

## FCC 15.407 NII & RSS-247 5 GHz WLAN Report

for

**Amtran Technology Co., Ltd.**

**17F., No. 268, Liancheng Rd., Jhonghe District,  
New Taipei City 23553, Taiwan, R.O.C.**

**Brand : CISCO**  
**Product Name : Video Conferencing Equipment**  
**Model Name : AA70WW**  
**FCC ID : MDZAA70WW**  
**IC : 7825A-AA70WW**

**Prepared by: : AUDIX Technology Corporation,  
EMC Department**



## TABLE OF CONTENTS

Description	Page
TEST REPORT CERTIFICATION .....	4
<b>1. REPORT HISTORY .....</b>	<b>4</b>
<b>2. SUMMARY OF TEST RESULTS .....</b>	<b>5</b>
<b>3. GENERAL INFORMATION .....</b>	<b>6</b>
3.1. Description of Application .....	6
3.2. Description of EUT .....	7
3.3. Antenna Information .....	8
3.4. EUT Specifications Assessed in Current Report .....	8
3.5. Test Configuration .....	11
3.6. Tested Supporting System List .....	12
3.7. Setup Configuration .....	13
3.8. Operating Condition of EUT .....	13
3.9. Description of Test Facility .....	14
3.10. Measurement Uncertainty .....	15
<b>4. MEASUREMENT EQUIPMENT LIST .....</b>	<b>16</b>
4.1. Conducted Emission Measurement .....	16
4.2. Radiated Emission Measurement .....	16
4.3. RF Conducted Measurement .....	16
<b>5. CONDUCTED EMISSION MEASUREMENT .....</b>	<b>17</b>
5.1. Block Diagram of Test Setup .....	17
5.2. Power Line Conducted Emission Limit .....	17
5.3. Test Procedure .....	17
5.4. Conducted Emission Measurement Results .....	18
<b>6. RADIATED EMISSION MEASUREMENT .....</b>	<b>20</b>
6.1. Block Diagram of Test Setup .....	20
6.2. Radiated Emission Limits .....	21
6.3. Test Procedure .....	23
6.4. Measurement Result Explanation .....	24
6.5. Test Results .....	24
<b>7. CONDUCTED BAND EDGES .....</b>	<b>62</b>
7.1. Block Diagram of Test Setup .....	62
7.2. Specification Limits .....	62
7.3. Test Procedure .....	64
7.4. Test Results .....	65
<b>8. FREQUENCY STABILITY .....</b>	<b>67</b>
8.1. Block Diagram of Test Setup .....	67
8.2. Specification Limits .....	67
8.3. Test Procedure .....	67
8.4. Test Results .....	68
<b>9. DEVIATION TO TEST SPECIFICATIONS .....</b>	<b>72</b>

### APPENDIX A TEST PHOTOGRAPHS

## TEST REPORT CERTIFICATION

Applicant : Amtran Technology Co., Ltd.  
Manufacture : Cisco Systems, Inc.  
EUT Description  
(1) Product : Video Conferencing Equipment  
(2) Model : AA70WW  
(3) Brand : CISCO

### Applicable Standards:

47 CFR FCC Part 15 Subpart E  
RSS-Gen (Issue 4), November 2014  
RSS-247 (Issue 2), February 2017  
ANSI C63.10:2013  
789033 D02 General UNII Test Procedures New Rules v01r04

**Audix Technology Corp.** tested the equipment mentioned in accordance with the requirements set forth in the above standards. Test results indicate that the equipment tested is capable of demonstrating compliance with the requirements as documented within this report.

**Audix Technology Corp.** does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens and samples.

Date of Report: 2017. 05. 15

Reviewed by:  (Annie Yu/Administrator)

Approved by:  (Ben Cheng/Manager)

## 1. REPORT HISTORY

Revision	Date	Revision Summary	Report Number
0	2017. 05. 15	Original Report.	EM-F170206

## 2. SUMMARY OF TEST RESULTS

Rule		Description	Results
FCC	IC		
15.207	RSS-Gen §8.8	Conducted Emission	<b>PASS, Note 2</b>
15.247(d)/ 15.205	RSS-Gen §8.9 RSS-247 §5.5	Radiated Band Edge and Radiated Spurious Emission	<b>PASS</b>
15.407(a)(5)/ 15.407(e)	RSS-247 §5.2(1)	Emission Bandwidth Measurement	<b>N/A, Note 1</b>
15.407(a)	RSS-247 §5.4(4)	Maximum Output	<b>N/A, Note 1</b>
15.407(b)	RSS-247 §5.5	Conducted Band Edges	<b>PASS</b>
		Conducted Spurious Emission	<b>N/A, Note 1</b>
15.407(a)	RSS-247 §5.2(2)	Power Spectral Density	<b>N/A, Note 1</b>
15.203	---	Antenna Requirement	<b>PASS</b>
15.407	---	Frequency Stability	<b>PASS</b>
<p>Note: 1. All conducted results are authorized to leverage to original grant FCC ID: VOB-P2180 and IC: 7361A-P2180.</p> <p>2. The emissions higher than limit were confirmed not emitted from RF transmitter but from TV signal are subject to FCC 15.107 and presented at report number: EM-F170295.</p>			

### 3. GENERAL INFORMATION

#### 3.1. Description of Application

Applicant	Amtran Technology Co., Ltd. 17F., No. 268, Liancheng Rd., Jhonghe District, New Taipei City 23553, Taiwan, R.O.C.
Manufacturer	Cisco Systems, Inc. 170 West Tasman Drive, San Jose, CA 95134, USA
Product	Video Conferencing Equipment
Model	AA70WW
Brand	MDZAA70WW

### 3.2. Description of EUT

Test Model	AA70WW																								
Serial Number	N/A																								
Power Rating	100-240VAC, Max. 3.5A, 50/60Hz																								
Firmware Version	N/A																								
Sample Status	Production																								
RF Features	WLAN:802.11a/b/g/n/ac Bluetooth: BT and BLE																								
Transmit Type	<table border="1"> <thead> <tr> <th colspan="2">2.4 GHz</th> </tr> </thead> <tbody> <tr> <td>802.11b</td> <td>1T1R</td> </tr> <tr> <td>802.11g</td> <td>1T1R</td> </tr> <tr> <td>802.11n-HT20</td> <td>2T2R</td> </tr> <tr> <td>802.11n-HT40</td> <td>2T2R</td> </tr> <tr> <td>BT</td> <td>1T1R</td> </tr> <tr> <td>BLE</td> <td>1T1R</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">UNII Bands</th> </tr> </thead> <tbody> <tr> <td>802.11a</td> <td>1T1R</td> </tr> <tr> <td>802.11n-HT20/ 802.11ac-VHT20</td> <td>2T2R</td> </tr> <tr> <td>802.11n-HT40/ 802.11ac-VHT40</td> <td>2T2R</td> </tr> <tr> <td>802.11ac-VHT80</td> <td>2T2R</td> </tr> </tbody> </table>	2.4 GHz		802.11b	1T1R	802.11g	1T1R	802.11n-HT20	2T2R	802.11n-HT40	2T2R	BT	1T1R	BLE	1T1R	UNII Bands		802.11a	1T1R	802.11n-HT20/ 802.11ac-VHT20	2T2R	802.11n-HT40/ 802.11ac-VHT40	2T2R	802.11ac-VHT80	2T2R
2.4 GHz																									
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802.11n-HT40/ 802.11ac-VHT40	2T2R																								
802.11ac-VHT80	2T2R																								
Date of Receipt	2017. 03. 02																								
Date of Test	2017. 04. 05 ~ 28																								
AC Power Cord	Unshielded, Detachable, 1.8m (3C)																								
Interface Ports of EUT	One AC power port One LAN port One HDMI port One Audio out port One USB 3.0 port																								

### 3.3. Antenna Information

No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (GHz)	Max Gain (dBi)
1	RFMTA34071AIMLB702 (ANT 1)	Walsin Technology Corporation	PIFA	2.4 to 2.5	2.6
				5.15 to 5.85	4.77
2	RFMTA340772IMLB701 (ANT 2)		PIFA	2.4 to 2.5	2.81
				5.15 to 5.85	4.92

Note: All results have been tested with worst antenna port 1.

### 3.4. EUT Specifications Assessed in Current Report

Mode	UNII Band	Fundamental Range (MHz)	Channel Number
802.11a	I	5180-5240	4
	II-2A	5260-5320	4
	II-2C	5500-5700	11
		5500-5700 <sup>NOTE</sup>	8
	III	5745-5825	5
802.11n-HT20/ 802.11ac-VHT20	I	5180-5240	4
	II-2A	5260-5320	4
	II-2C	5500-5700	11
		5500-5700 <sup>NOTE</sup>	8
	III	5745-5825	5
802.11n-HT40/ 802.11ac-VHT40	I	5190-5230	2
	II-2A	5270-5310	2
	II-2C	5510-5670	5
		5510-5670 <sup>NOTE</sup>	5
	III	5755-5795	2
802.11ac-VHT80	I	5210	1
	II-2A	5290	1
	II-2C	5530	1
	III	5775	1

Remark: UNII Band II (DFS Function, Slave/no In service monitor, no Ad-Hoc mode)

**Note: It is for RSS-247, not include 5600-5650MHz range.**



Mode	Modulation	Data Rate (Mbps)
802.11a	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 54
802.11n-HT20	OFDM (BPSK/QPSK/16QAM/64QAM)	Up to 144.4
802.11n-HT40		Up to 300
802.11ac-HT20	OFDM (BPSK/QPSK/16QAM/64QAM/256QAM)	Up to 173.3
802.11ac-HT40		Up to 400
802.11ac-VHT80		Up to 866.7

Channel List					
802.11a/802.11n-HT20/802.11ac-VHT20					
UNII Band	Channel Number	Frequency (MHz)	UNII Band	Channel Number	Frequency (MHz)
I	36	5180	II-2C	120 <sup>NOTE</sup>	5600
	40	5200		124 <sup>NOTE</sup>	5620
	44	5220		128 <sup>NOTE</sup>	5640
	48	5240		132	5660
II-2A	52	5260		136	5680
	56	5280		140	5700
	60	5300	III	149	5745
	64	5320		153	5765
II-2C	100	5500		157	5785
	104	5520		161	5805
	108	5540		165	5825
	112	5560			
	116	5580			

**Note: Not support for RSS-247.**

Channel List					
802.11n-HT40/802.11ac-VHT40					
UNII Band	Channel Number	Frequency (MHz)	UNII Band	Channel Number	Frequency (MHz)
I	38	5190	II-2C	118	5590
	46	5230		126 <sup>NOTE</sup>	5630
II-2A	54	5270		134	5670
	62	5310	III	151	5755
II-2C	102	5510		159	5795
	110	5550			

**Note: Not support for RSS-247.**

Channel List					
802.11ac-VHT80					
UNII Band	Channel Number	Frequency (MHz)	UNII Band	Channel Number	Frequency (MHz)
I	42	5210	II-2C	106	5530
II-2A	58	5290	III	155	5775

Note 1: 802.11ac has similar modulation to 802.11n at 20 MHz and 40 MHz bandwidths, we assess the worst case to be the representative mode in this report.  
 2: Test modes are presented at section 3.4.

### 3.5. Test Configuration

Mode	Duty Cycle (x)	T (ms)
802.11a	0.94	1.43
802.11n-HT20/802.11ac-VHT20	0.87	0.692
802.11n-HT40/802.11ac-VHT40	0.79	0.358
802.11ac-VHT80	0.66	0.191

AC Conduction	
Test Case	Normal operation

Item		Mode	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge <small>Note2</small>	802.11a	6 Mbps	36/64/100/140/149/165
		802.11n-HT20	MCS8	
		802.11n-HT40	MCS8	38/62/102/134/151/159
		802.11ac-VHT80	MCS8	42/58/106/155
	Radiated Spurious Emission <small>Note2</small>	802.11a	6 Mbps	36/52/116/157
		802.11n-HT20	MCS8	40/52/116/157
		802.11n-HT40	MCS8	46/54/110/159
		802.11ac-VHT80	MCS8	42/58/106/155

Note 1:

- Mobile Device
  - Portable Device, and 3 axis were assessed.
  - Lie
  - Side
  - Stand

Note 2: Low, mid, and high channels were measured, only the worst channel of each modulation was presented in this report.

### 3.6. Tested Supporting System List

#### 3.6.1. Support Peripheral Unit

No.	Product	Brand	Model No.	Serial No.	FCC ID
For Power Line Emission					
1.	PC System	Lenovo	RK4	PBFK922	By DoC
2.	USB Keyboard	IBM	KU-0225	3630	By DoC
3.	USB Mouse	Lenovo	45J4886	N/A	By DoC
4.	USB Printer	SAMSUNG	ML-1630	4561B1CP600023 X	FCC ID: A3LML1630
5.	I-POD Player	APPLE	A1204	4H722TH8VTE	By DoC
6.	Earphone	APPLE	N/A	N/A	N/A
7.	USB 3.0 HDD	SOY	HD-E1	3GDL0T155151C 14	By DoC
8.	Mobile Phone	SAMSUNG	GT-I9300	RF1C86ATMSV	NCC ID: CCAF123G0370T1
9.	AP Server	D-Link	DIR-868L	R3WE1D7002319	FCC ID: KA2IR868LA1
For Radiated Emission					
1.	Notebook PC	acer	MS2362	N/A	PPD-AAR5B225
2.	Earphone	Cheng Jia	CJ-323	N/A	N/A
3.	IPOD Player	APPLE	A1204	4H722TJKVTE	DoC
4.	5G Server	D-Link	DIR-868L	R3WE1D7002319	KA2IR868LA1

### 3.6.2. Cable Lists

No.	Cable Description Of The Above Support Units
For Power Line Emission	
1.	HDMI Cable: Shielded, Detachable, 1.5m, Bonded two ferrite cores
2.	USB Cable: Shielded, Detachable, 1.8m
3.	USB Cable: Shielded, Detachable, 1.8m
4.	USB Cable: Shielded, Detachable, 1.8m
5.	USB Cable: Shielded, Detachable, 1.0m
6.	Earphone Cable: Unshielded, Detachable, 0.9m
7.	USB Cable: Shielded, Detachable, 0.5m
8.	LAN Cable: Unshielded, Detachable, 5.0m
9.	AC Power Cord (3C): Shielded, Detachable, 1.8m
10.	LAN Cable: Unshielded, Detachable, 10.0m
11.	LAN Cable: Unshielded, Detachable, 1.8m
12.	AC Power Cord: Shielded, Detachable, 1.8m*4
For Radiated Emission	
1.	HDMI Cable: Shielded, Detachable, 1.8m Adapter: Chicony, M/N CPA09-A065N1, DC Power Cord: Unshielded, Undetachable, 1.8m, Bonded a ferrite core AC Power Cord: Unshielded, Detachable, 1.8m
2.	Earphone Cable: Unshielded, Detachable, 2.0m
3.	USB Cable: Unshielded, Detachable, 1.0m
4.	LAN Cable: Unshielded, Detachable, 1.8m

## 3.7. Setup Configuration

### 3.7.1. EUT Configuration for Power Line Emission

**EUT**

### 3.7.2. EUT Configuration for RF Conducted Test Items

**EUT**

## 3.8. Operating Condition of EUT

Test program “ADB” is used for enabling EUT WLAN function under continues transmitting and choosing data rate/ channel.

### 3.9. Description of Test Facility

Test Firm Name	:	<b>AUDIX Technology Corporation</b> <b>EMC Department</b> No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Location & Facility	:	<b>No. 7 Shielded Room</b> No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan  <b>Semi-Anechoic Chamber</b> No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan IC Test Site Registration No.: 5183B-1 Renewal on September 17, 2014  <b>Fully Anechoic Chamber</b> No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan IC Test Site Registration No.: 5183B-4 Renewal on August 31, 2015
NVLAP Lab. Code	:	200077-0
TAF Accreditation No	:	1724
FCC OET Designation	:	TW1004 & TW1090

### 3.10. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conduction Test	150kHz~30MHz	±3.5dB
Radiation Test (Distance: 3m)	30MHz~1000MHz	± 3.68dB
	Above 1GHz	± 5.82dB

Remark : Uncertainty =  $ku_c(y)$

Test Item	Uncertainty
Emission Bandwidth	± 0.2kHz
Maximum output power	± 0.33dB
Power spectral density	± 0.13dB
Conducted Emission Limitations	± 0.13dB

## 4. MEASUREMENT EQUIPMENT LIST

### 4.1. Conducted Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R & S	ESCI	101276	2017. 03. 23	1 Year
2.	A.M.N.	R&S	ESH2-Z5	100366	2016. 07. 27	1 Year
3.	L.I.S.N.	Kyoritsu	KNW-407	8-1539-3	2017. 01. 21	1 Year
4.	Pulse Limiter	R & S	ESH3-Z2	101495	2017. 01. 16	1 Year
5.	Test Software	Audix	e3	V.6.120424	N.C.R.	N.C.R.

### 4.2. Radiated Emission Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2016. 09. 19	1 Year
2.	Spectrum Analyzer	Agilent	N9010A-507	MY52220264	2016. 08. 09	1 Year
3.	Test Receiver	R & S	ESCS30	100338	2016. 06. 22	1 Year
4.	Amplifier	HP	8447D	2944A06305	2017. 02. 16	1 Year
5.	Amplifier	Agilent	8449B	3008A02678	2017. 03. 06	1 Year
6.	Bilog Antenna	CHASE	CBL6112D	33821	2017. 01. 21	1 Year
7.	Loop Antenna	R&S	HFH2-Z2	891847/27	2016. 12. 23	1 Year
8.	5G Notch Filter	Microwave Circuits	N0452502	459775	2016. 12. 28	1 Year
9.	5G Notch Filter	Microwave Circuits	N0555983	459481	2016. 05. 21	1 Year
10.	5G Notch Filter	Microwave Circuits	N0258771	459776	2017. 02. 03	1 Year
11.	Double-Ridged Waveguide Horn	EMCO	3115	9609-4927	2016. 06. 27	1 Year
12.	Horn Antenna	EMCO	3116	2653	2016. 10. 24	1 Year
13.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.
14.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

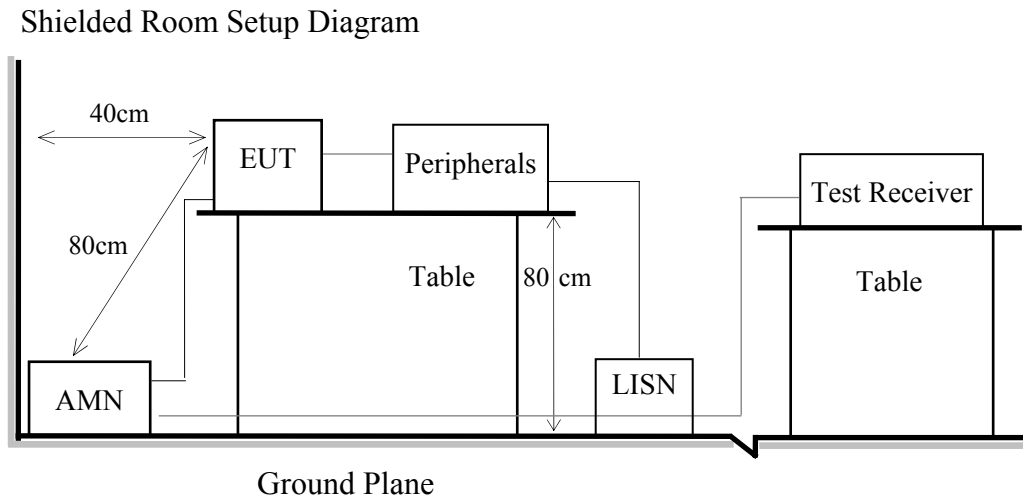
### 4.3. RF Conducted Measurement

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Keysight	N9010B-544	MY55460198	2016. 04. 20	1 Year
2.	Programmable Temperature & Humidity Chamber	GIANT	GTH-150-40-CP-AR	MAA1505-008	2016. 05. 11	1 Year



## 5. CONDUCTED EMISSION MEASUREMENT

### 5.1. Block Diagram of Test Setup



### 5.2. Power Line Conducted Emission Limit

Frequency	Conducted Limit	
	Quasi-Peak Level	Average Level
150kHz ~ 500kHz	66 ~ 56 dB $\mu$ V	56 ~ 46 dB $\mu$ V
500kHz ~ 5MHz	56 dB $\mu$ V	46 dB $\mu$ V
5MHz ~ 30MHz	60 dB $\mu$ V	50 dB $\mu$ V

Remark 1.: If the average limit is met when using a Quasi-Peak detector, the measurement using the average detector is not required.

2.: The lower limit applies to the band edges.

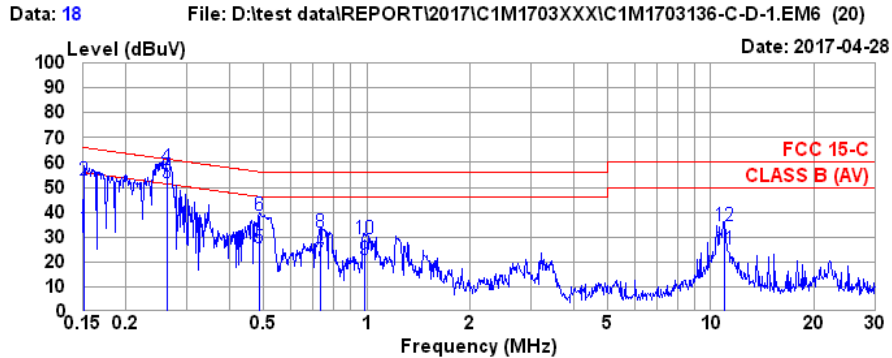
### 5.3. Test Procedure

- 5.3.1. To set up the EUT as indicated in ANSI C 63.10. The EUT was placed on the table which has 80 cm height to the ground and 40 cm distance to the conducting wall.
- 5.3.2. Power supplier of the EUT was connected to the AC mains through an Artificial Mains Network (A.M.N.).
- 5.3.3. The AC power supplies to all peripheral devices must be provided through line impedance stabilization network (L.I.S.N.)
- 5.3.4. Checking frequency range from 150 kHz to 30 MHz and record the emission which does not have 20 dB below limit.

### 5.4. Conducted Emission Measurement Results

PASSED.

Test Date	2017/04/28	Temp./Hum.	26 /54%
Test Voltage	AC 120V, 60Hz		

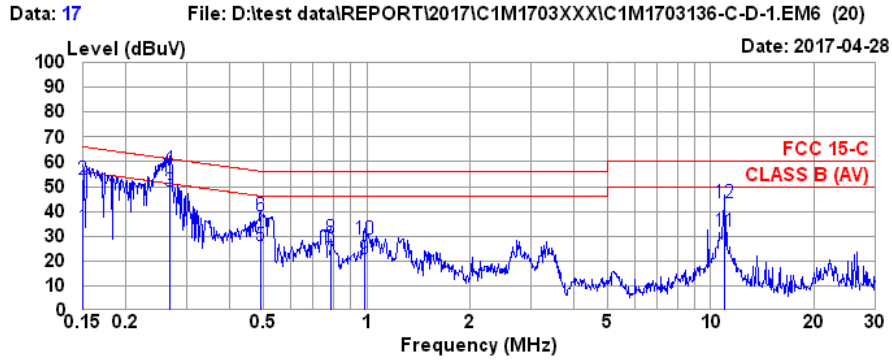


Site no. : No.7 Shielded Room Data no. : 18  
 Condition : ESH2-Z5 366(ADAPTER) Phase : NEUTRAL  
 Limit : FCC 15-C  
 Env. / Ins. : 26°C / 54% ESCI (1276) Engineer : Nick Du  
 EUT : AA70WW  
 Power Rating : 120Vac/60Hz  
 Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.151	0.19	0.03	9.86	23.69	33.77	55.96	22.19	Average
2	0.151	0.19	0.03	9.86	43.03	53.11	65.96	12.85	QP
* 3	0.264	0.18	0.04	9.86	41.73	51.81	51.29	-0.52	Average
4	0.264	0.18	0.04	9.86	47.94	58.02	61.29	3.27	QP
5	0.486	0.20	0.04	9.86	15.73	25.83	46.23	20.40	Average
6	0.486	0.20	0.04	9.86	28.79	38.89	56.23	17.34	QP
7	0.731	0.21	0.05	9.86	10.24	20.36	46.00	25.64	Average
8	0.731	0.21	0.05	9.86	21.62	31.74	56.00	24.26	QP
9	0.984	0.22	0.06	9.86	10.86	21.00	46.00	25.00	Average
10	0.984	0.22	0.06	9.86	19.11	29.25	56.00	26.75	QP
11	10.963	0.59	0.18	9.90	14.23	24.90	50.00	25.10	Average
12	10.963	0.59	0.18	9.90	23.70	34.37	60.00	25.63	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.  
 2. If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary.  
 3. The emissions higher than limit were confirmed not emitted from RF transmitter but from TV signal are subject to FCC 15.107 and presented at report number: EM-F170295.

Test Date	2017/04/28	Temp./Hum.	26 /54%
Test Voltage	AC 120V, 60Hz		



Site no. : No.7 Shielded Room Data no. : 17  
 Condition : ESH2-Z5 366(ADAPTER) Phase : LINE  
 Limit : FCC 15-C  
 Env. / Ins. : 26°C / 54% ESCI (1276) Engineer : Nick Du  
 EUT : AA70WW  
 Power Rating : 120Vac/60Hz  
 Test Mode : Operating

	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.150	0.18	0.03	9.86	23.62	33.69	55.99	22.30	Average
2	0.150	0.18	0.03	9.86	42.94	53.01	65.99	12.98	QP
3	0.269	0.17	0.04	9.86	38.21	48.28	51.16	2.88	Average
4	0.269	0.17	0.04	9.86	47.27	57.34	61.16	3.82	QP
5	0.491	0.19	0.04	9.86	16.28	26.37	46.14	19.77	Average
6	0.491	0.19	0.04	9.86	28.15	38.24	56.14	17.90	QP
7	0.788	0.20	0.05	9.86	10.52	20.63	46.00	25.37	Average
8	0.788	0.20	0.05	9.86	19.06	29.17	56.00	26.83	QP
9	0.989	0.21	0.06	9.86	10.75	20.88	46.00	25.12	Average
10	0.989	0.21	0.06	9.86	18.53	28.66	56.00	27.34	QP
11	10.953	0.64	0.18	9.90	21.05	31.77	50.00	18.23	Average
12	10.953	0.64	0.18	9.90	32.84	43.56	60.00	16.44	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.  
 2. If the average limit is met when using a quasi-peak detector,  
 the EUT shall be deemed to meet both limits and measurement  
 with average detector is unnecessary.  
 3. The emissions higher than limit were confirmed not emitted from RF transmitter  
 are subject to FCC 15.107 and presented at report number: EM-F170295.

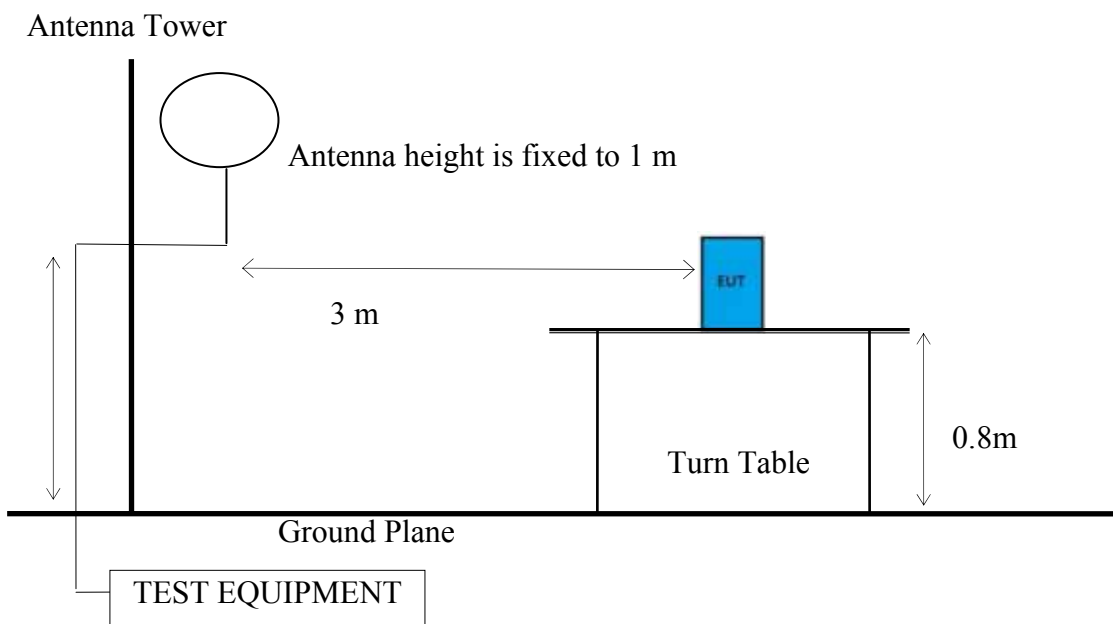
## 6. RADIATED EMISSION MEASUREMENT

### 6.1. Block Diagram of Test Setup

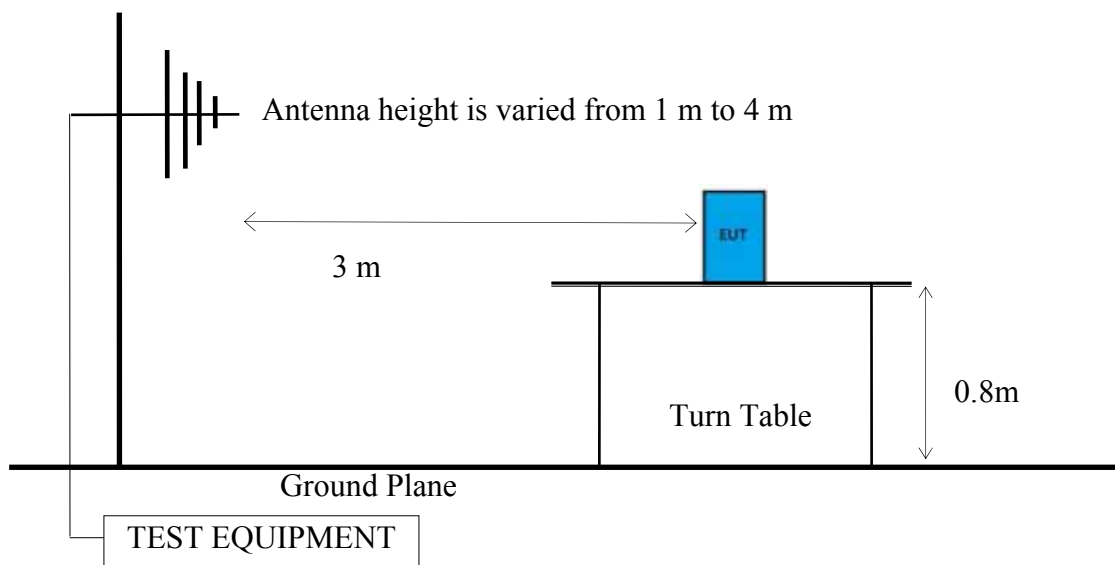
#### 6.1.1. Block Diagram of connection between EUT and simulators

Indicated as section 3.6

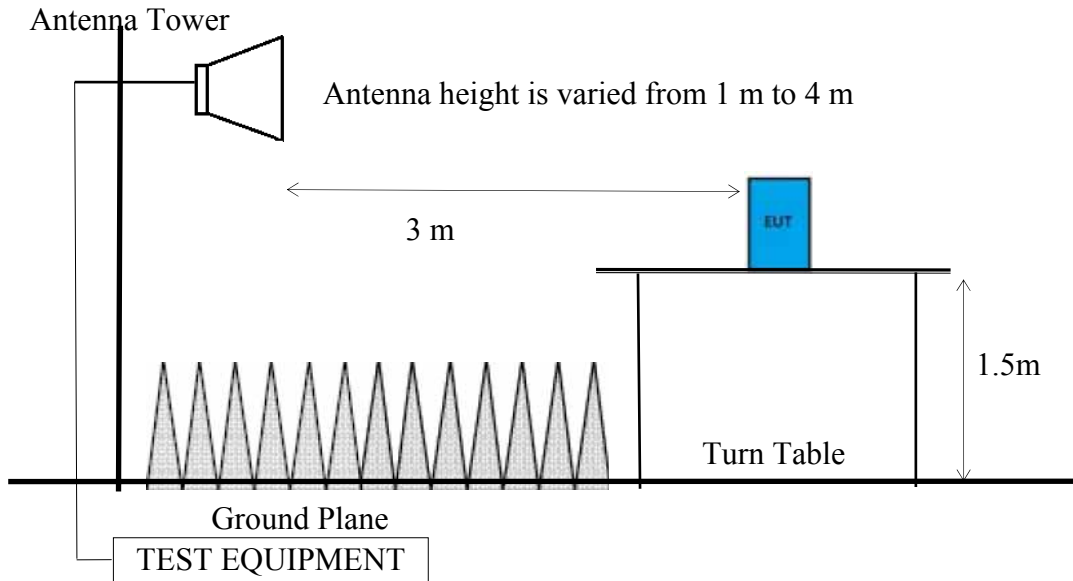
#### 6.1.2. Semi-Anechoic Chamber (3m) Setup Diagram for 9kHz-30MHz



#### 6.1.3. Semi-Anechoic Chamber (3m) Setup Diagram for 30-1000 MHz



6.1.4. Fully Anechoic Chamber (3m) Setup Diagram for above 1GHz



6.2. Radiated Emission Limits

Radiated emissions fall in restricted bands, as defined in Section 15.205 must be in compliance with the radiated emission limits specified in 15.209 as below.

6.2.1. General Limit

Frequency (MHz)	Distance (m)	Field Strengths Limits	
		$\mu\text{V/m}$	$\text{dB}\mu\text{V/m}$
0.009 - 0.490	300	67.6	2400/kHz
0.490 - 1.705	30	87.6	24000/kHz
1.705 - 30	30	29.5	30
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
Above 1000	3	74.0 $\text{dB}\mu\text{V/m}$ (Peak) 54.0 $\text{dB}\mu\text{V/m}$ (Average)	

Remark: (1)  $\text{dB}\mu\text{V/m} = 20 \log (\mu\text{V/m})$

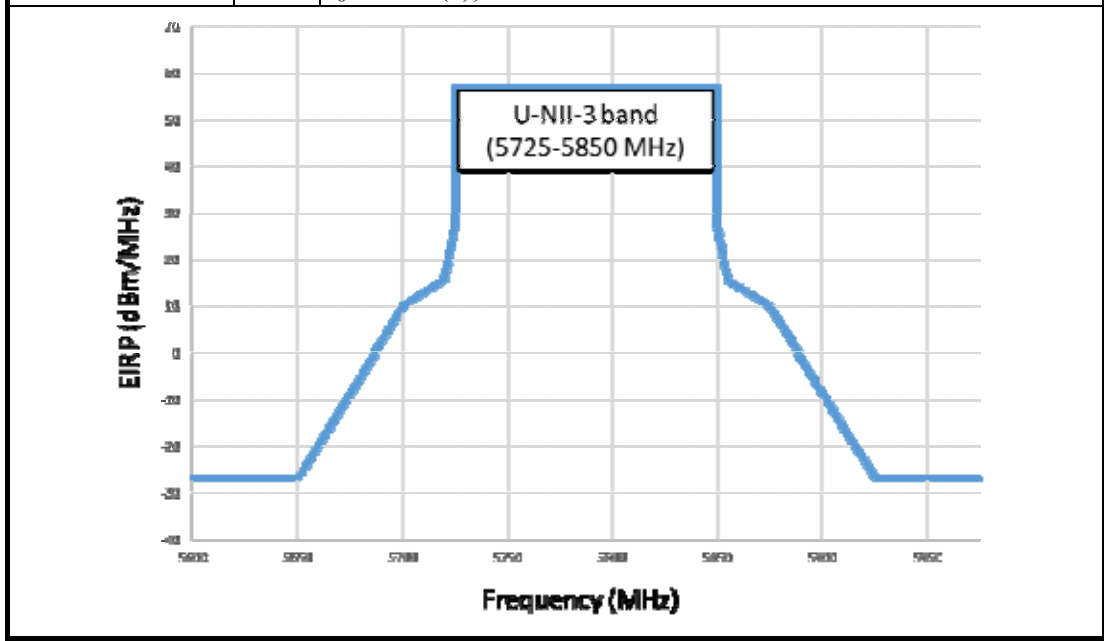
- (2) The tighter limit applies to the edge between two frequency bands.
- (3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
- (4) Fundamental and emission fall within operation band are exempted from this section.
- (5) Pursuant to ANSI C63.10: 6.6.4.3, if the maximized peak measured value complies with the average limit, then it is unnecessary to perform an average measurement.

6.2.2. Limit for non-restricted frequency above 1 GHz

Frequency Band (MHz)	E.I.R.P. Limit	Field Strength Limit at 3 m
5150 to 5250	-27 dBm	68.2
5250 to 5350		68.2
5470 to 5725		68.2

Note: Field Strength at 3 m = E.I.R.P. + 95.2 dB

Frequency Band (MHz)	Field Strength Limit at 3 m	
5725 to 5850	<input checked="" type="checkbox"/>	15.407(b)(4)(i) All emissions shall be limited to a level of 68.2 dB $\mu$ V/m at 75 MHz or more above or below the band edge increasing linearly to 105.2dB $\mu$ V/m 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 110.8 dB $\mu$ V/m 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 68.2 dB $\mu$ V/m at the band edge.
	<input type="checkbox"/>	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))



### 6.3. Test Procedure

#### Frequency Range 9kHz~30MHz:

The EUT setup on the turn table which has 0.8 m height to the ground. The turn table rotated 360 degrees and antenna fixed to 1 m to find the maximum emission level. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

- (1) RBW = 9kHz with peak and average detector.
- (2) Detector: average and peak (9kHz-490kHz)  
Q.P. (490kHz-30MHz)

#### Frequency Range 30MHz ~ 40GHz:

The EUT setup on the turn table which has 0.8m (For 30-1000MHz) or 1.5m (For Above 1GHz) height to the ground. The turn table rotated 360 degrees and antenna varied from 1 m to 4 m to find the maximum emission level. Both horizontal and vertical polarization are required. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10-2013 regulation.

#### Frequency below 1 GHz:

Spectrum Analyzer is used for pre-testing with following setting:

- (1) RBW = 120 kHz
- (2) VBW  $\geq$  3 x RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.
- (7) When peak-detected value is lower than limit that the measurement using the Q.P. detector is not required. Otherwise using Q.P. for finally measurement.

**Frequency above 1GHz to 10th harmonic (up to 40 GHz):**

**Peak Detector:**

- (1) RBW = 1 MHz
- (2) VBW ≥ 3 x RBW.
- (3) Detector = Peak.
- (4) Sweep time = auto.
- (5) Trace mode = max hold.
- (6) Allow sweeps to continue until the trace stabilizes.
- (7) When peak-detected value is lower than limit that the measurement using the average detector is not required. Otherwise using average for finally measurement.

**Average Detector:**

**Option 1:**

- (1) RBW = 1 MHz
- (2) VBW ≥ 1/ T.

Modulation Type	T (ms)	1/ T (kHz)	VBW Setting (kHz)
802.11a	1.43	0.70	0.65
802.11ac-VHT20	0.692	1.45	1.5
802.11ac-VHT40	0.358	2.79	2.7
802.11ac-VHT80	0.191	5.24	5.1

N/A: 1/ T is not implemented when duty cycle presented in section 3.5 is ≥ 98 %.

- (1) Detector = Peak.
- (2) Sweep time = auto.
- (3) Trace mode = max hold.
- (4) Allow sweeps to continue until the trace stabilizes.

**Option 2:**

**Average Emission Level= Peak Emission Level+ D.C.C.F.**

**6.4. Measurement Result Explanation**

Peak Emission Level=Antenna Factor + Cable Loss + Meter Reading  
 Average Emission Level=Antenna Factor + Cable Loss + Meter Reading  
 Average Emission Level= Peak Emission Level+ DCCF  
 Duty Cycle Correction Factor (DCCF)= 20log (TX<sub>on</sub>/TX<sub>on+off</sub>) presented in section 3.5

**6.5. Test Results**

**PASSED.**

Test Date	2017/04/05	Temp./Hum.	20 /53%
Test Voltage	AC 120V, 60Hz		



6.5.1. Emissions within Restricted Frequency Bands

6.5.1.1. Frequency 9kHz~30MHz

**The emissions (9kHz~30MHz) not reported for there is no emission be found.**

6.5.1.2. Frequency 30MHz~1000MHz

Mode	802.11a	UNII Band	I
		Frequency	TX 5180MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
56.19	13.25	1.67	21.27	36.19	40.00	3.81	Peak
149.31	17.01	2.83	15.99	35.83	43.50	7.67	Peak
210.42	16.51	3.45	20.30	40.26	43.50	3.24	Peak
299.66	19.77	4.30	15.40	39.47	46.00	6.53	Peak
721.61	25.87	7.20	11.96	45.03	46.00	0.97	Peak
750.71	26.12	7.35	5.06	38.53	46.00	7.47	Peak

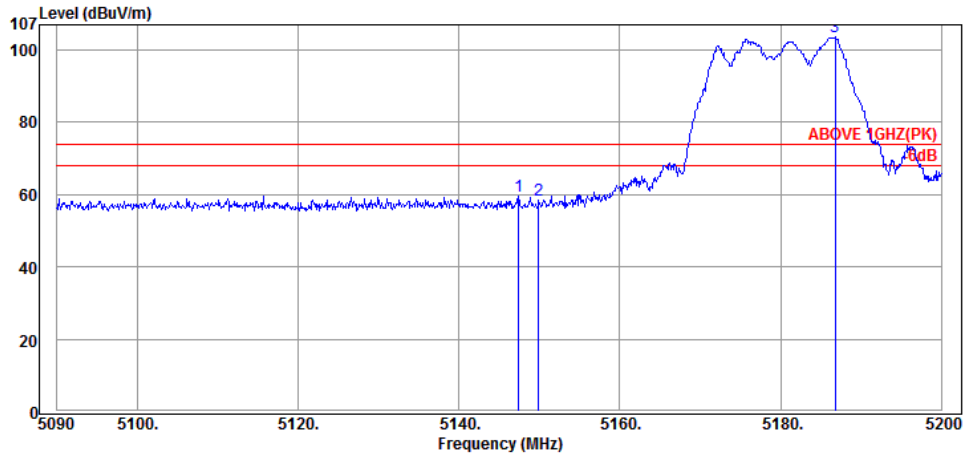
**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limits (dB $\mu$ V/m)	Margin (dB)	Detector
40.67	19.15	1.41	16.49	37.05	40.00	2.95	Peak
151.25	16.89	2.84	22.54	42.27	43.50	1.23	Peak
227.88	17.59	3.61	18.69	39.89	46.00	6.11	Peak
297.72	19.74	4.28	13.82	37.84	46.00	8.16	Peak
399.57	22.71	5.54	10.10	38.35	46.00	7.65	Peak
721.61	25.87	7.20	7.33	40.40	46.00	5.60	Peak

6.5.1.3. Frequency Above 1 GHz to 10<sup>th</sup> harmonics

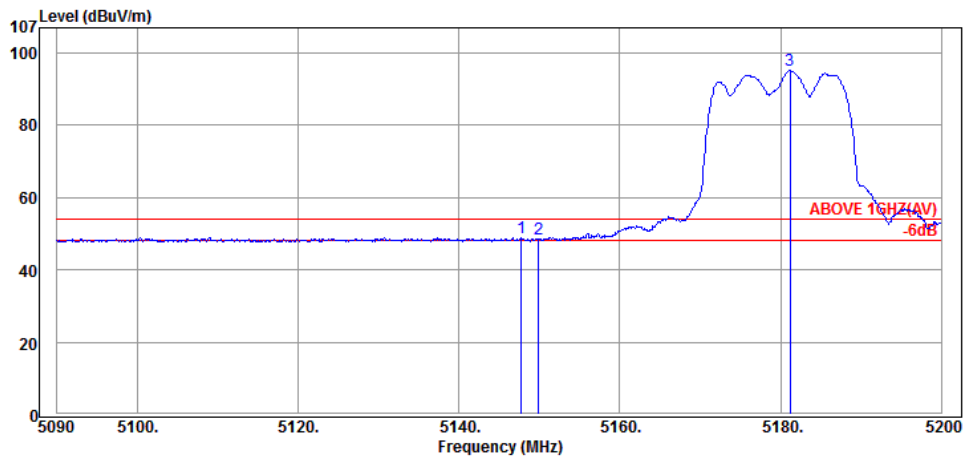
**Band Edge:**

Mode	802.11a	Frequency	TX 5180MHz
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**Antenna at Horizontal Polarization**

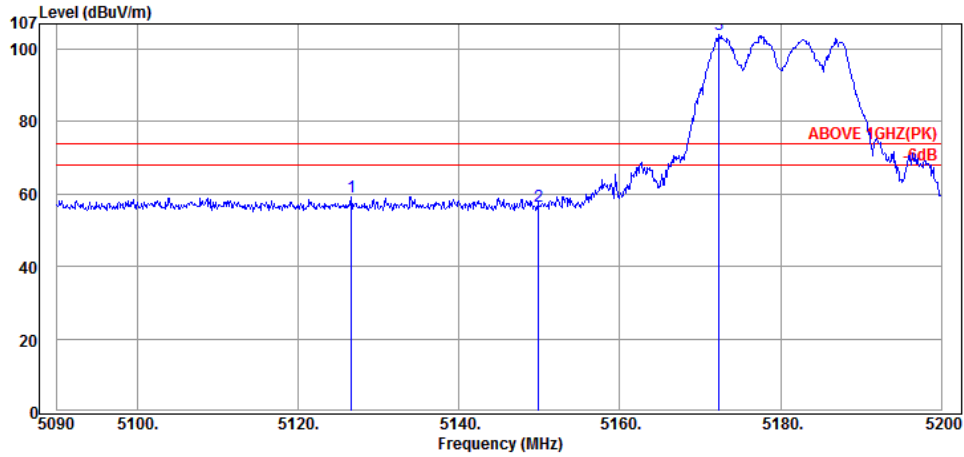
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5147.42	33.41	9.34	16.84	59.59	74.00	14.41	Peak
5149.95	33.41	9.34	15.54	58.29	74.00	15.71	Peak
5186.80	33.48	9.36	60.70	103.54	---	---	Peak



**Antenna at Horizontal Polarization**

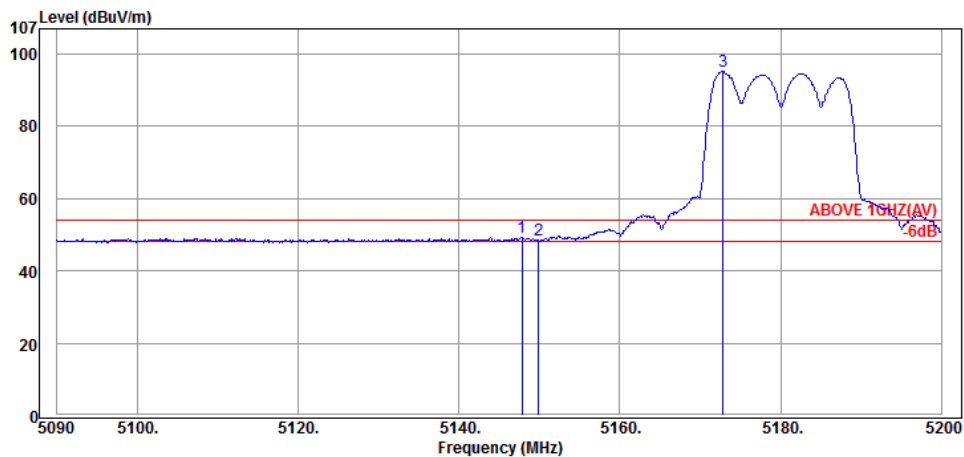
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5147.75	33.41	9.34	6.24	48.99	54.00	5.01	Average
5149.95	33.41	9.34	5.93	48.68	54.00	5.32	Average
5181.19	33.45	9.36	52.32	95.13	---	---	Average

Mode	802.11a	Frequency	TX 5180MHz
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**Antenna at Vertical Polarization**

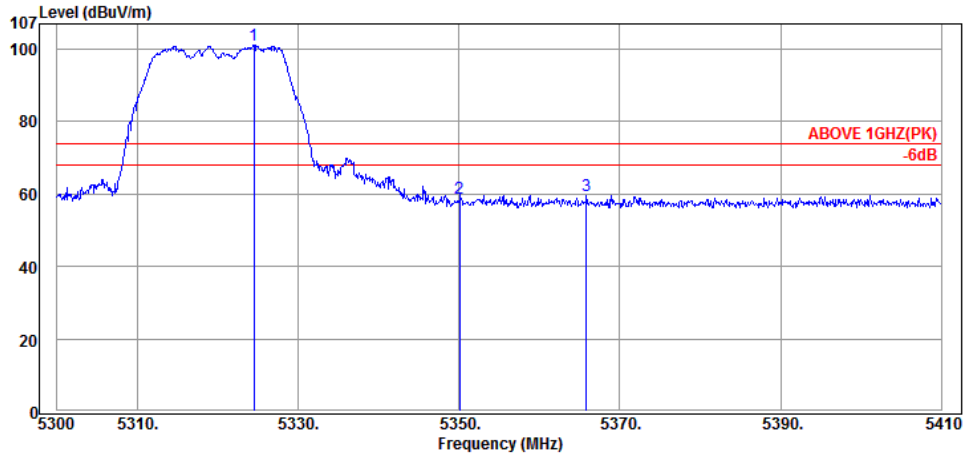
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5126.63	33.37	9.33	16.49	59.19	74.00	14.81	Peak
5149.95	33.41	9.34	13.83	56.58	74.00	17.42	Peak
5172.39	33.45	9.36	61.07	103.88	---	---	Peak



**Antenna at Vertical Polarization**

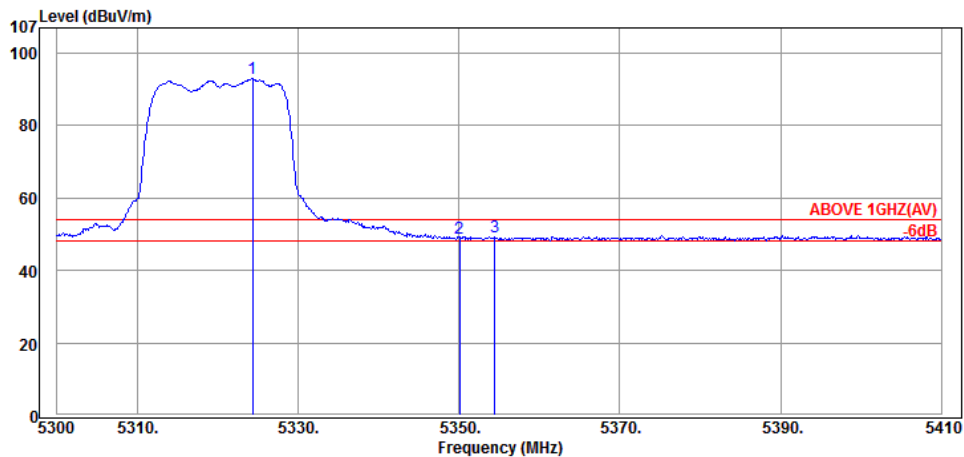
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5147.86	33.41	9.34	6.56	49.31	54.00	4.69	Average
5149.95	33.41	9.34	5.66	48.41	54.00	5.59	Average
5172.83	33.45	9.36	52.46	95.27	---	---	Average

Mode	802.11a	Frequency	TX 5320MHz
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**Antenna at Horizontal Polarization**

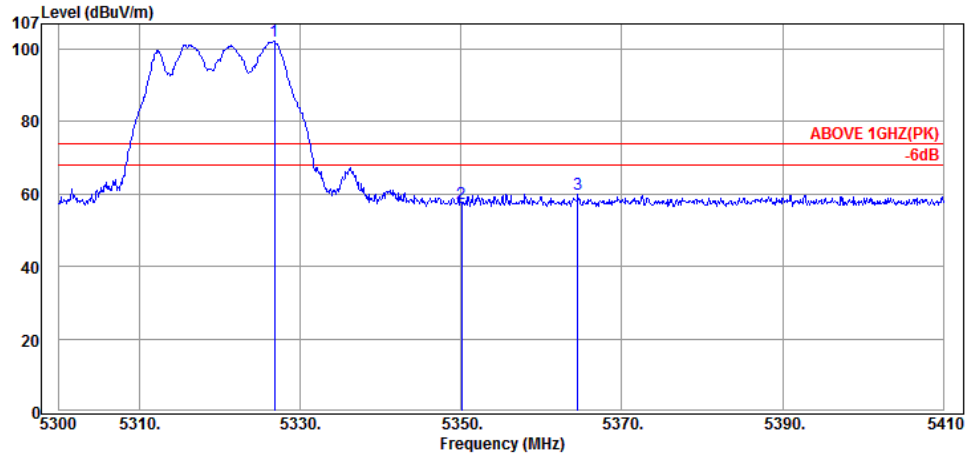
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5324.53	33.67	9.44	58.18	101.29	---	---	Peak
5350.05	33.69	9.46	15.85	59.00	74.00	15.00	Peak
5365.89	33.71	9.47	16.53	59.71	74.00	14.29	Peak



**Antenna at Horizontal Polarization**

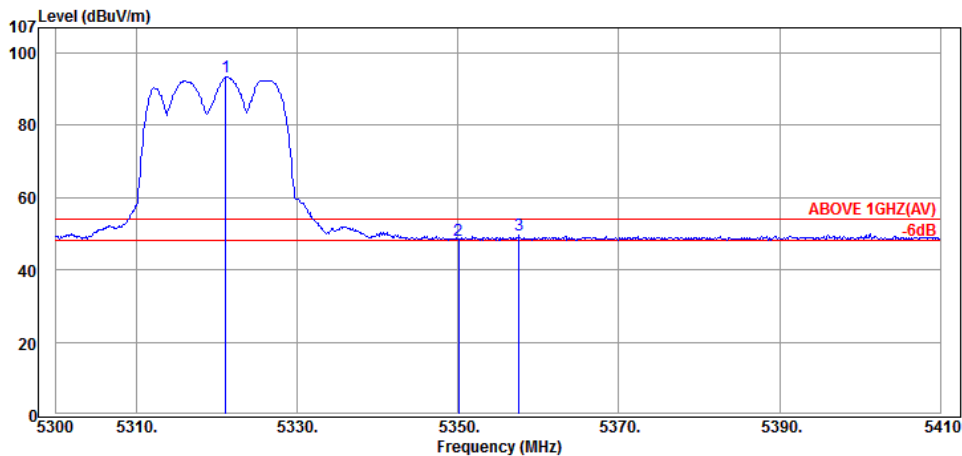
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5324.31	33.67	9.44	49.80	92.91	---	---	Average
5350.05	33.69	9.46	5.84	48.99	54.00	5.01	Average
5354.45	33.71	9.46	6.18	49.35	54.00	4.65	Average

Mode	802.11a	Frequency	TX 5320MHz
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**Antenna at Vertical Polarization**

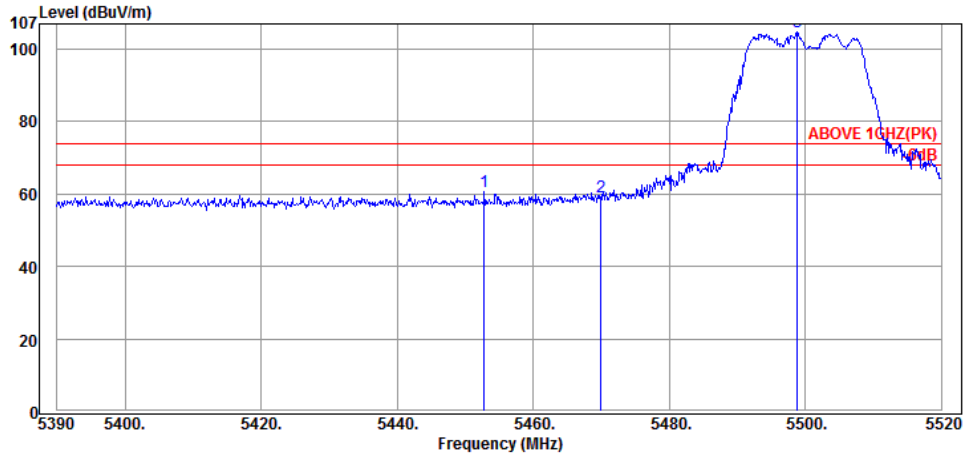
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5326.84	33.67	9.44	59.03	102.14	---	---	Peak
5350.05	33.69	9.46	14.31	57.46	74.00	16.54	Peak
5364.57	33.71	9.47	16.90	60.08	74.00	13.92	Peak



**Antenna at Vertical Polarization**

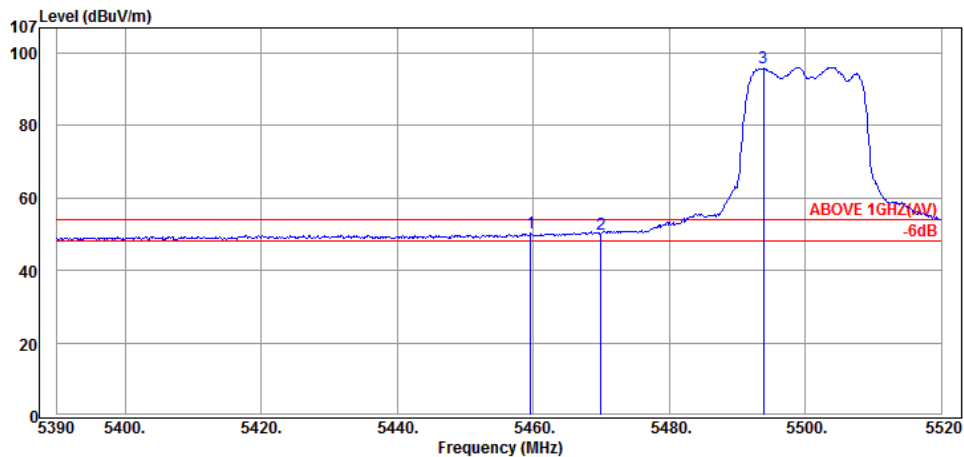
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5321.12	33.65	9.44	50.26	93.35	---	---	Average
5350.05	33.69	9.46	5.06	48.21	54.00	5.79	Average
5357.64	33.71	9.46	6.33	49.50	54.00	4.50	Average

Mode	802.11a	Frequency	TX 5500MHz
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**Antenna at Horizontal Polarization**

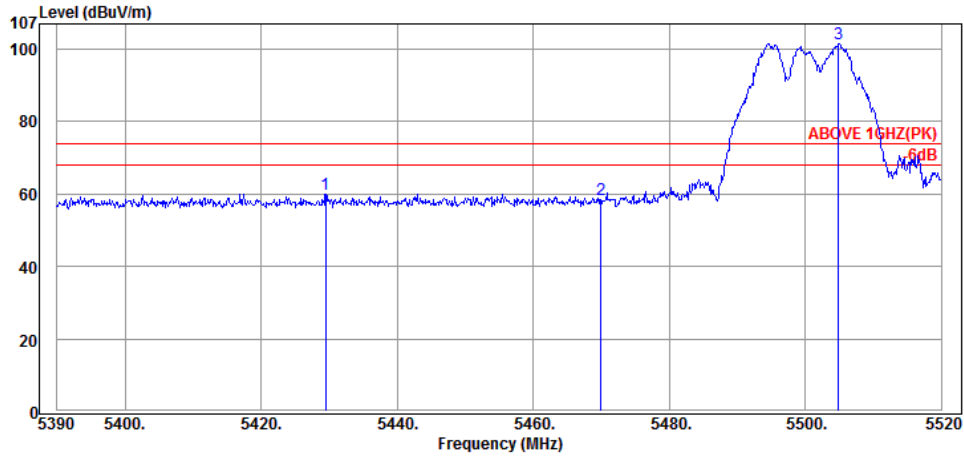
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5452.79	33.84	9.52	17.34	60.70	74.00	13.30	Peak
5469.95	33.86	9.53	15.85	59.24	74.00	14.76	Peak
5498.81	33.90	9.55	61.18	104.63	---	---	Peak



**Antenna at Horizontal Polarization**

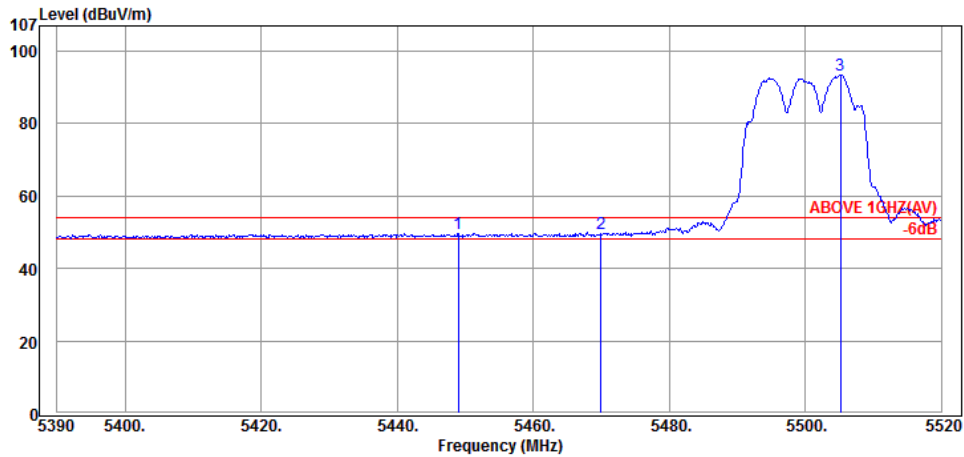
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5459.68	33.84	9.53	6.98	50.35	54.00	3.65	Average
5469.95	33.86	9.53	6.60	49.99	54.00	4.01	Average
5493.87	33.88	9.55	52.70	96.13	---	---	Average

Mode	802.11a	Frequency	TX 5500MHz
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**Antenna at Vertical Polarization**

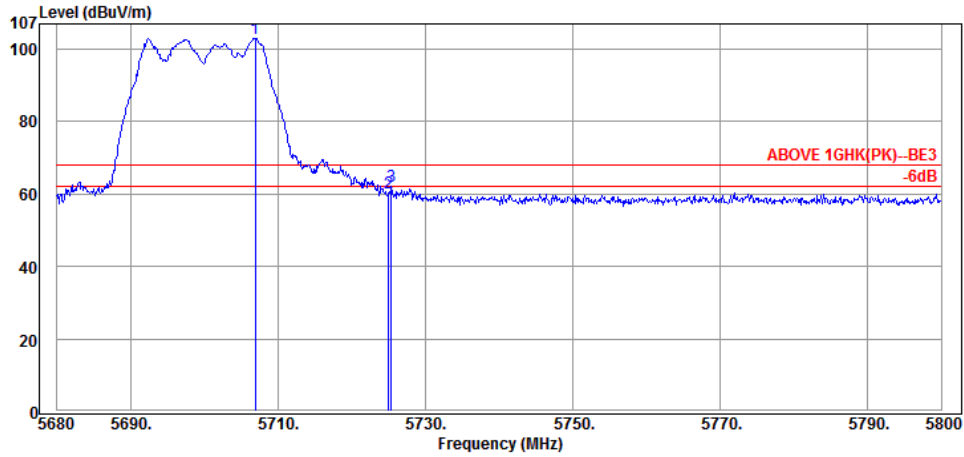
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5429.52	33.79	9.51	16.82	60.12	74.00	13.88	Peak
5469.95	33.86	9.53	14.97	58.36	74.00	15.64	Peak
5504.92	33.90	9.55	57.91	101.36	---	---	Peak



**Antenna at Vertical Polarization**

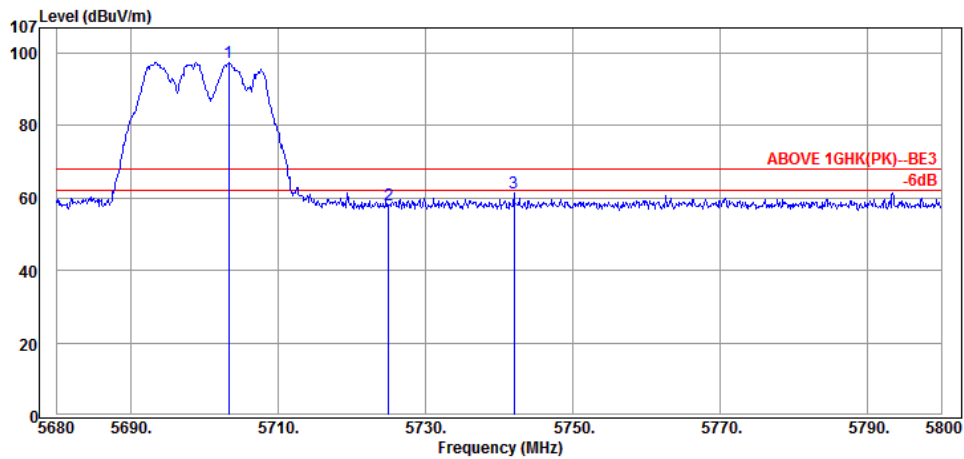
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5449.02	33.84	9.52	6.38	49.74	54.00	4.26	Average
5469.95	33.86	9.53	6.27	49.66	54.00	4.34	Average
5505.18	33.90	9.55	50.01	93.46	---	---	Average

Mode	802.11a	Frequency	TX 5700MHz
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**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5706.88	34.03	9.67	59.34	103.04	---	---	Peak
5725.00	34.04	9.68	16.41	60.13	68.20	8.07	Peak
5725.36	34.04	9.68	18.45	62.17	68.20	6.03	Peak

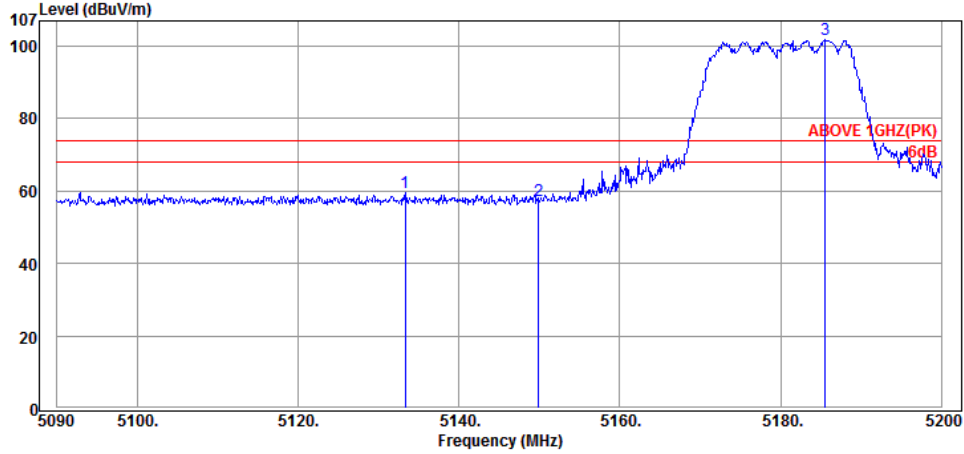


**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5703.28	34.02	9.67	53.74	97.43	---	---	Peak
5725.00	34.04	9.68	14.43	58.15	68.20	10.05	Peak
5742.04	34.05	9.68	17.84	61.57	68.20	6.63	Peak

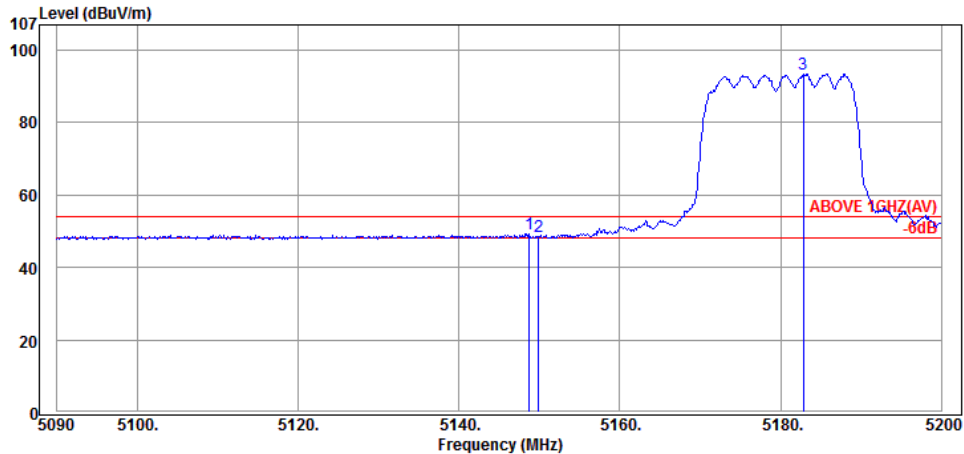


Mode	802.11n-HT20	Frequency	TX 5180MHz
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**Antenna at Horizontal Polarization**

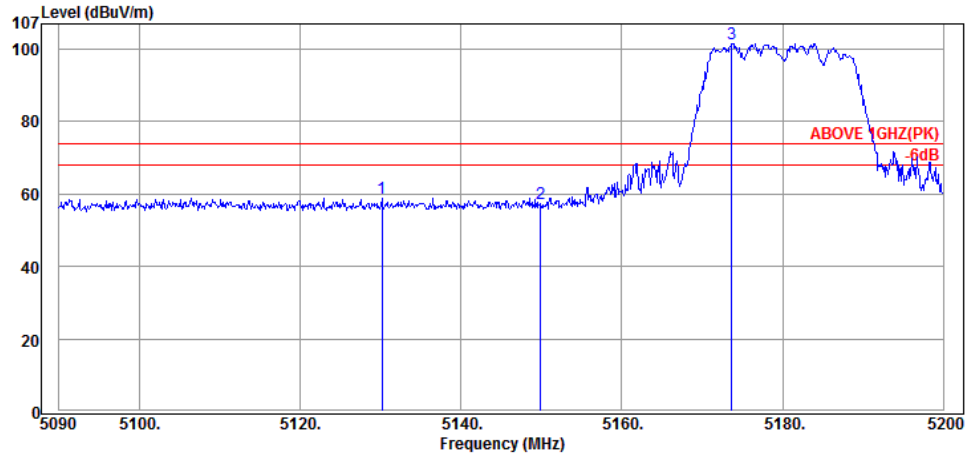
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5133.34	33.39	9.33	16.91	59.63	74.00	14.37	Peak
5149.95	33.41	9.34	14.60	57.35	74.00	16.65	Peak
5185.59	33.45	9.36	58.89	101.70	---	---	Peak



**Antenna at Horizontal Polarization**

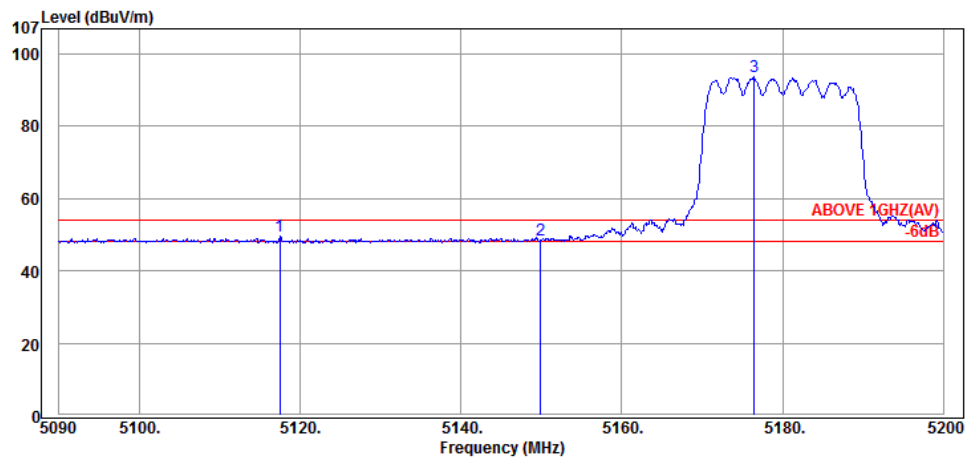
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5148.74	33.41	9.34	6.67	49.42	54.00	4.58	Average
5149.95	33.41	9.34	5.69	48.44	54.00	5.56	Average
5182.84	33.45	9.36	50.71	93.52	---	---	Average

Mode	802.11n-HT20	Frequency	TX 5180MHz
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**Antenna at Vertical Polarization**

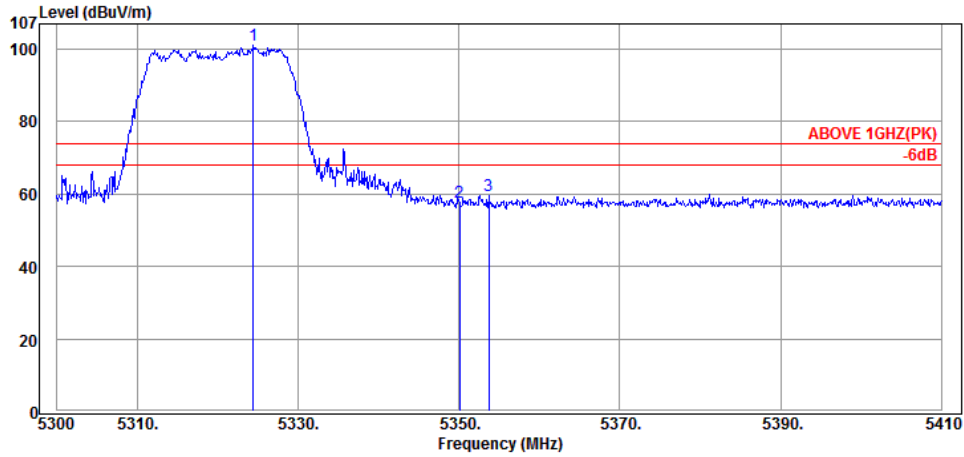
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5130.15	33.39	9.33	16.10	58.82	74.00	15.18	Peak
5149.95	33.41	9.34	14.78	57.53	74.00	16.47	Peak
5173.71	33.45	9.36	58.81	101.62	---	---	Peak



**Antenna at Vertical Polarization**

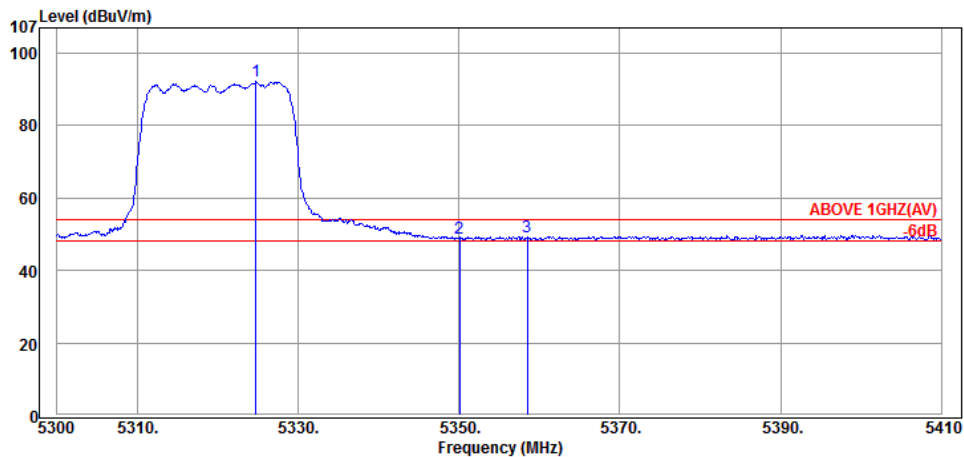
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5117.50	33.37	9.32	6.77	49.46	54.00	4.54	Average
5149.95	33.41	9.34	5.63	48.38	54.00	5.62	Average
5176.46	33.45	9.36	50.81	93.62	---	---	Average

Mode	802.11n-HT20	Frequency	TX 5320MHz
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**Antenna at Horizontal Polarization**

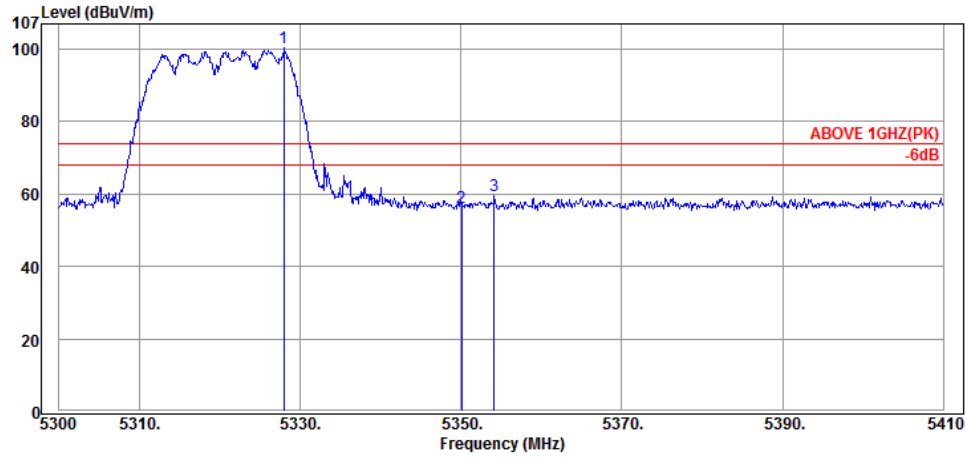
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5324.42	33.67	9.44	58.09	101.20	---	---	Peak
5350.05	33.69	9.46	14.63	57.78	74.00	16.22	Peak
5353.68	33.69	9.46	16.30	59.45	74.00	14.55	Peak



**Antenna at Horizontal Polarization**

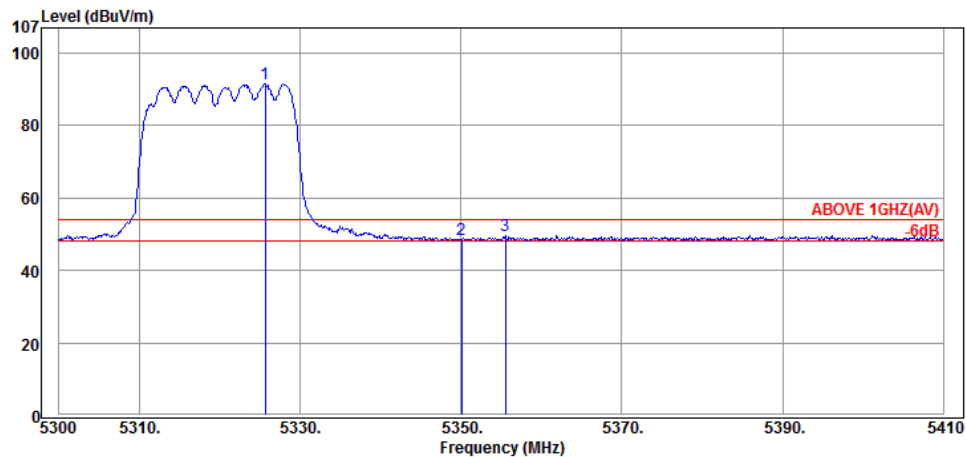
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5324.75	33.67	9.44	49.00	92.11	---	---	Average
5350.05	33.69	9.46	5.90	49.05	54.00	4.95	Average
5358.52	33.71	9.46	6.27	49.44	54.00	4.56	Average

Mode	802.11n-HT20	Frequency	TX 5320MHz
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**Antenna at Vertical Polarization**

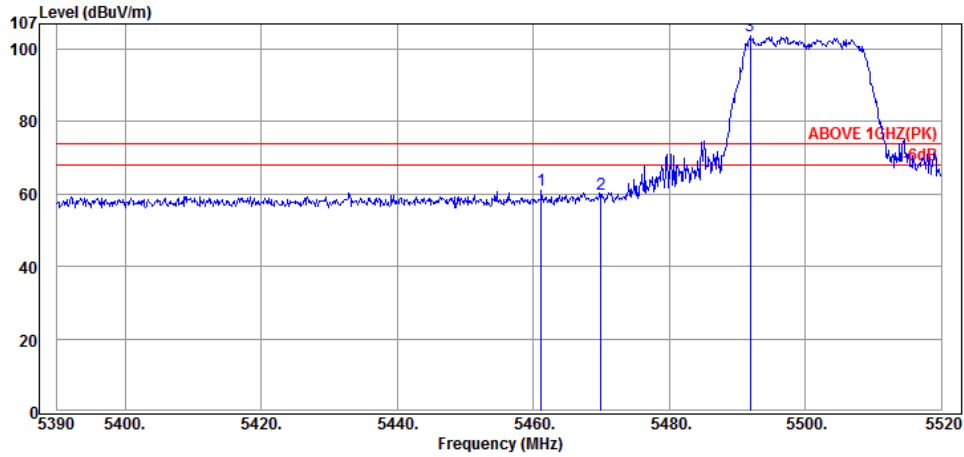
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5327.94	33.67	9.44	57.26	100.37	---	---	Peak
5350.05	33.69	9.46	13.19	56.34	74.00	17.66	Peak
5354.12	33.71	9.46	16.33	59.50	74.00	14.50	Peak



**Antenna at Vertical Polarization**

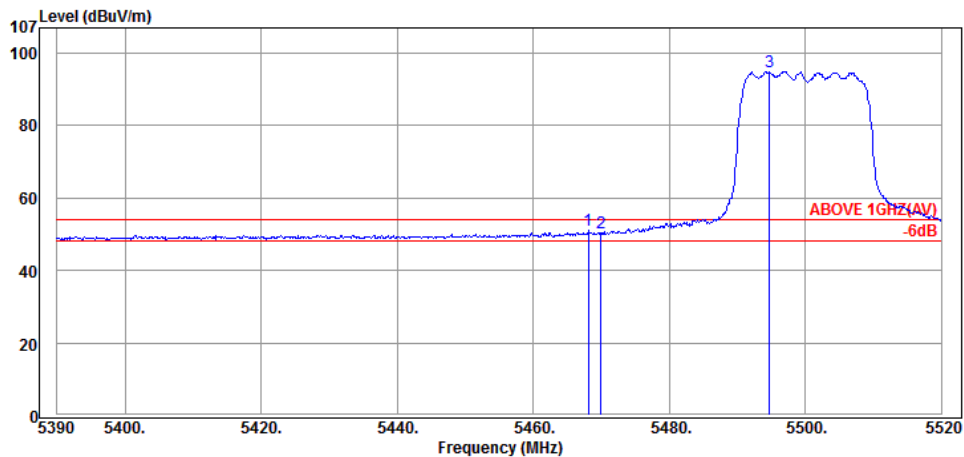
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5325.63	33.67	9.44	48.44	91.55	---	---	Average
5350.05	33.69	9.46	5.40	48.55	54.00	5.45	Average
5355.55	33.71	9.46	6.41	49.58	54.00	4.42	Average

Mode	802.11n-HT20	Frequency	TX 5500MHz
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**Antenna at Horizontal Polarization**

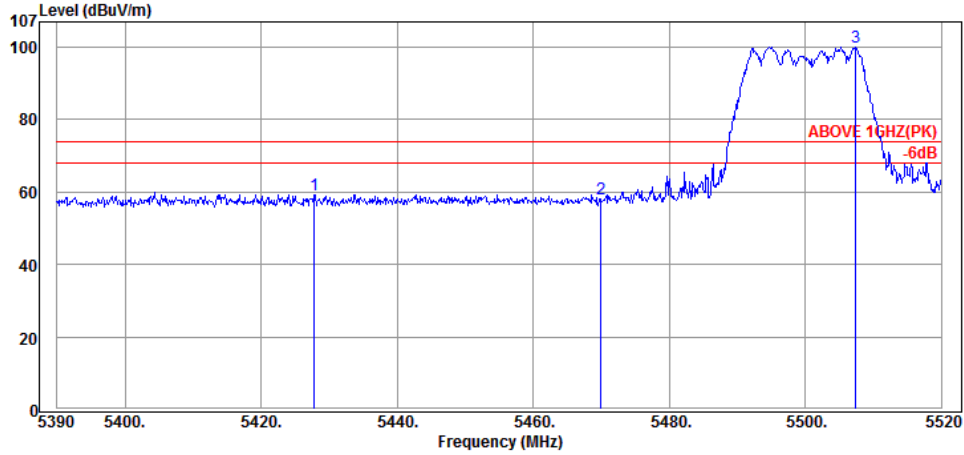
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5461.24	33.84	9.53	17.53	60.90	74.00	13.10	Peak
5469.95	33.86	9.53	16.51	59.90	74.00	14.10	Peak
5491.92	33.88	9.55	60.29	103.72	---	---	Peak



**Antenna at Horizontal Polarization**

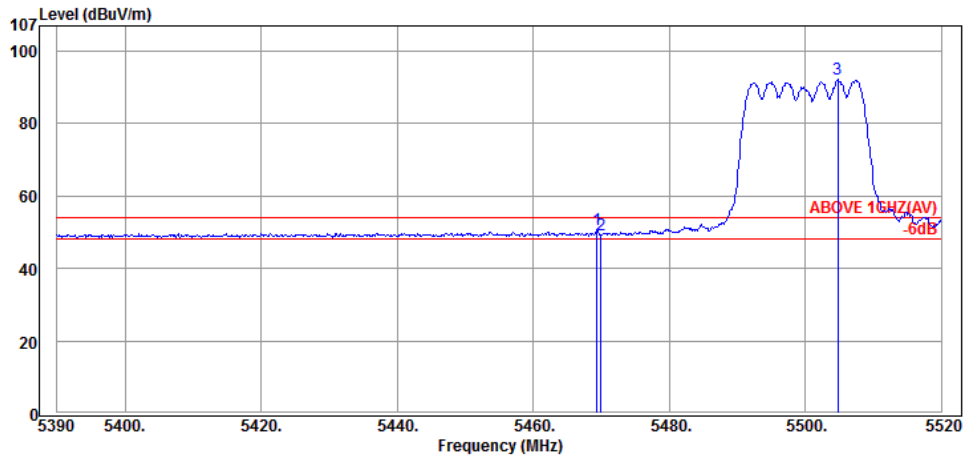
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5468.13	33.86	9.53	7.64	51.03	54.00	2.97	Average
5469.95	33.86	9.53	6.80	50.19	54.00	3.81	Average
5494.78	33.88	9.55	51.51	94.94	---	---	Average

Mode	802.11n-HT20	Frequency	TX 5500MHz
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**Antenna at Vertical Polarization**

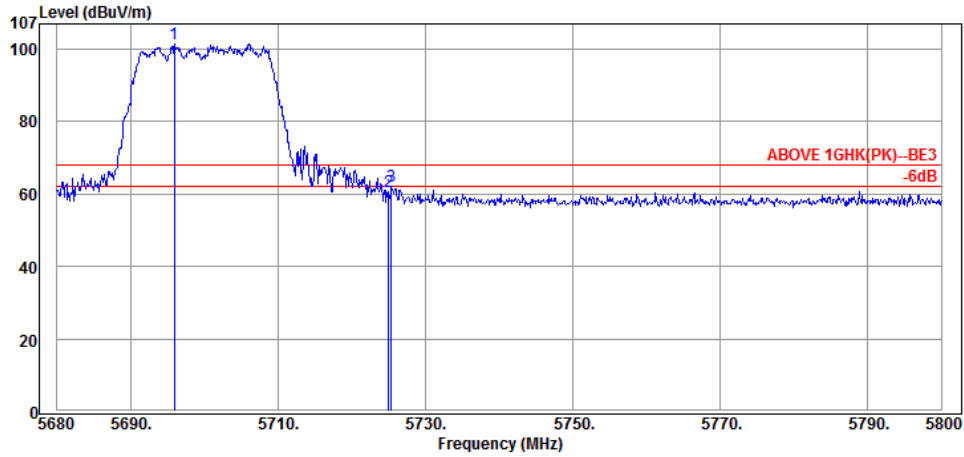
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5427.83	33.79	9.51	16.08	59.38	74.00	14.62	Peak
5469.95	33.86	9.53	14.83	58.22	74.00	15.78	Peak
5507.39	33.90	9.56	56.59	100.05	---	---	Peak



**Antenna at Vertical Polarization**

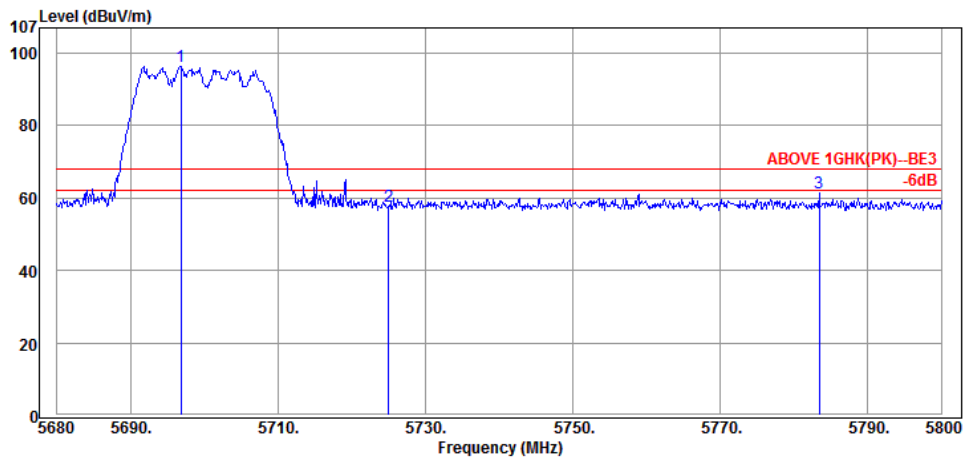
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.43	33.86	9.53	7.18	50.57	54.00	3.43	Average
5469.95	33.86	9.53	6.03	49.42	54.00	4.58	Average
5504.79	33.90	9.55	48.83	92.28	---	---	Average

Mode	802.11n-HT20	Frequency	TX 5700MHz
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**Antenna at Horizontal Polarization**

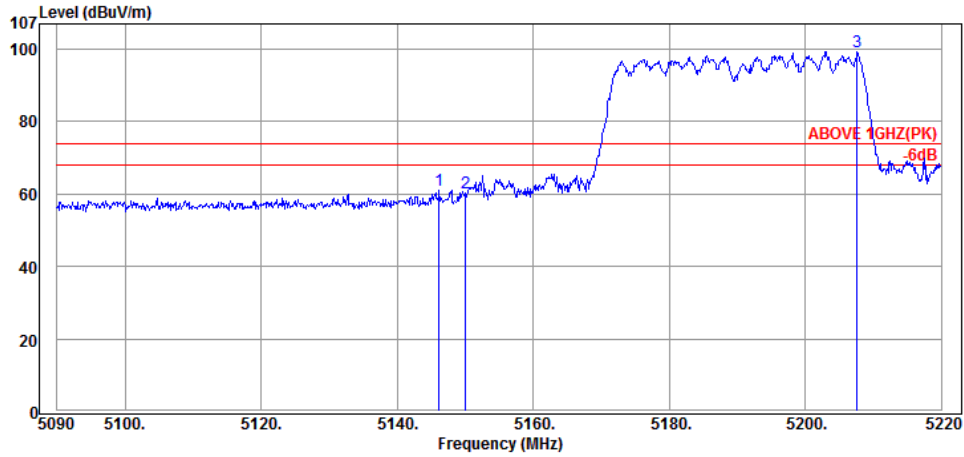
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5695.96	34.02	9.67	57.95	101.64	---	---	Peak
5725.00	34.04	9.68	17.08	60.80	68.20	7.40	Peak
5725.36	34.04	9.68	18.45	62.17	68.20	6.03	Peak



**Antenna at Vertical Polarization**

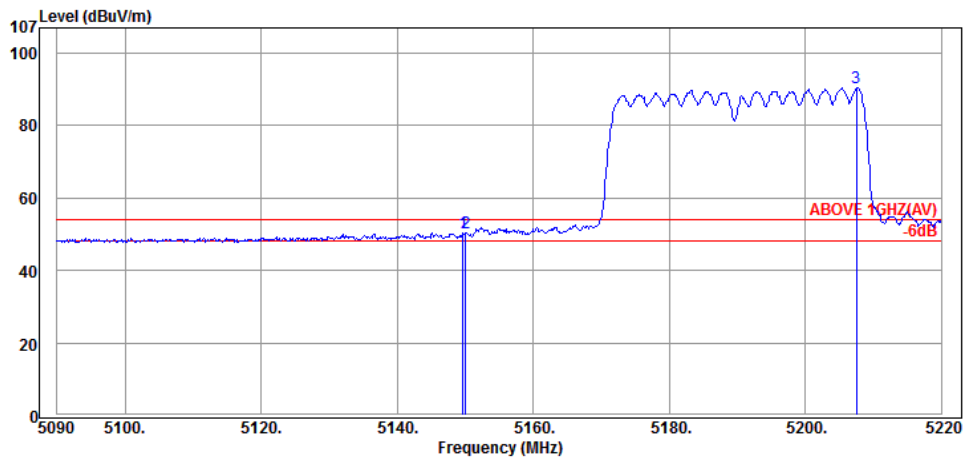
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5696.80	34.02	9.67	52.59	96.28	---	---	Peak
5725.00	34.04	9.68	14.07	57.79	68.20	10.41	Peak
5783.44	34.07	9.71	17.46	61.24	68.20	6.96	Peak

Mode	802.11n-HT40	Frequency	TX 5190MHz
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**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5146.16	33.41	9.34	18.23	60.98	74.00	13.02	Peak
5150.06	33.41	9.34	17.56	60.31	74.00	13.69	Peak
5207.65	33.50	9.38	56.49	99.37	---	---	Peak

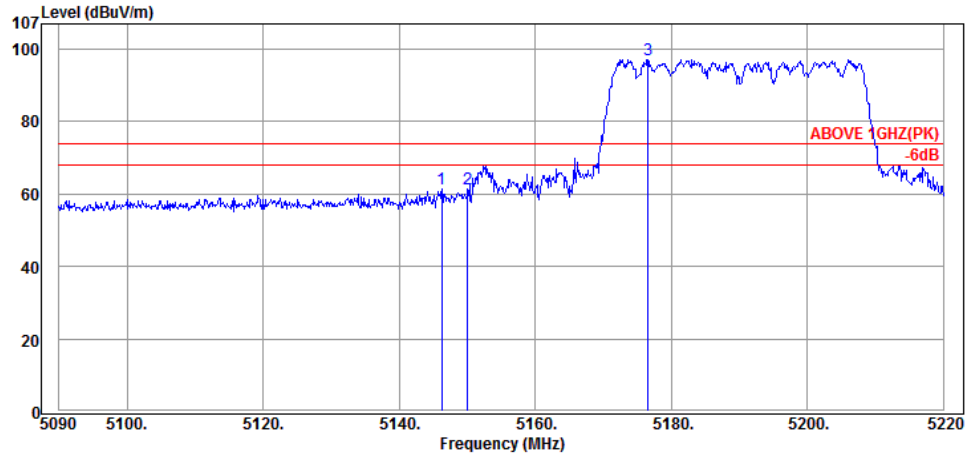


**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5149.67	33.41	9.34	7.72	50.47	54.00	3.53	Average
5150.06	33.41	9.34	7.65	50.40	54.00	3.60	Average
5207.52	33.50	9.38	47.61	90.49	---	---	Average

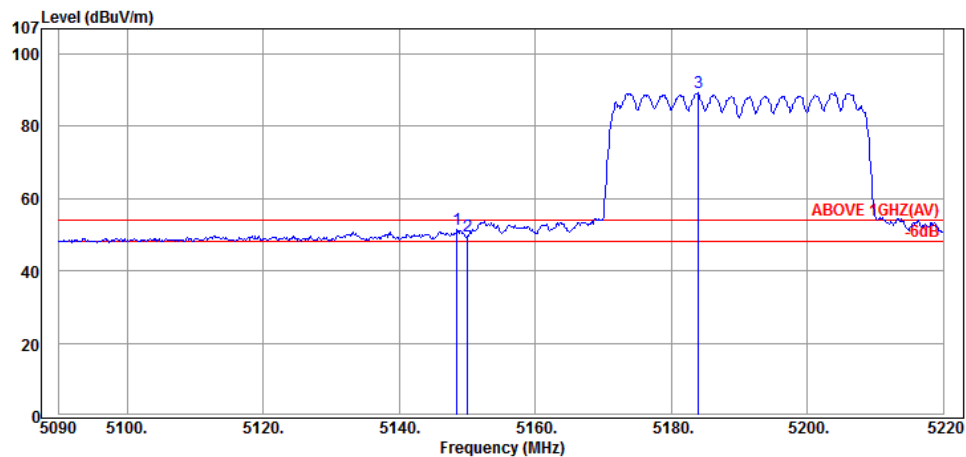


Mode	802.11n-HT40	Frequency	TX 5190MHz
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**Antenna at Vertical Polarization**

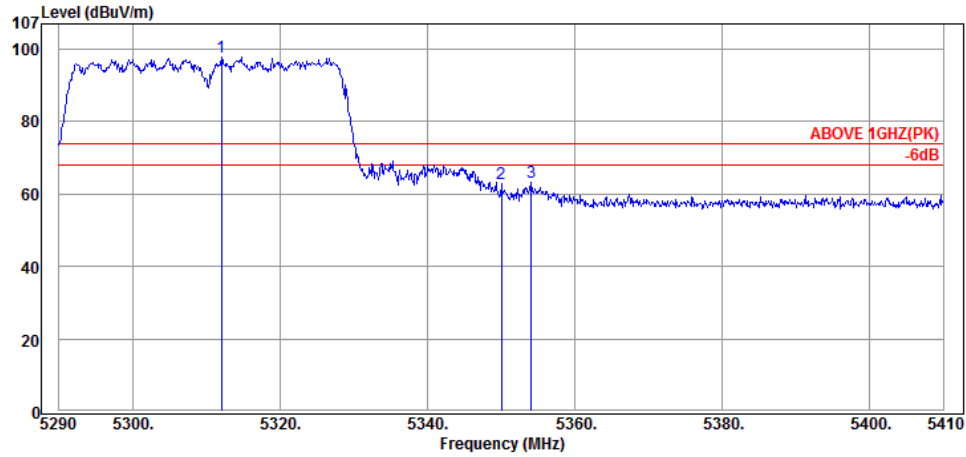
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5146.29	33.41	9.34	18.82	61.57	74.00	12.43	Peak
5150.06	33.41	9.34	18.74	61.49	74.00	12.51	Peak
5176.58	33.45	9.36	54.38	97.19	---	---	Peak



**Antenna at Vertical Polarization**

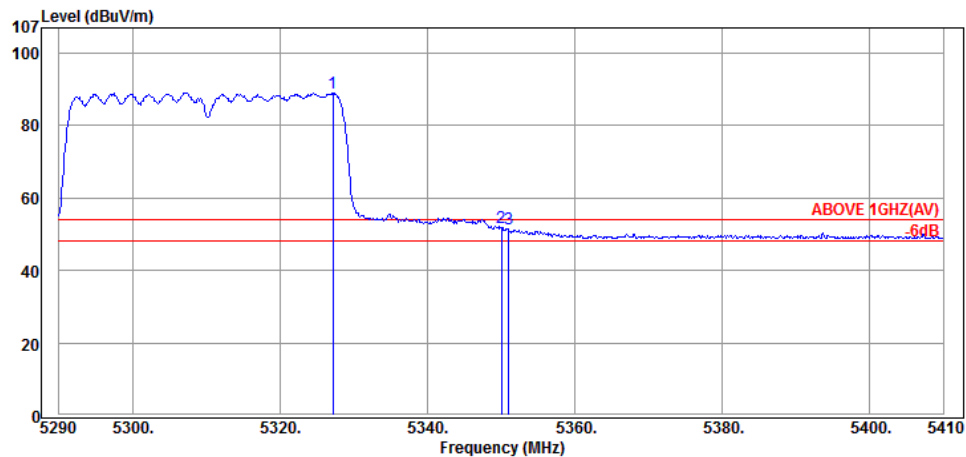
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5148.50	33.41	9.34	8.69	51.44	54.00	2.56	Average
5150.06	33.41	9.34	6.94	49.69	54.00	4.31	Average
5183.99	33.45	9.36	46.38	89.19	---	---	Average

Mode	802.11n-HT40	Frequency	TX 5310MHz
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**Antenna at Horizontal Polarization**

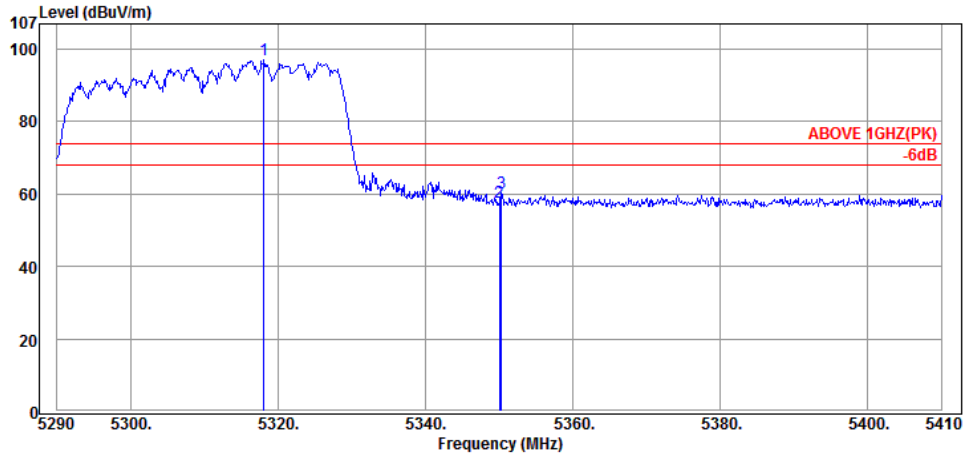
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5312.08	33.65	9.43	54.66	97.74	---	---	Peak
5350.00	33.69	9.46	19.80	62.95	74.00	11.05	Peak
5354.08	33.69	9.46	20.13	63.28	74.00	10.72	Peak



**Antenna at Horizontal Polarization**

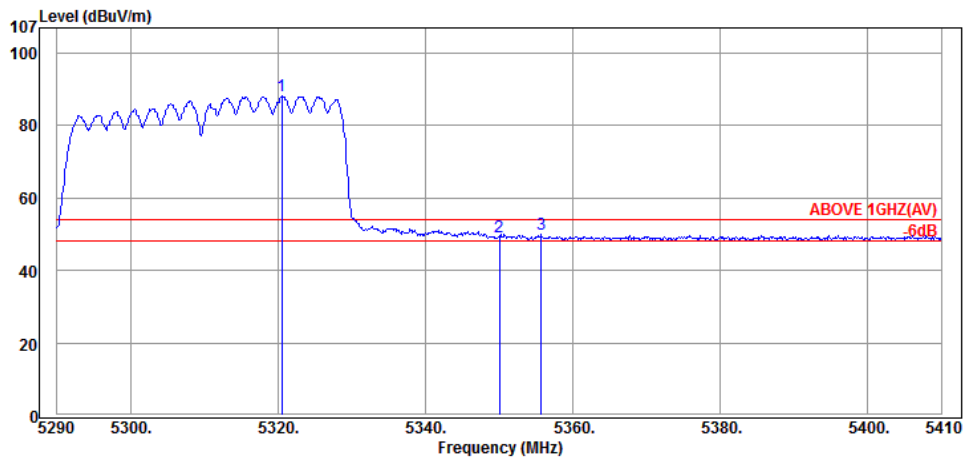
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5327.20	33.67	9.44	46.00	89.11	---	---	Average
5350.00	33.69	9.46	8.58	51.73	54.00	2.27	Average
5351.08	33.69	9.46	8.48	51.63	54.00	2.37	Average

Mode	802.11n-HT40	Frequency	TX 5310MHz
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**Antenna at Vertical Polarization**

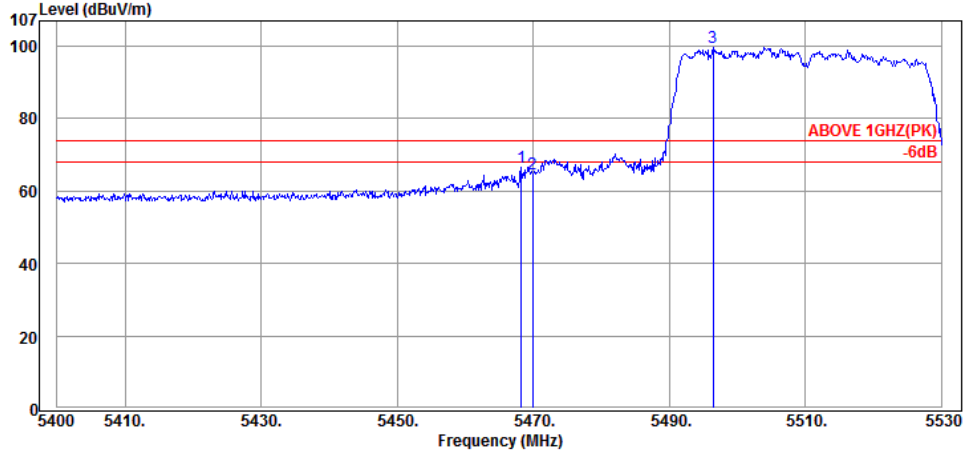
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5318.08	33.65	9.44	54.00	97.09	---	---	Peak
5350.00	33.69	9.46	14.60	57.75	74.00	16.25	Peak
5350.36	33.69	9.46	17.20	60.35	74.00	13.65	Peak



**Antenna at Vertical Polarization**

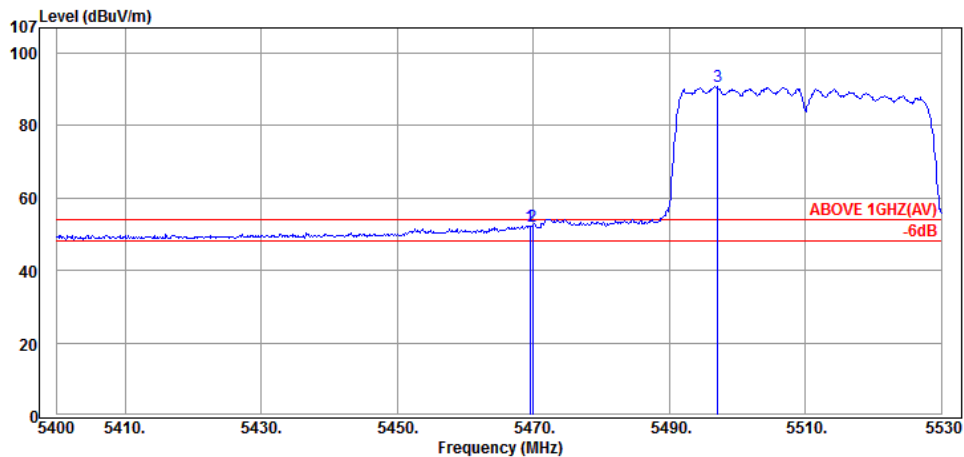
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5320.48	33.65	9.44	45.11	88.20	---	---	Average
5350.00	33.69	9.46	6.05	49.20	54.00	4.80	Average
5355.76	33.71	9.46	6.76	49.93	54.00	4.07	Average

Mode	802.11n-HT40	Frequency	TX 5510MHz
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**Antenna at Horizontal Polarization**

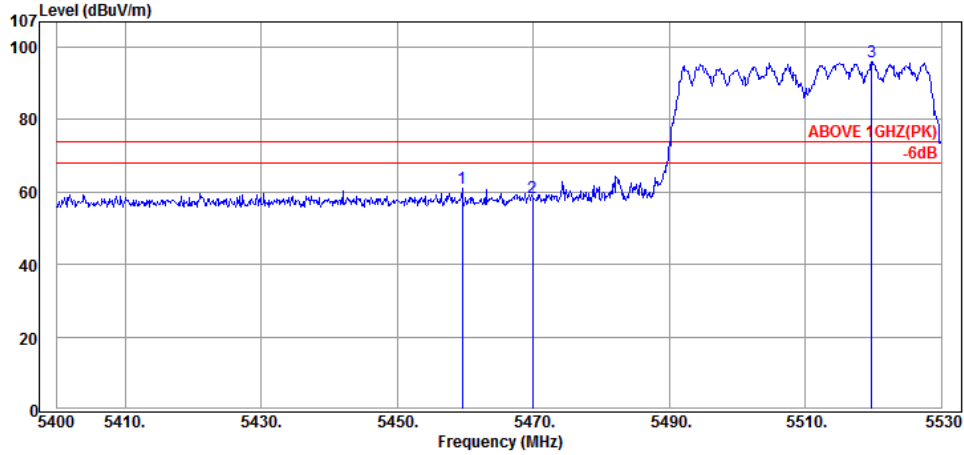
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5468.25	33.86	9.53	23.27	66.66	74.00	7.34	Peak
5469.94	33.86	9.53	21.32	64.71	74.00	9.29	Peak
5496.46	33.90	9.55	56.29	99.74	---	---	Peak



**Antenna at Horizontal Polarization**

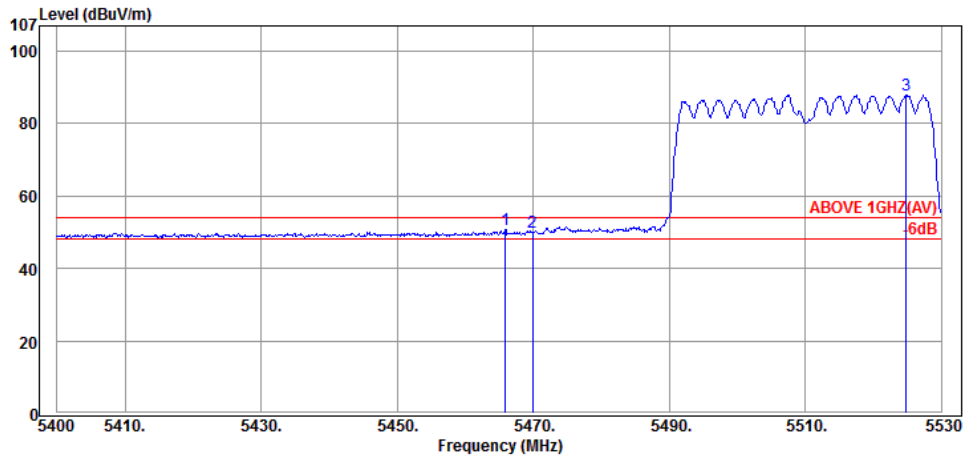
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.55	33.86	9.53	9.00	52.39	54.00	1.61	Average
5469.94	33.86	9.53	8.94	52.33	54.00	1.67	Average
5497.11	33.90	9.55	47.48	90.93	---	---	Average

Mode	802.11n-HT40	Frequency	TX 5510MHz
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**Antenna at Vertical Polarization**

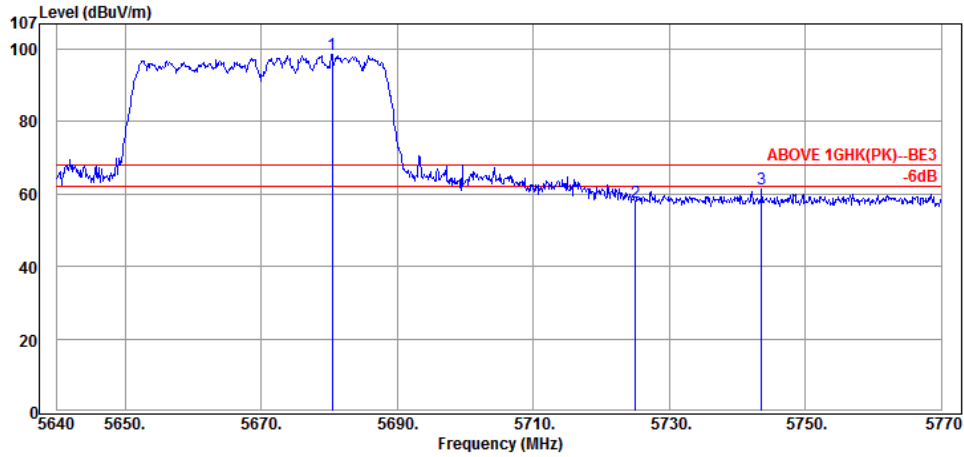
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5459.54	33.84	9.53	17.57	60.94	74.00	13.06	Peak
5469.94	33.86	9.53	15.17	58.56	74.00	15.44	Peak
5519.73	33.91	9.56	52.39	95.86	---	---	Peak



**Antenna at Vertical Polarization**

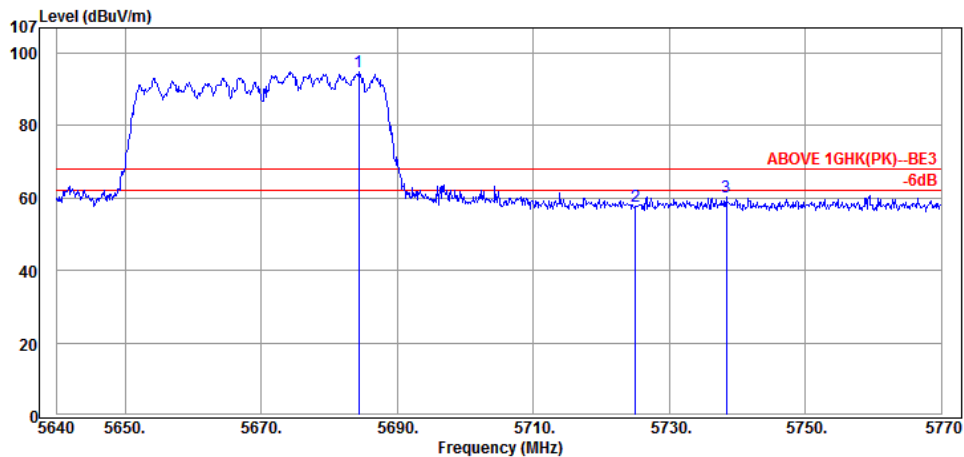
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5465.91	33.86	9.53	7.21	50.60	54.00	3.40	Average
5469.94	33.86	9.53	6.68	50.07	54.00	3.93	Average
5524.80	33.91	9.57	44.51	87.99	---	---	Average

Mode	802.11n-HT40	Frequency	TX 5670MHz
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**Antenna at Horizontal Polarization**

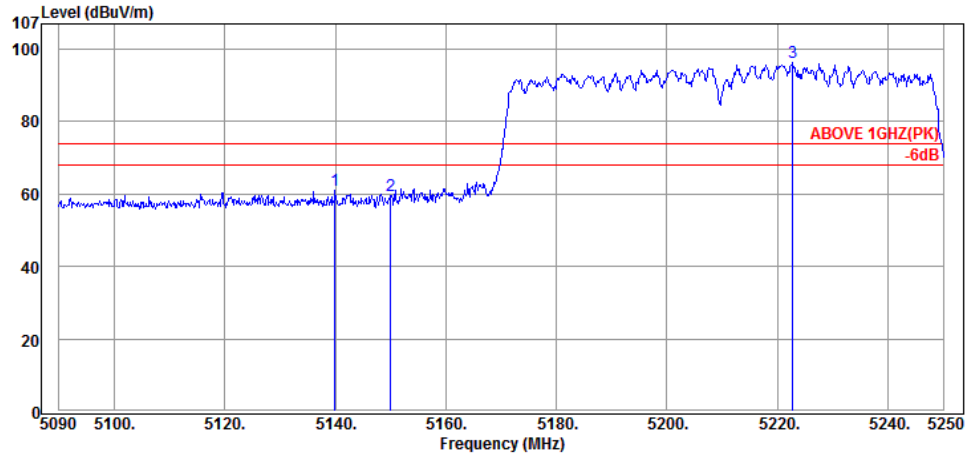
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5680.43	34.01	9.66	54.90	98.57	---	---	Peak
5725.02	34.04	9.68	13.86	57.58	68.20	10.62	Peak
5743.61	34.05	9.69	17.53	61.27	68.20	6.93	Peak



**Antenna at Vertical Polarization**

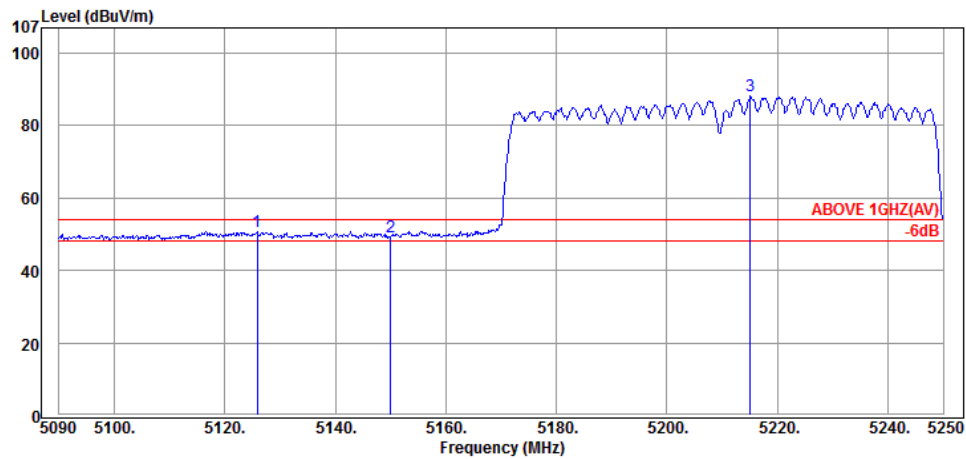
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5684.33	34.01	9.66	51.27	94.94	---	---	Peak
5725.02	34.04	9.68	13.83	57.55	68.20	10.65	Peak
5738.41	34.04	9.68	16.52	60.24	68.20	7.96	Peak

Mode	802.11ac-VHT80	Frequency	TX 5210MHz
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**Antenna at Horizontal Polarization**

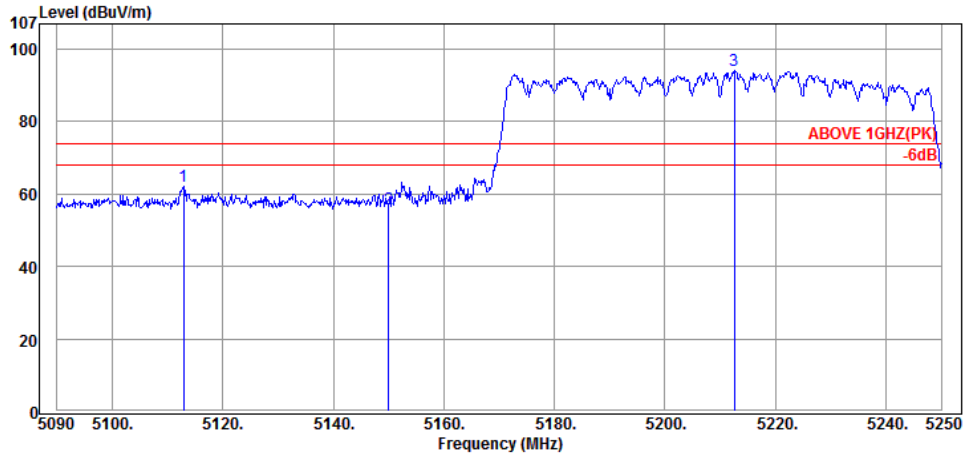
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5139.92	33.39	9.33	18.39	61.11	74.00	12.89	Peak
5150.00	33.41	9.34	16.90	59.65	74.00	14.35	Peak
5222.80	33.52	9.39	53.55	96.46	---	---	Peak



**Antenna at Horizontal Polarization**

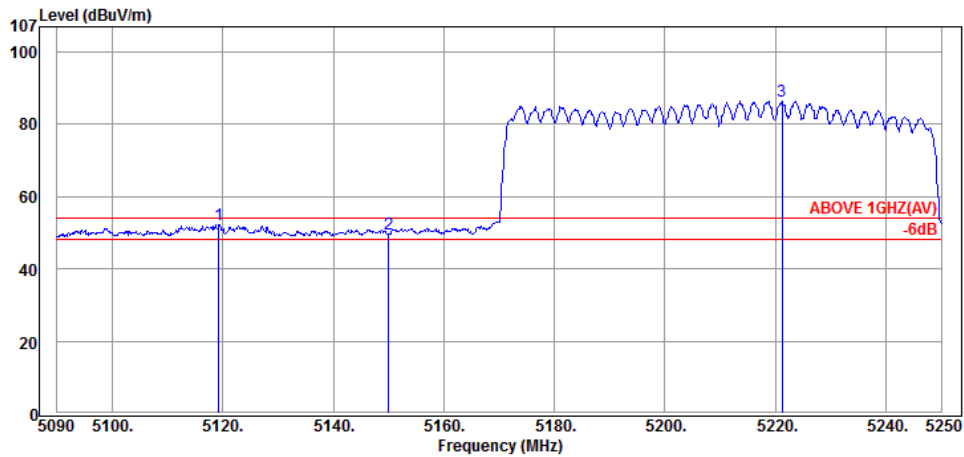
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5125.84	33.37	9.33	8.02	50.72	54.00	3.28	Average
5150.00	33.41	9.34	6.62	49.37	54.00	4.63	Average
5215.12	33.50	9.38	45.50	88.38	---	---	Average

Mode	802.11ac-VHT80	Frequency	TX 5210MHz
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**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5112.88	33.37	9.32	19.61	62.30	74.00	11.70	Peak
5150.00	33.41	9.34	13.30	56.05	74.00	17.95	Peak
5212.56	33.50	9.38	51.25	94.13	---	---	Peak

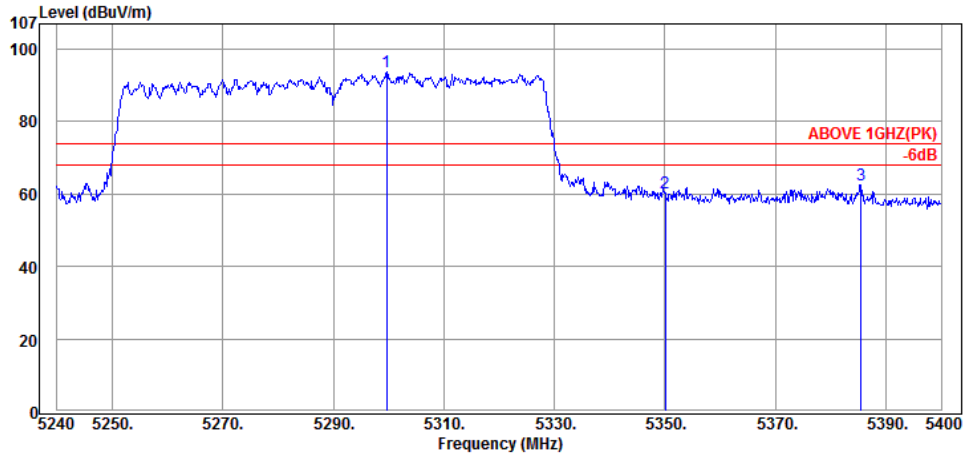


**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5119.28	33.37	9.32	9.53	52.22	54.00	1.78	Average
5150.00	33.41	9.34	6.94	49.69	54.00	4.31	Average
5221.20	33.52	9.39	43.60	86.51	---	---	Average

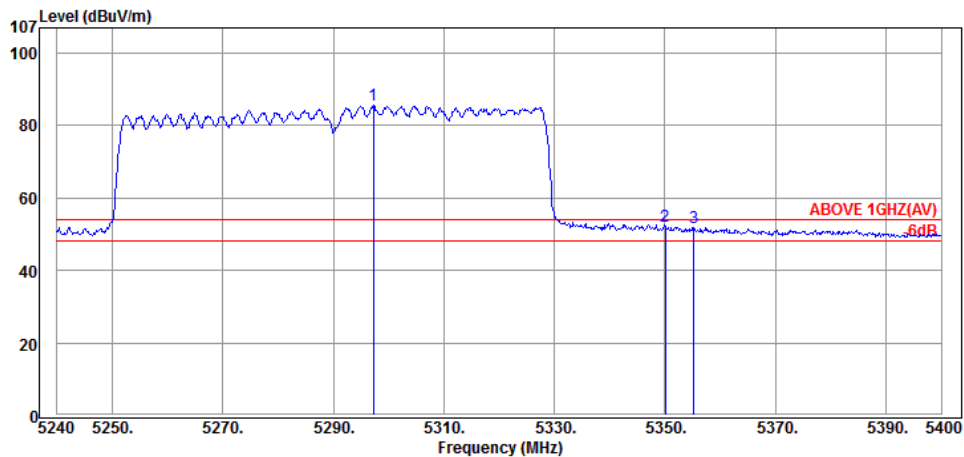


Mode	802.11ac-VHT80	Frequency	TX 5290MHz
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**Antenna at Horizontal Polarization**

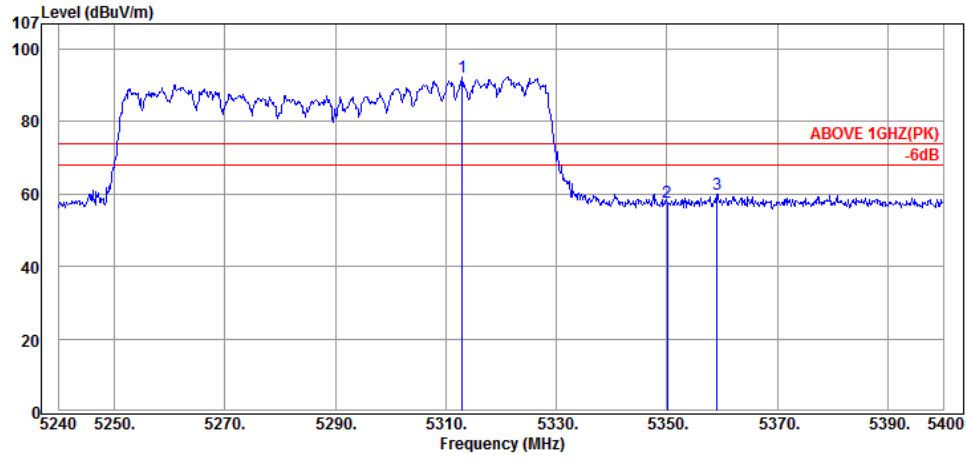
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5299.68	33.62	9.43	50.88	93.93	---	---	Peak
5350.08	33.69	9.46	17.12	60.27	74.00	13.73	Peak
5385.44	33.75	9.48	19.39	62.62	74.00	11.38	Peak



**Antenna at Horizontal Polarization**

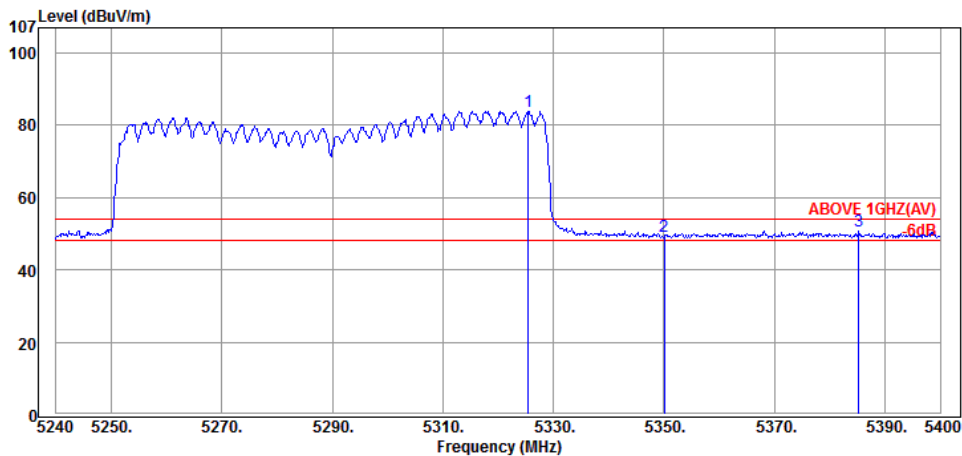
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5297.28	33.62	9.43	42.53	85.58	---	---	Average
5350.08	33.69	9.46	8.98	52.13	54.00	1.87	Average
5355.20	33.71	9.46	8.63	51.80	54.00	2.20	Average

Mode	802.11ac-VHT80	Frequency	TX 5290MHz
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**Antenna at Vertical Polarization**

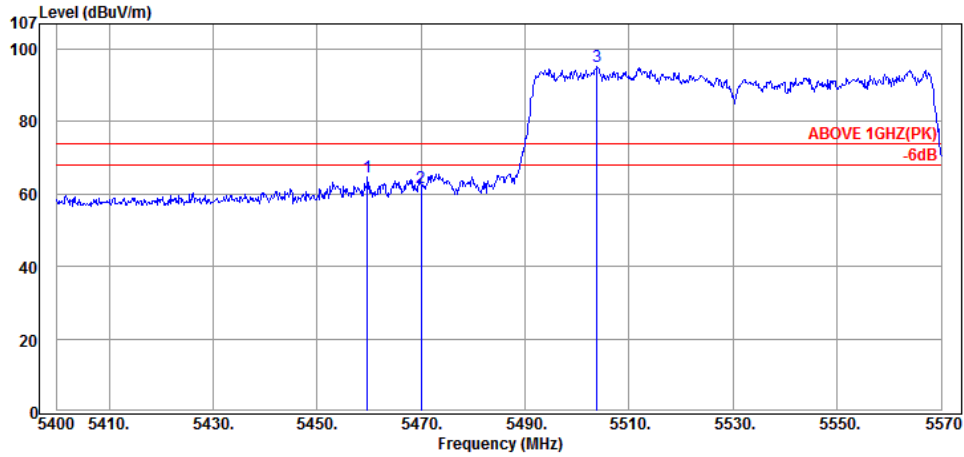
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5312.96	33.65	9.44	49.30	92.39	---	---	Peak
5350.08	33.69	9.46	14.63	57.78	74.00	16.22	Peak
5359.04	33.71	9.46	16.78	59.95	74.00	14.05	Peak



**Antenna at Vertical Polarization**

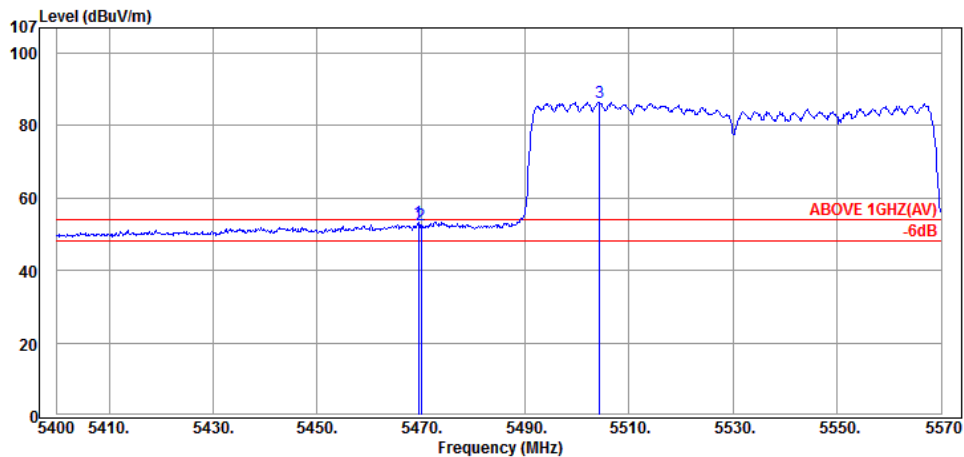
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5325.44	33.67	9.44	40.85	83.96	---	---	Average
5350.08	33.69	9.46	6.12	49.27	54.00	4.73	Average
5385.28	33.75	9.48	7.57	50.80	54.00	3.20	Average

Mode	802.11ac-VHT80	Frequency	TX 5530MHz
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**Antenna at Horizontal Polarization**

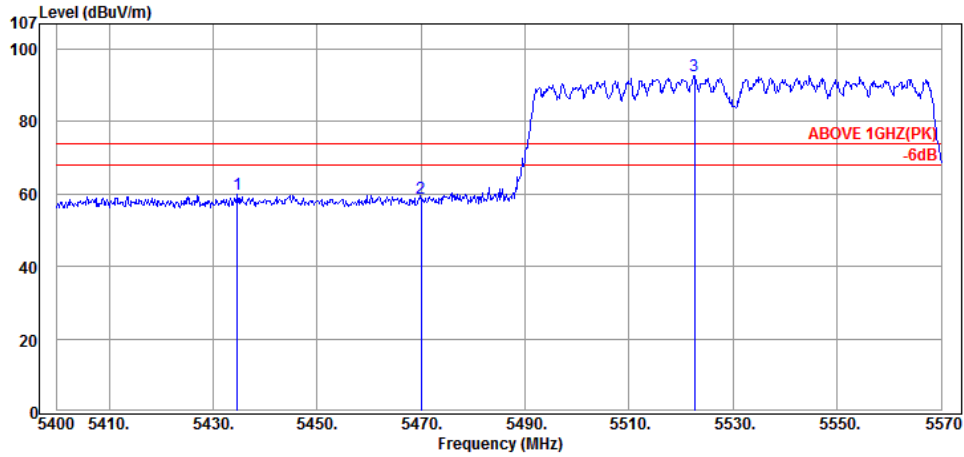
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5459.67	33.84	9.53	21.31	64.68	74.00	9.32	Peak
5470.04	33.86	9.53	18.46	61.85	74.00	12.15	Peak
5503.87	33.90	9.55	51.71	95.16	---	---	Peak



**Antenna at Horizontal Polarization**

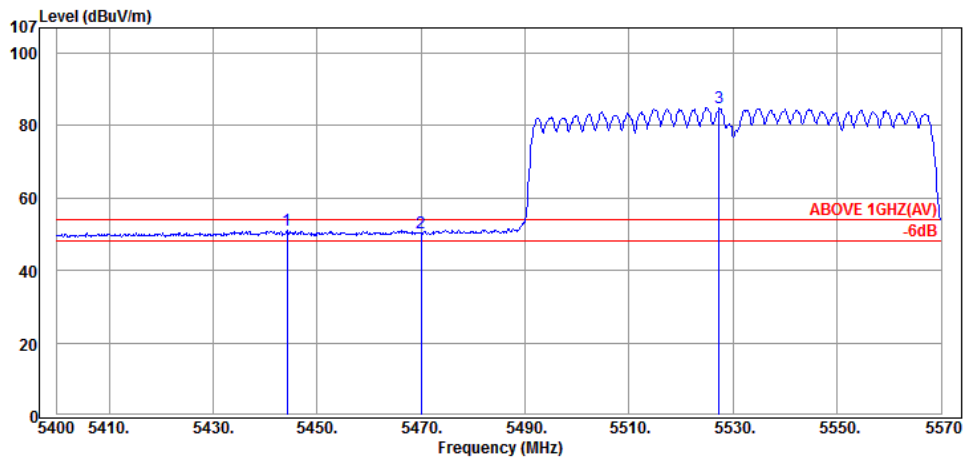
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.53	33.86	9.53	9.97	53.36	54.00	0.64	Average
5470.04	33.86	9.53	9.14	52.53	54.00	1.47	Average
5504.38	33.90	9.55	42.94	86.39	---	---	Average

Mode	802.11ac-VHT80	Frequency	TX 5530MHz
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**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5434.68	33.82	9.51	16.78	60.11	74.00	13.89	Peak
5470.04	33.86	9.53	15.38	58.77	74.00	15.23	Peak
5522.57	33.91	9.56	49.37	92.84	---	---	Peak



**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5444.20	33.82	9.52	7.80	51.14	54.00	2.86	Average
5470.04	33.86	9.53	6.90	50.29	54.00	3.71	Average
5527.33	33.92	9.57	41.60	85.09	---	---	Average

6.5.2. Emissions outside the frequency band:

The emissions (up to 40GHz) not reported for there is no emission be found.

Mode	802.11a	UNII Band	I
		Frequency	TX 5180MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1860.00	27.22	4.68	15.10	47.00	54.00	7.00	Peak
2488.00	28.48	5.31	11.88	45.67	54.00	8.33	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1850.00	27.18	4.65	16.23	48.06	54.00	5.94	Peak
2776.00	29.41	5.55	15.97	50.93	54.00	3.07	Peak

Mode	802.11a	UNII Band	II-2A
		Frequency	TX 5260MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1858.00	27.20	4.68	14.73	46.61	54.00	7.39	Peak
2412.00	28.39	5.26	15.14	48.79	54.00	5.21	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1850.00	27.18	4.65	15.55	47.38	54.00	6.62	Peak
2410.00	28.38	5.26	15.14	48.78	54.00	5.22	Peak

Mode	802.11a	UNII Band	II-2C
		Frequency	TX 5580MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1834.00	27.11	4.62	15.68	47.41	54.00	6.59	Peak
2752.00	29.34	5.53	12.41	47.28	54.00	6.72	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1830.00	27.09	4.62	17.94	49.65	54.00	4.35	Peak
2738.00	29.29	5.52	16.24	51.05	54.00	2.95	Peak

Mode	802.11a	UNII Band	III
		Frequency	TX 5785MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1830.00	27.09	4.62	16.93	48.64	54.00	5.36	Peak
2768.00	29.39	5.54	12.57	47.50	54.00	6.50	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1830.00	27.09	4.62	11.87	43.58	54.00	10.42	Peak
2760.00	29.36	5.54	11.82	46.72	54.00	7.28	Peak

Mode	802.11n-HT20	UNII Band	I
		Frequency	TX 5200MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1822.00	27.06	4.60	16.79	48.45	54.00	5.55	Peak
2758.00	29.36	5.54	11.62	46.52	54.00	7.48	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1832.00	27.09	4.62	16.45	48.16	54.00	5.84	Peak
2756.00	29.36	5.53	16.70	51.59	54.00	2.41	Peak

Mode	802.11n-HT20	UNII Band	II-2A
		Frequency	TX 5260MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	15.05	46.75	54.00	7.25	Peak
2758.00	29.36	5.54	11.28	46.18	54.00	7.82	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	16.77	48.47	54.00	5.53	Peak
2746.00	29.31	5.52	17.32	52.15	54.00	1.85	Peak

Mode	802.11n-HT20	UNII Band	II-2C
		Frequency	TX 5580MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1830.00	27.09	4.62	12.05	43.76	54.00	10.24	Peak
2740.00	29.31	5.52	12.05	46.88	54.00	7.12	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1860.00	27.22	4.68	13.17	45.07	54.00	8.93	Peak
2738.00	29.29	5.52	13.98	48.79	54.00	5.21	Peak

Mode	802.11n-HT20	UNII Band	III
		Frequency	TX 5785MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1830.00	27.09	4.62	17.19	48.90	54.00	5.10	Peak
2740.00	29.31	5.52	13.62	48.45	54.00	5.55	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	16.78	48.48	54.00	5.52	Peak
2746.00	29.31	5.52	17.48	52.31	54.00	1.69	Peak



Mode	802.11n-HT40	UNII Band	I
		Frequency	TX 5230MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1834.00	27.11	4.62	14.77	46.50	54.00	7.50	Peak
2752.00	29.34	5.53	12.39	47.26	54.00	6.74	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	17.72	49.42	54.00	4.58	Peak
2758.00	29.36	5.54	17.69	52.59	54.00	1.41	Peak

Mode	802.11n-HT40	UNII Band	II-2A
		Frequency	TX 5270MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1826.00	27.06	4.61	16.29	47.96	54.00	6.04	Peak
2740.00	29.31	5.52	12.81	47.64	54.00	6.36	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	17.57	49.27	54.00	4.73	Peak
2744.00	29.31	5.52	17.44	52.27	54.00	1.73	Peak

Mode	802.11n-HT40	UNII Band	II-2C
		Frequency	TX 5550MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	14.80	46.50	54.00	7.50	Peak
2740.00	29.31	5.52	13.25	48.08	54.00	5.92	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1850.00	27.18	4.65	14.08	45.91	54.00	8.09	Peak
2746.00	29.31	5.52	15.07	49.90	54.00	4.10	Peak

Mode	802.11n-HT40	UNII Band	II-2C
		Frequency	TX 5795MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	17.29	48.99	54.00	5.01	Peak
2746.00	29.31	5.52	13.08	47.91	54.00	6.09	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1830.00	27.09	4.62	17.94	49.65	54.00	4.35	Peak
2738.00	29.29	5.52	14.24	49.05	54.00	4.95	Peak

Mode	802.11ac-VHT80	UNII Band	I
		Frequency	TX 5210MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1824.00	27.06	4.61	17.44	49.11	54.00	4.89	Peak
2754.00	29.34	5.53	12.66	47.53	54.00	6.47	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1834.00	27.11	4.62	16.89	48.62	54.00	5.38	Peak
2742.00	29.31	5.52	18.52	53.35	54.00	0.65	Peak

Mode	802.11ac-VHT80	UNII Band	II-2A
		Frequency	TX 5290MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1822.00	27.06	4.60	17.24	48.90	54.00	5.10	Peak
2758.00	29.36	5.54	13.42	48.32	54.00	5.68	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1824.00	27.06	4.61	17.69	49.36	54.00	4.64	Peak
2748.00	29.34	5.52	18.07	52.93	54.00	1.07	Peak

Mode	802.11ac-VHT80	UNII Band	II-2C
		Frequency	TX 5530MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1830.00	27.09	4.62	16.42	48.13	54.00	5.87	Peak
2556.00	28.70	5.37	12.20	46.27	54.00	7.73	Peak

**Antenna at Vertical Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1834.00	27.11	4.62	17.21	48.94	54.00	5.06	Peak
2756.00	29.36	5.53	18.23	53.12	54.00	0.88	Peak

Mode	802.11ac-VHT80	UNII Band	III
		Frequency	TX 5775MHz

**Antenna at Horizontal Polarization**

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1824.00	27.06	4.61	16.75	48.42	54.00	5.58	Peak
2744.00	29.31	5.52	12.60	47.43	54.00	6.57	Peak

**Antenna at Vertical Polarization**

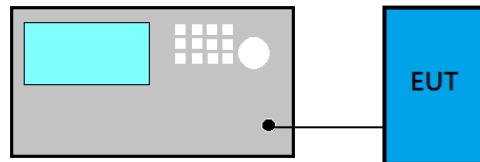
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1828.00	27.09	4.61	16.75	48.45	54.00	5.55	Peak
2762.00	29.36	5.54	17.13	52.03	54.00	1.97	Peak

### 6.5.3. Emissions in Non-restricted Frequency Bands

Pursuant to 789033 D02 General UNII Test Procedures New Rules v01r03 that emission levels below the 15.209 general radiated emissions limits is not required.

## 7. CONDUCTED BAND EDGES

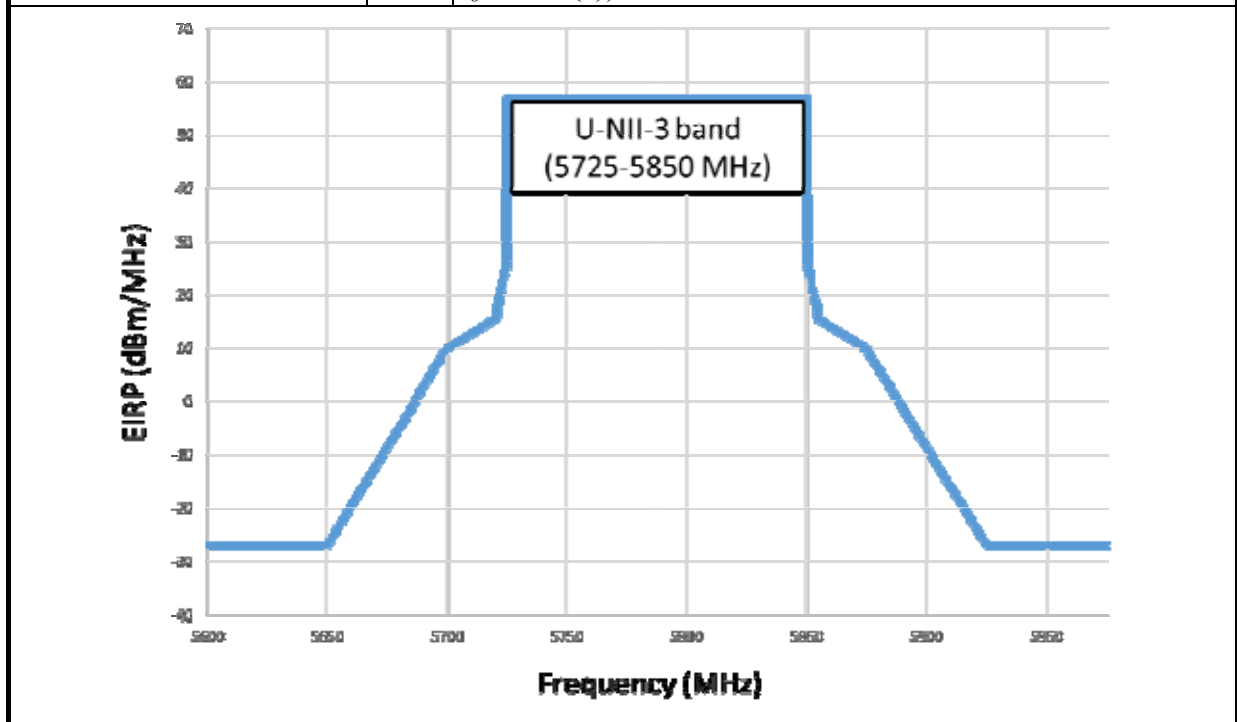
### 7.1. Block Diagram of Test Setup



### 7.2. Specification Limits

Frequency Band (MHz)	E.I.R.P. Limit
5150 to 5250	-27 dBm
5250 to 5350	
5470 to 5725	

Frequency Band (MHz)	E.I.R.P. Limit	
5725 to 5850	<input checked="" type="checkbox"/>	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.
	<input type="checkbox"/>	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))



### **7.3. Test Procedure**

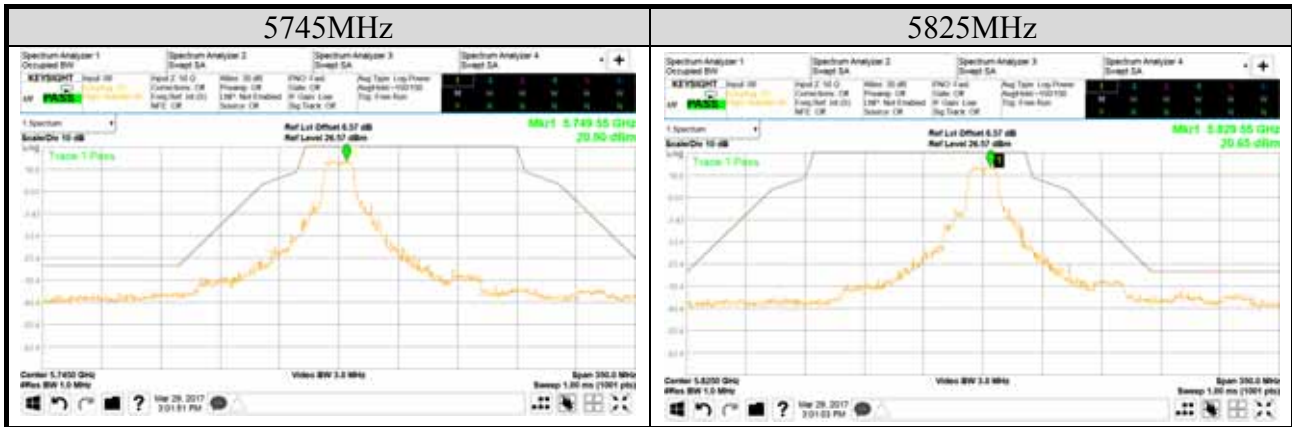
Following measurement procedure is reference to KDB 789033 D02 General UNII Test Procedures New Rules v01r04:

- (1) RBW = 1 MHz
- (2) VBW  $\geq$  3 x RBW
- (3) Detector = Peak
- (4) Sweep time = auto
- (5) Trace mode = max hold
- (6) Allow sweeps to continue until the trace stabilizes.

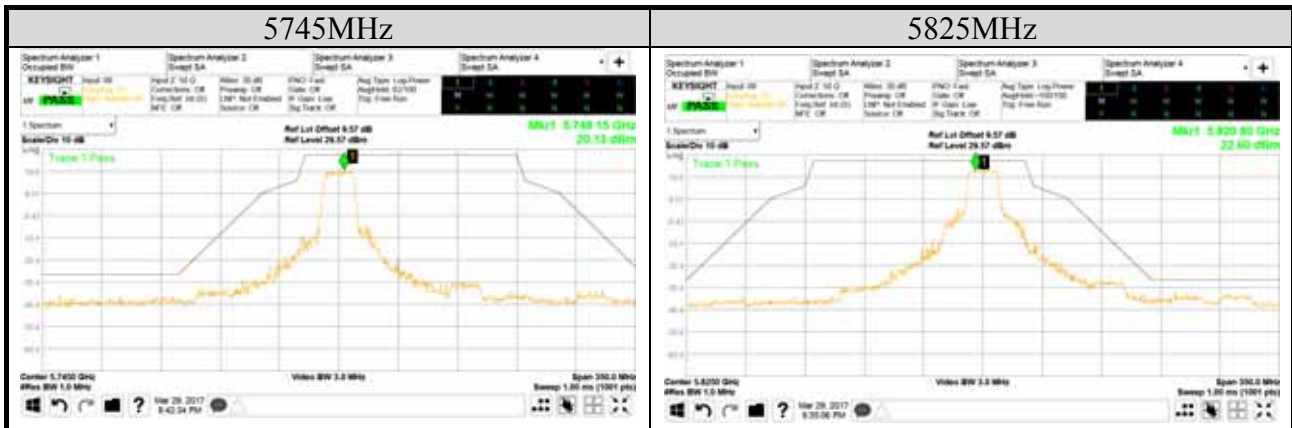


### 7.4. Test Results

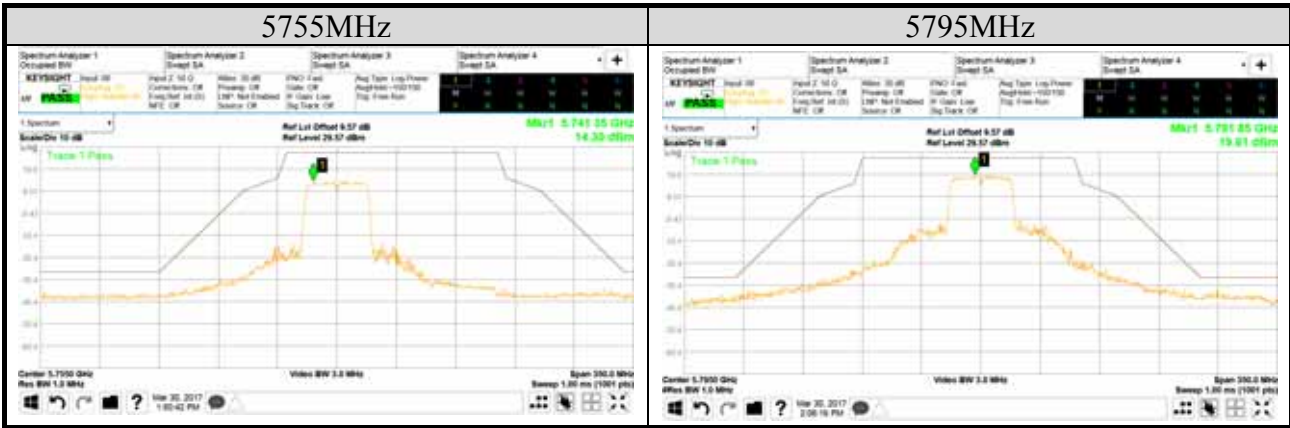
Test Date	2017/03/29	Temp./Hum.	24 /56%
Mode	802.11a		



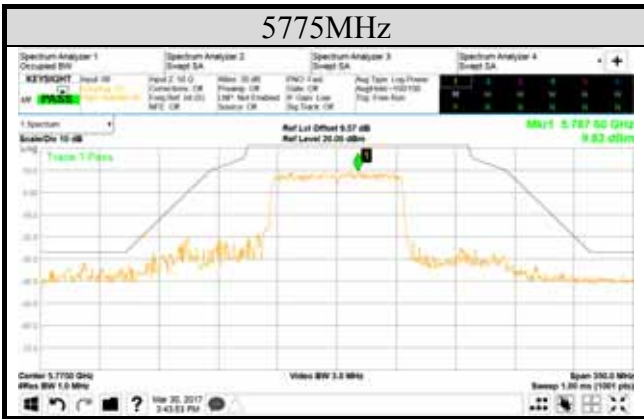
Test Date	2017/03/29	Temp./Hum.	24 /56%
Mode	802.11n-HT20		



Test Date	2017/03/30	Temp./Hum.	24 /56%
Mode	802.11n-HT40		

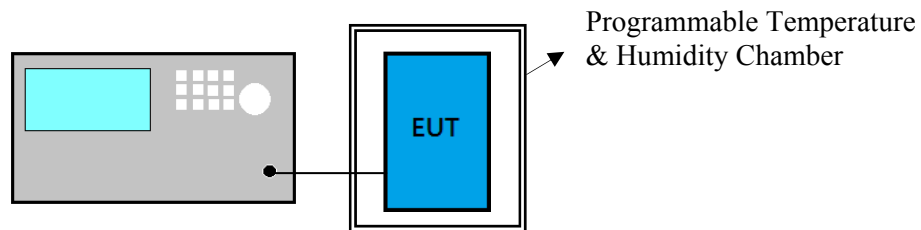


Test Date	2017/03/30	Temp./Hum.	24 /56%
Mode	802.11ac-VHT80		



## 8. FREQUENCY STABILITY

### 8.1. Block Diagram of Test Setup



### 8.2. Specification Limits

NONE

### 8.3. Test Procedure

- (1) Frequency: Test frequency.
- (2) Span: enough to cover the complete power envelope
- (3) RBW: 1MHz(modulation ON) ; 10KHz(CW)
- (4) VBW: 1MHz(modulation ON) ; 10KHz(CW)
- (5) Detector Mode: Positive Peak
- (6) Indication mode: Max hold
- (7) Find the peak frequency and take calculate by the formula:  
(Measurement Value-declaration frequency)/ declaration frequency)

### 8.4. Test Results

Test Date	2017/03/29	Temp./Hum.	24 /56%
-----------	------------	------------	---------

5180MHz					
Temperature( )	-30	-20	-10	0	25
Voltage	138Vac	138Vac	138Vac	138Vac	120Vac
Frequency(MHz)	5179.983	5180.022	5179.986	5180.016	5180.002
Frequency Stability (ppm)	-3.282	4.247	-2.703	3.089	0.386
Temperature( )	-30	-20	-10	0	/
Voltage	102Vac	102Vac	102Vac	102Vac	
Frequency(MHz)	5179.991	5180.011	5179.979	5179.994	
Frequency Stability (ppm)	-1.737	2.124	-4.054	-1.158	
Temperature( )	50	40	30	20	10
Voltage	138Vac	138Vac	138Vac	138Vac	138Vac
Frequency(MHz)	5179.995	5180.006	5179.983	5180.007	5180.014
Frequency Stability (ppm)	-0.965	1.158	-3.282	1.351	2.703
Temperature( )	50	40	30	20	10
Voltage	102Vac	102Vac	102Vac	102Vac	102Vac
Frequency(MHz)	5179.987	5180.020	5180.019	5179.992	5180.009
Frequency Stability (ppm)	-2.510	3.861	3.668	-1.544	1.737

5260MHz					
Temperature( )	-30	-20	-10	0	25
Voltage	138Vac	138Vac	138Vac	138Vac	120Vac
Frequency(MHz)	5260.004	5260.023	5259.985	5260.026	5260.004
Frequency Stability (ppm)	0.760	4.373	-2.852	4.943	0.760
Temperature( )	-30	-20	-10	0	/
Voltage	102Vac	102Vac	102Vac	102Vac	
Frequency(MHz)	5259.993	5260.014	5259.976	5259.989	
Frequency Stability (ppm)	-1.331	2.662	-4.563	-2.091	
Temperature( )	50	40	30	20	10
Voltage	138Vac	138Vac	138Vac	138Vac	138Vac
Frequency(MHz)	5259.986	5260.013	5259.981	5260.008	5260.009
Frequency Stability (ppm)	-2.662	2.471	-3.612	1.521	1.711
Temperature( )	50	40	30	20	10
Voltage	102Vac	102Vac	102Vac	102Vac	102Vac
Frequency(MHz)	5259.992	5260.021	5260.016	5259.991	5260.013
Frequency Stability (ppm)	-1.521	3.992	3.042	-1.711	2.471

5500MHz					
Temperature( )	-30	-20	-10	0	25
Voltage	138Vac	138Vac	138Vac	138Vac	120Vac
Frequency(MHz)	5499.992	5500.019	5500.022	5500.002	5500.002
Frequency Stability (ppm)	-1.455	3.455	4.000	0.364	0.364
Temperature( )	-30	-20	-10	0	/
Voltage	102Vac	102Vac	102Vac	102Vac	
Frequency(MHz)	5500.014	5500.007	5500.011	5499.979	
Frequency Stability (ppm)	2.545	1.273	2.000	-3.818	
Temperature( )	50	40	30	20	10
Voltage	138Vac	138Vac	138Vac	138Vac	138Vac
Frequency(MHz)	5499.979	5500.020	5500.019	5499.994	5499.983
Frequency Stability (ppm)	-3.818	3.636	3.455	-1.091	-3.091
Temperature( )	50	40	30	20	10
Voltage	102Vac	102Vac	102Vac	102Vac	102Vac
Frequency(MHz)	5500.006	5499.983	5500.007	5499.986	5499.991
Frequency Stability (ppm)	1.091	-3.091	1.273	-2.545	-1.636

5725MHz					
Temperature( )	-30	-20	-10	0	25
Voltage	138Vac	138Vac	138Vac	138Vac	120Vac
Frequency(MHz)	5724.987	5724.994	5725.003	5725.021	5725.004
Frequency Stability (ppm)	-2.271	-1.048	0.524	3.668	0.699
Temperature( )	-30	-20	-10	0	/
Voltage	102Vac	102Vac	102Vac	102Vac	
Frequency(MHz)	5725.006	5724.995	5725.016	5724.983	
Frequency Stability (ppm)	1.048	-0.873	2.795	-2.969	
Temperature( )	50	40	30	20	10
Voltage	138Vac	138Vac	138Vac	138Vac	138Vac
Frequency(MHz)	5724.986	5724.991	5725.022	5725.019	5724.979
Frequency Stability (ppm)	-2.445	-1.572	3.843	3.319	-3.668
Temperature( )	50	40	30	20	10
Voltage	102Vac	102Vac	102Vac	102Vac	102Vac
Frequency(MHz)	5724.983	5725.016	5724.983	5724.986	5725.022
Frequency Stability (ppm)	-2.969	2.795	-2.969	-2.445	3.843

## **9. DEVIATION TO TEST SPECIFICATIONS**

**【NONE】**