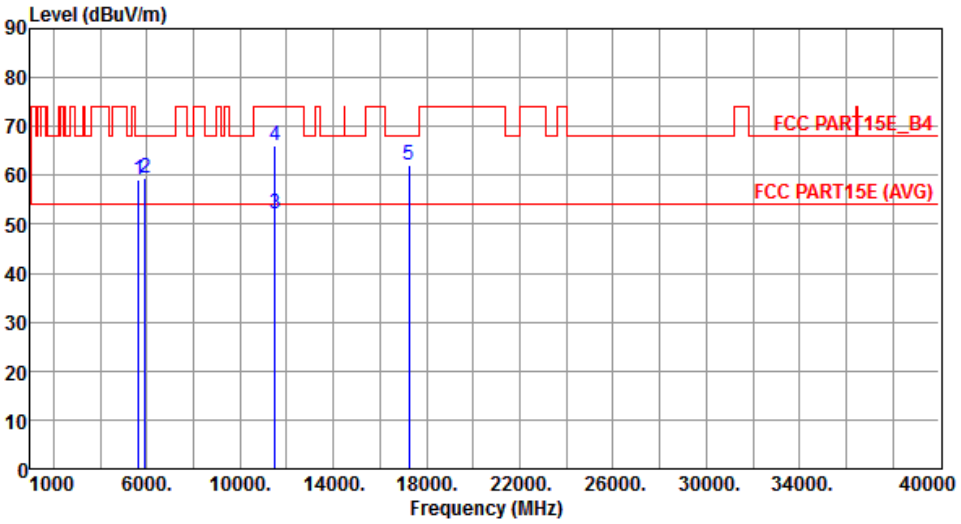
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	56.06	68.20	-12.14	51.06	5.00	Peak	232	122
2	5925.10	56.48	68.20	-11.72	51.14	5.34	Peak	232	122
3	11490.00	52.13	54.00	-1.87	36.60	15.53	Average	238	116
4	11490.00	65.96	74.00	-8.04	50.43	15.53	Peak	238	116
5	17235.00	60.47	68.20	-7.73	41.60	18.87	Peak	273	124

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

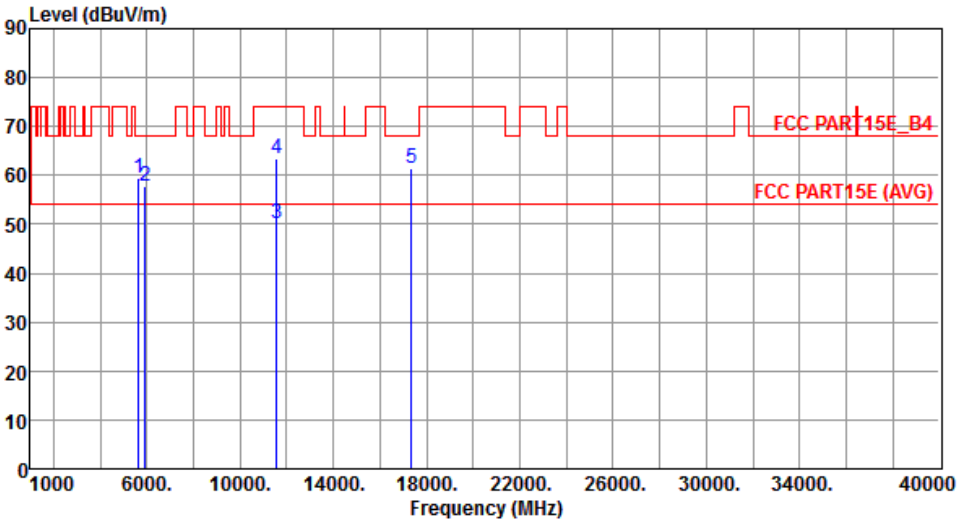
Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	58.99	68.20	-9.21	53.99	5.00	Peak	201	96
2	5925.10	59.32	68.20	-8.88	53.98	5.34	Peak	201	96
3	11490.00	52.17	54.00	-1.83	36.64	15.53	Average	218	173
4	11490.00	66.01	74.00	-7.99	50.48	15.53	Peak	218	173
5	17235.00	62.19	68.20	-6.01	43.32	18.87	Peak	205	82

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

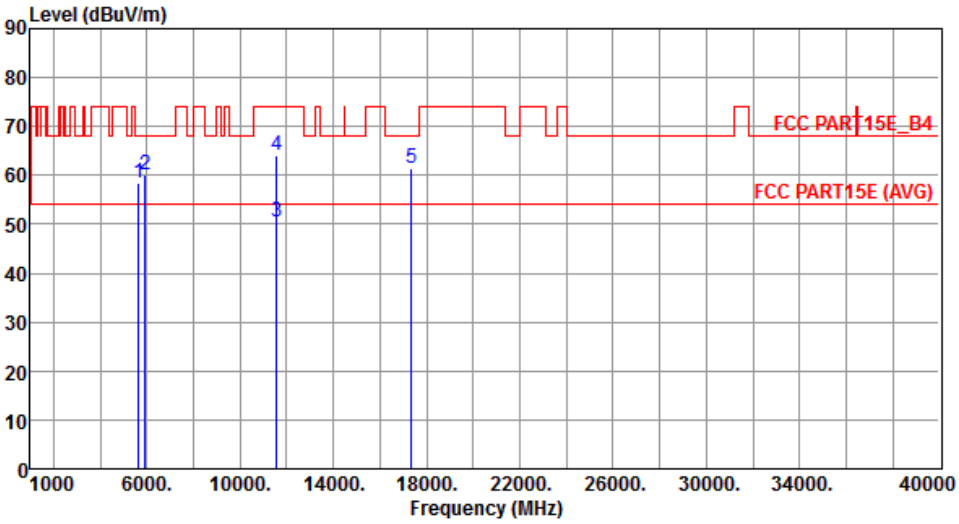
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.42	68.20	-8.78	54.42	5.00	Peak	227	76
2	5925.10	57.93	68.20	-10.27	52.59	5.34	Peak	227	76
3	11570.00	50.19	54.00	-3.81	34.86	15.33	Average	206	110
4	11570.00	63.59	74.00	-10.41	48.26	15.33	Peak	206	110
5	17355.00	61.32	68.20	-6.88	42.11	19.21	Peak	201	146

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

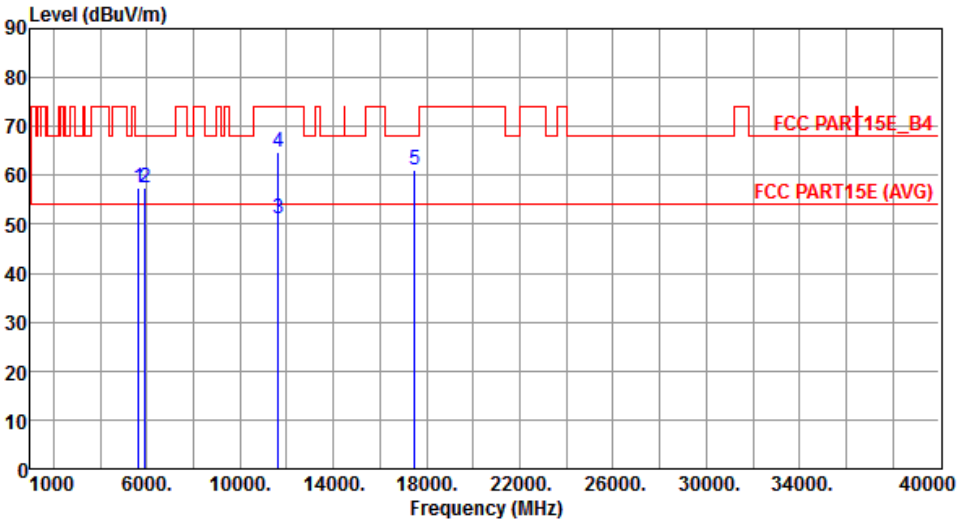
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	58.50	68.20	-9.70	53.50	5.00	Peak	195	90
2	5925.10	59.95	68.20	-8.25	54.61	5.34	Peak	195	90
3	11570.00	50.36	54.00	-3.64	35.03	15.33	Average	195	82
4	11570.00	64.02	74.00	-9.98	48.69	15.33	Peak	195	82
5	17355.00	61.54	68.20	-6.66	42.33	19.21	Peak	201	146

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

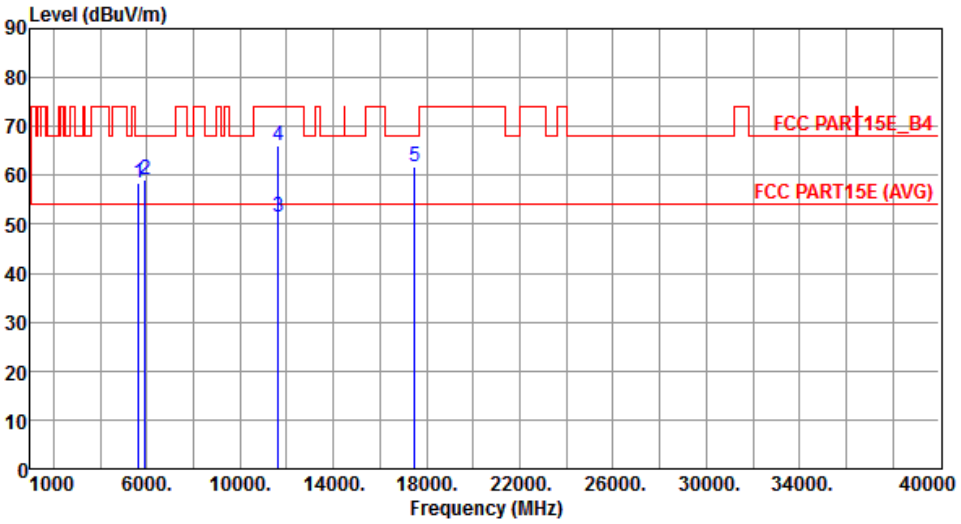
Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	57.49	68.20	-10.71	52.49	5.00	Peak	204	102
2	5925.10	57.43	68.20	-10.77	52.09	5.34	Peak	204	102
3	11650.00	51.29	54.00	-2.71	36.20	15.09	Average	236	115
4	11650.00	64.73	74.00	-9.27	49.64	15.09	Peak	236	115
5	17475.00	61.12	68.20	-7.08	41.57	19.55	Peak	237	72

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

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

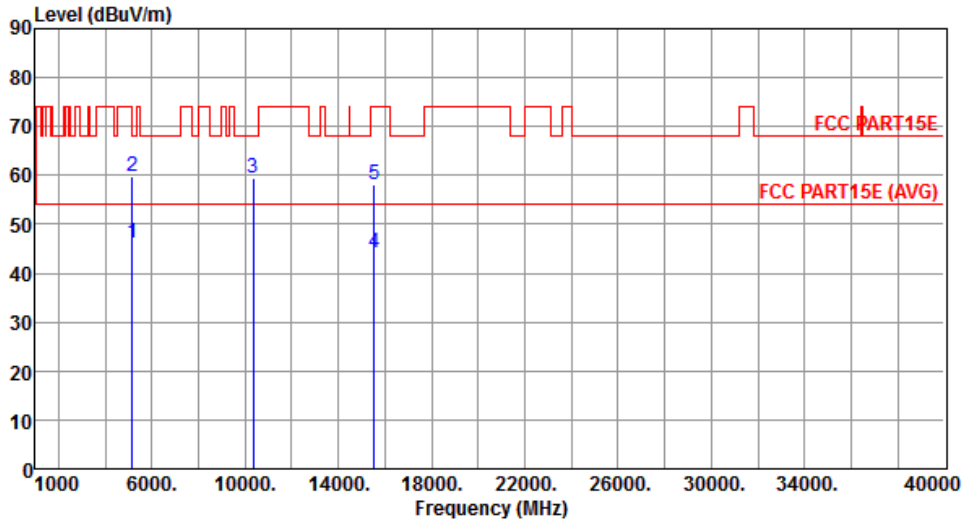


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	58.30	68.20	-9.90	53.30	5.00	Peak	204	96
2	5925.10	59.09	68.20	-9.11	53.75	5.34	Peak	204	96
3	11650.00	51.43	54.00	-2.57	36.34	15.09	Average	203	81
4	11650.00	66.07	74.00	-7.93	50.98	15.09	Peak	203	81
5	17475.00	61.85	68.20	-6.35	42.30	19.55	Peak	206	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).

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

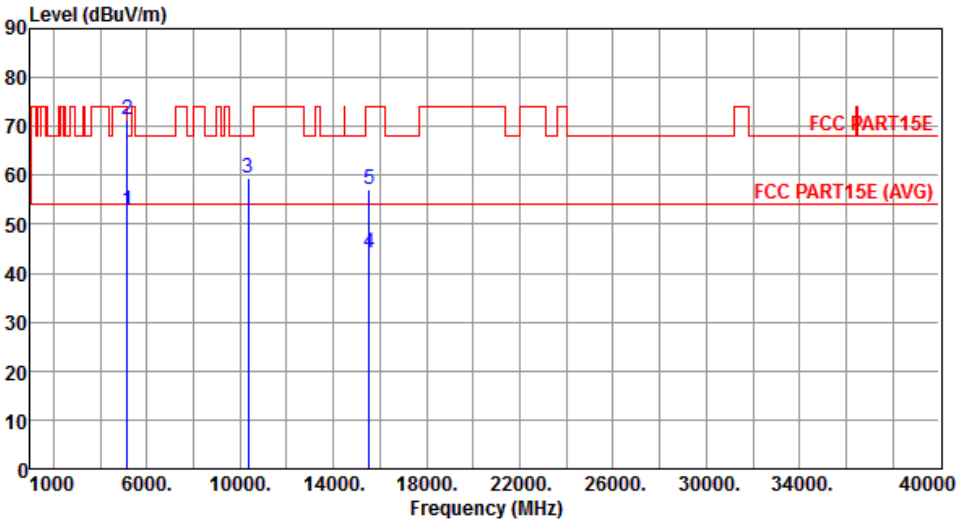
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.07	54.00	-7.93	41.67	4.40	Average	280	183
2	5150.00	59.66	74.00	-14.34	55.26	4.40	Peak	280	183
3	10360.00	59.51	68.20	-8.69	45.31	14.20	Peak	388	280
4	15540.00	44.29	54.00	-9.71	29.18	15.11	Average	138	90
5	15540.00	57.97	74.00	-16.03	42.86	15.11	Peak	138	90

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

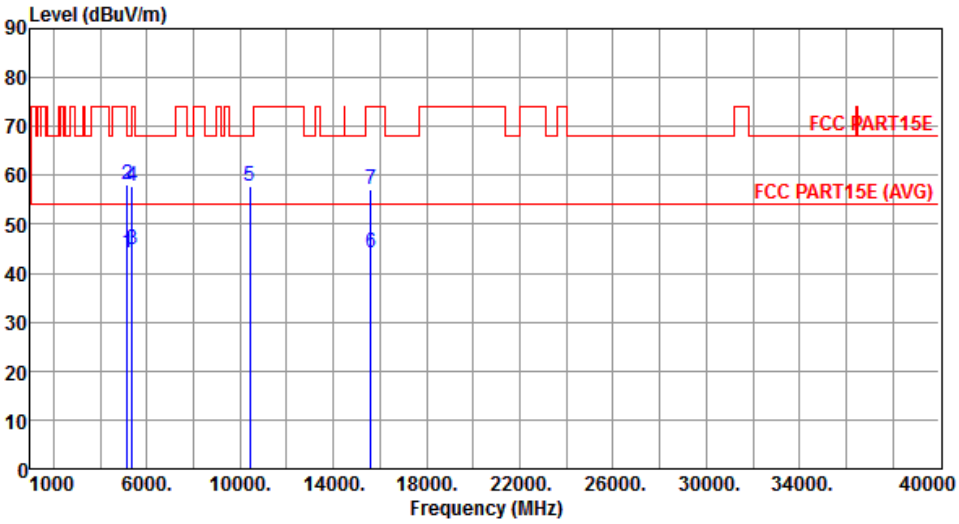
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.90	54.00	-1.10	48.50	4.40	Average	223	301
2	5150.00	71.40	74.00	-2.60	67.00	4.40	Peak	223	301
3	10360.00	59.32	68.20	-8.88	45.12	14.20	Peak	228	124
4	15540.00	44.26	54.00	-9.74	29.15	15.11	Average	274	117
5	15540.00	56.97	74.00	-17.03	41.86	15.11	Peak	274	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).

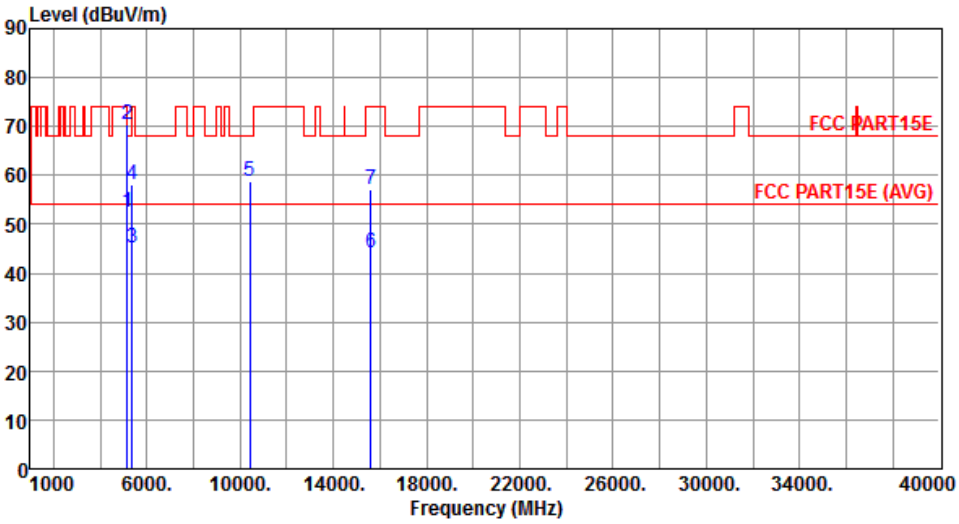
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.03	54.00	-9.97	39.63	4.40	Average	105	172
2	5150.00	58.23	74.00	-15.77	53.83	4.40	Peak	105	172
3	5350.00	44.88	54.00	-9.12	40.24	4.64	Average	105	172
4	5350.00	57.90	74.00	-16.10	53.26	4.64	Peak	105	172
5	10400.00	57.95	68.20	-10.25	43.67	14.28	Peak	214	110
6	15600.00	44.05	54.00	-9.95	29.03	15.02	Average	100	246
7	15600.00	57.18	74.00	-16.82	42.16	15.02	Peak	100	246

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

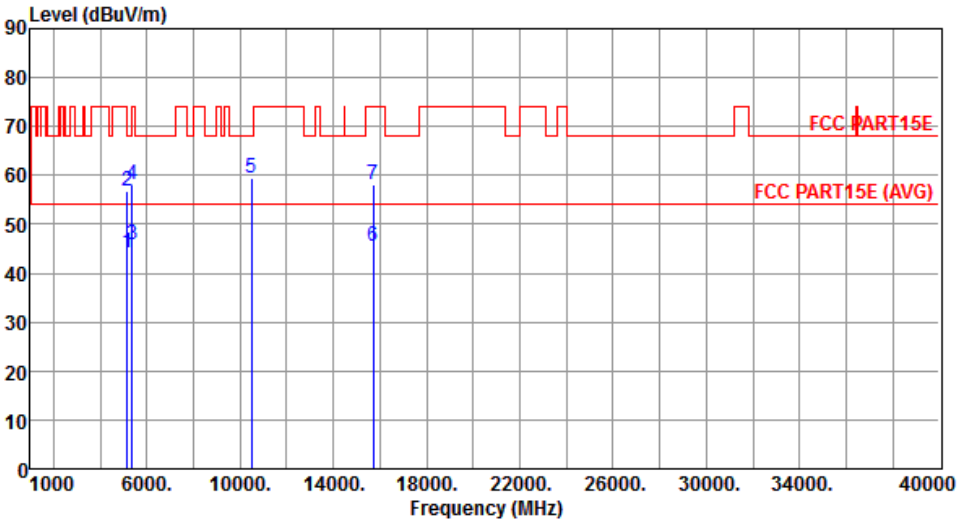
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.44	54.00	-1.56	48.04	4.40	Average	215	304
2	5150.00	70.31	74.00	-3.69	65.91	4.40	Peak	215	304
3	5350.00	45.05	54.00	-8.95	40.41	4.64	Average	215	304
4	5350.00	58.25	74.00	-15.75	53.61	4.64	Peak	215	304
5	10400.00	58.84	68.20	-9.36	44.56	14.28	Peak	238	75
6	15600.00	44.30	54.00	-9.70	29.28	15.02	Average	212	148
7	15600.00	57.02	74.00	-16.98	42.00	15.02	Peak	212	148

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

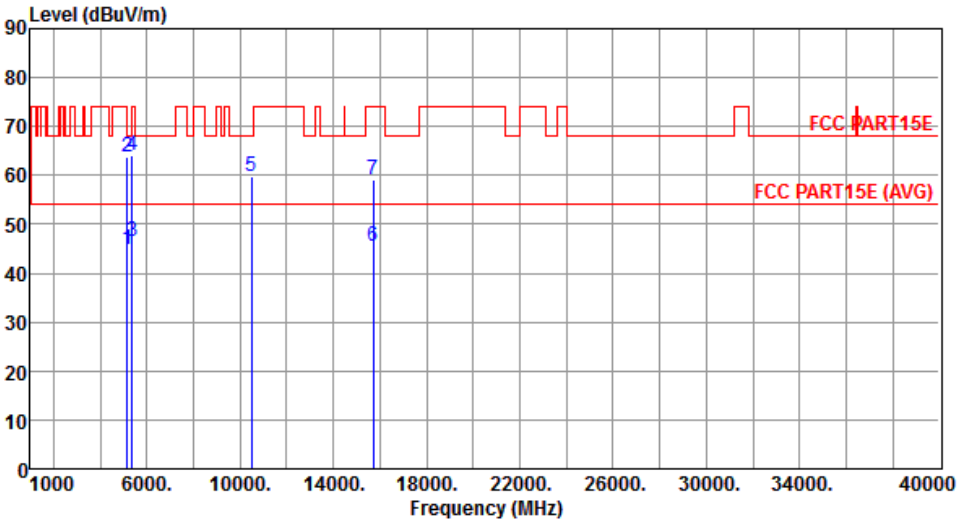
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



	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	44.12	54.00	-9.88	39.72	4.40	Average	118	168
2	5150.00	56.82	74.00	-17.18	52.42	4.40	Peak	118	168
3	5350.00	45.72	54.00	-8.28	41.08	4.64	Average	118	168
4	5350.00	58.14	74.00	-15.86	53.50	4.64	Peak	118	168
5	10480.00	59.35	68.20	-8.85	44.92	14.43	Peak	100	120
6	15720.00	45.49	54.00	-8.51	30.62	14.87	Average	100	161
7	15720.00	58.11	74.00	-15.89	43.24	14.87	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).

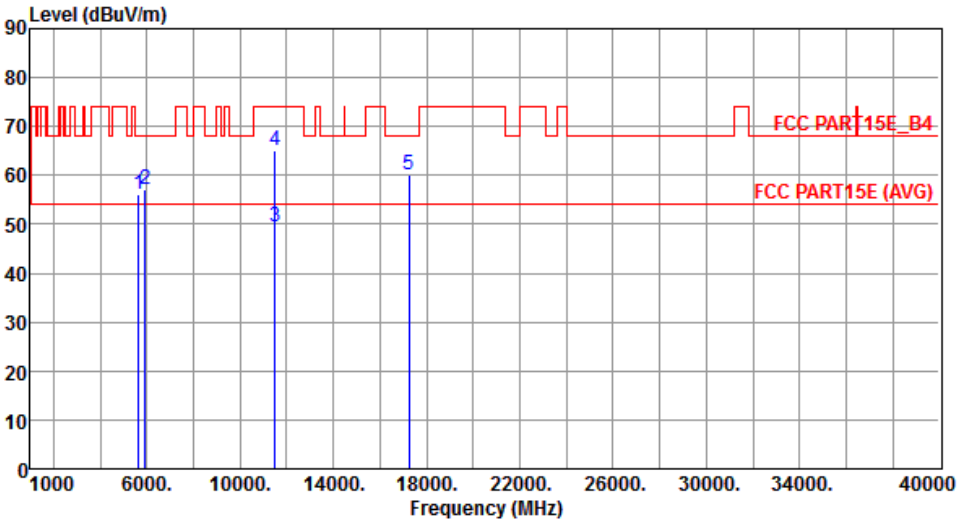
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.67	54.00	-9.33	40.27	4.40	Average	173	71
2	5150.00	63.86	74.00	-10.14	59.46	4.40	Peak	173	71
3	5350.00	46.65	54.00	-7.35	42.01	4.64	Average	173	71
4	5350.00	63.97	74.00	-10.03	59.33	4.64	Peak	173	71
5	10480.00	59.92	68.20	-8.28	45.49	14.43	Peak	231	133
6	15720.00	45.54	54.00	-8.46	30.67	14.87	Average	174	273
7	15720.00	59.14	74.00	-14.86	44.27	14.87	Peak	174	273

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

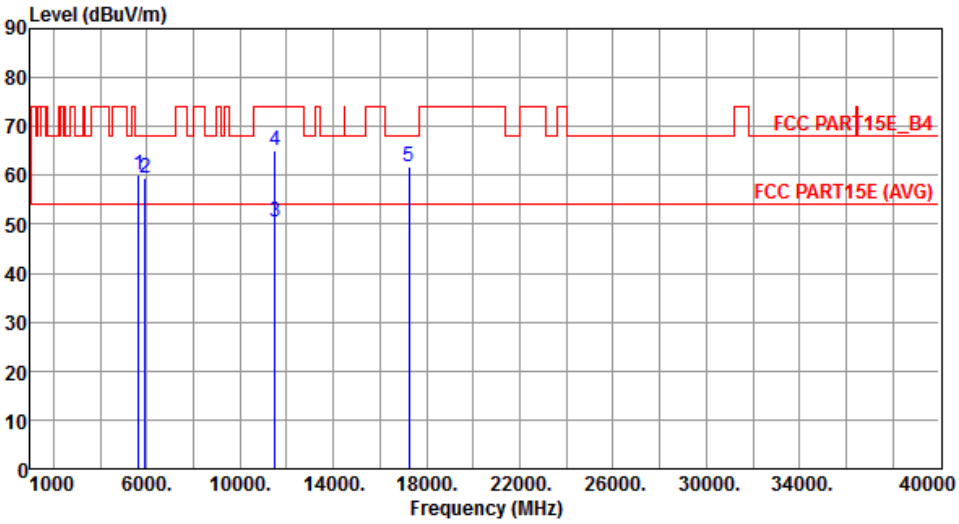
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	56.17	68.20	-12.03	51.17	5.00	Peak	184	115
2	5925.10	57.11	68.20	-11.09	51.77	5.34	Peak	184	115
3	11490.00	49.36	54.00	-4.64	33.83	15.53	Average	238	116
4	11490.00	65.10	74.00	-8.90	49.57	15.53	Peak	238	116
5	17235.00	60.16	68.20	-8.04	41.29	18.87	Peak	204	112

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

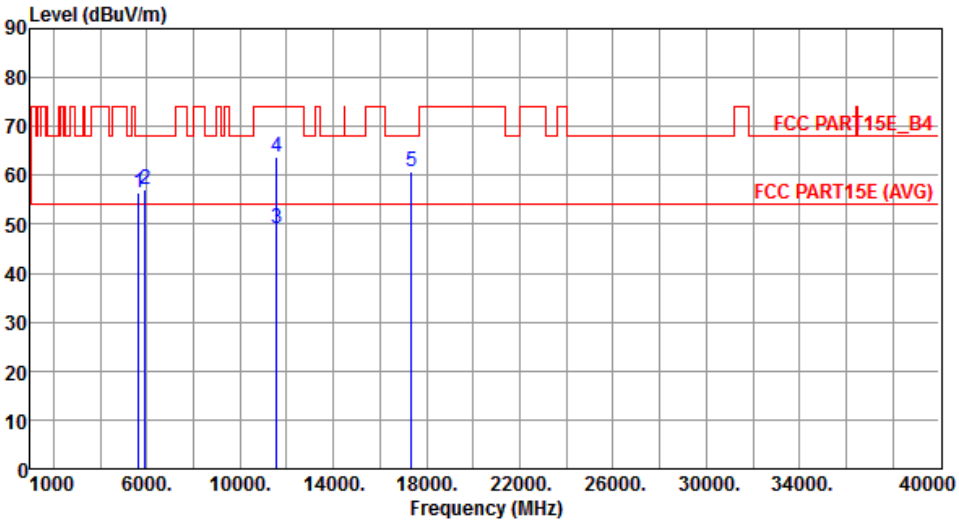
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	60.16	68.20	-8.04	55.16	5.00	Peak	204	105
2	5925.10	59.40	68.20	-8.80	54.06	5.34	Peak	204	105
3	11490.00	50.34	54.00	-3.66	34.81	15.53	Average	204	172
4	11490.00	65.13	74.00	-8.87	49.60	15.53	Peak	204	172
5	17235.00	61.82	68.20	-6.38	42.95	18.87	Peak	214	97

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

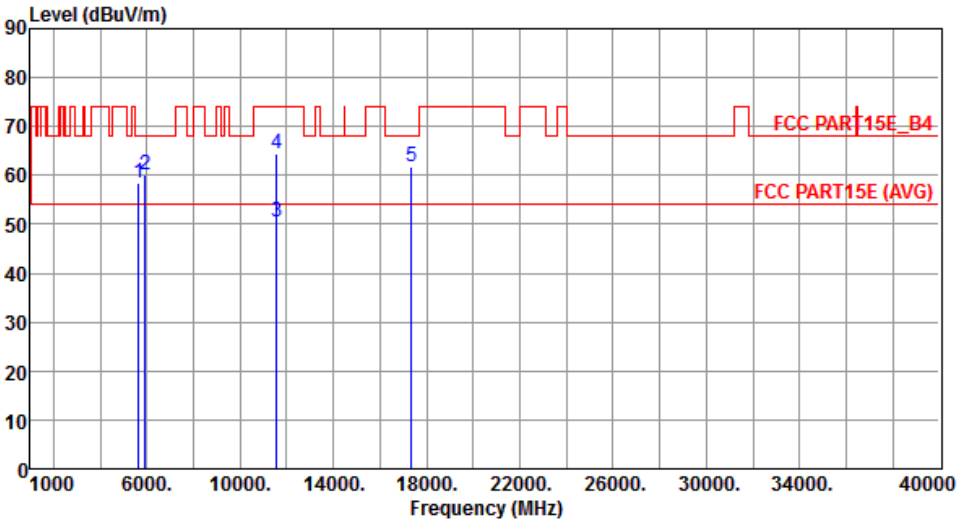
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	56.53	68.20	-11.67	51.53	5.00	Peak	184	117
2	5925.10	57.11	68.20	-11.09	51.77	5.34	Peak	184	117
3	11570.00	49.11	54.00	-4.89	33.78	15.33	Average	234	115
4	11570.00	63.77	74.00	-10.23	48.44	15.33	Peak	234	115
5	17355.00	60.89	68.20	-7.31	41.68	19.21	Peak	212	83

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

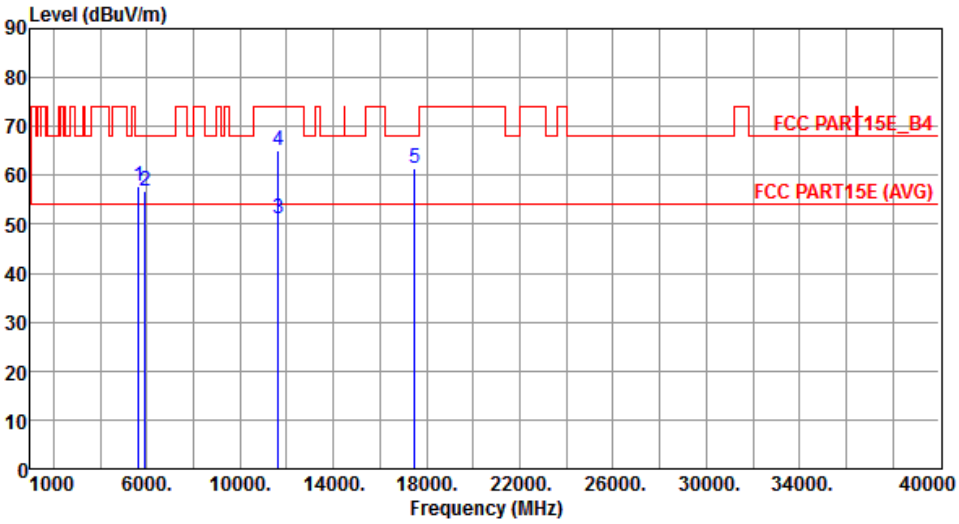
Modulation	VHT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	58.45	68.20	-9.75	53.45	5.00	Peak	206	105
2	5925.10	60.01	68.20	-8.19	54.67	5.34	Peak	206	105
3	11570.00	50.31	54.00	-3.69	34.98	15.33	Average	213	173
4	11570.00	64.55	74.00	-9.45	49.22	15.33	Peak	213	173
5	17355.00	61.71	68.20	-6.49	42.50	19.21	Peak	188	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).

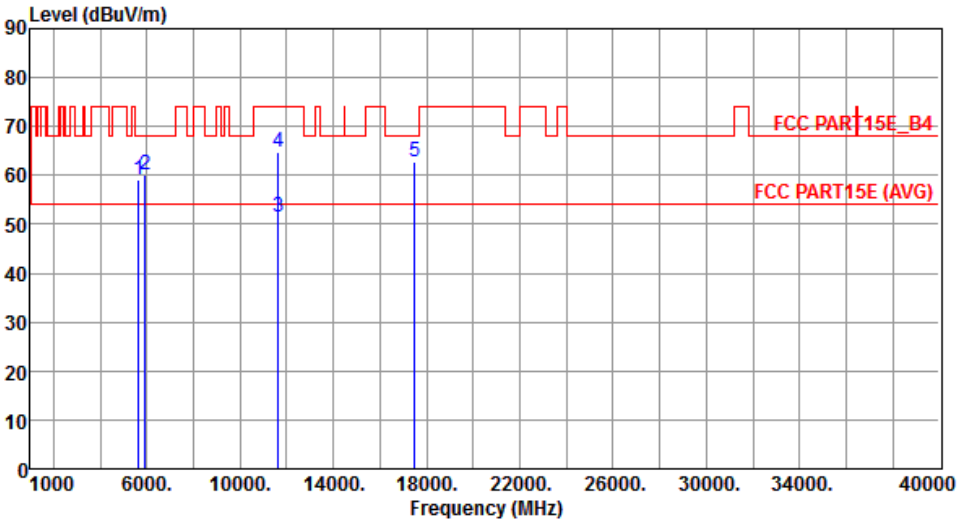
Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	57.66	68.20	-10.54	52.66	5.00	Peak	202	98
2	5925.10	56.88	68.20	-11.32	51.54	5.34	Peak	202	98
3	11650.00	51.27	54.00	-2.73	36.18	15.09	Average	220	116
4	11650.00	65.07	74.00	-8.93	49.98	15.09	Peak	220	116
5	17475.00	61.48	68.20	-6.72	41.93	19.55	Peak	214	108

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

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		

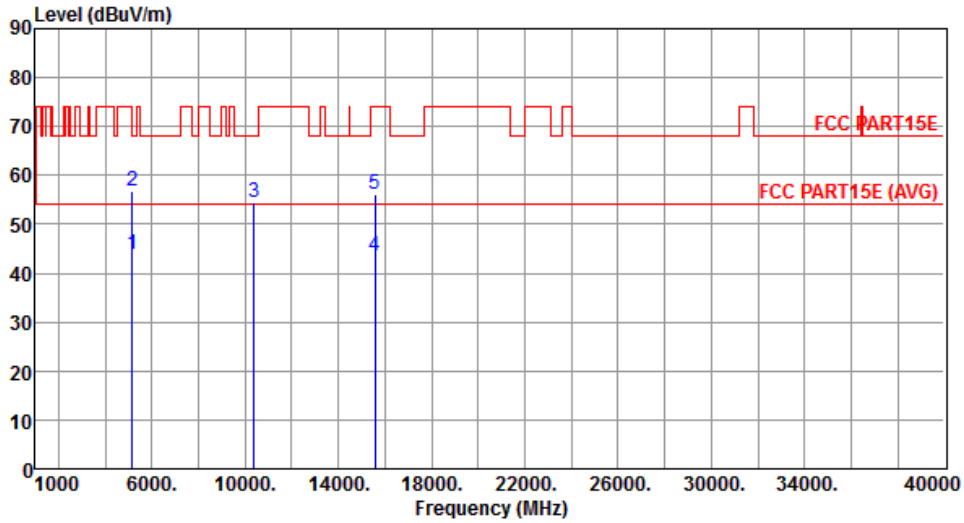


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	59.07	68.20	-9.13	54.07	5.00	Peak	212	99
2	5925.10	60.11	68.20	-8.09	54.77	5.34	Peak	212	99
3	11650.00	51.50	54.00	-2.50	36.41	15.09	Average	208	83
4	11650.00	64.85	74.00	-9.15	49.76	15.09	Peak	208	83
5	17475.00	62.66	68.20	-5.54	43.11	19.55	Peak	196	84

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).

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

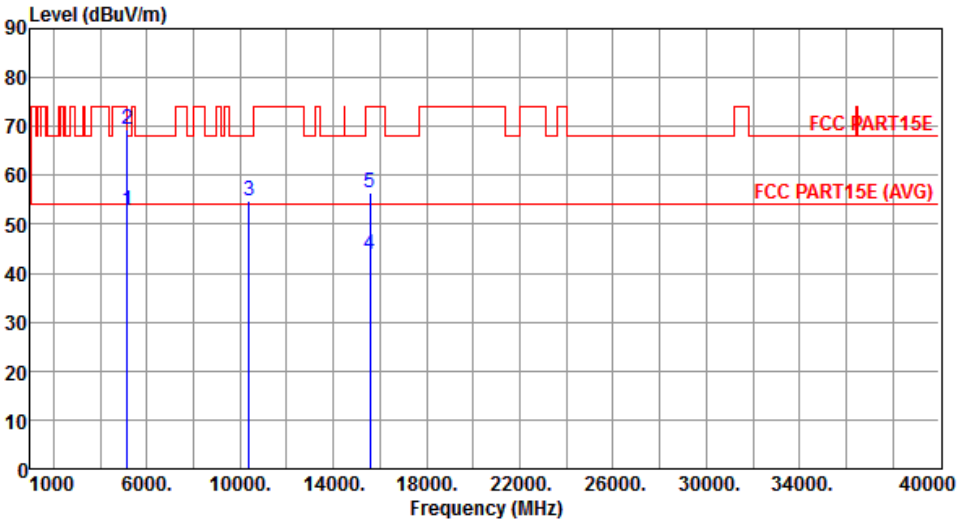
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	43.87	54.00	-10.13	39.47	4.40	Average	136	344
2	5150.00	56.92	74.00	-17.08	52.52	4.40	Peak	136	344
3	10380.00	54.36	68.20	-13.84	40.11	14.25	Peak	100	124
4	15570.00	43.45	54.00	-10.55	28.39	15.06	Average	100	243
5	15570.00	56.23	74.00	-17.77	41.17	15.06	Peak	100	243

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).

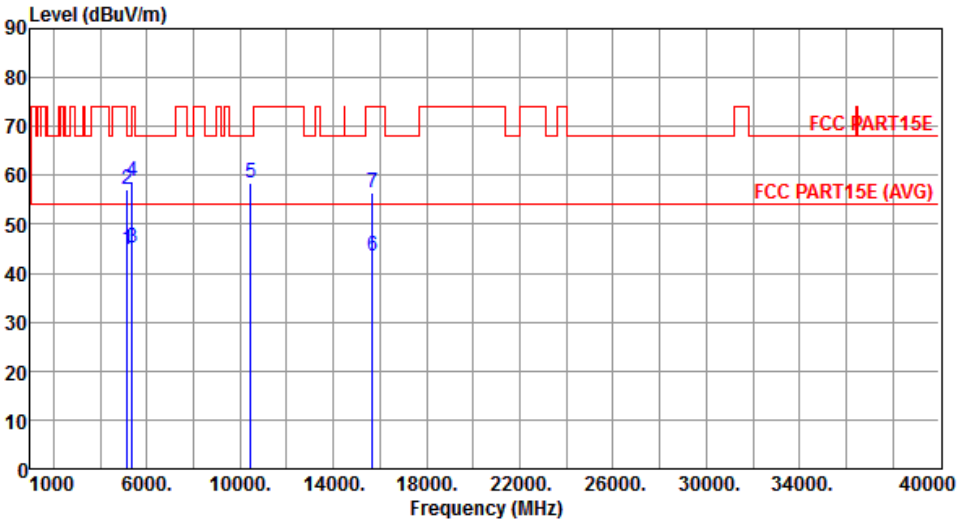
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.80	54.00	-1.20	48.40	4.40	Average	174	101
2	5150.00	69.45	74.00	-4.55	65.05	4.40	Peak	174	101
3	10380.00	54.77	68.20	-13.43	40.52	14.25	Peak	100	214
4	15570.00	43.69	54.00	-10.31	28.63	15.06	Average	100	165
5	15570.00	56.56	74.00	-17.44	41.50	15.06	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).

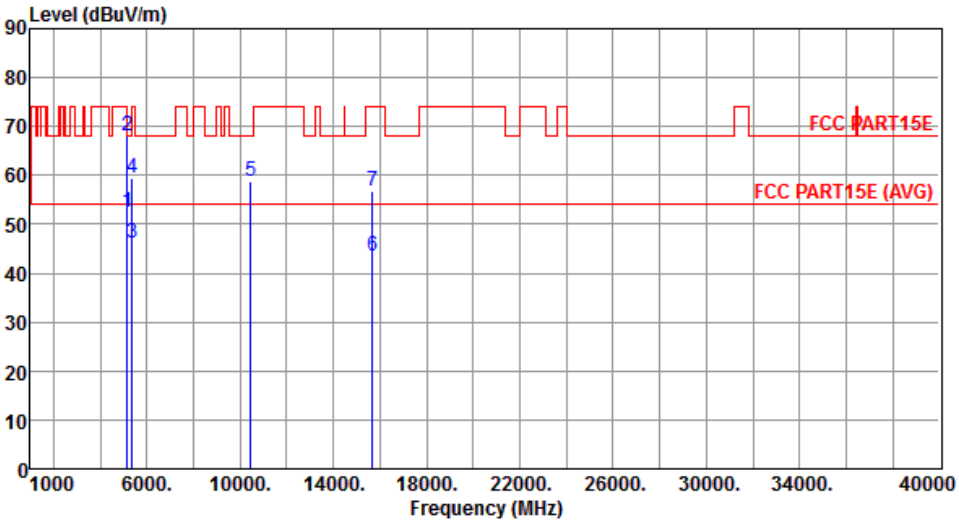
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	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	44.90	54.00	-9.10	40.50	4.40	Average	100	346
2	5150.00	57.05	74.00	-16.95	52.65	4.40	Peak	100	346
3	5350.00	45.15	54.00	-8.85	40.51	4.64	Average	100	346
4	5350.00	58.66	74.00	-15.34	54.02	4.64	Peak	100	346
5	10460.00	58.31	68.20	-9.89	43.91	14.40	Peak	252	113
6	15690.00	43.49	54.00	-10.51	28.58	14.91	Average	100	164
7	15690.00	56.53	74.00	-17.47	41.62	14.91	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).

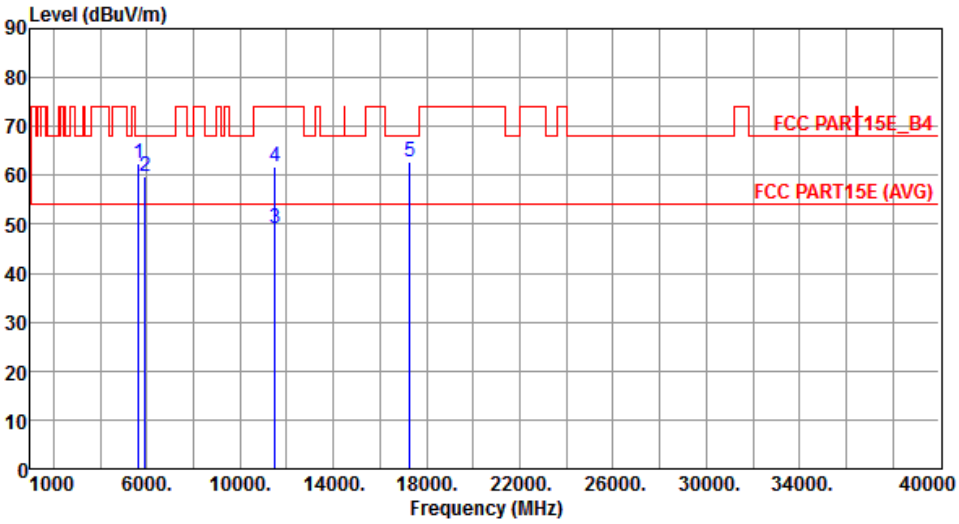
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.33	54.00	-1.67	47.93	4.40	Average	174	71
2	5150.00	68.01	74.00	-5.99	63.61	4.40	Peak	174	71
3	5350.00	46.05	54.00	-7.95	41.41	4.64	Average	174	71
4	5350.00	59.48	74.00	-14.52	54.84	4.64	Peak	174	71
5	10460.00	58.66	68.20	-9.54	44.26	14.40	Peak	212	130
6	15690.00	43.63	54.00	-10.37	28.72	14.91	Average	100	266
7	15690.00	56.89	74.00	-17.11	41.98	14.91	Peak	100	266

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

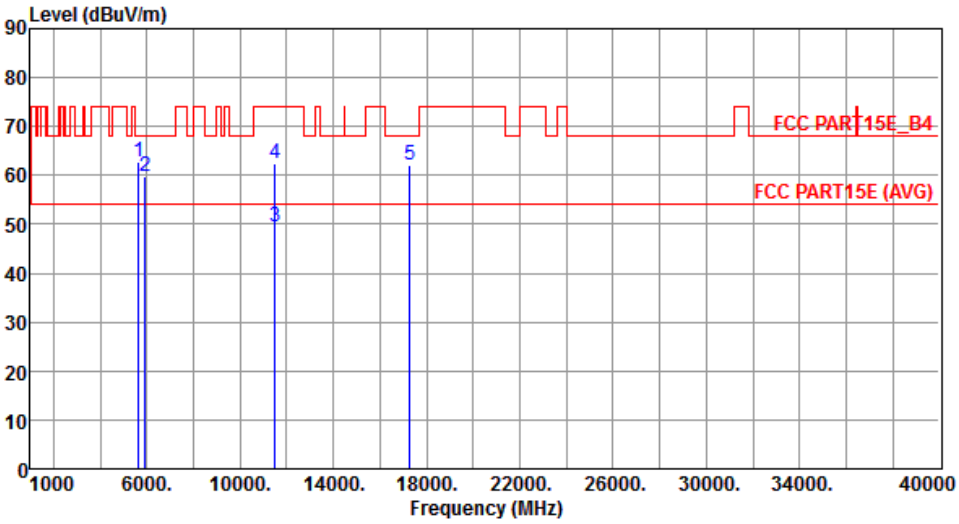
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	62.43	68.20	-5.77	57.43	5.00	Peak	171	105
2	5925.10	59.63	68.20	-8.57	54.29	5.34	Peak	171	105
3	11510.00	49.07	54.00	-4.93	33.56	15.51	Average	206	91
4	11510.00	61.75	74.00	-12.25	46.24	15.51	Peak	206	91
5	17265.00	62.76	68.20	-5.44	43.79	18.97	Peak	241	156

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

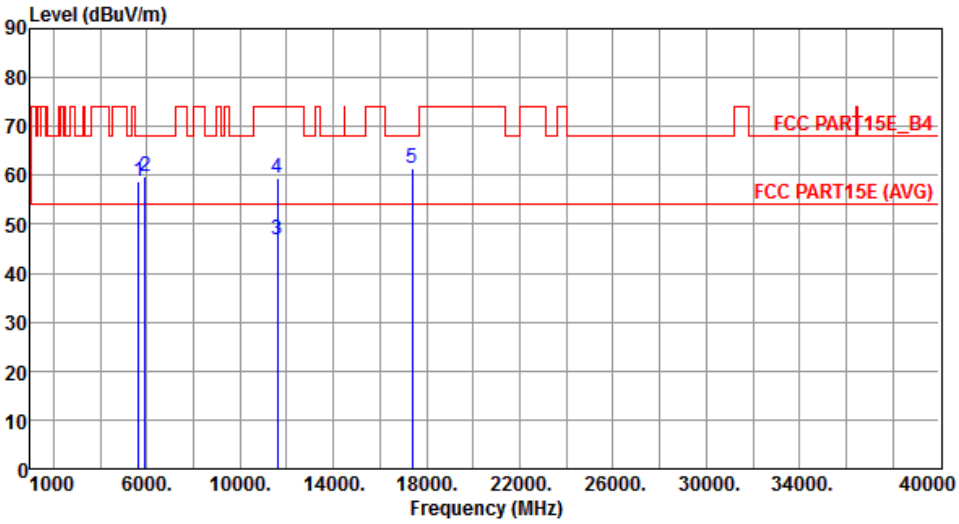
Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	62.81	68.20	-5.39	57.81	5.00	Peak	212	108
2	5925.10	59.70	68.20	-8.50	54.36	5.34	Peak	212	96
3	11510.00	49.35	54.00	-4.65	33.84	15.51	Average	211	172
4	11510.00	62.50	74.00	-11.50	46.99	15.51	Peak	211	172
5	17265.00	62.06	68.20	-6.14	43.09	18.97	Peak	207	320

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

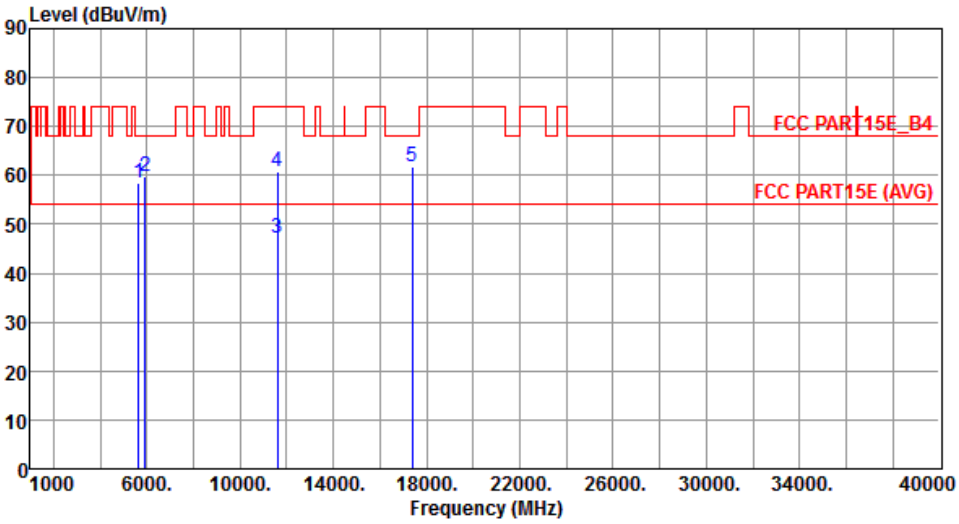
Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	58.74	68.20	-9.46	53.74	5.00	Peak	202	103
2	5925.10	59.71	68.20	-8.49	54.37	5.34	Peak	202	103
3	11590.00	46.73	54.00	-7.27	31.46	15.27	Average	242	175
4	11590.00	59.59	74.00	-14.41	44.32	15.27	Peak	242	175
5	17385.00	61.38	68.20	-6.82	42.09	19.29	Peak	209	156

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

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		

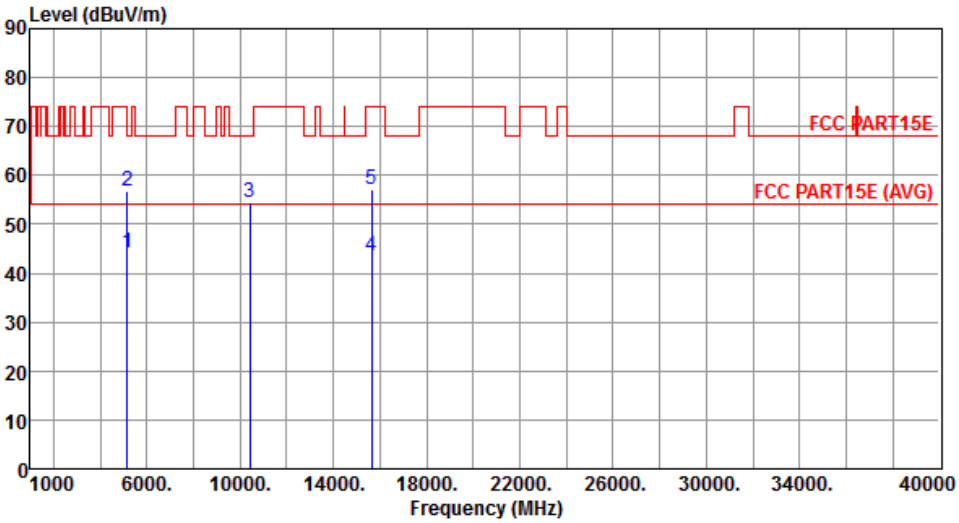


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	58.57	68.20	-9.63	53.57	5.00	Peak	197	89
2	5925.10	59.86	68.20	-8.34	54.52	5.34	Peak	197	89
3	11590.00	47.16	54.00	-6.84	31.89	15.27	Average	204	83
4	11590.00	60.75	74.00	-13.25	45.48	15.27	Peak	204	83
5	17385.00	61.65	68.20	-6.55	42.36	19.29	Peak	173	136

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).

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

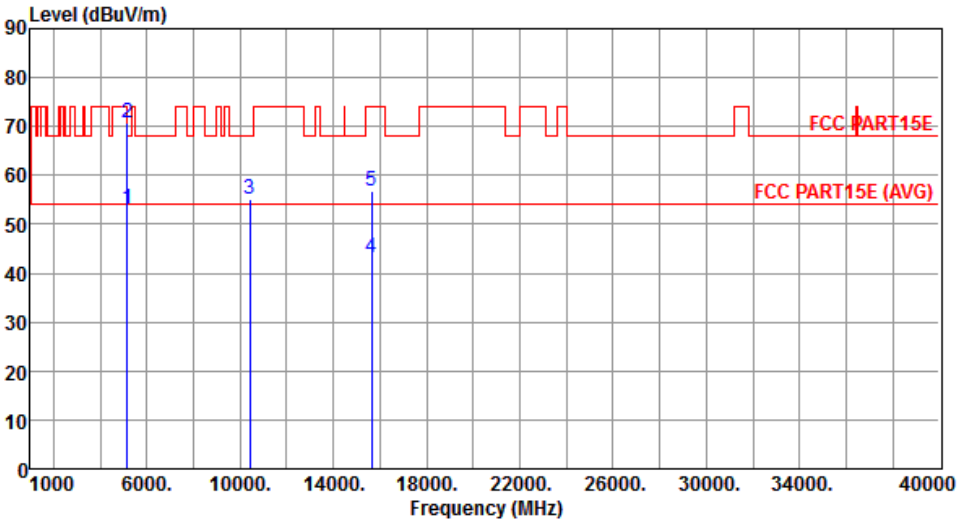
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	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	44.25	54.00	-9.75	39.85	4.40	Average	125	346
2	5150.00	56.88	74.00	-17.12	52.48	4.40	Peak	125	346
3	10420.00	54.36	68.20	-13.84	40.04	14.32	Peak	100	165
4	15630.00	43.45	54.00	-10.55	28.46	14.99	Average	100	352
5	15630.00	57.05	74.00	-16.95	42.06	14.99	Peak	100	352

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

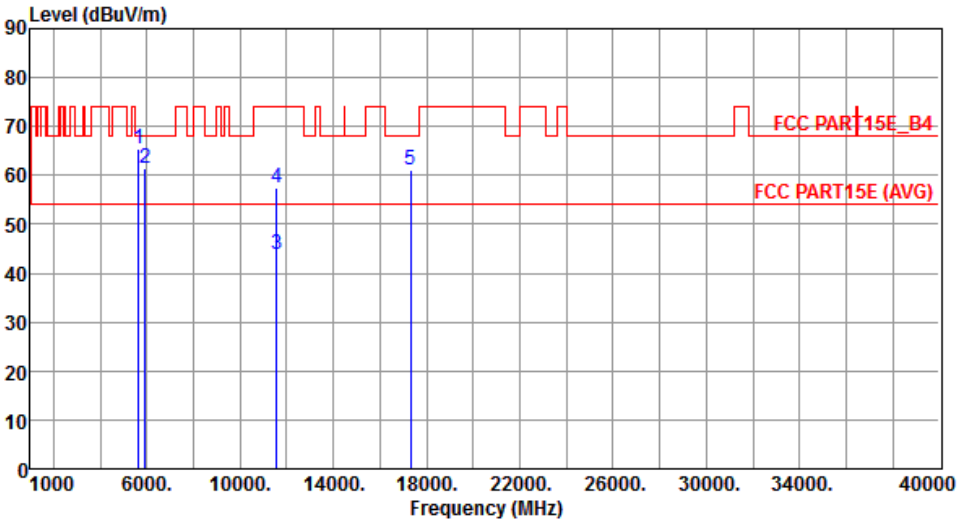
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.99	54.00	-1.01	48.59	4.40	Average	188	68
2	5150.00	70.63	74.00	-3.37	66.23	4.40	Peak	188	68
3	10420.00	55.19	68.20	-13.01	40.87	14.32	Peak	100	168
4	15630.00	43.33	54.00	-10.67	28.34	14.99	Average	100	233
5	15630.00	56.67	74.00	-17.33	41.68	14.99	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).

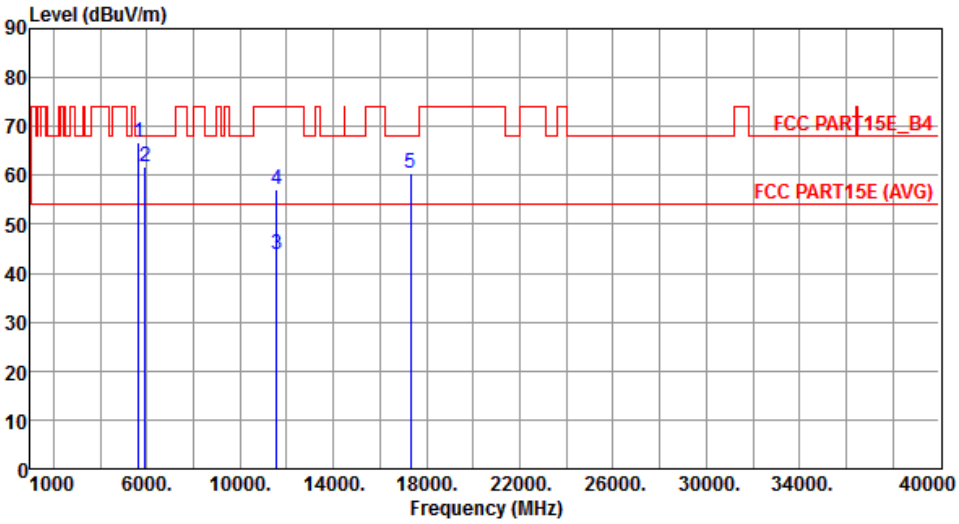
Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	65.37	68.20	-2.83	60.37	5.00	Peak	181	115
2	5925.10	61.54	68.20	-6.66	56.20	5.34	Peak	181	115
3	11550.00	43.69	54.00	-10.31	28.29	15.40	Average	190	256
4	11550.00	57.51	74.00	-16.49	42.11	15.40	Peak	190	256
5	17325.00	61.13	68.20	-7.07	42.00	19.13	Peak	204	97

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

Modulation	VHT80	Test Freq. (MHz)	5775
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5649.90	66.67	68.20	-1.53	61.67	5.00	Peak	230	252
2	5925.10	61.63	68.20	-6.57	56.29	5.34	Peak	230	252
3	11550.00	44.00	54.00	-10.00	28.60	15.40	Average	100	179
4	11550.00	57.24	74.00	-16.76	41.84	15.40	Peak	100	179
5	17325.00	60.57	68.20	-7.63	41.44	19.13	Peak	100	22

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

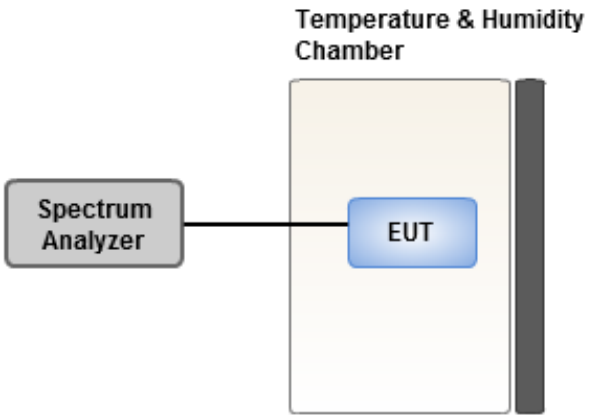
3.6.1 Limit of Frequency Stability

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 65 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: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	1.69	2.32	2.61	1.91
T20°CVmin	0.96	0.78	0.53	1.14
T65°CVnom	2.30	2.36	2.25	2.08
T60°CVnom	2.25	2.33	2.24	2.05
T-50°CVnom	1.37	1.45	1.34	1.78
T-40°CVnom	3.64	3.41	3.95	4.12
T-30°CVnom	3.24	3.36	3.41	3.68
T-20°CVnom	3.93	3.88	4.44	4.03
T10°CVnom	2.26	2.46	2.54	2.79
T0°CVnom	1.97	2.72	1.99	1.97
T-10°CVnom	1.13	1.32	1.06	0.85
T-20°CVnom	1.21	0.92	1.81	1.06
T-30°CVnom	1.45	1.63	1.25	1.44
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102	
Tnom [°C]: 20	Tmax [°C]: 65		Tmin [°C]: -30	

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°CVmax	-0.16	-0.37	0.08	0.20
T20°CVmin	-0.31	-0.11	-0.35	-0.18
T65°CVnom	-0.31	0.07	-0.17	0.09
T60°CVnom	0.71	0.58	0.85	0.52
T-50°CVnom	0.04	0.27	-0.34	-0.18
T-40°CVnom	0.11	0.32	0.48	0.25
T-30°CVnom	0.34	0.02	0.68	0.84
T-20°CVnom	0.11	-0.20	0.51	0.51
T10°CVnom	0.02	0.06	-0.29	0.08
T0°CVnom	-0.09	0.51	0.24	-0.15
T-10°CVnom	0.02	0.49	0.66	0.14
T-20°CVnom	0.29	0.69	0.56	0.74
T-30°CVnom	-0.03	0.20	0.39	0.04
Vnom [Vac]: 120	Vmax [Vac]: 138		Vmin [Vac]: 102	
Tnom [°C]: 20	Tmax [°C]: 65		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 Hsiang. 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
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Email: ICC_Service@icertifi.com.tw

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