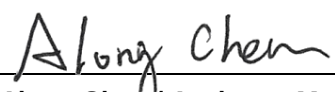


FCC Test Report

FCC ID : NKR-DHURAN32
Equipment : STAMP module 802.11 abgn & BT
Model No. : DHUR-AN32
Brand Name : Wistron NeWeb Corp.
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 : Sep. 04, 2017
Tested Date : Sep. 12 ~ Sep. 19, 2017

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

Reviewed by:


Along Chen / Assistant Manager

Approved by:

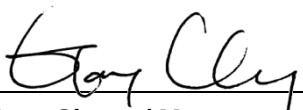

Gary Chang / Manager



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information.....	5
1.2	Local Support Equipment List	9
1.3	Test Setup Chart	9
1.4	The Equipment List	10
1.5	Testing Applied Standards	11
1.6	Measurement Uncertainty	11
2	TEST CONFIGURATION	12
2.1	Testing Condition	12
2.2	The Worst Test Modes and Channel Details	12
3	TRANSMITTER TEST RESULTS.....	14
3.1	Conducted Emissions.....	14
3.2	Emission Bandwidth	19
3.3	RF Output Power	23
3.4	Peak Power Spectral Density	26
3.5	Transmitter Radiated and Band Edge Emissions	31
3.6	Frequency Stability	104
4	TEST LABORATORY INFORMATION	107

Release Record

Report No.	Version	Description	Issued Date
FR790404AN	Rev. 01	Initial issue	Sep. 25, 2017

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.159MHz 50.83 (Margin -14.69dB) - QP	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 16500.00MHz 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: 20.19 5250~5350MHz: 18.41 5470~5725MHz: 20.54 5725~5850MHz: 20.45	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 5500-5700 5745-5825	36-48 [4] 52-64 [4] 100-140 [11] 149-165 [5]	2	6-54 Mbps
5150-5250 5250-5350 5470-5725 5725-5850	n (HT20)	5180-5240 5260-5320 5500-5700 5745-5825	36-48 [4] 52-64 [4] 100-140 [11] 149-165 [5]	2	MCS 0-15
5150-5250 5250-5350 5470-5725 5725-5850	n (HT40)	5190-5230 5270-5310 5510-5670 5755-5795	38-46 [2] 54-62 [2] 102-134 [5] 151-159 [2]	2	MCS 0-15

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

1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)			
				5150~5250	5250~5350	5470~5725	5725~5850
1	RFMTA340740IMLB701	PIFA	UFL	4.36			
2	RFMTA340765IMLB702_A	PIFA	UFL	4.36			

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		HT40	
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	118	5590
64	5320	126	5630
100	5500	134	5670
104	5520	151	5755
108	5540	159	5795
112	5560	---	---
116	5580	---	---
120	5600	---	---
124	5620	---	---
128	5640	---	---
132	5660	---	---
136	5680	---	---
140	5700	---	---
149	5745	---	---
153	5765	---	---
157	5785	---	---
161	5805	---	---
165	5825	---	---

1.1.6 Test Tool and Duty Cycle

Test Tool	MT7662 QA, Version: 1.0.3.13		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	99.60%	0.02
	HT20	99.58%	0.02
	HT40	99.15%	0.04

1.1.7 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5180	18/19
11a	5200	18/19
11a	5240	17/1A
HT20	5180	18/19
HT20	5200	18/19
HT20	5240	17/1A
HT40	5190	16/17
HT40	5230	19/1B

For Frequency band 5250~5350 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5260	13/15
11a	5300	13/15
11a	5320	13/15
HT20	5260	13/15
HT20	5300	13/15
HT20	5320	13/15
HT40	5270	15/16
HT40	5310	15/16

For Frequency band 5470~5725 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5500	16/17
11a	5580	15/17
11a	5700	15/18
HT20	5500	16/17
HT20	5580	15/17
HT20	5700	15/18
HT40	5510	14/16
HT40	5590	16/18
HT40	5670	16/19

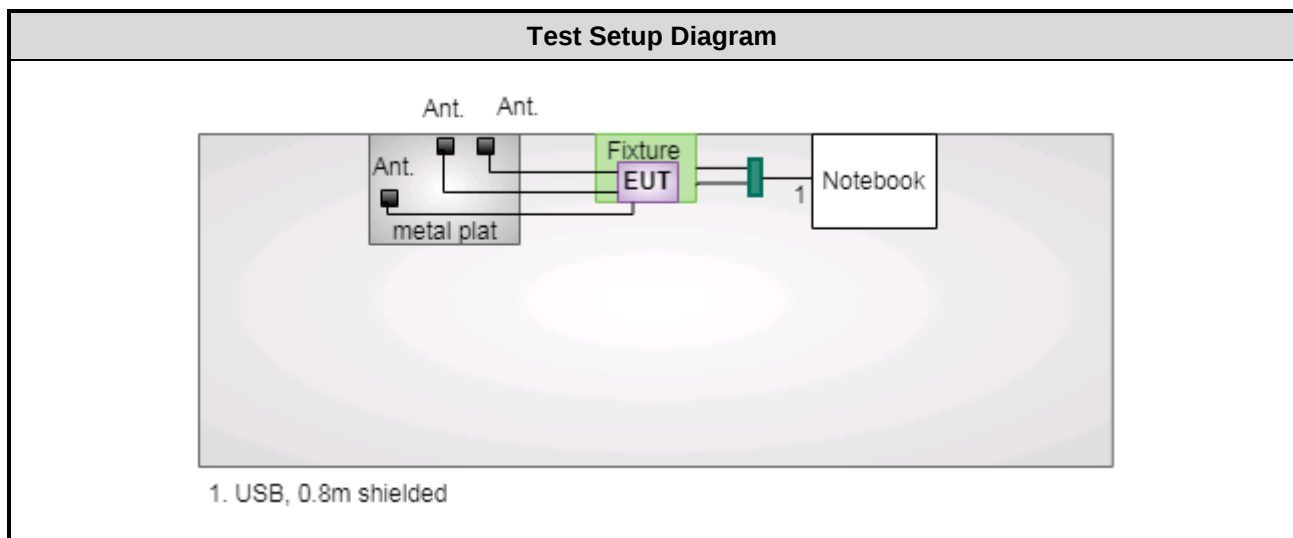
For Frequency band 5725~5850 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5745	15/18
11a	5785	15/18
11a	5825	15/17
HT20	5745	15/18
HT20	5785	15/18
HT20	5825	15/18
HT40	5755	16/19
HT40	5795	16/18

1.2 Local Support Equipment List

Support Equipment List					
No.	Equipment	Brand	Model	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Inspiron 3000	DoC	USB, 0.8m shielded.
2	Fixture	---	---	---	---

Note: No.2 was provided 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	Sep. 19, 2017				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Dec. 21, 2016	Dec. 20, 2017
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 08, 2016	Nov. 07, 2017
RF Cable-CON	EMC	EMCCFD300-BM-B M-6000	50821	Dec. 20, 2016	Dec. 19, 2017
Measurement Software	AUDIX	e3	6.120210k	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Tested Date	Sep. 12 ~ Sep. 19, 2017				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Nov. 25, 2016	Nov. 24, 2017
Receiver	R&S	ESR3	101658	Nov. 24, 2016	Nov. 23, 2017
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 25, 2017	Jul. 24, 2018
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 21, 2016	Dec. 20, 2017
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Oct. 25, 2016	Oct. 24, 2017
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 10, 2016	Nov. 09, 2017
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Dec. 09, 2016	Dec. 08, 2017
Preamplifier	EMC	EMC02325	980225	Jul. 28, 2017	Jul. 27, 2018
Preamplifier	Agilent	83017A	MY39501308	Oct. 06, 2016	Oct. 05, 2017
Preamplifier	EMC	EMC184045B	980192	Aug. 22, 2017	Aug. 21, 2018
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 09, 2016	Dec. 08, 2017
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 09, 2016	Dec. 08, 2017
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	16052	Dec. 09, 2016	Dec. 08, 2017
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Dec. 09, 2016	Dec. 08, 2017
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Dec. 09, 2016	Dec. 08, 2017
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Tested Date	Sep. 14 ~ Sep. 19, 2017				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Mar. 15, 2017	Mar. 14, 2018
Power Meter	Anritsu	ML2495A	1241002	Oct. 06, 2016	Oct. 05, 2017
Power Sensor	Anritsu	MA2411B	1207366	Oct. 06, 2016	Oct. 05, 2017
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Nov. 21, 2016	Nov. 20, 2017
AC POWER SOURCE	APC	AFC-500W	F312060012	Oct. 28, 2016	Oct. 27, 2017
Measurement Software	Sporton	Sporton_1	1.3.30	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

1.5 Testing Applied Standards

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

47 CFR FCC Part 15.407

ANSI C63.10-2013

FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.6 Measurement Uncertainty

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

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

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	25°C / 58%	Alex Tsai
Radiated Emissions	03CH01-WS	25°C / 62-67%	Brad Wu Vincent Yeh
RF Conducted	TH01-WS	23°C / 65%	Felix Sung

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

2.2 The Worst Test Modes and Channel Details

Frequency band 5150~5350 MHz / 5470~5725 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate	Test Configuration
Conducted Emissions	HT40	5590	MCS 0	---
Radiated Emissions ≤1GHz	HT40	5590	MCS 0	---
RF Output Power	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	6 Mbps	---
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	MCS 0	
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5590 / 5670	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	6 Mbps	---
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700	MCS 0	
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5590 / 5670	MCS 0	
Frequency Stability	Un-modulation	5320	---	---

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

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

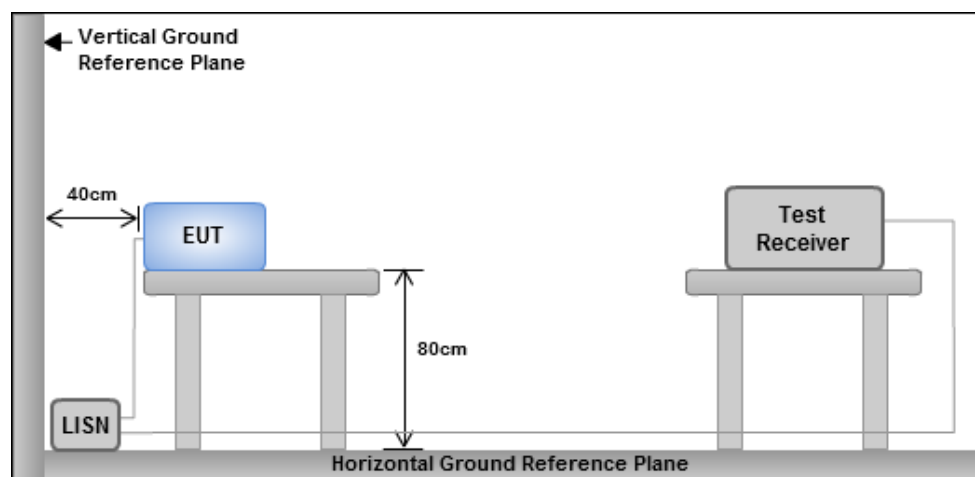
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

Note 1: * Decreases with the logarithm of the frequency.

3.1.2 Test Procedures

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

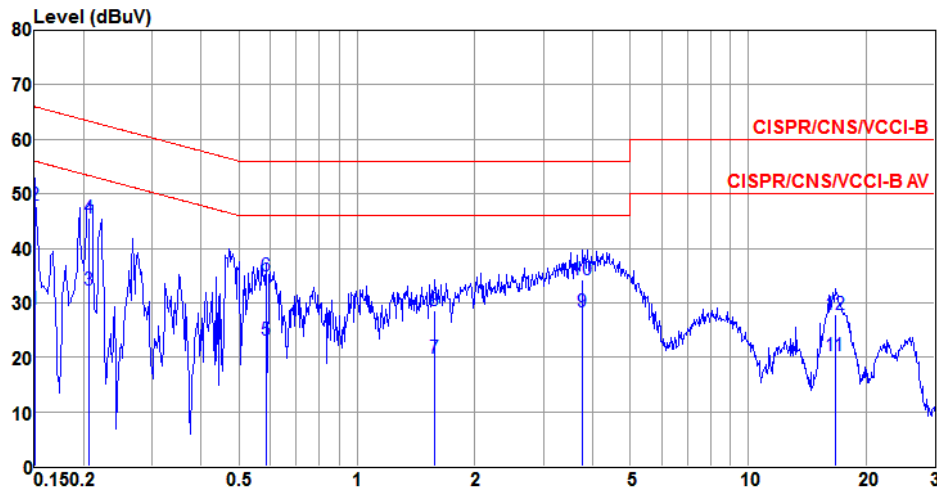
3.1.3 Test Setup



- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

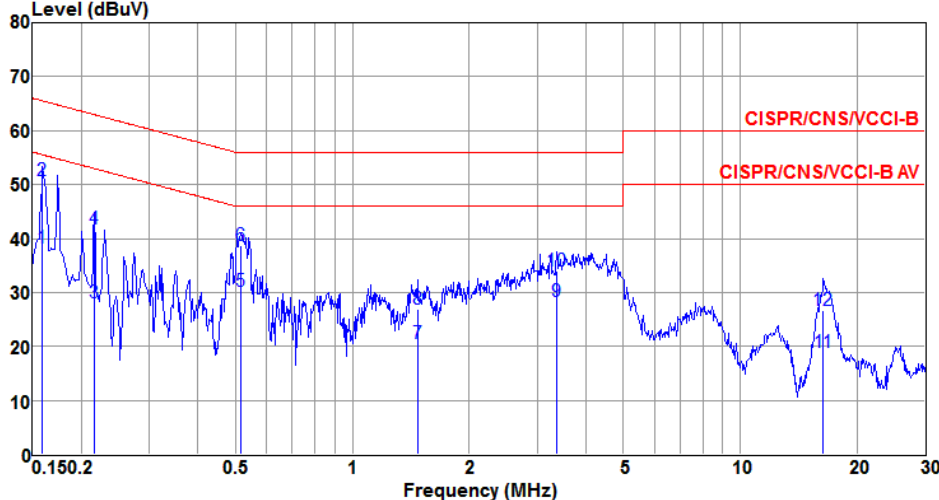
Modulation	HT40	Test Freq. (MHz)	5590
Power Phase	Line		



	Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	0.150	28.76	56.00	-27.24	28.65	0.07	0.04	Average
2	0.150	47.94	66.00	-18.06	47.83	0.07	0.04	QP
3	0.207	32.32	53.32	-21.00	32.18	0.10	0.04	Average
4	0.207	45.63	63.32	-17.69	45.49	0.10	0.04	QP
5	0.585	23.22	46.00	-22.78	23.12	0.06	0.04	Average
6	0.585	34.86	56.00	-21.14	34.76	0.06	0.04	QP
7	1.577	19.87	46.00	-26.13	19.72	0.11	0.04	Average
8	1.577	28.63	56.00	-27.37	28.48	0.11	0.04	QP
9	3.779	28.36	46.00	-17.64	28.04	0.17	0.15	Average
10	3.779	34.30	56.00	-21.70	33.98	0.17	0.15	QP
11	16.661	20.28	50.00	-29.72	19.69	0.35	0.24	Average
12	16.661	27.74	60.00	-32.26	27.15	0.35	0.24	QP

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

Modulation	HT40	Test Freq. (MHz)	5590
Power Phase	Neutral		



	Freq	Level	Limit	Over	Read	LISN	cable	Remark
	MHz	dBuV	Line	Limit	Level	factor	loss	
			dBuV	dB	dBuV	dB	dB	
1	0.159	38.34	55.52	-17.18	38.20	0.10	0.04	Average
2@	0.159	50.83	65.52	-14.69	50.69	0.10	0.04	QP
3	0.216	28.18	52.96	-24.78	28.05	0.09	0.04	Average
4	0.216	41.87	62.96	-21.09	41.74	0.09	0.04	QP
5	0.516	30.15	46.00	-15.85	29.99	0.12	0.04	Average
6	0.516	38.65	56.00	-17.35	38.49	0.12	0.04	QP
7	1.472	20.61	46.00	-25.39	20.44	0.13	0.04	Average
8	1.472	26.93	56.00	-29.07	26.76	0.13	0.04	QP
9	3.364	28.33	46.00	-17.67	28.05	0.15	0.13	Average
10	3.364	33.96	56.00	-22.04	33.68	0.15	0.13	QP
11	16.398	18.93	50.00	-31.07	18.31	0.38	0.24	Average
12	16.398	26.67	60.00	-33.33	26.05	0.38	0.24	QP

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

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

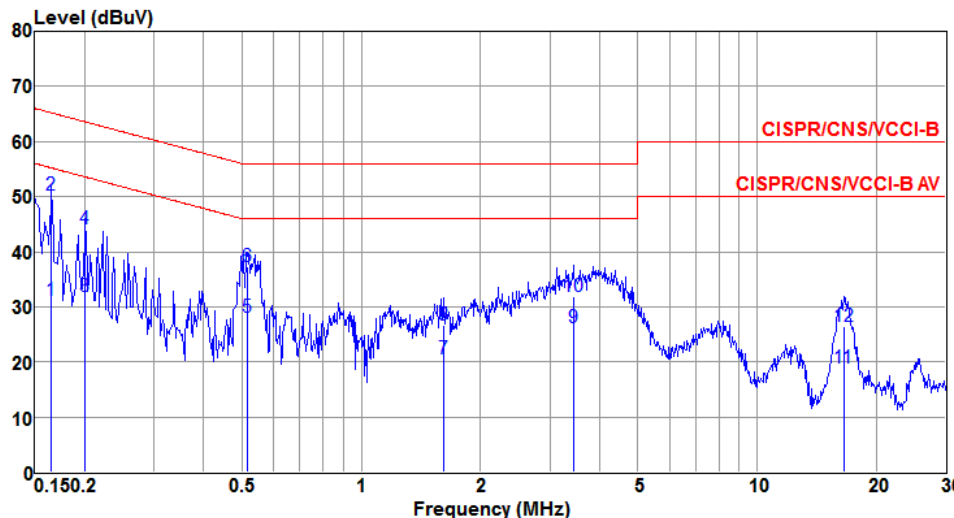
Modulation	HT40	Test Freq. (MHz)	5795
Power Phase	Line		

The graph displays the measured level in dBUV against frequency in MHz. The y-axis ranges from 0 to 80 dBUV, and the x-axis ranges from 0.15 to 30 MHz. Two red limit lines are shown: CISPR/CNS/VCCI-B (upper) and CISPR/CNS/VCCI-B AV (lower). The measured signal is a blue line with several peaks, notably around 0.15, 0.2, 0.4, 1.6, 3.4, and 16.5 MHz.

Freq MHz	Level dBUV	Limit Line dBUV	Over Limit dB	Read Level dBUV	LISN factor dB	cable loss dB	Remark
1	34.58	54.20	-19.62	34.45	0.09	0.04	Average
2	46.70	64.20	-17.50	46.57	0.09	0.04	QP
3	27.46	52.08	-24.62	27.33	0.09	0.04	Average
4	40.14	62.08	-21.94	40.01	0.09	0.04	QP
5	28.46	46.23	-17.77	28.36	0.06	0.04	Average
6	37.93	56.23	-18.30	37.83	0.06	0.04	QP
7	21.32	46.00	-24.68	21.16	0.12	0.04	Average
8	28.53	56.00	-27.47	28.37	0.12	0.04	QP
9	28.79	46.00	-17.21	28.50	0.16	0.13	Average
10	33.62	56.00	-22.38	33.33	0.16	0.13	QP
11	20.22	50.00	-29.78	19.64	0.34	0.24	Average
12	27.76	60.00	-32.24	27.18	0.34	0.24	QP

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

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

Modulation	HT40	Test Freq. (MHz)	5795																																																																																																																					
Power Phase	Neutral																																																																																																																							
Level (dBuV)  Frequency (MHz) <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>0.165</td><td>31.13</td><td>55.21</td><td>-24.08</td><td>30.99</td><td>0.10</td><td>0.04</td><td>Average</td></tr><tr><td>2</td><td>0.165</td><td>50.34</td><td>65.21</td><td>-14.87</td><td>50.20</td><td>0.10</td><td>0.04</td><td>QP</td></tr><tr><td>3</td><td>0.201</td><td>31.83</td><td>53.58</td><td>-21.75</td><td>31.70</td><td>0.09</td><td>0.04</td><td>Average</td></tr><tr><td>4</td><td>0.201</td><td>44.08</td><td>63.58</td><td>-19.50</td><td>43.95</td><td>0.09</td><td>0.04</td><td>QP</td></tr><tr><td>5</td><td>0.516</td><td>28.11</td><td>46.00</td><td>-17.89</td><td>27.95</td><td>0.12</td><td>0.04</td><td>Average</td></tr><tr><td>6</td><td>0.516</td><td>37.26</td><td>56.00</td><td>-18.74</td><td>37.10</td><td>0.12</td><td>0.04</td><td>QP</td></tr><tr><td>7</td><td>1.610</td><td>20.61</td><td>46.00</td><td>-25.39</td><td>20.43</td><td>0.14</td><td>0.04</td><td>Average</td></tr><tr><td>8</td><td>1.610</td><td>26.61</td><td>56.00</td><td>-29.39</td><td>26.43</td><td>0.14</td><td>0.04</td><td>QP</td></tr><tr><td>9</td><td>3.436</td><td>26.18</td><td>46.00</td><td>-19.82</td><td>25.91</td><td>0.14</td><td>0.13</td><td>Average</td></tr><tr><td>10</td><td>3.436</td><td>31.75</td><td>56.00</td><td>-24.25</td><td>31.48</td><td>0.14</td><td>0.13</td><td>QP</td></tr><tr><td>11</td><td>16.573</td><td>18.81</td><td>50.00</td><td>-31.19</td><td>18.19</td><td>0.38</td><td>0.24</td><td>Average</td></tr><tr><td>12</td><td>16.573</td><td>26.49</td><td>60.00</td><td>-33.51</td><td>25.87</td><td>0.38</td><td>0.24</td><td>QP</td></tr></table>					Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark	1	0.165	31.13	55.21	-24.08	30.99	0.10	0.04	Average	2	0.165	50.34	65.21	-14.87	50.20	0.10	0.04	QP	3	0.201	31.83	53.58	-21.75	31.70	0.09	0.04	Average	4	0.201	44.08	63.58	-19.50	43.95	0.09	0.04	QP	5	0.516	28.11	46.00	-17.89	27.95	0.12	0.04	Average	6	0.516	37.26	56.00	-18.74	37.10	0.12	0.04	QP	7	1.610	20.61	46.00	-25.39	20.43	0.14	0.04	Average	8	1.610	26.61	56.00	-29.39	26.43	0.14	0.04	QP	9	3.436	26.18	46.00	-19.82	25.91	0.14	0.13	Average	10	3.436	31.75	56.00	-24.25	31.48	0.14	0.13	QP	11	16.573	18.81	50.00	-31.19	18.19	0.38	0.24	Average	12	16.573	26.49	60.00	-33.51	25.87	0.38	0.24	QP
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark																																																																																																																
1	0.165	31.13	55.21	-24.08	30.99	0.10	0.04	Average																																																																																																																
2	0.165	50.34	65.21	-14.87	50.20	0.10	0.04	QP																																																																																																																
3	0.201	31.83	53.58	-21.75	31.70	0.09	0.04	Average																																																																																																																
4	0.201	44.08	63.58	-19.50	43.95	0.09	0.04	QP																																																																																																																
5	0.516	28.11	46.00	-17.89	27.95	0.12	0.04	Average																																																																																																																
6	0.516	37.26	56.00	-18.74	37.10	0.12	0.04	QP																																																																																																																
7	1.610	20.61	46.00	-25.39	20.43	0.14	0.04	Average																																																																																																																
8	1.610	26.61	56.00	-29.39	26.43	0.14	0.04	QP																																																																																																																
9	3.436	26.18	46.00	-19.82	25.91	0.14	0.13	Average																																																																																																																
10	3.436	31.75	56.00	-24.25	31.48	0.14	0.13	QP																																																																																																																
11	16.573	18.81	50.00	-31.19	18.19	0.38	0.24	Average																																																																																																																
12	16.573	26.49	60.00	-33.51	25.87	0.38	0.24	QP																																																																																																																
Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB). Note 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.

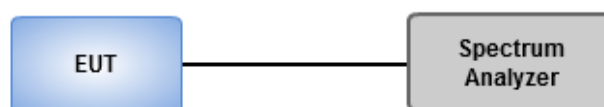
Occupied Bandwidth

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

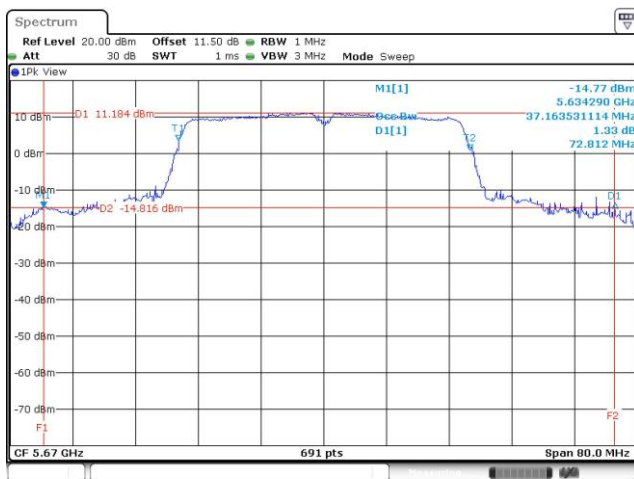
For Frequency band 5150~5250 MHz										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	2	5180	25.80	22.96	---	---	16.86	16.84	---	---
11a	2	5200	26.61	26.32	---	---	16.89	16.81	---	---
11a	2	5240	25.68	23.94	---	---	16.84	16.85	---	---
HT20	2	5180	24.70	25.62	---	---	17.79	17.76	---	---
HT20	2	5200	29.62	25.57	---	---	17.79	17.79	---	---
HT20	2	5240	24.99	27.36	---	---	17.77	17.81	---	---
HT40	2	5190	56.00	42.44	---	---	36.36	36.38	---	---
HT40	2	5230	57.62	60.75	---	---	36.62	36.48	---	---

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	20.23	20.23	---	---	16.79	16.76	---	---	24.00
11a	2	5300	20.00	20.12	---	---	16.77	16.77	---	---	24.00
11a	2	5320	20.35	20.06	---	---	16.76	16.76	---	---	24.00
HT20	2	5260	20.64	20.46	---	---	17.74	17.71	---	---	24.00
HT20	2	5300	22.38	20.58	---	---	17.73	17.71	---	---	24.00
HT20	2	5320	20.75	20.64	---	---	17.72	17.70	---	---	24.00
HT40	2	5270	42.44	42.20	---	---	36.36	36.34	---	---	24.00
HT40	2	5310	42.09	41.86	---	---	36.34	36.44	---	---	24.00

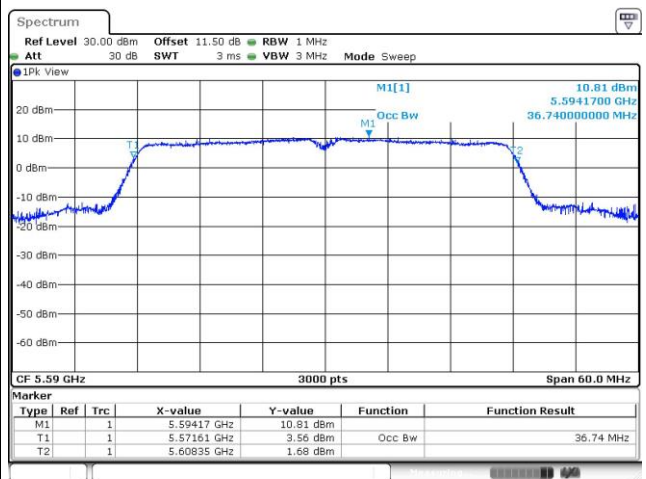
For Frequency band 5470~5725 MHz

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	24.58	25.10	---	---	16.88	16.83	---	---	24.00
11a	2	5580	26.14	24.58	---	---	16.94	16.85	---	---	24.00
11a	2	5700	29.39	25.04	---	---	16.88	16.83	---	---	24.00
HT20	2	5500	27.01	26.03	---	---	17.81	17.77	---	---	24.00
HT20	2	5580	27.59	25.74	---	---	17.82	17.82	---	---	24.00
HT20	2	5700	28.46	25.68	---	---	17.87	17.80	---	---	24.00
HT40	2	5510	51.13	44.87	---	---	36.42	36.38	---	---	24.00
HT40	2	5590	60.64	70.03	---	---	36.74	36.44	---	---	24.00
HT40	2	5670	72.81	55.65	---	---	36.56	36.54	---	---	24.00

Worst Plot of 26dB Bandwidth



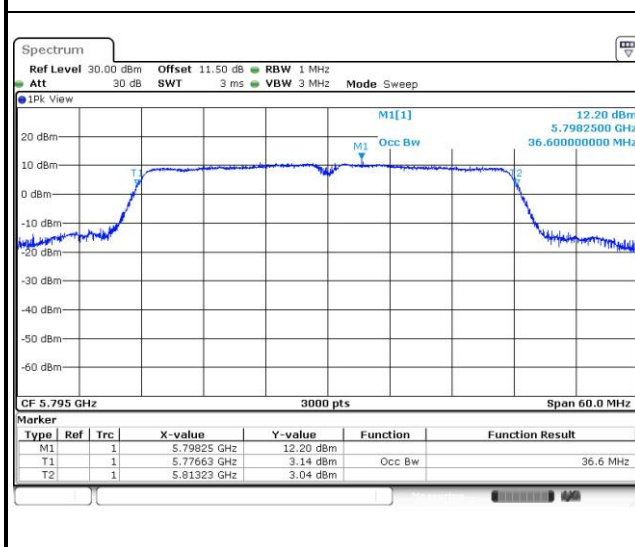
Worst Plot of 99% Bandwidth



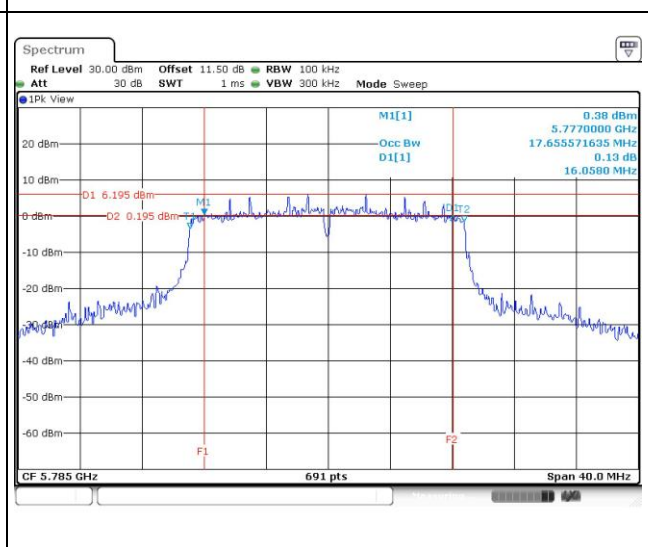
For Frequency band 5725-5850 MHz

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	16.91	16.90	---	---	16.35	16.35	---	---	0.5
11a	2	5785	16.90	16.86	---	---	16.35	16.29	---	---	0.5
11a	2	5825	16.88	16.86	---	---	16.29	16.29	---	---	0.5
HT20	2	5745	17.83	17.80	---	---	16.70	16.93	---	---	0.5
HT20	2	5785	17.82	17.79	---	---	16.06	17.28	---	---	0.5
HT20	2	5825	17.85	17.84	---	---	17.04	17.04	---	---	0.5
HT40	2	5755	36.52	36.46	---	---	35.13	35.13	---	---	0.5
HT40	2	5795	36.52	36.60	---	---	35.13	35.13	---	---	0.5

Worst Plot of 99% Bandwidth



Worst Plot 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
☒	Client devices	Conducted Power: 250 mW

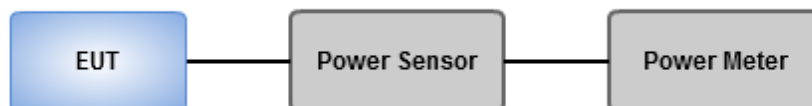
Frequency Band (MHz)	Limit
☒ 5250 ~ 5350	250mW or 11dBm+10 log B
☒ 5470 ~ 5725	250mW or 11dBm+10 log B
☒ 5725 ~ 5850	1 W

Note: "B" is the 26dB emission bandwidth in MHz.

3.3.2 Test Procedures

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

3.3.3 Test Setup



3.3.4 Test Result of Maximum Conducted Output Power

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	17.06	17.11	---	---	102.220	20.10	24.00
11a	2	5200	17.29	17.06	---	---	104.396	20.19	24.00
11a	2	5240	17.21	17.09	---	---	103.770	20.16	24.00
HT20	2	5180	17.03	16.99	---	---	100.470	20.02	24.00
HT20	2	5200	16.96	17.35	---	---	103.984	20.17	24.00
HT20	2	5240	16.98	17.19	---	---	102.248	20.10	24.00
HT40	2	5190	15.33	15.69	---	---	71.187	18.52	24.00
HT40	2	5230	17.23	17.09	---	---	104.013	20.17	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	15.43	15.06	---	---	66.977	18.26	24.00
11a	2	5300	15.39	15.11	---	---	67.028	18.26	24.00
11a	2	5320	15.46	15.22	---	---	68.422	18.35	24.00
HT20	2	5260	15.16	15.52	---	---	68.455	18.35	24.00
HT20	2	5300	15.35	15.22	---	---	67.543	18.30	24.00
HT20	2	5320	15.32	15.35	---	---	68.318	18.35	24.00
HT40	2	5270	15.45	15.34	---	---	69.273	18.41	24.00
HT40	2	5310	15.56	15.23	---	---	69.318	18.41	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	17.11	17.04	---	---	101.987	20.09	24.00
11a	2	5580	17.26	17.33	---	---	107.286	20.31	24.00
11a	2	5700	17.1	17.15	---	---	103.166	20.14	24.00
HT20	2	5500	17.23	17.19	---	---	105.205	20.22	24.00
HT20	2	5580	17.29	17.35	---	---	107.905	20.33	24.00
HT20	2	5700	17.16	17.03	---	---	102.466	20.11	24.00
HT40	2	5510	16.11	16.43	---	---	84.786	19.28	24.00
HT40	2	5590	17.51	17.55	---	---	113.249	20.54	24.00
HT40	2	5670	17.25	17.22	---	---	105.811	20.25	24.00

For Frequency band 5725-5850 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	2	5745	17.32	17.35	---	---	108.276	20.35	30.00
11a	2	5785	17.36	17.4	---	---	109.404	20.39	30.00
11a	2	5825	17.43	17.31	---	---	109.162	20.38	30.00
HT20	2	5745	17.11	17.38	---	---	106.106	20.26	30.00
HT20	2	5785	17.16	17.43	---	---	107.335	20.31	30.00
HT20	2	5825	17.29	17.32	---	---	107.531	20.32	30.00
HT40	2	5755	17.25	17.34	---	---	107.289	20.31	30.00
HT40	2	5795	17.39	17.48	---	---	110.803	20.45	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
☒	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

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

☐ Method SA-2 Alternative

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

For 5725~5850 MHz

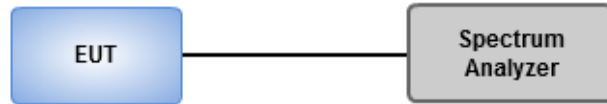
☒ Method SA-1

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

☐ Method SA-2 Alternative

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

3.4.3 Test Setup



3.4.4 Test Result of Peak Power Spectral Density

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	7.87	0.00	7.87	9.63
11a	2	5200	8.06	0.00	8.06	9.63
11a	2	5240	8.56	0.00	8.56	9.63
HT20	2	5180	8.01	0.00	8.01	9.63
HT20	2	5200	8.15	0.00	8.15	9.63
HT20	2	5240	8.26	0.00	8.26	9.63
HT40	2	5190	3.69	0.00	3.69	9.63
HT40	2	5230	5.52	0.00	5.52	9.63
11a	2	5260	6.80	0.00	6.80	9.63
11a	2	5300	6.87	0.00	6.87	9.63
11a	2	5320	7.01	0.00	7.01	9.63
HT20	2	5260	6.75	0.00	6.75	9.63
HT20	2	5300	6.78	0.00	6.78	9.63
HT20	2	5320	6.70	0.00	6.70	9.63
HT40	2	5270	4.17	0.00	4.17	9.63
HT40	2	5310	3.84	0.00	3.84	9.63

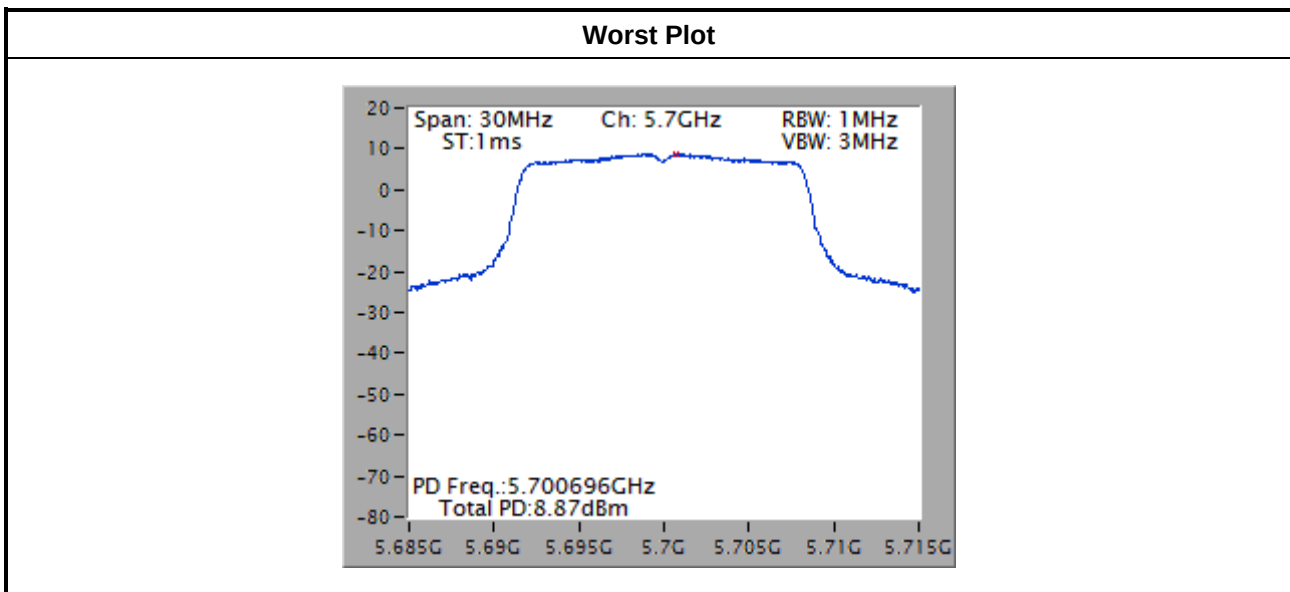
Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain = $4.36 + 10 \cdot \log(2/1) = 7.37 \text{ dBi} > 6 \text{ dBi}$.
Limit shall be reduced to $11 \text{ dBm} - (7.37 \text{ dBi} - 6 \text{ dBi}) = 9.63 \text{ dBm}$.

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	8.51	0.00	8.51	9.63
11a	2	5580	8.37	0.00	8.37	9.63
11a	2	5700	8.87	0.00	8.87	9.63
HT20	2	5500	7.75	0.00	7.75	9.63
HT20	2	5580	8.24	0.00	8.24	9.63
HT20	2	5700	8.37	0.00	8.37	9.63
HT40	2	5510	4.10	0.00	4.10	9.63
HT40	2	5590	5.61	0.00	5.61	9.63
HT40	2	5670	5.24	0.00	5.24	9.63

Note:

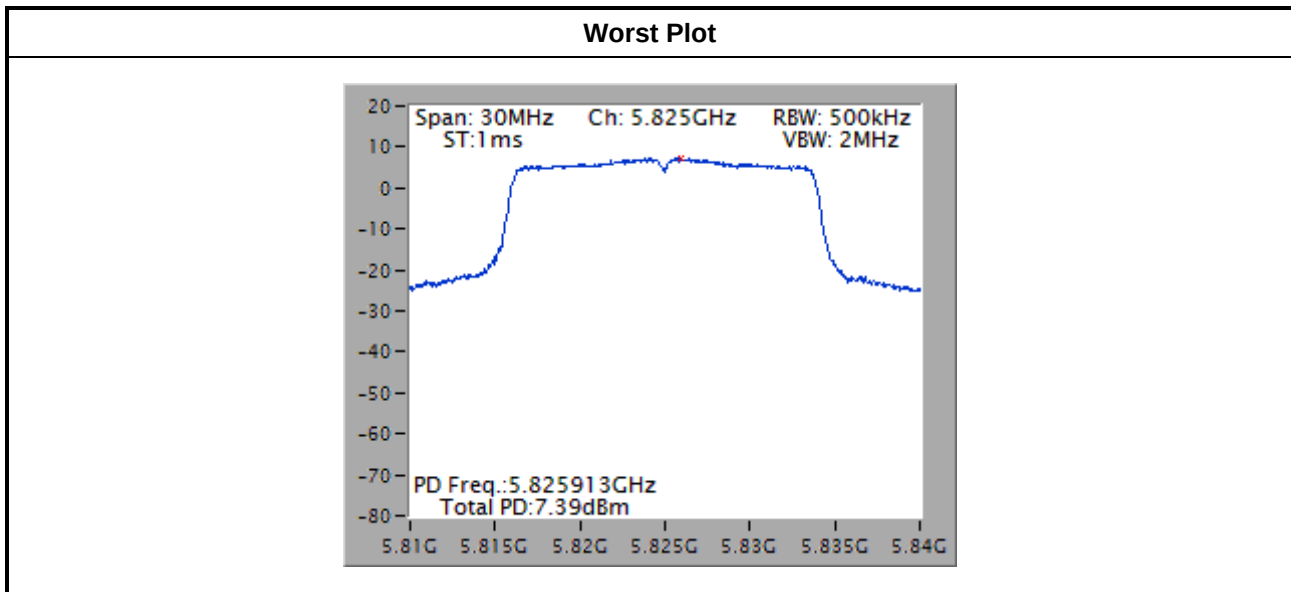
1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain = $4.36 + 10 * \log(2/1) = 7.37 \text{ dBi} > 6 \text{ dBi}$.
Limit shall be reduced to $11 \text{ dBm} - (7.37 \text{ dBi} - 6 \text{ dBi}) = 9.63 \text{ dBm}$.



Frequency band			5725-5850 MHz			
Condition			Peak Power Spectral Density (dBm/500kHz)			
Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
11a	2	5745	7.29	0.00	7.29	28.63
11a	2	5785	7.31	0.00	7.31	28.63
11a	2	5825	7.30	0.00	7.30	28.63
HT20	2	5745	7.17	0.00	7.17	28.63
HT20	2	5785	7.18	0.00	7.18	28.63
HT20	2	5825	7.39	0.00	7.39	28.63
HT40	2	5755	3.73	0.00	3.73	28.63
HT40	2	5795	3.63	0.00	3.63	28.63

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain = $4.36 + 10 \cdot \log(2/1) = 7.37 \text{ dBi} > 6 \text{ dBi}$.
For 5745~5825MHz:
Limit shall be reduced to $30 \text{ dBm} - (7.37 \text{ dBi} - 6 \text{ dBi}) = 28.63 \text{ dBm}$.



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	☒ 15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
	☐ 15.407(b)(4)(ii), compliance with the emission limits in § 15.247(d) Shall be at least 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power,. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see § 15.205(c))

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

3.5.2 Test Procedures

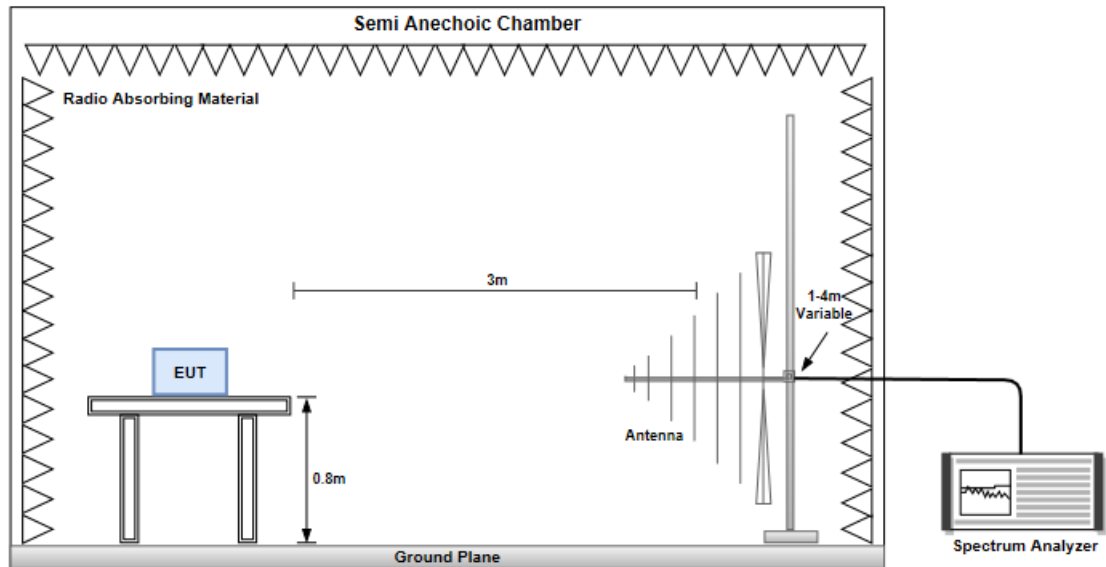
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

Note:

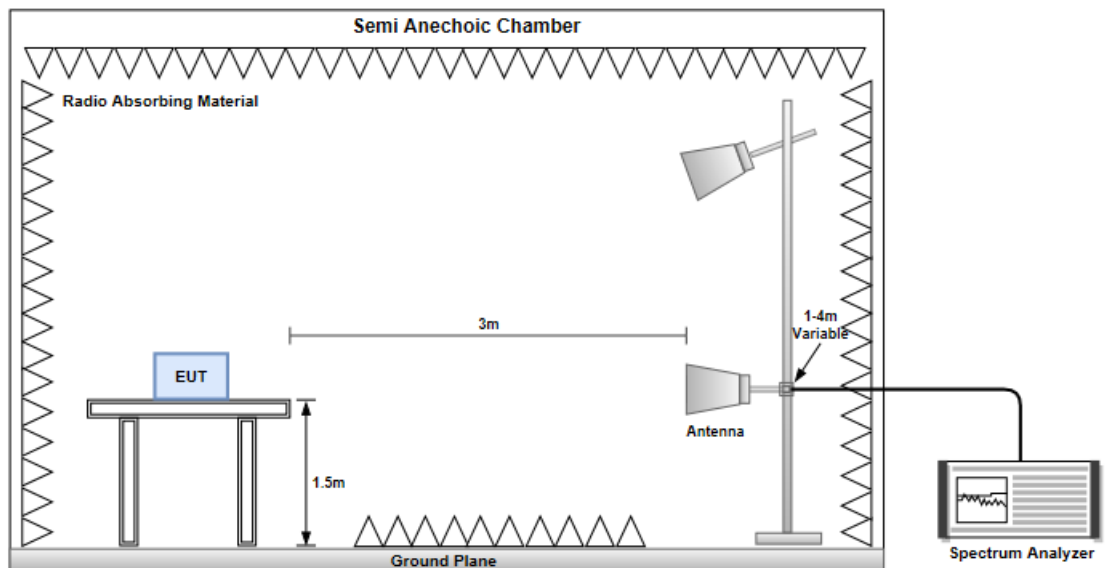
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above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

3.5.3 Test Setup

Radiated Emissions below 1 GHz

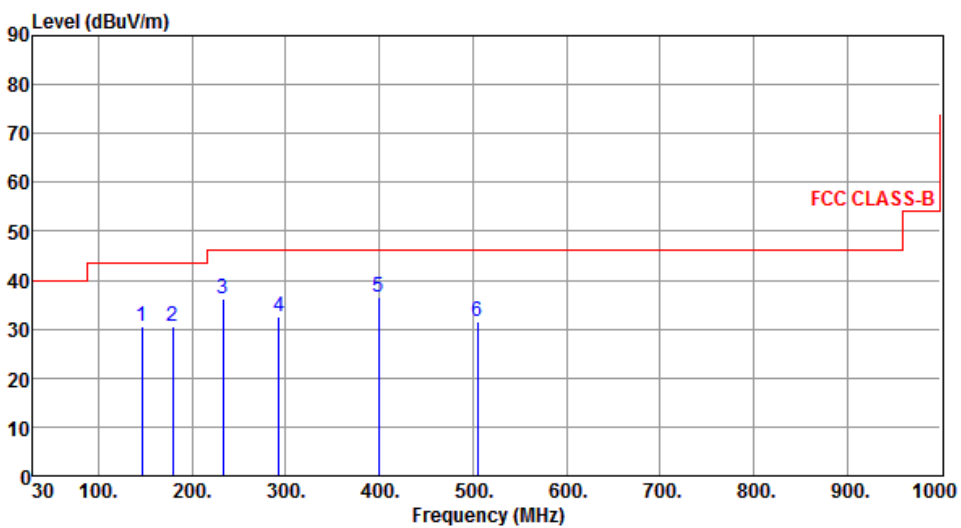


Radiated Emissions above 1 GHz



3.5.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Modulation	HT40	Test Freq. (MHz)	5590
Polarization	Horizontal		



The graph displays the radiated unwanted emissions for a transmitter. The y-axis represents the Level in dBuV/m, ranging from 0 to 90. The x-axis represents the Frequency in MHz, ranging from 30 to 1000. A red line indicates the FCC CLASS-B limit, which is 40 dBuV/m from 30 to 100 MHz, 45 dBuV/m from 100 to 1000 MHz, and 55 dBuV/m from 1000 to 10000 MHz. Six emission peaks are identified and labeled 1 through 6, with their corresponding data provided in the table below.

	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	146.52	30.62	43.50	-12.88	39.07	-8.45	Peak	---	---
2	179.31	30.45	43.50	-13.05	40.15	-9.70	Peak	---	---
3	232.65	36.24	46.00	-9.76	46.39	-10.15	Peak	---	---
4	292.63	32.45	46.00	-13.55	40.29	-7.84	Peak	---	---
5	399.21	36.45	46.00	-9.55	41.42	-4.97	Peak	---	---
6	505.30	31.58	46.00	-14.42	34.30	-2.72	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	HT40	Test Freq. (MHz)	5590
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	HT40		Test Freq. (MHz)		5795	
Polarization	Horizontal					
Level (dBuV/m)						

Modulation	HT40		Test Freq. (MHz)		5795	
Polarization	Vertical					
Level (dBuV/m) <						

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	45.73	54.00	-8.27	41.25	4.48	Average	100	342
2	5150.00	60.93	74.00	-13.07	56.45	4.48	Peak	100	342
3	10360.00	59.88	68.20	-8.32	46.10	13.78	Peak	111	299
4	15540.00	52.98	54.00	-1.02	38.59	14.39	Average	160	290
5	15540.00	69.14	74.00	-4.86	54.75	14.39	Peak	160	290

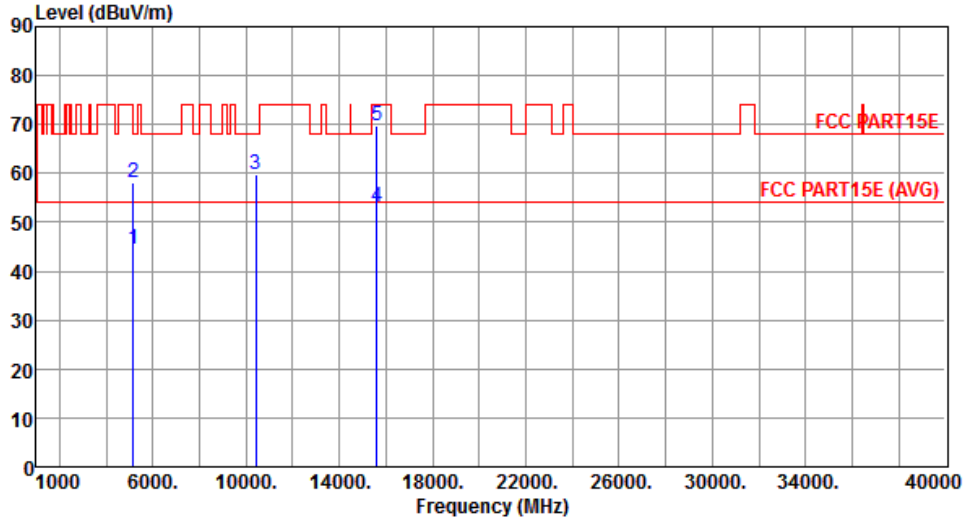
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)

*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		
Level (dBuV/m)			

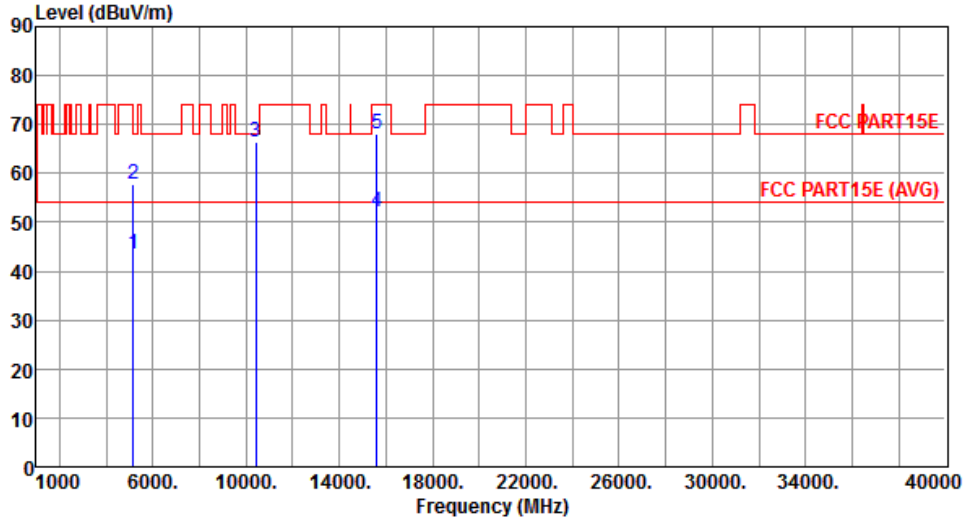
Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.36	54.00	-9.64	39.88	4.48	Average	106	343
2	5150.00	58.09	74.00	-15.91	53.61	4.48	Peak	106	343
3	10400.00	59.87	68.20	-8.33	46.02	13.85	Peak	168	297
4	15600.00	52.97	54.00	-1.03	38.67	14.30	Average	160	290
5	15600.00	69.78	74.00	-4.22	55.48	14.30	Peak	160	290

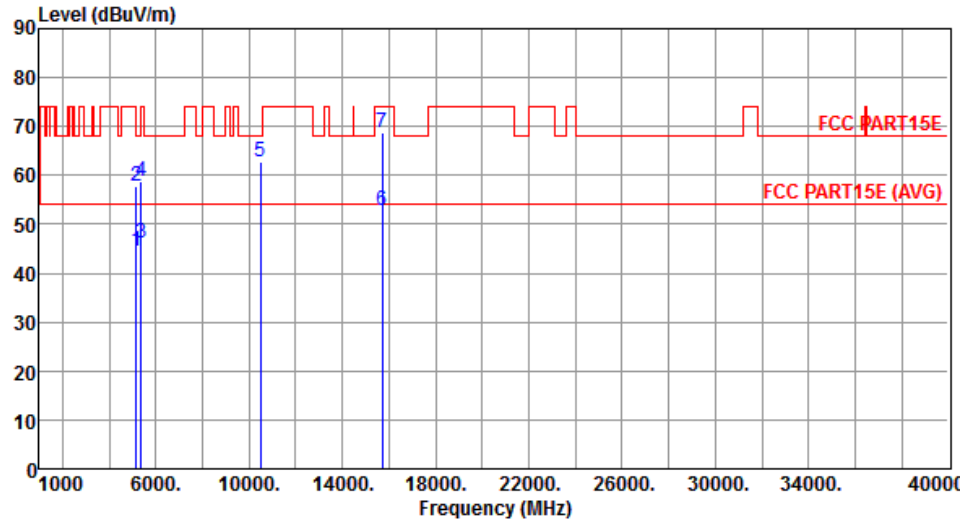
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

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



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	43.59	54.00	-10.41	39.11	4.48	Average	110	22
2	5150.00	57.72	74.00	-16.28	53.24	4.48	Peak	110	22
3	10400.00	66.54	68.20	-1.66	52.69	13.85	Peak	100	10
4	15600.00	52.22	54.00	-1.78	37.92	14.30	Average	129	324
5	15600.00	68.01	74.00	-5.99	53.71	14.30	Peak	129	324

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

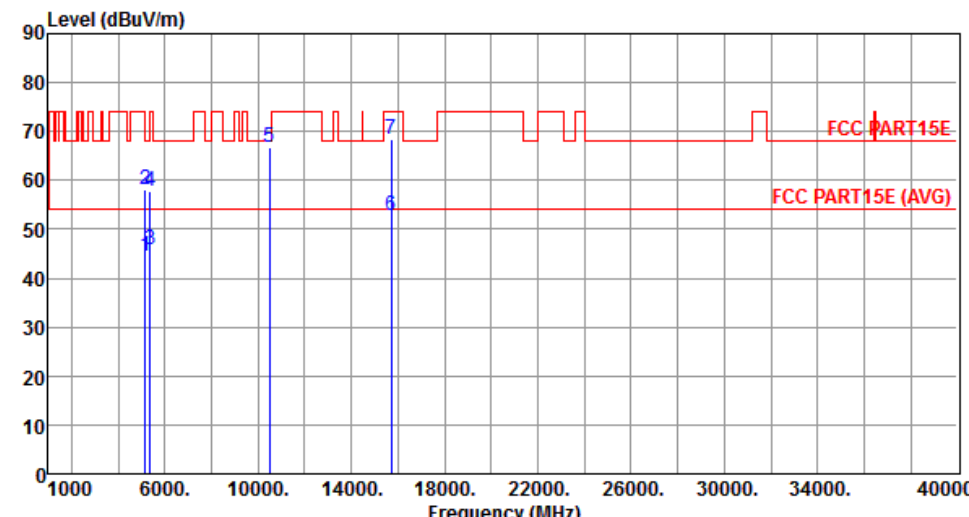
Modulation	11a	Test Freq. (MHz)	5240						
Polarization	Horizontal								
 Level (dBUV/m) Frequency (MHz) FCC PART15E FCC PART15E (AVG)									
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.55	54.00	-9.45	40.07	4.48	Average	106	342
2	5150.00	57.62	74.00	-16.38	53.14	4.48	Peak	106	342
3	5350.00	46.05	54.00	-7.95	41.31	4.74	Average	106	342
4	5350.00	58.85	74.00	-15.15	54.11	4.74	Peak	106	342
5	10480.00	62.79	68.20	-5.41	48.84	13.95	Peak	112	298
6	15720.00	52.91	54.00	-1.09	38.80	14.11	Average	161	296
7	15720.00	68.60	74.00	-5.40	54.49	14.11	Peak	161	296

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

*Factor includes antenna factor , cable loss and amplifier gain

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

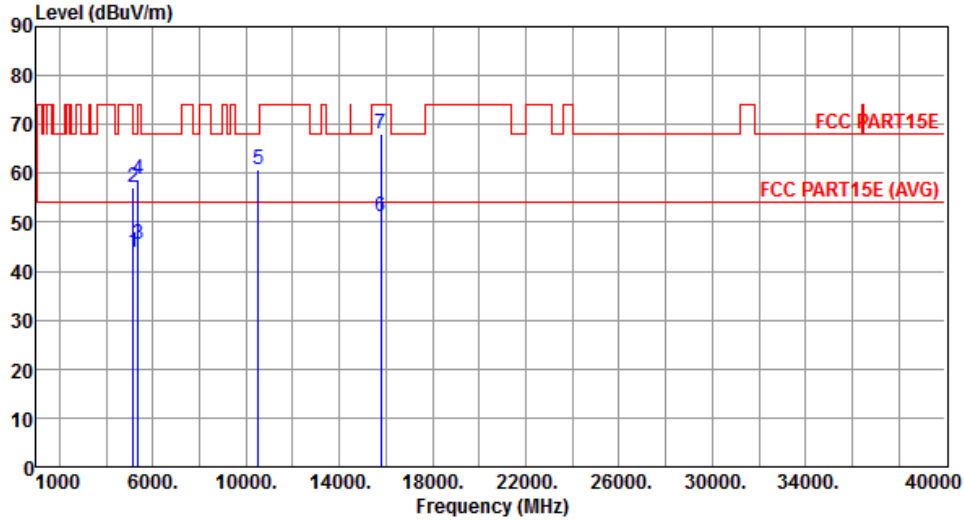
Modulation	11a	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.39	54.00	-9.61	39.91	4.48	Average	100	21
2	5150.00	57.99	74.00	-16.01	53.51	4.48	Peak	100	21
3	5350.00	45.84	54.00	-8.16	41.10	4.74	Average	100	21
4	5350.00	57.87	74.00	-16.13	53.13	4.74	Peak	100	21
5	10480.00	66.72	68.20	-1.48	52.77	13.95	Peak	103	8
6	15720.00	52.92	54.00	-1.08	38.81	14.11	Average	162	330
7	15720.00	68.30	74.00	-5.70	54.19	14.11	Peak	162	330

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

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



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	43.87	54.00	-10.13	39.39	4.48	Average	100	343
2	5150.00	57.17	74.00	-16.83	52.69	4.48	Peak	100	343
3	5350.00	45.50	54.00	-8.50	40.76	4.74	Average	100	343
4	5350.00	58.82	74.00	-15.18	54.08	4.74	Peak	100	343
5	10520.00	60.64	68.20	-7.56	46.63	14.01	Peak	129	299
6	15780.00	51.16	54.00	-2.84	37.15	14.01	Average	156	286
7	15780.00	68.11	74.00	-5.89	54.10	14.01	Peak	156	286

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

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

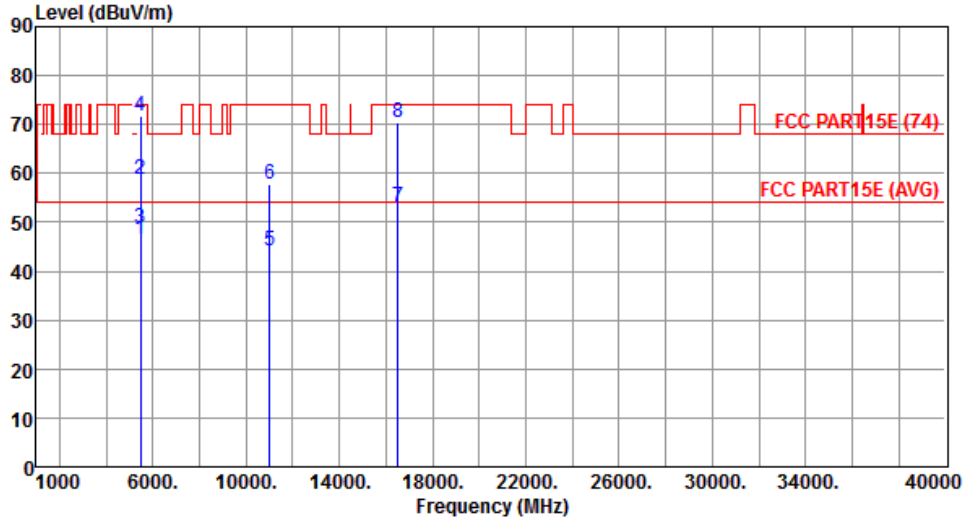
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Horizontal		
Level (dBuV/m)			

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

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

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

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

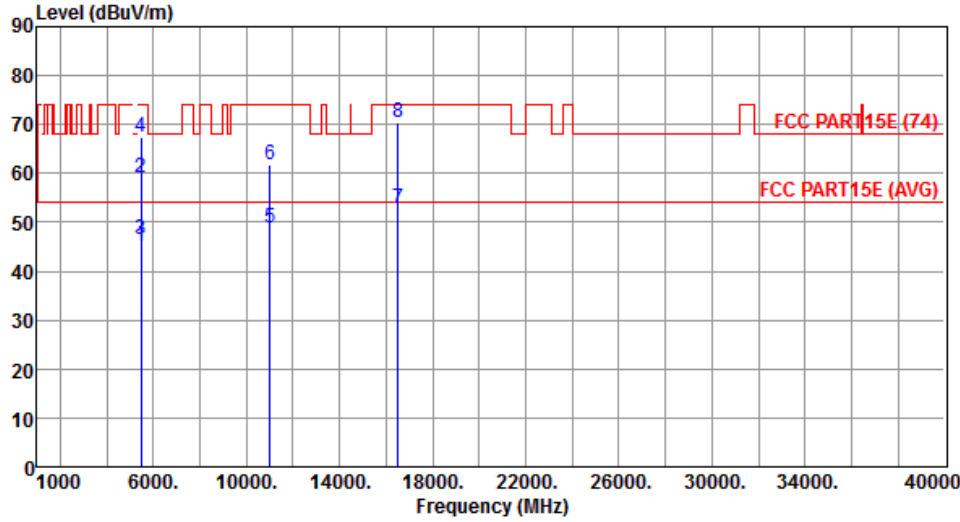


The graph displays the emission level in dBuV/m against frequency in MHz. The y-axis ranges from 0 to 90 dBuV/m, and the x-axis ranges from 1000 to 40000 MHz. A red line represents the FCC Part 15E (74) limit, and a lower red line represents the FCC Part 15E (AVG) limit. Blue vertical lines indicate specific test points labeled 1 through 8.

	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	46.42	54.00	-7.58	41.53	4.89	Average	100	17
2	5460.00	58.75	74.00	-15.25	53.86	4.89	Peak	100	17
3	5470.00	48.81	54.00	-5.19	43.90	4.91	Average	100	17
4	5470.00	71.83	74.00	-2.17	66.92	4.91	Peak	100	17
5	11000.00	44.24	54.00	-9.76	29.56	14.68	Average	120	315
6	11000.00	57.88	74.00	-16.12	43.20	14.68	Peak	120	315
7	16500.00	52.99	54.00	-1.01	37.13	15.86	Average	130	296
8	16500.00	70.26	74.00	-3.74	54.40	15.86	Peak	130	296

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

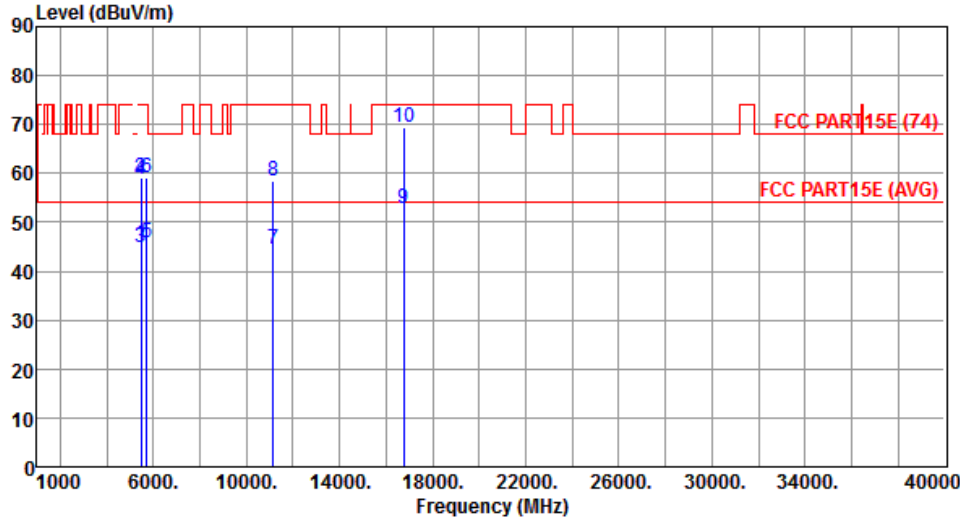
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	45.11	54.00	-8.89	40.22	4.89	Average	220	311
2	5460.00	59.00	74.00	-15.00	54.11	4.89	Peak	220	311
3	5470.00	46.65	54.00	-7.35	41.74	4.91	Average	220	311
4	5470.00	67.45	74.00	-6.55	62.54	4.91	Peak	220	311
5	11000.00	48.98	54.00	-5.02	34.30	14.68	Average	100	356
6	11000.00	61.89	74.00	-12.11	47.21	14.68	Peak	100	356
7	16500.00	52.73	54.00	-1.27	36.87	15.86	Average	122	329
8	16500.00	70.50	74.00	-3.50	54.64	15.86	Peak	122	329

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

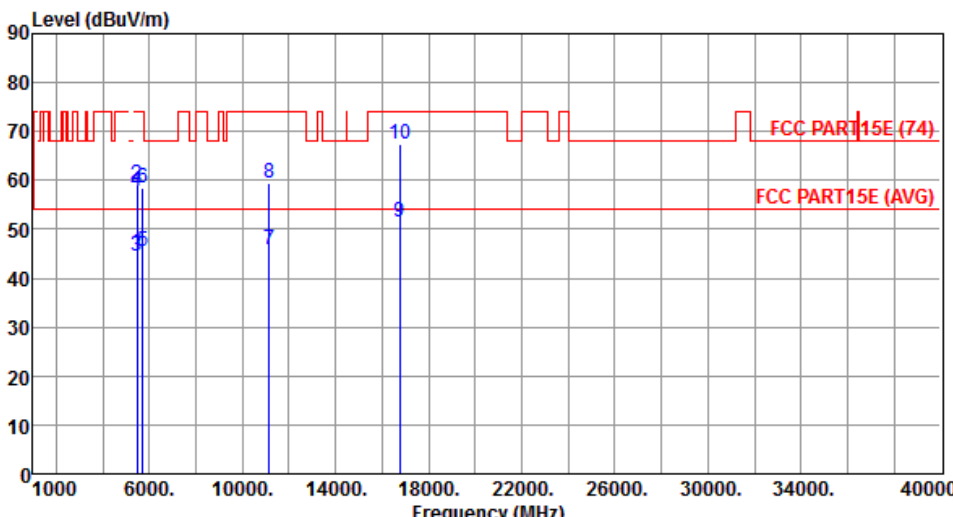
Modulation	11a	Test Freq. (MHz)	5580
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	45.34	54.00	-8.66	40.45	4.89	Average	220	356
2	5460.00	59.03	74.00	-14.97	54.14	4.89	Peak	220	356
3	5470.00	44.86	54.00	-9.14	39.95	4.91	Average	220	356
4	5470.00	58.72	74.00	-15.28	53.81	4.91	Peak	220	356
5	5725.00	45.70	54.00	-8.30	40.38	5.32	Average	220	356
6	5725.00	58.96	74.00	-15.04	53.64	5.32	Peak	220	356
7	11160.00	44.37	54.00	-9.63	29.65	14.72	Average	102	314
8	11160.00	58.35	74.00	-15.65	43.63	14.72	Peak	102	314
9	16740.00	52.89	54.00	-1.11	36.41	16.48	Average	100	304
10	16740.00	69.30	74.00	-4.70	52.82	16.48	Peak	100	304

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

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	45.18	54.00	-8.82	40.29	4.89	Average	100	33
2	5460.00	59.24	74.00	-14.76	54.35	4.89	Peak	100	33
3	5470.00	44.50	54.00	-9.50	39.59	4.91	Average	100	33
4	5470.00	57.70	74.00	-16.30	52.79	4.91	Peak	100	33
5	5725.00	45.47	54.00	-8.53	40.15	5.32	Average	100	33
6	5725.00	58.55	74.00	-15.45	53.23	5.32	Peak	100	33
7	11160.00	45.89	54.00	-8.11	31.17	14.72	Average	146	7
8	11160.00	59.28	74.00	-14.72	44.56	14.72	Peak	146	7
9	16740.00	51.45	54.00	-2.55	34.97	16.48	Average	135	331
10	16740.00	67.33	74.00	-6.67	50.85	16.48	Peak	135	331

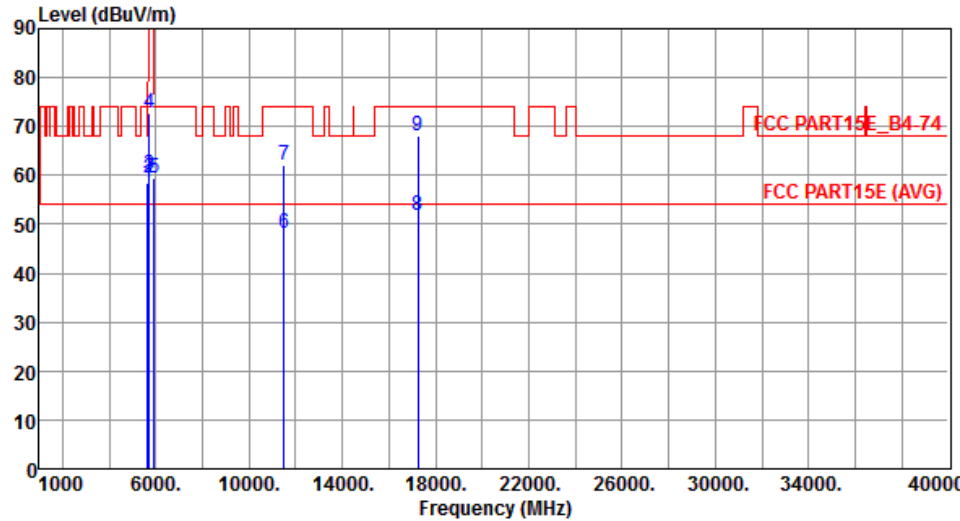
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

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

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

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

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



The spectrum plot shows the emission level in dBuV/m on the y-axis (0 to 90) against frequency in MHz on the x-axis (1000 to 40000). A red line represents the measured emission level, and a blue line represents the FCC Part 15E limit. The emission level is generally higher than the limit, with several peaks exceeding the limit. The plot is labeled 'FCC PART15E_B4-74' and 'FCC PART15E (AVG)'.

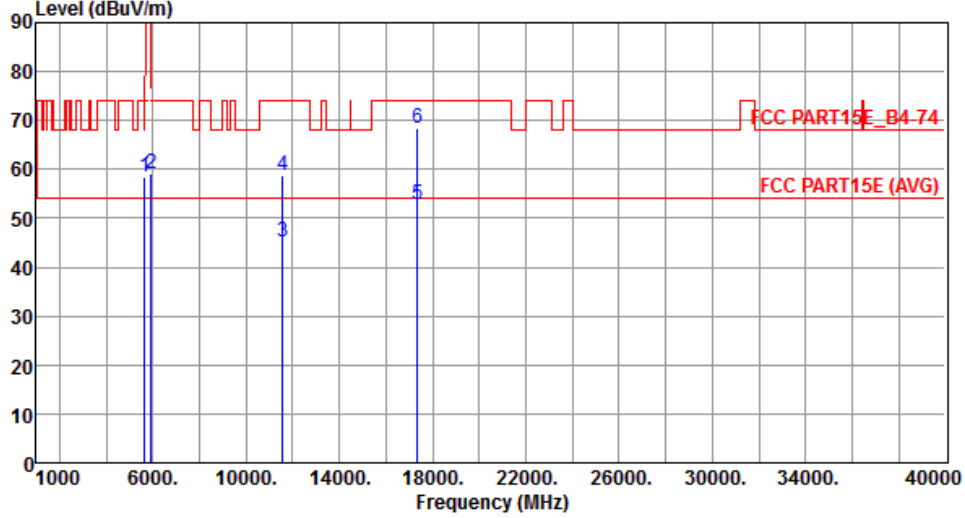
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.35	68.20	-9.85	53.16	5.19	Peak	111	47
2	5700.00	59.50	105.20	-45.70	54.22	5.28	Peak	111	47
3	5720.00	60.03	110.80	-50.77	54.72	5.31	Peak	111	47
4	5725.00	72.65	122.20	-49.55	67.33	5.32	Peak	111	47
5	5925.00	59.41	68.20	-8.79	53.77	5.64	Peak	111	47
6	11490.00	48.22	54.00	-5.78	33.40	14.82	Average	100	350
7	11490.00	62.12	74.00	-11.88	47.30	14.82	Peak	100	350
8	17235.00	51.94	54.00	-2.06	34.23	17.71	Average	118	326
9	17235.00	68.19	74.00	-5.81	50.48	17.71	Peak	118	326

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

*Factor includes antenna factor , cable loss and amplifier gain

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

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



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.50	68.20	-9.70	53.31	5.19	Peak	188	352
2	5925.00	59.20	68.20	-9.00	53.56	5.64	Peak	188	352
3	11570.00	45.02	54.00	-8.98	30.38	14.64	Average	115	317
4	11570.00	58.90	74.00	-15.10	44.26	14.64	Peak	115	317
5	17355.00	52.96	54.00	-1.04	34.95	18.01	Average	100	303
6	17355.00	68.46	74.00	-5.54	50.45	18.01	Peak	100	303

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 HT20

Modulation	HT20	Test Freq. (MHz)	5180						
Polarization	Horizontal								
	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	44.84	54.00	-9.16	40.36	4.48	Average	100	340
2	5150.00	59.91	74.00	-14.09	55.43	4.48	Peak	100	340
3	10360.00	58.99	68.20	-9.21	45.21	13.78	Peak	113	297
4	15540.00	52.74	54.00	-1.26	38.35	14.39	Average	165	293
5	15540.00	68.78	74.00	-5.22	54.39	14.39	Peak	165	293

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).

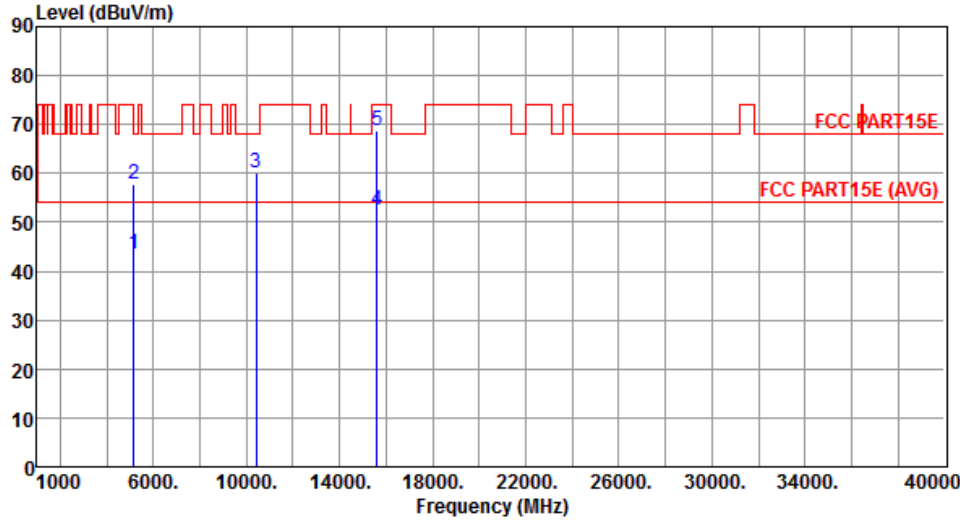
Modulation	HT20	Test Freq. (MHz)	5180
Polarization	Vertical		



	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	43.56	54.00	-10.44	39.08	4.48	Average	100	22
2	5150.00	57.89	74.00	-16.11	53.41	4.48	Peak	100	22
3	10360.00	67.01	68.20	-1.19	53.23	13.78	Peak	198	0
4	15540.00	52.88	54.00	-1.12	38.49	14.39	Average	111	326
5	15540.00	67.89	74.00	-6.11	53.50	14.39	Peak	111	326

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).

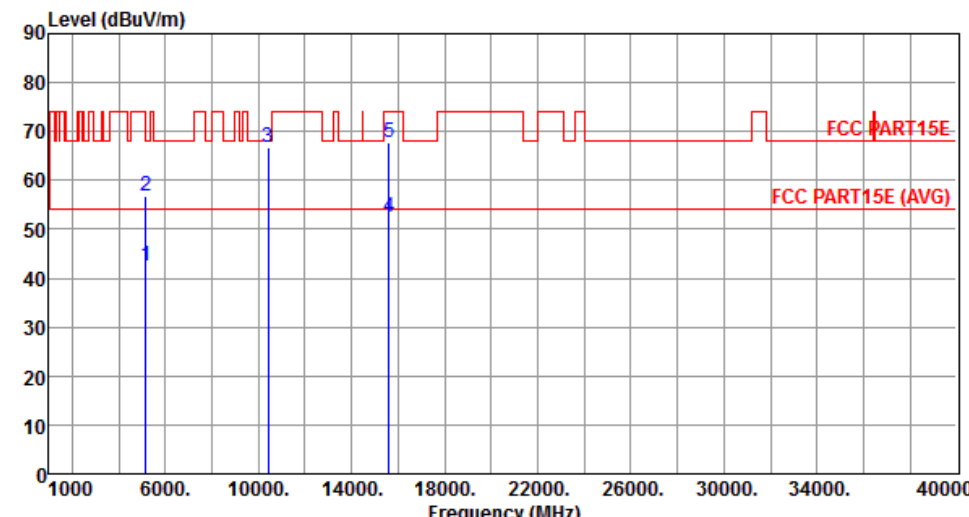
Modulation	HT20	Test Freq. (MHz)	5200
Polarization	Horizontal		



	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	43.39	54.00	-10.61	38.91	4.48	Average	107	340
2	5150.00	57.74	74.00	-16.26	53.26	4.48	Peak	107	340
3	10400.00	60.22	68.20	-7.98	46.37	13.85	Peak	170	300
4	15600.00	52.55	54.00	-1.45	38.25	14.30	Average	163	295
5	15600.00	68.88	74.00	-5.12	54.58	14.30	Peak	163	295

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).

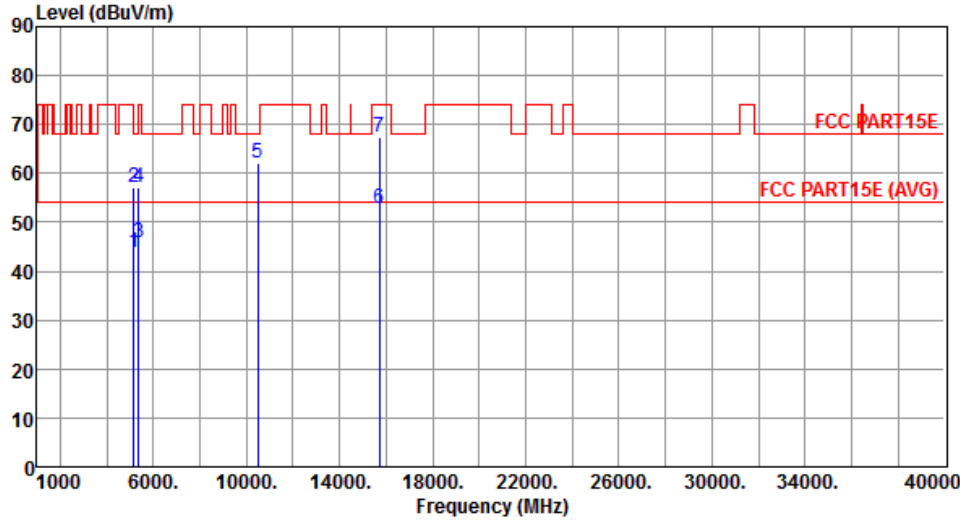
Modulation	HT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	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	42.59	54.00	-11.41	38.11	4.48	Average	114	25
2	5150.00	56.71	74.00	-17.29	52.23	4.48	Peak	114	25
3	10400.00	66.89	68.20	-1.31	53.04	13.85	Peak	100	13
4	15600.00	52.32	54.00	-1.68	38.02	14.30	Average	130	325
5	15600.00	67.78	74.00	-6.22	53.48	14.30	Peak	130	325

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	HT20	Test Freq. (MHz)	5240
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	43.98	54.00	-10.02	39.50	4.48	Average	107	346
2	5150.00	56.99	74.00	-17.01	52.51	4.48	Peak	107	346
3	5350.00	45.71	54.00	-8.29	40.97	4.74	Average	107	346
4	5350.00	57.21	74.00	-16.79	52.47	4.74	Peak	107	346
5	10480.00	61.96	68.20	-6.24	48.01	13.95	Peak	113	301
6	15720.00	52.94	54.00	-1.06	38.83	14.11	Average	163	294
7	15720.00	67.45	74.00	-6.55	53.34	14.11	Peak	163	294

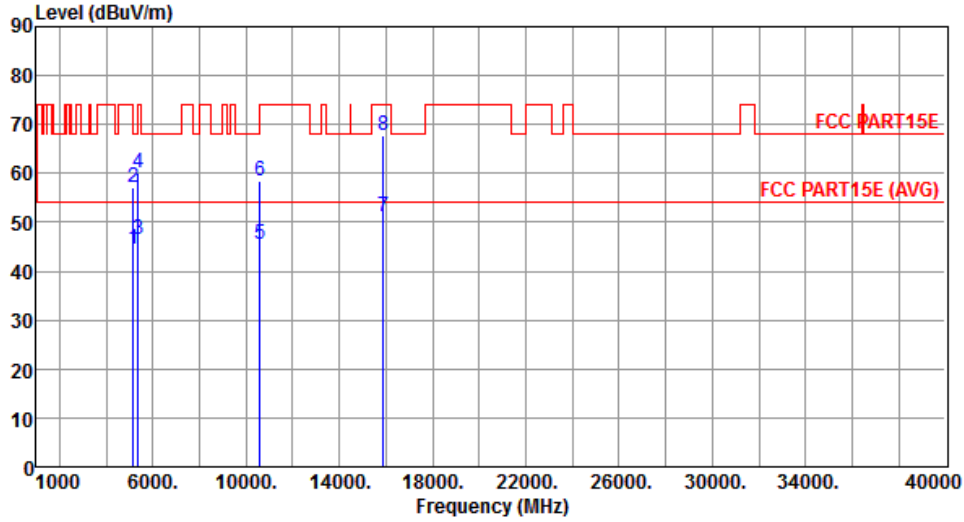
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Modulation	HT20	Test Freq. (MHz)	5240
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	HT20	Test Freq. (MHz)	5260
Polarization	Horizontal		
Level (dBuV/m) <			

Modulation	HT20	Test Freq. (MHz)	5260
Polarization	Vertical		
Level (dBuV/m)			

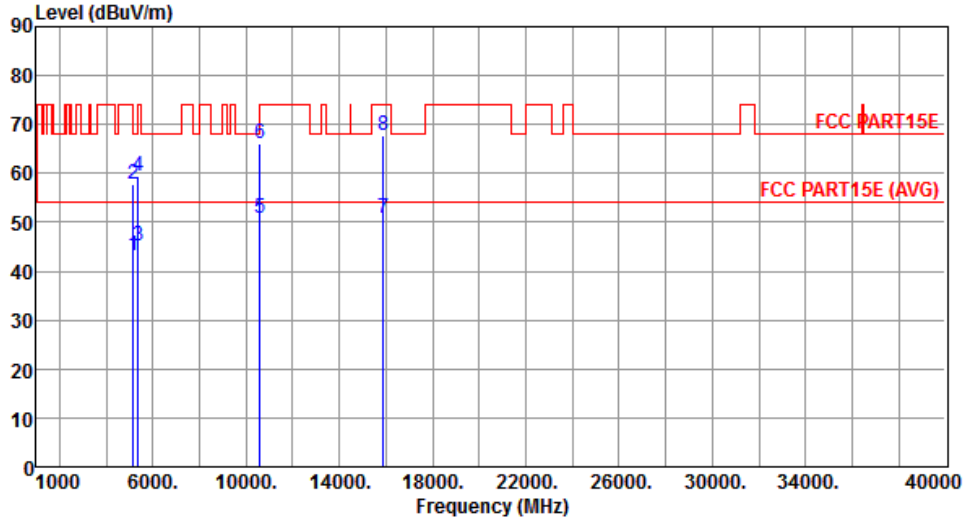
Modulation	HT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	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	44.59	54.00	-9.41	40.11	4.48	Average	100	345
2	5150.00	57.25	74.00	-16.75	52.77	4.48	Peak	100	345
3	5350.00	46.38	54.00	-7.62	41.64	4.74	Average	100	345
4	5350.00	60.12	74.00	-13.88	55.38	4.74	Peak	100	345
5	10600.00	45.65	54.00	-8.35	31.53	14.12	Average	138	301
6	10600.00	58.37	74.00	-15.63	44.25	14.12	Peak	138	301
7	15900.00	51.16	54.00	-2.84	37.34	13.82	Average	162	295
8	15900.00	67.72	74.00	-6.28	53.90	13.82	Peak	162	295

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).

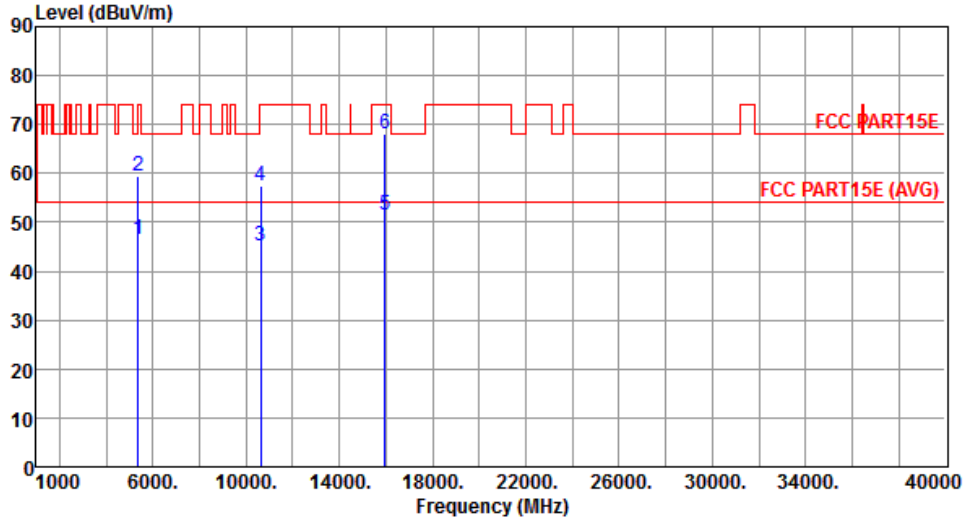
Modulation	HT20	Test Freq. (MHz)	5300
Polarization	Vertical		



	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	43.25	54.00	-10.75	38.77	4.48	Average	100	25
2	5150.00	57.65	74.00	-16.35	53.17	4.48	Peak	100	25
3	5350.00	45.15	54.00	-8.85	40.41	4.74	Average	100	25
4	5350.00	59.33	74.00	-14.67	54.59	4.74	Peak	100	25
5	10600.00	50.96	54.00	-3.04	36.84	14.12	Average	178	352
6	10600.00	66.24	74.00	-7.76	52.12	14.12	Peak	178	352
7	15900.00	50.85	54.00	-3.15	37.03	13.82	Average	162	342
8	15900.00	67.72	74.00	-6.28	53.90	13.82	Peak	162	342

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).

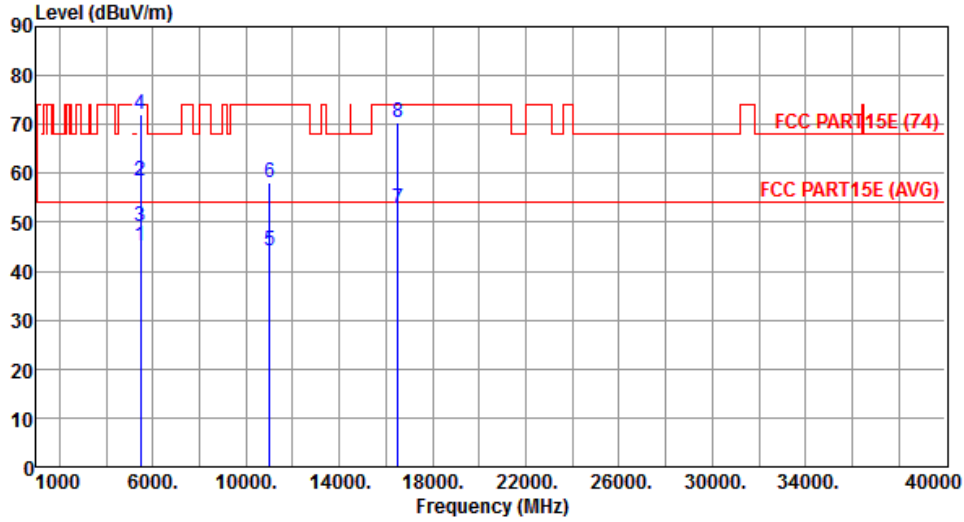
Modulation	HT20	Test Freq. (MHz)	5320
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.59	54.00	-7.41	41.85	4.74	Average	110	341
2	5350.00	59.30	74.00	-14.70	54.56	4.74	Peak	110	341
3	10640.00	45.03	54.00	-8.97	30.85	14.18	Average	100	298
4	10640.00	57.49	74.00	-16.51	43.31	14.18	Peak	100	298
5	15960.00	51.34	54.00	-2.66	37.61	13.73	Average	182	291
6	15960.00	67.97	74.00	-6.03	54.24	13.73	Peak	182	291

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).

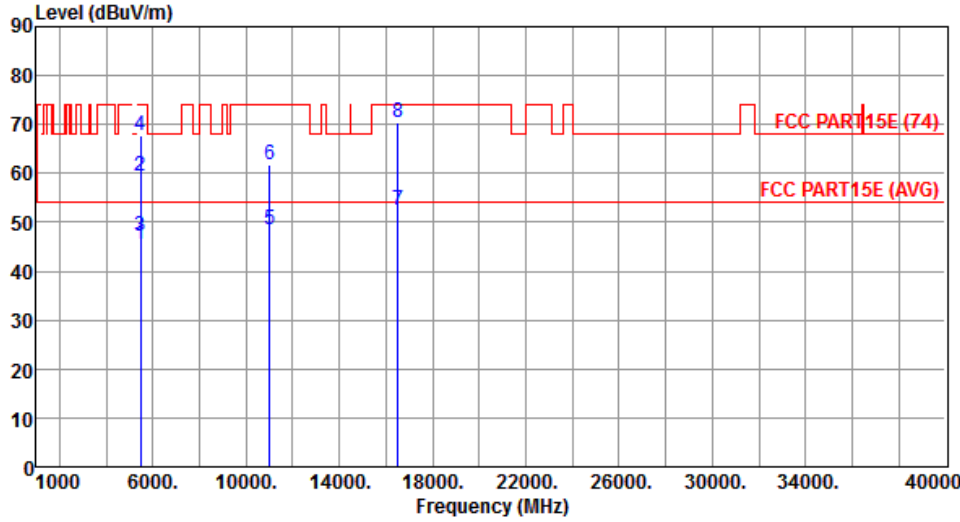
Modulation	HT20	Test Freq. (MHz)	5500
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	45.17	54.00	-8.83	40.28	4.89	Average	100	22
2	5460.00	58.36	74.00	-15.64	53.47	4.89	Peak	100	22
3	5470.00	49.21	54.00	-4.79	44.30	4.91	Average	100	22
4	5470.00	72.02	74.00	-1.98	67.11	4.91	Peak	100	22
5	11000.00	44.30	54.00	-9.70	29.62	14.68	Average	118	320
6	11000.00	58.12	74.00	-15.88	43.44	14.68	Peak	118	320
7	16500.00	52.97	54.00	-1.03	37.11	15.86	Average	128	299
8	16500.00	70.49	74.00	-3.51	54.63	15.86	Peak	128	299

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).

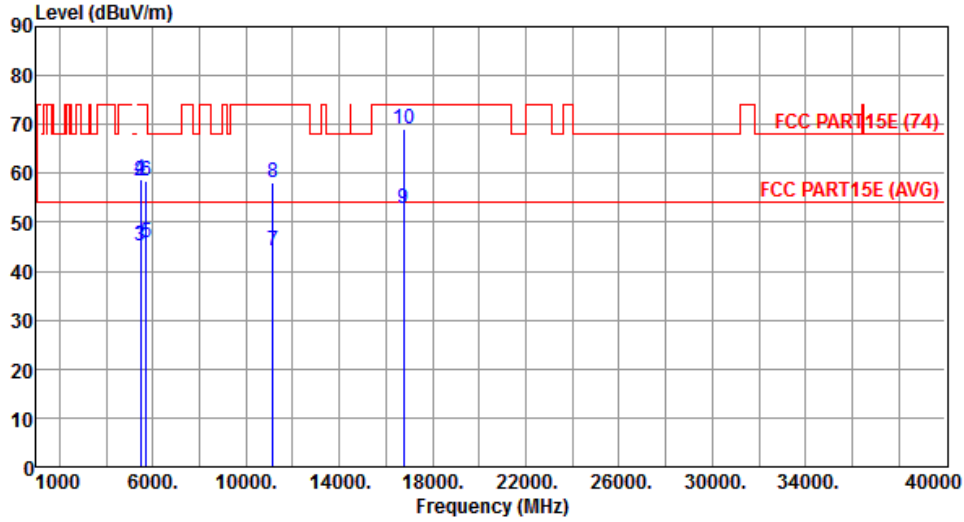
Modulation	HT20	Test Freq. (MHz)	5500
Polarization	Vertical		



	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	45.34	54.00	-8.66	40.45	4.89	Average	218	310
2	5460.00	59.42	74.00	-14.58	54.53	4.89	Peak	218	310
3	5470.00	47.11	54.00	-6.89	42.20	4.91	Average	218	310
4	5470.00	67.62	74.00	-6.38	62.71	4.91	Peak	218	310
5	11000.00	48.46	54.00	-5.54	33.78	14.68	Average	100	351
6	11000.00	61.73	74.00	-12.27	47.05	14.68	Peak	100	351
7	16500.00	52.61	54.00	-1.39	36.75	15.86	Average	121	327
8	16500.00	70.30	74.00	-3.70	54.44	15.86	Peak	121	327

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).

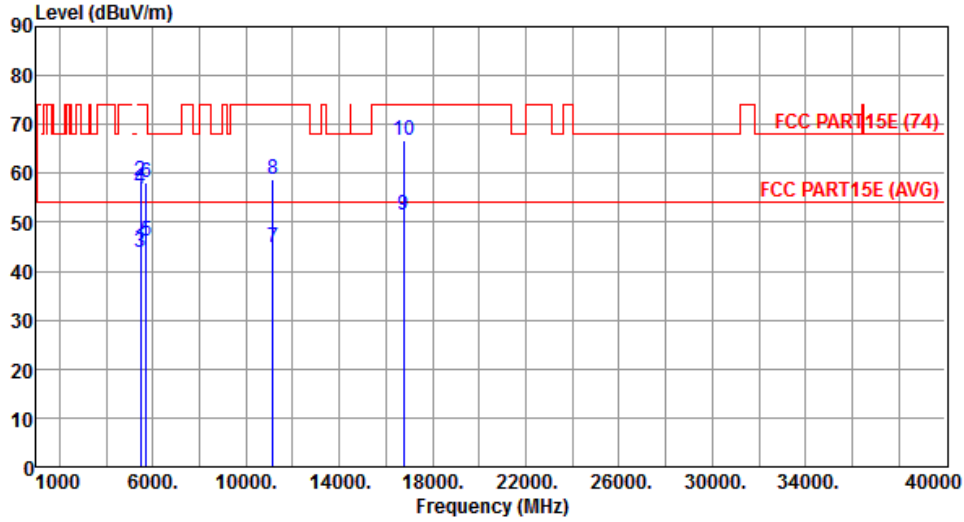
Modulation	HT20	Test Freq. (MHz)	5580
Polarization	Horizontal		



	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	45.64	54.00	-8.36	40.75	4.89	Average	219	355
2	5460.00	58.61	74.00	-15.39	53.72	4.89	Peak	219	355
3	5470.00	45.02	54.00	-8.98	40.11	4.91	Average	219	355
4	5470.00	58.63	74.00	-15.37	53.72	4.91	Peak	219	355
5	5725.00	45.75	54.00	-8.25	40.43	5.32	Average	219	355
6	5725.00	58.59	74.00	-15.41	53.27	5.32	Peak	219	355
7	11160.00	44.14	54.00	-9.86	29.42	14.72	Average	100	316
8	11160.00	58.19	74.00	-15.81	43.47	14.72	Peak	100	316
9	16740.00	52.76	54.00	-1.24	36.28	16.48	Average	100	305
10	16740.00	69.24	74.00	-4.76	52.76	16.48	Peak	100	305

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	HT20	Test Freq. (MHz)	5580
Polarization	Vertical		

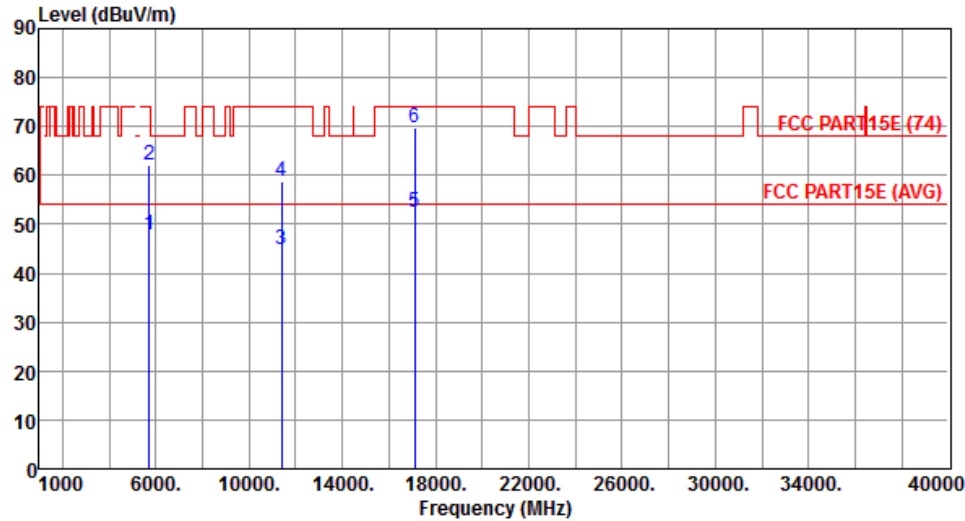


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	44.85	54.00	-9.15	39.96	4.89	Average	100	35
2	5460.00	58.45	74.00	-15.55	53.56	4.89	Peak	100	35
3	5470.00	43.78	54.00	-10.22	38.87	4.91	Average	100	35
4	5470.00	56.82	74.00	-17.18	51.91	4.91	Peak	100	35
5	5725.00	46.01	54.00	-7.99	40.69	5.32	Average	100	35
6	5725.00	58.03	74.00	-15.97	52.71	5.32	Peak	100	35
7	11160.00	44.79	54.00	-9.21	30.07	14.72	Average	149	9
8	11160.00	58.74	74.00	-15.26	44.02	14.72	Peak	149	9
9	16740.00	51.33	54.00	-2.67	34.85	16.48	Average	136	330
10	16740.00	66.88	74.00	-7.12	50.40	16.48	Peak	136	330

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	HT20	Test Freq. (MHz)	5700
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	HT20	Test Freq. (MHz)	5700
Polarization	Vertical		

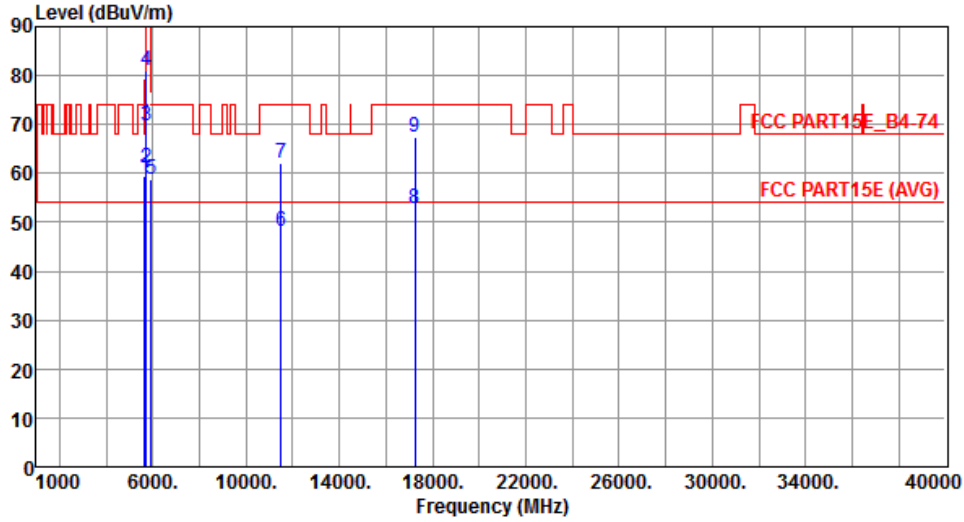


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5725.00	47.96	54.00	-6.04	42.64	5.32	Average	114	50
2	5725.00	62.21	74.00	-11.79	56.89	5.32	Peak	114	50
3	11400.00	44.99	54.00	-9.01	30.20	14.79	Average	100	352
4	11400.00	58.88	74.00	-15.12	44.09	14.79	Peak	100	352
5	17100.00	52.41	54.00	-1.59	35.04	17.37	Average	133	344
6	17100.00	69.77	74.00	-4.23	52.40	17.37	Peak	133	344

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).

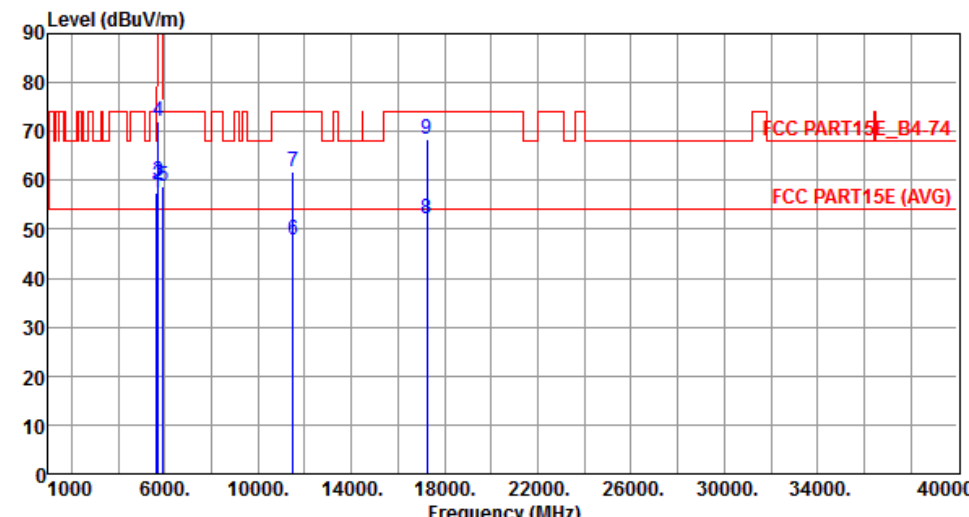
Modulation	HT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	59.58	68.20	-8.62	54.39	5.19	Peak	209	356
2	5700.00	61.20	105.20	-44.00	55.92	5.28	Peak	209	356
3	5720.00	69.81	110.80	-40.99	64.50	5.31	Peak	209	356
4	5725.00	81.08	122.20	-41.12	75.76	5.32	Peak	209	356
5	5925.00	58.85	68.20	-9.35	53.21	5.64	Peak	209	356
6	11490.00	48.21	54.00	-5.79	33.39	14.82	Average	118	319
7	11490.00	62.12	74.00	-11.88	47.30	14.82	Peak	118	319
8	17235.00	52.67	54.00	-1.33	34.96	17.71	Average	114	305
9	17235.00	67.46	74.00	-6.54	49.75	17.71	Peak	114	305

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	HT20	Test Freq. (MHz)	5745
Polarization	Vertical		



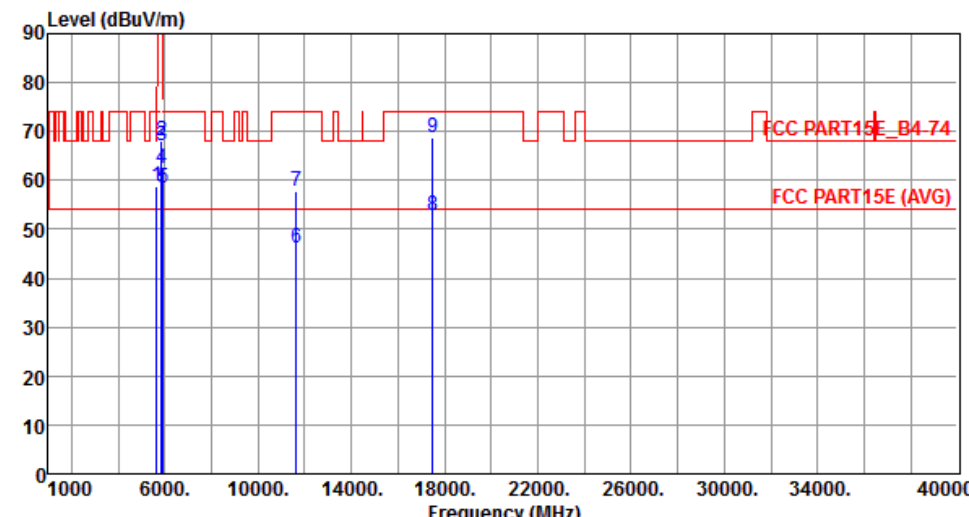
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	57.51	68.20	-10.69	52.32	5.19	Peak	115	49
2	5700.00	59.20	105.20	-46.00	53.92	5.28	Peak	115	49
3	5720.00	59.85	110.80	-50.95	54.54	5.31	Peak	115	49
4	5725.00	71.96	122.20	-50.24	66.64	5.32	Peak	115	49
5	5925.00	58.74	68.20	-9.46	53.10	5.64	Peak	115	49
6	11490.00	47.96	54.00	-6.04	33.14	14.82	Average	100	353
7	11490.00	61.80	74.00	-12.20	46.98	14.82	Peak	100	353
8	17235.00	52.03	54.00	-1.97	34.32	17.71	Average	119	328
9	17235.00	68.55	74.00	-5.45	50.84	17.71	Peak	119	328

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

Modulation	HT20	Test Freq. (MHz)	5785
Polarization	Horizontal		
 			

Modulation	HT20	Test Freq. (MHz)	5785
Polarization	Vertical		
Level (dBuV/m) </			

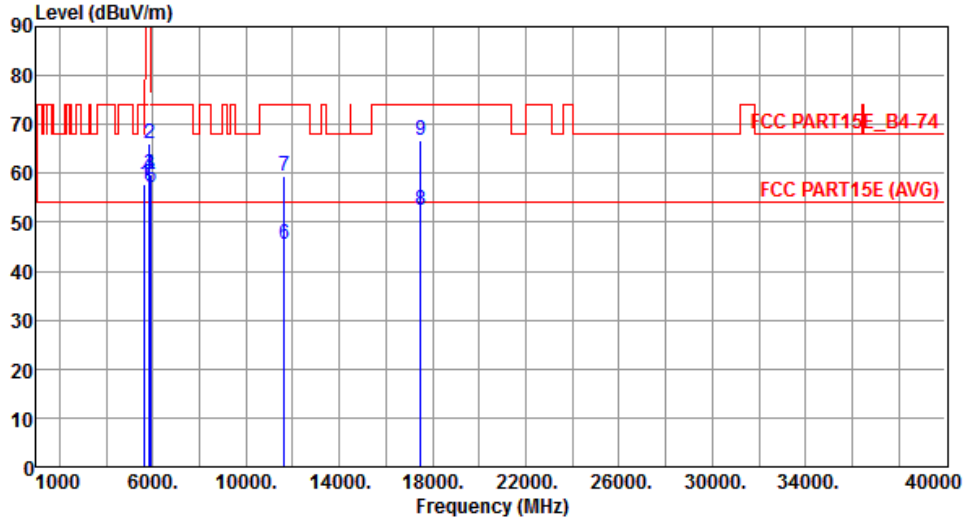
Modulation	HT20	Test Freq. (MHz)	5825
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	58.76	68.20	-9.44	53.57	5.19	Peak	188	352
2	5850.00	68.14	122.20	-54.06	62.62	5.52	Peak	188	352
3	5855.00	66.99	110.80	-43.81	61.46	5.53	Peak	188	352
4	5875.00	62.36	105.20	-42.84	56.80	5.56	Peak	188	352
5	5925.00	58.41	68.20	-9.79	52.77	5.64	Peak	188	352
6	11650.00	46.21	54.00	-7.79	31.77	14.44	Average	105	319
7	11650.00	57.85	74.00	-16.15	43.41	14.44	Peak	105	319
8	17475.00	52.89	54.00	-1.11	34.60	18.29	Average	109	298
9	17475.00	68.76	74.00	-5.24	50.47	18.29	Peak	109	298

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	HT20	Test Freq. (MHz)	5825
Polarization	Vertical		



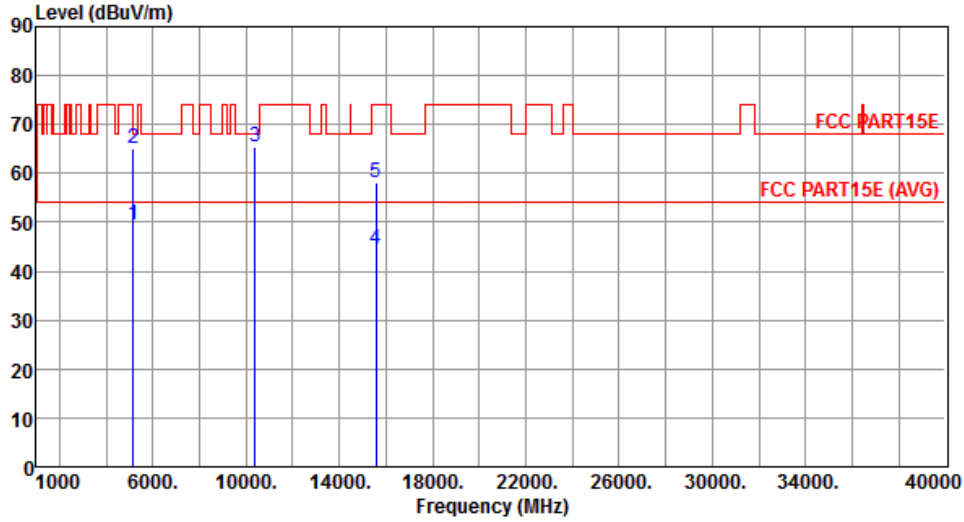
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	57.66	68.20	-10.54	52.47	5.19	Peak	127	43
2	5850.00	66.20	122.20	-56.00	60.68	5.52	Peak	127	43
3	5855.00	59.90	110.80	-50.90	54.37	5.53	Peak	127	43
4	5875.00	59.84	105.20	-45.36	54.28	5.56	Peak	127	43
5	5925.00	57.21	68.20	-10.99	51.57	5.64	Peak	127	43
6	11650.00	45.54	54.00	-8.46	31.10	14.44	Average	100	355
7	11650.00	59.54	74.00	-14.46	45.10	14.44	Peak	100	355
8	17475.00	52.32	54.00	-1.68	34.03	18.29	Average	100	326
9	17475.00	66.73	74.00	-7.27	48.44	18.29	Peak	100	326

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 HT40

Modulation	HT40	Test Freq. (MHz)	5190
Polarization	Horizontal		
Level (dBuV/m) <			

Modulation	HT40	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	49.37	54.00	-4.63	44.89	4.48	Average	189	41
2	5150.00	65.15	74.00	-8.85	60.67	4.48	Peak	189	41
3	10380.00	65.30	68.20	-2.90	51.48	13.82	Peak	187	0
4	15570.00	44.66	54.00	-9.34	30.32	14.34	Average	156	26
5	15570.00	58.02	74.00	-15.98	43.68	14.34	Peak	156	26

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	HT40	Test Freq. (MHz)	5230
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	HT40	Test Freq. (MHz)	5230
Polarization	Vertical		

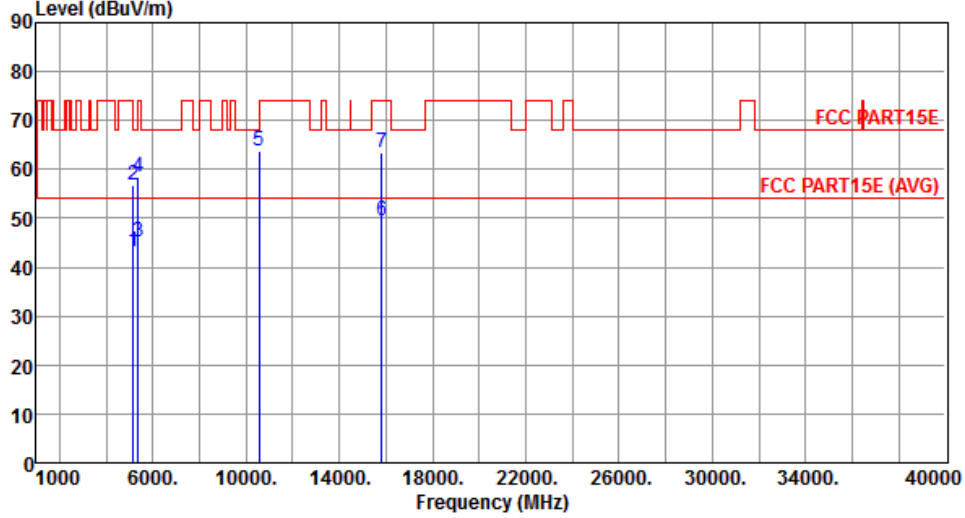


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	46.00	54.00	-8.00	41.52	4.48	Average	186	32
2	5150.00	59.31	74.00	-14.69	54.83	4.48	Peak	186	32
3	5350.00	45.69	54.00	-8.31	40.95	4.74	Average	186	32
4	5350.00	57.79	74.00	-16.21	53.05	4.74	Peak	186	32
5	10460.00	65.05	68.20	-3.15	51.12	13.93	Peak	185	353
6	15690.00	51.21	54.00	-2.79	37.06	14.15	Average	140	24
7	15690.00	65.86	74.00	-8.14	51.71	14.15	Peak	140	24

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	HT40	Test Freq. (MHz)	5270
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	HT40	Test Freq. (MHz)	5270
Polarization	Vertical		



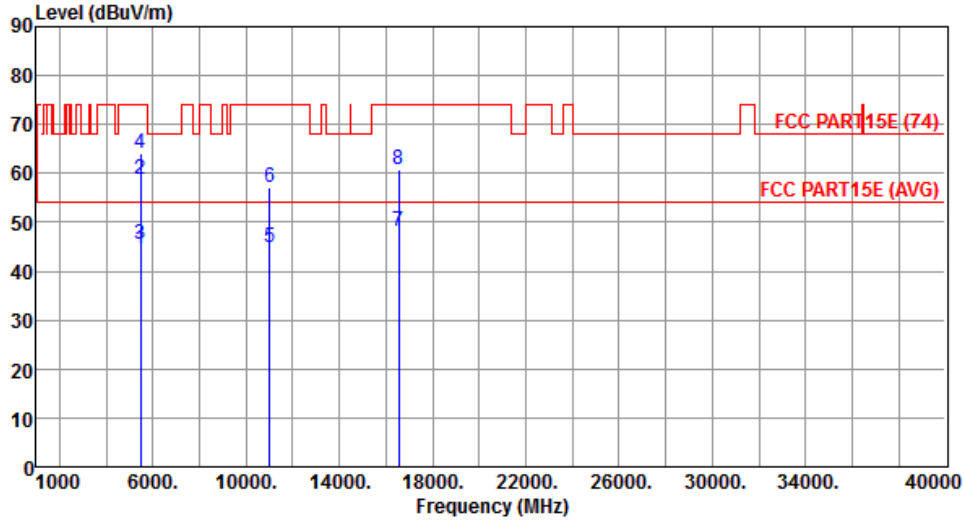
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	43.02	54.00	-10.98	38.54	4.48	Average	356	131
2	5150.00	56.95	74.00	-17.05	52.47	4.48	Peak	356	131
3	5350.00	45.18	54.00	-8.82	40.44	4.74	Average	356	131
4	5350.00	58.31	74.00	-15.69	53.57	4.74	Peak	356	131
5	10540.00	63.79	68.20	-4.41	49.75	14.04	Peak	166	353
6	15810.00	49.41	54.00	-4.59	35.44	13.97	Average	120	336
7	15810.00	63.43	74.00	-10.57	49.46	13.97	Peak	120	336

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	HT40		Test Freq. (MHz)		5310	
Polarization	Horizontal					
Level (dBuV/m) <						

Modulation	HT40	Test Freq. (MHz)	5510
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	HT40	Test Freq. (MHz)	5510
Polarization	Vertical		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	44.41	54.00	-9.59	39.52	4.89	Average	100	235
2	5460.00	58.72	74.00	-15.28	53.83	4.89	Peak	100	235
3	5470.00	45.58	54.00	-8.42	40.67	4.91	Average	100	235
4	5470.00	64.24	74.00	-9.76	59.33	4.91	Peak	100	235
5	11020.00	44.97	54.00	-9.03	30.28	14.69	Average	177	351
6	11020.00	57.02	74.00	-16.98	42.33	14.69	Peak	177	351
7	16530.00	48.00	54.00	-6.00	32.07	15.93	Average	146	339
8	16530.00	60.75	74.00	-13.25	44.82	15.93	Peak	146	339

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).

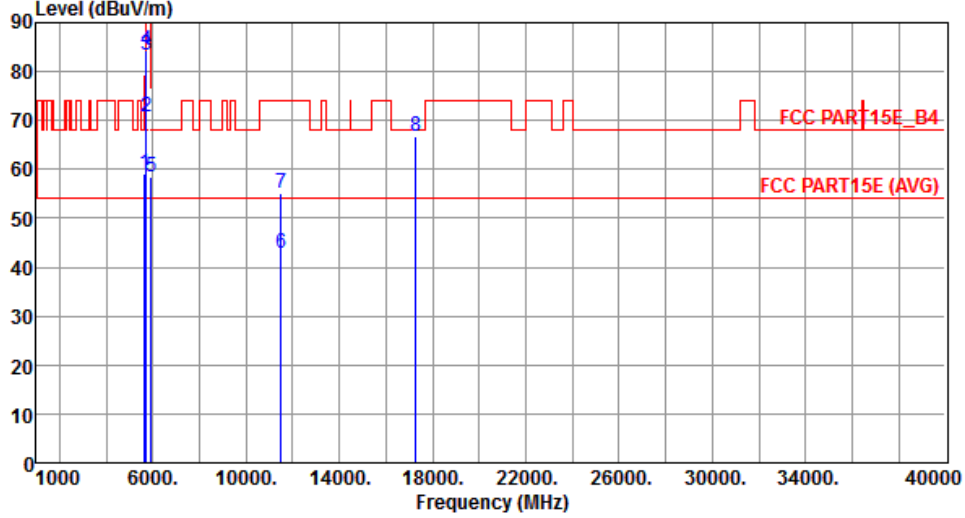
Modulation	HT40		Test Freq. (MHz)		5590	
Polarization	Horizontal					
Level (dBuV/m)						

Modulation	HT40	Test Freq. (MHz)	5590
Polarization	Vertical		
Level (dBuV/m)			

Modulation	HT40	Test Freq. (MHz)	5670
Polarization	Horizontal		
Level (dBuV/m) <			

Modulation	HT40	Test Freq. (MHz)	5670
Polarization	Vertical		
Level (dBuV/m)			

Modulation	HT40	Test Freq. (MHz)	5755
Polarization	Horizontal		



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5650.00	59.05	68.20	-9.15	53.86	5.19	Peak	216	10
2	5700.00	70.83	105.20	-34.37	65.55	5.28	Peak	216	10
3	5720.00	83.28	110.80	-27.52	77.97	5.31	Peak	216	10
4	5725.00	84.33	122.20	-37.87	79.01	5.32	Peak	216	10
5	5925.00	58.54	68.20	-9.66	52.90	5.64	Peak	216	10
6	11510.00	42.69	54.00	-11.31	27.89	14.80	Average	150	23
7	11510.00	55.15	74.00	-18.85	40.35	14.80	Peak	150	23
8	17265.00	66.88	68.20	-1.32	49.10	17.78	Peak	187	285

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	HT40	Test Freq. (MHz)	5755
Polarization	Vertical		
Level (dBuV/m) </			

Modulation	HT40	Test Freq. (MHz)	5795
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	HT40	Test Freq. (MHz)	5795
Polarization	Vertical		
Level (dBuV/m) </			

3.6 Frequency Stability

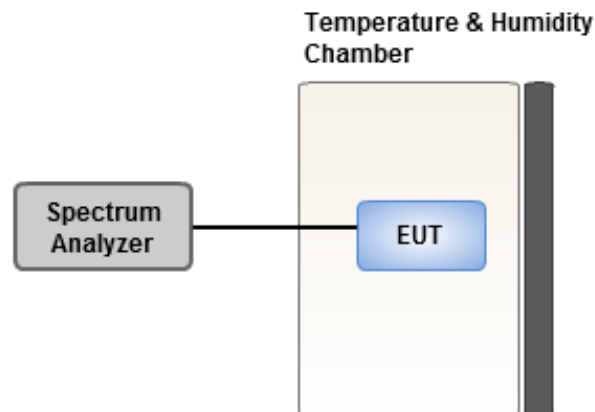
3.6.1 Limit of Frequency Stability

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	5.28	5.13	5.89	5.81
T20°C Vmin	3.76	4.01	4.19	4.02
T70°C Vnom	3.67	3.86	4.02	4.00
T60°C Vnom	3.04	3.07	3.26	3.83
T50°C Vnom	2.34	2.37	2.15	2.69
T40°C Vnom	2.42	3.09	2.81	3.15
T30°C Vnom	2.05	1.93	2.53	2.32
T20°C Vnom	2.98	3.09	3.56	3.37
T10°C Vnom	2.22	2.38	2.93	2.36
T0°C Vnom	1.13	1.25	1.55	2.01
T-10°C Vnom	0.70	1.02	1.10	0.90
T-20°C Vnom	0.18	0.38	0.12	0.84
T-30°C Vnom	0.17	0.61	0.20	0.73
Vnom [Vdc]: 120		Vmax [Vdc]: 138		Vmin [Vdc]: 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°CVmax	5.73	5.79	5.38	6.05
T20°CVmin	4.82	5.05	5.08	5.18
T70°CVnom	3.74	3.56	4.22	3.90
T60°CVnom	3.76	3.65	4.06	4.25
T50°CVnom	2.94	3.03	3.23	3.07
T40°CVnom	2.92	2.89	3.03	3.59
T30°CVnom	2.54	2.50	2.40	2.87
T20°CVnom	3.02	2.95	2.71	3.44
T10°CVnom	2.89	2.65	3.47	2.85
T0°CVnom	2.43	2.76	2.08	2.02
T-10°CVnom	1.57	1.90	1.83	1.53
T-20°CVnom	0.47	0.78	0.35	0.30
T-30°CVnom	1.16	1.16	1.77	1.21
Vnom [Vdc]: 120		Vmax [Vdc]: 138		Vmin [Vdc]: 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 (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

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

Linkou

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 District, Tao Yuan City
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 District, Tao Yuan
City 333, Taiwan, R.O.C.

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

Tel: 886-3-271-8666

Fax: 886-3-318-0155

Email: ICC_Service@icertifi.com.tw

==END==