

RSS-247 5 GHz WLAN Report

for

LG Electronics Inc.

**222 LG-ro Jinwi-myeon 451-713
Pyeongtaek-si, Gyeonggi-do 451-713, Korea**

Brand : LG
Product Name : Notebook Computer
Model Name : 13Z970
IC : 2703H-13Z970

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



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AUDIX Technology Corp.
No. 53-11, Dingfu, Linkou, Dist.,
New Taipei City 244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

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APPENDIX A TEST PLOTS

APPENDIX B TEST PHOTOGRAPHS

TEST REPORT CERTIFICATION

Applicant : LG Electronics Inc.
Factory : LG Electronics Nanjing New Technology Co., Ltd.
Product Name : Notebook Computer
Model No. : 13Z970
Serial No. : N/A
Brand : LG

Applicable Standards:

RSS-Gen (Issue 4), November 2014
RSS-247 (Issue 1), May 2015
ANSI C63.10:2013
789033 D02 General UNII Test Procedures New Rules v01r03

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 Test: 2016. 11. 07 ~ 29

Date of Report: 2016. 11. 29

Producer: Sabrina Wang
(Sabrina Wang/Administrator)

Signatory: Ben Cheng
(Ben Cheng/Manager)

1. REPORT HISTORY

Revision	Date	Revision Summary	Report Number
0	2016. 11. 29	Original Report.	EM-F160809

2. SUMMARY OF TEST RESULTS

Rule	Description	Results
RSS-Gen §8.8	Conducted Emission	PASS
RSS-Gen §8.9/ RSS-247 §6.2.1(2)/6.2.2(2)/6.2.3(2)/6.2.4(2)	Radiated Band Edge and Radiated Spurious Emission	PASS
RSS-247 §6.2.1(1)/6.2.2(1)/6.2.3(1)/6.2.4(1)	Emission Bandwidth Measurement	PASS
RSS-247 §6.2.1(1)/6.2.2(1)/6.2.3(1)/6.2.4(1)	Maximum Output	PASS
RSS-247 §6.2.1(2)/6.2.2(2)/6.2.3(2)/6.2.4(2)	Conducted Band Edges and Conducted Spurious Emission	PASS
RSS-247 §6.2.1(1)/6.2.2(1)/6.2.3(1)/6.2.4(1)	Power Spectral Density	PASS
Note: Due to update the standard, so it is unnecessary to re-test.		

3. GENERAL INFORMATION

3.1. Description of EUT

Product	Notebook Computer																						
Model Number	13Z970																						
Serial Number	N/A																						
Brand Name	LG																						
Applicant	LG Electronics Inc. 222, LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do 451-713 Korea																						
Factory	LG Electronics Nanjing New Technology Co., Ltd. No.346,Yaoxin Road, Economic & Technical Development Zone, Nanjing, China.																						
RF Features	WLAN:802.11a/b/g/n/ac Bluetooth: BT and BLE																						
Transmit Type	<table><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/BLE</td><td>1T1R</td></tr></tbody></table> <table><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/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																							
802.11b	1T1R																						
802.11g	1T1R																						
802.11n-HT20	2T2R																						
802.11n-HT40	2T2R																						
BT/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																						
Device Category	☐ Outdoor Access Point ☐ Fixed point-to-point Access Point ☐ Indoor Access Point ☒ Mobile and Portable client device																						
Date of Receipt of Sample	2016. 11. 07																						

3.2. Description of Key Component Lists

Item	Vendor	Model name	Description
System	Microsoft	Windows 10	---
Main Board	LGIT	13/14/15Z970 Main	LGIT
	E&E	13/14/15Z970 Main	E&E
CPU (Socket: BGA1356)	Intel	i7-7500U	2.70GHz, up to 2.90GHz
	Intel	i5-7200U	2.50GHz, up to 2.71GHz
Memory	SAMSUNG	M471A1K43BB0-CPB	8GB DDR4 2133MHz
	SK hynix	HMA81GS6AFR8N-TF	8GB DDR4 2133MHz
LCD Panel	LG Display	LP133WF5-SPC1	Resolution: 1920 x 1080, 60Hz HDMI: 4K; (Including touch)
	LG Display	LP133WF4-SPC1	(Non touch)
Storage	SAMSUNG	MZ-NLN512A (P/N:MZNLN512HMJP)	512GB
	SK hynix	HFS512G39MND-3510A (P/N:HFS512G39MND)	512GB
Web Camera	Namuga	LC121 / LC119	1.00M/HD
WLAN Combo Card	Intel	8265D2W	802.11a/b/g/n/ac 2.4GHz/5GHz + BT 4.2 BLE FCC ID: PD98265D2 IC: 1000M-8265D2
Wireless LAN Antenna	LG (INPAQ)	WA-F-LBLB-04-047	FPCB Type Main: Black, Aux: Gray
Wireless LAN Board	HANNSTAR	13Z970 WLAN SUB	---
	E&E	13Z970 WLAN SUB	
HDMI Board	HANNSTAR	13Z970 HDMI SUB	---
	E&E	13Z970 HDMI SUB	
Keyboard	LG	13Z970 KR HMB8150ELB13	---
Touch Pad	LG	EBD62827901 FA167D-16H0	---
	LG	EBD61685203 SA167D-26H5	---
Type C to LAN	LG	10/100 Megabit Ethernet	---
	Type C to LAN: Shielded, Undetached, 0.12m		

Item	Vendor	Model name	Description
Battery Pack	LG	LBR1223E	60.06Wh, DC7.7V, 7800mAh
	LG	LBP7221E	34.61Wh, DC7.7V, 4495mAh
AC Adapter	LG (Lien Chang)	LCAP25B	I/P: AC 100-240V, 50-60Hz, 1.0A, O/P: DC 19V, 2.1A
	DC Power Cord: Non-Shielded, Undetached, 1.5m, Bonded a ferrite core AC Power Cord: Non-Shielded, Detached, 1.5m (2C)		

Remark: For a more detailed features description, please refer to the manufacturer's specifications or the user manual.

3.3. EUT Specifications Assessed in Current Report

Mode	UNII Band	Fundamental Range (MHz)	Channel Number	Modulation	Data Rate (Mbps)
802.11a	I	5180-5240	4	OFDM Modulation (BPSK/QPSK/16QAM/64QAM)	Up to 54
	II	5260-5320	4		
	III	5500-5720	9		
	IV	5745-5825	5		
802.11n-HT20/ 802.11ac-VHT20	I	5180-5240	4	OFDM Modulation (BPSK/QPSK/16QAM/64QAM)	MCS0~15
	II	5260-5320	4		
	III	5500-5720	11		
	IV	5745-5825	5		
802.11n-HT40/ 802.11ac-VHT40	I	5190-5230	2	OFDM Modulation (BPSK/QPSK/16QAM/64QAM)	MCS0~15
	II	5270-5310	2		
	III	5510-5710	5		
	IV	5755-5795	2		
802.11ac-VHT80	I	5210	1	OFDM Modulation (BPSK/QPSK/16QAM/64QAM)	MCS0~15
	II	5290	1		
	III	5530-5690	2		
	IV	5775	1		
Remark: UNII Band II (DFS Function, Slave/no In service monitor, no Ad-Hoc mode)					

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	III		
	40	5200			
	44	5220		132	5660
	48	5240		136	5680
II	52	5260	IV	140	5700
	56	5280		144	5720
	60	5300		149	5745
	64	5320		153	5765
III	100	5500		157	5785
	104	5520		161	5805
	108	5540		165	5825
	112	5560			
	116	5580			

Channel List					
802.11n-HT40/802.11ac-VHT40					
UNII Band	Channel Number	Frequency (MHz)	UNII Band	Channel Number	Frequency (MHz)
I	38	5190	III	118	5590
	46	5230			
II	54	5270		134	5670
	62	5310		142	5710
III	102	5510	IV	151	5755
	110	5550		159	5795

Channel List					
802.11ac-VHT80					
UNII Band	Channel Number	Frequency (MHz)	UNII Band	Channel Number	Frequency (MHz)
I	42	5210	IV	155	5775
II	58	5290			
III	106	5530			
	138	5690			

Note 1: 80211n has similar modulation to 802.11ac 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 3.6.

3.4. Antenna Information

2.4G Antenna					
No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)
1	WA-F-LBLB-04-047 (Main)	INPAQ	FPCB	2400	0.76
				2450	2.31
				2500	3.26
2	WA-F-LBLB-04-047 (AUX)			2400	2.64
				2450	2.22
				2500	2.37

5G Antenna					
No.	Antenna Part Number	Manufacture	Antenna Type	Frequency (MHz)	Max Gain (dBi)
1	WA-F-LBLB-04-047 (Main)	INPAQ	FPCB	5100	1.49
				5400	2.74
				5800	2.48
2	WA-F-LBLB-04-047 (AUX)			5100	2.98
				5400	1.98
				5800	4.76

3.5. Data Rate Relative to Output Power

802.11a				802.11n-HT20			
Channel	Modulation	Date Rate	Power (dBm)	Channel	Modulation	Date Rate	Power (dBm)
36	BPSK	6	16.97	36	BPSK	MCS8	14.96
36	QPSK	9	16.91	36	QPSK	MCS9	14.92
36	QPSK	12	16.84	36	QPSK	MCS10	14.89
36	16-QAM	18	16.79	36	16-QAM	MCS11	14.81
36	16-QAM	24	16.72	36	16-QAM	MCS12	14.75
36	64-QAM	36	16.65	36	64-QAM	MCS13	14.68
36	64-QAM	48	16.57	36	64-QAM	MCS14	14.64
36	64-QAM	54	16.51	36	64-QAM	MCS15	14.62

802.11n-HT40				802.11ac-VHT80			
Channel	Modulation	Date Rate	Power (dBm)	Channel	Modulation	Date Rate	Power (dBm)
38	BPSK	MCS8	12.59	38	BPSK	MCS8	10.90
38	QPSK	MCS9	12.53	38	QPSK	MCS9	10.83
38	QPSK	MCS10	12.48	38	QPSK	MCS10	10.79
38	16-QAM	MCS11	12.37	38	16-QAM	MCS11	10.74
38	16-QAM	MCS12	12.34	38	16-QAM	MCS12	10.70
38	64-QAM	MCS13	12.22	38	64-QAM	MCS13	10.58
38	64-QAM	MCS14	12.18	38	64-QAM	MCS14	10.52
38	64-QAM	MCS15	12.11	38	64-QAM	MCS15	10.45

Note: Above results are assessed in average power.

3.6. Test Configuration

Mode	Duty Cycle (x)	T (ms)	Duty Cycle Factor (dB)
802.11a	1.00	2.050	0.00
802.11n-HT20/802.11ac-VHT20	0.97	0.975	0.13
802.11n-HT40/802.11ac-VHT40	0.94	0.494	0.27
802.11ac-VHT80	0.66	0.663	1.80

Note: When duty cycle is less than 98% (0.98) that duty cycle factor $10\log(1/x)$ is needed to add in conducted test items measured in average detector.

AC Conduction	
Test Case	Normal operation

Item		Mode	Data Rate	Test Channel
Radiated Test Case	Radiated Band Edge Note1	802.11a	6 Mbps	36/64/100/140
		802.11n-HT20	MCS8	36/64/100/140
		802.11n-HT40	MCS8	38/62/102/134
		802.11ac-VHT80	MCS8	42/58/106/122
	Radiated Spurious Emission Note1 & 2	802.11a	6 Mbps	40/52/116/144/157
		802.11n-HT20	MCS8	40/52/116/144/157
		802.11n-HT40	MCS8	46/54/118/142/159
		802.11ac-VHT80	MCS8	42/58/138/155

Item		Mode	Data Rate	Test Channel
Conducted Test Case	Emission Bandwidth/ Maximum output power/ Power spectral density	802.11a	6 Mbps	36/40/48/52/60/64/ 100/116/140/144/149/157/165
		802.11n-HT20	MCS8	36/40/48/52/60/64 100/116/140/144/149/157/165
		802.11n-HT40	MCS8	38/46/54/62/102 118/134/142/151/159
		802.11ac-VHT80	MCS8	42/58/106/138/155
	Conducted Band Edges	802.11a	6 Mbps	149/165
		802.11n-HT20	MCS8	149/165
		802.11n-HT40	MCS8	151/159
		802.11ac-VHT80	MCS8	155

Note 1:

☒ Mobile Device

☐ Portable Device, and 3 axis were assessed. The worst scenario for Radiated Spurious Emission as follow:

- ☐ Lie
- ☐ Side
- ☐ Stand

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

3.7. Tested Supporting System List

3.7.1. Support Peripheral Unit

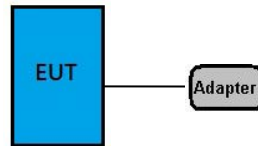
No.	Product	Brand	Model No.	Serial No.	FCC ID
1.	SD Card	ADATA	N/A	N/A	N/A
2.	Earphone	APPLE	N/A	N/A	N/A
3.	LCD Monitor	VIEWSONIC	VP2780-4K	U8K153600277	N/A
4.	External HDD	SONY	HD-E1	3GDL0T155151 A12	N/A
5.	USB Mouse	DELL	MS111-T	CN-0KW2YH-7 1616-282-0XYP	N/A
6.	Earphone	HTC	Max300	N/A	N/A
7.	USB Mouse	ASUS	N6-mimi	N/A	N/A
8.	LCD TV	LG	22LK330-DB	N/A	N/A
9.	USB Storage	Transcend	N/A	N/A	N/A

3.7.2. Cable Lists

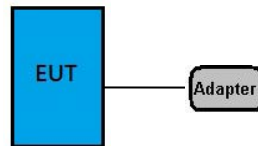
No.	Cable Description Of The Above Support Units
1.	N/A
2.	Earphone Cable: Unshielded, Detachable, 0.9m
3.	HDMI Cable: Shielded, Detachable, 1.8m
4.	USB Cable: Shielded, Detachable, 0.5m
5.	USB Cable: Shielded, Detachable, 1.8m
6.	Earphone Cable: Unshielded, Detachable, 1.5m
7.	USB Cable: Shielded, Detachable, 1.5m
8.	Power Cord: Shielded, Detachable, 1.5m HDMI Cable: Shielded, Detachable, 1.5m
9.	N/A

3.8. Setup Configuration

3.8.1. EUT Configuration for Power Line Emission



3.8.2. EUT Configuration for Conducted Test Items



3.9. Operating Condition of EUT

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

3.10. Description of Test Facility

Test Firm Name	:	AUDIX Technology Corporation EMC Department No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan
Test Location & Facility	:	No. 7 Shielded Room No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan Semi-Anechoic Chamber No. 53-11, Dingfu, Linkou Dist., New Taipei City 244, Taiwan IC Test Site Registration No.: 5183B-1 Renewal on September 17, 2014 Fully Anechoic Chamber 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

3.11.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	2016. 03. 31	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	2016. 01. 21	1 Year
4.	Pulse Limiter	R&S	ESH3-Z2	101495	2016. 01. 17	1 Year
5.	Test Software	Audix	e3	V.120619C	N.C.R.	N.C.R.

4.2. Radiated Emission Measurement

4.2.1. Frequency Range 9kHz~1000MHz (Semi Anechoic Chamber)

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A-526	MY53400071	2016. 09. 19	1 Year
2.	Test Receiver	R & S	ESCS30	100338	2016. 06. 22	1 Year
3.	Amplifier	HP	8447D	2944A06305	2016. 02. 23	1 Year
4.	Bilog Antenna	CHASE	CBL6112D	33821	2016. 01. 30	1 Year
5.	Loop Antenna	R&S	HFH2-Z2	891847/27	2015. 12. 24	1 Year
6.	Test Software	Audix	e3	V.6.110601	N.C.R.	N.C.R.

4.2.2. Frequency Range Above 1GHz (Fully Anechoic Chamber)

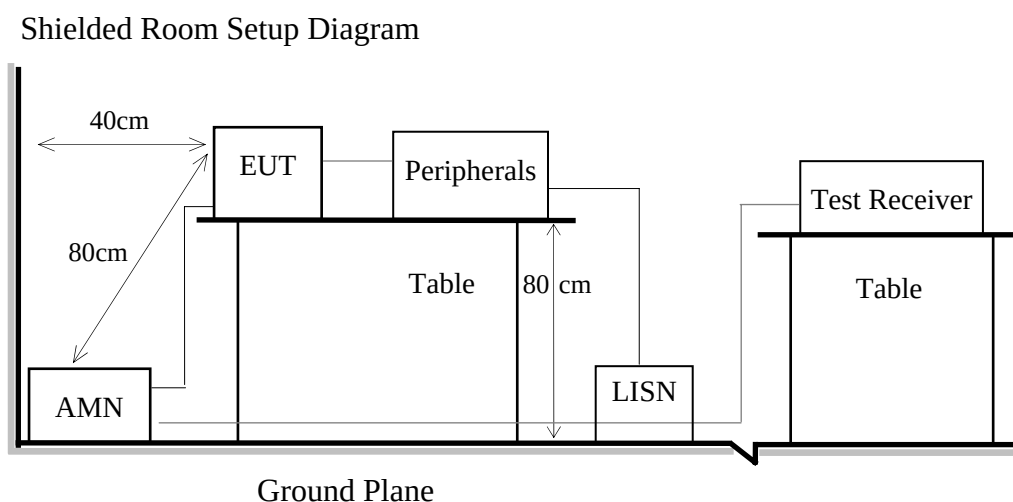
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	E4446A	US44300366	2016. 08. 19	1 Year
2.	Amplifier	Agilent	8449B	3008A02678	2016. 03. 04	1 Year
3.	5G Notch Filter	Microwave Circuits	N0452502	459775	2016. 01. 28	1 Year
4.	5G Notch Filter	Microwave Circuits	N0555983	459481	2016. 01. 28	1 Year
5.	5G Notch Filter	Microwave Circuits	N0258771	459776	2016. 01. 28	1 Year
6.	Double-Ridged Waveguide Horn	ETS-Lindgren	3117	00135902	2016. 03. 05	1 Year
7.	Horn Antenna	EMCO	3116	2653	2016. 10. 24	1 Year
8.	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	Agilent	N9010A-507	MY52220264	2016. 08. 09	1 Year
2.	Power Meter	Anritsu	ML2495A	1145008	2016. 10. 27	1 Year
3.	Power Sensor	Anritsu	MA2411B	1126096	2016. 10. 27	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 μ V	56 ~ 46 dB μ V
500kHz ~ 5MHz	56 dB μ V	46 dB μ V
5MHz ~ 30MHz	60 dB μ V	50 dB μ 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.

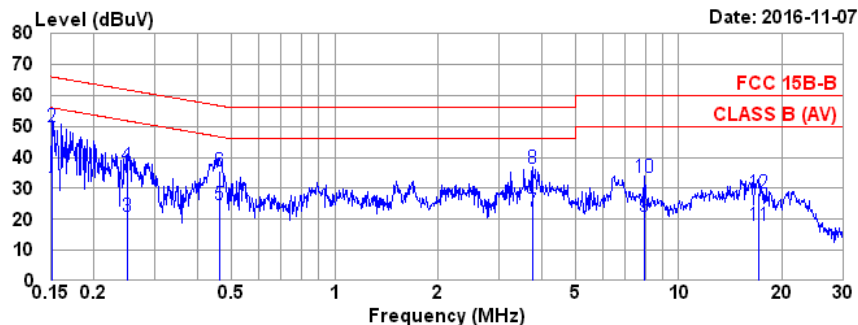
5.3. Test Procedure

- 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	2016/11/07	Temp./Hum.	24°C/53%
Test Voltage	AC 120V, 60Hz (via AC Adapter)		



Site no. : No.7 Shielded Room Data no. : 2
Condition : ESH2-Z5 366(ADAPTER) Phase : NEUTRAL
Limit : FCC 15B-B
Env. / Ins. : 24°C / 53% ESCI (1276) Engineer : Nick Du
EUT : 13Z970
Power Rating : 120Vac/60Hz
Test Mode : Operating

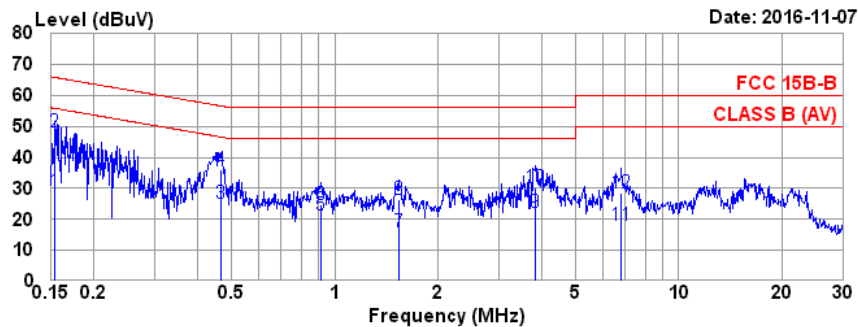
	Freq. (MHz)	AMN Factor (dB)	Cable Loss (dB)	Pulse Att. (dB)	Reading (dBμV)	Emission Level (dBμV)	Limits (dBμV)	Margin (dB)	Remark
1	0.151	0.19	0.03	9.85	20.16	30.23	55.96	25.73	Average
2	0.151	0.19	0.03	9.85	39.99	50.06	65.96	15.90	QP
3	0.251	0.18	0.04	9.85	10.95	21.02	51.73	30.71	Average
4	0.251	0.18	0.04	9.85	27.40	37.47	61.73	24.26	QP
5	0.464	0.19	0.04	9.85	14.83	24.91	46.63	21.72	Average
6	0.464	0.19	0.04	9.85	25.59	35.67	56.63	20.96	QP
7	3.759	0.31	0.11	9.89	12.23	22.54	46.00	23.46	Average
8	3.759	0.31	0.11	9.89	26.02	36.33	56.00	19.67	QP
9	7.977	0.48	0.16	9.87	10.36	20.87	50.00	29.13	Average
10	7.977	0.48	0.16	9.87	23.04	33.55	60.00	26.45	QP
11	17.018	0.88	0.23	9.91	7.12	18.14	50.00	31.86	Average
12	17.018	0.88	0.23	9.91	17.32	28.34	60.00	31.66	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

AUDIX Technology Corp.
No. 53-11, Dingfu, Linkou, Dist.,
New Taipei City 244, Taiwan

Tel: +886 2 26099301
Fax: +886 2 26099303

Test Date	2016/11/07	Temp./Hum.	24°C/53%
Test Voltage	AC 120V, 60Hz (via AC Adapter)		



Site no. : No.7 Shielded Room Data no. : 1
Condition : ESH2-Z5 366(ADAPTER) Phase : LINE
Limit : FCC 15B-B
Env. / Ins. : 24°C / 53% ESCI (1276) Engineer : Nick Du
EUT : 13Z970
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	0.154	0.18	0.03	9.85	18.88	28.94	55.78	26.84	Average
2	0.154	0.18	0.03	9.85	37.99	48.05	65.78	17.73	QP
3	0.466	0.19	0.04	9.85	15.09	25.17	46.58	21.41	Average
4	0.466	0.19	0.04	9.85	26.15	36.23	56.58	20.35	QP
5	0.909	0.21	0.06	9.90	11.01	21.18	46.00	24.82	Average
6	0.909	0.21	0.06	9.90	14.63	24.80	56.00	31.20	QP
7	1.535	0.23	0.07	9.94	5.51	15.75	46.00	30.25	Average
8	1.535	0.23	0.07	9.94	16.13	26.37	56.00	29.63	QP
9	3.840	0.33	0.11	9.89	12.09	22.42	46.00	23.58	Average
10	3.840	0.33	0.11	9.89	19.87	30.20	56.00	25.80	QP
11	6.805	0.47	0.14	9.87	7.49	17.97	50.00	32.03	Average
12	6.805	0.47	0.14	9.87	18.23	28.71	60.00	31.29	QP

Remarks: 1. Emission Level= AMN Factor + Cable Loss + Pulse Att. + Reading.

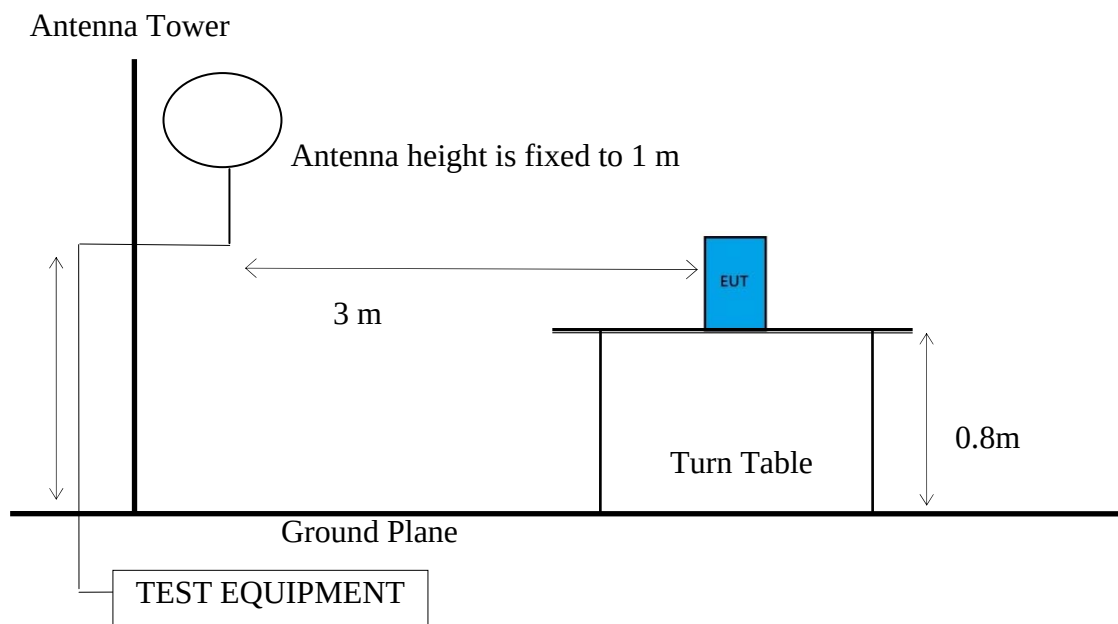
6. RADIATED EMISSION MEASUREMENT

6.1. Block Diagram of Test Setup

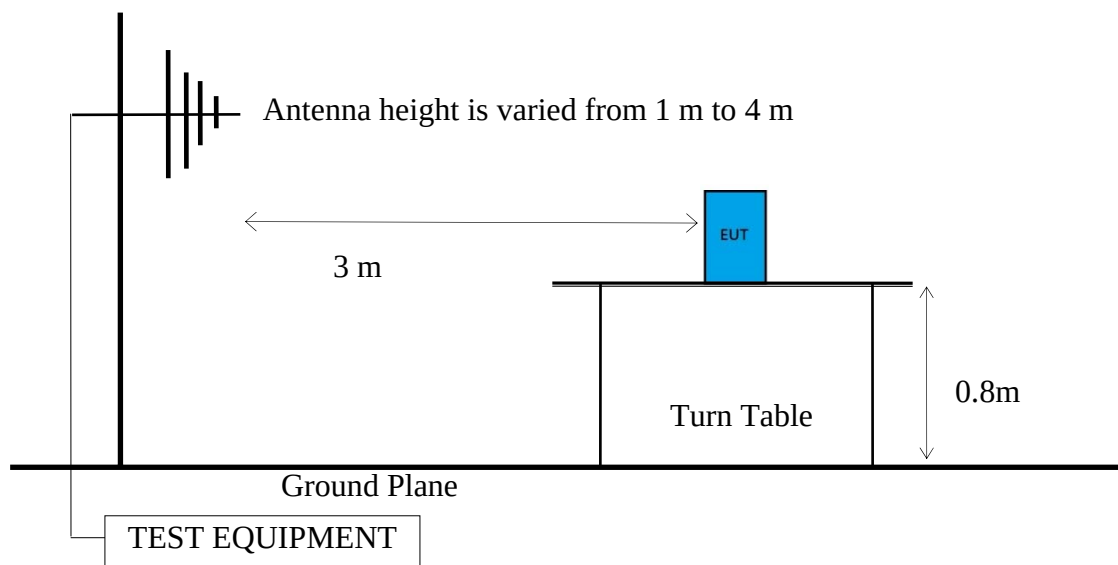
6.1.1. Block Diagram of connection between EUT and simulators

Indicated as section 3.7

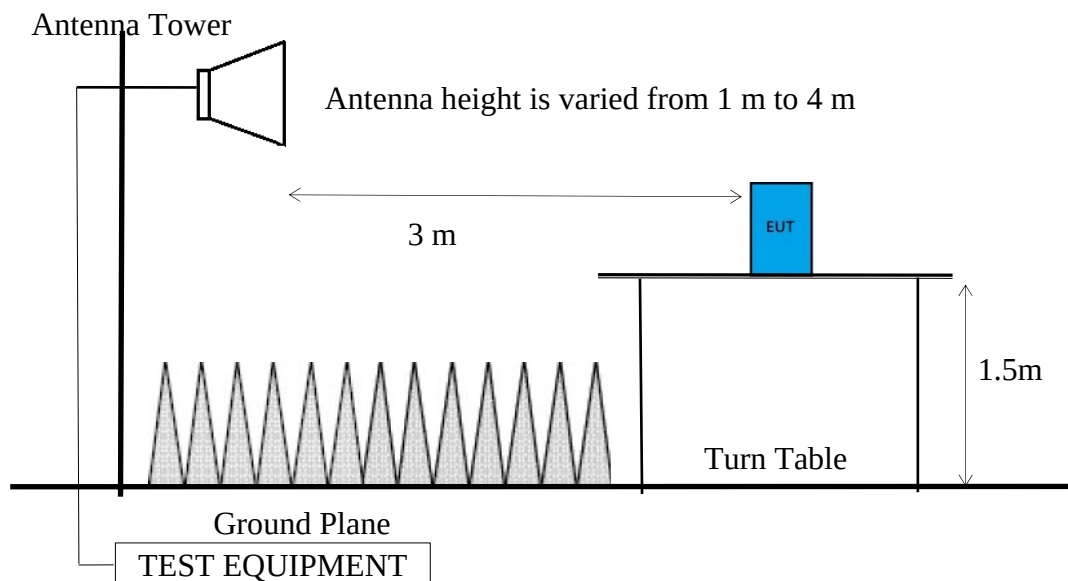
6.1.2. Semi-Anechoic Chamber (3m) Setup Diagram for 9kHz-30MHz



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



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 RSS-Gen table 6 must be in compliance with the radiated emission limits specified in RSS-Gen table 4 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
5725 to 5850	-17 dBm/MHz ^{Note 1} -27 dBm/MHz ^{Note 2}	78.2 ^{Note 1} 68.2 ^{Note 2}

Note 1: Applicable to frequency within 10MHz to band edge.

2: Applicable to frequency beyond 10 MHz out of band edge.

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

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 $\geq 3 \times$ 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 $\geq 3 \times$ 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 $\geq 1/T$.

Modulation Type	T (ms)	1/ T (kHz)	VBW Setting (kHz)
802.11a	2.050	0.488	0.488
802.11ac-VHT20	0.975	1.026	1.026
802.11ac-VHT40	0.494	2.024	2.024
802.11ac-VHT80	0.663	1.508	1.508

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

- (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)= $20\log(TX_{on}/TX_{on+off})$ presented in section 3.5

6.5. Test Results

PASSED.

Test Date	2016/11/24	Temp./Hum.	25°C/56%
Test Voltage	AC 120V, 60Hz (via AC Adapter)		

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

Worse mode as representative.

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
91.11	9.31	3.16	12.56	25.03	43.50	18.47	Peak
242.43	11.96	4.28	17.86	34.10	46.00	11.90	Peak
325.85	13.81	4.94	11.55	30.30	46.00	15.70	Peak
526.64	17.35	6.46	2.00	25.81	46.00	20.19	Peak
707.06	18.83	6.75	1.62	27.20	46.00	18.80	Peak
798.24	20.02	7.16	7.36	34.54	46.00	11.46	Peak

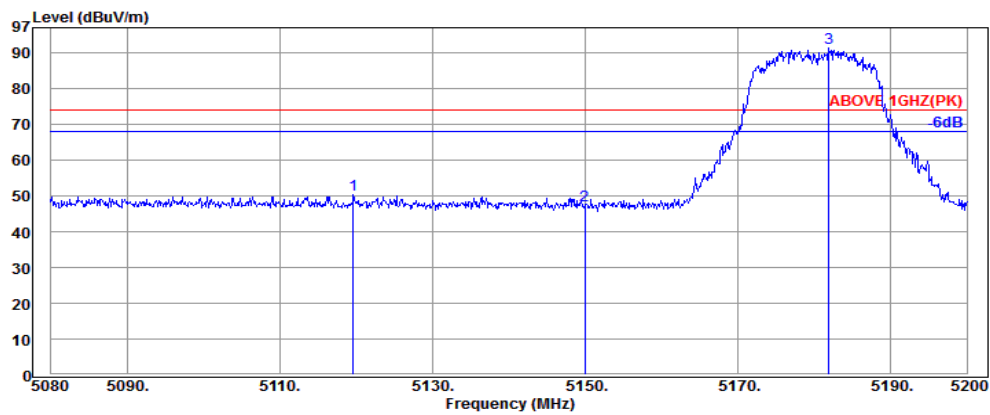
Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
30.97	18.07	2.34	16.84	37.25	40.00	2.75	Peak
77.53	7.24	2.96	15.24	25.44	40.00	14.56	Peak
244.37	12.06	4.29	16.60	32.95	46.00	13.05	Peak
330.70	13.93	4.99	10.01	28.93	46.00	17.07	Peak
593.57	18.24	6.50	2.25	26.99	46.00	19.01	Peak
725.49	19.07	6.84	5.13	31.04	46.00	14.96	Peak

6.5.1.3. Frequency Above 1 GHz to 10th harmonics

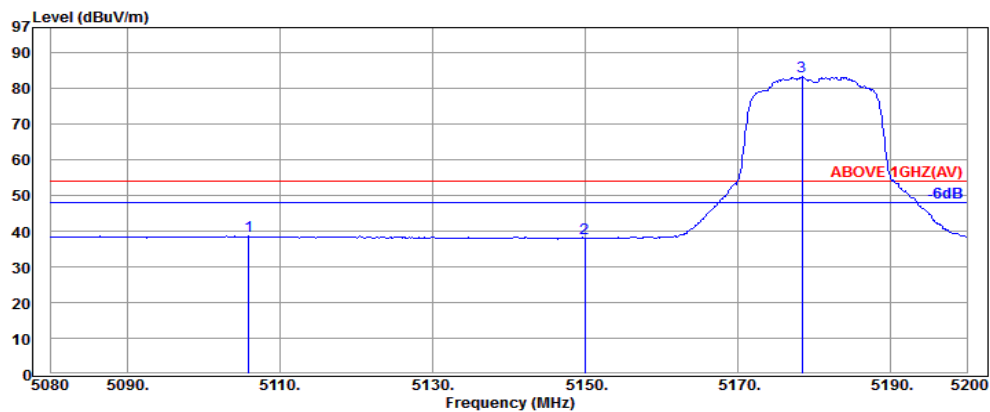
Band Edge:

Mode	802.11a	Frequency	TX 5180MHz
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Antenna at Horizontal Polarization

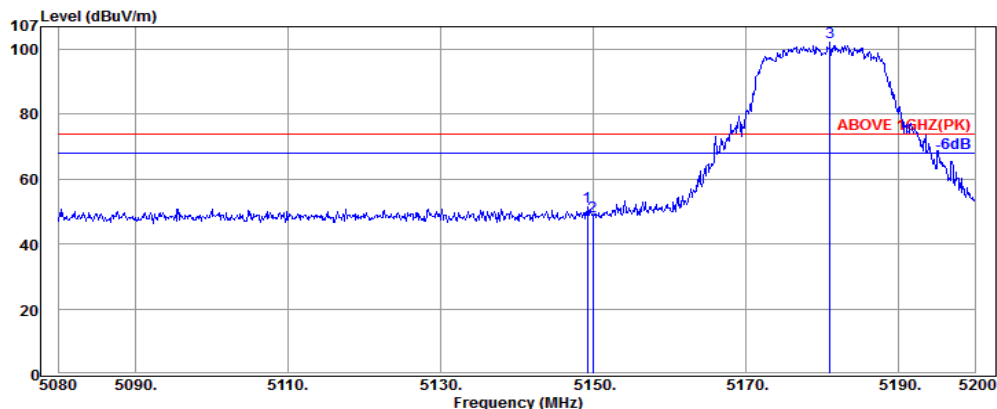
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5119.60	34.42	8.91	6.86	50.19	74.00	23.81	Peak
5149.96	34.45	8.84	4.14	47.43	74.00	26.57	Peak
5181.88	34.48	8.77	48.03	91.28	---	---	Peak



Antenna at Horizontal Polarization

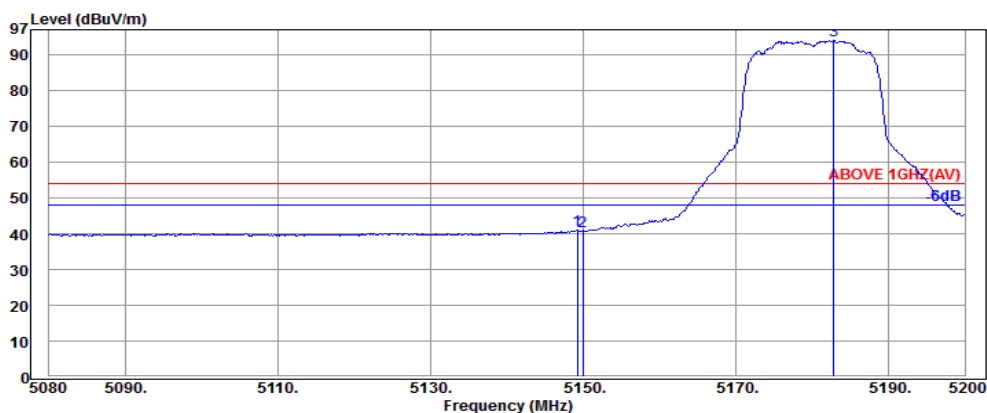
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5105.92	34.42	8.91	-4.78	38.55	54.00	15.45	Average
5149.96	34.45	8.84	-5.19	38.10	54.00	15.90	Average
5178.40	34.48	8.77	39.96	83.21	---	---	Average

Mode	802.11a	Frequency	TX 5180MHz
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Antenna at Vertical Polarization

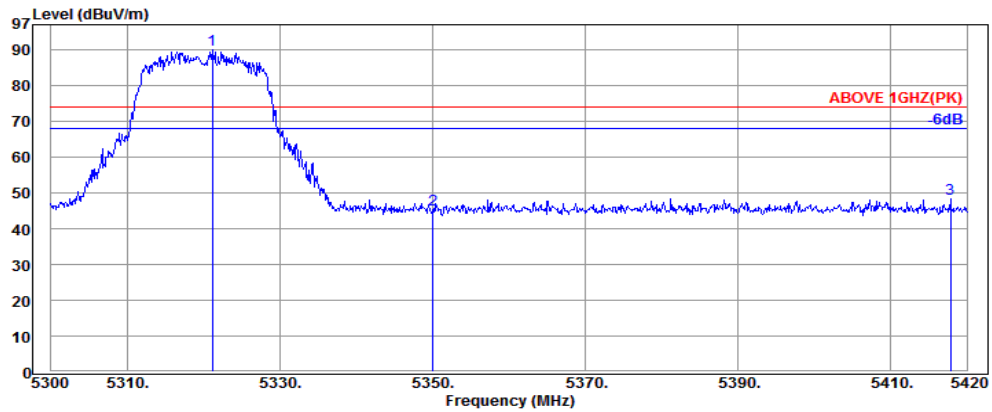
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5149.24	34.45	8.84	8.18	51.47	74.00	22.53	Peak
5149.96	34.45	8.84	5.31	48.60	74.00	25.40	Peak
5181.04	34.48	8.77	58.84	102.09	---	---	Peak



Antenna at Vertical Polarization

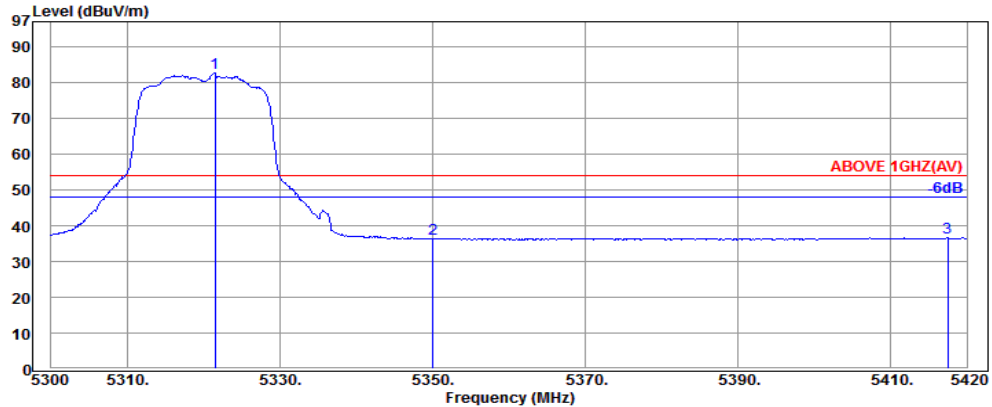
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5149.24	34.45	8.84	-2.45	40.84	54.00	13.16	Average
5149.96	34.45	8.84	-2.49	40.80	54.00	13.20	Average
5182.84	34.48	8.77	50.63	93.88	---	---	Average

Mode	802.11a	Frequency	TX 5320MHz
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Antenna at Horizontal Polarization

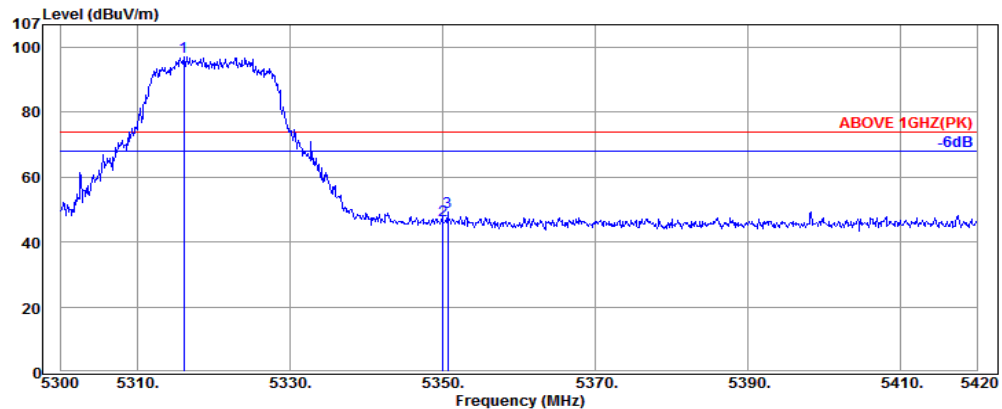
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5321.12	34.62	8.70	46.57	89.89	---	---	Peak
5350.04	34.65	8.61	2.23	45.49	74.00	28.51	Peak
5417.84	34.72	8.53	5.01	48.26	74.00	25.74	Peak



Antenna at Horizontal Polarization

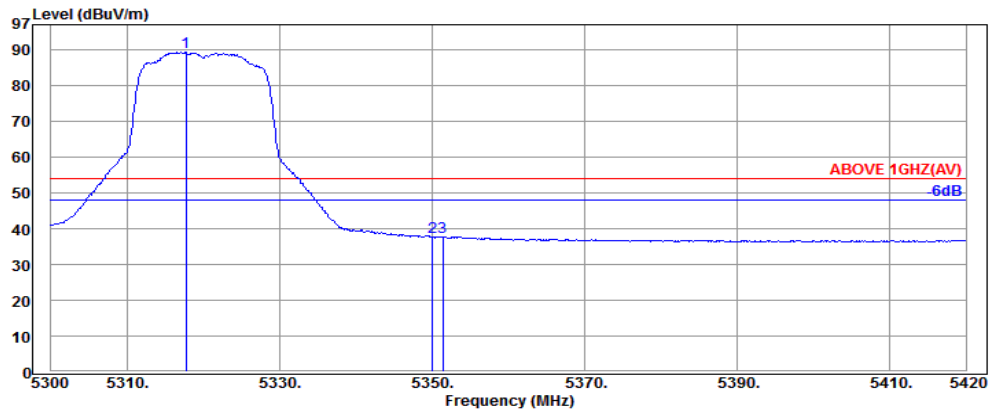
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5321.48	34.62	8.70	39.34	82.66	---	---	Average
5350.04	34.65	8.61	-6.97	36.29	54.00	17.71	Average
5417.48	34.72	8.53	-6.59	36.66	54.00	17.34	Average

Mode	802.11a	Frequency	TX 5320MHz
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Antenna at Vertical Polarization

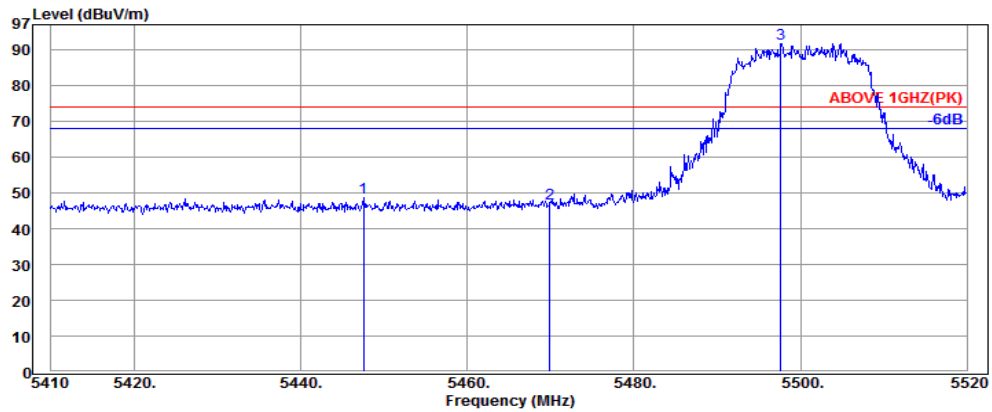
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5316.08	34.62	8.70	53.84	97.16	---	---	Peak
5350.04	34.65	8.61	3.58	46.84	74.00	27.16	Peak
5350.64	34.65	8.61	6.01	49.27	74.00	24.73	Peak



Antenna at Vertical Polarization

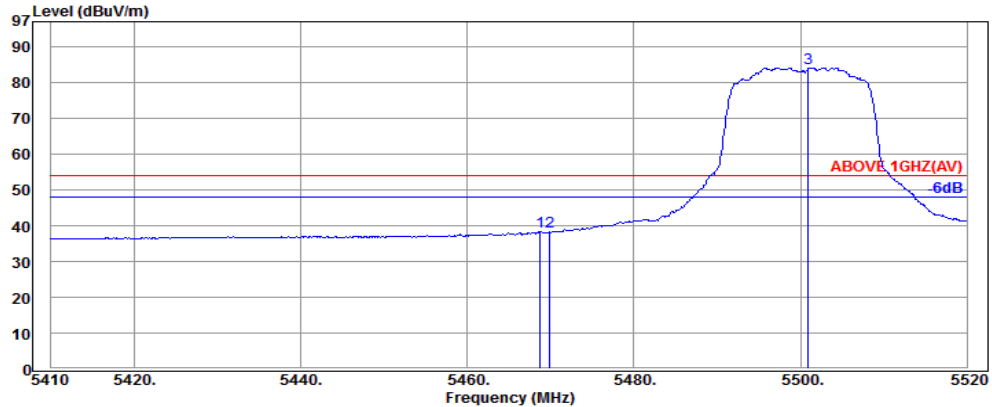
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5317.76	34.62	8.70	45.92	89.24	---	---	Average
5350.04	34.65	8.61	-5.50	37.76	54.00	16.24	Average
5351.36	34.65	8.61	-5.52	37.74	54.00	16.26	Average

Mode	802.11a	Frequency	TX 5500MHz
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Antenna at Horizontal Polarization

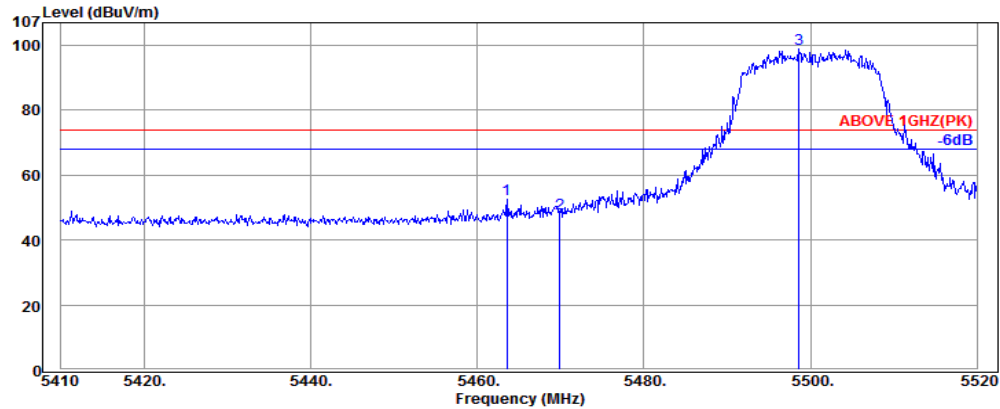
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5447.51	34.75	8.61	5.38	48.74	74.00	25.26	Peak
5469.95	34.77	8.65	3.46	46.88	74.00	27.12	Peak
5497.67	34.80	8.73	48.01	91.54	---	---	Peak



Antenna at Horizontal Polarization

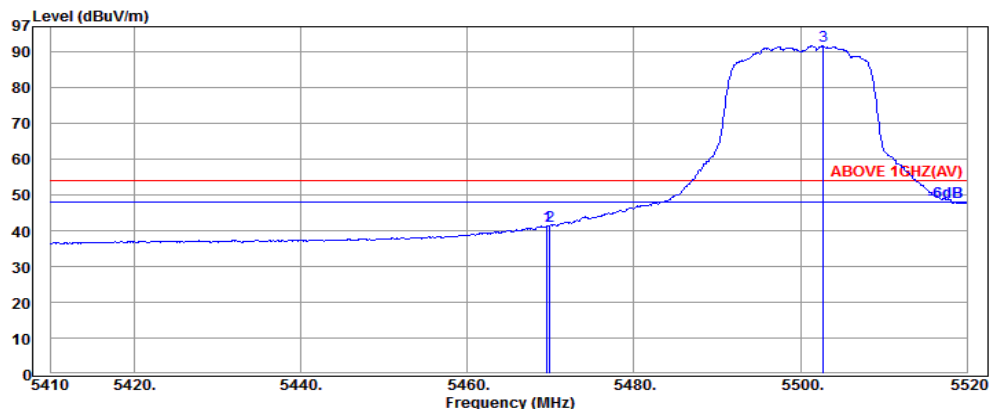
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5468.74	34.77	8.65	-5.03	38.39	54.00	15.61	Average
5469.95	34.77	8.65	-5.13	38.29	54.00	15.71	Average
5500.97	34.80	8.73	40.60	84.13	---	---	Average

Mode	802.11a	Frequency	TX 5500MHz
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Antenna at Vertical Polarization

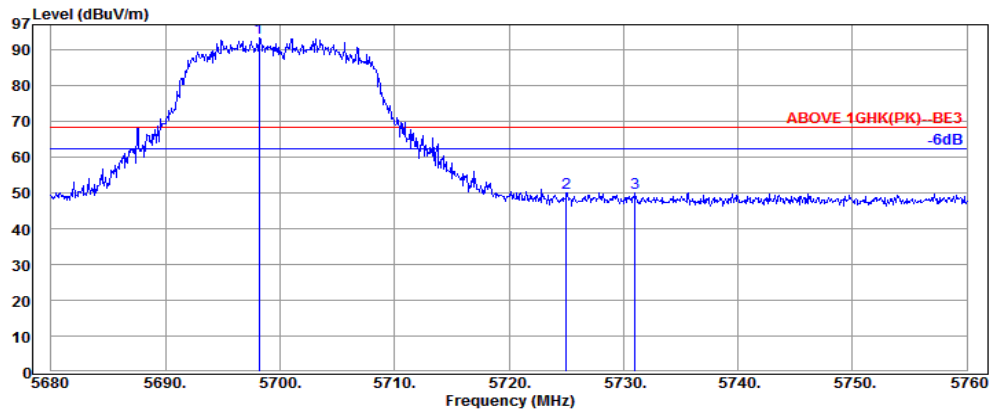
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5463.57	34.77	8.65	8.99	52.41	74.00	21.59	Peak
5469.95	34.77	8.65	4.67	48.09	74.00	25.91	Peak
5498.66	34.80	8.73	55.28	98.81	---	---	Peak



Antenna at Vertical Polarization

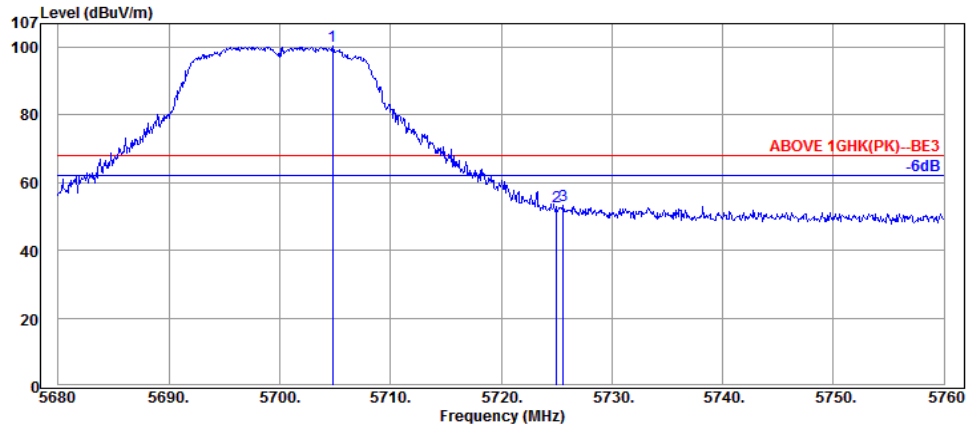
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.62	34.77	8.65	-2.06	41.36	54.00	12.64	Average
5469.95	34.77	8.65	-1.95	41.47	54.00	12.53	Average
5502.73	34.80	8.73	48.06	91.59	---	---	Average

Mode	802.11a	Frequency	TX 5700MHz
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Antenna at Horizontal Polarization

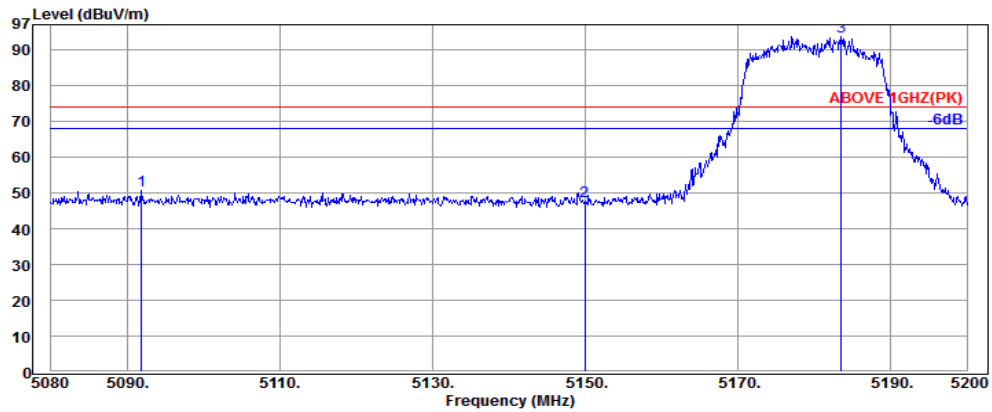
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5698.16	35.03	9.68	48.49	93.20	---	---	Peak
5725.04	35.07	9.78	5.22	50.07	68.20	18.13	Peak
5731.04	35.07	9.78	5.24	50.09	68.20	18.11	Peak



Antenna at Vertical Polarization

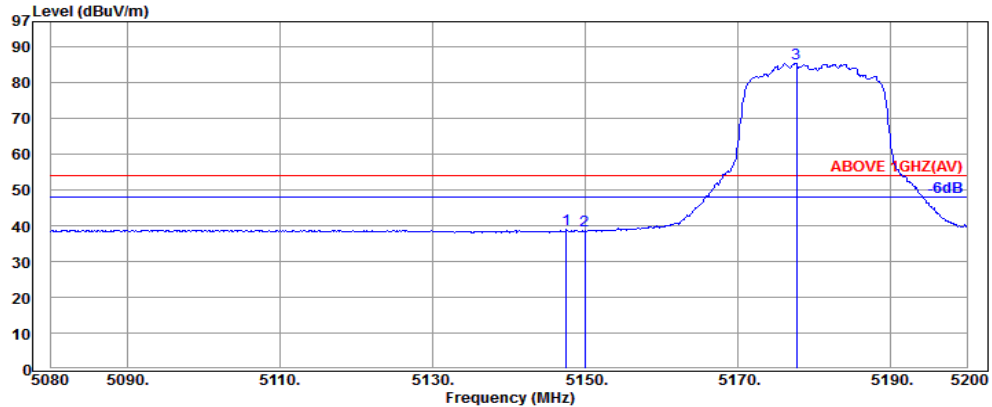
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5704.80	35.05	9.73	55.46	100.24	---	---	Peak
5725.04	35.07	9.78	8.07	52.92	68.20	15.28	Peak
5725.60	35.07	9.78	8.60	53.45	68.20	14.75	Peak

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

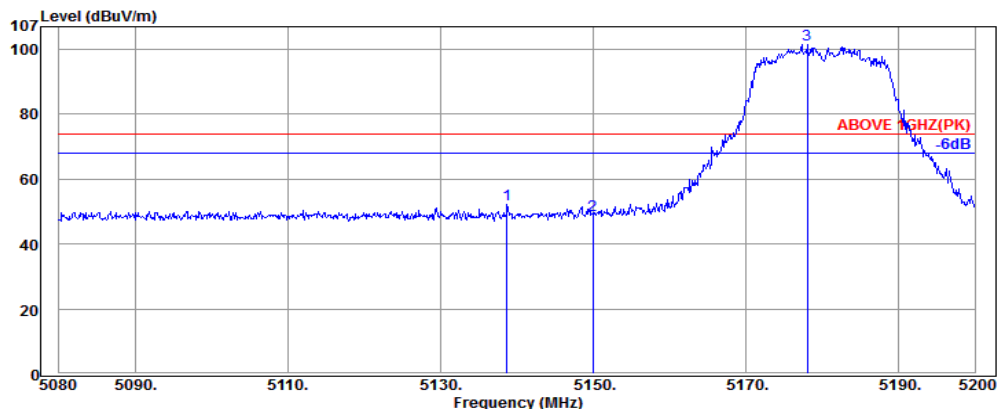
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5091.88	34.40	8.95	7.48	50.83	74.00	23.17	Peak
5149.96	34.45	8.84	4.23	47.52	74.00	26.48	Peak
5183.56	34.48	8.77	50.49	93.74	---	---	Peak



Antenna at Horizontal Polarization

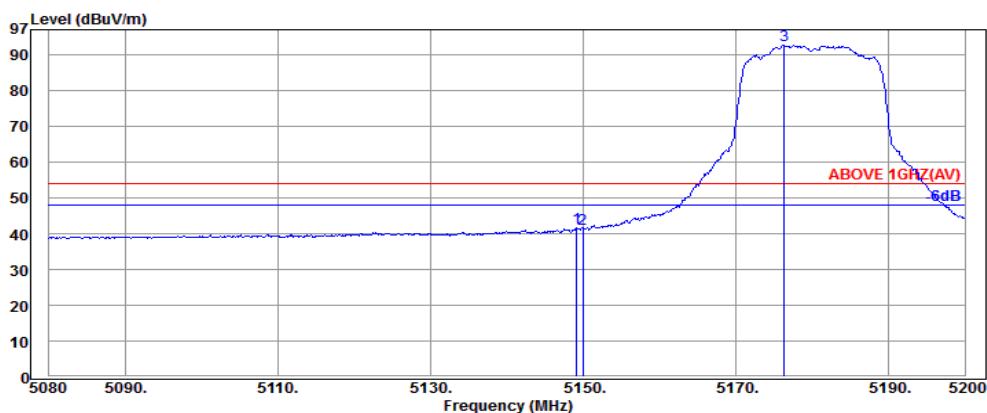
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5147.56	34.45	8.84	-4.45	38.84	54.00	15.16	Average
5149.96	34.45	8.84	-4.61	38.68	54.00	15.32	Average
5177.68	34.48	8.77	42.01	85.26	---	---	Average

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

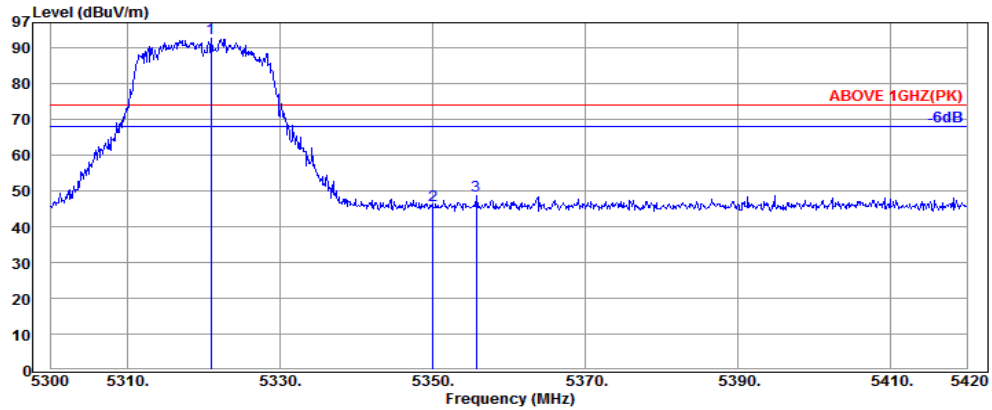
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5138.68	34.43	8.88	8.80	52.11	74.00	21.89	Peak
5149.96	34.45	8.84	5.79	49.08	74.00	24.92	Peak
5178.04	34.48	8.77	58.06	101.31	---	---	Peak



Antenna at Vertical Polarization

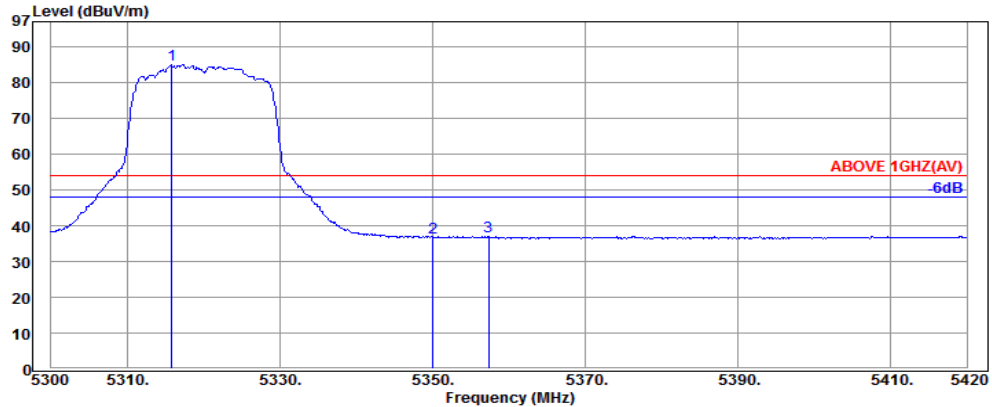
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5149.12	34.45	8.84	-1.77	41.52	54.00	12.48	Average
5149.96	34.45	8.84	-1.85	41.44	54.00	12.56	Average
5176.36	34.48	8.77	49.56	92.81	---	---	Average

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

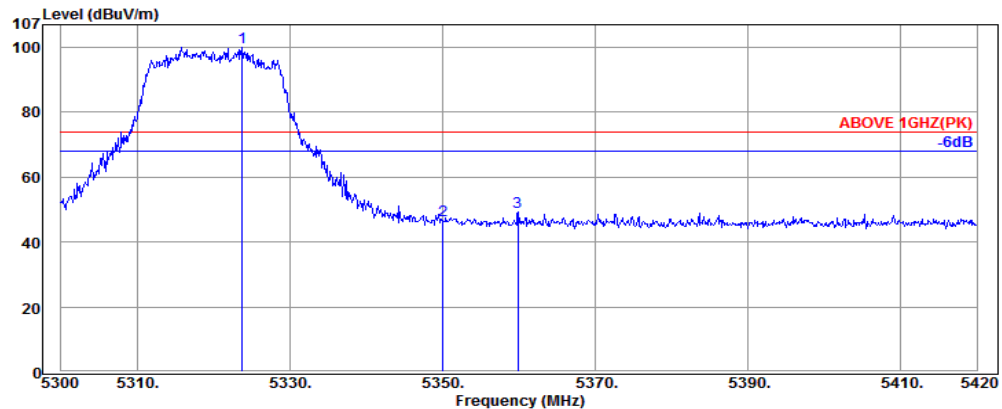
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5321.00	34.62	8.70	49.19	92.51	---	---	Peak
5350.04	34.65	8.61	2.80	46.06	74.00	27.94	Peak
5355.68	34.65	8.61	5.57	48.83	74.00	25.17	Peak



Antenna at Horizontal Polarization

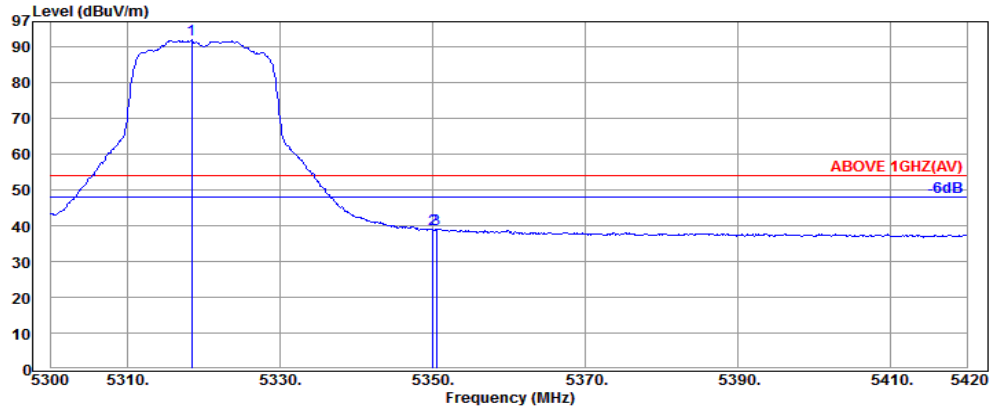
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5315.84	34.62	8.70	41.63	84.95	---	---	Average
5350.04	34.65	8.61	-6.51	36.75	54.00	17.25	Average
5357.36	34.65	8.61	-6.23	37.03	54.00	16.97	Average

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

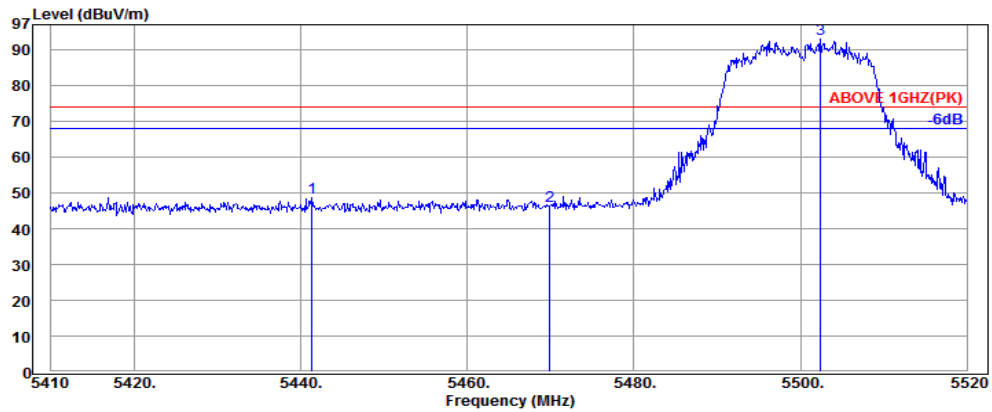
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5323.76	34.62	8.70	56.86	100.18	---	---	Peak
5350.04	34.65	8.61	3.50	46.76	74.00	27.24	Peak
5359.88	34.65	8.61	6.06	49.32	74.00	24.68	Peak



Antenna at Vertical Polarization

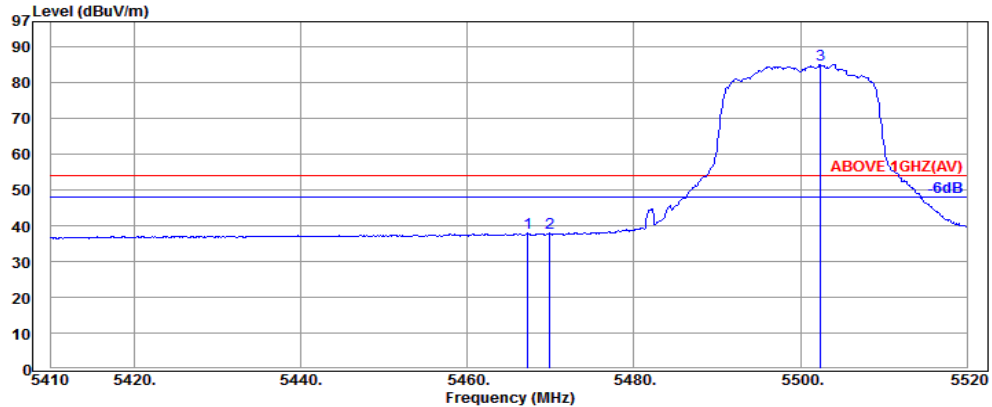
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5318.48	34.62	8.70	48.61	91.93	---	---	Average
5350.04	34.65	8.61	-4.42	38.84	54.00	15.16	Average
5350.52	34.65	8.61	-4.24	39.02	54.00	14.98	Average

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

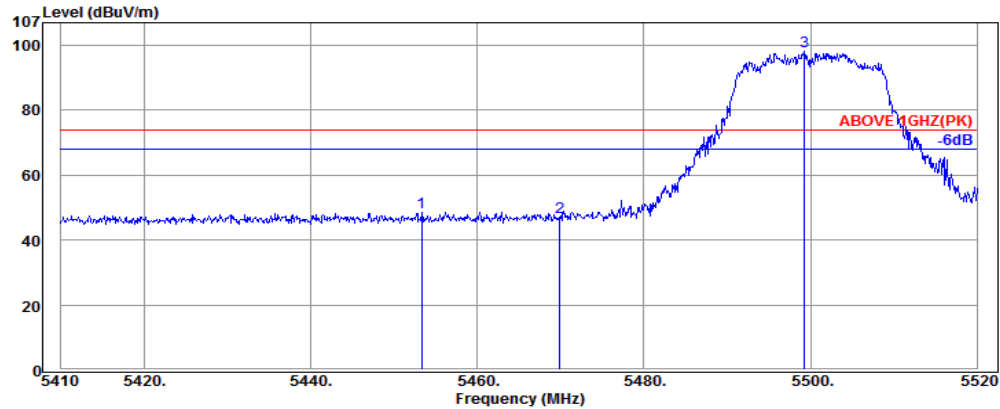
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5441.35	34.73	8.57	5.37	48.67	74.00	25.33	Peak
5469.95	34.77	8.65	2.92	46.34	74.00	27.66	Peak
5502.40	34.80	8.73	49.41	92.94	---	---	Peak



Antenna at Horizontal Polarization

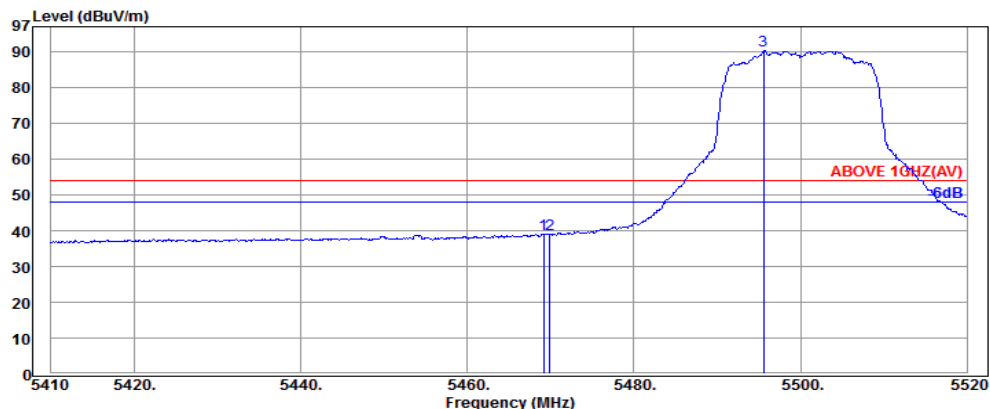
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5467.31	34.77	8.65	-5.48	37.94	54.00	16.06	Average
5469.95	34.77	8.65	-5.58	37.84	54.00	16.16	Average
5502.40	34.80	8.73	41.47	85.00	---	---	Average

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

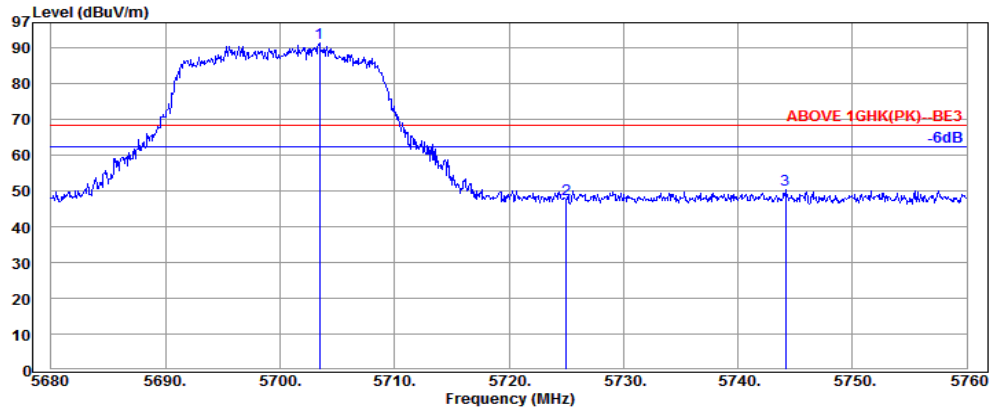
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5453.34	34.75	8.61	5.34	48.70	74.00	25.30	Peak
5469.95	34.77	8.65	3.80	47.22	74.00	26.78	Peak
5499.32	34.80	8.73	54.52	98.05	---	---	Peak



Antenna at Vertical Polarization

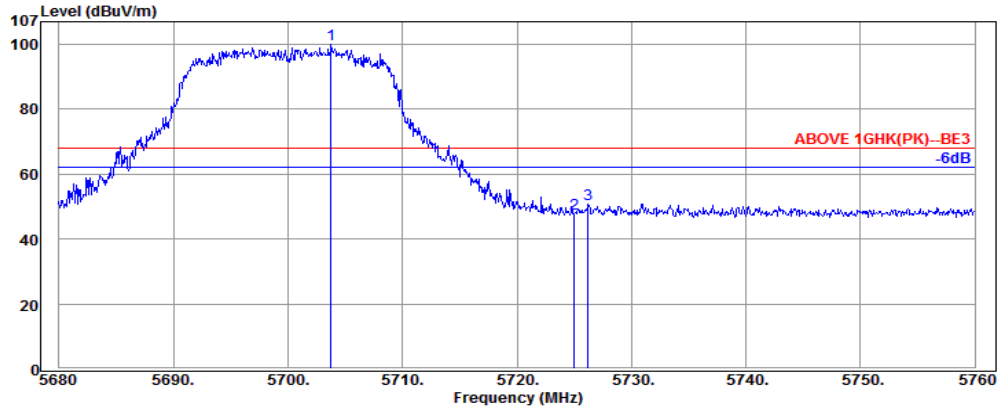
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.18	34.77	8.65	-4.48	38.94	54.00	15.06	Average
5469.95	34.77	8.65	-4.45	38.97	54.00	15.03	Average
5495.58	34.78	8.69	46.74	90.21	---	---	Average

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

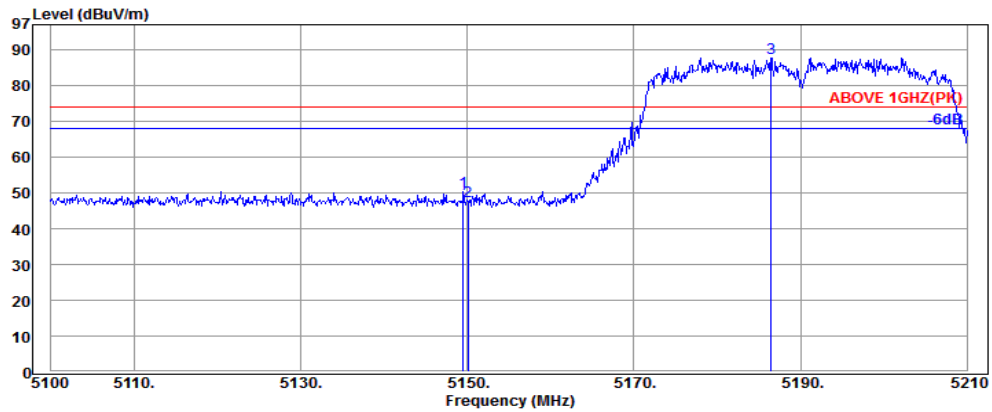
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5703.44	35.05	9.73	46.51	91.29	---	---	Peak
5725.04	35.07	9.78	2.88	47.73	68.20	20.47	Peak
5744.16	35.09	9.83	5.33	50.25	68.20	17.95	Peak



Antenna at Vertical Polarization

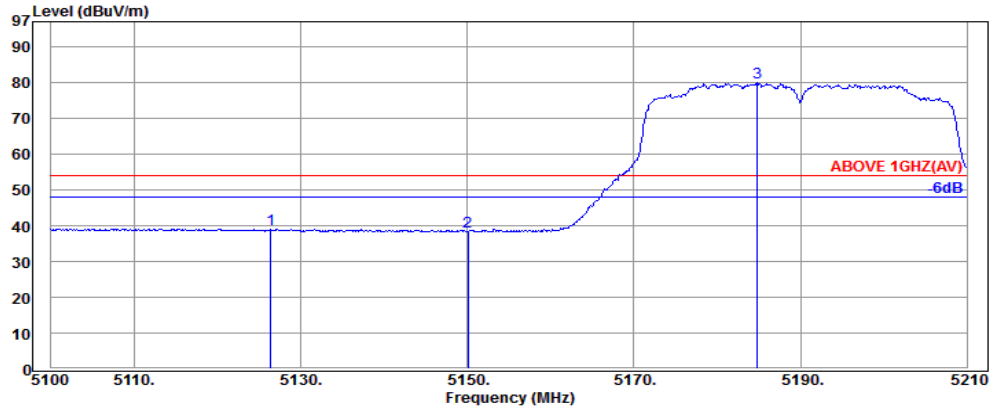
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5703.76	35.05	9.73	55.11	99.89	---	---	Peak
5725.04	35.07	9.78	3.12	47.97	54.00	6.03	Peak
5726.24	35.07	9.78	5.79	50.64	54.00	3.36	Peak

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

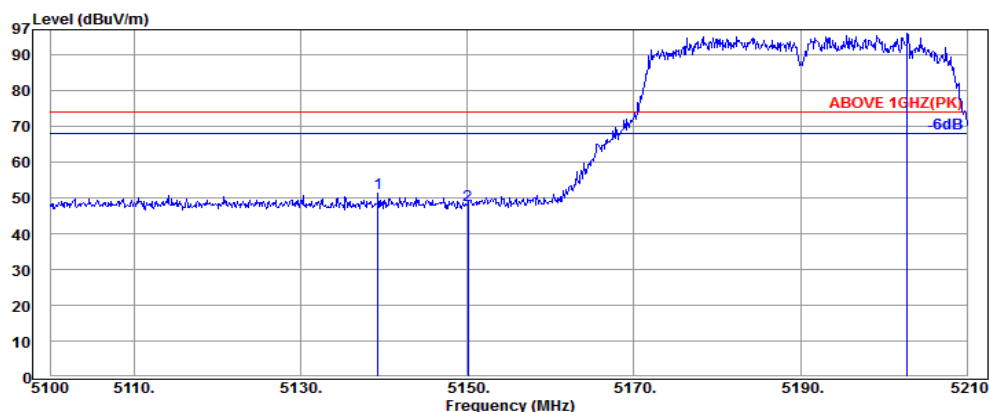
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5149.50	34.45	8.84	7.20	50.49	74.00	23.51	Peak
5150.05	34.45	8.84	4.22	47.51	74.00	26.49	Peak
5186.46	34.48	8.77	44.43	87.68	---	---	Peak



Antenna at Horizontal Polarization

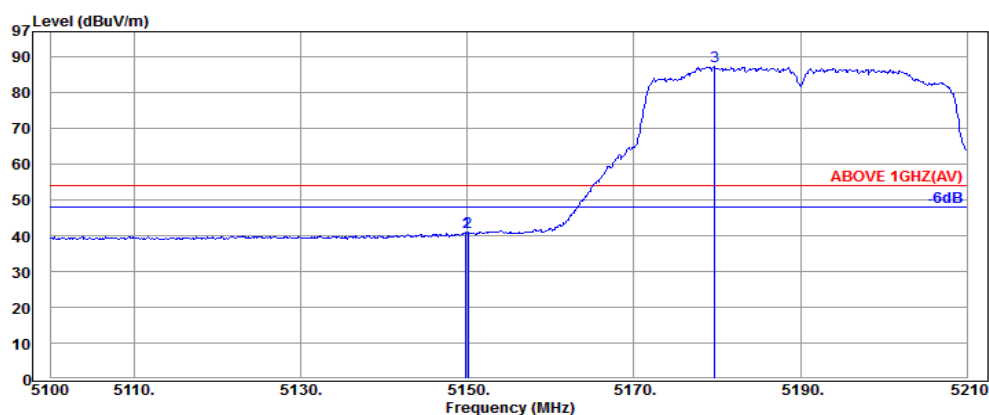
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5126.40	34.43	8.88	-4.21	39.10	54.00	14.90	Average
5150.05	34.45	8.84	-4.89	38.40	54.00	15.60	Average
5184.81	34.48	8.77	36.59	79.84	---	---	Average

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

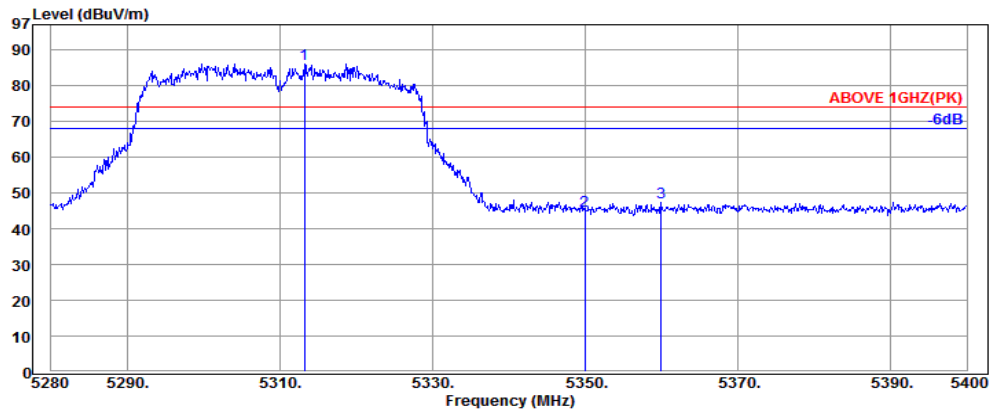
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5139.27	34.43	8.88	8.12	51.43	74.00	22.57	Peak
5150.05	34.45	8.84	4.80	48.09	74.00	25.91	Peak
5202.85	34.50	8.74	52.72	95.96	---	---	Peak



Antenna at Vertical Polarization

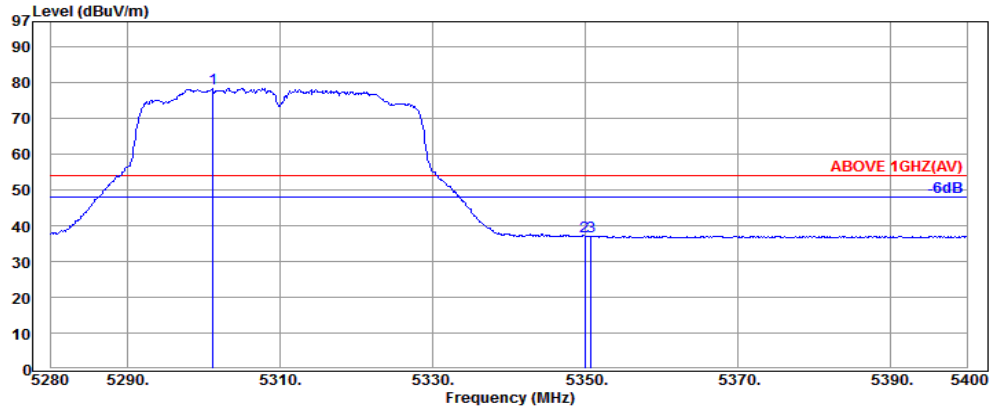
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5149.83	34.45	8.84	-2.37	40.92	54.00	13.08	Average
5150.05	34.45	8.84	-2.38	40.91	54.00	13.09	Average
5179.75	34.48	8.77	44.00	87.25	---	---	Average

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

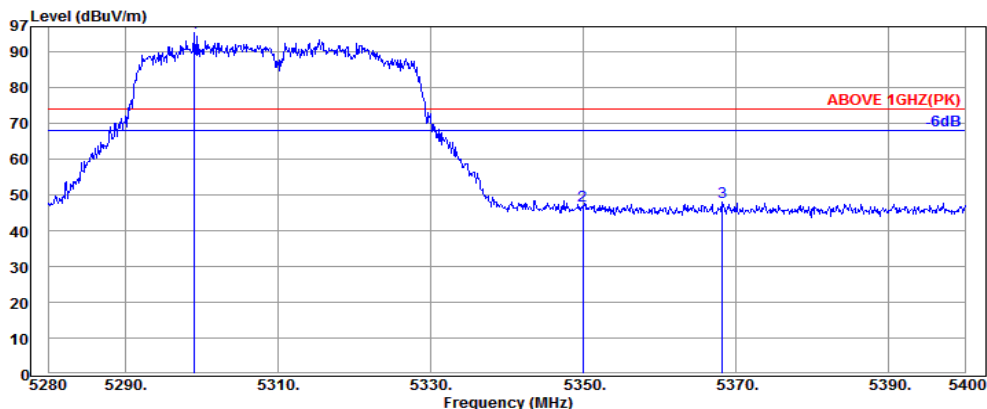
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5313.24	34.62	8.70	42.78	86.10	---	---	Peak
5349.96	34.65	8.61	1.85	45.11	74.00	28.89	Peak
5359.92	34.65	8.61	4.04	47.30	74.00	26.70	Peak



Antenna at Horizontal Polarization

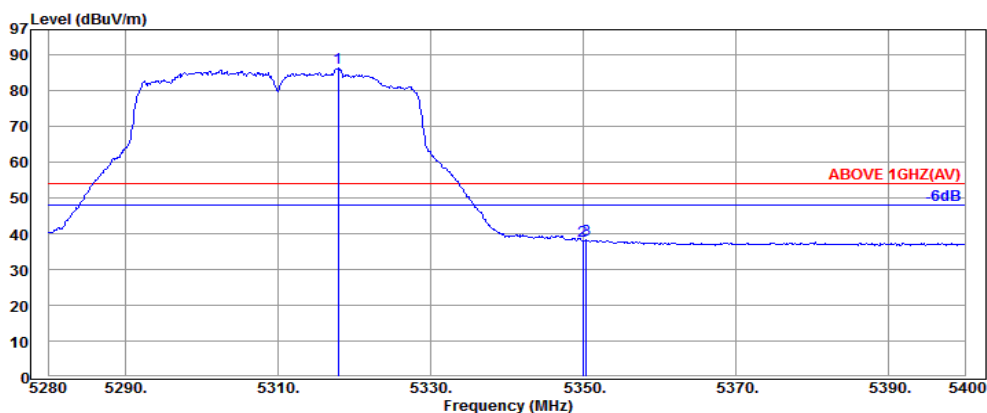
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5301.24	34.60	8.74	34.98	78.32	---	---	Average
5349.96	34.65	8.61	-6.30	36.96	54.00	17.04	Average
5350.80	34.65	8.61	-6.16	37.10	54.00	16.90	Average

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

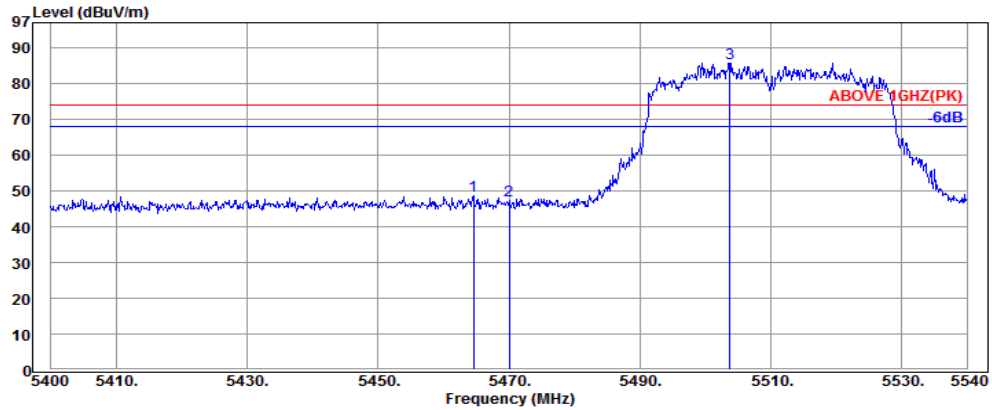
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5299.08	34.60	8.74	51.87	95.21	---	---	Peak
5349.96	34.65	8.61	3.76	47.02	74.00	26.98	Peak
5368.20	34.67	8.57	4.65	47.89	74.00	26.11	Peak



Antenna at Vertical Polarization

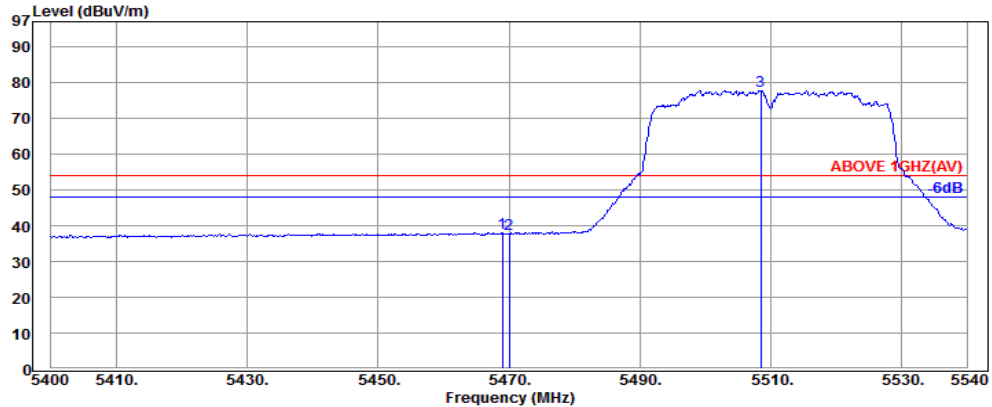
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5317.92	34.62	8.70	42.85	86.17	---	---	Average
5349.96	34.65	8.61	-5.10	38.16	54.00	15.84	Average
5350.44	34.65	8.61	-5.01	38.25	54.00	15.75	Average

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

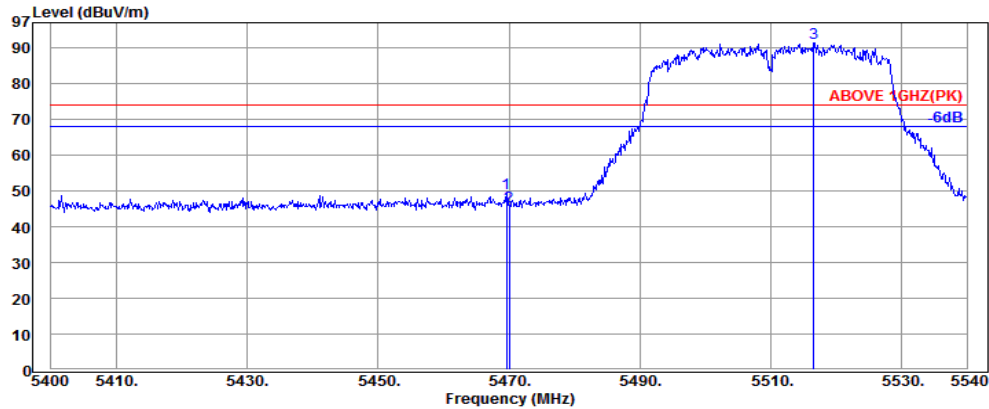
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5464.54	34.77	8.65	5.18	48.60	74.00	25.40	Peak
5470.00	34.77	8.65	3.85	47.27	74.00	26.73	Peak
5503.74	34.80	8.73	42.12	85.65	---	---	Peak



Antenna at Horizontal Polarization

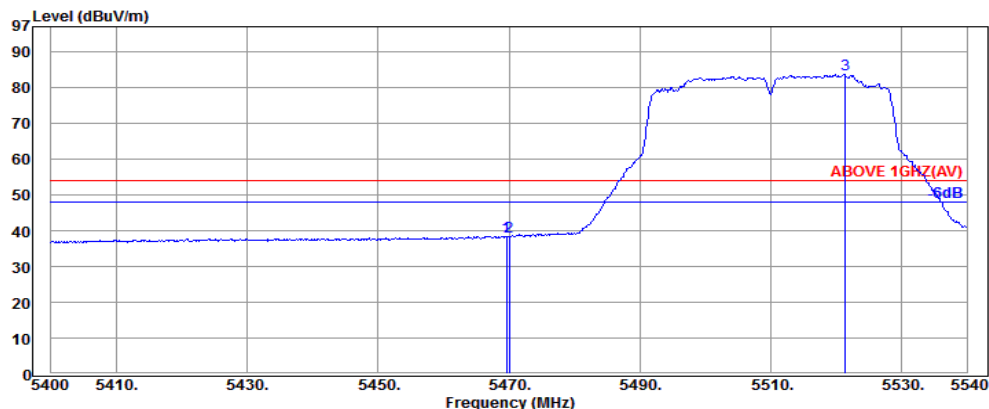
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.02	34.77	8.65	-5.49	37.93	54.00	16.07	Average
5470.00	34.77	8.65	-5.61	37.81	54.00	16.19	Average
5508.50	34.80	8.73	34.26	77.79	---	---	Average

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

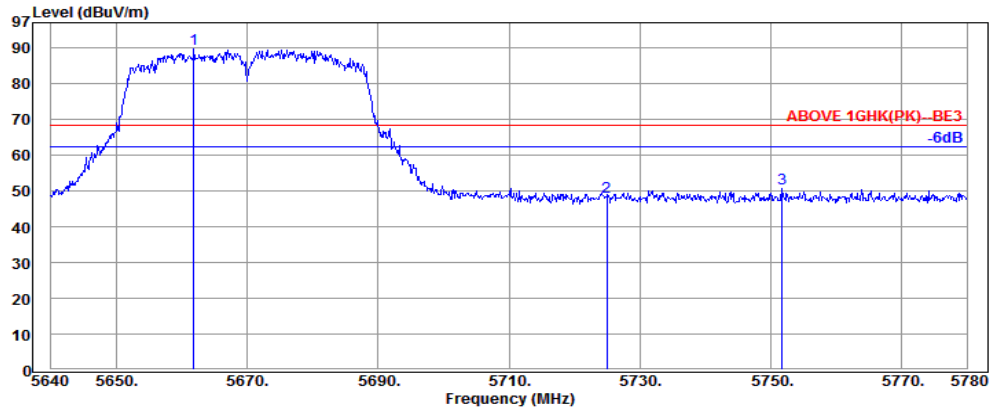
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.58	34.77	8.65	5.97	49.39	74.00	24.61	Peak
5470.00	34.77	8.65	2.19	45.61	74.00	28.39	Peak
5516.62	34.82	8.80	47.71	91.33	---	---	Peak



Antenna at Vertical Polarization

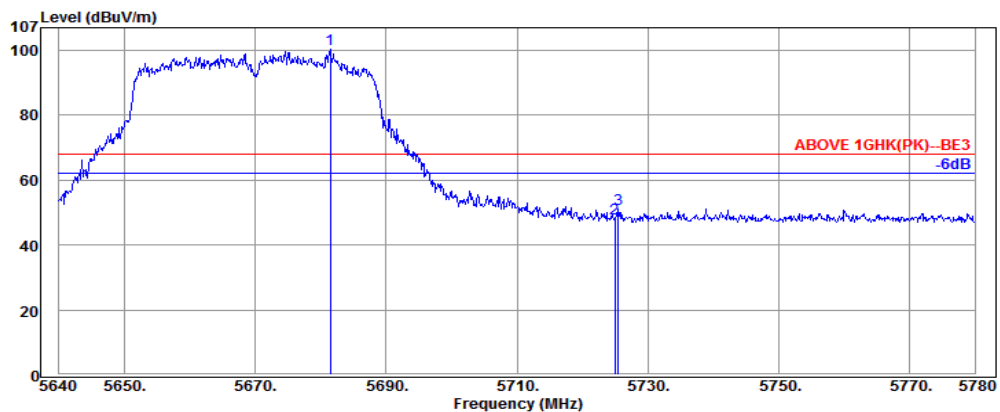
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5469.58	34.77	8.65	-4.92	38.50	54.00	15.50	Average
5470.00	34.77	8.65	-5.03	38.39	54.00	15.61	Average
5521.38	34.82	8.80	40.07	83.69	---	---	Average

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

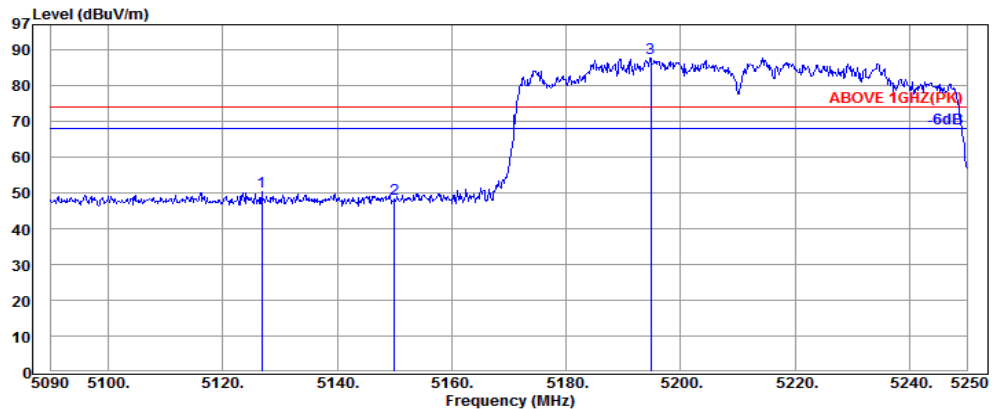
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5661.84	34.99	9.47	45.24	89.70	---	---	Peak
5724.98	35.07	9.78	3.57	48.42	68.20	19.78	Peak
5751.72	35.11	9.88	5.57	50.56	68.20	17.64	Peak



Antenna at Vertical Polarization

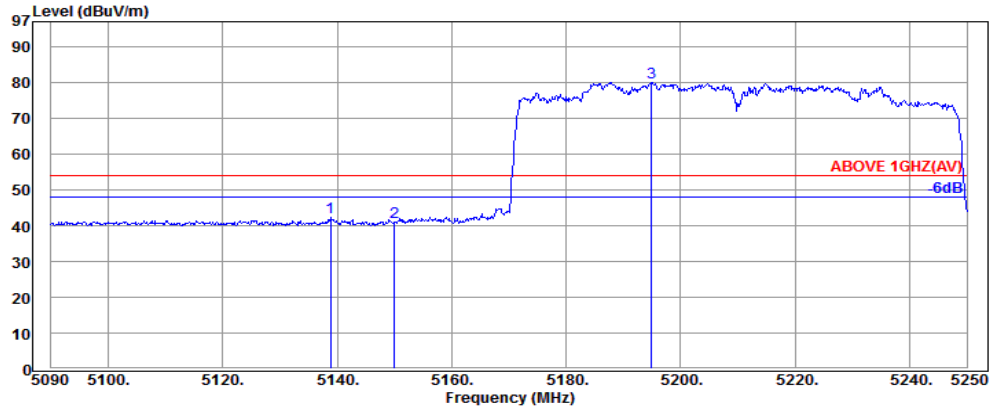
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5681.44	35.01	9.57	55.96	100.54	---	---	Peak
5724.98	35.07	9.78	3.27	48.12	68.20	20.08	Peak
5725.54	35.07	9.78	6.40	51.25	68.20	16.95	Peak

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

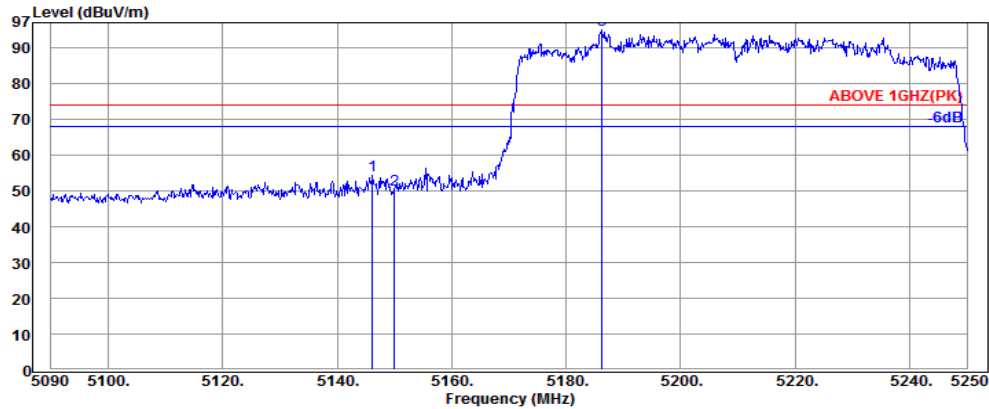
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5126.80	34.43	8.88	6.86	50.17	74.00	23.83	Peak
5150.00	34.45	8.84	5.16	48.45	74.00	25.55	Peak
5194.80	34.50	8.74	44.58	87.82	---	---	Peak



Antenna at Horizontal Polarization

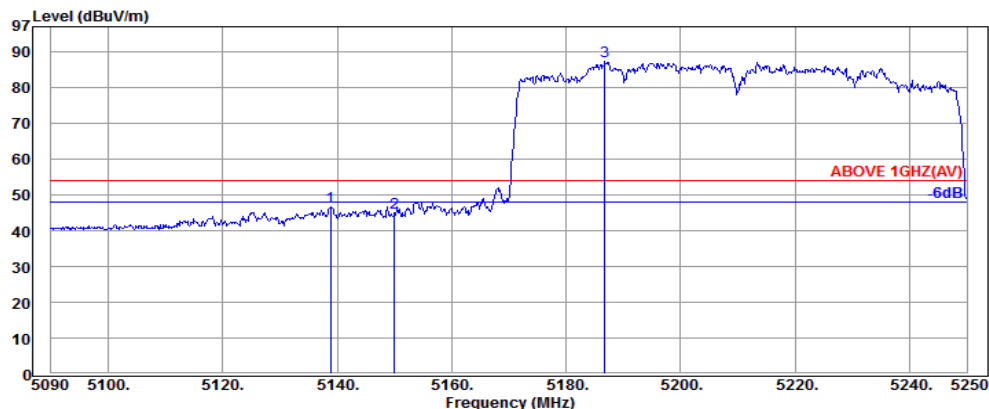
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5138.80	34.43	8.88	-1.03	42.28	54.00	11.72	Average
5150.00	34.45	8.84	-2.32	40.97	54.00	13.03	Average
5194.96	34.50	8.74	36.91	80.15	---	---	Average

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

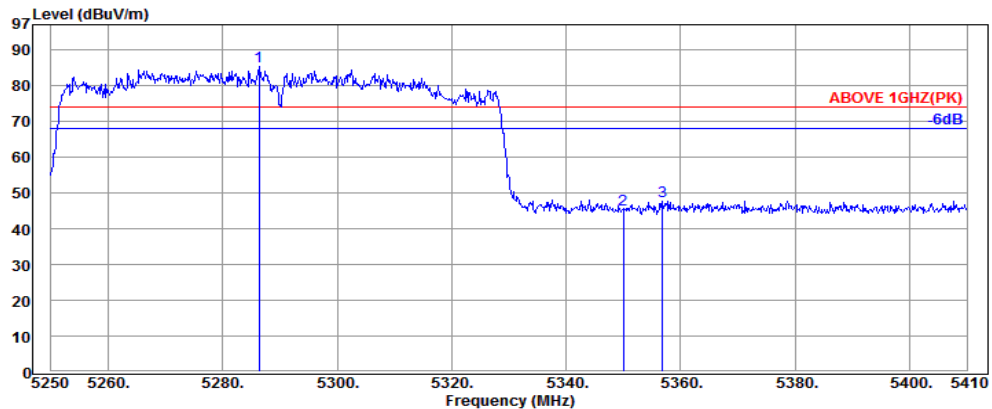
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5146.16	34.45	8.84	10.95	54.24	74.00	19.76	Peak
5150.00	34.45	8.84	6.99	50.28	74.00	23.72	Peak
5186.32	34.48	8.77	51.84	95.09	---	---	Peak



Antenna at Vertical Polarization

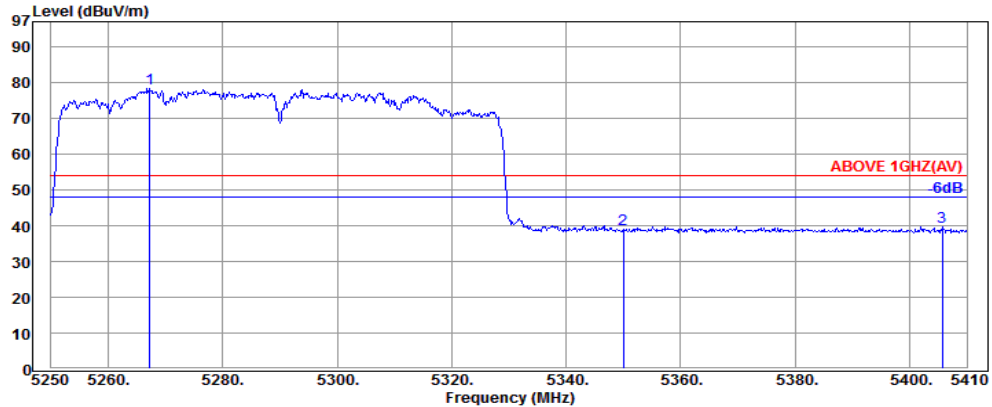
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5138.80	34.43	8.88	3.49	46.80	54.00	7.20	Average
5150.00	34.45	8.84	1.56	44.85	54.00	9.15	Average
5186.80	34.48	8.77	44.04	87.29	---	---	Average

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

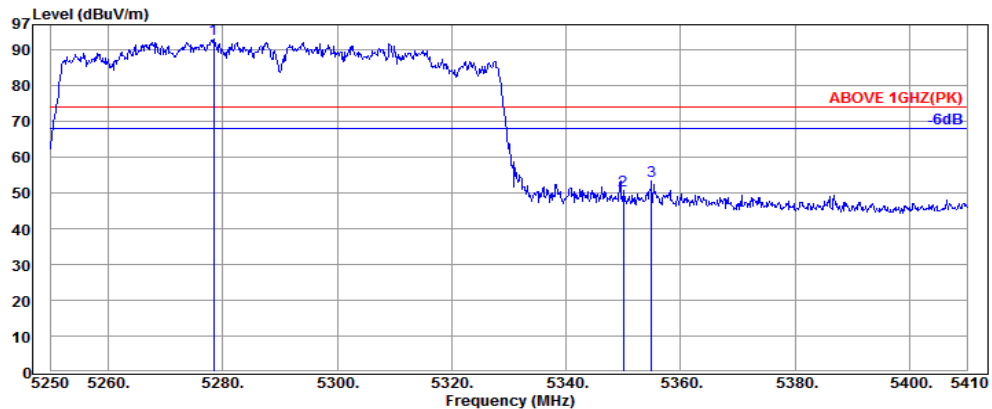
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5286.32	34.58	8.74	41.86	85.18	---	---	Peak
5350.00	34.65	8.61	1.94	45.20	74.00	28.80	Peak
5356.88	34.65	8.61	4.40	47.66	74.00	26.34	Peak



Antenna at Horizontal Polarization

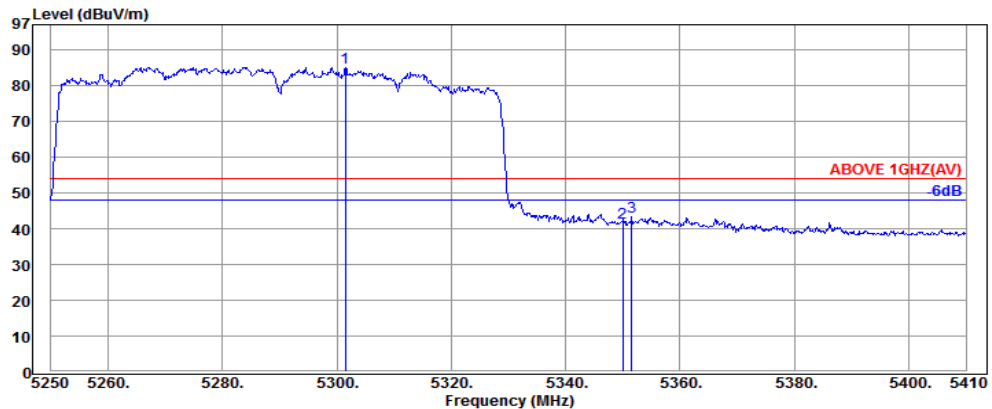
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5267.28	34.57	8.74	35.12	78.43	---	---	Average
5350.00	34.65	8.61	-4.33	38.93	54.00	15.07	Average
5405.68	34.70	8.49	-3.46	39.73	54.00	14.27	Average

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

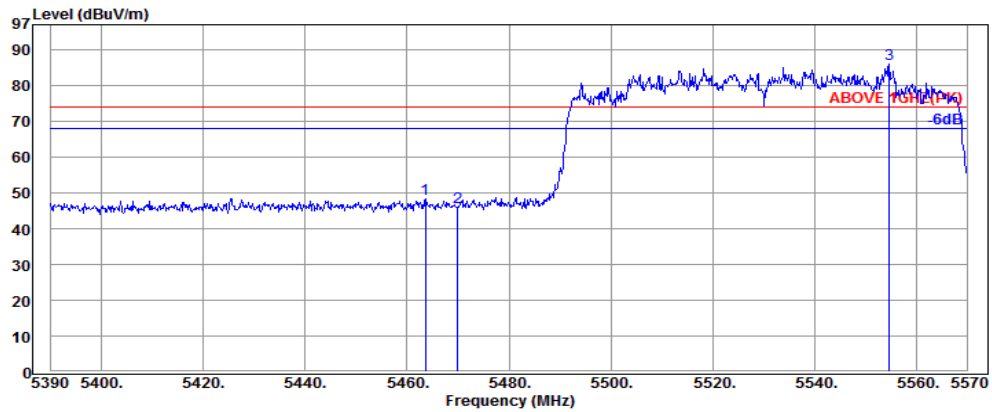
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5278.48	34.58	8.74	49.53	92.85	---	---	Peak
5350.00	34.65	8.61	7.53	50.79	74.00	23.21	Peak
5354.96	34.65	8.61	10.16	53.42	74.00	20.58	Peak



Antenna at Vertical Polarization

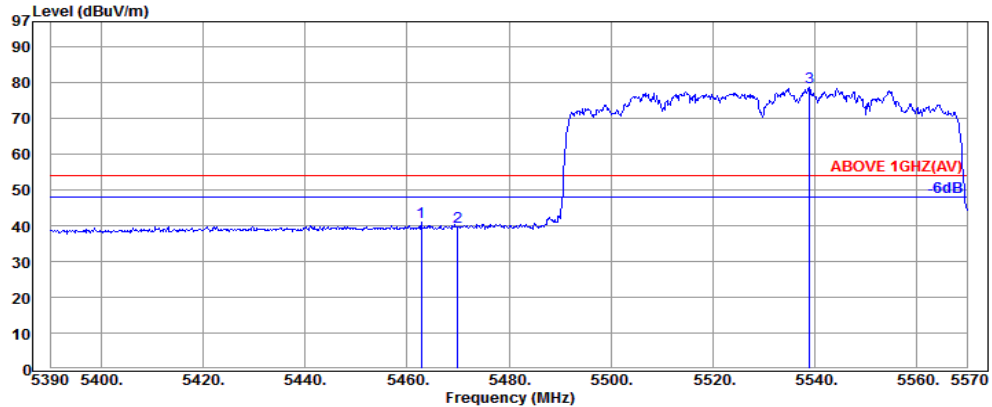
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5301.52	34.60	8.74	41.80	85.14	---	---	Average
5350.00	34.65	8.61	-1.48	41.78	54.00	12.22	Average
5351.60	34.65	8.61	0.14	43.40	54.00	10.60	Average

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

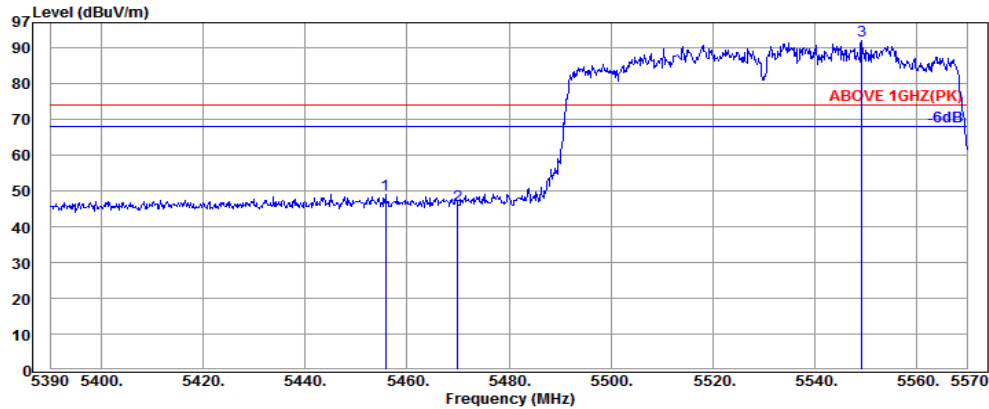
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5463.62	34.77	8.65	5.02	48.44	74.00	25.56	Peak
5469.92	34.77	8.65	2.46	45.88	74.00	28.12	Peak
5554.70	34.86	8.94	42.26	86.06	---	---	Peak



Antenna at Horizontal Polarization

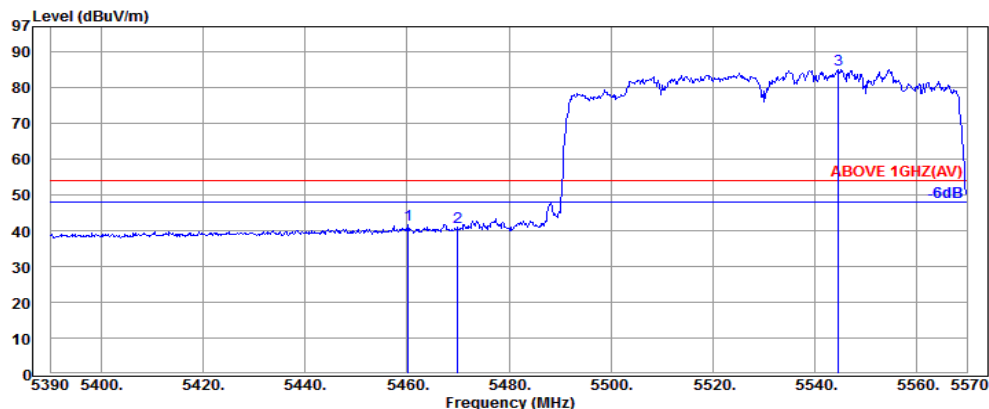
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5462.72	34.77	8.65	-2.55	40.87	54.00	13.13	Average
5469.92	34.77	8.65	-3.89	39.53	54.00	14.47	Average
5539.04	34.84	8.87	34.87	78.58	---	---	Average

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

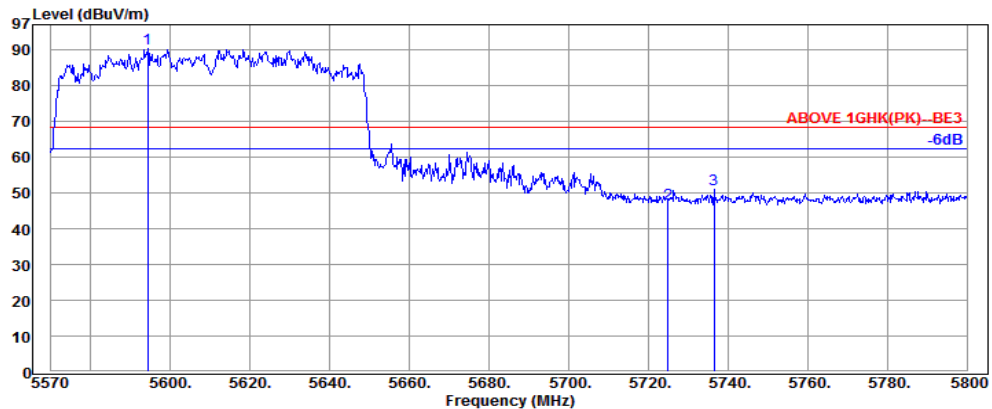
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5455.70	34.75	8.61	5.76	49.12	74.00	24.88	Peak
5469.92	34.77	8.65	2.68	46.10	74.00	27.90	Peak
5549.30	34.86	8.94	48.07	91.87	---	---	Peak



Antenna at Vertical Polarization

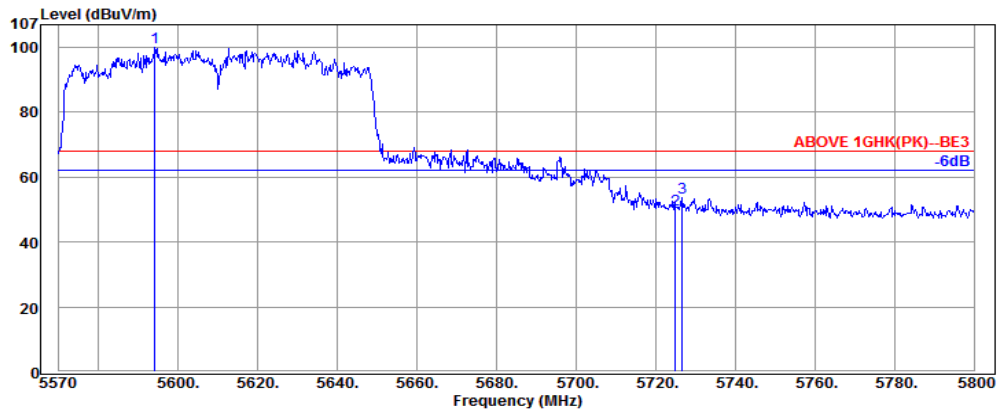
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
5460.20	34.75	8.61	-1.66	41.70	54.00	12.30	Average
5469.92	34.77	8.65	-2.58	40.84	54.00	13.16	Average
5544.80	34.84	8.87	41.23	84.94	---	---	Average

Mode	802.11ac-VHT80	Frequency	TX 5610MHz
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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
5594.38	34.90	9.08	46.38	90.36	---	---	Peak
5725.02	35.07	9.78	2.31	47.16	68.20	21.04	Peak
5736.52	35.09	9.83	5.98	50.90	68.20	17.30	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
5594.15	34.90	9.08	56.20	100.18	---	---	Peak
5725.02	35.07	9.78	5.27	50.12	68.20	18.08	Peak
5726.63	35.07	9.78	8.86	53.71	68.20	14.49	Peak

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 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
1062.00	28.09	3.42	12.49	44.00	54.00	10.00	Peak
4270.00	33.73	8.00	3.16	44.89	54.00	9.11	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
1066.00	28.09	3.42	10.49	42.00	54.00	12.00	Peak
2126.00	31.77	5.43	14.93	52.13	54.00	1.87	Peak
4255.00	33.70	8.00	4.55	46.25	54.00	7.75	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
1066.00	28.09	3.42	11.63	43.14	54.00	10.86	Peak
2134.00	31.79	5.46	7.35	44.60	54.00	9.40	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
1062.00	28.09	3.42	13.94	45.45	54.00	8.55	Peak
2126.00	31.77	5.43	14.48	51.68	54.00	2.32	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
1066.00	28.09	3.42	12.27	43.78	54.00	10.22	Peak
2124.00	31.77	5.43	9.24	46.44	54.00	7.56	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
1066.00	28.09	3.42	17.28	48.79	54.00	5.21	Peak
2128.00	31.77	5.43	13.56	50.76	54.00	3.24	Peak
3190.00	32.86	6.43	5.83	45.12	54.00	8.88	Peak
4245.00	33.70	8.00	5.71	47.41	54.00	6.59	Peak

Mode	802.11a	UNII Band	II-2C
		Frequency	TX 5720MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1066.00	28.09	3.42	12.67	44.18	54.00	9.82	Peak
2130.00	31.77	5.43	8.23	45.43	54.00	8.57	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1066.00	28.09	3.42	19.96	51.47	54.00	2.53	Peak
2128.00	31.77	5.43	15.34	52.54	54.00	1.46	Peak
3190.00	32.86	6.43	6.70	45.99	54.00	8.01	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
1064.00	28.09	3.42	14.27	45.78	54.00	8.22	Peak
2132.00	31.79	5.46	11.78	49.03	54.00	4.97	Peak
4245.00	33.70	8.00	4.41	46.11	54.00	7.89	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
1062.00	28.09	3.42	17.32	48.83	54.00	5.17	Peak
2126.00	31.77	5.43	15.26	52.46	54.00	1.54	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
1064.00	28.09	3.42	12.19	43.70	54.00	10.30	Peak
2126.00	31.77	5.43	7.53	44.73	54.00	9.27	Peak
4275.00	33.75	8.01	3.49	45.25	54.00	8.75	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
1062.00	28.09	3.42	17.38	48.89	54.00	5.11	Peak
2124.00	31.77	5.43	14.71	51.91	54.00	2.09	Peak
3195.00	32.86	6.43	5.37	44.66	54.00	9.34	Peak
4250.00	33.70	8.00	3.83	45.53	54.00	8.47	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
1066.00	28.09	3.42	14.24	45.75	54.00	8.25	Peak
2126.00	31.77	5.43	15.85	53.05	54.00	0.95	Peak
3190.00	32.86	6.43	9.41	48.70	54.00	5.30	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
1066.00	28.09	3.42	14.41	45.92	54.00	8.08	Peak
2126.00	31.77	5.43	15.64	52.84	54.00	1.16	Peak
3190.00	32.86	6.43	6.45	45.74	54.00	8.26	Peak
4260.00	33.73	8.00	4.72	46.45	54.00	7.55	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
1066.00	28.09	3.42	12.55	44.06	54.00	9.94	Peak
2126.00	31.77	5.43	7.41	44.61	54.00	9.39	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
1066.00	28.09	3.42	17.28	48.79	54.00	5.21	Peak
2132.00	31.79	5.46	15.77	53.02	54.00	0.98	Peak
3195.00	32.86	6.43	8.63	47.92	54.00	6.08	Peak
4250.00	33.70	8.00	3.74	45.44	54.00	8.56	Peak

Mode	802.11n-HT20	UNII Band	II-2C
		Frequency	TX 5720MHz

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
1066.00	28.09	3.42	12.63	44.14	54.00	9.86	Peak
2128.00	31.77	5.43	9.05	46.25	54.00	7.75	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
1066.00	28.09	3.42	19.11	50.62	54.00	3.38	Peak
2126.00	31.77	5.43	15.87	53.07	54.00	0.93	Peak
3190.00	32.86	6.43	7.89	47.18	54.00	6.82	Peak

Mode	802.11n-HT20	UNII Band	III
		Frequency	TX 5745MHz

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
1066.00	28.09	3.42	13.42	44.93	54.00	9.07	Peak
2126.00	31.77	5.43	10.54	47.74	54.00	6.26	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
1066.00	28.09	3.42	16.61	48.12	54.00	5.88	Peak
2132.00	31.79	5.46	15.64	52.89	54.00	1.11	Peak
3195.00	32.86	6.43	5.20	44.49	54.00	9.51	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
1066.00	28.09	3.42	12.01	43.52	54.00	10.48	Peak
2130.00	31.77	5.43	9.05	46.25	54.00	7.75	Peak
4350.00	33.86	7.91	3.43	45.20	54.00	8.80	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
1064.00	28.09	3.42	17.18	48.69	54.00	5.31	Peak
2128.00	31.77	5.43	15.22	52.42	54.00	1.58	Peak
4250.00	33.70	8.00	6.11	47.81	54.00	6.19	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 (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1064.00	28.09	3.42	14.17	45.68	54.00	8.32	Peak
2128.00	31.77	5.43	14.05	51.25	54.00	2.75	Peak
3190.00	32.86	6.43	9.78	49.07	54.00	4.93	Peak
4255.00	33.70	8.00	4.90	46.60	54.00	7.40	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1066.00	28.09	3.42	13.78	45.29	54.00	8.71	Peak
2124.00	31.77	5.43	15.72	52.92	54.00	1.08	Peak
3195.00	32.86	6.43	7.29	46.58	54.00	7.42	Peak
4250.00	33.70	8.00	4.06	45.76	54.00	8.24	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
1066.00	28.09	3.42	12.45	43.96	54.00	10.04	Peak
2128.00	31.77	5.43	8.60	45.80	54.00	8.20	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
1066.00	28.09	3.42	18.88	50.39	54.00	3.61	Peak
2126.00	31.77	5.43	15.70	52.90	54.00	1.10	Peak
3190.00	32.86	6.43	7.33	46.62	54.00	7.38	Peak
4265.00	33.73	8.00	6.67	48.40	54.00	5.60	Peak

Mode	802.11n-HT40	UNII Band	II-2C
		Frequency	TX 5710MHz

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
1066.00	28.09	3.42	12.31	43.82	54.00	10.18	Peak
2126.00	31.77	5.43	8.67	45.87	54.00	8.13	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
1066.00	28.09	3.42	18.37	49.88	54.00	4.12	Peak
2126.00	31.77	5.43	15.91	53.11	54.00	0.89	Peak
3200.00	32.86	6.43	7.34	46.63	54.00	7.37	Peak

Mode	802.11n-HT40	UNII Band	III
		Frequency	TX 5795MHz

Antenna at Horizontal Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1066.00	28.09	3.42	17.49	49.00	54.00	5.00	Peak
2132.00	31.79	5.46	6.89	44.14	54.00	9.86	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1066.00	28.09	3.42	20.25	51.76	54.00	2.24	Peak
2130.00	31.77	5.43	13.12	50.32	54.00	3.68	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 (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1062.00	28.09	3.42	10.89	42.40	54.00	11.60	Peak
2124.00	31.77	5.43	7.23	44.43	54.00	9.57	Peak

Antenna at Vertical Polarization

Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dB μ V)	Emission Level (dB μ V/m)	Limits (dB μ V/m)	Margin (dB)	Detector
1064.00	28.09	3.42	18.79	50.30	54.00	3.70	Peak
2128.00	31.77	5.43	15.33	52.53	54.00	1.47	Peak
4255.00	33.70	8.00	4.24	45.94	54.00	8.06	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
1066.00	28.09	3.42	16.01	47.52	54.00	6.48	Peak
2132.00	31.79	5.46	15.28	52.53	54.00	1.47	Peak
3200.00	32.86	6.43	7.62	46.91	54.00	7.09	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
1062.00	28.09	3.42	17.38	48.89	54.00	5.11	Peak
2132.00	31.79	5.46	16.13	53.38	54.00	0.62	Peak
3195.00	32.86	6.43	9.55	48.84	54.00	5.16	Peak
4260.00	33.73	8.00	3.66	45.39	54.00	8.61	Peak

Mode	802.11ac-VHT80	UNII Band	II-2C
		Frequency	TX 5690MHz

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
1066.00	28.09	3.42	13.03	44.54	54.00	9.46	Peak
2126.00	31.77	5.43	8.88	46.08	54.00	7.92	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
1066.00	28.09	3.42	18.52	50.03	54.00	3.97	Peak
2124.00	31.77	5.43	15.37	52.57	54.00	1.43	Peak
3185.00	32.86	6.43	8.71	48.00	54.00	6.00	Peak
4250.00	33.70	8.00	5.89	47.59	54.00	6.41	Peak

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

Antenna at Horizontal Polarization

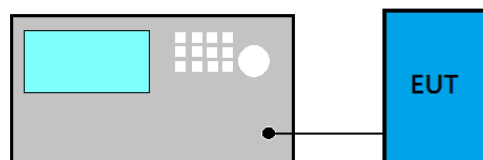
Emission Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Meter Reading (dBμV)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector
1064.00	28.09	3.42	13.17	44.68	54.00	9.32	Peak
2124.00	31.77	5.43	11.09	48.29	54.00	5.71	Peak

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
1064.00	28.09	3.42	16.99	48.50	54.00	5.50	Peak
2128.00	31.77	5.43	15.06	52.26	54.00	1.74	Peak
3190.00	32.86	6.43	4.35	43.64	54.00	10.36	Peak

7. EMISSION BANDWIDTH MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Specification Limits

Frequency Band (MHz)	Limit
5150 to 5250	Reference only
5250 to 5350	
5470 to 5725	
5725 to 5850	$\geq 500\text{kHz}$

7.3. Test Procedure

Following measurement procedure is reference to 789033 D02 General UNII Test Procedures New Rules v01r03:

■ Applicable to all bands except to 5725 MHz- 5850 MHz

- (1) Set RBW= 1% of the emission bandwidth
- (2) Set VBW > RBW
- (3) Detector = Peak
- (4) Trace mode = max hold
- (5) Setting channel bandwidth function x dB to -26 dB to record the final bandwidth.

■ 5725 MHz- 5850 MHz

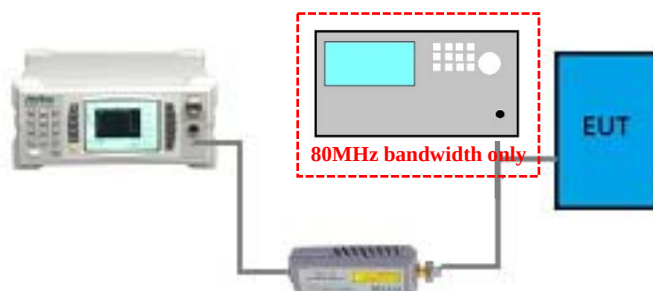
- (1) Set RBW = 100 kHz.
- (2) Set the video bandwidth (VBW) $\geq 3 \times \text{RBW}$.
- (3) Detector = Peak.
- (4) Trace mode = max hold.
- (5) Sweep = auto couple.
- (6) Allow the trace to stabilize.
- (7) Setting channel bandwidth function x dB to -6 dB to record the final bandwidth.

7.4. Test Results

Please refer to Appendix A

8. MAXIMUM OUTPUT POWER MEASUREMENT

8.1. Block Diagram of Test Setup



8.2. Specification Limits

Frequency Band (MHz)	Limit	
5150 to 5250	E.I.R.P.	200 mW or 11 dBm + 10 log B ^{Note1}
5250 to 5350	Maximum output power	250 mW or 11 dBm + 10 log B ^{Note1}
	E.I.R.P.	1.0 W or 17 dBm + 10 log B ^{Note1}
5470 to 5725	Maximum output power	250 mW or 11 dBm + 10 log B ^{Note1}
	E.I.R.P.	1.0 W or 17 dBm + 10 log B ^{Note1}
5725 to 5850	Maximum output power	1 W(30 dBm)

Note 1: B is the 99% emission bandwidth, which presented in section 7 and appendix A.1.

8.3. Test Procedure

Following measurement procedure is reference to 789033 D02 General UNII Test Procedures New Rules v01r03:

■ **Method AVGPM (Measurement using an RF average power meter):**

EUT is connected to power sensor and record the maximum average output power and duty cycle factor is added when duty cycle presented in section 3.5 is < 98%.

■ **Method AVGSA-2 (Spectrum channel power)**

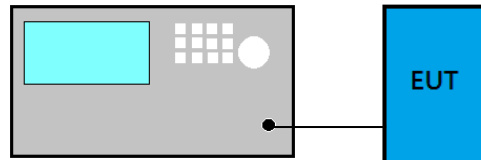
- (1) Set span to at least 1.5 times the OBW
- (2) Set RBW = 1 MHz
- (3) Set the video bandwidth (VBW) $\geq$ 3 MHz.
- (4) Detector = RMS.
- (5) Trace mode = trace average at least 100 traces
- (6) Sweep = auto couple.
- (7) Compute power by integrating the spectrum across the OBW of the signal using the instrument's band power measurement function with band limits set equal to the OBW band edges.
- (8) Duty cycle factor is added when duty cycle presented in section 3.5 is < 98%.

8.4. Test Results

Please refer to Appendix A

9. EMISSION LIMITATIONS MEASUREMENT

9.1. Block Diagram of Test Setup



9.2. Specification Limits

- 9.2.1. For transmitters operating in the 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.
- 9.2.2. For transmitters operating in the 5250-5350 MHz, all emissions outside the band 5250-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p.
- 9.2.3. For transmitters operating in the 5470-5725 MHz, all emissions outside the 5470-5725 MHz shall not exceed -27 dBm/MHz e.i.r.p.
- 9.2.4. For transmitters operating in the 5725-585 MHz, emissions at frequencies from the band edges to 10 MHz above or below the band edge shall not exceed -17 dBm/MHz e.i.r.p.; for frequencies more than 10 MHz above or below the band edges, the emissions power shall not exceed -27 dBm/MHz.

9.3. Test Procedure

Following measurement procedure is reference to 789033 D02 General UNII Test Procedures New Rules v01r03:

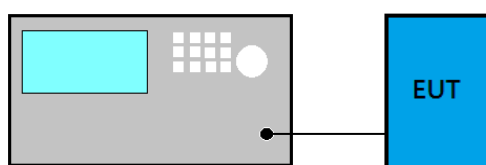
- (1) RBW = 1 MHz
- (2) VBW $\geq 3 \times$ RBW
- (3) Detector = Peak
- (4) Sweep time = auto
- (5) Trace mode = max hold
- (6) Allow sweeps to continue until the trace stabilizes.

9.4. Test Results

All emissions have been compliance with RSS-Gen section 8.9 as presented in the section 6 of test report.

10. POWER SPECTRAL DENSITY MEASUREMENT

10.1. Block Diagram of Test Setup



10.2. Specification Limits

Frequency Band (MHz)	Limit
5150 to 5250	10 dBm/MHz
5250 to 5350	11 dBm/MHz
5470 to 5725	11 dBm/MHz
5725 to 5850	30dBm/500 kHz

10.3. Test Procedure

Following measurement procedure is reference to 789033 D02 General UNII Test Procedures New Rules v01r03:

■ Method AVGSA-2 (Spectrum channel power)

- (1) Set span to at least 1.5 times the OBW
- (2) Set RBW = 1 MHz
- (3) Set the video bandwidth (VBW) ≥ 3 MHz.
- (4) Detector = RMS.
- (5) Trace mode = trace average at least 100 traces
- (6) Sweep = auto couple.
- (7) Use peak search function to find out the maximum power density.
- (8) Duty cycle factor is added when duty cycle presented in section 3.5 is $< 98\%$.

10.4. Test Results

Please refer to Appendix A

11.DEVIATION TO TEST SPECIFICATIONS

【NONE】