MOTOROLA SOLUTIONS

CERTIFICATE 2518.08

SAMM 825

MOTOROLA PENANG ADV. COMM. LABORATORY
Motorola Solutions Malaysia Sdn. Bhd.
Plot 2A Medan Bayan Lepas,
Mukim 12, S.W.D. 11900 Bayan Lepas,
Penang, Malaysia.

FCC / IC TEST REPORT
Report Revision : Rev.B

Date/s Tested	:	24-March-2024 - 26-April-2024
Manufacturer/Location	:	Motorola Solutions Malaysia SDN BHD
Manufacturer Address	:	Plot 2A Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia
Requestor	:	WONG CHEW LOOI
Product Type	:	Portable
Product Marketing Name (PMN)	:	R7
Hardware Version Identification Number (HVIN)	:	AAH06RDN9RA1AN (IC Model: PMUE5722ABB)
Frequency Band	:	5180-5825 MHz
Firmware Version Identification Number (FVIN)	:	D02.24.02.0078
Applicant Name	:	Motorola Solutions Inc
Applicant Address	:	Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia
FCC Registrations	:	461337
ISED Registrations	:	MY0001

The equipment was tested accordance to the requirement listed below:

(5GHz Wi-Fi) **FCC 47 CFR Part 15 Subpart E** **IC RSS 247 Issue 2**	**PASS**

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Table of Contents

1.0 Summary of Test Results 3
2.0 Measurement Uncertainty 4
3.0 Equipment List 5
4.0 General Information 6
5.0 Test Mode Applicability and Test Channel Detail 9
6.0 Duty Cycle of Test Signal 12
6.0.1. Test Setup 12
6.0.2. Test Data 13
7.0 Transmitter Test Parameters 14
7.1. Bandwidth measurements 14
7.1.1. Test Setup 14
7.1.2. Test Limits 14
7.1.3. Test Data 15
7.2. Maximum Conducted Output Power 23
7.2.1. Test Setup 23
7.2.2. Test Limits 23
7.2.3. Additional Info 25
7.2.4. Test Data 25
7.3. Maximum Power Spectral Density 42
7.3.1. Test Setup 42
7.3.2. Test Limits 42
7.3.3. Additional Info 43
7.3.4. Test Data 43
7.4. 6dB Bandwidth 53
7.4.1. Test Setup 53
7.4.2. Test Limits 53
7.4.3. Test Data 54
7.5. Frequency Stability 58
7.5.1. Test Setup 58
7.5.2. Test Limits 58
7.5.3. Test Data 59
8.0 Band Edge Radiated Spurious Emission Measurement 60
8.0.1. Test Setup 60
8.0.2. Test Limits 61
8.0.3. Test Result 62
8.1. Radiated Spurious Emission Measurement 98
8.1.1. Test Setup 98
8.1.2. Test Limits 99
8.1.3. Test Data 100
8.2. AC Powerline Conducted Emission 172
8.2.1. Test Setup 172
8.2.2. Test Limits 172
8.2.3. Test Data 174

Revision History	Description	Date	Originator
Rev. A	Initial Report	**2-July-2024**	**Alieya**
Rev. B	Update antenna type and cover page HVIN from "AAH06RDN9RA1AN" to "AAH06RDN9RA1AN (IC Model: PMUE5722ABB)"	**18-July-2024**	**Alieya**

1.0 Summary of Test Results

FCC Clause	IC Clause	Test Item	Result	Remarks	Serial Number tested	Tested by
15.407 (a)(1/2/3)	RSS 247 6.2	Maximum Conducted Output Power (Average)	Pass	Highest output power: 802.11a: 17.986dBm (62.891mW) 802.11n20/ac20: 17.770 dBm (59.847mW)	865EAD9539	Alieya
15.407(a) (1/2/3)	RSS 247 6.2	Maximum Power Spectral Density	Pass	Meet the limit requirement.	865EAD9539	Alieya
15.407 (e)	RSS 247 6.2.4	6dB Bandwidth	Pass	a20: 16.829MHz (16M8D1D) n20/ac20: 17.809MHz (17M8D1D)	865EAD9539	Alieya
15.407 (g)	RSS Gen 6.11	Frequency Stability	Pass	Meet the limit requirement.	865EAD9539	Alieya
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Band Edge Radiated Spurious Emission Measurement	Pass	Worst case emission: 51.4661 dBuV/m (margin: 2.5339 dB)	865EAD9538	Nazrin & Rezza
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Radiated Spurious Emission Measurement	Pass	Worst case emission: 67.6493 dBuV/m (margin: 0.5507 dB), Noise floor	865EAD9538	Nazrin & Rezza
15.207 15.407 (b)(6)	RSS Gen 8.8	AC Powerline Conducted Emission	Pass	Meet the limit requirement.	865EAD9538	Shidee
15.203	-	Antenna requirement	Pass	Internal antenna is not accessible to the end-user	NA	NA

2.0 Measurement Uncertainty

Measurement	**Frequency**	**Expended Uncertainty (k=1.96) (±dB)**
AC Power Line Conducted Spurious Emission	150KHz ~ 30MHz	3.43
Radiated Emissions up to 1 GHz	30MHz ~ 200MHz	5.01
	200MHz ~ 1000MHz	5.01
Radiated Emissions above 1 GHz	1GHz ~ 18GHz	5.01
	18GHz ~ 25GHz	5.01
Conducted Spurious Emissions	9kHz ~ 12.75GHz	2.82

3.0 Equipment List

Bluetooth ATE # 1 (SW Version: Ate Main_3.1.12_R1)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
SPECTRUM ANALYZER	E4440A	MY46185415	5-Jan-24	5-Jan-25
CHAMBER	SH-641	92003820	18-Jul-23	18-Jul-24
POWER SUPPLY	6652A	3541A02371	18-Jul-23	18-Jul-24
PULSE SENSOR	MA2411B	1726287	22-Aug-23	22-Aug-24
PULSE POWER METER	ML2495A	1845014	16-Aug-23	16-Aug-24

Radiated Emission Station (SW Version: EMC FCC RE v1.6.5)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
DRG HORN FREQ.	SAS-571	1143	08-Mar-23	08-Mar-25
DRG HORN FREQ.	SAS-571	720	18-Apr-23	18-Apr-25
DC Power Supply	NR973A	MY54180189	30-Aug-23	30-Aug-24
SIGNAL GENERATOR	SMB 100A	182511	4-Jun-21	4-Jun-24
EMI TEST RECEIVER	ESW44	101731	11-Aug-23	11-Aug-24
5m SEMI-ANECHOIC CHAMBER	S800-HX	J2308	No Cal. Req'd	No Cal. Req'd
BILOG ANTENNA	CBL6112B	2950	14-Dec-23	14-Dec-24
BILOG ANTENNA	CBL6112B	2964	25-Sep-23	25-Sep-24
DATA LOGGER THERMOHYGROMETER	SDL500	A.016800	21-Jun-23	21-Jun-24
SYSTEM CONTROLLER	SC104V	050806-1	No Cal. Req'd	No Cal. Req'd
TURNTABLE FLUSH MOUNT 2M	FM2011	NA	No Cal. Req'd	No Cal. Req'd
ANTENNA POSITIONING TOWER	TLT2	NA	No Cal. Req'd	No Cal. Req'd
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170143	28-Aug-23	28-Aug-24
PREAMPLIFIER 18-40GHz	Miteq Hi Gain Sucoflex	002	No Cal. Req'd	No Cal. Req'd
PREAMPLIFIER	PAM-0118P	269	28-Jun-23	28-Jun-24
LOOP ANTENNA	6502	00208416	26-Oct-23	26-Oct-24

AC Powerline Station (SW Version: EMC32 Ver.10.60.10)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
DATA LOGGER	DSB	16344143	21-Jun-23	21-Jun-24
V-NETWORK 2-LINE	ENV216V	101039	13-Dec-23	13-Dec-24
EMI TEST RECEIVER	ESIB40	100225	19-Sep-23	19-Sep-24
PROGRAMMABLE AC SOURCE	61604	ABR000000926	25-Jul-23	25-Jul-24

4.0 General Information

General Description of EUT:

Product	Portable
Brand	Motorola Solutions
Test Model	R7
Power Supply Rating	7.5Vdc
Mode of operation	WLAN 5GHz
Modulation Type	QPSK, BPSK, 16QAM, 64QAM, 256QAM
Modulation Technology	OFDM
Transfer Rate	802.11a: 6.0/9.0/12.0/18.0/24.0/36.0/48.0/54.0 Mbps 802.11n: up to MCS15 802.11ac: up to MCS9
Operating Frequency	5.180 ~ 5.240 GHz, 5.260 ~ 5.320 GHz, 5.50 ~ 5.720 GHz, 5.745 ~ 5.825 GHz
Output Power (26 EBW or 99% OBW)	63.10 mW for 5.180 ~ 5.240 GHz 63.10 mW for 5.260 ~ 5.320 GHz 31.62 mW for 5.50 ~ 5.720 GHz 31.62 mW for 5.745 ~ 5.825 GHz
Antenna Type	PCB
SW Version	D02.24.02.0078

Note:
The EUT contains following accessory devices and data cable:

Item	Brand	Model or P/N
ANTENNA, STAMPED METAL,UHF SLIM WHIP ANTENNA (400-527MHZ) 400 - 527MHz	MOTOROLA	PMAE4079A
BATTERY PACK,BATT IMPRES LIION TIA4950 IP68 3200T	MOTOROLA	PMNN4810A
POWER SUPPLY ADAPTOR,IMPRES SUC LEVEL V SMPS NA CORD	MOTOROLA	WPLN4253B

Description of Test Modes:

For 5180 to 5240 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
36	5180
40	5200
44	5220
48	5240

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
38	5190
46	5230

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
42	5210

For 5260 to 5320 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
52	5260
56	5280
60	5300
64	5320

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
54	5270
62	5310

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
58	5290

For 5500 to 5720 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT20)

Channel	Frequency (MHz)
100	5500
104	5520
108	5540
112	5560
116	5580
120	5600
124	5620
128	5640
132	5660
136	5680
140	5700
144	5720

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency (MHz)
102	5510
110	5550
118	5590
126	5630
134	5670
142	5710

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
106	5530
122	5610
138	5690

For 5745 to 5825 MHz:

Channels for 802.11a, 802.11n, 802.11ac (HT20, VHT40)

Channel	Frequency(MHz)
149	5745
153	5765
157	5785
161	5805
165	5825

Channels for 802.11n, 802.11ac (HT40, VHT40)

Channel	Frequency(MHz)
151	5755
159	5795

Channels for 802.11ac (VHT80)

Channel	Frequency (MHz)
155	5775

General Description of Applied Standards

The EUT is a RF Product. According to the specifications of the manufacturer, the EUT is to comply with the requirements of the following standards:

FCC Part15, Subpart E (15.407)
789033 D02 General UNII Test Procedures New Rules v01r04
644545 D03 Guidance for IEEE 802 11ac New Rules v01
ANSI C63.10-2013
RSS 247 Issue 2, RSS Gen

All test have been performed and recorded as per above standards.

Deviation from standard

Not applicable as no deviation from standard test method

Modifications to EUT

No modifications were done to the UUT to facilitate the tests in this report.

5.0 Test Mode Applicability and Test Channel Detail

EUT Configure Mode	Applicable to				Description
	RE≥1G	RE<1G	PLC	APCM	
A	√	√	√	√	Power from adapter
B	x	√	x	x	Power from carcharger (12Vdc)
C	x	√	x	x	Power from carcharger (24Vdc)

Where:

RE≥1G: Radiated Emission above 1GHz & Band edge Measurement
RE<1G: Radiated Emission below 1GHz
PLC: Power Line Conducted Emission
APCM: Antenna Port Conducted Measurement

Note: The EUT had been pre-scanned on the position of each 3 axis planes. The worst case was found when positioned on **Y-plane.**

Radiated Emission Test (Above 1GHz)

☒Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band	MODE	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36-48	36,44,48	OFDM	BPSK	6.0
-	5180-5240	802.11n/ac (HT20, VHT20)	36-48	36,44,48	OFDM	BPSK	6.5
-	5180-5240	802.11n/ac (HT40,VHT40)	38-46	38,46	OFDM	BPSK	13.5
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52-64	52,60,64	OFDM	BPSK	6.0
-	5260-5320	802.11n/ac (HT20, VHT20)	52-46	52,60,64	OFDM	BPSK	6.5
-	5260-5320	802.11n/ac (HT40,VHT40)	54-62	54,62	OFDM	BPSK	13.5
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100-140	100,116,140	OFDM	BPSK	6.0
-	5500-5720	802.11n/ac (HT20, VHT20)	100-144	100,116,144	OFDM	BPSK	6.5
-	5500-5720	802.11n/ac (HT40,VHT40)	102-142	102,110,142	OFDM	BPSK	13.5
-	5500-5720	802.11ac (VHT80)	106-138	106,122,138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149-165	149,157,165	OFDM	BPSK	6.0
-	5745-5825	802.11n/ac (HT20, VHT20)	149-165	149,157,165	OFDM	BPSK	6.5
-	5745-5825	802.11n/ac (HT40,VHT40)	151-159	151,159	OFDM	BPSK	13.5
-	5745-5825	802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Radiated Emission Test (Below 1GHz)

☒Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	MODE	Frequency band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
-	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

Power Line Conducted Emission Test

☒Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	MODE	Frequency band (MHz)	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	802.11a	5180-5240	36 to 48	36	OFDM	BPSK	6.0
-	802.11a	5260-5320	52 to 64		OFDM	BPSK	6.0
-	802.11a	5500-5700	100 to 140		OFDM	BPSK	6.0
-	802.11a	5745-5825	149 to 165		OFDM	BPSK	6.0

Antenna Port Conducted Measurement:

☒This item includes all test value of each mode, but only includes spectrum plot of worst value of each mode.
☒Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
☒Following channel(s) was (were) selected for the final test as listed below.

EUT Configure Mode	Frequency Band	MODE	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
-	5180-5240	802.11a	36-48	36,44,48	OFDM	BPSK	6.0
-	5180-5240	802.11n/ac (HT20, VHT20)	36-48	36,44,48	OFDM	BPSK	6.5
-	5180-5240	802.11n/ac (HT40,VHT40)	38-46	38,46	OFDM	BPSK	13.5
-	5180-5240	802.11ac (VHT80)	42	42	OFDM	BPSK	29.3
-	5260-5320	802.11a	52-64	52,60,64	OFDM	BPSK	6.0
-	5260-5320	802.11n/ac (HT20, VHT20)	52-46	52,60,64	OFDM	BPSK	6.5
-	5260-5320	802.11n/ac (HT40,VHT40)	54-62	54,62	OFDM	BPSK	13.5
-	5260-5320	802.11ac (VHT80)	58	58	OFDM	BPSK	29.3
-	5500-5700	802.11a	100-140	100,116,140	OFDM	BPSK	6.0
-	5500-5720	802.11n/ac (HT20, VHT20)	100-144	100,116,144	OFDM	BPSK	6.5
-	5500-5720	802.11n/ac (HT40,VHT40)	102-142	102,110,142	OFDM	BPSK	13.5
-	5500-5720	802.11ac (VHT80)	106-138	106,122,138	OFDM	BPSK	29.3
-	5745-5825	802.11a	149-165	149,157,165	OFDM	BPSK	6.0
-	5745-5825	802.11n/ac (HT20, VHT20)	149-165	149,157,165	OFDM	BPSK	6.5
-	5745-5825	802.11n/ac (HT40,VHT40)	151-159	151,159	OFDM	BPSK	13.5
-	5745-5825	802.11ac (VHT80)	155	155	OFDM	BPSK	29.3

Test Condition:

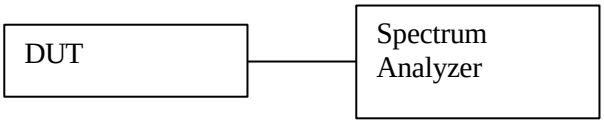
Applicable To	Environmental Conditions	Input Power	Tested By
RE≥1G	25°C, 50% RH	7.5V DC	Nazrin/Rezza
RE<1G	25°C, 50% RH	7.5V DC	Nazrin/Rezza
PLC	22.4°C, 68.6% RH	120V AC,240V AC	Shidee
APCM	25°C, 50% RH	7.5V DC	Alieya

Duty Cycle of Test Signal

802.11a, 802.11n and 802.11ac (HT20, VHT20): Duty cycle of test signal is 100%.
If Duty cycle of test signal is <98%, duty cycle factor shall be considered. (Refer to section 6.0 for duty cycle measurement)

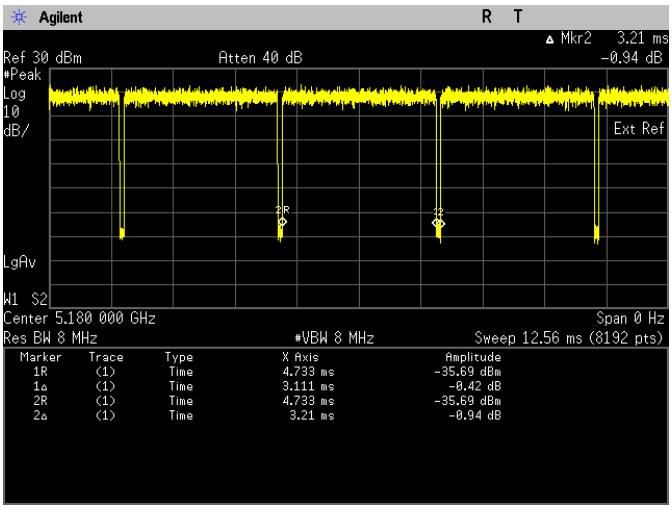
6.0 Duty Cycle of Test Signal

6.0.1. Test Setup



1) Set DUT to desire transmit frequency and transmit with maximum power.
2) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
3) Setting of Spectrum analyzer :
   a. Set the RBW = 10 MHz or the highest RBW available on spectrum analyzer.
   b. Set the VBW ≥ RBW.
   c. Set to Zero Span.
   d. Detector = Peak.
   e. Sweep time = 10ms or others that allow to measure accurate duty cycle.
   f. Trace mode = Max hold.
4) Record the duty cycle as X and save the plot.

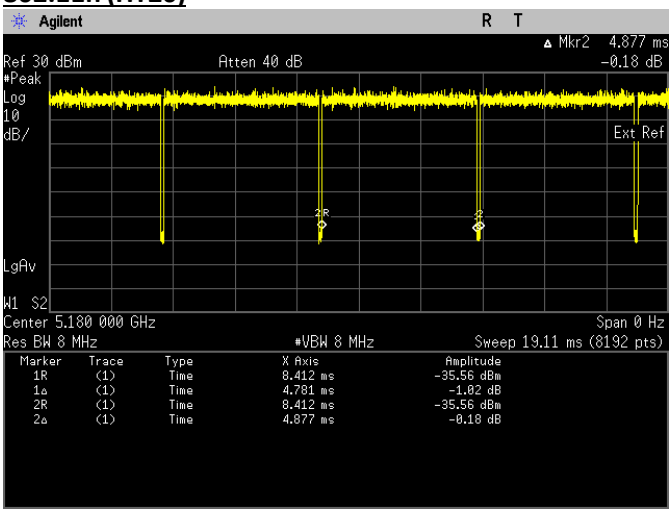
6.0.2. Test Data



On time	3.111	ms
On + off time	3.210	ms
Duty Cycle	0.9692	
Duty Cycle Factor	0.136	

*Duty cycle = On time/ On +off time
*Duty Cycle factor = 10*log (1/Duty Cycle)

802.11n (HT20)



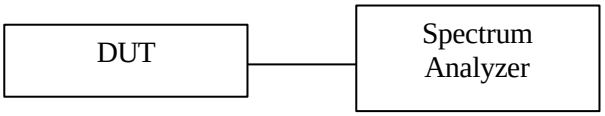
On time	4.781	ms
On + off time	4.877	ms
Duty Cycle	0.9803	
Duty Cycle Factor	0.086	

*Duty cycle = On time/ On +off time
*Duty Cycle factor = 10*log (1/Duty Cycle)

6.1. Transmitter Test Parameters

6.2. Bandwidth measurements

6.2.1. Test Setup



a) Test Setup as per illustrated above.
b) Set DUT to transmit at desire transmit frequency.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) Setting of Spectrum analyzer for 26dB EBW:
   - RBW = approximate 1% of emission bandwidth
   - VBW > RBW
   - Detector = Peak
   - Trace =Max hold
   - Measure the maximum width of the emission that is 26 dB down from the maximum of the emission.
   - Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

e) Setting of Spectrum analyzer for 99% Occupied bandwidth:
   - Span = 1.5 times to 5.0 times the OBW
   - RBW = 1% to 5 % of the OBW
   - VBW ≥ 3·RBW
   - Detector = Peak
   - Trace = Max Hold
   - Use the 99% power bandwidth function of the instrument
f) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause C.1) & D).

6.2.2. Test Limits

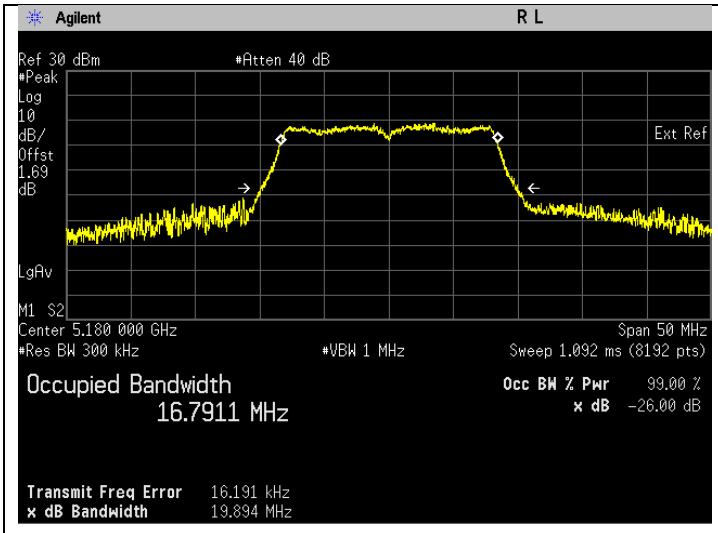
Not applicable.

6.2.3. Test Data

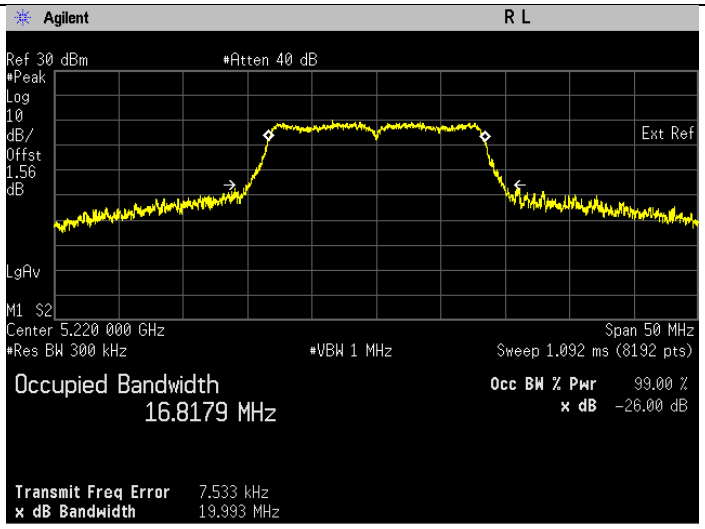
802.11a

Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	Mod Type: BPSK, Data Rate: 6	19.894	Pass	16.791	Pass
5220	Mod Type: BPSK, Data Rate: 6	19.993	Pass	16.818	Pass
5240	Mod Type: BPSK, Data Rate: 6	19.892	Pass	16.823	Pass
5260	Mod Type: BPSK, Data Rate: 6	20.214	Pass	16.829	Pass
5300	Mod Type: BPSK, Data Rate: 6	20.075	Pass	16.818	Pass
5320	Mod Type: BPSK, Data Rate: 6	19.796	Pass	16.768	Pass
5500	Mod Type: BPSK, Data Rate: 6	19.988	Pass	16.759	Pass
5580	Mod Type: BPSK, Data Rate: 6	19.970	Pass	16.745	Pass
5700	Mod Type: BPSK, Data Rate: 6	19.934	Pass	16.749	Pass
5720	Mod Type: BPSK, Data Rate: 6, UNII-2C	14.931	Pass	13.389	Pass
5720	Mod Type: BPSK, Data Rate: 6, UNII-3	4.931	Pass	3.389	Pass
5745	Mod Type: BPSK, Data Rate: 6	19.866	Pass	16.757	Pass
5785	Mod Type: BPSK, Data Rate: 6	19.881	Pass	16.785	Pass
5825	Mod Type: BPSK, Data Rate: 6	19.848	Pass	16.761	Pass

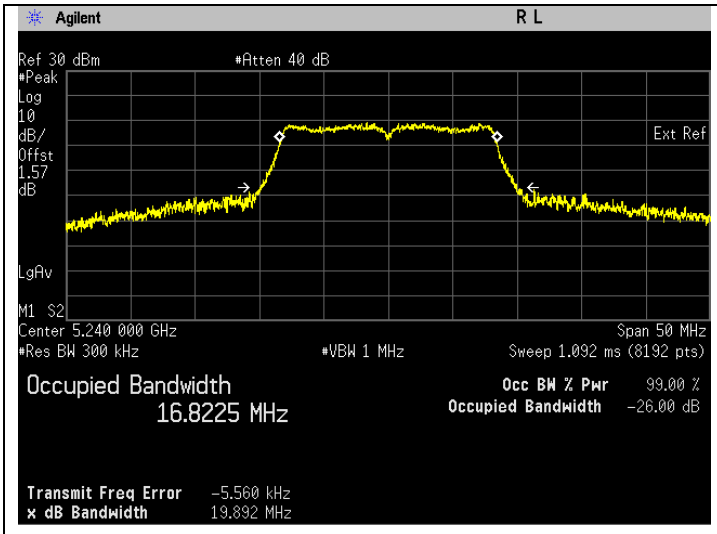
26 dB Bandwidth/ 99% Bandwidth



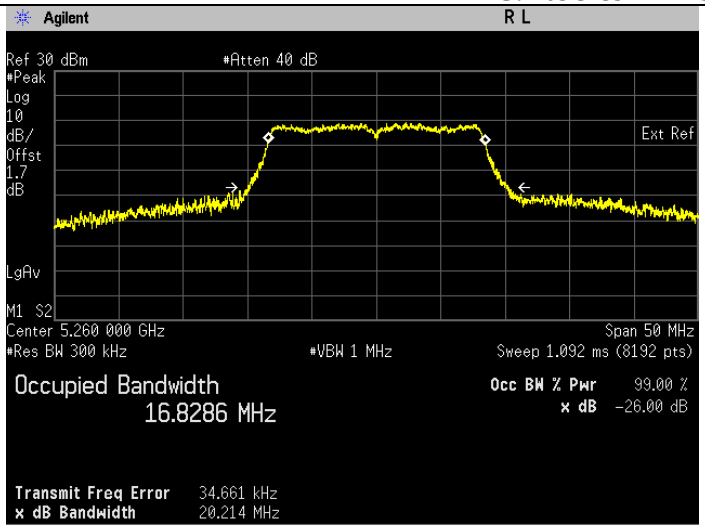
Frequency 5180 MHz



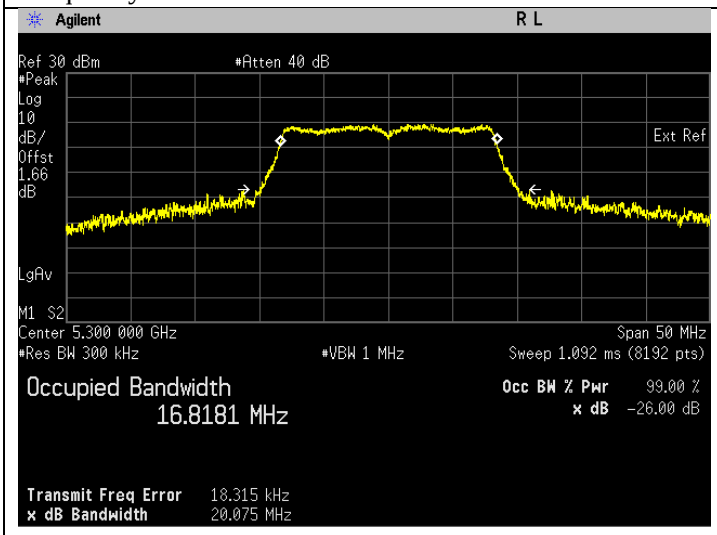
Frequency 5220 MHz



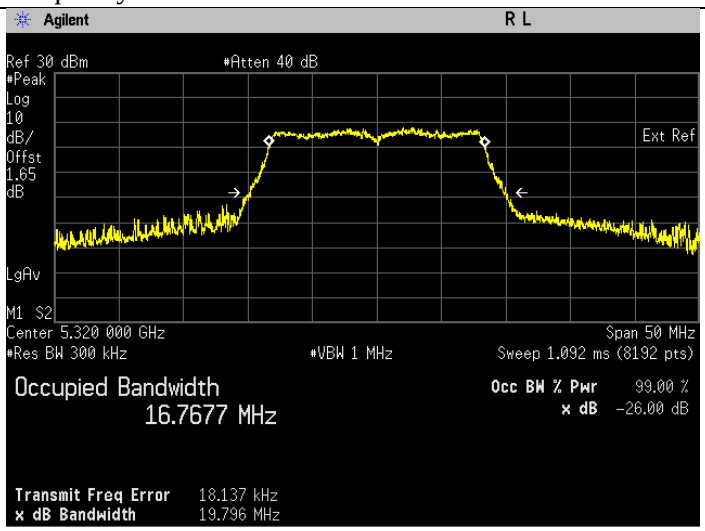
Frequency 5240 MHz



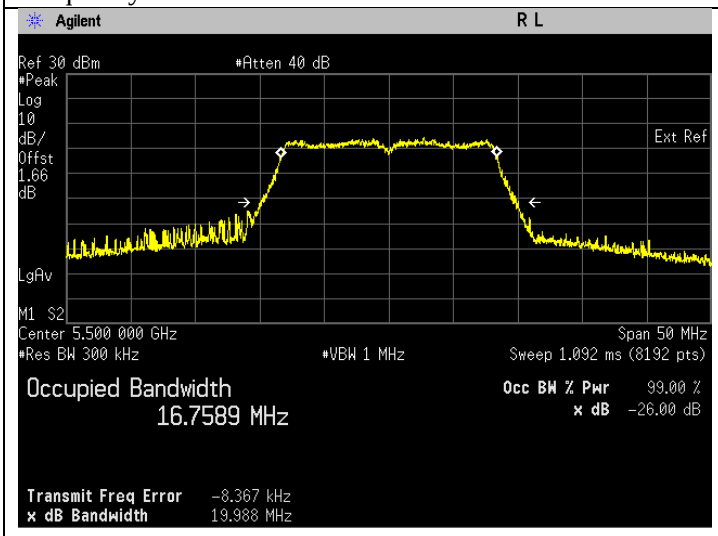
Frequency 5260 MHz



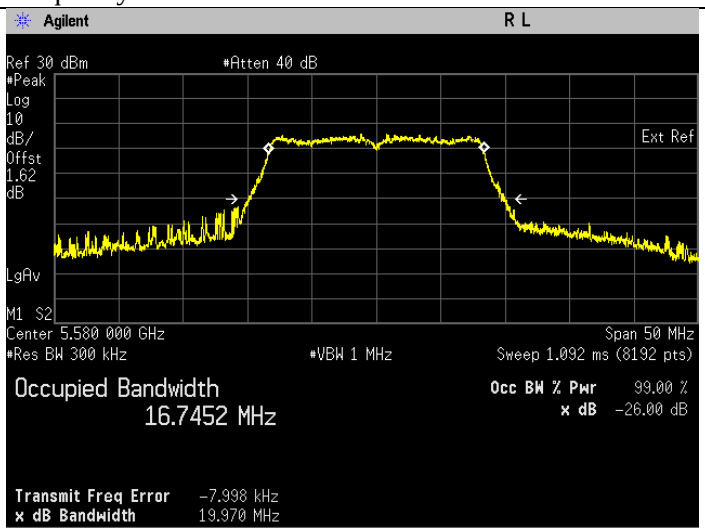
Frequency 5300 MHz



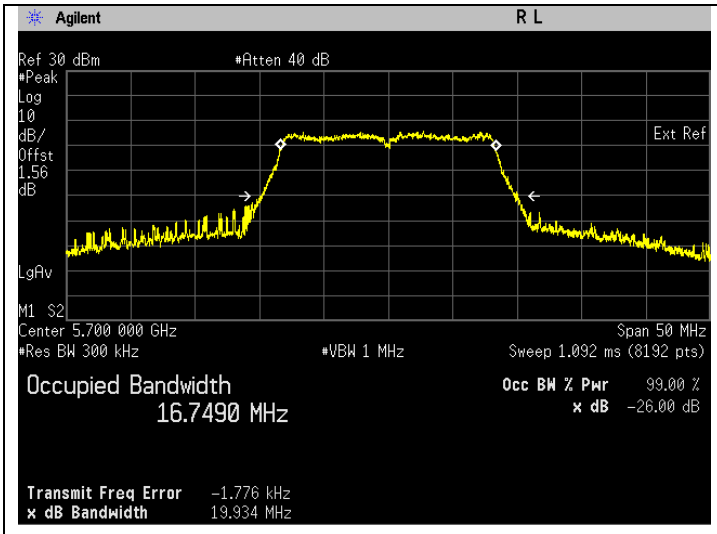
Frequency 5320 MHz



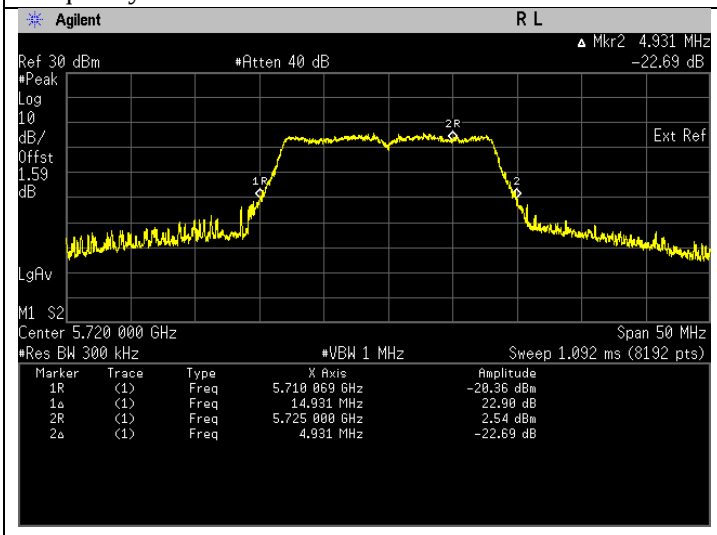
Frequency 5500 MHz



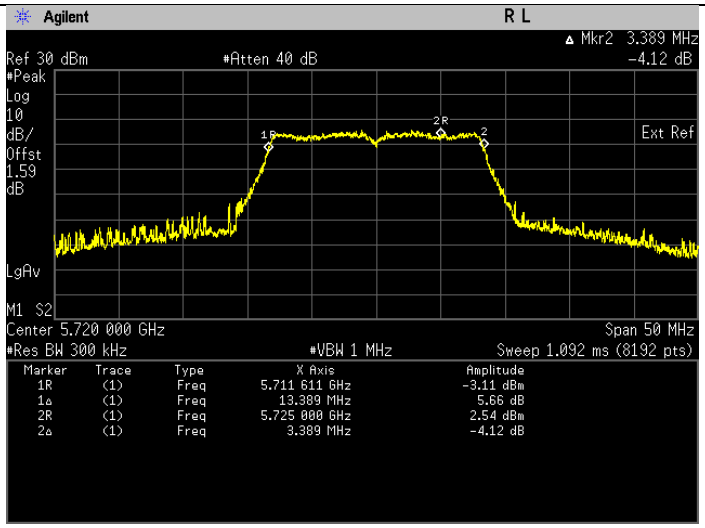
Frequency 5580 MHz



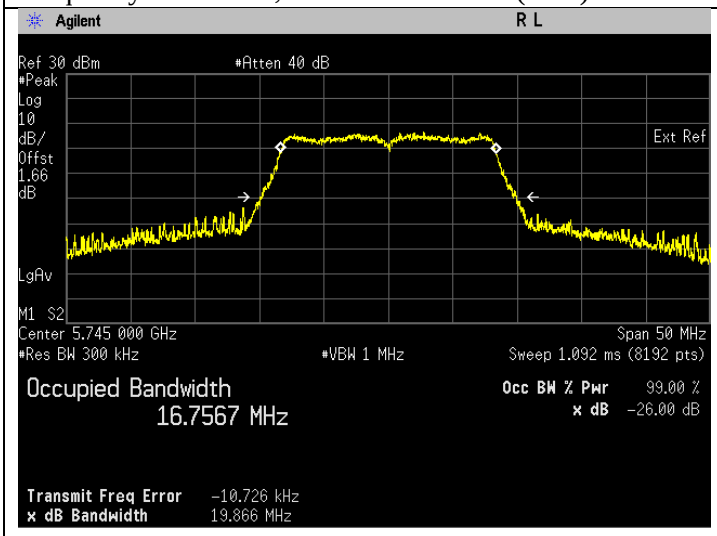
Frequency 5700 MHz



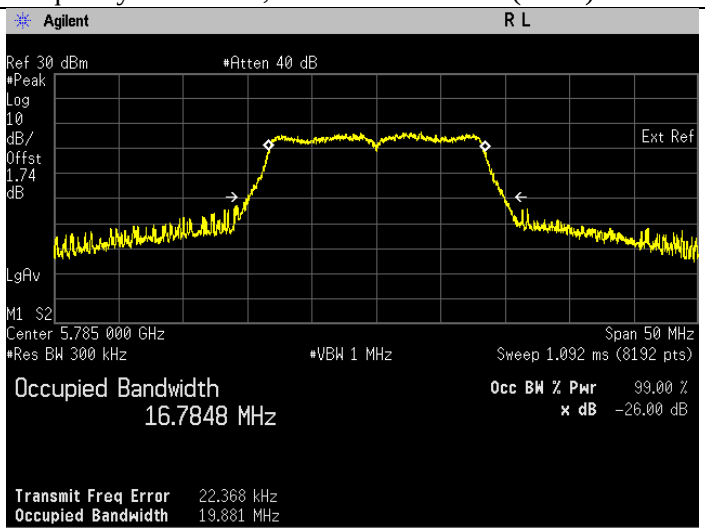
Frequency 5720 MHz, UNII-2C & UNII-3(FCC)



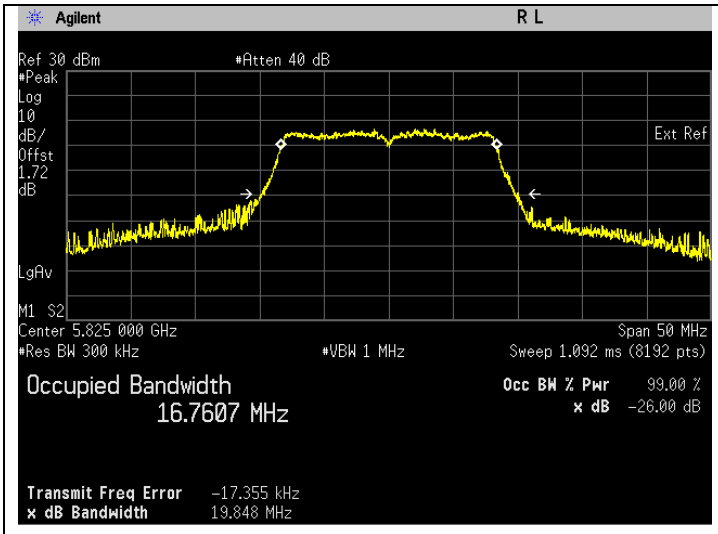
Frequency 5720 MHz, UNII-2C & UNII-3 (ISED)



Frequency 5745 MHz



Frequency 5785 MHz

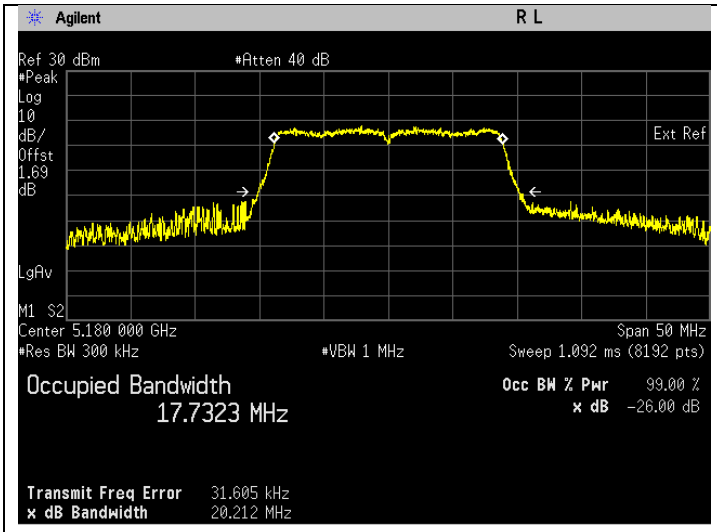


Frequency 5825 MHz

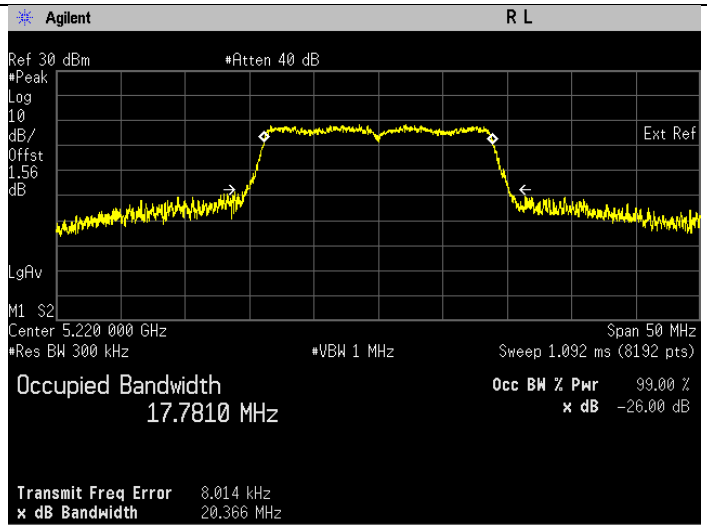
802.11n (HT20)

Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.212	Pass	17.732	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.366	Pass	17.781	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	22.846	Pass	17.804	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	25.173	Pass	17.809	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.338	Pass	17.761	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.374	Pass	17.703	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.341	Pass	17.721	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.218	Pass	17.713	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.274	Pass	17.719	Pass
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5), UNII-2C	15.180	Pass	13.852	Pass
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5), UNII-3	5.180	Pass	3.852	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.456	Pass	17.708	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.231	Pass	17.719	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.314	Pass	17.725	Pass

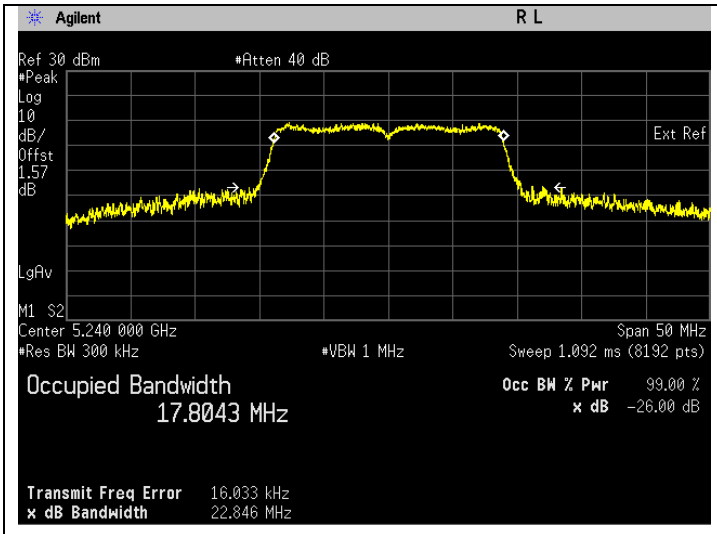
26 dB Bandwidth/ 99% Bandwidth



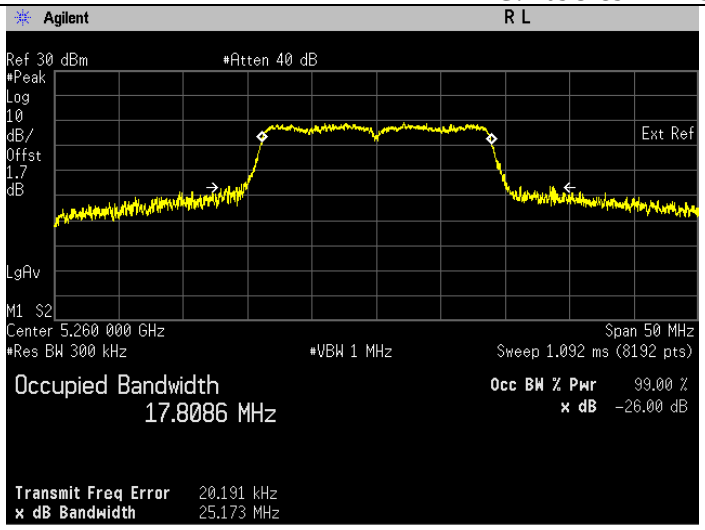
Frequency 5180 MHz



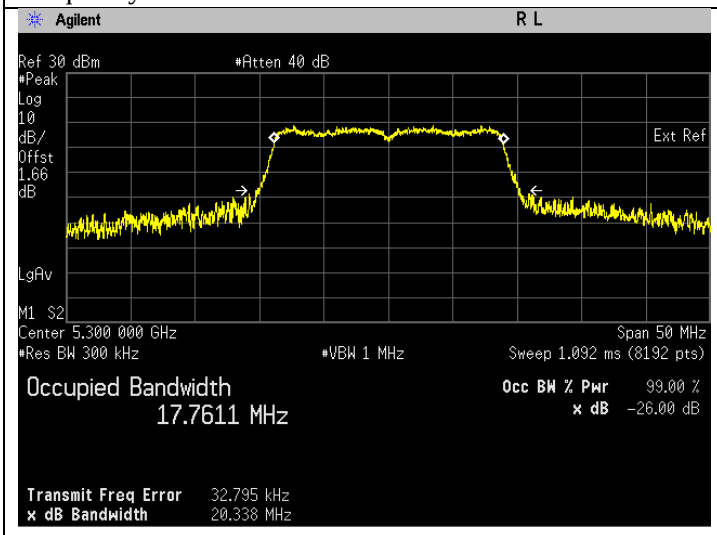
Frequency 5220 MHz



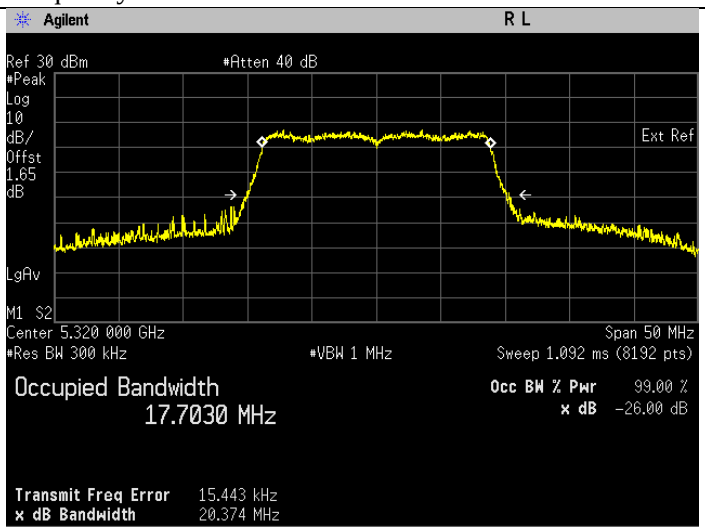
Frequency 5240 MHz



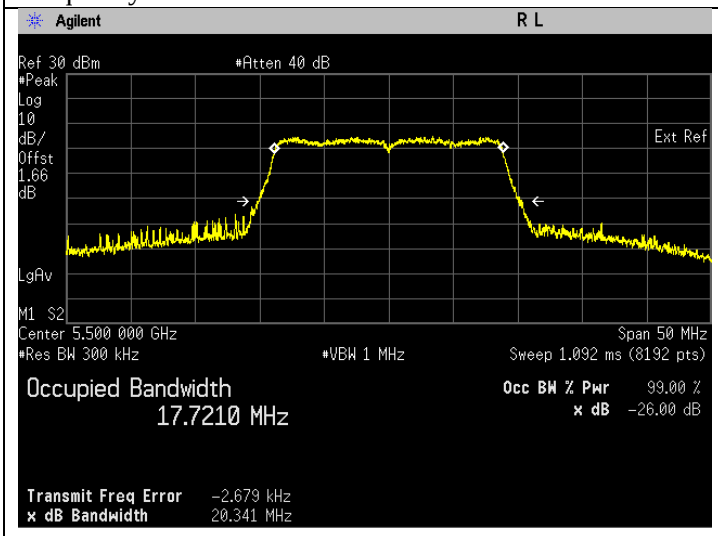
Frequency 5260 MHz



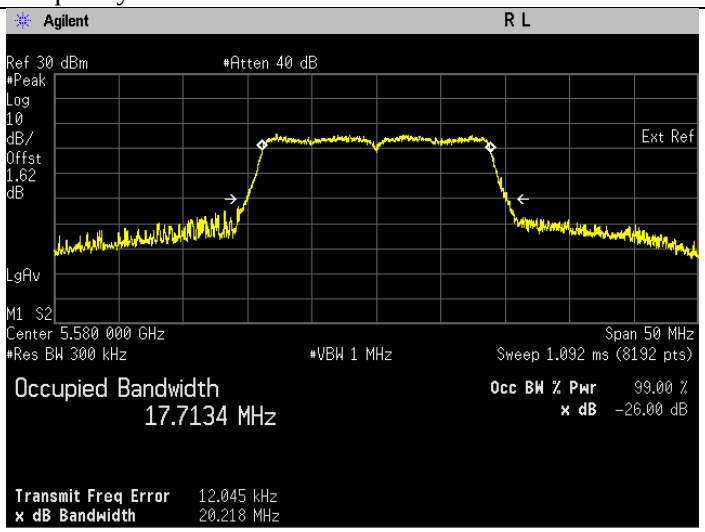
Frequency 5300 MHz



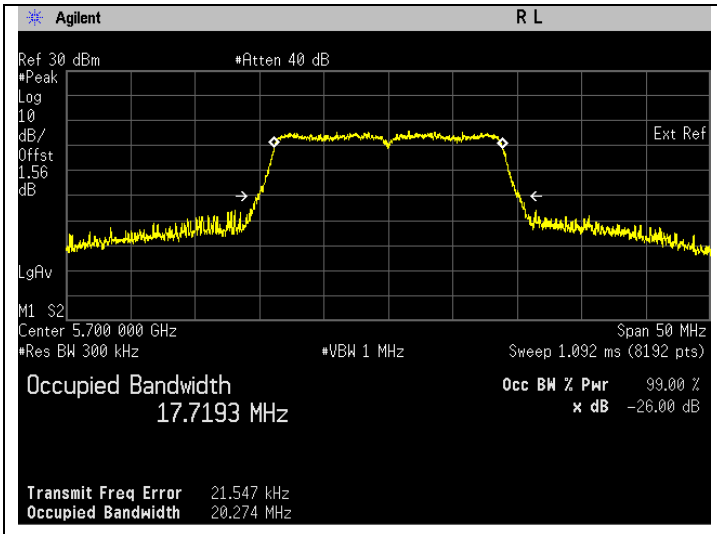
Frequency 5320 MHz



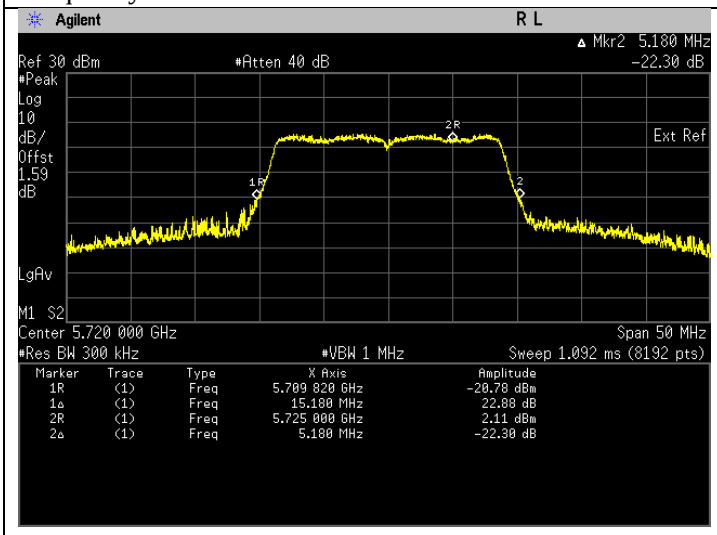
Frequency 5500 MHz



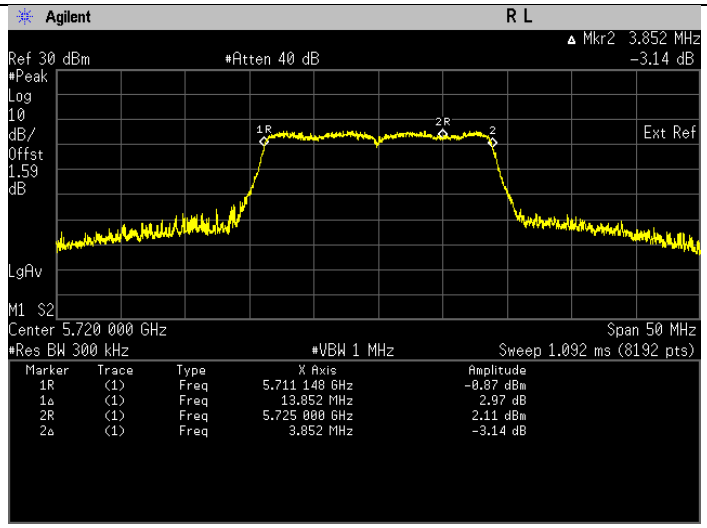
Frequency 5580 MHz



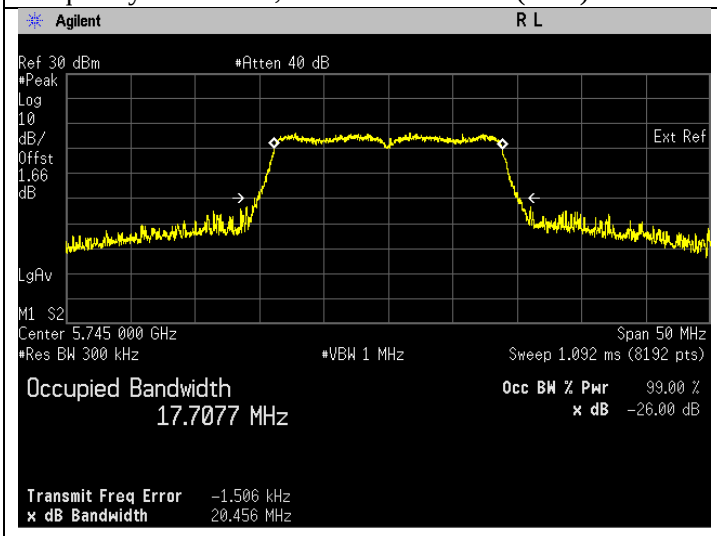
Frequency 5700 MHz



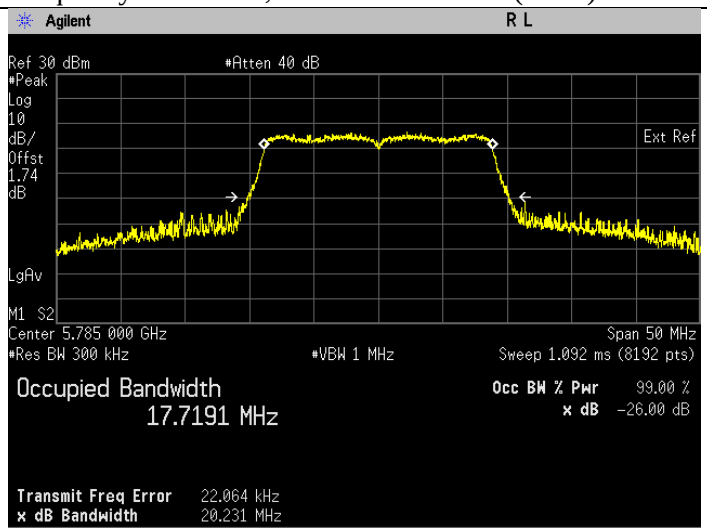
Frequency 5720 MHz, UNII-2C & UNII-3(FCC)



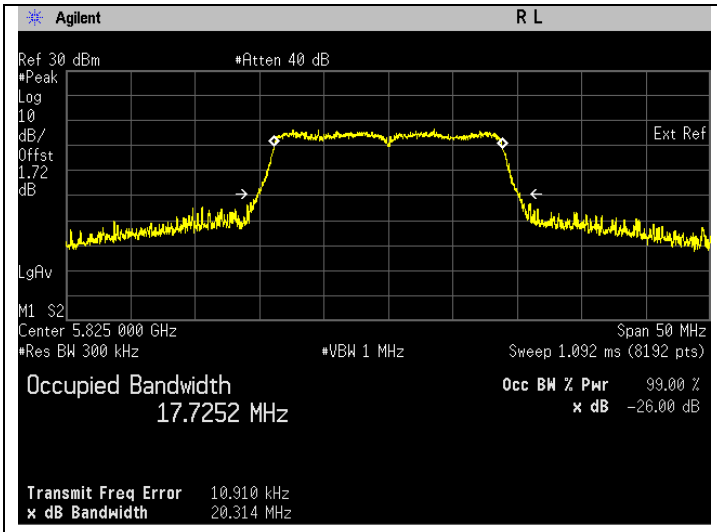
Frequency 5720 MHz, UNII-2C & UNII-3 (ISED)



Frequency 5745 MHz



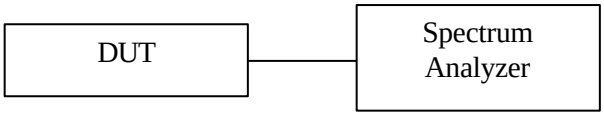
Frequency 5785 MHz



Frequency 5825 MHz

6.2. Maximum Conducted Output Power

6.2.1. Test Setup



a) Test setup as per illustrated above.
b) Set DUT to transmit at desire transmit frequency.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) Setting of Spectrum analyzer :
   - Span to encompass the entire 26dB EBW or 99% Occupied Bandwidth.
   - RBW = 1 MHz
   - VBW ≥ 3 MHz
   - Detector = power averaging (RMS)
   - Trace = Max hold
   - Number of points in sweep ≥ 2 × span / RBW
   - Sweep time = auto
   - Trace average at least 100 traces in power averaging (rms) mode
   - Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument's band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges.
   - Add 10 log (1/x), where x is the duty cycle, to the measured power to compute the average power during the actual transmission times
e) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause E.2.d) Method SA-2.
f) The Maximum output power results are included duty cycle correction factor.

6.2.2. Test Limits

FCC 15.407(a)

Range(GHz)		Condition	Output Power Limit
5.15-5.25 (UNII-1)		Outdoor AP	≤1W
		Indoor AP	≤1W
		Fixed Point to Point AP	≤1W
	√	Mobile and Portable client devices	≤250mW

5.25-5.35 (UNII-2A)	√	≤250mW or 11dBm+10log$_{10}$ B*
5.47-5.525 (UNII-2C)	√	*B is 26dB emission bandwidth in MHz

5.725-5.85 (UNII-3)	√	≤1W

RSS-247 6.2

Range(GHz)	Condition	Output Power Limit
5.15-5.25	indoor only (e.i.r.p.)	≤200mW or $10+10\log_{10}B$* *B is 99% emission bandwidth in 1MHz
5.25-5.35	(Conducted & e.i.r.p.)	Conducted: ≤250mW or $11+10\log_{10}B$* EIRP: < 1.0W or $17+10\log_{10}B$* *B is 99% emission bandwidth in 1MHz
5.47-5.6 5.65-5.725	(Conducted & e.i.r.p.)	Conducted: ≤250mW or $11+10\log_{10}B$* EIRP: < 1.0W or $17+10\log_{10}B$* *B is 99% emission bandwidth in 1MHz
5.725-5.85	(Conducted)	≤1W

6.2.3. Additional Info

Antenna	**Gain (dBi)**
UNII1,UNII2A,UNII2C &UNII3	2.70
Duty Cycle Correction Factor	
802.11a	0.136
802.11n20	0.086

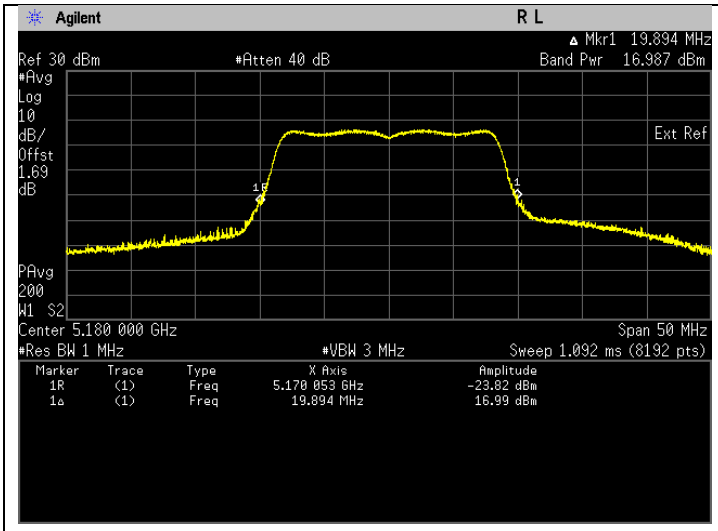
6.2.4. Test Data

Summary table

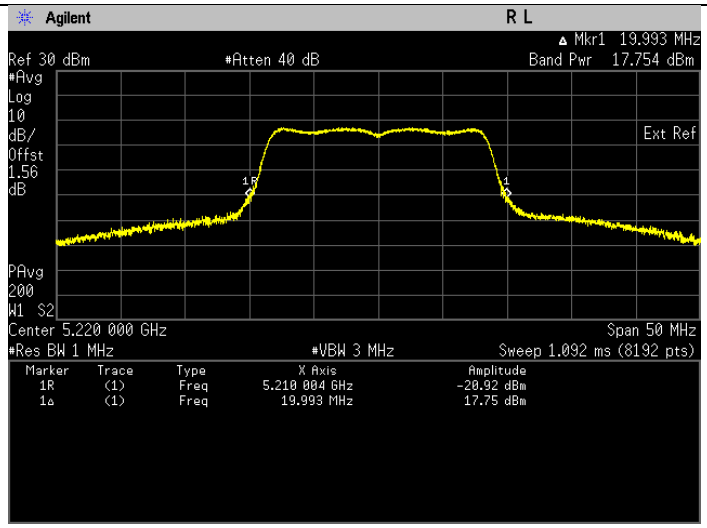
WLAN	Frequency Range (MHz)	Bandwidth (MHz)	RF Power Output		EIRP		Max Emission Designator
			Max measured (mW)	Max declared (mW)	Max measured (mW)	Max declared (mW)	
802.11a	5180-5240	20	60.90	63.10	113.40	117.49	16M8D1D
	5260-5320	20	62.89	63.10	117.11	117.49	16M8D1D
	5500-5580	20	25.15	31.62	46.84	58.88	16M8D1D
	5660-5720	20	24.99	31.62	46.53	58.88	16M7D1D
	5745-5825	20	29.82	31.62	55.53	58.88	16M8D1D
802.11n (HT20)	5180-5240	20	59.84	63.10	111.43	117.49	17M8D1D
	5260-5320	20	59.76	63.10	111.28	117.49	17M8D1D
	5500-5580	20	27.21	31.62	50.68	58.88	17M7D1D
	5660-5720	20	27.20	31.62	50.64	58.88	17M7D1D
	5745-5825	20	31.30	31.62	58.29	58.88	17M7D1D

802.11a (26dB EBW)

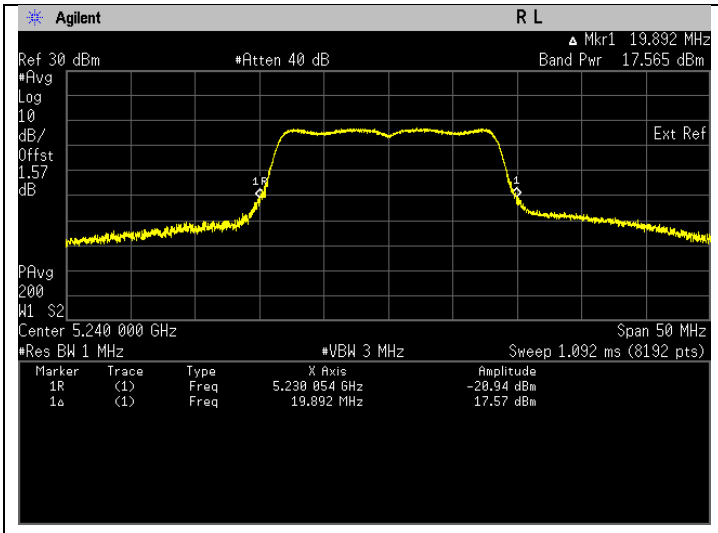
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	Mod Type: BPSK, Data Rate: 6	51.558	17.123	Pass
5220	Mod Type: BPSK, Data Rate: 6	61.518	17.890	Pass
5240	Mod Type: BPSK, Data Rate: 6	58.898	17.701	Pass
5260	Mod Type: BPSK, Data Rate: 6	58.479	17.670	Pass
5300	Mod Type: BPSK, Data Rate: 6	57.465	17.594	Pass
5320	Mod Type: BPSK, Data Rate: 6	41.276	16.157	Pass
5500	Mod Type: BPSK, Data Rate: 6	17.246	12.367	Pass
5580	Mod Type: BPSK, Data Rate: 6	25.942	14.140	Pass
5700	Mod Type: BPSK, Data Rate: 6	25.416	14.051	Pass
5745	Mod Type: BPSK, Data Rate: 6	29.343	14.675	Pass
5785	Mod Type: BPSK, Data Rate: 6	29.465	14.693	Pass
5825	Mod Type: BPSK, Data Rate: 6	30.704	14.872	Pass



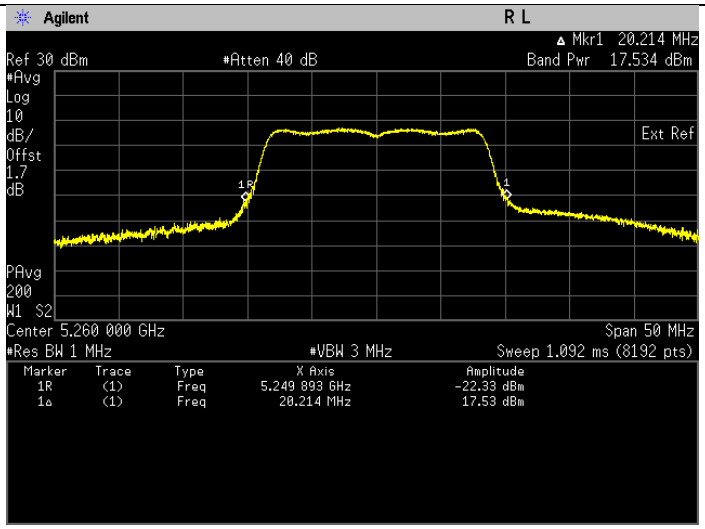
Frequency 5180 MHz, FCC.



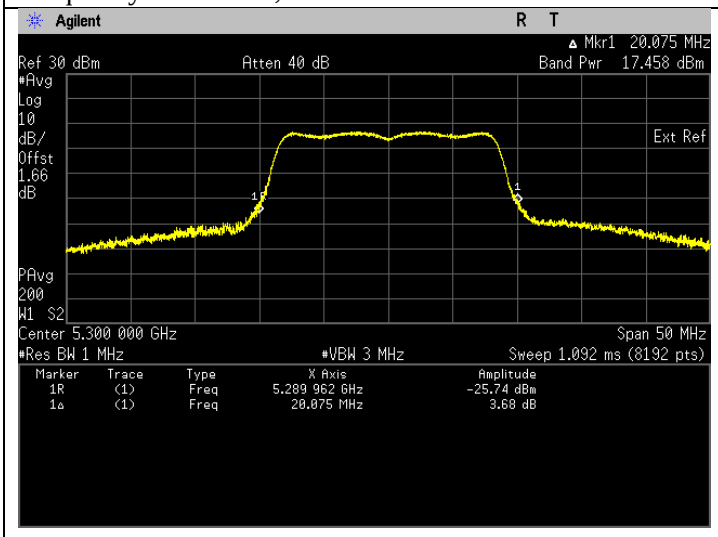
Frequency 5220 MHz, FCC.



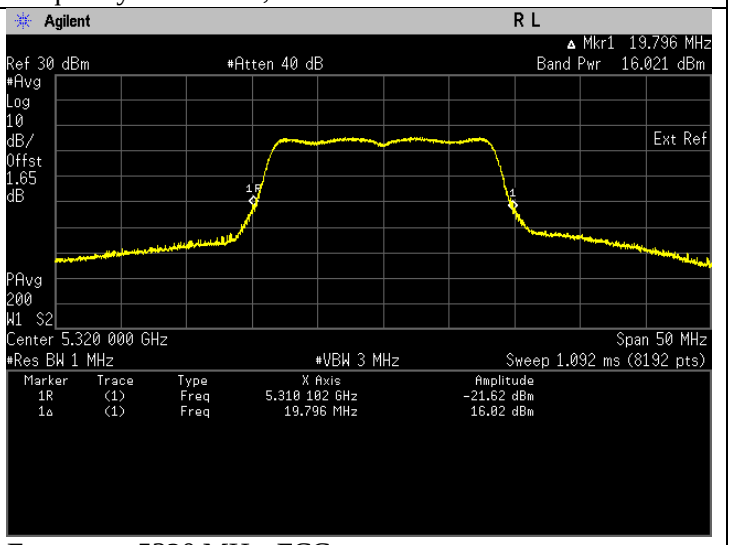
Frequency 5240 MHz, FCC.



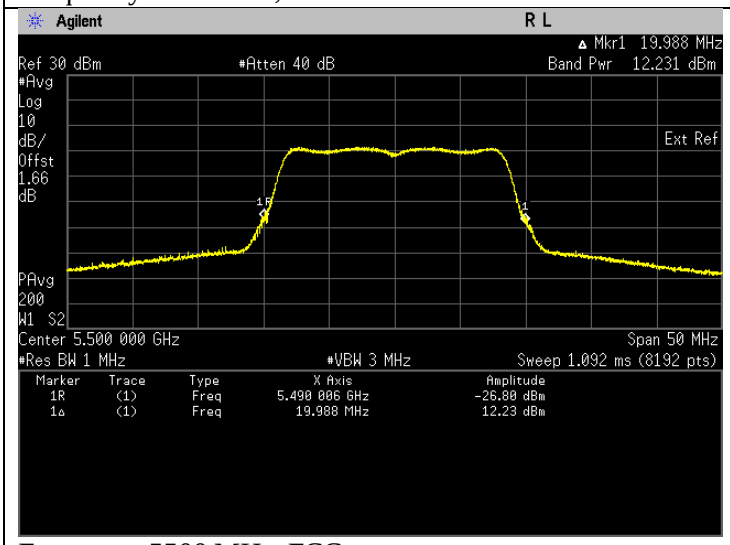
Frequency 5260 MHz, FCC.



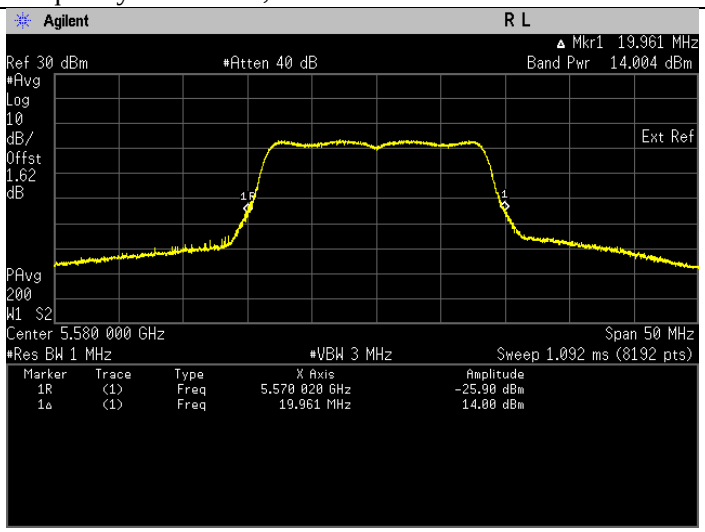
Frequency 5300 MHz, FCC.



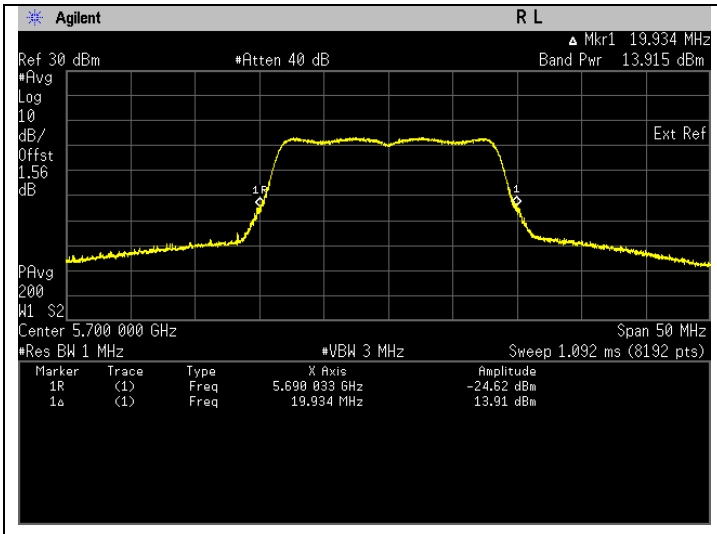
Frequency 5320 MHz, FCC.



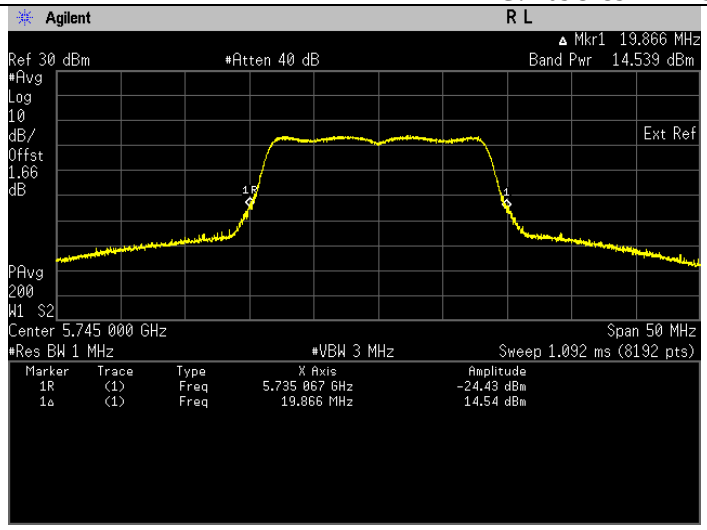
Frequency 5500 MHz, FCC.



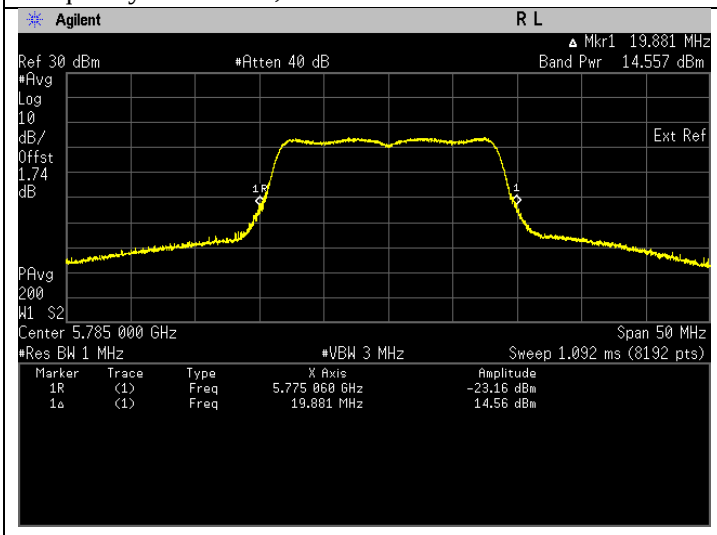
Frequency 5580 MHz, FCC.



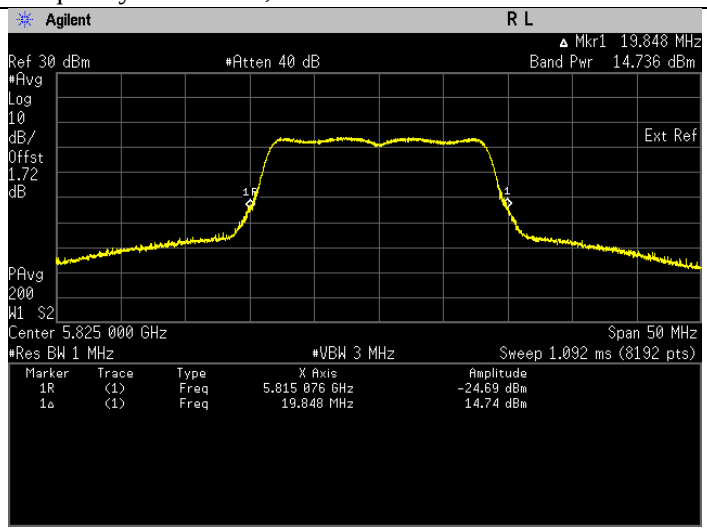
Frequency 5700 MHz, FCC.



Frequency 5745 MHz, FCC.



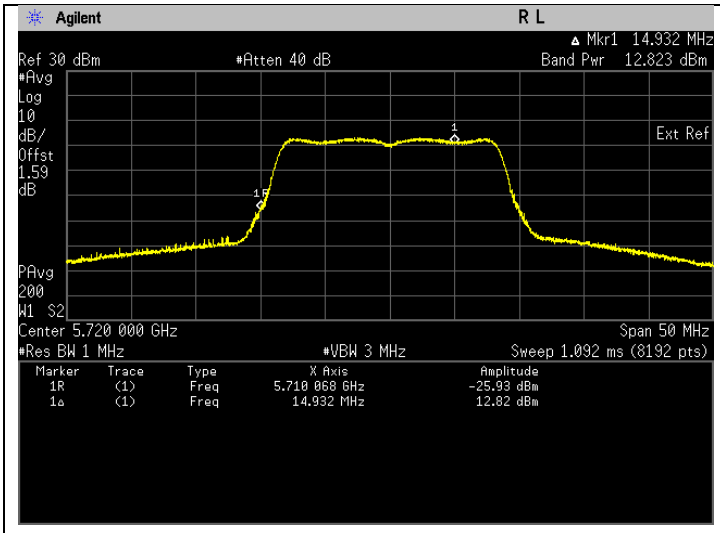
Frequency 5785 MHz, FCC.



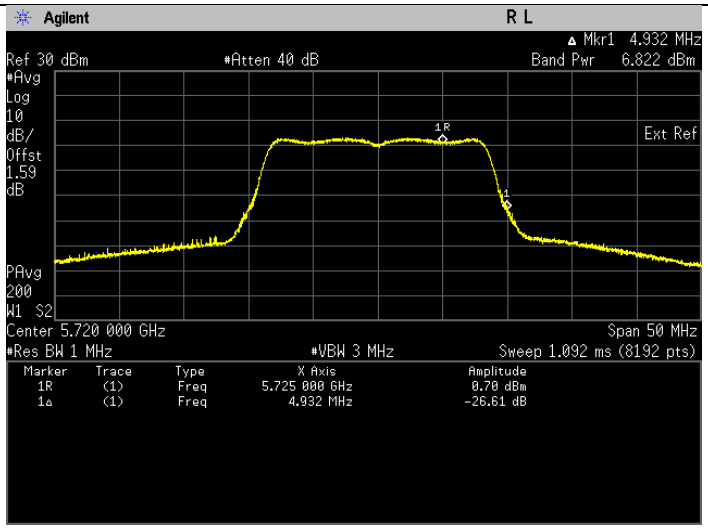
Frequency 5825 MHz, FCC.

Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	Mod Type: BPSK, Data Rate: 6	19.765	12.959	Pass
		U-NII-3		
5720	Mod Type: BPSK, Data Rate: 6	4.964	6.958	Pass



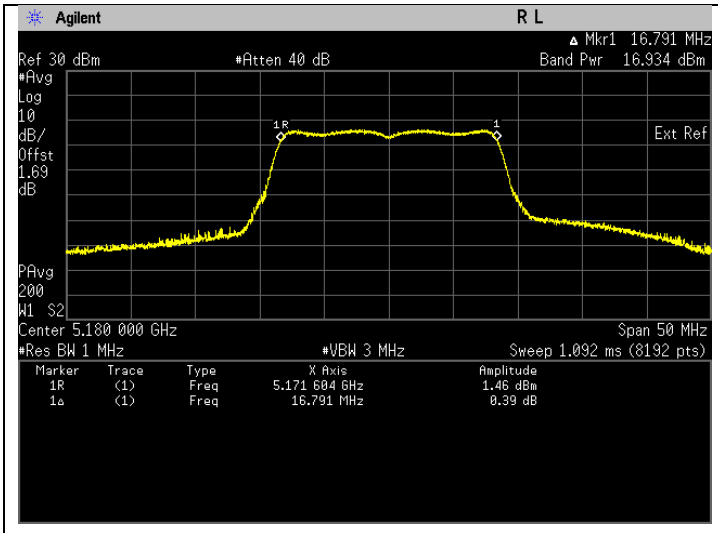
Frequency 5720 MHz, FCC, U-NII-2C. *Note: The band power is captured before the 5725 MHz.



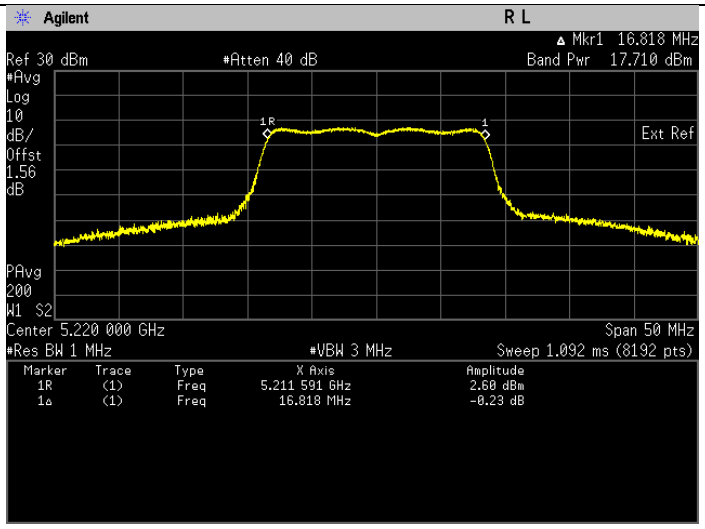
Frequency 5720 MHz, FCC, U-NII-3. *Note: The band power is captured after the 5725 MHz.

802.11a (99% EBW)

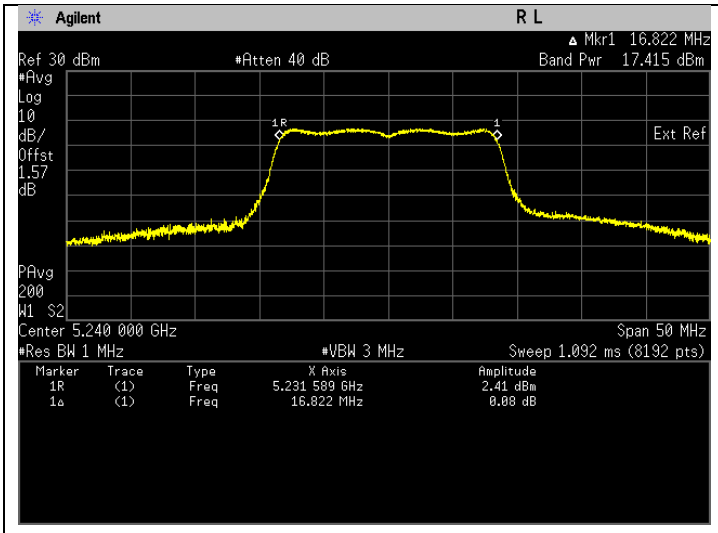
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	Mod Type: BPSK, Data Rate: 6	50.933	17.070	Pass	19.770	Pass
5220	Mod Type: BPSK, Data Rate: 6	60.898	17.846	Pass	20.546	Pass
5240	Mod Type: BPSK, Data Rate: 6	56.898	17.551	Pass	20.251	Pass
5260	Mod Type: BPSK, Data Rate: 6	57.293	17.581	Pass	20.281	Pass
5300	Mod Type: BPSK, Data Rate: 6	62.893	17.986	Pass	20.686	Pass
5320	Mod Type: BPSK, Data Rate: 6	40.022	16.023	Pass	18.723	Pass
5500	Mod Type: BPSK, Data Rate: 6	17.227	12.362	Pass	15.062	Pass
5580	Mod Type: BPSK, Data Rate: 6	25.154	14.006	Pass	16.706	Pass
5700	Mod Type: BPSK, Data Rate: 6	24.986	13.977	Pass	16.677	Pass
5745	Mod Type: BPSK, Data Rate: 6	28.913	14.611	Pass	17.311	Pass
5785	Mod Type: BPSK, Data Rate: 6	29.188	14.652	Pass	17.352	Pass
5825	Mod Type: BPSK, Data Rate: 6	29.819	14.745	Pass	17.445	Pass



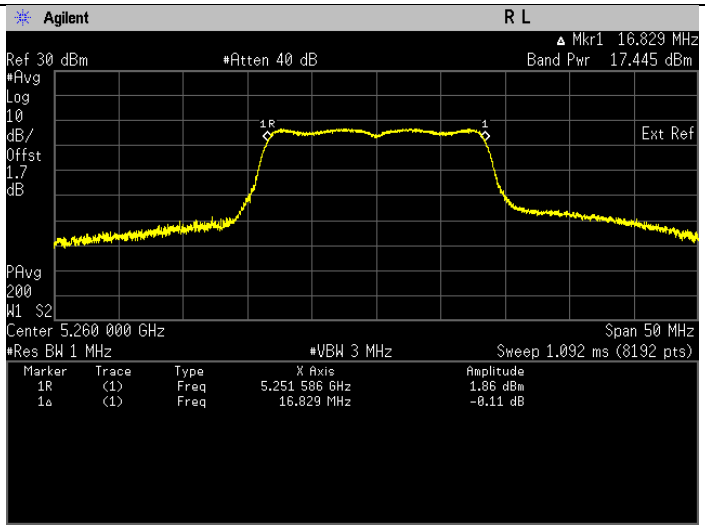
Frequency 5180 MHz, ISED



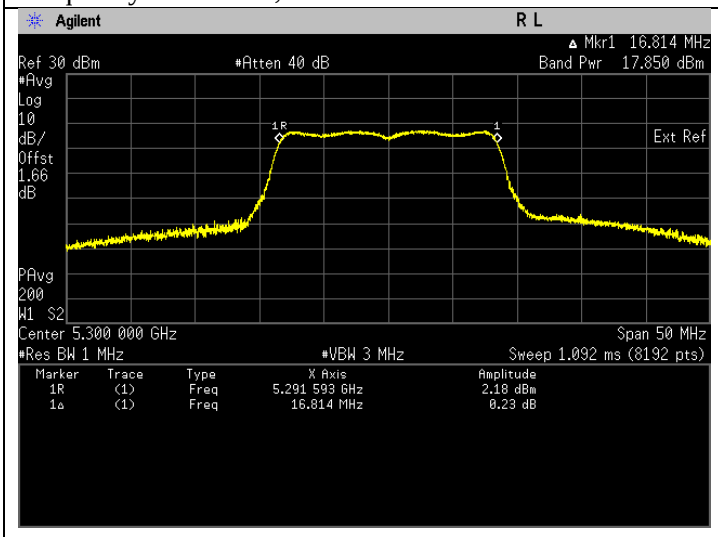
Frequency 5220 MHz, ISED



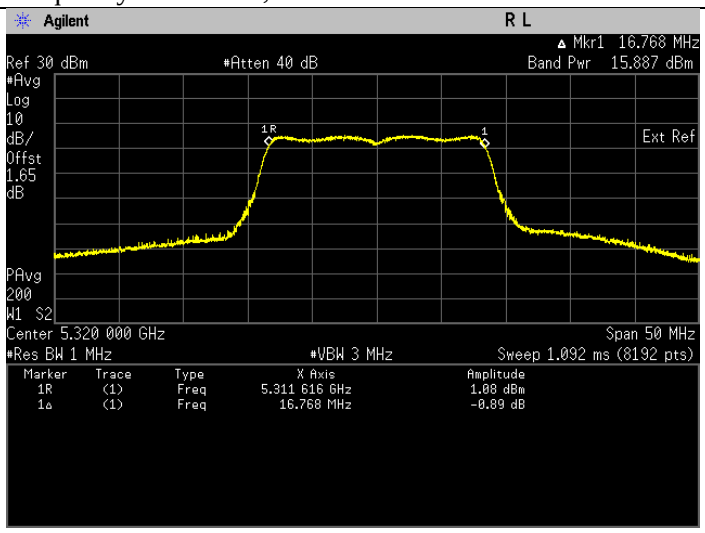
Frequency 5240 MHz, ISED



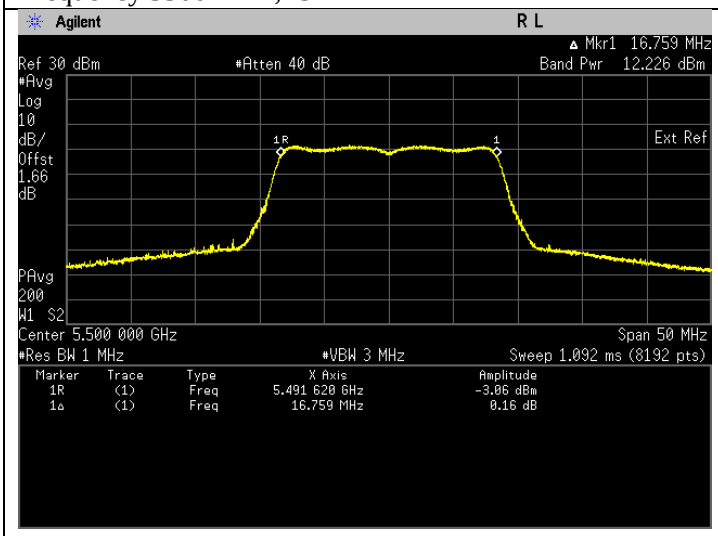
Frequency 5260 MHz, ISED



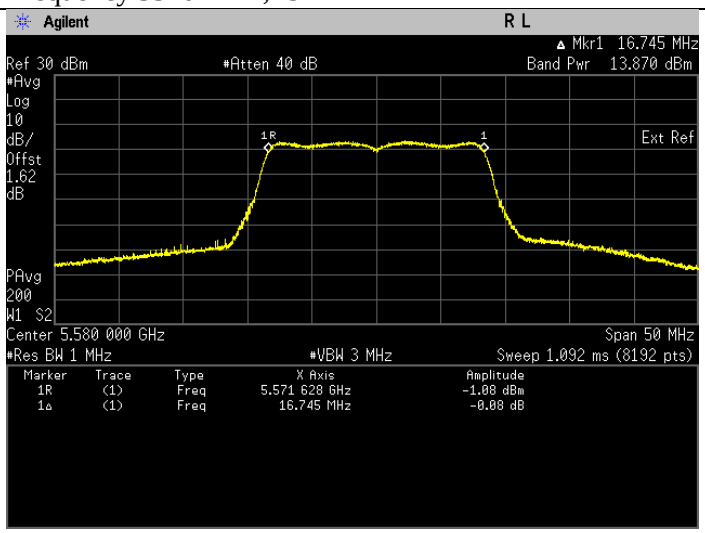
Frequency 5300 MHz, ISED



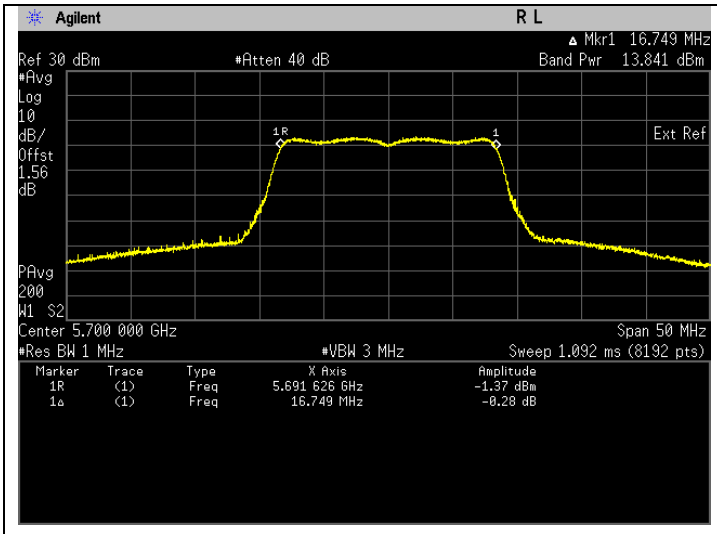
Frequency 5320 MHz, ISED



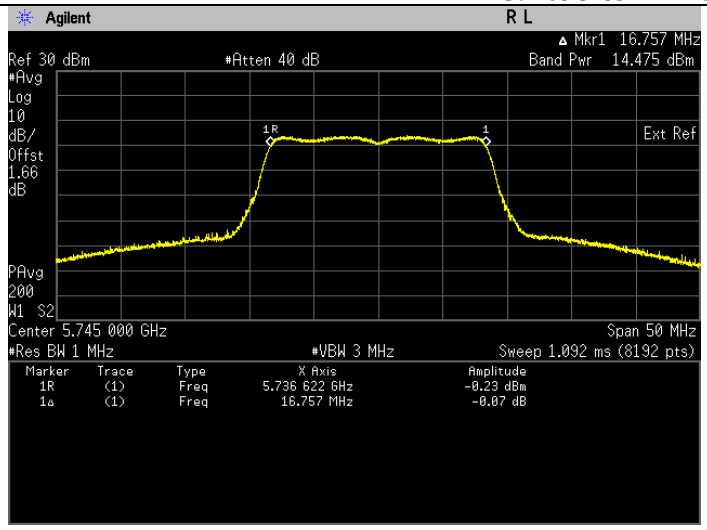
Frequency 5500 MHz, ISED



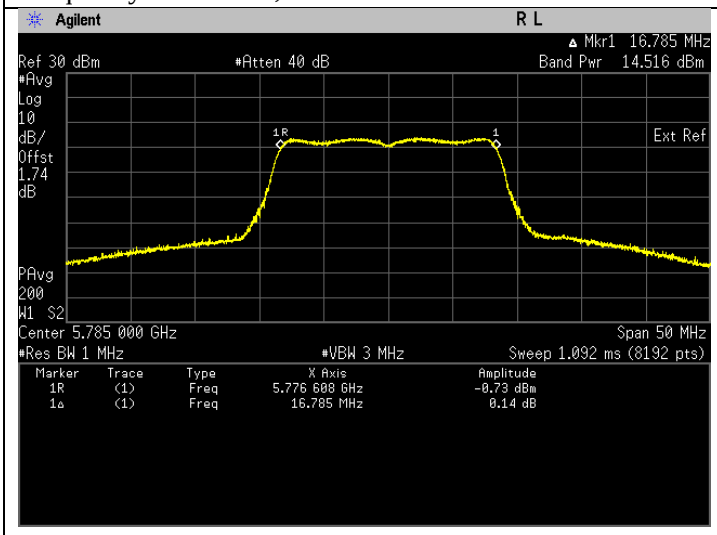
Frequency 5580 MHz, ISED



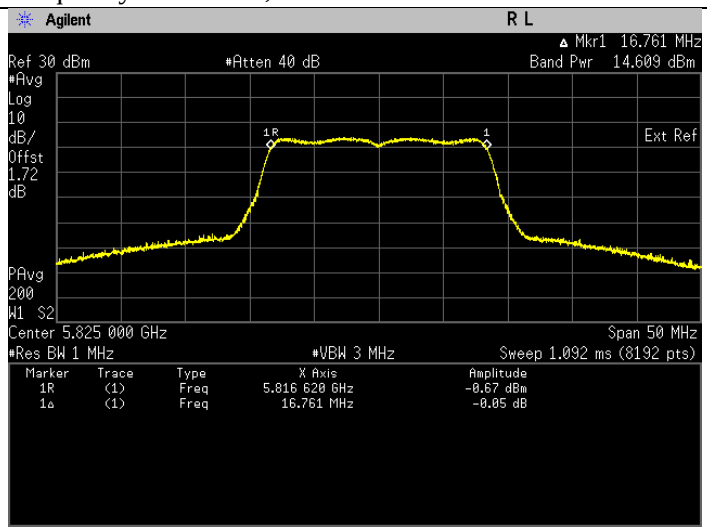
Frequency 5700 MHz, ISED



Frequency 5745 MHz, ISED



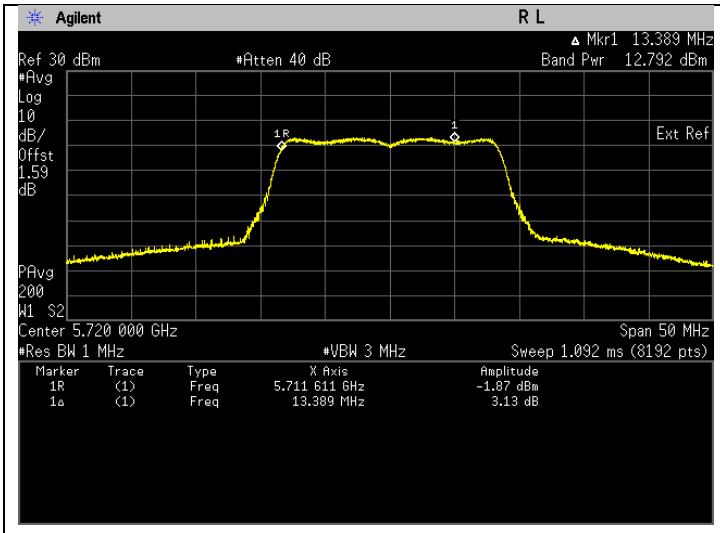
Frequency 5785 MHz, ISED



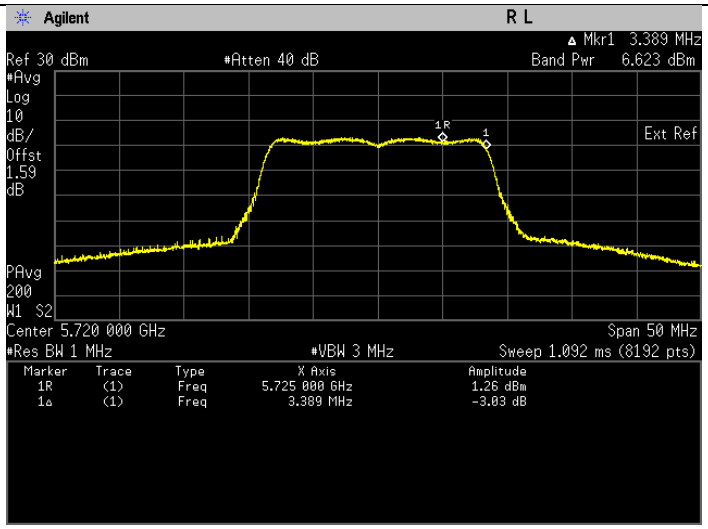
Frequency 5825 MHz, ISED

Straddle Frequency

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5720	Mod Type: BPSK, Data Rate: 6	19.625	12.928	Pass	15.628	Pass
		U-NII-3				
5720	Mod Type: BPSK, Data Rate: 6	4.741	6.759	Pass	9.459	Pass



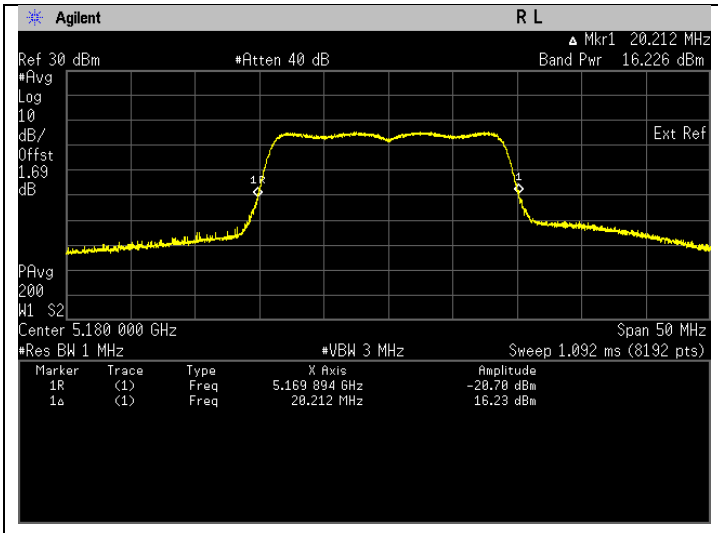
Frequency 5720 MHz, ISED, U-NII-2C. *Note: The band power is captured before the 5725 MHz.



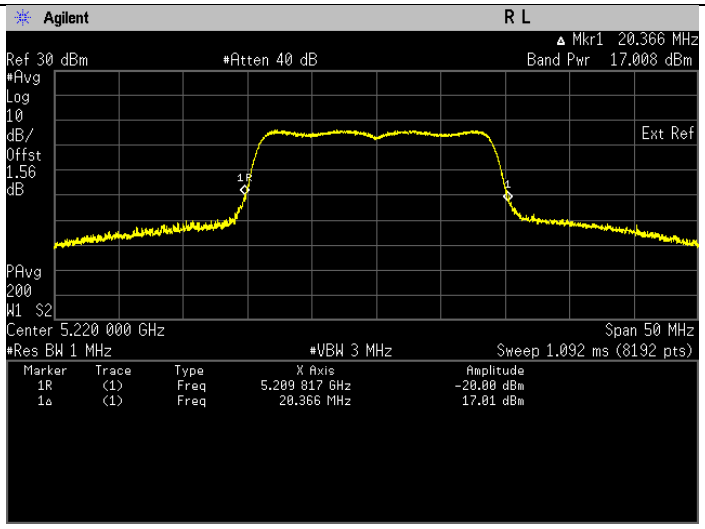
Frequency 5720 MHz, ISED, U-NII-3. *Note: The band power is captured after the 5725 MHz.

802.11n (HT20)(26dB EBW)

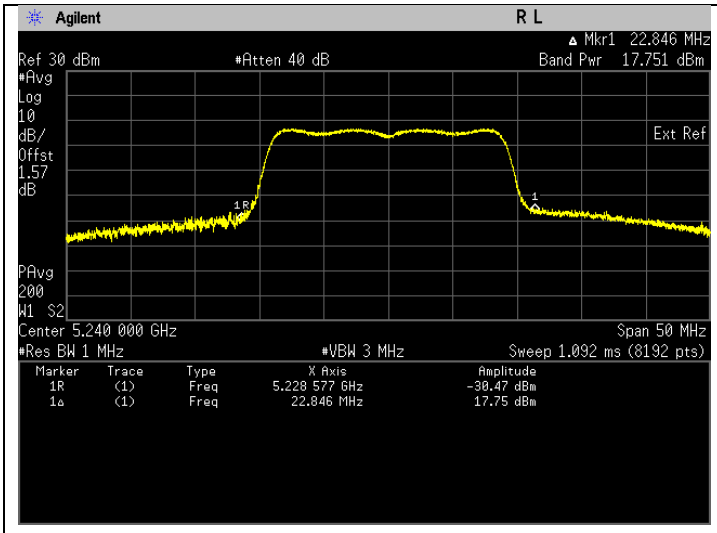
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	42.776	16.312	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	51.215	17.094	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	60.772	17.837	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	60.926	17.848	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	53.914	17.317	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	34.198	15.340	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.939	13.791	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	28.242	14.509	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	28.223	14.506	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	30.825	14.889	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	31.434	14.974	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	29.957	14.765	Pass



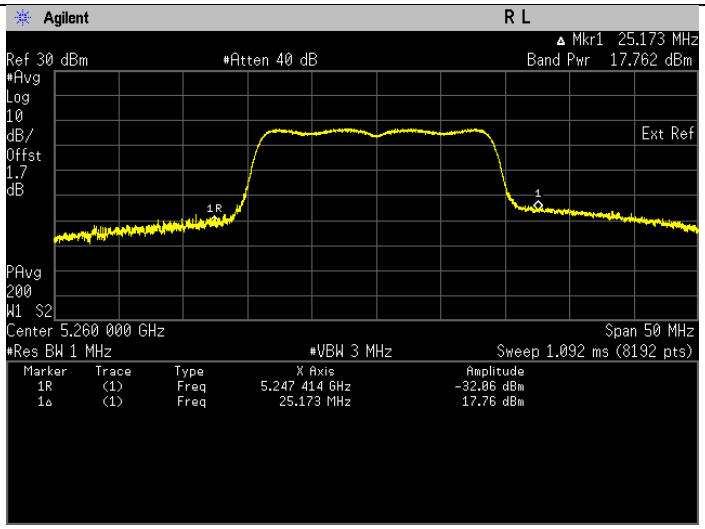
Frequency 5180 MHz, FCC.



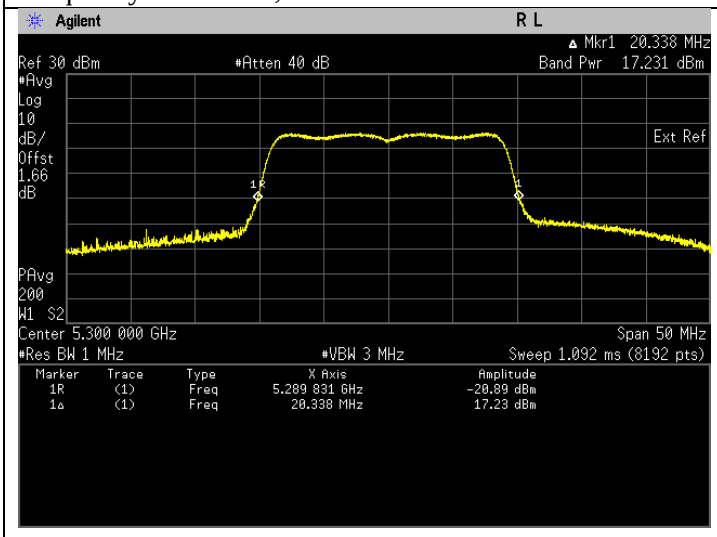
Frequency 5220 MHz, FCC.



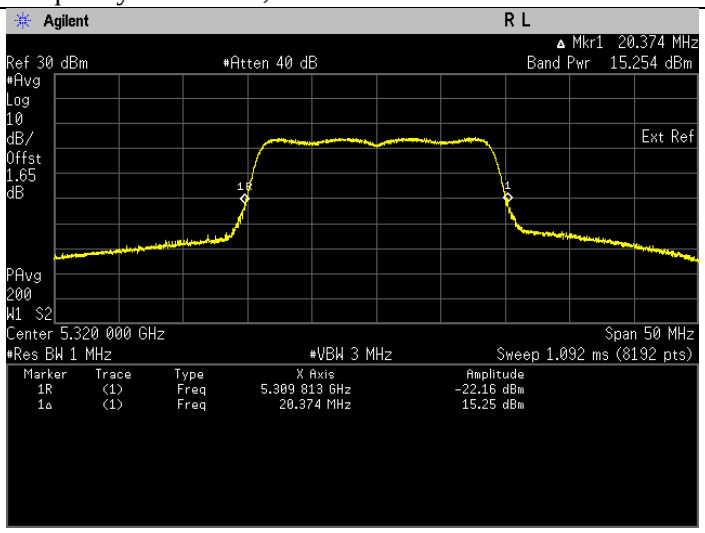
Frequency 5240 MHz, FCC.



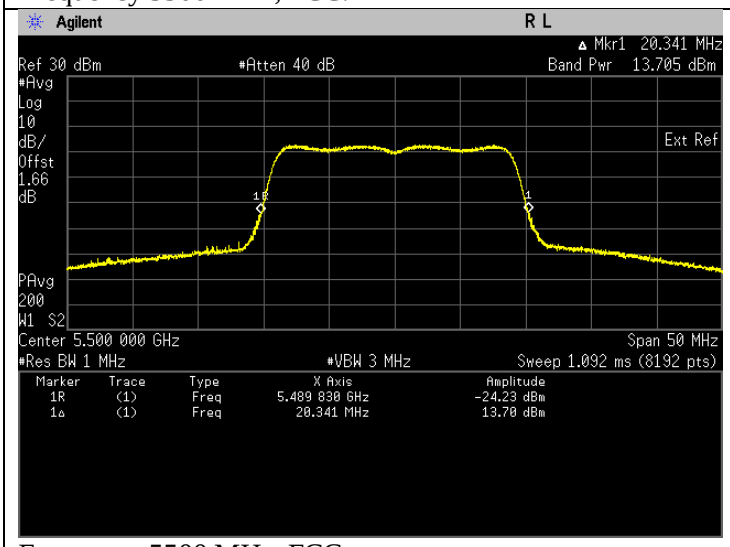
Frequency 5260 MHz, FCC.



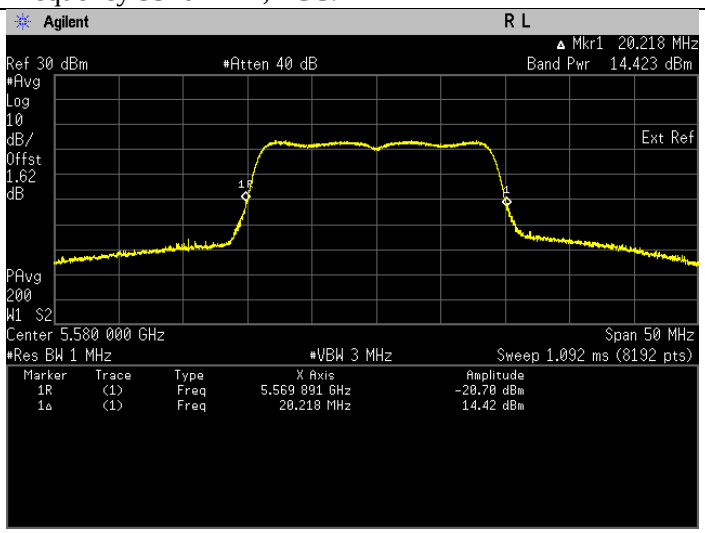
Frequency 5300 MHz, FCC.



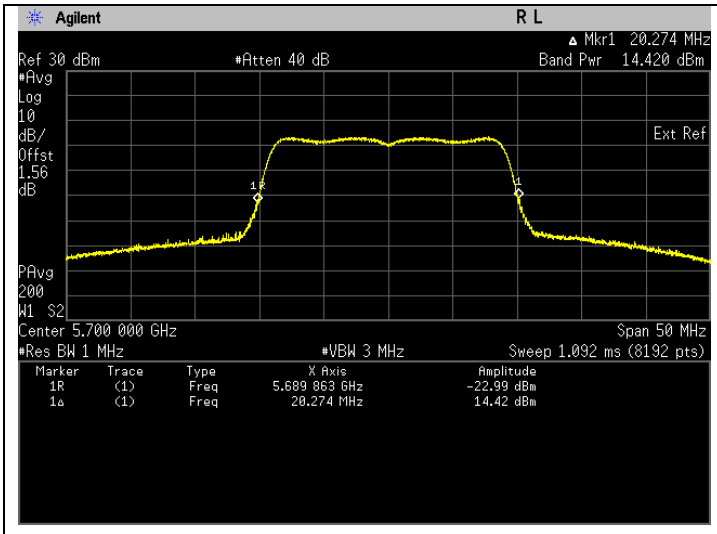
Frequency 5320 MHz, FCC.



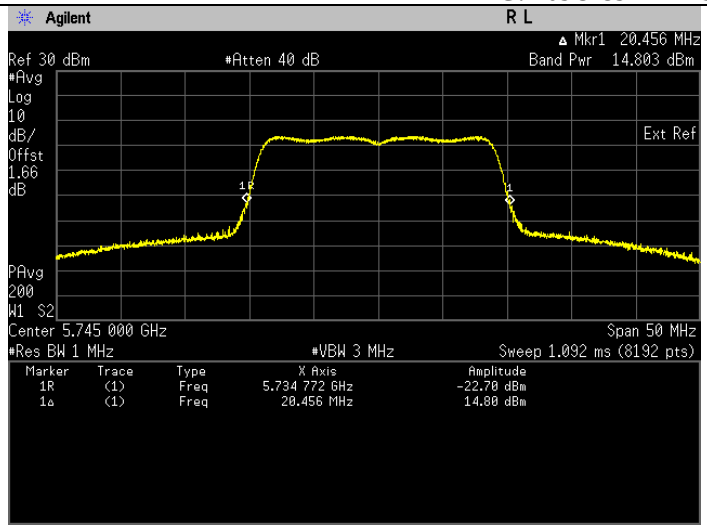
Frequency 5500 MHz, FCC.



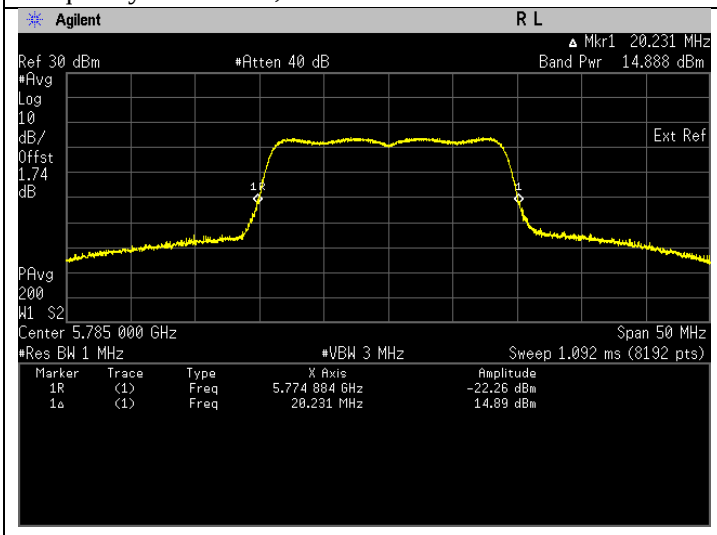
Frequency 5580 MHz, FCC.



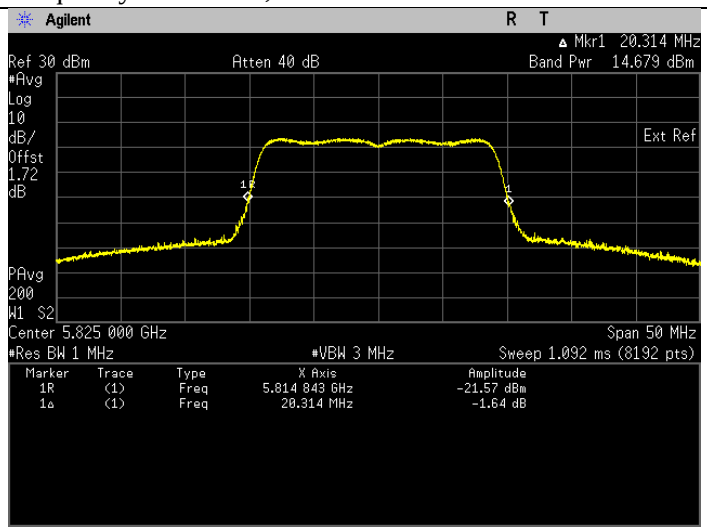
Frequency 5700 MHz, FCC.



Frequency 5745 MHz, FCC.



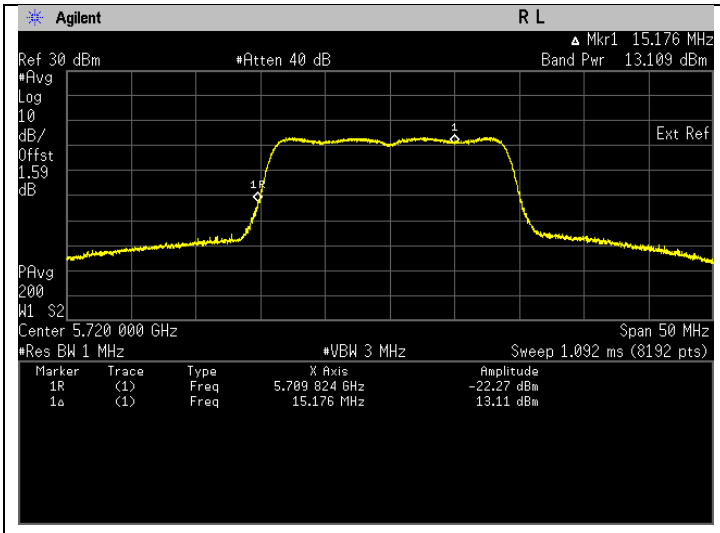
Frequency 5785 MHz, FCC.



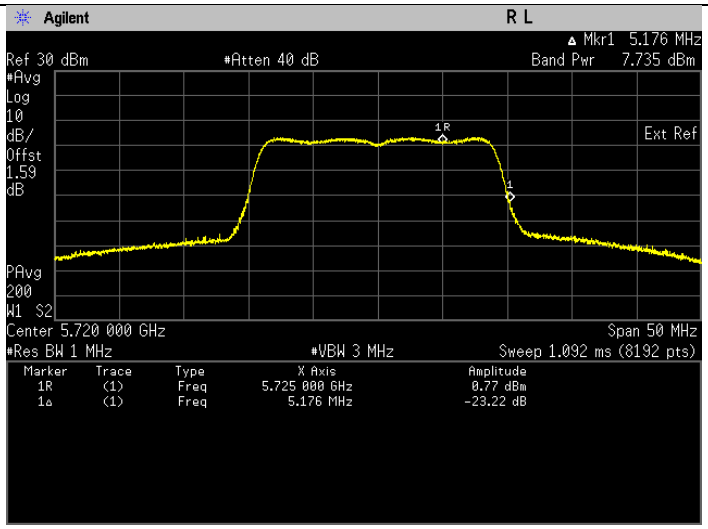
Frequency 5825 MHz, FCC.

Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.869	13.195	Pass
		U-NII-3		
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.055	7.821	Pass



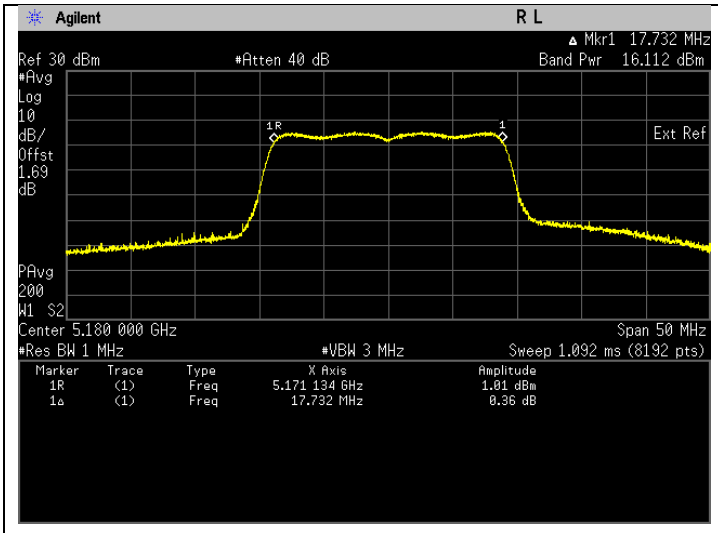
Frequency 5720 MHz, FCC, U-NII-2C. *Note: The band power is captured before the 5725 MHz.



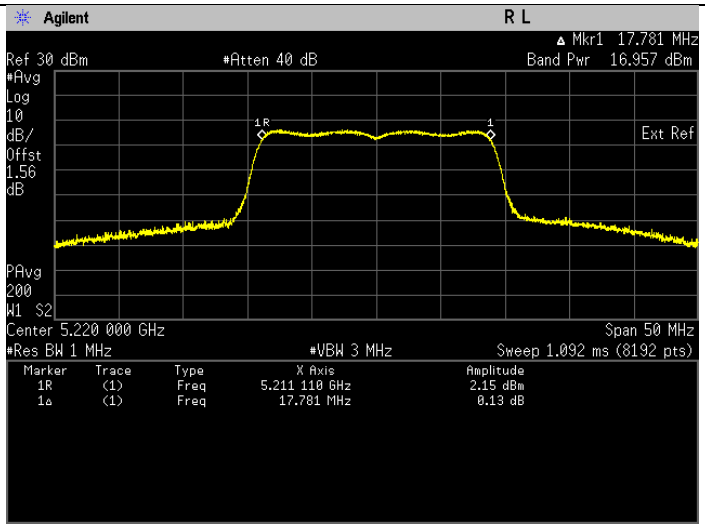
Frequency 5720 MHz, FCC, U-NII-3. *Note: The band power is captured after the 5725 MHz.

802.11n (HT20)(99% EBW)

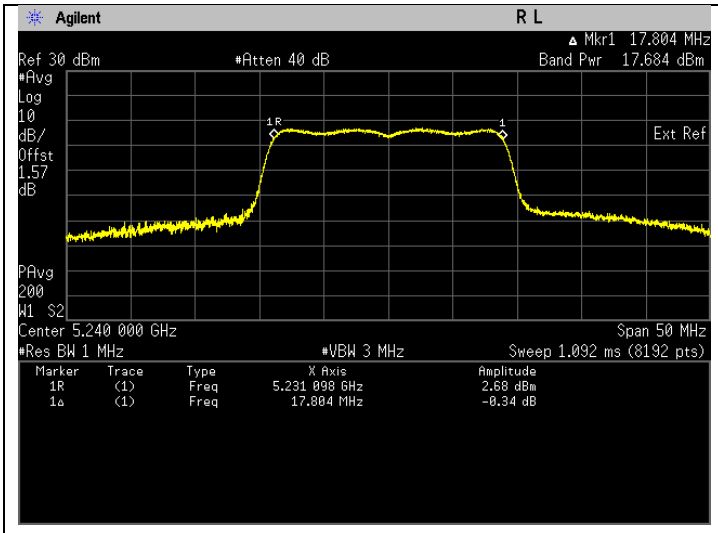
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	41.668	16.198	Pass	18.898	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	50.617	17.043	Pass	19.743	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	59.841	17.770	Pass	20.470	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	59.759	17.764	Pass	20.464	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	52.481	17.200	Pass	19.900	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	34.009	15.316	Pass	18.016	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	23.845	13.774	Pass	16.474	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	27.214	14.348	Pass	17.048	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	27.196	14.345	Pass	17.045	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	29.813	14.744	Pass	17.444	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	31.304	14.956	Pass	17.656	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	30.627	14.861	Pass	17.561	Pass



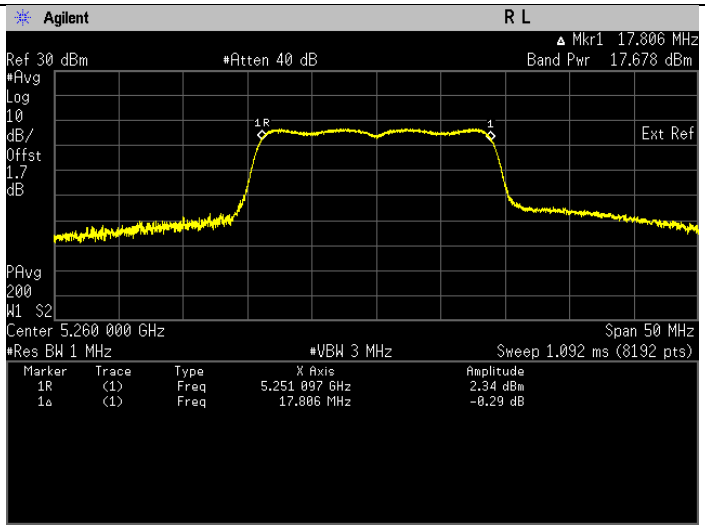
Frequency 5180 MHz, ISED



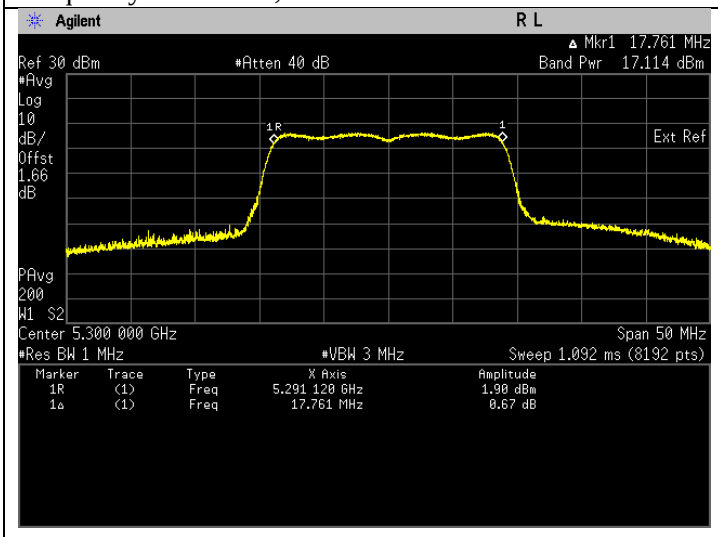
Frequency 5220 MHz, ISED



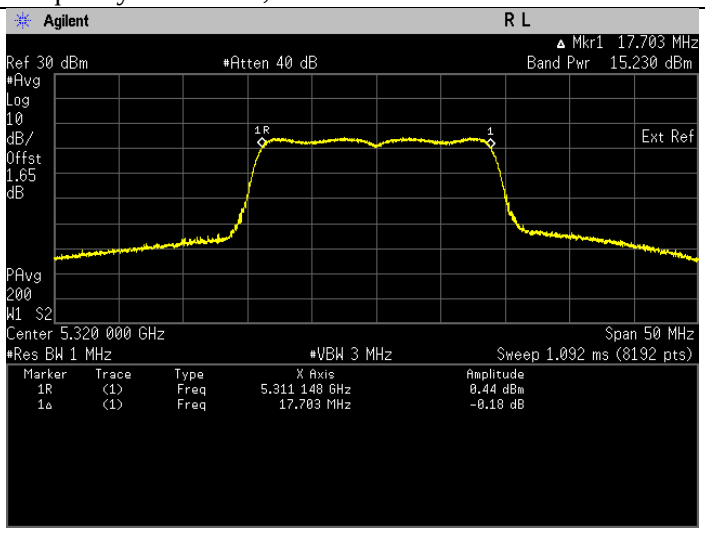
Frequency 5240 MHz, ISED



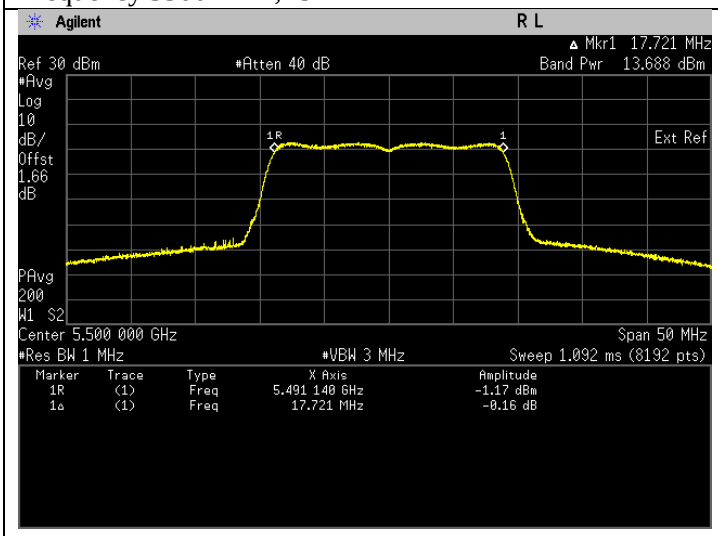
Frequency 5260 MHz, ISED



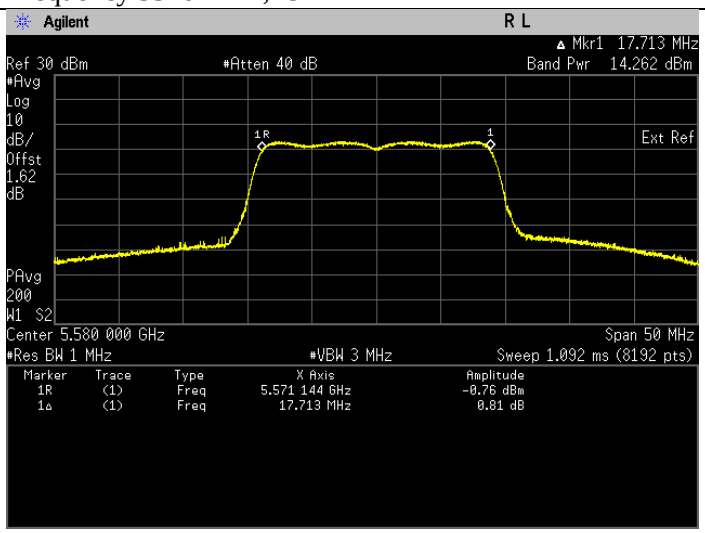
Frequency 5300 MHz, ISED



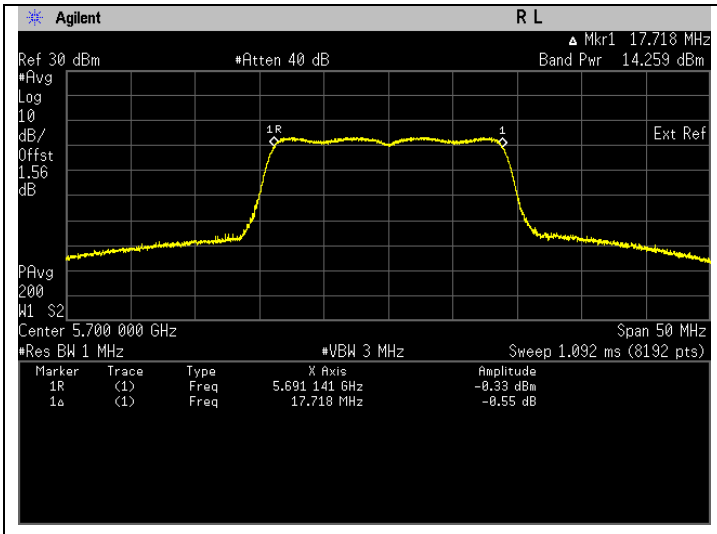
Frequency 5320 MHz, ISED



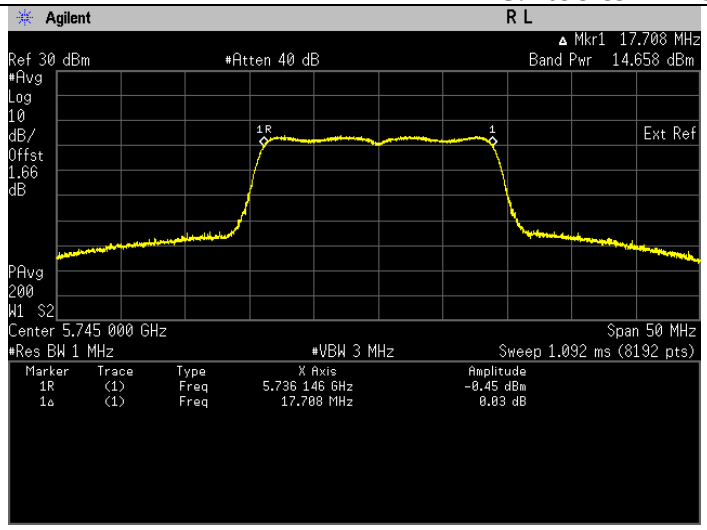
Frequency 5500 MHz, ISED



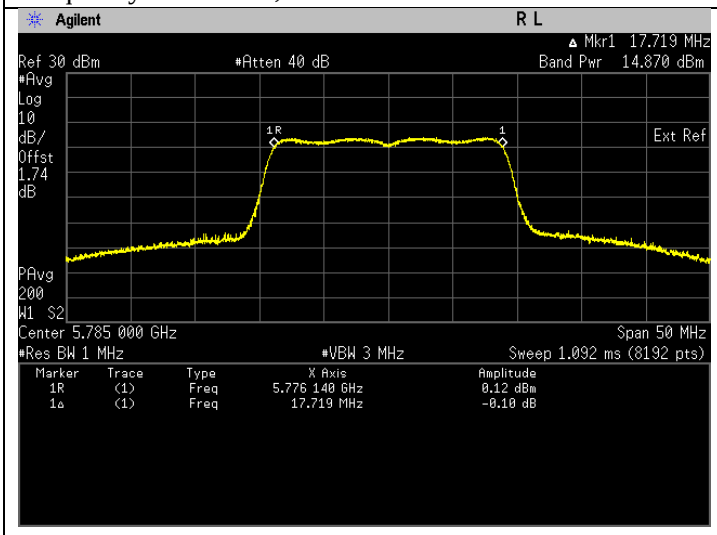
Frequency 5580 MHz, ISED



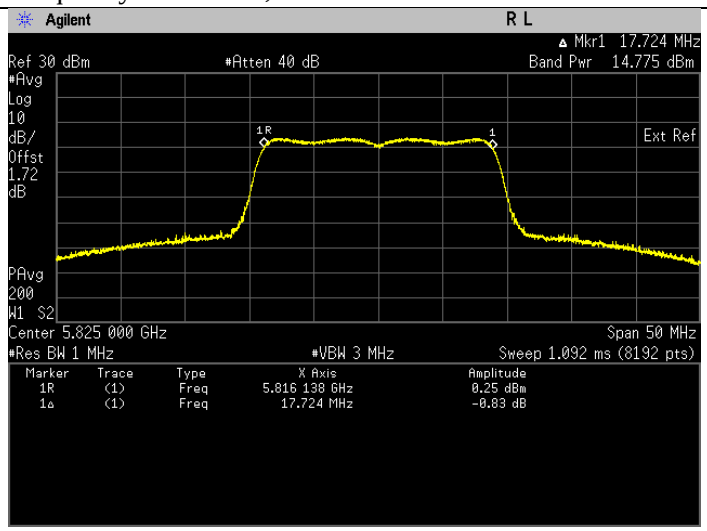
Frequency 5700 MHz, ISED



Frequency 5745 MHz, ISED



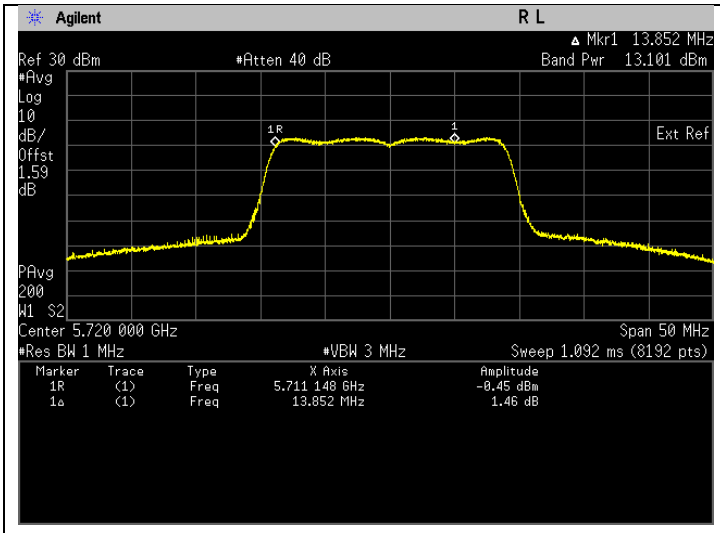
Frequency 5785 MHz, ISED



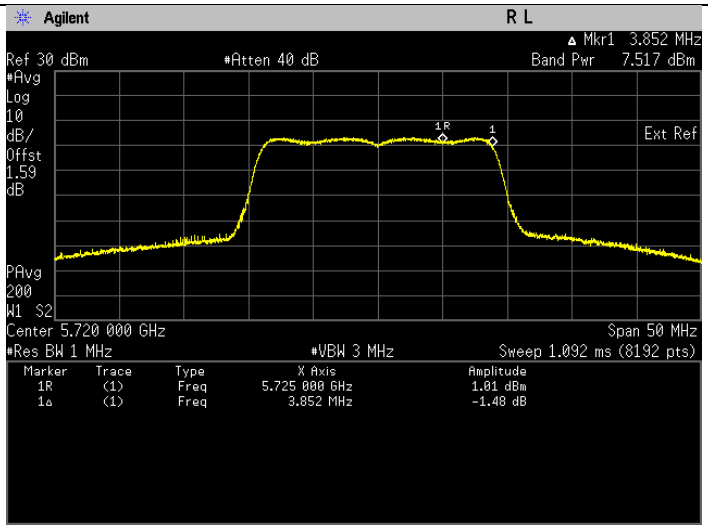
Frequency 5825 MHz, ISED

Straddle Frequency

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.831	13.187	Pass	15.887	Pass
		U-NII-3				
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	5.758	7.603	Pass	10.303	Pass



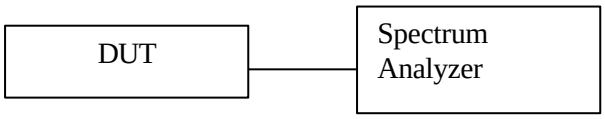
Frequency 5720 MHz, ISED, U-NII-2C. *Note: The band power is captured before the 5725 MHz.



Frequency 5720 MHz, ISED, U-NII-3. *Note: The band power is captured after the 5725 MHz.

6.3. Maximum Power Spectral Density

6.3.1. Test Setup



a) Test setup as per illustrated above.
b) Set DUT to transmit at desire transmit frequency.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) Setting of Spectrum analyzer :
   - Span to encompass the entire 26dB EBW or 99% occupied bandwidth.
   - RBW = 1 MHz (5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz) / 500 kHz (5.725-5.85 GHz)
   - VBW ≥ 3·RBW
   - Detector = power averaging (RMS)
   - Trace = Max hold
   - Number of points in sweep ≥ 2 × span / RBW
   - Sweep time = auto
   - Trace average at least 100 traces in power averaging (rms) mode
e) Use the peak search function on the instrument to find the peak of the spectrum and record its value.
f) Add 10 log (1/x), where x is the duty cycle, to the peak of the spectrum.
g) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause F) Method SA-2.
h) The Maximum power spectral density results are included duty cycle correction factor.

6.3.2. Test Limits

FCC 15.407(a)

Range (GHz)	Condition		Limit
5.15-5.25		Outdoor AP	17dBm/ 1MHz
		Indoor AP	17dBm/ 1MHz
		Fixed Point to Point AP	17dBm/ 1MHz
	√	Mobile and Portable Client Devices	11dBm/ 1MHz
5.25-5.35	√		11dBm/ 1MHz
5.47-5.525	√		11dBm/ 1MHz
5.725-5.85	√		30dBm/ 500kHz

RSS-247 6.2

Range(GHz)	Condition	Limit
5.15-5.25	Indoor Operation Only	EIRP: 10dBm/ 1MHz
5.25-5.35		11dBm/ 1MHz
5.47-5.6 5.6-5.525		11dBm/ 1MHz
5.725-5.85		30dBm/ 500kHz

6.3.3. Additional Info

Antenna Type	**Gain (dBi)**
UNII1,UNII2A,UNII2C & UNII3	2.70
Duty Cycle Correction Factor	
802.11a	0.136
802.11n20	0.086

6.3.4. Test Data

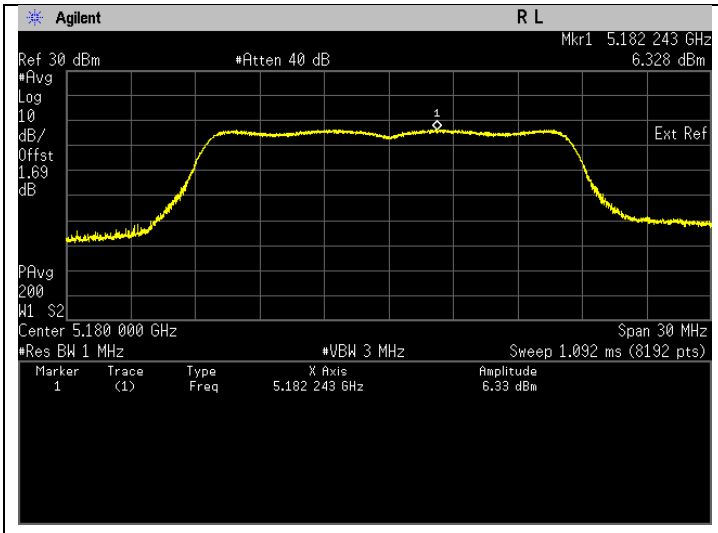
802.11a (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: 6	6.464	Pass
5220	Mod Type: BPSK, Data Rate: 6	7.497	Pass
5240	Mod Type: BPSK, Data Rate: 6	7.166	Pass
5260	Mod Type: BPSK, Data Rate: 6	7.004	Pass
5300	Mod Type: BPSK, Data Rate: 6	7.637	Pass
5320	Mod Type: BPSK, Data Rate: 6	5.462	Pass
5500	Mod Type: BPSK, Data Rate: 6	1.690	Pass
5580	Mod Type: BPSK, Data Rate: 6	3.643	Pass
5700	Mod Type: BPSK, Data Rate: 6	3.391	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status
5745	Mod Type: BPSK, Data Rate: 6	1.233	Pass
5785	Mod Type: BPSK, Data Rate: 6	1.230	Pass
5825	Mod Type: BPSK, Data Rate: 6	1.521	Pass

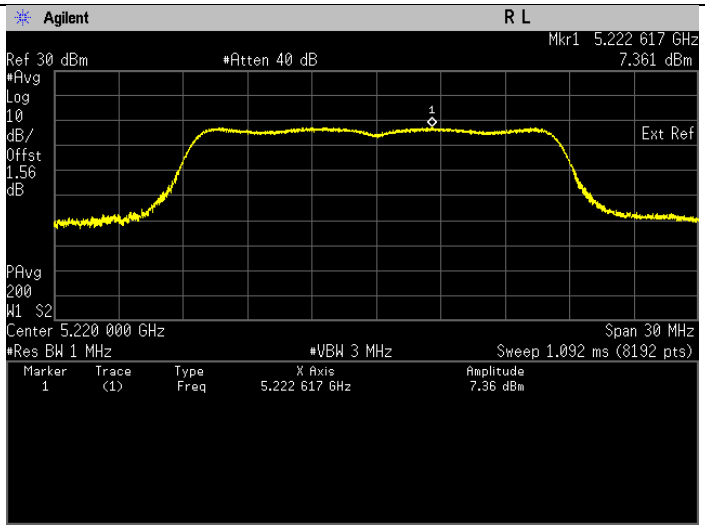
802.11a (99% EBW)

Freq. (MHz)	Test Conditions	Results			
		Power/Frequency (dBm/MHz)	Status	EIRP (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: 6	6.464	Pass	9.164	Pass
5220	Mod Type: BPSK, Data Rate: 6	7.497	Pass	10.197	Pass
5240	Mod Type: BPSK, Data Rate: 6	7.166	Pass	9.866	Pass
5260	Mod Type: BPSK, Data Rate: 6	7.004	Pass	9.704	Pass
5300	Mod Type: BPSK, Data Rate: 6	7.637	Pass	10.337	Pass
5320	Mod Type: BPSK, Data Rate: 6	5.462	Pass	8.162	Pass
5500	Mod Type: BPSK, Data Rate: 6	1.690	Pass	4.390	Pass
5580	Mod Type: BPSK, Data Rate: 6	3.643	Pass	6.343	Pass
5700	Mod Type: BPSK, Data Rate: 6	3.391	Pass	6.091	Pass
Freq. (MHz)	Test Conditions	Power/Frequency(dBm/500kHz)	Status		
5745	Mod Type: BPSK, Data Rate: 6	1.233	Pass	3.933	Pass
5785	Mod Type: BPSK, Data Rate: 6	1.230	Pass	3.930	Pass
5825	Mod Type: BPSK, Data Rate: 6	1.521	Pass	4.221	Pass

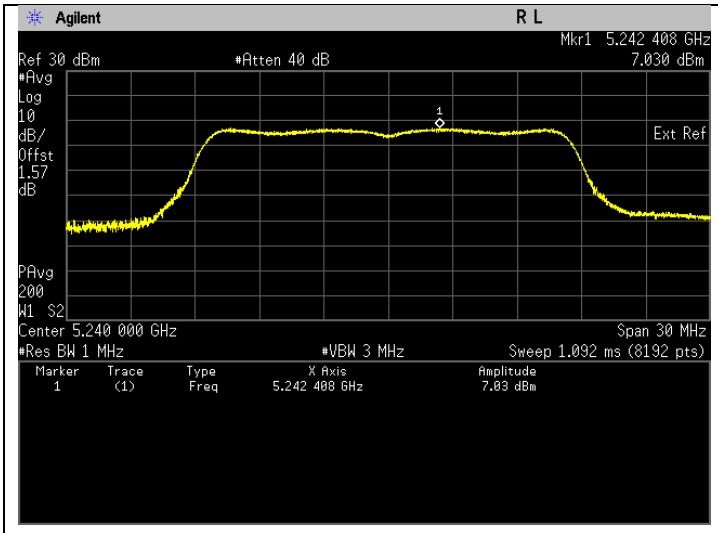
Plots for 802.11a (26dB EBW & 99% EBW)



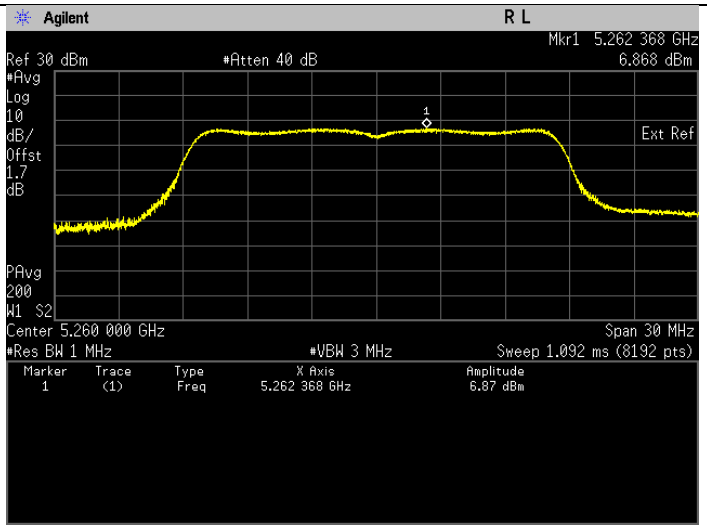
Frequency 5180 MHz, FCC & ISED.



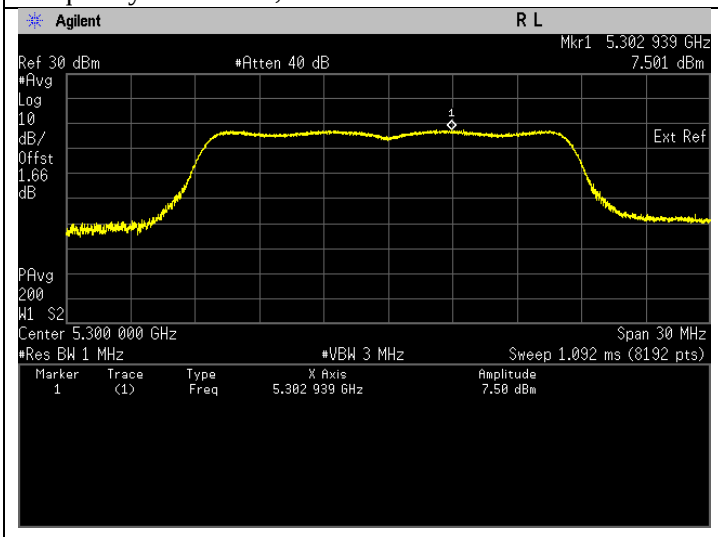
Frequency 5220 MHz, FCC & ISED.



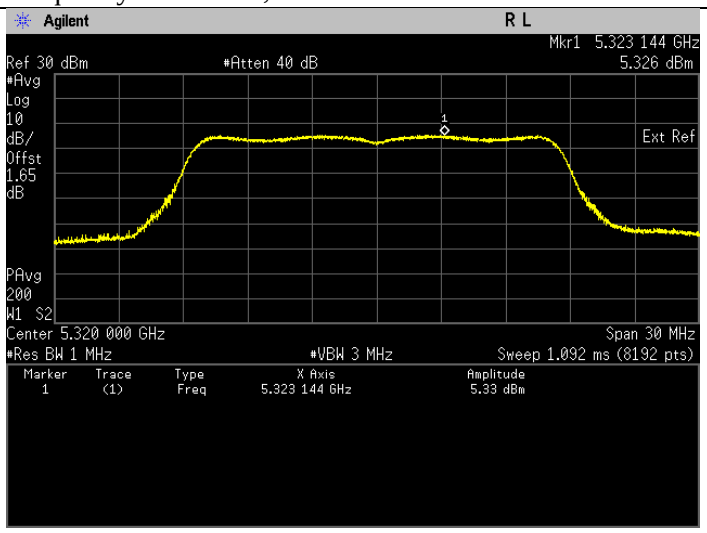
Frequency 5240 MHz, FCC & ISED.



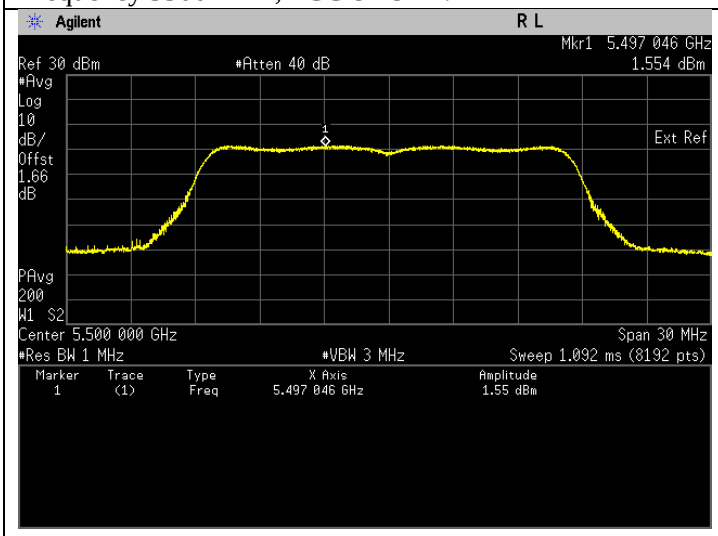
Frequency 5260 MHz, FCC & ISED.



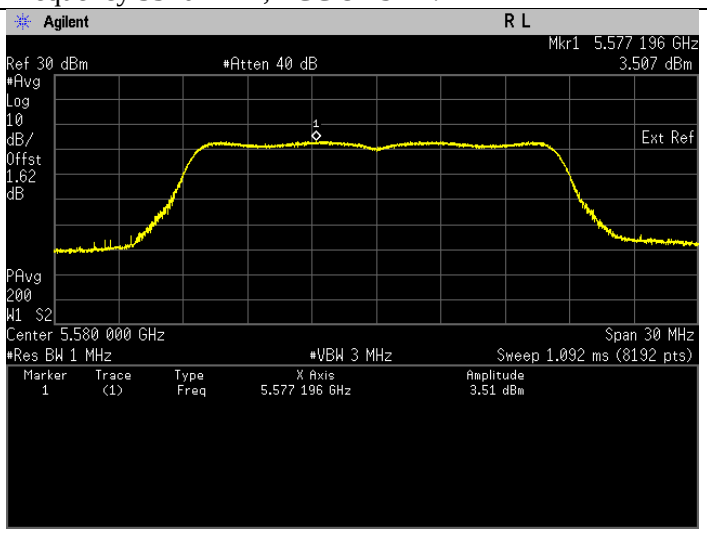
Frequency 5300 MHz, FCC & ISED.



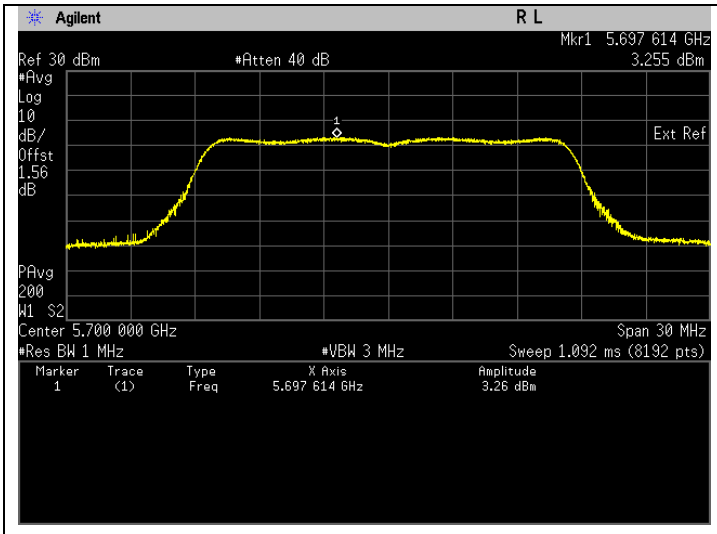
Frequency 5320 MHz, FCC & ISED.



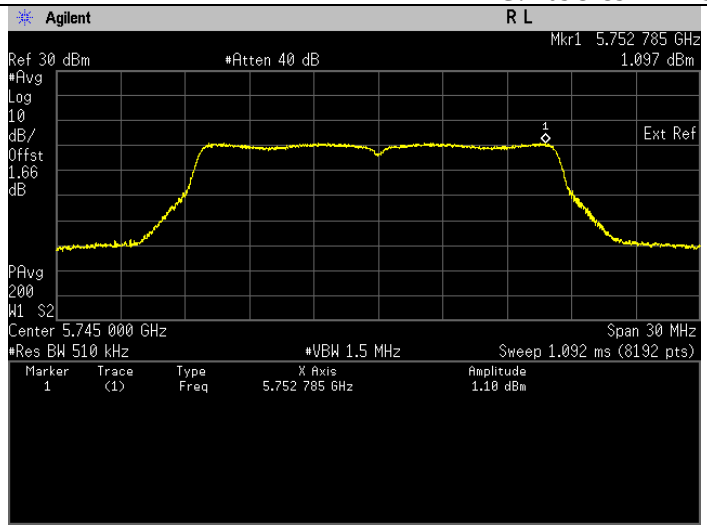
Frequency 5500 MHz, FCC & ISED.



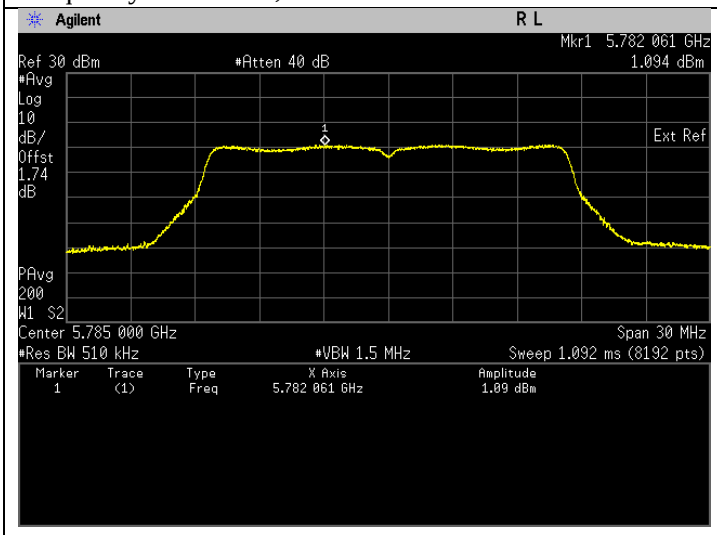
Frequency 5580 MHz, FCC & ISED.



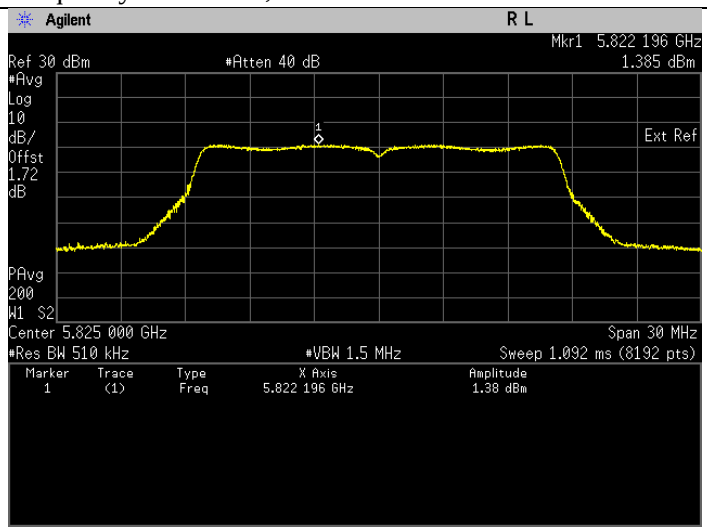
Frequency 5700 MHz, FCC & ISED.



Frequency 5745 MHz, FCC & ISED.



Frequency 5785 MHz, FCC & ISED.



Frequency 5825 MHz, FCC & ISED.

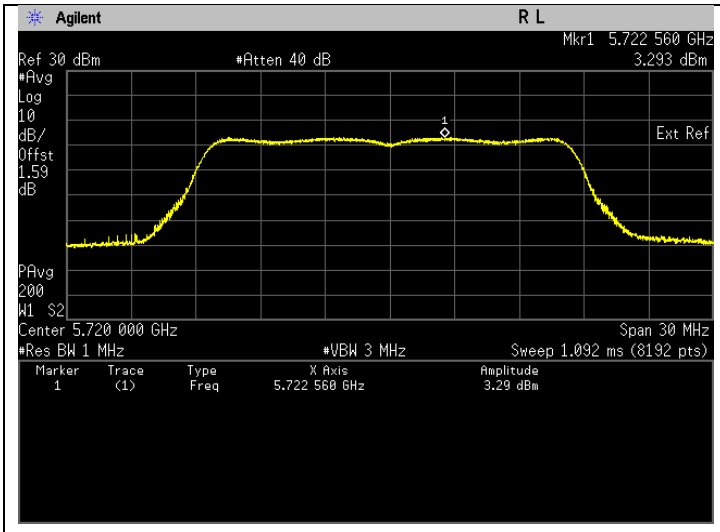
Straddle Frequency for 802.11a (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
		U-NII- 2C	
5720	Mod Type: BPSK, Data Rate: 6	3.429	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: 6	2.986	Pass

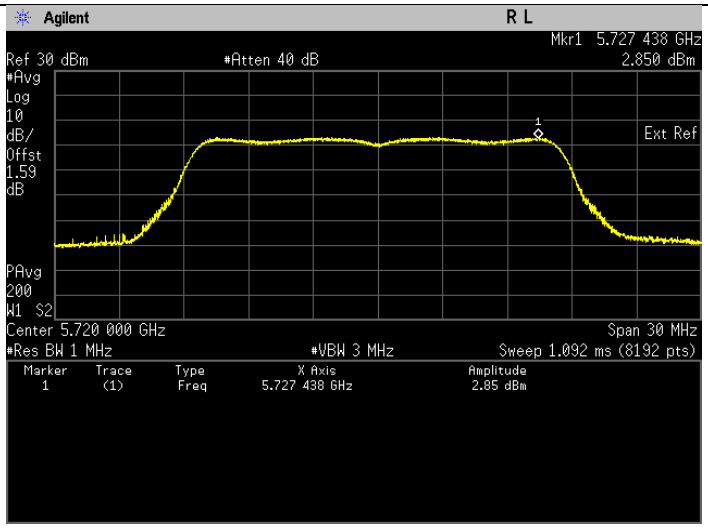
Straddle Frequency for 802.11a (99% EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
		U-NII- 2C	
5720	Mod Type: BPSK, Data Rate: 6	3.429	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: 6	2.986	Pass

Plots for 802.11a Straddle Frequency (26dB EBW & 99% EBW)



Frequency 5720 MHz, FCC & ISED,U-NII-2C. *Note: The highest spectral density is captured before the 5725 MHz.



Frequency 5720 MHz, FCC & ISED, U-NII-3. *Note: The highest spectral density is captured after the 5725 MHz.

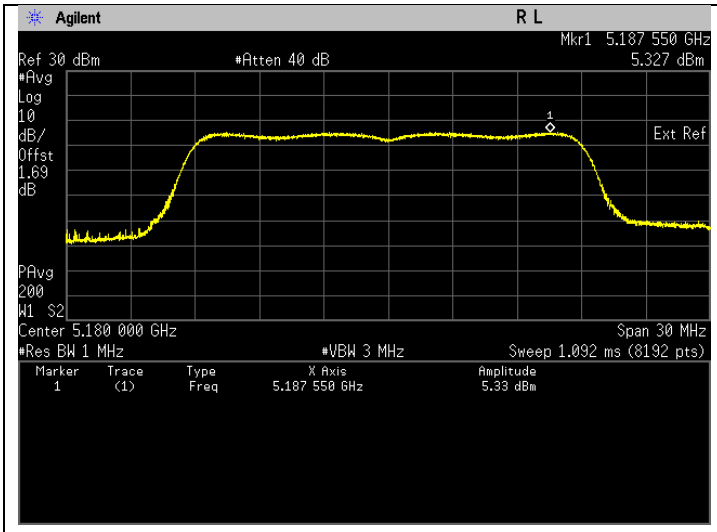
802.11n (HT20)(26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	5.413	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.291	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.956	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.903	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.644	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	4.420	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.102	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.820	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.540	Pass
Freq. (MHz)	Test Conditions	Power/Frequency(dBm/500kHz)	Status
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.091	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.483	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.250	Pass

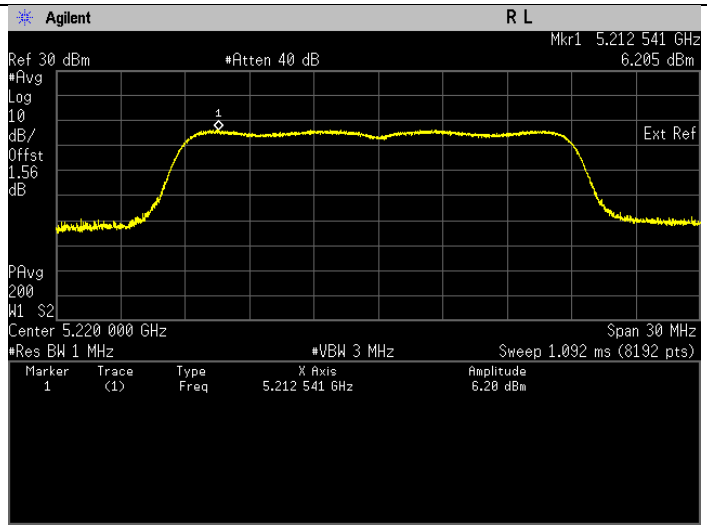
802.11n (HT20)(99% EBW)

Freq. (MHz)	Test Conditions	Results			
		Power/Frequency (dBm/MHz)	Status	EIRP (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	5.413	Pass	8.113	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.291	Pass	8.991	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.956	Pass	9.656	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.903	Pass	9.603	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.644	Pass	9.344	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	4.420	Pass	7.120	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.102	Pass	5.802	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.820	Pass	6.520	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.540	Pass	6.240	Pass
Freq. (MHz)	Test Conditions	Power/Frequency(dBm/500kHz)	Status		
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.091	Pass	3.791	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.483	Pass	4.183	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.250	Pass	3.950	Pass

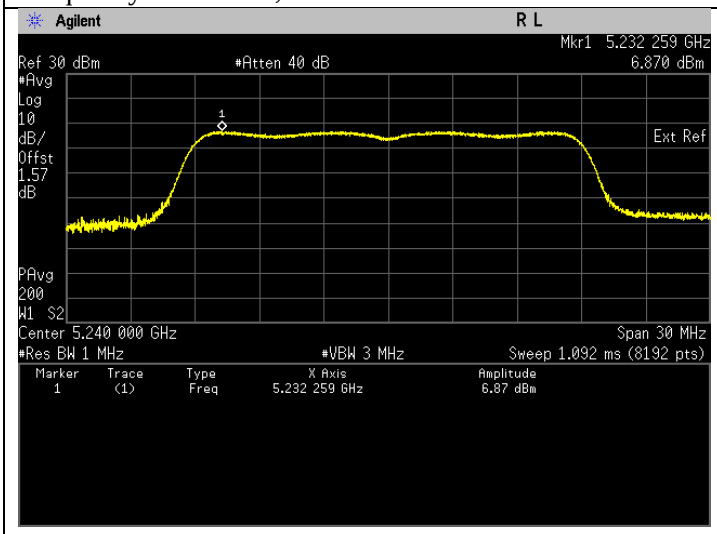
Plots for 802.11n (HT20) (26dB EBW & 99% EBW)



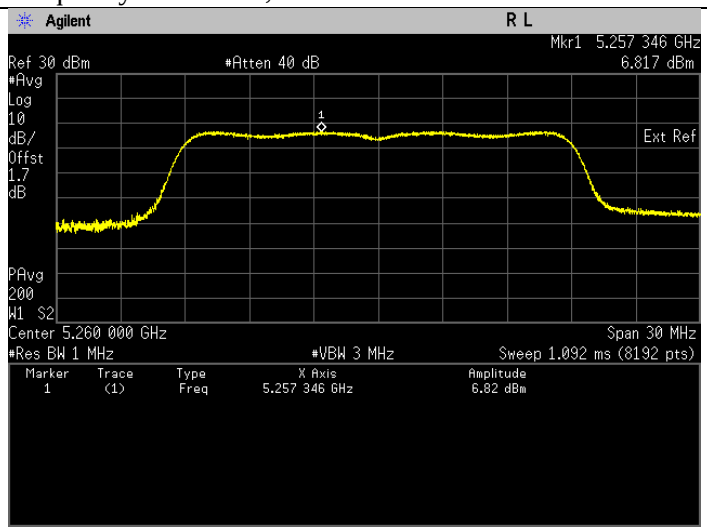
Frequency 5180 MHz, FCC & ISED.



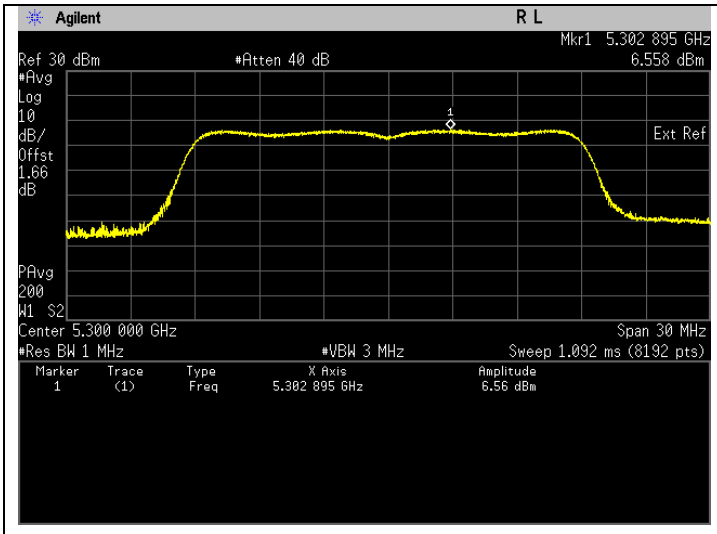
Frequency 5220 MHz, FCC & ISED.



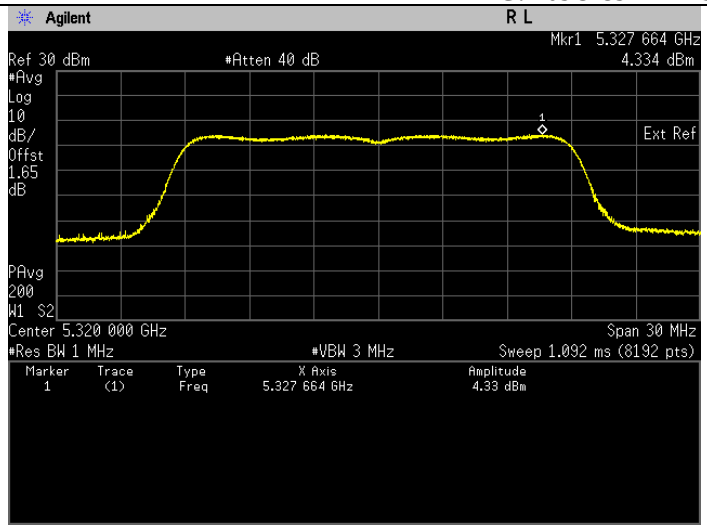
Frequency 5240 MHz, FCC & ISED.



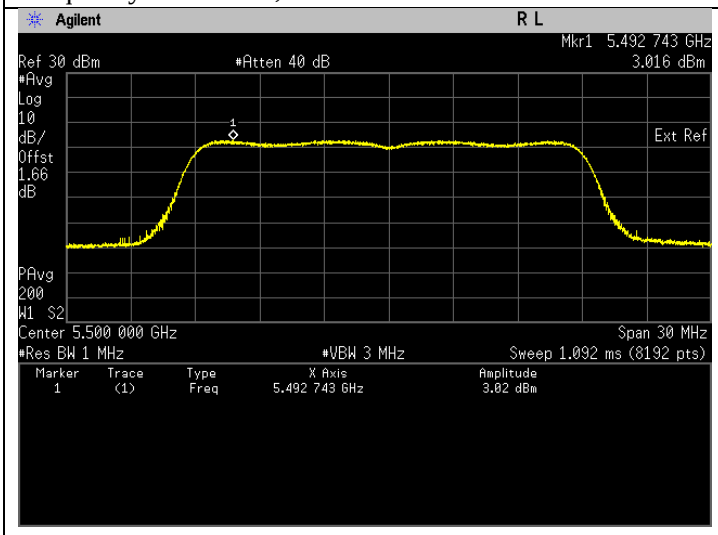
Frequency 5260 MHz, FCC & ISED.



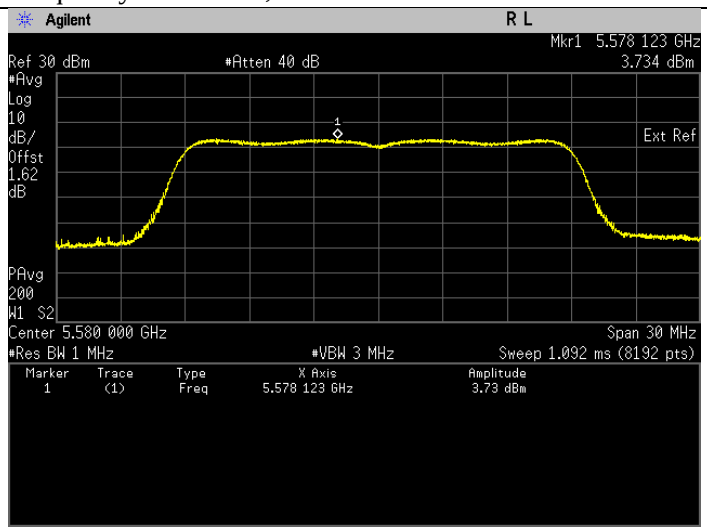
Frequency 5300 MHz, FCC & ISED.



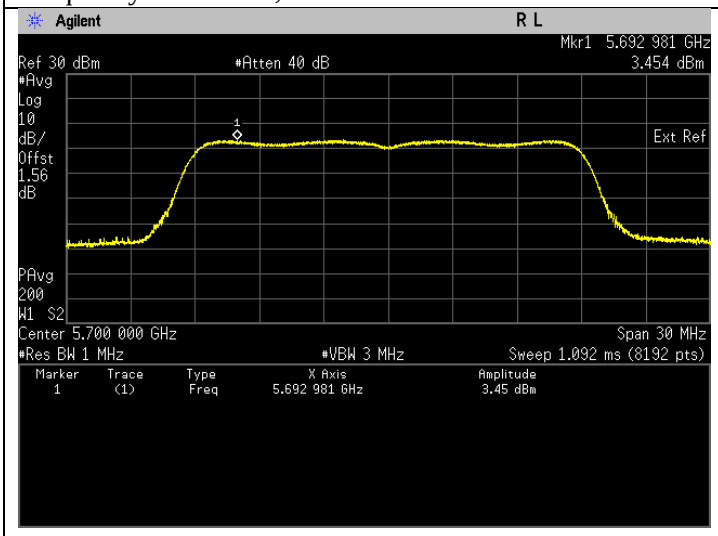
Frequency 5320 MHz, FCC & ISED.



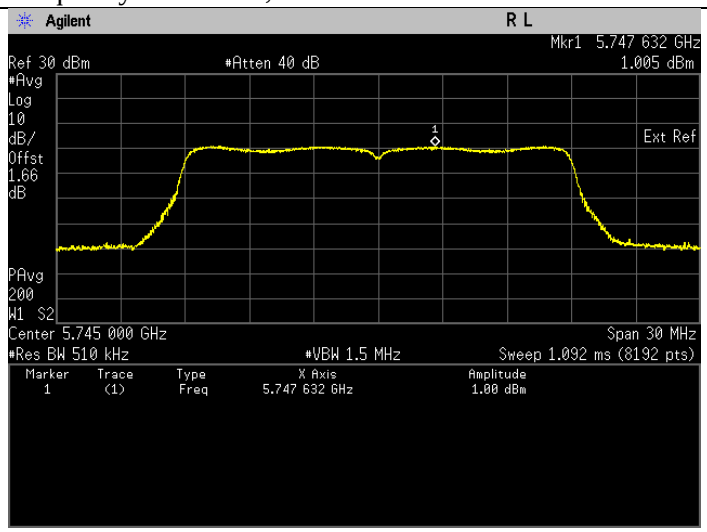
Frequency 5500 MHz, FCC & ISED.



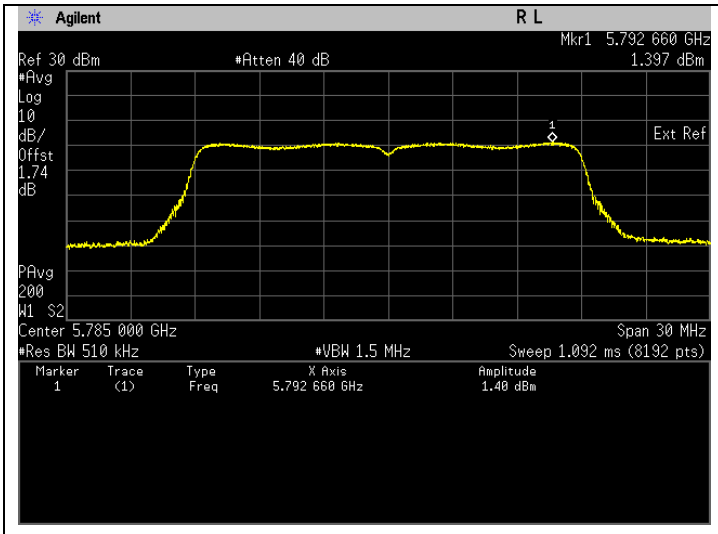
Frequency 5580 MHz, FCC & ISED.



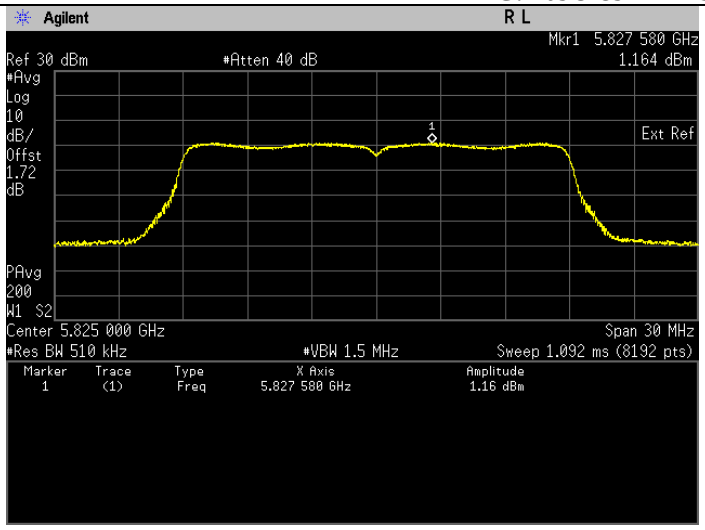
Frequency 5700 MHz, FCC & ISED.



Frequency 5745 MHz, FCC & ISED.



Frequency 5785 MHz, FCC & ISED.



Frequency 5825 MHz, FCC & ISED.

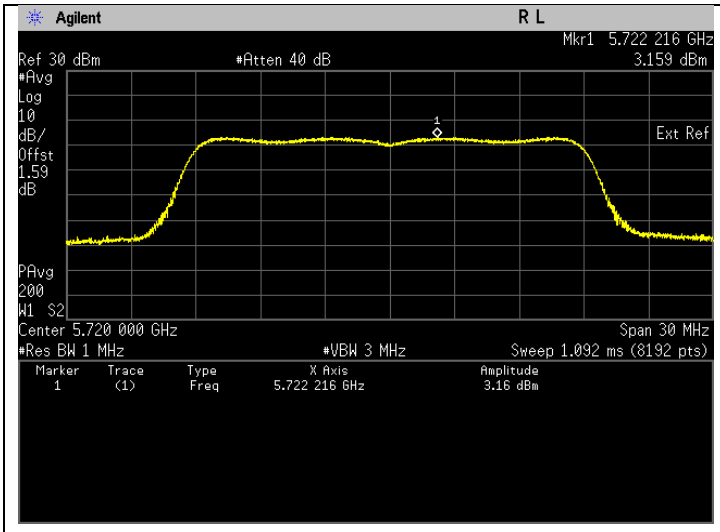
Straddle Frequency for 802.11n (HT20) (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
		U-NII- 2C	
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.245	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.170	Pass

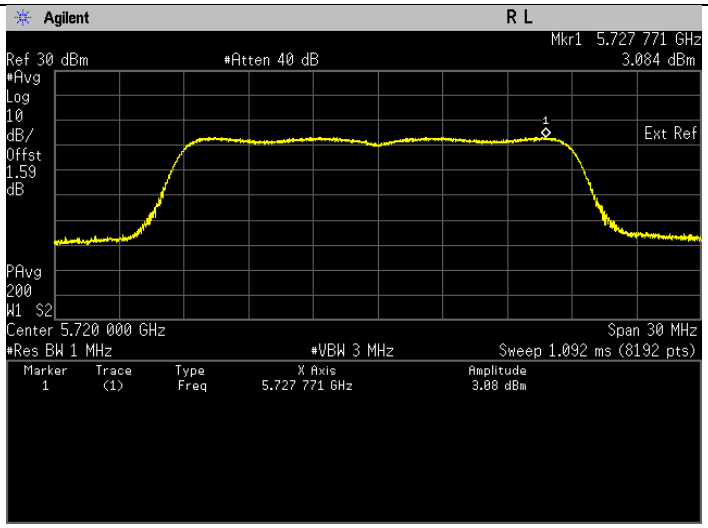
Straddle Frequency for 802.11n (HT20) (99% EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
		U-NII- 2C	
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.245	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.170	Pass

Plots for 802.11n (HT20) Straddle Frequency (26dB EBW & 99% EBW)



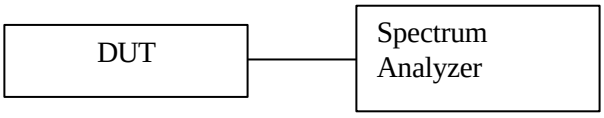
Frequency 5720 MHz, FCC & ISED,U-NII-2C. *Note: The highest spectral density is captured before the 5725 MHz.



Frequency 5720 MHz, FCC & ISED, U-NII-3. *Note: The highest spectral density is captured after the 5725 MHz.

6.4. 6dB Bandwidth

6.4.1. Test Setup



a) Test setup as per illustrated above.
b) Set DUT to transmit at desire transmit frequency.
c) 6dB bandwidth is applicable for the band 5.725-5.85GHz only.
d) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
e) Setting of Spectrum analyzer :
   - RBW = 100 kHz
   - VBW ≥ 3·RBW
   - Detector = Peak
   - Trace = Max Hold
   - Sweep = Auto couple

f) Allow trace to stabilize.
g) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.
h) The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause C.2).

6.4.2. Test Limits

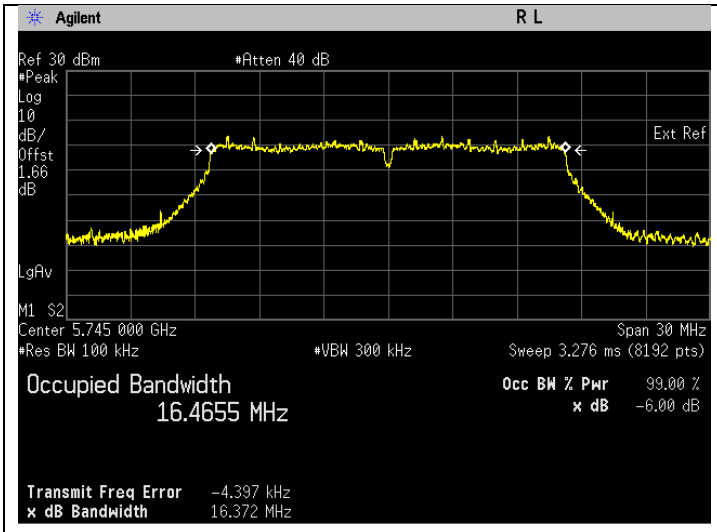
FCC 15.407(e)
Within the 5.725-5.85GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

RSS 247 6.2.4
For equipment operating in the band 5725-5850 MHz, the minimum 6 dB bandwidth shall be at least 500 kHz.

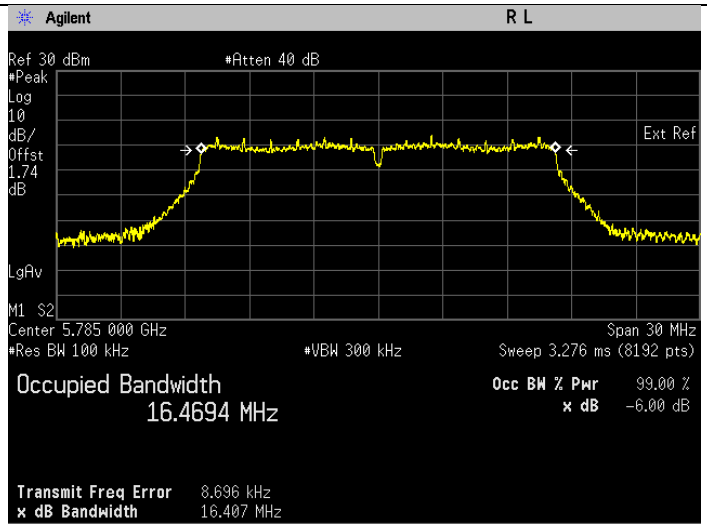
6.4.3. Test Data

802.11a

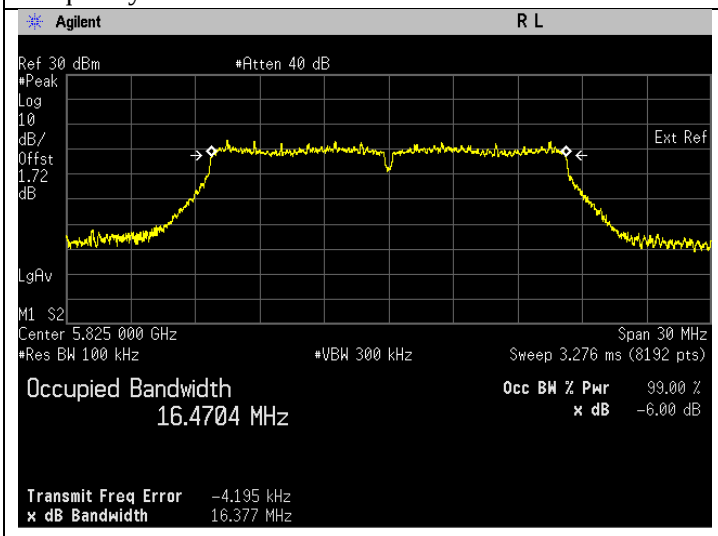
Frequency (MHz)	Test Configuration	Results	
		Bandwidth(MHz)	Status
5745	Mod Type: BPSK, Data Rate: 6	16.372	Pass
5785	Mod Type: BPSK, Data Rate: 6	16.407	Pass
5825	Mod Type: BPSK, Data Rate: 6	16.377	Pass



Frequency 5745 MHz



Frequency 5785 MHz

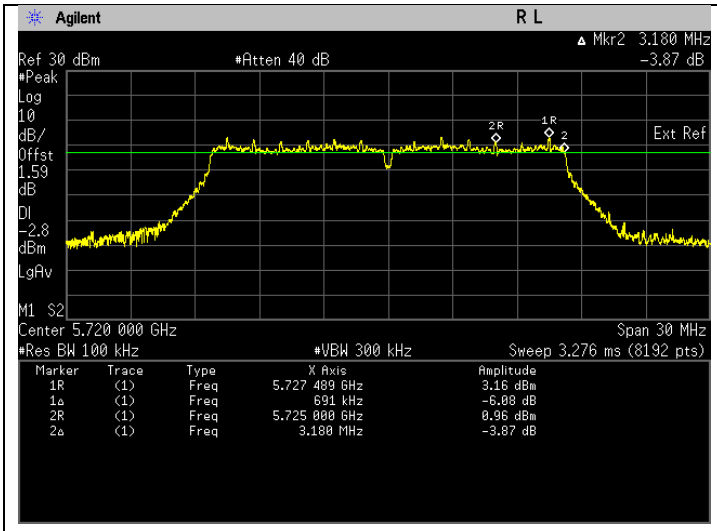


Frequency 5825 MHz

Straddle Frequency for 802.11a

Freq. (MHz)	Test Conditions	Results	
		Power/Freq. (dBm/MHz)	Status
		U-NII- 3	
5720	Mod Type: BPSK, Data Rate: 6	3.180	Pass

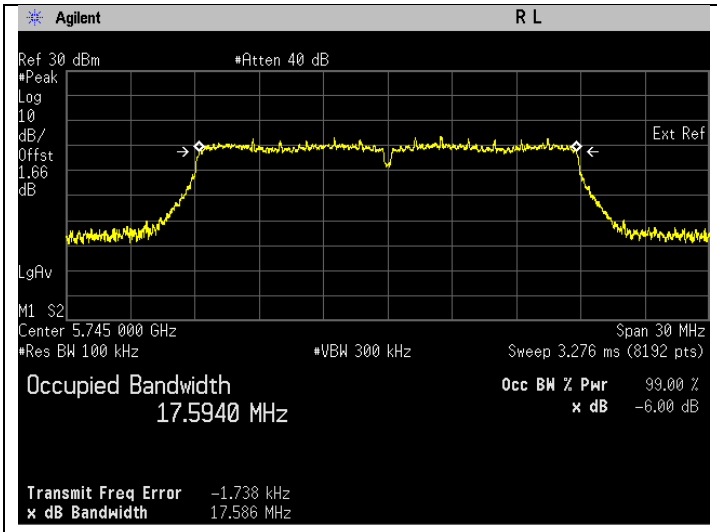
Plots for 802.11a Straddle Frequency



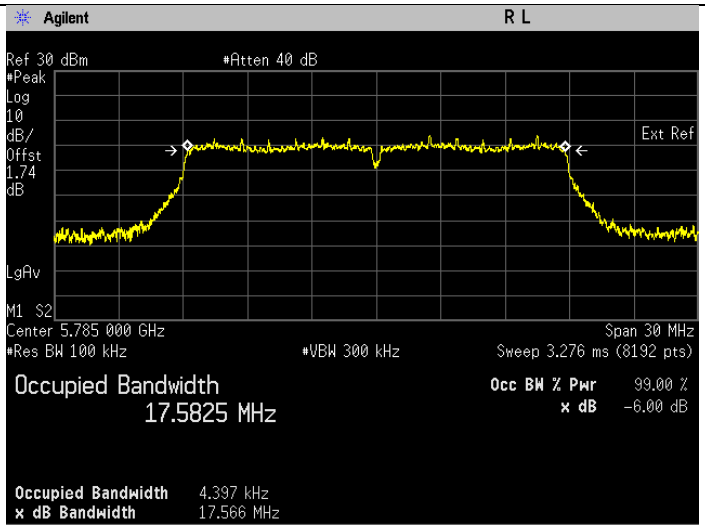
Frequency 5720 MHz

802.11n (HT20)

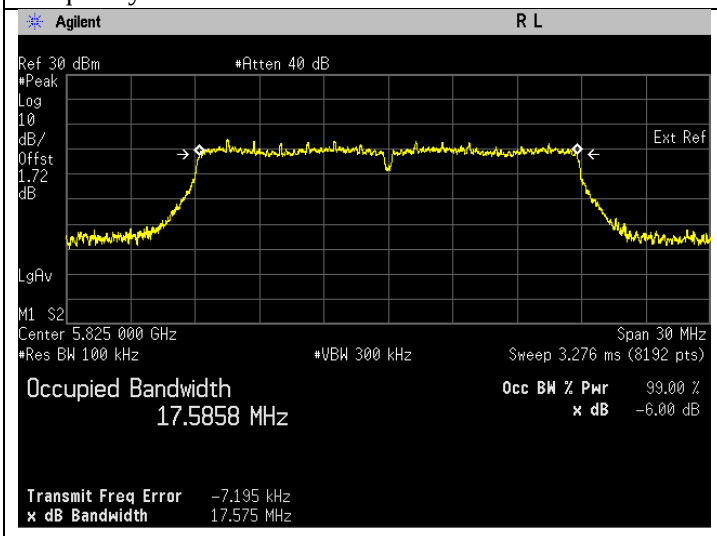
Frequency (MHz)	Test Configuration	Results	
		Bandwidth(MHz)	Status
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.586	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.566	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.575	Pass



Frequency 5745 MHz



Frequency 5785 MHz

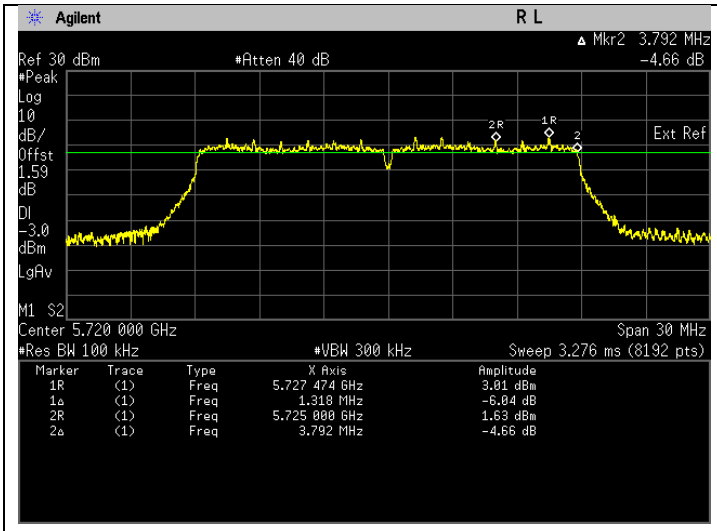


Frequency 5825 MHz

Straddle Frequency for 802.11n (HT20)

Freq. (MHz)	Test Conditions	Results	
		Power/Freq. (dBm/MHz)	Status
		U-NII- 3	
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.792	Pass

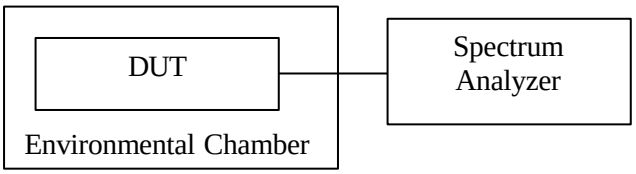
Plots for 802.11n (HT20) Straddle Frequency



Frequency 5720 MHz

6.5. Frequency Stability

6.5.1. Test Setup



a) Test setup as per illustrated above.
b) Set DUT to transmit un-modulated signal at desire transmit frequency.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) The DUT was operated at the maximum output power, and spectrum which is set to maximum hold function and peak detector.
e) The peak value of the power envelope was measured and noted.
f) Test was conducted from temperature range from -30^{0}C to 50^{0}C with step size of 10^{0}C on manufacturer's rated supply voltage.
g) At temperature of 20^{0}C, +/-15% of manufacturer's rated voltage are to be applied.
h) The frequency stability is measured and recorded of frequency deviation due to temperature and supply voltage variations as mentioned at condition f) & g) above.

6.5.2. Test Limits

FCC 15.407(g)
Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

RSS-GEN 6.11

6.5.3. Test Data

802.11a

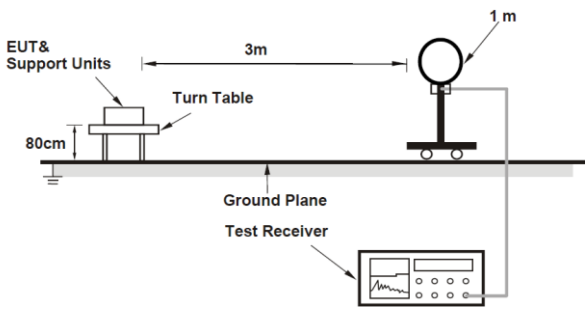
Test Configuration	Test Frequency Tx (MHz)
Mod Type: BPSK, Data Rate: 6	5180

		Results			
Temperature(°C)	Voltage	Measured Frequency(MHz)	Frequency Error(kHz)	Frequency Error(%)	Status
20	+15%	5179.991795	8.205000	0.000158	Pass
	±0%	5179.992923	7.077000	0.000137	Pass
	-15%	5179.994504	5.496000	0.000106	Pass
-30		5179.995271	4.729000	0.000091	Pass
-20		5179.995725	4.275000	0.000083	Pass
-10		5179.995566	4.434000	0.000086	Pass
0		5179.995727	4.273000	0.000082	Pass
10		5179.995545	4.455000	0.000086	Pass
30		5179.994170	5.830000	0.000113	Pass
40		5179.994126	5.874000	0.000113	Pass
50		5179.994083	5.917000	0.000114	Pass

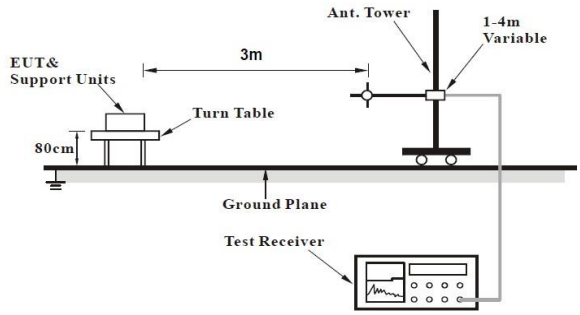
6.6. Band Edge Radiated Spurious Emission Measurement

6.6.1. Test Setup

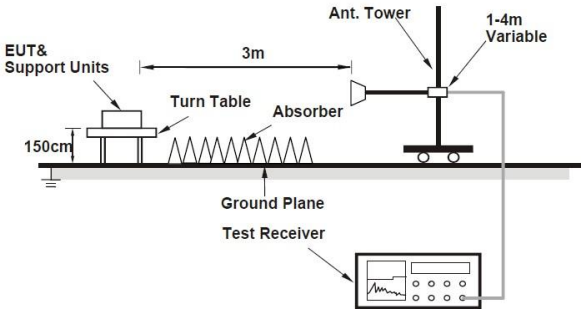
<Radiated emission below 30MHz>



<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



1. The EUT is placed on the top of a rotating table 0.8m/1.5m above the ground at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
2. The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
3. The antenna is Bilog/Horn antenna depend on which frequency range uses, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.

NOTE:

a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection using reduced video bandwidth (Duty cycle ≥98%) at frequency above 1GHz.
d. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1/ τ Hz, where τ is minimum transmitter on time (Duty cycle <98%) for Average detection using reduced video bandwidth at frequency above 1GHz.
e. All modes of operation were investigated and the worst-case emissions are reported.

6.6.2. Test Limits

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

NOTE:

a. The lower limit shall apply at the transition frequencies.
b. Emission level (dBuV/m) = 20 log Emission level (uV/m).
c. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

For Radiated emissions which fall out of the restricted bands must comply with the radiated emission limits specified as below table.

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		Field Strength at 3 m	
		PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	**Applicable To**	**EIRP Limit**	**Equivalent Field Strength at 3 m**
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2 (dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8 (dBμV/m) *3 PK:122.2 (dBμV/m) *4
	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

NOTE:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = ((1000000 \sqrt{(30P)}) / 3) \ \mu V/m, \text{ where P is the eirp (Watts)}$$

6.6.3. Test Result

802.11a

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (16dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5180.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

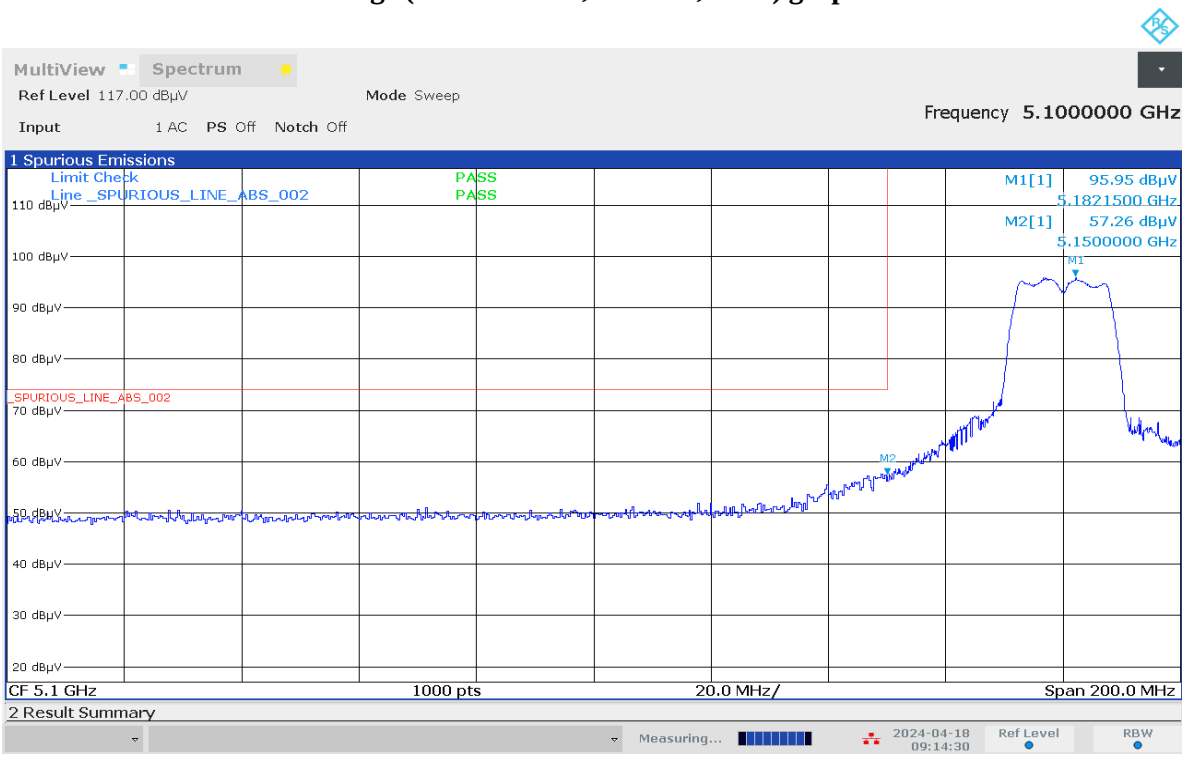
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5149.8500	-	-	46.2342	-	-	54.0000	-	-	7.7658	-
5150.0000	-	57.2596	46.3408	-	74.0000	54.0000	-	16.7404	7.6592	-
Horizontal Radiated Emission Result										
5146.2500	-	67.0625	-	-	74.0000	-	-	6.9375	-	-
5149.8500	-	67.8026	51.4589	-	74.0000	54.0000	-	6.1974	2.5411	-
5150.0000	-	67.4626	51.4661	-	74.0000	54.0000	-	6.5374	2.5339	-

Remarks: Pass Result	Marginal Result	Fail Result

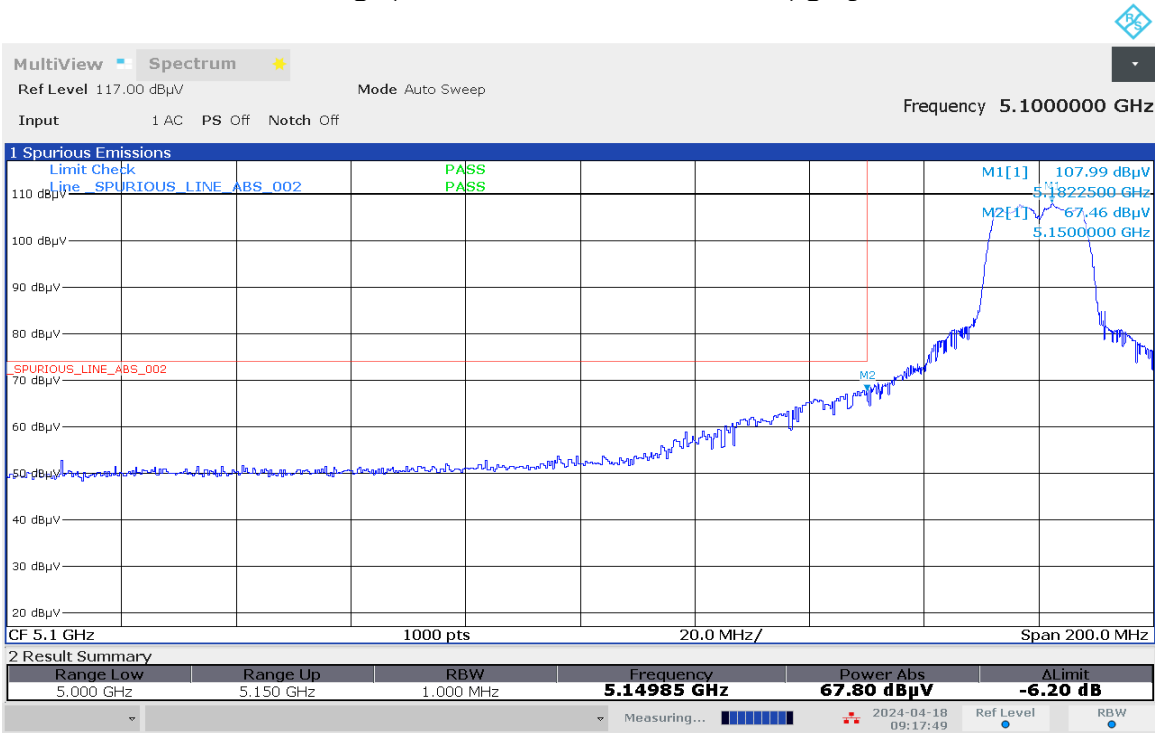
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Sat, 20 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



09:14:30 AM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot

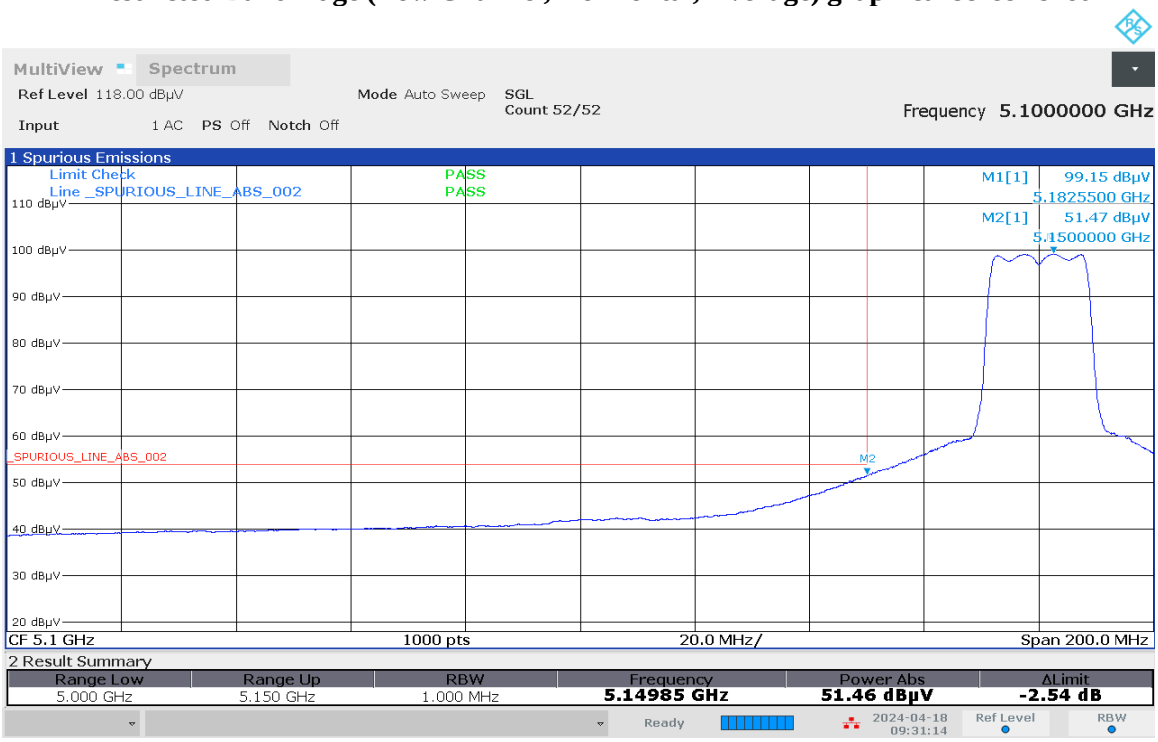


09:17:49 AM 04/18/2024

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot

09:27:17 AM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



09:31:15 AM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (17dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5320.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

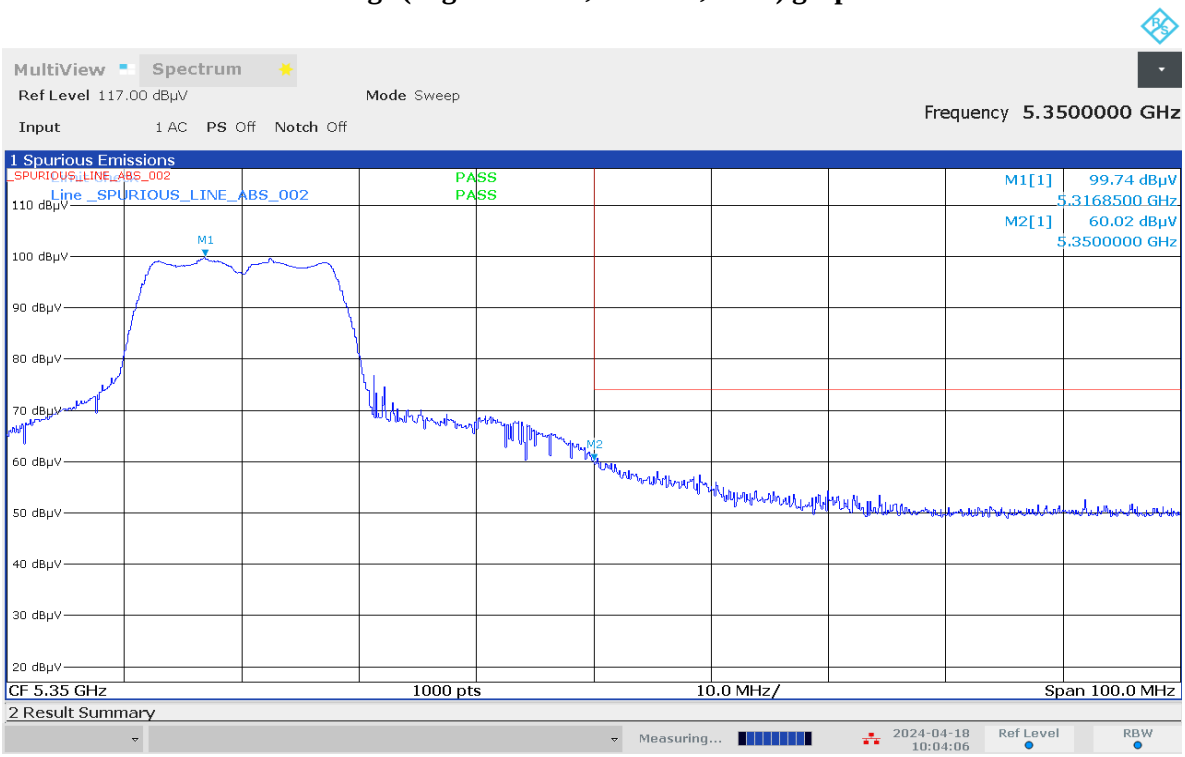
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5350.0000	-	60.0190	40.6357	-	74.0000	54.0000	-	13.9810	13.3643	-
Horizontal Radiated Emission Result										
5350.0000	-	62.8960	44.5272	-	74.0000	54.0000	-	11.1040	9.4728	-

Remarks: Pass Result	Marginal Result	Fail Result

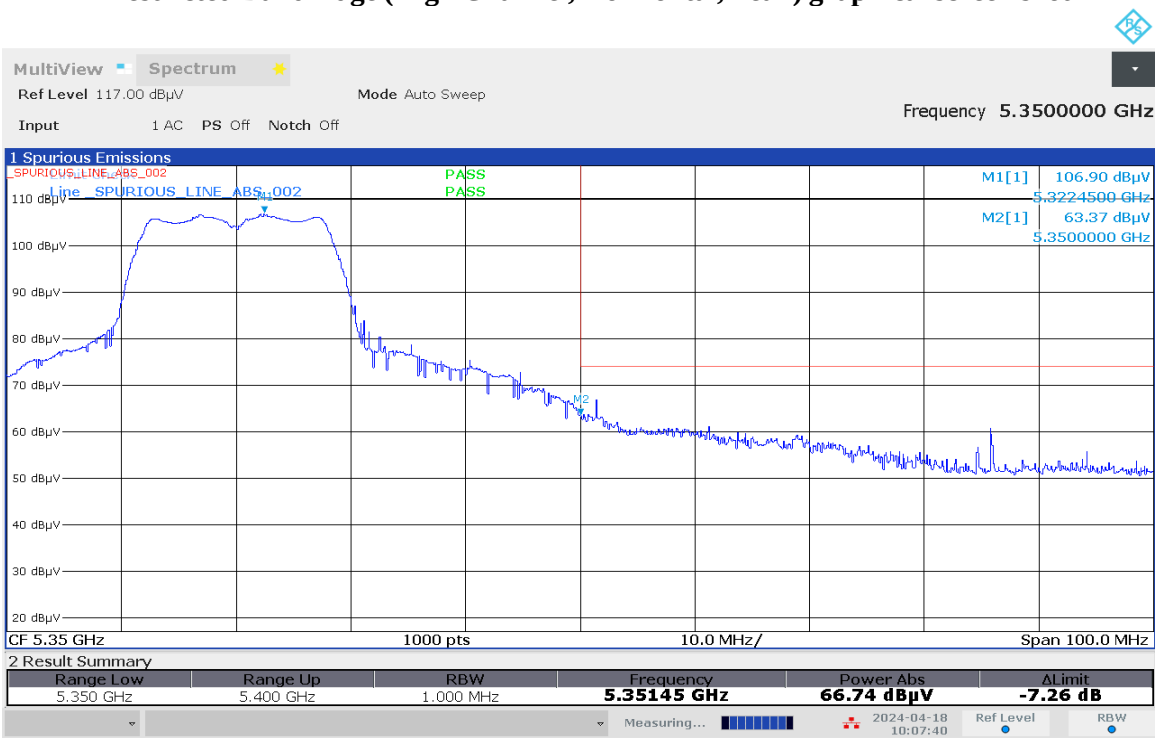
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



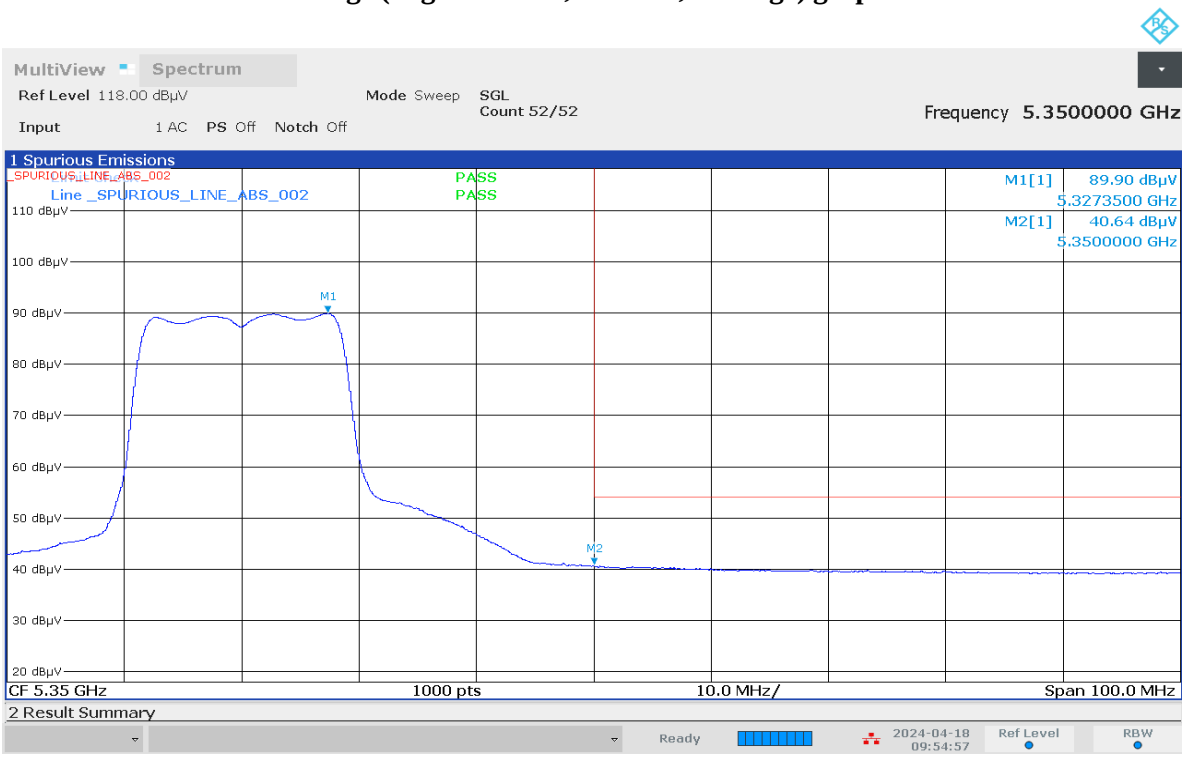
10:04:06 AM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



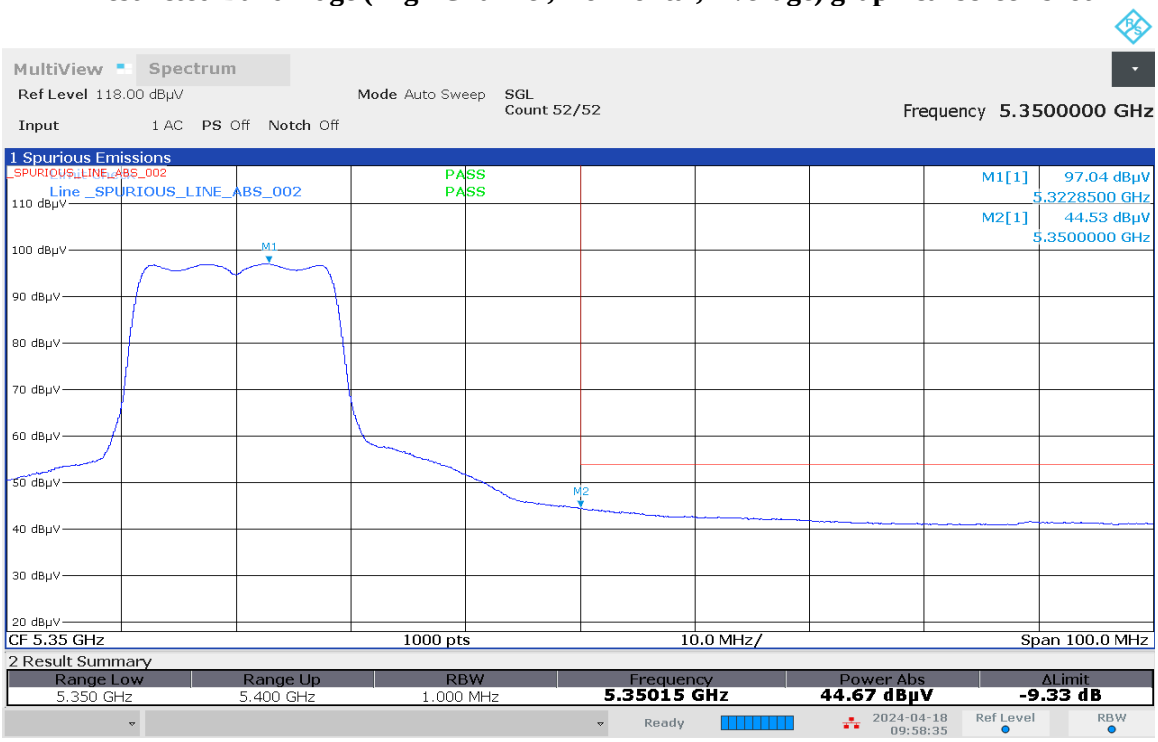
10:07:40 AM 04/18/2024

Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



09:54:57 AM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot



09:58:36 AM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (12dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

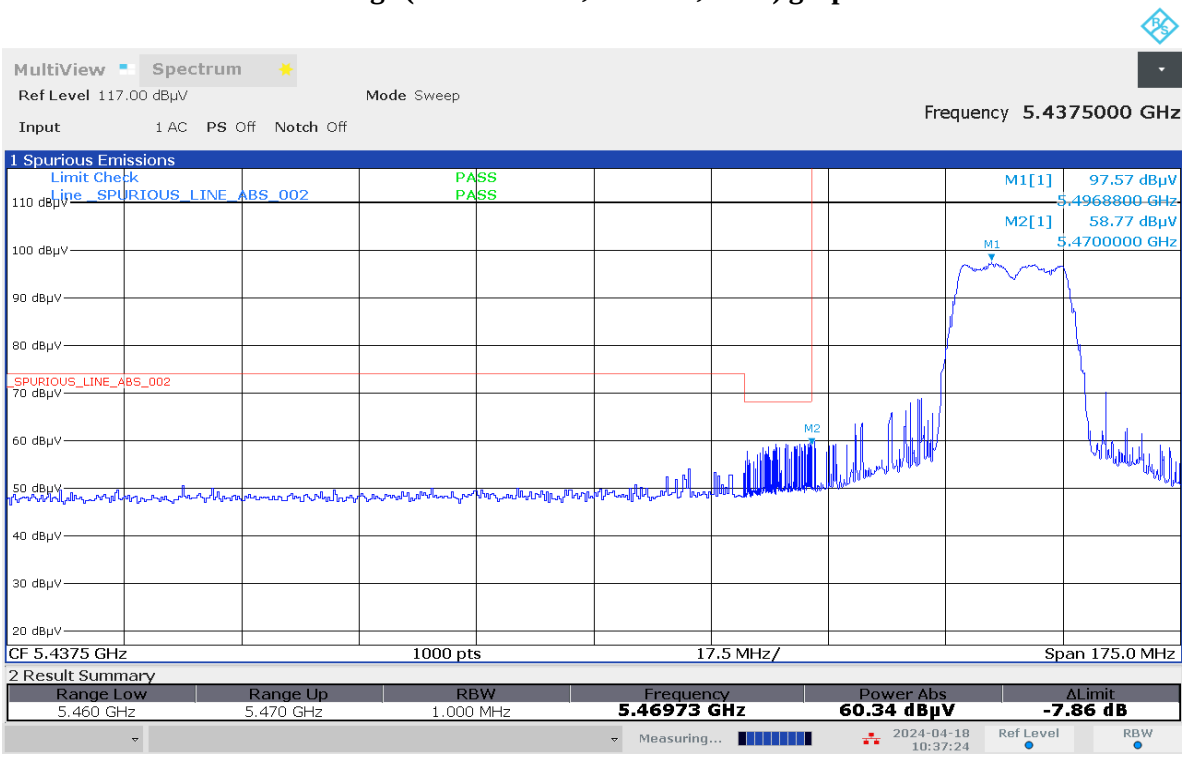
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5460.0000	-	-	38.9056	-	-	54.0000	-	-	15.0944	-
5470.0000	-	58.7658	-	-	68.2000	-	-	9.4342	-	-
Horizontal Radiated Emission Result										
5460.0000	-	-	40.2317	-	-	54.0000	-	-	13.7683	-
5466.7250	-	64.4095	-	-	68.2000	-	-	3.7905	-	-
5468.4250	-	64.7730	-	-	68.2000	-	-	3.4270	-	-
5468.6750	-	63.8962	-	-	68.2000	-	-	4.3038	-	-
5469.5750	-	64.0513	-	-	68.2000	-	-	4.1487	-	-
5469.6750	-	64.8145	-	-	68.2000	-	-	3.3855	-	-
5469.9250	-	-	42.3798	-	-	54.0000	-	-	11.6202	-
5470.0000	-	53.7015	-	-	68.2000	-	-	14.4985	-	-

Remarks: Pass Result	Marginal Result	Fail Result

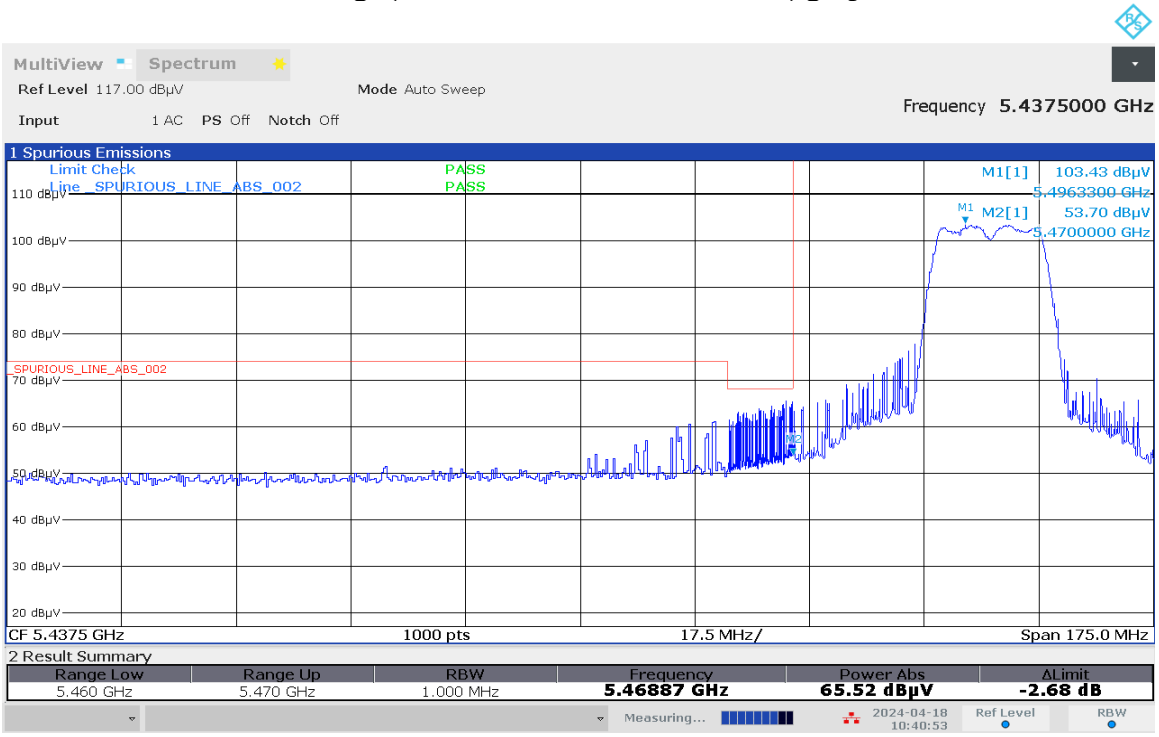
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Fri, 19 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



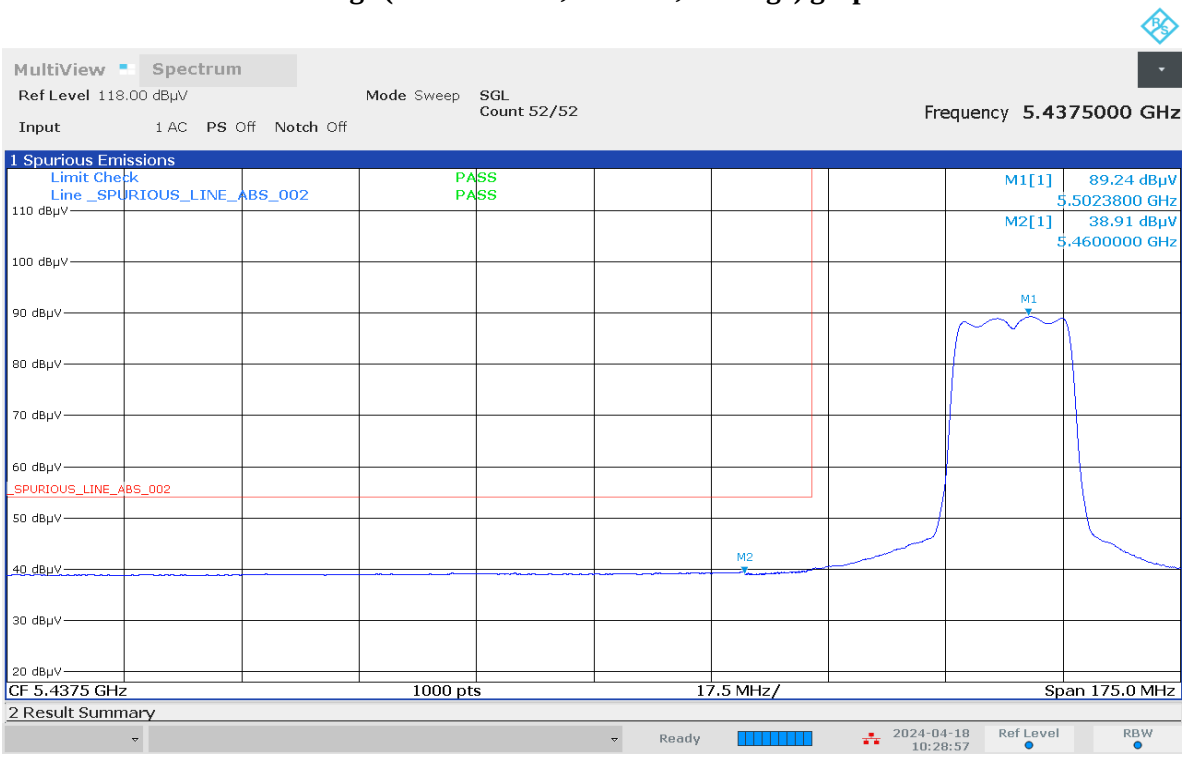
10:37:25 AM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



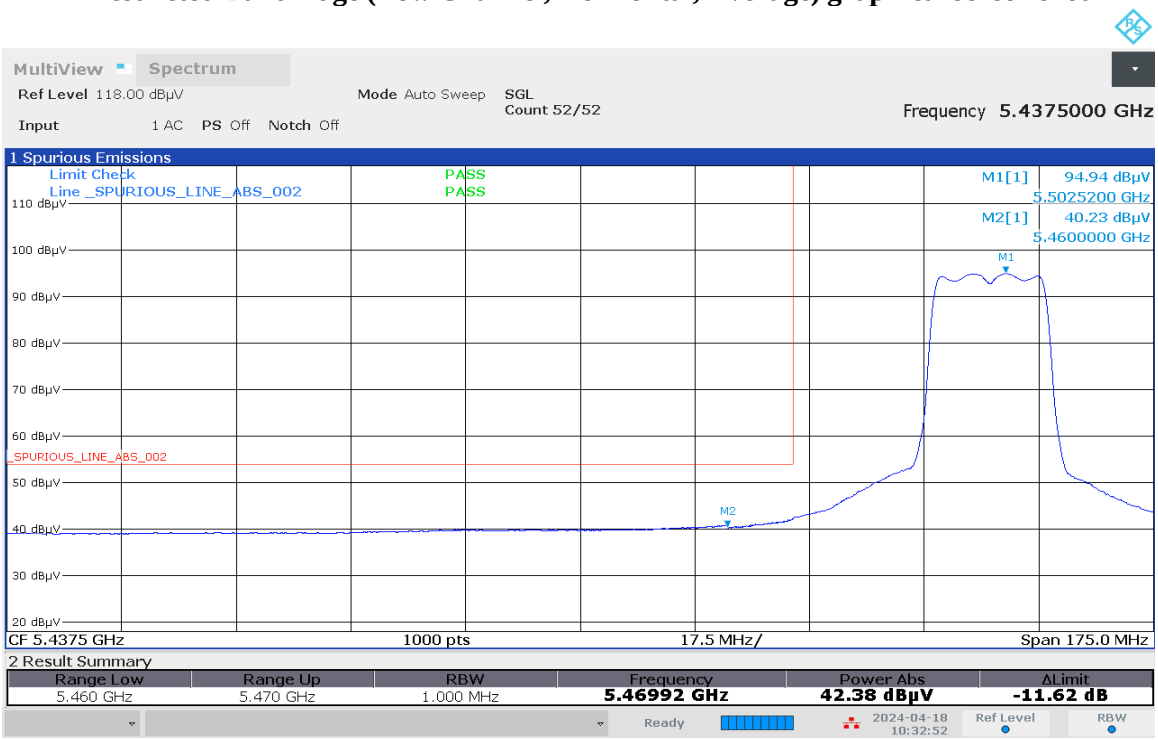
10:40:54 AM 04/18/2024

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



10:28:58 AM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



10:32:52 AM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5700.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

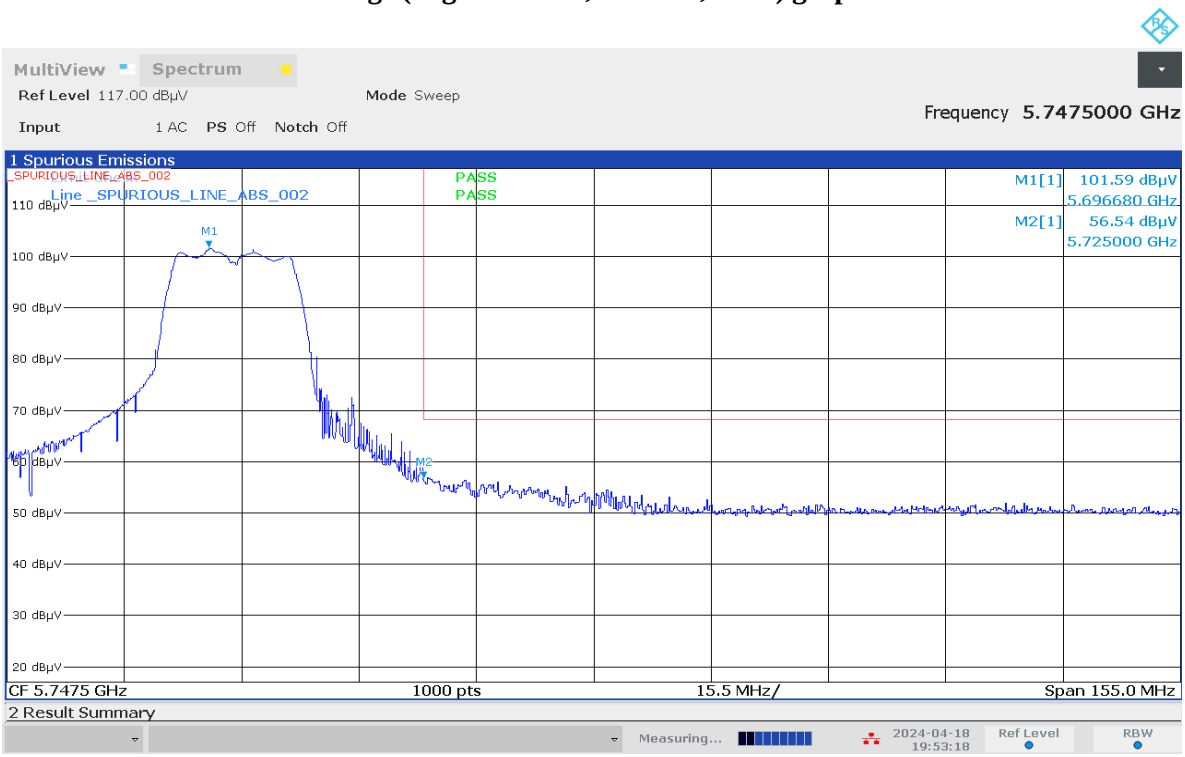
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5725.0000	-	56.5357	40.7841	-	68.2000	54.0000	-	11.6643	13.2159	-
Horizontal Radiated Emission Result										
5725.0000	-	59.2547	42.1465	-	68.2000	54.0000	-	8.9453	11.8535	-
5728.5000	-	60.4686	-	-	68.2000	-	-	7.7314	-	-

Remarks: Pass Result	Marginal Result	Fail Result

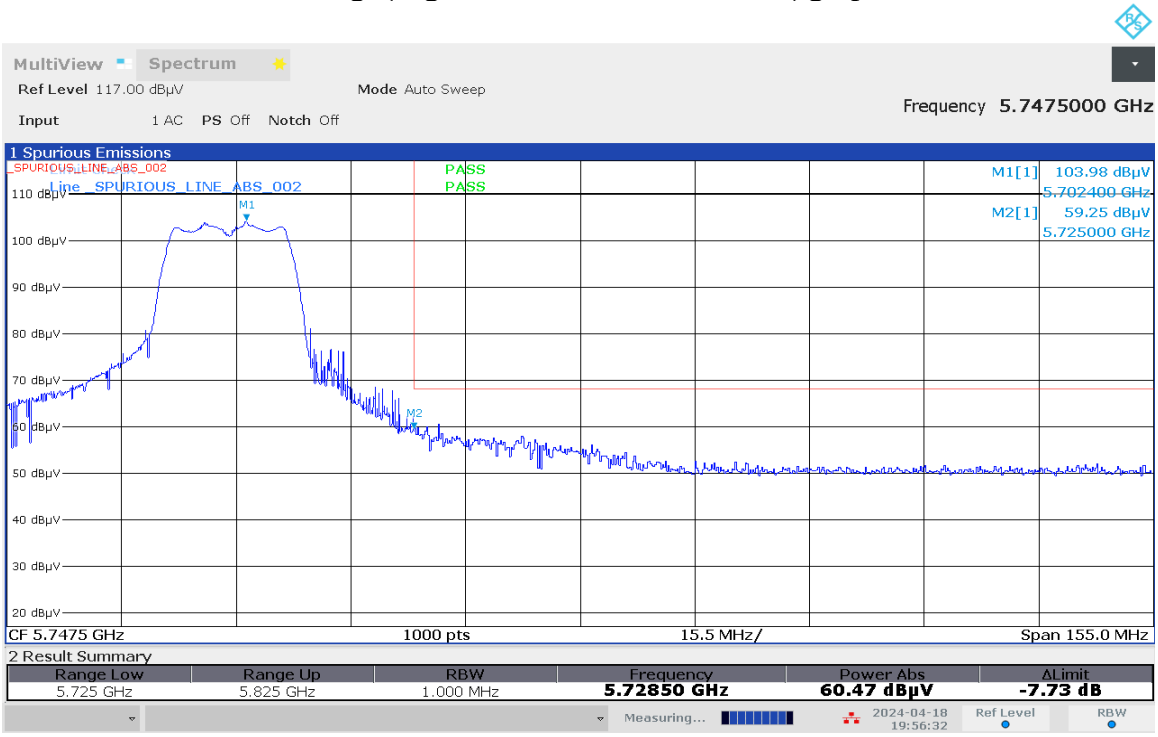
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



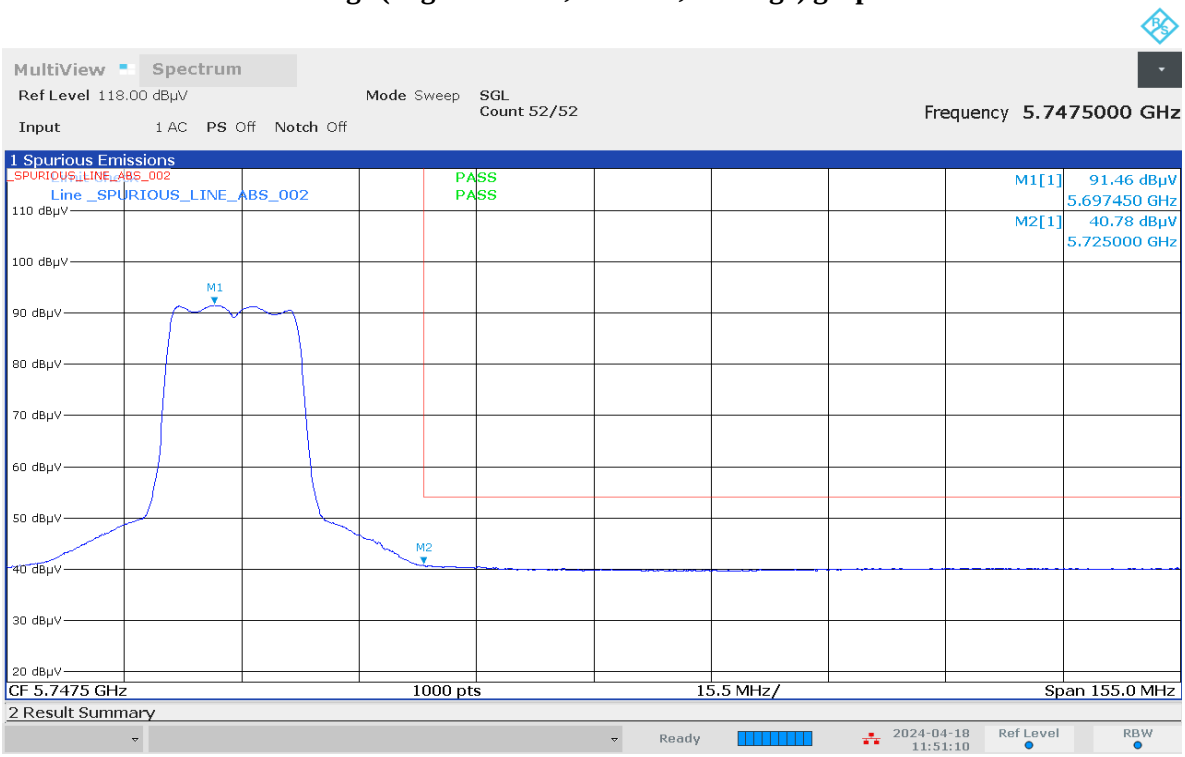
07:53:18 PM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



07:56:32 PM 04/18/2024

Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



11:51:11 AM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot

11:54:49 AM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Straddle Test Frequency: 5720.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

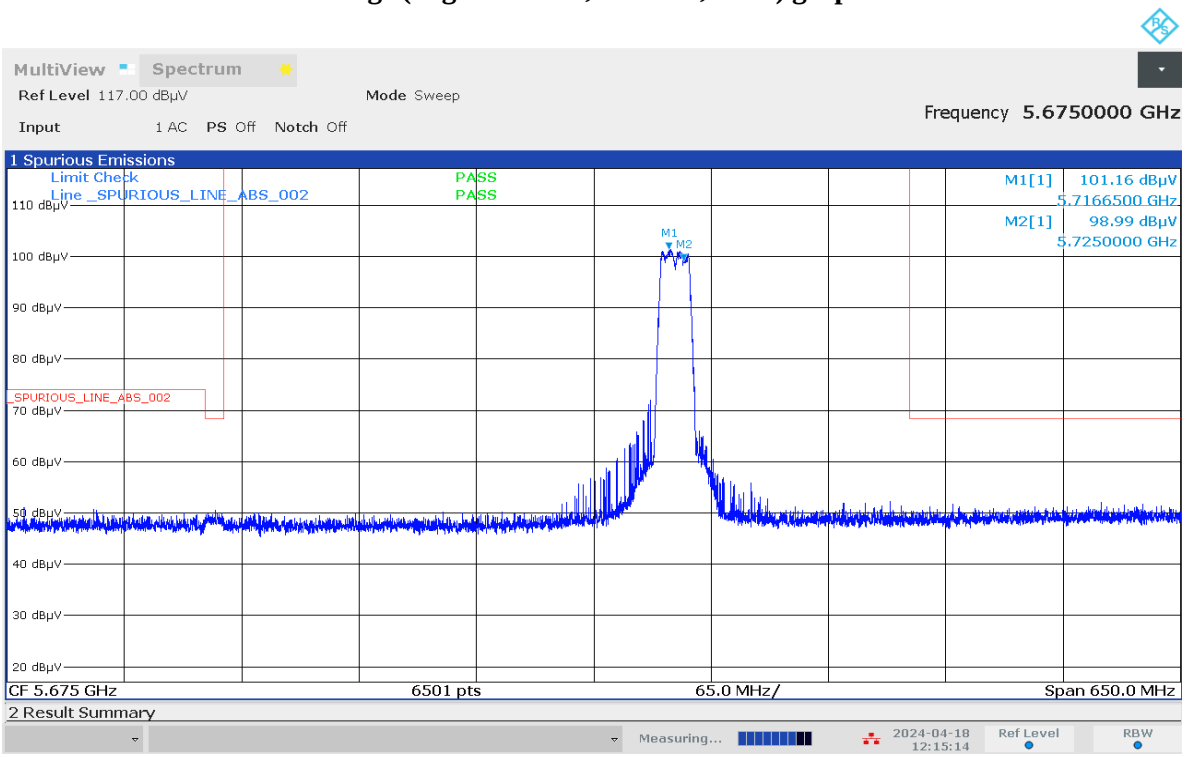
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
Horizontal Radiated Emission Result										

Remarks: Pass Result	Marginal Result	Fail Result

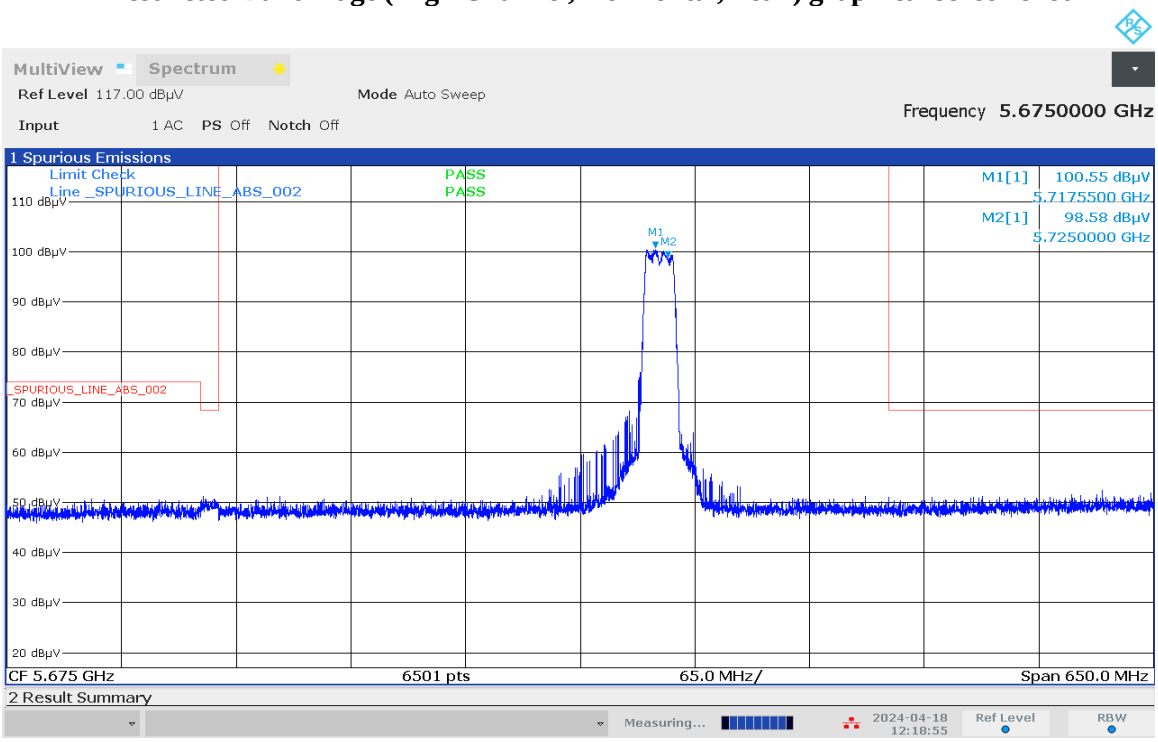
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



12:15:15 PM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



12:18:56 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5745.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

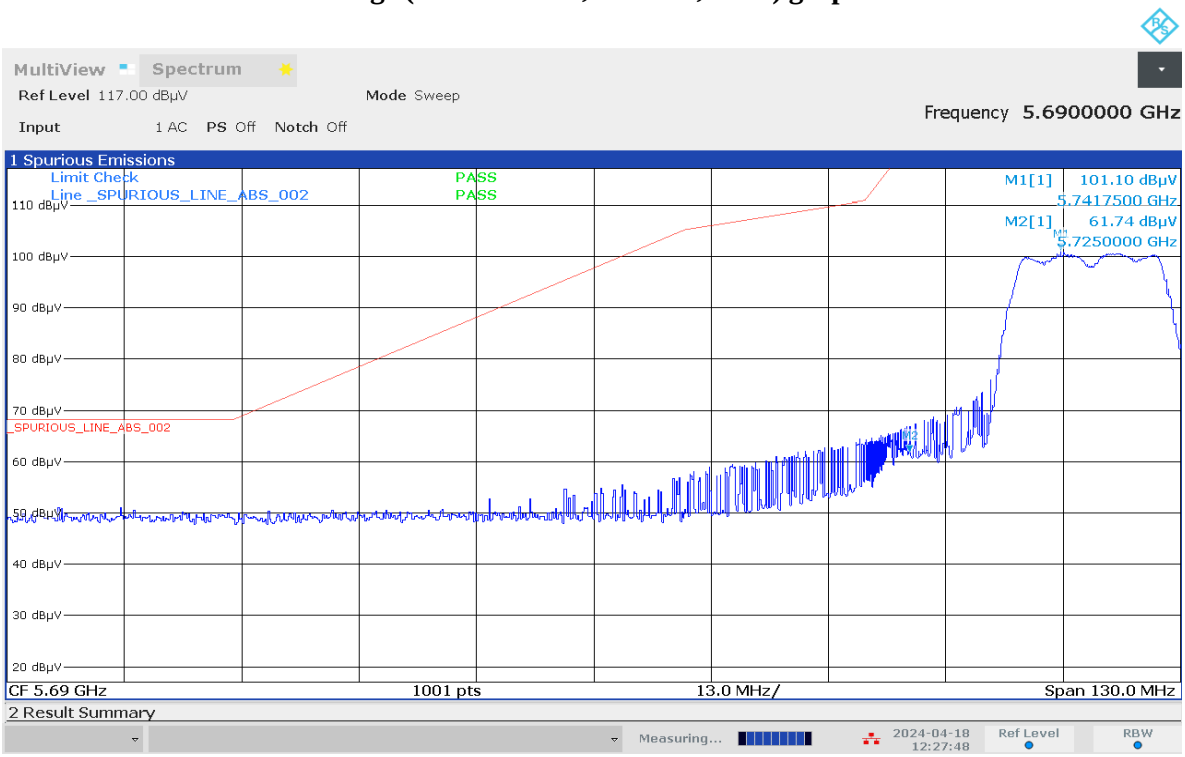
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5725.0000	-	61.7392	-	-	122.2000	-	-	60.4608	-	-
Horizontal Radiated Emission Result										
5725.0000	-	64.9929	-	-	122.2000	-	-	57.2071	-	-

Remarks: Pass Result	Marginal Result	Fail Result

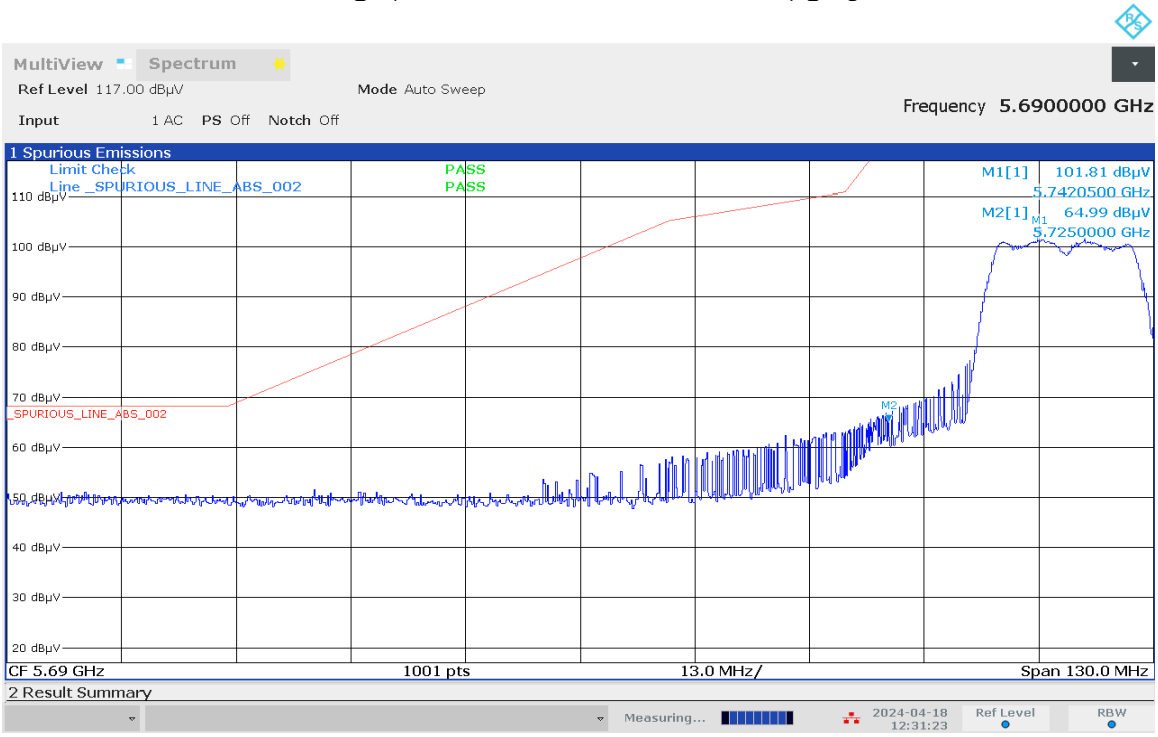
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



12:27:49 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



12:31:24 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5825.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

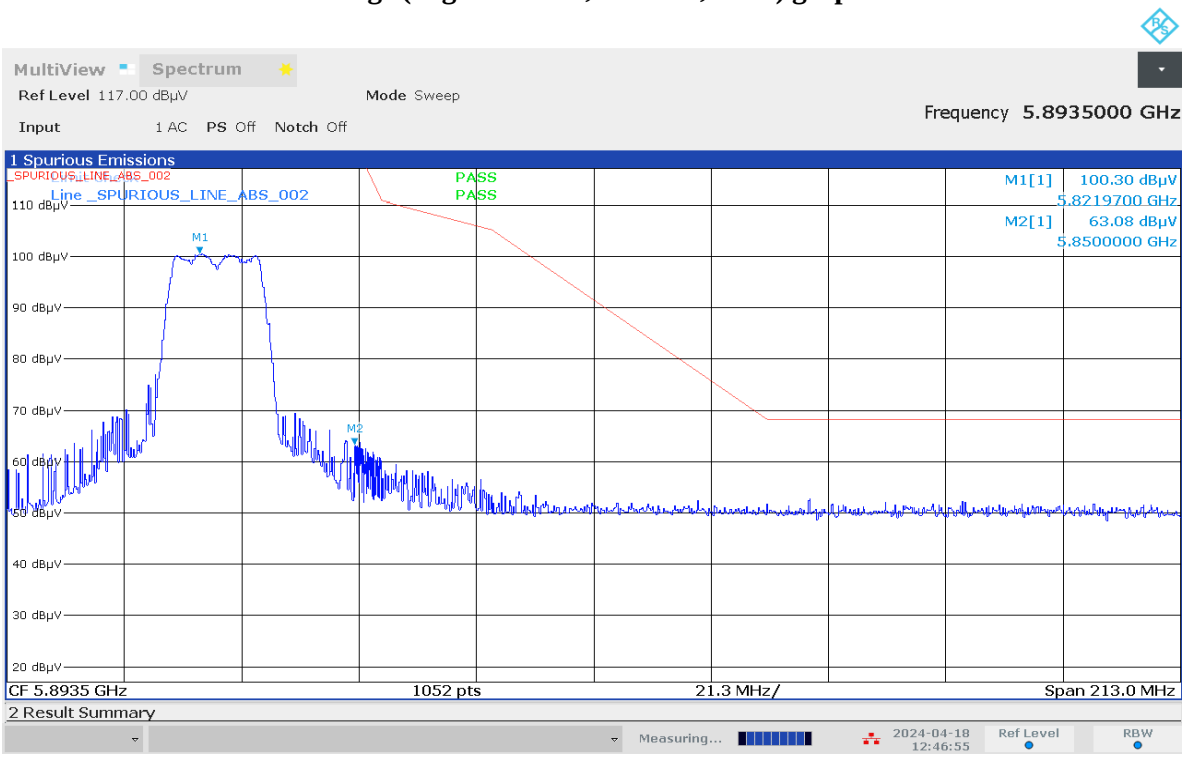
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5850.0000	-	-	63.0777	-	122.2000	-	-	59.1223	-	-
Horizontal Radiated Emission Result										
5850.0000	-	-	62.6123	-	122.2000	-	-	59.5877	-	-

Remarks: Pass Result	Marginal Result	Fail Result

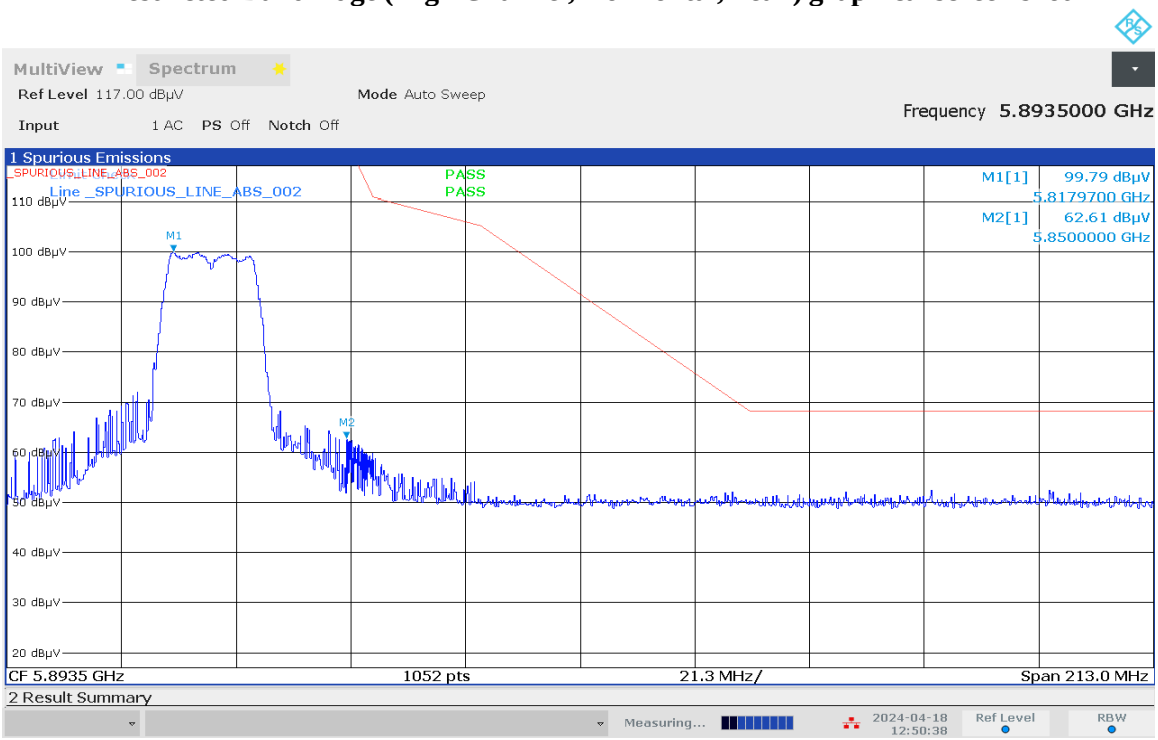
Temperature (degC): 23.5
Humidity (%): 69.4
Test Performed by: Nazrin & Rezza
Test Date: Thu, 18 Apr, 2024
System MU: 5.84dB

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



12:46:55 PM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



12:50:38 PM 04/18/2024

802.11n (HT20)

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5180.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

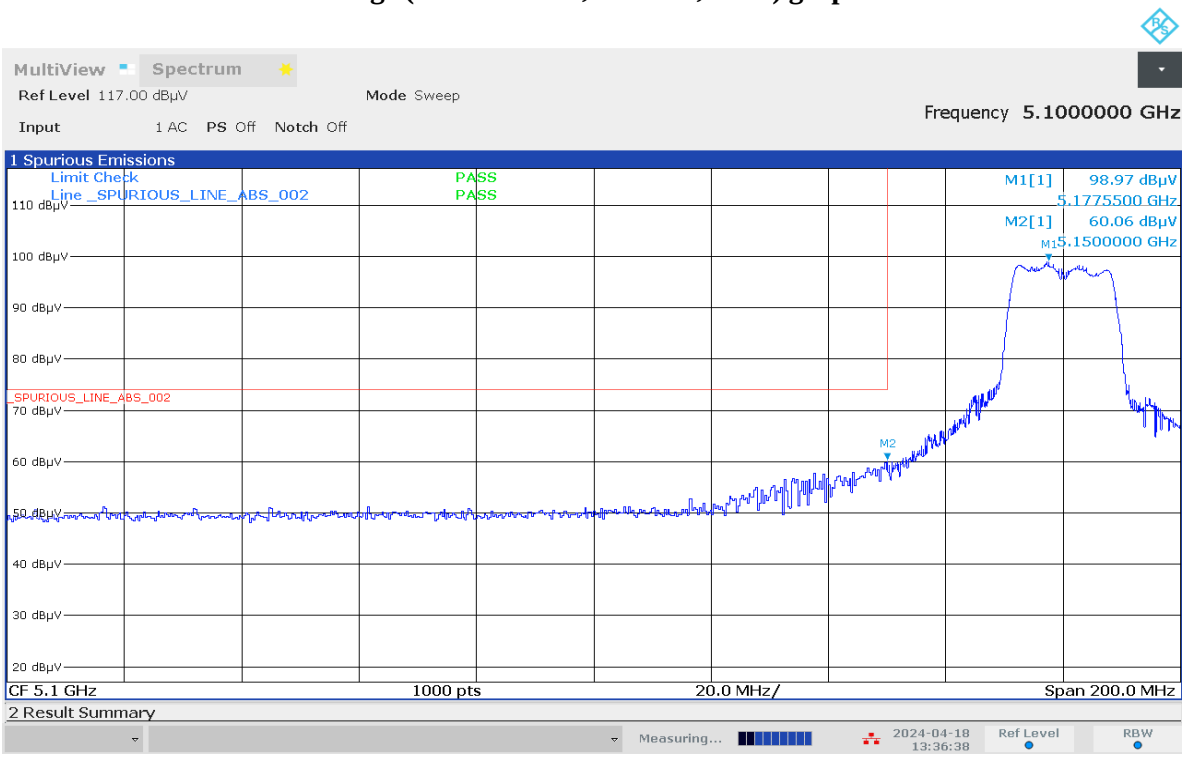
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5150.0000	-	60.0577	43.1914	-	74.0000	54.0000	-	13.9423	10.8086	-
Horizontal Radiated Emission Result										
5150.0000	-	64.4717	47.8193	-	74.0000	54.0000	-	9.5283	6.1807	-

Remarks: Pass Result	Marginal Result	Fail Result

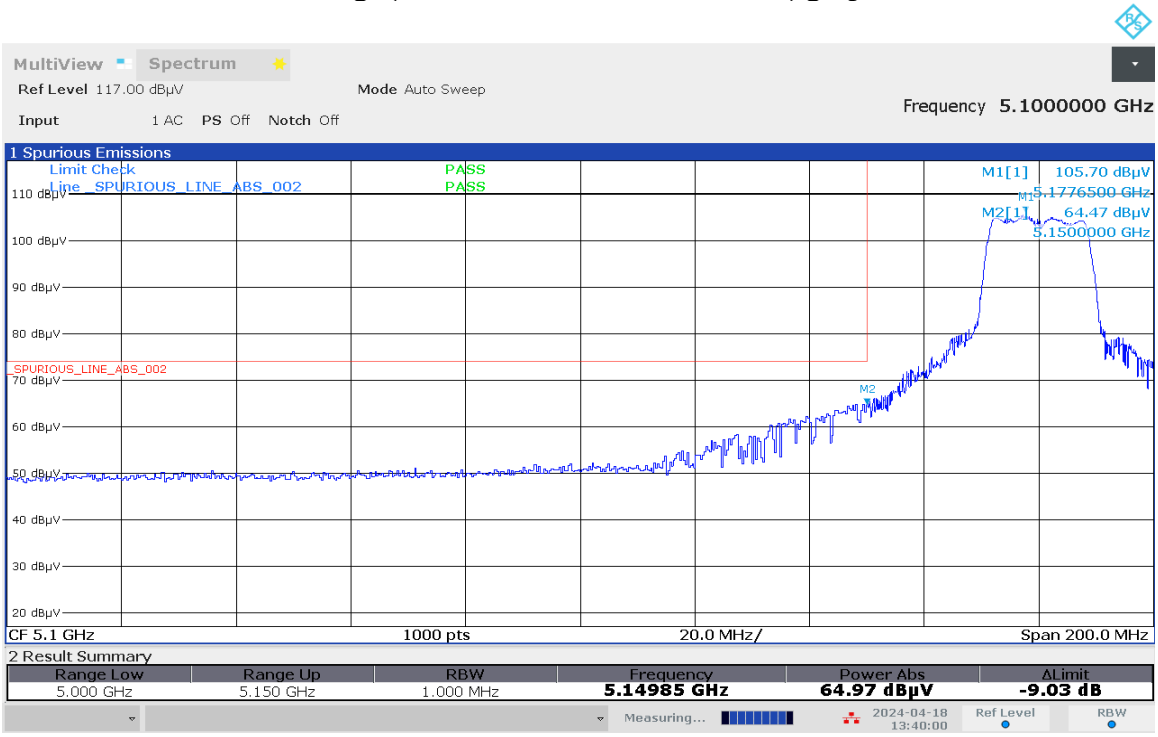
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



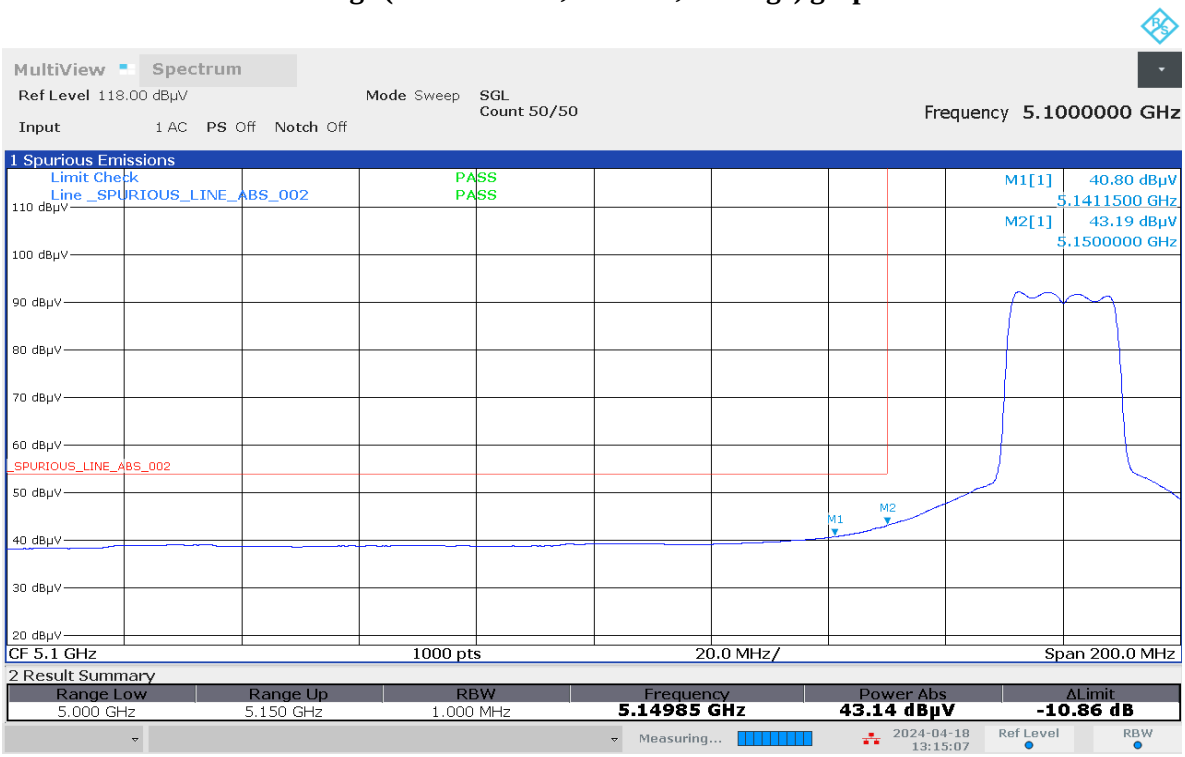
01:36:38 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



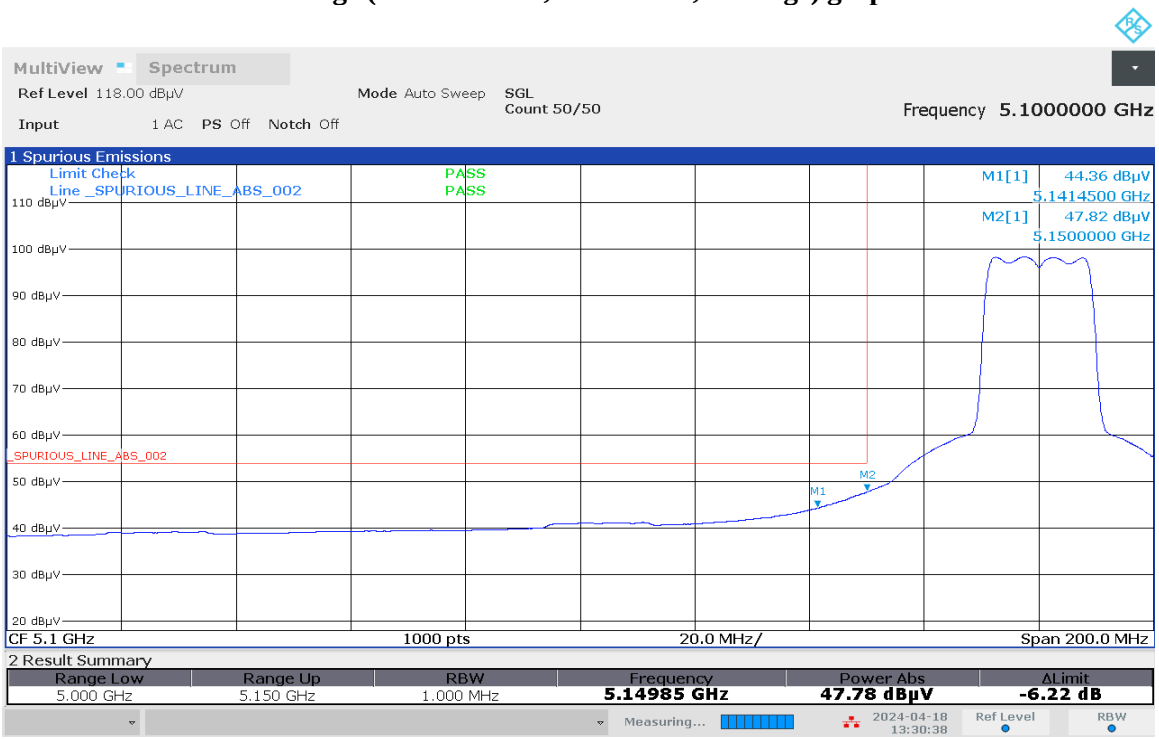
01:40:00 PM 04/18/2024

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



01:15:08 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



01:30:39 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5320.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

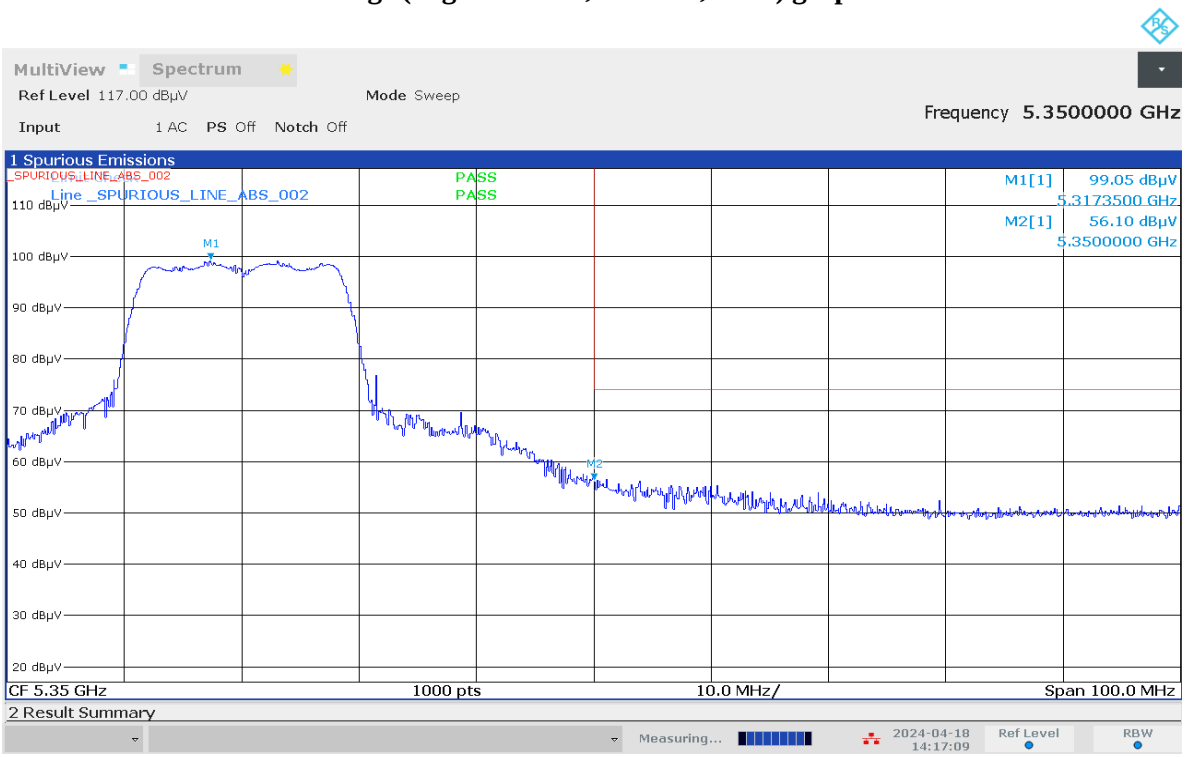
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5350.0000	-	53.0038	40.1703	-	74.0000	54.0000	-	20.9962	13.8297	-
Horizontal Radiated Emission Result										
5350.0000	-	58.0027	44.0817	-	74.0000	54.0000	-	15.9973	9.9183	-

Remarks: Pass Result	Marginal Result	Fail Result

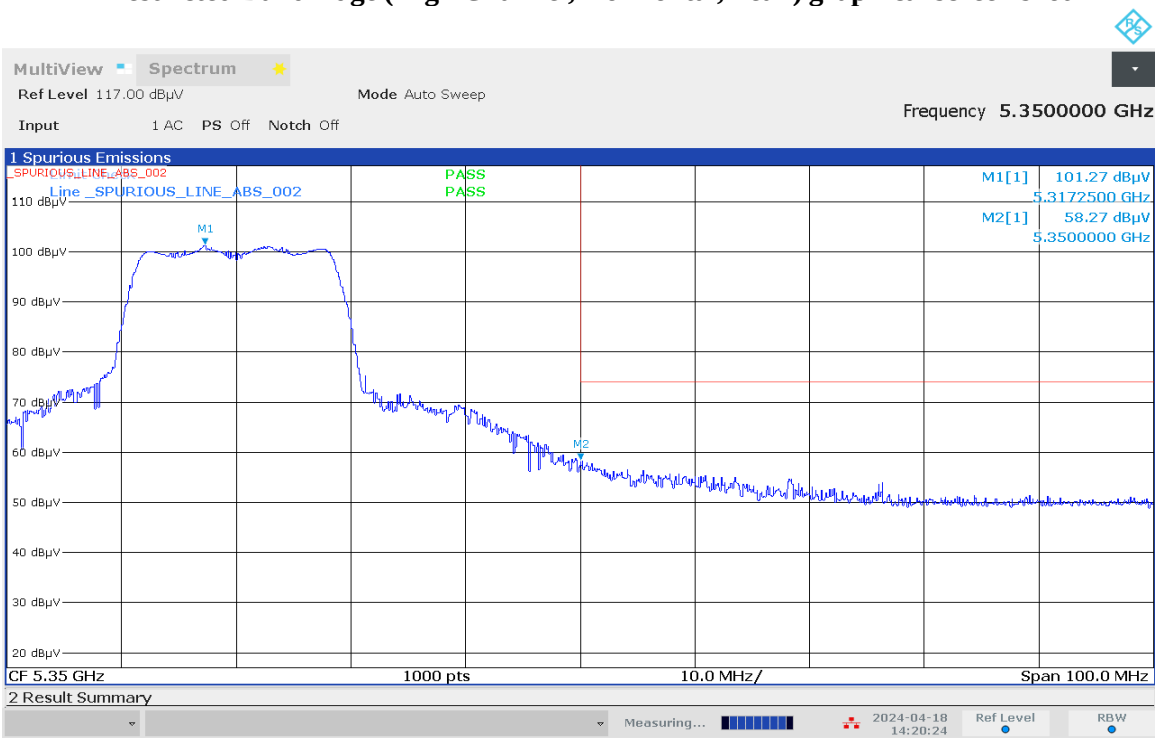
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



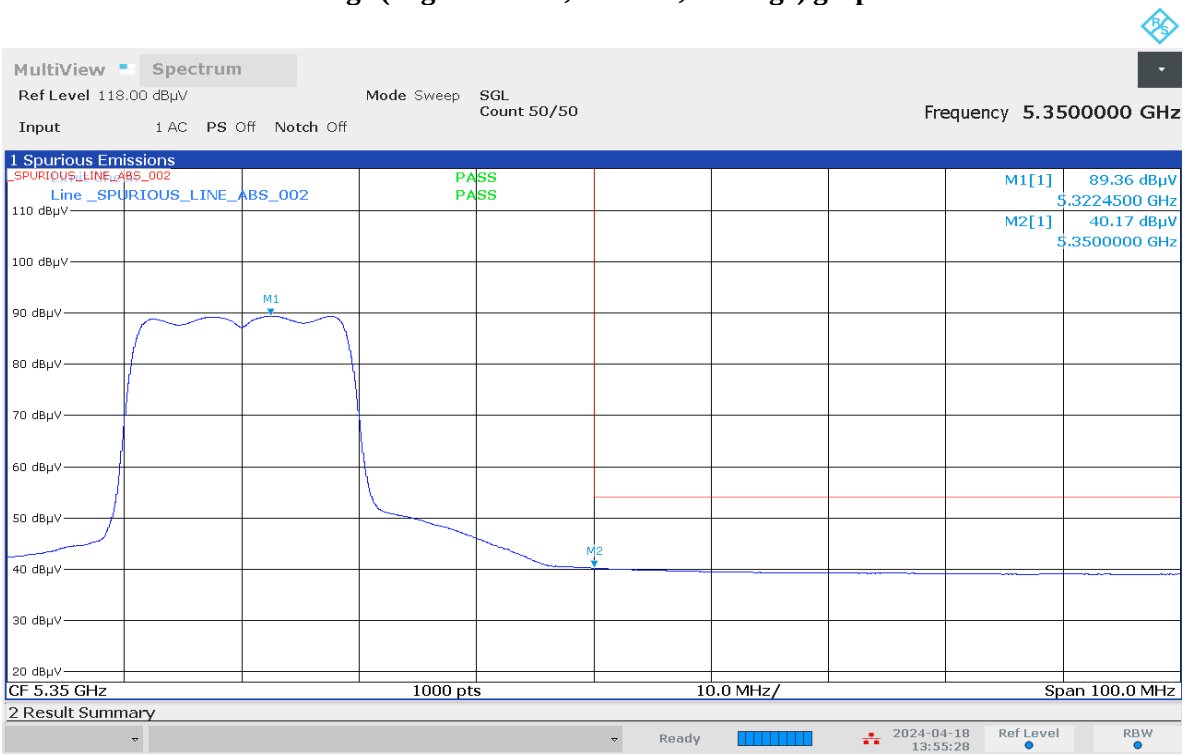
02:17:10 PM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



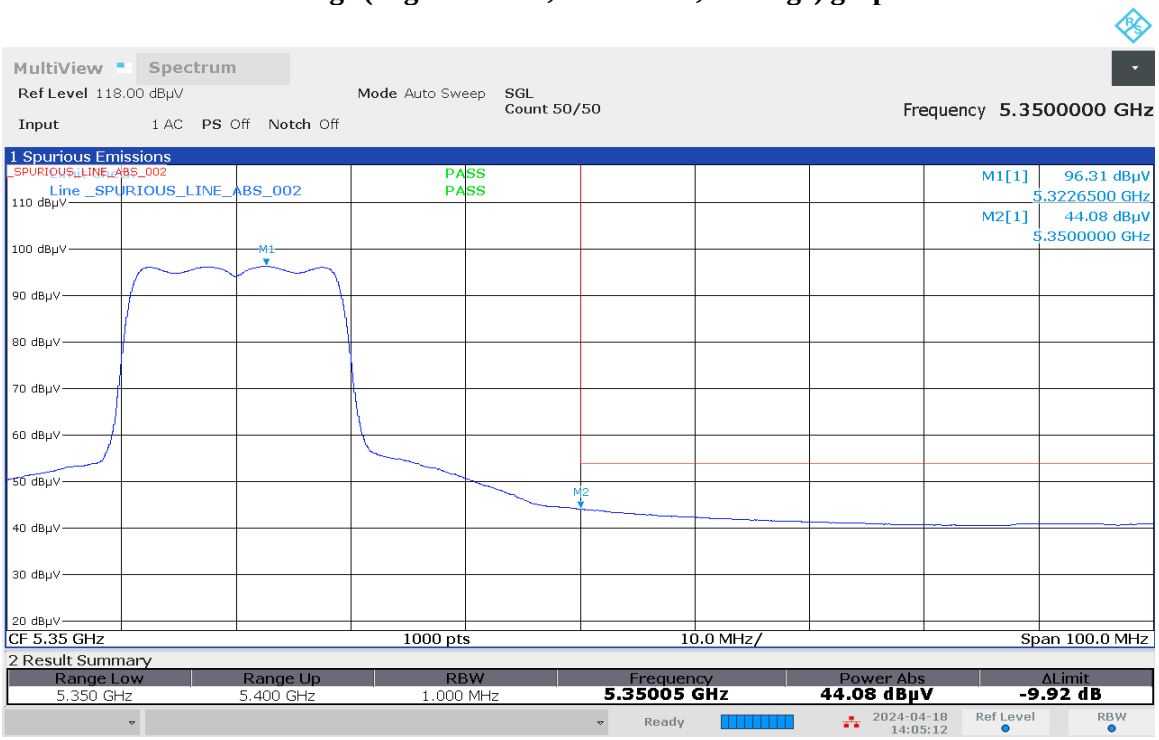
02:20:24 PM 04/18/2024

Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



01:55:29 PM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot



02:05:12 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (13dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

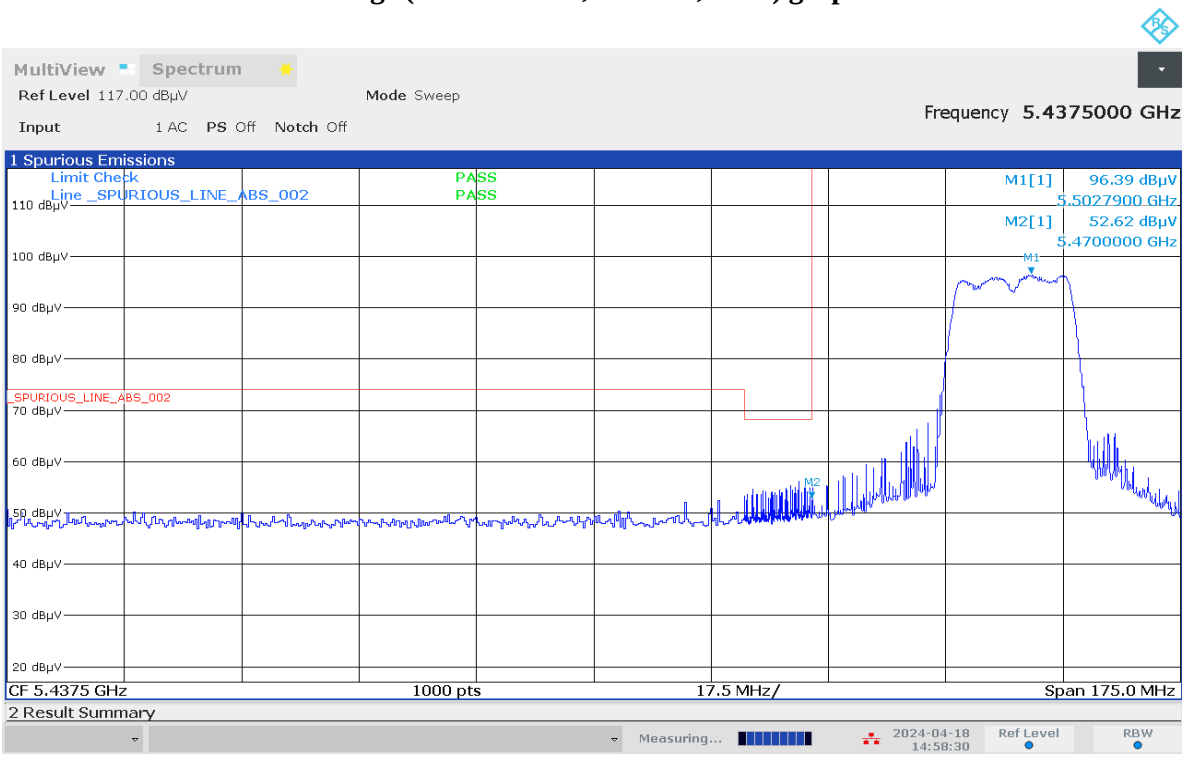
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5460.0000	-	-	38.8156	-	-	54.0000	-	-	15.1844	-
5470.0000	-	52.6153	-	-	68.2000	-	-	15.5847	-	-
Horizontal Radiated Emission Result										
5460.0000	-	-	41.1083	-	-	54.0000	-	-	12.8917	-
5466.4750	-	62.8431	-	-	68.2000	-	-	5.3569	-	-
5467.0250	-	63.4526	-	-	68.2000	-	-	4.7474	-	-
5467.6250	-	63.4811	-	-	68.2000	-	-	4.7189	-	-
5468.5750	-	63.7698	-	-	68.2000	-	-	4.4302	-	-
5469.1250	-	63.9590	-	-	68.2000	-	-	4.2410	-	-
5469.4750	-	62.9078	-	-	68.2000	-	-	5.2922	-	-
5469.7250	-	63.4187	-	-	68.2000	-	-	4.7813	-	-
5469.8750	-	-	43.7615	-	-	54.0000	-	-	10.2385	-
5469.9750	-	64.3342	-	-	68.2000	-	-	3.8658	-	-
5470.0000	-	55.0315	-	-	68.2000	-	-	13.1685	-	-

Remarks: Pass Result	Marginal Result	Fail Result

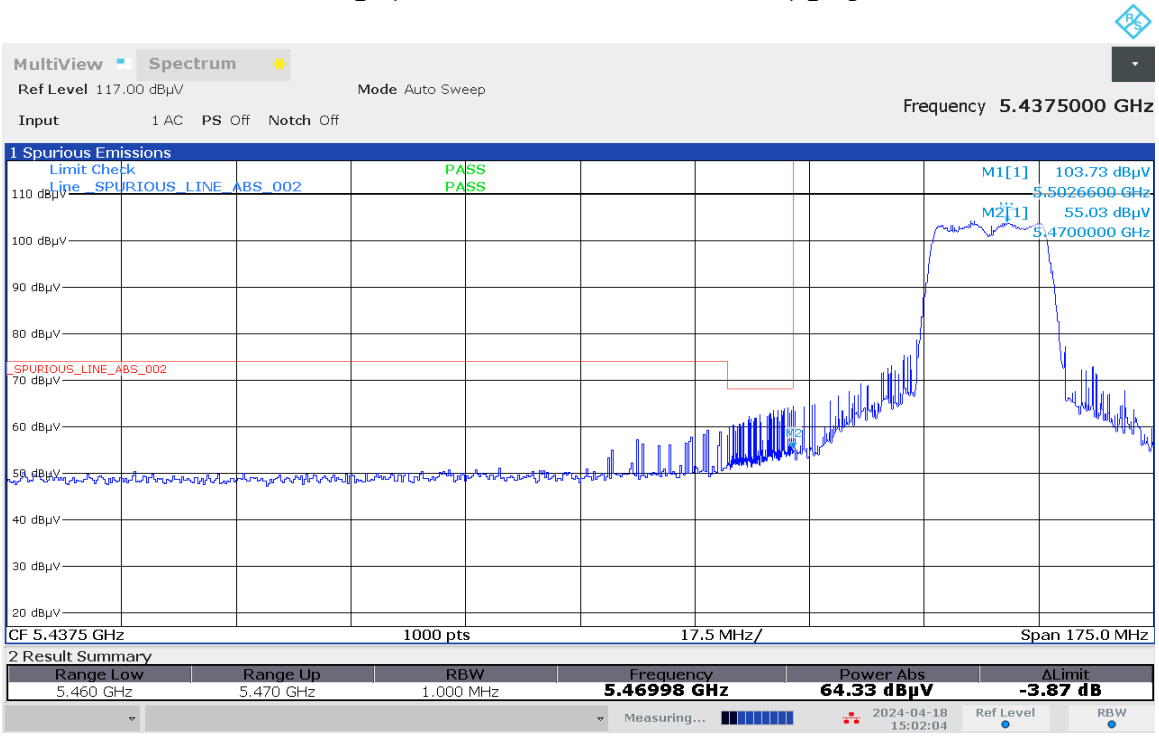
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Fri, 19 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



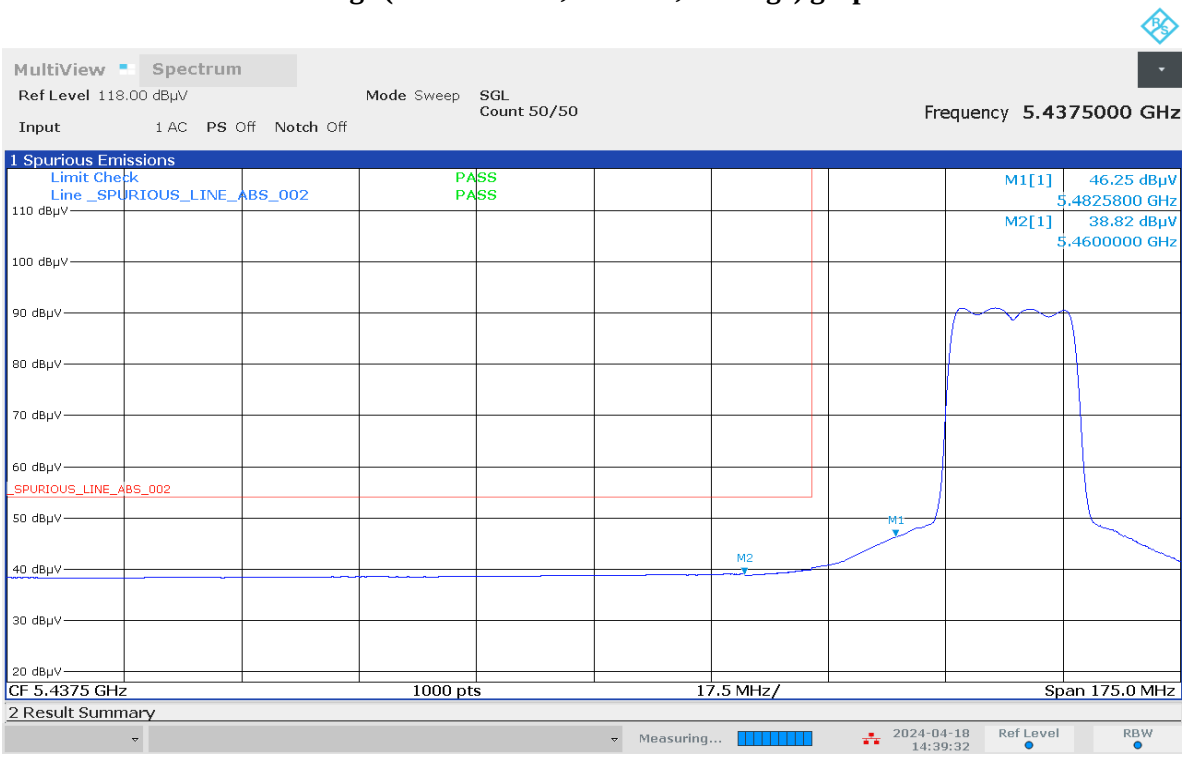
02:58:30 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



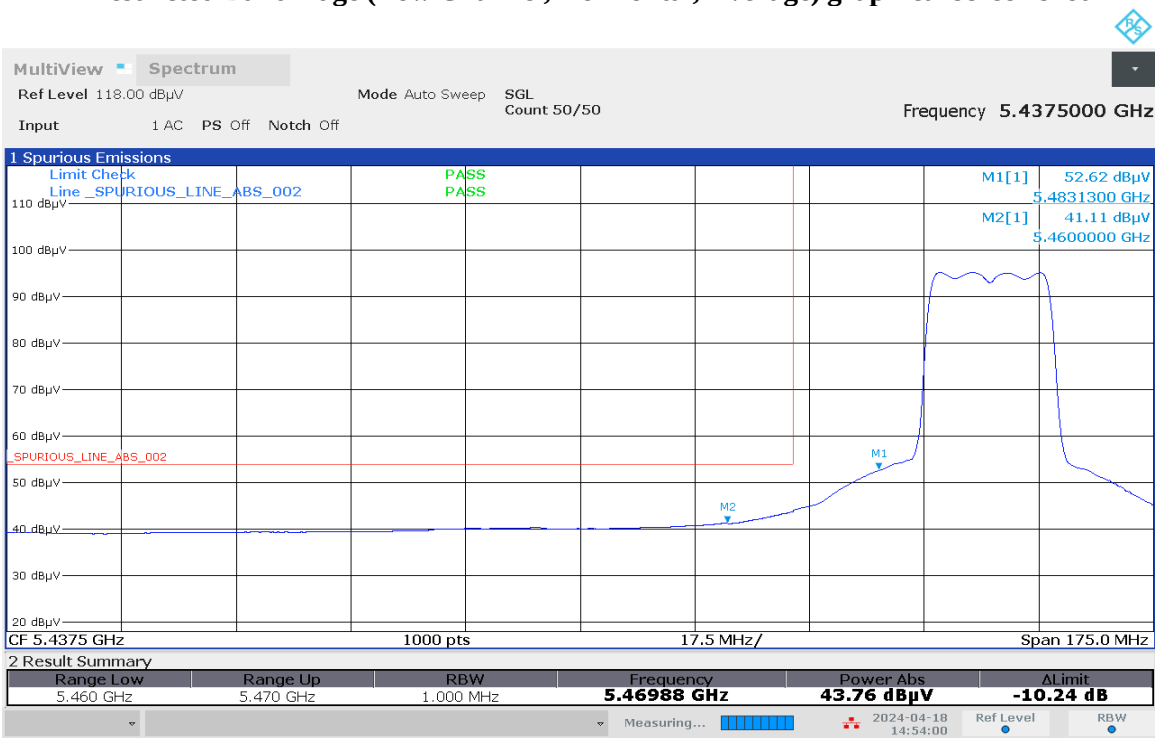
03:02:04 PM 04/18/2024

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



02:39:33 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



02:54:00 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5700.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

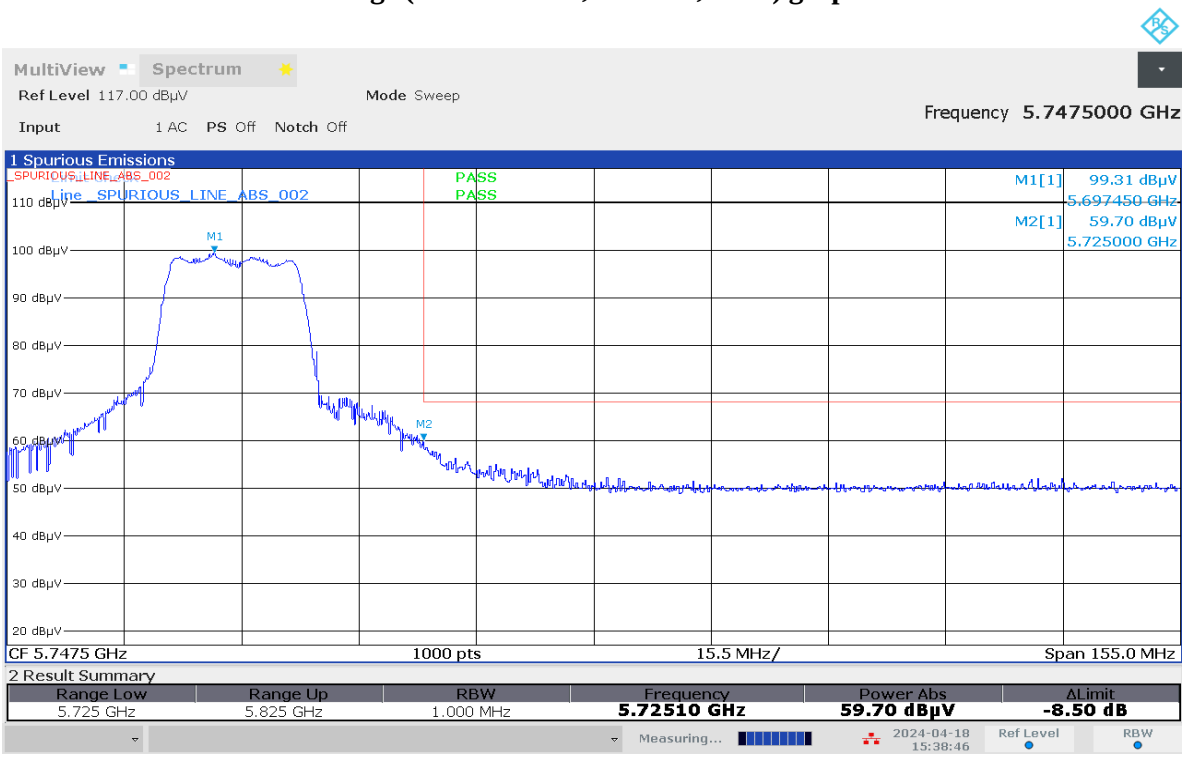
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5725.0000	-	59.7041	42.1465	-	68.2000	54.0000	-	8.4959	11.8535	-
Horizontal Radiated Emission Result										
5725.0000	-	61.0405	42.7551	-	68.2000	54.0000	-	7.1595	11.2449	-

Remarks: Pass Result	Marginal Result	Fail Result

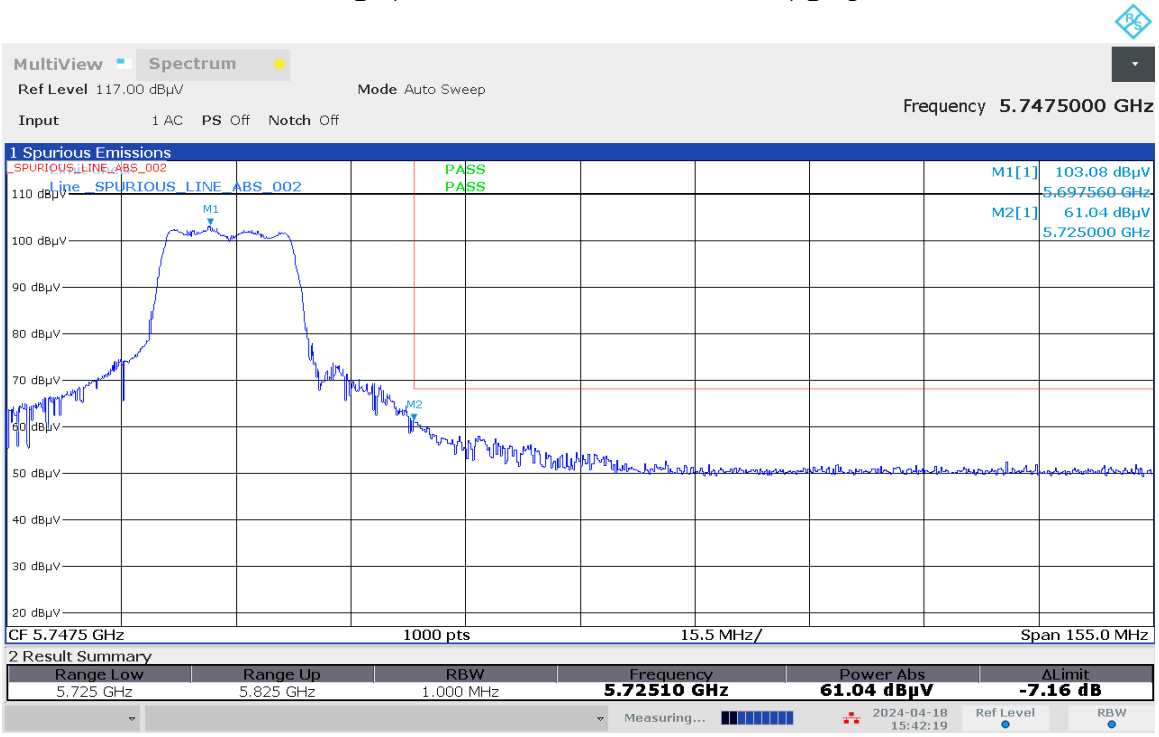
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



03:38:47 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot

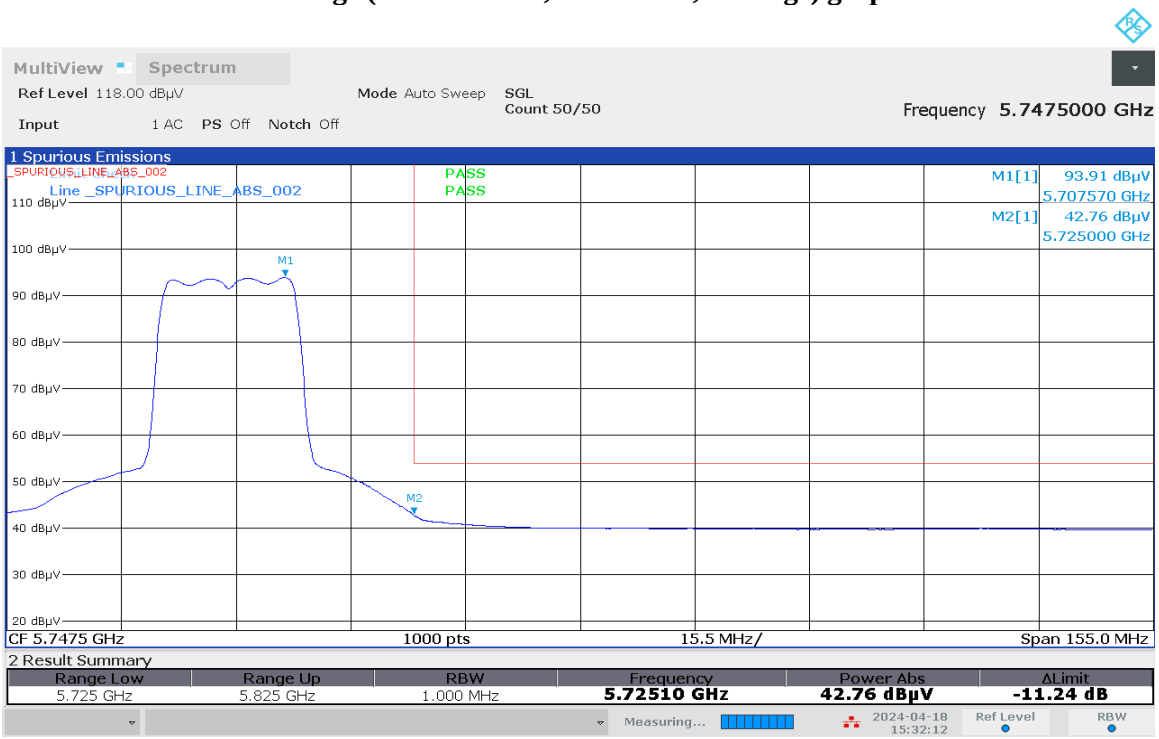


03:42:20 PM 04/18/2024

Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot

03:19:27 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



03:32:12 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Straddle Test Frequency: 5720.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

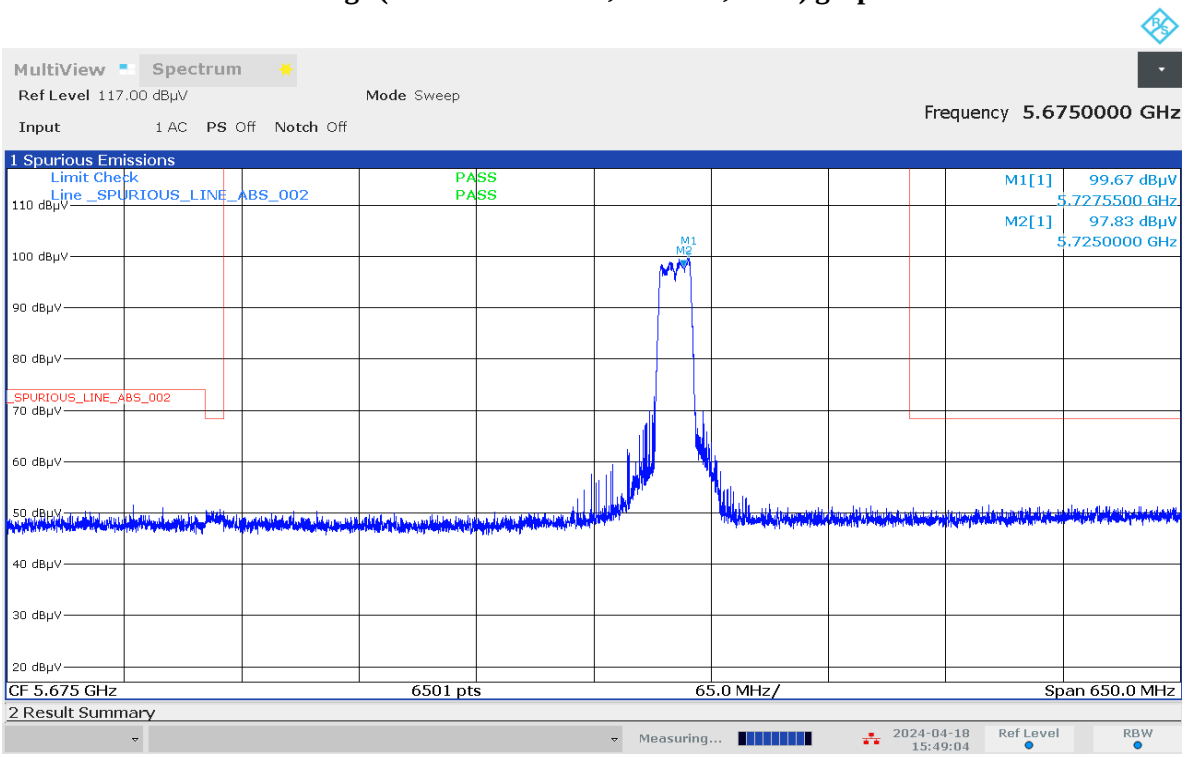
Restricted Band Edge (Straddle Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
Horizontal Radiated Emission Result										

Remarks: Pass Result	Marginal Result	Fail Result

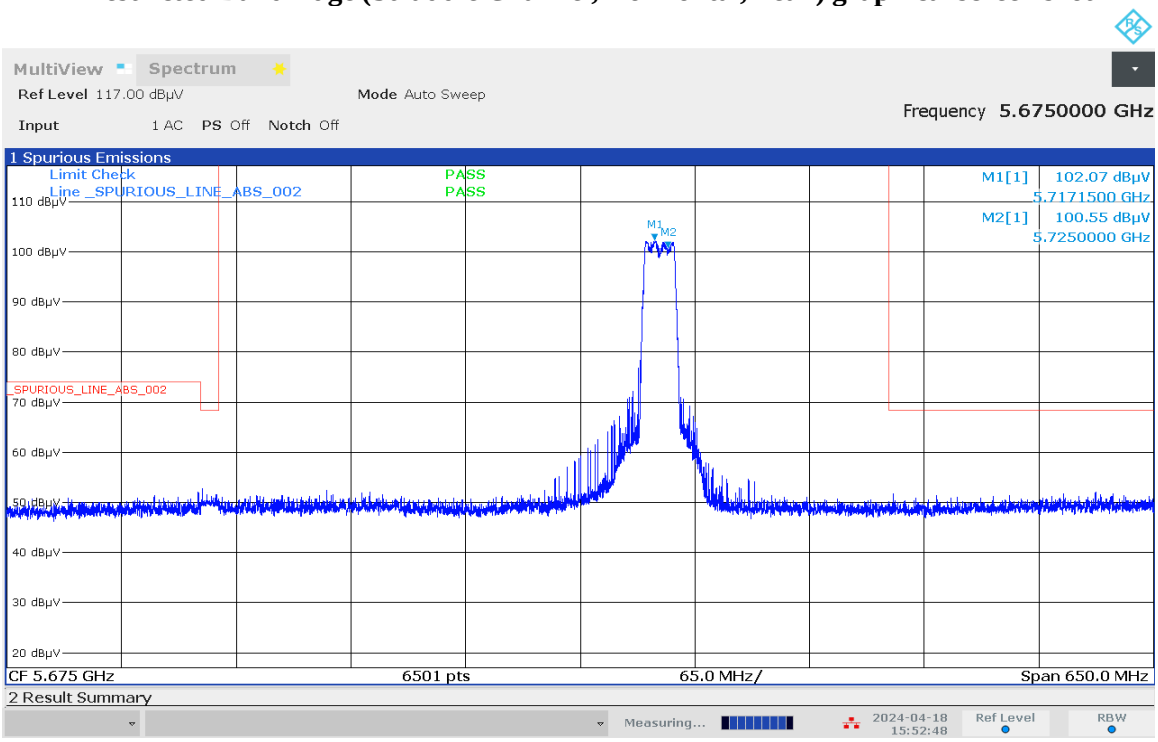
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Straddle Channel, Vertical, Peak) graphical screen shot



03:49:04 PM 04/18/2024

Restricted Band Edge (Straddle Channel, Horizontal, Peak) graphical screen shot



03:52:48 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5745.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

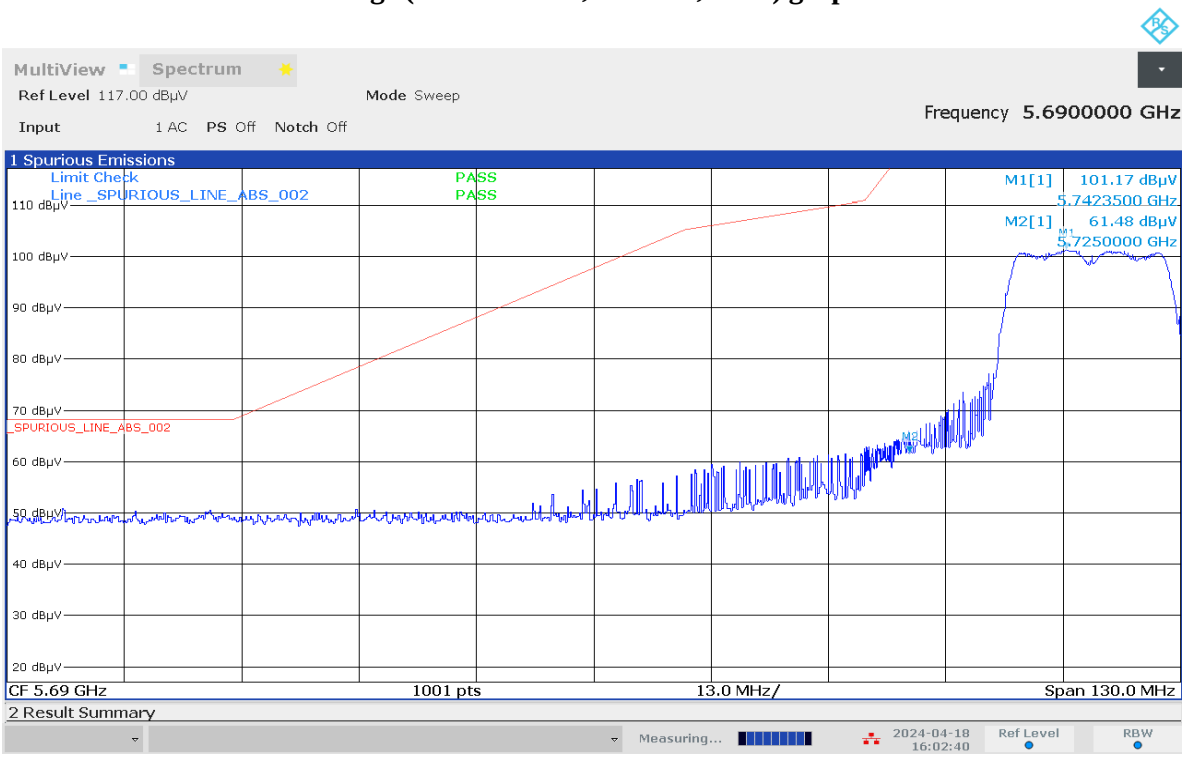
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5725.0000	-	61.4812	-	-	122.2000	-	-	60.7188	-	-
Horizontal Radiated Emission Result										
5725.0000	-	64.4930	-	-	122.2000	-	-	57.7070	-	-

Remarks: Pass Result	Marginal Result	Fail Result

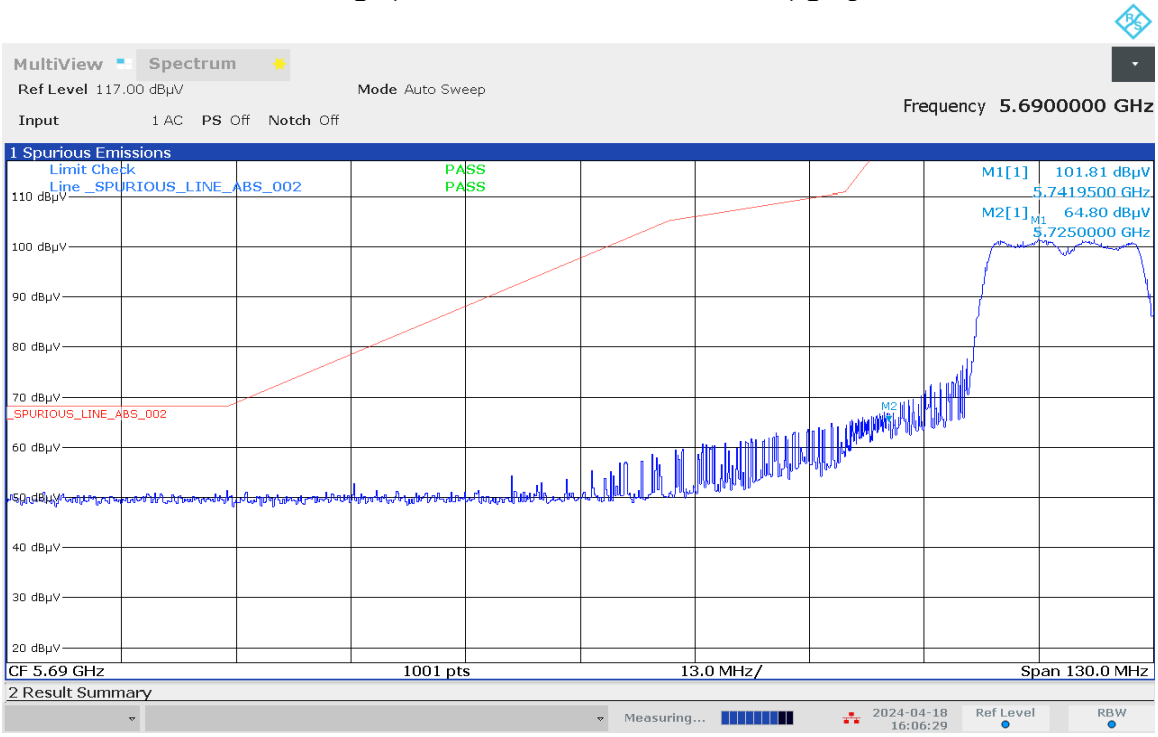
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



04:02:41 PM 04/18/2024

Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



04:06:30 PM 04/18/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5825.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

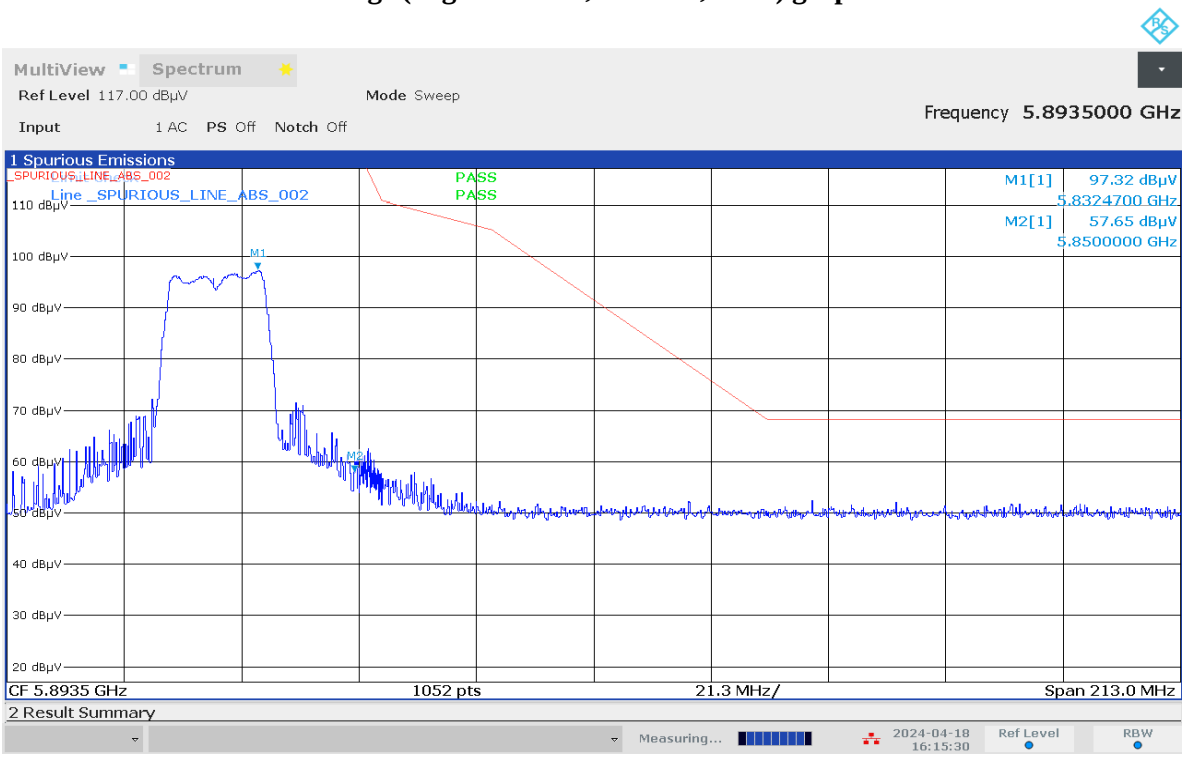
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
5850.0000	-	57.6538	-	-	122.2000	-	-	64.5462	-	-
Horizontal Radiated Emission Result										
5850.0000	-	59.0393	-	-	122.2000	-	-	63.1607	-	-

Remarks: Pass Result	Marginal Result	Fail Result

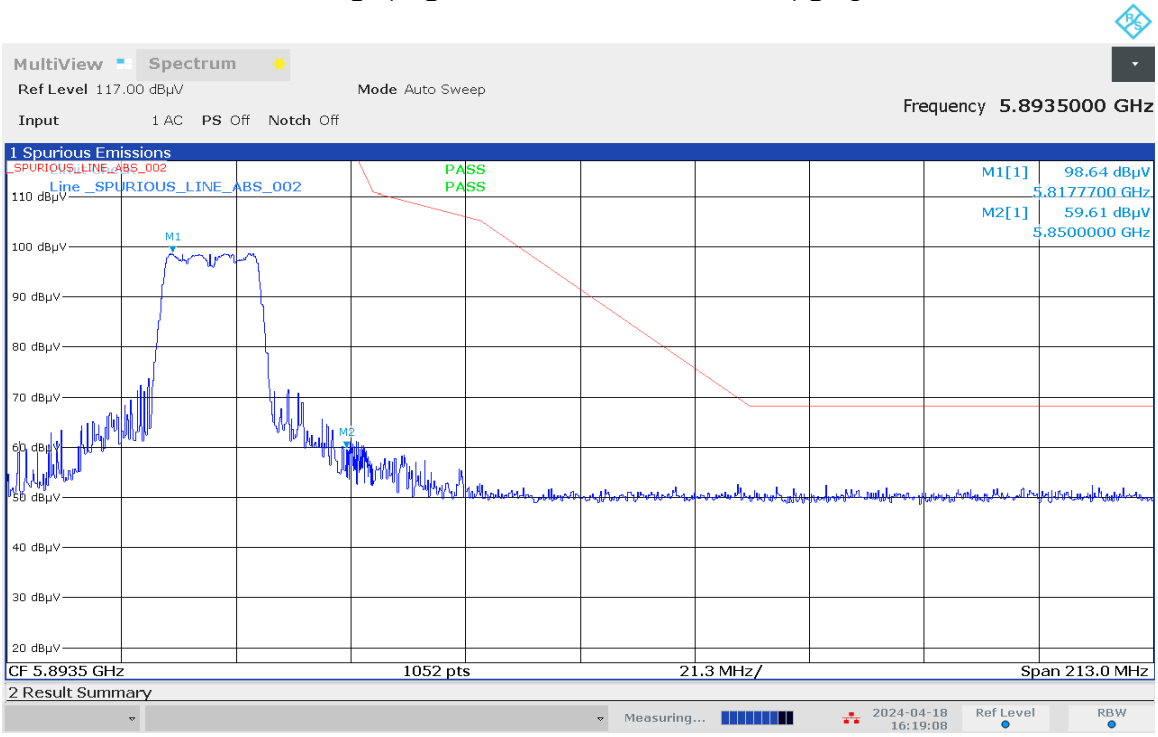
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 18 Apr, 2024**
System MU: 5.84dB

Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



04:15:31 PM 04/18/2024

Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot

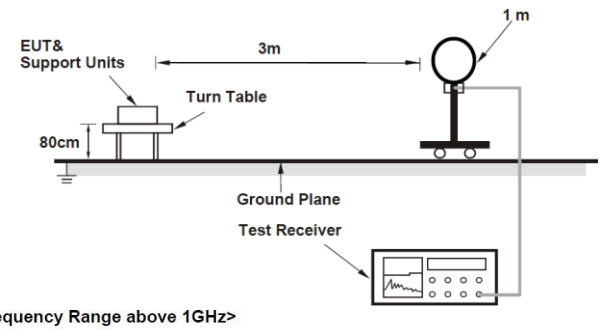


04:19:09 PM 04/18/2024

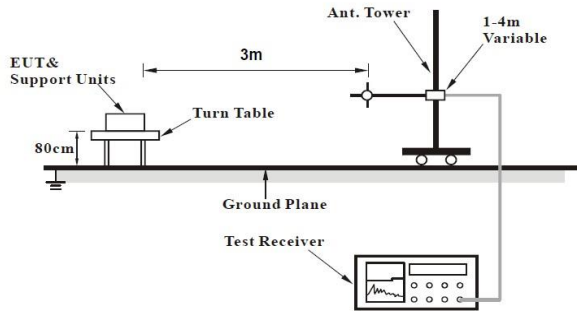
6.7. Radiated Spurious Emission Measurement

6.7.1. Test Setup

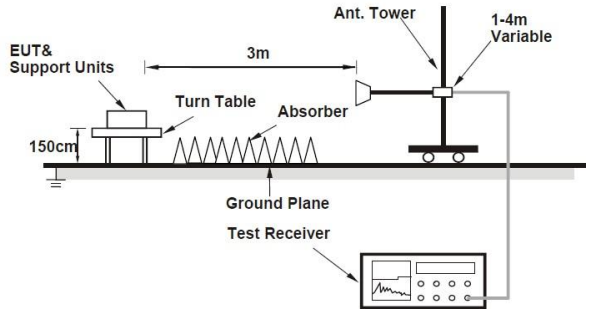
<Radiated emission below 30MHz>



<Frequency Range below 1GHz>



<Frequency Range above 1GHz>



1. The EUT is placed on the top of a rotating table 0.8m/1.5m above the ground at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
2. The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
3. The antenna is Bilog/Horn antenna depend on which frequency range uses, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
4. For each suspected emission, the EUT is arranged to its worst case and then the antenna is tuned to heights from 1m to 4m and the rotatable table is turned from 0 degrees to 360 degrees to find the maximum reading.
5. The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.

NOTE:

a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
c. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 10Hz for Average detection using reduced video bandwidth (Duty cycle ≥98%) at frequency above 1GHz.
d. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 1/ τ Hz, where τ is minimum transmitter on time (Duty cycle <98%) for Average detection using reduced video bandwidth at frequency above 1GHz.
e. All modes of operation were investigated and the worst-case emissions are reported.

6.7.2. Test Limits

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

NOTE:

d. The lower limit shall apply at the transition frequencies.
e. Emission level (dBuV/m) = 20 log Emission level (uV/m).
f. For frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

For Radiated emissions which fall out of the restricted bands must comply with the radiated emission limits specified as below table.

Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		Field Strength at 3 m	
		PK: 74 (dBμV/m)	AV: 54 (dBμV/m)
Frequency Band	**Applicable To**	**EIRP Limit**	**Equivalent Field Strength at 3 m**
5150~5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBμV/m)
5250~5350 MHz	15.407(b)(2)		
5470~5725 MHz	15.407(b)(3)		
5725~5850 MHz	15.407(b)(4)(i)	PK:-27 (dBm/MHz) *1 PK:10 (dBm/MHz) *2 PK:15.6 (dBm/MHz) *3 PK:27 (dBm/MHz) *4	PK: 68.2 (dBμV/m) *1 PK:105.2 (dBμV/m) *2 PK: 110.8 (dBμV/m) *3 PK:122.2 (dBμV/m) *4
	15.407(b)(4)(ii)	Emission limits in section 15.247(d)	

*1 beyond 75 MHz or more above of the band edge.
*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.
*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.
*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

NOTE:

The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

$$E = ((1000000 \sqrt{} (30P)) / 3) \ \mu V/m$$, where P is the eirp (Watts)

6.7.3. Test Data

802.11a

Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (16dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5180.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

Radiated Emission (Low Channel) tabular data

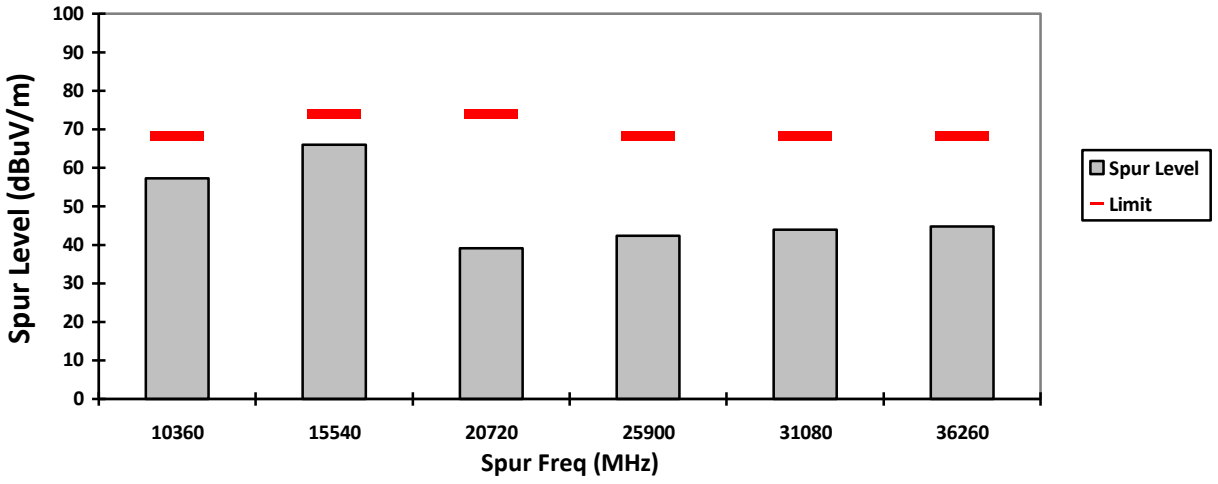
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10360	-	57.2965**	-	-	68.2000	-	-	10.9035	-	-
15540	-	65.9995**	52.2189**	-	74.0000	54.0000	-	8.0005	1.7811	-
20720	-	39.1430**	-	-	74.0000	-	-	34.8570	-	-
25900	-	42.3628**	-	-	68.2000	-	-	25.8372	-	-
31080	-	43.9765**	-	-	68.2000	-	-	24.2235	-	-
36260	-	44.7831**	-	-	68.2000	-	-	23.4169	-	-
Horizontal Radiated Emission Result										
10360	-	57.2729**	-	-	68.2000	-	-	10.9271	-	-
15540	-	65.6344**	52.2190**	-	74.0000	54.0000	-	8.3656	1.7810	-
20720	-	39.4898**	-	-	74.0000	-	-	34.5102	-	-
25900	-	42.1605**	-	-	68.2000	-	-	26.0395	-	-
31080	-	41.5318**	-	-	68.2000	-	-	26.6682	-	-
36260	-	45.0648**	-	-	68.2000	-	-	23.1352	-	-

Remarks: Pass Result	Marginal Result	Fail Result

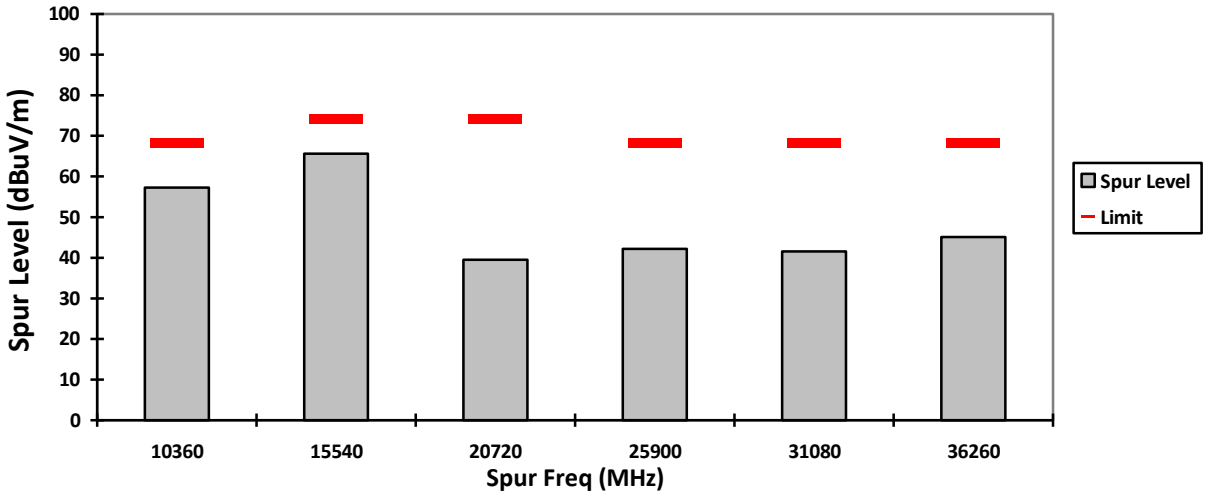
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

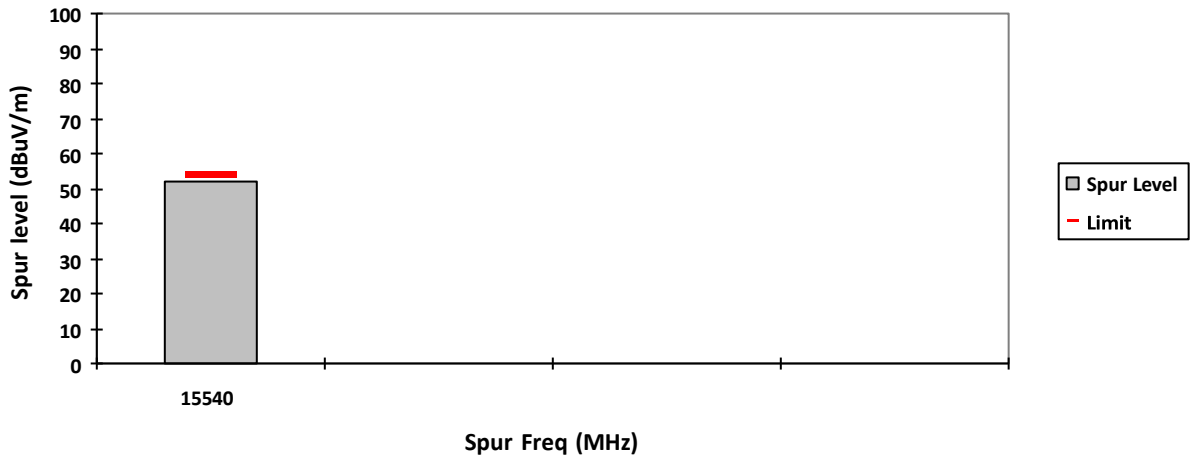
VERTICAL, PK



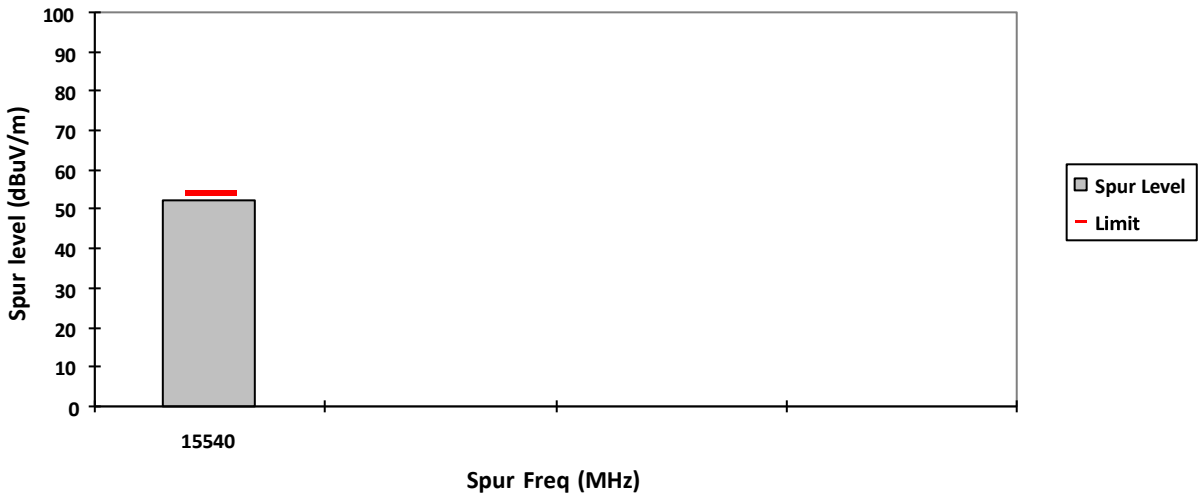
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (17dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5220.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

Radiated Emission (Mid Channel) tabular data

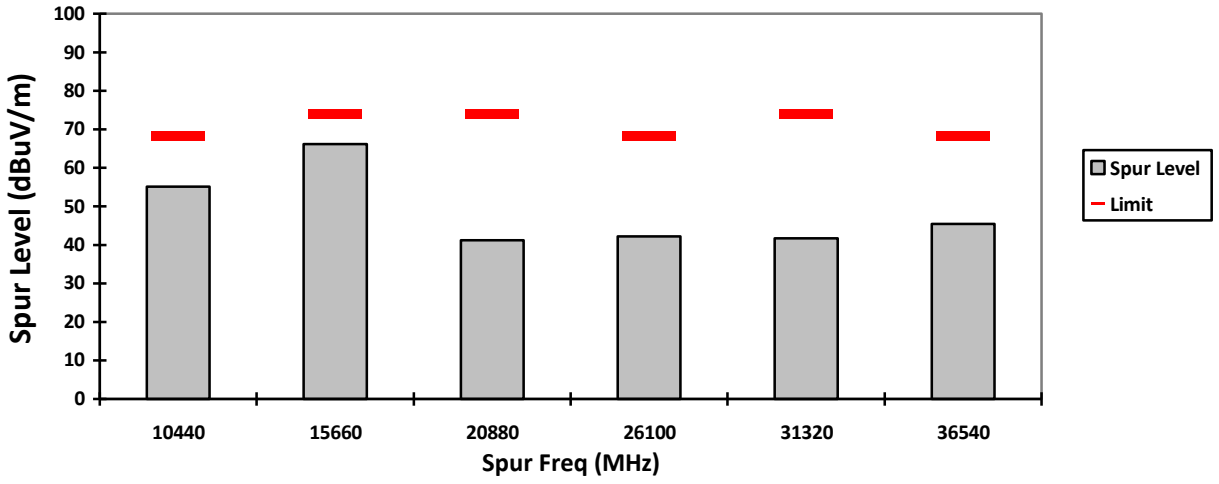
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10440	-	55.1412**	-	-	68.2000	-	-	13.0588	-	-
15660	-	66.1291**	52.5067**	-	74.0000	54.0000	-	7.8709	1.4933	-
20880	-	41.2368**	-	-	74.0000	-	-	32.7632	-	-
26100	-	42.1981**	-	-	68.2000	-	-	26.0019	-	-
31320	-	41.6837**	-	-	74.0000	-	-	32.3163	-	-
36540	-	45.4420**	-	-	68.2000	-	-	22.7580	-	-
Horizontal Radiated Emission Result										
10440	-	56.9682**	-	-	68.2000	-	-	11.2318	-	-
15660	-	66.0969**	52.4999**	-	74.0000	54.0000	-	7.9031	1.5001	-
20880	-	40.9801**	-	-	74.0000	-	-	33.0199	-	-
26100	-	42.0378**	-	-	68.2000	-	-	26.1622	-	-
31320	-	42.9262**	-	-	74.0000	-	-	31.0738	-	-
36540	-	44.7298**	-	-	68.2000	-	-	23.4702	-	-

Remarks: Pass Result	Marginal Result	Fail Result

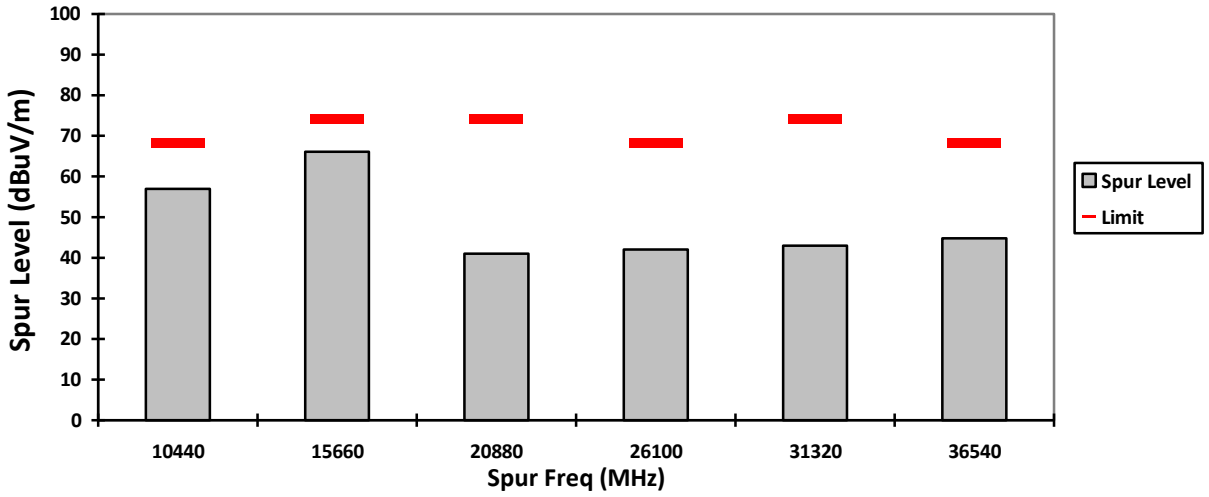
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

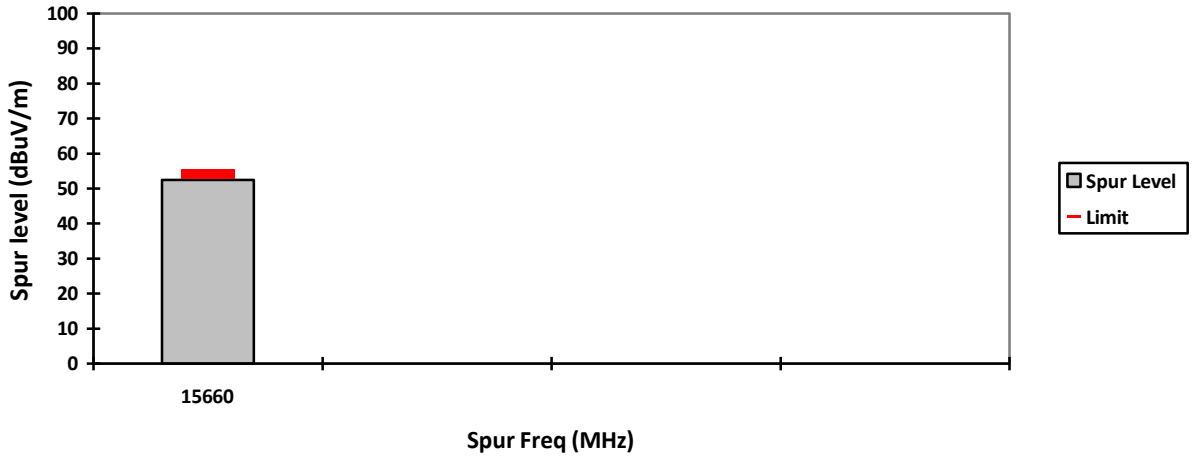
VERTICAL, PK



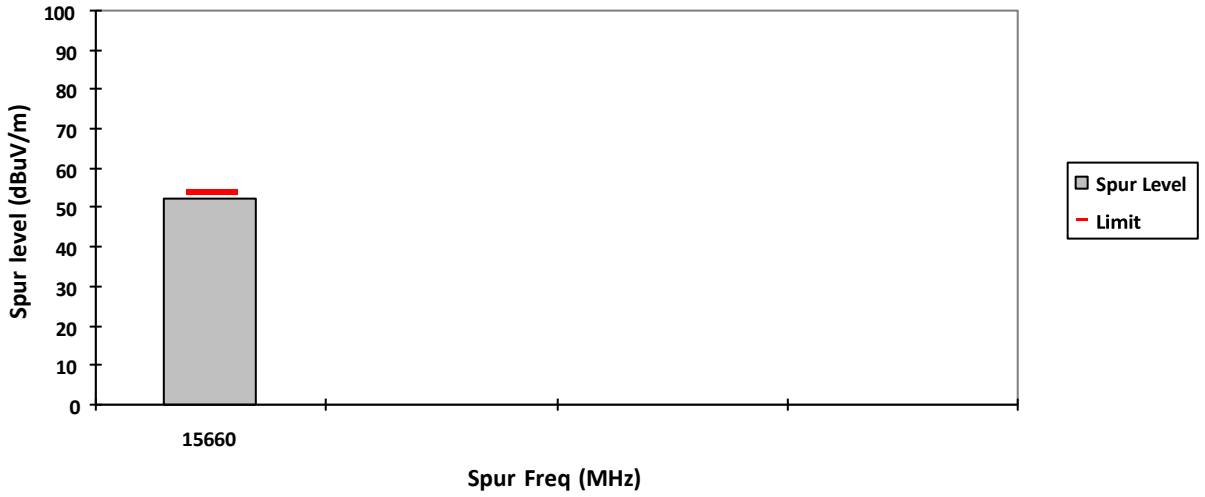
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (17dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5240.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

Radiated Emission (High Channel) tabular data

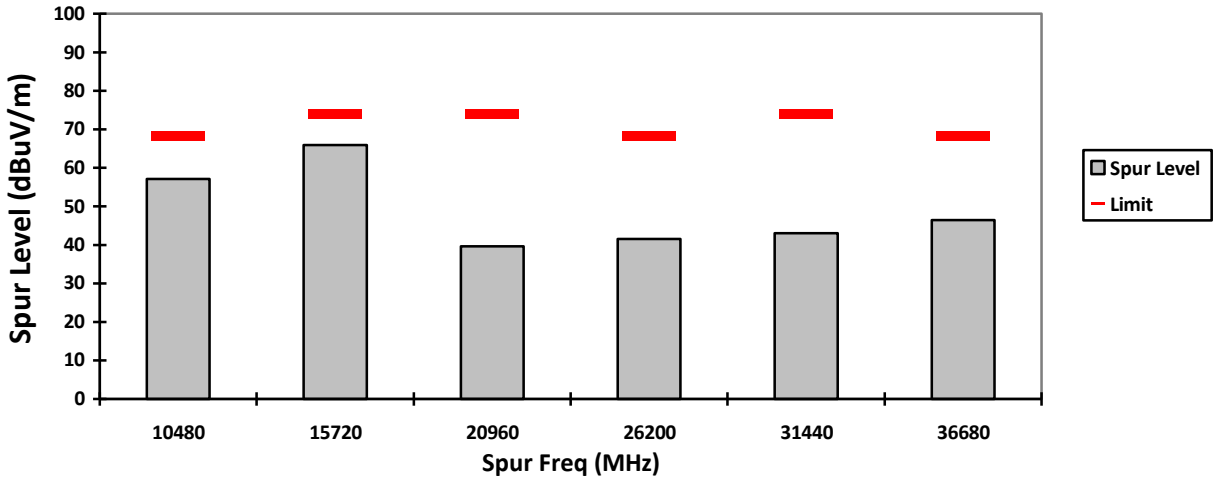
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10480	-	57.1196**	-	-	68.2000	-	-	11.0804	-	-
15720	-	65.9340**	52.5394**	-	74.0000	54.0000	-	8.0660	1.4606	-
20960	-	39.6314**	-	-	74.0000	-	-	34.3686	-	-
26200	-	41.5731**	-	-	68.2000	-	-	26.6269	-	-
31440	-	43.0404**	-	-	74.0000	-	-	30.9596	-	-
36680	-	46.4251**	-	-	68.2000	-	-	21.7749	-	-
Horizontal Radiated Emission Result										
10480	-	56.6127**	-	-	68.2000	-	-	11.5873	-	-
15720	-	66.1800**	52.5329**	-	74.0000	54.0000	-	7.8200	1.4671	-
20960	-	40.3663**	-	-	74.0000	-	-	33.6337	-	-
26200	-	41.8473**	-	-	68.2000	-	-	26.3527	-	-
31440	-	41.5880**	-	-	74.0000	-	-	32.4120	-	-
36680	-	45.2112**	-	-	68.2000	-	-	22.9888	-	-

Remarks: Pass Result	Marginal Result	Fail Result

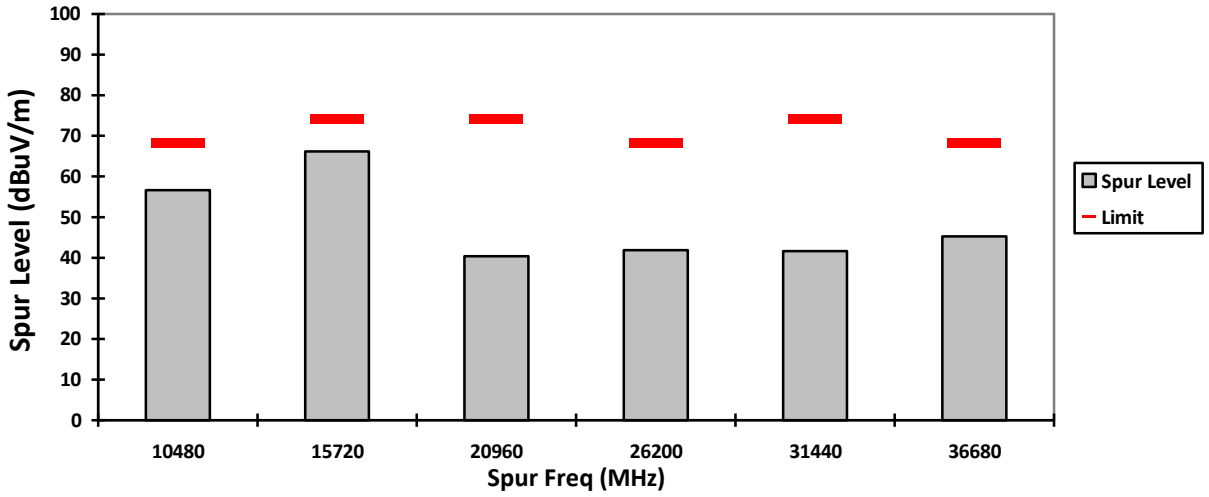
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

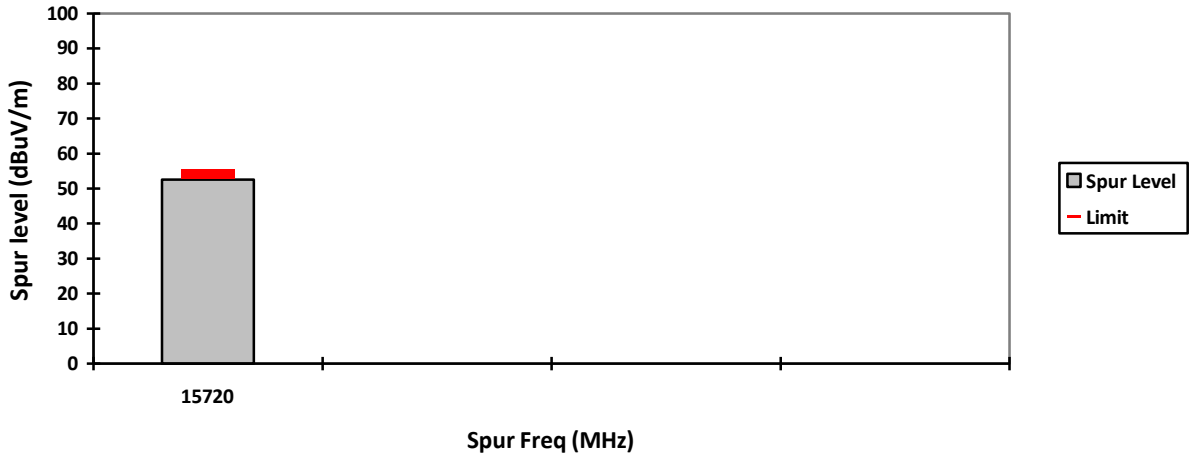
VERTICAL, PK



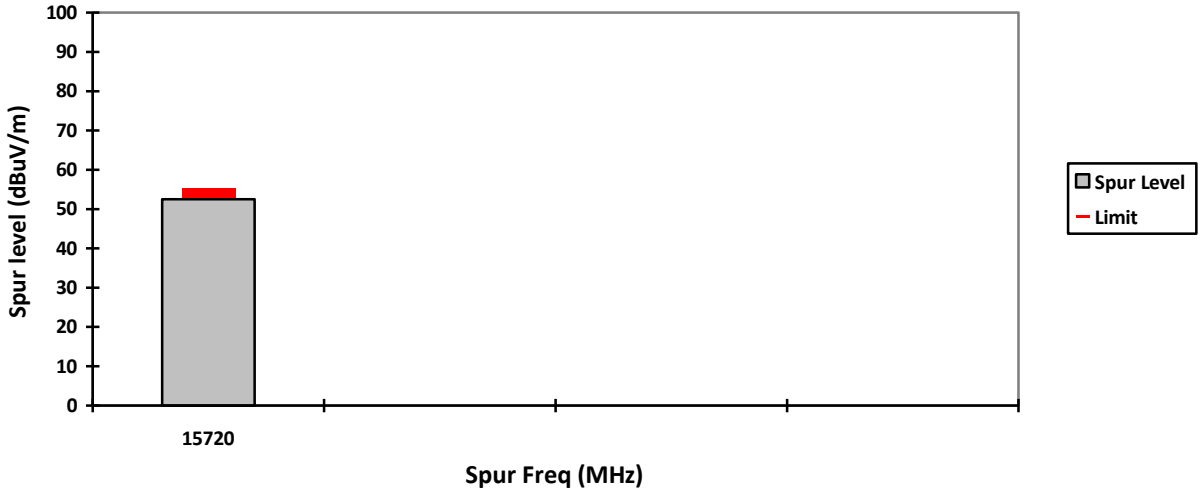
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (17dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5260.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

Radiated Emission (Low Channel) tabular data

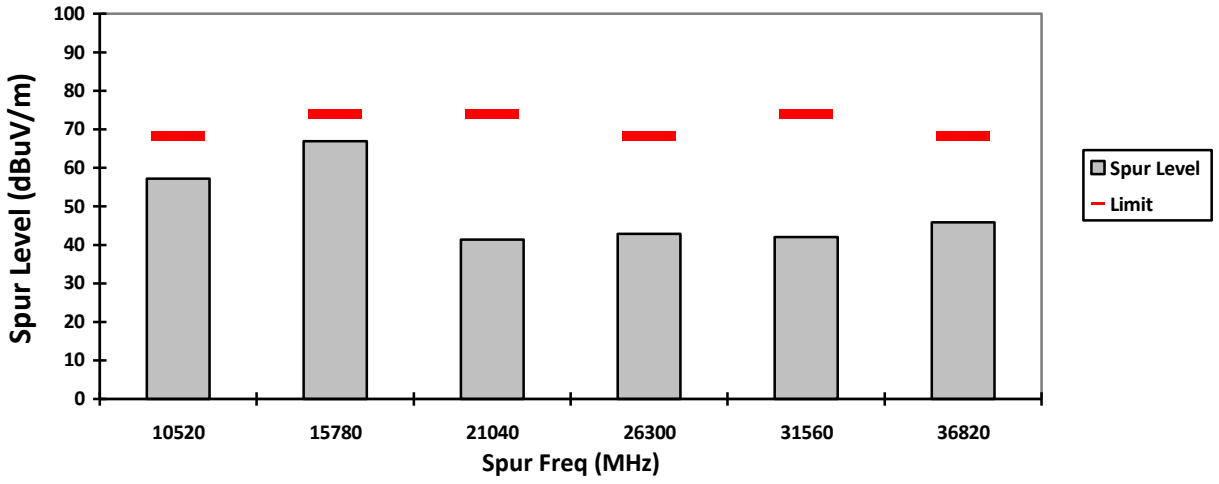
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10520	-	57.1745**	-	-	68.2000	-	-	11.0255	-	-
15780	-	66.9027**	53.3509**	-	74.0000	54.0000	-	7.0973	0.6491	-
21040	-	41.4118**	-	-	74.0000	-	-	32.5882	-	-
26300	-	42.8325**	-	-	68.2000	-	-	25.3675	-	-
31560	-	42.0652**	-	-	74.0000	-	-	31.9348	-	-
36820	-	45.8140**	-	-	68.2000	-	-	22.3860	-	-
Horizontal Radiated Emission Result										
10520	-	56.9118**	-	-	68.2000	-	-	11.2882	-	-
15780	-	66.9916**	53.3393**	-	74.0000	54.0000	-	7.0084	0.6607	-
21040	-	42.2312**	-	-	74.0000	-	-	31.7688	-	-
26300	-	43.1237**	-	-	68.2000	-	-	25.0763	-	-
31560	-	42.0093**	-	-	74.0000	-	-	31.9907	-	-
36820	-	46.2909**	-	-	68.2000	-	-	21.9091	-	-

Remarks: Pass Result	Marginal Result	Fail Result

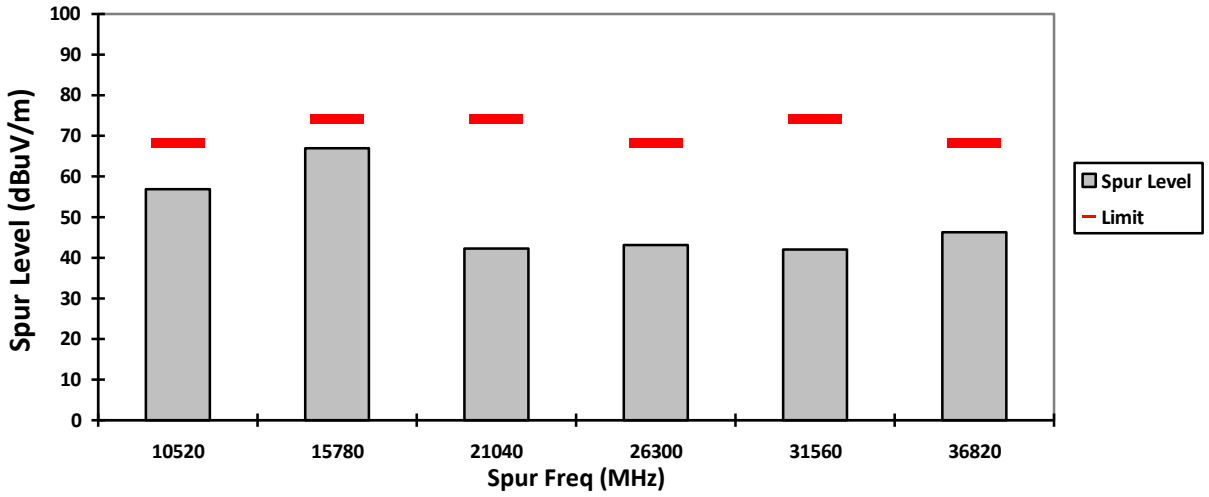
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

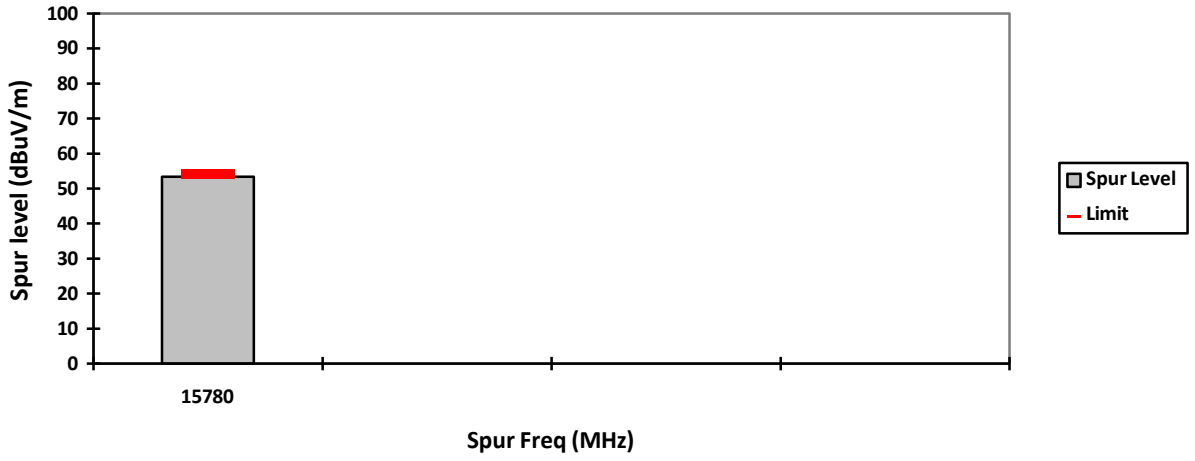
VERTICAL, PK



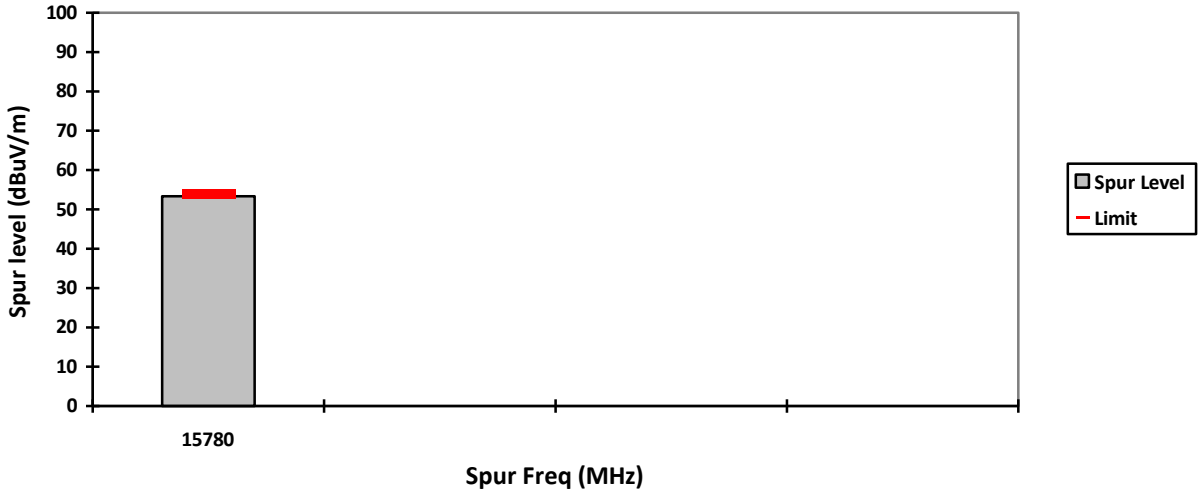
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (17dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5300.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

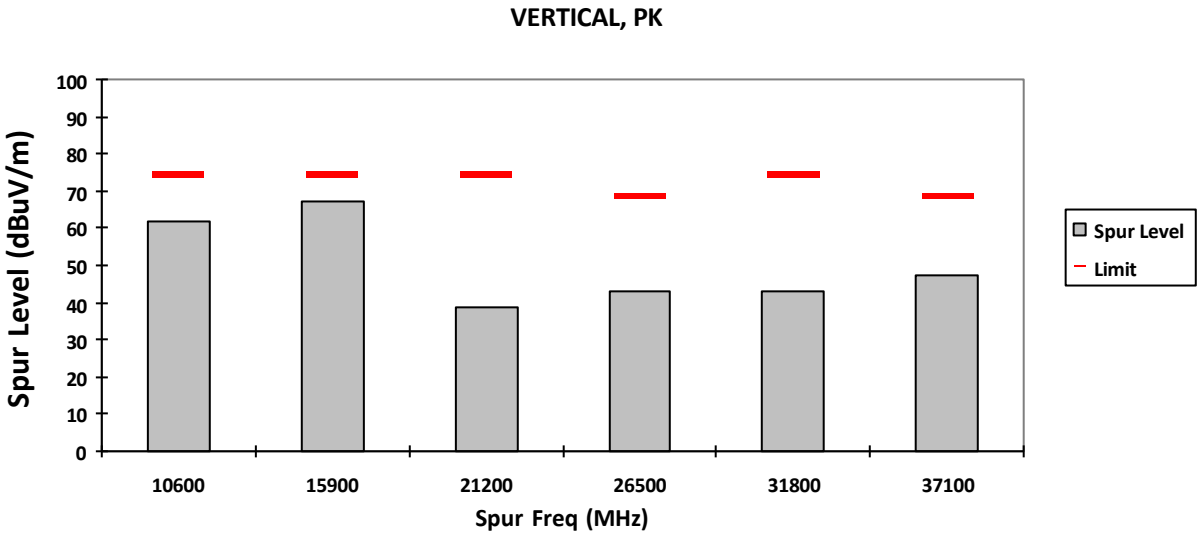
Radiated Emission (Mid Channel) tabular data

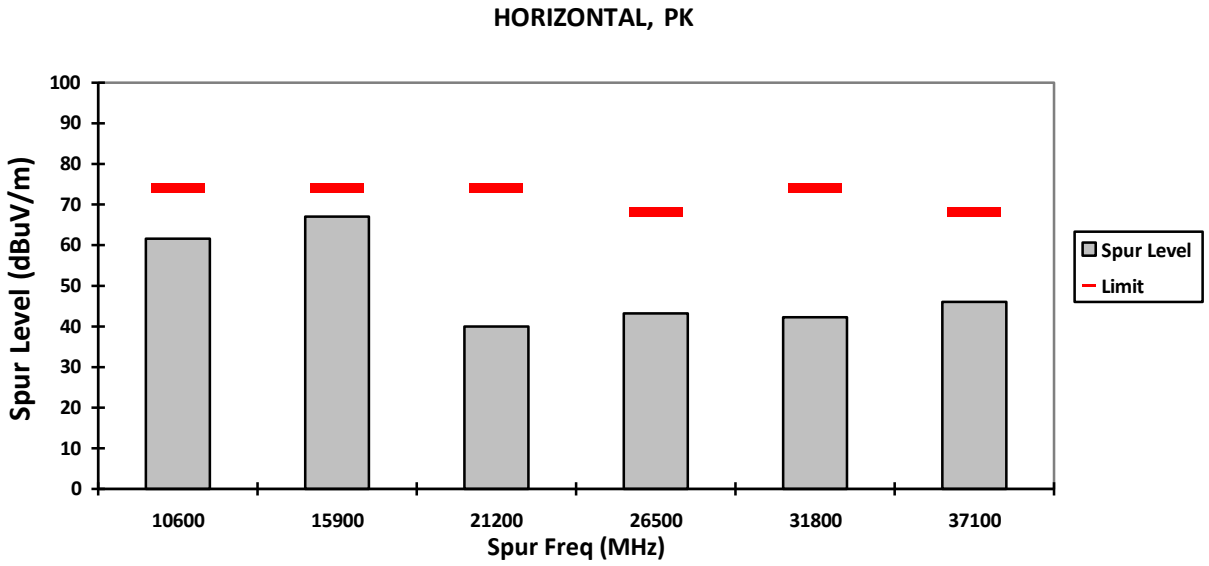
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10600	-	61.9920**	48.3398**	-	74.0000	54.0000	-	12.0080	5.6602	-
15900	-	67.2631**	53.0684**	-	74.0000	54.0000	-	6.7369	0.9316	-
21200	-	38.7922**	-	-	74.0000	-	-	35.2078	-	-
26500	-	42.7967**	-	-	68.2000	-	-	25.4033	-	-
31800	-	43.2256**	-	-	74.0000	-	-	30.7744	-	-
37100	-	47.3856**	-	-	68.2000	-	-	20.8144	-	-
Horizontal Radiated Emission Result										
10600	-	61.6340**	39.2711**	-	68.2000	54.0000	-	6.5660	14.7289	-
15900	-	67.0557**	53.0696**	-	74.0000	54.0000	-	6.9443	0.9304	-
21200	-	40.0060**	-	-	74.0000	-	-	33.9940	-	-
26500	-	43.2124**	-	-	68.2000	-	-	24.9876	-	-
31800	-	42.2565**	-	-	74.0000	-	-	31.7435	-	-
37100	-	46.0417**	-	-	68.2000	-	-	22.1583	-	-

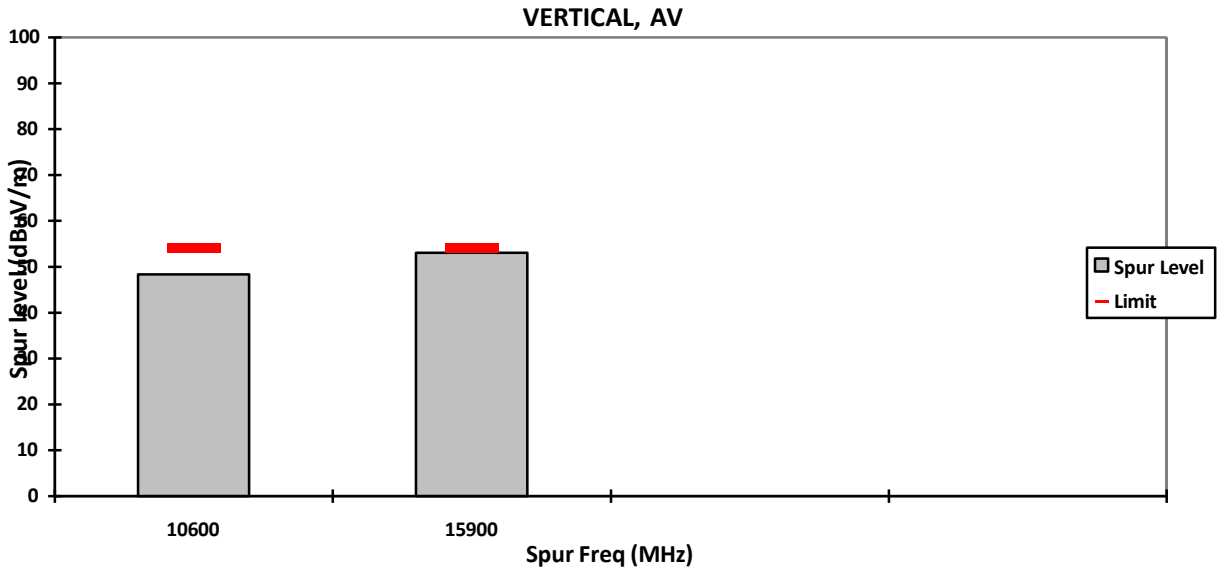
Remarks: Pass Result	Marginal Result	Fail Result

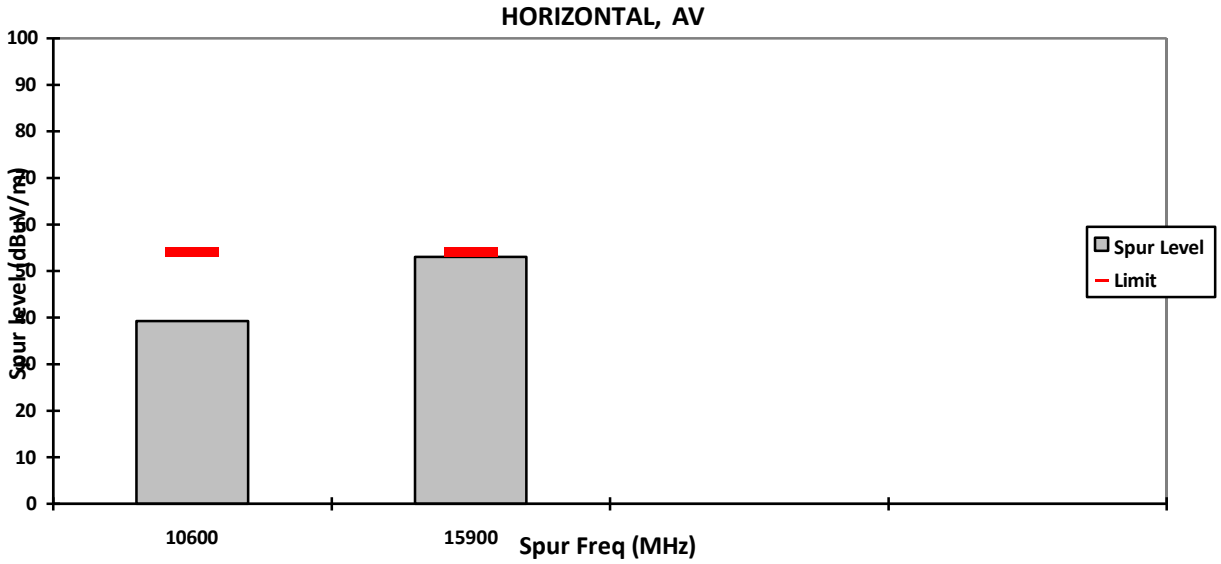
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**


VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10600
15900
21200
26500
31800
37100
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10600
15900
21200
26500
31800
37100
Spur Freq (MHz)
Spur Level
Limit


VERTICAL, AV
Spur level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10600
15900
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, AV
Spur level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10600
15900
Spur Freq (MHz)
Spur Level
Limit

Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5320.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

Radiated Emission (High Channel) tabular data

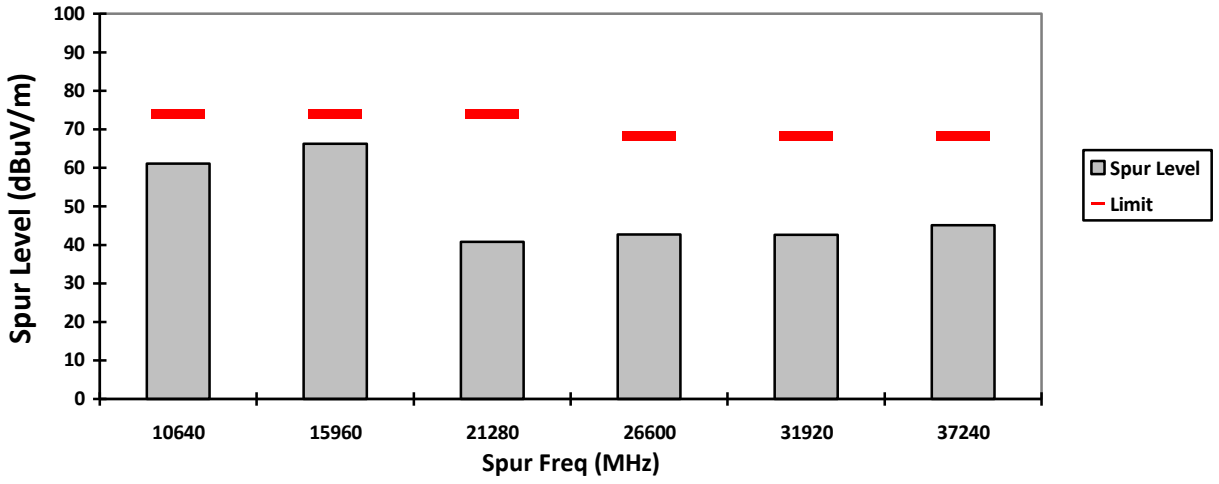
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10640	-	61.1165**	47.5226**	-	74.0000	54.0000	-	12.8835	6.4774	-
15960	-	66.2533**	52.6719**	-	74.0000	54.0000	-	7.7467	1.3281	-
21280	-	40.7673**	-	-	74.0000	-	-	33.2327	-	-
26600	-	42.7217**	-	-	68.2000	-	-	25.4783	-	-
31920	-	42.6383**	-	-	68.2000	-	-	25.5617	-	-
37240	-	45.1196**	-	-	68.2000	-	-	23.0804	-	-
Horizontal Radiated Emission Result										
10640	-	60.9410**	47.5581**	-	74.0000	54.0000	-	13.0590	6.4419	-
15960	-	65.8984**	52.6763**	-	74.0000	54.0000	-	8.1016	1.3237	-
21280	-	40.6924**	-	-	74.0000	-	-	33.3076	-	-
26600	-	42.6007**	-	-	68.2000	-	-	25.5993	-	-
31920	-	43.1814**	-	-	68.2000	-	-	25.0186	-	-
37240	-	44.6581**	-	-	68.2000	-	-	23.5419	-	-

Remarks: Pass Result	Marginal Result	Fail Result

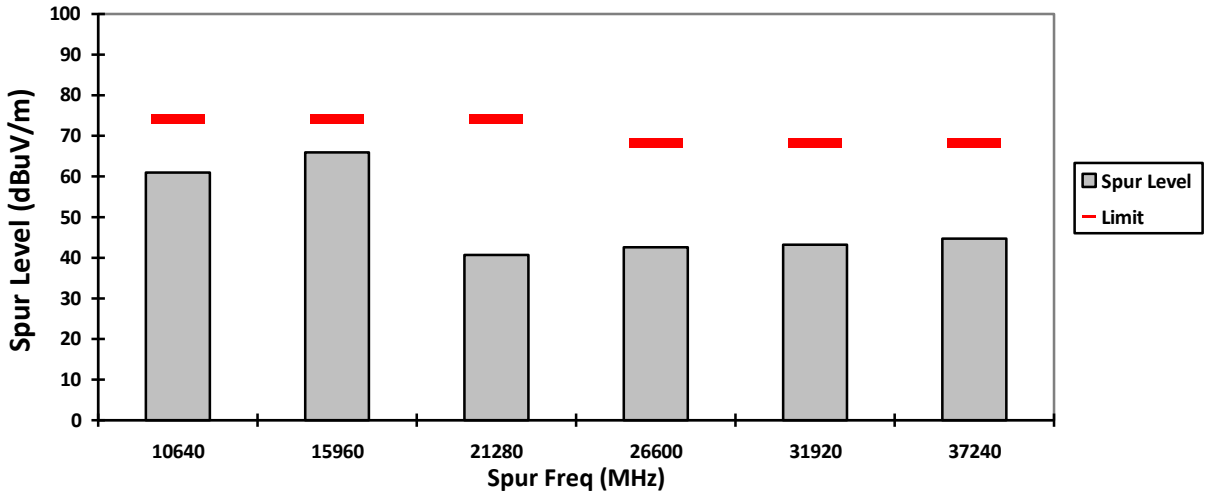
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

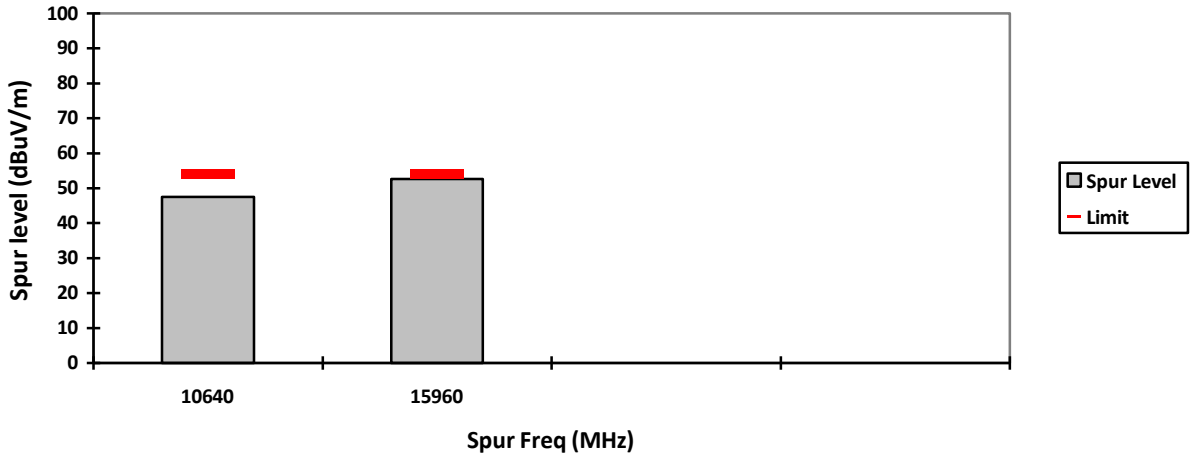
VERTICAL, PK



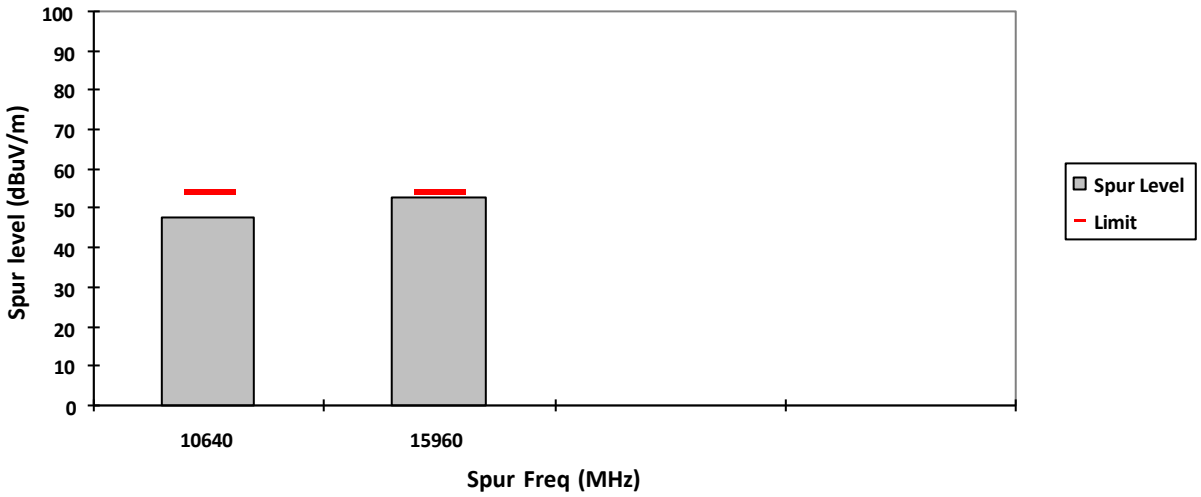
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (12dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

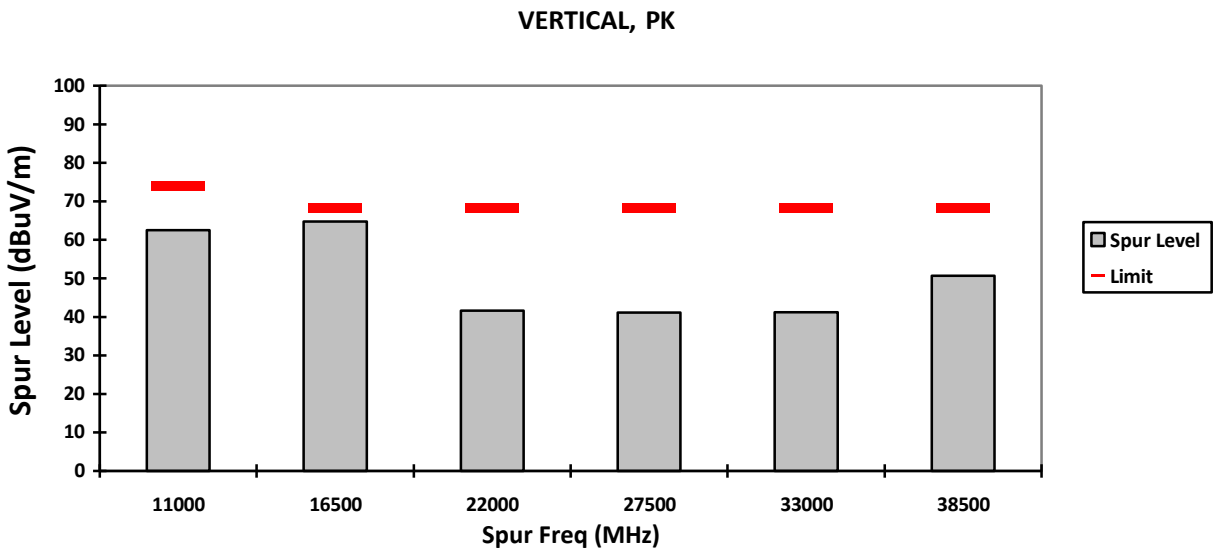
Radiated Emission (Low Channel) tabular data

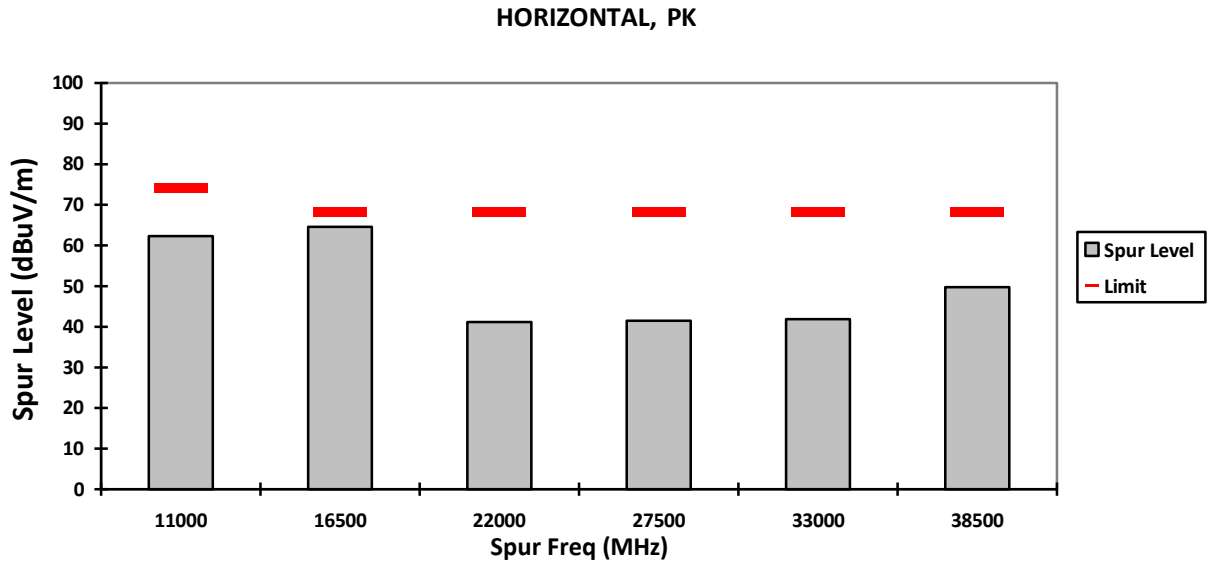
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11000	-	62.4944**	48.7426**	-	74.0000	54.0000	-	11.5056	5.2574	-
16500	-	64.7821**	-	-	68.2000	-	-	3.4179	-	-
22000	-	41.6491**	-	-	68.2000	-	-	26.5509	-	-
27500	-	41.1597**	-	-	68.2000	-	-	27.0403	-	-
33000	-	41.2086**	-	-	68.2000	-	-	26.9914	-	-
38500	-	50.6343**	-	-	68.2000	-	-	17.5657	-	-
Horizontal Radiated Emission Result										
11000	-	62.3475**	48.6256**	-	74.0000	54.0000	-	11.6525	5.3744	-
16500	-	64.5703**	-	-	68.2000	-	-	3.6297	-	-
22000	-	41.1864**	-	-	68.2000	-	-	27.0136	-	-
27500	-	41.4568**	-	-	68.2000	-	-	26.7432	-	-
33000	-	41.8498**	-	-	68.2000	-	-	26.3502	-	-
38500	-	49.7382**	-	-	68.2000	-	-	18.4618	-	-

Remarks: Pass Result	Marginal Result	Fail Result

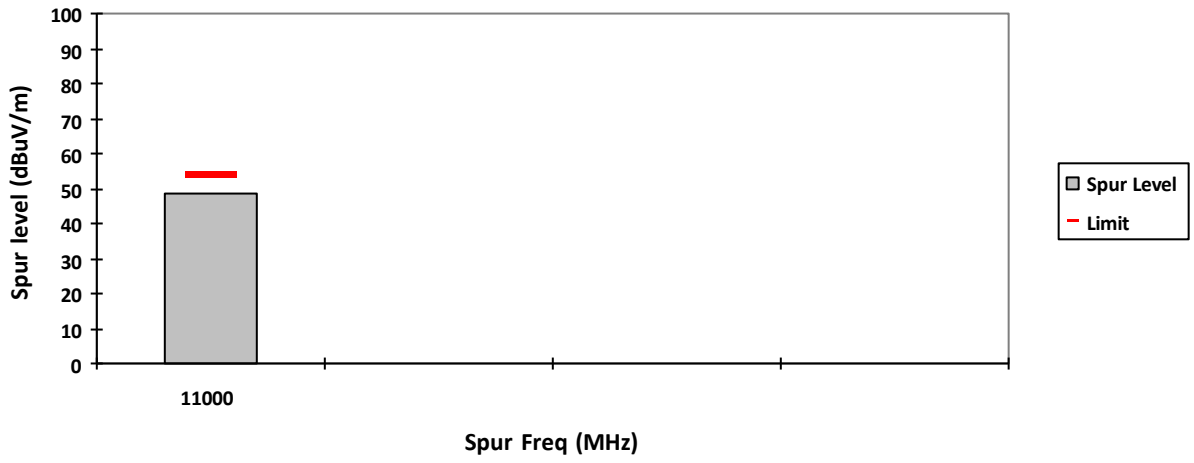
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

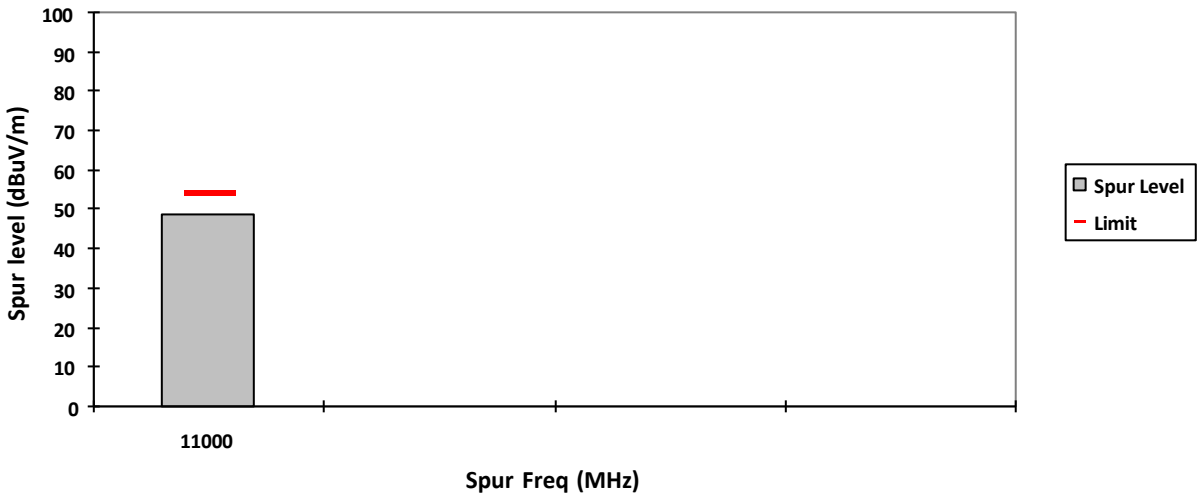

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11000
16500
22000
27500
33000
38500
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11000
16500
22000
27500
33000
38500
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5580.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

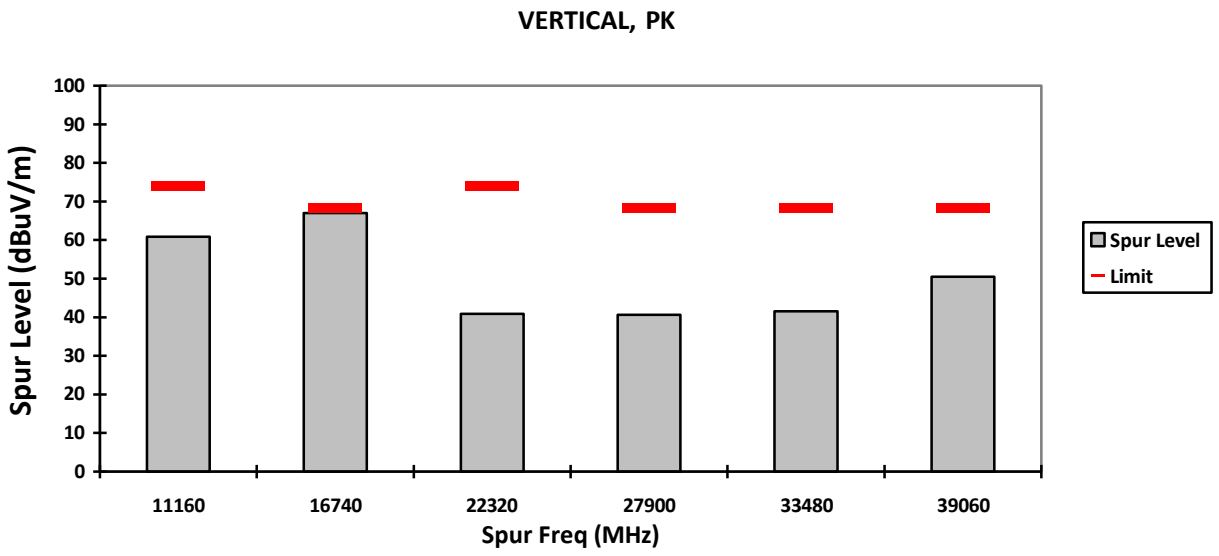
Radiated Emission (Mid Channel) tabular data

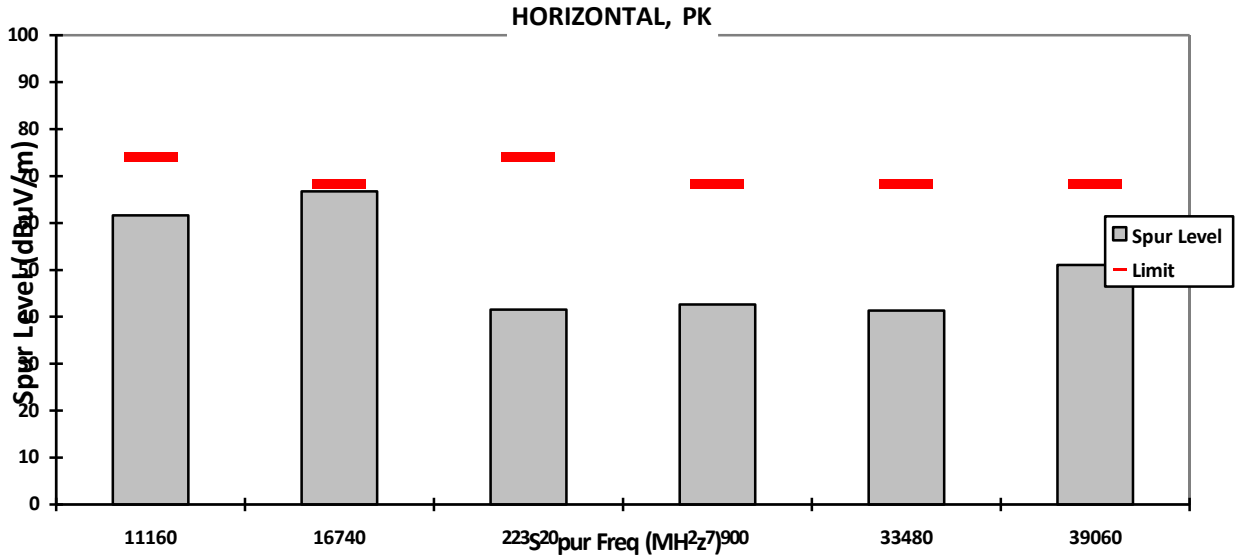
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11160	-	60.8779**	47.5942**	-	74.0000	54.0000	-	13.1221	6.4058	-
16740	-	66.9881**	-	-	68.2000	-	-	1.2119	-	-
22320	-	40.8885**	-	-	74.0000	-	-	33.1115	-	-
27900	-	40.6167**	-	-	68.2000	-	-	27.5833	-	-
33480	-	41.5185**	-	-	68.2000	-	-	26.6815	-	-
39060	-	50.4619**	-	-	68.2000	-	-	17.7381	-	-
Horizontal Radiated Emission Result										
11160	-	61.5926**	47.7028**	-	74.0000	54.0000	-	12.4074	6.2972	-
16740	-	66.7455**	-	-	68.2000	-	-	1.4545	-	-
22320	-	41.5546**	-	-	74.0000	-	-	32.4454	-	-
27900	-	42.5907**	-	-	68.2000	-	-	25.6093	-	-
33480	-	41.3495**	-	-	68.2000	-	-	26.8505	-	-
39060	-	51.0284**	-	-	68.2000	-	-	17.1716	-	-

Remarks: Pass Result	Marginal Result	Fail Result

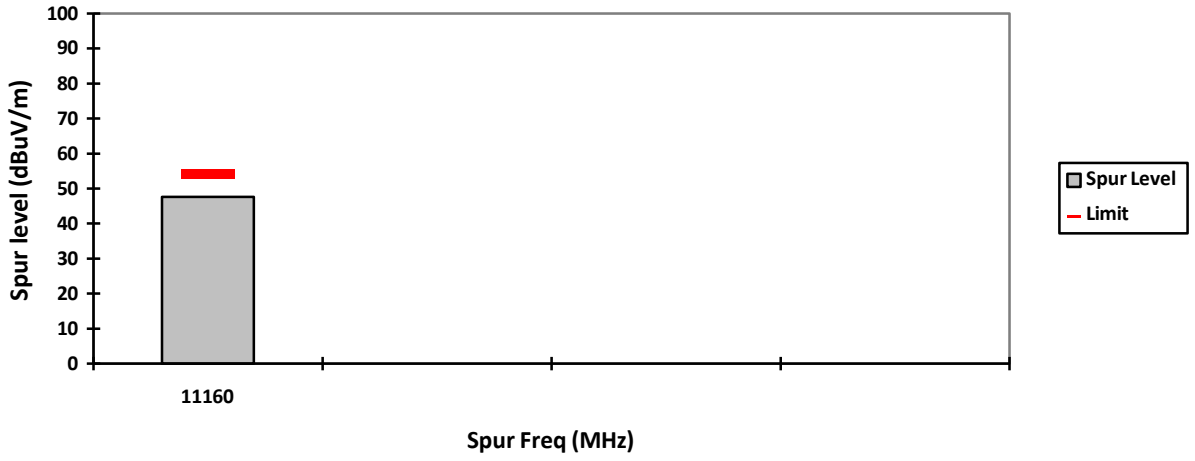
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

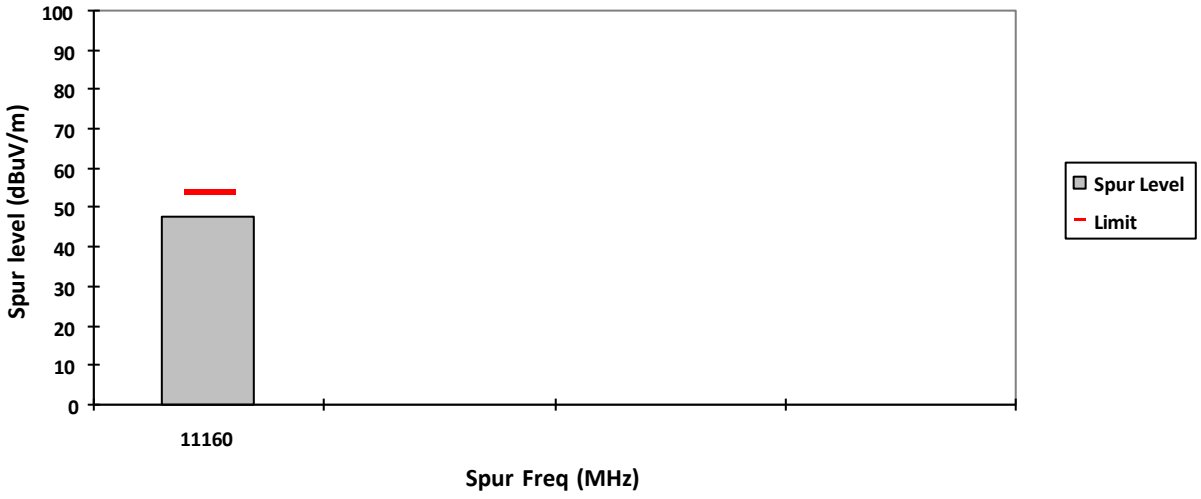

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11160
16740
22320
27900
33480
39060
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11160
16740
22320
27900
33480
39060
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Straddle Test Frequency: 5720.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

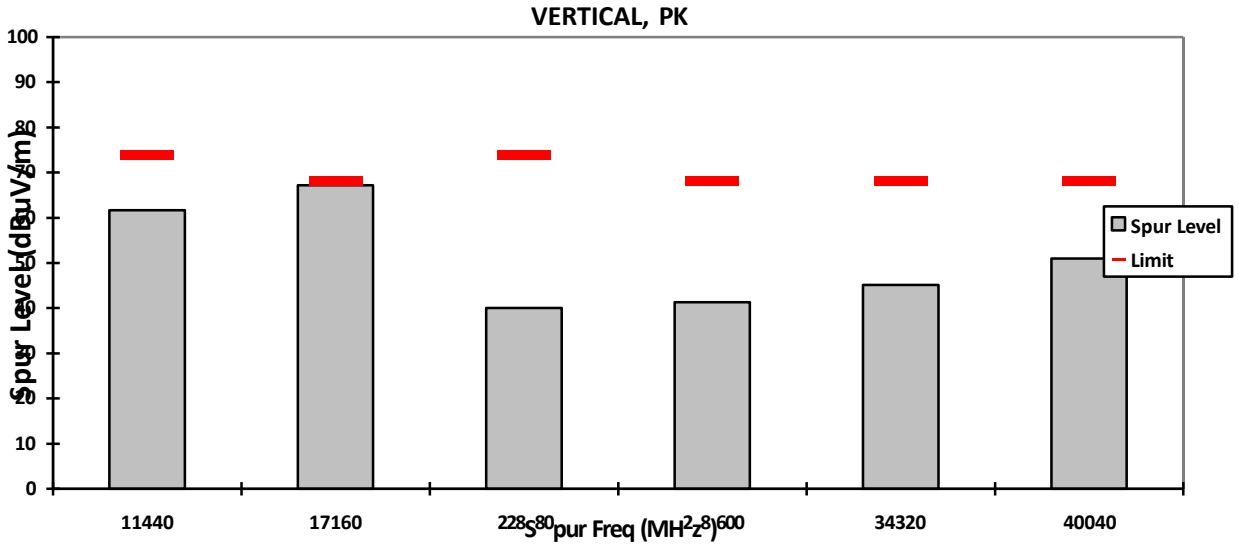
Radiated Emission (Straddle Channel) tabular data

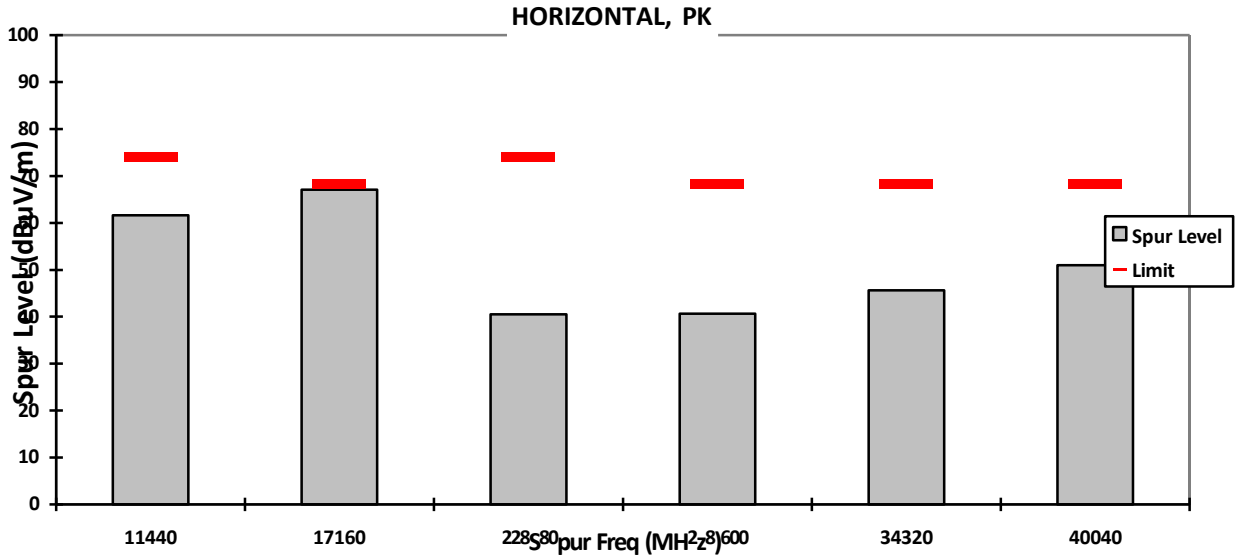
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11440	-	61.6602**	48.1963**	-	74.0000	54.0000	-	12.3398	5.8037	-
17160	-	67.1520**	-	-	68.2000	-	-	1.0480	-	-
22880	-	40.0446**	-	-	74.0000	-	-	33.9554	-	-
28600	-	41.3015**	-	-	68.2000	-	-	26.8985	-	-
34320	-	45.1012**	-	-	68.2000	-	-	23.0988	-	-
40040	-	50.9918**	-	-	68.2000	-	-	17.2082	-	-
Horizontal Radiated Emission Result										
11440	-	61.6022**	48.2991**	-	74.0000	54.0000	-	12.3978	5.7009	-
17160	-	67.0331**	-	-	68.2000	-	-	1.1669	-	-
22880	-	40.5369**	-	-	74.0000	-	-	33.4631	-	-
28600	-	40.6143**	-	-	68.2000	-	-	27.5857	-	-
34320	-	45.6323**	-	-	68.2000	-	-	22.5677	-	-
40040	-	51.0140**	-	-	68.2000	-	-	17.1860	-	-

Remarks: Pass Result	Marginal Result	Fail Result

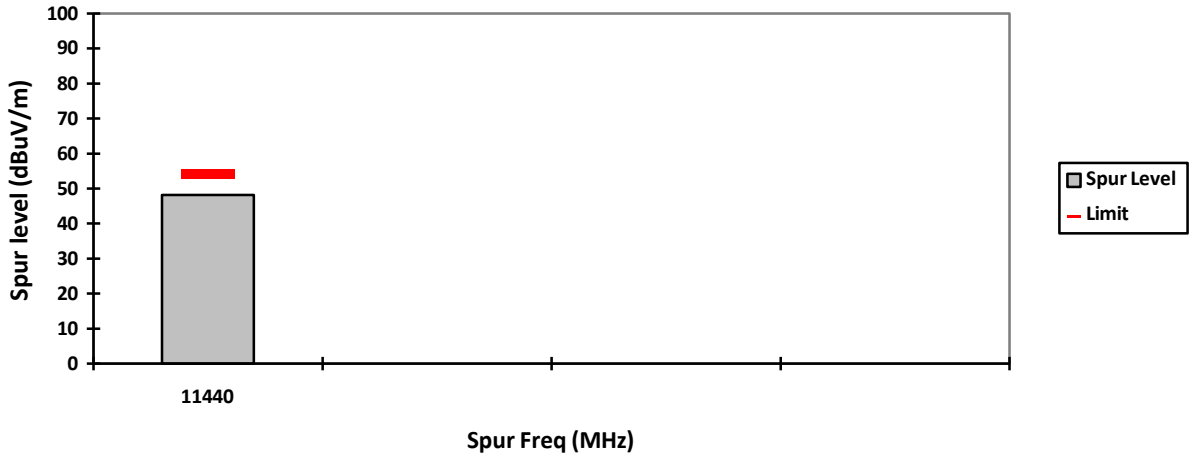
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

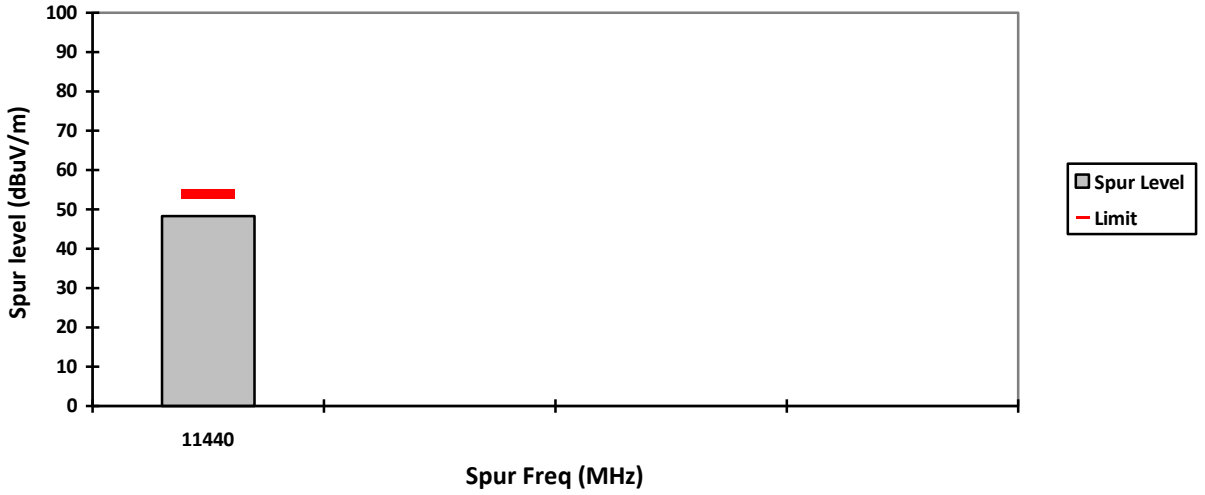

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11440
17160
22880
28600
34320
40040
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11440
17160
22880
28600
34320
40040
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5745.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

Radiated Emission (Low Channel) tabular data

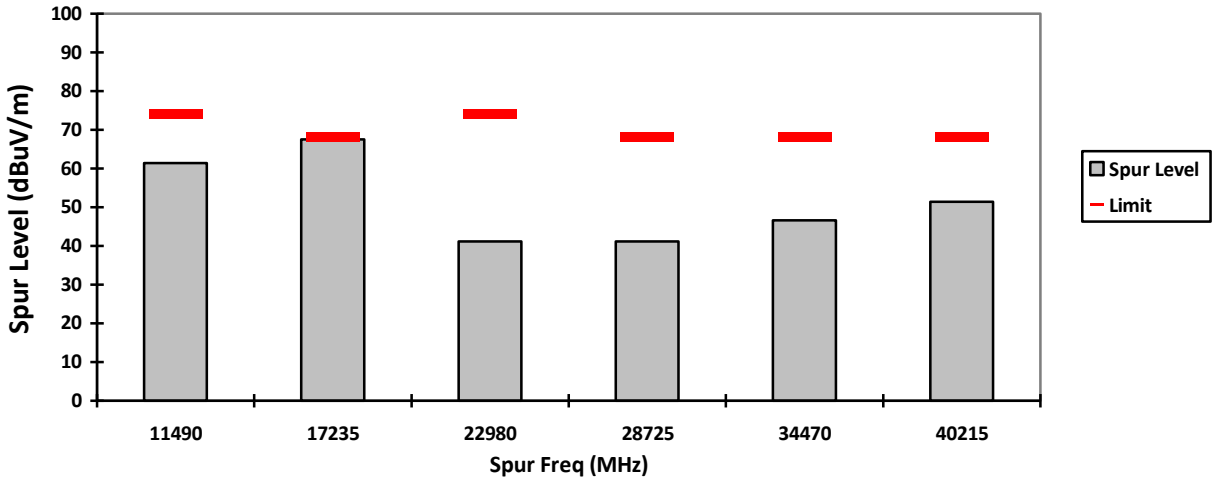
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11490	-	61.3829**	48.0678**	-	74.0000	54.0000	-	12.6171	5.9322	-
17235	-	67.5459**	-	-	68.2000	-	-	0.6541	-	-
22980	-	41.1339**	-	-	74.0000	-	-	32.8661	-	-
28725	-	41.1723**	-	-	68.2000	-	-	27.0277	-	-
34470	-	46.5839**	-	-	68.2000	-	-	21.6161	-	-
40215	-	51.3789**	-	-	68.2000	-	-	16.8211	-	-
Horizontal Radiated Emission Result										
11490	-	61.4608**	48.0783**	-	74.0000	54.0000	-	12.5392	5.9217	-
17235	-	67.5808**	-	-	68.2000	-	-	0.6192	-	-
22980	-	40.4743**	-	-	74.0000	-	-	33.5257	-	-
28725	-	40.7474**	-	-	68.2000	-	-	27.4526	-	-
34470	-	46.1539**	-	-	68.2000	-	-	22.0461	-	-
40215	-	51.2815**	-	-	68.2000	-	-	16.9185	-	-

Remarks: Pass Result	Marginal Result	Fail Result

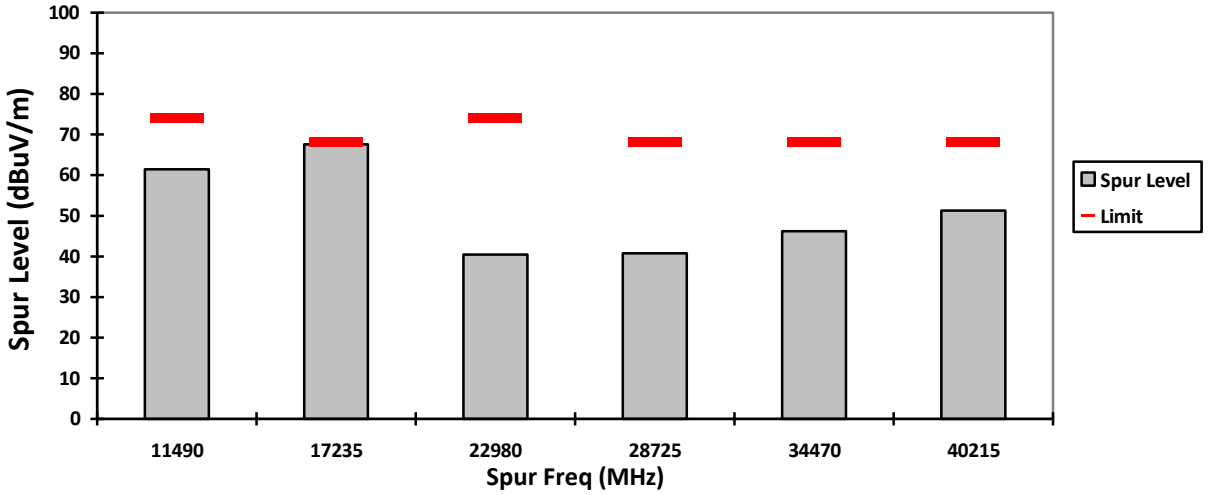
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

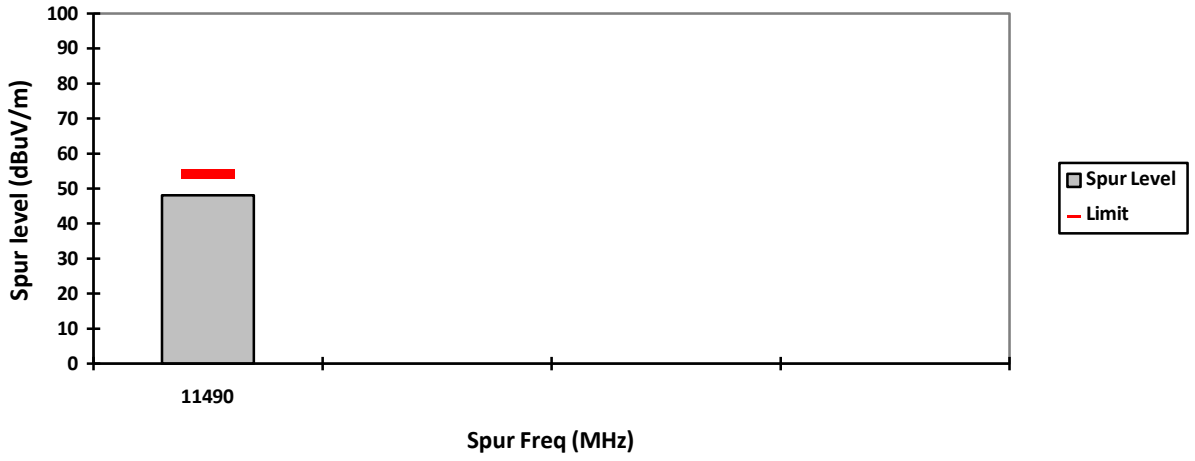
VERTICAL, PK



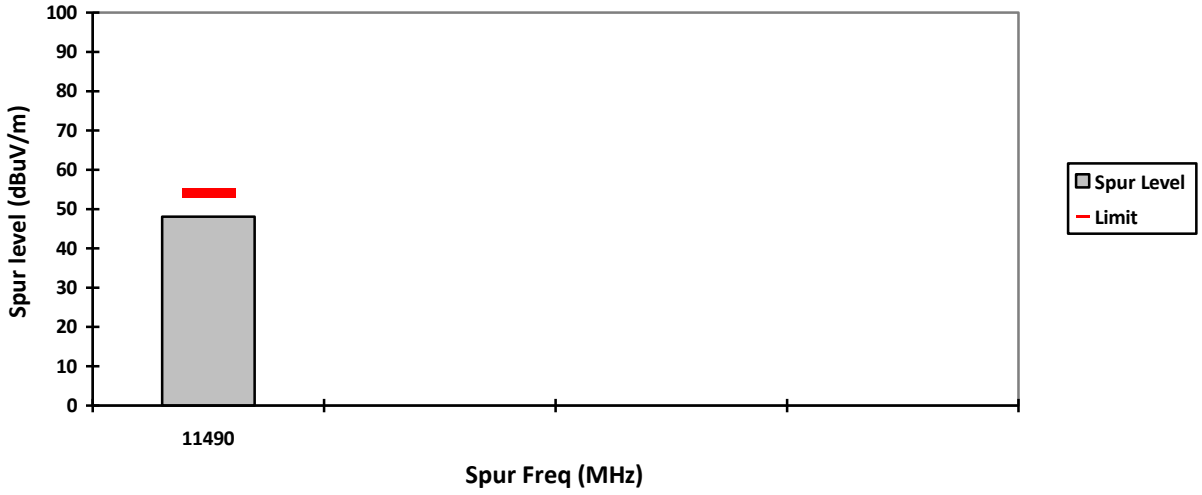
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5785.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

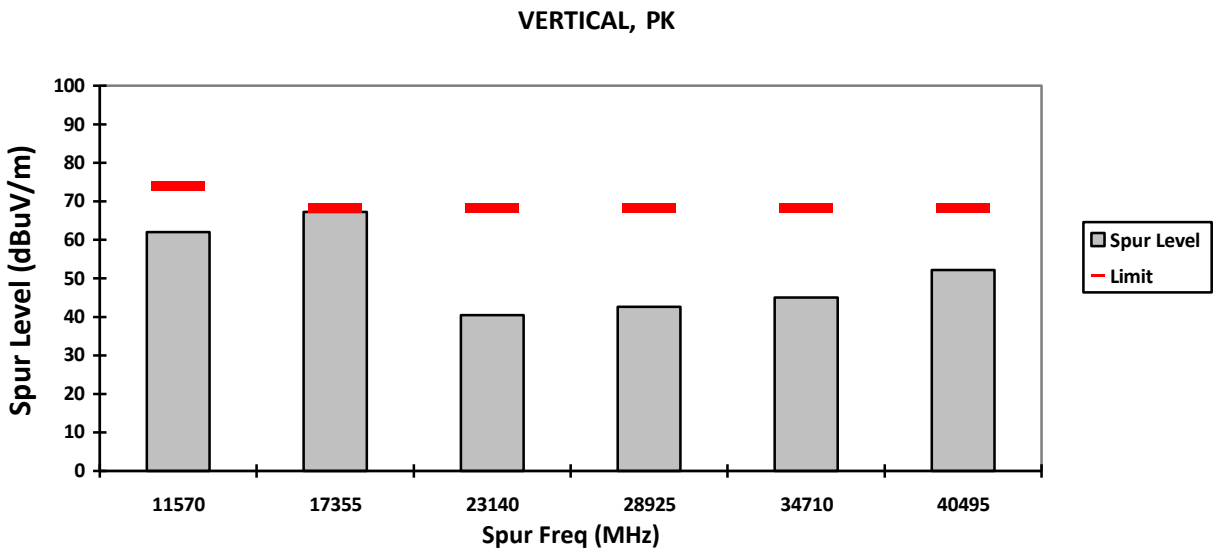
Radiated Emission (Mid Channel) tabular data

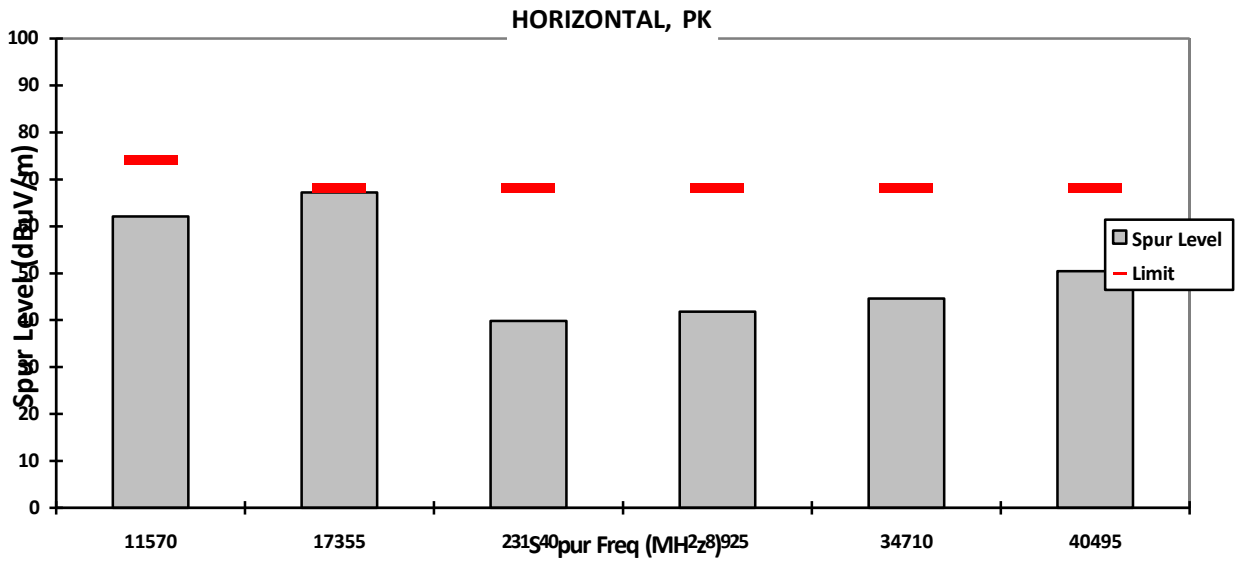
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11570	-	62.0135**	47.3556**	-	74.0000	54.0000	-	11.9865	6.6444	-
17355	-	67.2837**	-	-	68.2000	-	-	0.9163	-	-
23140	-	40.4627**	-	-	68.2000	-	-	27.7373	-	-
28925	-	42.6186**	-	-	68.2000	-	-	25.5814	-	-
34710	-	45.0524**	-	-	68.2000	-	-	23.1476	-	-
40495	-	52.1645**	-	-	68.2000	-	-	16.0355	-	-
Horizontal Radiated Emission Result										
11570	-	62.0757**	47.3650**	-	74.0000	54.0000	-	11.9243	6.6350	-
17355	-	67.2089**	-	-	68.2000	-	-	0.9911	-	-
23140	-	39.8484**	-	-	68.2000	-	-	28.3516	-	-
28925	-	41.7762**	-	-	68.2000	-	-	26.4238	-	-
34710	-	44.5828**	-	-	68.2000	-	-	23.6172	-	-
40495	-	50.4200**	-	-	68.2000	-	-	17.7800	-	-

Remarks: Pass Result	Marginal Result	Fail Result

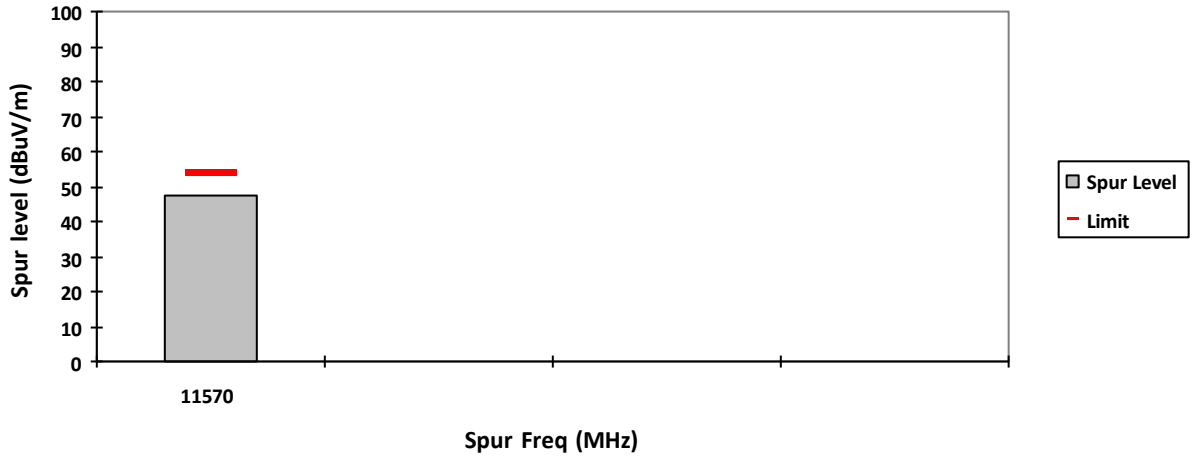
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

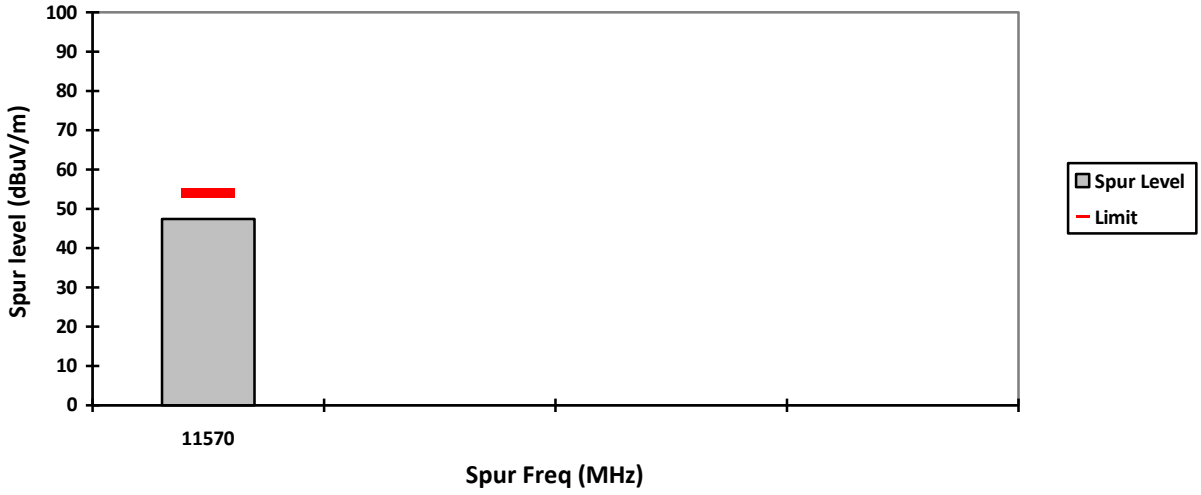

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11570
17355
23140
28925
34710
40495
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11570
17355
23140
28925
34710
40495
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5825.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11a 20MHz)

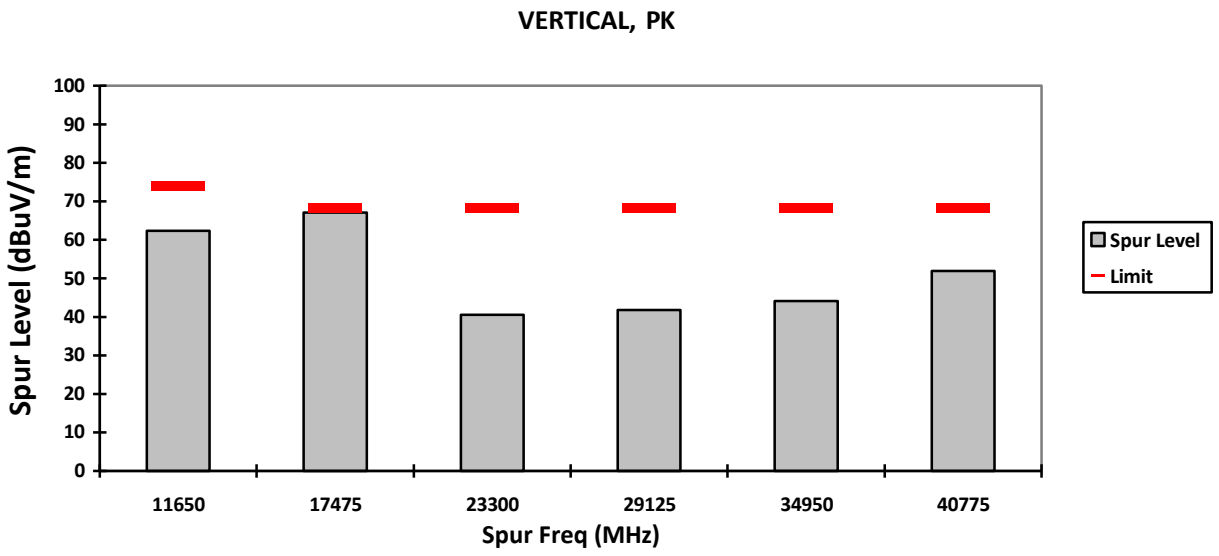
Radiated Emission (High Channel) tabular data

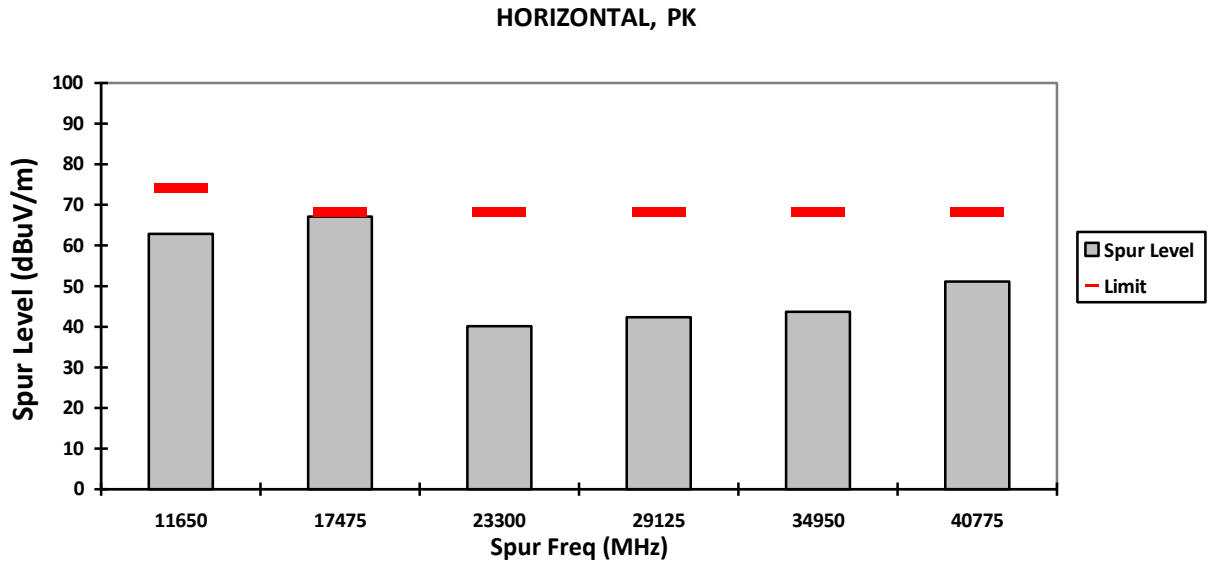
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11650	-	62.3509**	48.4202**	-	74.0000	54.0000	-	11.6491	5.5798	-
17475	-	67.0660**	-	-	68.2000	-	-	1.1340	-	-
23300	-	40.5249**	-	-	68.2000	-	-	27.6751	-	-
29125	-	41.8128**	-	-	68.2000	-	-	26.3872	-	-
34950	-	44.1288**	-	-	68.2000	-	-	24.0712	-	-
40775	-	51.8800**	-	-	68.2000	-	-	16.3200	-	-
Horizontal Radiated Emission Result										
11650	-	62.8641**	48.4075**	-	74.0000	54.0000	-	11.1359	5.5925	-
17475	-	67.1033**	-	-	68.2000	-	-	1.0967	-	-
23300	-	40.1095**	-	-	68.2000	-	-	28.0905	-	-
29125	-	42.3430**	-	-	68.2000	-	-	25.8570	-	-
34950	-	43.6666**	-	-	68.2000	-	-	24.5334	-	-
40775	-	51.1707**	-	-	68.2000	-	-	17.0293	-	-

Remarks: Pass Result	Marginal Result	Fail Result

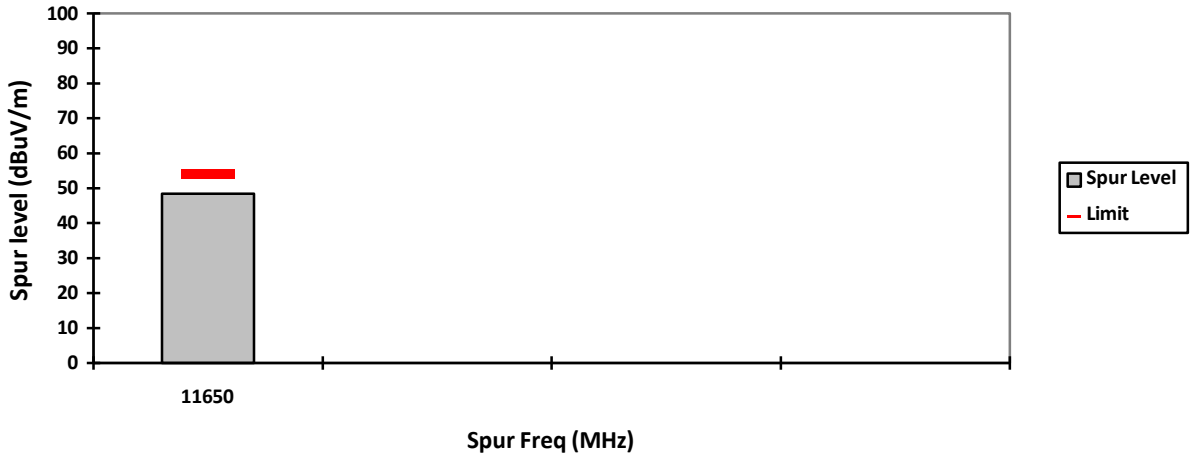
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

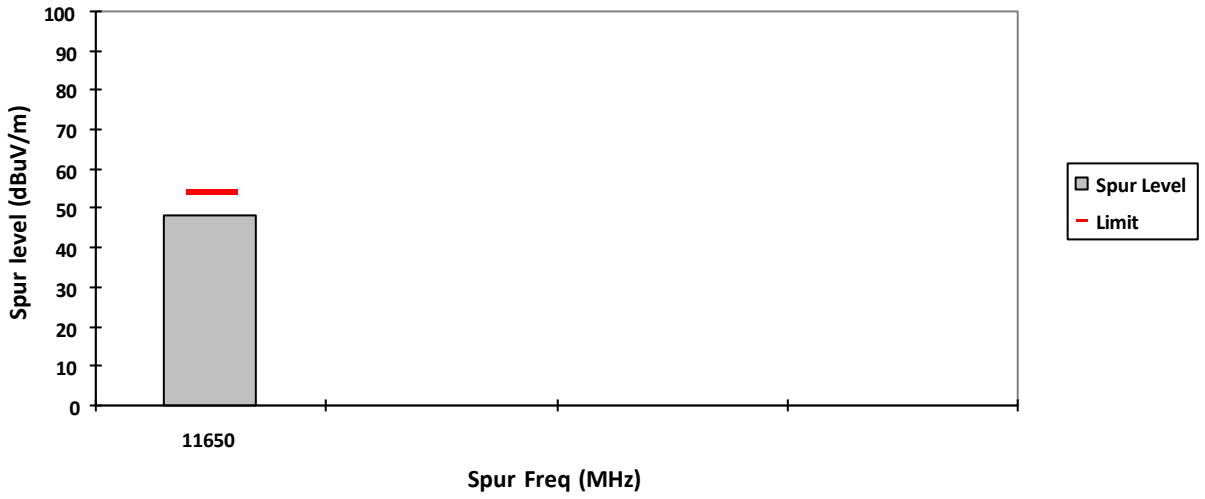

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11650
17475
23300
29125
34950
40775
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11650
17475
23300
29125
34950
40775
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



802.11n (HT20)

Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5180.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (Low Channel) tabular data

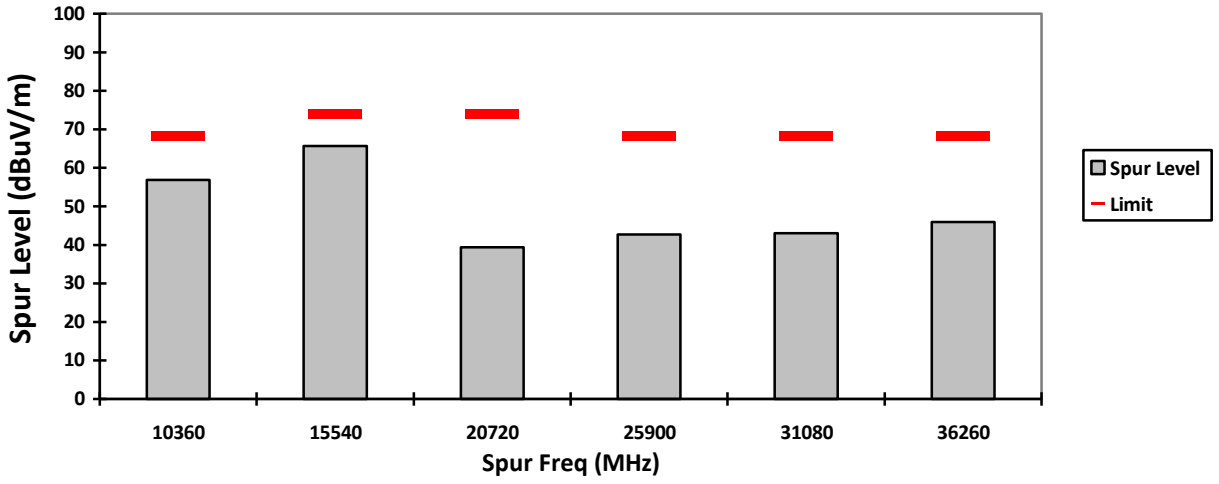
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10360	-	56.9188**	-	-	68.2000	-	-	11.2812	-	-
15540	-	65.6961**	51.7174**	-	74.0000	54.0000	-	8.3039	2.2826	-
20720	-	39.3463**	-	-	74.0000	-	-	34.6537	-	-
25900	-	42.7005**	-	-	68.2000	-	-	25.4995	-	-
31080	-	43.0700**	-	-	68.2000	-	-	25.1300	-	-
36260	-	45.9292**	-	-	68.2000	-	-	22.2708	-	-
Horizontal Radiated Emission Result										
10360	-	57.3892**	-	-	68.2000	-	-	10.8108	-	-
15540	-	65.3632**	51.7179**	-	74.0000	54.0000	-	8.6368	2.2821	-
20720	-	39.2514**	-	-	74.0000	-	-	34.7486	-	-
25900	-	41.4610**	-	-	68.2000	-	-	26.7390	-	-
31080	-	42.6200**	-	-	68.2000	-	-	25.5800	-	-
36260	-	46.6191**	-	-	68.2000	-	-	21.5809	-	-

Remarks: Pass Result	Marginal Result	Fail Result

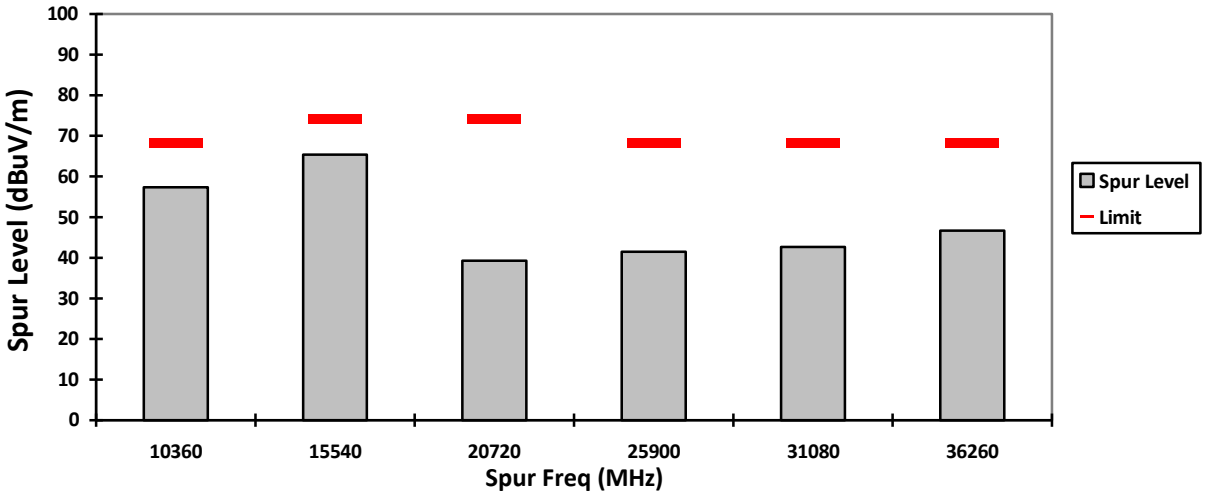
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

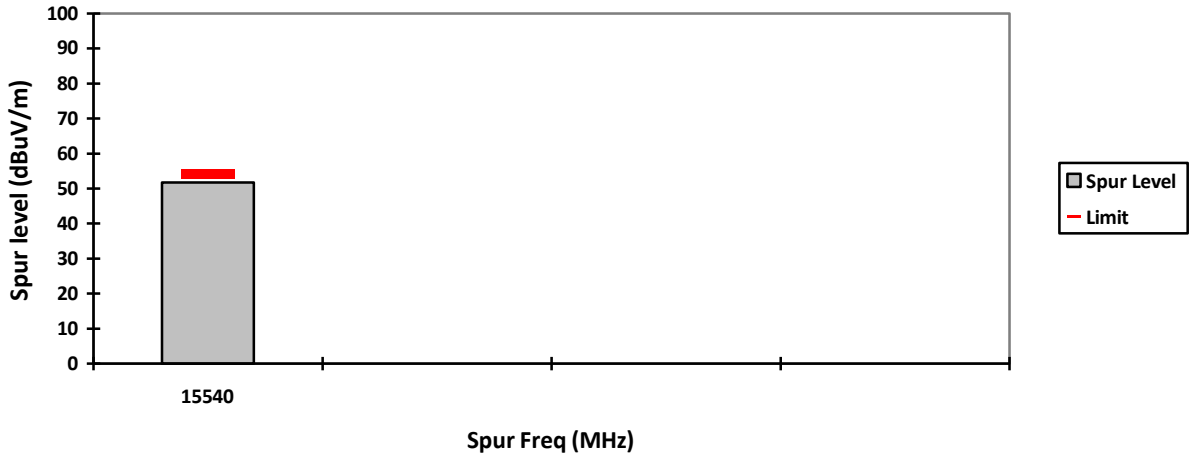
VERTICAL, PK



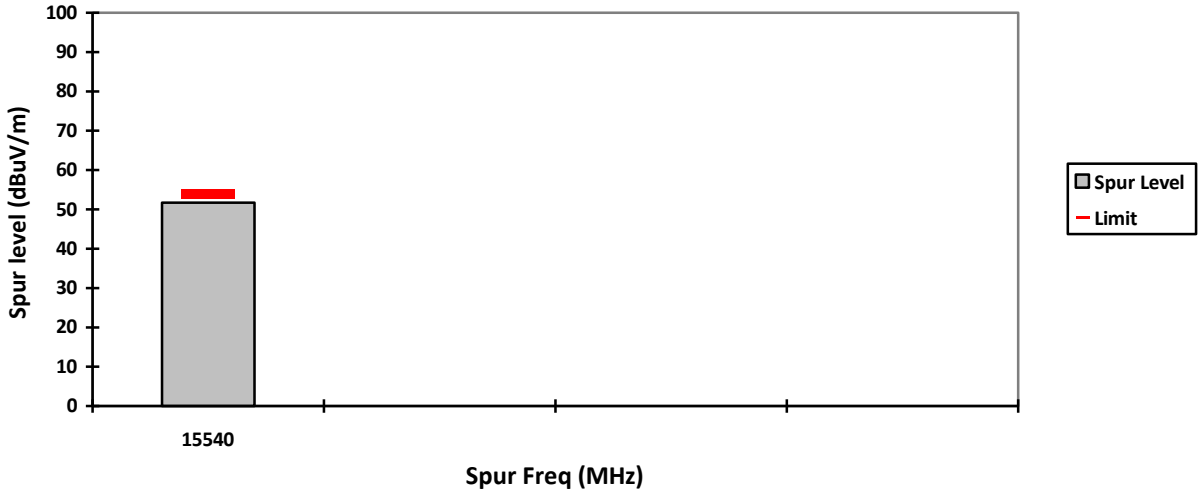
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (16dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5220.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

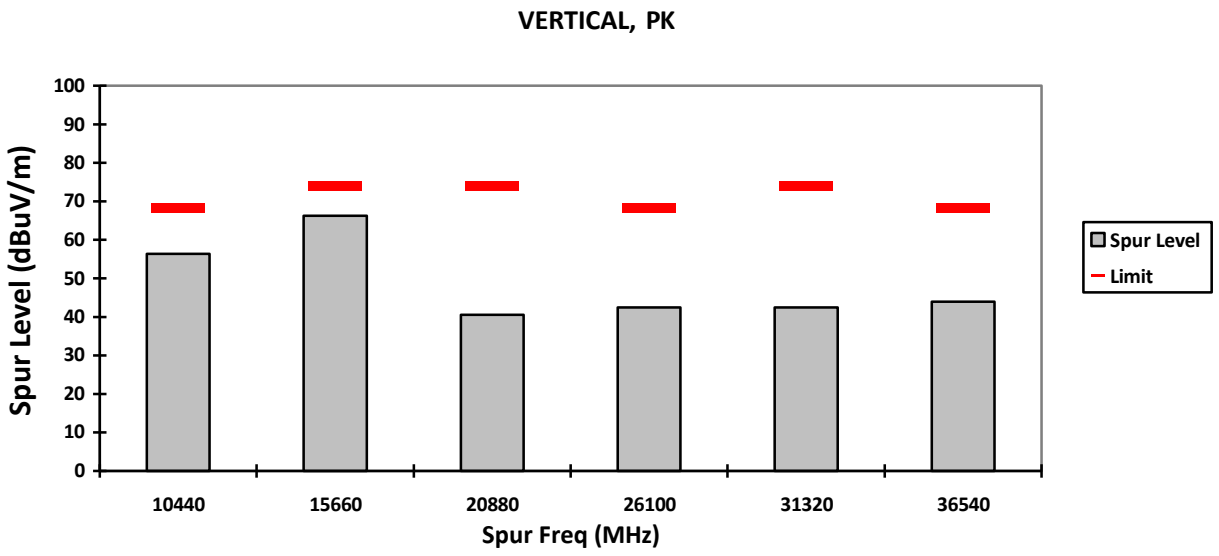
Radiated Emission (Mid Channel) tabular data

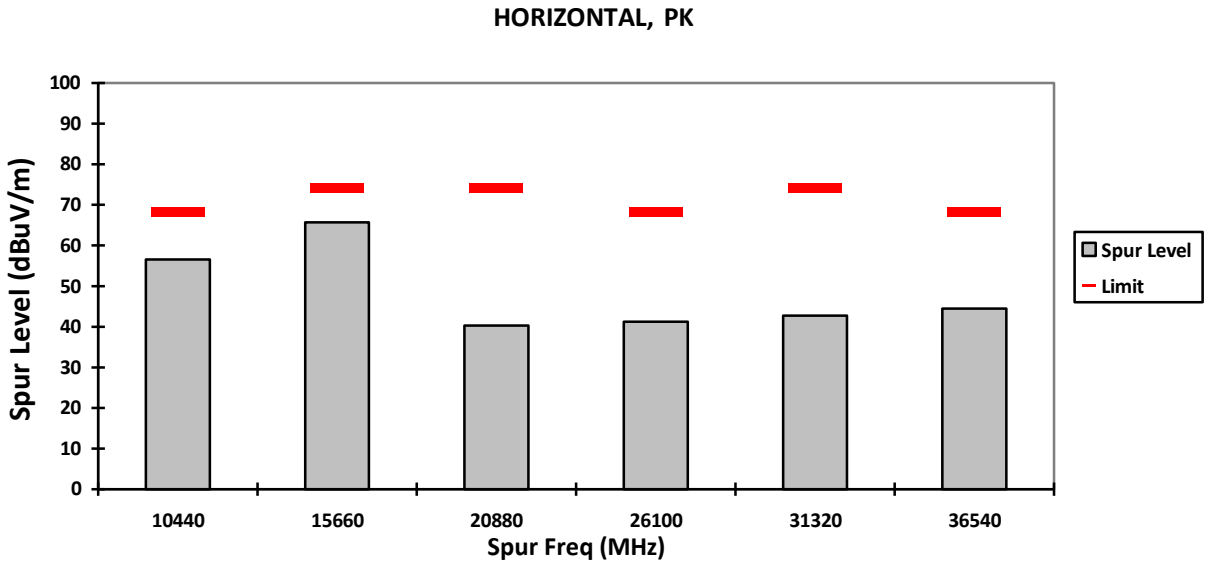
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10440	-	56.3813**	-	-	68.2000	-	-	11.8187	-	-
15660	-	66.2337**	52.0520**	-	74.0000	54.0000	-	7.7663	1.9480	-
20880	-	40.5273**	-	-	74.0000	-	-	33.4727	-	-
26100	-	42.4902**	-	-	68.2000	-	-	25.7098	-	-
31320	-	42.4368**	-	-	74.0000	-	-	31.5632	-	-
36540	-	43.9194**	-	-	68.2000	-	-	24.2806	-	-
Horizontal Radiated Emission Result										
10440	-	56.5950**	-	-	68.2000	-	-	11.6050	-	-
15660	-	65.7289**	52.0449**	-	74.0000	54.0000	-	8.2711	1.9551	-
20880	-	40.3170**	-	-	74.0000	-	-	33.6830	-	-
26100	-	41.2618**	-	-	68.2000	-	-	26.9382	-	-
31320	-	42.7604**	-	-	74.0000	-	-	31.2396	-	-
36540	-	44.4895**	-	-	68.2000	-	-	23.7105	-	-

Remarks: Pass Result	Marginal Result	Fail Result

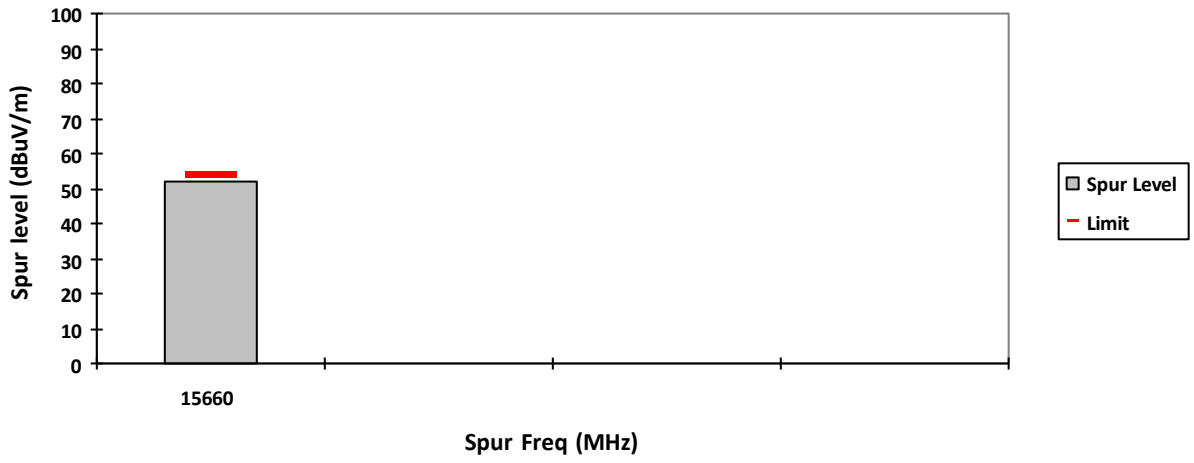
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

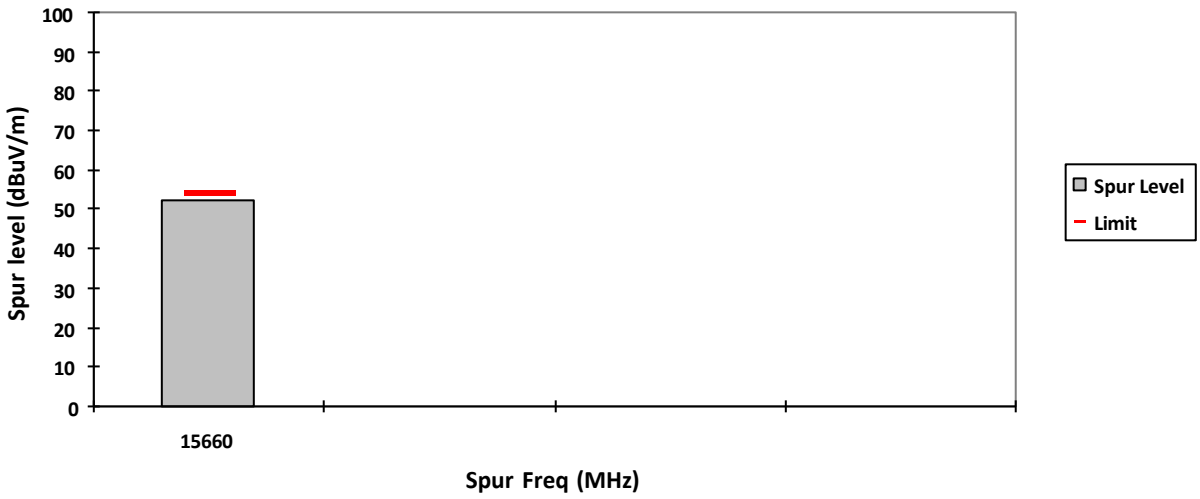

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10440
15660
20880
26100
31320
36540
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10440
15660
20880
26100
31320
36540
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (17dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5240.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

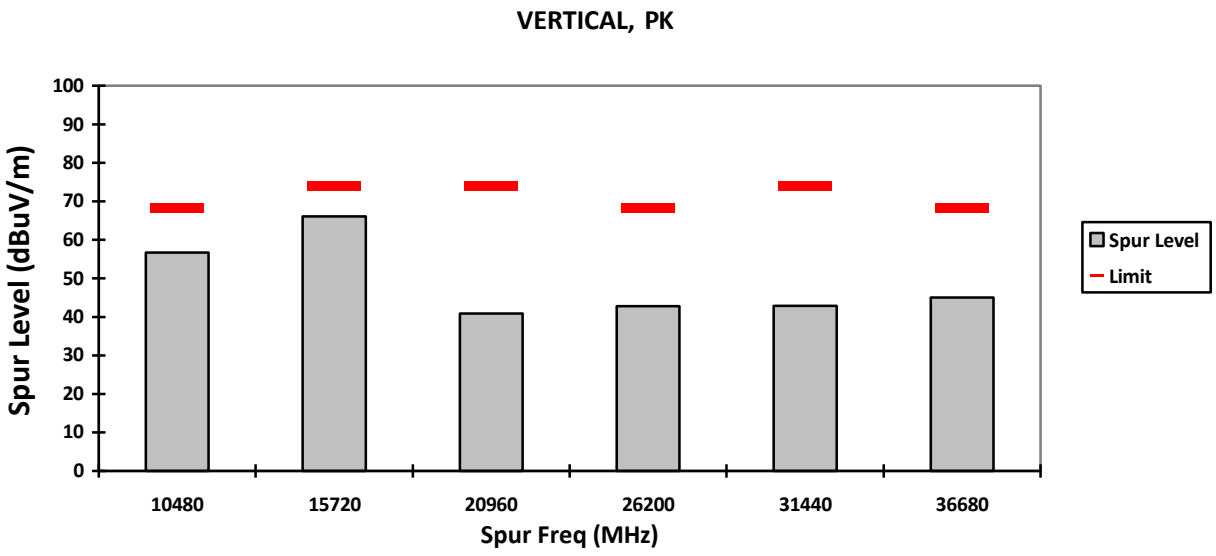
Radiated Emission (High Channel) tabular data

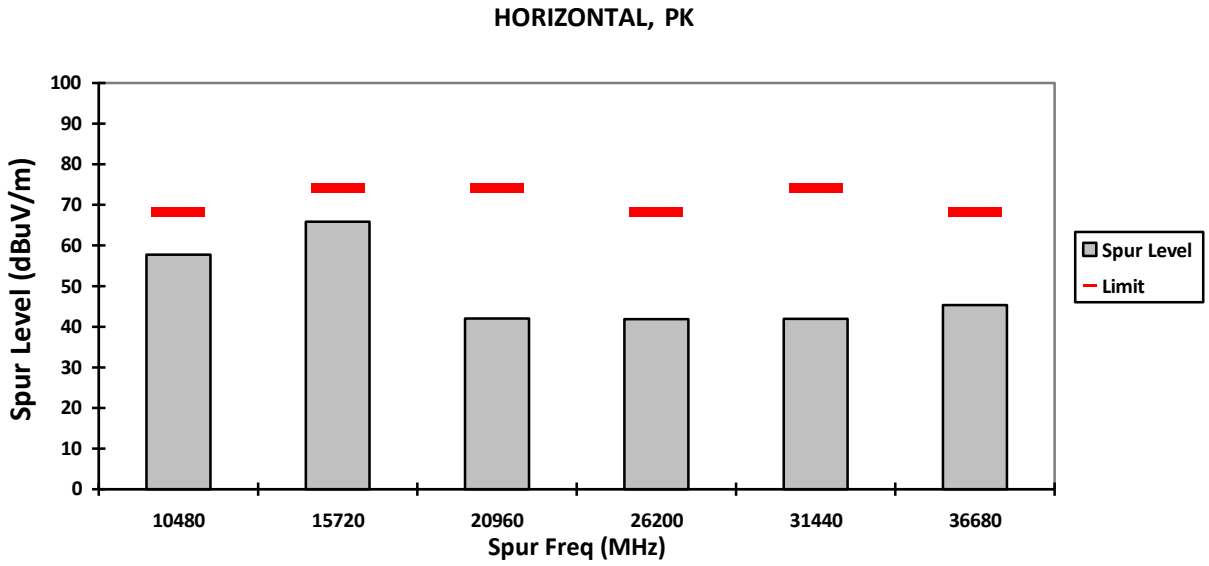
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10480	-	56.6891**	-	-	68.2000	-	-	11.5109	-	-
15720	-	66.1236**	51.9477**	-	74.0000	54.0000	-	7.8764	2.0523	-
20960	-	40.8916**	-	-	74.0000	-	-	33.1084	-	-
26200	-	42.7702**	-	-	68.2000	-	-	25.4298	-	-
31440	-	42.8397**	-	-	74.0000	-	-	31.1603	-	-
36680	-	45.0645**	-	-	68.2000	-	-	23.1355	-	-
Horizontal Radiated Emission Result										
10480	-	57.7847**	-	-	68.2000	-	-	10.4153	-	-
15720	-	65.8903**	51.9309**	-	74.0000	54.0000	-	8.1097	2.0691	-
20960	-	42.0391**	-	-	74.0000	-	-	31.9609	-	-
26200	-	41.8905**	-	-	68.2000	-	-	26.3095	-	-
31440	-	41.9040**	-	-	74.0000	-	-	32.0960	-	-
36680	-	45.3187**	-	-	68.2000	-	-	22.8813	-	-

Remarks: Pass Result	Marginal Result	Fail Result

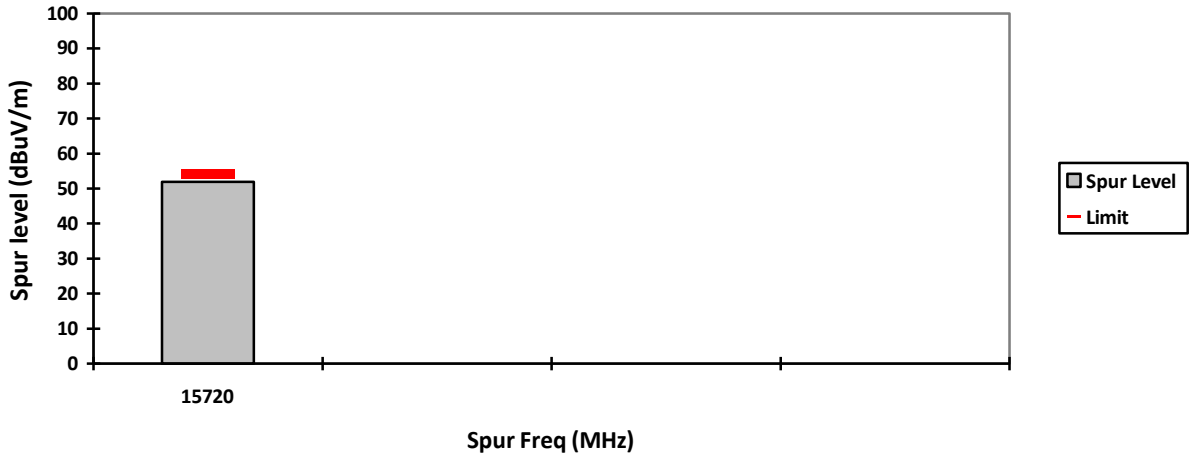
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

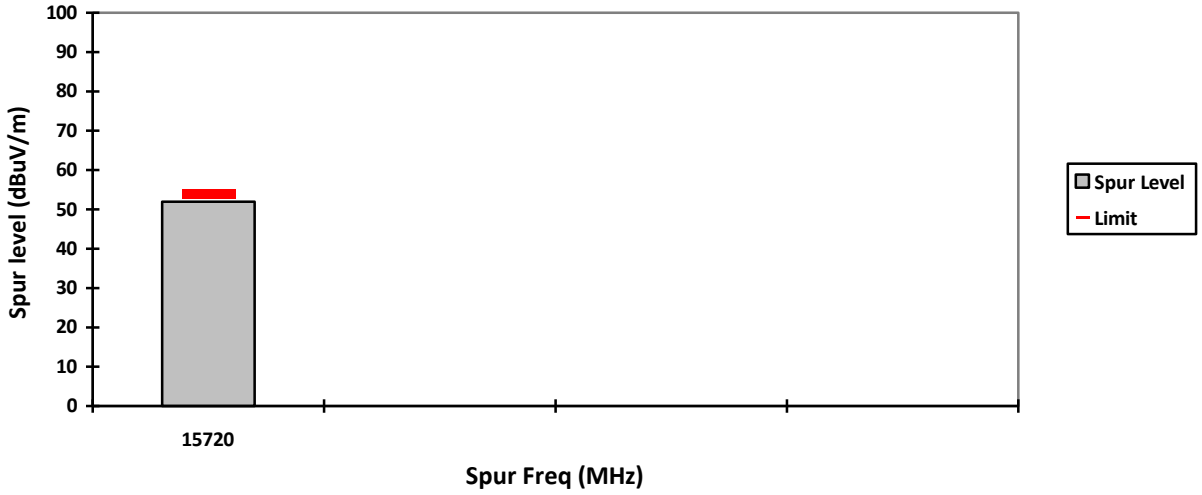

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10480
15720
20960
26200
31440
36680
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
10480
15720
20960
26200
31440
36680
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (17dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5260.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (Low Channel) tabular data

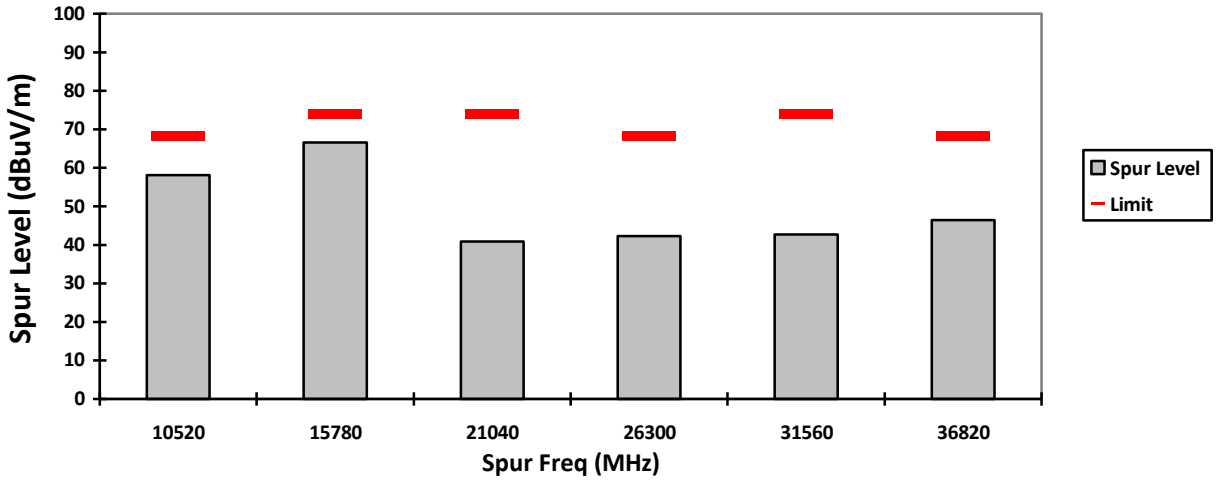
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10520	-	58.1185**	-	-	68.2000	-	-	10.0815	-	-
15780	-	66.5516**	52.8112**	-	74.0000	54.0000	-	7.4484	1.1888	-
21040	-	40.9151**	-	-	74.0000	-	-	33.0849	-	-
26300	-	42.3120**	-	-	68.2000	-	-	25.8880	-	-
31560	-	42.6815**	-	-	74.0000	-	-	31.3185	-	-
36820	-	46.4534**	-	-	68.2000	-	-	21.7466	-	-
Horizontal Radiated Emission Result										
10520	-	56.6982**	-	-	68.2000	-	-	11.5018	-	-
15780	-	66.4330**	52.8247**	-	74.0000	54.0000	-	7.5670	1.1753	-
21040	-	41.0461**	-	-	74.0000	-	-	32.9539	-	-
26300	-	42.8042**	-	-	68.2000	-	-	25.3958	-	-
31560	-	42.5230**	-	-	74.0000	-	-	31.4770	-	-
36820	-	47.0070**	-	-	68.2000	-	-	21.1930	-	-

Remarks: Pass Result	Marginal Result	Fail Result

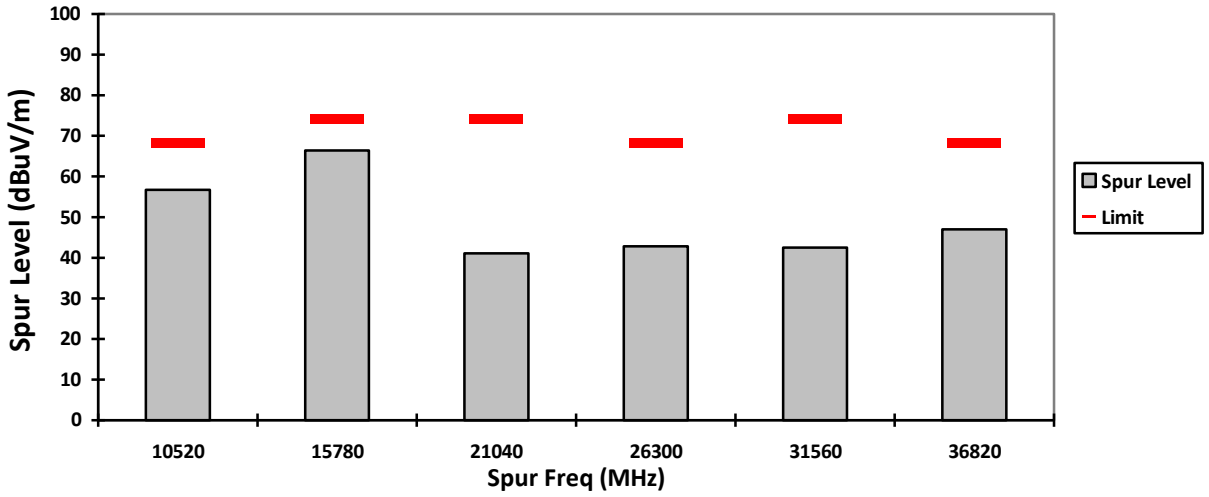
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

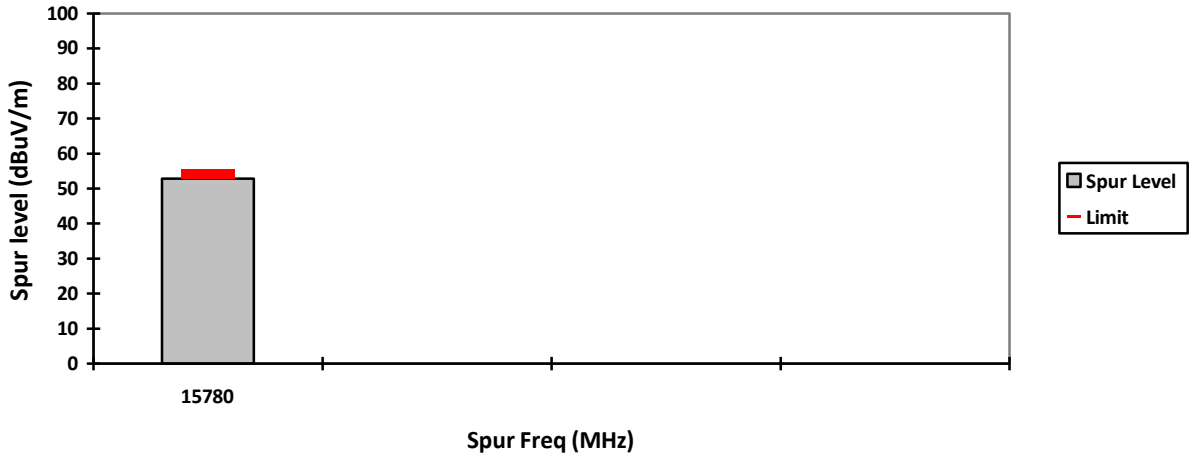
VERTICAL, PK



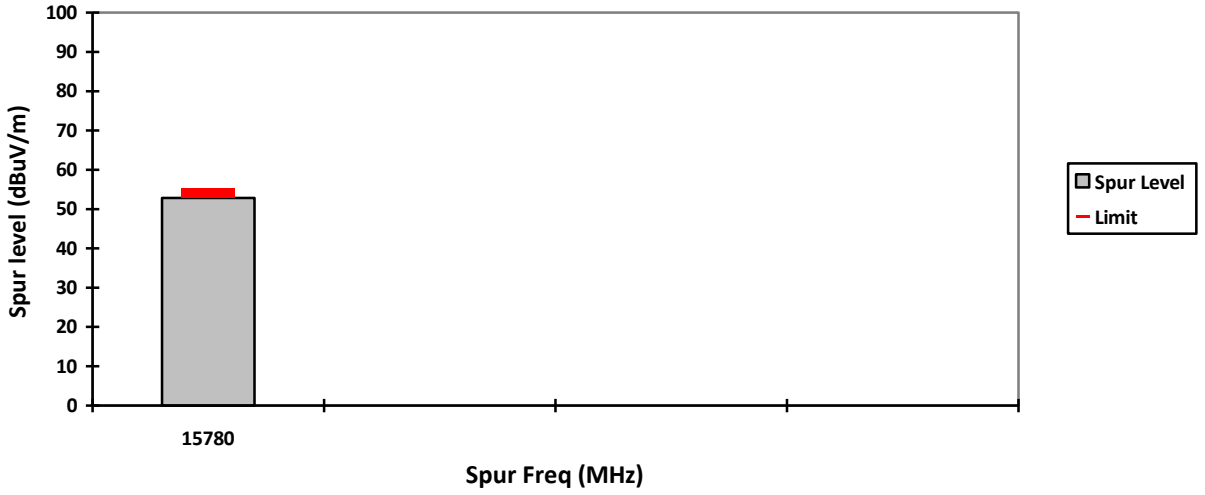
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (16dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5300.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (Mid Channel) tabular data

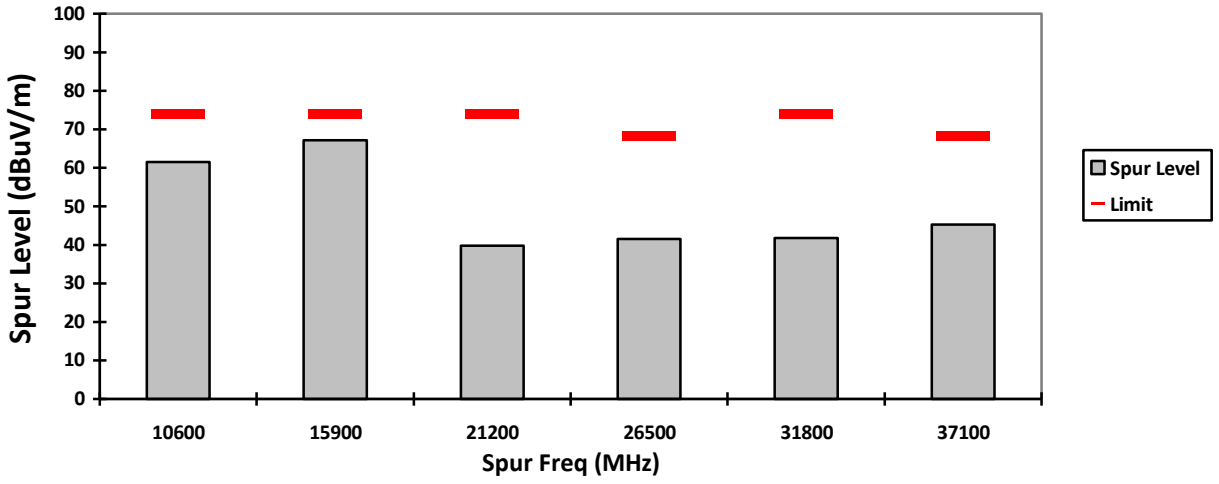
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10600	-	61.5014**	47.7465**	-	74.0000	54.0000	-	12.4986	6.2535	-
15900	-	67.1386**	53.1776**	-	74.0000	54.0000	-	6.8614	0.8224	-
21200	-	39.7874**	-	-	74.0000	-	-	34.2126	-	-
26500	-	41.5632**	-	-	68.2000	-	-	26.6368	-	-
31800	-	41.7625**	-	-	74.0000	-	-	32.2375	-	-
37100	-	45.2690**	-	-	68.2000	-	-	22.9310	-	-
Horizontal Radiated Emission Result										
10600	-	61.4941**	38.9156**	-	68.2000	54.0000	-	6.7059	15.0844	-
15900	-	67.3887**	53.3081**	-	74.0000	54.0000	-	6.6113	0.6919	-
21200	-	39.8251**	-	-	74.0000	-	-	34.1749	-	-
26500	-	42.0932**	-	-	68.2000	-	-	26.1068	-	-
31800	-	42.1945**	-	-	74.0000	-	-	31.8055	-	-
37100	-	45.1145**	-	-	68.2000	-	-	23.0855	-	-

Remarks: Pass Result	Marginal Result	Fail Result

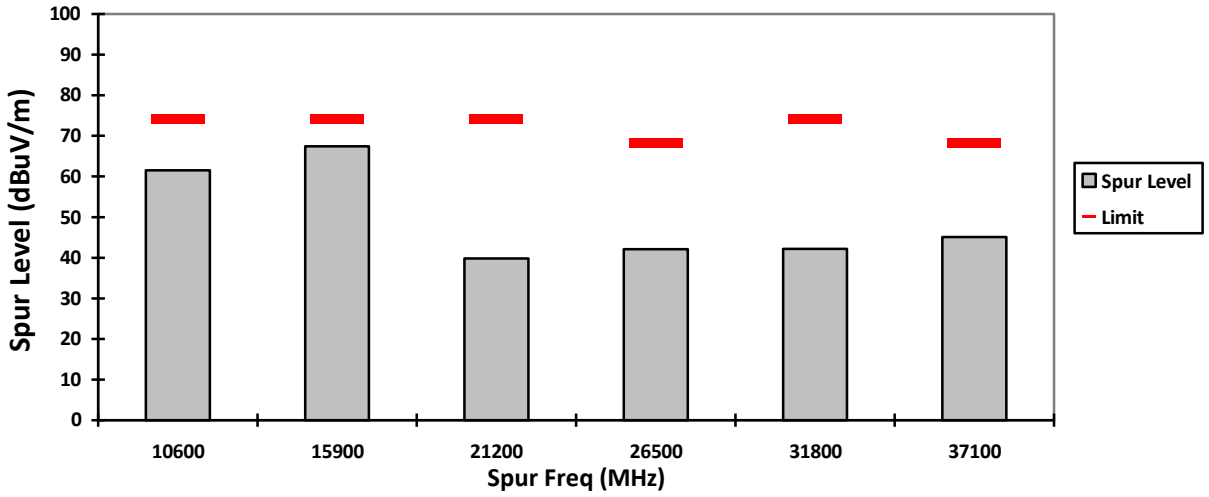
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

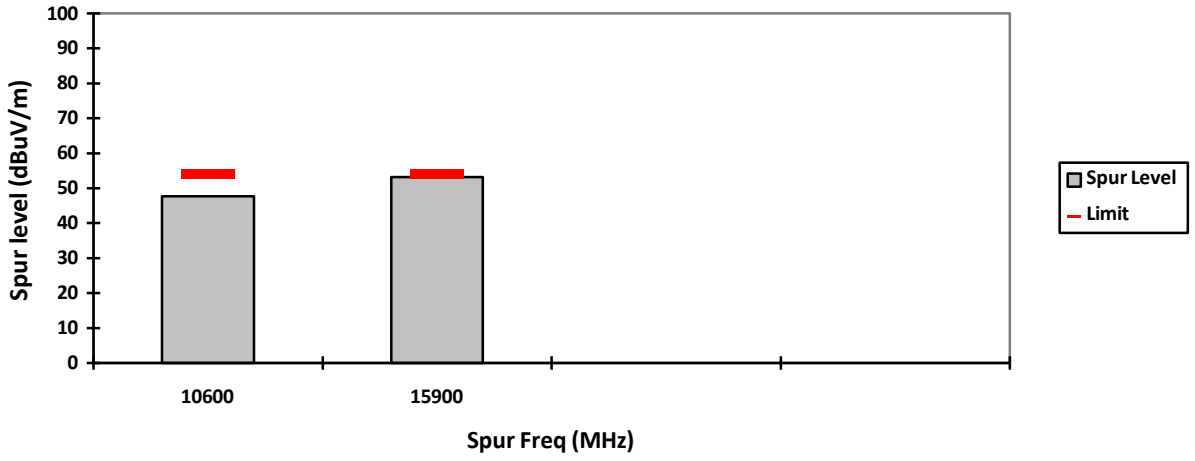
VERTICAL, PK



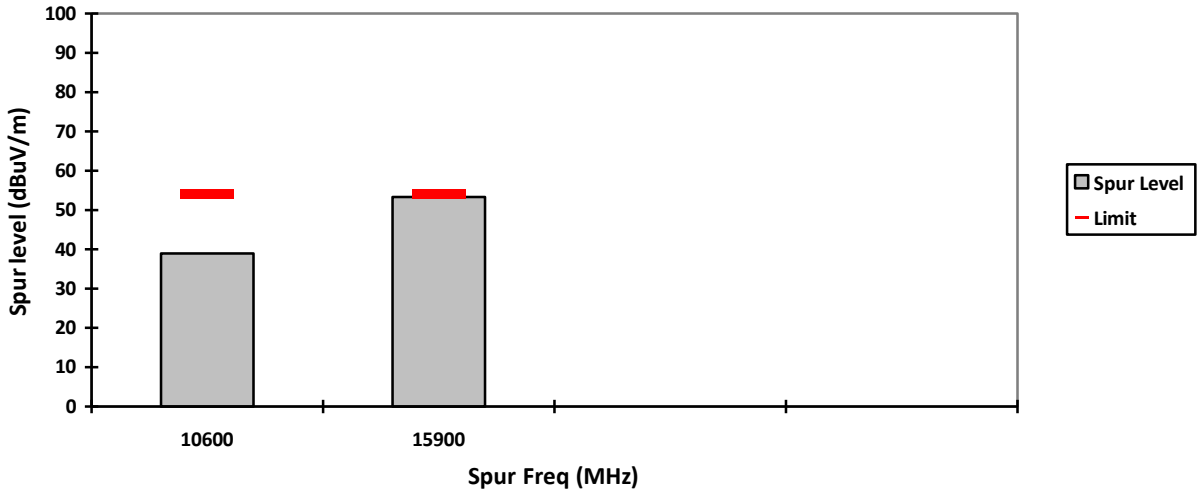
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5320.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (High Channel) tabular data

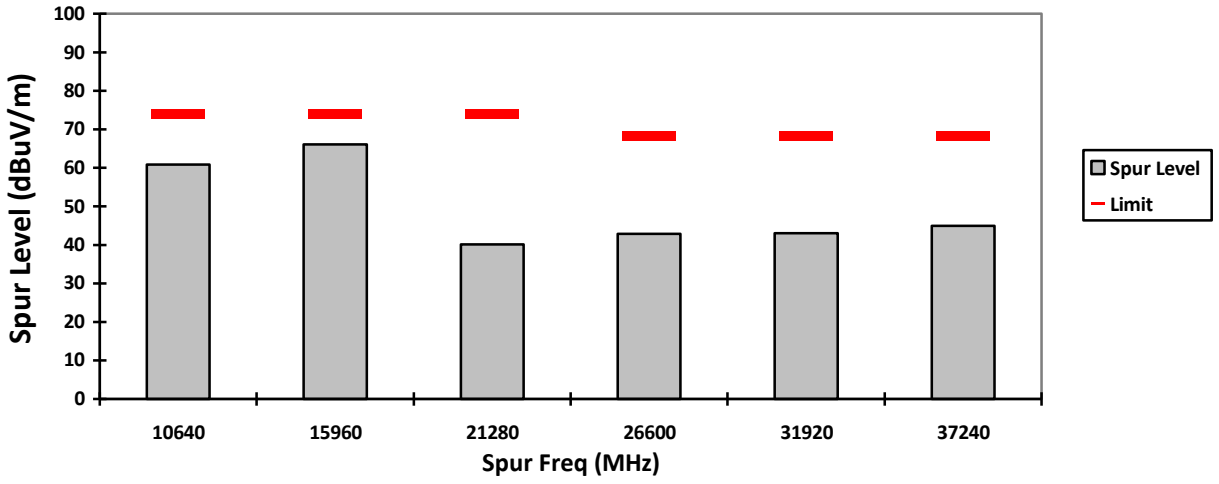
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
10640	-	60.8759**	47.1744**	-	74.0000	54.0000	-	13.1241	6.8256	-
15960	-	66.0855**	52.1037**	-	74.0000	54.0000	-	7.9145	1.8963	-
21280	-	40.1645**	-	-	74.0000	-	-	33.8355	-	-
26600	-	42.8357**	-	-	68.2000	-	-	25.3643	-	-
31920	-	43.0753**	-	-	68.2000	-	-	25.1247	-	-
37240	-	44.9500**	-	-	68.2000	-	-	23.2500	-	-
Horizontal Radiated Emission Result										
10640	-	61.1121**	47.0476**	-	74.0000	54.0000	-	12.8879	6.9524	-
15960	-	66.2118**	52.1139**	-	74.0000	54.0000	-	7.7882	1.8861	-
21280	-	39.7762**	-	-	74.0000	-	-	34.2238	-	-
26600	-	42.3018**	-	-	68.2000	-	-	25.8982	-	-
31920	-	42.2129**	-	-	68.2000	-	-	25.9871	-	-
37240	-	46.0627**	-	-	68.2000	-	-	22.1373	-	-

Remarks: Pass Result	Marginal Result	Fail Result

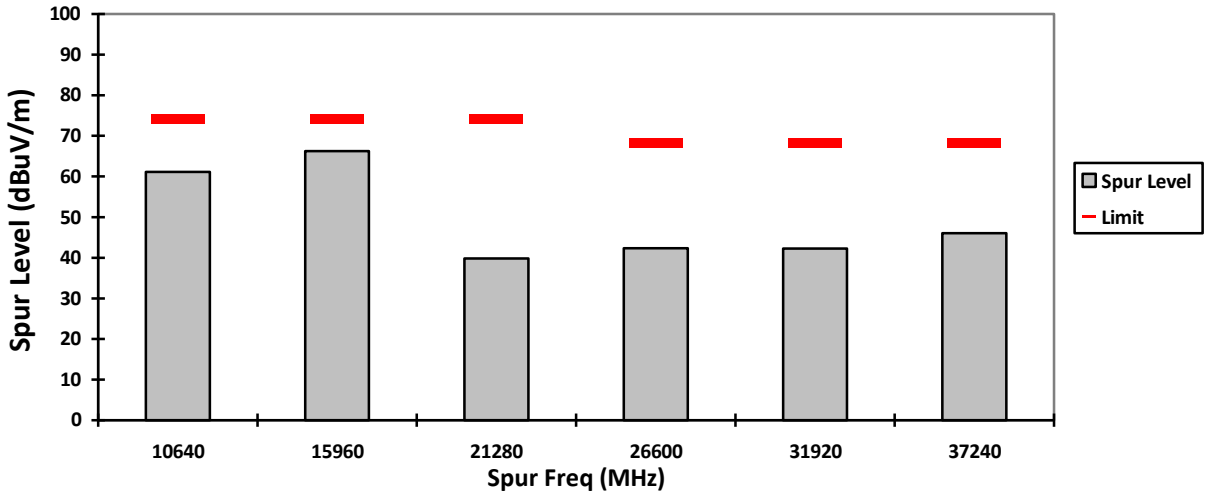
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

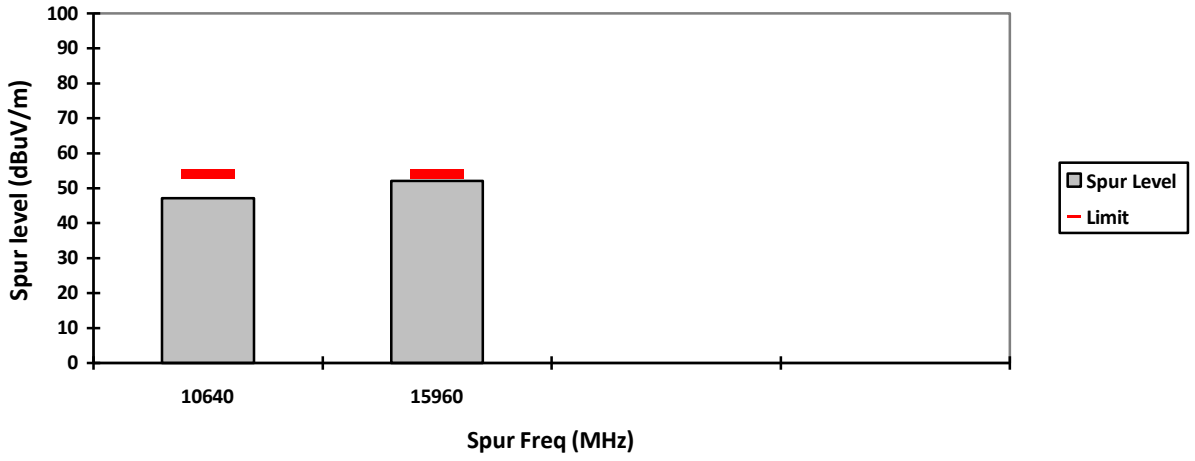
VERTICAL, PK



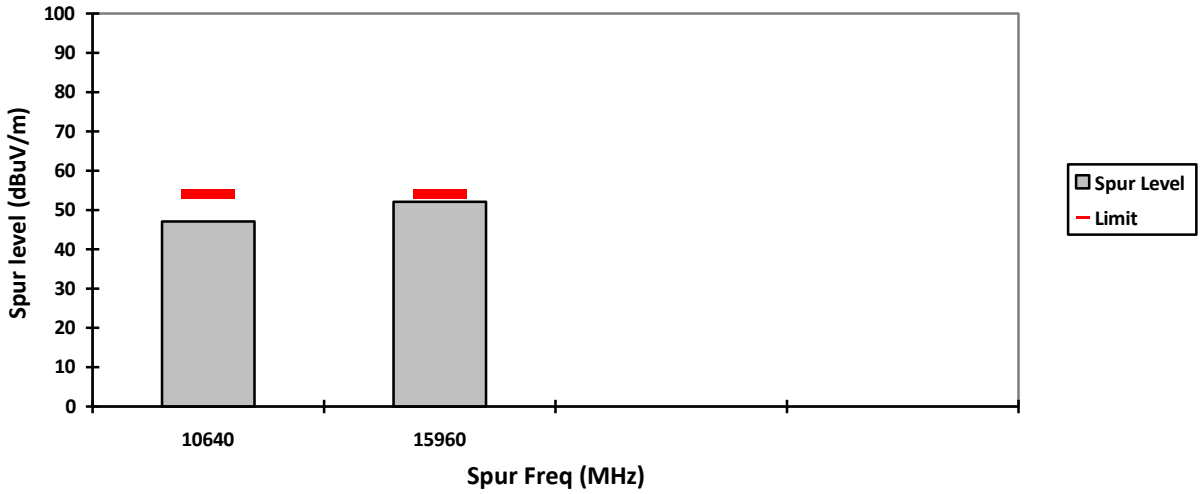
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (13dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (Low Channel) tabular data

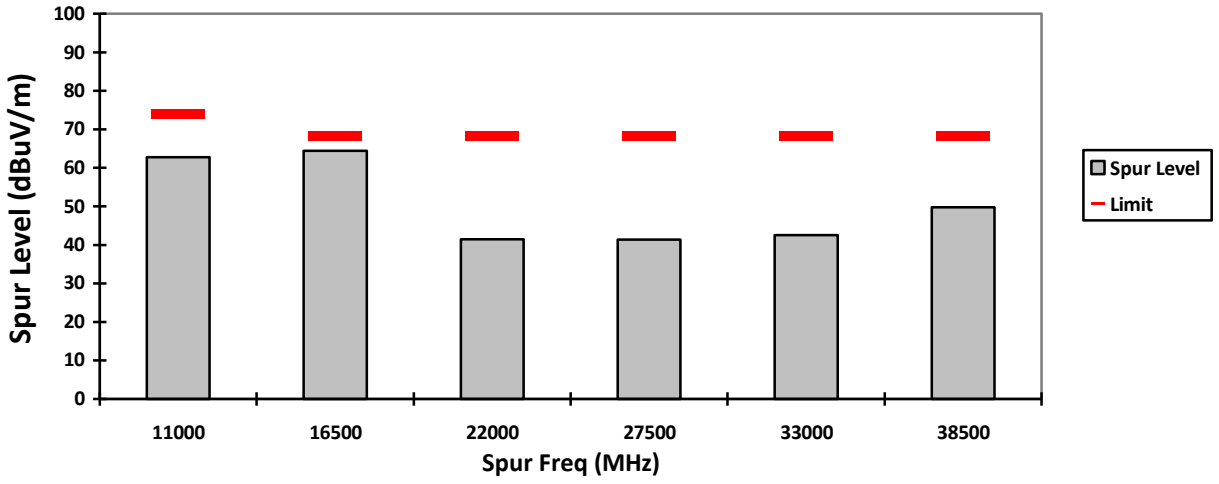
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11000	-	62.7418**	48.2358**	-	74.0000	54.0000	-	11.2582	5.7642	-
16500	-	64.3916**	-	-	68.2000	-	-	3.8084	-	-
22000	-	41.4463**	-	-	68.2000	-	-	26.7537	-	-
27500	-	41.4046**	-	-	68.2000	-	-	26.7954	-	-
33000	-	42.5528**	-	-	68.2000	-	-	25.6472	-	-
38500	-	49.7629**	-	-	68.2000	-	-	18.4371	-	-
Horizontal Radiated Emission Result										
11000	-	62.5613**	48.1291**	-	74.0000	54.0000	-	11.4387	5.8709	-
16500	-	64.2121**	-	-	68.2000	-	-	3.9879	-	-
22000	-	41.1651**	-	-	68.2000	-	-	27.0349	-	-
27500	-	41.1871**	-	-	68.2000	-	-	27.0129	-	-
33000	-	43.2950**	-	-	68.2000	-	-	24.9050	-	-
38500	-	49.4497**	-	-	68.2000	-	-	18.7503	-	-

Remarks: Pass Result	Marginal Result	Fail Result

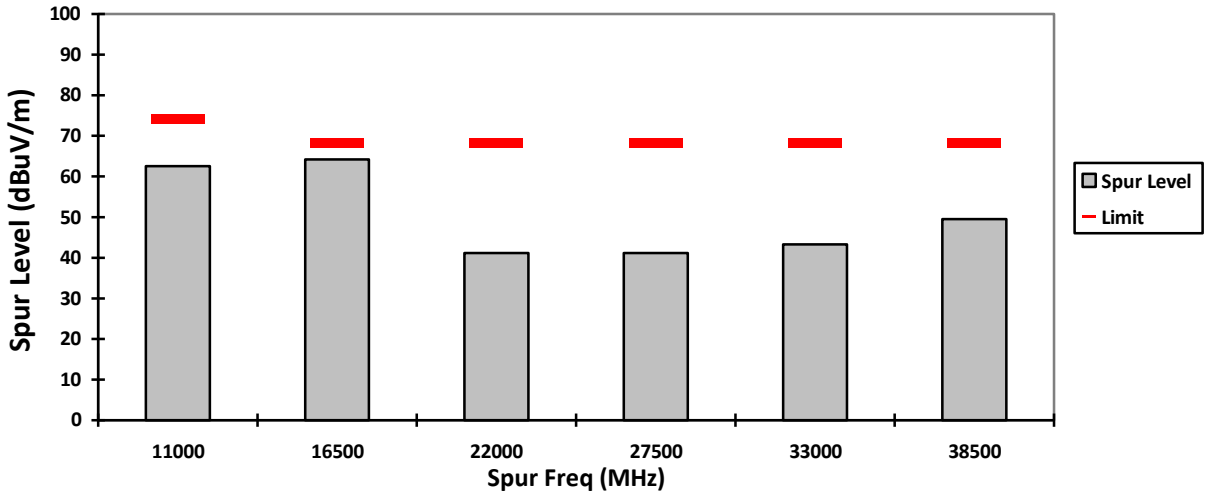
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

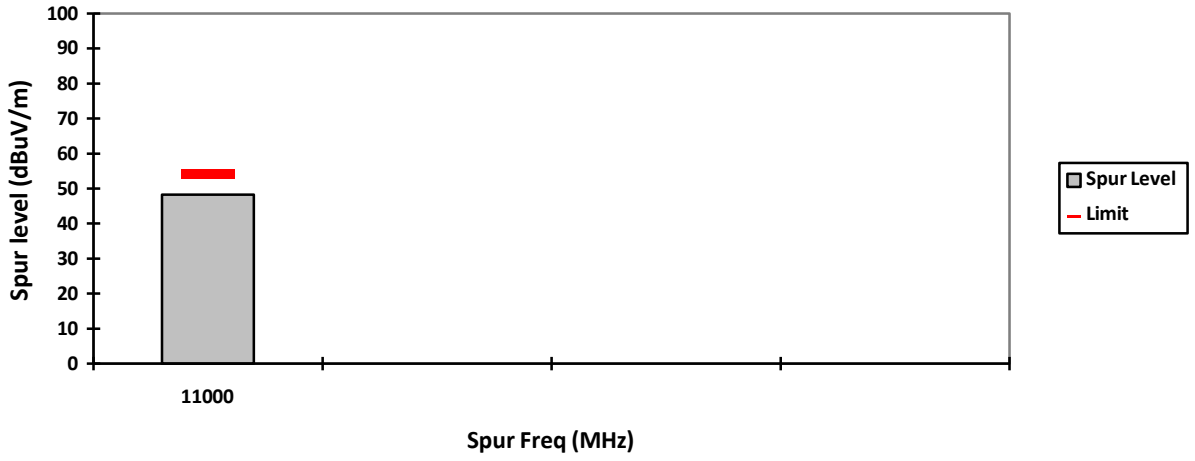
VERTICAL, PK



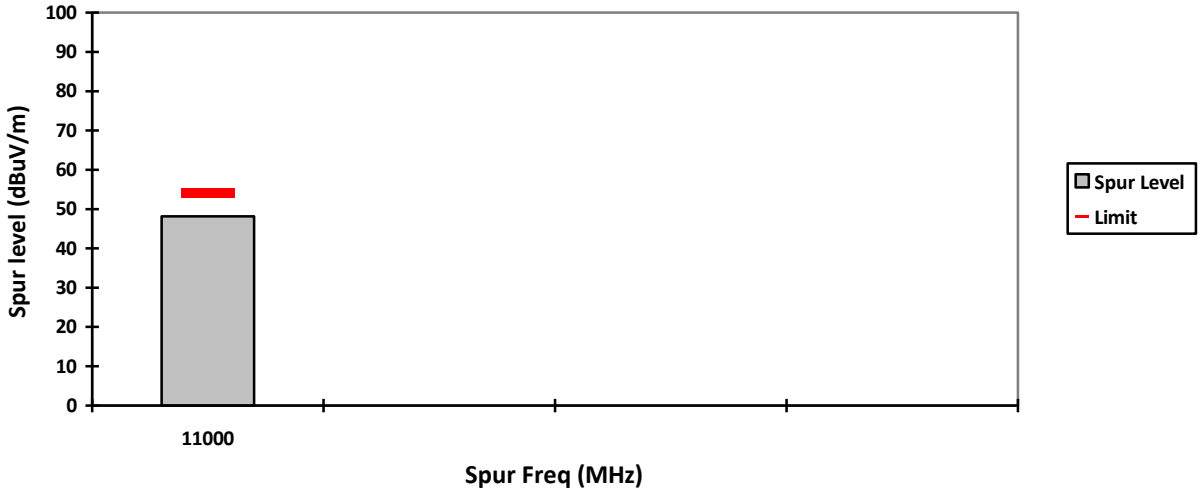
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5580.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (Mid Channel) tabular data

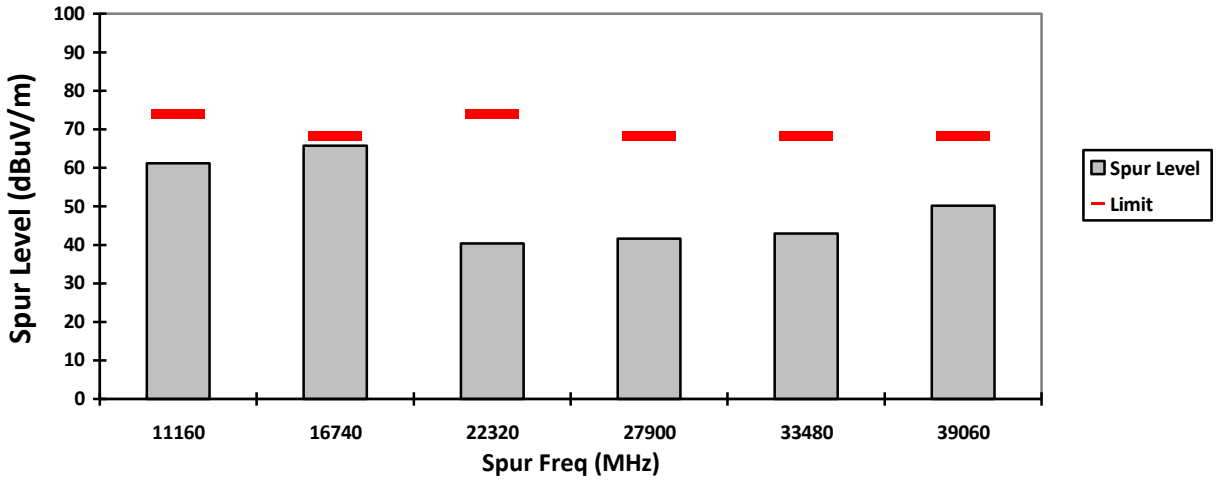
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11160	-	61.2169**	47.0938**	-	74.0000	54.0000	-	12.7831	6.9062	-
16740	-	65.7272**	-	-	68.2000	-	-	2.4728	-	-
22320	-	40.3447**	-	-	74.0000	-	-	33.6553	-	-
27900	-	41.6091**	-	-	68.2000	-	-	26.5909	-	-
33480	-	42.9493**	-	-	68.2000	-	-	25.2507	-	-
39060	-	50.1639**	-	-	68.2000	-	-	18.0361	-	-
Horizontal Radiated Emission Result										
11160	-	61.2641**	47.1178**	-	74.0000	54.0000	-	12.7359	6.8822	-
16740	-	66.2471**	-	-	68.2000	-	-	1.9529	-	-
22320	-	41.4603**	-	-	74.0000	-	-	32.5397	-	-
27900	-	41.6743**	-	-	68.2000	-	-	26.5257	-	-
33480	-	41.9807**	-	-	68.2000	-	-	26.2193	-	-
39060	-	50.7795**	-	-	68.2000	-	-	17.4205	-	-

Remarks: Pass Result	Marginal Result	Fail Result

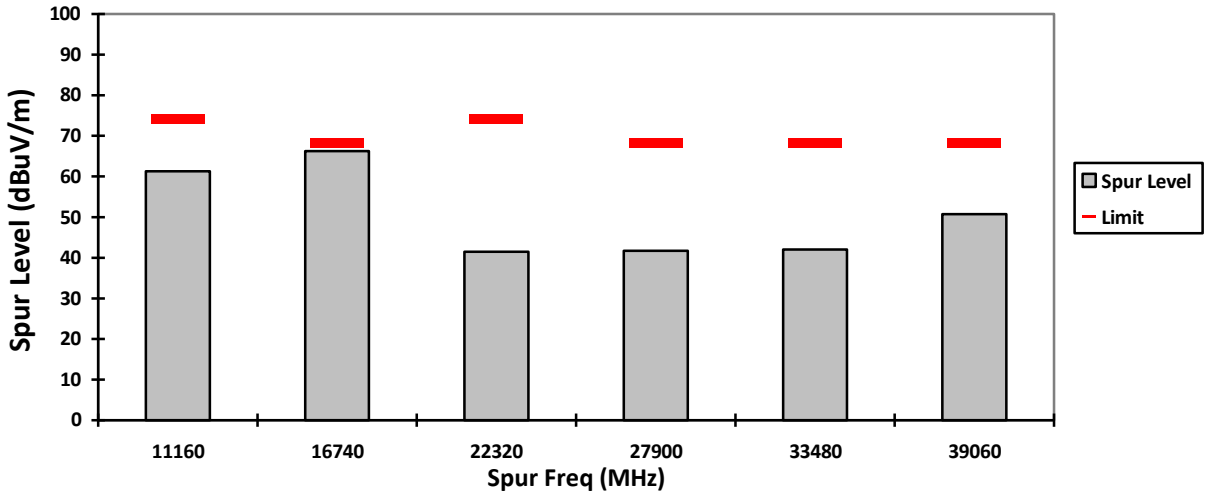
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

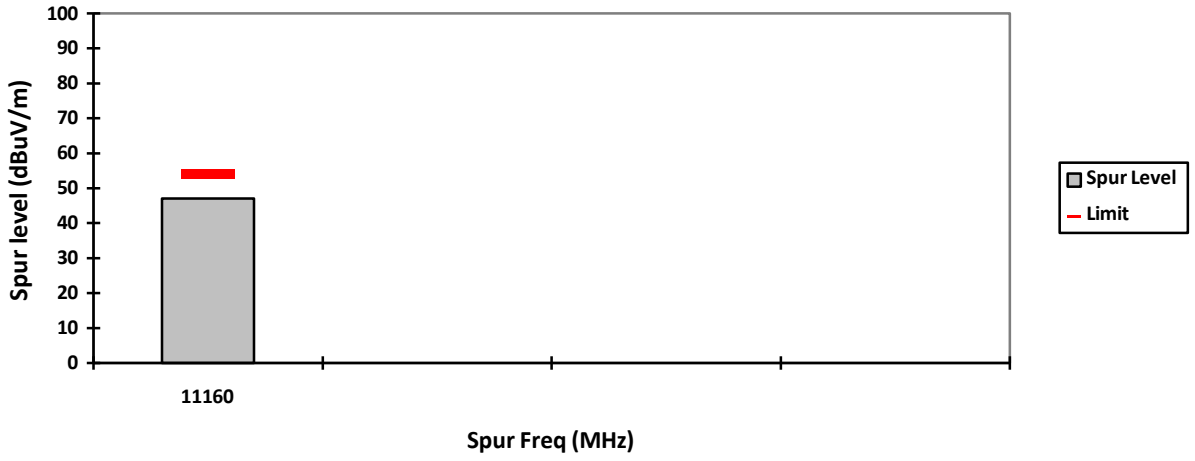
VERTICAL, PK



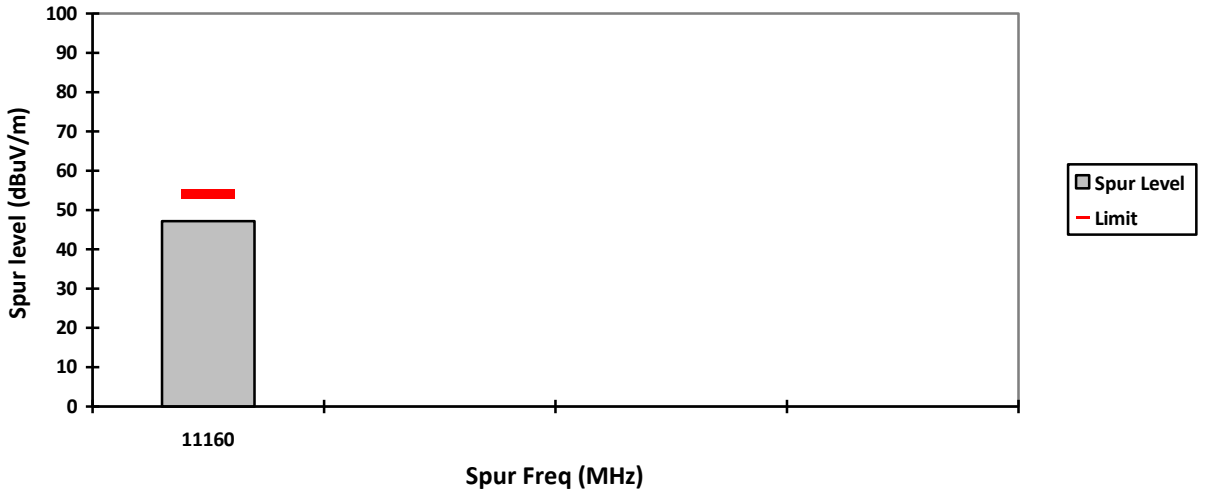
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Straddle Test Frequency: 5720.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (Straddle Channel) tabular data

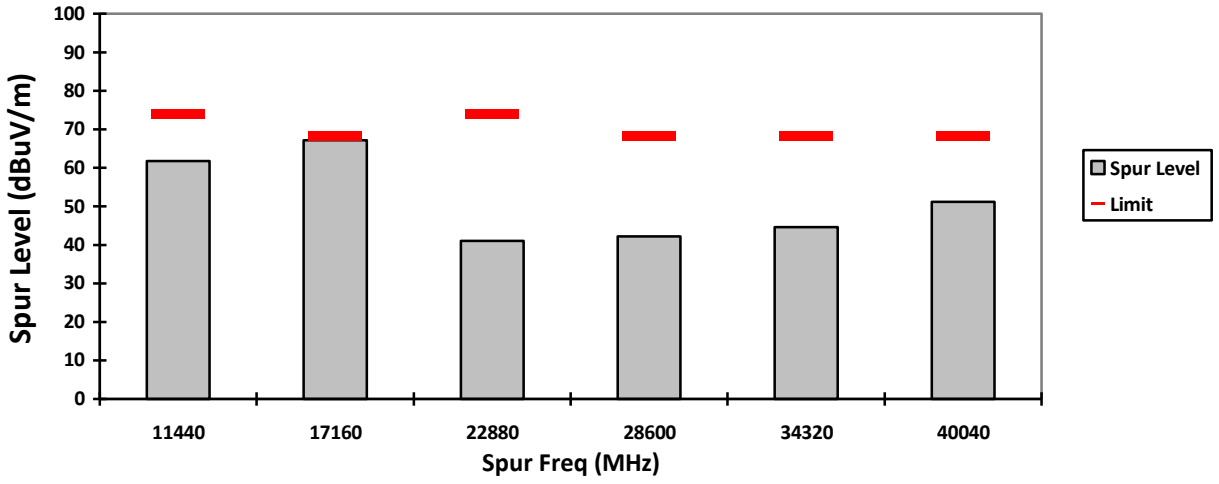
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11440	-	61.8013**	47.7408**	-	74.0000	54.0000	-	12.1987	6.2592	-
17160	-	67.1231**	-	-	68.2000	-	-	1.0769	-	-
22880	-	41.0443**	-	-	74.0000	-	-	32.9557	-	-
28600	-	42.1876**	-	-	68.2000	-	-	26.0124	-	-
34320	-	44.5999**	-	-	68.2000	-	-	23.6001	-	-
40040	-	51.1348**	-	-	68.2000	-	-	17.0652	-	-
Horizontal Radiated Emission Result										
11440	-	61.4788**	47.7391**	-	74.0000	54.0000	-	12.5212	6.2609	-
17160	-	67.1687**	-	-	68.2000	-	-	1.0313	-	-
22880	-	39.6891**	-	-	74.0000	-	-	34.3109	-	-
28600	-	40.8076**	-	-	68.2000	-	-	27.3924	-	-
34320	-	44.4062**	-	-	68.2000	-	-	23.7938	-	-
40040	-	50.7610**	-	-	68.2000	-	-	17.4390	-	-

Remarks: Pass Result	Marginal Result	Fail Result

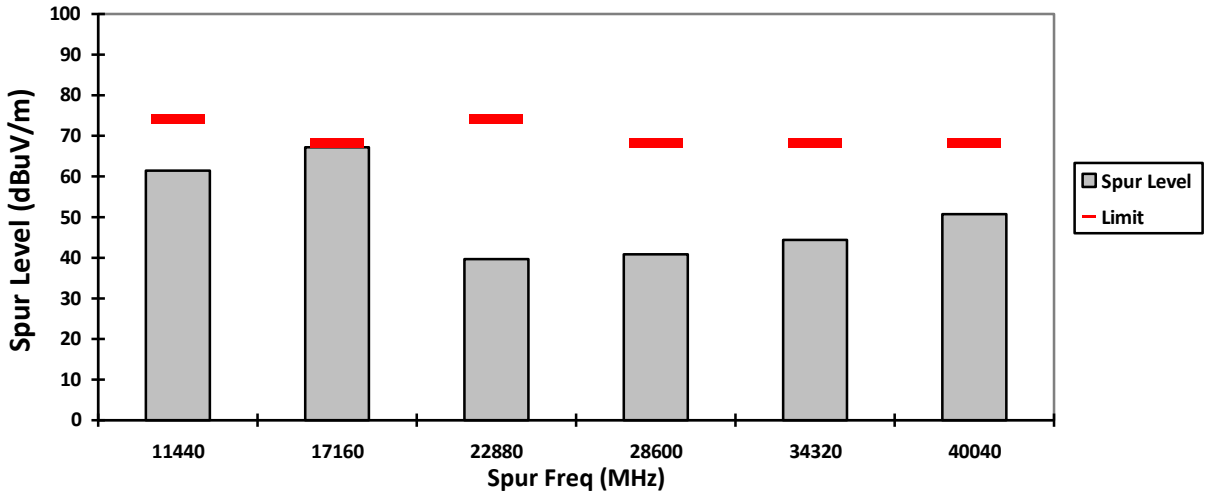
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

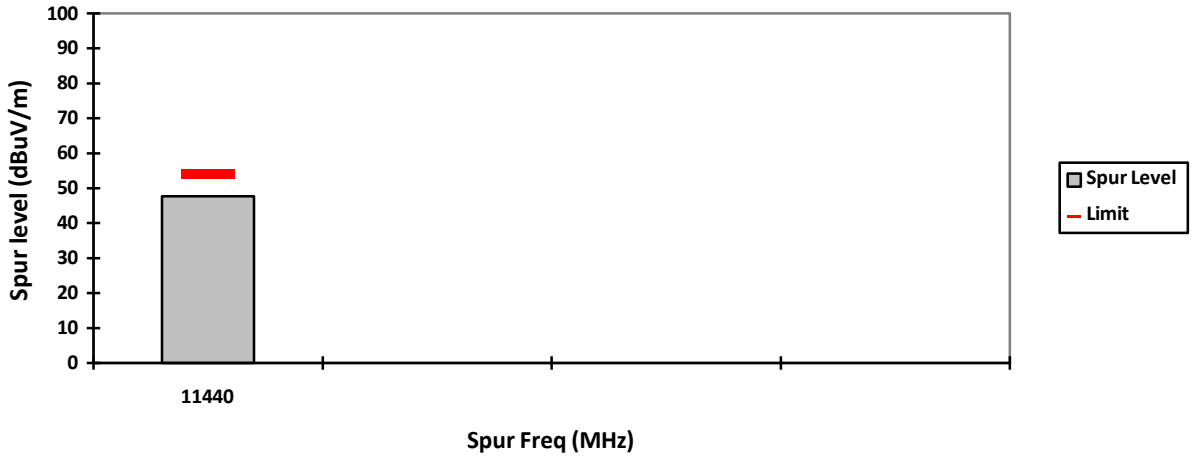
VERTICAL, PK



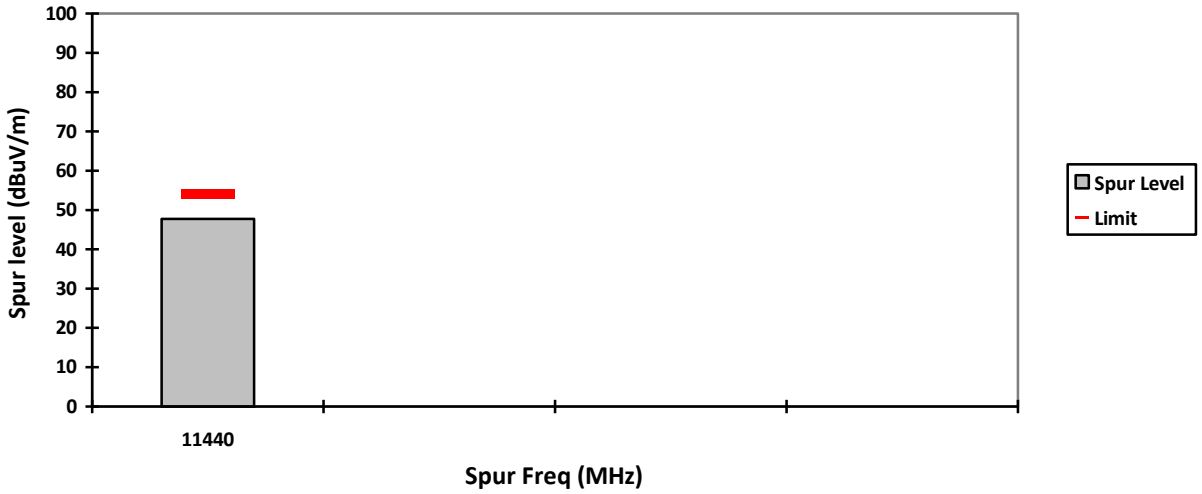
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 5745.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

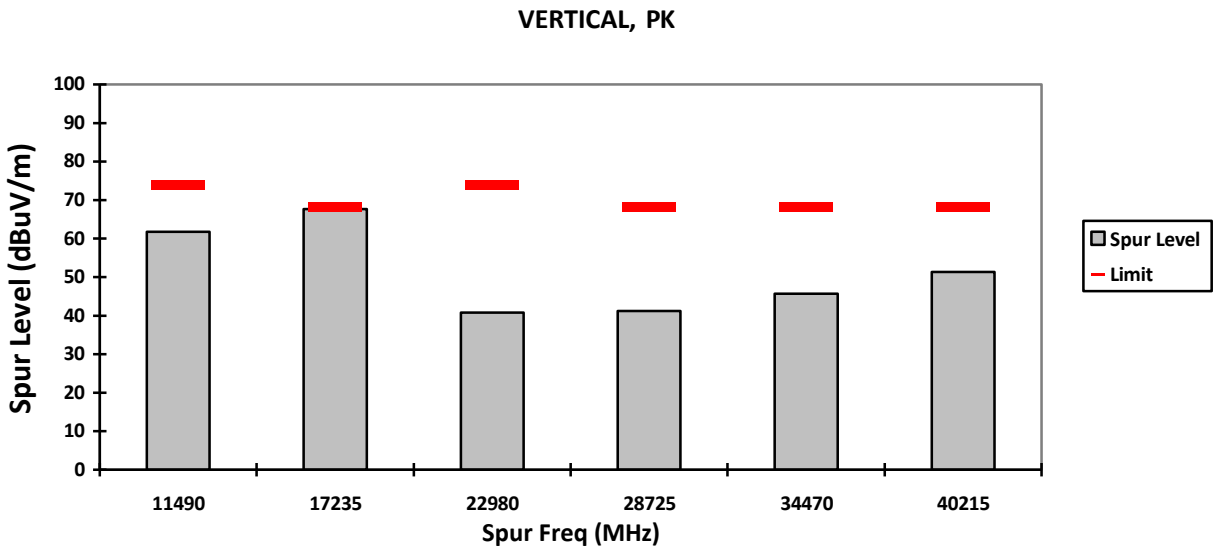
Radiated Emission (Low Channel) tabular data

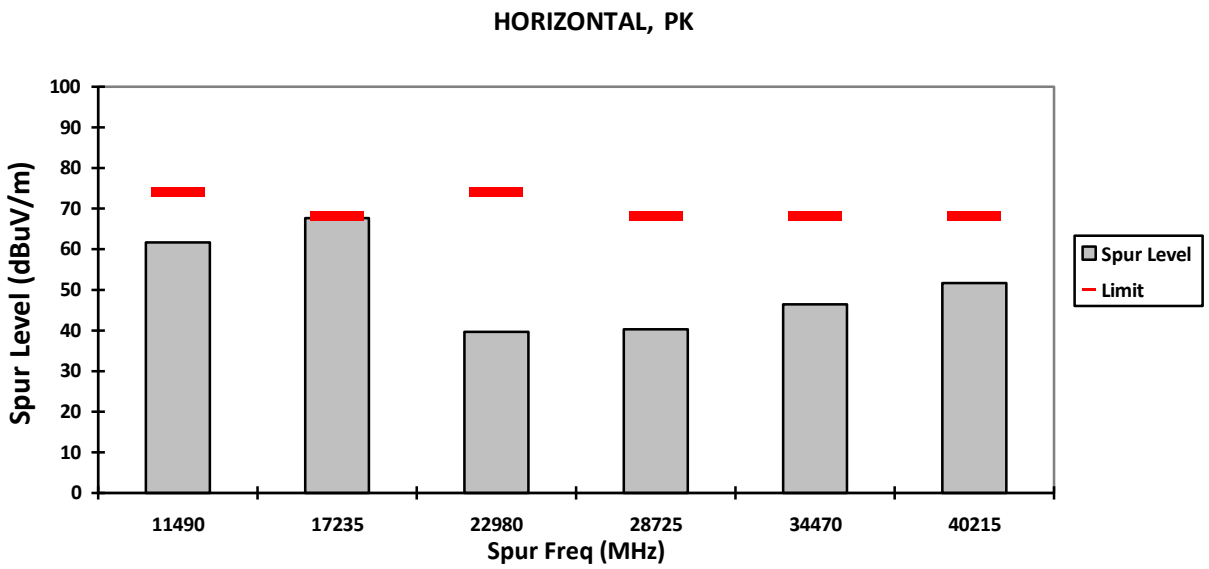
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11490	-	61.7699**	47.5918**	-	74.0000	54.0000	-	12.2301	6.4082	-
17235	-	67.6493**	-	-	68.2000	-	-	0.5507	-	-
22980	-	40.7926**	-	-	74.0000	-	-	33.2074	-	-
28725	-	41.2302**	-	-	68.2000	-	-	26.9698	-	-
34470	-	45.7279**	-	-	68.2000	-	-	22.4721	-	-
40215	-	51.2940**	-	-	68.2000	-	-	16.9060	-	-
Horizontal Radiated Emission Result										
11490	-	61.6667**	47.6090**	-	74.0000	54.0000	-	12.3333	6.3910	-
17235	-	67.6313**	-	-	68.2000	-	-	0.5687	-	-
22980	-	39.6254**	-	-	74.0000	-	-	34.3746	-	-
28725	-	40.2720**	-	-	68.2000	-	-	27.9280	-	-
34470	-	46.4343**	-	-	68.2000	-	-	21.7657	-	-
40215	-	51.7142**	-	-	68.2000	-	-	16.4858	-	-

Remarks: Pass Result	Marginal Result	Fail Result

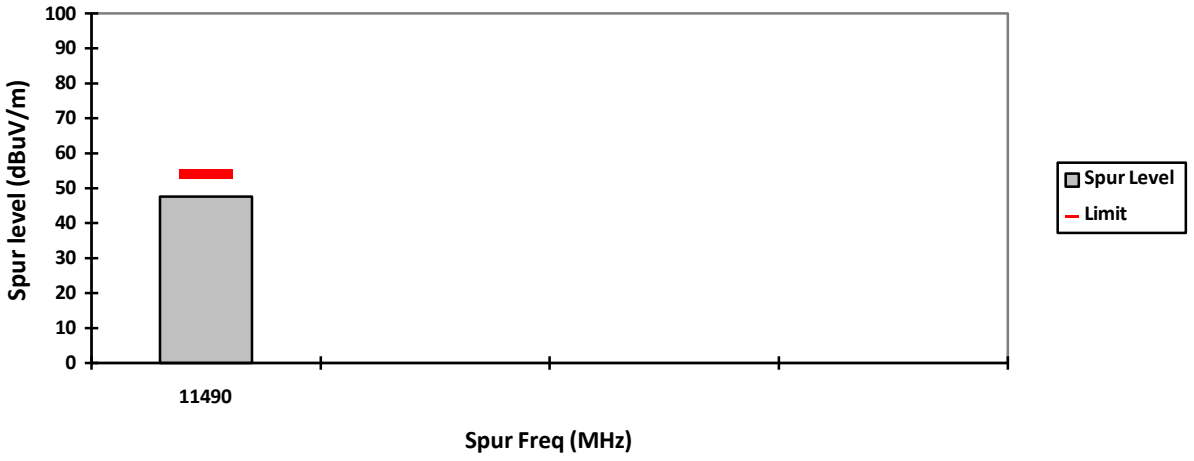
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

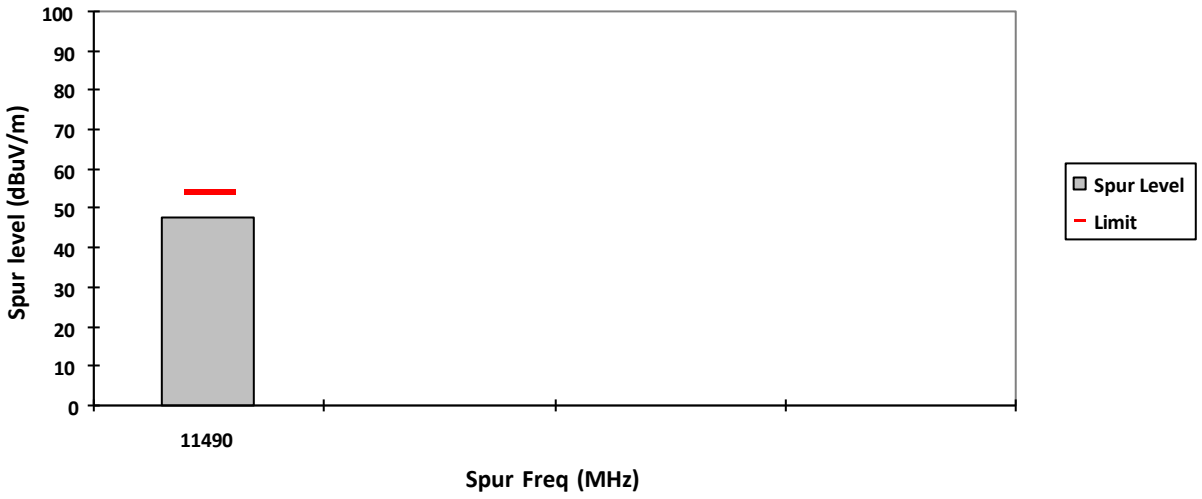

VERTICAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11490
17235
22980
28725
34470
40215
Spur Freq (MHz)
Spur Level
Limit


HORIZONTAL, PK
Spur Level (dBuV/m)
100
90
80
70
60
50
40
30
20
10
0
11490
17235
22980
28725
34470
40215
Spur Freq (MHz)
Spur Level
Limit

VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 5785.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (Mid Channel) tabular data

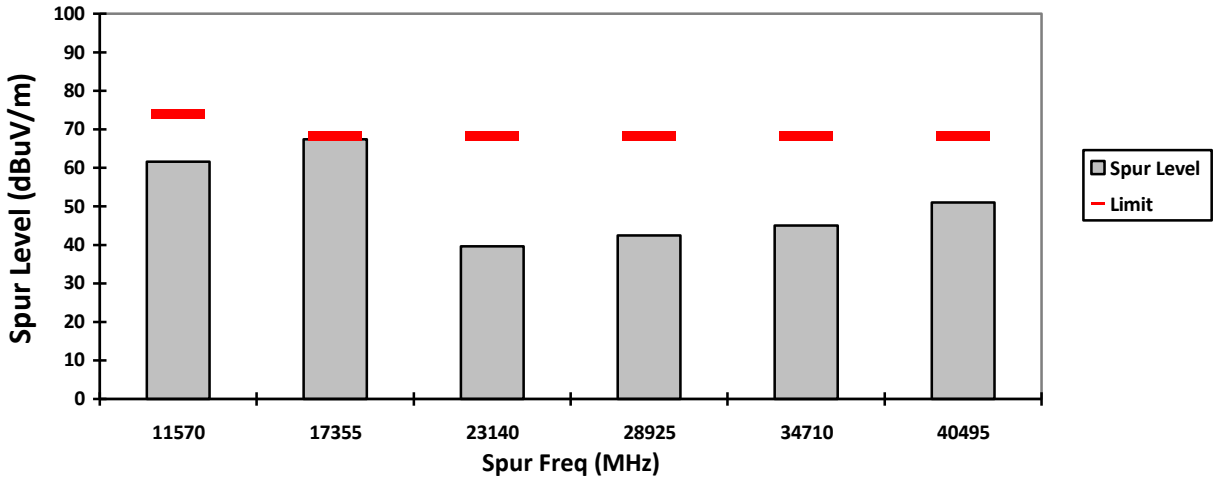
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11570	-	61.5787**	47.3651**	-	74.0000	54.0000	-	12.4213	6.6349	-
17355	-	67.3955**	-	-	68.2000	-	-	0.8045	-	-
23140	-	39.6499**	-	-	68.2000	-	-	28.5501	-	-
28925	-	42.4729**	-	-	68.2000	-	-	25.7271	-	-
34710	-	44.9937**	-	-	68.2000	-	-	23.2063	-	-
40495	-	51.0109**	-	-	68.2000	-	-	17.1891	-	-
Horizontal Radiated Emission Result										
11570	-	61.9967**	47.3572**	-	74.0000	54.0000	-	12.0033	6.6428	-
17355	-	67.3022**	-	-	68.2000	-	-	0.8978	-	-
23140	-	39.2675**	-	-	68.2000	-	-	28.9325	-	-
28925	-	42.5428**	-	-	68.2000	-	-	25.6572	-	-
34710	-	45.6281**	-	-	68.2000	-	-	22.5719	-	-
40495	-	50.9916**	-	-	68.2000	-	-	17.2084	-	-

Remarks: Pass Result	Marginal Result	Fail Result

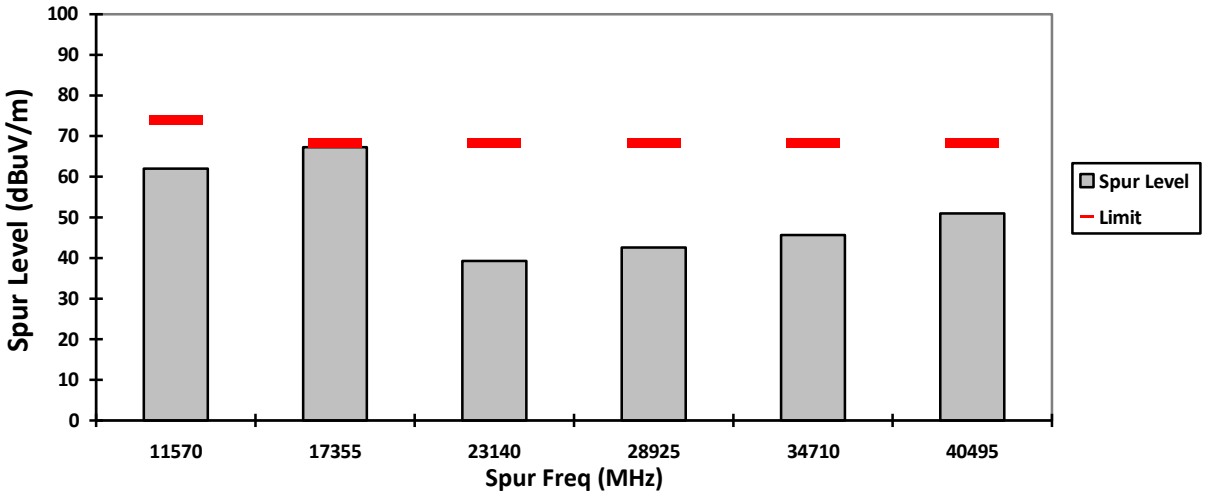
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

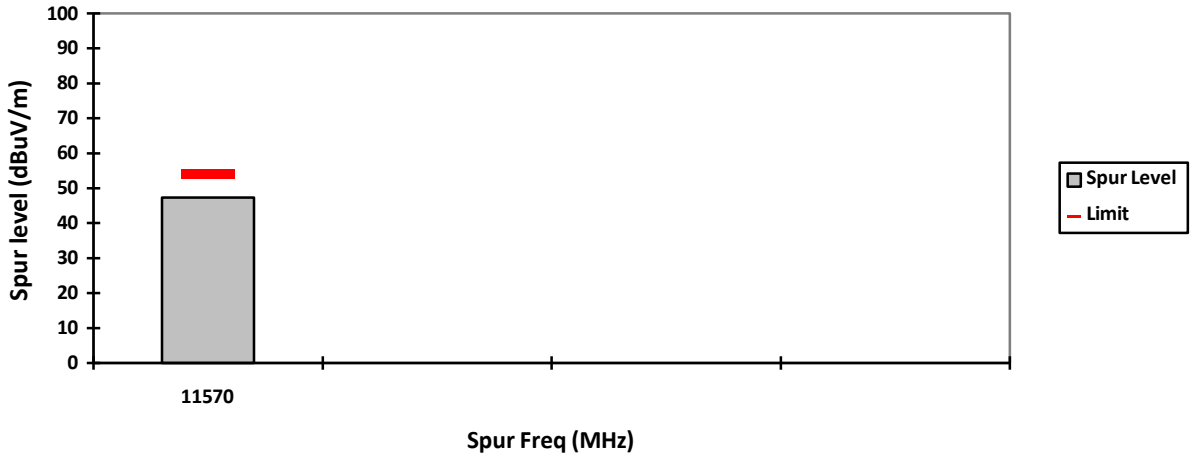
VERTICAL, PK



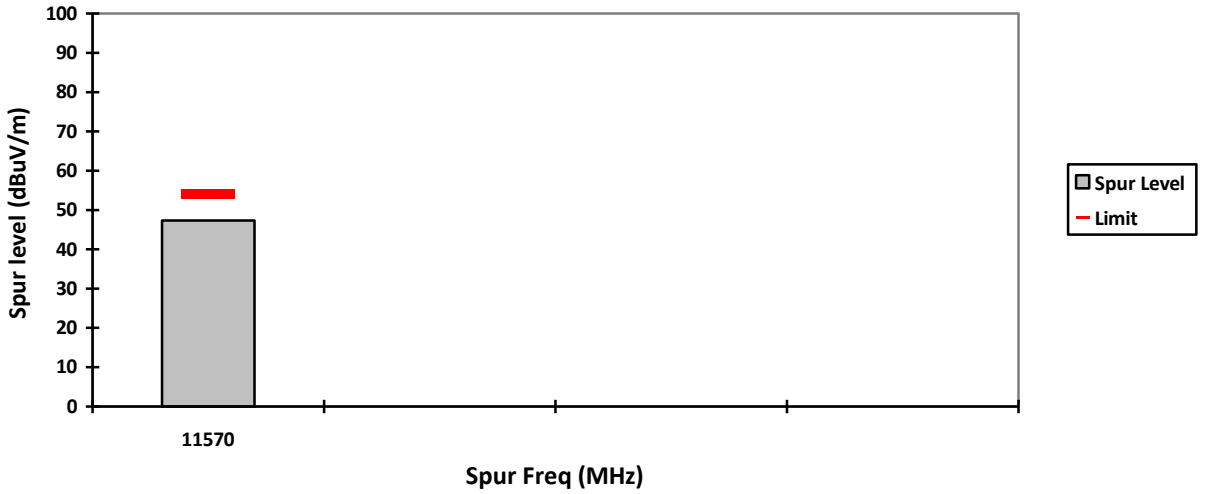
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00008
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 5825.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

Radiated Emission (High Channel) tabular data

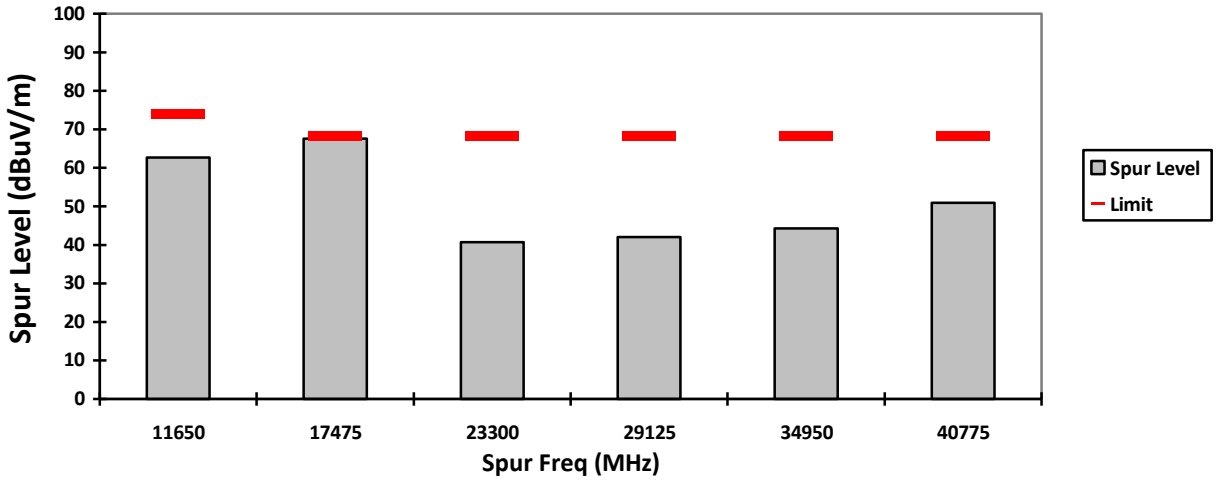
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
11650	-	62.6944**	48.2825**	-	74.0000	54.0000	-	11.3056	5.7175	-
17475	-	67.5571**	-	-	68.2000	-	-	0.6429	-	-
23300	-	40.6780**	-	-	68.2000	-	-	27.5220	-	-
29125	-	42.0168**	-	-	68.2000	-	-	26.1832	-	-
34950	-	44.2688**	-	-	68.2000	-	-	23.9312	-	-
40775	-	50.9152**	-	-	68.2000	-	-	17.2848	-	-
Horizontal Radiated Emission Result										
11650	-	62.2143**	48.4155**	-	74.0000	54.0000	-	11.7857	5.5845	-
17475	-	67.6091**	-	-	68.2000	-	-	0.5909	-	-
23300	-	39.4619**	-	-	68.2000	-	-	28.7381	-	-
29125	-	41.7291**	-	-	68.2000	-	-	26.4709	-	-
34950	-	44.3366**	-	-	68.2000	-	-	23.8634	-	-
40775	-	50.7960**	-	-	68.2000	-	-	17.4040	-	-

Remarks: Pass Result	Marginal Result	Fail Result

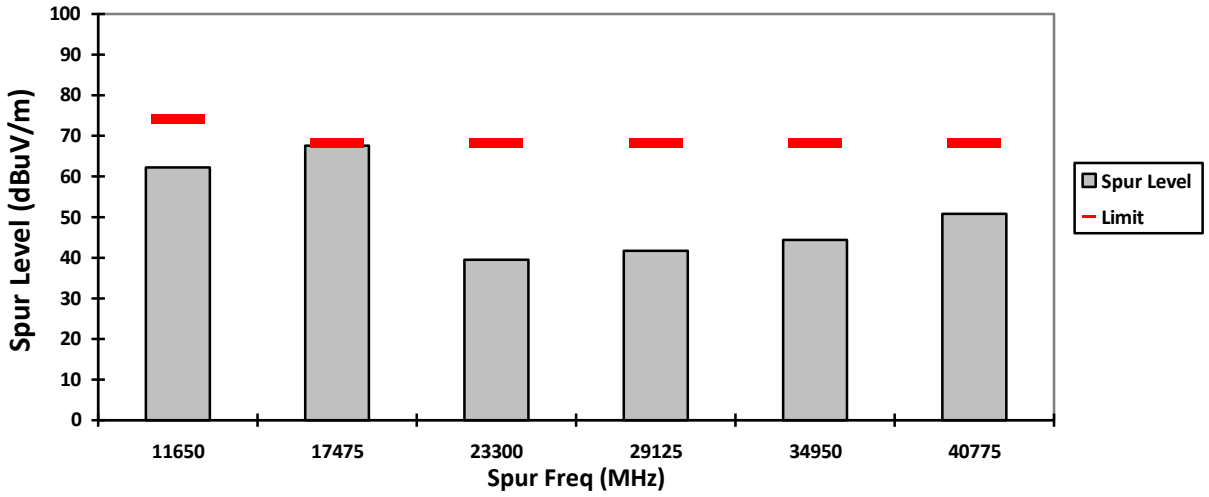
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Sun, 21 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

Remarks: ** Indicates the spurious emission could not be detected due to noise limitations or ambient.
***Pursuant to CFR 47 Part 2.1057 (c), emissions attenuated more than 20 dB below the permissible limit are not reported.**

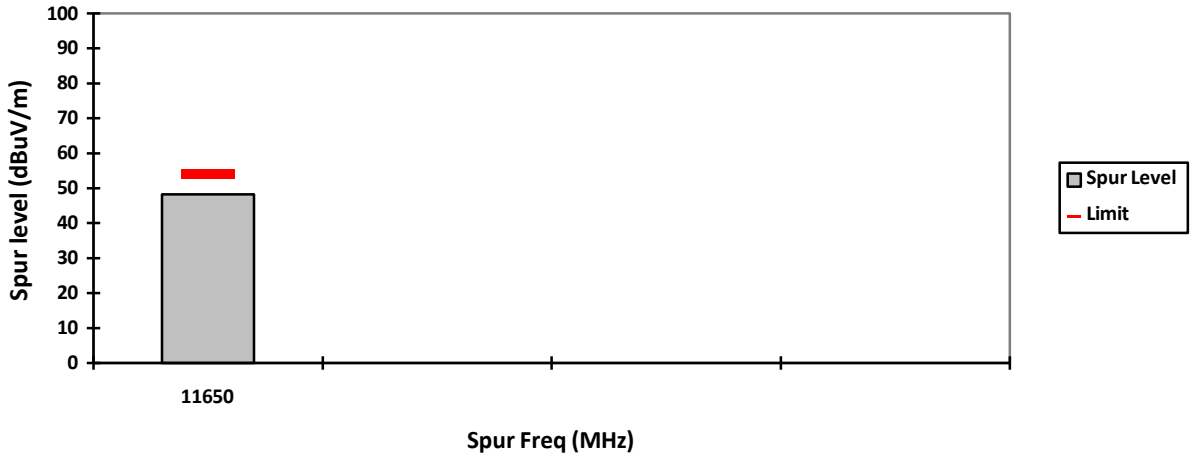
VERTICAL, PK



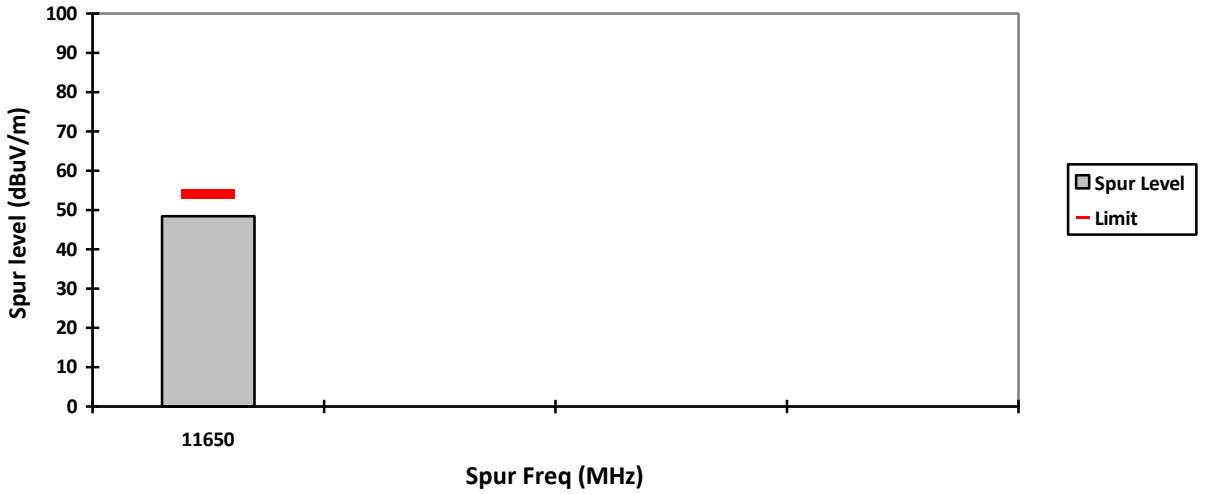
HORIZONTAL, PK



VERTICAL, AV

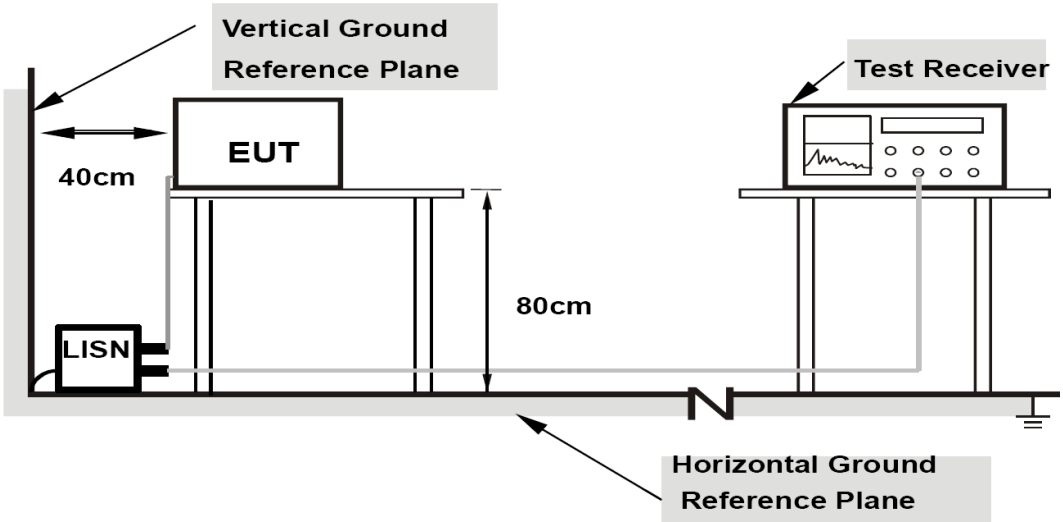


HORIZONTAL, AV



6.8. AC Powerline Conducted Emission

6.8.1. Test Setup



1) Tests were conducted for both Receive and Transmit Mode of the EUT.
2) The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/50uH of coupling impedance for the measuring instrument.
3) Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
4) The frequency range from 150 kHz to 30MHz was measured.

6.8.2. Test Limits

For AC Power Line Conducted Test Limit can be Class A or B depends on product classification.

Limits for conducted disturbance at the mains ports of class A ITE

Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	79	66
0,50 to 30	73	60
NOTE The lower limit shall apply at the transition frequency.		

Table 1: Limits for Conducted Disturbance at the Mains Ports of Class A ITE.

Limits for conducted disturbance at the mains ports of class B ITE

Frequency range MHz	Limits dB(µV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50

NOTE 1 The lower limit shall apply at the transition frequencies.

NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.

Table 2: Limits for Conducted Disturbance at the Mains Ports of Class B ITE