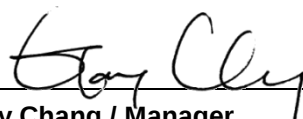


FCC Test Report

FCC ID : NKR-DHSMW97
Equipment : 802.11 abgn/ac 2x2 module with BT
Model No. : DHSM-W97
Brand Name : WNC
Applicant : Wistron NeWeb Corp.
Address : 20 Park Avenue II, Hsinchu Science Park,
Hsinchu 308, Taiwan, R.O.C.
Standard : 47 CFR FCC Part 15.407
Received Date : Dec. 17, 2015
Tested Date : Jan. 11 ~ Jan. 29, 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.

Approved & Reviewed by:



Gary Chang / Manager



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List	11
1.3	Test Setup Chart	11
1.4	The Equipment List	12
1.5	Testing Applied Standards	13
1.6	Measurement Uncertainty	13
2	TEST CONFIGURATION	14
2.1	Testing Condition	14
2.2	The Worst Test Modes and Channel Details	14
3	TRANSMITTER TEST RESULTS.....	16
3.1	Conducted Emissions.....	16
3.2	Emission Bandwidth	21
3.3	RF Output Power	26
3.4	Peak Power Spectral Density	32
3.5	Transmitter Radiated and Band Edge Emissions	37
3.6	Frequency Stability	130
4	TEST LABORATORY INFORMATION	132

Release Record

Report No.	Version	Description	Issued Date
FR5D1702AN	Rev. 01	Initial issue	Feb. 05, 2016

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.240MHz 48.37 (Margin -13.71dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 5150.00MHz 52.99 (Margin -1.01dB) – AV [dBuV/m at 3m]: 5470.00MHz 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: 21.85 5250~5350MHz: 23.09 5470~5725MHz: 23.06 5725~5850MHz: 20.43	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 5250-5350 5470-5725 5725-5850	a	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [9] 149-165 [5]	2	6-54 Mbps
5150-5250 5250-5350 5470-5725 5725-5850	n (HT20)	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [9] 149-165 [5]	2	MCS 0-15
5150-5250 5250-5350 5470-5725 5725-5850	n (HT40)	5190-5230 5270-5310 5510-5710 5755-5795	38-46 [2] 54-62 [2] 102-142 [4] 151-159 [2]	2	MCS 0-15
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT20)	5180-5240 5260-5320 5500-5720 5745-5825	36-48 [4] 52-64 [4] 100-144 [9] 149-165 [5]	2	MCS 0-9
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT40)	5190-5230 5270-5310 5510-5710 5755-5795	38-46 [2] 54-62 [2] 102-142 [4] 151-159 [2]	2	MCS 0-9
5150-5250 5250-5350 5470-5725 5725-5850	ac (VHT80)	5210 5290 5530-5690 5775	42 [1] 58 [1] 106-138 [2] 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. Note 3: The device has disabled the 5600-5650MHz band by S/W setting.					

1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)					Cable length (mm)
				2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850	
1	95EEW15 GLR	PIFA	U.FL	-1.34	4.69	4.69	3.03	1.59	200
	95EEW15 GLS	PIFA	U.FL	0.08	1.57	1.04	1.04	-1.56	370
2	E40 (White cable)	PIFA	U.FL	1.61	0.79	2.02	2.08	0.46	400
	E40 (Black cable)	PIFA	U.FL	0.81	-0.61	0.62	0.68	-0.94	700
3	E48 (White cable)	PIFA	U.FL	1.51	0.59	1.82	1.88	0.26	450
	E48 (Black cable)	PIFA	U.FL	0.81	-0.61	0.62	0.68	-0.94	700
4	E55 (White cable)	PIFA	U.FL	-1.79	-5.31	-4.08	-4.02	-5.64	450
	E55 (Black cable)	PIFA	U.FL	0.01	-2.11	-0.88	-0.82	-2.44	1050

Note: Ant. No. 2 with highest gain and Ant. No. 4 (E55, black cable) with longest cable were for 2.4G final test.

Ant. No. 1 with highest gain and Ant. No. 4 (E55, black cable) with longest cable were for 5G final test.

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

802.11 a / HT20 / VHT20		HT40 / VHT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
36	5180	38	5190
40	5200	46	5230
44	5220	54	5270
48	5240	62	5310
52	5260	102	5510
56	5280	110	5550
60	5300	134	5670
64	5320	142	5710
100	5500	151	5755
104	5520	159	5795
108	5540	VHT80	
112	5560	42	5210
116	5580	58	5290
132	5660	106	5530
136	5680	138	5690
140	5700	155	5775
144	5720	---	---
149	5745	---	---
153	5765	---	---
157	5785	---	---
161	5805	---	---
165	5825	---	---

1.1.6 Test Tool and Duty Cycle

Test Tool	Dut Wlan BT Labtool, V 2.0.0.68		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	99.20%	0.03
	VHT20	99.16%	0.04
	VHT40	98.20%	0.08
	VHT80	95.23%	0.21

1.1.7 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5180	16
11a	5200	18
11a	5240	19
HT20	5180	15
HT20	5200	18
HT20	5240	19
HT40	5190	9
HT40	5230	17
VHT20	5180	15
VHT20	5200	18
VHT20	5240	19
VHT40	5190	9
VHT40	5230	17
VHT80	5210	7

For Frequency band 5250~5350 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5260	22
11a	5300	18
11a	5320	14
HT20	5260	19
HT20	5300	18
HT20	5320	14
HT40	5270	17
HT40	5310	10
VHT20	5260	19
VHT20	5300	18
VHT20	5320	14
VHT40	5270	17
VHT40	5310	10
VHT80	5290	7

For Frequency band 5470~5725 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5500	15
11a	5580	22
11a	5700	13
HT20	5500	15
HT20	5580	19
HT20	5700	13
HT40	5510	10
HT40	5550	18
HT40	5670	15
VHT20	5500	15
VHT20	5580	19
VHT20	5700	13
VHT40	5510	10
VHT40	5550	18
VHT40	5670	15
VHT80	5530	7

Channel that extends across the 5.725 GHz boundary

For Frequency band 5470~5725 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5720	18
HT20	5720	19
HT40	5710	18
VHT20	5720	19
VHT40	5710	18
VHT80	5690	16

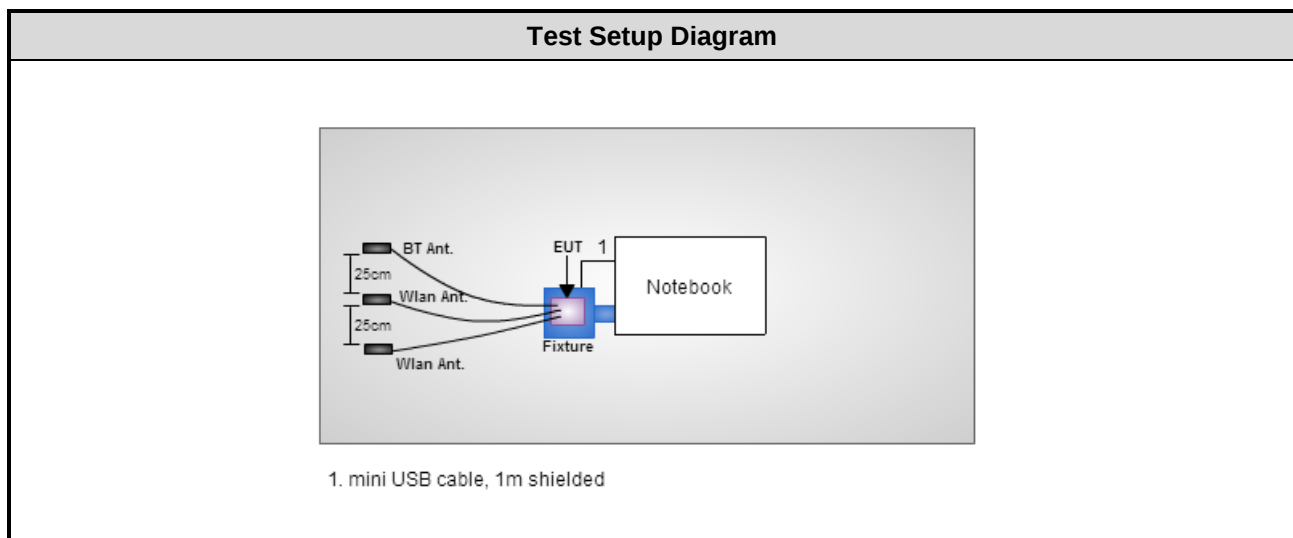
For Frequency band 5725~5850 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5745	13
11a	5785	18
11a	5825	14
HT20	5745	13
HT20	5785	18
HT20	5825	14
HT40	5755	8
HT40	5795	15
VHT20	5745	13
VHT20	5785	18
VHT20	5825	14
VHT40	5755	8
VHT40	5795	15
VHT80	5775	6

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	E6500	DoC	Mini USB, 1m shielded.

Note: Notebook & Mini USB cable are supplied by applicant.

1.3 Test Setup Chart



1.4 The Equipment List

Test Item	Conducted Emission				
Test Site	Conduction room 1 / (CO01-WS)				
Tested Date	Jan. 19, 2016				
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 below 1GHz				
Test Site	966 chamber 2 / (03CH02-WS)				
Tested Date	Jan. 27, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Jan. 12, 2016	Jan. 11, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-523	Nov. 09, 2015	Nov. 08, 2016
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 10, 2015	Dec. 09, 2016
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	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	Radiated Emission above 1GHz				
Test Site	966 chamber 2 / (03CH02-WS)				
Tested Date	Jan. 09 ~ Jan. 27, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Dec. 17, 2015	Dec. 16, 2016
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Oct. 07, 2015	Oct. 06, 2016
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 04, 2015	Nov. 03, 2016
Preamplifier	Burgeon	BPA-530	100218	Nov. 03, 2015	Nov. 02, 2016
Preamplifier	Agilent	83017A	MY39501309	Sep. 22, 2015	Sep. 21, 2016
Preamplifier	EMC	EMC184045B	980192	Sep. 01, 2015	Aug. 31, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 10, 2015	Dec. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	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)				
Tested Date	Jan. 28 ~ Jan. 29, 2016				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Feb. 03, 2015	Feb. 02, 2016
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 v01r01

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	±2.92 dB
Radiated emission ≤ 1GHz	±3.87 dB
Radiated emission > 1GHz	±5.60 dB
Time	±0.1%
Temperature	±0.6 °C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	18°C / 59%	Sky Huang
Radiated Emissions	03CH02-WS	21-22°C / 62-64%	Anderson Hong Aska Huang
RF Conducted	TH01-WS	22°C / 64%	Alex Huang

➤ FCC site registration No.: 657002

➤ IC site registration No.: 10807A-2

2.2 The Worst Test Modes and Channel Details

Frequency band 5150~5250 MHz / 5250~5350 MHz / 5470~5725 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11a	5260	6 Mbps	1
Radiated Emissions ≤1GHz	11a	5260	6 Mbps	1, 2
RF Output Power	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	6 Mbps	1
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0	
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670 / 5710	MCS 0	
	VHT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670 / 5710	MCS 0	
	VHT80	5210 / 5290 / 5530 / 5690	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	6 Mbps	1
	VHT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0	
	VHT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670 / 5710	MCS 0	
	VHT80	5210 / 5290 / 5530 / 5690	MCS 0	
Frequency Stability	Un-modulation	5320	---	1
NOTE:				
1. The following antennas are used for final testing for this module: (See item 1.1.2 for more details.)				
1) Configuration 1: Ant. No. 1(95EEW15 GLR/GLS), PIFA antenna.				
2) Configuration 2: Ant. No. 4 (E55, black cable), PIFA antenna.				

Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	Test Configuration
Conducted Emissions	11a	5785	6 Mbps	1
Radiated Emissions ≤ 1 GHz	11a	5785	6 Mbps	1, 2
RF Output Power	11a	5745 / 5785 / 5825	6 Mbps	1
	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 > 1 GHz Emission Bandwidth 6dB bandwidth Peak Power Spectral Density	11a	5745 / 5785 / 5825	6 Mbps	1
	VHT20	5745 / 5785 / 5825	MCS 0	
	VHT40	5755 / 5795	MCS 0	
	VHT80	5775	MCS 0	
Frequency Stability	Un-modulation	5785	---	1
NOTE: 1. The following antennas are used for final testing for this module: (See item 1.1.2 for more details.) 1) Configuration 1: Ant. No. 1(95EEW15 GLR/GLS), PIFA antenna. 2) Configuration 2: Ant. No. 4 (E55, black cable), PIFA antenna.				

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

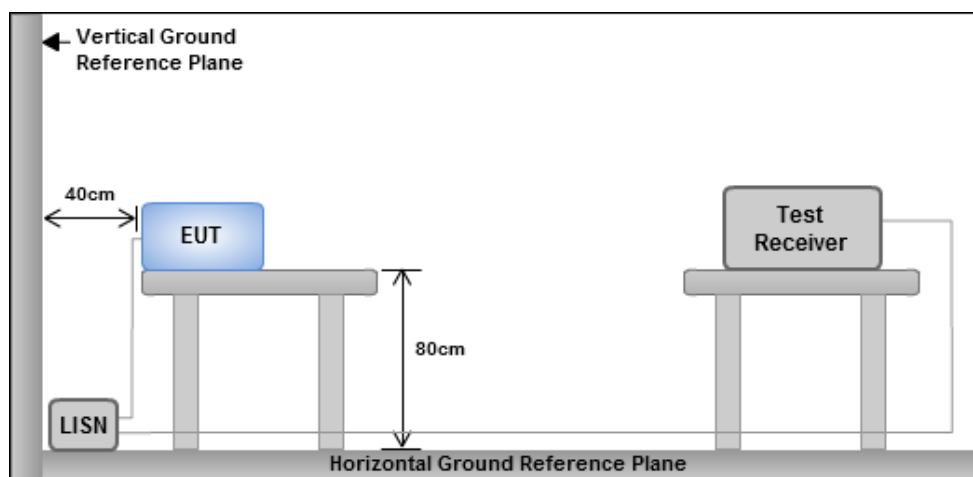
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

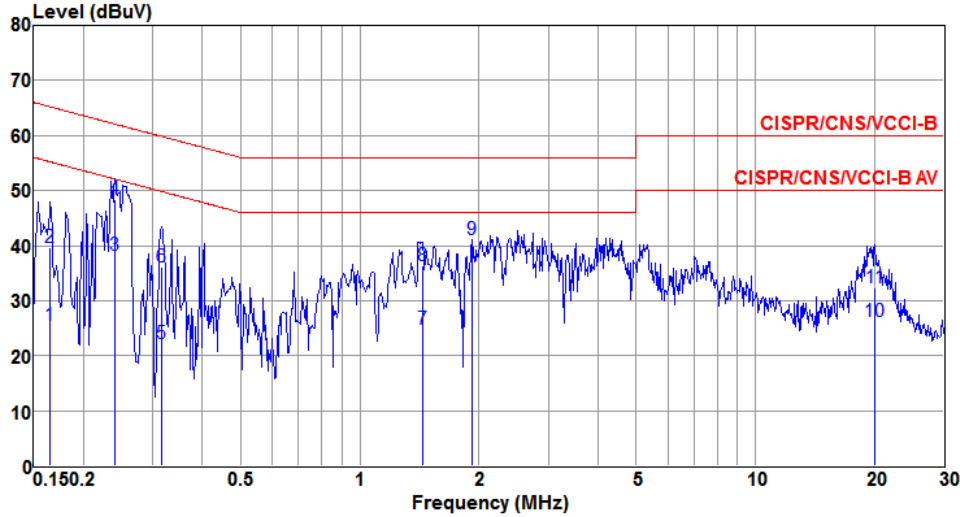
3.1.3 Test Setup



- 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

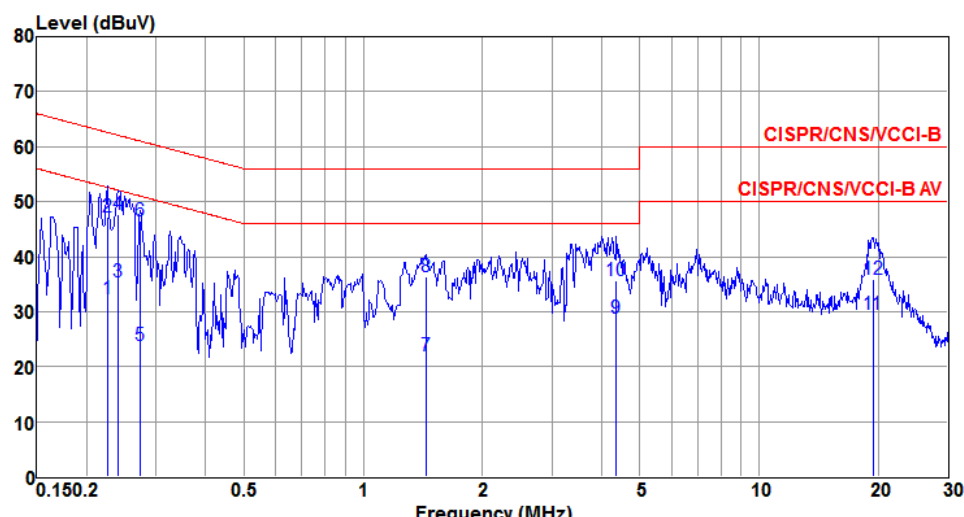
3.1.4 Test Result of Conducted Emissions

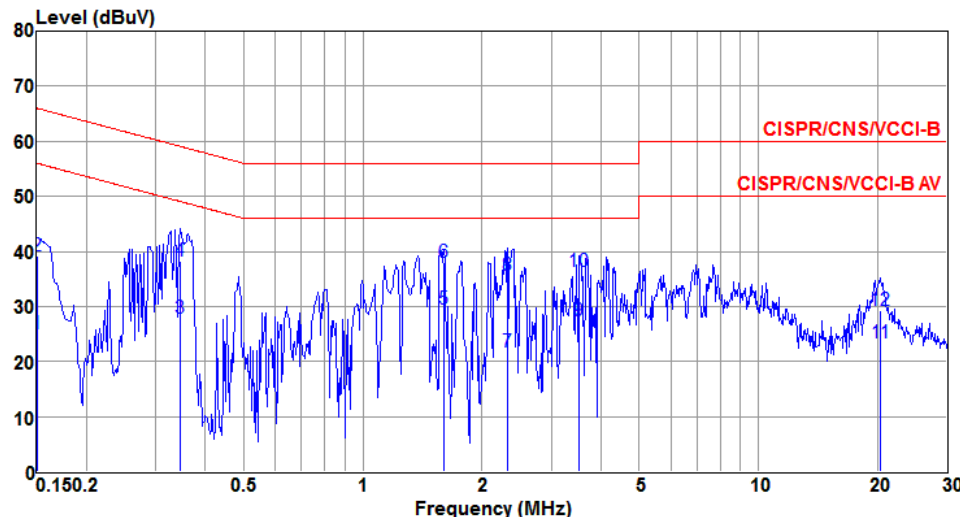
Modulation	11a	Test Freq. (MHz)	5260
Power Phase	Line		



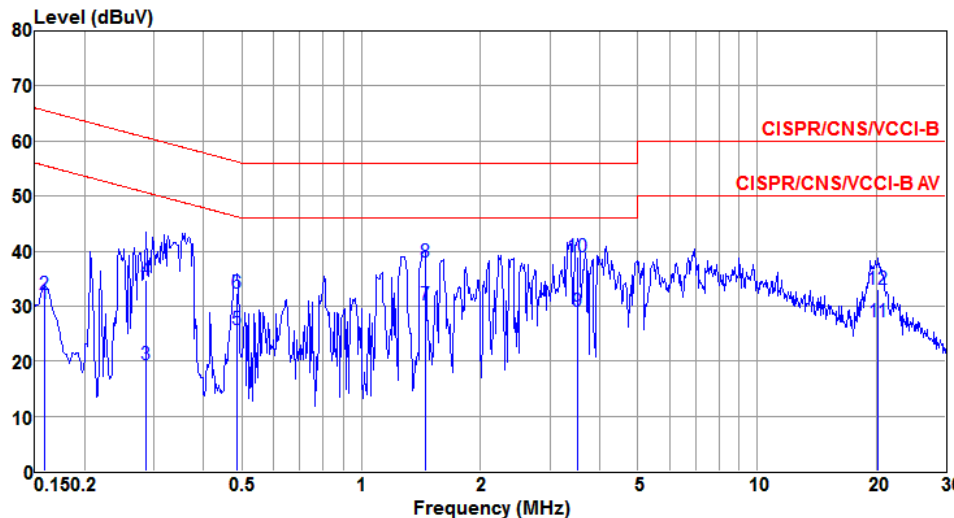
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.165	25.59	55.21	-29.62	24.88	0.69	0.02	Average
2	0.165	39.72	65.21	-25.49	39.01	0.69	0.02	QP
3	0.240	38.15	52.08	-13.93	37.90	0.23	0.02	Average
4	0.240	48.37	62.08	-13.71	48.12	0.23	0.02	QP
5	0.315	22.09	49.84	-27.75	21.86	0.20	0.03	Average
6	0.315	36.07	59.84	-23.77	35.84	0.20	0.03	QP
7	1.441	24.78	46.00	-21.22	24.33	0.38	0.07	Average
8	1.441	36.31	56.00	-19.69	35.86	0.38	0.07	QP
9	1.928	41.05	56.00	-14.95	40.37	0.60	0.08	Peak
10	20.056	26.28	50.00	-23.72	25.34	0.77	0.17	Average
11	20.056	32.36	60.00	-27.64	31.42	0.77	0.17	QP

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

Modulation	11a	Test Freq. (MHz)	5260																																																																																																																					
Power Phase	Neutral																																																																																																																							
Level (dBuV)  <table><tr><th></th><th>Freq MHz</th><th>Level dBuV</th><th>Limit Line dBuV</th><th>Over Limit dB</th><th>Read Level dBuV</th><th>LISN factor dB</th><th>cable loss dB</th><th>Remark</th></tr><tr><td>1</td><td>0.226</td><td>32.22</td><td>52.61</td><td>-20.39</td><td>31.98</td><td>0.22</td><td>0.02</td><td>Average</td></tr><tr><td>2</td><td>0.226</td><td>47.31</td><td>62.61</td><td>-15.30</td><td>47.07</td><td>0.22</td><td>0.02</td><td>QP</td></tr><tr><td>3</td><td>0.240</td><td>35.41</td><td>52.08</td><td>-16.67</td><td>35.18</td><td>0.21</td><td>0.02</td><td>Average</td></tr><tr><td>4</td><td>0.240</td><td>47.58</td><td>62.08</td><td>-14.50</td><td>47.35</td><td>0.21</td><td>0.02</td><td>QP</td></tr><tr><td>5</td><td>0.273</td><td>23.93</td><td>51.03</td><td>-27.10</td><td>23.72</td><td>0.19</td><td>0.02</td><td>Average</td></tr><tr><td>6</td><td>0.273</td><td>46.40</td><td>61.03</td><td>-14.63</td><td>46.19</td><td>0.19</td><td>0.02</td><td>QP</td></tr><tr><td>7</td><td>1.441</td><td>22.03</td><td>46.00</td><td>-23.97</td><td>21.72</td><td>0.24</td><td>0.07</td><td>Average</td></tr><tr><td>8</td><td>1.441</td><td>36.43</td><td>56.00</td><td>-19.57</td><td>36.12</td><td>0.24</td><td>0.07</td><td>QP</td></tr><tr><td>9</td><td>4.361</td><td>28.82</td><td>46.00</td><td>-17.18</td><td>27.98</td><td>0.72</td><td>0.12</td><td>Average</td></tr><tr><td>10</td><td>4.361</td><td>35.69</td><td>56.00</td><td>-20.31</td><td>34.85</td><td>0.72</td><td>0.12</td><td>QP</td></tr><tr><td>11</td><td>19.428</td><td>29.50</td><td>50.00</td><td>-20.50</td><td>28.60</td><td>0.73</td><td>0.17</td><td>Average</td></tr><tr><td>12</td><td>19.428</td><td>35.88</td><td>60.00</td><td>-24.12</td><td>34.98</td><td>0.73</td><td>0.17</td><td>QP</td></tr></table> Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB). Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).					Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark	1	0.226	32.22	52.61	-20.39	31.98	0.22	0.02	Average	2	0.226	47.31	62.61	-15.30	47.07	0.22	0.02	QP	3	0.240	35.41	52.08	-16.67	35.18	0.21	0.02	Average	4	0.240	47.58	62.08	-14.50	47.35	0.21	0.02	QP	5	0.273	23.93	51.03	-27.10	23.72	0.19	0.02	Average	6	0.273	46.40	61.03	-14.63	46.19	0.19	0.02	QP	7	1.441	22.03	46.00	-23.97	21.72	0.24	0.07	Average	8	1.441	36.43	56.00	-19.57	36.12	0.24	0.07	QP	9	4.361	28.82	46.00	-17.18	27.98	0.72	0.12	Average	10	4.361	35.69	56.00	-20.31	34.85	0.72	0.12	QP	11	19.428	29.50	50.00	-20.50	28.60	0.73	0.17	Average	12	19.428	35.88	60.00	-24.12	34.98	0.73	0.17	QP
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark																																																																																																																
1	0.226	32.22	52.61	-20.39	31.98	0.22	0.02	Average																																																																																																																
2	0.226	47.31	62.61	-15.30	47.07	0.22	0.02	QP																																																																																																																
3	0.240	35.41	52.08	-16.67	35.18	0.21	0.02	Average																																																																																																																
4	0.240	47.58	62.08	-14.50	47.35	0.21	0.02	QP																																																																																																																
5	0.273	23.93	51.03	-27.10	23.72	0.19	0.02	Average																																																																																																																
6	0.273	46.40	61.03	-14.63	46.19	0.19	0.02	QP																																																																																																																
7	1.441	22.03	46.00	-23.97	21.72	0.24	0.07	Average																																																																																																																
8	1.441	36.43	56.00	-19.57	36.12	0.24	0.07	QP																																																																																																																
9	4.361	28.82	46.00	-17.18	27.98	0.72	0.12	Average																																																																																																																
10	4.361	35.69	56.00	-20.31	34.85	0.72	0.12	QP																																																																																																																
11	19.428	29.50	50.00	-20.50	28.60	0.73	0.17	Average																																																																																																																
12	19.428	35.88	60.00	-24.12	34.98	0.73	0.17	QP																																																																																																																

Modulation	11a	Test Freq. (MHz)	5785																																																																																																																																							
Power Phase	Line																																																																																																																																									
Level (dBuV)  Frequency (MHz) <table><thead><tr><th></th><th>Freq</th><th>Level</th><th>Limit</th><th>Over</th><th>Read</th><th>LISN</th><th>cable</th><th></th></tr><tr><th></th><th>MHz</th><th>dBuV</th><th>Line</th><th>Limit</th><th>Level</th><th>factor</th><th>loss</th><th>Remark</th></tr><tr><th></th><th></th><th></th><th>dBuV</th><th>dB</th><th>dBuV</th><th>dB</th><th>dB</th><th></th></tr></thead><tbody><tr><td>1</td><td>0.150</td><td>25.14</td><td>56.00</td><td>-30.86</td><td>24.20</td><td>0.92</td><td>0.02</td><td>Average</td></tr><tr><td>2</td><td>0.150</td><td>39.10</td><td>66.00</td><td>-26.90</td><td>38.16</td><td>0.92</td><td>0.02</td><td>QP</td></tr><tr><td>3</td><td>0.346</td><td>27.96</td><td>49.05</td><td>-21.09</td><td>27.74</td><td>0.19</td><td>0.03</td><td>Average</td></tr><tr><td>4</td><td>0.346</td><td>38.21</td><td>59.05</td><td>-20.84</td><td>37.99</td><td>0.19</td><td>0.03</td><td>QP</td></tr><tr><td>5@</td><td>1.602</td><td>29.59</td><td>46.00</td><td>-16.41</td><td>29.06</td><td>0.46</td><td>0.07</td><td>Average</td></tr><tr><td>6</td><td>1.602</td><td>38.04</td><td>56.00</td><td>-17.96</td><td>37.51</td><td>0.46</td><td>0.07</td><td>QP</td></tr><tr><td>7</td><td>2.321</td><td>21.71</td><td>46.00</td><td>-24.29</td><td>21.07</td><td>0.55</td><td>0.09</td><td>Average</td></tr><tr><td>8</td><td>2.321</td><td>35.70</td><td>56.00</td><td>-20.30</td><td>35.06</td><td>0.55</td><td>0.09</td><td>QP</td></tr><tr><td>9</td><td>3.509</td><td>27.33</td><td>46.00</td><td>-18.67</td><td>26.89</td><td>0.33</td><td>0.11</td><td>Average</td></tr><tr><td>10</td><td>3.509</td><td>36.42</td><td>56.00</td><td>-19.58</td><td>35.98</td><td>0.33</td><td>0.11</td><td>QP</td></tr><tr><td>11</td><td>20.377</td><td>23.44</td><td>50.00</td><td>-26.56</td><td>22.48</td><td>0.78</td><td>0.18</td><td>Average</td></tr><tr><td>12</td><td>20.377</td><td>29.27</td><td>60.00</td><td>-30.73</td><td>28.31</td><td>0.78</td><td>0.18</td><td>QP</td></tr></tbody></table>					Freq	Level	Limit	Over	Read	LISN	cable			MHz	dBuV	Line	Limit	Level	factor	loss	Remark				dBuV	dB	dBuV	dB	dB		1	0.150	25.14	56.00	-30.86	24.20	0.92	0.02	Average	2	0.150	39.10	66.00	-26.90	38.16	0.92	0.02	QP	3	0.346	27.96	49.05	-21.09	27.74	0.19	0.03	Average	4	0.346	38.21	59.05	-20.84	37.99	0.19	0.03	QP	5@	1.602	29.59	46.00	-16.41	29.06	0.46	0.07	Average	6	1.602	38.04	56.00	-17.96	37.51	0.46	0.07	QP	7	2.321	21.71	46.00	-24.29	21.07	0.55	0.09	Average	8	2.321	35.70	56.00	-20.30	35.06	0.55	0.09	QP	9	3.509	27.33	46.00	-18.67	26.89	0.33	0.11	Average	10	3.509	36.42	56.00	-19.58	35.98	0.33	0.11	QP	11	20.377	23.44	50.00	-26.56	22.48	0.78	0.18	Average	12	20.377	29.27	60.00	-30.73	28.31	0.78	0.18	QP
	Freq	Level	Limit	Over	Read	LISN	cable																																																																																																																																			
	MHz	dBuV	Line	Limit	Level	factor	loss	Remark																																																																																																																																		
			dBuV	dB	dBuV	dB	dB																																																																																																																																			
1	0.150	25.14	56.00	-30.86	24.20	0.92	0.02	Average																																																																																																																																		
2	0.150	39.10	66.00	-26.90	38.16	0.92	0.02	QP																																																																																																																																		
3	0.346	27.96	49.05	-21.09	27.74	0.19	0.03	Average																																																																																																																																		
4	0.346	38.21	59.05	-20.84	37.99	0.19	0.03	QP																																																																																																																																		
5@	1.602	29.59	46.00	-16.41	29.06	0.46	0.07	Average																																																																																																																																		
6	1.602	38.04	56.00	-17.96	37.51	0.46	0.07	QP																																																																																																																																		
7	2.321	21.71	46.00	-24.29	21.07	0.55	0.09	Average																																																																																																																																		
8	2.321	35.70	56.00	-20.30	35.06	0.55	0.09	QP																																																																																																																																		
9	3.509	27.33	46.00	-18.67	26.89	0.33	0.11	Average																																																																																																																																		
10	3.509	36.42	56.00	-19.58	35.98	0.33	0.11	QP																																																																																																																																		
11	20.377	23.44	50.00	-26.56	22.48	0.78	0.18	Average																																																																																																																																		
12	20.377	29.27	60.00	-30.73	28.31	0.78	0.18	QP																																																																																																																																		
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB). Note 2: Over Limit (dB) = Level (dBuV) – Limit Line (dBuV).																																																																																																																																										

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



	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark
1	0.159	30.34	55.52	-25.18	29.59	0.73	0.02	Average
2	0.159	32.14	65.52	-33.38	31.39	0.73	0.02	QP
3	0.286	19.44	50.63	-31.19	19.23	0.18	0.03	Average
4	0.286	34.76	60.63	-25.87	34.55	0.18	0.03	QP
5	0.486	25.67	46.23	-20.56	25.47	0.16	0.04	Average
6	0.486	32.45	56.23	-23.78	32.25	0.16	0.04	QP
7@	1.449	30.11	46.00	-15.89	29.80	0.24	0.07	Average
8	1.449	38.02	56.00	-17.98	37.71	0.24	0.07	QP
9	3.509	29.07	46.00	-16.93	28.32	0.64	0.11	Average
10	3.509	38.99	56.00	-17.01	38.24	0.64	0.11	QP
11	20.270	27.14	50.00	-22.86	26.20	0.76	0.18	Average
12	20.270	33.13	60.00	-26.87	32.19	0.76	0.18	QP

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

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

3.2 Emission Bandwidth

3.2.1 Limit of Emission Bandwidth

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

3.2.2 Test Procedures

26dB Bandwidth

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

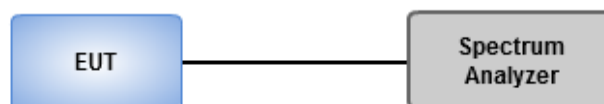
Occupied Bandwidth

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

6dB Bandwidth

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

3.2.3 Test Setup



3.2.4 Test Result of Emission Bandwidth

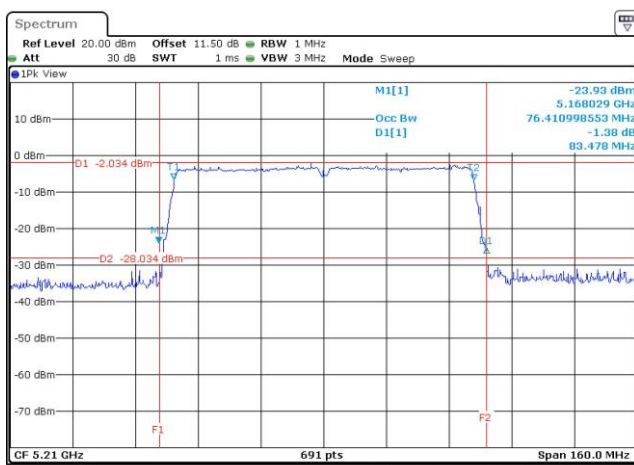
For Frequency band 5150~5250 MHz										
Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	2	5180	21.57	19.94	---	---	16.75	16.68	---	---
11a	2	5200	34.78	26.01	---	---	17.07	16.80	---	---
11a	2	5240	32.75	26.67	---	---	18.37	17.14	---	---
VHT20	2	5180	21.28	20.12	---	---	17.68	17.68	---	---
VHT20	2	5200	38.99	31.67	---	---	18.02	17.81	---	---
VHT20	2	5240	36.23	26.96	---	---	18.04	17.82	---	---
VHT40	2	5190	41.74	40.93	---	---	36.30	36.30	---	---
VHT40	2	5230	68.64	64.12	---	---	36.54	36.48	---	---
VHT80	2	5210	83.48	82.09	---	---	76.60	76.48	---	---

For Frequency band 5250~5350 MHz											
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)				Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	2	5260	36.23	27.46	---	---	25.23	24.10	---	---	24.00
11a	2	5300	33.41	25.94	---	---	17.31	16.90	---	---	24.00
11a	2	5320	19.94	19.94	---	---	16.73	16.62	---	---	24.00
VHT20	2	5260	32.61	27.10	---	---	18.90	18.37	---	---	24.00
VHT20	2	5300	38.55	28.26	---	---	18.18	17.90	---	---	24.00
VHT20	2	5320	28.93	20.17	---	---	17.68	17.66	---	---	24.00
VHT40	2	5270	72.35	65.04	---	---	36.74	36.50	---	---	24.00
VHT40	2	5310	41.74	40.81	---	---	36.32	36.32	---	---	24.00
VHT80	2	5290	82.78	81.62	---	---	76.56	76.48	---	---	24.00

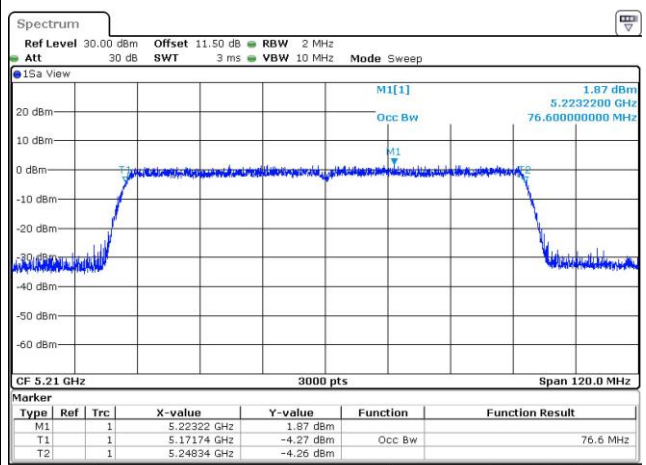
For Frequency band 5470~5725 MHz

Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)				Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	2	5500	20.06	19.88	---	---	16.75	16.63	---	---	24.00
11a	2	5580	31.45	31.30	---	---	27.22	27.28	---	---	24.00
11a	2	5700	20.06	19.88	---	---	16.74	16.62	---	---	24.00
VHT20	2	5500	20.75	20.23	---	---	17.68	17.66	---	---	24.00
VHT20	2	5580	32.61	28.55	---	---	18.39	18.42	---	---	24.00
VHT20	2	5700	20.46	20.06	---	---	17.69	17.66	---	---	24.00
VHT40	2	5510	40.93	41.04	---	---	36.32	36.32	---	---	24.00
VHT40	2	5550	70.96	65.62	---	---	36.84	36.68	---	---	24.00
VHT40	2	5670	68.64	52.87	---	---	36.56	36.42	---	---	24.00
VHT80	2	5530	82.32	81.86	---	---	76.56	76.48	---	---	24.00

Worst Plot of 26dB Bandwidth



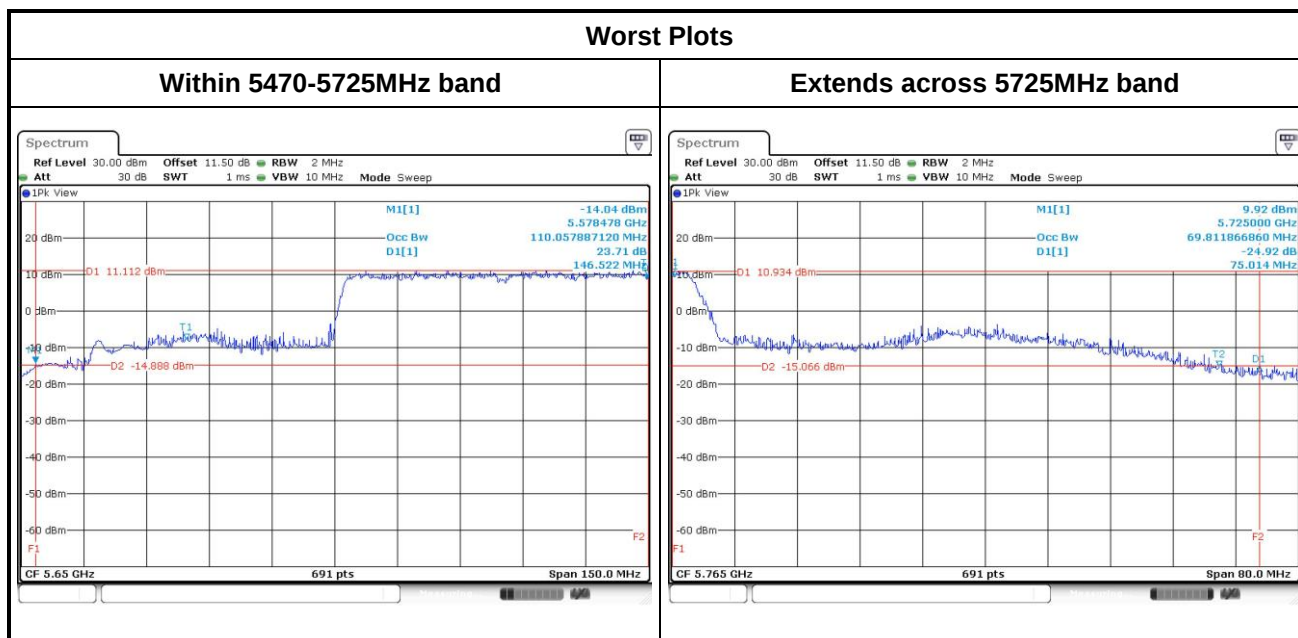
Worst Plot of 99% Bandwidth



Channel that extends across the 5.725 GHz boundary

Frequency band			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 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	2	5720	26.49	26.92	---	---	15.84	13.76	---	---	24.00
VHT20	2	5720	29.87	27.84	---	---	18.77	18.51	---	---	24.00
VHT40	2	5710	64.73	60.77	---	---	36.99	35.45	---	---	24.00
VHT80	2	5690	146.52	137.17	---	---	74.22	73.94	---	---	24.00

Frequency band			UNII Emission Bandwidth Result (Extends across 5725MHz band)								
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)				Power Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	2	5720	17.30	17.13	---	---	6.10	3.77	---	---	---
VHT20	2	5720	19.65	18.35	---	---	8.81	8.53	---	---	---
VHT40	2	5710	35.13	34.43	---	---	6.59	4.33	---	---	---
VHT80	2	5690	75.01	68.99	---	---	3.46	3.34	---	---	---

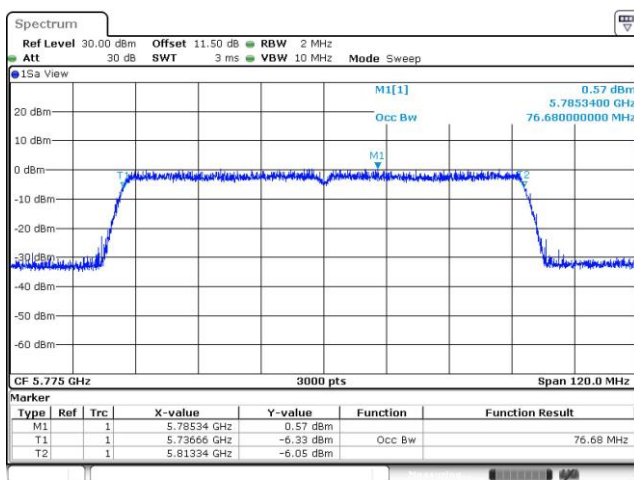


For Frequency band 5725-5850 MHz

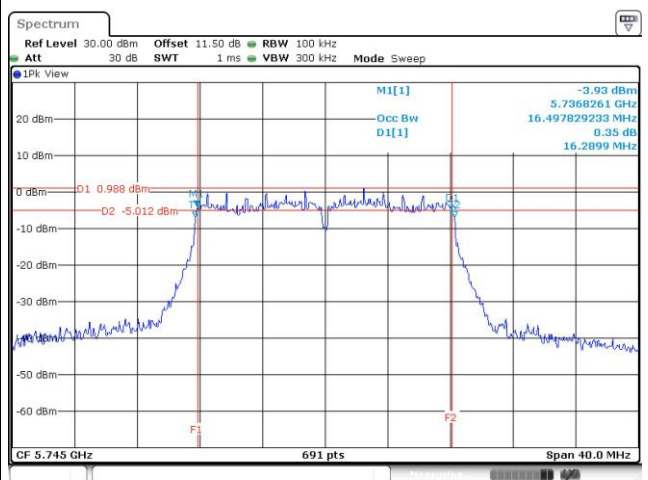
Emission Bandwidth

Mode	N _{TX}	Freq. (MHz)	OBW Bandwidth (MHz)				6dB Bandwidth (MHz)				6dB BW Limit (MHz)
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3	
11a	2	5745	16.76	16.63	---	---	16.29	16.35	---	---	0.5
11a	2	5785	17.63	17.44	---	---	16.29	16.29	---	---	0.5
11a	2	5825	16.72	16.64	---	---	16.35	16.41	---	---	0.5
VHT20	2	5745	17.70	17.67	---	---	17.10	17.57	---	---	0.5
VHT20	2	5785	18.22	18.21	---	---	16.87	17.57	---	---	0.5
VHT20	2	5825	17.69	17.68	---	---	17.57	17.57	---	---	0.5
VHT40	2	5755	36.30	36.26	---	---	35.48	35.36	---	---	0.5
VHT40	2	5795	36.40	36.44	---	---	35.25	35.25	---	---	0.5
VHT80	2	5775	76.68	76.56	---	---	76.52	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

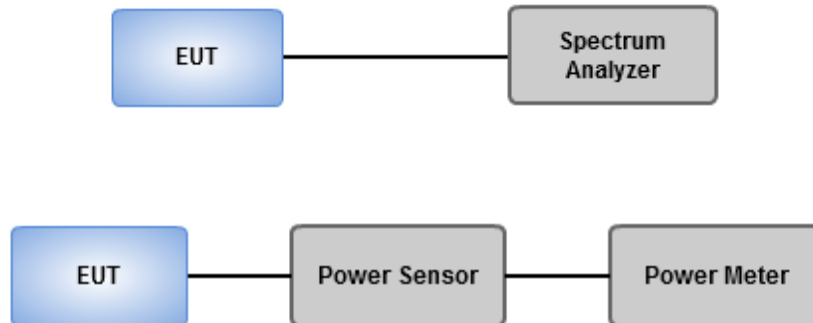
Frequency band 5150-5250 MHz		
Operating Mode		Limit
☐	Outdoor access point	Conducted Power: 1 W The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm)
☐	Indoor access point	Conducted Power: 1 W
☐	Fixed point-to-point access points	Conducted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

- ☒ 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

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	15.49	15.72	---	---	72.725	18.62	24.00
11a	2	5200	17.10	17.96	---	---	113.803	20.56	24.00
11a	2	5240	18.94	18.73	---	---	152.988	21.85	24.00
HT20	2	5180	14.36	14.65	---	---	56.464	17.52	24.00
HT20	2	5200	17.22	17.86	---	---	113.817	20.56	24.00
HT20	2	5240	18.85	18.61	---	---	149.347	21.74	24.00
HT40	2	5190	8.35	9.12	---	---	15.005	11.76	24.00
HT40	2	5230	16.27	16.68	---	---	88.923	19.49	24.00
VHT20	2	5180	14.45	14.72	---	---	57.510	17.60	24.00
VHT20	2	5200	17.27	17.93	---	---	115.420	20.62	24.00
VHT20	2	5240	18.89	18.68	---	---	151.237	21.80	24.00
VHT40	2	5190	8.44	9.2	---	---	15.300	11.85	24.00
VHT40	2	5230	16.34	16.72	---	---	90.042	19.54	24.00
VHT80	2	5210	7.28	7.54	---	---	11.021	10.42	24.00

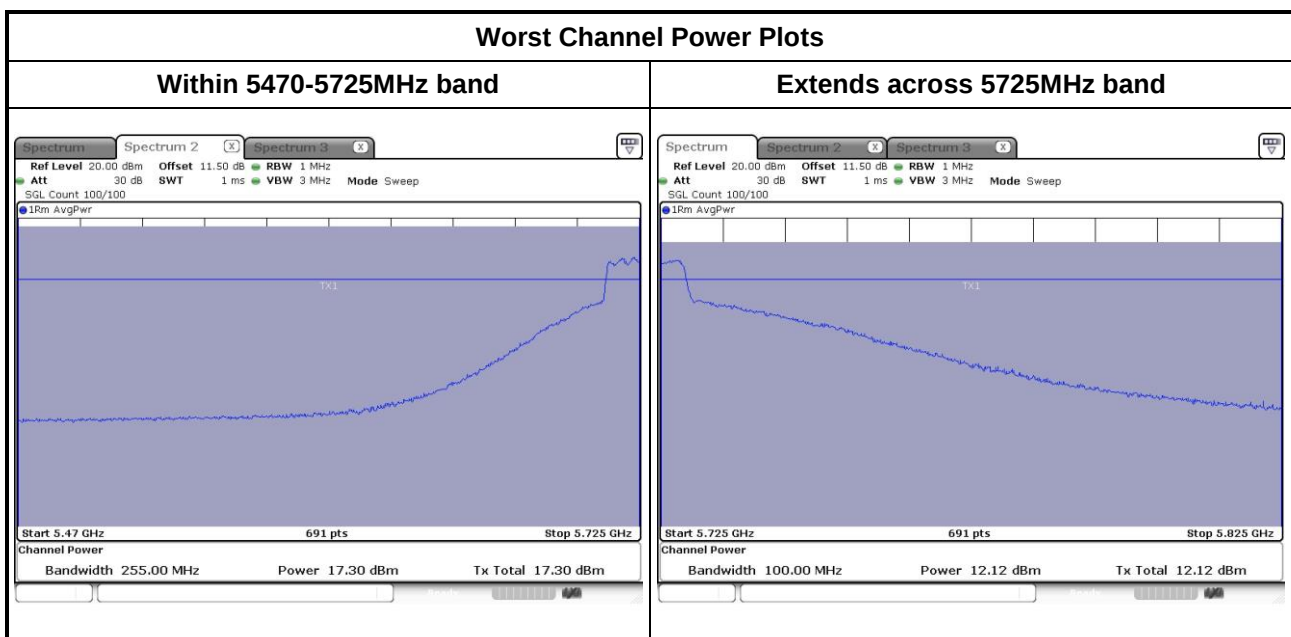
For Frequency band 5250~5350 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	2	5260	20.15	20.01	---	---	203.745	23.09	24.00
11a	2	5300	18.14	17.82	---	---	125.697	20.99	24.00
11a	2	5320	14.11	13.46	---	---	47.945	16.81	24.00
HT20	2	5260	19.21	18.86	---	---	160.281	22.05	24.00
HT20	2	5300	18.03	17.53	---	---	120.157	20.80	24.00
HT20	2	5320	13.85	13.36	---	---	45.943	16.62	24.00
HT40	2	5270	16.73	16.21	---	---	88.881	19.49	24.00
HT40	2	5310	9.61	9.27	---	---	17.594	12.45	24.00
VHT20	2	5260	19.26	18.93	---	---	162.496	22.11	24.00
VHT20	2	5300	18.11	17.61	---	---	122.391	20.88	24.00
VHT20	2	5320	13.95	13.41	---	---	46.759	16.70	24.00
VHT40	2	5270	16.8	16.25	---	---	90.033	19.54	24.00
VHT40	2	5310	9.66	9.32	---	---	17.798	12.50	24.00
VHT80	2	5290	6.92	7.46	---	---	10.492	10.21	24.00

For Frequency band 5470~5725 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	5500	14.39	14.18	---	---	53.661	17.30	24.00
11a	2	5580	19.95	20.15	---	---	202.370	23.06	24.00
11a	2	5700	12.75	12.99	---	---	38.743	15.88	24.00
HT20	2	5500	14.27	14.24	---	---	53.276	17.27	24.00
HT20	2	5580	18.34	18.27	---	---	135.377	21.32	24.00
HT20	2	5700	12.58	12.61	---	---	36.352	15.61	24.00
HT40	2	5510	8.98	8.81	---	---	15.510	11.91	24.00
HT40	2	5550	16.96	16.81	---	---	97.633	19.90	24.00
HT40	2	5670	14.22	14.01	---	---	51.601	17.13	24.00
VHT20	2	5500	14.33	14.31	---	---	54.079	17.33	24.00
VHT20	2	5580	18.46	18.33	---	---	138.222	21.41	24.00
VHT20	2	5700	12.64	12.69	---	---	36.943	15.68	24.00
VHT40	2	5510	9.03	8.85	---	---	15.672	11.95	24.00
VHT40	2	5550	17.01	16.85	---	---	98.651	19.94	24.00
VHT40	2	5670	14.27	14.08	---	---	52.316	17.19	24.00
VHT80	2	5530	6.4	6.73	---	---	9.075	9.58	24.00

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	2	5720	16.96	16.39	---	---	19.69	0.00	93.210	19.69	24.00
HT20	2	5720	16.86	17.27	---	---	20.08	0.00	101.862	20.08	24.00
HT40	2	5710	17.25	16.36	---	---	19.84	0.00	96.340	19.84	24.00
VHT20	2	5720	17.06	17.3	---	---	20.19	0.00	104.519	20.19	24.00
VHT40	2	5710	16.99	16.3	---	---	19.67	0.00	92.661	19.67	24.00
VHT80	2	5690	14.95	14.15	---	---	17.58	0.21	60.099	17.79	24.00

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	2	5720	11.42	10.31	---	---	13.91	0.00	24.607	13.91	30.00
HT20	2	5720	11.66	12.06	---	---	14.87	0.00	30.725	14.87	30.00
HT40	2	5710	7.58	6.41	---	---	10.04	0.00	10.103	10.04	30.00
VHT20	2	5720	11.82	12.12	---	---	14.98	0.00	31.498	14.98	30.00
VHT40	2	5710	7.57	6.52	---	---	10.09	0.00	10.202	10.09	30.00
VHT80	2	5690	2.42	1.87	---	---	5.16	0.21	3.447	5.37	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	12.16	11.92	---	---	32.003	15.05	30.00
11a	2	5785	17.5	17.33	---	---	110.310	20.43	30.00
11a	2	5825	13.2	13.75	---	---	44.607	16.49	30.00
HT20	2	5745	12.03	12.02	---	---	31.881	15.04	30.00
HT20	2	5785	17.03	17.05	---	---	101.165	20.05	30.00
HT20	2	5825	13.08	13.72	---	---	43.874	16.42	30.00
HT40	2	5755	7.72	7.32	---	---	11.311	10.53	30.00
HT40	2	5795	13.62	13.88	---	---	47.449	16.76	30.00
VHT20	2	5745	12.15	12.08	---	---	32.549	15.13	30.00
VHT20	2	5785	17.15	17.17	---	---	103.999	20.17	30.00
VHT20	2	5825	13.15	13.76	---	---	44.422	16.48	30.00
VHT40	2	5755	7.79	7.39	---	---	11.495	10.60	30.00
VHT40	2	5795	13.66	13.95	---	---	48.059	16.82	30.00
VHT80	2	5775	5.5	4.95	---	---	6.674	8.24	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, 5250~5350 MHz, 5470~5725 MHz

☒ Method SA-1 (for 11a/VHT20/VHT40)

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 (for VHT80)

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

For 5725~5850 MHz

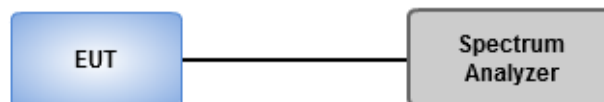
☐ Method SA-1 (for 11a/VHT20/VHT40)

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 (for VHT80)

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

3.4.3 Test Setup



3.4.4 Test Result of Peak Power Spectral Density

Frequency band			5150~5250 MHz / 5250~5350 MHz			
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	2	5180	5.08	0.00	5.08	10.72
11a	2	5200	7.27	0.00	7.27	10.72
11a	2	5240	9.28	0.00	9.28	10.72
VHT20	2	5180	4.30	0.00	4.30	10.72
VHT20	2	5200	7.20	0.00	7.20	10.72
VHT20	2	5240	8.71	0.00	8.71	10.72
VHT40	2	5190	-5.56	0.00	-5.56	10.72
VHT40	2	5230	2.66	0.00	2.66	10.72
VHT80	2	5210	-11.32	0.21	-11.11	10.72
11a	2	5260	10.65	0.00	10.65	10.93
11a	2	5300	7.79	0.00	7.79	10.93
11a	2	5320	3.45	0.00	3.45	10.93
VHT20	2	5260	8.58	0.00	8.58	10.93
VHT20	2	5300	7.20	0.00	7.20	10.93
VHT20	2	5320	3.42	0.00	3.42	10.93
VHT40	2	5270	2.45	0.00	2.45	10.93
VHT40	2	5310	-4.12	0.00	-4.12	10.93
VHT80	2	5290	-10.56	0.21	-10.35	10.93

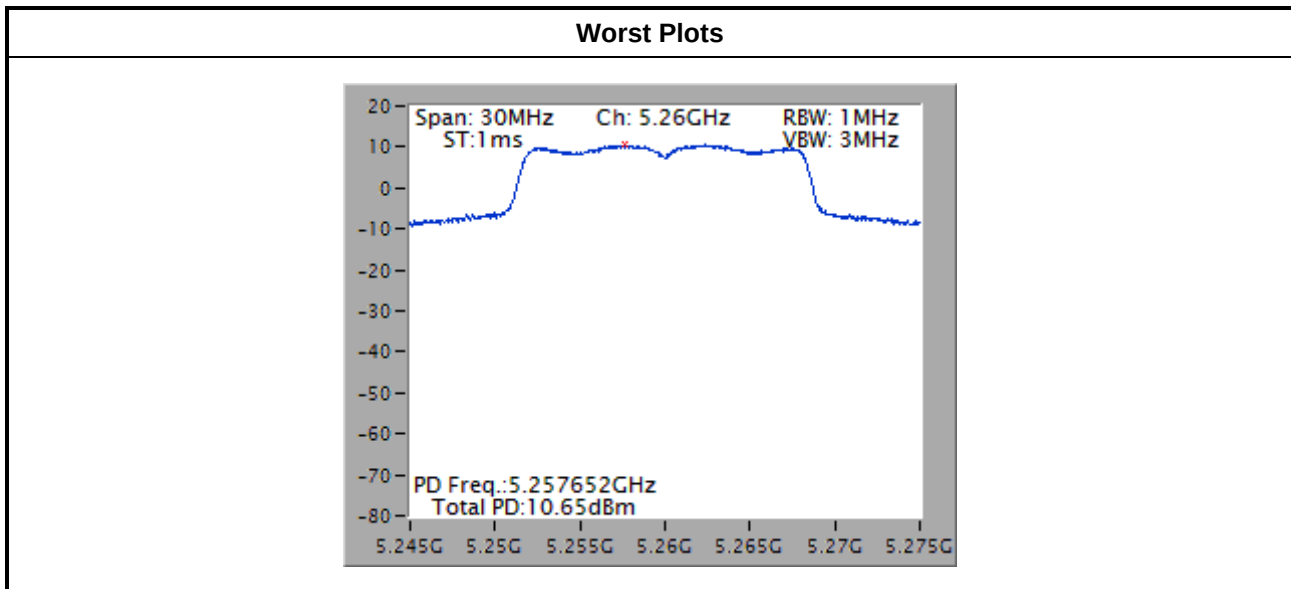
Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. For 5150-5250 MHz
 Directional gain = $10 * \log((10^{4.69/20} + 10^{1.57/20})^2 / 2) = 6.28 \text{ dBi} > 6 \text{ dBi}$
 Limit shall be reduced to $11 \text{ dBm} - (6.28 \text{ dBi} - 6 \text{ dBi}) = 10.72 \text{ dBm}$
 For 5250-5350 MHz
 Directional gain = $10 * \log((10^{4.69/20} + 10^{1.04/20})^2 / 2) = 6.07 \text{ dBi} > 6 \text{ dBi}$
 Limit shall be reduced to $11 \text{ dBm} - (6.07 \text{ dBi} - 6 \text{ dBi}) = 10.93 \text{ dBm}$

Frequency band			5470~5725 MHz			
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	2	5500	3.40	0.00	3.40	11
11a	2	5580	10.49	0.00	10.49	11
11a	2	5700	2.78	0.00	2.78	11
11a	2	5720	9.22	0.00	9.22	11
VHT20	2	5500	3.52	0.00	3.52	11
VHT20	2	5580	7.75	0.00	7.75	11
VHT20	2	5700	2.68	0.00	2.68	11
VHT20	2	5720	8.56	0.00	8.56	11
VHT40	2	5510	-4.98	0.00	-4.98	11
VHT40	2	5550	3.17	0.00	3.17	11
VHT40	2	5670	0.47	0.00	0.47	11
VHT40	2	5710	4.97	0.00	4.97	11
VHT80	2	5530	-12.08	0.21	-11.87	11
VHT80	2	5690	1.06	0.21	1.27	11

Note:

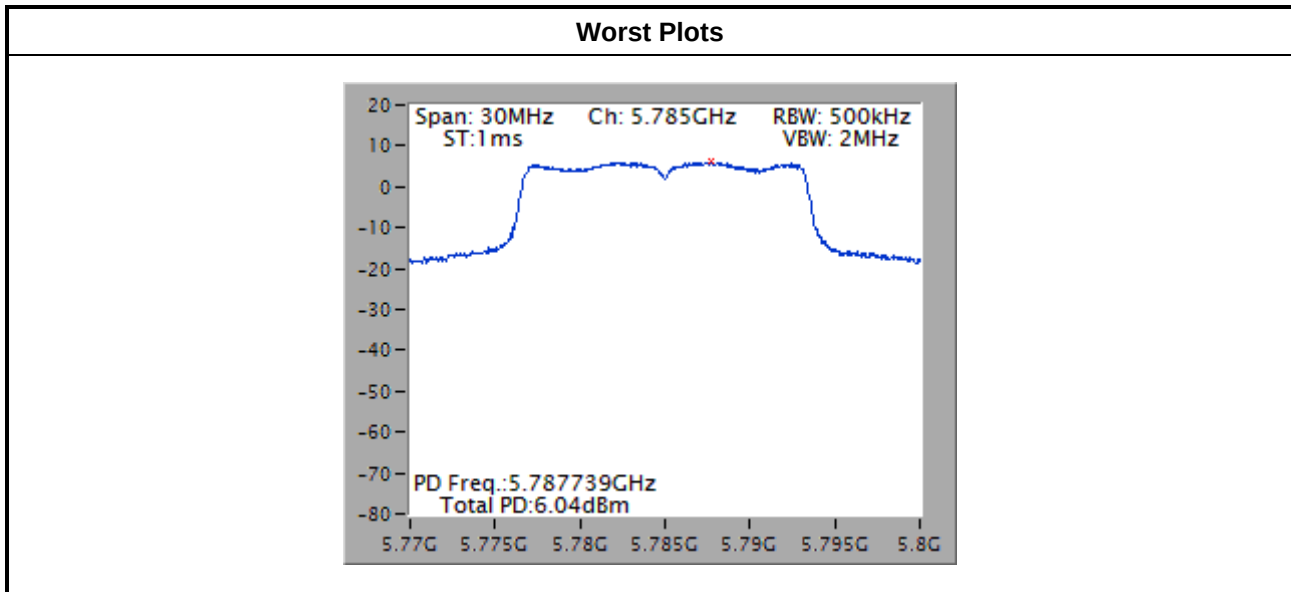
1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.



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	1.26	0.00	1.26	30.00
11a	2	5785	6.04	0.00	6.04	30.00
11a	2	5825	2.07	0.00	2.07	30.00
VHT20	2	5745	0.97	0.00	0.97	30.00
VHT20	2	5785	6.04	0.00	6.04	30.00
VHT20	2	5825	1.95	0.00	1.95	30.00
VHT40	2	5755	-7.20	0.00	-7.20	30.00
VHT40	2	5795	-1.40	0.00	-1.40	30.00
VHT80	2	5775	-13.44	0.21	-13.23	30.00

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.



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]
5.25 - 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]
5.725 - 5.850 GHz	5.715 5.725 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] 5.825 5.835 GHz: e.i.r.p. -17 dBm [78.2 dBuV/m@3m] Other un-restricted band: 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

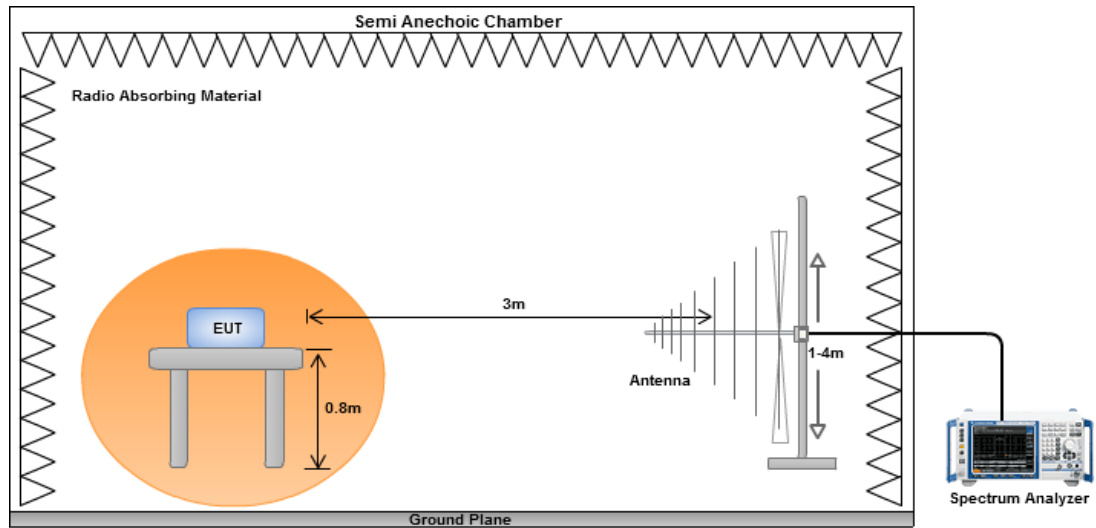
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

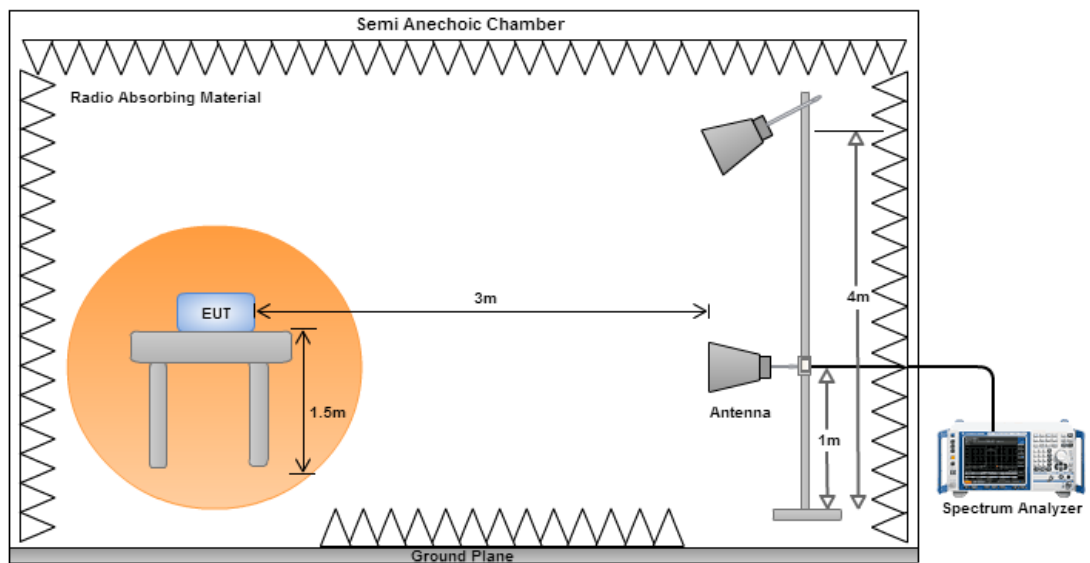
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

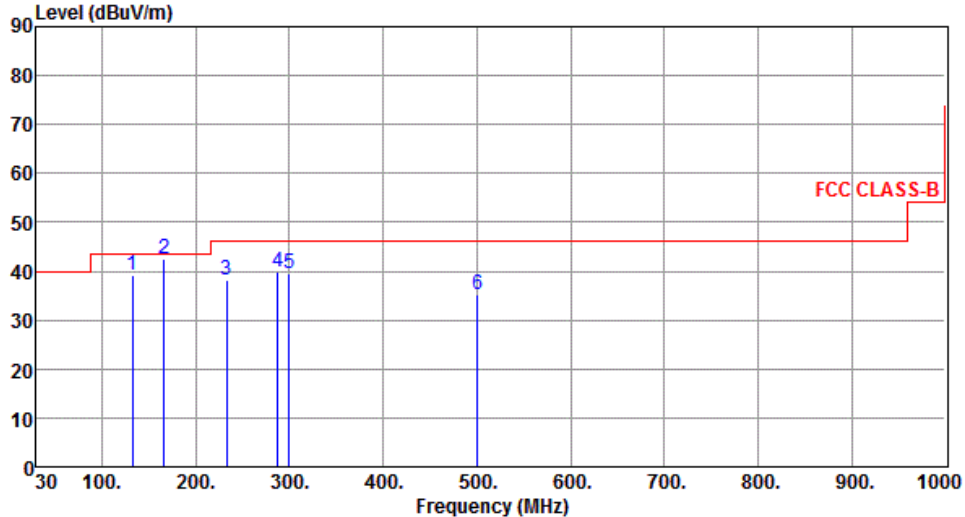


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

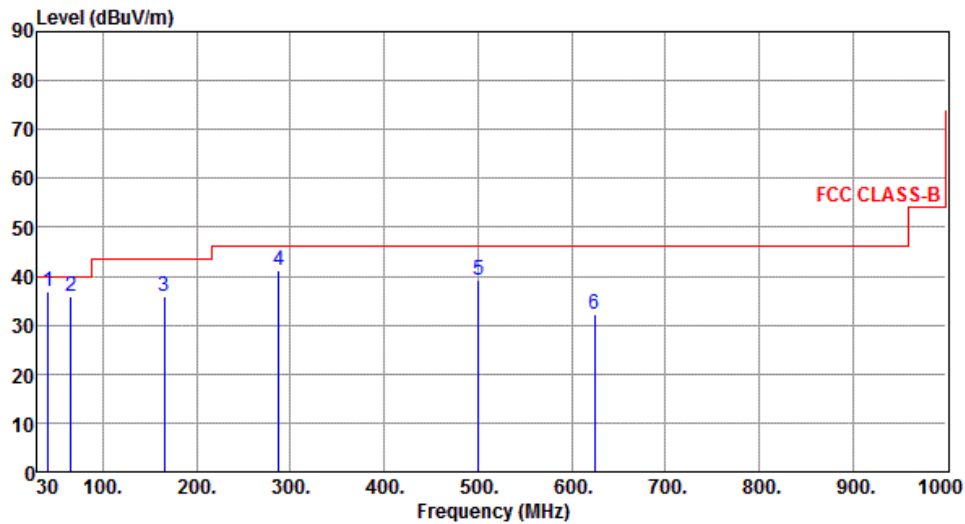
Modulation	11a	Test Freq. (MHz)	5260
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	132.82	39.34	43.50	-4.16	52.14	-12.80	Peak	---	---
2	165.95	42.45	43.50	-1.05	54.31	-11.86	QP	180	50
3	232.73	38.32	46.00	-7.68	51.93	-13.61	Peak	---	---
4	288.02	39.85	46.00	-6.15	51.23	-11.38	Peak	---	---
5	299.68	39.39	46.00	-6.61	50.51	-11.12	Peak	---	---
6	500.45	35.16	46.00	-10.84	41.66	-6.50	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)	5260
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	41.96	36.78	40.00	-3.22	48.53	-11.75	QP	100	20
2	65.89	35.74	40.00	-4.26	49.46	-13.72	Peak	---	---
3	165.80	35.90	43.50	-7.60	47.75	-11.85	Peak	---	---
4	288.02	41.08	46.00	-4.92	52.46	-11.38	Peak	---	---
5	500.45	39.34	46.00	-6.66	45.84	-6.50	Peak	---	---
6	624.61	32.20	46.00	-13.80	36.49	-4.29	Peak	---	---

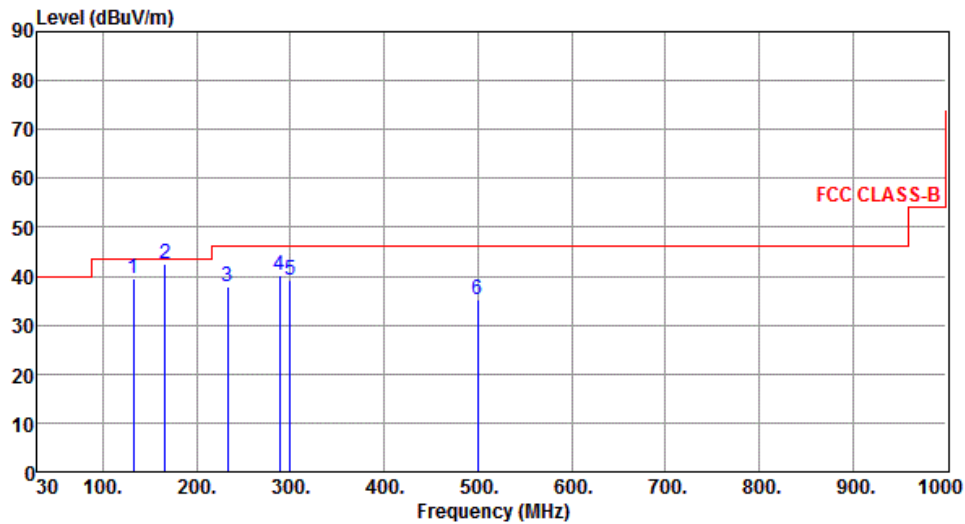
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*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)	5785
Polarization	Horizontal	Test Configuration	1



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	132.76	39.36	43.50	-4.14	52.17	-12.81	Peak	---	---
2	165.94	42.43	43.50	-1.07	54.29	-11.86	QP	182	51
3	232.70	37.94	46.00	-8.06	51.55	-13.61	Peak	---	---
4	288.12	40.10	46.00	-5.90	51.48	-11.38	Peak	---	---
5	299.62	39.27	46.00	-6.73	50.39	-11.12	Peak	---	---
6	500.26	35.04	46.00	-10.96	41.55	-6.51	Peak	---	---

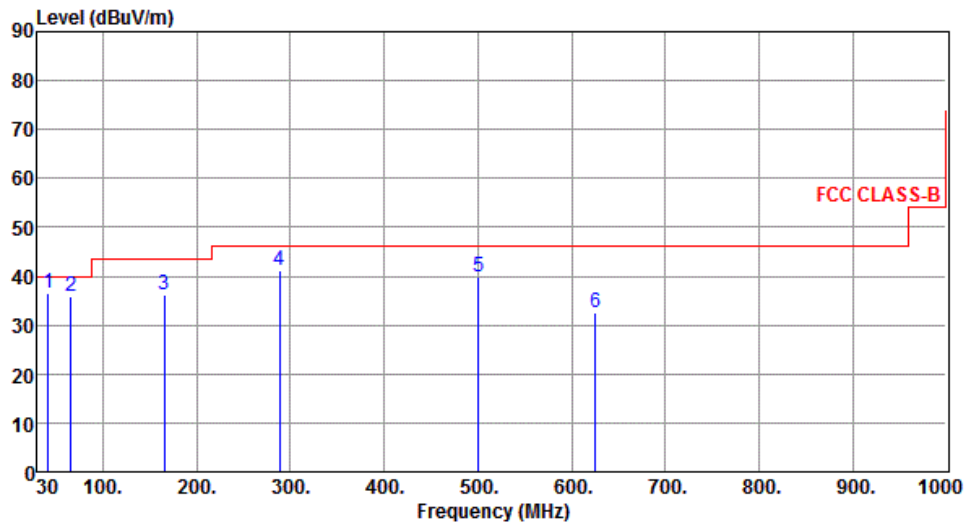
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	5785
Polarization	Vertical	Test Configuration	1



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	41.86	36.69	40.00	-3.31	48.45	-11.76	QP	100	18
2	65.76	35.98	40.00	-4.02	49.68	-13.70	Peak	---	---
3	165.76	36.11	43.50	-7.39	47.96	-11.85	Peak	---	---
4	288.16	41.27	46.00	-4.73	52.65	-11.38	Peak	---	---
5	500.36	39.81	46.00	-6.19	46.31	-6.50	Peak	---	---
6	625.12	32.58	46.00	-13.42	36.86	-4.28	Peak	---	---

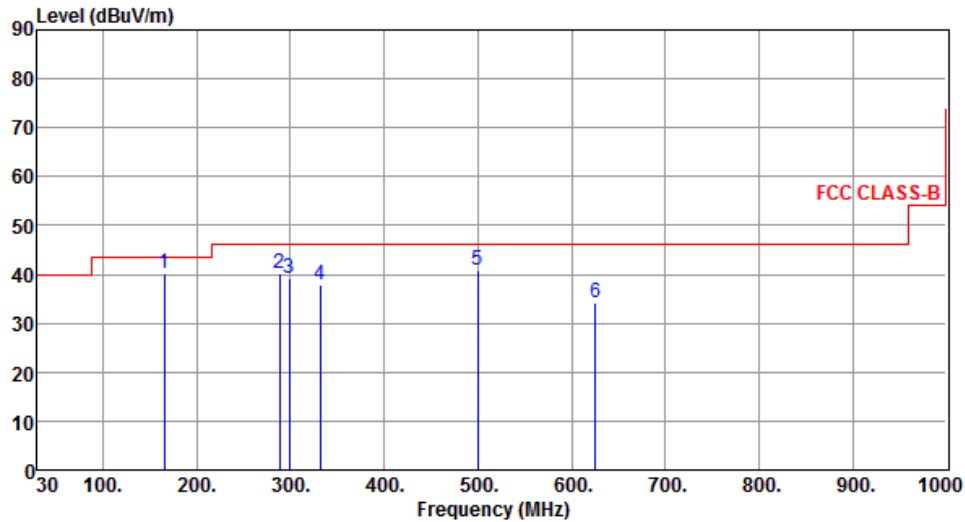
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*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)	5260
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	165.56	40.32	43.50	-3.18	52.17	-11.85	Peak	---	---
2	288.13	40.06	46.00	-5.94	51.44	-11.38	Peak	---	---
3	298.62	39.33	46.00	-6.67	50.47	-11.14	Peak	---	---
4	331.52	37.79	46.00	-8.21	48.22	-10.43	Peak	---	---
5	500.26	40.84	46.00	-5.16	47.35	-6.51	Peak	---	---
6	625.16	34.18	46.00	-11.82	38.46	-4.28	Peak	---	---

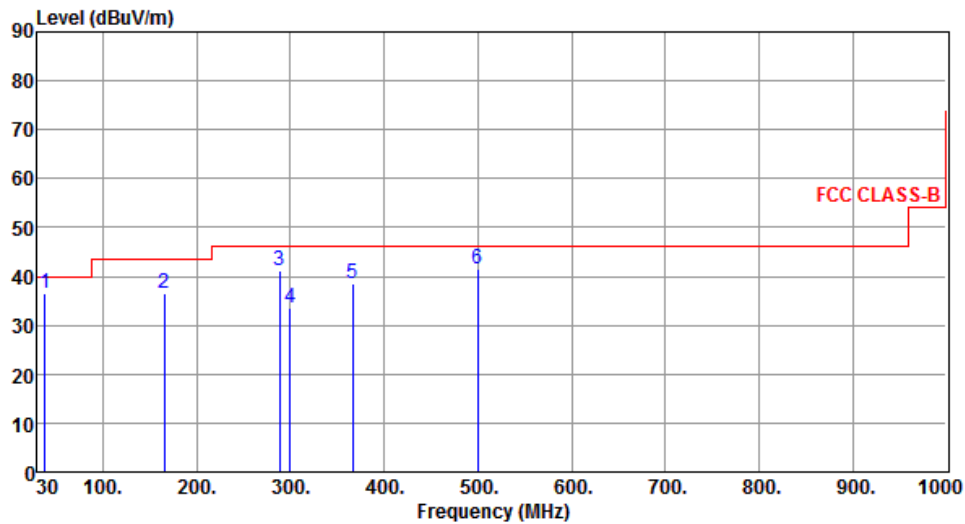
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	5260
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	38.33	36.40	40.00	-3.60	48.42	-12.02	QP	100	20
2	165.75	36.48	43.50	-7.02	48.33	-11.85	Peak	---	---
3	288.06	41.07	46.00	-4.93	52.45	-11.38	Peak	---	---
4	299.52	33.42	46.00	-12.58	44.54	-11.12	Peak	---	---
5	366.37	38.68	46.00	-7.32	48.24	-9.56	Peak	---	---
6	500.26	41.65	46.00	-4.35	48.16	-6.51	Peak	---	---

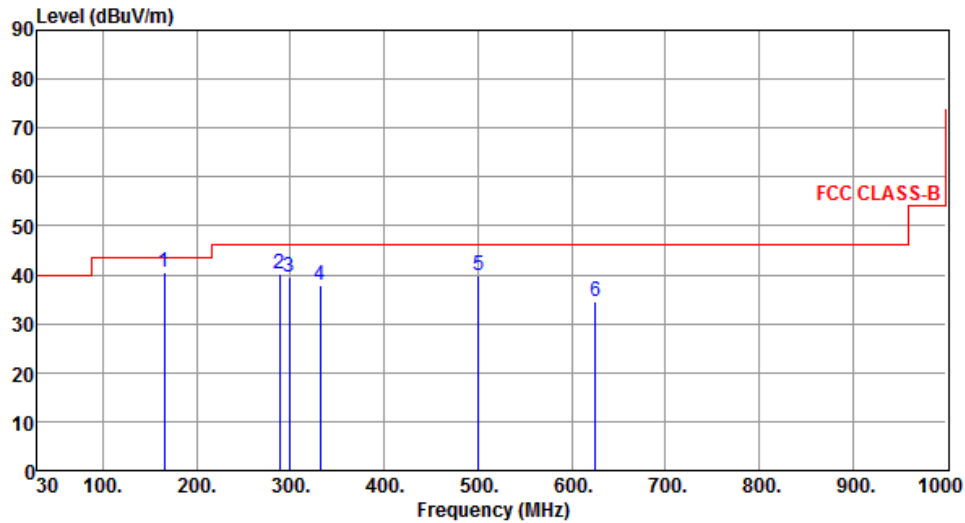
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	5785
Polarization	Horizontal	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	165.76	40.55	43.50	-2.95	52.40	-11.85	Peak	---	---
2	288.16	40.16	46.00	-5.84	51.54	-11.38	Peak	---	---
3	298.55	39.43	46.00	-6.57	50.57	-11.14	Peak	---	---
4	331.52	37.83	46.00	-8.17	48.26	-10.43	Peak	---	---
5	500.36	39.97	46.00	-6.03	46.47	-6.50	Peak	---	---
6	625.26	34.38	46.00	-11.62	38.66	-4.28	Peak	---	---

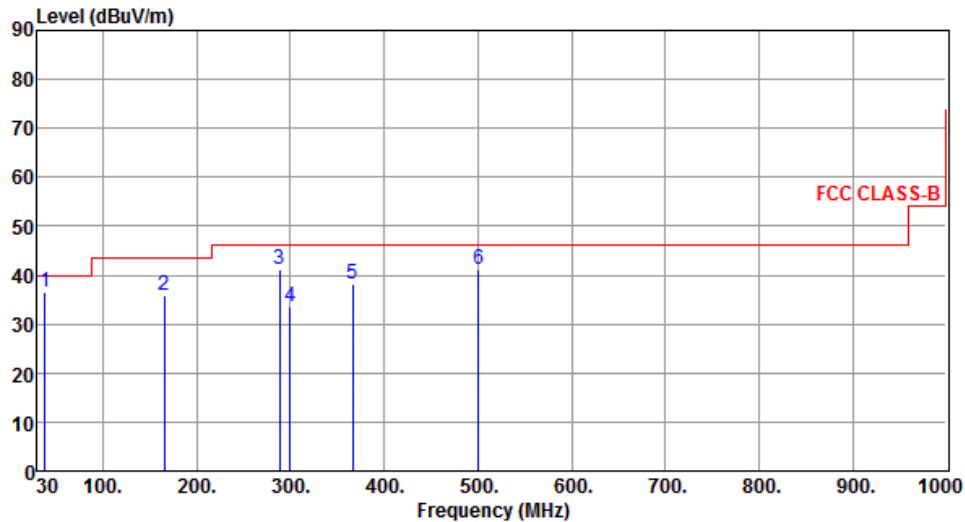
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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)	5785
Polarization	Vertical	Test Configuration	2



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	38.41	36.51	40.00	-3.49	48.52	-12.01	QP	100	20
2	165.26	36.01	43.50	-7.49	47.85	-11.84	Peak	---	---
3	288.06	41.17	46.00	-4.83	52.55	-11.38	Peak	---	---
4	299.57	33.61	46.00	-12.39	44.73	-11.12	Peak	---	---
5	366.35	38.08	46.00	-7.92	47.64	-9.56	Peak	---	---
6	500.36	41.32	46.00	-4.68	47.82	-6.50	Peak	---	---

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

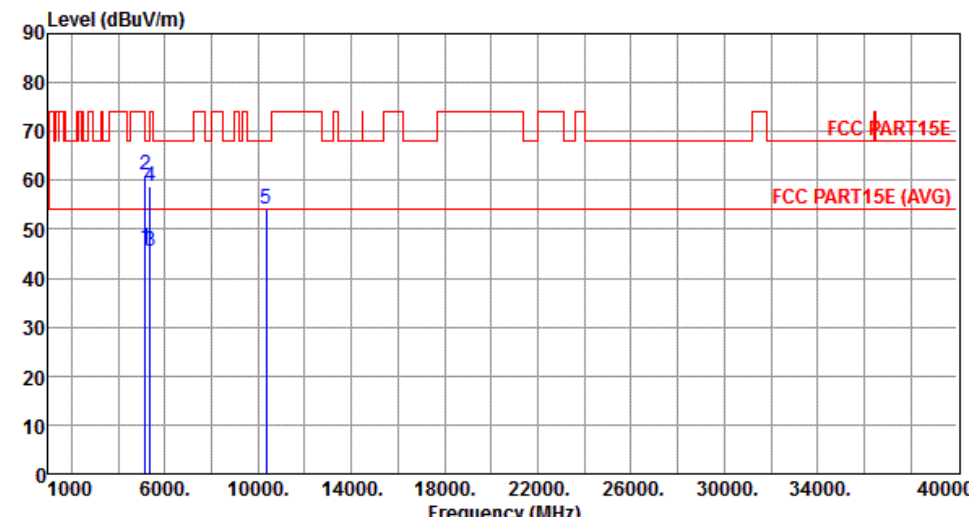
3.5.5 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11a

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

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.99	54.00	-1.01	48.09	4.90	Average	258	276
2	5150.00	72.71	74.00	-1.29	67.81	4.90	Peak	258	276
3	5350.00	45.54	54.00	-8.46	40.41	5.13	Average	258	276
4	5350.00	58.41	74.00	-15.59	53.28	5.13	Peak	258	276
5	10360.00	55.00	68.20	-13.20	41.33	13.67	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).

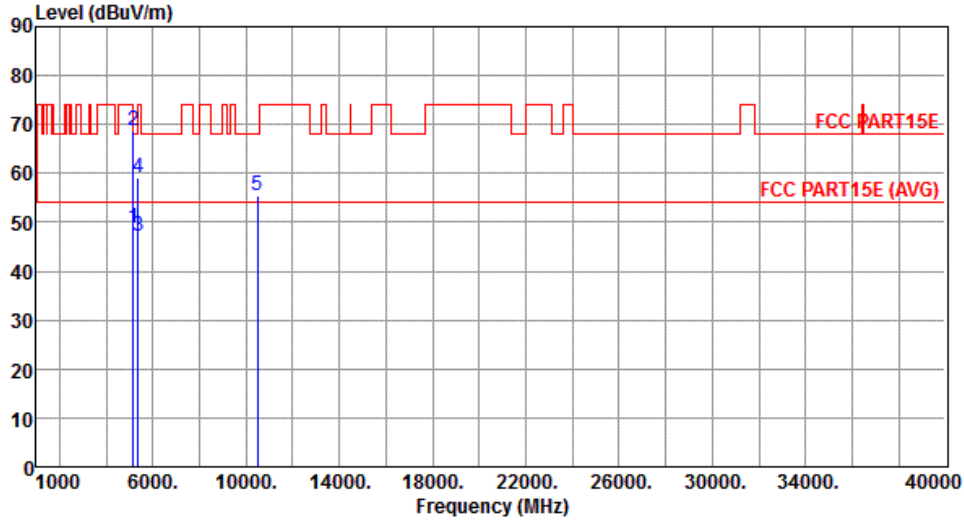
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		



	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	46.05	54.00	-7.95	41.15	4.90	Average	197	293
2	5150.00	61.17	74.00	-12.83	56.27	4.90	Peak	197	293
3	5350.00	45.57	54.00	-8.43	40.44	5.13	Average	197	293
4	5350.00	58.91	74.00	-15.09	53.78	5.13	Peak	197	293
5	10360.00	54.20	68.20	-14.00	40.53	13.67	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	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	48.86	54.00	-5.14	43.96	4.90	Average	253	277
2	5150.00	68.89	74.00	-5.11	63.99	4.90	Peak	253	277
3	5350.00	47.06	54.00	-6.94	41.93	5.13	Average	253	277
4	5350.00	59.07	74.00	-14.93	53.94	5.13	Peak	253	277
5	10480.00	55.42	68.20	-12.78	41.52	13.90	Peak	195	335

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		
Level (dBuV/m)			

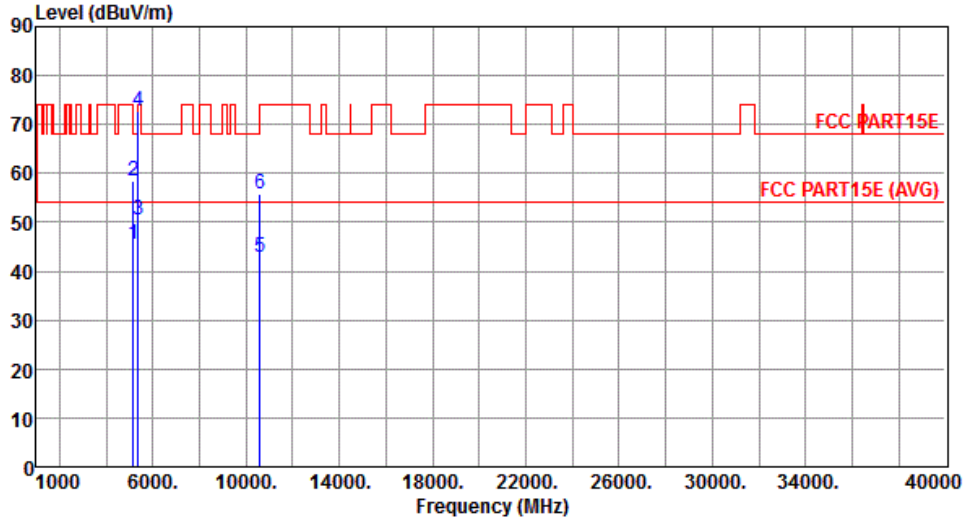
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5260
Polarization	Vertical		
Level (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	5150.00	45.38	54.00	-8.62	40.48	4.90	Average	178	278
2	5150.00	58.60	74.00	-15.40	53.70	4.90	Peak	178	278
3	5350.00	50.49	54.00	-3.51	45.36	5.13	Average	178	278
4	5350.00	72.58	74.00	-1.42	67.45	5.13	Peak	178	278
5	10600.00	43.00	54.00	-11.00	28.96	14.04	Average	153	245
6	10600.00	55.82	74.00	-18.18	41.78	14.04	Peak	153	245

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

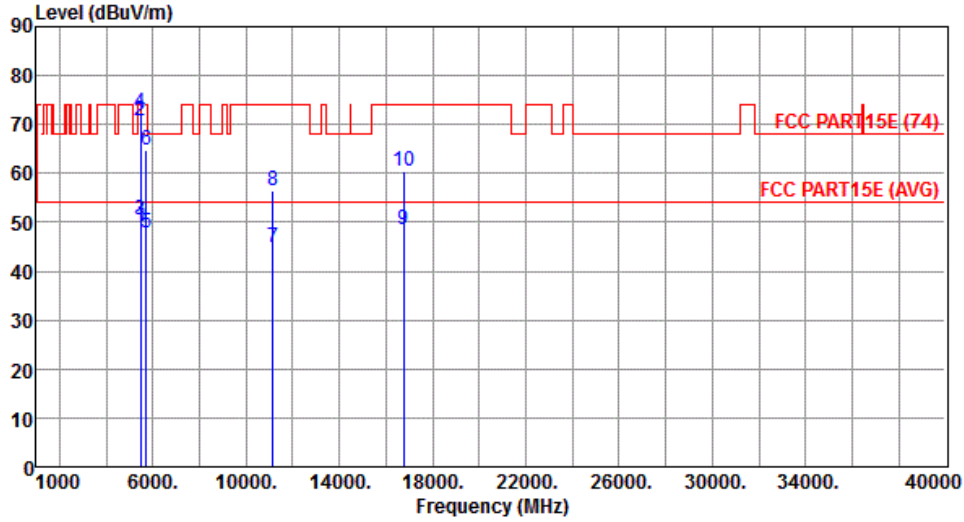
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5320
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5320
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		
Level (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	49.30	54.00	-4.70	44.04	5.26	Average	120	273
2	5460.00	70.67	74.00	-3.33	65.41	5.26	Peak	120	273
3	5470.00	50.36	54.00	-3.64	45.10	5.26	Average	120	273
4	5470.00	72.50	74.00	-1.50	67.24	5.26	Peak	120	273
5	5725.00	47.97	54.00	-6.03	42.26	5.71	Average	120	273
6	5725.00	64.71	74.00	-9.29	59.00	5.71	Peak	120	273
7	11160.00	44.87	54.00	-9.13	30.33	14.54	Average	220	310
8	11160.00	56.30	74.00	-17.70	41.76	14.54	Peak	220	310
9	16740.00	48.46	54.00	-5.54	30.31	18.15	Average	255	212
10	16740.00	60.44	74.00	-13.56	42.29	18.15	Peak	255	212

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).

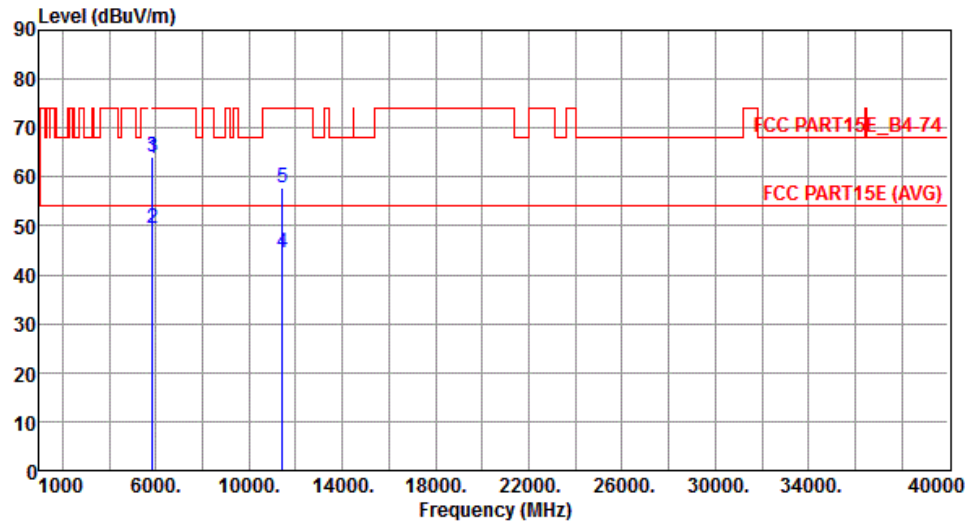
Modulation	11a	Test Freq. (MHz)	5580
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5700
Polarization	Vertical		
Level (dBuV/m)			

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

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



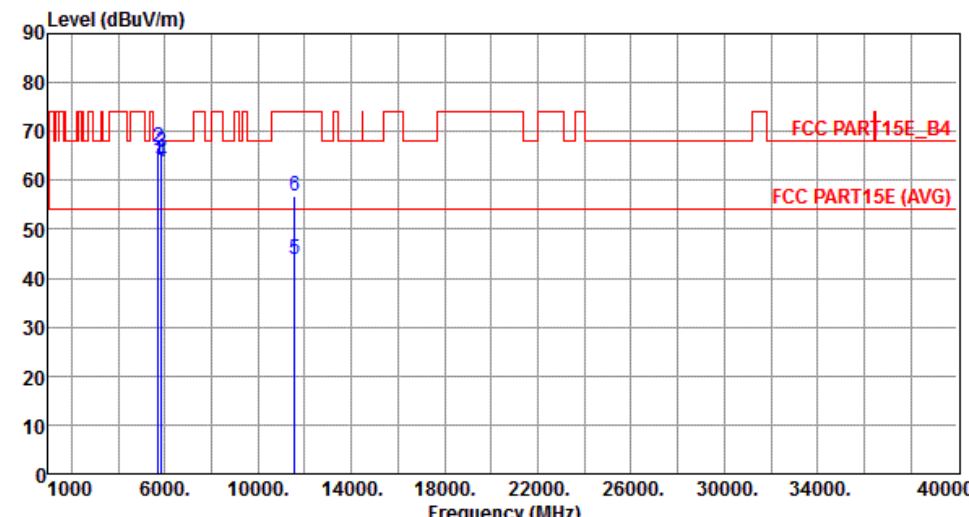
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	63.75	78.20	-14.45	57.78	5.97	Peak	306	291
2	5860.00	49.63	54.00	-4.37	43.65	5.98	Average	306	291
3	5860.00	64.16	74.00	-9.84	58.18	5.98	Peak	306	291
4	11440.00	44.47	54.00	-9.53	29.86	14.61	Average	310	15
5	11440.00	57.93	74.00	-16.07	43.32	14.61	Peak	310	15

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

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

Modulation	11a	Test Freq. (MHz)	5745
Polarization	Vertical		
Level (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	5715.00	64.23	68.20	-3.97	58.53	5.70	Peak	294	288
2	5725.00	66.63	78.20	-11.57	60.92	5.71	Peak	294	288
3	5850.00	65.71	78.20	-12.49	59.74	5.97	Peak	294	288
4	5860.00	63.61	68.20	-4.59	57.63	5.98	Peak	294	288
5	11570.00	43.90	54.00	-10.10	29.38	14.52	Average	255	245
6	11570.00	56.96	74.00	-17.04	42.44	14.52	Peak	255	245

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

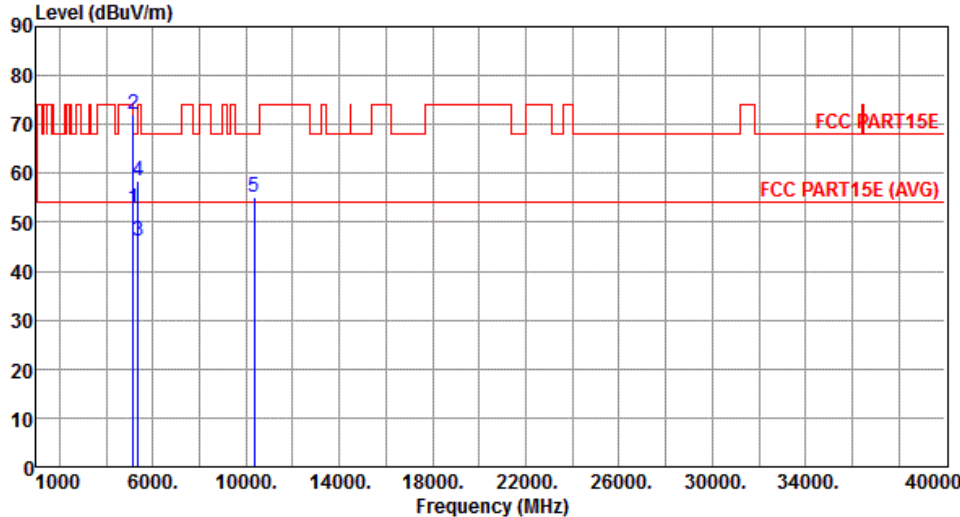
Modulation	11a	Test Freq. (MHz)	5785
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5825
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	11a	Test Freq. (MHz)	5825
Polarization	Vertical		
Level (dBuV/m) </			

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

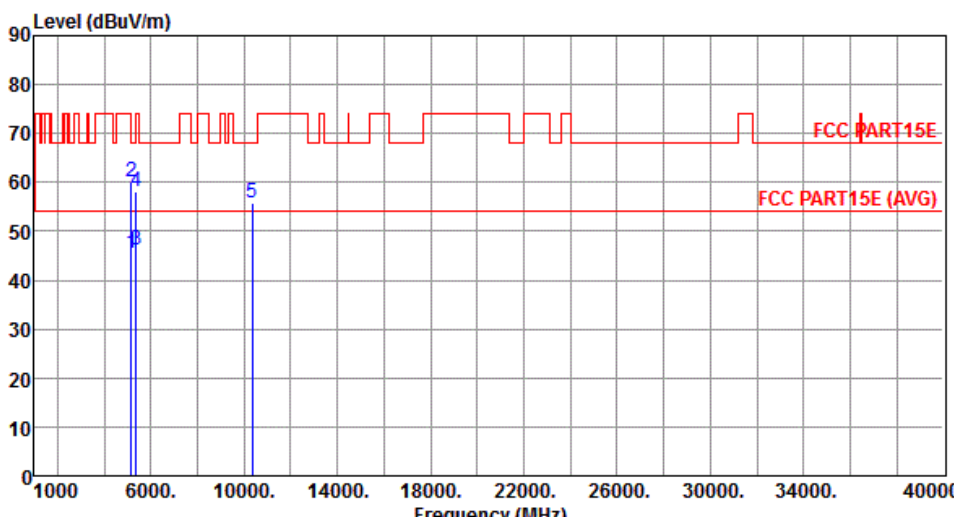
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.91	54.00	-1.09	48.01	4.90	Average	255	276
2	5150.00	71.94	74.00	-2.06	67.04	4.90	Peak	255	276
3	5350.00	46.10	54.00	-7.90	40.97	5.13	Average	255	276
4	5350.00	58.56	74.00	-15.44	53.43	5.13	Peak	255	276
5	10360.00	55.00	68.20	-13.20	41.33	13.67	Peak	100	212

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).

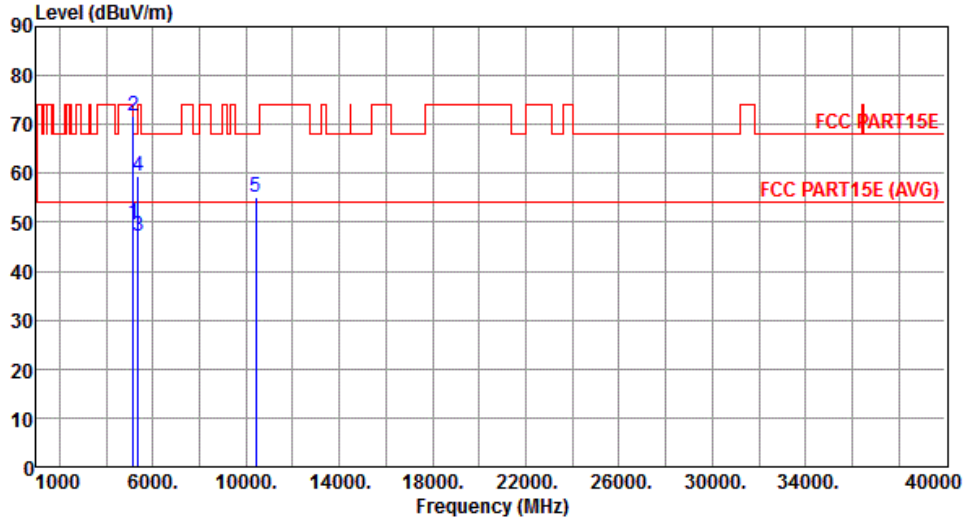
Modulation	VHT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	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	45.55	54.00	-8.45	40.65	4.90	Average	105	258
2	5150.00	60.03	74.00	-13.97	55.13	4.90	Peak	105	258
3	5350.00	46.02	54.00	-7.98	40.89	5.13	Average	105	258
4	5350.00	58.10	74.00	-15.90	52.97	5.13	Peak	105	258
5	10360.00	55.69	68.20	-12.51	42.02	13.67	Peak	100	166

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

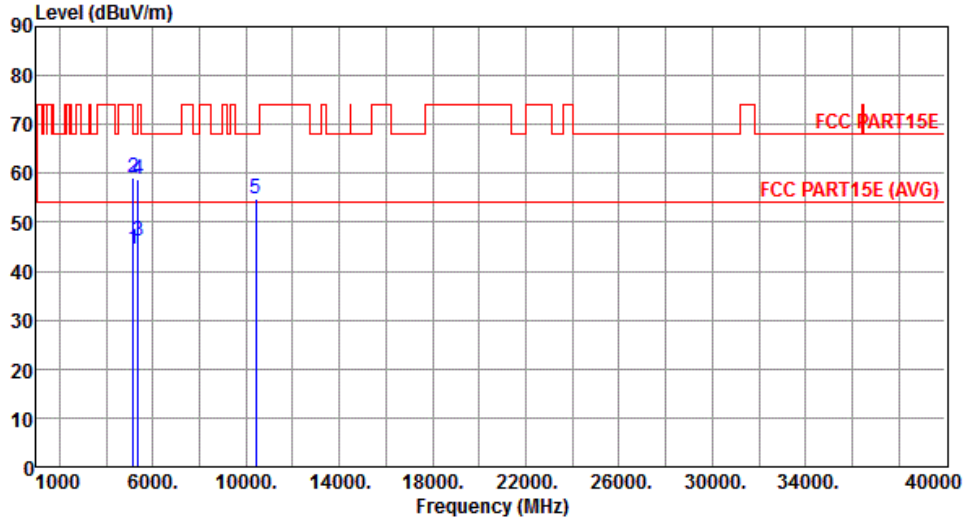
Modulation	VHT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	49.88	54.00	-4.12	44.98	4.90	Average	252	281
2	5150.00	71.63	74.00	-2.37	66.73	4.90	Peak	252	281
3	5350.00	47.20	54.00	-6.80	42.07	5.13	Average	252	281
4	5350.00	59.48	74.00	-14.52	54.35	5.13	Peak	252	281
5	10400.00	55.24	68.20	-12.96	41.49	13.75	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)	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	44.62	54.00	-9.38	39.72	4.90	Average	176	263
2	5150.00	58.98	74.00	-15.02	54.08	4.90	Peak	176	263
3	5350.00	46.05	54.00	-7.95	40.92	5.13	Average	176	263
4	5350.00	58.70	74.00	-15.30	53.57	5.13	Peak	176	263
5	10400.00	54.76	68.20	-13.44	41.01	13.75	Peak	100	218

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		
Level (dBuV/m) <			

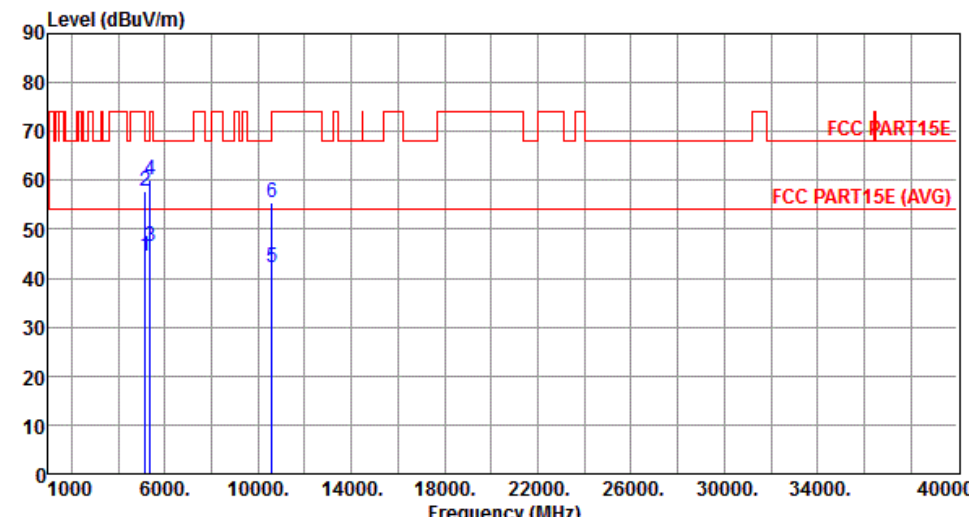
Modulation	VHT20	Test Freq. (MHz)	5240
Polarization	Vertical		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m) <			

Modulation	VHT20	Test Freq. (MHz)	5260
Polarization	Vertical		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5300
Polarization	Vertical		

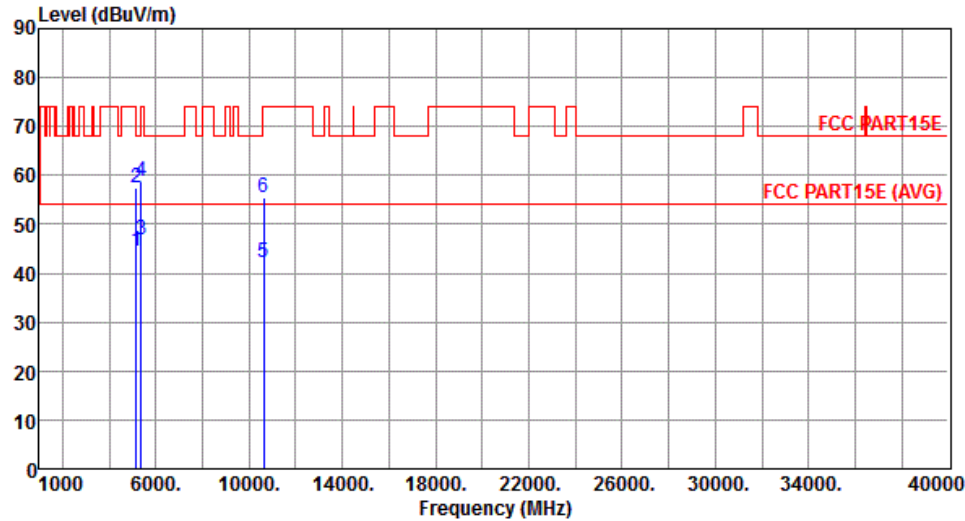


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.40	54.00	-9.60	39.50	4.90	Average	133	254
2	5150.00	57.77	74.00	-16.23	52.87	4.90	Peak	133	254
3	5350.00	46.40	54.00	-7.60	41.27	5.13	Average	133	254
4	5350.00	60.09	74.00	-13.91	54.96	5.13	Peak	133	254
5	10600.00	42.26	54.00	-11.74	28.22	14.04	Average	100	156
6	10600.00	55.48	74.00	-18.52	41.44	14.04	Peak	100	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	VHT20	Test Freq. (MHz)	5320
Polarization	Horizontal		
Level (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	5150.00	44.56	54.00	-9.44	39.66	4.90	Average	228	302
2	5150.00	57.41	74.00	-16.59	52.51	4.90	Peak	228	302
3	5350.00	46.69	54.00	-7.31	41.56	5.13	Average	228	302
4	5350.00	58.88	74.00	-15.12	53.75	5.13	Peak	228	302
5	10640.00	42.25	54.00	-11.75	28.16	14.09	Average	100	153
6	10640.00	55.53	74.00	-18.47	41.44	14.09	Peak	100	153

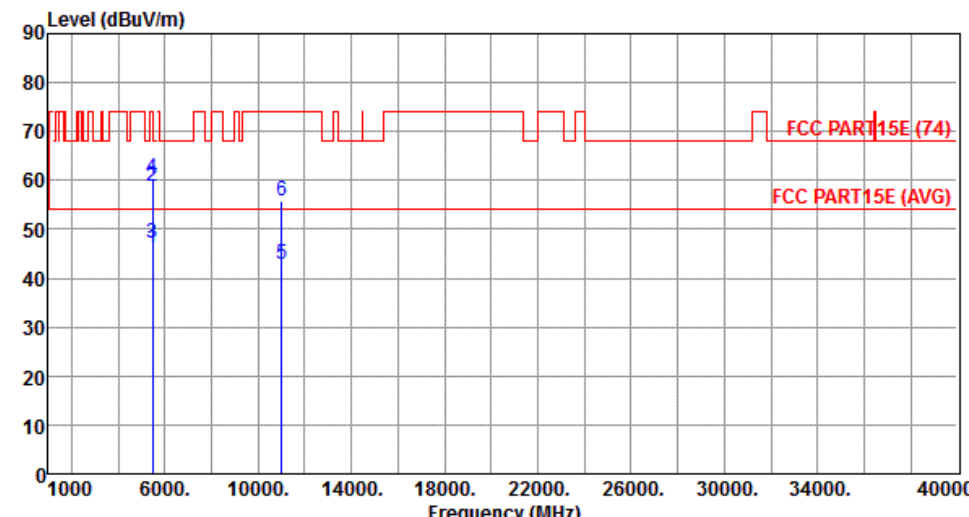
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5500
Polarization	Vertical		



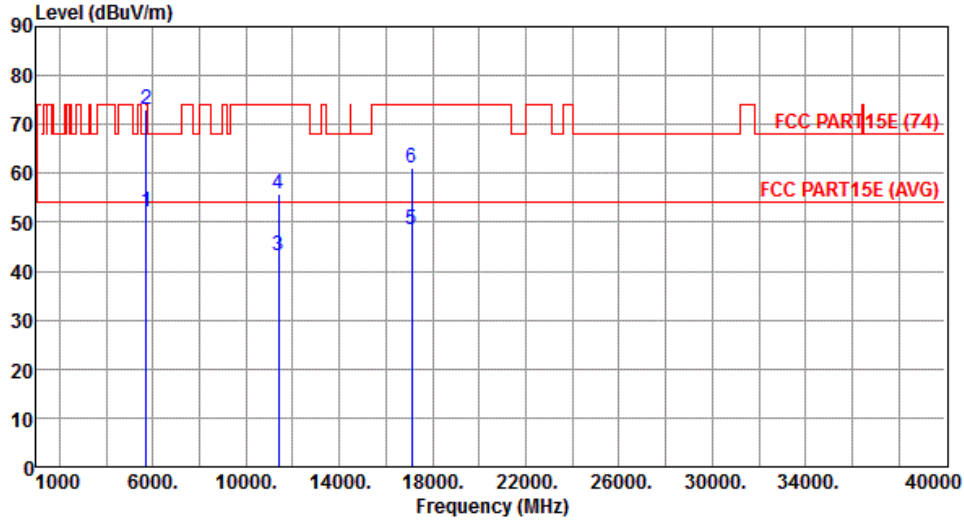
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.10	54.00	-7.90	40.84	5.26	Average	318	293
2	5460.00	58.64	74.00	-15.36	53.38	5.26	Peak	318	293
3	5470.00	47.24	54.00	-6.76	41.98	5.26	Average	318	293
4	5470.00	60.42	74.00	-13.58	55.16	5.26	Peak	318	293
5	11000.00	42.97	54.00	-11.03	28.48	14.49	Average	272	196
6	11000.00	55.91	74.00	-18.09	41.42	14.49	Peak	272	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	VHT20	Test Freq. (MHz)	5580
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT20	Test Freq. (MHz)	5580
Polarization	Vertical		
Level (dBuV/m)			

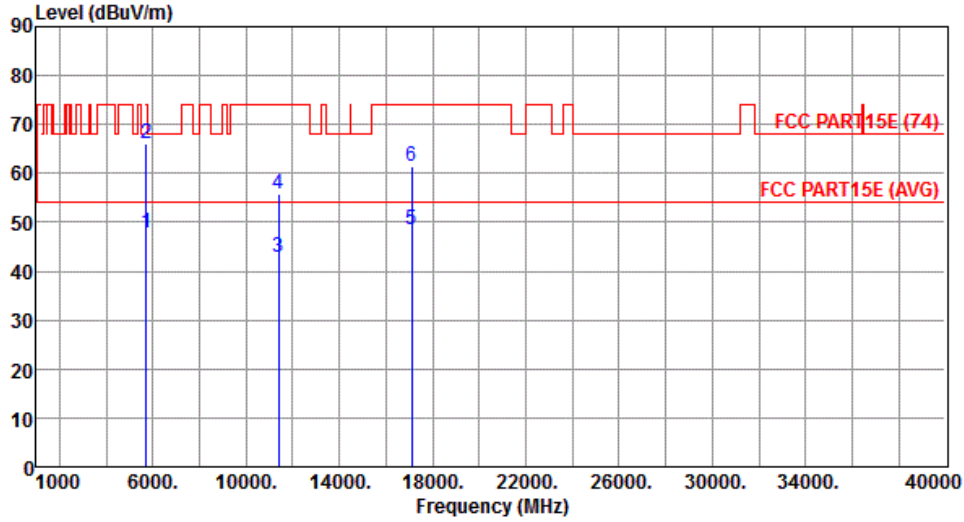
Modulation	VHT20	Test Freq. (MHz)	5700
Polarization	Horizontal		



	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	52.27	54.00	-1.73	46.56	5.71	Average	295	274
2	5725.00	72.95	74.00	-1.05	67.24	5.71	Peak	295	274
3	11400.00	43.13	54.00	-10.87	28.52	14.61	Average	185	166
4	11400.00	55.85	74.00	-18.15	41.24	14.61	Peak	185	166
5	17100.00	48.34	54.00	-5.66	28.42	19.92	Average	165	238
6	17100.00	61.27	74.00	-12.73	41.35	19.92	Peak	165	238

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	47.82	54.00	-6.18	42.11	5.71	Average	312	293
2	5725.00	65.95	74.00	-8.05	60.24	5.71	Peak	312	293
3	11400.00	42.72	54.00	-11.28	28.11	14.61	Average	200	156
4	11400.00	55.93	74.00	-18.07	41.32	14.61	Peak	200	156
5	17100.00	48.33	54.00	-5.67	28.41	19.92	Average	222	138
6	17100.00	61.56	74.00	-12.44	41.64	19.92	Peak	222	138

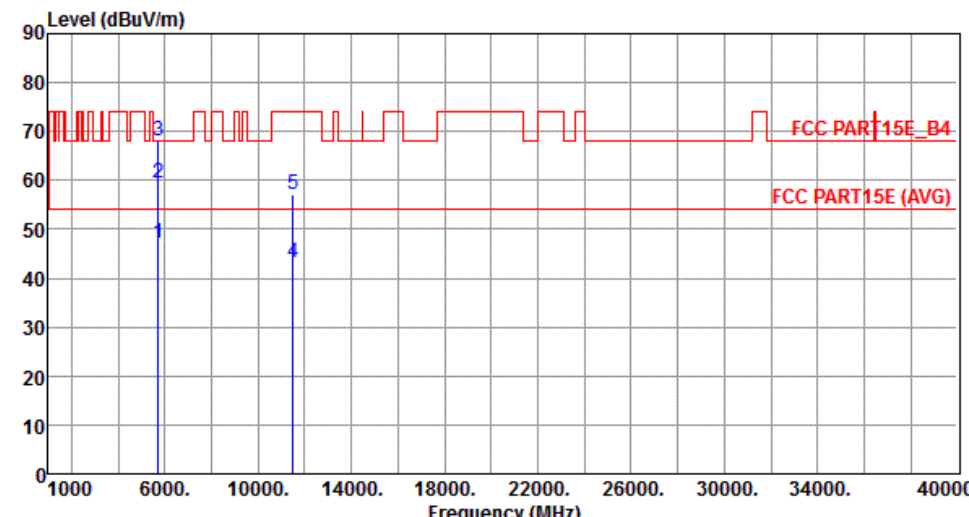
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT20	Test Freq. (MHz)	5720
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT20	Test Freq. (MHz)	5720
Polarization	Vertical		
Level (dBuV/m)			

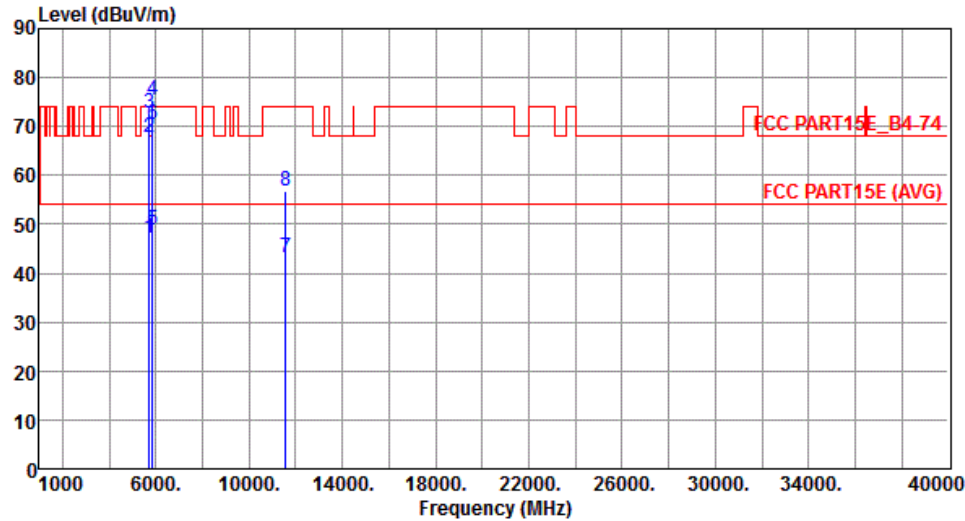
Modulation	VHT20	Test Freq. (MHz)	5745
Polarization	Horizontal		
Level (dBuV/m) </			

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	5715.00	47.21	54.00	-6.79	41.51	5.70	Average	324	303
2	5715.00	59.42	68.20	-8.78	53.72	5.70	Peak	324	303
3	5725.00	68.08	78.20	-10.12	62.37	5.71	Peak	324	303
4	11490.00	43.16	54.00	-10.84	28.54	14.62	Average	324	10
5	11490.00	57.07	74.00	-16.93	42.45	14.62	Peak	324	10

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

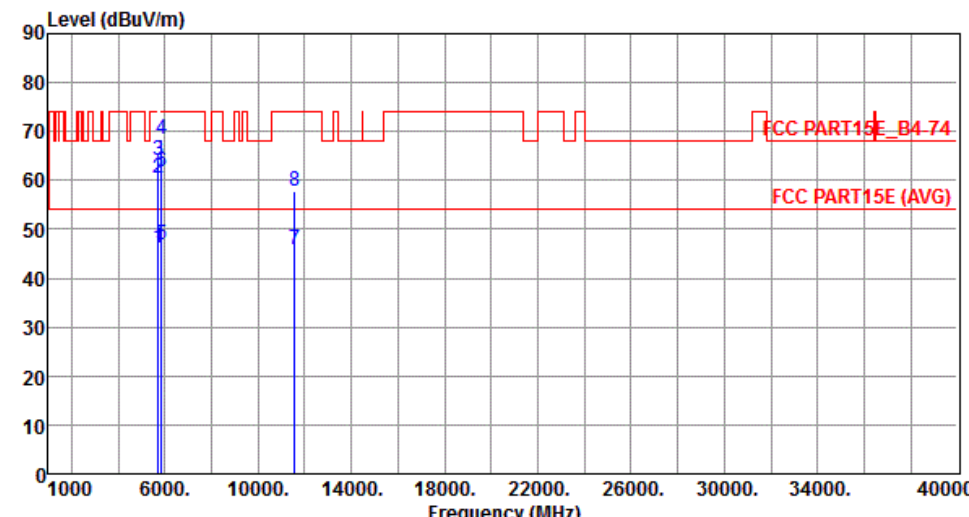
Modulation	VHT20	Test Freq. (MHz)	5785						
Polarization	Horizontal								
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	47.03	54.00	-6.97	41.33	5.70	Average	294	285
2	5715.00	67.91	74.00	-6.09	62.21	5.70	Peak	294	285
3	5725.00	72.73	78.20	-5.47	67.02	5.71	Peak	294	285
4	5850.00	75.25	78.20	-2.95	69.28	5.97	Peak	294	285
5	5860.00	48.90	54.00	-5.10	42.92	5.98	Average	294	285
6	5860.00	70.37	74.00	-3.63	64.39	5.98	Peak	294	285
7	11570.00	43.08	54.00	-10.92	28.56	14.52	Average	264	238
8	11570.00	56.76	74.00	-17.24	42.24	14.52	Peak	264	238

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		

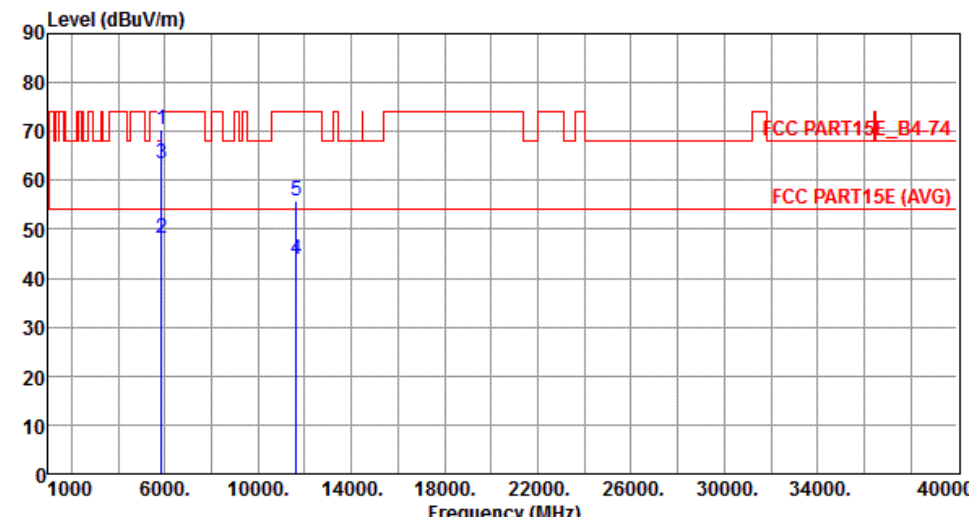


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	46.26	54.00	-7.74	40.56	5.70	Average	302	294
2	5715.00	60.56	74.00	-13.44	54.86	5.70	Peak	302	294
3	5725.00	64.00	78.20	-14.20	58.29	5.71	Peak	302	294
4	5850.00	68.45	78.20	-9.75	62.48	5.97	Peak	302	294
5	5860.00	46.75	54.00	-7.25	40.77	5.98	Average	302	294
6	5860.00	61.85	74.00	-12.15	55.87	5.98	Peak	302	294
7	11570.00	45.76	54.00	-8.24	31.24	14.52	Average	310	15
8	11570.00	57.83	74.00	-16.17	43.31	14.52	Peak	310	15

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

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT20	Test Freq. (MHz)	5825
Polarization	Vertical		



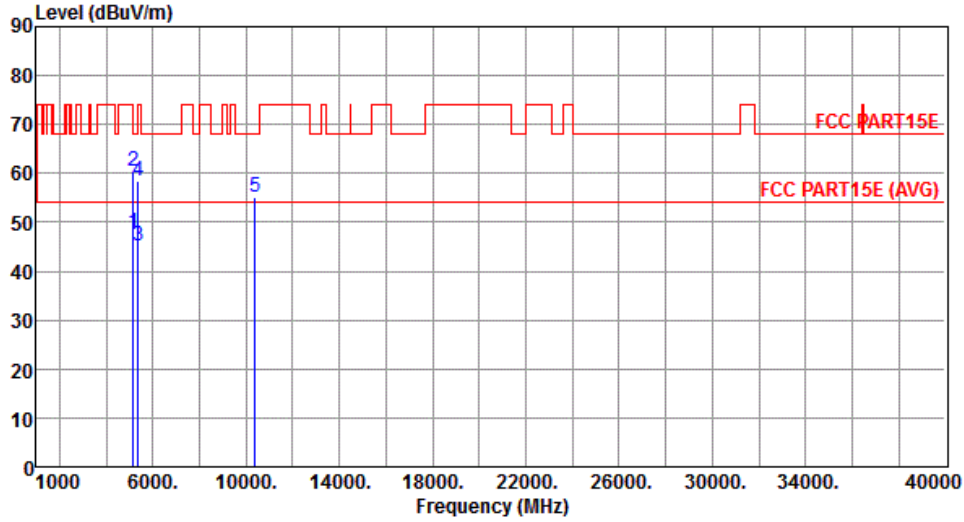
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	70.52	78.20	-7.68	64.55	5.97	Peak	318	278
2	5860.00	48.31	54.00	-5.69	42.33	5.98	Average	318	278
3	5860.00	63.51	74.00	-10.49	57.53	5.98	Peak	318	278
4	11650.00	43.97	54.00	-10.03	29.57	14.40	Average	318	20
5	11650.00	55.88	74.00	-18.12	41.48	14.40	Peak	318	20

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)	5190
Polarization	Horizontal		
Level (dBuV/m)			

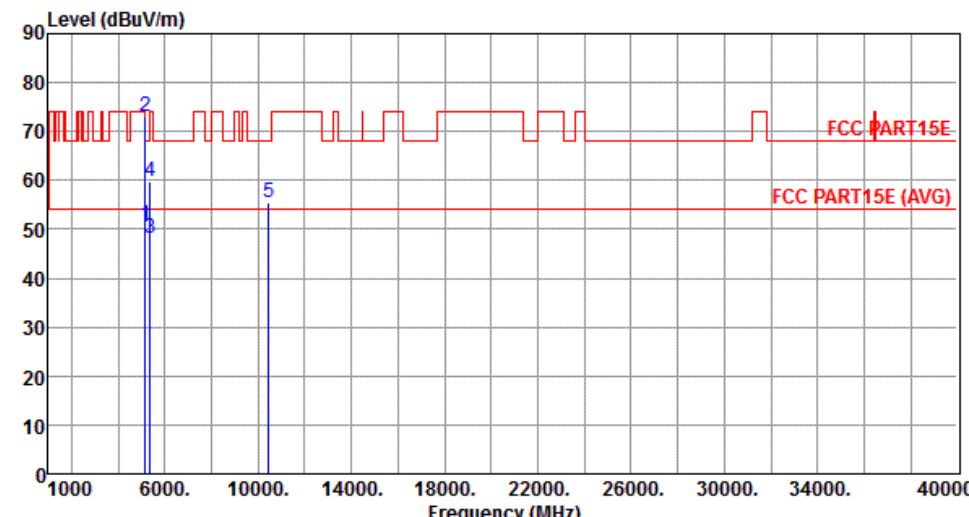
Modulation	VHT40	Test Freq. (MHz)	5190
Polarization	Vertical		



	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	47.89	54.00	-6.11	42.99	4.90	Average	261	275
2	5150.00	60.55	74.00	-13.45	55.65	4.90	Peak	261	275
3	5350.00	45.33	54.00	-8.67	40.20	5.13	Average	261	275
4	5350.00	58.42	74.00	-15.58	53.29	5.13	Peak	261	275
5	10380.00	55.04	68.20	-13.16	41.33	13.71	Peak	100	157

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

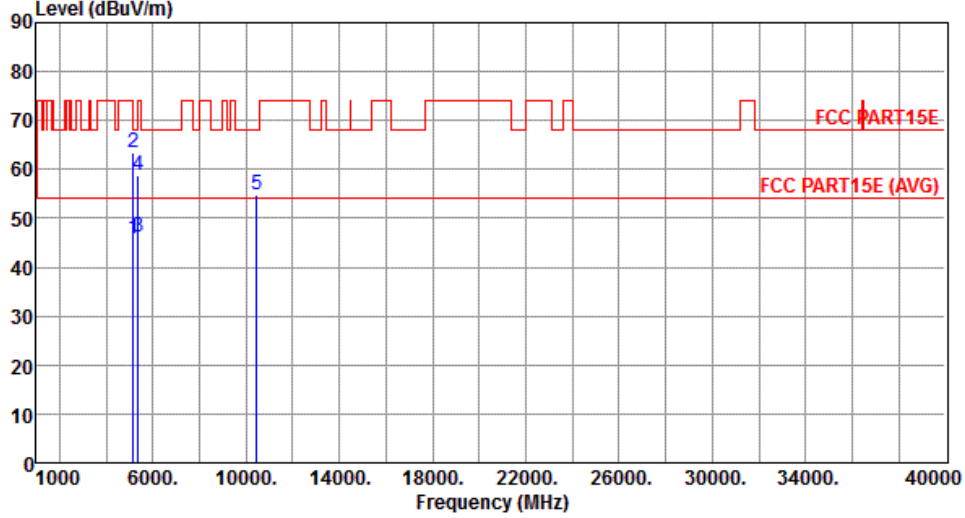
Modulation	VHT40	Test Freq. (MHz)	5230
Polarization	Horizontal		



	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	50.82	54.00	-3.18	45.92	4.90	Average	254	277
2	5150.00	72.98	74.00	-1.02	68.08	4.90	Peak	254	277
3	5350.00	48.01	54.00	-5.99	42.88	5.13	Average	254	277
4	5350.00	59.79	74.00	-14.21	54.66	5.13	Peak	254	277
5	10460.00	55.39	68.20	-12.81	41.53	13.86	Peak	100	182

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		

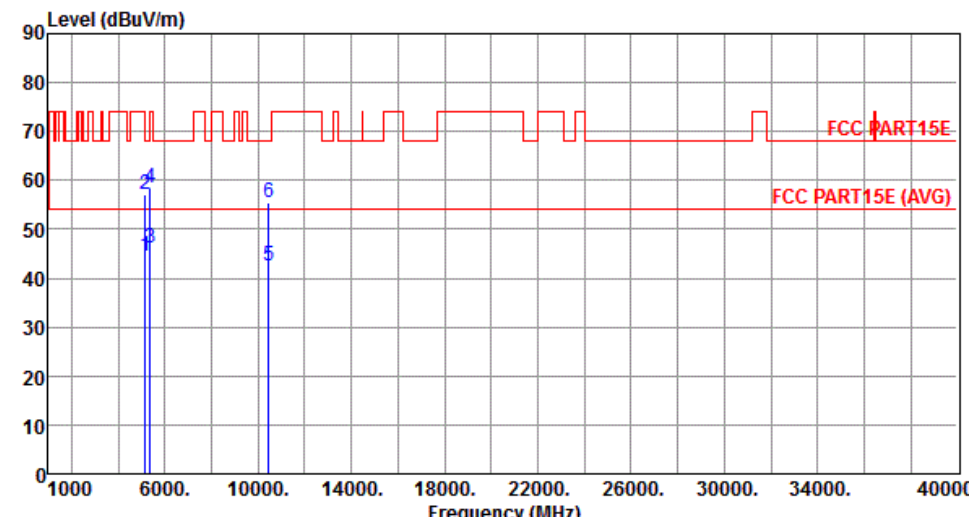


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	45.92	54.00	-8.08	41.02	4.90	Average	259	274
2	5150.00	63.35	74.00	-10.65	58.45	4.90	Peak	259	274
3	5350.00	46.27	54.00	-7.73	41.14	5.13	Average	259	274
4	5350.00	58.77	74.00	-15.23	53.64	5.13	Peak	259	274
5	10460.00	54.89	68.20	-13.31	41.03	13.86	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	VHT40	Test Freq. (MHz)	5270
Polarization	Horizontal		
Level (dBUV/m) </			

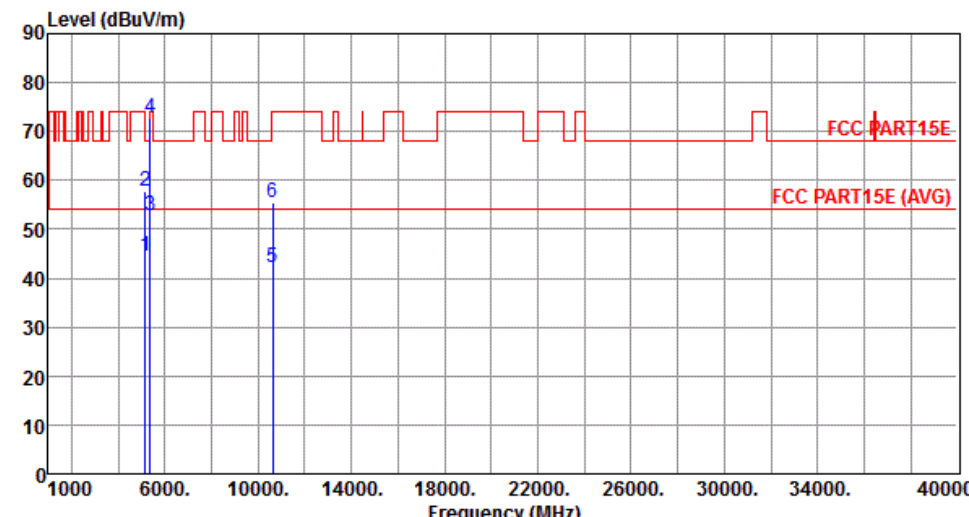
Modulation	VHT40	Test Freq. (MHz)	5270
Polarization	Vertical		



	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	44.42	54.00	-9.58	39.52	4.90	Average	148	230
2	5150.00	56.97	74.00	-17.03	52.07	4.90	Peak	148	230
3	5350.00	46.13	54.00	-7.87	41.00	5.13	Average	148	230
4	5350.00	58.59	74.00	-15.41	53.46	5.13	Peak	148	230
5	10460.00	42.51	54.00	-11.49	28.65	13.86	Average	100	175
6	10460.00	55.38	68.20	-12.82	41.52	13.86	Peak	100	175

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).

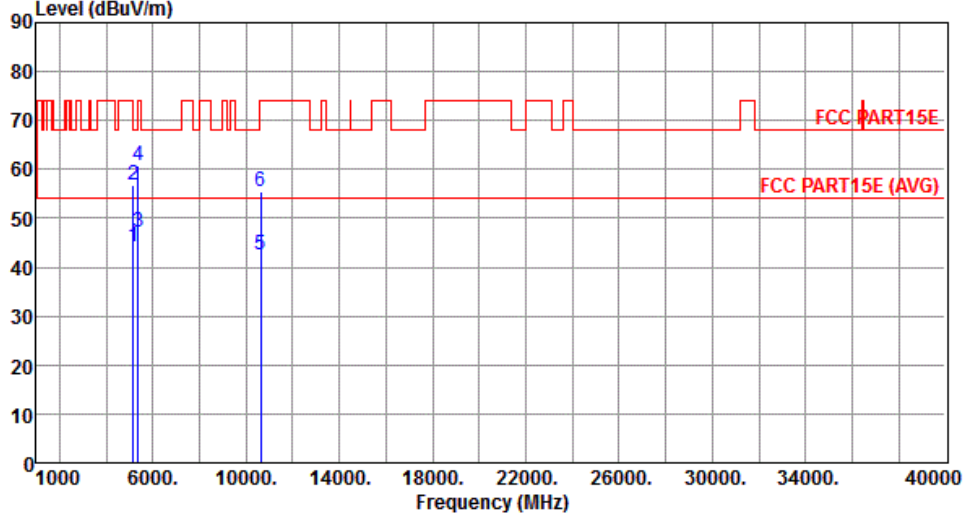
Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.50	54.00	-9.50	39.60	4.90	Average	179	278
2	5150.00	57.62	74.00	-16.38	52.72	4.90	Peak	179	278
3	5350.00	52.69	54.00	-1.31	47.56	5.13	Average	179	278
4	5350.00	72.65	74.00	-1.35	67.52	5.13	Peak	179	278
5	10620.00	42.22	54.00	-11.78	28.16	14.06	Average	100	157
6	10620.00	55.39	74.00	-18.61	41.33	14.06	Peak	100	157

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

Modulation	VHT40	Test Freq. (MHz)	5310
Polarization	Vertical		



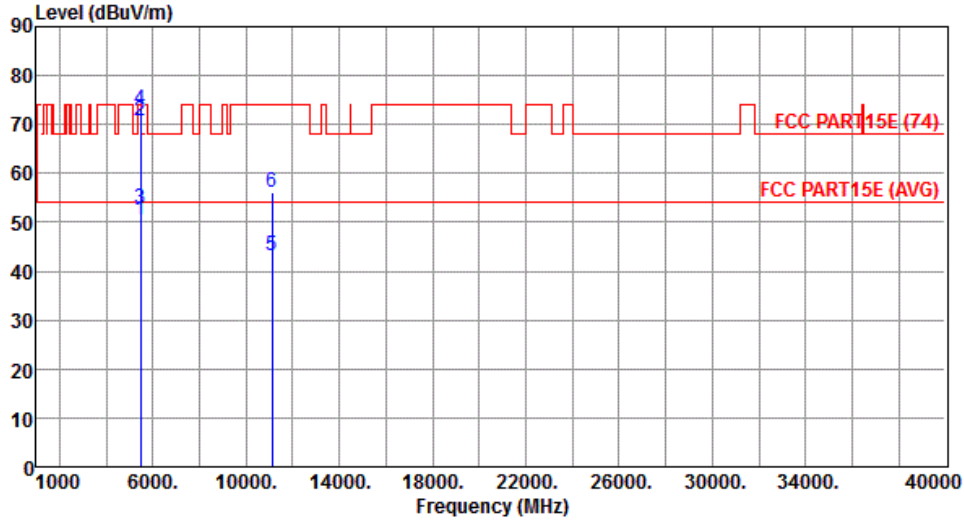
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.25	54.00	-9.75	39.35	4.90	Average	148	255
2	5150.00	56.81	74.00	-17.19	51.91	4.90	Peak	148	255
3	5350.00	47.18	54.00	-6.82	42.05	5.13	Average	148	255
4	5350.00	60.72	74.00	-13.28	55.59	5.13	Peak	148	255
5	10620.00	42.43	54.00	-11.57	28.37	14.06	Average	100	168
6	10620.00	55.62	74.00	-18.38	41.56	14.06	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	VHT40	Test Freq. (MHz)	5510
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT40	Test Freq. (MHz)	5510
Polarization	Vertical		
Level (dBuV/m)			

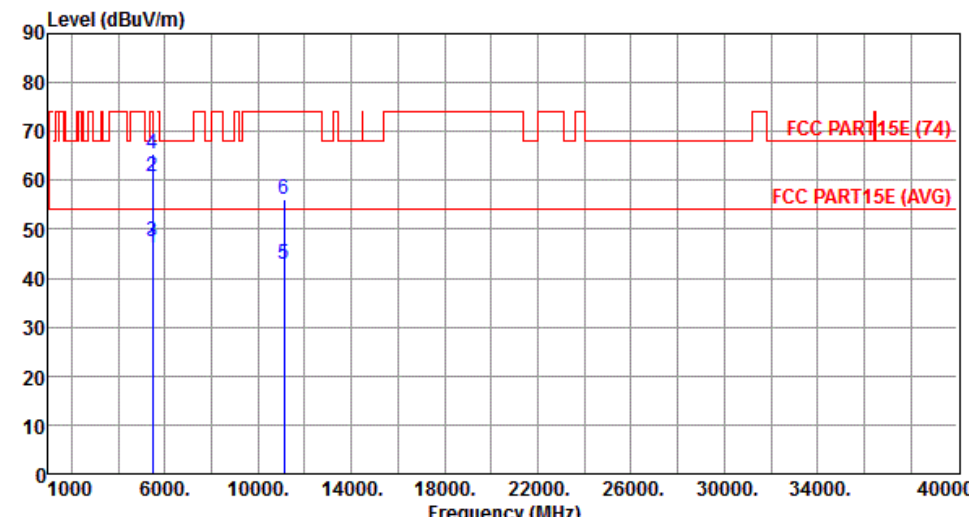
Modulation	VHT40	Test Freq. (MHz)	5550
Polarization	Horizontal		



	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	50.37	54.00	-3.63	45.11	5.26	Average	304	287
2	5460.00	70.78	74.00	-3.22	65.52	5.26	Peak	304	287
3	5470.00	52.80	54.00	-1.20	47.54	5.26	Average	304	287
4	5470.00	72.95	74.00	-1.05	67.69	5.26	Peak	304	287
5	11100.00	43.17	54.00	-10.83	28.66	14.51	Average	205	185
6	11100.00	56.23	74.00	-17.77	41.72	14.51	Peak	205	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	VHT40	Test Freq. (MHz)	5550
Polarization	Vertical		

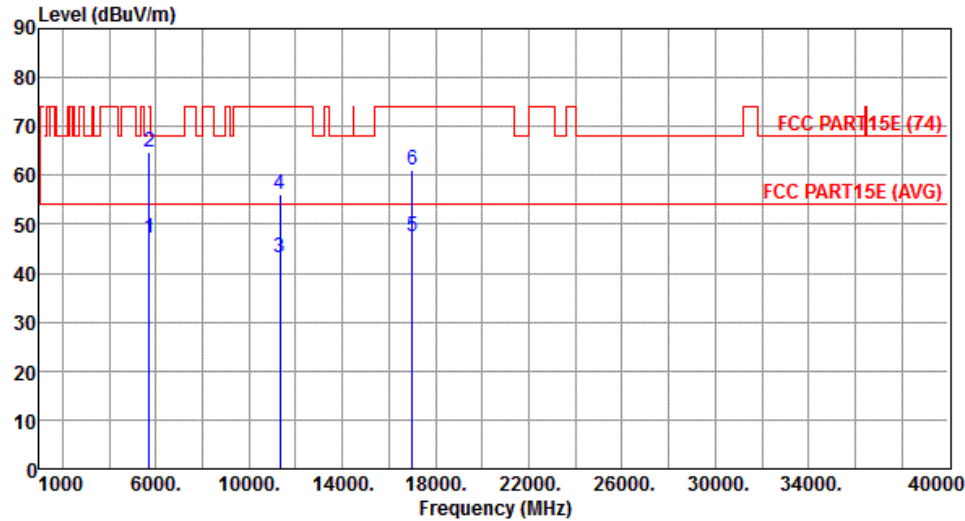


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.31	54.00	-7.69	41.05	5.26	Average	316	294
2	5460.00	60.83	74.00	-13.17	55.57	5.26	Peak	316	294
3	5470.00	47.52	54.00	-6.48	42.26	5.26	Average	316	294
4	5470.00	65.49	74.00	-8.51	60.23	5.26	Peak	316	294
5	11100.00	42.94	54.00	-11.06	28.43	14.51	Average	222	313
6	11100.00	56.26	74.00	-17.74	41.75	14.51	Peak	222	313

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		
Level (dBuV/m) <			

Modulation	VHT40	Test Freq. (MHz)	5670
Polarization	Vertical		

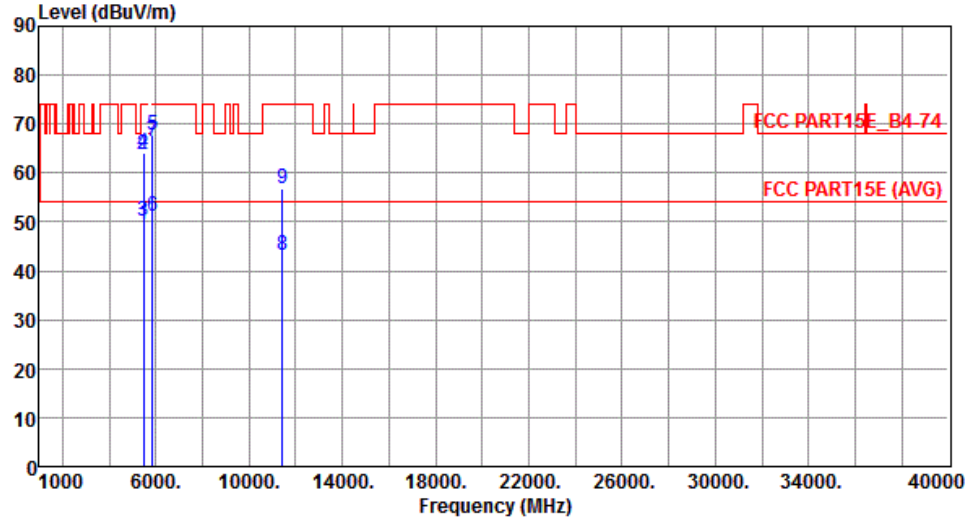


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	47.18	54.00	-6.82	41.47	5.71	Average	294	304
2	5725.00	64.67	74.00	-9.33	58.96	5.71	Peak	294	304
3	11340.00	43.24	54.00	-10.76	28.66	14.58	Average	238	256
4	11340.00	56.12	74.00	-17.88	41.54	14.58	Peak	238	256
5	17010.00	47.63	54.00	-6.37	28.19	19.44	Average	168	143
6	17010.00	60.97	74.00	-13.03	41.53	19.44	Peak	168	143

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

*Factor includes antenna factor , cable loss and amplifier gain

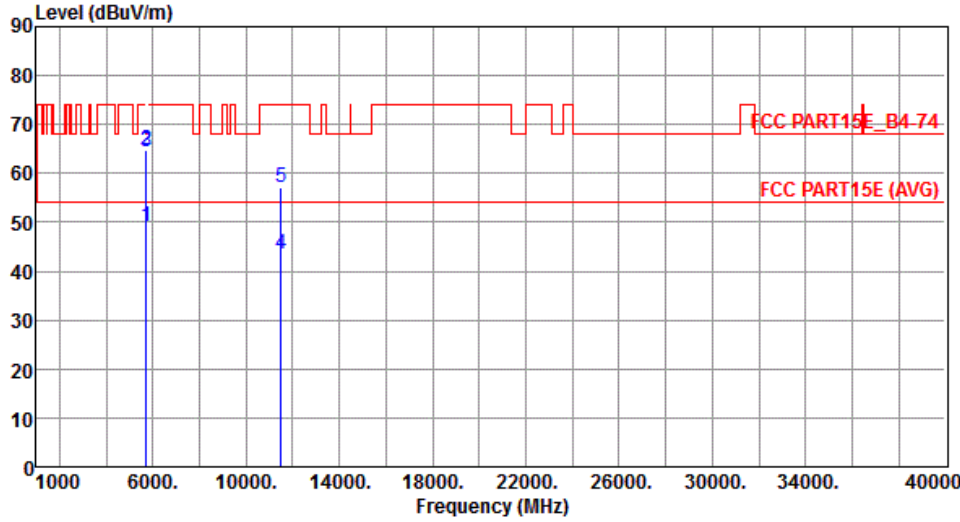
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

Modulation	VHT40	Test Freq. (MHz)	5710																																																																																										
Polarization	Horizontal																																																																																												
Level (dBuV/m)  Freq. Emission Limit Margin SA Factor Remark ANT Turn MHz level dBuV/m dBuV/m dB reading dBuV dB cm Table deg <table><tr><td>1</td><td>5460.00</td><td>49.48</td><td>54.00</td><td>-4.52</td><td>44.22</td><td>5.26</td><td>Average</td><td>340</td><td>284</td></tr><tr><td>2</td><td>5460.00</td><td>63.75</td><td>74.00</td><td>-10.25</td><td>58.49</td><td>5.26</td><td>Peak</td><td>340</td><td>284</td></tr><tr><td>3</td><td>5470.00</td><td>50.28</td><td>54.00</td><td>-3.72</td><td>45.02</td><td>5.26</td><td>Average</td><td>340</td><td>284</td></tr><tr><td>4</td><td>5470.00</td><td>64.23</td><td>74.00</td><td>-9.77</td><td>58.97</td><td>5.26</td><td>Peak</td><td>340</td><td>284</td></tr><tr><td>5</td><td>5850.00</td><td>67.84</td><td>78.20</td><td>-10.36</td><td>61.87</td><td>5.97</td><td>Peak</td><td>340</td><td>284</td></tr><tr><td>6</td><td>5860.00</td><td>51.27</td><td>54.00</td><td>-2.73</td><td>45.29</td><td>5.98</td><td>Average</td><td>340</td><td>284</td></tr><tr><td>7</td><td>5860.00</td><td>66.54</td><td>74.00</td><td>-7.46</td><td>60.56</td><td>5.98</td><td>Peak</td><td>340</td><td>284</td></tr><tr><td>8</td><td>11420.00</td><td>43.14</td><td>54.00</td><td>-10.86</td><td>28.53</td><td>14.61</td><td>Average</td><td>255</td><td>261</td></tr><tr><td>9</td><td>11420.00</td><td>56.91</td><td>74.00</td><td>-17.09</td><td>42.30</td><td>14.61</td><td>Peak</td><td>255</td><td>261</td></tr></table>				1	5460.00	49.48	54.00	-4.52	44.22	5.26	Average	340	284	2	5460.00	63.75	74.00	-10.25	58.49	5.26	Peak	340	284	3	5470.00	50.28	54.00	-3.72	45.02	5.26	Average	340	284	4	5470.00	64.23	74.00	-9.77	58.97	5.26	Peak	340	284	5	5850.00	67.84	78.20	-10.36	61.87	5.97	Peak	340	284	6	5860.00	51.27	54.00	-2.73	45.29	5.98	Average	340	284	7	5860.00	66.54	74.00	-7.46	60.56	5.98	Peak	340	284	8	11420.00	43.14	54.00	-10.86	28.53	14.61	Average	255	261	9	11420.00	56.91	74.00	-17.09	42.30	14.61	Peak	255	261
1	5460.00	49.48	54.00	-4.52	44.22	5.26	Average	340	284																																																																																				
2	5460.00	63.75	74.00	-10.25	58.49	5.26	Peak	340	284																																																																																				
3	5470.00	50.28	54.00	-3.72	45.02	5.26	Average	340	284																																																																																				
4	5470.00	64.23	74.00	-9.77	58.97	5.26	Peak	340	284																																																																																				
5	5850.00	67.84	78.20	-10.36	61.87	5.97	Peak	340	284																																																																																				
6	5860.00	51.27	54.00	-2.73	45.29	5.98	Average	340	284																																																																																				
7	5860.00	66.54	74.00	-7.46	60.56	5.98	Peak	340	284																																																																																				
8	11420.00	43.14	54.00	-10.86	28.53	14.61	Average	255	261																																																																																				
9	11420.00	56.91	74.00	-17.09	42.30	14.61	Peak	255	261																																																																																				
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		
Level (dBuV/m) </			

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	VHT40	Test Freq. (MHz)	5755
Polarization	Vertical		

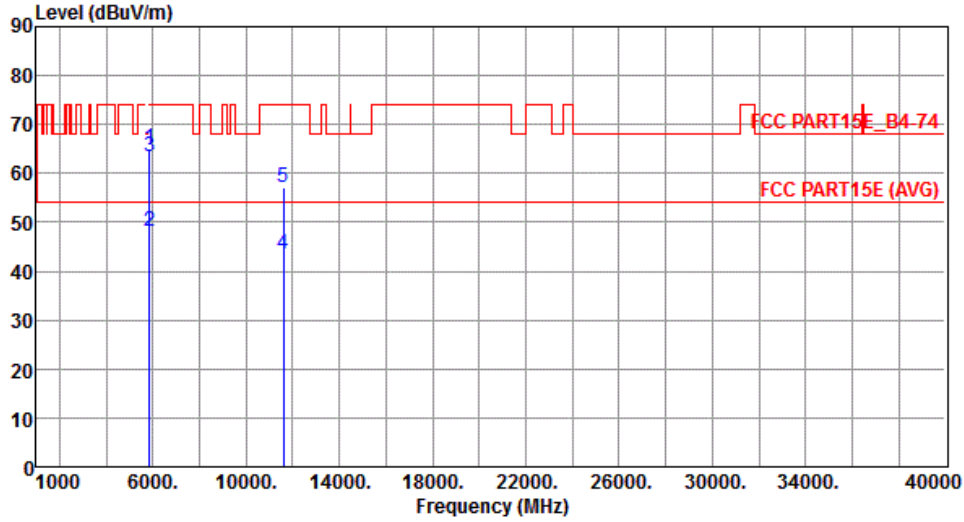


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	49.08	54.00	-4.92	43.38	5.70	Average	338	285
2	5715.00	64.65	74.00	-9.35	58.95	5.70	Peak	338	285
3	5725.00	64.32	78.20	-13.88	58.61	5.71	Peak	338	285
4	11510.00	43.37	54.00	-10.63	28.75	14.62	Average	320	13
5	11510.00	56.99	74.00	-17.01	42.37	14.62	Peak	320	13

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

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT40	Test Freq. (MHz)	5795
Polarization	Vertical		

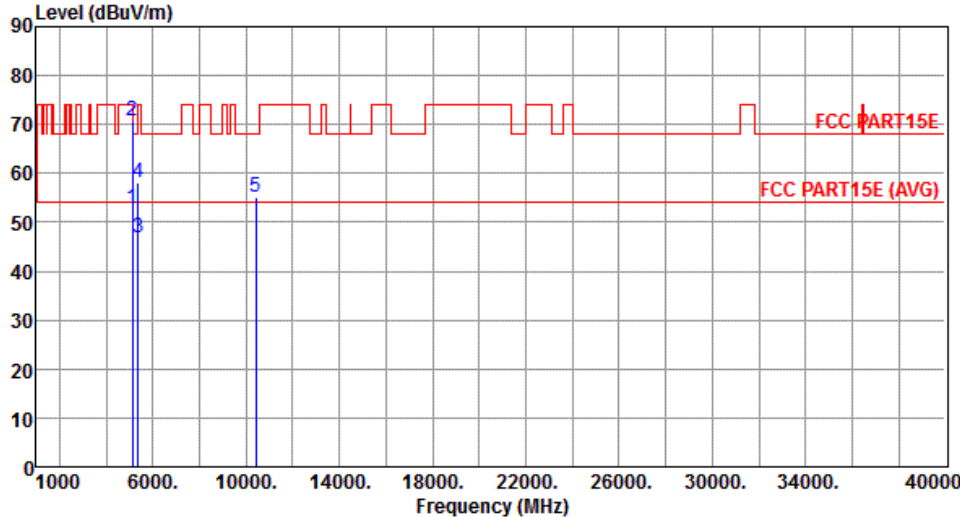


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	65.12	78.20	-13.08	59.15	5.97	Peak	315	297
2	5860.00	48.05	54.00	-5.95	42.07	5.98	Average	315	297
3	5860.00	63.29	74.00	-10.71	57.31	5.98	Peak	315	297
4	11590.00	43.35	54.00	-10.65	28.85	14.50	Average	322	16
5	11590.00	57.24	74.00	-16.76	42.74	14.50	Peak	322	16

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

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

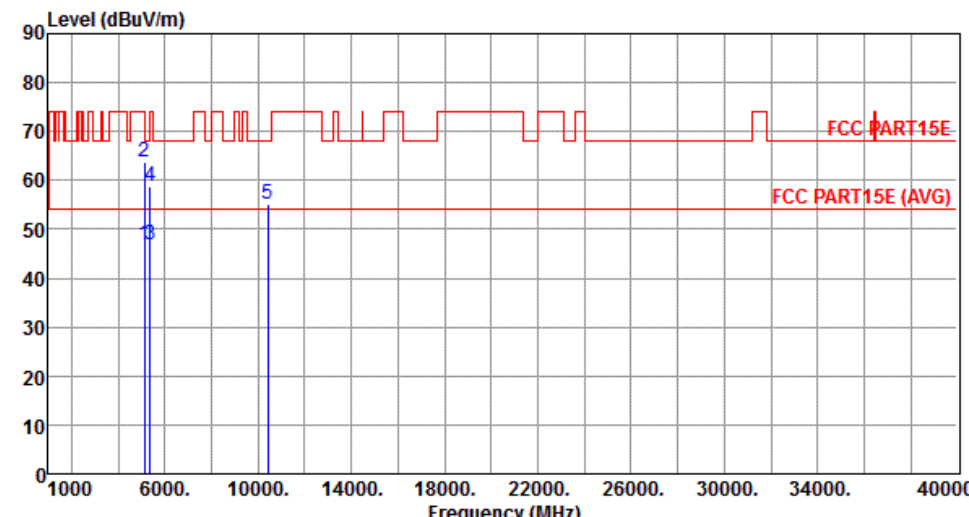
Modulation	VHT80	Test Freq. (MHz)	5210
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5137.00	52.90	54.00	-1.10	48.01	4.89	Average	252	277
2	5137.00	70.75	74.00	-3.25	65.86	4.89	Peak	252	277
3	5350.00	46.88	54.00	-7.12	41.75	5.13	Average	252	277
4	5350.00	58.10	74.00	-15.90	52.97	5.13	Peak	252	277
5	10420.00	55.10	68.20	-13.10	41.32	13.78	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	VHT80	Test Freq. (MHz)	5210
Polarization	Vertical		

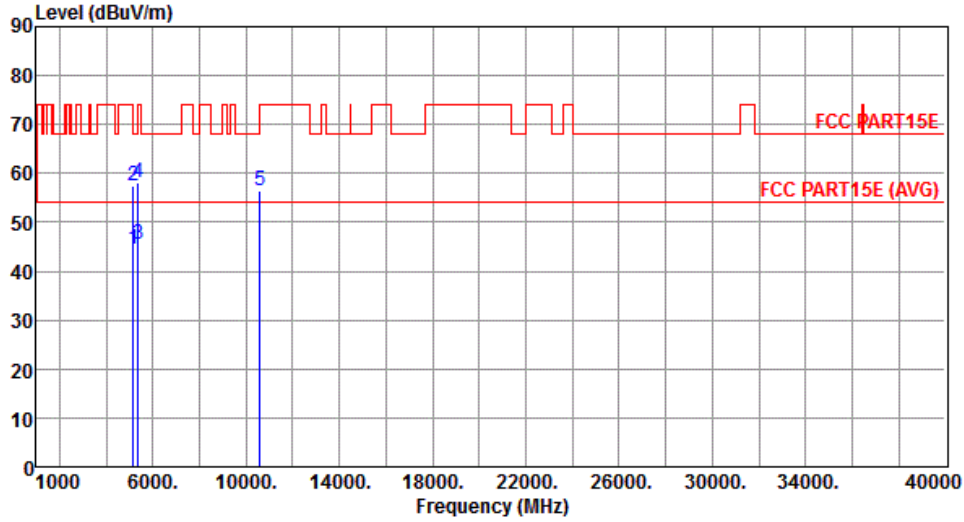


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5137.00	46.91	54.00	-7.09	42.02	4.89	Average	255	275
2	5137.00	63.88	74.00	-10.12	58.99	4.89	Peak	255	275
3	5350.00	46.92	54.00	-7.08	41.79	5.13	Average	255	275
4	5350.00	58.71	74.00	-15.29	53.58	5.13	Peak	255	275
5	10420.00	55.22	68.20	-12.98	41.44	13.78	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	VHT80	Test Freq. (MHz)	5290
Polarization	Horizontal		
Level (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	44.41	54.00	-9.59	39.51	4.90	Average	255	276
2	5150.00	57.59	74.00	-16.41	52.69	4.90	Peak	255	276
3	5350.00	45.55	54.00	-8.45	40.42	5.13	Average	255	276
4	5350.00	58.11	74.00	-15.89	52.98	5.13	Peak	255	276
5	10580.00	56.35	68.20	-11.85	42.33	14.02	Peak	222	35

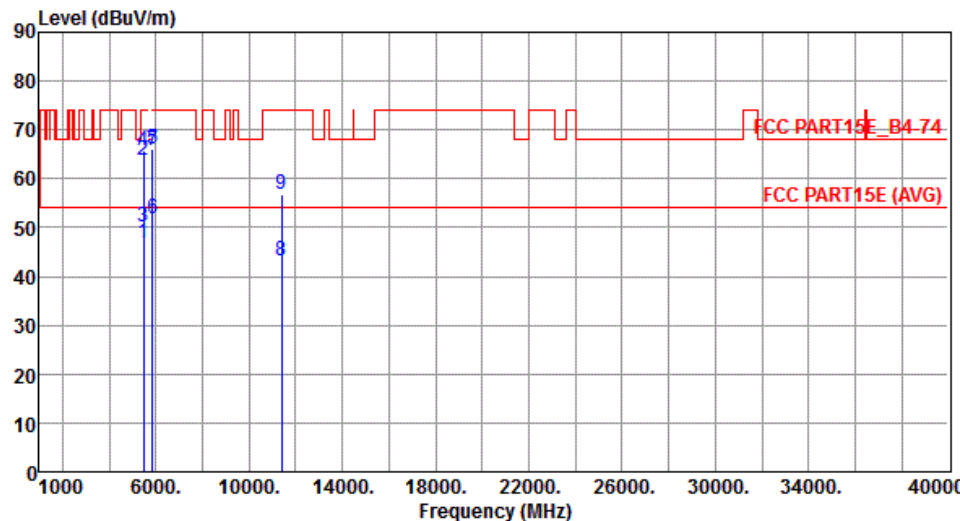
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
 *Factor includes antenna factor , cable loss and amplifier gain
 Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT80	Test Freq. (MHz)	5530
Polarization	Vertical		
Level (dBuV/m)			

Modulation	VHT80	Test Freq. (MHz)	5690
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	VHT80	Test Freq. (MHz)	5690
Polarization	Vertical		

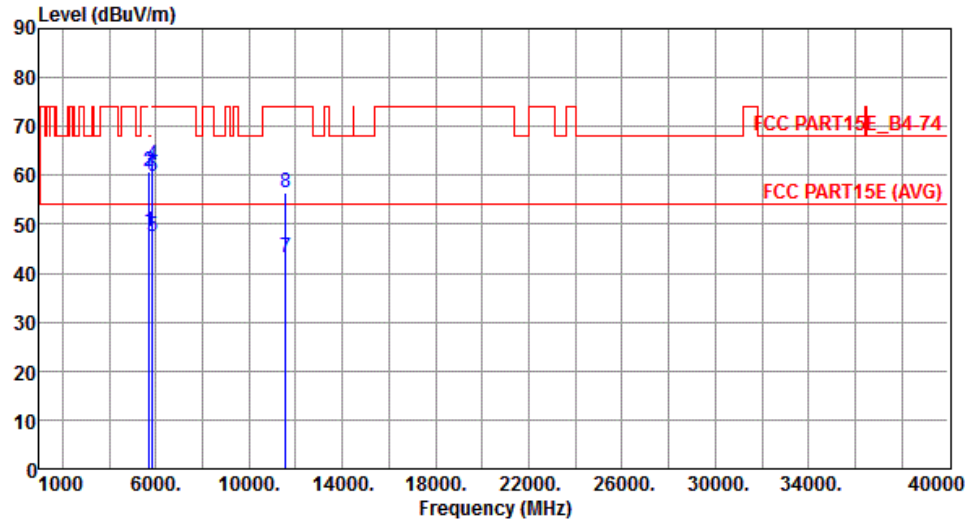


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.72	54.00	-7.28	41.46	5.26	Average	316	296
2	5460.00	63.80	74.00	-10.20	58.54	5.26	Peak	316	296
3	5470.00	50.31	54.00	-3.69	45.05	5.26	Average	316	296
4	5470.00	65.63	74.00	-8.37	60.37	5.26	Peak	316	296
5	5850.00	66.22	78.20	-11.98	60.25	5.97	Peak	316	296
6	5860.00	51.76	54.00	-2.24	45.78	5.98	Average	316	296
7	5860.00	65.77	74.00	-8.23	59.79	5.98	Peak	316	296
8	11380.00	43.16	54.00	-10.84	28.56	14.60	Average	265	31
9	11380.00	56.81	74.00	-17.19	42.21	14.60	Peak	265	31

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		
Level (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	5715.00	48.52	54.00	-5.48	42.82	5.70	Average	241	279
2	5715.00	60.65	74.00	-13.35	54.95	5.70	Peak	241	279
3	5725.00	60.66	78.20	-17.54	54.95	5.71	Peak	241	279
4	5850.00	62.05	78.20	-16.15	56.08	5.97	Peak	241	279
5	5860.00	47.51	54.00	-6.49	41.53	5.98	Average	241	279
6	5860.00	59.72	74.00	-14.28	53.74	5.98	Peak	241	279
7	11550.00	43.08	54.00	-10.92	28.53	14.55	Average	234	254
8	11550.00	56.51	74.00	-17.49	41.96	14.55	Peak	234	254

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

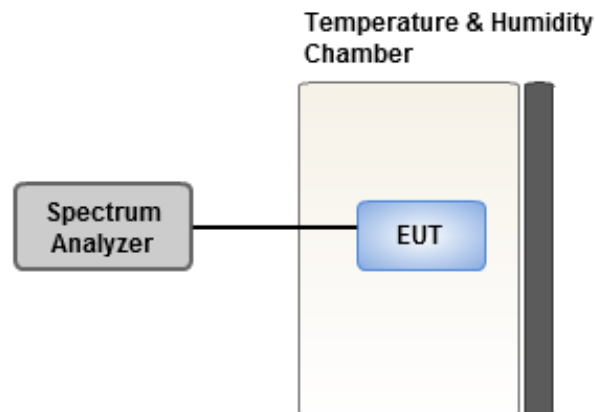
3.6.1 Limit of Frequency Stability

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 70 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°C Vmax	0.84	1.18	1.17	0.72
T20°C Vmin	-0.18	0.25	0.25	0.35
T70°C Vnom	0.63	0.89	1.24	1.19
T60°C Vnom	0.46	0.94	0.79	1.14
T50°C Vnom	0.51	0.61	1.20	0.72
T40°C Vnom	-0.19	-0.19	0.27	-0.27
T30°C Vnom	0.32	0.05	-0.14	0.75
T20°C Vnom	0.10	-0.03	0.17	0.03
T10°C Vnom	1.05	1.34	1.36	1.29
T0°C Vnom	-0.25	-0.23	-0.01	0.09
T-10°C Vnom	0.48	0.92	0.46	0.81
T-20°C Vnom	0.90	0.97	0.72	1.36
T-30°C Vnom	0.03	0.17	0.31	0.22
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 70		Tmin [°C]: -30

Frequency: 5785 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	5.19	5.68	5.53	5.46
T20°C Vmin	3.54	3.44	3.99	3.22
T70°C Vnom	2.39	2.94	2.66	2.87
T60°C Vnom	2.65	2.19	3.34	2.19
T50°C Vnom	3.40	3.61	3.80	3.51
T40°C Vnom	3.35	3.60	3.50	3.60
T30°C Vnom	2.81	3.22	3.25	3.09
T20°C Vnom	2.89	2.86	3.18	2.96
T10°C Vnom	2.05	2.03	2.36	2.31
T0°C Vnom	2.77	2.36	3.01	2.96
T-10°C Vnom	1.27	1.30	1.29	1.78
T-20°C Vnom	0.75	0.36	0.69	0.74
T-30°C Vnom	0.55	0.73	0.63	0.58
Vnom [Vac]: 120		Vmax [Vac]: 138		Vmin [Vac]: 102
Tnom [°C]: 20		Tmax [°C]: 70		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, 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

Tel: 886-2-2601-1640

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

Kwei Shan

Tel: 886-3-271-8666

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

Kwei Shan Site II

Tel: 886-3-271-8640

No. 14-1, Lane 19, Wen San 3rd
St., Kwei Shan Hsiang, Tao Yuan
Hsien 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==