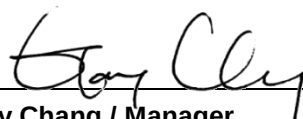


FCC Test Report

FCC ID : NKR-SY75
Equipment : WiFi module
Model No. : DNUA-SY75
Brand Name : WNC
Applicant : Wistron NeWeb Corporation
Address : 20 Park Avenue II, Hsinchu Science Park,
Hsinchu 308, Taiwan, R.O.C.
Standard : 47 CFR FCC Part 15.407
Received Date : Aug. 03, 2015
Tested Date : Aug. 25 ~ Sep. 03, 2015

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	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	24
3.4	Peak Power Spectral Density	29
3.5	Transmitter Radiated and Band Edge Emissions	34
3.6	Frequency Stability	113
4	TEST LABORATORY INFORMATION	115

Release Record

Report No.	Version	Description	Issued Date
FR580301AN	Rev. 01	Initial issue	Sep. 17, 2015

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.207	Conducted Emissions	[dBuV]: 0.151MHz 44.55 (Margin -11.39dB) - AV	Pass
15.407(b) 15.209	Radiated Emissions	[dBuV/m at 3m]: 11570.00MHz 53.67 (Margin -0.33dB) - 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: 20.03 5250~5350MHz: 19.67 5470~5725MHz: 19.88 5725~5850MHz: 18.70	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
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. Note 3: The device has disabled the 5600-5650MHz band by SW to avoid 5600-5650MHz band.					

1.1.2 Antenna Details

Ant. No.	Model	Type	Connector	Operating Frequencies (MHz) / Antenna Gain (dBi)				
				2400~2483.5	5150~5250	5250~5350	5470~5725	5725~5850
1	DNUA-SY75 ANT0	Printed	in-line switch	0.39	2.57	3.11	4.13	4.13
2	DNUA-SY75 ANT1	Printed	in-line switch	-0.2	1.1	1.64	2.32	2.19

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

Frequency band (MHz)		5150~5725	
802.11 a / n HT20		802.11n 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	134	5670
64	5320	142	5710
100	5500	---	---
104	5520	---	---
108	5540	---	---
112	5560	---	---
116	5580	---	---
132	5660	---	---
136	5680	---	---
140	5700	---	---
144	5720		

For Frequency band 5725~5850 MHz			
802.11 a / n HT20		802.11n HT40	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
149	5745	151	5755
153	5765	159	5795
157	5785	---	---
161	5805	---	---
165	5825	---	---

1.1.6 Test Tool and Duty Cycle

Test Tool	ART2-GUI, Version 2.3		
Duty Cycle and Duty Factor	Mode	Duty cycle (%)	Duty factor (dB)
	11a	98.94%	0.05
	HT20	98.87%	0.05
	HT40	98.11%	0.08

1.1.7 Power Setting

For Frequency band 5150-5250 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5180	18
11a	5200	17.5
11a	5240	17
HT20	5180	16
HT20	5200	17
HT20	5240	18
HT40	5190	11
HT40	5230	20

For Frequency band 5250-5350 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5260	17.5
11a	5300	19
11a	5320	15.5
HT20	5260	18
HT20	5300	18
HT20	5320	17
HT40	5270	20
HT40	5310	11

For Frequency band 5470-5725 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5500	12.5
11a	5580	16
11a	5700	14
HT20	5500	17.5
HT20	5580	19
HT20	5700	15
HT40	5510	12
HT40	5550	19.5
HT40	5670	17

Channel that extends across the 5.725 GHz boundary

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

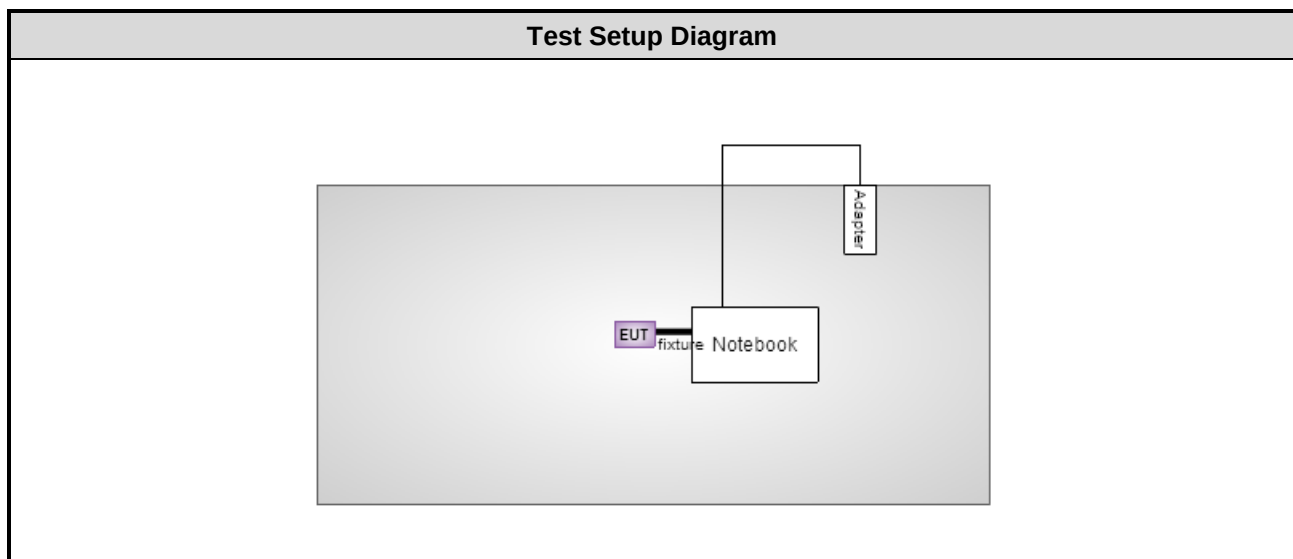
For Frequency band 5725~5850 MHz		
Modulation Mode	Test Frequency (MHz)	Power Set
11a	5745	12.5
11a	5785	16
11a	5825	14
HT20	5745	12.5
HT20	5785	15.5
HT20	5825	14
HT40	5755	11
HT40	5795	17

1.2 Local Support Equipment List

Support Equipment List						
No.	Equipment	Brand	Model	S/N	FCC ID	Signal cable / Length (m)
1	Notebook	DELL	Latitude E6440	DPXMD12	DoC	---
2	Fixture	---	---	---	---	---

Note: The Fixture 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)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
EMC Receiver	R&S	ESCS 30	100169	Oct. 17, 2014	Oct. 16, 2015
LISN	SCHWARZBECK	Schwarzbeck 8127	8127-667	Nov. 17, 2014	Nov. 16, 2015
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Dec. 31, 2014	Dec. 30, 2015
Measurement Software	AUDIX	e3	6.120210k	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)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101499	Dec. 31, 2014	Dec. 30, 2015
Receiver	R&S	ESR3	101657	Jan. 15, 2015	Jan. 14, 2016
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-524	Oct. 16, 2014	Oct. 15, 2015
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1095	Oct. 14, 2014	Oct. 13, 2015
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 10, 2014	Nov. 09, 2015
Loop Antenna	R&S	HFH2-Z2	11900	Nov. 10, 2014	Nov. 09, 2015
Preamplifier	Burgeon	BPA-530	100218	Nov. 10, 2014	Nov. 09, 2015
Preamplifier	Agilent	83017A	MY39501309	Sep. 29, 2014	Sep. 28, 2015
Pre-Amplifier	WM	TF-130N-R1	923365	Feb. 10, 2015	Feb. 09, 2016
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16140/4	Dec. 16, 2014	Dec. 15, 2015
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16018/4	Dec. 16, 2014	Dec. 15, 2015
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16015/4	Dec. 16, 2014	Dec. 15, 2015
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-003	Dec. 16, 2014	Dec. 15, 2015
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-004	Dec. 16, 2014	Dec. 15, 2015
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Note: Calibration Interval of instruments listed above is one year.					

Test Item	RF Conducted				
Test Site	(TH01-WS)				
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101063	Feb. 03, 2015	Feb. 02, 2016
TEMP&HUMIDITY CHAMBER	GIANT FORCE	GCT-225-40-SP-SD	MAF1212-002	Dec. 03, 2014	Dec. 02, 2015
Power Meter	Anritsu	ML2495A	1241002	Sep. 29, 2014	Sep. 28, 2015
Power Sensor	Anritsu	MA2411B	1207366	Sep. 29, 2014	Sep. 28, 2015
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 v01

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 ≤ 1 GHz	± 3.62 dB
Radiated emission > 1 GHz	± 5.60 dB
Time	$\pm 0.1\%$
Temperature	± 0.6 °C

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
AC Conduction	CO01-WS	22°C / 58%	Kevin Ma
Radiated Emissions	03CH02-WS	21-24°C / 63-69%	Anderson Hung
RF Conducted	TH01-WS	22°C / 63%	Felix Sung

➤ 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	Test Configuration
Conducted Emissions	HT40	5230	MCS 0	---
Radiated Emissions ≤1GHz	HT40	5230	MCS 0	---
RF Output Power	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	6 Mbps	---
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0	
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5550 / 5670 / 5710	MCS 0	
Radiated Emissions >1GHz Emission Bandwidth Peak Power Spectral Density	11a	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	6 Mbps	---
	HT20	5180 / 5200 / 5240 / 5260 / 5300 5320 / 5500 / 5580 / 5700 / 5720	MCS 0	
	HT40	5190 / 5230 / 5270 / 5310 / 5510 5590 / 5670 / 5710	MCS 0	
Frequency Stability	Un-modulation	5200	---	---
NOTE:				
1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.				

Frequency band 5725-5850 MHz				
Test item	Modulation Mode	Test Frequency (MHz)	Data Rate (Mbps) / MCS	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	---	---
NOTE: 1. The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane results were found as the worst case and were shown in this report.				

3 Transmitter Test Results

3.1 Conducted Emissions

3.1.1 Limit of Conducted Emissions

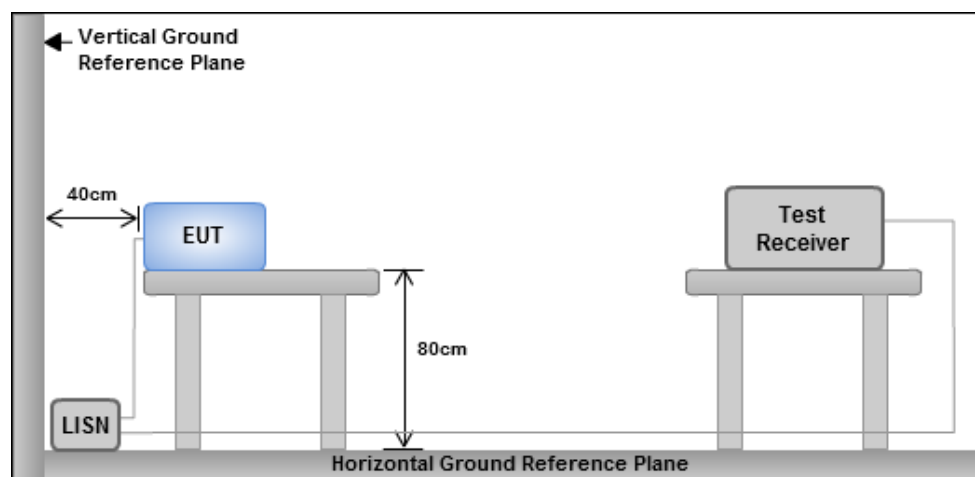
Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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

3.1.2 Test Procedures

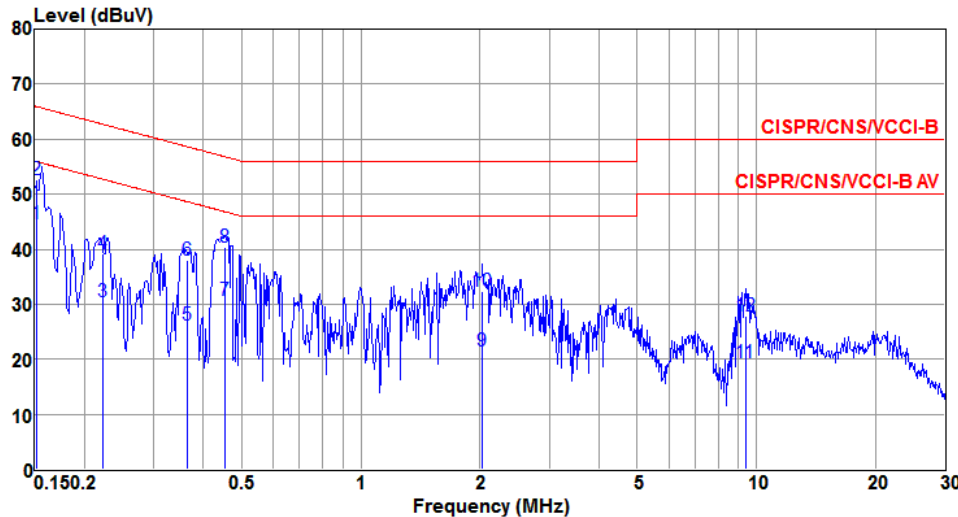
1. The device is placed on a test table, raised 80 cm above the reference ground plane. The vertical conducting plane is located 40 cm to the rear of the device.
2. The device is connected to line impedance stabilization network (LISN) and other accessories are connected to other LISN. Measured levels 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



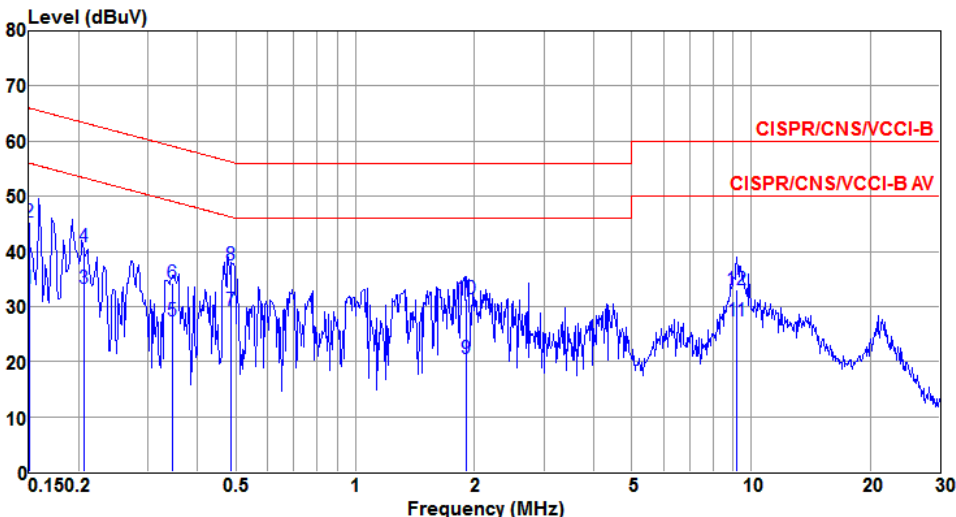
- Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

3.1.4 Test Result of Conducted Emissions

Modulation	HT40	Test Freq. (MHz)	5230																																																																																																																					
Power Phase	Line																																																																																																																							
Level (dBuV)  Frequency (MHz) <table><thead><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></thead><tbody><tr><td>1@</td><td>0.151</td><td>44.55</td><td>55.94</td><td>-11.39</td><td>44.40</td><td>0.07</td><td>0.08</td><td>Average</td></tr><tr><td>2</td><td>0.151</td><td>52.66</td><td>65.94</td><td>-13.28</td><td>52.51</td><td>0.07</td><td>0.08</td><td>QP</td></tr><tr><td>3</td><td>0.222</td><td>30.42</td><td>52.74</td><td>-22.32</td><td>30.26</td><td>0.07</td><td>0.09</td><td>Average</td></tr><tr><td>4</td><td>0.222</td><td>39.09</td><td>62.74</td><td>-23.65</td><td>38.93</td><td>0.07</td><td>0.09</td><td>QP</td></tr><tr><td>5</td><td>0.363</td><td>26.31</td><td>48.67</td><td>-22.36</td><td>26.13</td><td>0.07</td><td>0.11</td><td>Average</td></tr><tr><td>6</td><td>0.363</td><td>37.91</td><td>58.67</td><td>-20.76</td><td>37.73</td><td>0.07</td><td>0.11</td><td>QP</td></tr><tr><td>7</td><td>0.453</td><td>30.71</td><td>46.83</td><td>-16.12</td><td>30.52</td><td>0.07</td><td>0.12</td><td>Average</td></tr><tr><td>8</td><td>0.453</td><td>40.42</td><td>56.83</td><td>-16.41</td><td>40.23</td><td>0.07</td><td>0.12</td><td>QP</td></tr><tr><td>9</td><td>2.033</td><td>21.56</td><td>46.00</td><td>-24.44</td><td>21.22</td><td>0.10</td><td>0.24</td><td>Average</td></tr><tr><td>10</td><td>2.033</td><td>32.38</td><td>56.00</td><td>-23.62</td><td>32.04</td><td>0.10</td><td>0.24</td><td>QP</td></tr><tr><td>11</td><td>9.401</td><td>19.46</td><td>50.00</td><td>-30.54</td><td>18.96</td><td>0.20</td><td>0.30</td><td>Average</td></tr><tr><td>12</td><td>9.401</td><td>27.86</td><td>60.00</td><td>-32.14</td><td>27.36</td><td>0.20</td><td>0.30</td><td>QP</td></tr></tbody></table> Note 1: Level (dBuV) = Read Level (dBuV) + LISN Factor (dB) + Cable Loss (dB). 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@	0.151	44.55	55.94	-11.39	44.40	0.07	0.08	Average	2	0.151	52.66	65.94	-13.28	52.51	0.07	0.08	QP	3	0.222	30.42	52.74	-22.32	30.26	0.07	0.09	Average	4	0.222	39.09	62.74	-23.65	38.93	0.07	0.09	QP	5	0.363	26.31	48.67	-22.36	26.13	0.07	0.11	Average	6	0.363	37.91	58.67	-20.76	37.73	0.07	0.11	QP	7	0.453	30.71	46.83	-16.12	30.52	0.07	0.12	Average	8	0.453	40.42	56.83	-16.41	40.23	0.07	0.12	QP	9	2.033	21.56	46.00	-24.44	21.22	0.10	0.24	Average	10	2.033	32.38	56.00	-23.62	32.04	0.10	0.24	QP	11	9.401	19.46	50.00	-30.54	18.96	0.20	0.30	Average	12	9.401	27.86	60.00	-32.14	27.36	0.20	0.30	QP
	Freq MHz	Level dBuV	Limit Line dBuV	Over Limit dB	Read Level dBuV	LISN factor dB	cable loss dB	Remark																																																																																																																
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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.

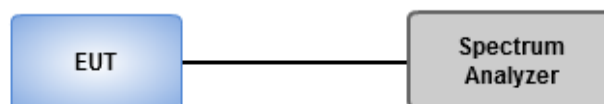
Occupied Bandwidth

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

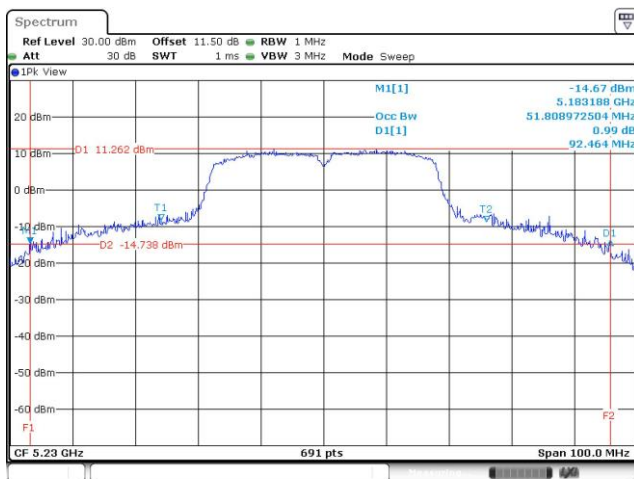
For Frequency band 5150~5250 MHz										
Emission Bandwidth										
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	2	5180	41.09	39.06	---	---	17.50	18.08	---	---
11a	2	5200	41.88	42.25	---	---	17.41	18.39	---	---
11a	2	5240	41.30	40.87	---	---	17.93	18.83	---	---
HT20	2	5180	37.90	43.19	---	---	18.11	18.25	---	---
HT20	2	5200	40.65	43.70	---	---	18.30	19.97	---	---
HT20	2	5240	42.75	45.00	---	---	18.45	18.93	---	---
HT40	2	5190	50.32	52.64	---	---	36.60	36.64	---	---
HT40	2	5230	92.46	91.45	---	---	38.38	39.32	---	---

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	40.07	40.29	---	---	17.60	18.08	---	---	24.00
11a	2	5300	41.38	40.29	---	---	17.52	17.69	---	---	24.00
11a	2	5320	40.51	38.04	---	---	17.37	17.53	---	---	24.00
HT20	2	5260	40.29	44.86	---	---	18.31	18.68	---	---	24.00
HT20	2	5300	41.59	40.51	---	---	18.36	18.45	---	---	24.00
HT20	2	5320	42.68	43.70	---	---	18.20	18.42	---	---	24.00
HT40	2	5270	91.45	90.29	---	---	37.88	39.46	---	---	24.00
HT40	2	5310	50.32	49.04	---	---	36.72	36.68	---	---	24.00

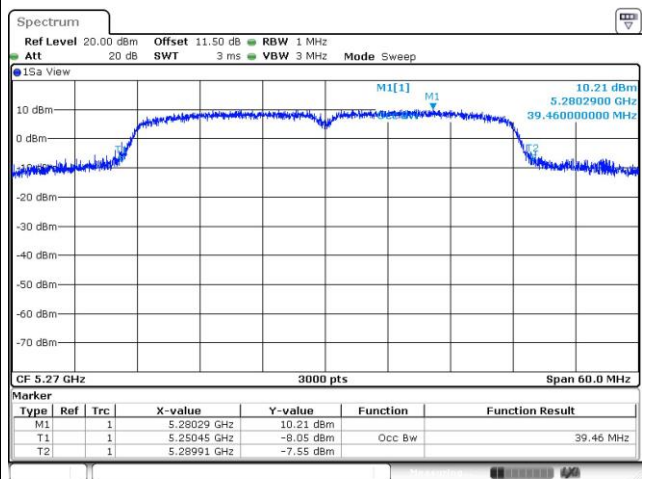
For Frequency band 5470~5725 MHz

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	39.86	36.88	---	---	17.23	17.19	---	---	24.00
11a	2	5580	41.74	42.10	---	---	17.80	17.77	---	---	24.00
11a	2	5700	37.39	34.49	---	---	16.97	16.78	---	---	24.00
HT20	2	5500	38.12	41.88	---	---	18.11	18.14	---	---	24.00
HT20	2	5580	44.13	44.28	---	---	18.53	18.46	---	---	24.00
HT20	2	5700	38.12	32.10	---	---	18.04	17.89	---	---	24.00
HT40	2	5510	50.55	48.58	---	---	36.72	36.64	---	---	24.00
HT40	2	5590	91.30	86.38	---	---	37.52	37.64	---	---	24.00
HT40	2	5670	86.23	82.17	---	---	37.12	36.96	---	---	24.00

Worst Plot of 26dB Bandwidth



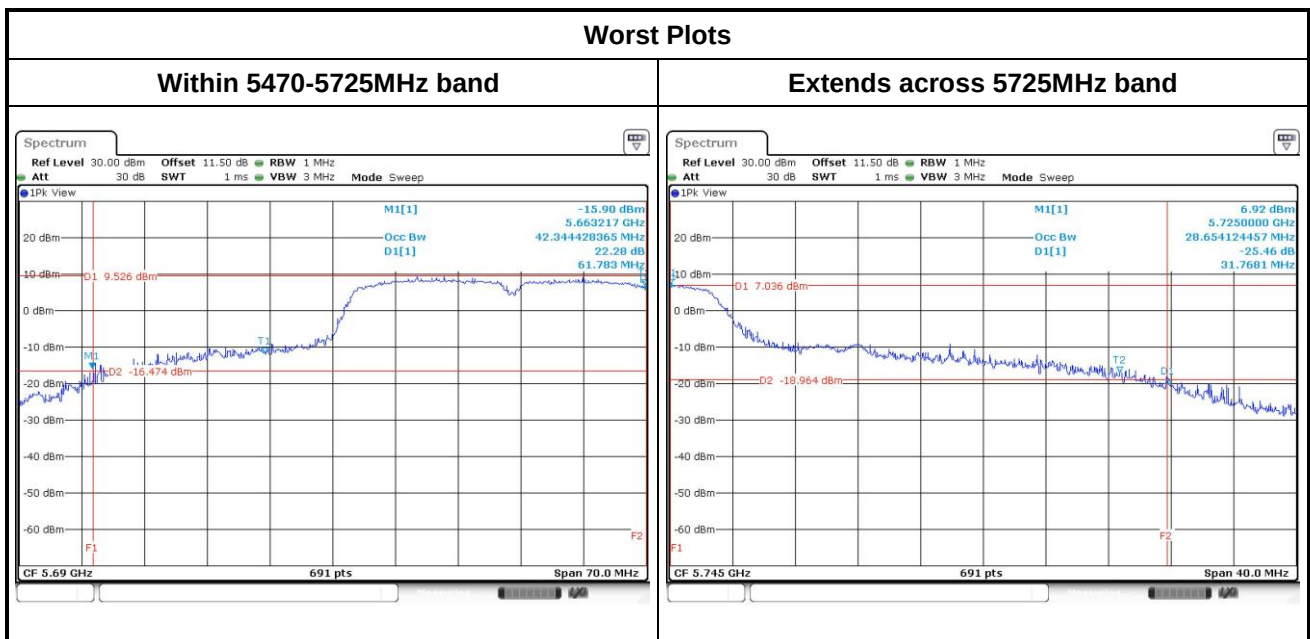
Worst Plot of 99% Bandwidth



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	24.33	23.71	---	---	13.88	13.60	---	---	24.00
HT20	2	5720	23.96	23.47	---	---	14.24	14.06	---	---	24.00
HT40	2	5710	61.78	61.68	---	---	34.31	33.95	---	---	24.00

Frequency band			UNII Emission Bandwidth Result (Extends across 5725MHz band)							
Mode	N _{TX}	Freq. (MHz)	26dB Bandwidth (MHz)				99% Bandwidth (MHz)			
			Chain 0	Chain 1	Chain 2	Chain 3	Chain 0	Chain 1	Chain 2	Chain 3
11a	2	5720	13.76	13.17	---	---	3.61	3.39	---	---
HT20	2	5720	13.76	12.39	---	---	4.06	3.90	---	---
HT40	2	5710	31.77	30.61	---	---	3.69	3.51	---	---

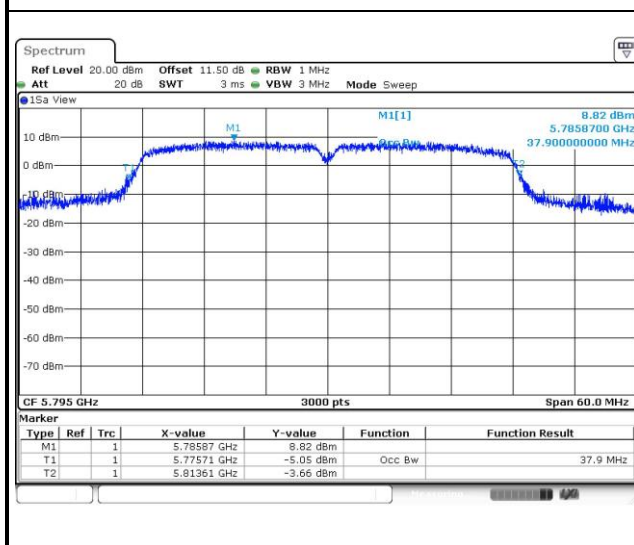


For Frequency band 5725-5850 MHz

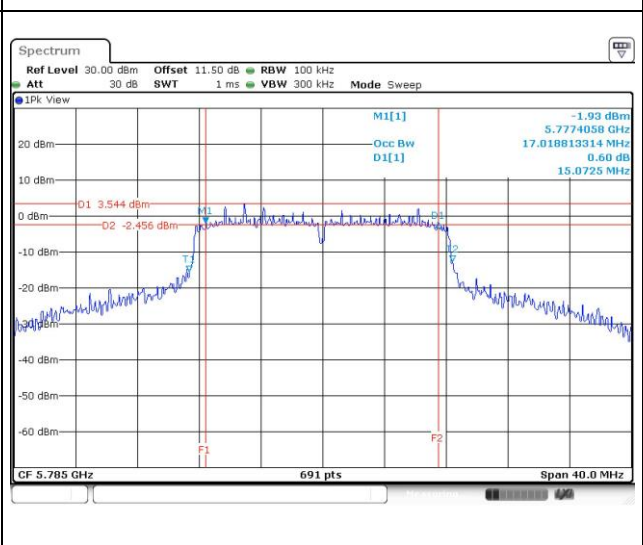
Emission Bandwidth

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	16.81	16.65	---	---	15.65	16.35	---	---	0.5
11a	2	5785	17.39	17.02	---	---	15.65	15.07	---	---	0.5
11a	2	5825	16.94	16.79	---	---	15.94	16.06	---	---	0.5
HT20	2	5745	17.84	17.79	---	---	16.64	16.99	---	---	0.5
HT20	2	5785	18.02	17.94	---	---	15.94	16.12	---	---	0.5
HT20	2	5825	17.92	17.85	---	---	15.88	16.70	---	---	0.5
HT40	2	5755	36.68	36.58	---	---	35.36	35.24	---	---	0.5
HT40	2	5795	37.90	37.36	---	---	35.24	35.36	---	---	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

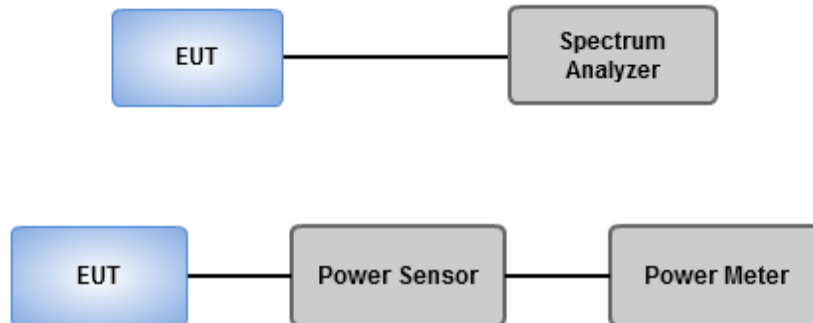
Frequency band 5150-5250 MHz		
Operating Mode		Limit
☐	Outdoor access point	Conducted Power: 1 W The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm)
☐	Indoor access point	Conducted Power: 1 W
☐	Fixed point-to-point access points	Conducted Power: 1 W
☒	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	15.6	15.32	---	---	70.349	18.47	24.00
11a	2	5200	15.36	15.38	---	---	68.870	18.38	24.00
11a	2	5240	15.83	15.97	---	---	77.819	18.91	24.00
HT20	2	5180	14.87	14.51	---	---	58.939	17.70	24.00
HT20	2	5200	15.35	15.33	---	---	68.396	18.35	24.00
HT20	2	5240	15.81	15.96	---	---	77.552	18.90	24.00
HT40	2	5190	9.13	8.82	---	---	15.805	11.99	24.00
HT40	2	5230	17.11	16.92	---	---	100.608	20.03	24.00

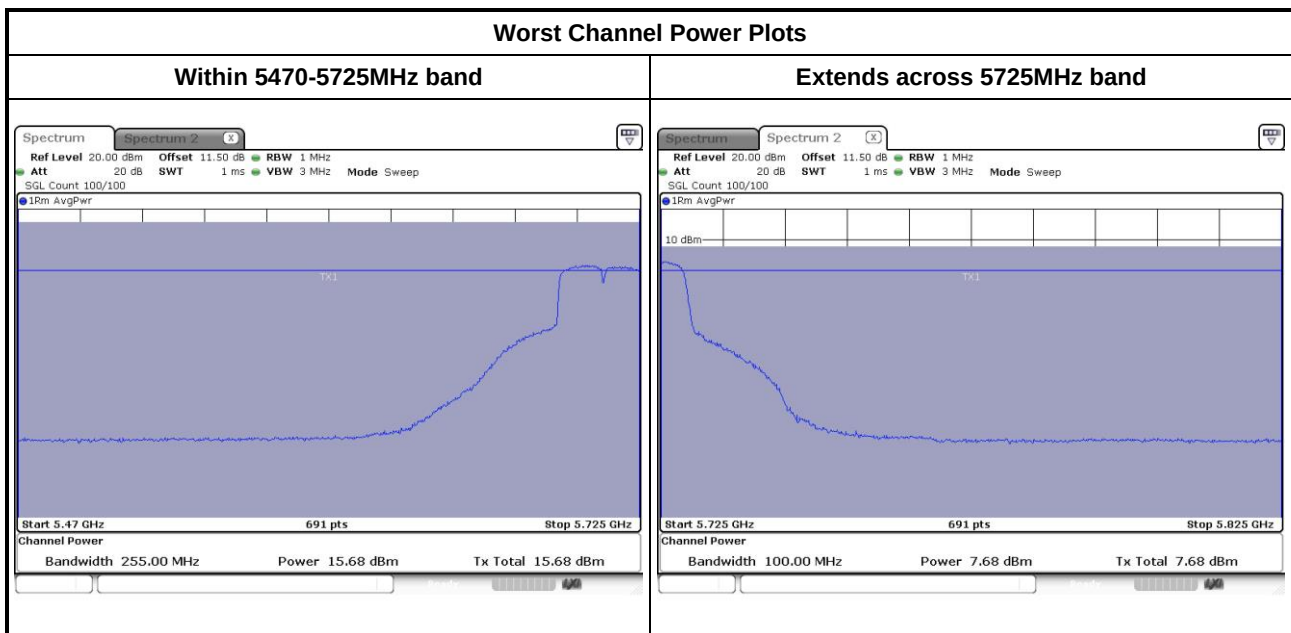
For Frequency band 5250~5350 MHz									
Mode	N _{TX}	Freq. (MHz)	Conducted Power (dBm)				Total Power (mW)	Total Power (dBm)	Limit (dBm)
			Chain 0	Chain 1	Chain 2	Chain 3			
11a	2	5260	15.38	15.62	---	---	70.990	18.51	24.00
11a	2	5300	15.25	15.33	---	---	67.616	18.30	24.00
11a	2	5320	15.02	14.96	---	---	63.102	18.00	24.00
HT20	2	5260	15.28	15.73	---	---	71.140	18.52	24.00
HT20	2	5300	15.76	15.74	---	---	75.168	18.76	24.00
HT20	2	5320	14.82	14.84	---	---	60.818	17.84	24.00
HT40	2	5270	16.53	16.78	---	---	92.621	19.67	24.00
HT40	2	5310	9.03	9.21	---	---	16.335	12.13	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	15.48	14.88	---	---	66.079	18.20	24.00
11a	2	5580	16.85	16.72	---	---	95.407	19.80	24.00
11a	2	5700	14.36	13.89	---	---	51.780	17.14	24.00
HT20	2	5500	15.43	14.75	---	---	64.768	18.11	24.00
HT20	2	5580	16.82	16.78	---	---	95.727	19.81	24.00
HT20	2	5700	13.84	13.42	---	---	46.189	16.65	24.00
HT40	2	5510	9.50	8.83	---	---	16.551	12.19	24.00
HT40	2	5590	16.98	16.76	---	---	97.313	19.88	24.00
HT40	2	5670	15.72	15.35	---	---	71.602	18.55	24.00

Channel that extends across the 5.725 GHz boundary

Maximum Conducted Output Power (Within 5470-5725MHz band)									
RF Output Power (dBm)									
Mode	N _{TX}	Freq. (MHz)	Chain 0	Chain 1	Chain 2	Chain 3	Total Power (mW)	Total Power (dBm)	Limit
11a	2	5720	13.86	13.41	---	---	46.250	16.65	24.00
HT20	2	5720	13.88	13.16	---	---	45.136	16.55	24.00
HT40	2	5710	15.68	15.13	---	---	69.566	18.42	24.00

Maximum Conducted Output Power (Extends across 5725MHz band)									
RF Output Power (dBm)									
Mode	N _{TX}	Freq. (MHz)	Chain 0	Chain 1	Chain 2	Chain 3	Total Power (mW)	Total Power (dBm)	Limit
11a	2	5720	7.35	6.88	---	---	10.308	10.13	30.00
HT20	2	5720	7.68	7.26	---	---	11.182	10.49	30.00
HT40	2	5710	4.03	3.61	---	---	4.825	6.84	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	10.73	10.62	---	---	23.365	13.69	30.00
11a	2	5785	14.93	14.96	---	---	62.450	17.96	30.00
11a	2	5825	13.12	13.06	---	---	40.742	16.10	30.00
HT20	2	5745	10.53	10.49	---	---	22.492	13.52	30.00
HT20	2	5785	14.29	14.25	---	---	53.461	17.28	30.00
HT20	2	5825	13.26	13.21	---	---	42.125	16.25	30.00
HT40	2	5755	9.43	8.98	---	---	16.677	12.22	30.00
HT40	2	5795	15.63	15.75	---	---	74.143	18.70	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

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

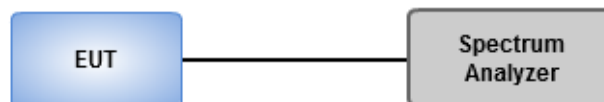
☒ Method SA-1

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



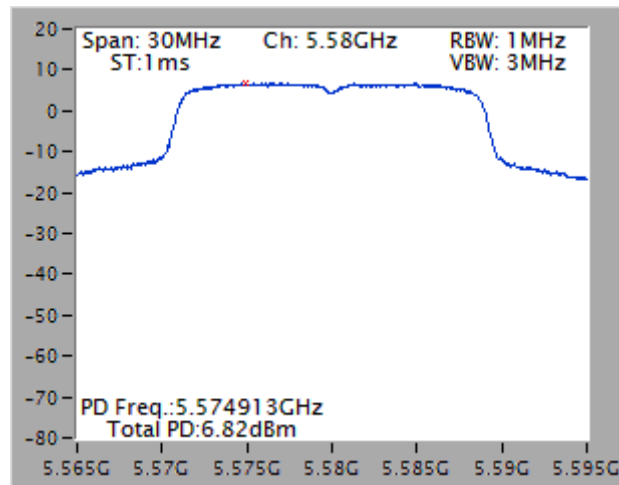
3.4.4 Test Result of Peak Power Spectral Density

For Frequency band 5150~5250 MHz / 5250~5350 MHz / 5475~5725 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	5180	5.30	0.00	5.30	11
11a	2	5200	5.10	0.00	5.10	11
11a	2	5240	5.31	0.00	5.31	11
HT20	2	5180	3.69	0.00	3.69	11
HT20	2	5200	4.30	0.00	4.30	11
HT20	2	5240	4.77	0.00	4.77	11
HT40	2	5190	-4.92	0.00	-4.92	11
HT40	2	5230	3.22	0.00	3.22	11
11a	2	5260	4.12	0.00	4.12	11
11a	2	5300	4.92	0.00	4.92	11
11a	2	5320	4.43	0.00	4.43	11
HT20	2	5260	4.64	0.00	4.64	11
HT20	2	5300	4.83	0.00	4.83	11
HT20	2	5320	3.77	0.00	3.77	11
HT40	2	5270	3.05	0.00	3.05	11
HT40	2	5310	-4.96	0.00	-4.96	11
11a	2	5500	6.34	0.00	6.34	10.72
11a	2	5580	5.70	0.00	5.70	10.72
11a	2	5700	2.79	0.00	2.79	10.72
11a	2	5720	5.09	0.00	5.09	10.72
HT20	2	5500	3.87	0.00	3.87	10.72
HT20	2	5580	6.82	0.00	6.82	10.72
HT20	2	5700	2.34	0.00	2.34	10.72
HT20	2	5720	4.77	0.00	4.77	10.72
HT40	2	5510	-4.82	0.00	-4.82	10.72
HT40	2	5590	3.09	0.00	3.09	10.72
HT40	2	5670	1.66	0.00	1.66	10.72
HT40	2	5710	3.03	0.00	3.03	10.72

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. For 5470~5725MHz band, Directional gain = $10 * \log((10^{4.13/20} + 10^{2.32/20})^2 / 2) = 6.28 \text{ dBi} > 6 \text{ dBi}$.
Limit shall be reduced to $11 \text{ dBm} - (6.28 \text{ dBi} - 6 \text{ dBi}) = 10.72 \text{ dBm}$.

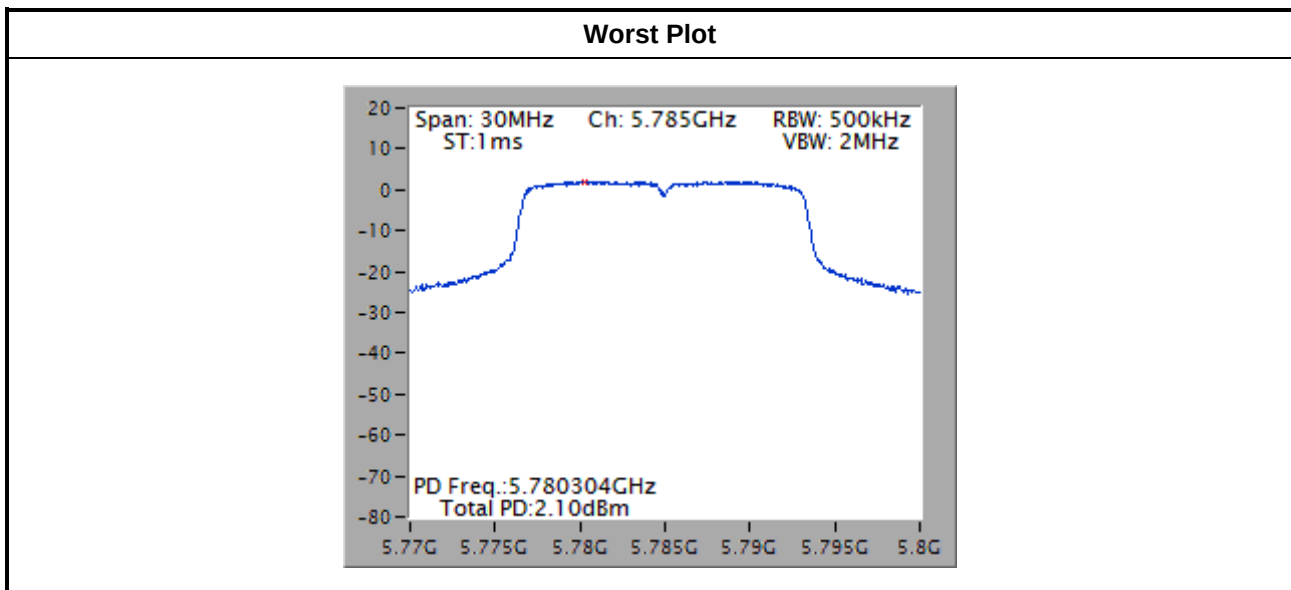
Worst Plot



For Frequency band 5725-5850 MHz						
Condition			Peak Power Spectral Density (dBm/500kHz)			
Modulation Mode	N _{TX}	Freq. (MHz)	PPSD w/o D.F (dBm/500kHz)	Duty Factor (dB)	PPSD with D.F (dBm/500kHz)	PPSD Limit (dBm/500kHz)
11a	2	5745	-1.95	0.00	-1.95	29.78
11a	2	5785	2.10	0.00	2.10	29.78
11a	2	5825	0.35	0.00	0.35	29.78
HT20	2	5745	-2.61	0.00	-2.61	29.78
HT20	2	5785	1.27	0.00	1.27	29.78
HT20	2	5825	0.03	0.00	0.03	29.78
HT40	2	5755	-6.70	0.00	-6.70	29.78
HT40	2	5795	0.09	0.00	0.09	29.78

Note:

1. D.F is duty factor.
2. Test result is bin-by-bin summing measured value of each TX port.
3. Directional gain = $10 * \log((10^{4.13/20} + 10^{2.19/20})^2 / 2) = 6.22 \text{ dBi} > 6 \text{ dBi}$.
Limit shall be reduced to $30 \text{ dBm} - (6.22 \text{ dBi} - 6 \text{ dBi}) = 29.78 \text{ dBm}$.



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	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

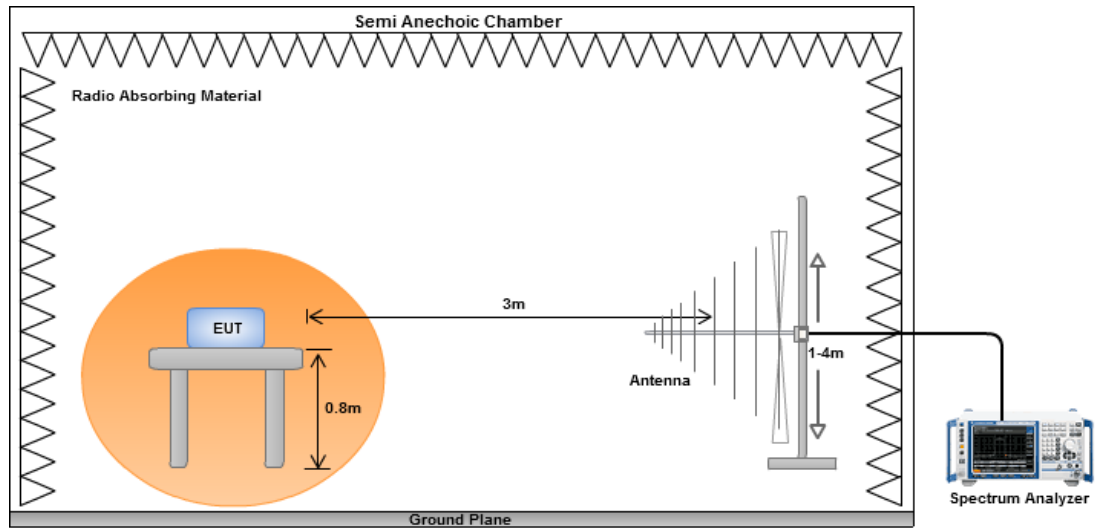
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360° . A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission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

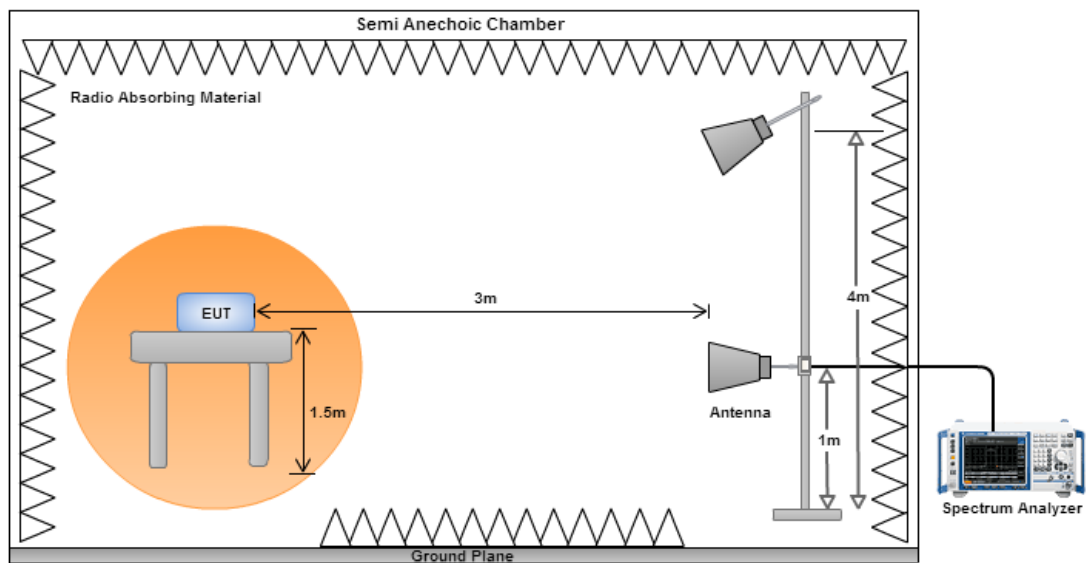
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 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	HT40	Test Freq. (MHz)	5230
Polarization	Horizontal		
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

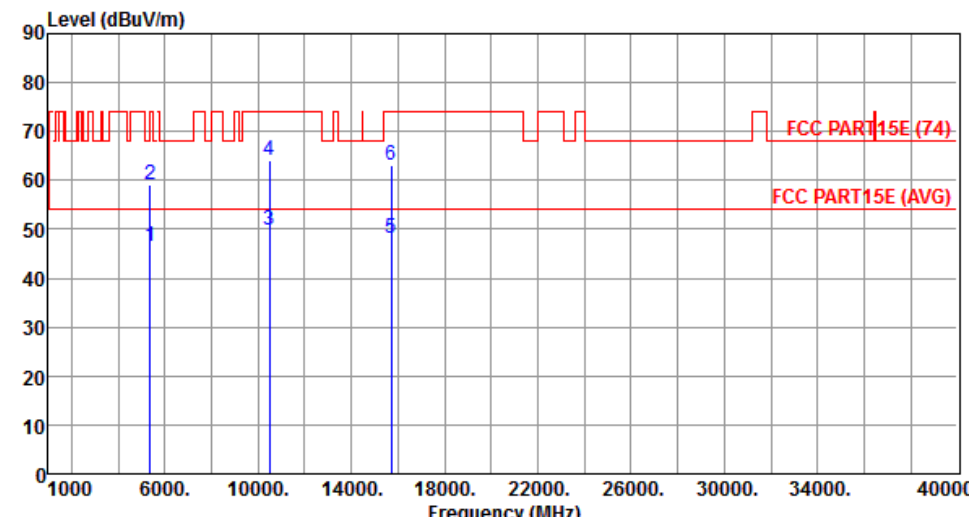
Modulation	11a	Test Freq. (MHz)	5180
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5180
Polarization	Vertical		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5200
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5200
Polarization	Vertical		
Level (dBuV/m) </			

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



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.48	54.00	-7.52	40.44	6.04	Average	221	92
2	5350.00	59.24	74.00	-14.76	53.20	6.04	Peak	221	92
3	10480.00	49.68	54.00	-4.32	34.85	14.83	Average	209	33
4	10480.00	64.11	74.00	-9.89	49.28	14.83	Peak	209	33
5	15720.00	48.13	54.00	-5.87	31.85	16.28	Average	300	52
6	15720.00	63.14	74.00	-10.86	46.86	16.28	Peak	300	52

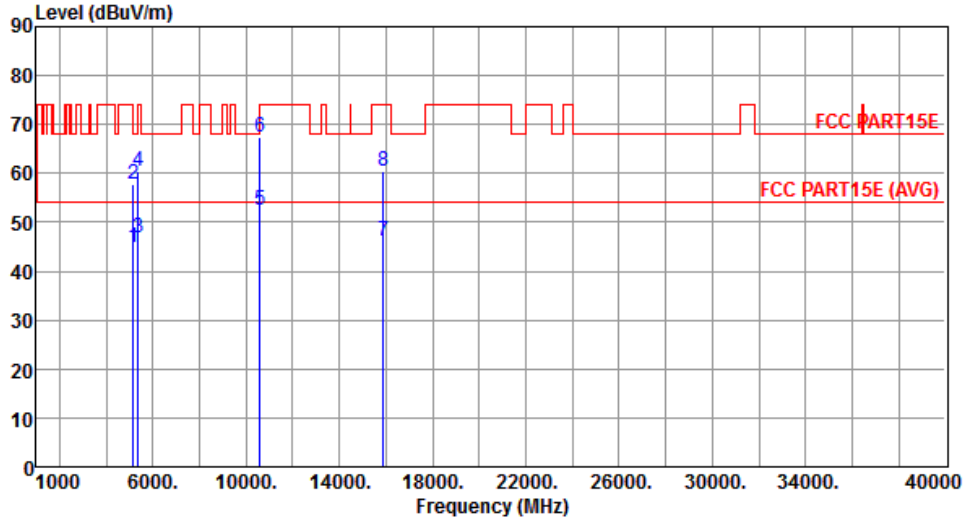
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

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

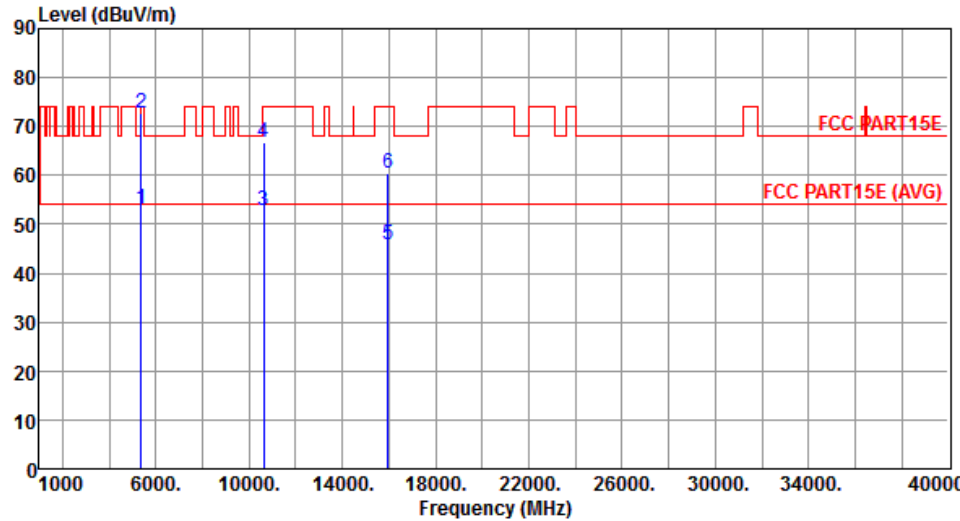
Modulation	11a	Test Freq. (MHz)	5300
Polarization	Horizontal		



	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	44.99	54.00	-9.01	39.23	5.76	Average	267	267
2	5150.00	57.70	74.00	-16.30	51.94	5.76	Peak	267	267
3	5350.00	46.76	54.00	-7.24	40.72	6.04	Average	267	267
4	5350.00	60.52	74.00	-13.48	54.48	6.04	Peak	267	267
5	10600.00	52.60	54.00	-1.40	37.47	15.13	Average	213	263
6	10600.00	67.33	74.00	-6.67	52.20	15.13	Peak	213	263
7	15900.00	46.13	54.00	-7.87	30.13	16.00	Average	349	35
8	15900.00	60.52	74.00	-13.48	44.52	16.00	Peak	349	35

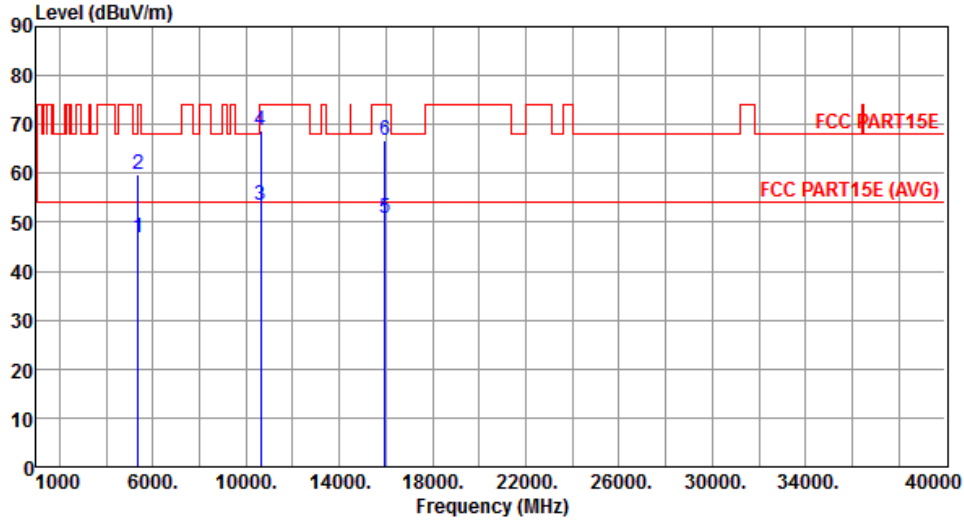
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

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

Modulation	11a	Test Freq. (MHz)	5320						
Polarization	Horizontal								
									
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	52.99	54.00	-1.01	46.95	6.04	Average	227	260
2	5350.00	72.64	74.00	-1.36	66.60	6.04	Peak	227	260
3	10640.00	52.92	54.00	-1.08	37.70	15.22	Average	213	262
4	10640.00	66.89	74.00	-7.11	51.67	15.22	Peak	213	262
5	15960.00	45.89	54.00	-8.11	29.99	15.90	Average	341	39
6	15960.00	60.33	74.00	-13.67	44.43	15.90	Peak	341	39

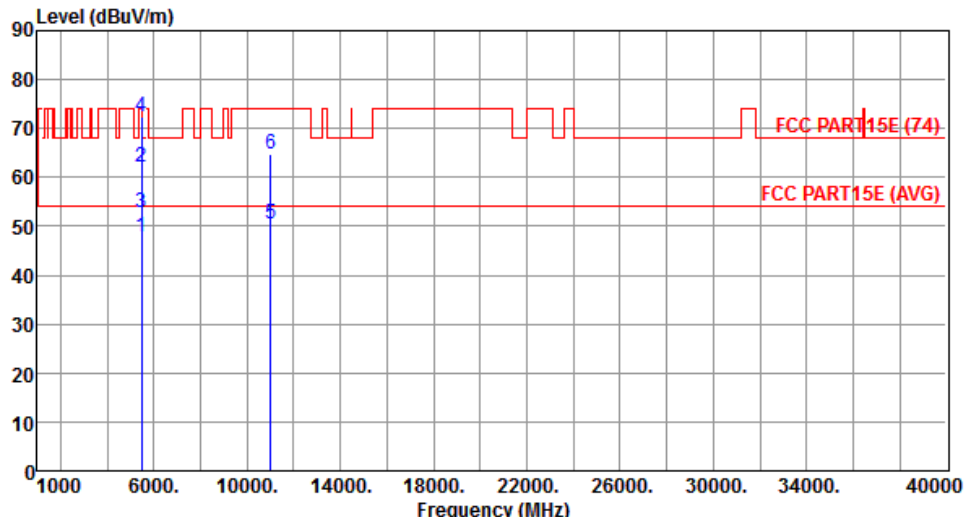
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)
*Factor includes antenna factor , cable loss and amplifier gain
Note 2: Margin (dB) = Emission level (dBUV/m) – Limit (dBUV/m).

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

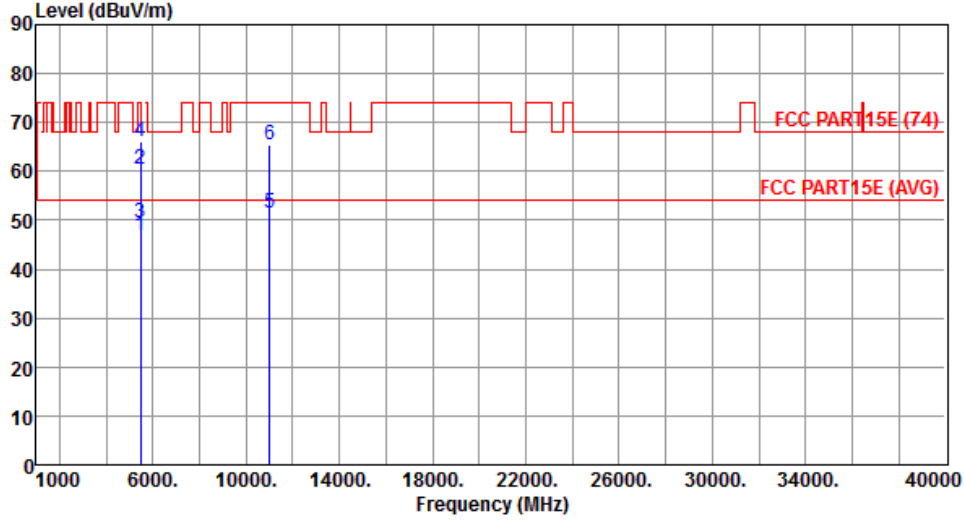


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.95	54.00	-7.05	40.91	6.04	Average	349	286
2	5350.00	59.82	74.00	-14.18	53.78	6.04	Peak	349	286
3	10640.00	53.42	54.00	-0.58	38.20	15.22	Average	230	264
4	10640.00	68.63	74.00	-5.37	53.41	15.22	Peak	230	264
5	15960.00	50.73	54.00	-3.27	34.83	15.90	Average	301	237
6	15960.00	66.84	74.00	-7.16	50.94	15.90	Peak	301	237

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

Modulation	11a	Test Freq. (MHz)	5500						
Polarization	Horizontal								
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	47.87	54.00	-6.13	41.67	6.20	Average	224	262
2	5460.00	62.18	74.00	-11.82	55.98	6.20	Peak	224	262
3	5470.00	52.72	54.00	-1.28	46.50	6.22	Average	224	262
4	5470.00	72.56	74.00	-1.44	66.34	6.22	Peak	224	262
5	11000.00	50.59	54.00	-3.41	34.49	16.10	Average	210	264
6	11000.00	64.78	74.00	-9.22	48.68	16.10	Peak	210	264
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).									

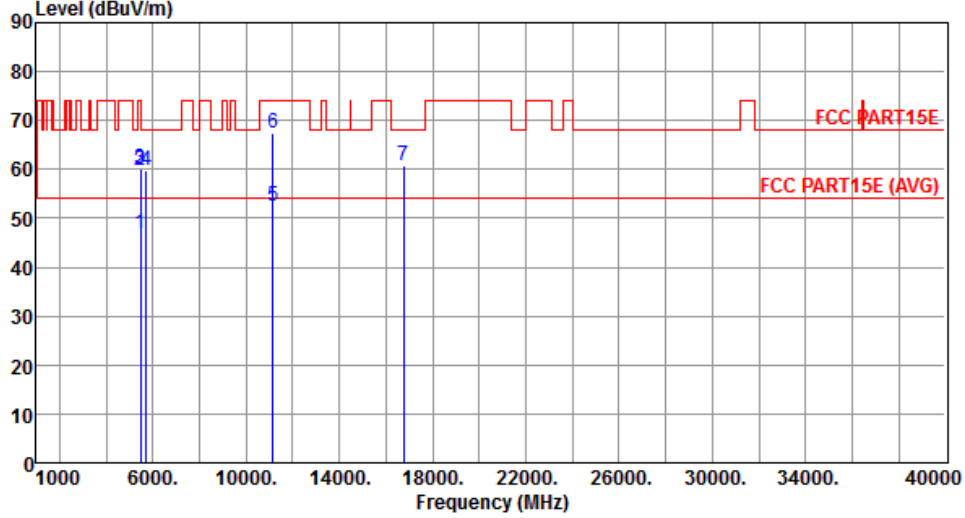
Modulation	11a	Test Freq. (MHz)	5500
Polarization	Vertical		



	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	46.86	54.00	-7.14	40.66	6.20	Average	320	294
2	5460.00	60.59	74.00	-13.41	54.39	6.20	Peak	320	294
3	5470.00	49.51	54.00	-4.49	43.29	6.22	Average	320	294
4	5470.00	65.99	74.00	-8.01	59.77	6.22	Peak	320	294
5	11000.00	51.36	54.00	-2.64	35.26	16.10	Average	239	279
6	11000.00	65.57	74.00	-8.43	49.47	16.10	Peak	239	279

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

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



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.76	54.00	-7.24	40.56	6.20	Average	257	266
2	5460.00	59.74	74.00	-14.26	53.54	6.20	Peak	257	266
3	5470.00	60.02	68.20	-8.18	53.80	6.22	Peak	257	266
4	5725.00	59.82	68.20	-8.38	53.11	6.71	Peak	257	266
5	11160.00	52.50	54.00	-1.50	36.36	16.14	Average	203	223
6	11160.00	67.30	74.00	-6.70	51.16	16.14	Peak	203	223
7	16740.00	60.63	68.20	-7.57	42.15	18.48	Peak	242	23

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		
Level (dBuV/m)			

Modulation	11a	Test Freq. (MHz)	5720
Polarization	Vertical		
Level (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		
Level (dBuV/m) </			

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



	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	58.29	68.20	-9.91	51.59	6.70	Peak	340	8
2	5725.00	59.30	78.20	-18.90	52.59	6.71	Peak	340	8
3	11570.00	53.67	54.00	-0.33	37.55	16.12	Average	349	275
4	11570.00	70.31	74.00	-3.69	54.19	16.12	Peak	349	275
5	17355.00	65.93	68.20	-2.27	44.30	21.63	Peak	284	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)	5825
Polarization	Horizontal		
Level (dBuV/m) </			

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

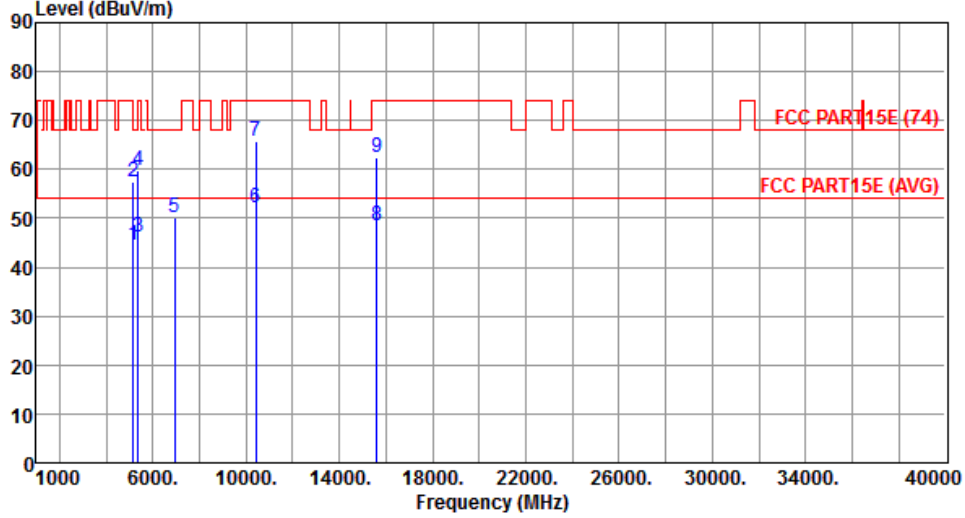
3.5.6 Transmitter Radiated Unwanted Emissions (Above 1GHz) for HT20

Modulation	HT20		Test Freq. (MHz)		5180	
Polarization	Horizontal					
Level (dBuV/m) </						

Modulation	HT20	Test Freq. (MHz)	5180
Polarization	Vertical		
Level (dBuV/m)			

Modulation	HT20	Test Freq. (MHz)	5200
Polarization	Horizontal		
Level (dBuV/m) </			

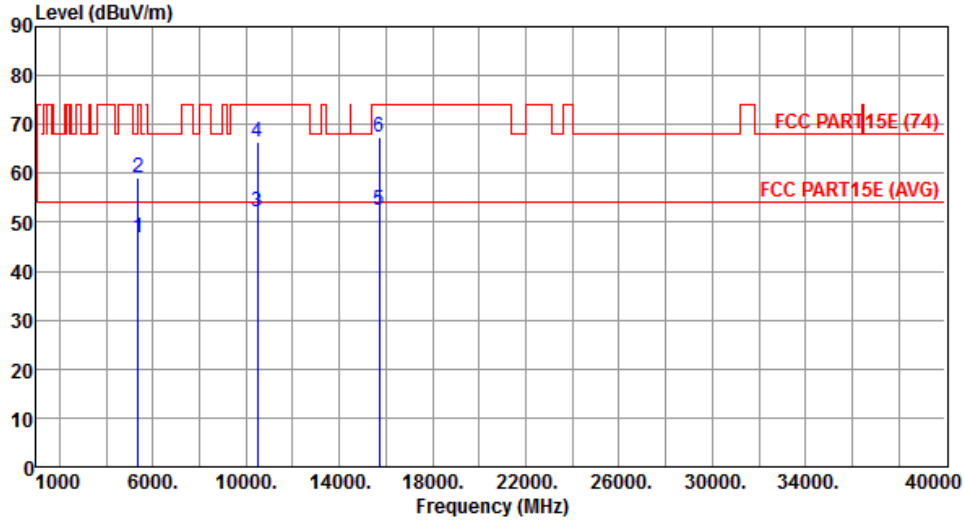
Modulation	HT20	Test Freq. (MHz)	5200
Polarization	Vertical		



	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	44.62	54.00	-9.38	38.86	5.76	Average	306	20
2	5150.00	57.45	74.00	-16.55	51.69	5.76	Peak	306	20
3	5350.00	46.12	54.00	-7.88	40.08	6.04	Average	306	20
4	5350.00	59.63	74.00	-14.37	53.59	6.04	Peak	306	20
5	6933.30	50.21	68.20	-17.99	40.81	9.40	Peak	256	44
6	10400.00	52.22	54.00	-1.78	37.60	14.62	Average	341	278
7	10400.00	65.68	74.00	-8.32	51.06	14.62	Peak	341	278
8	15600.00	48.57	54.00	-5.43	32.10	16.47	Average	289	307
9	15600.00	62.35	74.00	-11.65	45.88	16.47	Peak	289	307

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		

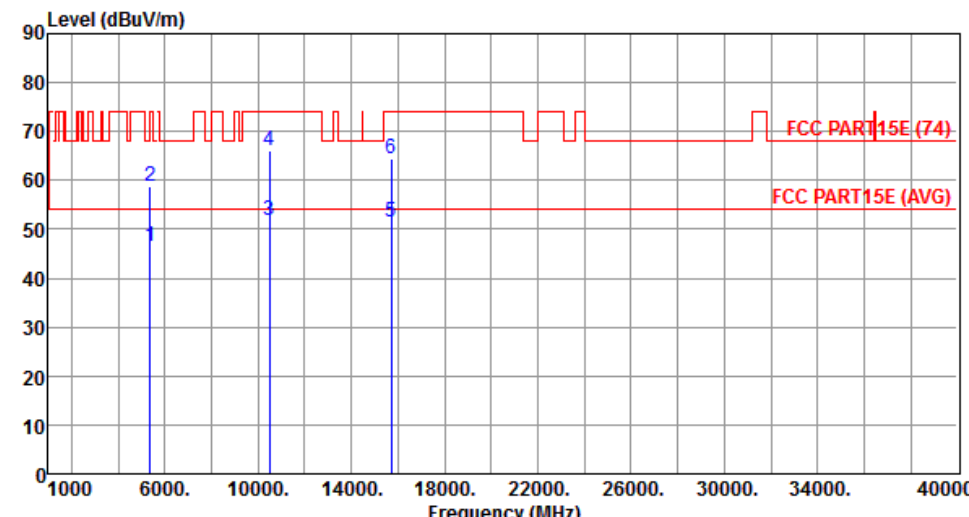


The graph displays the emission level in dBUV/m against frequency in MHz. The y-axis ranges from 0 to 90 dBUV/m, and the x-axis ranges from 1000 to 40000 MHz. A red line represents the FCC Part 15E (74) limit, and a lower red line represents the FCC Part 15E (AVG) limit. Blue vertical lines indicate specific test points labeled 1 through 6.

	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.78	54.00	-7.22	40.74	6.04	Average	312	15
2	5350.00	59.24	74.00	-14.76	53.20	6.04	Peak	312	15
3	10480.00	52.06	54.00	-1.94	37.23	14.83	Average	311	283
4	10480.00	66.45	74.00	-7.55	51.62	14.83	Peak	311	283
5	15720.00	52.37	54.00	-1.63	36.09	16.28	Average	300	218
6	15720.00	67.42	74.00	-6.58	51.14	16.28	Peak	300	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).

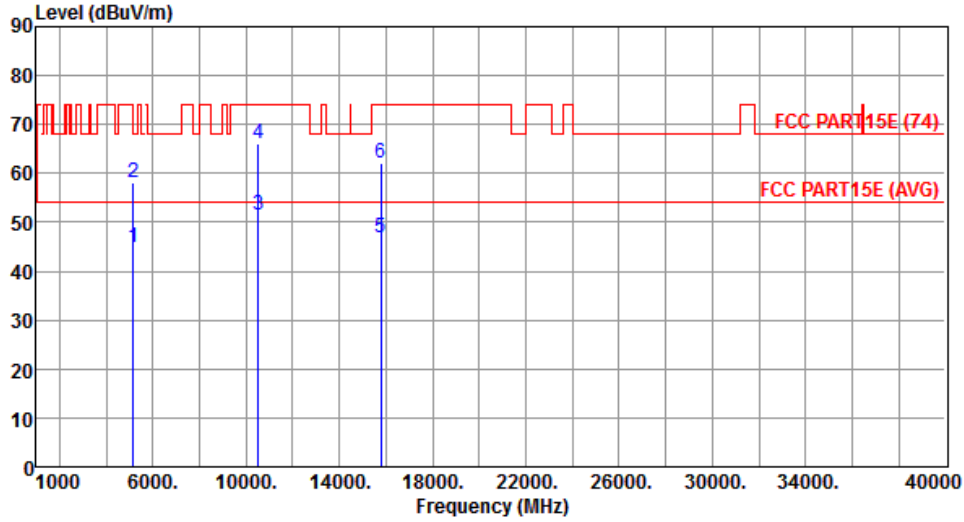
Modulation	HT20	Test Freq. (MHz)	5240
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.44	54.00	-7.56	40.40	6.04	Average	316	22
2	5350.00	58.91	74.00	-15.09	52.87	6.04	Peak	316	22
3	10480.00	51.91	54.00	-2.09	37.08	14.83	Average	318	281
4	10480.00	66.10	74.00	-7.90	51.27	14.83	Peak	318	281
5	15720.00	51.61	54.00	-2.39	35.33	16.28	Average	308	234
6	15720.00	64.53	74.00	-9.47	48.25	16.28	Peak	308	234

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)	5260
Polarization	Horizontal		

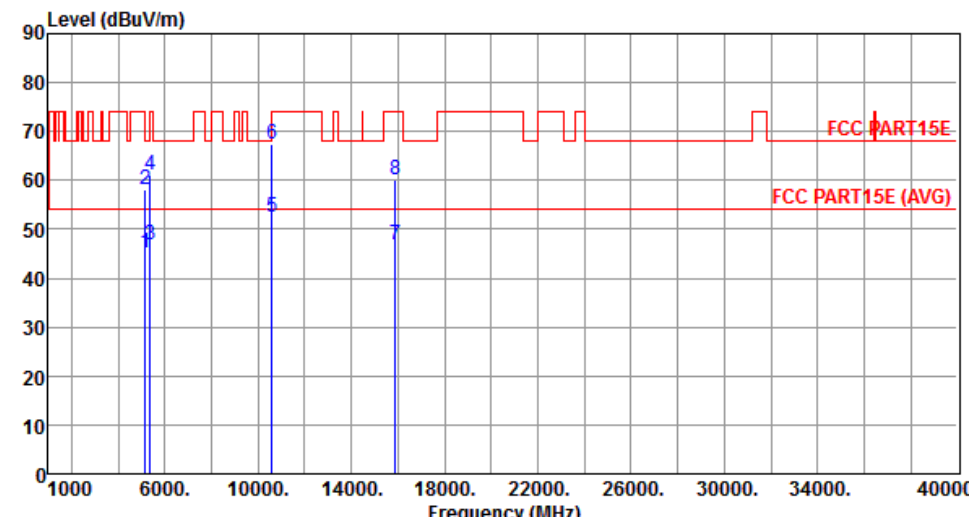


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.83	54.00	-9.17	39.07	5.76	Average	265	265
2	5150.00	58.00	74.00	-16.00	52.24	5.76	Peak	265	265
3	10520.00	51.62	54.00	-2.38	36.69	14.93	Average	235	261
4	10520.00	65.97	74.00	-8.03	51.04	14.93	Peak	235	261
5	15780.00	46.98	54.00	-7.02	30.79	16.19	Average	183	52
6	15780.00	62.12	74.00	-11.88	45.93	16.19	Peak	183	52

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)	5260
Polarization	Vertical		
Level (dBuV/m)			

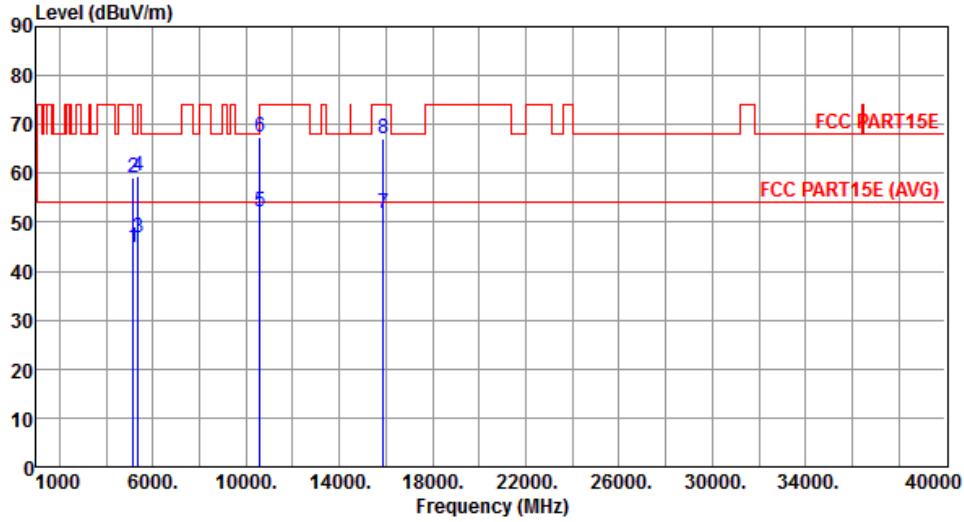
Modulation	HT20	Test Freq. (MHz)	5300
Polarization	Horizontal		



	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	45.13	54.00	-8.87	39.37	5.76	Average	266	265
2	5150.00	57.98	74.00	-16.02	52.22	5.76	Peak	266	265
3	5350.00	46.98	54.00	-7.02	40.94	6.04	Average	266	265
4	5350.00	61.02	74.00	-12.98	54.98	6.04	Peak	266	265
5	10600.00	52.60	54.00	-1.40	37.47	15.13	Average	232	260
6	10600.00	67.25	74.00	-6.75	52.12	15.13	Peak	232	260
7	15900.00	46.93	54.00	-7.07	30.93	16.00	Average	341	31
8	15900.00	60.22	74.00	-13.78	44.22	16.00	Peak	341	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).

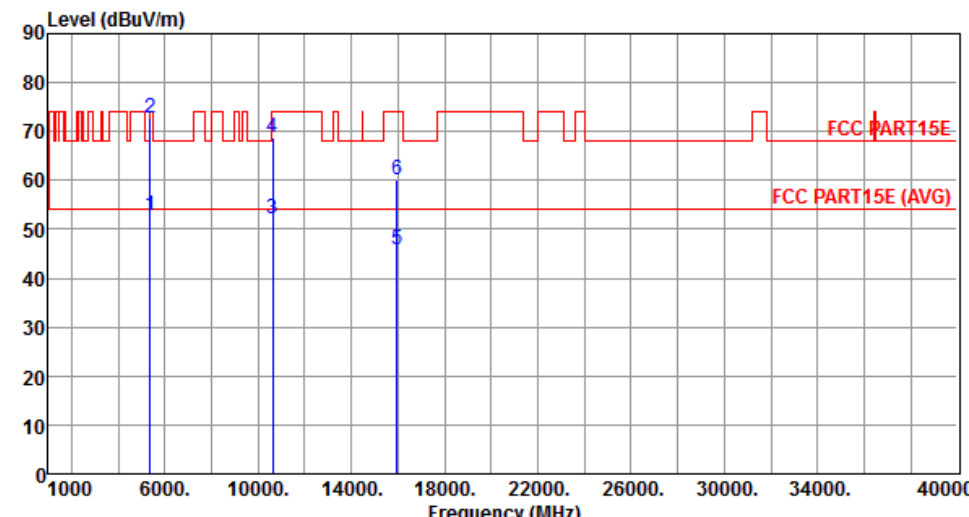
Modulation	HT20	Test Freq. (MHz)	5300
Polarization	Vertical		



	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	44.98	54.00	-9.02	39.22	5.76	Average	348	287
2	5150.00	59.10	74.00	-14.90	53.34	5.76	Peak	348	287
3	5350.00	46.78	54.00	-7.22	40.74	6.04	Average	348	287
4	5350.00	59.55	74.00	-14.45	53.51	6.04	Peak	348	287
5	10600.00	52.02	54.00	-1.98	36.89	15.13	Average	230	263
6	10600.00	67.54	74.00	-6.46	52.41	15.13	Peak	230	263
7	15900.00	51.77	54.00	-2.23	35.77	16.00	Average	279	241
8	15900.00	67.07	74.00	-6.93	51.07	16.00	Peak	279	241

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).

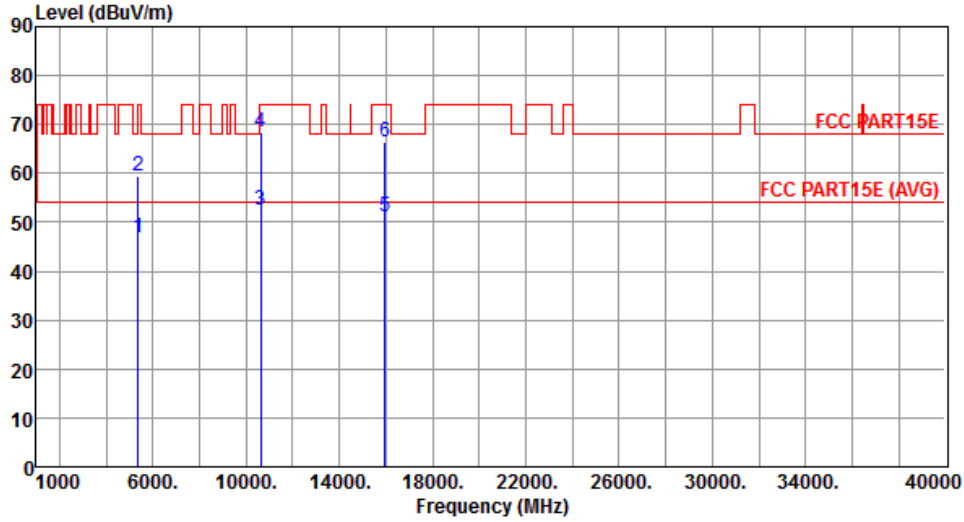
Modulation	HT20	Test Freq. (MHz)	5320
Polarization	Horizontal		



	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	52.91	54.00	-1.09	46.87	6.04	Average	231	259
2	5350.00	72.72	74.00	-1.28	66.68	6.04	Peak	231	259
3	10640.00	52.30	54.00	-1.70	37.08	15.22	Average	211	260
4	10640.00	68.60	74.00	-5.40	53.38	15.22	Peak	211	260
5	15960.00	45.68	54.00	-8.32	29.78	15.90	Average	333	30
6	15960.00	59.98	74.00	-14.02	44.08	15.90	Peak	333	30

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

Modulation	HT20	Test Freq. (MHz)	5320
Polarization	Vertical		

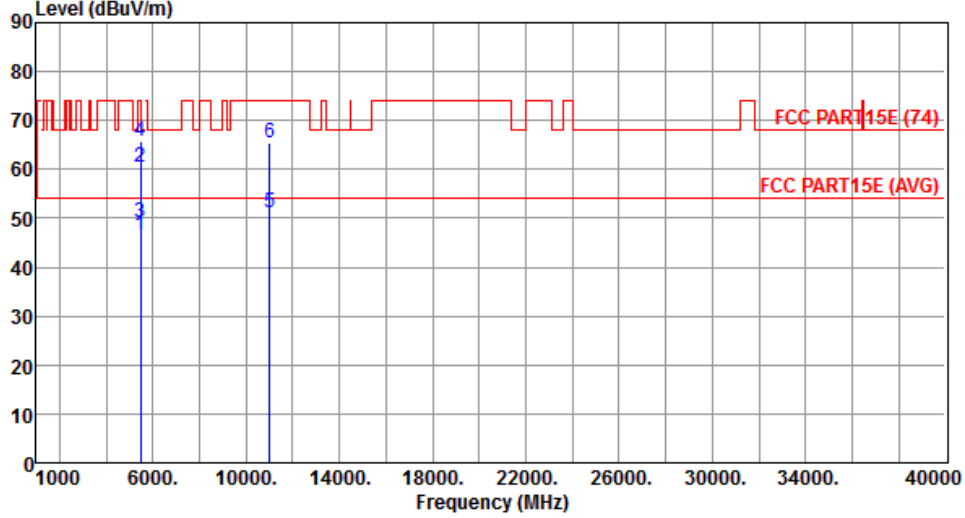


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	46.82	54.00	-7.18	40.78	6.04	Average	351	292
2	5350.00	59.61	74.00	-14.39	53.57	6.04	Peak	351	292
3	10640.00	52.62	54.00	-1.38	37.40	15.22	Average	229	264
4	10640.00	68.31	74.00	-5.69	53.09	15.22	Peak	229	264
5	15960.00	51.27	54.00	-2.73	35.37	15.90	Average	268	239
6	15960.00	66.30	74.00	-7.70	50.40	15.90	Peak	268	239

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		
Level (dBuV/m)			

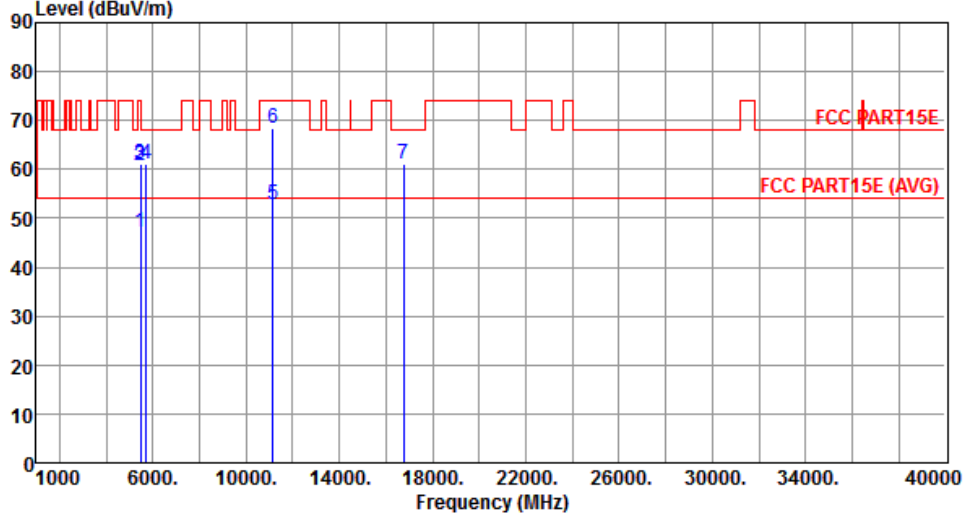
Modulation	HT20	Test Freq. (MHz)	5500
Polarization	Vertical		



	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	46.65	54.00	-7.35	40.45	6.20	Average	318	288
2	5460.00	60.32	74.00	-13.68	54.12	6.20	Peak	318	288
3	5470.00	49.25	54.00	-4.75	43.03	6.22	Average	318	288
4	5470.00	65.84	74.00	-8.16	59.62	6.22	Peak	318	288
5	11000.00	50.98	54.00	-3.02	34.88	16.10	Average	241	287
6	11000.00	65.42	74.00	-8.58	49.32	16.10	Peak	241	287

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	47.31	54.00	-6.69	41.11	6.20	Average	263	265
2	5460.00	60.74	74.00	-13.26	54.54	6.20	Peak	263	265
3	5470.00	61.17	68.20	-7.03	54.95	6.22	Peak	263	265
4	5725.00	61.08	68.20	-7.12	54.37	6.71	Peak	263	265
5	11160.00	52.88	54.00	-1.12	36.74	16.14	Average	255	231
6	11160.00	68.40	74.00	-5.60	52.26	16.14	Peak	255	231
7	16740.00	61.09	68.20	-7.11	42.61	18.48	Peak	240	1

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).

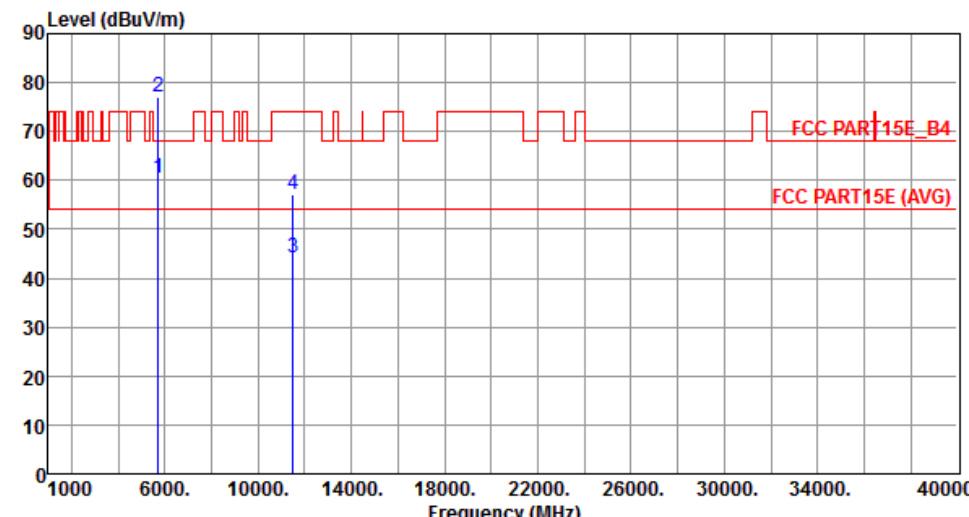
Modulation	HT20	Test Freq. (MHz)	5580
Polarization	Vertical		
Level (dBuV/m)			

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

Modulation	HT20	Test Freq. (MHz)	5720
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	HT20	Test Freq. (MHz)	5720
Polarization	Vertical		
Level (dBuV/m)			

Modulation	HT20	Test Freq. (MHz)	5745
Polarization	Horizontal		



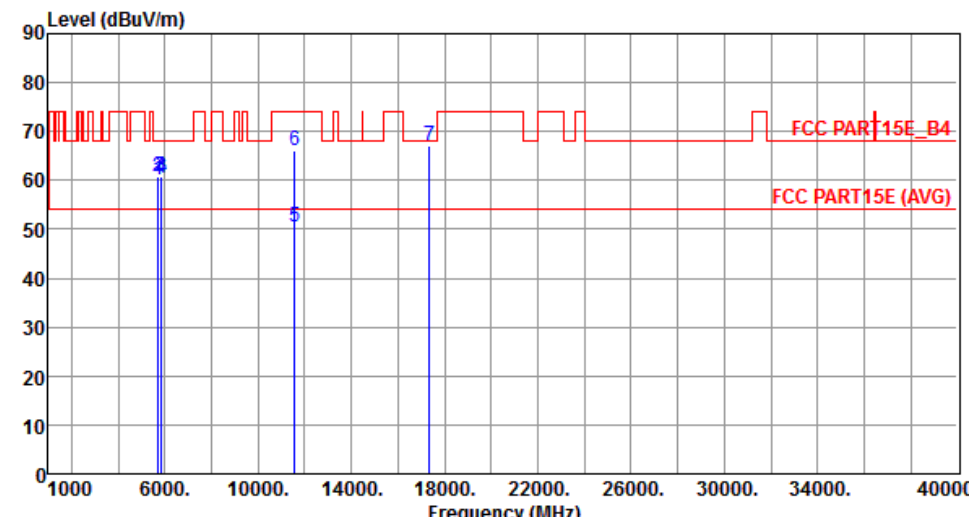
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	60.55	68.20	-7.65	53.85	6.70	Peak	254	198
2	5725.00	76.95	78.20	-1.25	70.24	6.71	Peak	254	198
3	11490.00	44.13	54.00	-9.87	27.91	16.22	Average	173	243
4	11490.00	57.26	74.00	-16.74	41.04	16.22	Peak	173	243

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

Modulation	HT20	Test Freq. (MHz)	5745
Polarization	Vertical		
Level (dBuV/m)			

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

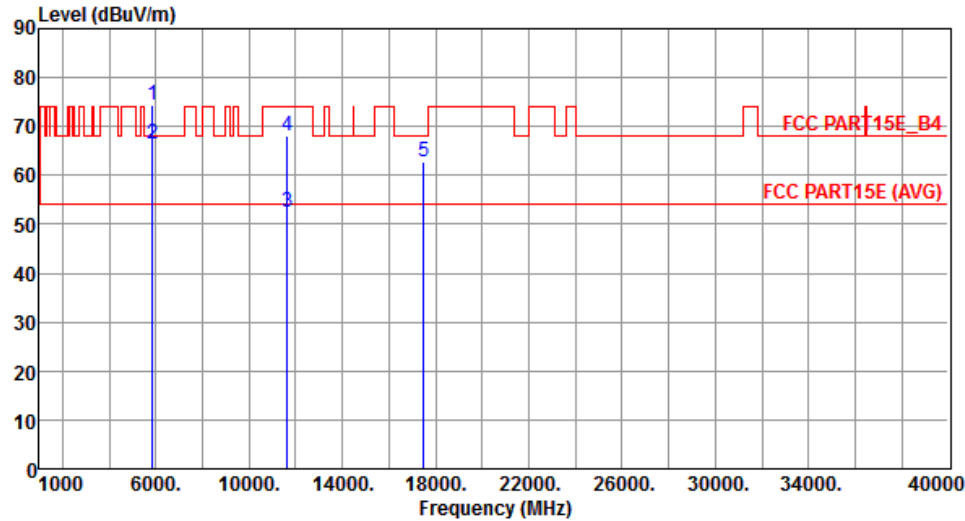
Modulation	HT20	Test Freq. (MHz)	5785
Polarization	Vertical		



	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	60.08	68.20	-8.12	53.38	6.70	Peak	372	17
2	5725.00	60.83	78.20	-17.37	54.12	6.71	Peak	372	17
3	5850.00	60.82	78.20	-17.38	53.87	6.95	Peak	372	17
4	5860.00	60.46	68.20	-7.74	53.51	6.95	Peak	372	17
5	11570.00	50.45	54.00	-3.55	34.33	16.12	Average	318	268
6	11570.00	65.92	74.00	-8.08	49.80	16.12	Peak	318	268
7	17355.00	67.12	68.20	-1.08	45.49	21.63	Peak	278	259

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	Horizontal		

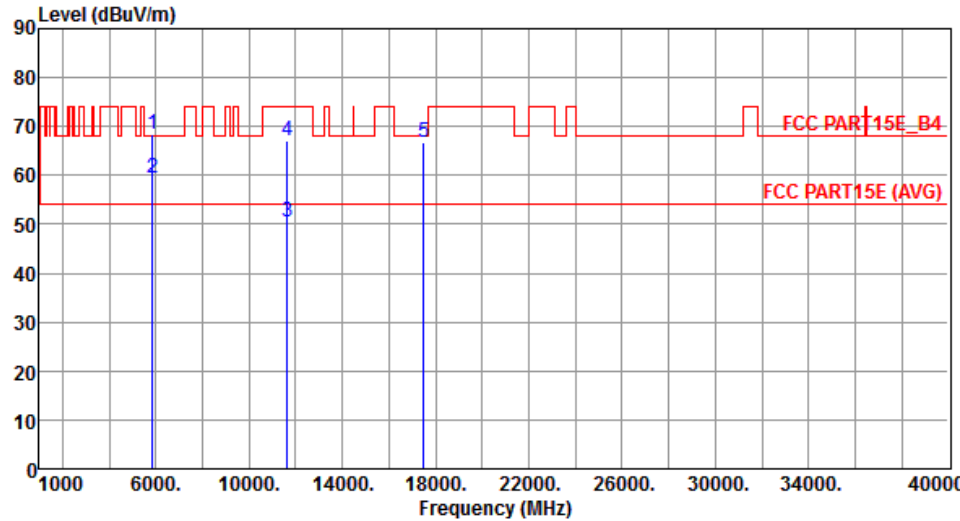


The graph displays the emission level in dBuV/m against frequency in MHz. The y-axis ranges from 0 to 90 dBuV/m, and the x-axis ranges from 1000 to 40000 MHz. A red line represents the FCC Part 15E (AVG) limit at approximately 55 dBuV/m. A red stepped line represents the FCC Part 15E_B4 limit, which varies between 60 and 75 dBuV/m. Five test points are marked with blue vertical lines and numbered 1 through 5.

	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	74.32	78.20	-3.88	67.37	6.95	Peak	248	268
2	5860.00	66.36	68.20	-1.84	59.41	6.95	Peak	248	268
3	11650.00	52.46	54.00	-1.54	36.44	16.02	Average	238	258
4	11650.00	67.96	74.00	-6.04	51.94	16.02	Peak	238	258
5	17475.00	62.87	68.20	-5.33	40.54	22.33	Peak	208	98

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).

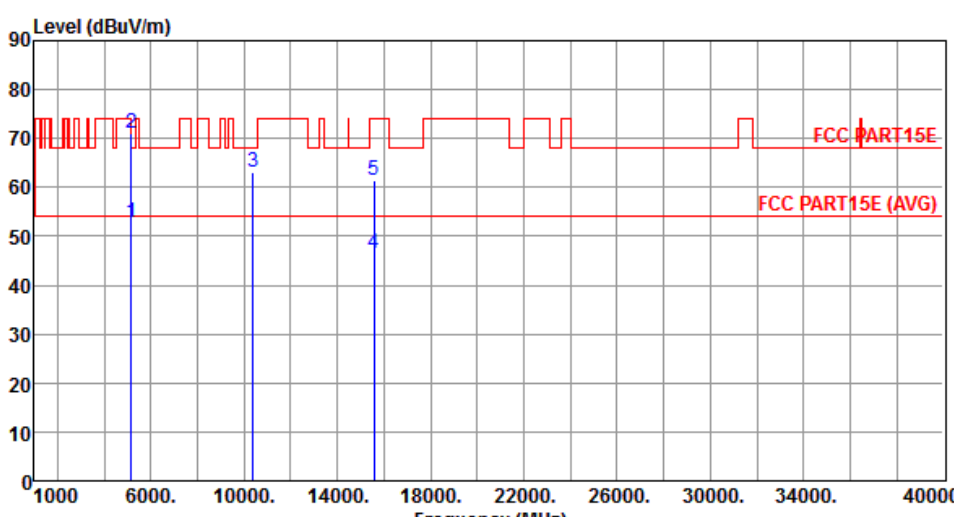
Modulation	HT20	Test Freq. (MHz)	5825
Polarization	Vertical		



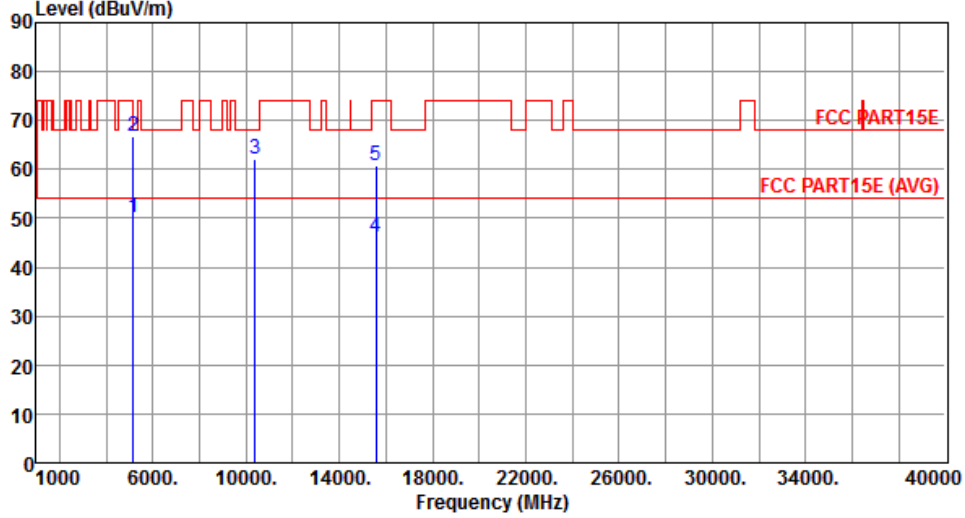
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5850.00	68.54	78.20	-9.66	61.59	6.95	Peak	308	296
2	5860.00	59.38	68.20	-8.82	52.43	6.95	Peak	308	296
3	11650.00	50.57	54.00	-3.43	34.55	16.02	Average	314	273
4	11650.00	67.21	74.00	-6.79	51.19	16.02	Peak	314	273
5	17475.00	66.85	68.20	-1.35	44.52	22.33	Peak	267	264

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								
									
	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	52.76	54.00	-1.24	47.00	5.76	Average	276	85
2	5150.00	71.22	74.00	-2.78	65.46	5.76	Peak	276	85
3	10380.00	62.98	68.20	-5.22	48.42	14.56	Peak	261	74
4	15570.00	46.55	54.00	-7.45	30.03	16.52	Average	254	91
5	15570.00	61.32	74.00	-12.68	44.80	16.52	Peak	254	91
Note 1: Emission Level (dBuV/m) = SA Reading (dBuV/m) + Factor* (dB) *Factor includes antenna factor , cable loss and amplifier gain Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).									

Modulation	HT40	Test Freq. (MHz)	5190
Polarization	Vertical		

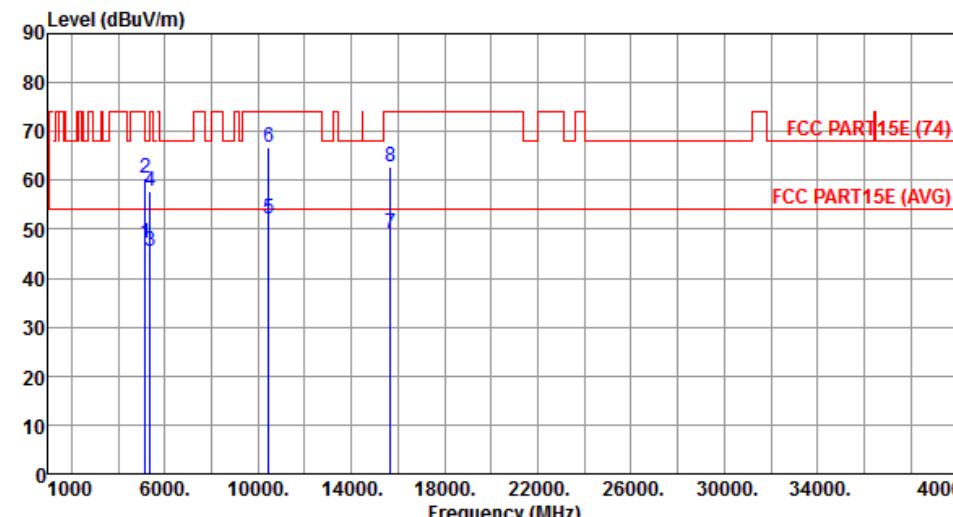


	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	50.28	54.00	-3.72	44.52	5.76	Average	351	3
2	5150.00	66.69	74.00	-7.31	60.93	5.76	Peak	351	3
3	10380.00	62.14	68.20	-6.06	47.58	14.56	Peak	295	48
4	15570.00	46.12	54.00	-7.88	29.60	16.52	Average	284	77
5	15570.00	60.93	74.00	-13.07	44.41	16.52	Peak	284	77

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)			

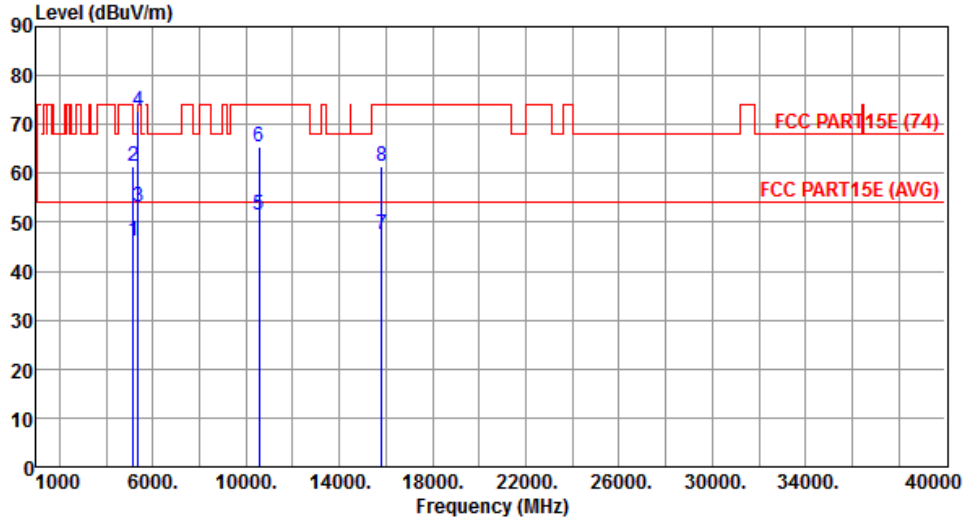
Modulation	HT40	Test Freq. (MHz)	5230
Polarization	Vertical		



	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	47.02	54.00	-6.98	41.26	5.76	Average	340	95
2	5150.00	60.55	74.00	-13.45	54.79	5.76	Peak	340	95
3	5350.00	45.54	54.00	-8.46	39.50	6.04	Average	340	95
4	5350.00	57.81	74.00	-16.19	51.77	6.04	Peak	340	95
5	10460.00	52.11	54.00	-1.89	37.33	14.78	Average	371	277
6	10460.00	66.78	74.00	-7.22	52.00	14.78	Peak	371	277
7	15690.00	49.28	54.00	-4.72	32.95	16.33	Average	280	232
8	15690.00	62.84	74.00	-11.16	46.51	16.33	Peak	280	232

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).

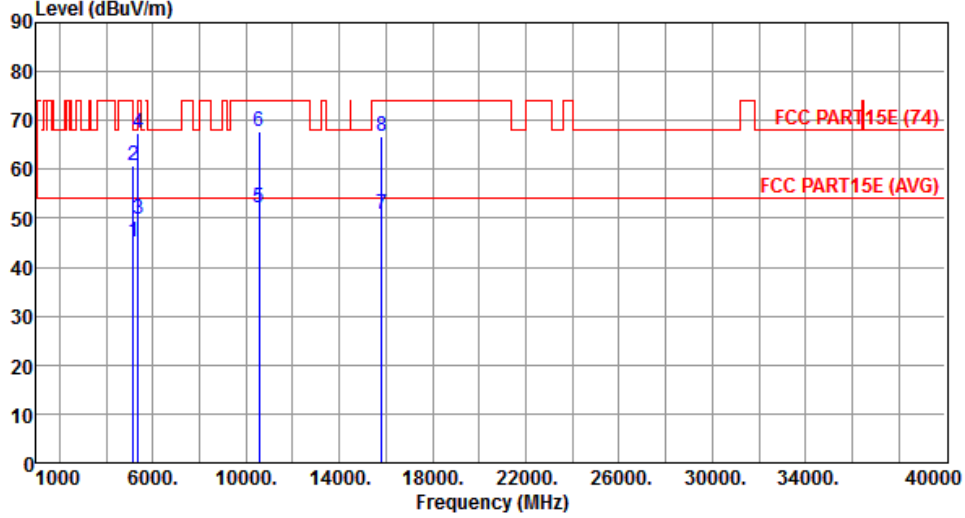
Modulation	HT40	Test Freq. (MHz)	5270
Polarization	Horizontal		



	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	46.19	54.00	-7.81	40.43	5.76	Average	230	262
2	5150.00	61.58	74.00	-12.42	55.82	5.76	Peak	230	262
3	5350.00	53.13	54.00	-0.87	47.09	6.04	Average	230	262
4	5350.00	72.65	74.00	-1.35	66.61	6.04	Peak	230	262
5	10540.00	51.35	54.00	-2.65	36.37	14.98	Average	189	258
6	10540.00	65.47	74.00	-8.53	50.49	14.98	Peak	189	258
7	15810.00	47.39	54.00	-6.61	31.25	16.14	Average	250	250
8	15810.00	61.56	74.00	-12.44	45.42	16.14	Peak	250	250

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

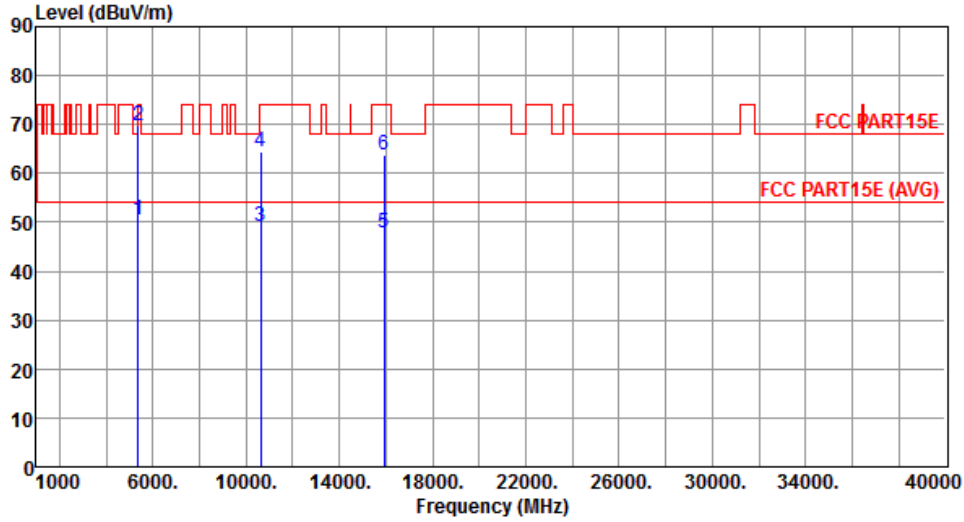
Modulation	HT40	Test Freq. (MHz)	5270
Polarization	Vertical		



	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	45.03	54.00	-8.97	39.27	5.76	Average	366	13
2	5150.00	60.68	74.00	-13.32	54.92	5.76	Peak	366	13
3	5350.00	49.93	54.00	-4.07	43.89	6.04	Average	377	15
4	5350.00	67.29	74.00	-6.71	61.25	6.04	Peak	377	15
5	10540.00	52.23	54.00	-1.77	37.25	14.98	Average	296	271
6	10540.00	67.64	74.00	-6.36	52.66	14.98	Peak	296	271
7	15810.00	50.95	54.00	-3.05	34.81	16.14	Average	290	241
8	15810.00	66.71	74.00	-7.29	50.57	16.14	Peak	290	241

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).

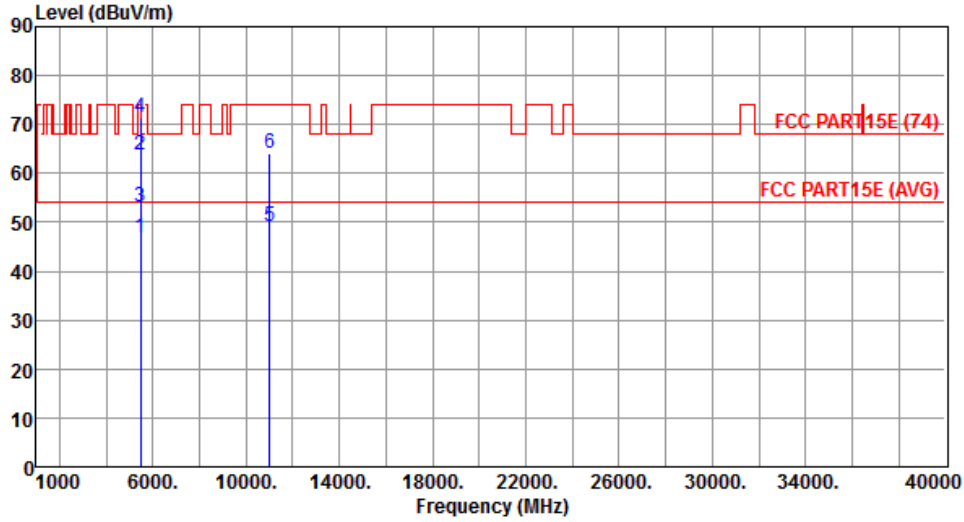
Modulation	HT40	Test Freq. (MHz)	5310
Polarization	Vertical		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5350.00	50.62	54.00	-3.38	44.58	6.04	Average	30	284
2	5350.00	69.84	74.00	-4.16	63.80	6.04	Peak	30	284
3	10620.00	49.17	54.00	-4.83	33.99	15.18	Average	294	278
4	10620.00	64.35	74.00	-9.65	49.17	15.18	Peak	294	278
5	15930.00	47.78	54.00	-6.22	31.83	15.95	Average	288	246
6	15930.00	63.66	74.00	-10.34	47.71	15.95	Peak	288	246

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

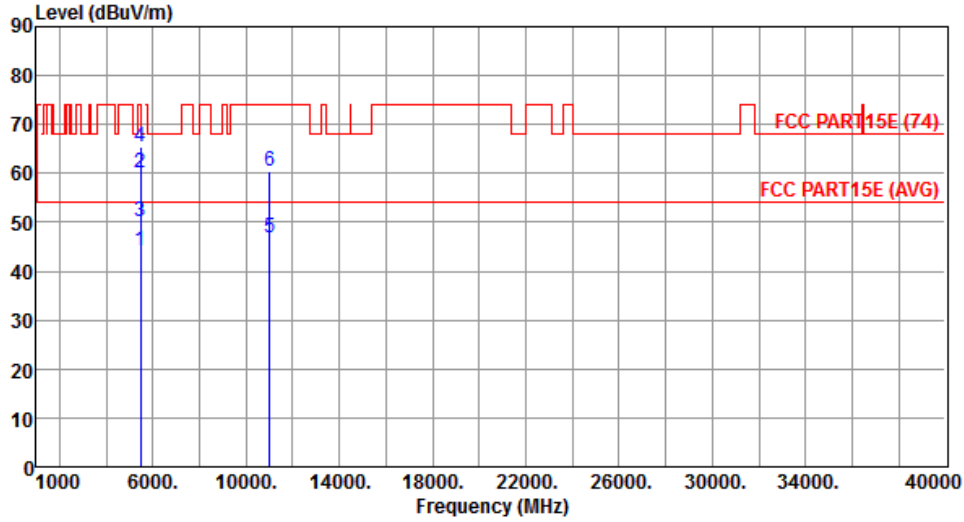
Modulation	HT40	Test Freq. (MHz)	5510
Polarization	Horizontal		



	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.78	54.00	-7.22	40.58	6.20	Average	229	266
2	5460.00	63.63	74.00	-10.37	57.43	6.20	Peak	229	266
3	5470.00	53.29	54.00	-0.71	47.07	6.22	Average	229	266
4	5470.00	71.27	74.00	-2.73	65.05	6.22	Peak	229	266
5	11020.00	49.12	54.00	-4.88	33.01	16.11	Average	196	208
6	11020.00	64.09	74.00	-9.91	47.98	16.11	Peak	196	208

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)	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	44.25	54.00	-9.75	38.05	6.20	Average	289	291
2	5460.00	60.18	74.00	-13.82	53.98	6.20	Peak	289	291
3	5470.00	50.21	54.00	-3.79	43.99	6.22	Average	289	291
4	5470.00	65.34	74.00	-8.66	59.12	6.22	Peak	289	291
5	11020.00	46.83	54.00	-7.17	30.72	16.11	Average	271	286
6	11020.00	60.33	74.00	-13.67	44.22	16.11	Peak	271	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).

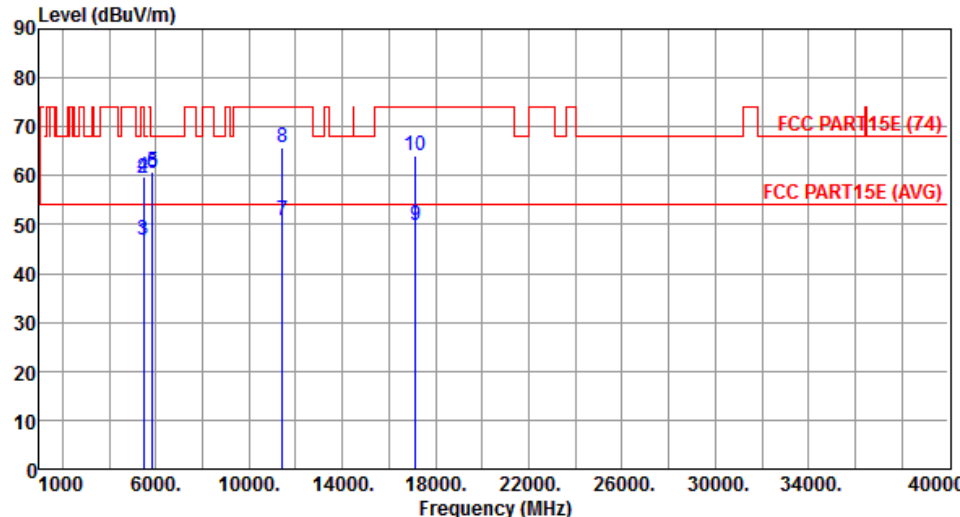
Modulation	HT40	Test Freq. (MHz)	5550
Polarization	Horizontal		
Level (dBuV/m)			

Modulation	HT40	Test Freq. (MHz)	5550
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)	5710
Polarization	Horizontal		



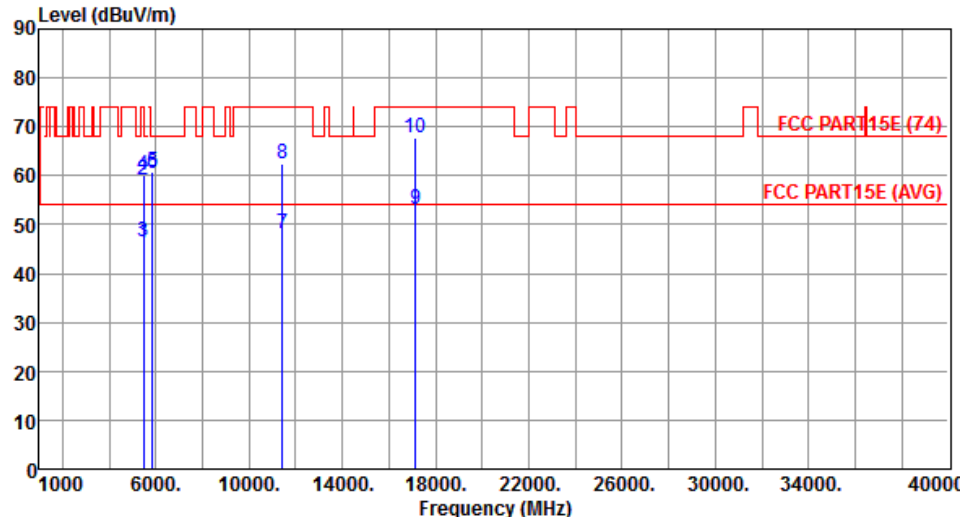
	Freq. MHz	Emission level dBUV/m	Limit dBUV/m	Margin dB	SA reading dBUV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5460.00	46.54	54.00	-7.46	40.34	6.20	Average	239	198
2	5460.00	59.35	74.00	-14.65	53.15	6.20	Peak	239	198
3	5470.00	46.82	54.00	-7.18	40.60	6.22	Average	239	198
4	5470.00	59.80	74.00	-14.20	53.58	6.22	Peak	239	198
5	5850.00	60.90	68.20	-7.30	53.95	6.95	Peak	239	198
6	5860.00	60.46	68.20	-7.74	53.51	6.95	Peak	239	198
7	11420.00	50.93	54.00	-3.07	34.72	16.21	Average	195	231
8	11420.00	65.81	74.00	-8.19	49.60	16.21	Peak	195	231
9	17130.00	49.82	54.00	-4.18	29.49	20.33	Average	206	249
10	17130.00	64.19	74.00	-9.81	43.86	20.33	Peak	206	249

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

*Factor includes antenna factor , cable loss and amplifier gain

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

Modulation	HT40	Test Freq. (MHz)	5710
Polarization	Vertical		



	Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
	MHz	level			reading			High	Table
		dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5460.00	46.31	54.00	-7.69	40.11	6.20	Average	392	315
2	5460.00	59.12	74.00	-14.88	52.92	6.20	Peak	392	315
3	5470.00	46.58	54.00	-7.42	40.36	6.22	Average	392	315
4	5470.00	59.99	74.00	-14.01	53.77	6.22	Peak	392	315
5	5850.00	60.81	68.20	-7.39	53.86	6.95	Peak	392	315
6	5860.00	60.28	68.20	-7.92	53.33	6.95	Peak	392	315
7	11420.00	48.15	54.00	-5.85	31.94	16.21	Average	314	266
8	11420.00	62.52	74.00	-11.48	46.31	16.21	Peak	314	266
9	17130.00	53.26	54.00	-0.74	32.93	20.33	Average	275	251
10	17130.00	67.67	74.00	-6.33	47.34	20.33	Peak	275	251

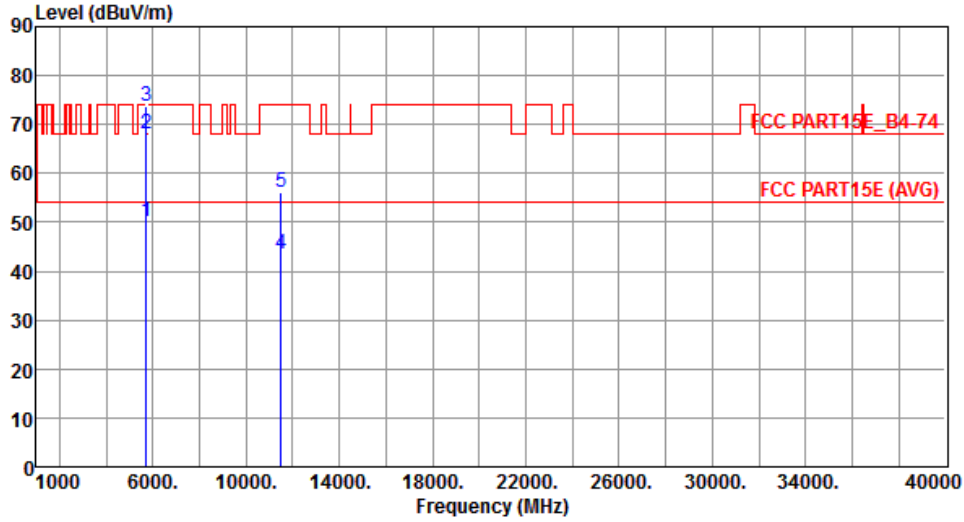
Note 1: Emission Level (dBUV/m) = SA Reading (dBUV/m) + Factor* (dB)

*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	Horizontal					
Level (dBuV/m)						

Modulation	HT40	Test Freq. (MHz)	5755
Polarization	Vertical		

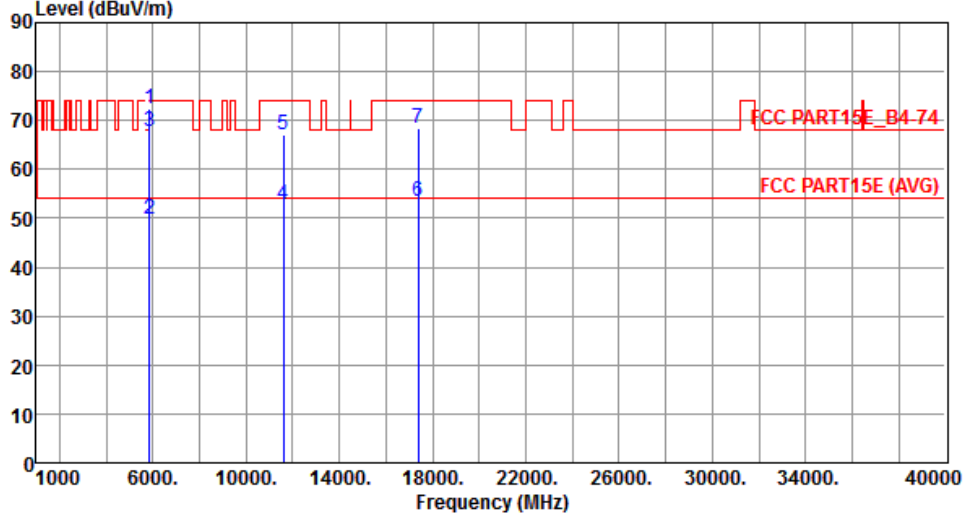


	Freq. MHz	Emission level dBuV/m	Limit dBuV/m	Margin dB	SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5715.00	50.05	54.00	-3.95	43.35	6.70	Average	357	327
2	5715.00	68.01	74.00	-5.99	61.31	6.70	Peak	357	327
3	5725.00	73.88	78.20	-4.32	67.17	6.71	Peak	357	327
4	11510.00	43.59	54.00	-10.41	27.39	16.20	Average	284	122
5	11510.00	56.15	74.00	-17.85	39.95	16.20	Peak	284	122

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)	5795
Polarization	Horizontal		
Level (dBuV/m) </			

Modulation	HT40	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	72.43	78.20	-5.77	65.48	6.95	Peak	383	15
2	5860.00	49.75	54.00	-4.25	42.80	6.95	Average	383	15
3	5860.00	67.85	74.00	-6.15	60.90	6.95	Peak	383	15
4	11590.00	52.70	54.00	-1.30	36.60	16.10	Average	241	265
5	11590.00	67.05	74.00	-6.95	50.95	16.10	Peak	241	265
6	17385.00	53.49	54.00	-0.51	31.68	21.81	Average	269	261
7	17385.00	68.40	74.00	-5.60	46.59	21.81	Peak	269	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).

3.6 Frequency Stability

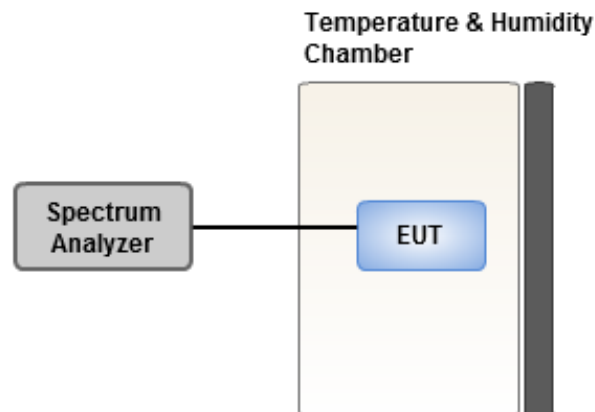
3.6.1 Limit of Frequency Stability

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: 5200 MHz	Frequency Drift (ppm)			
Temperature (°C)	0 minute	2 minutes	5 minutes	10 minutes
T20°C Vmax	4.73	4.99	4.64	4.61
T20°C Vmin	4.66	4.64	4.46	4.98
T70°C Vnom	3.84	3.56	3.69	4.22
T60°C Vnom	4.44	4.66	4.03	3.87
T50°C Vnom	3.67	2.68	3.03	2.90
T40°C Vnom	2.78	3.11	3.15	3.26
T30°C Vnom	3.64	2.90	2.66	2.86
T20°C Vnom	3.14	3.00	2.53	2.85
T10°C Vnom	1.87	2.15	2.30	2.60
T0°C Vnom	2.28	2.57	2.11	2.89
T-10°C Vnom	0.95	0.81	0.89	1.28
T-20°C Vnom	-0.40	0.64	0.25	-0.12
T-30°C Vnom	-0.54	-0.39	-0.74	0.09
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	4.73	4.99	4.64	4.61
T20°C Vmin	4.66	4.64	4.46	4.98
T70°C Vnom	3.84	3.56	3.69	4.22
T60°C Vnom	4.44	4.66	4.03	3.87
T50°C Vnom	3.67	2.68	3.03	2.90
T40°C Vnom	2.78	3.11	3.15	3.26
T30°C Vnom	3.64	2.90	2.66	2.86
T20°C Vnom	3.14	3.00	2.53	2.85
T10°C Vnom	1.87	2.15	2.30	2.60
T0°C Vnom	2.28	2.57	2.11	2.89
T-10°C Vnom	0.95	0.81	0.89	1.28
T-20°C Vnom	-0.40	0.64	0.25	-0.12
T-30°C Vnom	-0.54	-0.39	-0.74	0.09
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>.

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