

 MOTOROLA SOLUTIONS	    CERTIFICATE 2518.08 MS ISO/IEC 17025 TESTING SAMM NO. 0825																												
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																												
<table><tr><td>Date/s Tested</td><td>: 26-Aug-2021 - 18-Sep-2021</td></tr><tr><td>Manufacturer/Location</td><td>: Motorola Solutions Malaysia SDN BHD</td></tr><tr><td>Manufacturer Address</td><td>: Plot 2A Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia</td></tr><tr><td>Requestor</td><td>: KHOO TEIK KEAN</td></tr><tr><td>Product Type</td><td>: Hand-held</td></tr><tr><td>Product Version (PMN)</td><td>: R7</td></tr><tr><td>Model Number (HVIN)</td><td>: AAH06JDN9RA1AN (IC Model: PMUD3491ABB)</td></tr><tr><td>Frequency Band</td><td>: 5180-5825 MHz</td></tr><tr><td>Firmware Version (FVIN)</td><td>: D02.21.04.0065</td></tr><tr><td>Applicant Name</td><td>: Motorola Solutions Inc</td></tr><tr><td>Applicant Address</td><td>: 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322</td></tr><tr><td>FCC Registrations</td><td>: 461337</td></tr><tr><td>ISED Registrations</td><td>: MY0001</td></tr></table>  The equipment was tested accordance to the requirement listed below: <table><tr><td>(5GHz Wi-Fi) FCC 47 CFR Part 15 Subpart E IC RSS 247 Issue 2</td><td>PASS</td></tr></table>		Date/s Tested	: 26-Aug-2021 - 18-Sep-2021	Manufacturer/Location	: Motorola Solutions Malaysia SDN BHD	Manufacturer Address	: Plot 2A Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia	Requestor	: KHOO TEIK KEAN	Product Type	: Hand-held	Product Version (PMN)	: R7	Model Number (HVIN)	: AAH06JDN9RA1AN (IC Model: PMUD3491ABB)	Frequency Band	: 5180-5825 MHz	Firmware Version (FVIN)	: D02.21.04.0065	Applicant Name	: Motorola Solutions Inc	Applicant Address	: 8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322	FCC Registrations	: 461337	ISED Registrations	: MY0001	(5GHz Wi-Fi) FCC 47 CFR Part 15 Subpart E IC RSS 247 Issue 2	PASS
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Prepared By:  GAN BOON TEONG Test Personnel	Approved Signatory:  VINCENT FOONG CHUEN KIT Responsible Engineer																												

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	10
6.0. Duty Cycle of Test Signal	13
6.0.1. Test Setup	13
6.0.2. Test Data	13
7.0. Transmitter Test Parameters	15
7.1. Bandwidth measurements	15
7.1.1. Test Setup	15
7.1.2. Test Limits	15
7.1.3. Test Data	16
7.2. Maximum Conducted Output Power	24
7.2.1. Test Setup	24
7.2.2. Test Limits	24
7.2.3. Additional Info	25
7.2.4. Test Data	25
7.3. Maximum Power Spectral Density	39
7.3.1. Test Setup	39
7.3.2. Test Limits	39
7.3.3. Additional Info	40
7.3.4. Test Data	40
7.4. 6dB Bandwidth	50
7.4.1. Test Setup	50
7.4.2. Test Limits	50
7.4.3. Test Data	51
7.5. Frequency Stability	55
7.5.1. Test Setup	55
7.5.2. Test Limits	55
7.5.3. Test Data	56
7.6. Band Edge Radiated Spurious Emission Measurement	57
7.6.1. Test Setup	57
7.6.2. Test Limits	58
7.6.3. Test Result	59
7.7. Radiated Spurious Emission Measurement	93
7.7.1. Test Setup	93
7.7.2. Test Limits	94
7.7.3. Test Data	95
7.8. AC Powerline Conducted Emission	191
7.8.1. Test Setup	191
7.8.2. Test Limits	191
7.8.3. Test Data	193

REVISION HISTORY

Revision History	Description	Date	Originator
Rev. A	Initial Report	20-Sep-2021	Gan Boon Teong
Rev. B	Updated radiated AV info, limit	18-Oct-2021	Vincent Foong

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: 17.543dBm (56.79mW) 802.11n20: 17.718dBm (59.13mW)	865TXP0468	Gan
15.407(a) (1/2/3)	RSS 247 6.2	Maximum Power Spectral Density	Pass	NA	865TXP0468	Gan
15.407 (e)	RSS 247 6.2.4	6dB Bandwidth	Pass	a20:16.864MHz (16M7D1D) n20/ac20: 17.876MHz (17M9D1D)	865TXP0468	Gan
15.407 (g)	RSS Gen 6.11	Frequency Stability	Pass	NA	865TXP0468	Gan
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Band Edge Radiated Spurious Emission Measurement	Pass	Worst case emission: 69.9658dBuV/m (margin: 4.0342dB)	865TXP0473	Qawiman&Amaluddin
15.407 (b) (1/2/3/4/6)	RSS 247 6.2	Radiated Spurious Emission Measurement	Pass	Worst case emission: 65.5237dBuV/m (margin: 2.6763dB)	865TXP0473	Qawiman&Amaluddin
15.207 15.407 (b)(6)	RSS Gen 8.8	AC Powerline Conducted Emission	Pass	Meet the requirement	865TXP0473	Alif&Iskandar
15.203	-	Antenna requirement	Pass	Internal antenna is not accessible to the end-user	NA	NA

2.0. Measurement Uncertainty

Measurement	Frequency	Expanded Uncertainty (k=1.96) (±)
AC Power Line Conducted Spurious Emission	150kHz ~ 30MHz	3.48 dB
Radiated Emissions up to 1 GHz (Field Strength)	30MHz ~ 1000MHz	5.88 dB
Radiated Emissions above 1 GHz (Field Strength)	1GHz ~ 18GHz	5.84 dB
	18GHz ~ 40GHz	6.02 dB
Conducted Spurious Emissions	9kHz ~ 12.75GHz	2.82 dB

3.0. Equipment List

Bluetooth ATE # 1 (SW Version: Ate Main_3.1.11)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
CHAMBER	SH-641	92002639	8-Dec-20	8-Dec-21
POWER SUPPLY (0-20V / 0-25A)	6652A	3640A02941	22-Jan-21	22-Jan-22
ANALYZER SPECTRUM (PSA 3Hz-26.5GHz)	E4440A	US45303111	14-Jul-21	14-Jul-22
CHAMBER	SH-641	92002639	8-Dec-20	8-Dec-21
N to N RF Cable # 1	SF126/11N/11N	NA	NA	NA

Radiated Emission Station (SW Version: EMC FCC RE v1.6.2)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
DRG HORN FREQ.	SAS-571	720	06-Apr-21	06-Apr-23
DRG HORN FREQ.	SAS-571	566	22-Oct-19	22-Oct-21
POWER SUPPLY	N7976A	MY53410110	24-May-21	24-May-22
SIGNAL GENERATOR	SMB 100A	181117	8-Nov-18	8-Nov-21
EMI TEST RECEIVER	ESW44	101750	15-Jan-21	15-Jan-22
EMI TEST RECEIVER	ESIB26	827769/009	11-Mar-21	11-Mar-22
5m SEMI-ANECHOIC CHAMBER	S800-HX	J2308	Not Required	Not Required
BILOG ANTENNA	CBL6112D	55546	06-Jun-21	06-Jun-22
BILOG ANTENNA	CBL6112B	2964	4-May-21	4-May-22
HYGRO-THERMOMETER	SDL500	A.016800	18-May-21	18-May-22
SYSTEM CONTROLLER	SC104V	050806-1	Not Required	Not Required
TURNTABLE FLUSH MOUNT 2M	FM2011	NA	Not Required	Not Required
ANTENNA POSITIONING TOWER	TLT2	NA	Not Required	Not Required
BROAD-BAND HORN ANTENNA	BBHA9170	BBHA9170255	4-Feb-21	4-Feb-22
AMPLIFIER	JS44-18004000-33-8P	2034566	12-June-19	12-June-22
PREAMPLIFIER	PAM-0118P	361	11-Sep-20	11-Sep-23
LOOP ANTENNA	6502	00208416	15-Sep-20	15-Sep-21

Power Line Conducted Emission (SW Version: EMC 32 v10.60.10)

Description	Model	Serial Number	Calibration Date	Calibration Due Date
TEMPERATURE & HUMIDITY LOGGER	TM320	11203258	11-Dec-20	11-Dec-21
V-NETWORK 2-LINE	ENV216V	101039	20-July-19	20-Sep-21
EMI TEST RECEIVER	ESIB40	100307	8-Jan-21	8-Jan-22
PROGRAMMABLE AC SOURCE	61604	616040003502	4-Dec-2020	4-Dec-2021

4.0. General Information

General Description of EUT:

Product	Hand-held
Brand	Motorola Solutions
Test Model	R7
Power Supply Rating	7.5Vdc (Battery)
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)	63.1 mW for 5.180 ~ 5.240 GHz 63.1 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	Internal PCB with 2.7 dBi gain
SW Version	D02.21.04.0065
HW Version	Rev A

Note:

The EUT contains following accessory devices and data cable:

Item	Brand	Model or P/N
BATTERY PACK,BATT IMPRES LIION TIA4950 IP68 3200T	MOTOROLA	PMNN4810A
VHF WHIP ANTENNA (136-174 MHZ) 136 - 174 MHz	MOTOROLA	PMAD4147A
CABLE,PORTABLE PROGRAMMING CABLE	MOTOROLA	PMKN4230A
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

*Note: Only applicable channels on UUT will be tested.

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

A pigtail was soldered out of the EUT for RF conducted measurements. The EUT used for EMC testing was not modified

Selection of test modes

Some reports may contain a limited number of test points/modes, in which case all channels and modulations were evaluated and the worst case performance is presented in the report

Antenna gain disclaimer

Antenna gain information is provided by customer. The validity of the results is dependent upon this information. The lab will not be held accountable in the event the supplied information affects compliance

Test configuration of EUT

All relevant configurations involving radio models and accessories (including chargers, batteries, antennas) were assessed. Only worst case configurations will be included 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	23.8°C, 69.7% RH	7.5V DC	Qawiman&Amaluddin
RE<1G	23.8°C, 69.7% RH	7.5V DC	Qawiman&Amaluddin
PLC	24.2°C, 71.2% RH	120V AC	Alif&Iskandar
APCM	25°C, 54.8% RH	7.5V DC	Gan

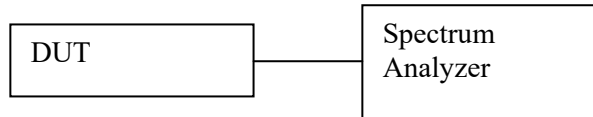
Duty Cycle of Test Signal

802.11a and 802.11n (HT20): Duty cycle of test signal is <98%.

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

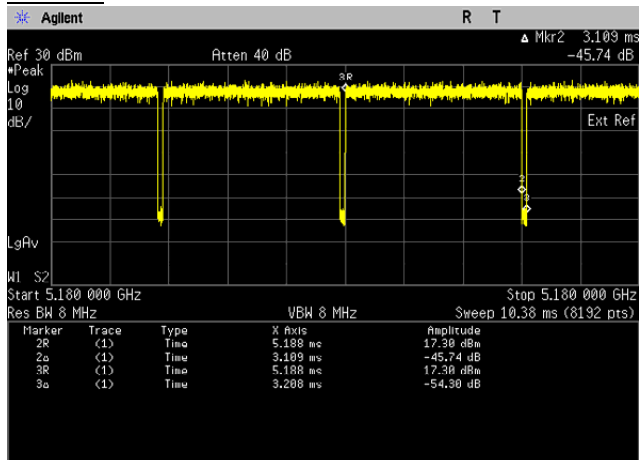
6.0.1. Test Setup



- 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

802.11a

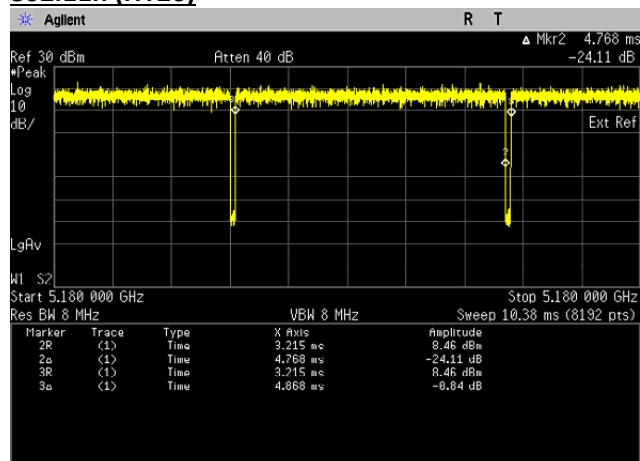


On time	3.109	ms
On + off time	3.208	ms
Duty Cycle	0.9691	
Duty Cycle Factor	0.136	

*Duty cycle = On time/ On +off time

*Duty Cycle factor = 10*log (1/Duty Cycle)

802.11n (HT20)



On time	4.768	ms
On + off time	4.868	ms
Duty Cycle	0.9795	
Duty Cycle Factor	0.090	

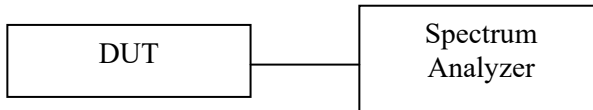
*Duty cycle = On time/ On +off time

*Duty Cycle factor = 10*log (1/Duty Cycle)

7.0. Transmitter Test Parameters

7.1. Bandwidth measurements

7.1.1. 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 $\geq 3 \cdot$ 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).

7.1.2. Test Limits

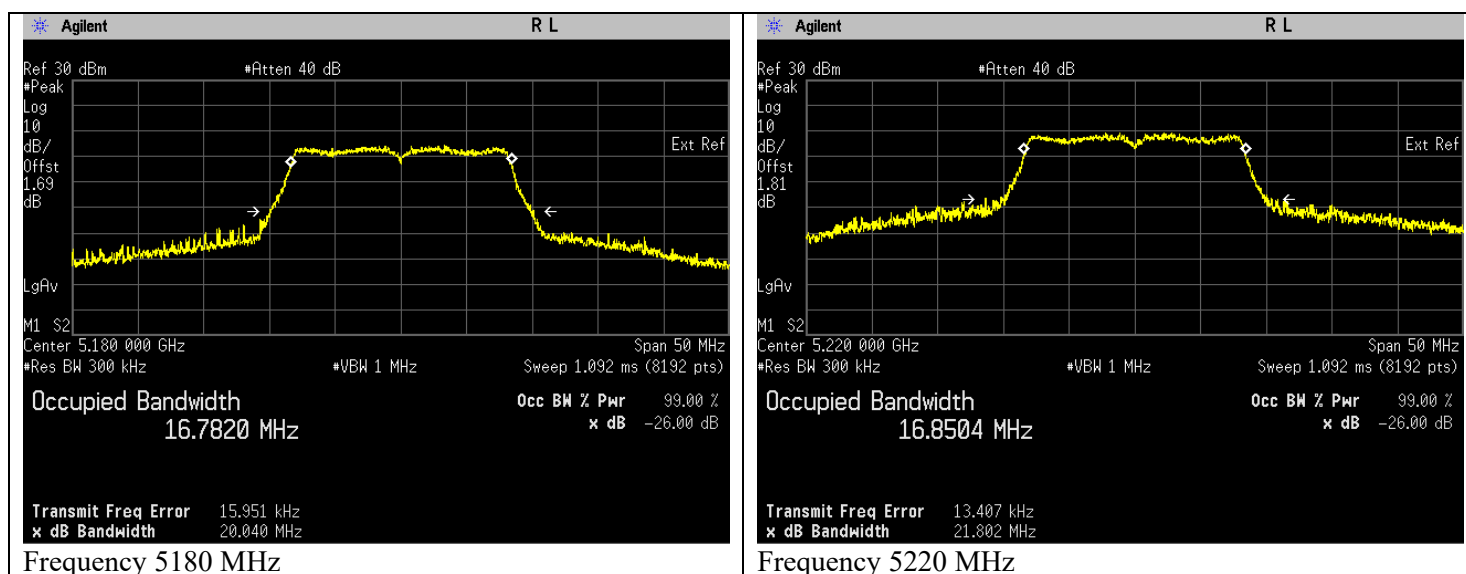
Not applicable.

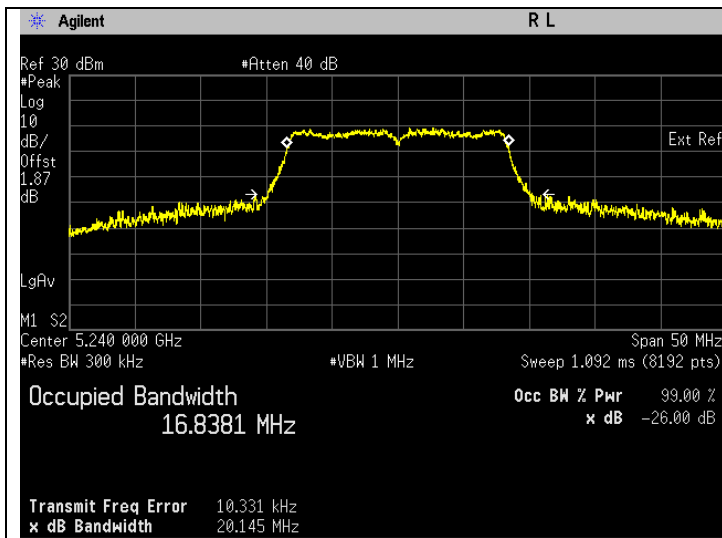
7.1.3. Test Data

802.11a

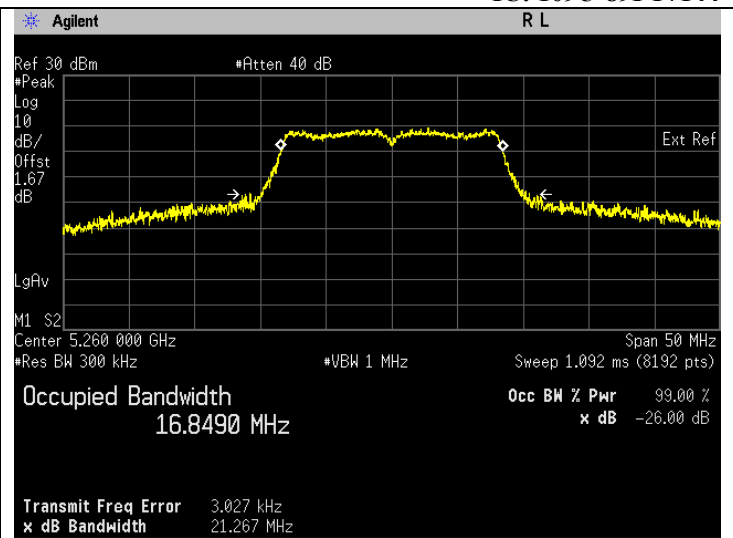
Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	Mod Type: BPSK, Data Rate: 6	20.040	Pass	16.782	Pass
5220	Mod Type: BPSK, Data Rate: 6	21.802	Pass	16.850	Pass
5240	Mod Type: BPSK, Data Rate: 6	20.145	Pass	16.838	Pass
5260	Mod Type: BPSK, Data Rate: 6	21.267	Pass	16.842	Pass
5300	Mod Type: BPSK, Data Rate: 6	21.071	Pass	16.864	Pass
5320	Mod Type: BPSK, Data Rate: 6	20.070	Pass	16.811	Pass
5500	Mod Type: BPSK, Data Rate: 6	20.067	Pass	16.740	Pass
5580	Mod Type: BPSK, Data Rate: 6	19.879	Pass	16.756	Pass
5700	Mod Type: BPSK, Data Rate: 6	19.831	Pass	16.769	Pass
5720	Mod Type: BPSK, Data Rate: 6, UNII-2C	14.883	Pass	13.383	Pass
5720	Mod Type: BPSK, Data Rate: 6, UNII-3	4.883	Pass	3.383	Pass
5745	Mod Type: BPSK, Data Rate: 6	20.002	Pass	16.758	Pass
5785	Mod Type: BPSK, Data Rate: 6	19.765	Pass	16.762	Pass
5825	Mod Type: BPSK, Data Rate: 6	19.919	Pass	16.793	Pass

26 dB Bandwidth/ 99% Bandwidth

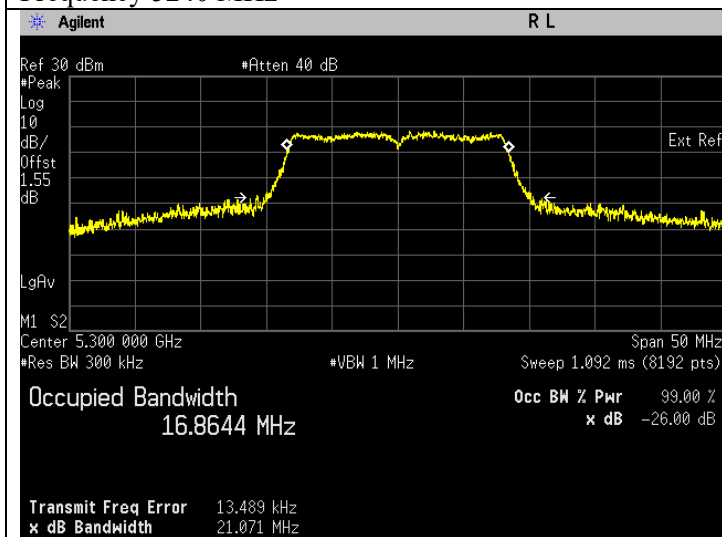




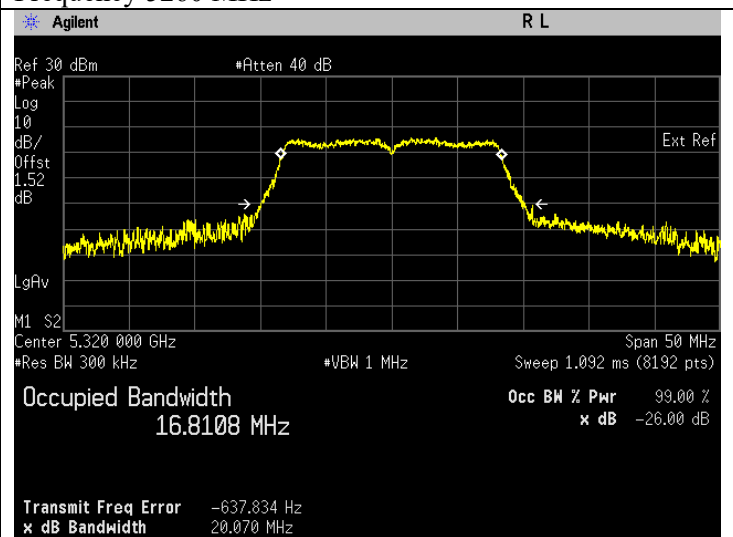
Frequency 5240 MHz



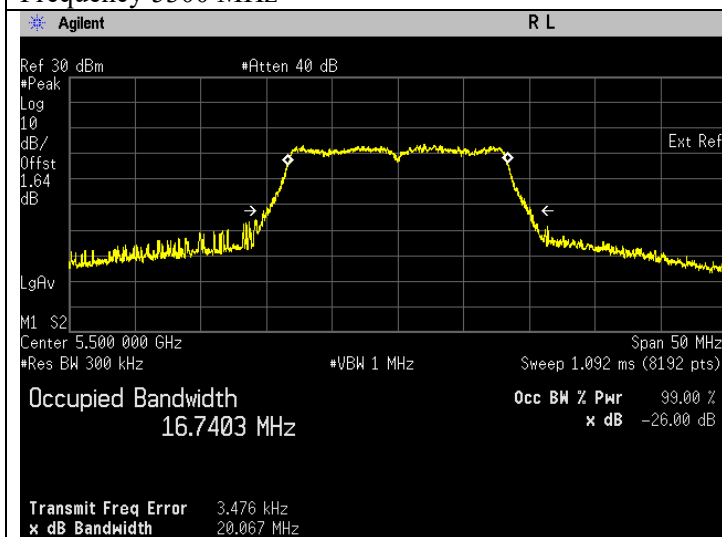
Frequency 5260 MHz



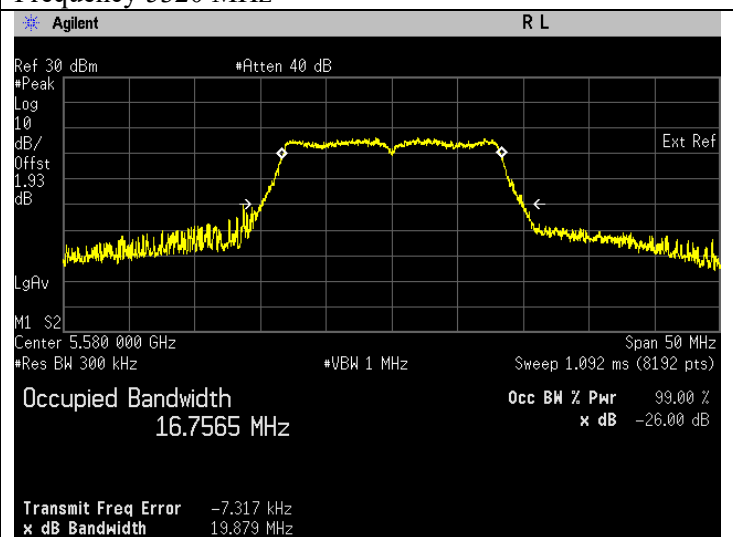
Frequency 5300 MHz



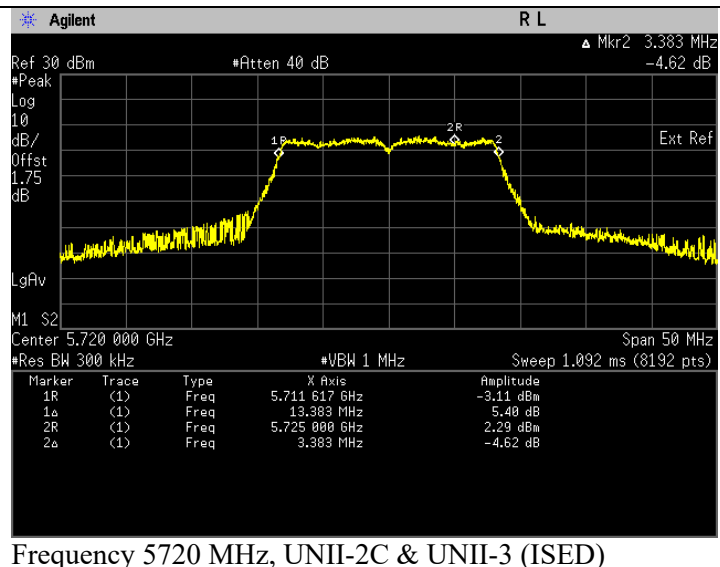
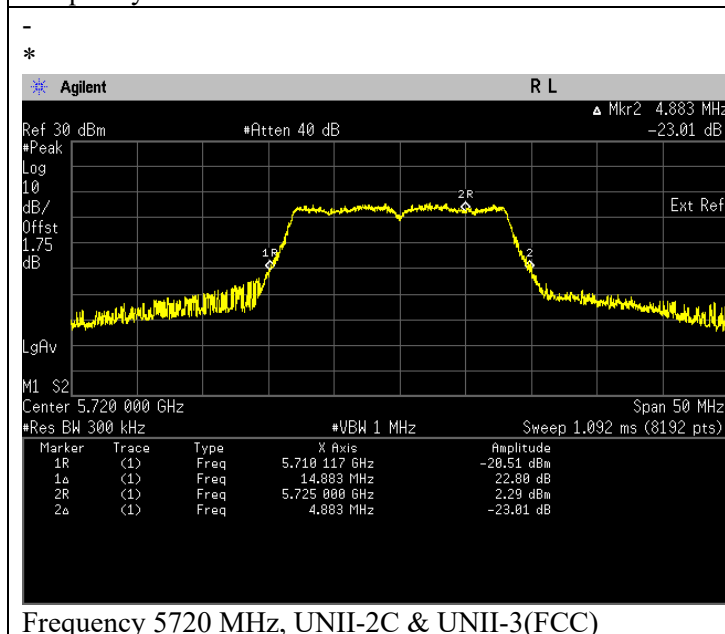
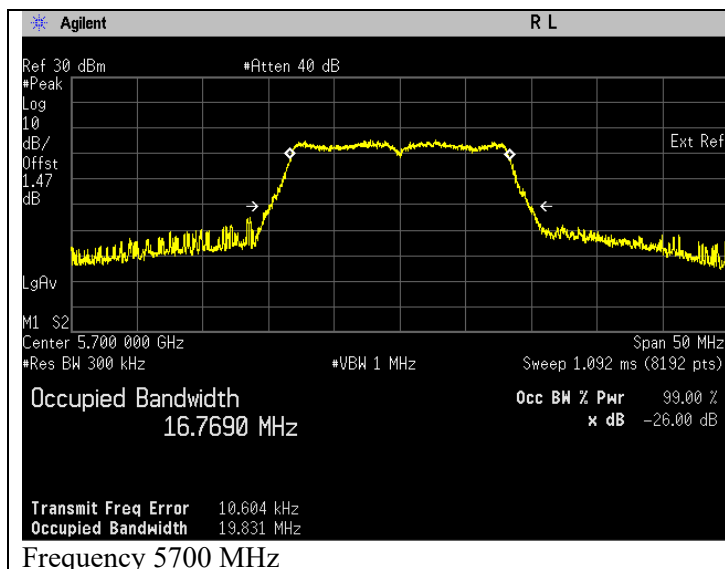
Frequency 5320 MHz

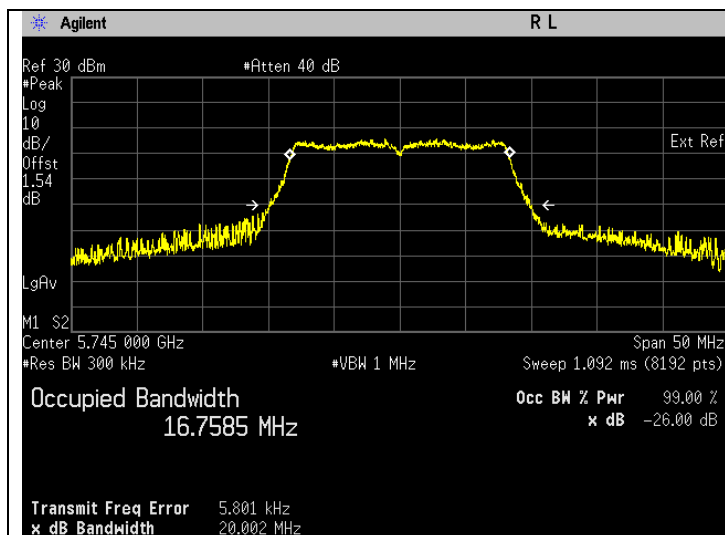


Frequency 5500 MHz

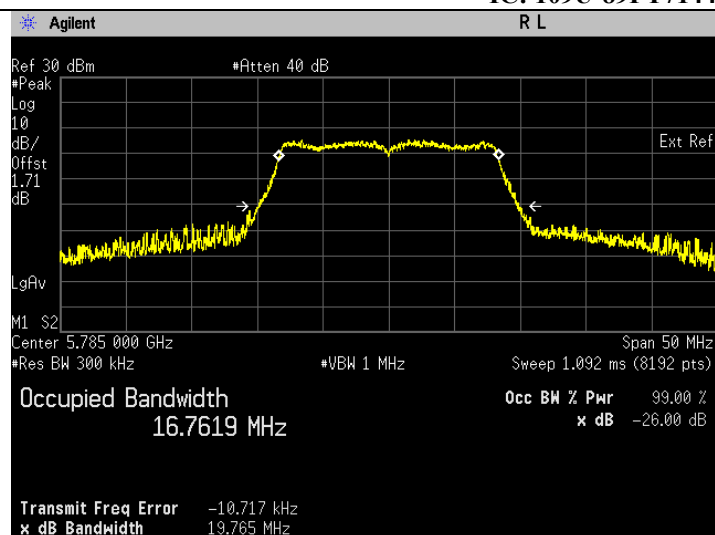


Frequency 5580 MHz

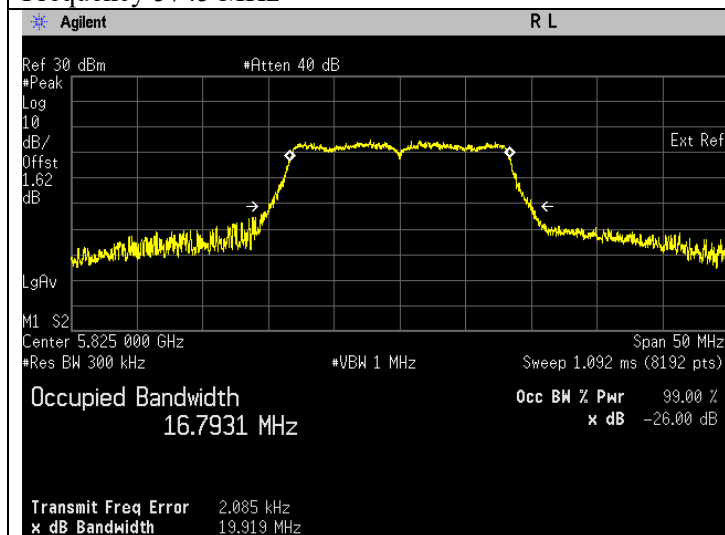




Frequency 5745 MHz



Frequency 5785 MHz

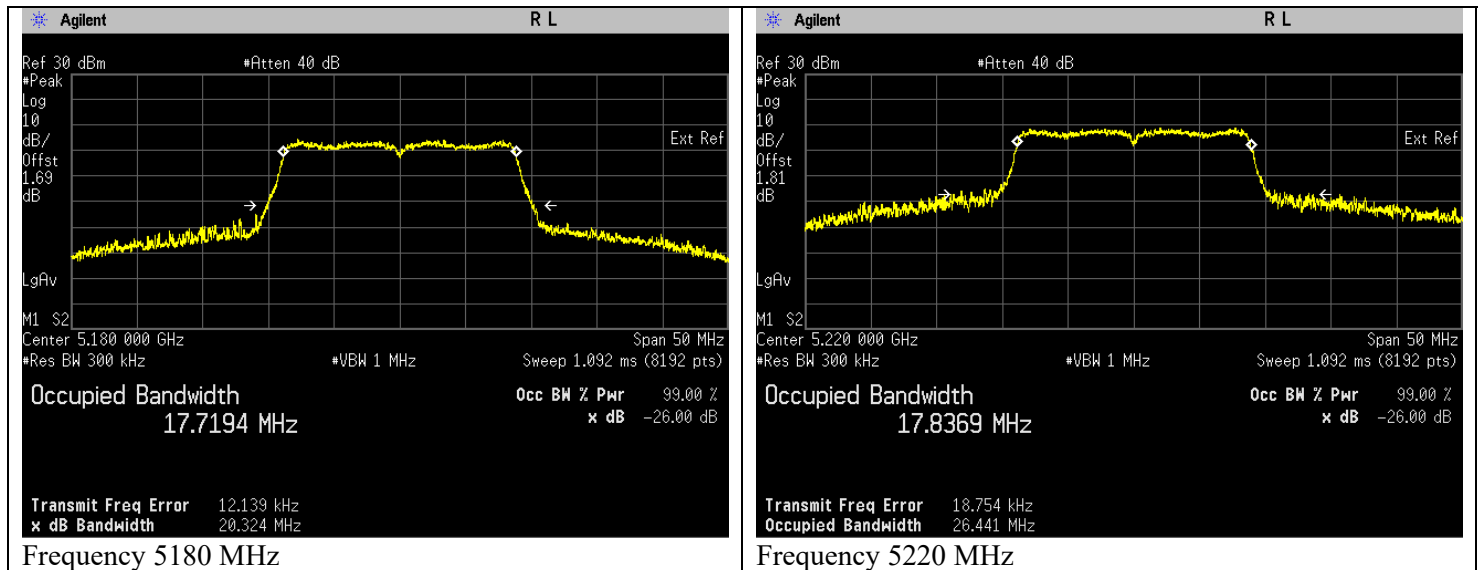


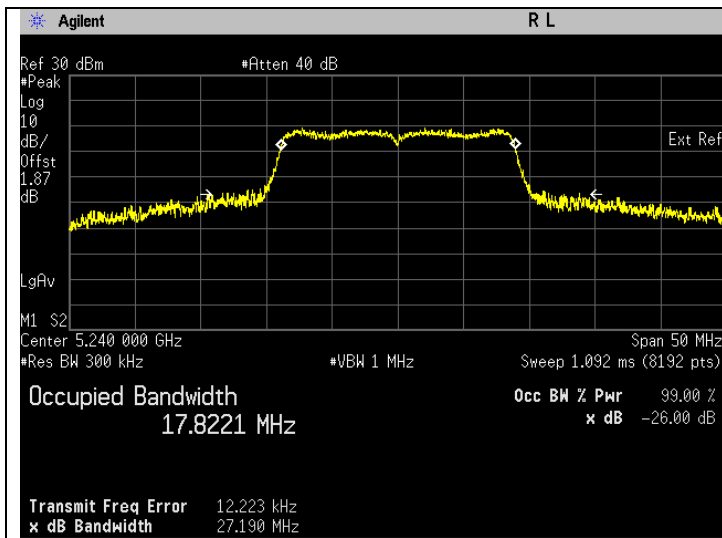
Frequency 5825 MHz

802.11n (HT20)

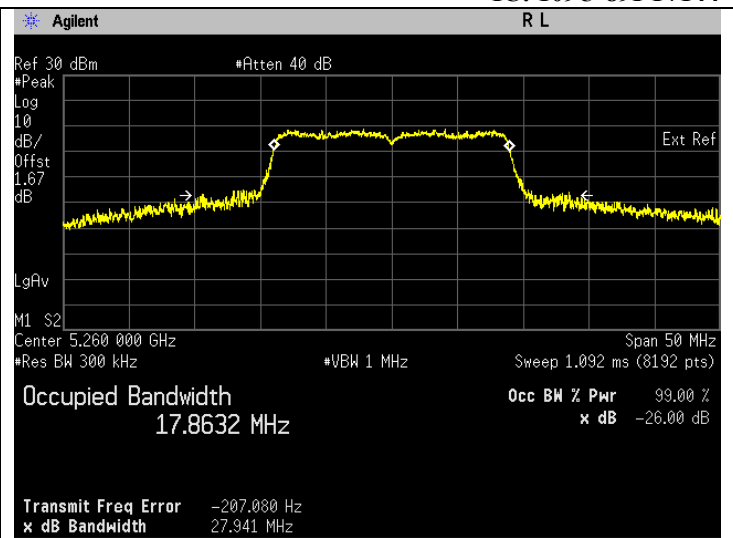
Frequency (MHz)	Test Configuration	Results			
		26 dB Bandwidth(MHz)	Status	99% Bandwidth(MHz)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.324	Pass	17.719	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	26.441	Pass	17.837	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	27.190	Pass	17.823	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	27.941	Pass	17.863	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	28.684	Pass	17.876	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.664	Pass	17.704	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.363	Pass	17.717	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.191	Pass	17.709	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.262	Pass	17.701	Pass
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5), UNII-2C	15.132	Pass	13.856	Pass
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5), UNII-3	5.132	Pass	3.856	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.408	Pass	17.720	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.307	Pass	17.701	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	20.314	Pass	17.747	Pass

26 dB Bandwidth/ 99% Bandwidth

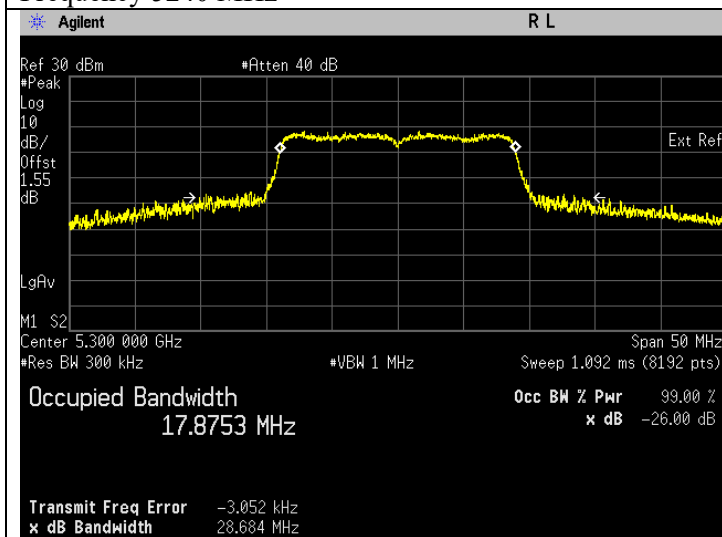




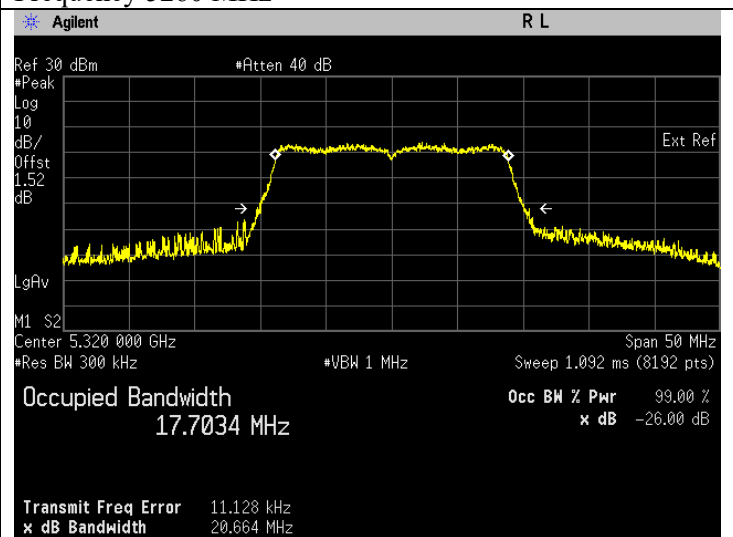
Frequency 5240 MHz



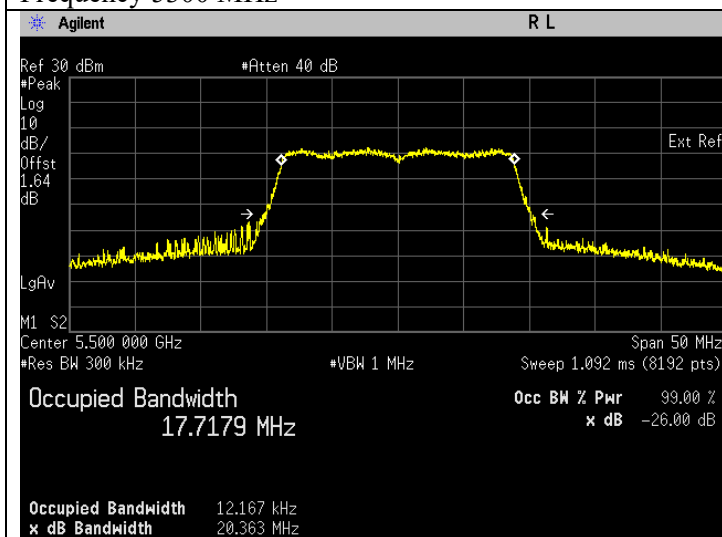
Frequency 5260 MHz



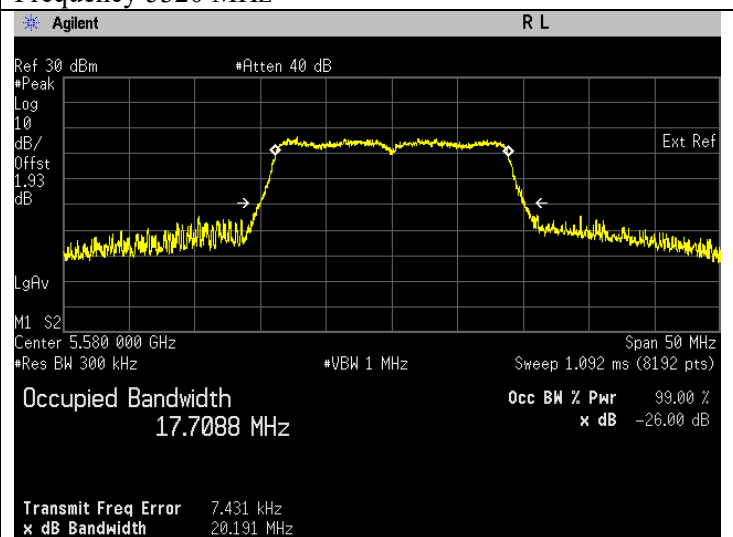
Frequency 5300 MHz



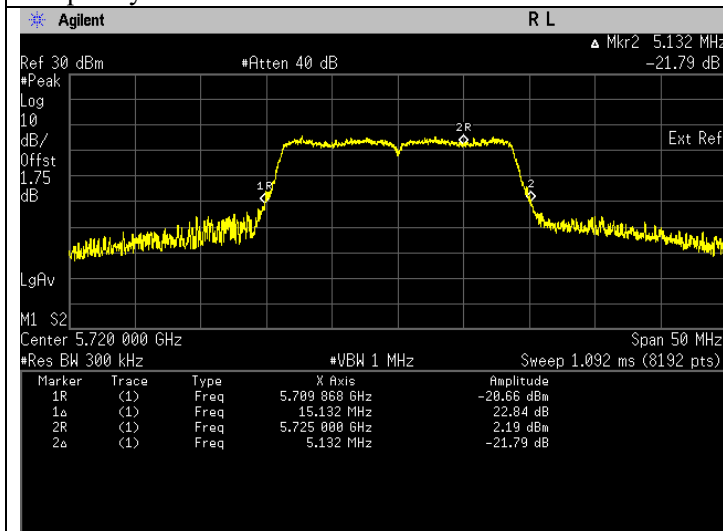
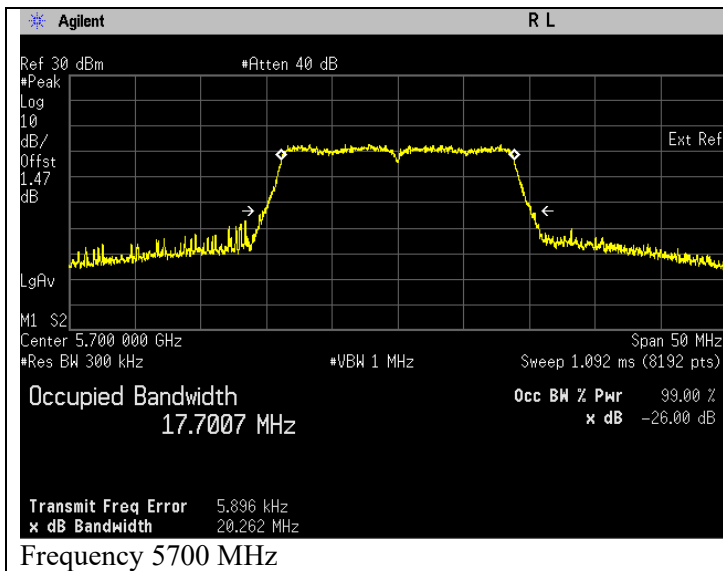
Frequency 5320 MHz



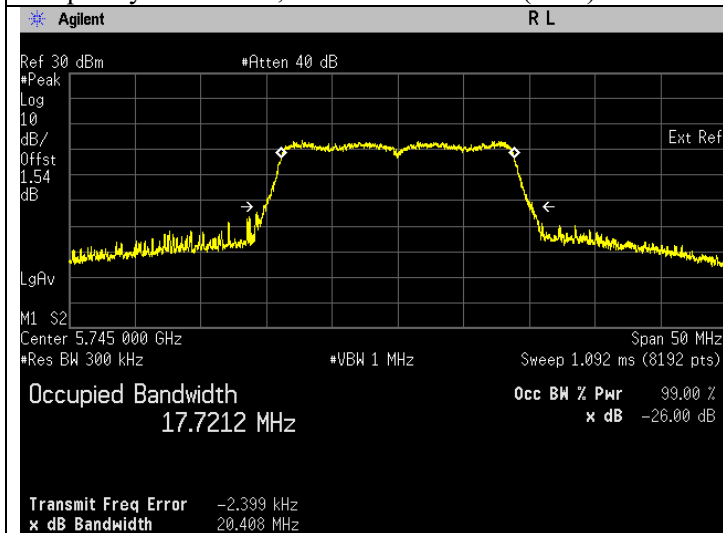
Frequency 5500 MHz



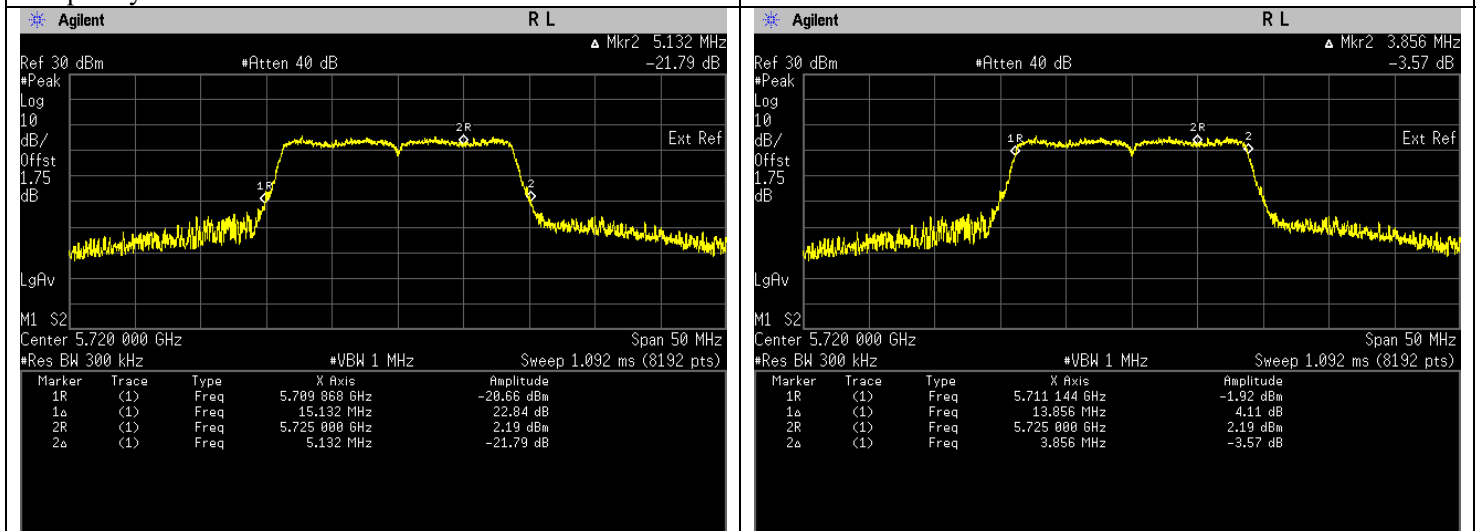
Frequency 5580 MHz



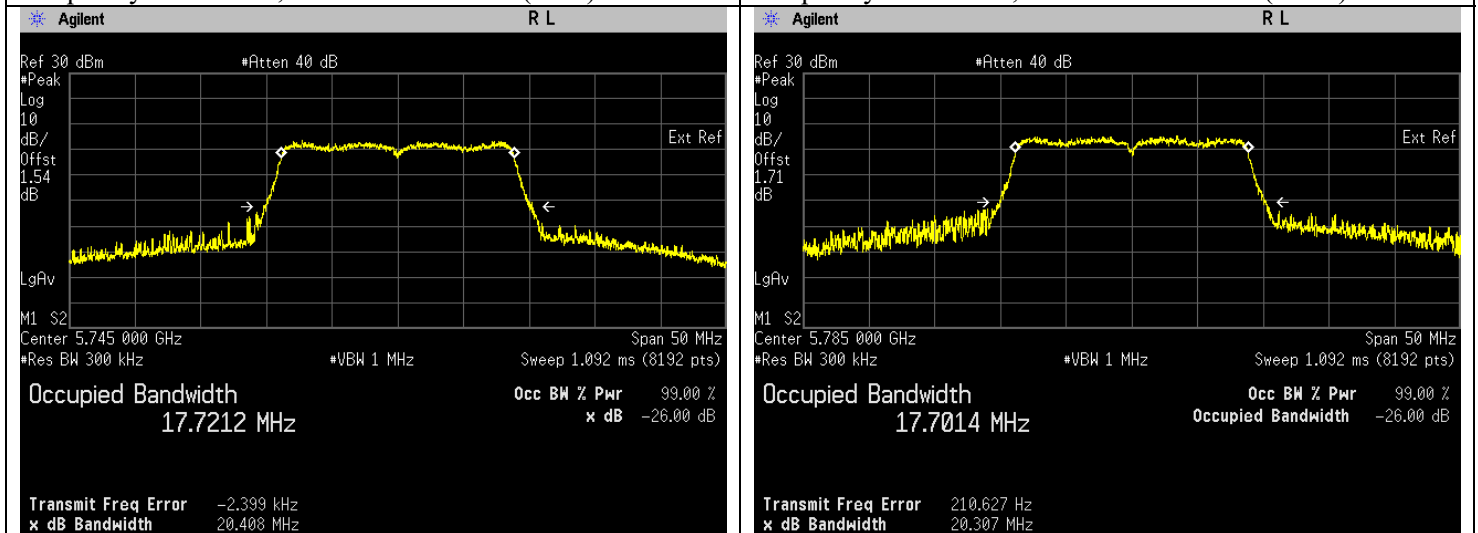
Frequency 5720 MHz, UNII-2C & UNII-3(FCC)



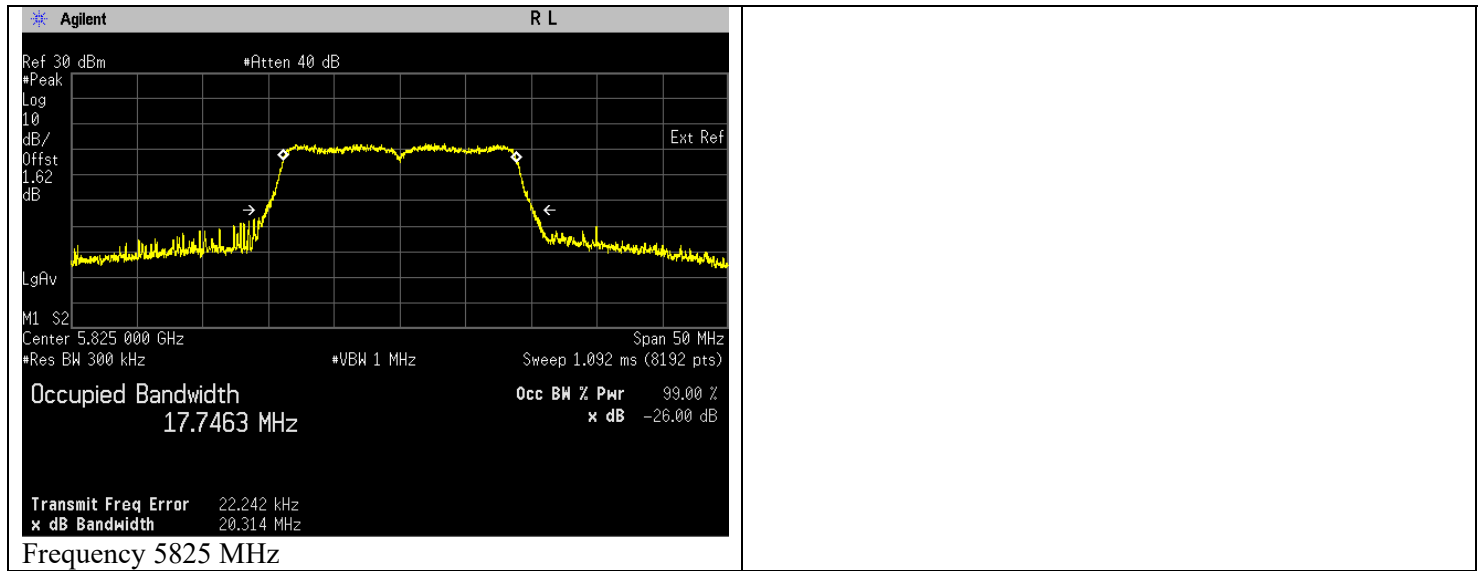
Frequency 5745 MHz



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

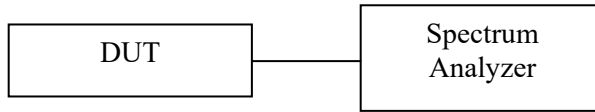


Frequency 5785 MHz



7.2. Maximum Conducted Output Power

7.2.1. Test Setup



- Test setup as per illustrated above.
- Set DUT to transmit at desire transmit frequency.
- Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
- Setting of Spectrum analyzer :
 - Span to encompass the entire 26dB EBW or 99% Occupied Bandwidth.
 - RBW = 1 MHz
 - VBW $\geq$ 3 MHz
 - Detector = power averaging (RMS)
 - Trace = Max hold
 - Number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$
 - 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
- The measurement method follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v01r04 under clause E.2.d) Method SA-2.
- The Maximum output power results are included duty cycle correction factor.

7.2.2. Test Limits

FCC 15.407(a)

Range(GHz)	Condition	Output Power Limit
5.15-5.25 (UNII-1)	Outdoor AP	$\leq 1\text{W}$
	Indoor AP	$\leq 1\text{W}$
	Fixed Point to Point AP	$\leq 1\text{W}$
	√ Mobile and Portable client devices	$\leq 250\text{mW}$
5.25-5.35 (UNII-2A)	√	$\leq 250\text{mW}$ or $11\text{dBm} + 10\log_{10} B^*$
5.47-5.525 (UNII-2C)	√	*B is 26dB emission bandwidth in MHz

5.725-5.85 (UNII-3)	√	≤1W
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RSS-247 6.2

Range(GHz)	Condition	Output Power Limit
5.15-5.25	indoor only (e.i.r.p.)	≤200mW or 10+10log ₁₀ B* *B is 99% emission bandwidth in 1MHz

5.25-5.35	(Conducted & e.i.r.p.)	Conducted: ≤250mW or 11+10log ₁₀ B* EIRP: < 1.0W or 17+10log ₁₀ B* *B is 99% emission bandwidth in 1MHz
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5.47-5.6 5.65-5.725	(Conducted & e.i.r.p.)	Conducted: ≤250mW or 11+10log ₁₀ B* EIRP: < 1.0W or 17+10log ₁₀ B* *B is 99% emission bandwidth in 1MHz
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5.725-5.85	(Conducted)	≤1W
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7.2.3. Additional Info

Antenna	Gain (dBi)
Antenna 1	2.7
Duty Cycle Correction Factor	
802.11a	0.136
802.11n (HT20)	0.090

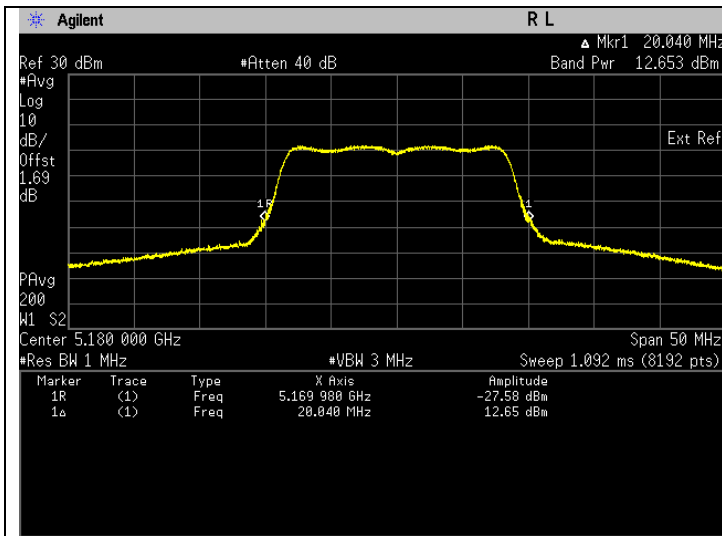
7.2.4. Test Data

Summary table

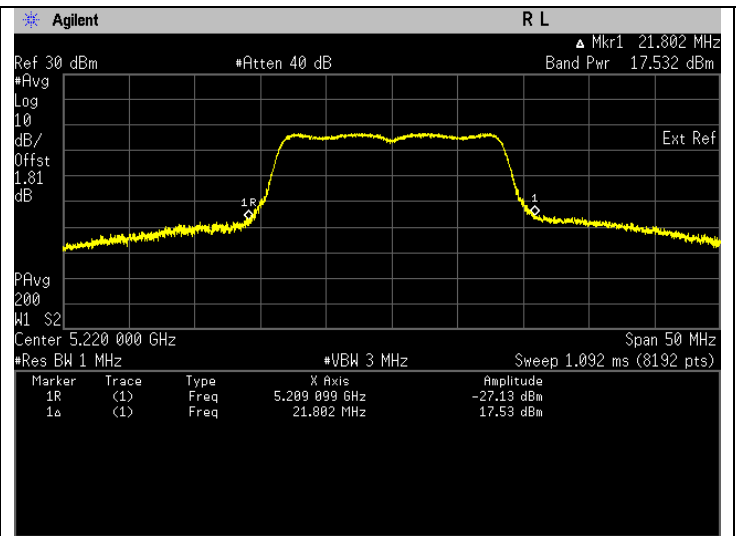
WLAN	Frequency Range (MHz)	Bandwidth (MHz)	RF Power Output		EIRP	
			Max measured (mW)	Max declared (mW)	Max measured (mW)	Max declared (mW)
802.11a	5180	20	18.99	25.12	35.37	46.77
	5200-5240	20	57.84	63.1	107.7	117.49
	5260-5300	20	54.5	63.1	101.48	117.49
	5320	20	26.38	39.81	49.11	74.13
	5500	20	14.89	19.95	27.73	37.15
	5520-5720	20	28.78	31.62	53.59	58.88
	5745-5825	20	24.75	31.62	46.08	58.88
802.11n	5180	20	19.74	25.12	36.76	46.77
	5200-5240	20	59.13	63.1	110.1	117.49
	5260-5300	20	56.04	63.1	104.35	117.49
	5320	20	17.08	25.12	31.8	46.77
	5500	20	12.37	15.85	23.03	29.51
	5520-5680, 5720	20	29.37	31.62	54.69	58.88
	5700	20	14.33	19.95	26.69	37.15
	5745	20	16.1	19.95	29.98	37.15
	5765-5805	20	24.46	31.62	45.54	58.88
	5825	20	12.94	19.95	24.1	37.15

802.11a (26dB EBW)

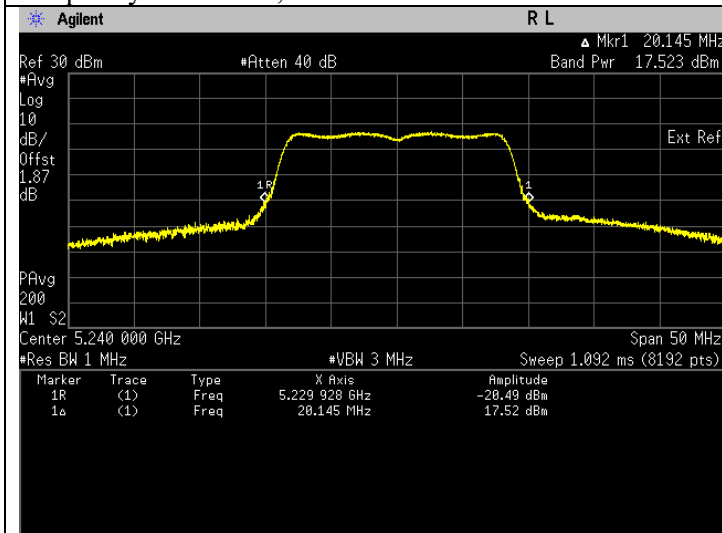
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	Mod Type: BPSK, Data Rate: 6	19.008	12.789	Pass
5220	Mod Type: BPSK, Data Rate: 6	58.456	17.668	Pass
5240	Mod Type: BPSK, Data Rate: 6	58.335	17.659	Pass
5260	Mod Type: BPSK, Data Rate: 6	55.110	17.412	Pass
5300	Mod Type: BPSK, Data Rate: 6	48.566	16.863	Pass
5320	Mod Type: BPSK, Data Rate: 6	27.035	14.319	Pass
5500	Mod Type: BPSK, Data Rate: 6	15.277	11.840	Pass
5580	Mod Type: BPSK, Data Rate: 6	29.217	14.656	Pass
5700	Mod Type: BPSK, Data Rate: 6	22.937	13.605	Pass
5745	Mod Type: BPSK, Data Rate: 6	25.382	14.045	Pass
5785	Mod Type: BPSK, Data Rate: 6	24.123	13.824	Pass
5825	Mod Type: BPSK, Data Rate: 6	19.899	12.988	Pass



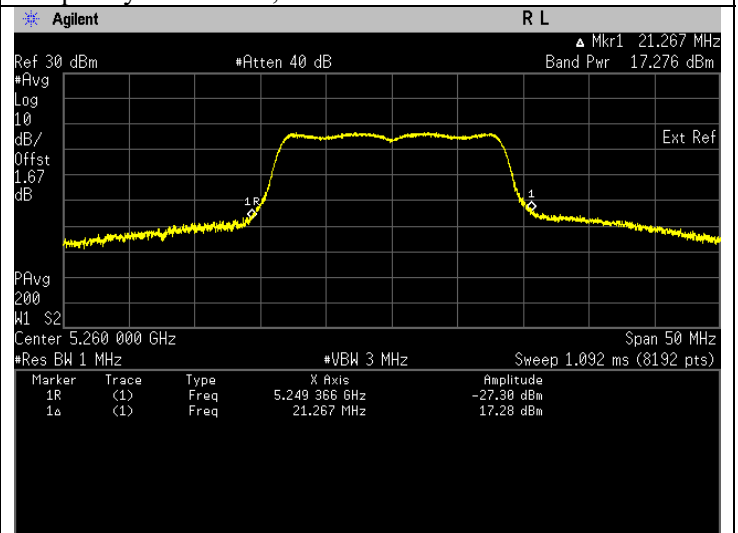
Frequency 5180 MHz, FCC.



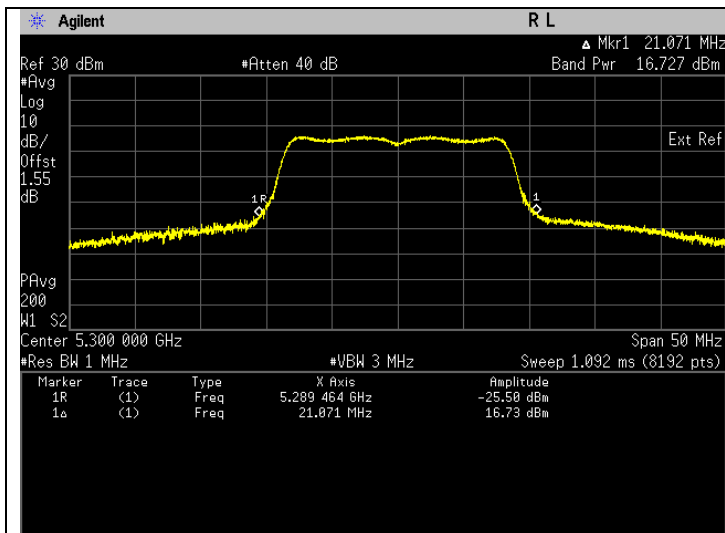
Frequency 5220 MHz, FCC.



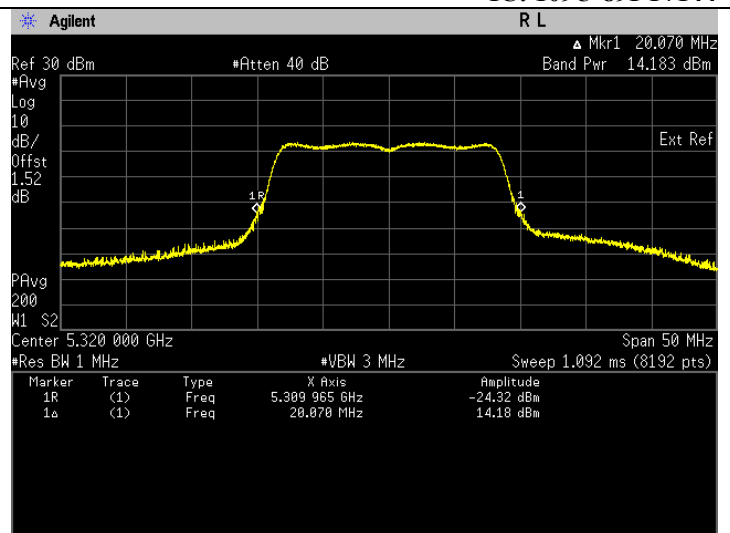
Frequency 5240 MHz, FCC.



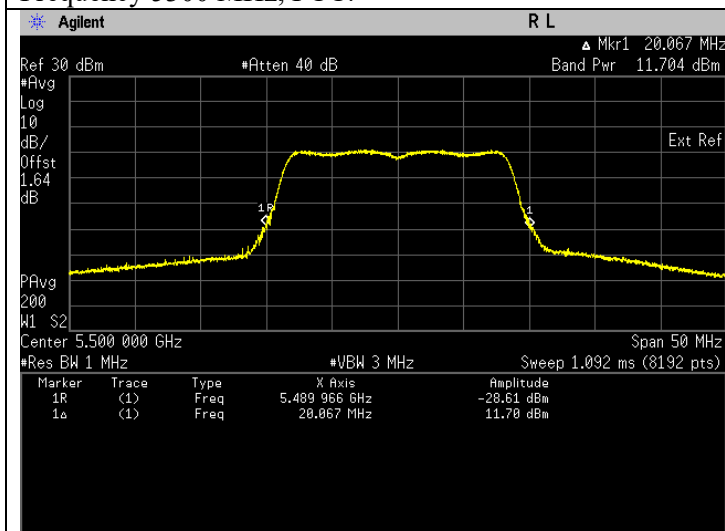
Frequency 5260 MHz, FCC.



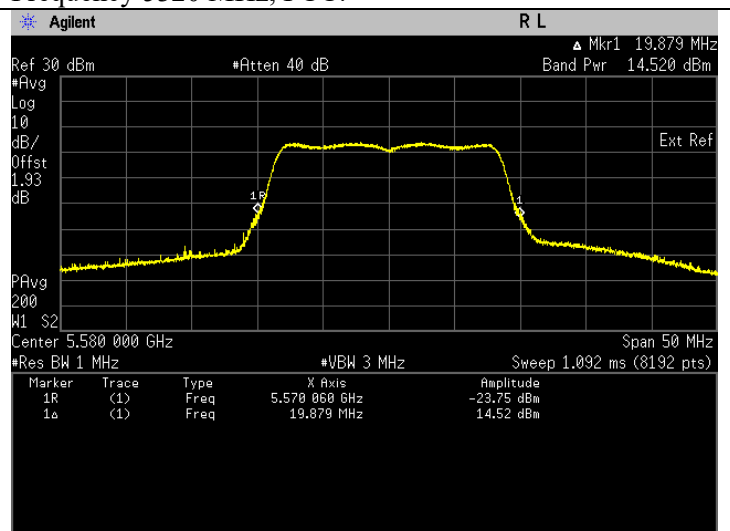
Frequency 5300 MHz, FCC.



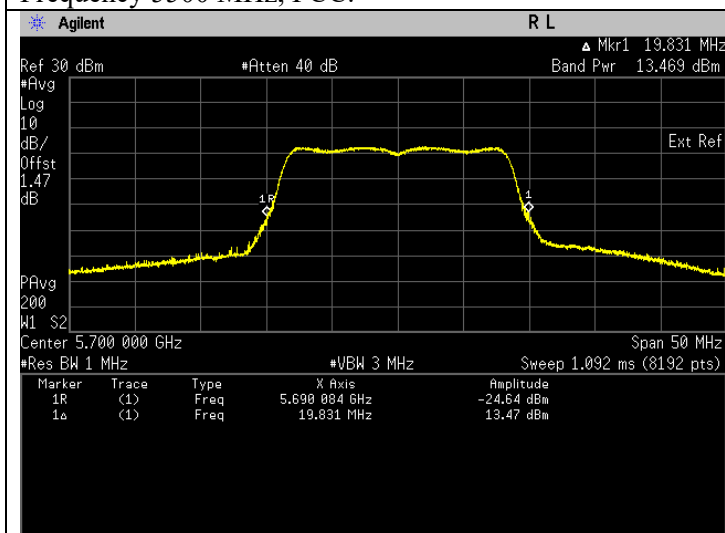
Frequency 5320 MHz, FCC.



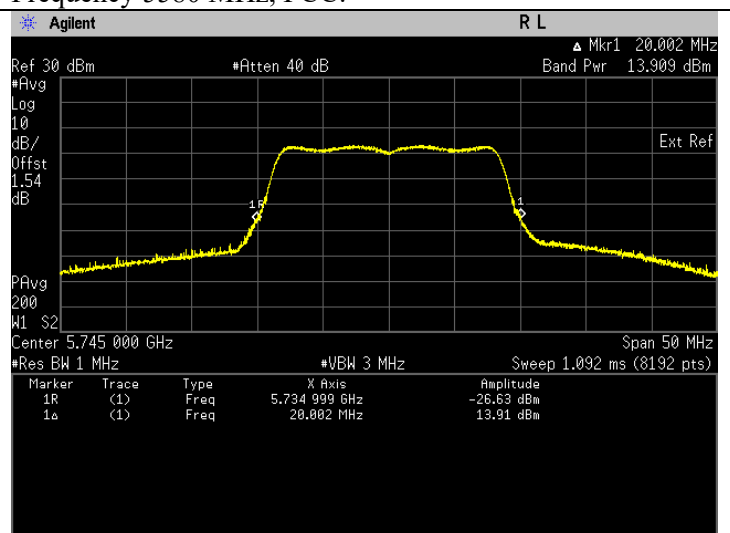
Frequency 5500 MHz, FCC.



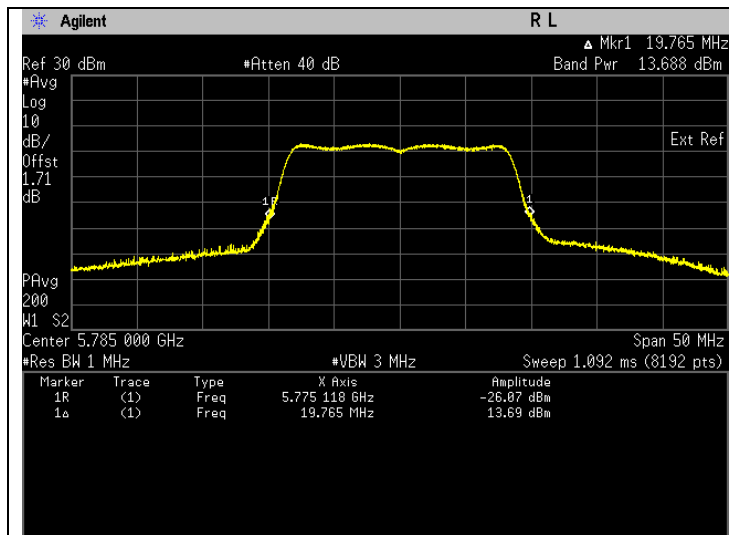
Frequency 5580 MHz, FCC.



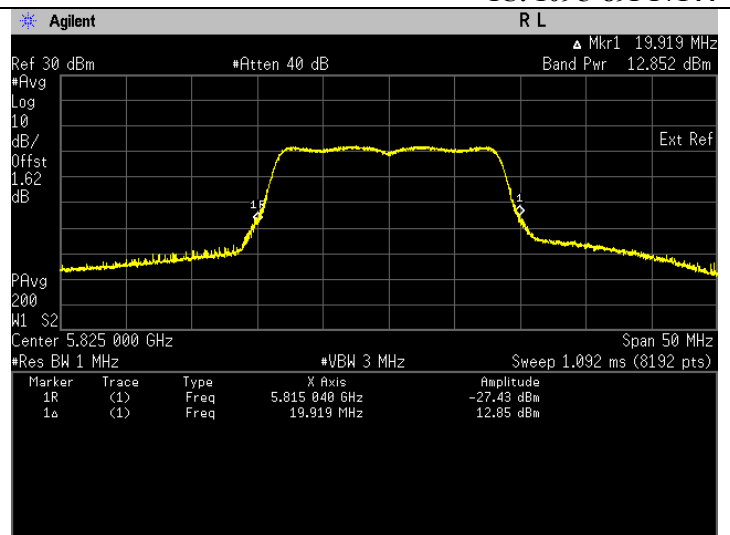
Frequency 5700 MHz, FCC.



Frequency 5745 MHz, FCC.



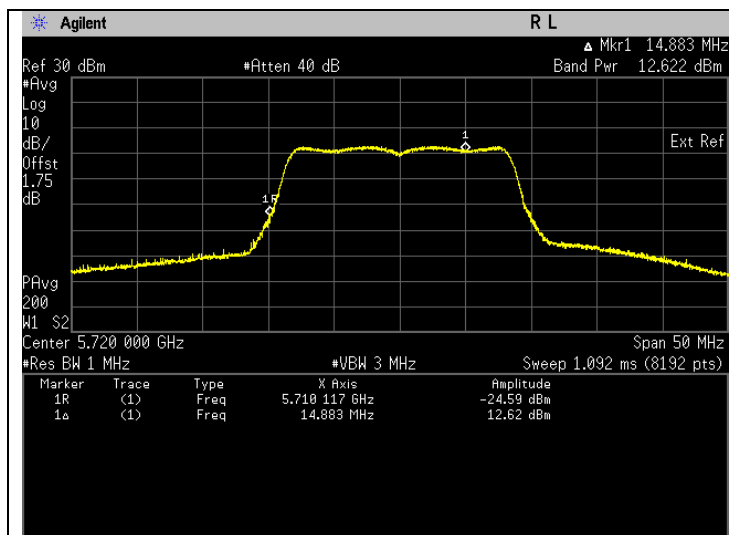
Frequency 5785 MHz, FCC.



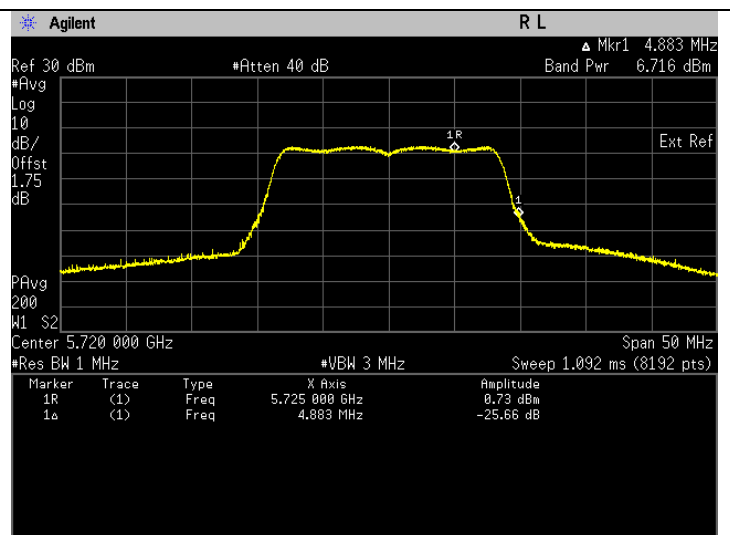
Frequency 5825 MHz, FCC.

Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	Mod Type: BPSK, Data Rate: 6	18.873	12.758	Pass
		U-NII-3		
5720	Mod Type: BPSK, Data Rate: 6	4.844	6.852	Pass



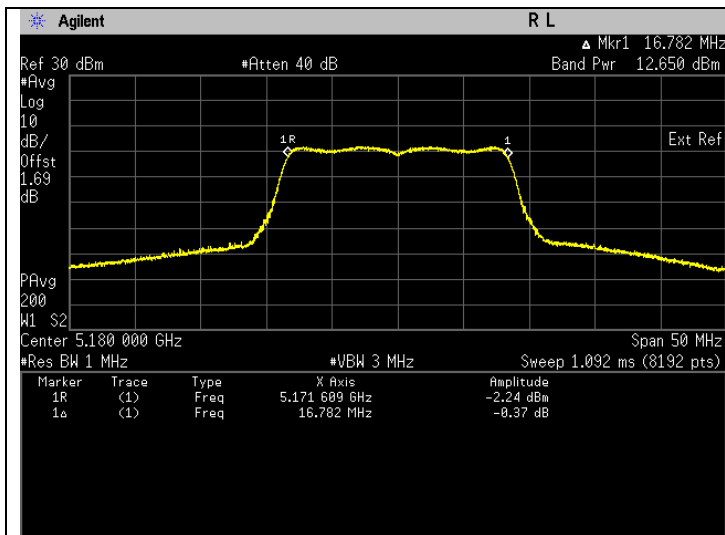
Frequency 5720 MHz, FCC, U-NII-2C. *Note: The band power is captured before the 5725 MHz.



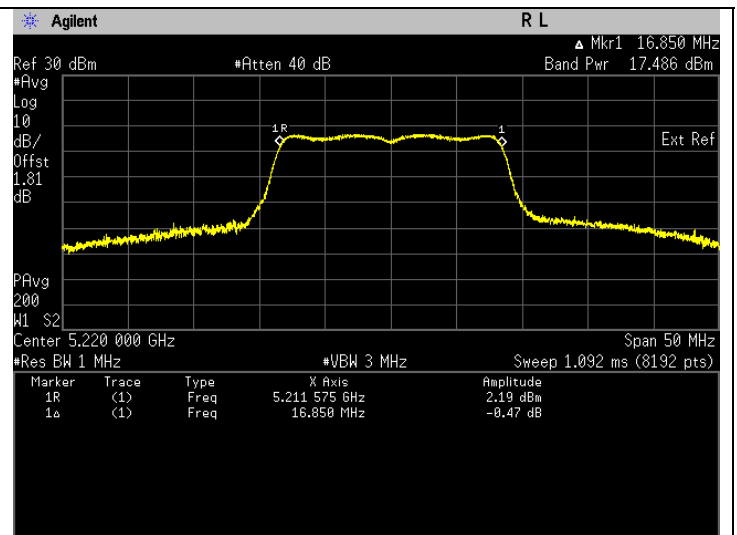
Frequency 5720 MHz, FCC, U-NII-3. *Note: The band power is captured after the 5725 MHz.

802.11a (99% EBW)

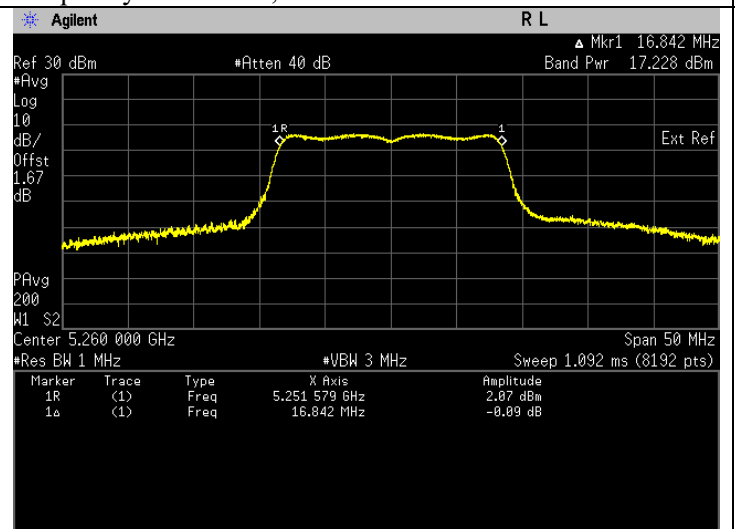
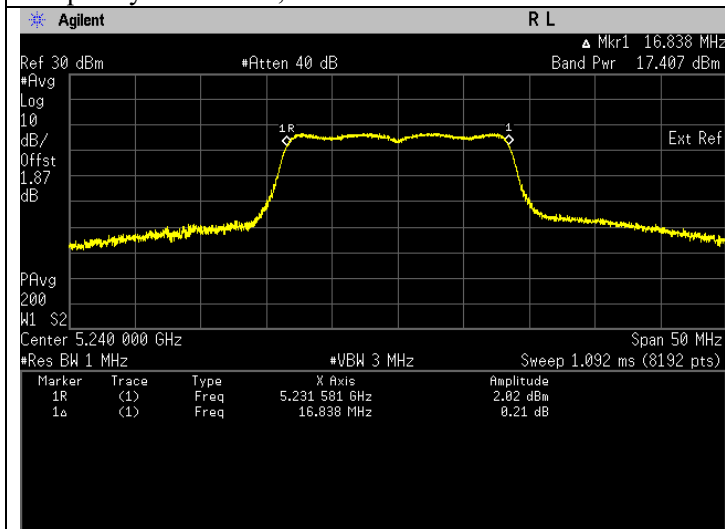
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	Mod Type: BPSK, Data Rate: 6	18.995	12.786	Pass	15.486	Pass
5220	Mod Type: BPSK, Data Rate: 6	57.840	17.622	Pass	20.322	Pass
5240	Mod Type: BPSK, Data Rate: 6	56.798	17.543	Pass	20.243	Pass
5260	Mod Type: BPSK, Data Rate: 6	54.504	17.364	Pass	20.064	Pass
5300	Mod Type: BPSK, Data Rate: 6	47.395	16.757	Pass	19.457	Pass
5320	Mod Type: BPSK, Data Rate: 6	26.377	14.212	Pass	16.912	Pass
5500	Mod Type: BPSK, Data Rate: 6	14.895	11.730	Pass	14.430	Pass
5580	Mod Type: BPSK, Data Rate: 6	28.783	14.591	Pass	17.291	Pass
5700	Mod Type: BPSK, Data Rate: 6	22.301	13.483	Pass	16.183	Pass
5745	Mod Type: BPSK, Data Rate: 6	24.748	13.935	Pass	16.635	Pass
5785	Mod Type: BPSK, Data Rate: 6	23.770	13.760	Pass	16.460	Pass
5825	Mod Type: BPSK, Data Rate: 6	19.717	12.948	Pass	15.648	Pass



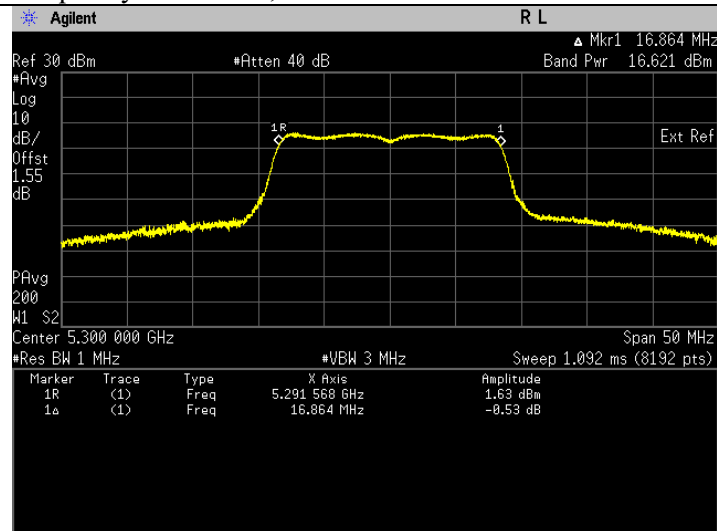
Frequency 5180 MHz, ISED



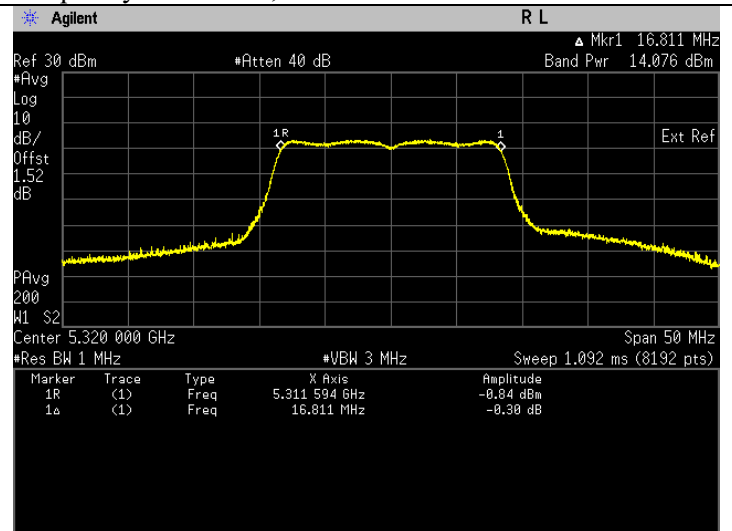
Frequency 5220 MHz, ISED



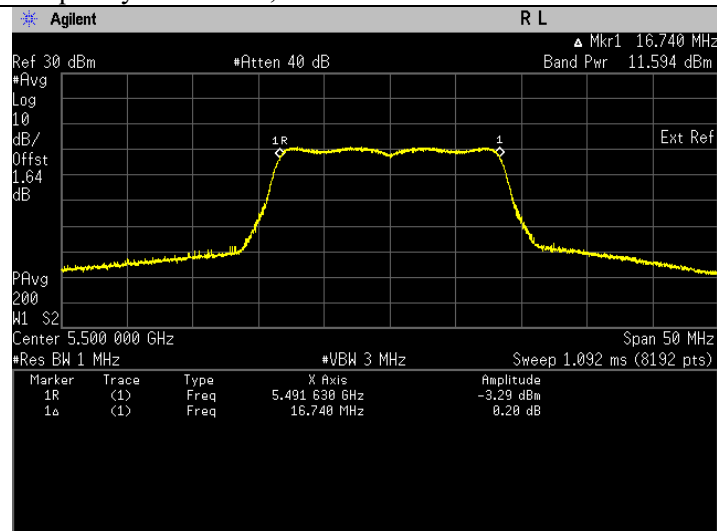
Frequency 5240 MHz, ISED



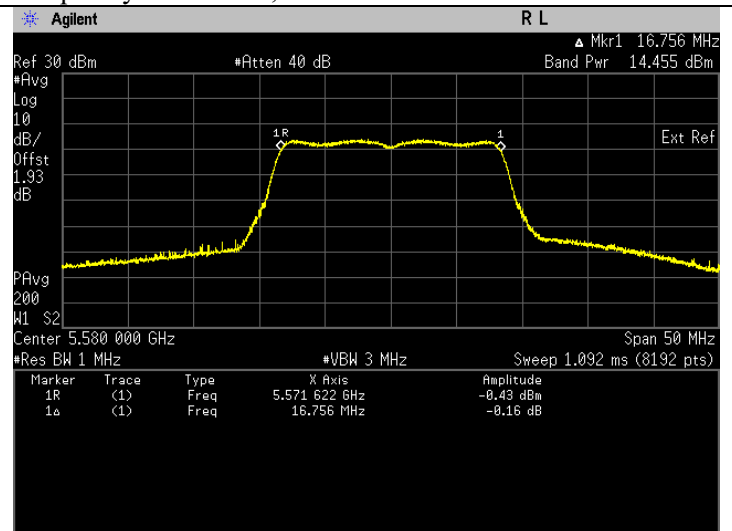
Frequency 5260 MHz, ISED



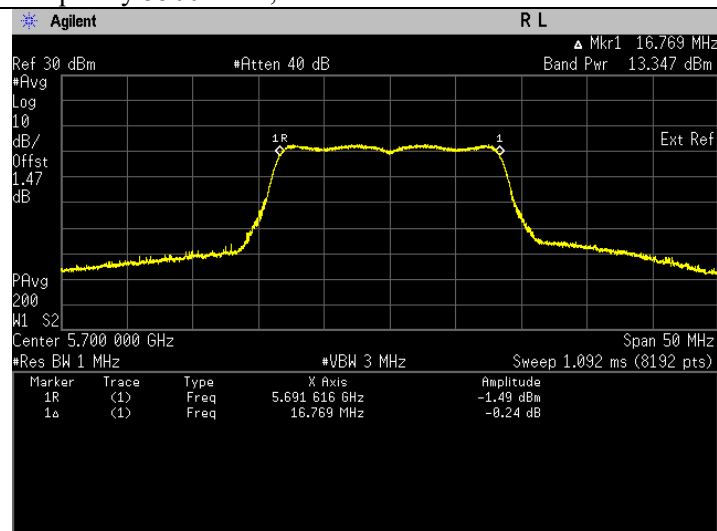
Frequency 5300 MHz, ISED



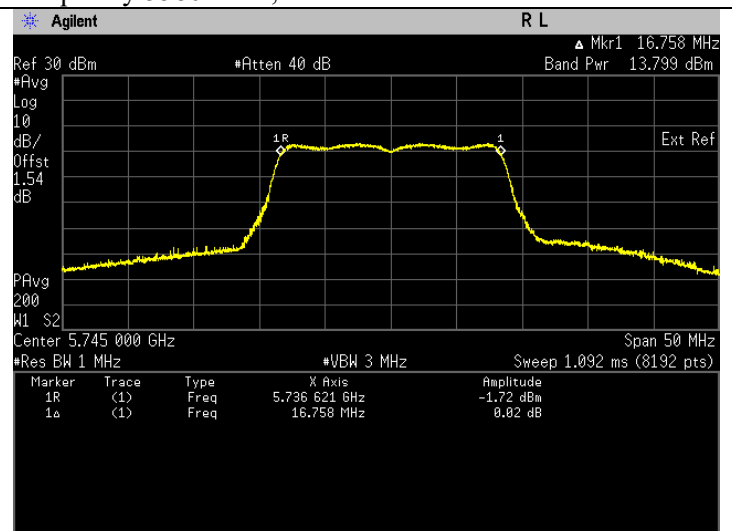
Frequency 5320 MHz, ISED

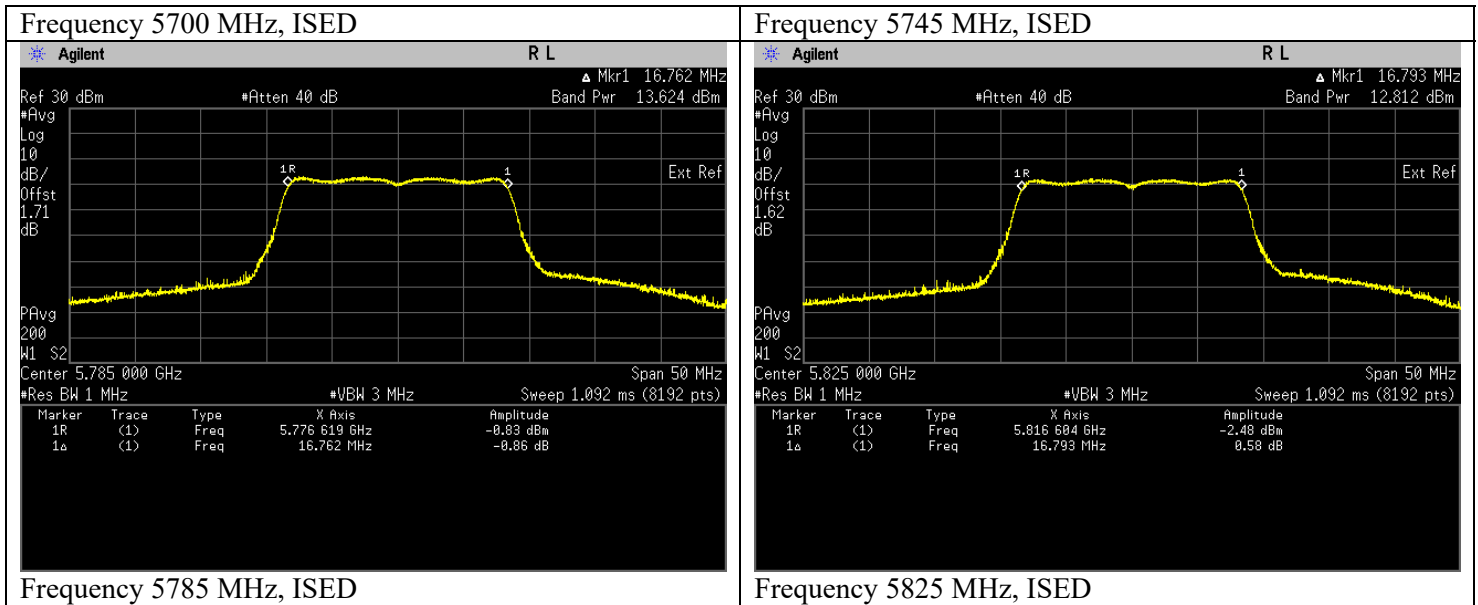


Frequency 5500 MHz, ISED



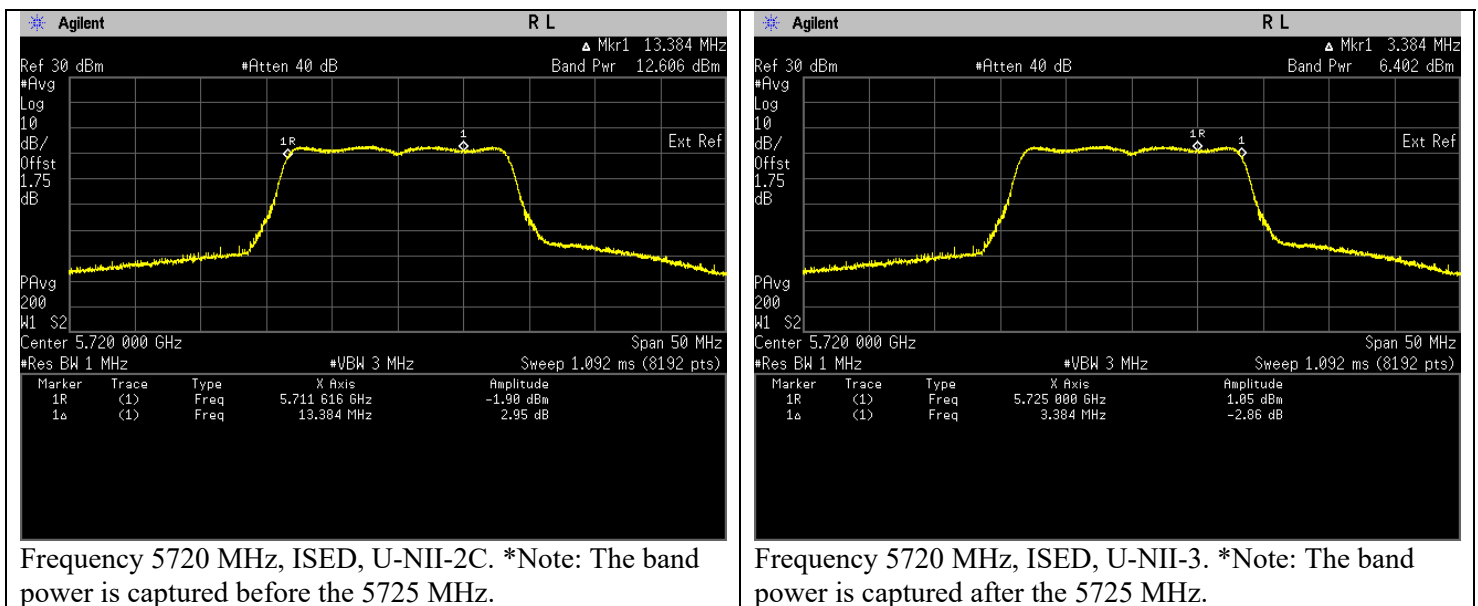
Frequency 5580 MHz, ISED





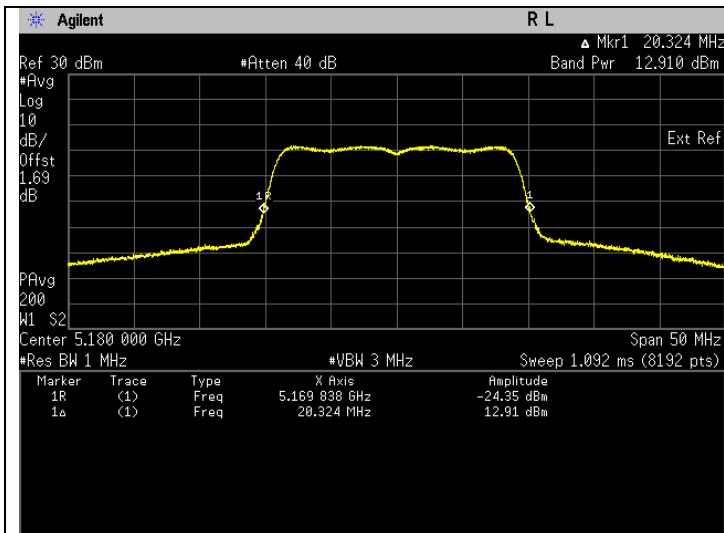
Straddle Frequency

Freq. (MHz)	Test Conditions	Results				
		U-NII- 2C				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5720	Mod Type: BPSK, Data Rate: 6	18.803	12.742	Pass	15.442	Pass
U-NII-3						
5720	Mod Type: BPSK, Data Rate: 6	4.506	6.538	Pass	9.238	Pass

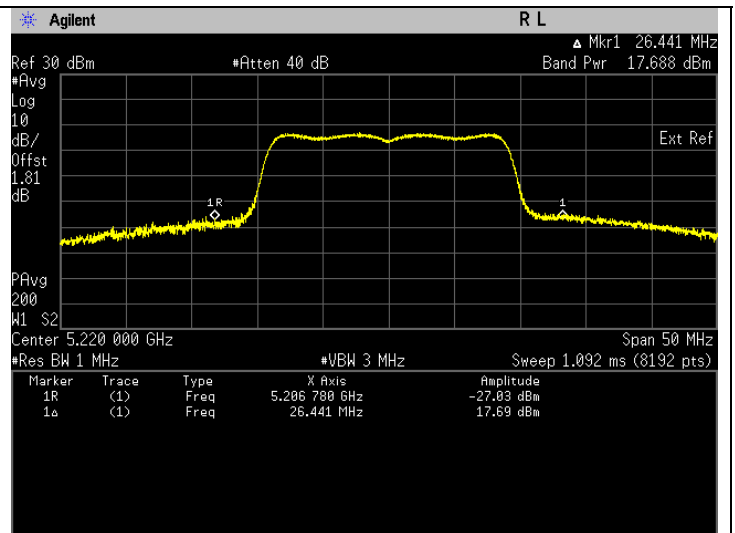


802.11n (HT20)(26dB EBW)

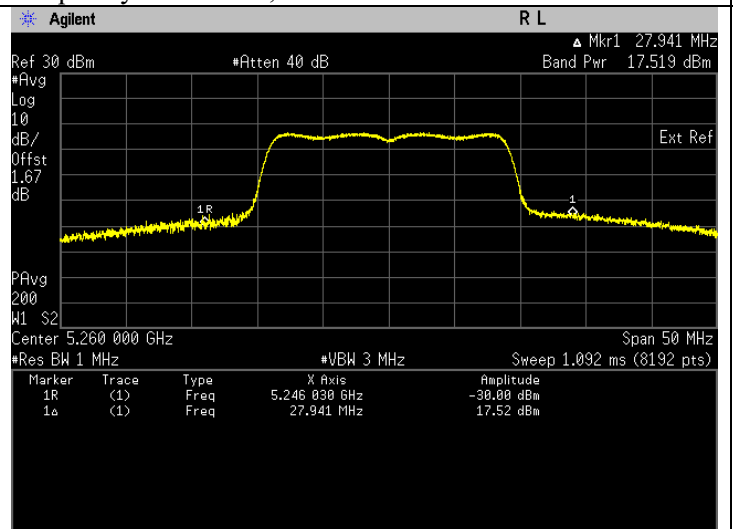
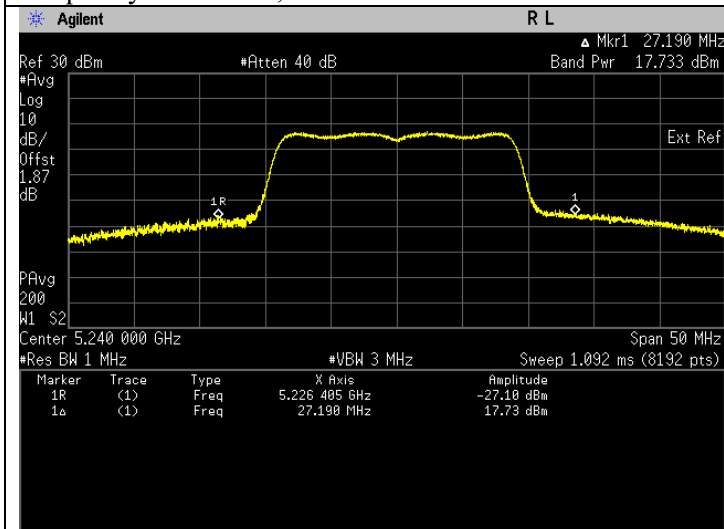
Freq. (MHz)	Test Conditions	Results		
		Power (mW)	Power (dBm)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	19.952	13.000	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	59.951	17.778	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	60.575	17.823	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	57.663	17.609	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	50.211	17.008	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.583	12.451	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	12.644	11.019	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	30.144	14.792	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	14.625	11.651	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	16.421	12.154	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	24.888	13.960	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	13.207	11.208	Pass



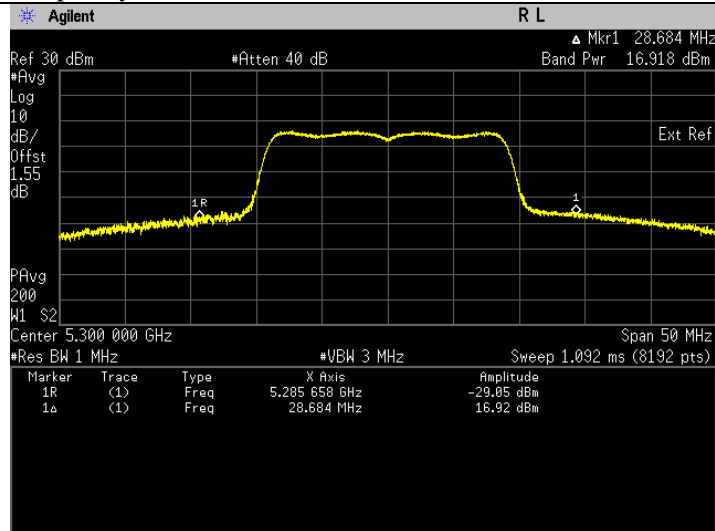
Frequency 5180 MHz, FCC.



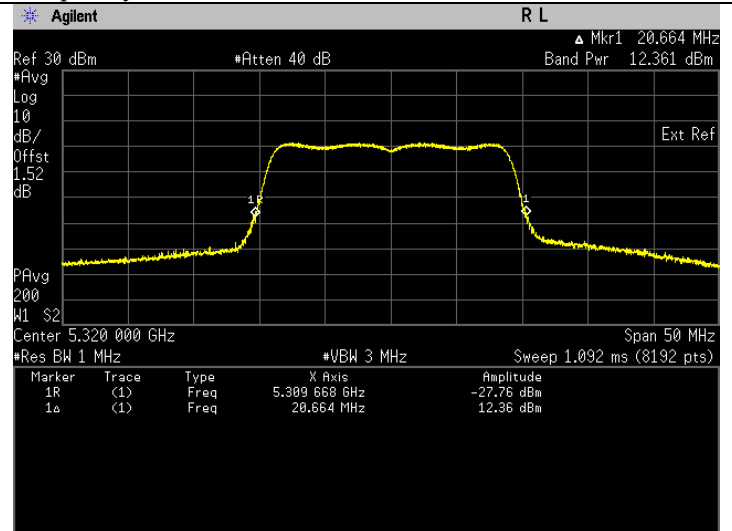
Frequency 5220 MHz, FCC.



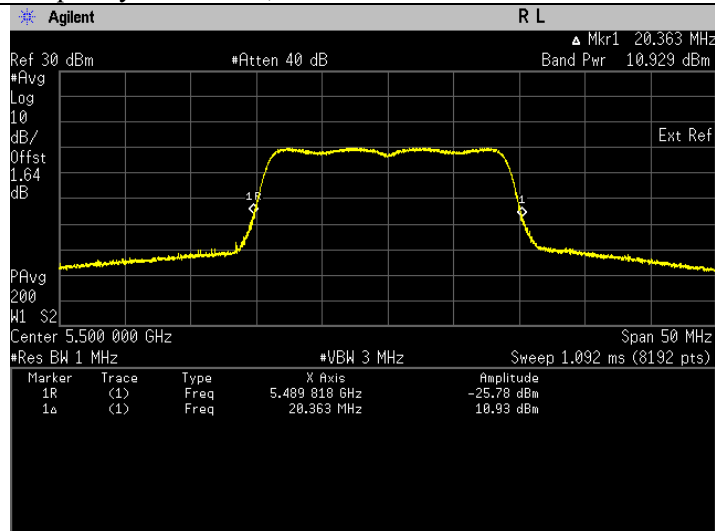
Frequency 5240 MHz, FCC.



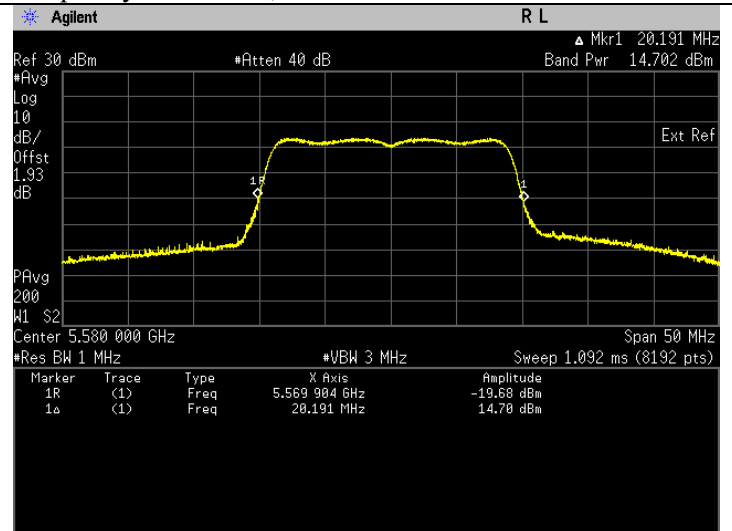
Frequency 5260 MHz, FCC.



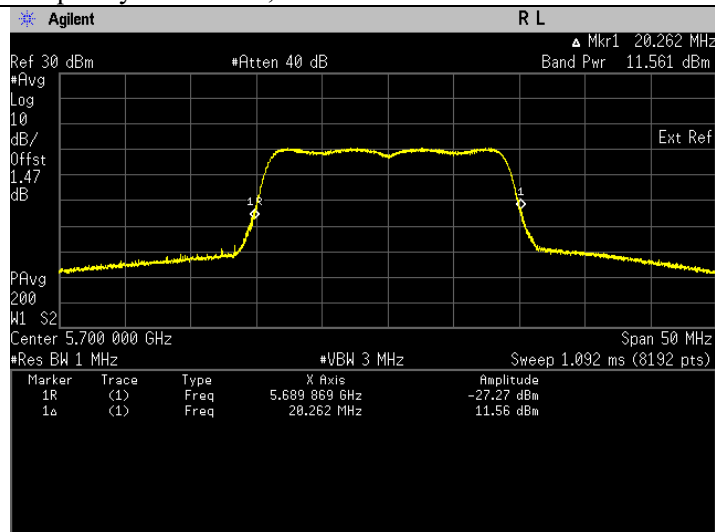
Frequency 5300 MHz, FCC.



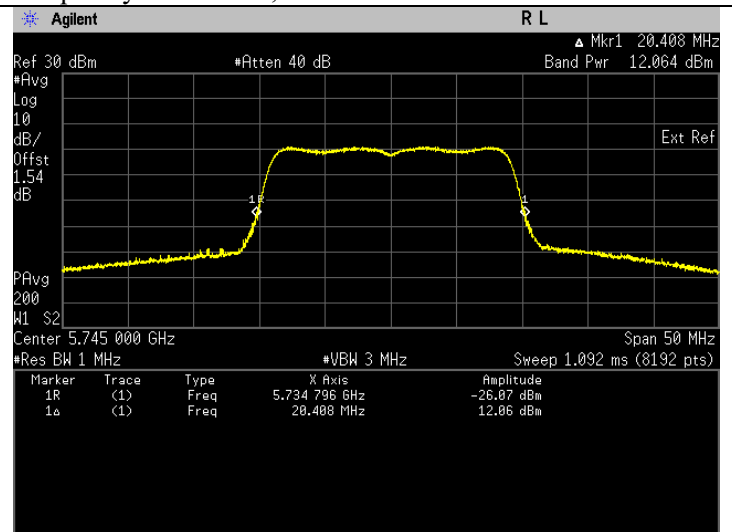
Frequency 5320 MHz, FCC.

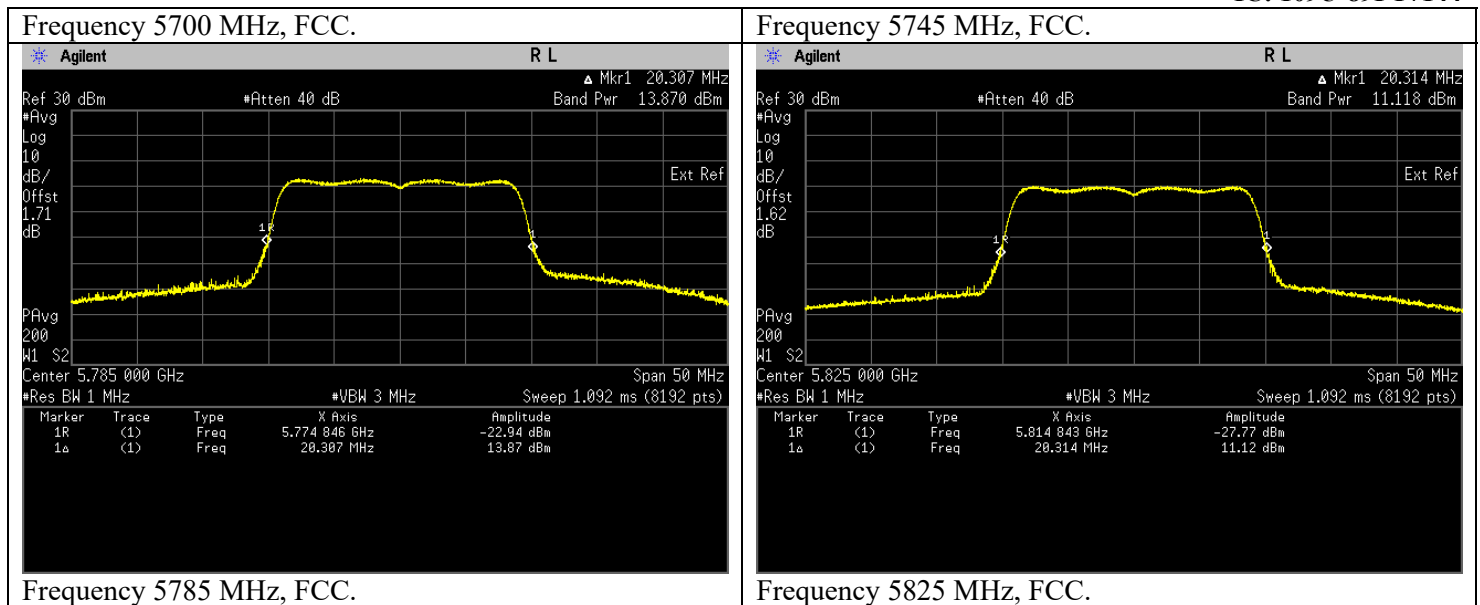


Frequency 5500 MHz, FCC.



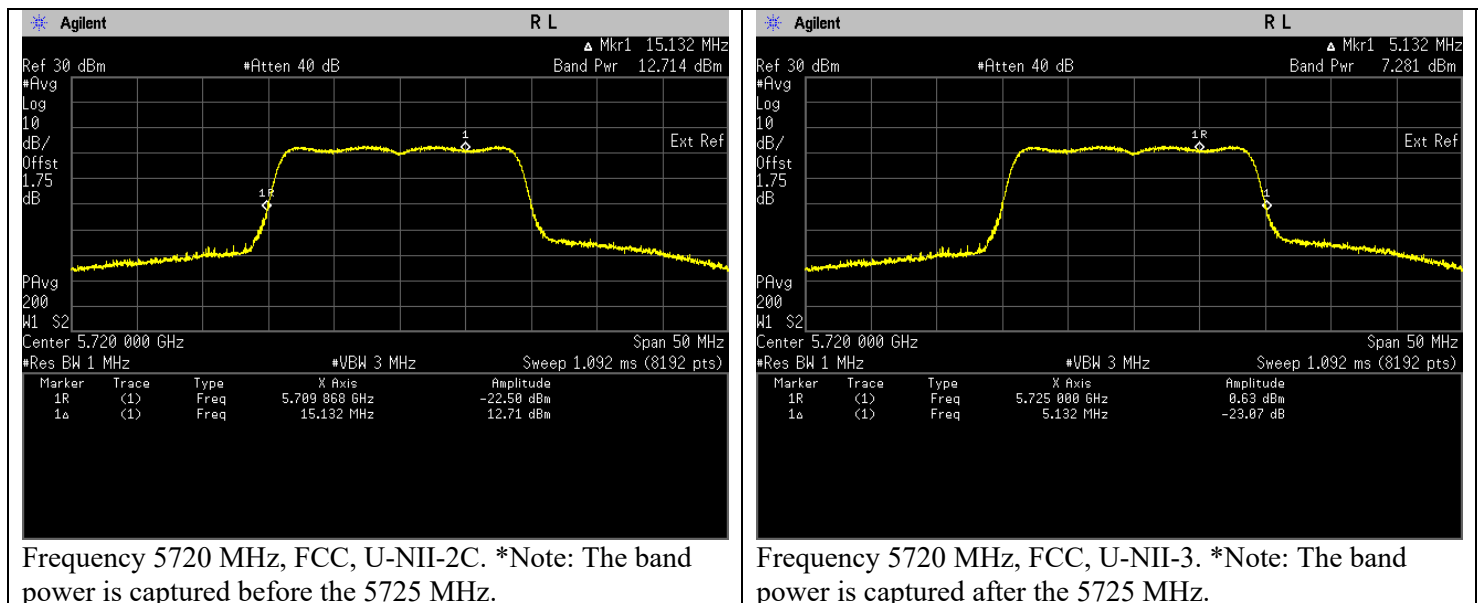
Frequency 5580 MHz, FCC.





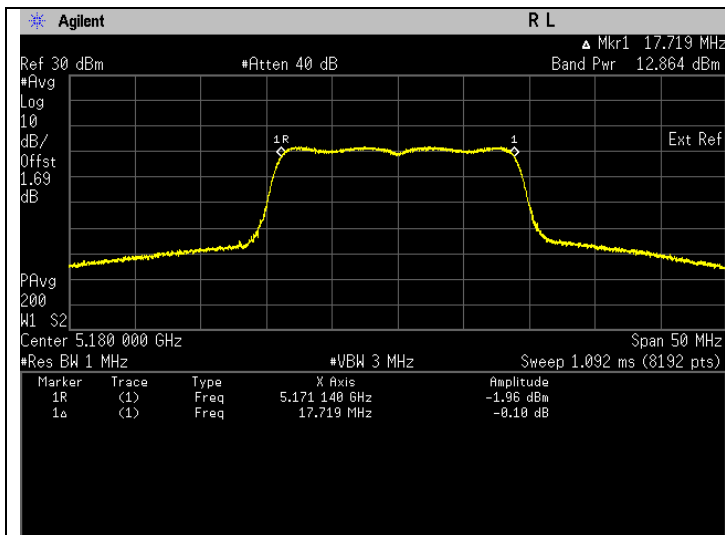
Straddle Frequency

Freq. (MHz)	Test Conditions	Results		
		U-NII- 2C		
		Power (mW)	Power (dBm)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	19.072	12.804	Pass
		U-NII-3		
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	5.459	7.371	Pass

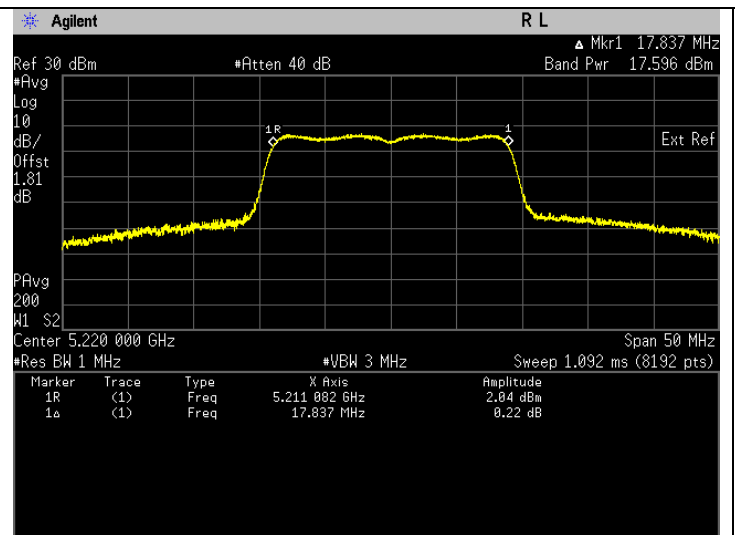


802.11n (HT20)(99% EBW)

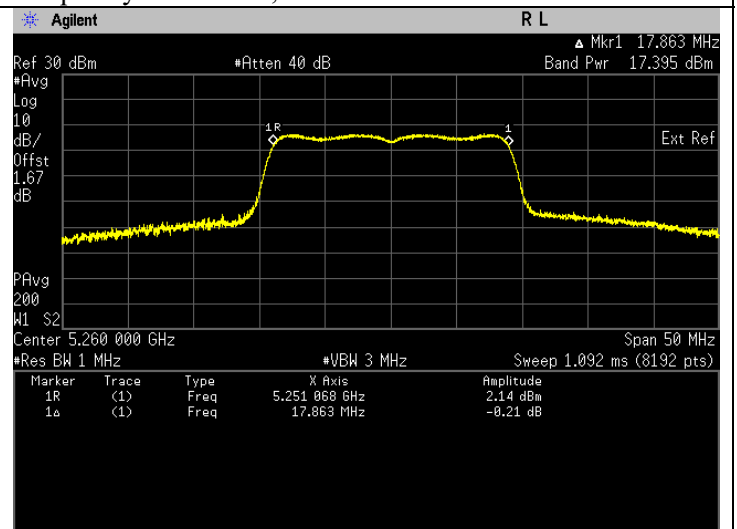
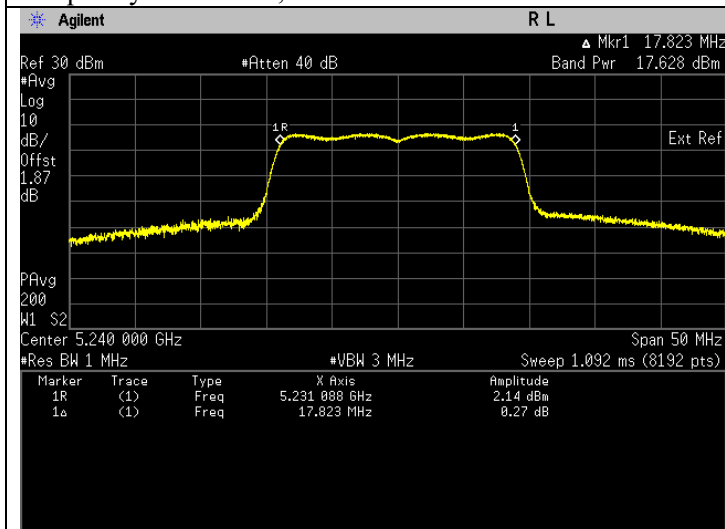
Freq. (MHz)	Test Conditions	Results				
		Power (mW)	Power (dBm)	Status	EIRP (dBm)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	19.742	12.954	Pass	15.654	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	58.694	17.686	Pass	20.386	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	59.128	17.718	Pass	20.418	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	56.040	17.485	Pass	20.185	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	49.283	16.927	Pass	19.627	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.076	12.324	Pass	15.024	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	12.365	10.922	Pass	13.622	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	29.369	14.679	Pass	17.379	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	14.332	11.563	Pass	14.263	Pass
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	16.103	12.069	Pass	14.769	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	24.457	13.884	Pass	16.584	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	12.942	11.120	Pass	13.820	Pass



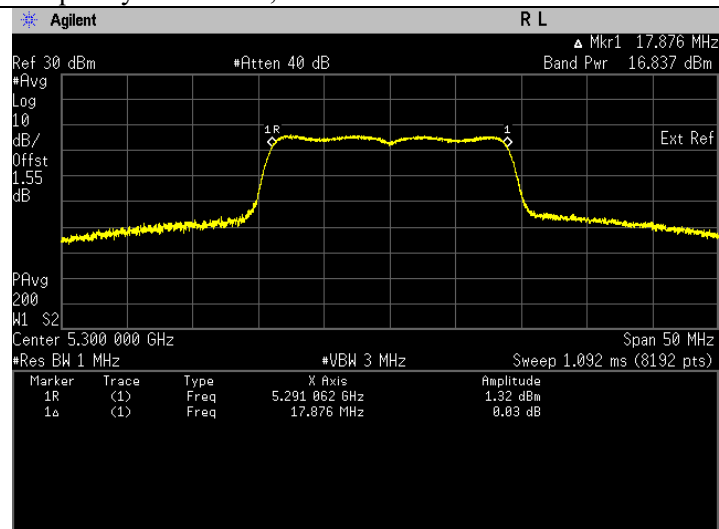
Frequency 5180 MHz, ISED



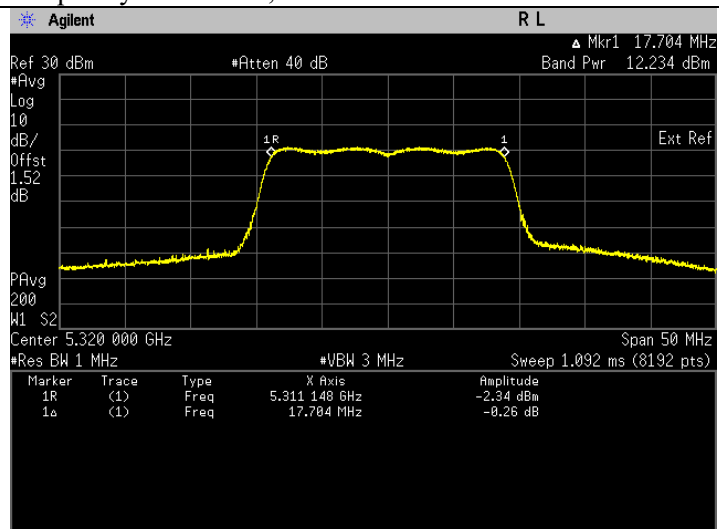
Frequency 5220 MHz, ISED



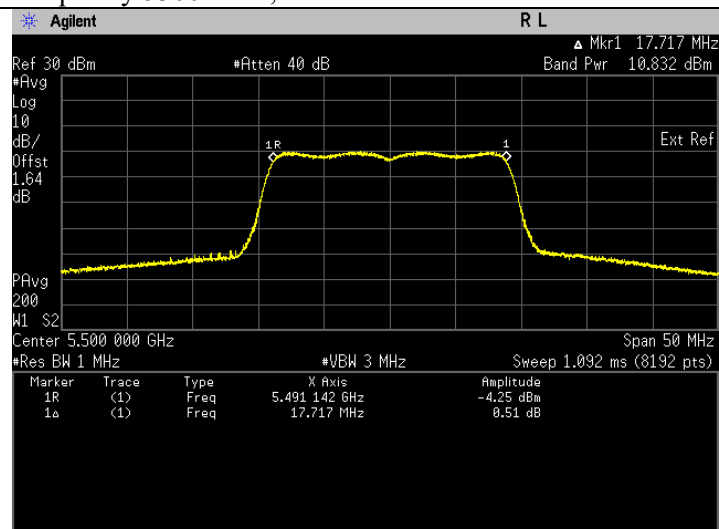
Frequency 5240 MHz, ISED



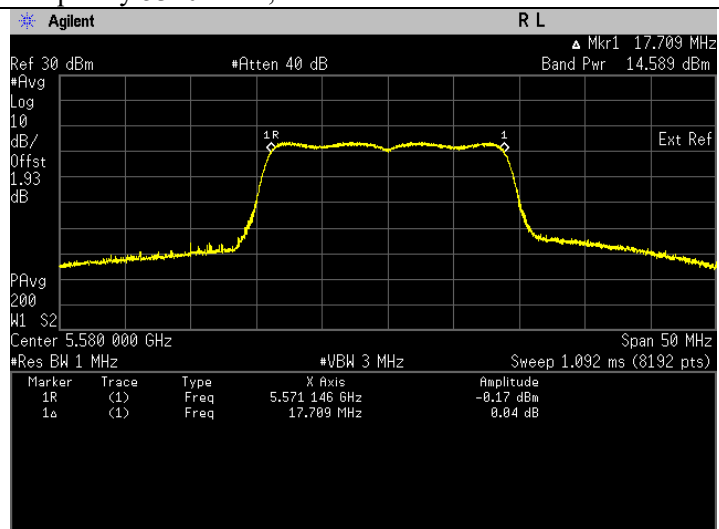
Frequency 5260 MHz, ISED



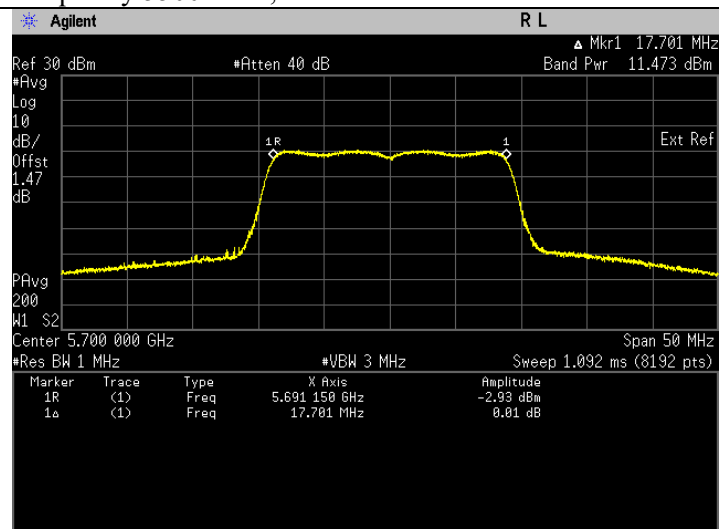
Frequency 5300 MHz, ISED



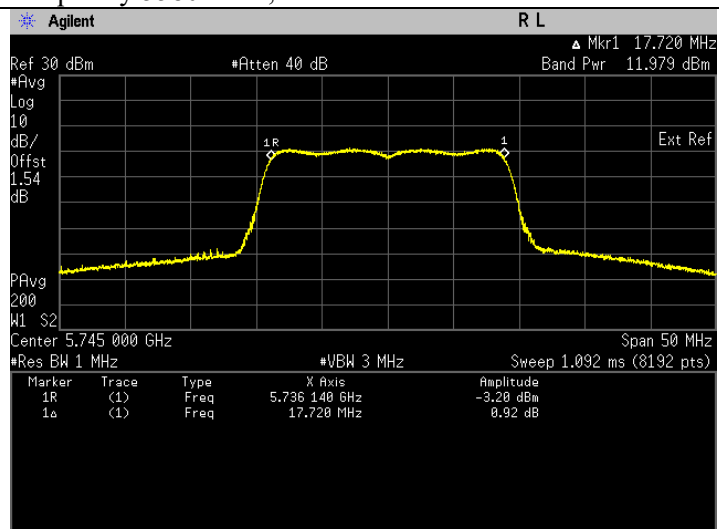
Frequency 5320 MHz, ISED

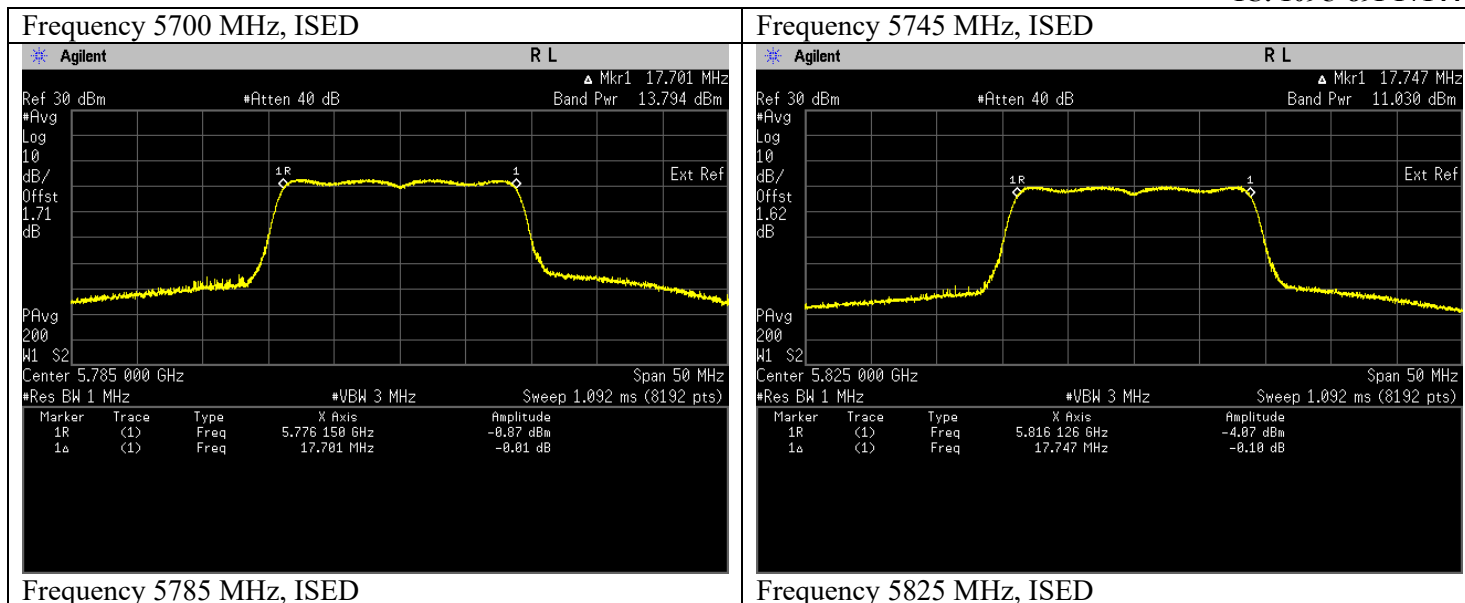


Frequency 5500 MHz, ISED



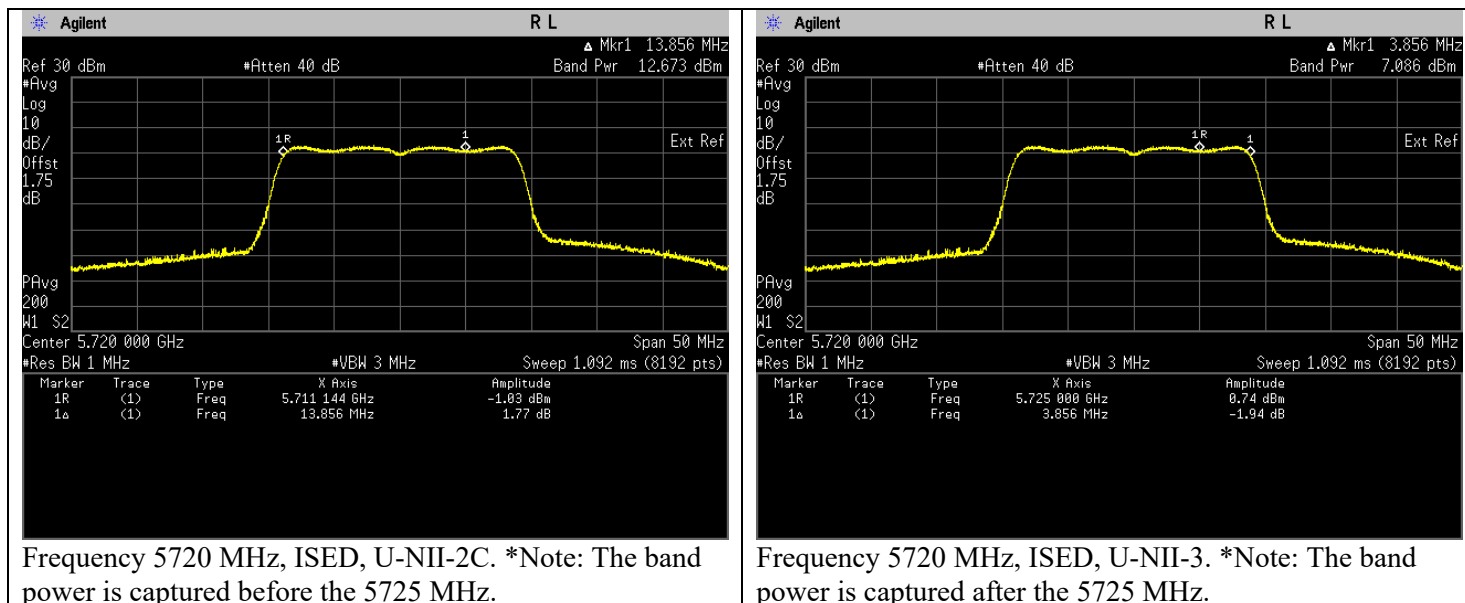
Frequency 5580 MHz, ISED





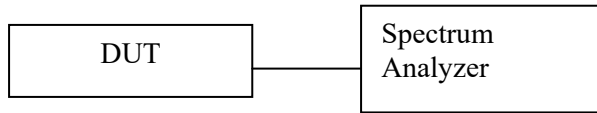
Straddle Frequency

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)	18.893	12.763	Pass	15.463	Pass
U-NII-3						
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	5.219	7.176	Pass	9.876	Pass



7.3. Maximum Power Spectral Density

7.3.1. 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 $\geq 3 \cdot$ RBW
 - Detector = power averaging (RMS)
 - Trace = Max hold
 - Number of points in sweep $\geq 2 \times$ 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.

7.3.2. 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

7.3.3. Additional Info

Antenna	Gain (dBi)
Antenna 1	2.7
Duty Cycle Correction Factor	
802.11a	0.136
802.11n (HT20)	0.090

7.3.4. Test Data

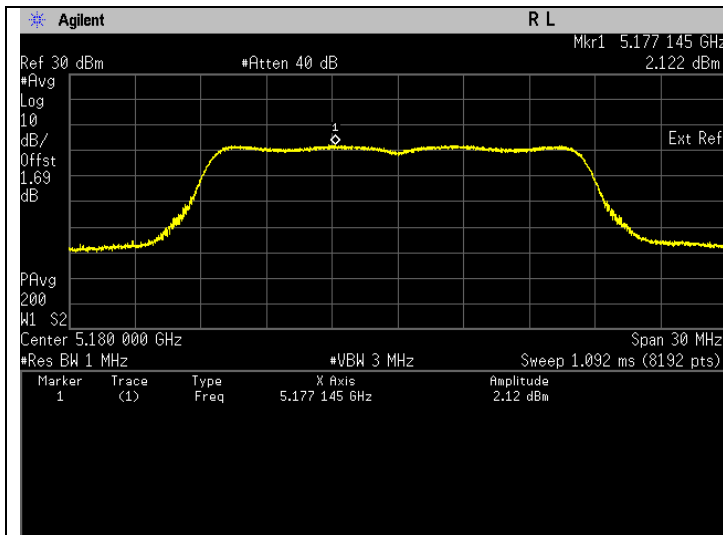
802.11a (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: 6	2.258	Pass
5220	Mod Type: BPSK, Data Rate: 6	7.108	Pass
5240	Mod Type: BPSK, Data Rate: 6	6.949	Pass
5260	Mod Type: BPSK, Data Rate: 6	6.836	Pass
5300	Mod Type: BPSK, Data Rate: 6	6.528	Pass
5320	Mod Type: BPSK, Data Rate: 6	3.657	Pass
5500	Mod Type: BPSK, Data Rate: 6	1.364	Pass
5580	Mod Type: BPSK, Data Rate: 6	4.102	Pass
5700	Mod Type: BPSK, Data Rate: 6	3.024	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status
5745	Mod Type: BPSK, Data Rate: 6	0.695	Pass
5785	Mod Type: BPSK, Data Rate: 6	0.314	Pass
5825	Mod Type: BPSK, Data Rate: 6	-0.436	Pass

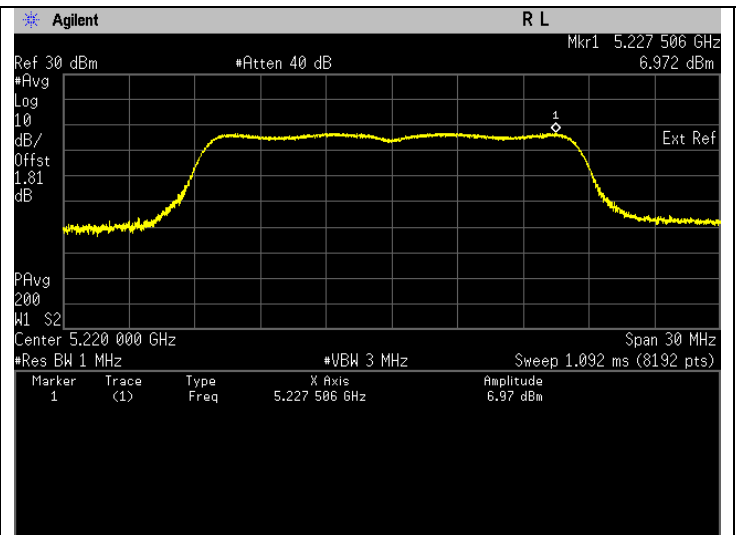
802.11a (99% EBW)

Freq. (MHz)	Test Conditions	Results			
		Power/Frequency (dBm/MHz)	Status	EIRP (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: 6	2.258	Pass	4.958	Pass
5220	Mod Type: BPSK, Data Rate: 6	7.108	Pass	9.808	Pass
5240	Mod Type: BPSK, Data Rate: 6	6.949	Pass	9.649	Pass
5260	Mod Type: BPSK, Data Rate: 6	6.836	Pass	9.536	Pass
5300	Mod Type: BPSK, Data Rate: 6	6.528	Pass	9.228	Pass
5320	Mod Type: BPSK, Data Rate: 6	3.657	Pass	6.357	Pass
5500	Mod Type: BPSK, Data Rate: 6	1.364	Pass	4.064	Pass
5580	Mod Type: BPSK, Data Rate: 6	4.102	Pass	6.802	Pass
5700	Mod Type: BPSK, Data Rate: 6	3.024	Pass	5.724	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status	EIRP (dBm/MHz)	Status
5745	Mod Type: BPSK, Data Rate: 6	0.695	Pass	3.395	Pass
5785	Mod Type: BPSK, Data Rate: 6	0.314	Pass	3.014	Pass
5825	Mod Type: BPSK, Data Rate: 6	-0.436	Pass	2.264	Pass

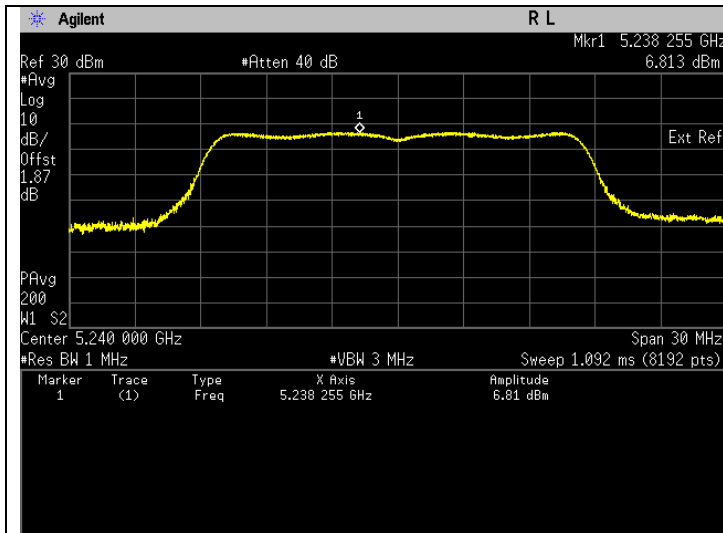
Plots for 802.11a (26dB EBW & 99% EBW)



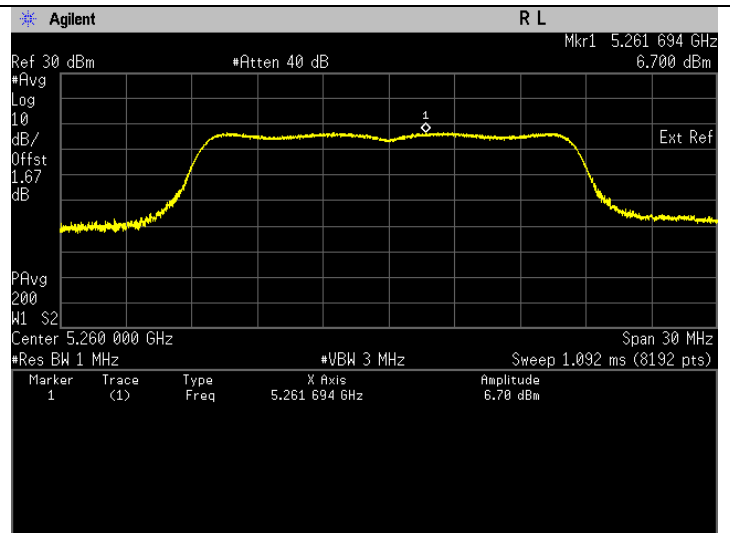
Frequency 5180 MHz, FCC & ISSED.



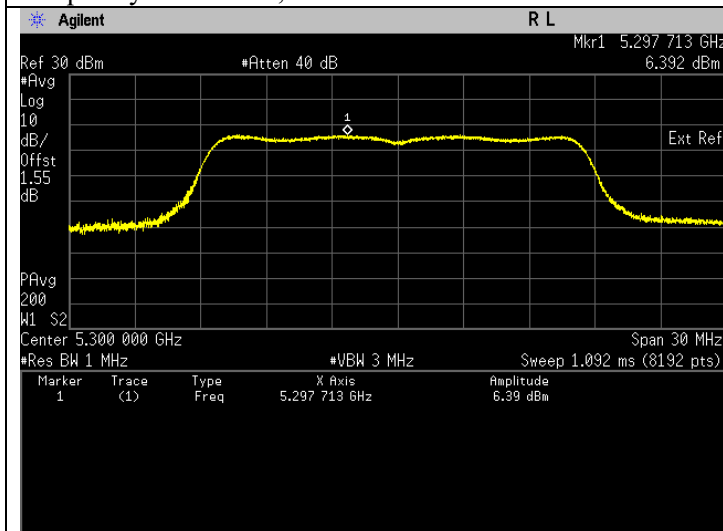
Frequency 5220 MHz, FCC & ISSED.



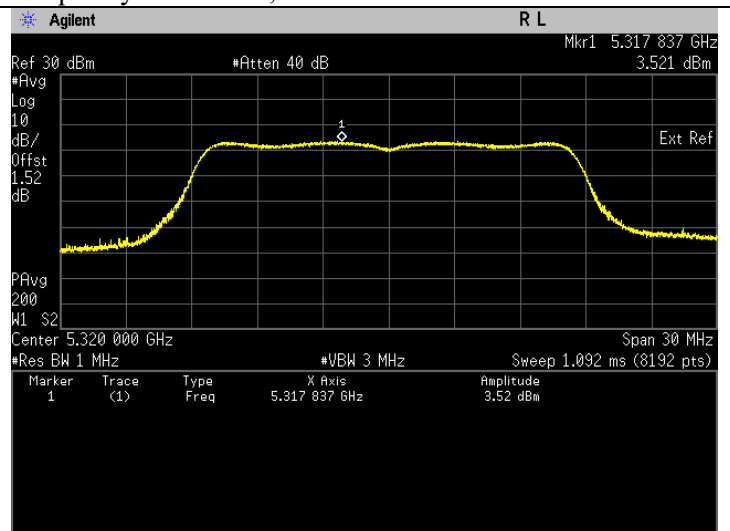
Frequency 5240 MHz, FCC & ISSED.



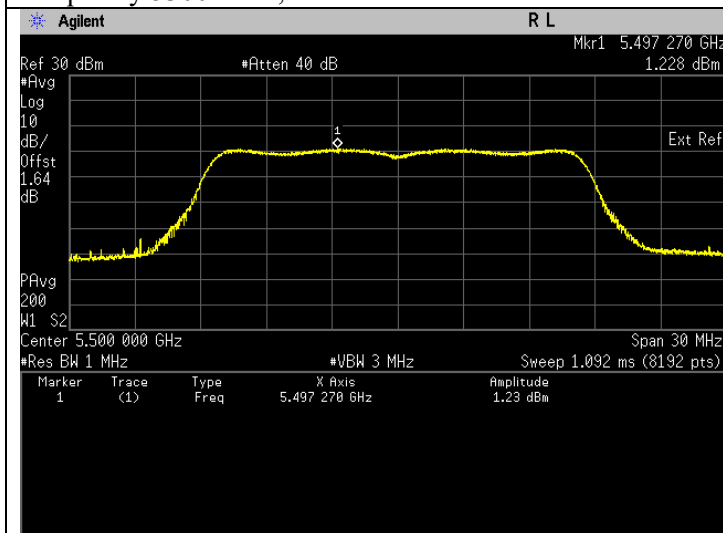
Frequency 5260 MHz, FCC & ISSED.



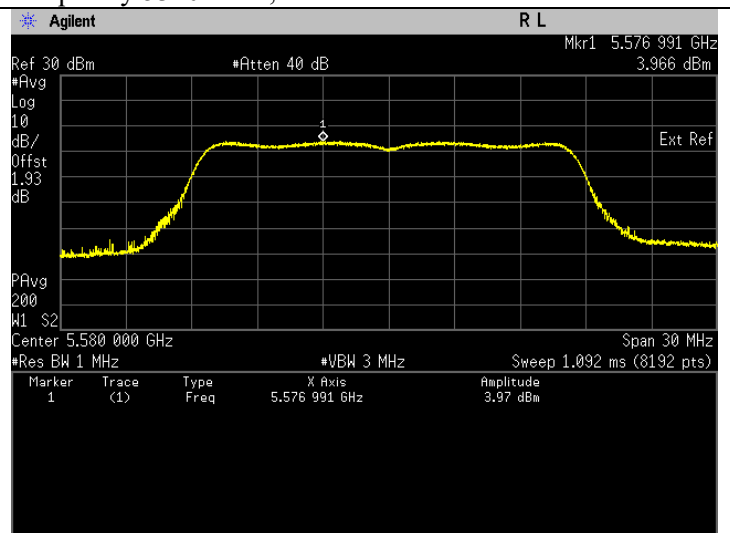
Frequency 5300 MHz, FCC & ISSED.



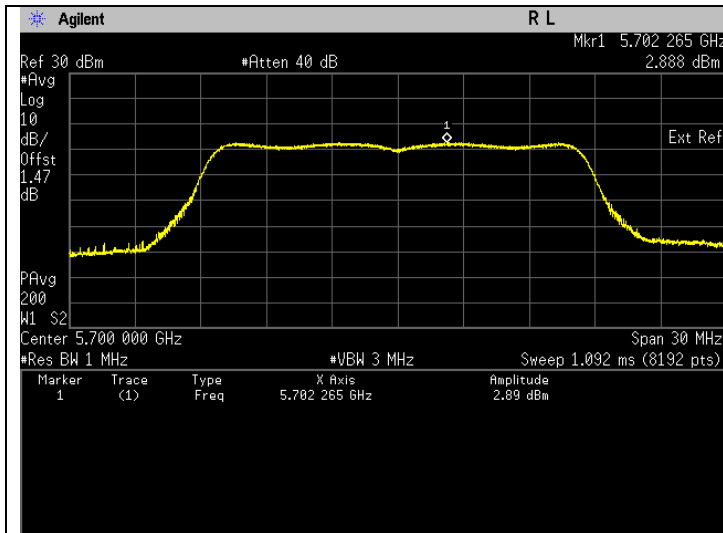
Frequency 5320 MHz, FCC & ISSED.



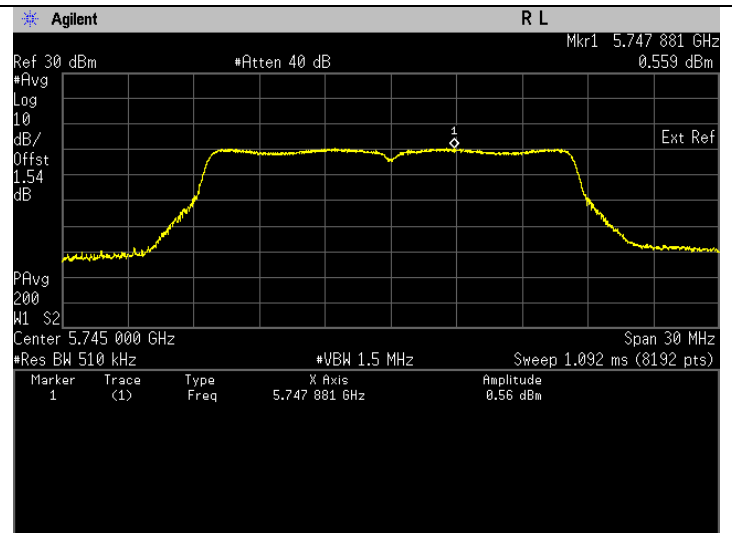
Frequency 5500 MHz, FCC & ISSED.



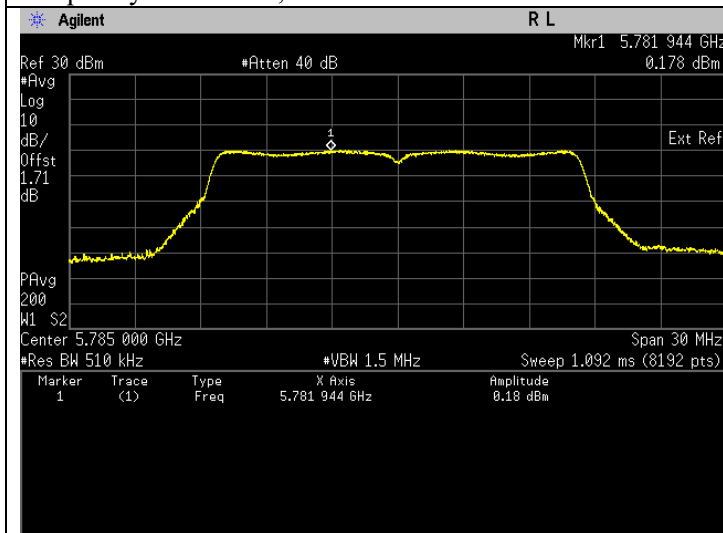
Frequency 5580 MHz, FCC & ISSED.



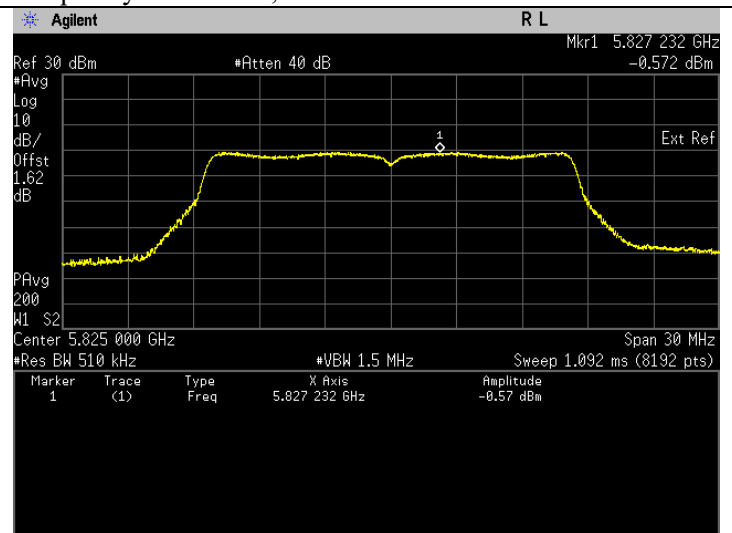
Frequency 5700 MHz, FCC & ISCED.



Frequency 5745 MHz, FCC & ISCED.



Frequency 5785 MHz, FCC & ISCED.



Frequency 5825 MHz, FCC & ISCED.

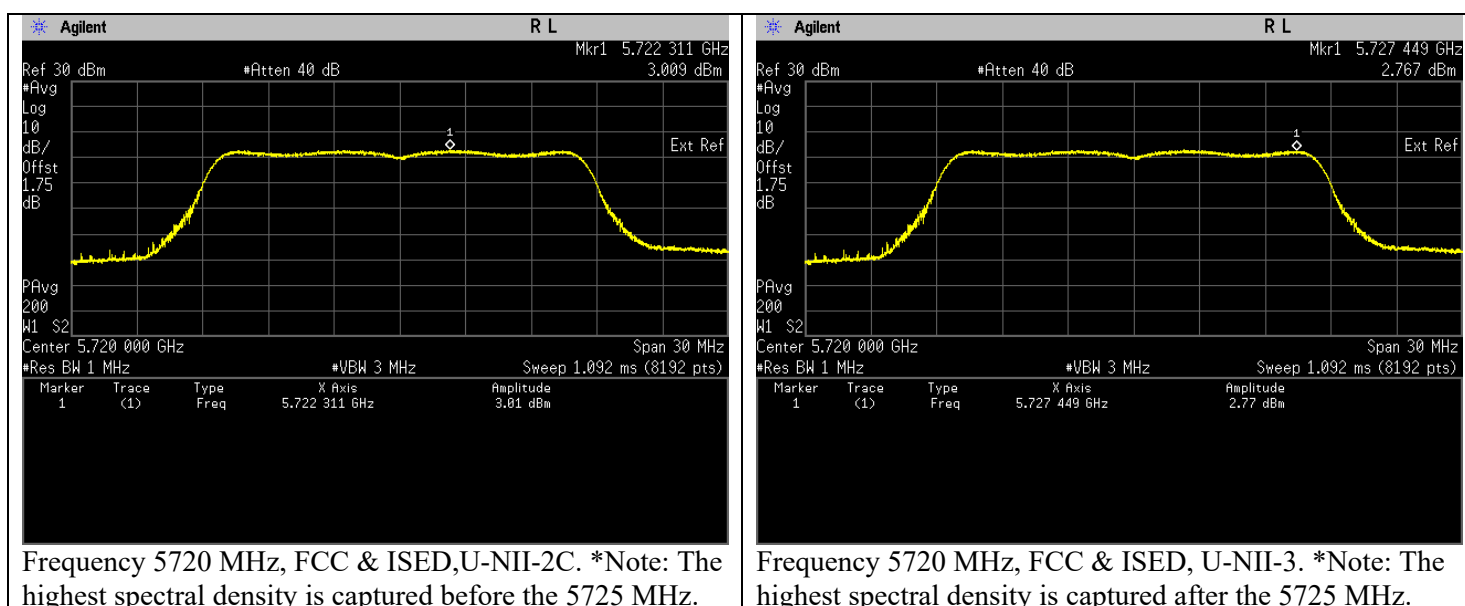
Straddle Frequency for 802.11a (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
		U-NII- 2C	
5720	Mod Type: BPSK, Data Rate: 6	3.145	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: 6	2.903	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: 6	3.145	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: 6	2.903	Pass

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



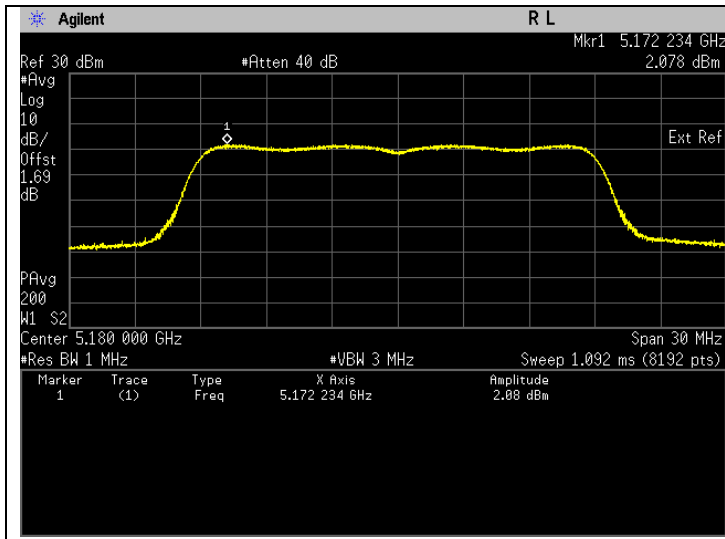
802.11n (HT20)(26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	2.168	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.999	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.816	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.601	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.151	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.552	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	0.046	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.928	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	0.711	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	-1.557	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	0.261	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	-0.472	Pass

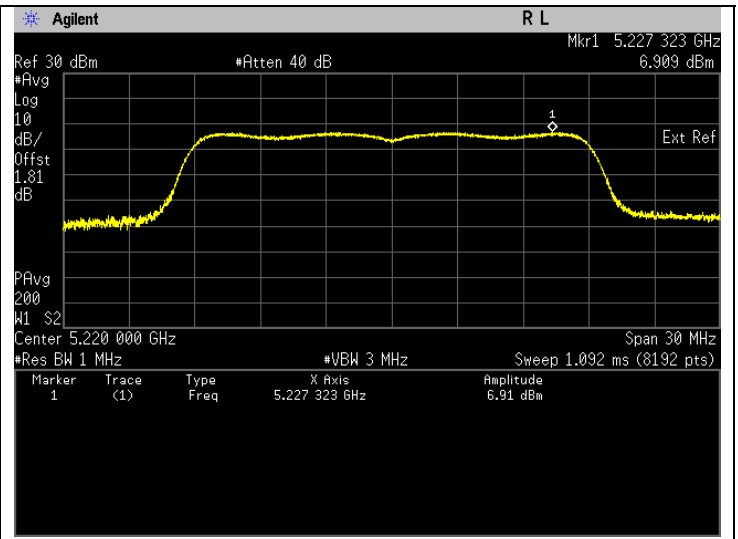
802.11n (HT20)(99% EBW)

Freq. (MHz)	Test Conditions	Results			
		Power/Frequency (dBm/MHz)	Status	EIRP (dBm/MHz)	Status
5180	Mod Type: BPSK, Data Rate: MCS0 (6.5)	2.168	Pass	4.868	Pass
5220	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.999	Pass	9.699	Pass
5240	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.816	Pass	9.516	Pass
5260	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.601	Pass	9.301	Pass
5300	Mod Type: BPSK, Data Rate: MCS0 (6.5)	6.151	Pass	8.851	Pass
5320	Mod Type: BPSK, Data Rate: MCS0 (6.5)	1.552	Pass	4.252	Pass
5500	Mod Type: BPSK, Data Rate: MCS0 (6.5)	0.046	Pass	2.746	Pass
5580	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.928	Pass	6.628	Pass
5700	Mod Type: BPSK, Data Rate: MCS0 (6.5)	0.711	Pass	3.411	Pass
Freq. (MHz)	Test Conditions	Power/Frequency (dBm/500kHz)	Status	EIRP (dBm/MHz)	Status
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	-1.557	Pass	1.143	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	0.261	Pass	2.961	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	-2.703	Pass	-0.003	Pass

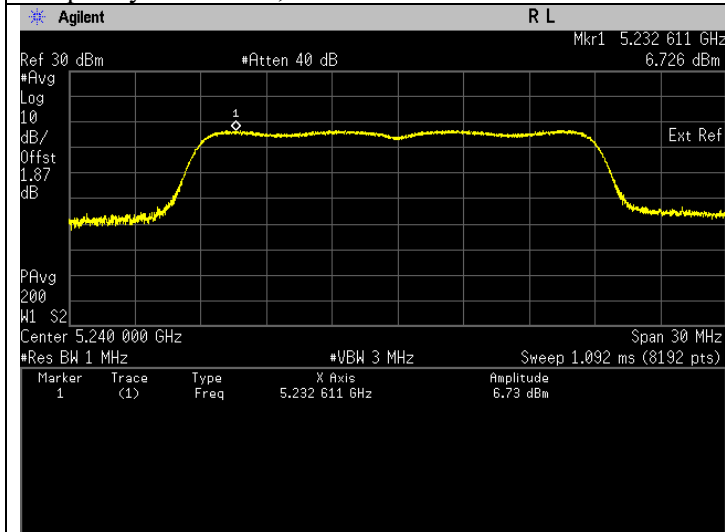
Plots for 802.11n (HT20) (26dB EBW & 99% EBW)



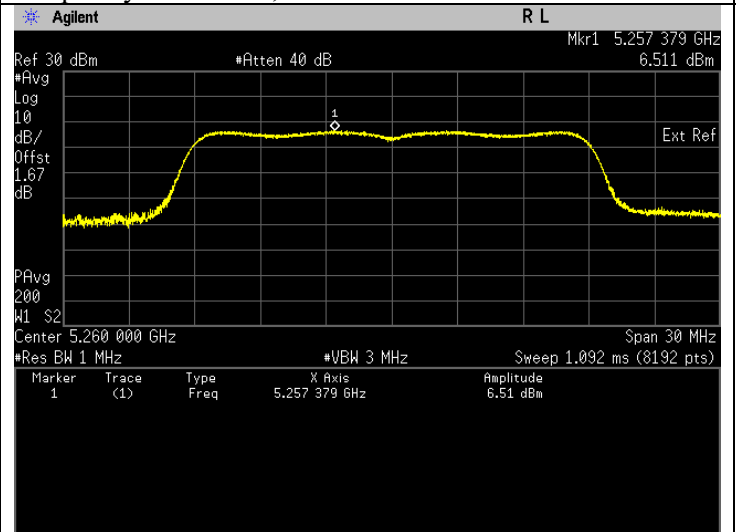
Frequency 5180 MHz, FCC & ISSED.



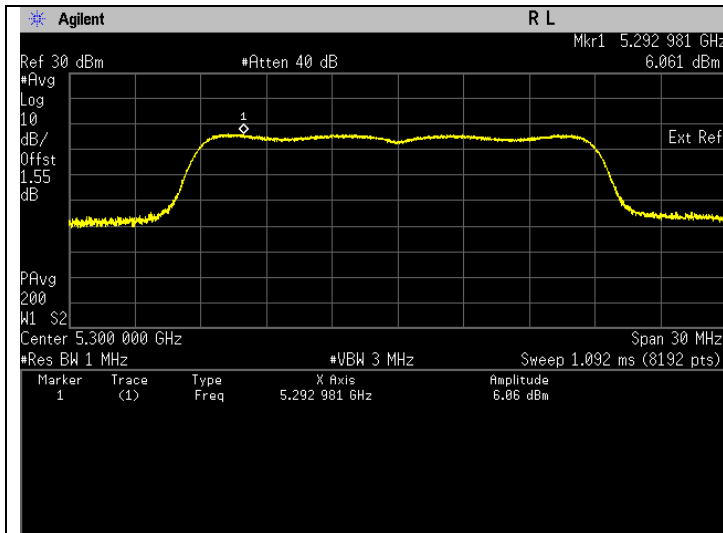
Frequency 5220 MHz, FCC & ISSED.



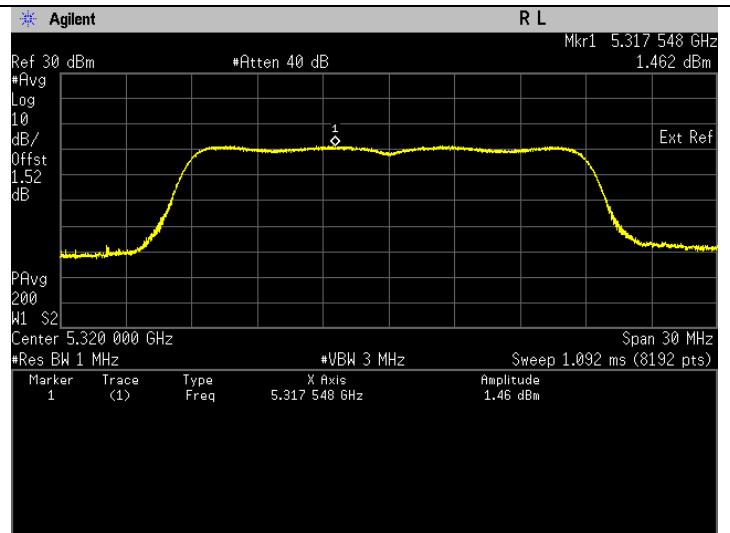
Frequency 5240 MHz, FCC & ISSED.



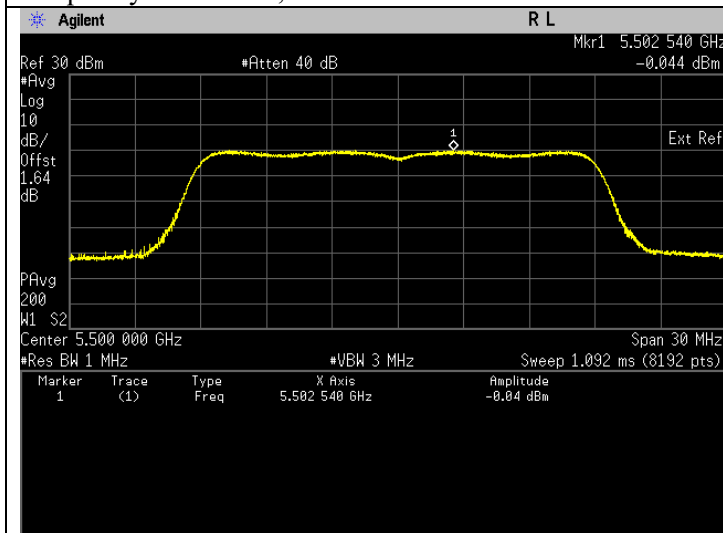
Frequency 5260 MHz, FCC & ISSED.



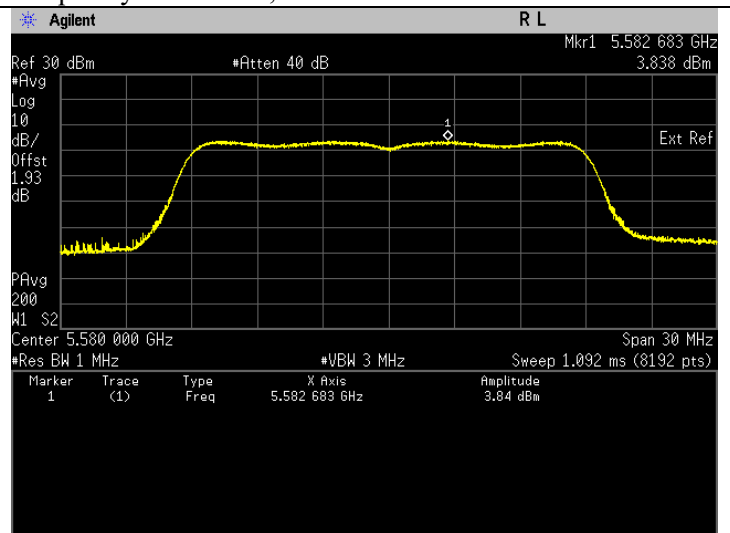
Frequency 5300 MHz, FCC & ISSED.



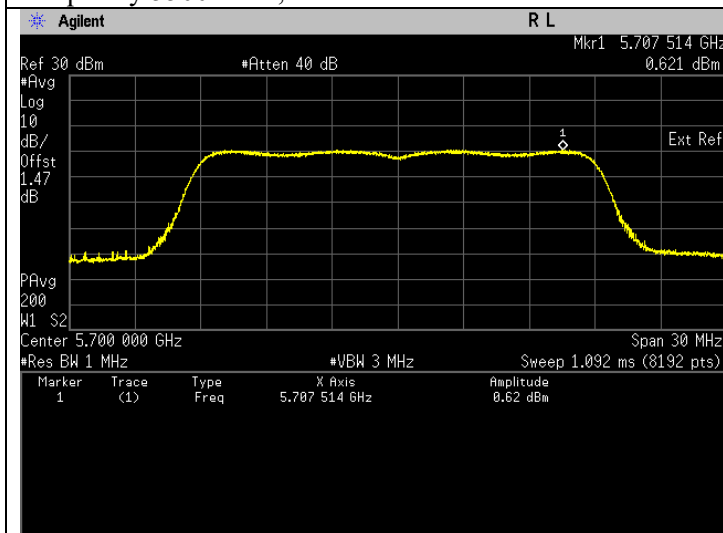
Frequency 5320 MHz, FCC & ISSED.



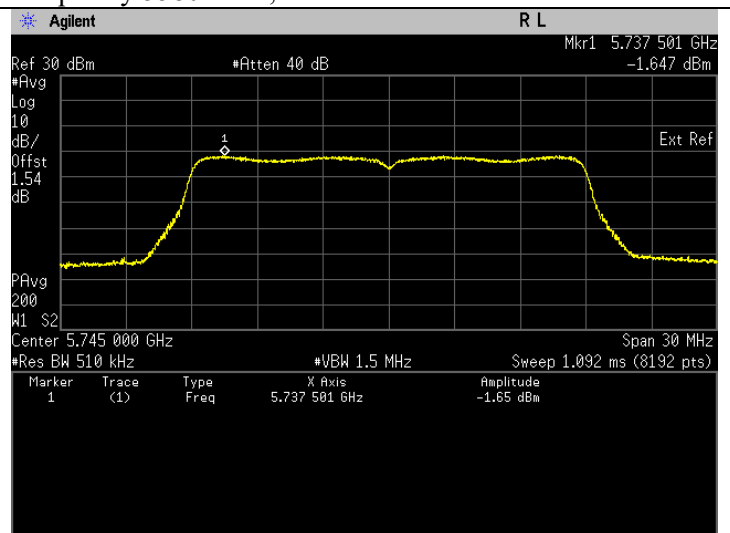
Frequency 5500 MHz, FCC & ISSED.



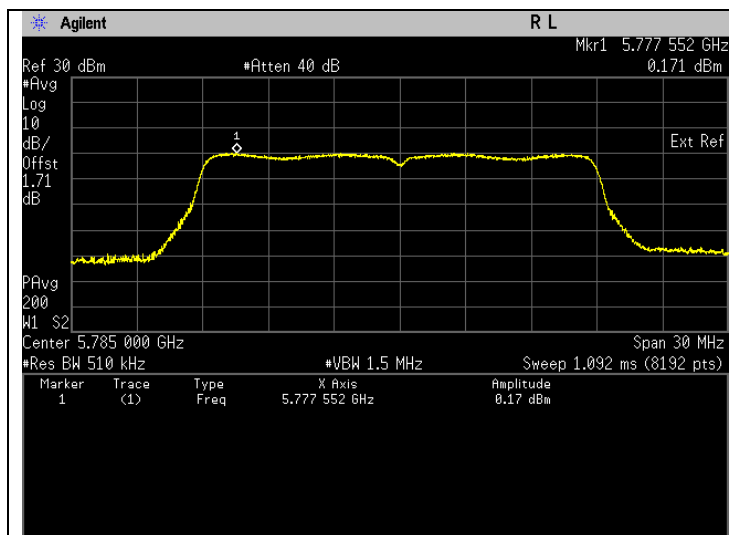
Frequency 5580 MHz, FCC & ISSED.



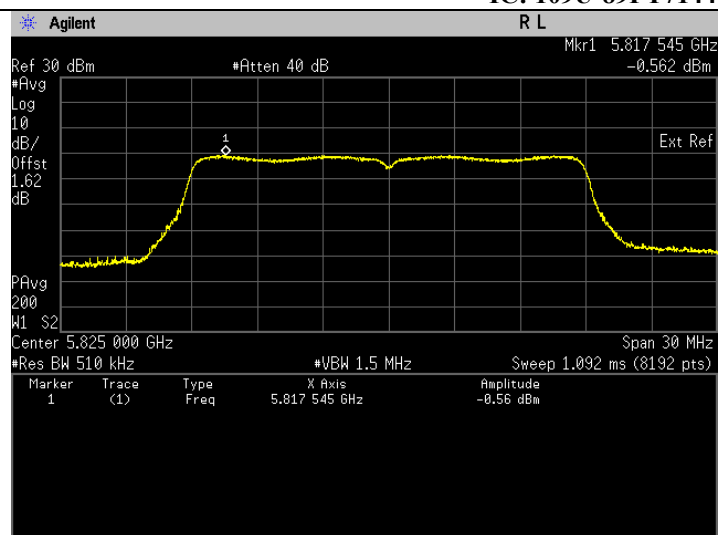
Frequency 5700 MHz, FCC & ISSED.



Frequency 5745 MHz, FCC & ISSED.



Frequency 5785 MHz, FCC & ISSED.



Frequency 5825 MHz, FCC & ISSED.

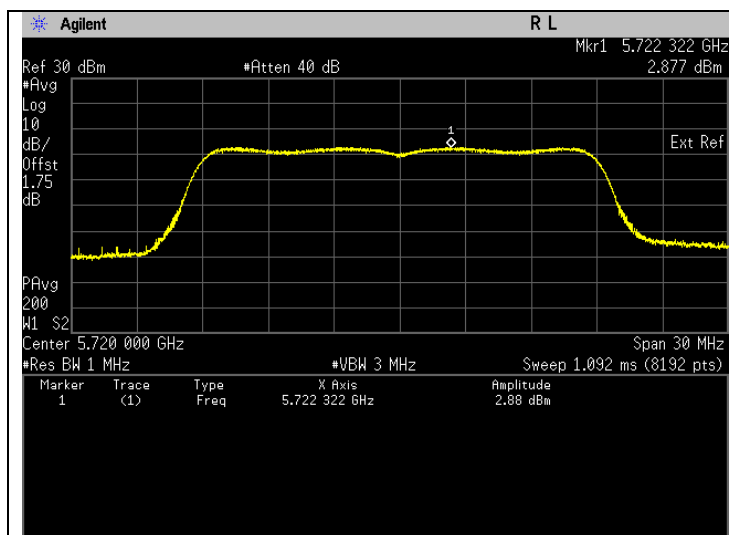
Straddle Frequency for 802.11n (HT20) (26dB EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
		U-NII- 2C	
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	2.967	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	2.626	Pass

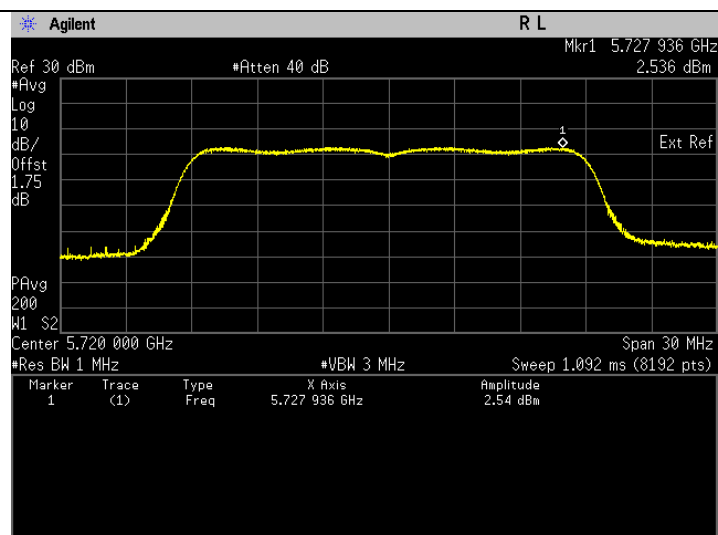
Straddle Frequency for 802.11n (HT20) (99% EBW)

Freq. (MHz)	Test Conditions	Results	
		Power/Frequency (dBm/MHz)	Status
		U-NII- 2C	
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	2.967	Pass
Freq. (MHz)	Test Conditions	U-NII-3	
		Power/Frequency (dBm/500kHz)	Status
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	2.626	Pass

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



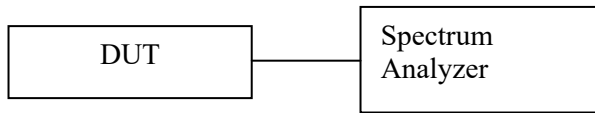
Frequency 5720 MHz, FCC & ISDE,U-NII-2C. *Note: The highest spectral density is captured before the 5725 MHz.



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

7.4. 6dB Bandwidth

7.4.1. 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 $\geq 3 \cdot$ 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).

7.4.2. 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.

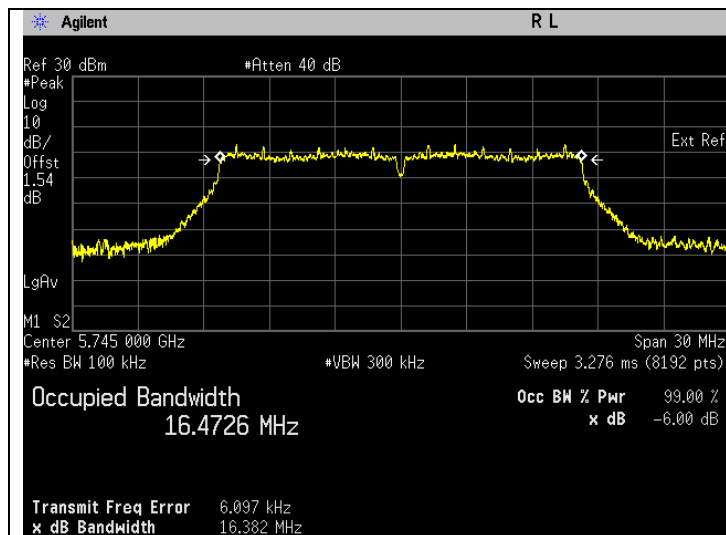
RSS 247 6.2.4

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

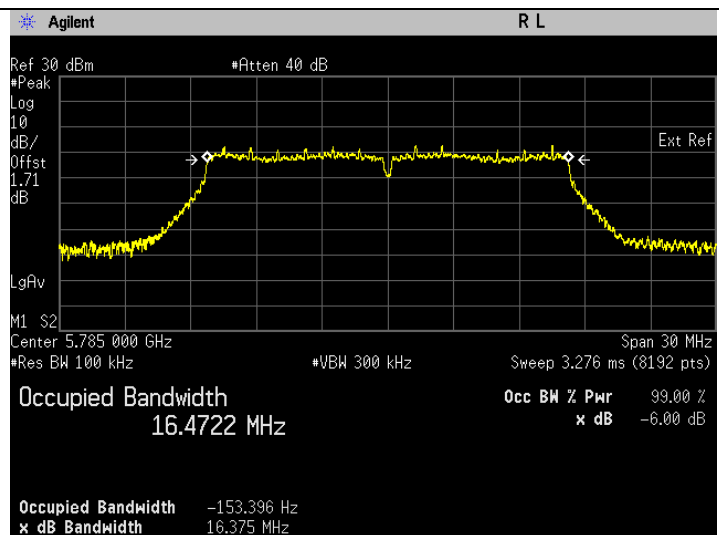
7.4.3. Test Data

802.11a

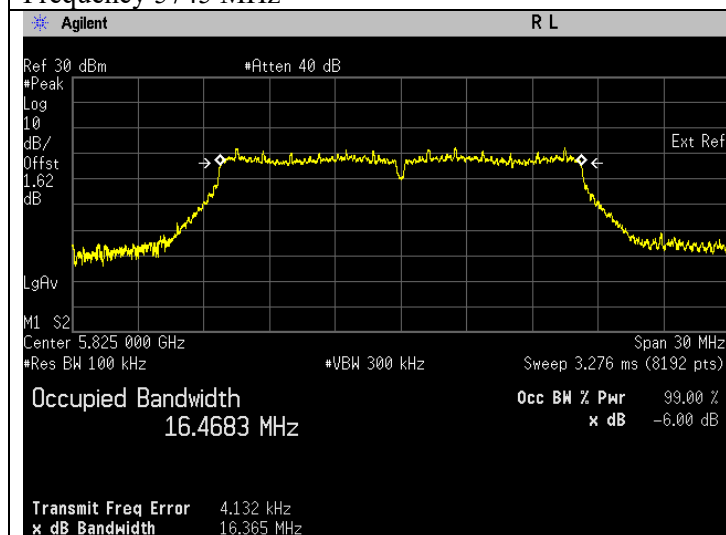
Freq. (MHz)	Test Configuration	Results	
		Bandwidth(MHz)	Status
5745	Mod Type: BPSK, Data Rate: 6	16.382	Pass
5785	Mod Type: BPSK, Data Rate: 6	16.375	Pass
5825	Mod Type: BPSK, Data Rate: 6	16.365	Pass



Frequency 5745 MHz



Frequency 5785 MHz

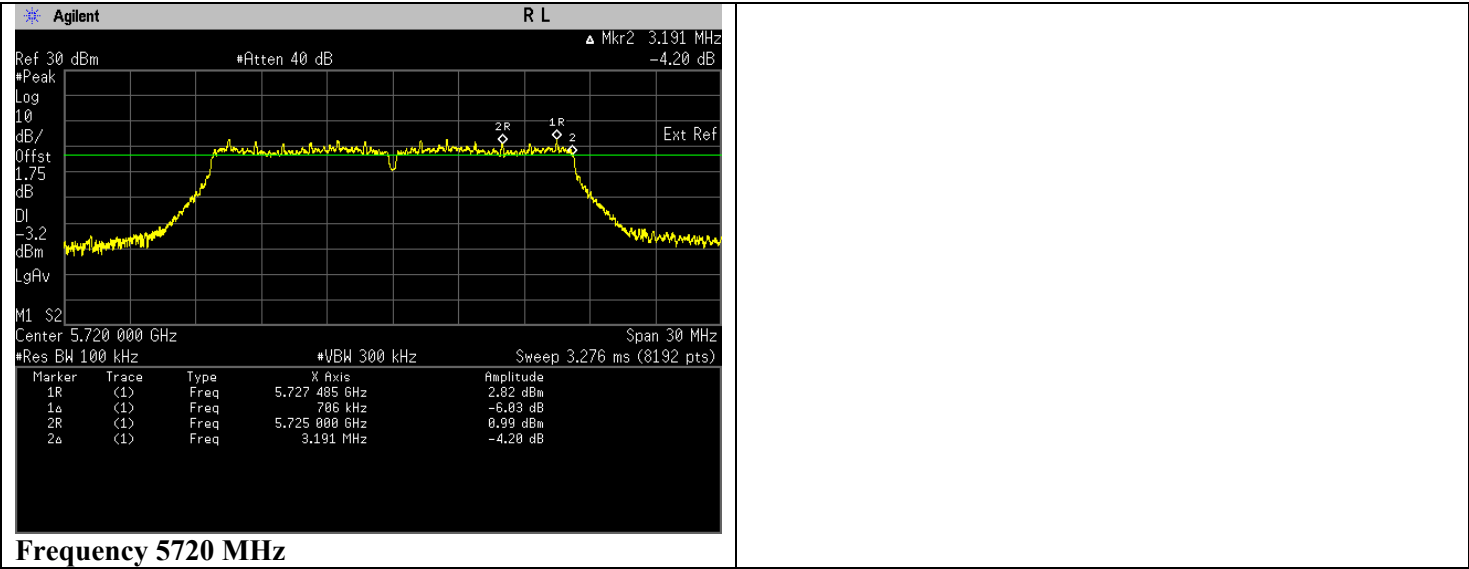


Frequency 5825 MHz

Straddle Frequency for 802.11a

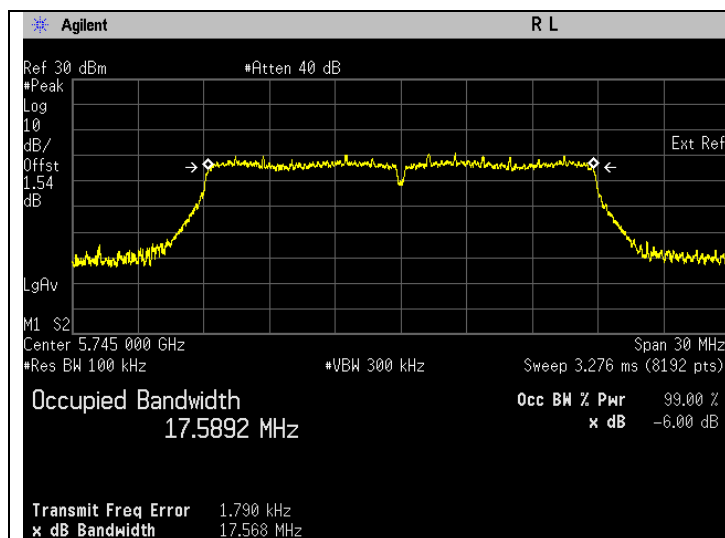
Freq. (MHz)	Test Conditions	Results	
		Power/Freq. (dBm/MHz)	Status
		U-NII- 3	
5720	Mod Type: BPSK, Data Rate: 6	3.191	Pass

Plots for 802.11a Straddle Frequency

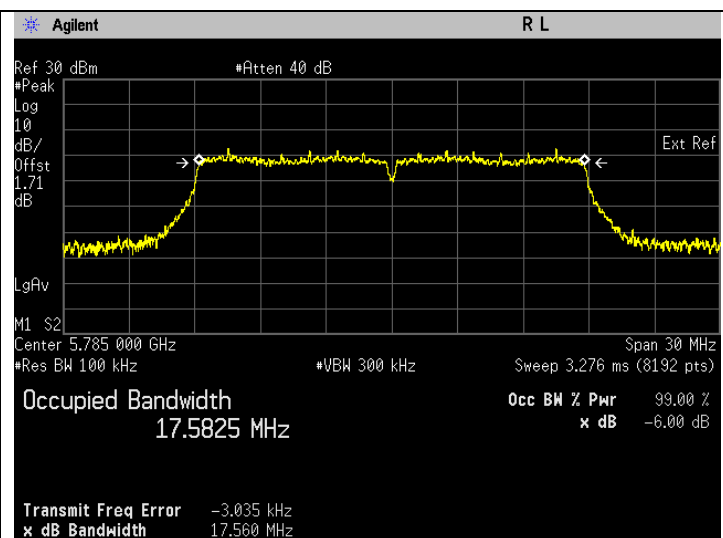


802.11n (HT20)

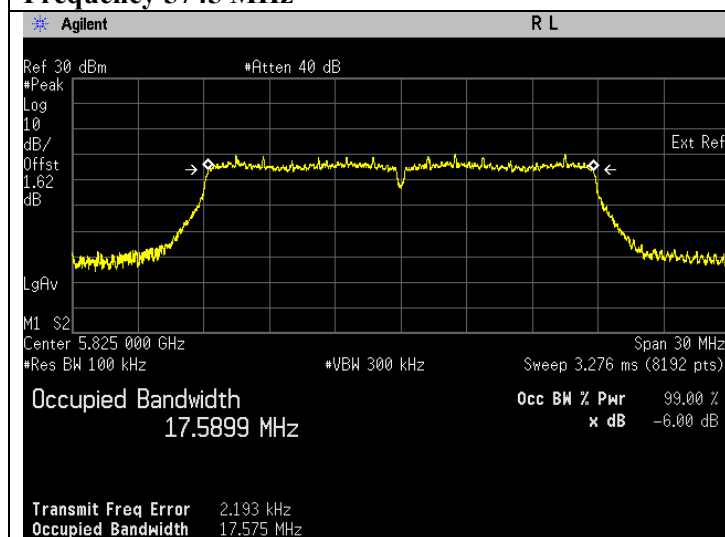
Freq. (MHz)	Test Configuration	Results	
		Bandwidth(MHz)	Status
5745	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.568	Pass
5785	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.560	Pass
5825	Mod Type: BPSK, Data Rate: MCS0 (6.5)	17.575	Pass



Frequency 5745 MHz



Frequency 5785 MHz

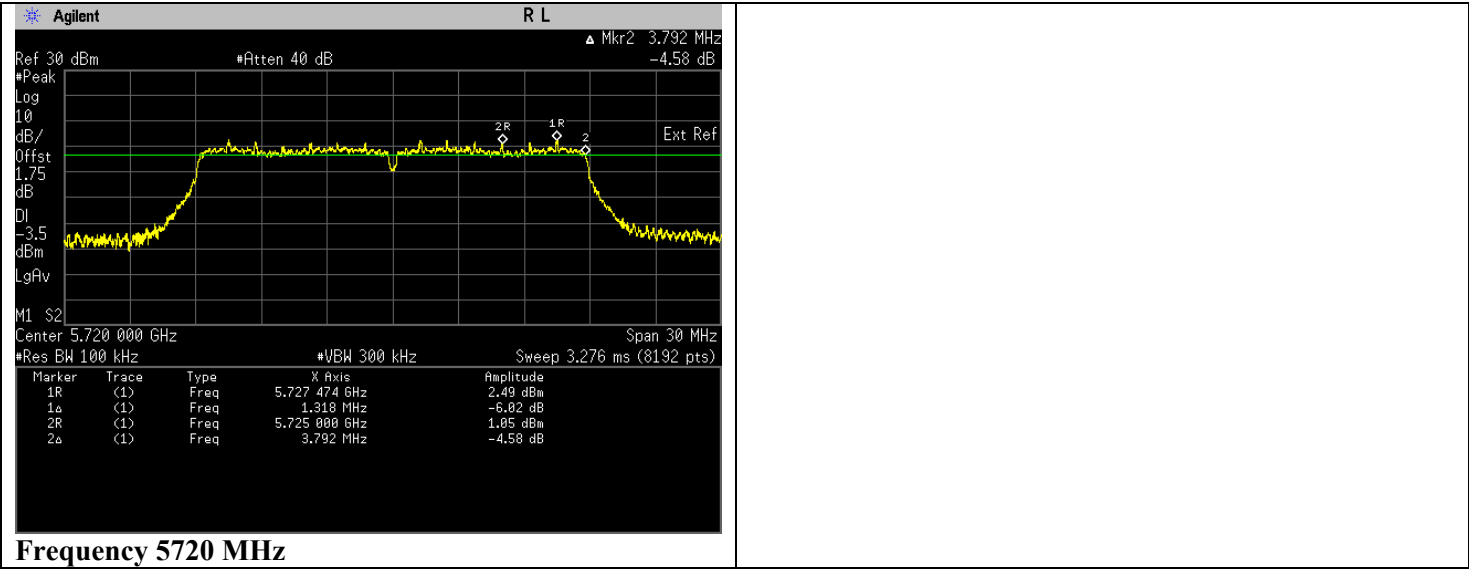


Frequency 5825 MHz

Straddle Frequency for 802.11n (HT20)

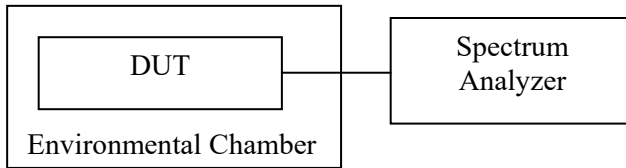
Freq. (MHz)	Test Conditions	Results	
		Power/Freq. (dBm/MHz)	Status
		U-NII- 3	
5720	Mod Type: BPSK, Data Rate: MCS0 (6.5)	3.792	Pass

Plots for 802.11n (HT20) Straddle Frequency



7.5. Frequency Stability

7.5.1. 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 -30⁰C to 50⁰C with step size of 10⁰C on manufacturer's rated supply voltage.
- g) At temperature of 20⁰C, +/-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.

7.5.2. 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.

7.5.3. Test Data

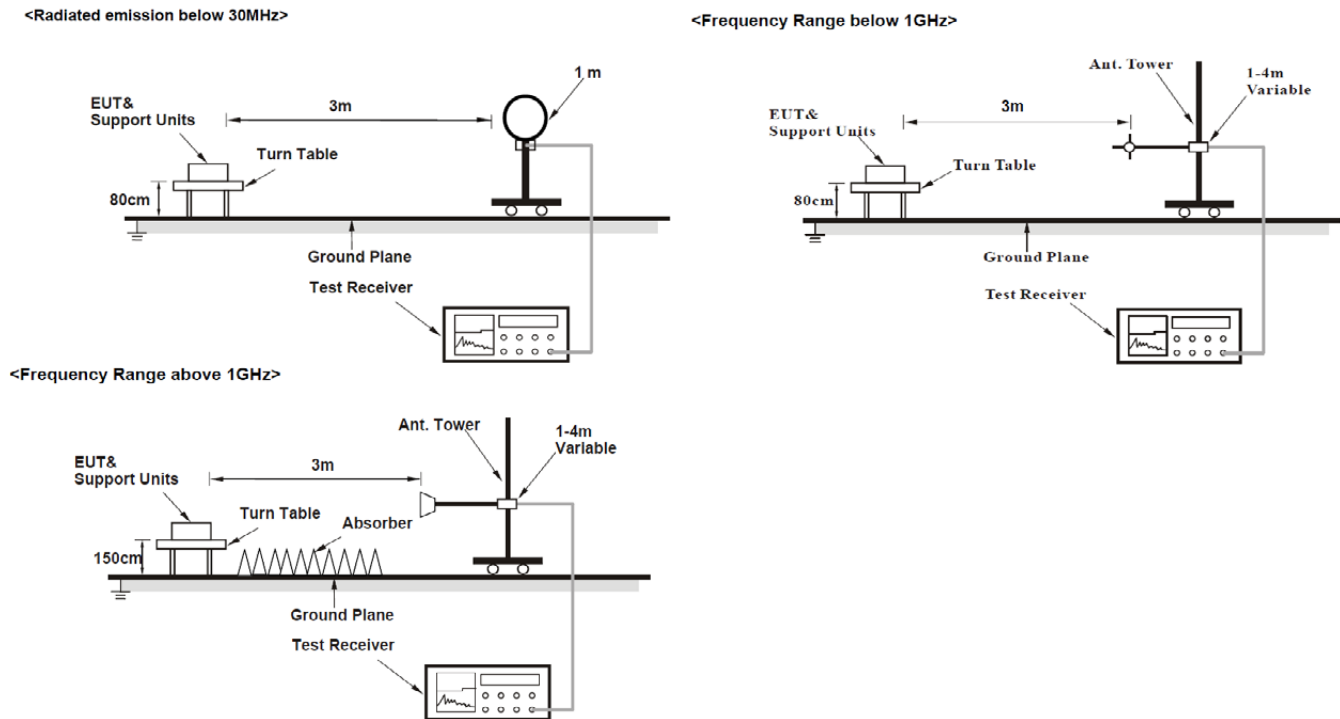
802.11a

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

Temperature(°C)	Voltage	Results			
		Measured Frequency(MHz)	Frequency Error(kHz)	Frequency Error(%)	Status
20	+15%	5179.997456	2.544000	0.000049	Pass
	±0%	5179.997888	2.112000	0.000041	Pass
	-15%	5179.998515	1.485000	0.000029	Pass
-30		5179.998946	1.054000	0.000020	Pass
-20		5179.998920	1.080000	0.000021	Pass
-10		5179.998307	1.693000	0.000033	Pass
0		5179.998372	1.628000	0.000031	Pass
10		5179.998161	1.839000	0.000036	Pass
30		5179.998322	1.678000	0.000032	Pass
40		5179.998319	1.681000	0.000032	Pass
50		5179.998314	1.686000	0.000033	Pass

7.6. Band Edge Radiated Spurious Emission Measurement

7.6.1. Test Setup



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:

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

7.6.2. 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:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 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.

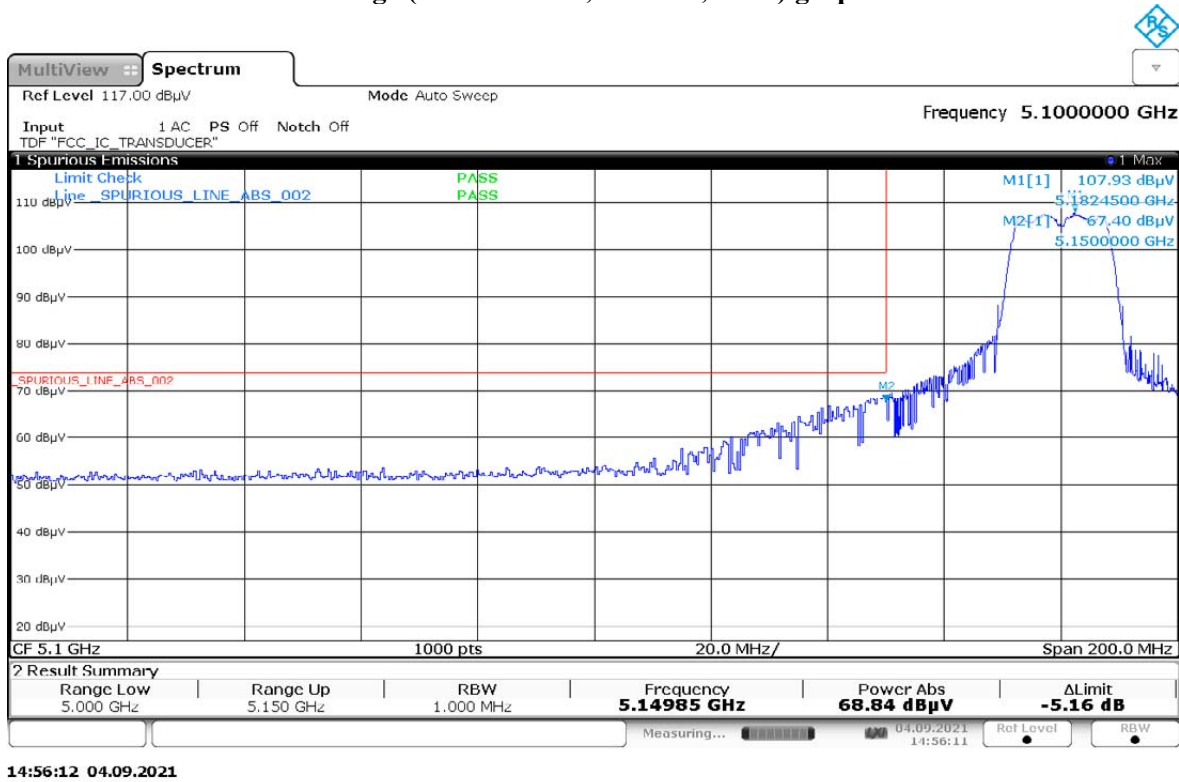
Applicable To		Limit	
789033 D02 General UNII Test Procedures New Rules v01r03		Field Strength at 3 m	
		PK: 74 (dBµV/m)	AV: 54 (dBµV/m)
Frequency Band	Applicable To	EIRP Limit	Equivalent Field Strength at 3 m
5150–5250 MHz	15.407(b)(1)	PK: -27 (dBm/MHz)	PK: 68.2 (dBµV/m)
5250–5350 MHz	15.407(b)(2)		
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:

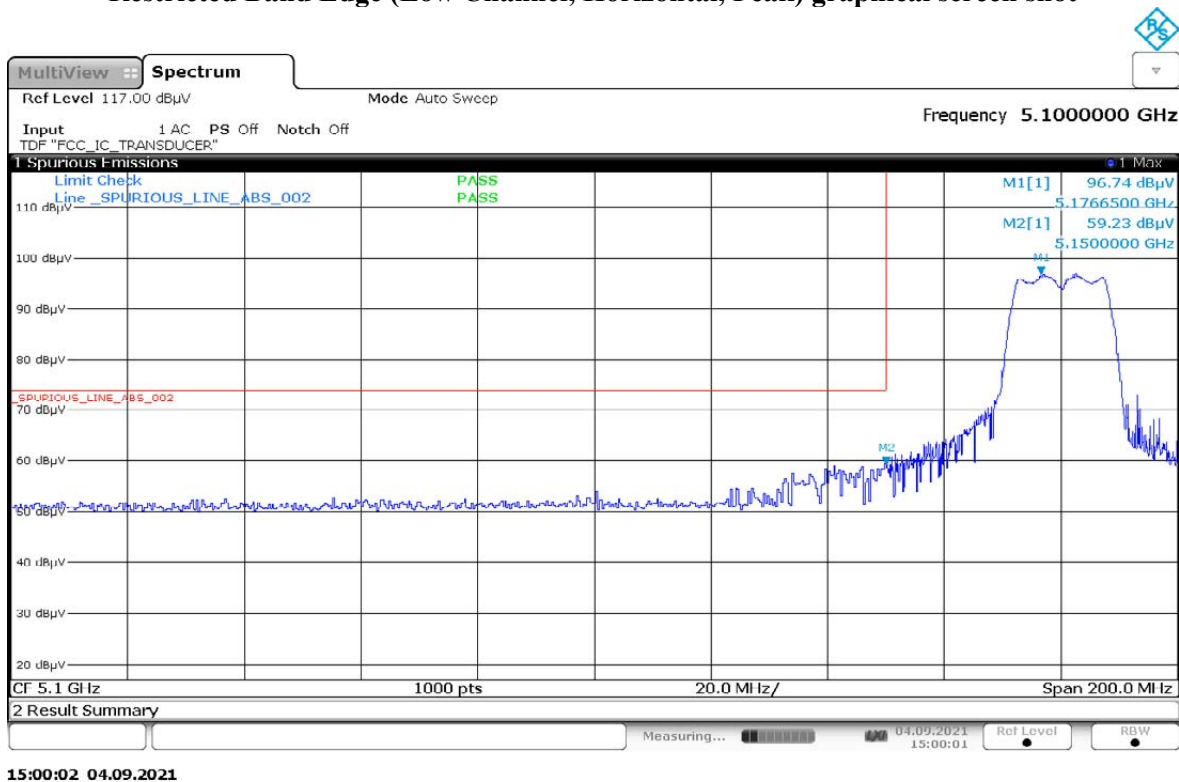
The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength:

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

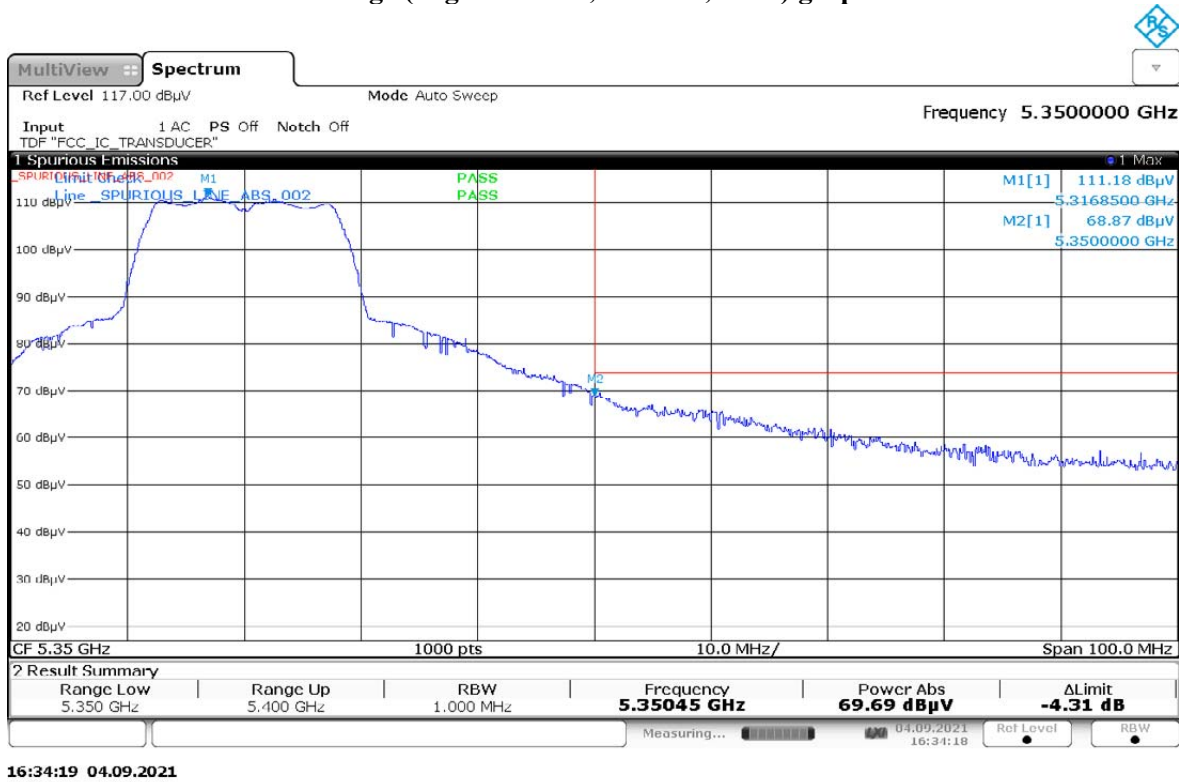
Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



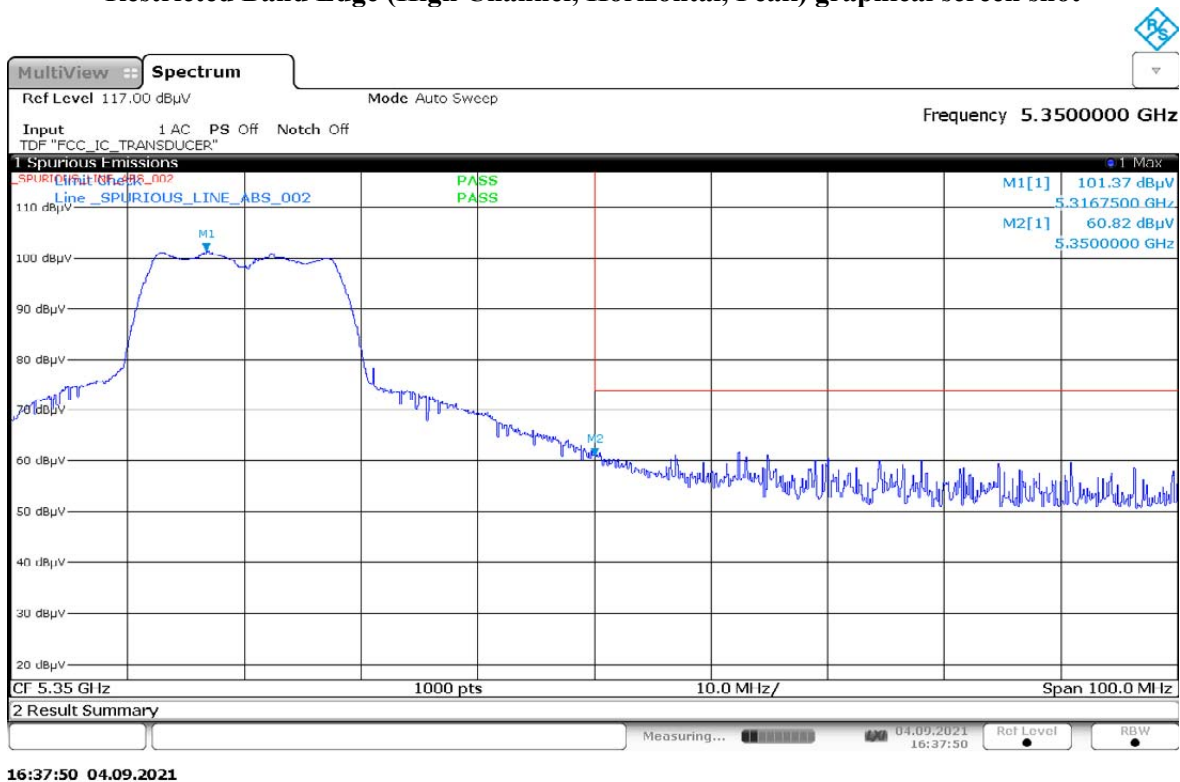
Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



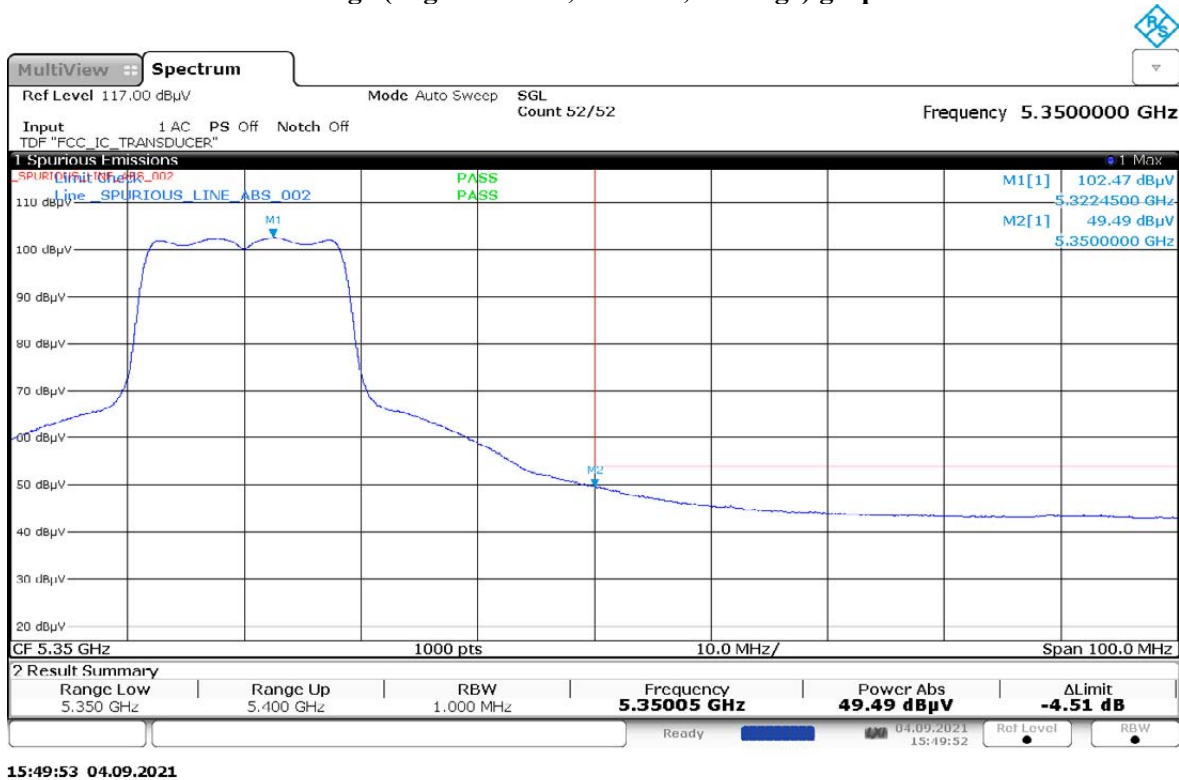
Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



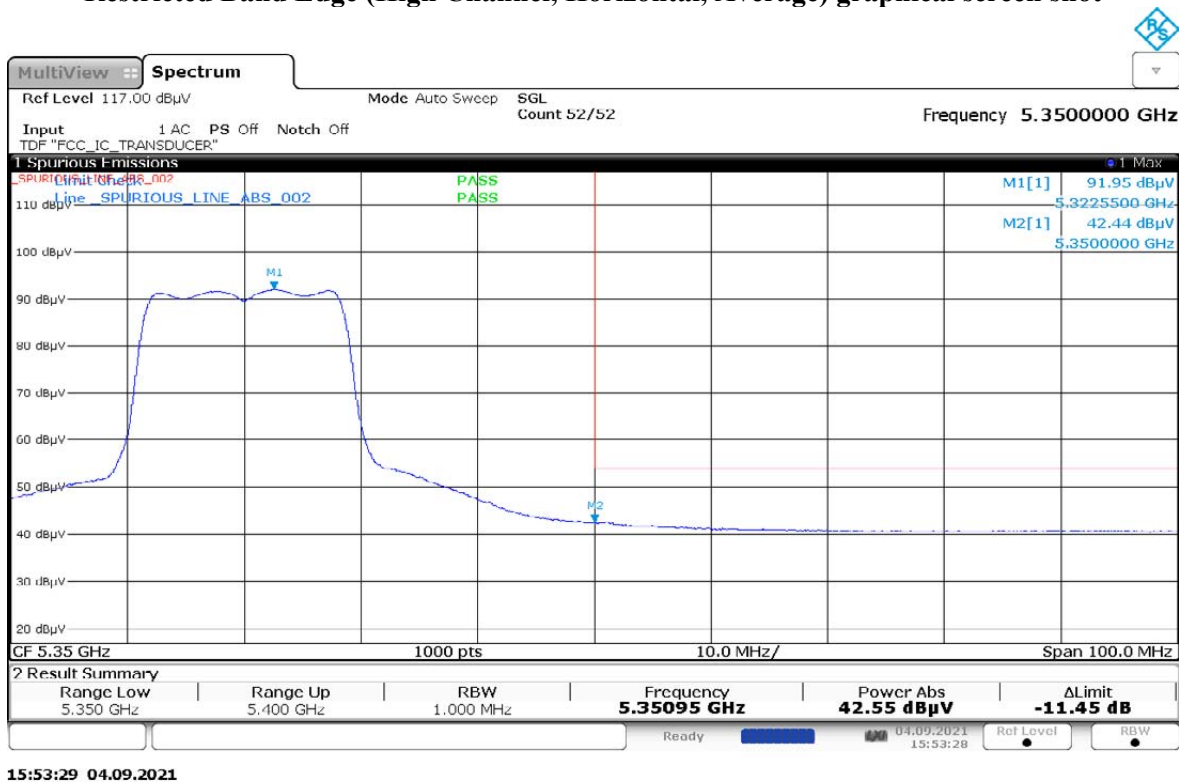
Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



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



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



Test: WIFI SAC Restricted Band Edge

Model Number: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113

Battery: PMNN4810A Accessory: PMAD4147A

Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013

Worst Case Plane: (802.11a 20MHz)

Restricted Band Edge (Low Channel) tabular data

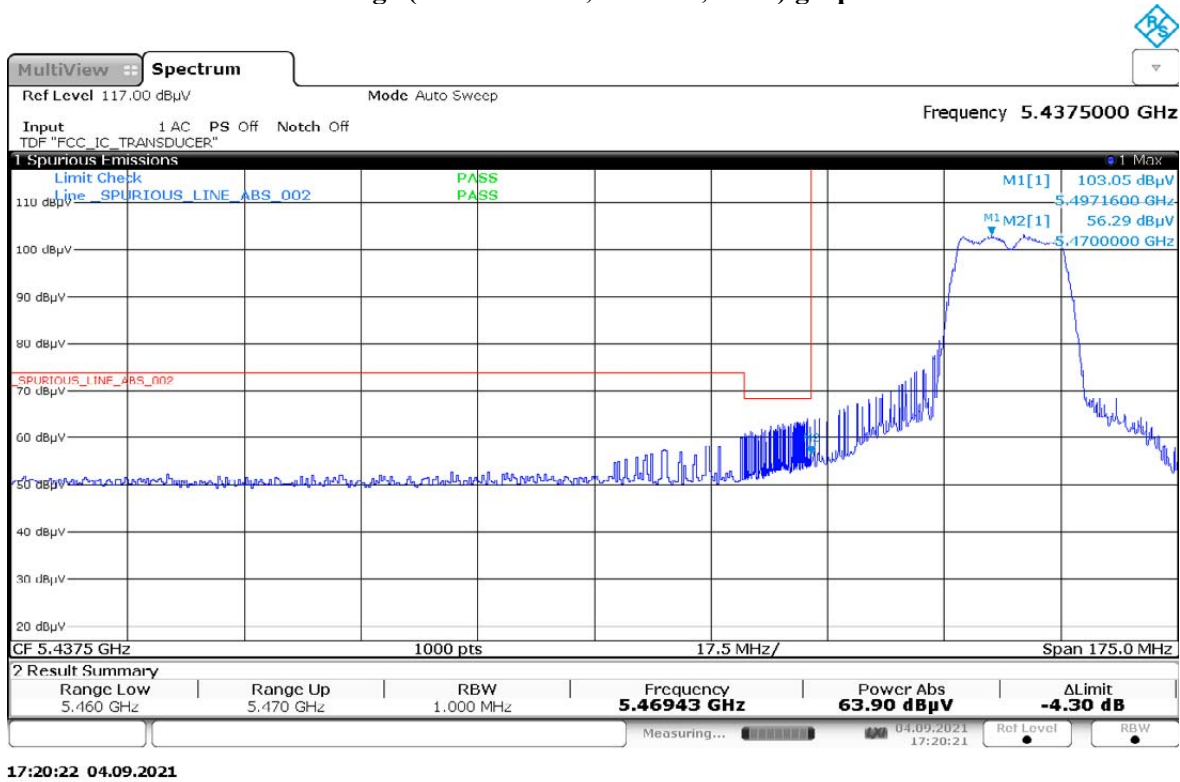
[illegible]

Remarks: Pass Result	Marginal Result	Fail Result
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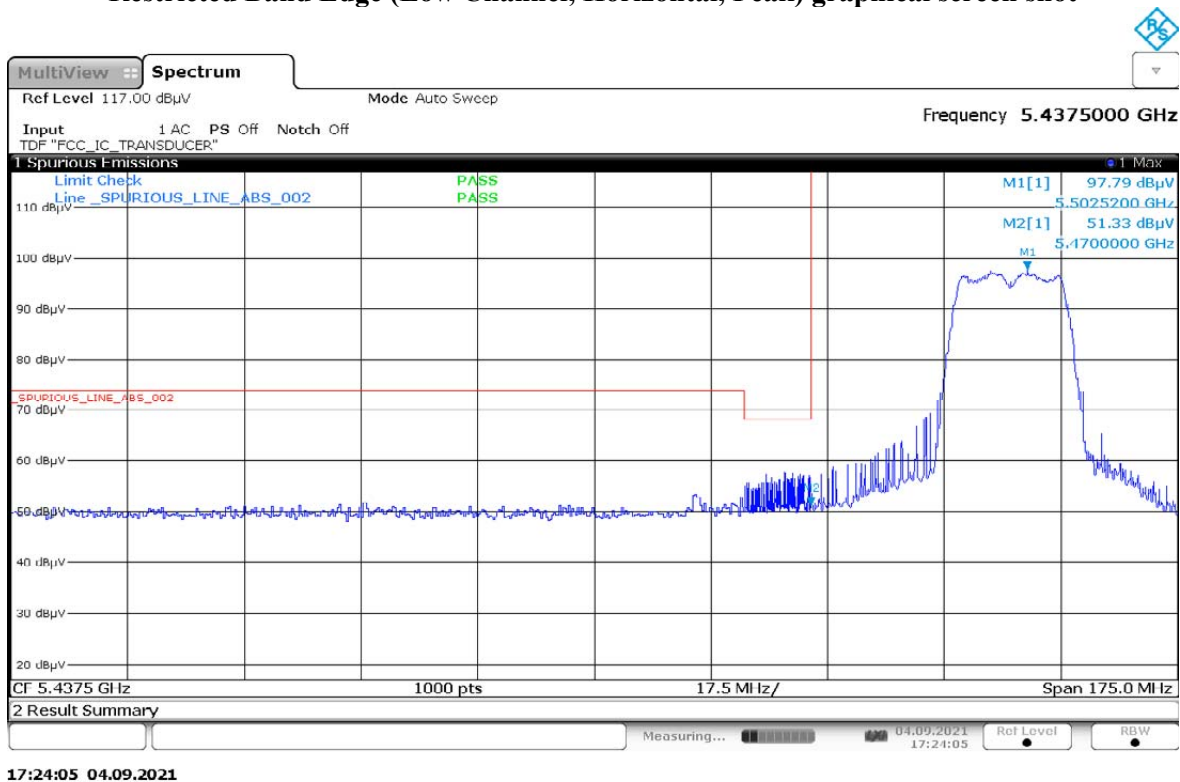
Temperature (degC):23.8
Test Performed by: Qawiman&Amaluddin
System MU: 4.03dB

Humidity (%): 69.7
Test Date: Sat, 4 Sep, 2021

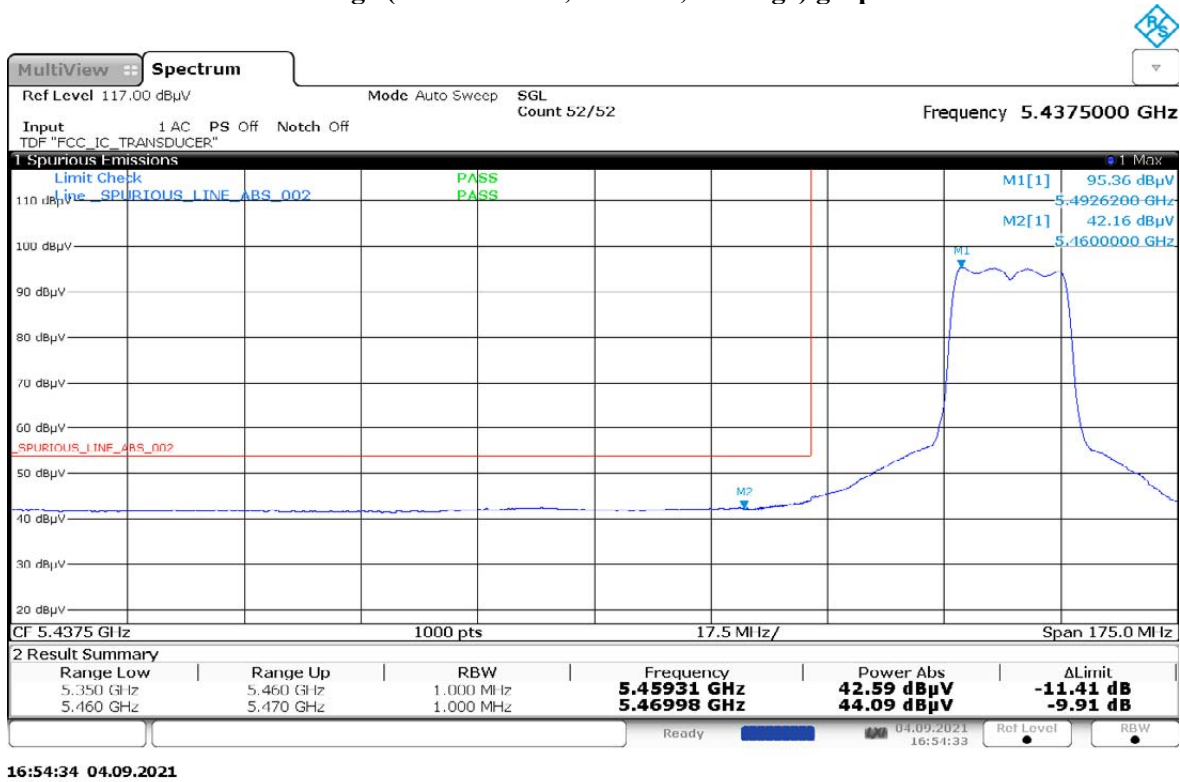
Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



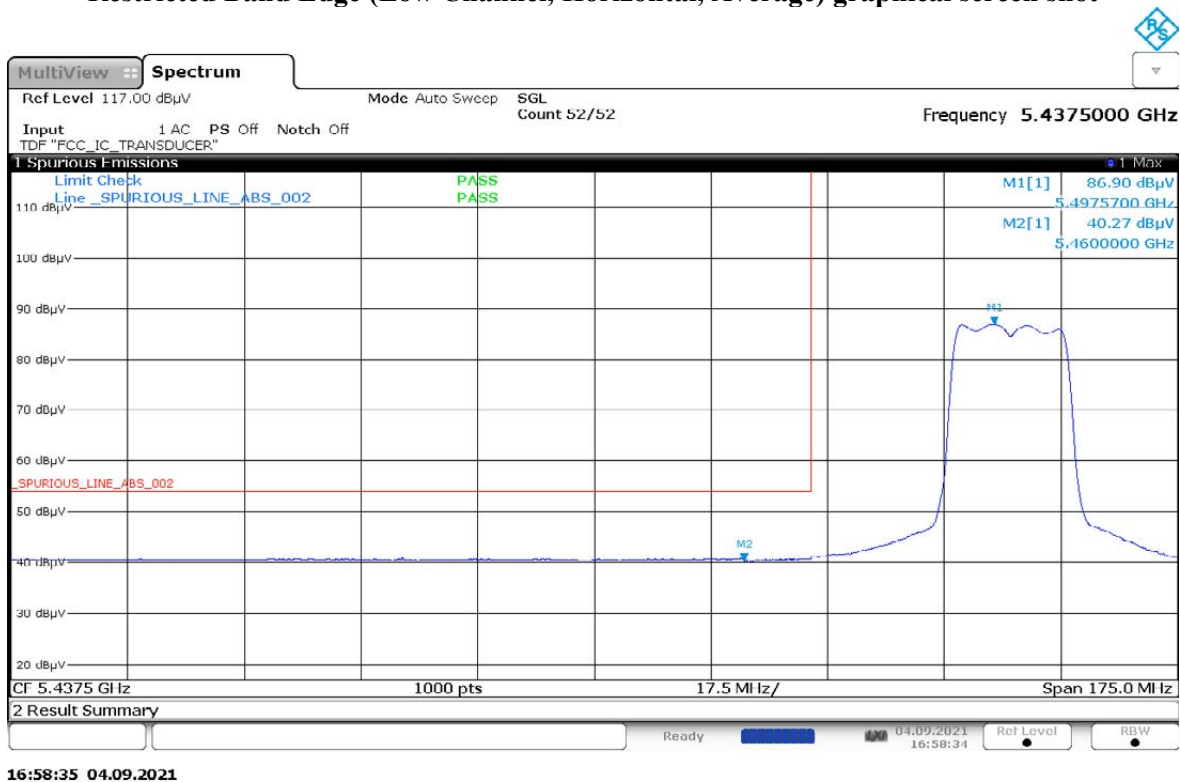
Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



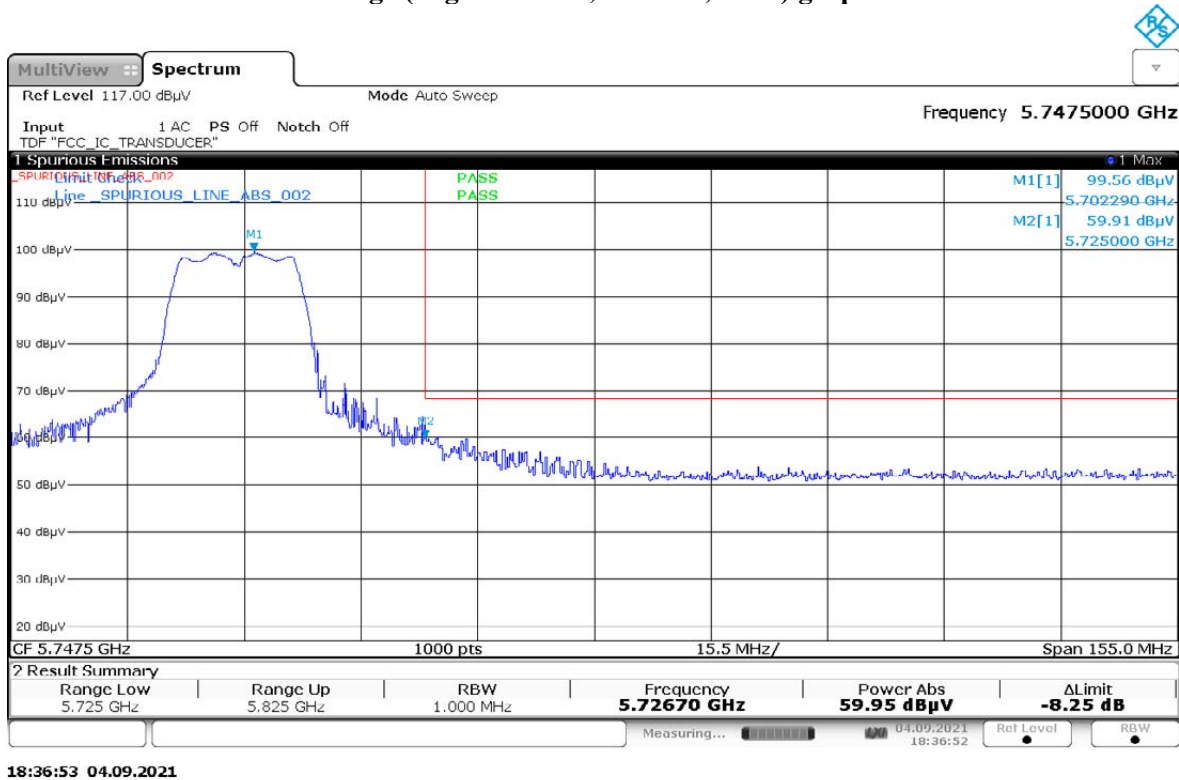
Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



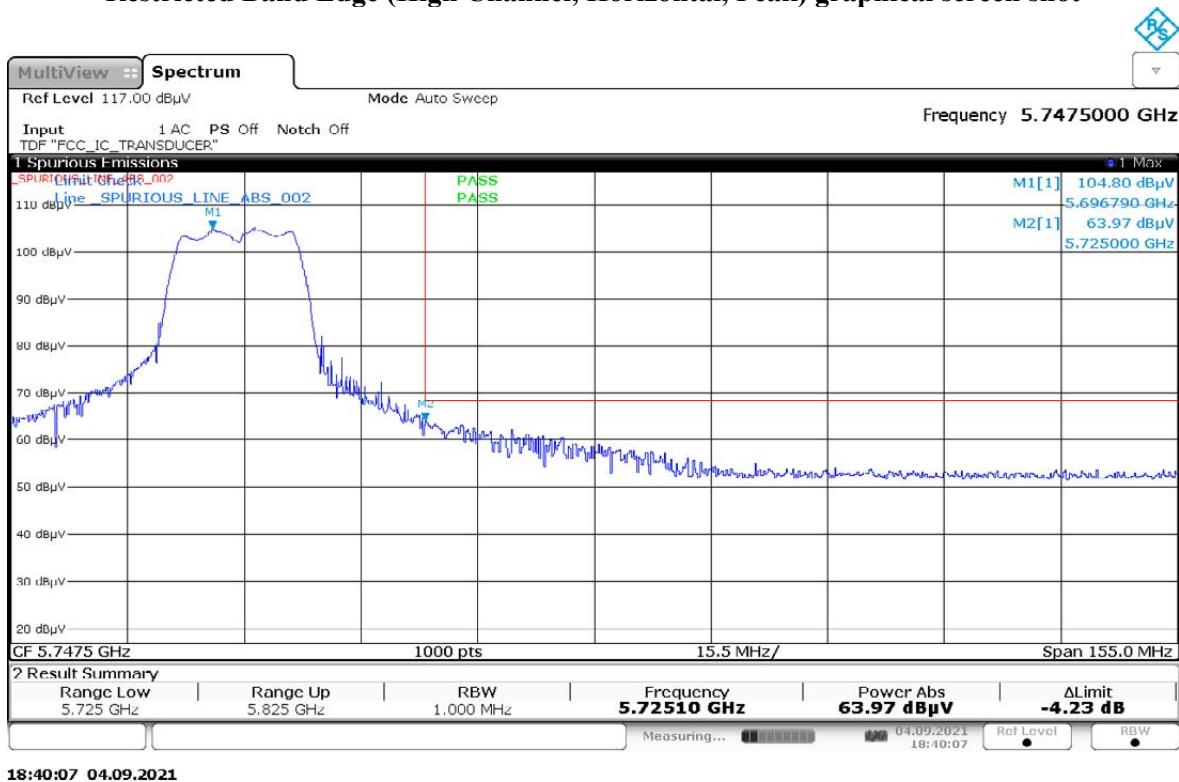
Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



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



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

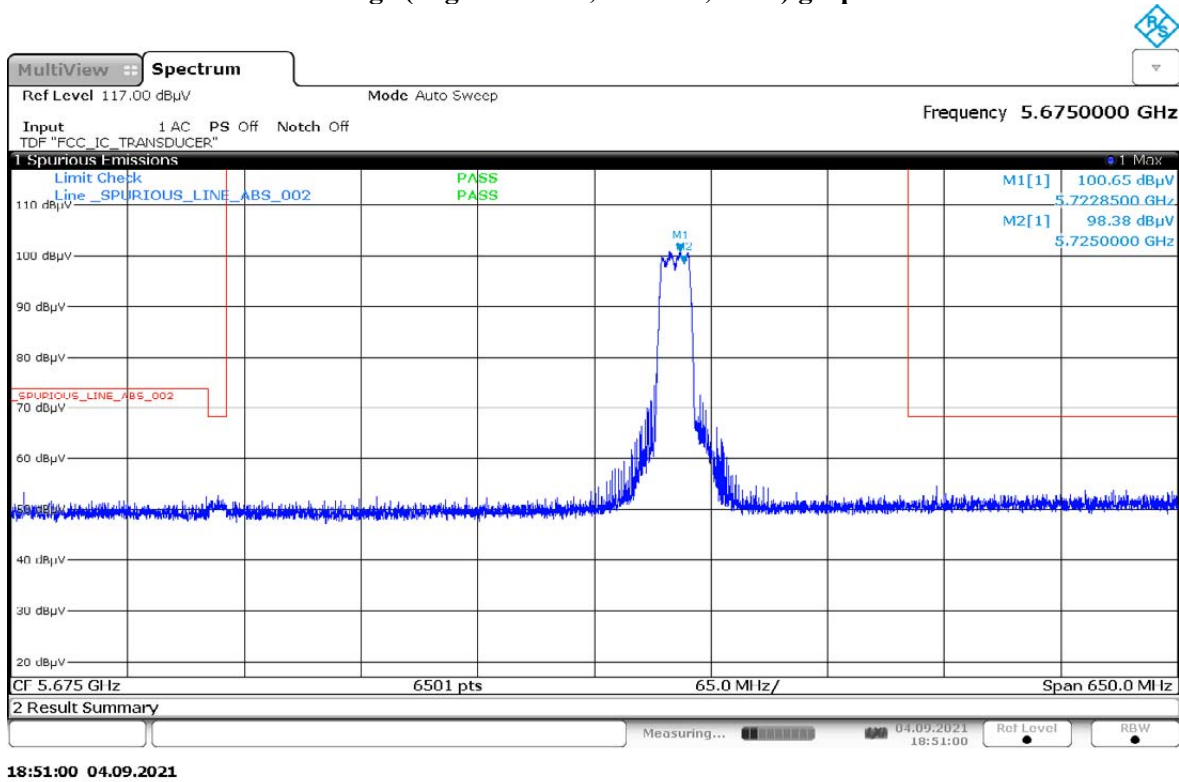


Restricted Band Edge (Straddle Channel) tabular data

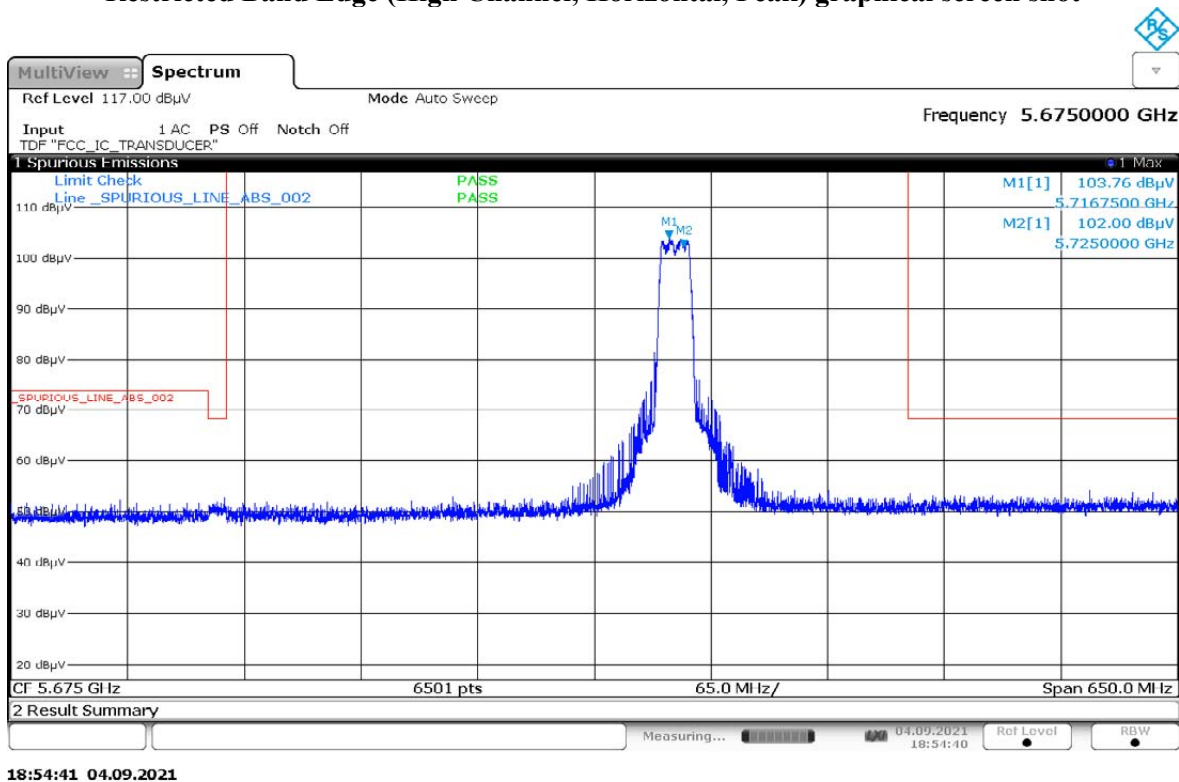
Remarks: Pass Result	Marginal Result	Fail Result
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Humidity (%): 69.7
Test Date: Sat, 4 Sep, 2021

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



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

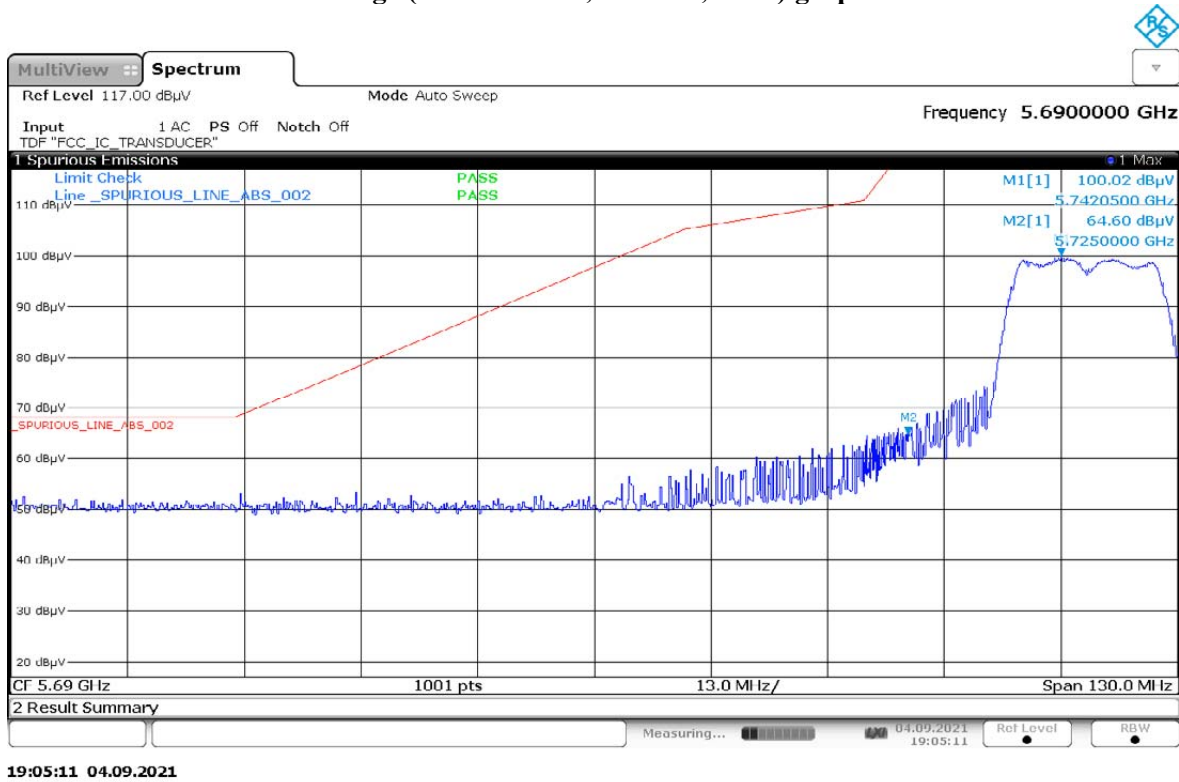


Restricted Band Edge (Low Channel) tabular data

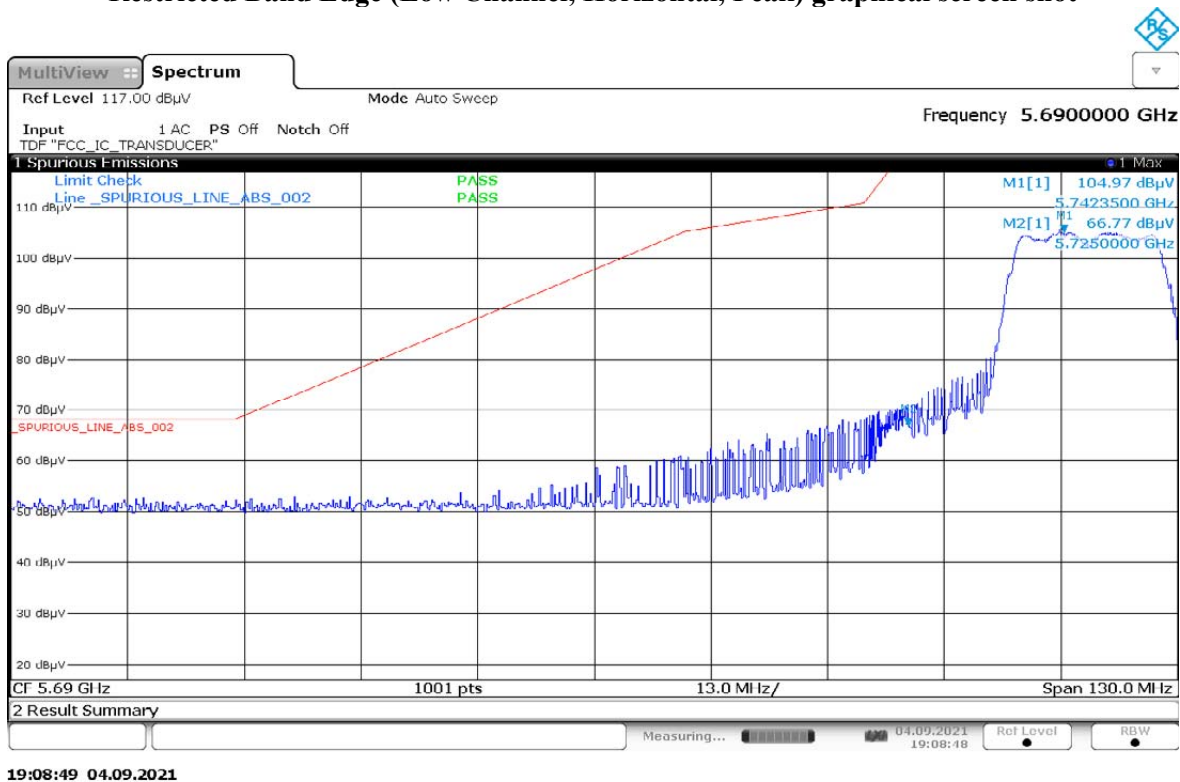
Remarks: Pass Result	Marginal Result	Fail Result
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Humidity (%): 69.7
Test Date: Sat, 4 Sep, 2021

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



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



Test: WIFI SAC Restricted Band Edge

Battery: PMNN4810A

Accessory: PMAD4147A

Test Frequency: 5825.0000 MHz

Test Standard: ANSI C63.10-2013

Worst Case Plane: (802.11a 20MHz)

Vertical Radiated Emission Result

Horizontal Radiated Emission Result

Remarks:
Pass Result

Marginal Result

Fail Result

Temperature (degC):23.8

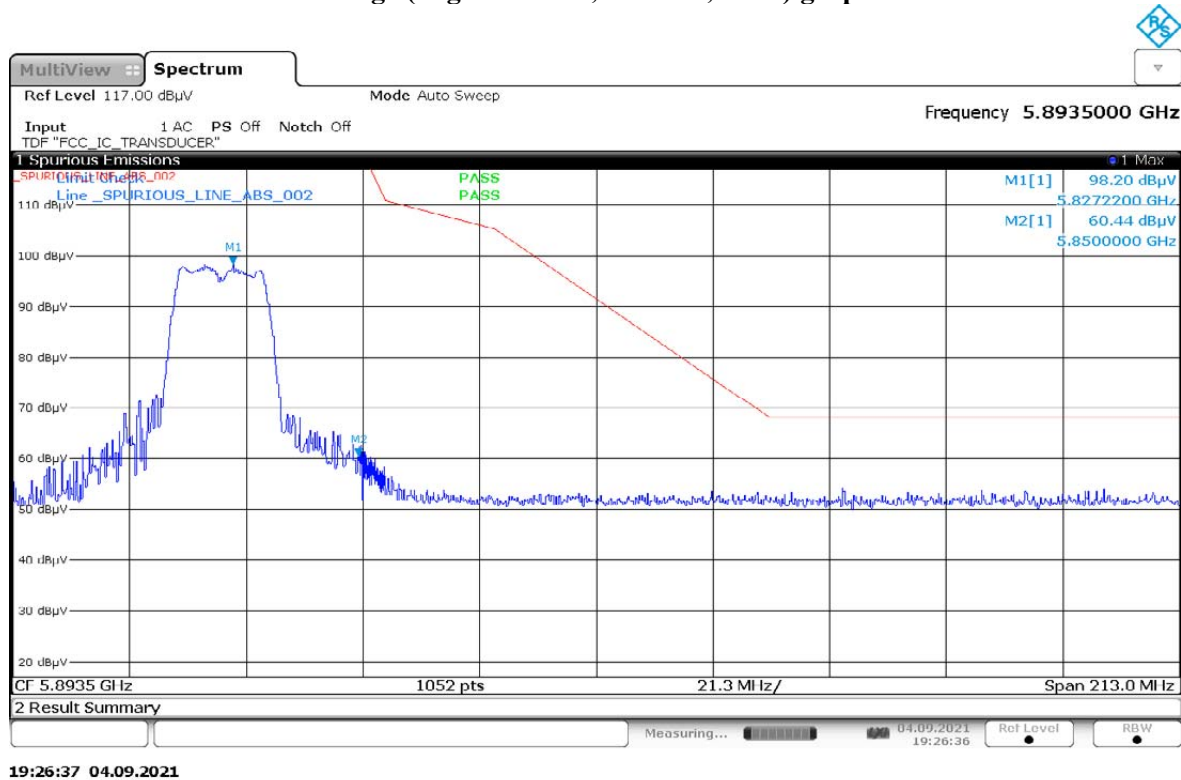
Test Performed by: Qawiman&Amaluddin

System MU: 4.03dB

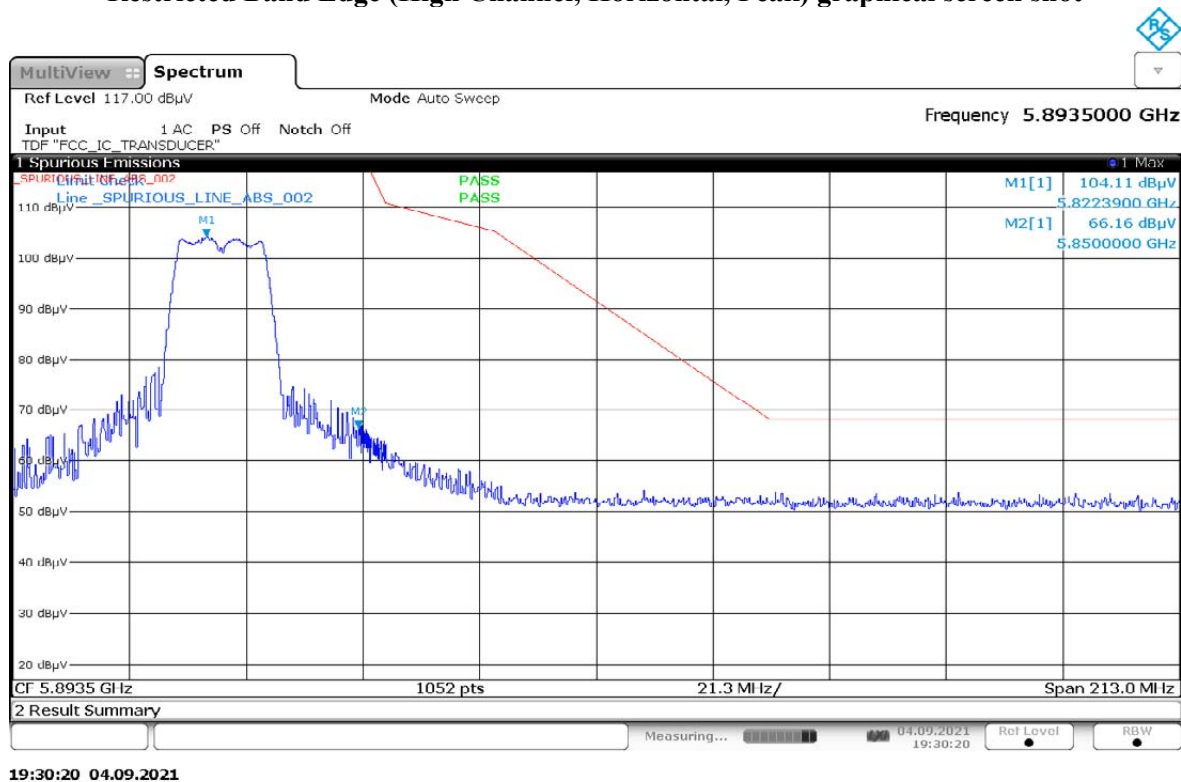
Humidity (%): 69.7

Test Date: Sat, 4 Sep, 2021

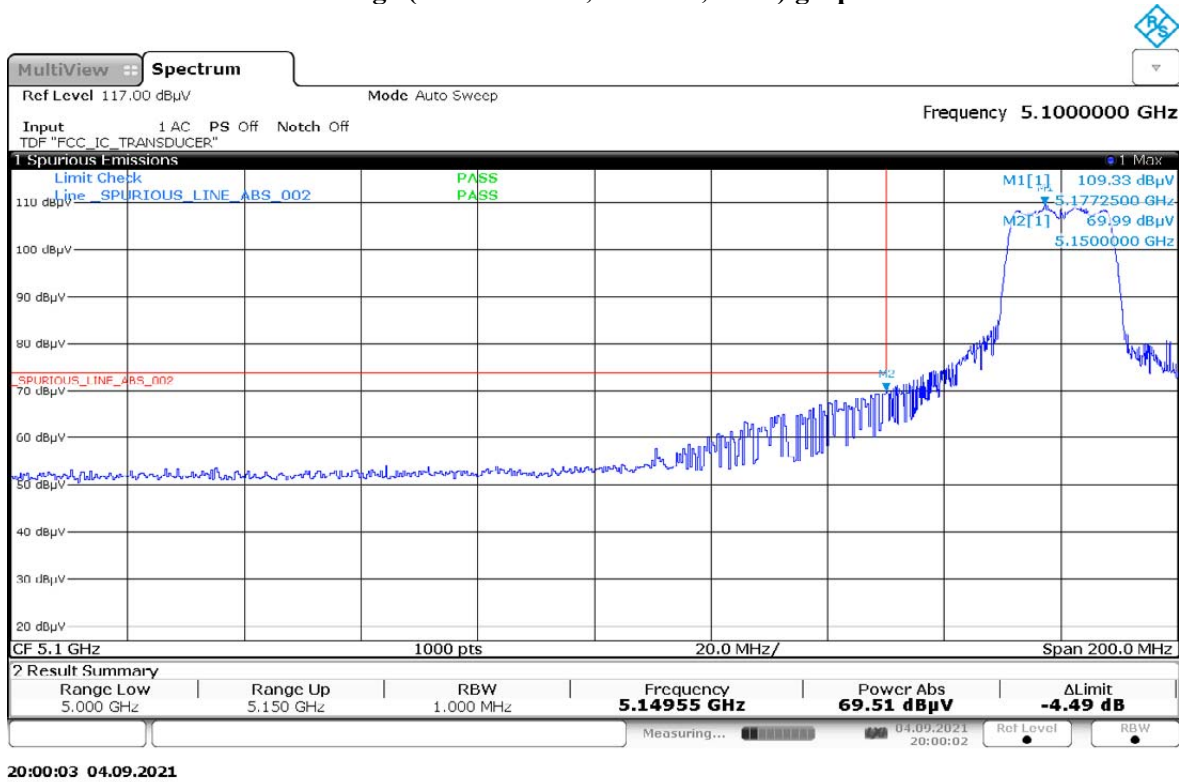
Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



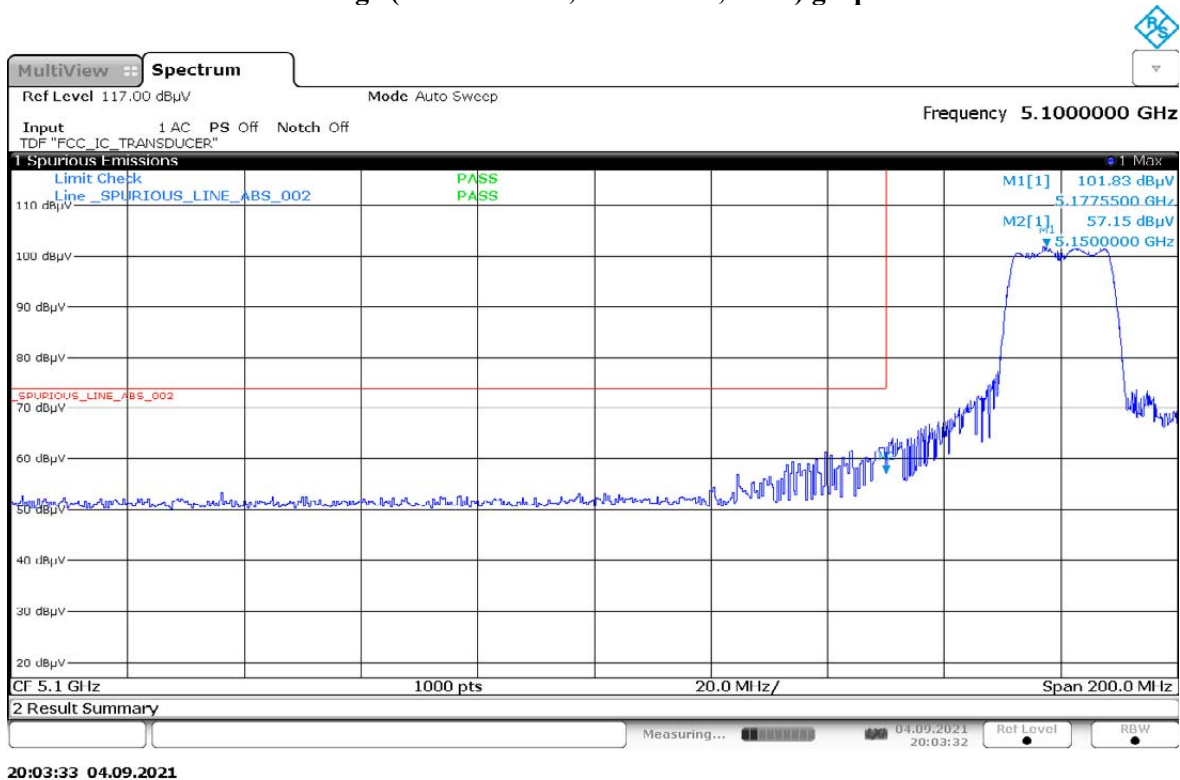
Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



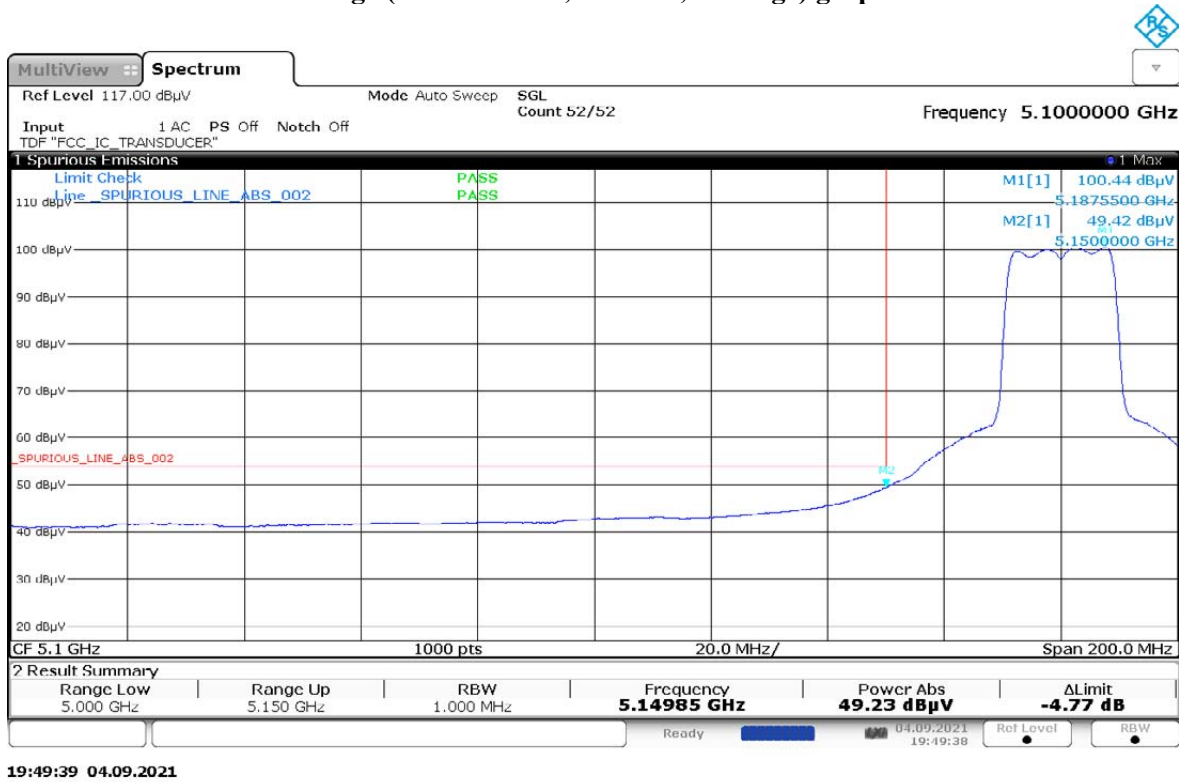
Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



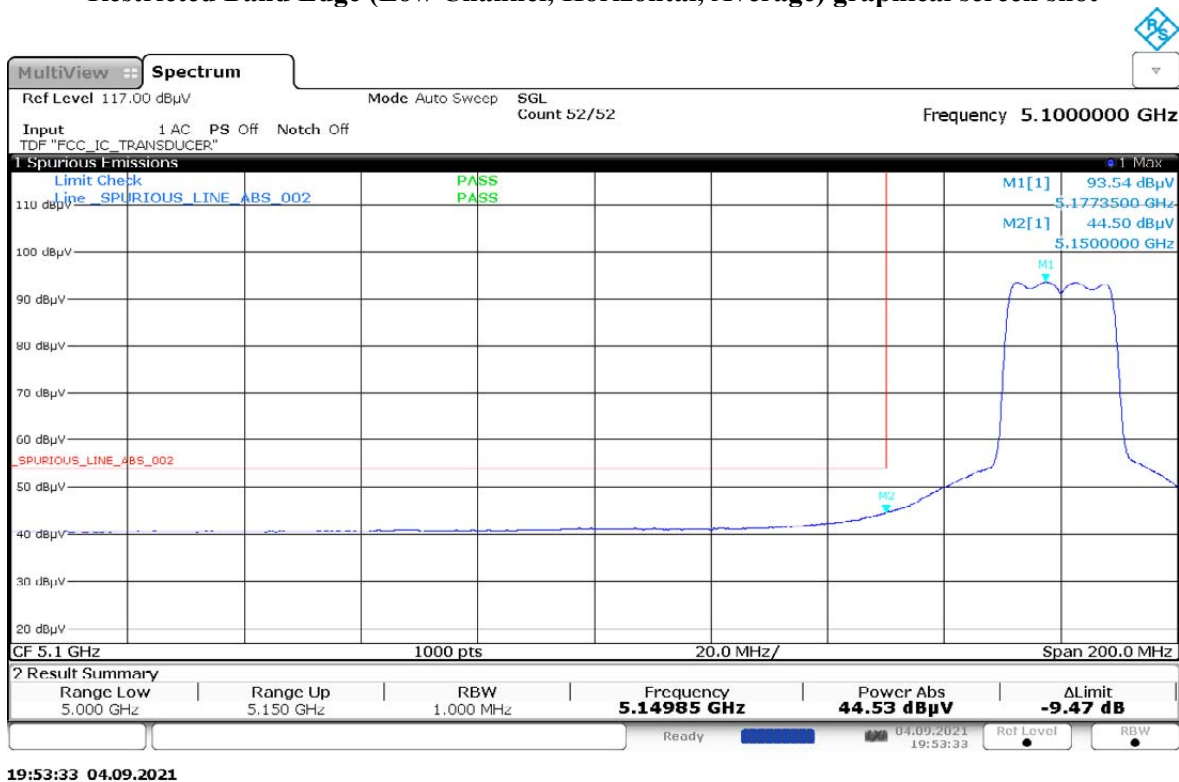
Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



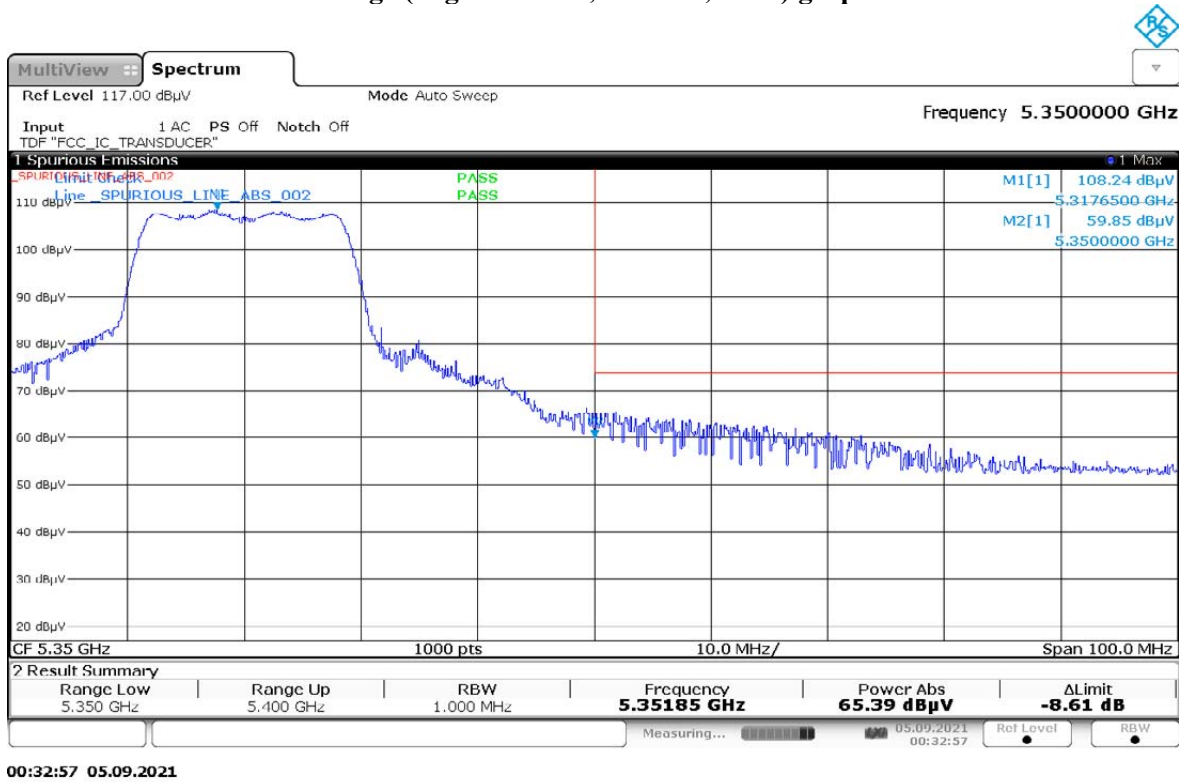
Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



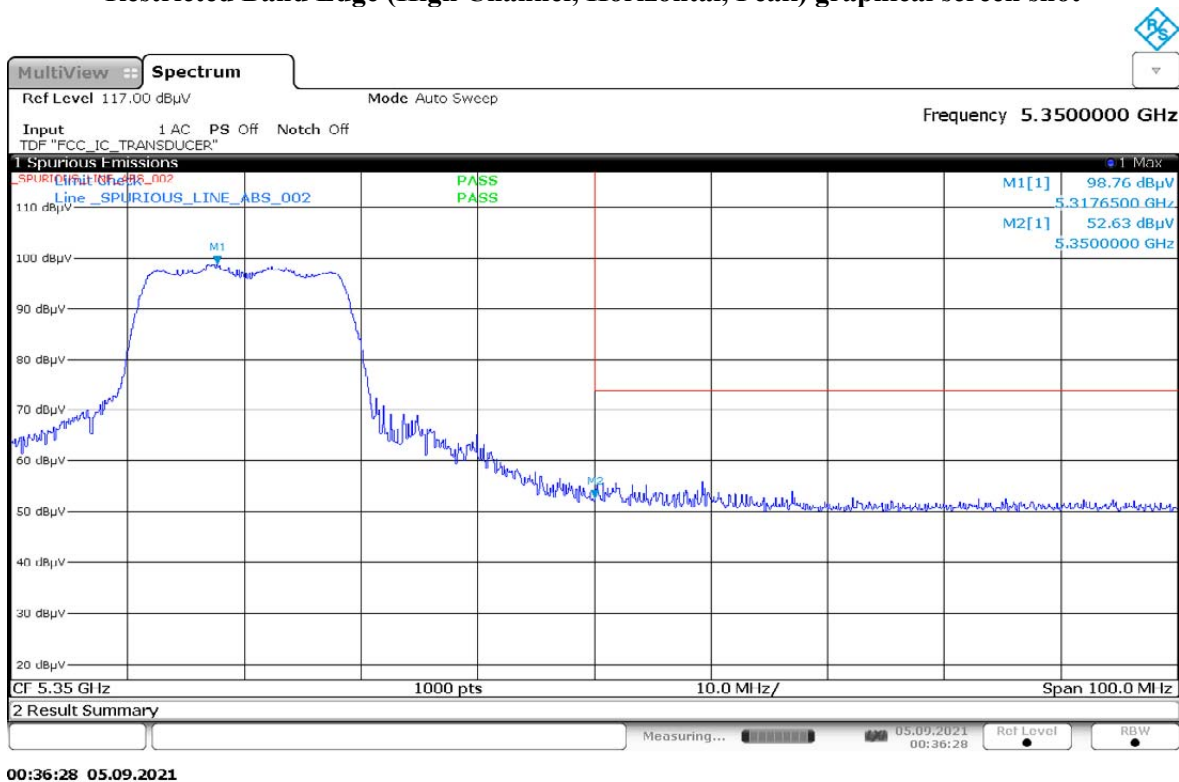
Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



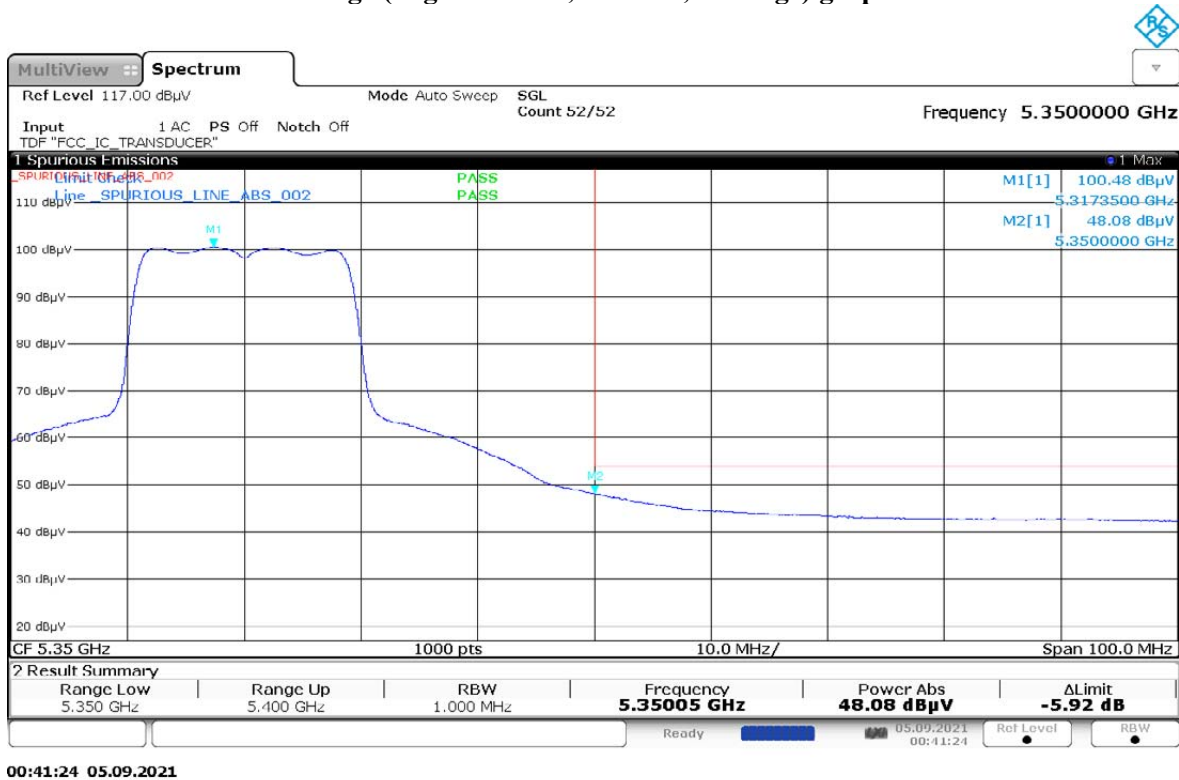
Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



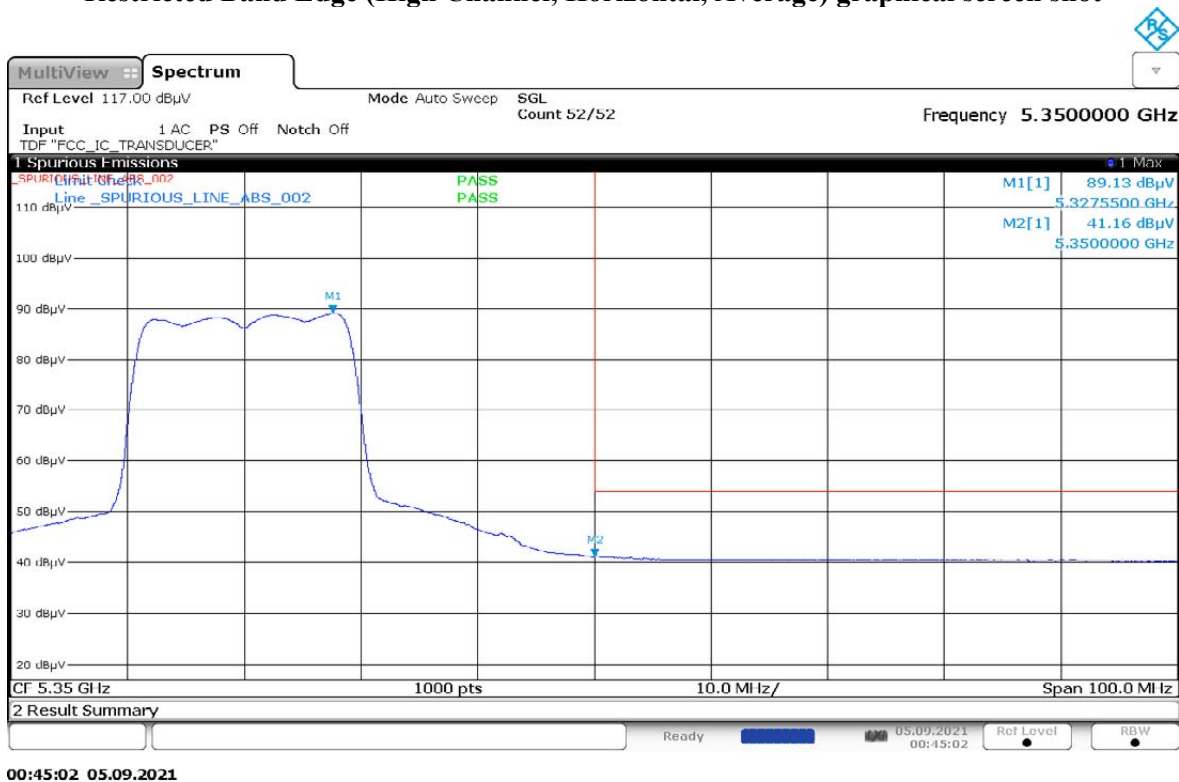
Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



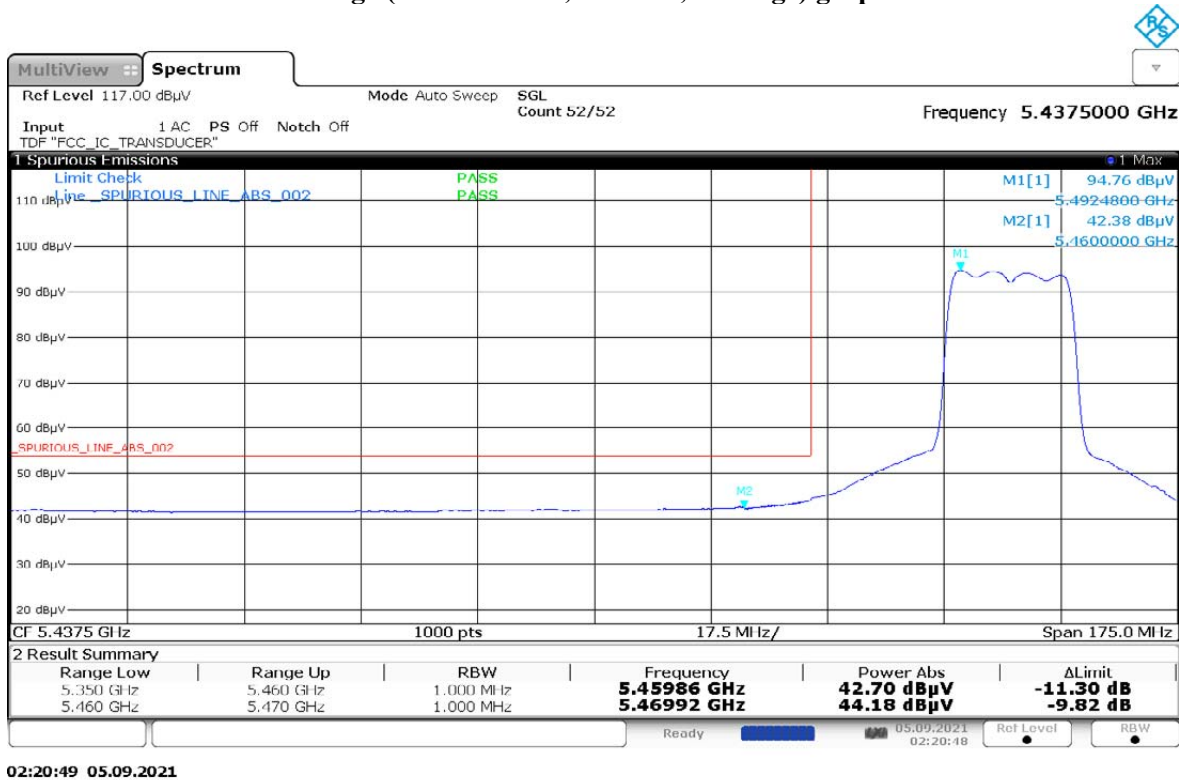
Restricted Band Edge (High Channel, Vertical, Average) graphical screen shot



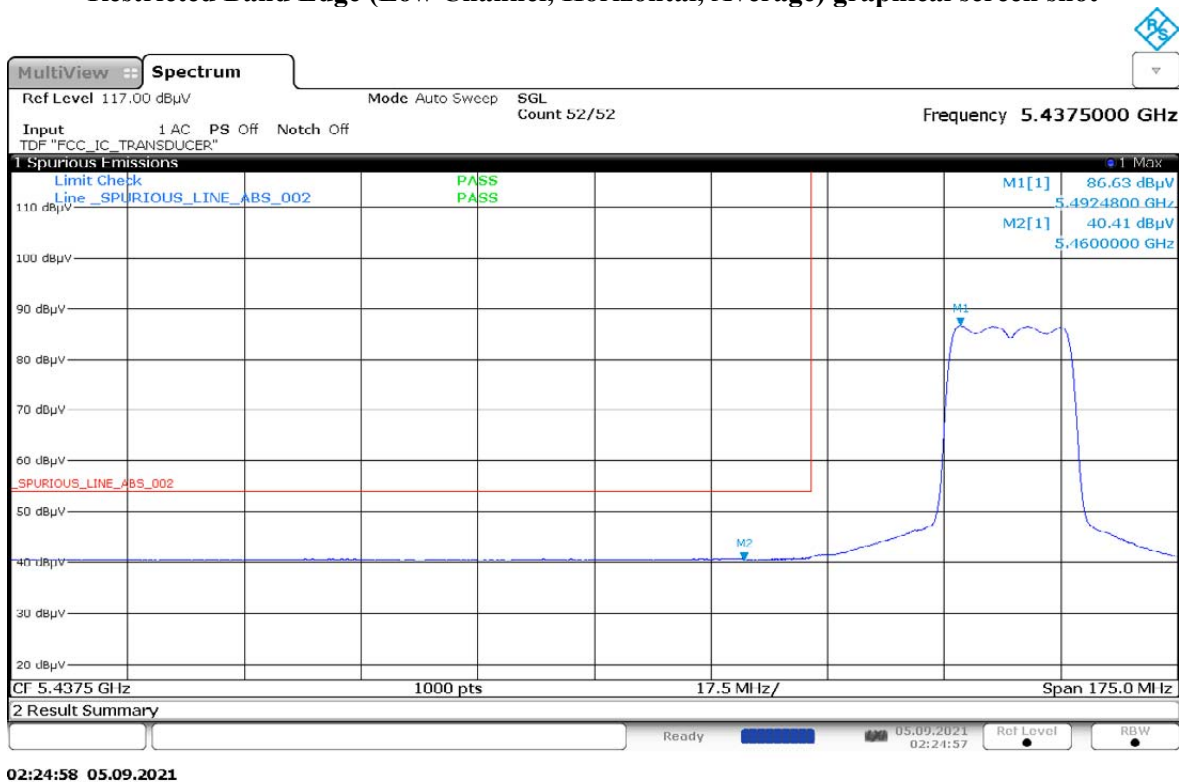
Restricted Band Edge (High Channel, Horizontal, Average) graphical screen shot



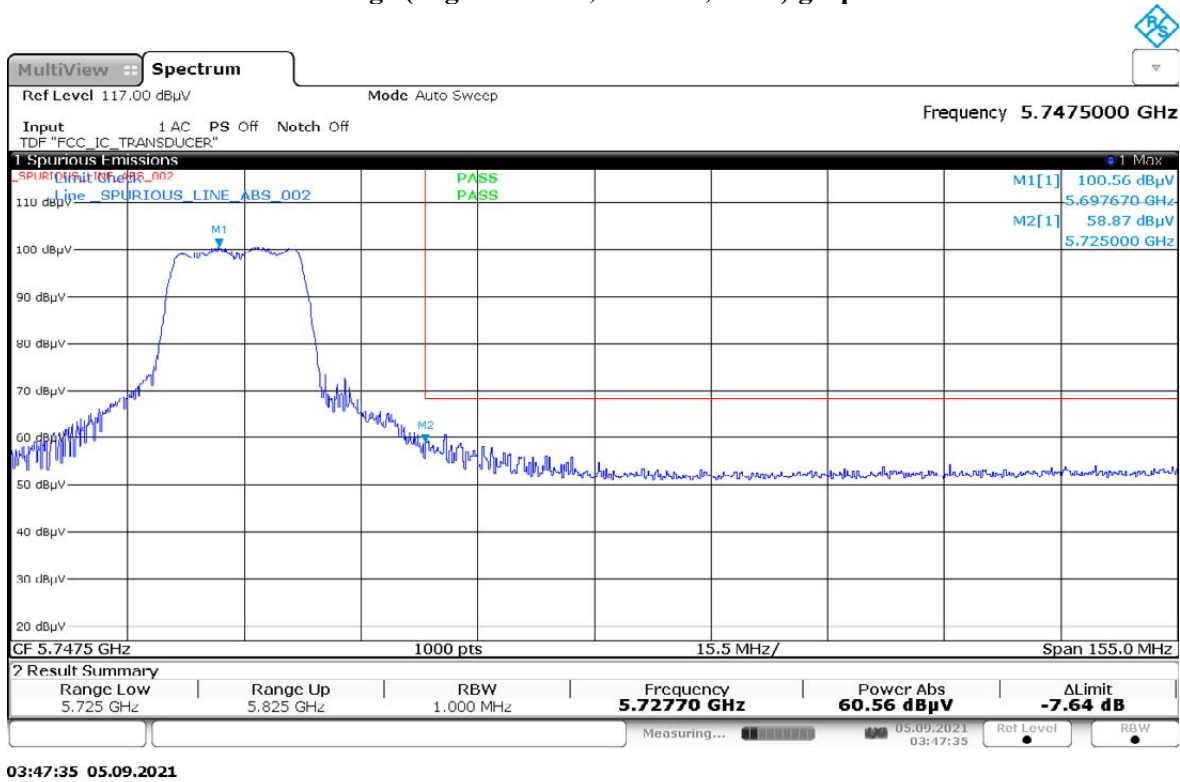
Restricted Band Edge (Low Channel, Vertical, Average) graphical screen shot



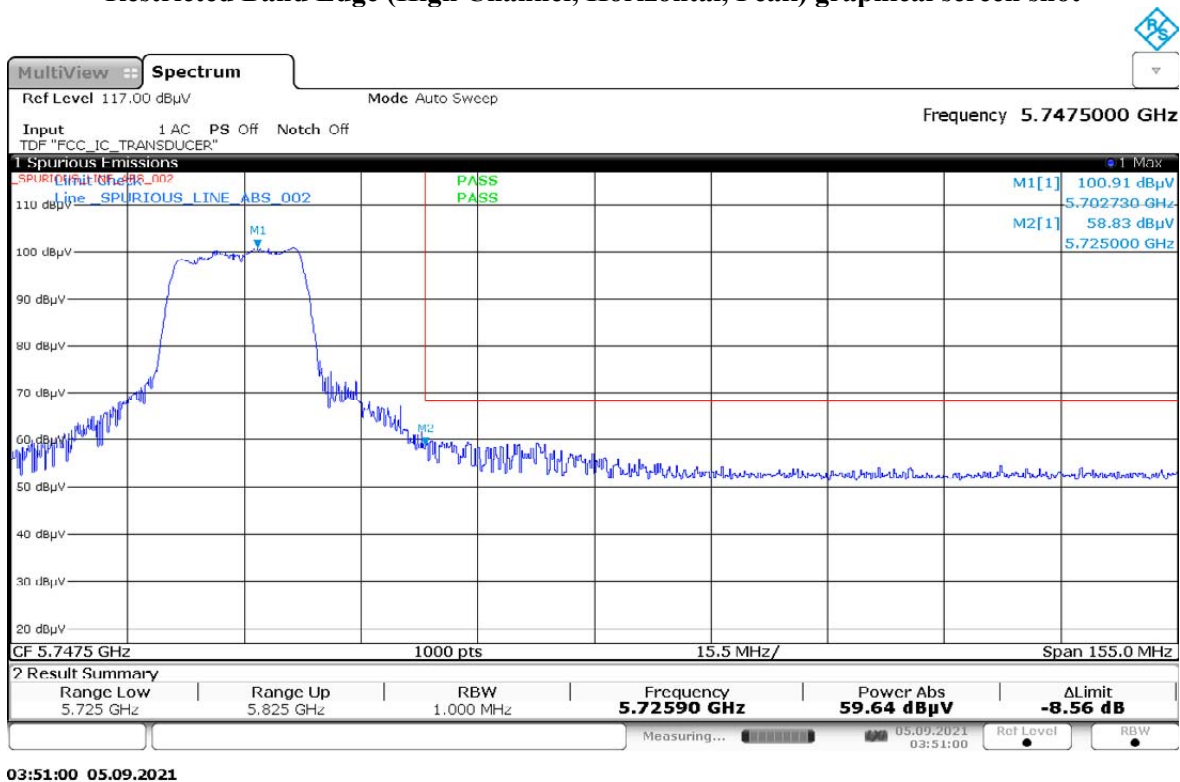
Restricted Band Edge (Low Channel, Horizontal, Average) graphical screen shot



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



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

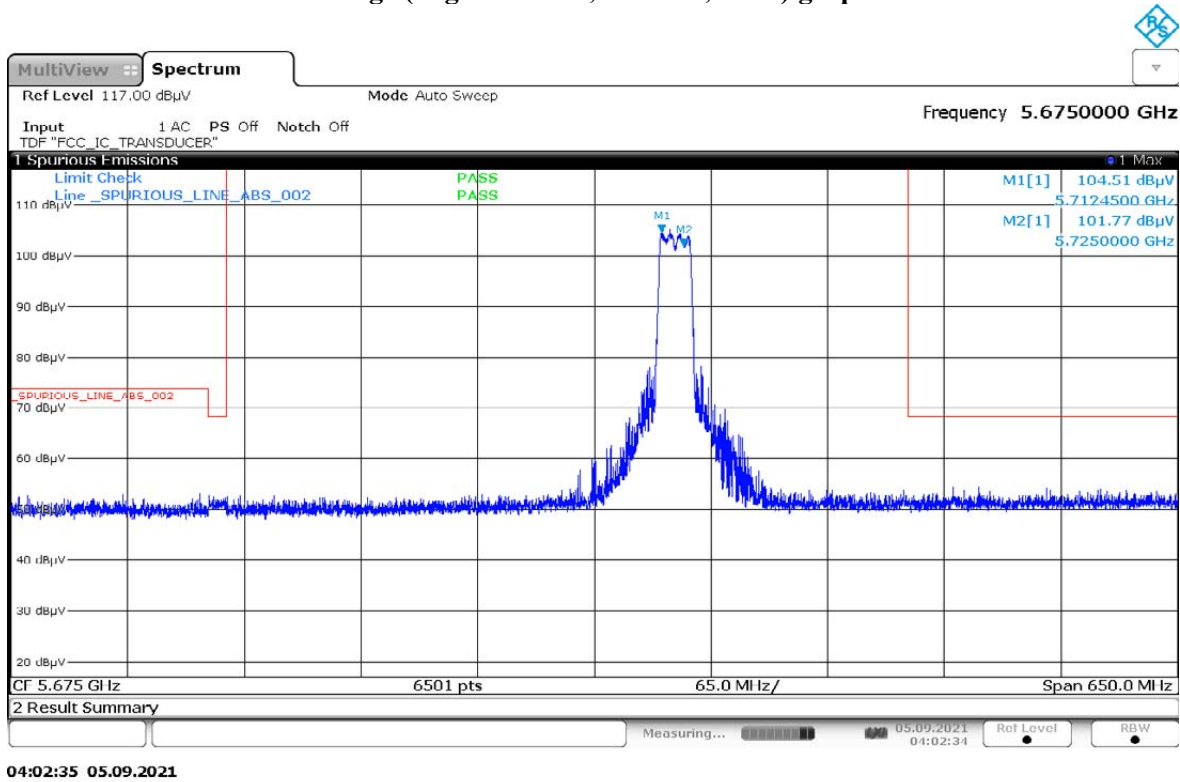


Restricted Band Edge (Straddle Channel) tabular data

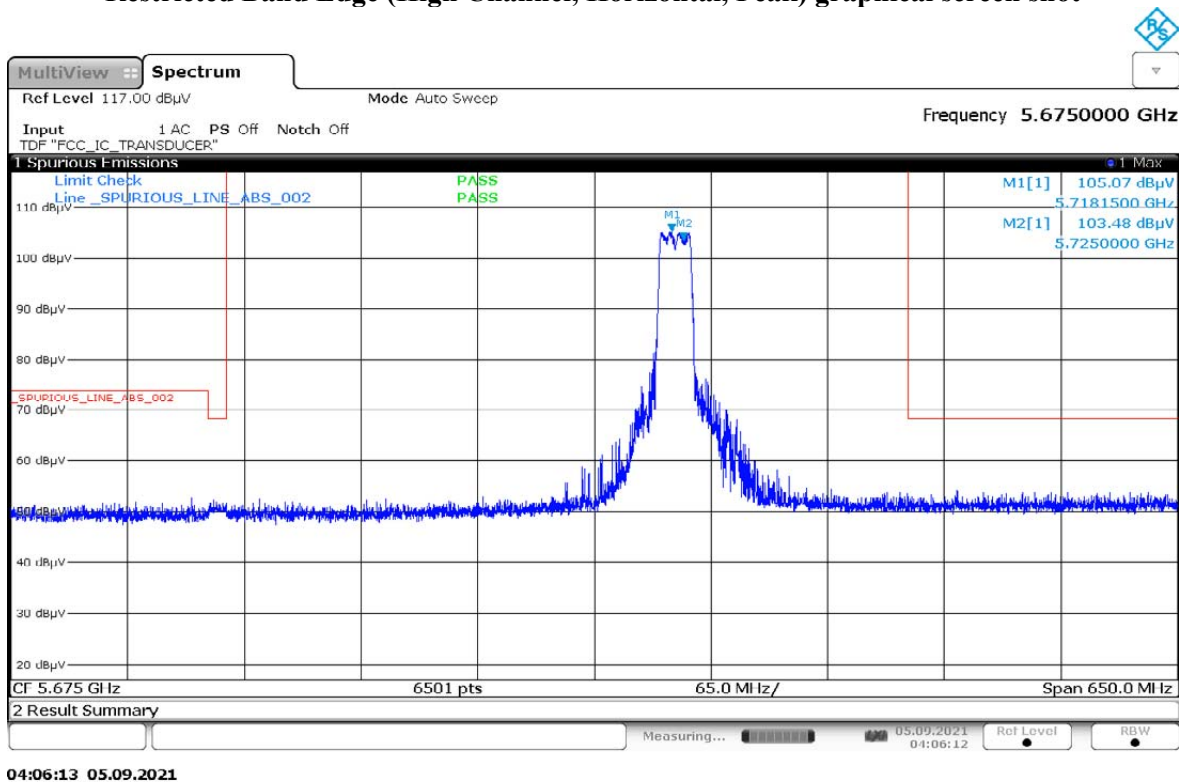
Remarks: Pass Result	Marginal Result	Fail Result
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Humidity (%): 69.7
Test Date: Sun, 5 Sep, 2021

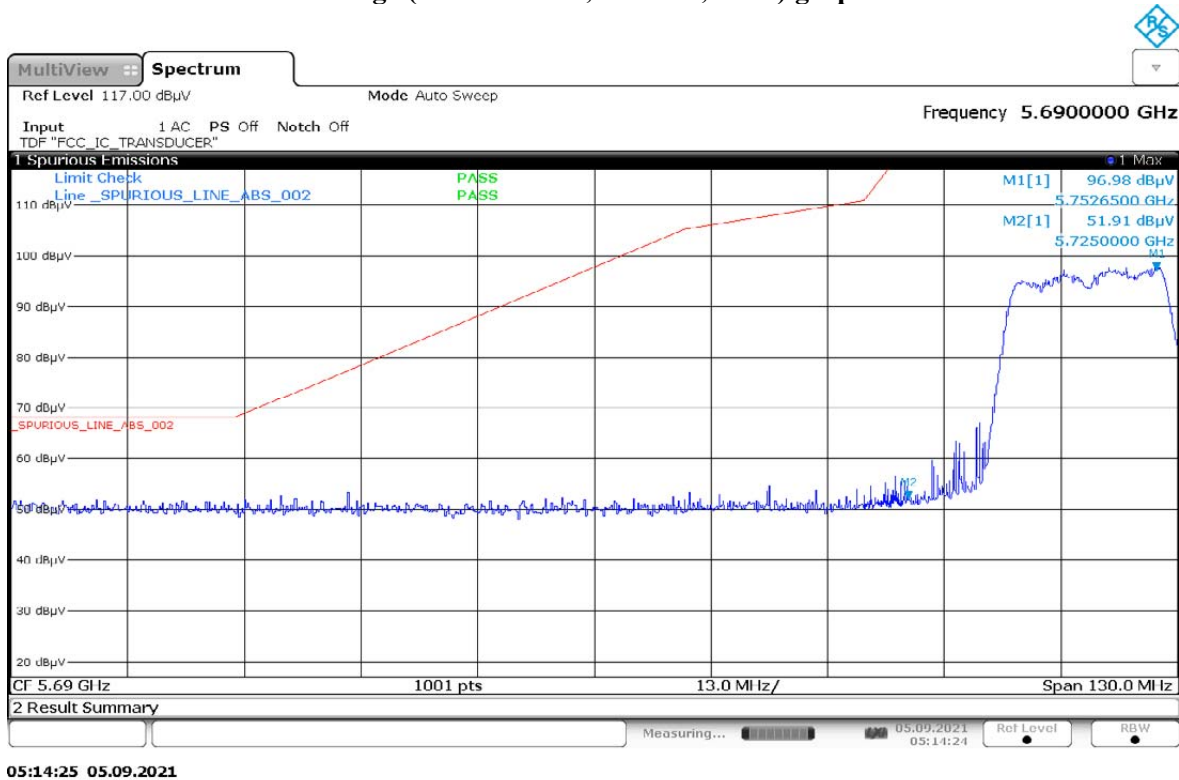
Restricted Band Edge (High Channel, Vertical, Peak) graphical screen shot



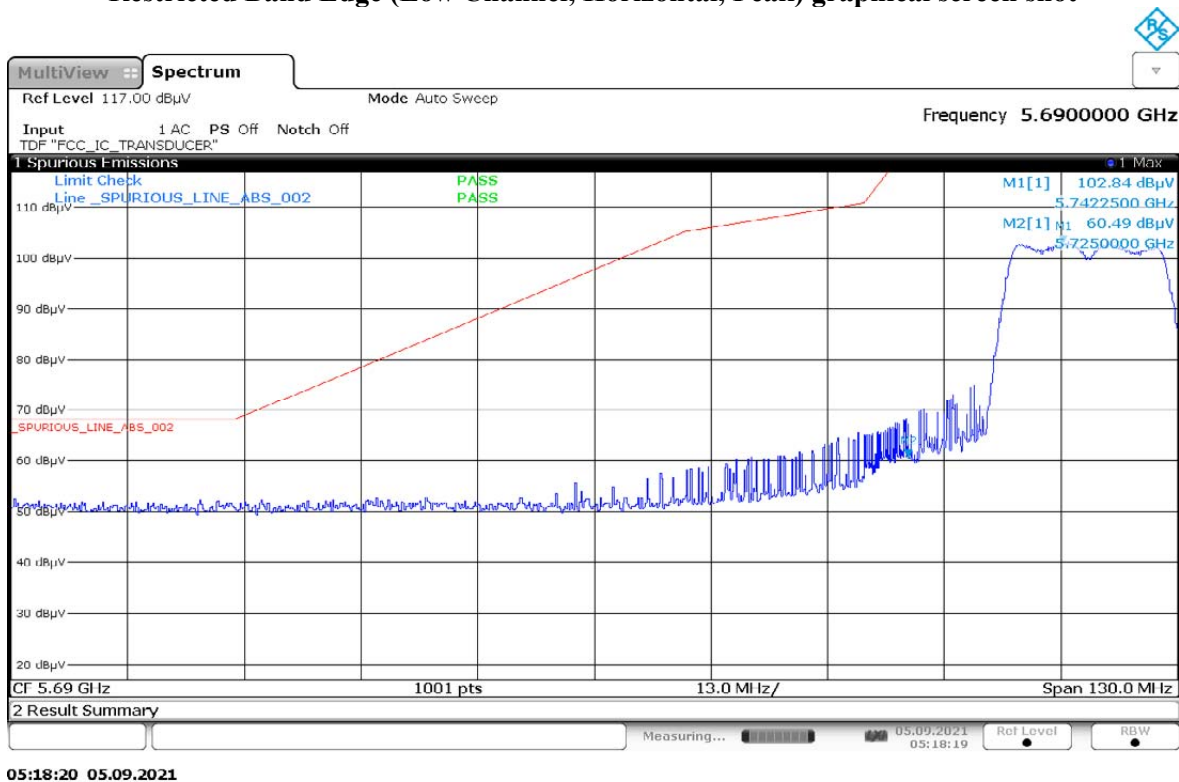
Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



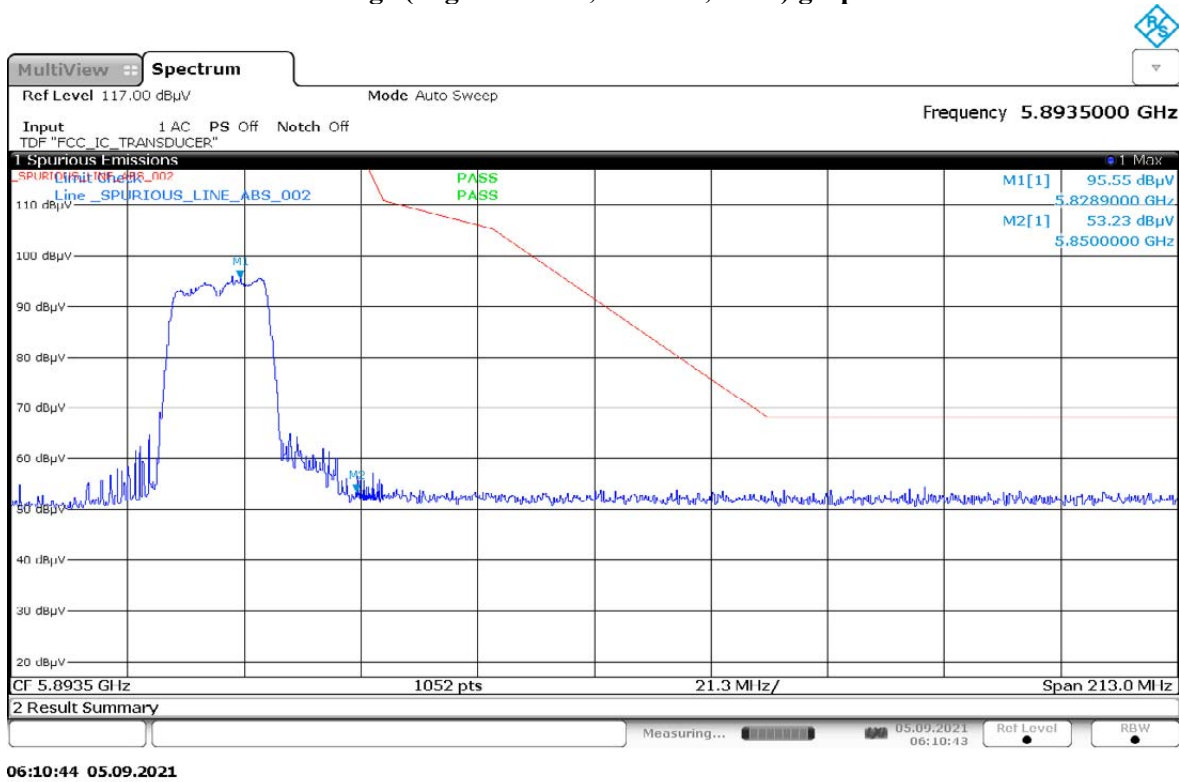
Restricted Band Edge (Low Channel, Vertical, Peak) graphical screen shot



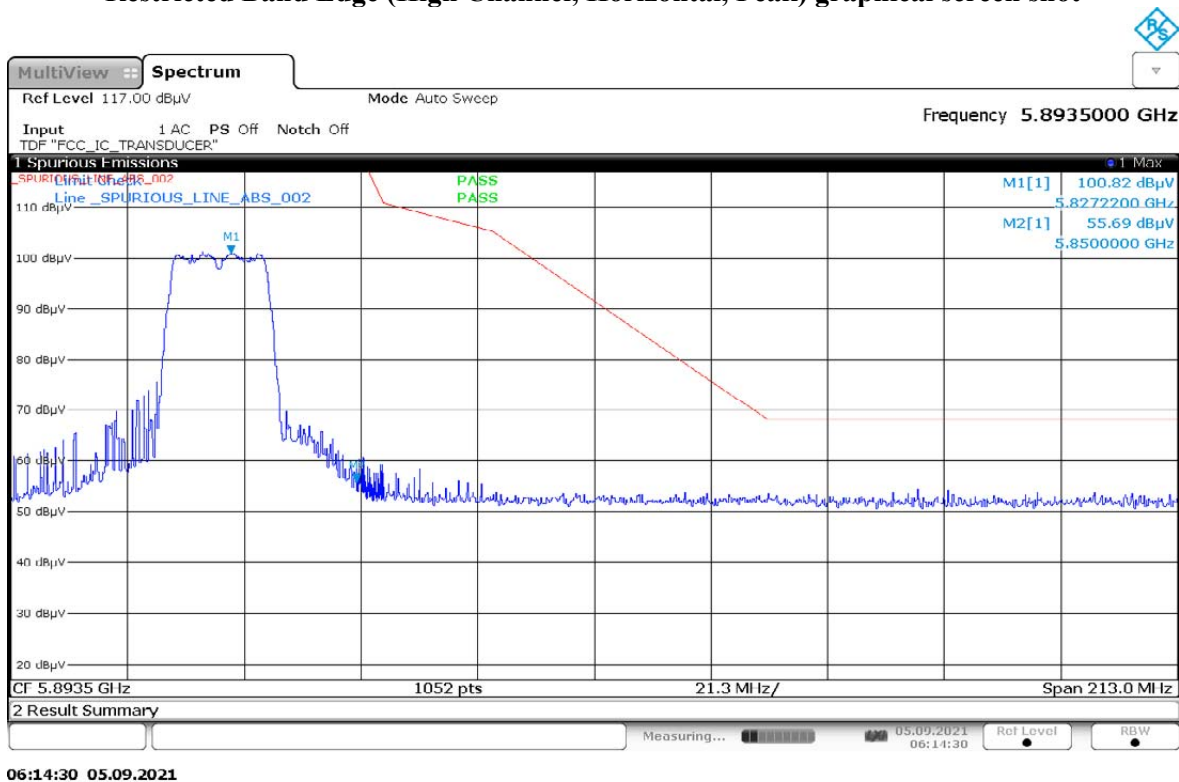
Restricted Band Edge (Low Channel, Horizontal, Peak) graphical screen shot



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



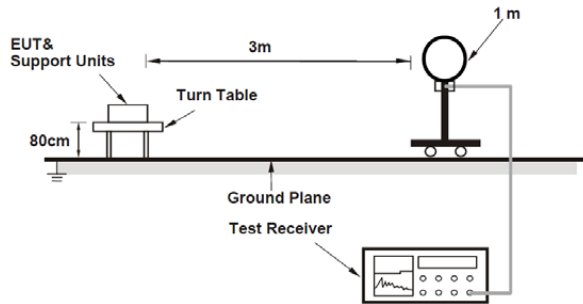
Restricted Band Edge (High Channel, Horizontal, Peak) graphical screen shot



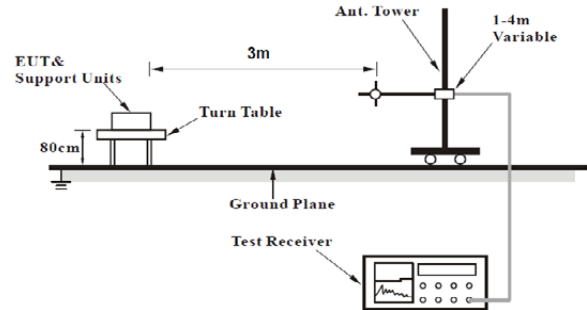
7.7. Radiated Spurious Emission Measurement

7.7.1. Test Setup

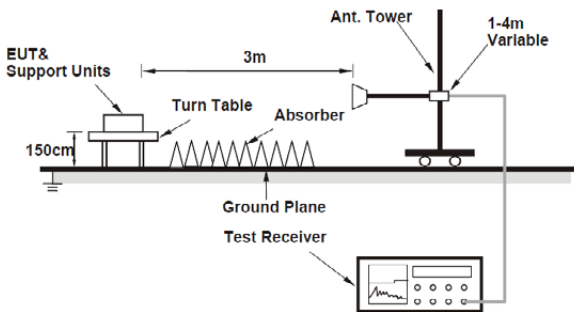
<Radiated emission below 30MHz>



<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:

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

7.7.2. 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:

- The lower limit shall apply at the transition frequencies.
- Emission level (dBuV/m) = 20 log Emission level (uV/m).
- 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:

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

7.7.3. Test Data

802.11a

Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Low Test Frequency: 5180.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	57.6151**	-	-	68.2	-	-	10.5849**	-	-
15540	-	59.8454**	38.59**	-	74.0	54.0	-	14.1546**	15.41**	-
20720	-	42.8345**	-	-	74.0	-	-	31.1655**	-	-
25900	-	44.2072**	-	-	68.2	-	-	23.9928**	-	-
31080	-	44.8065**	-	-	68.2	-	-	23.3935**	-	-
36260	-	46.4367**	-	-	68.2	-	-	21.7633**	-	-
Horizontal Radiated Emission Result										
10360	-	57.2241**	-	-	68.2	-	-	10.9759**	-	-
15540	-	59.9569**	38.62**	-	74.0	54.0	-	14.0431**	15.38**	-
20720	-	42.1274**	-	-	74.0	-	-	31.8726**	-	-
25900	-	45.5403**	-	-	68.2	-	-	22.6597**	-	-
31080	-	44.4126**	-	-	68.2	-	-	23.7874**	-	-
36260	-	46.5805**	-	-	68.2	-	-	21.6195**	-	-

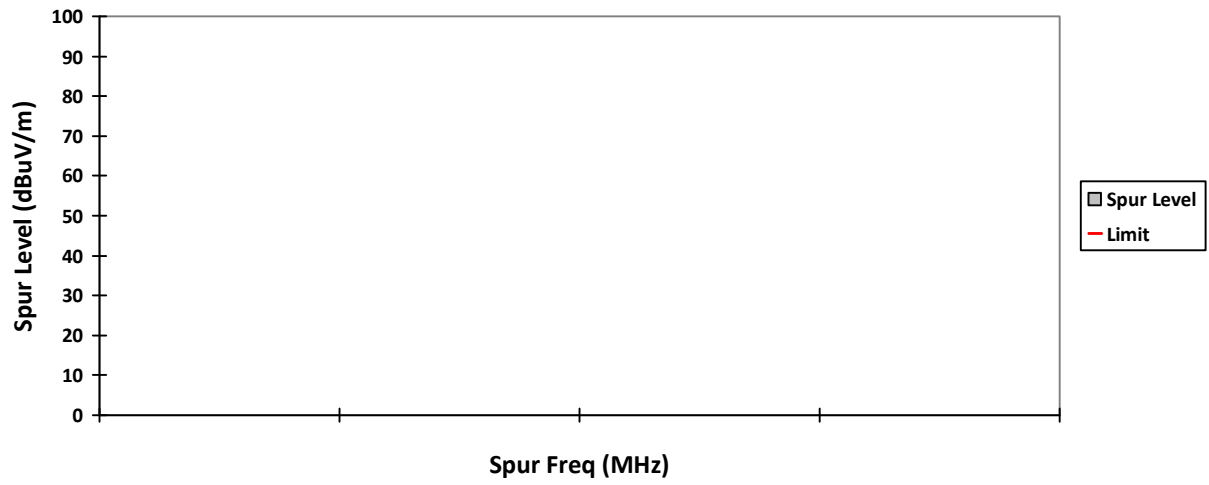
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
Test Performed by: Qawiman&Amaluddin
System MU: 4.03dB

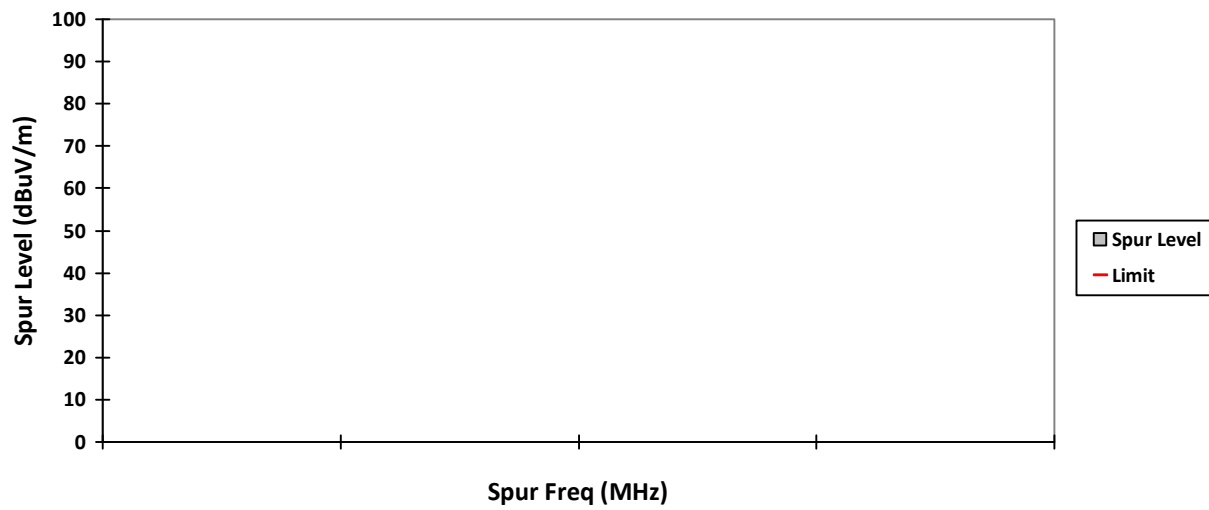
Humidity (%): 69.7
Test Date: Tue, 7 Sept, 2021

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.

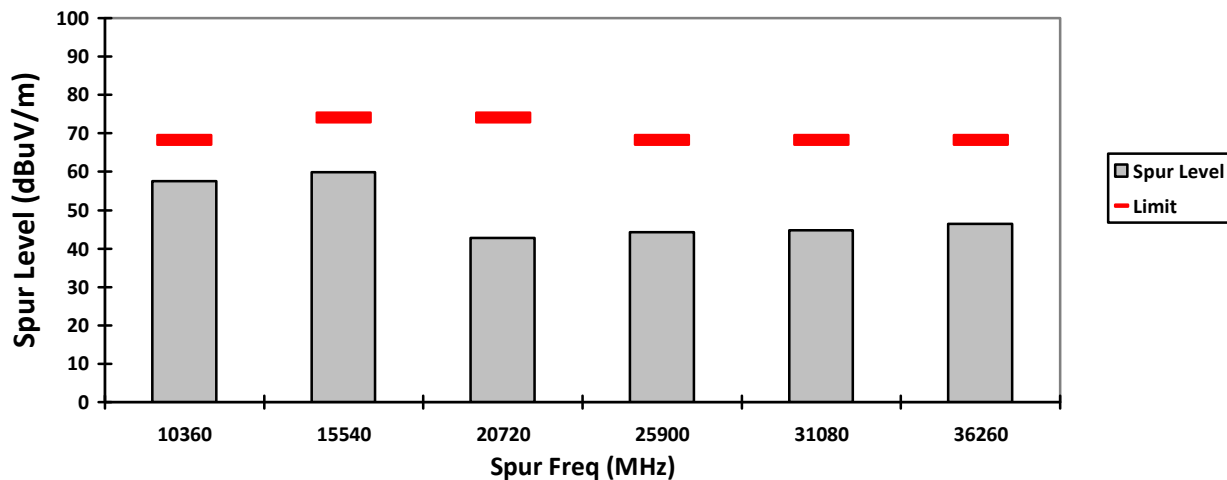
VERTICAL, QPK



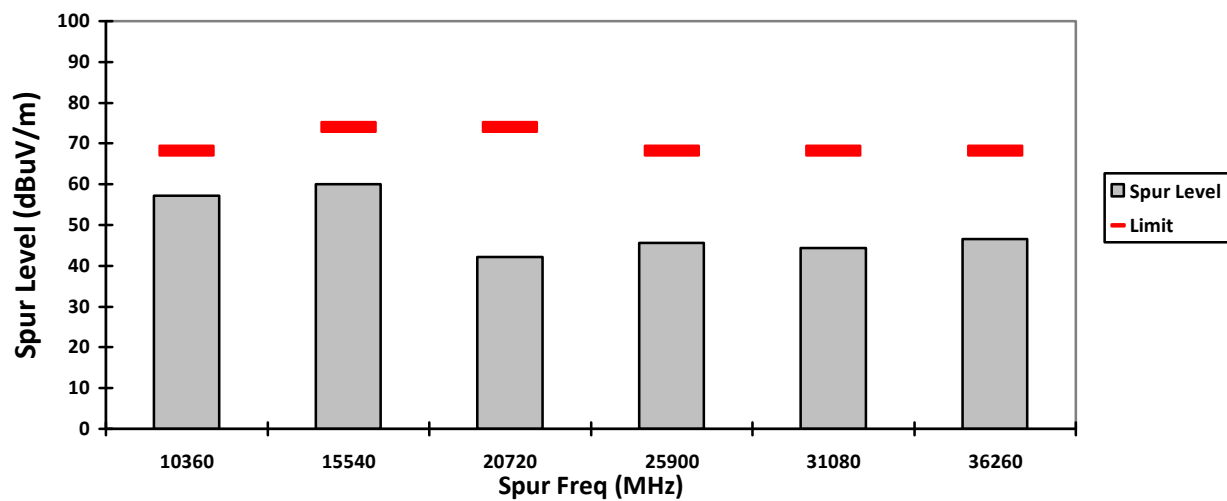
HORIZONTAL, QPK



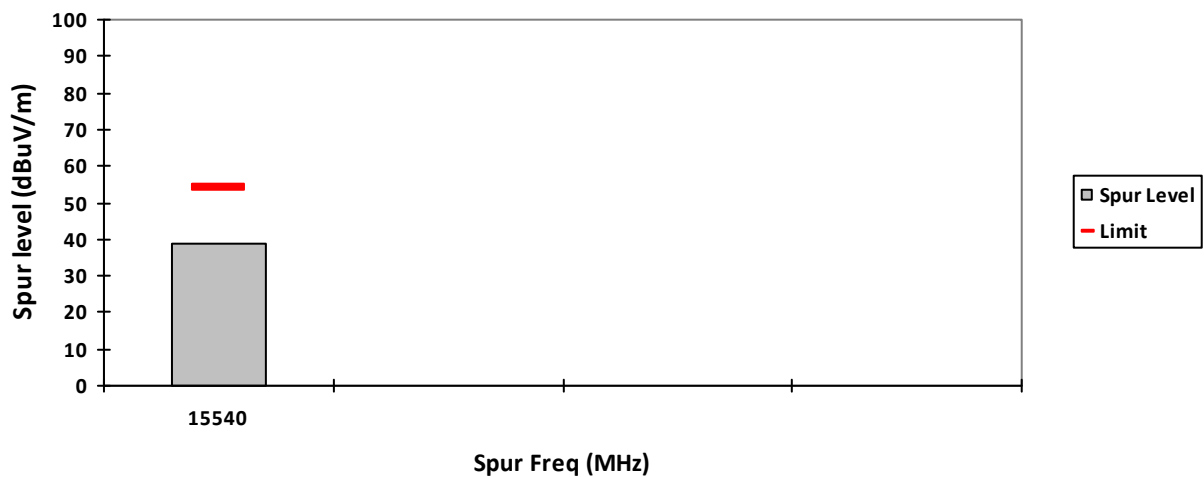
VERTICAL, PK



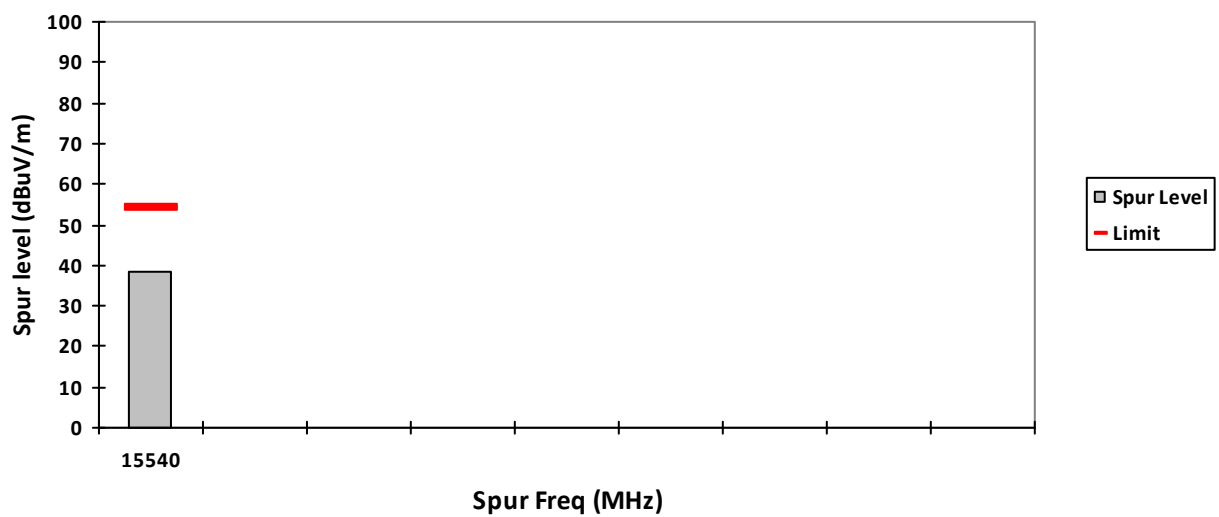
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Mid Test Frequency: 5220.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	57.6250**	-	-	68.2	-	-	10.575**	-	-
15660	-	59.7483**	38.17**	-	74.0	54.0	-	14.2517**	15.83**	-
20880	-	42.0268**	-	-	74.0	-	-	31.9732**	-	-
26100	-	44.0797**	-	-	68.2	-	-	24.1203**	-	-
31320	-	45.1432**	-	-	74.0	-	-	28.8568**	-	-
36540	-	47.1683**	-	-	74.0	-	-	26.8317**	-	-
Horizontal Radiated Emission Result										
10440	-	56.7308**	-	-	68.2	-	-	11.4692**	-	-
15660	-	59.9011**	38.22**	-	74.0	54.0	-	14.0989**	15.78**	-
20880	-	42.5340**	-	-	74.0	-	-	31.466**	-	-
26100	-	45.1526**	-	-	68.2	-	-	23.0474**	-	-
31320	-	43.8630**	-	-	74.0	-	-	30.137**	-	-
36540	-	47.6899**	-	-	74.0	-	-	26.3101**	-	-

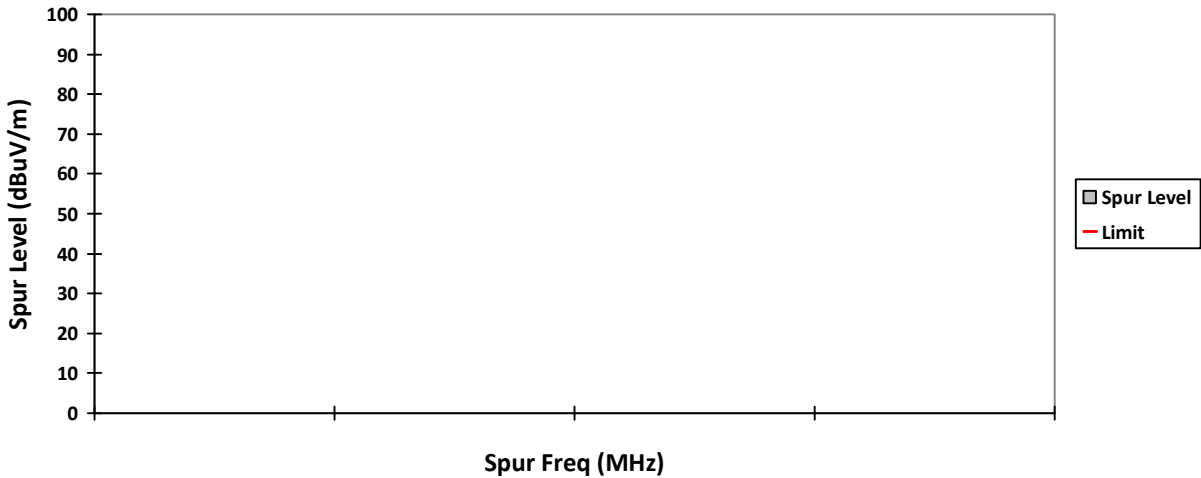
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

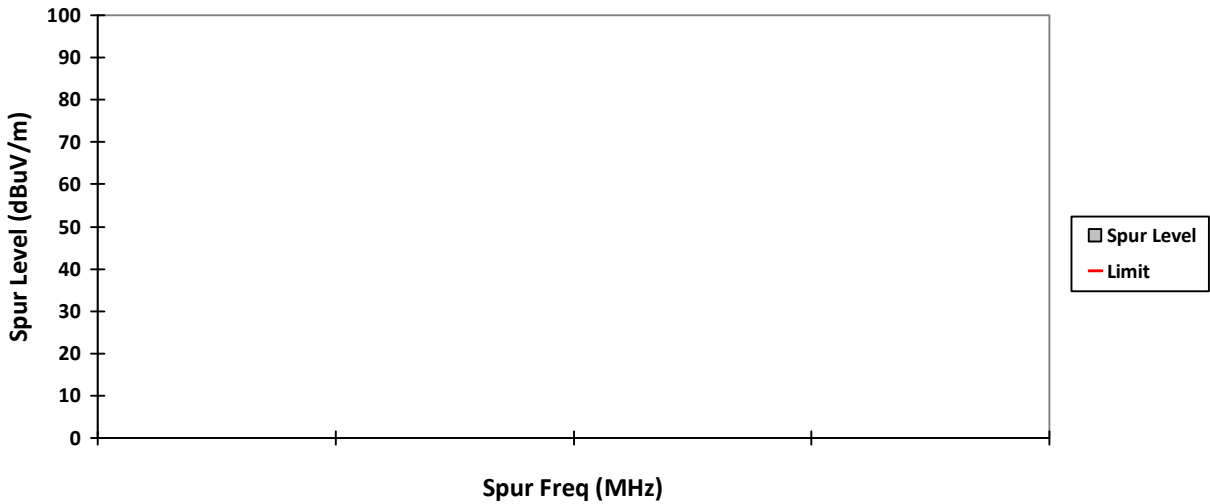
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

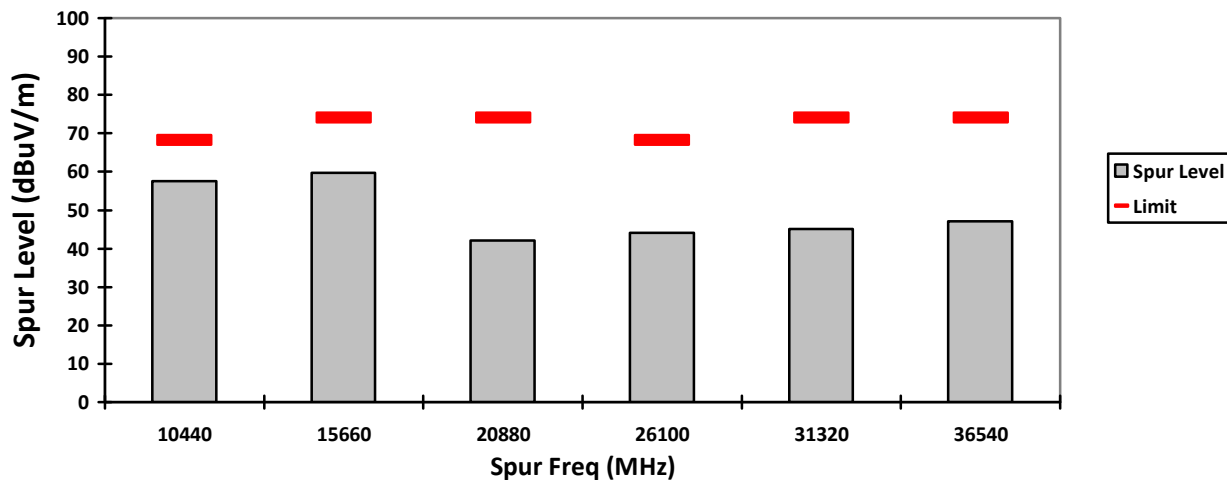
VERTICAL, QPK



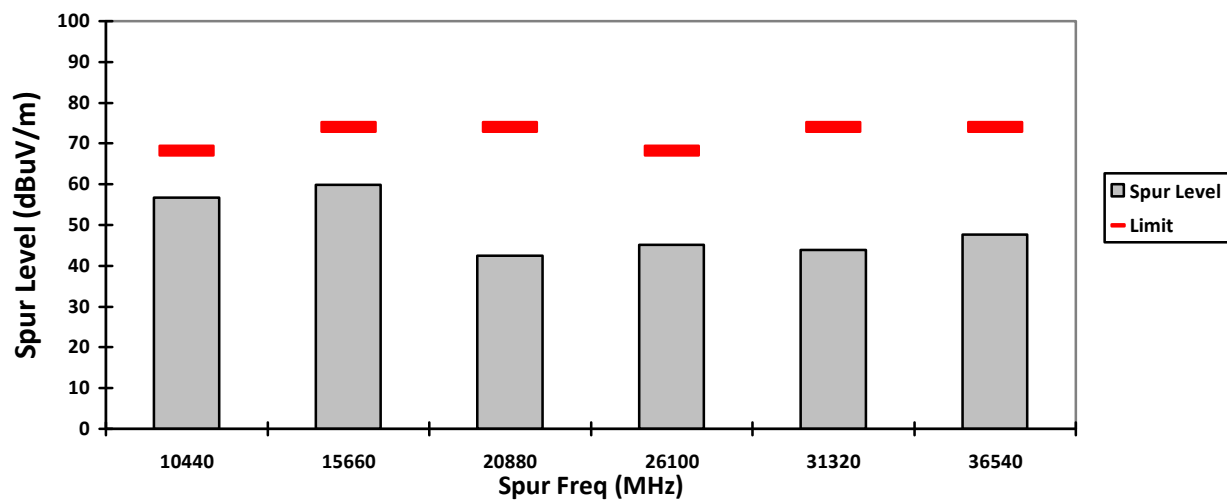
HORIZONTAL, QPK



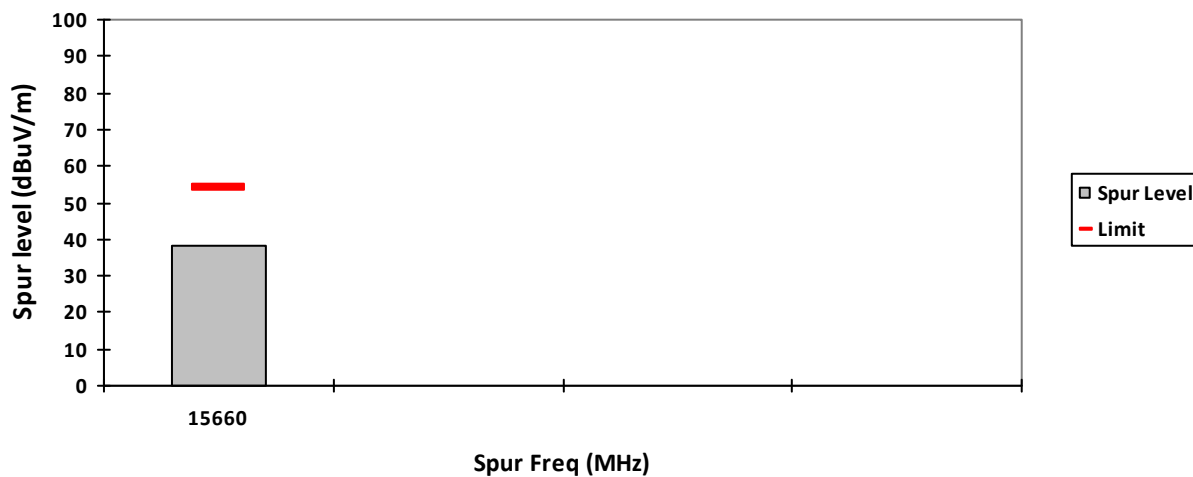
VERTICAL, PK



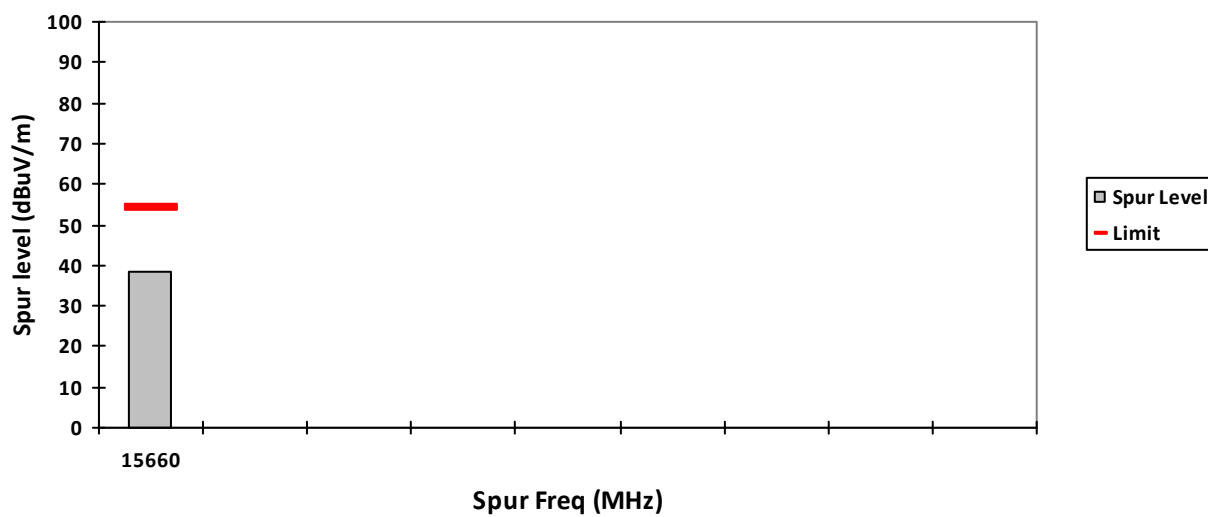
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: High Test Frequency: 5240.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	57.1611**	-	-	68.2	-	-	11.0389**	-	-
15720	-	59.4678**	38.42**	-	74.0	54.0	-	14.5322**	15.58**	-
20960	-	43.3425**	-	-	74.0	-	-	30.6575**	-	-
26200	-	43.7640**	-	-	68.2	-	-	24.436**	-	-
31440	-	43.9043**	-	-	74.0	-	-	30.0957**	-	-
36680	-	48.1749**	-	-	68.2	-	-	20.0251**	-	-
Horizontal Radiated Emission Result										
10480	-	57.8467**	-	-	68.2	-	-	10.3533**	-	-
15720	-	60.3223**	38.44**	-	74.0	54.0	-	13.6777**	15.56**	-
20960	-	42.1374**	-	-	74.0	-	-	31.8626**	-	-
26200	-	43.2676**	-	-	68.2	-	-	24.9324**	-	-
31440	-	44.3259**	-	-	74.0	-	-	29.6741**	-	-
36680	-	48.7952**	-	-	68.2	-	-	19.4048**	-	-

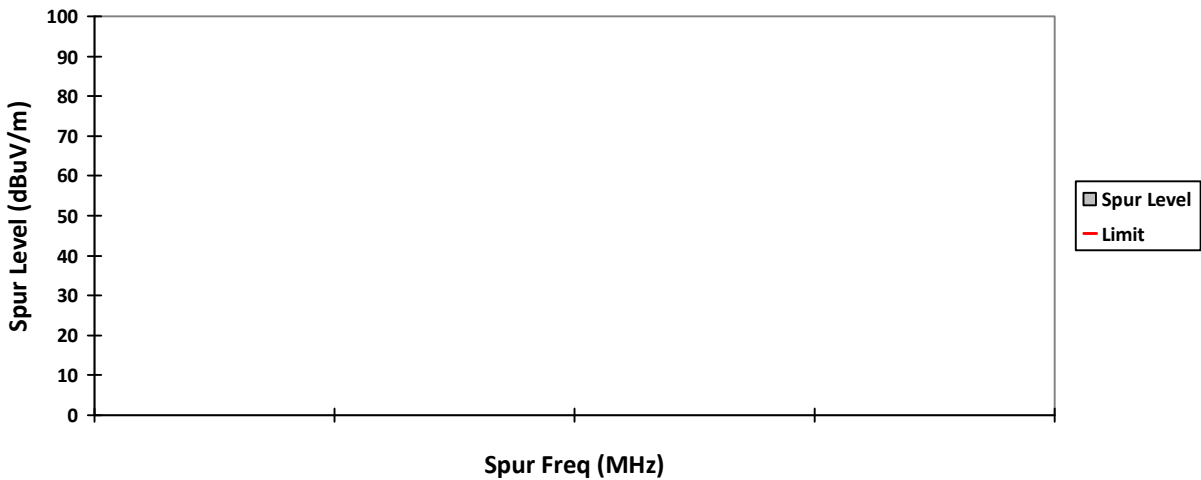
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

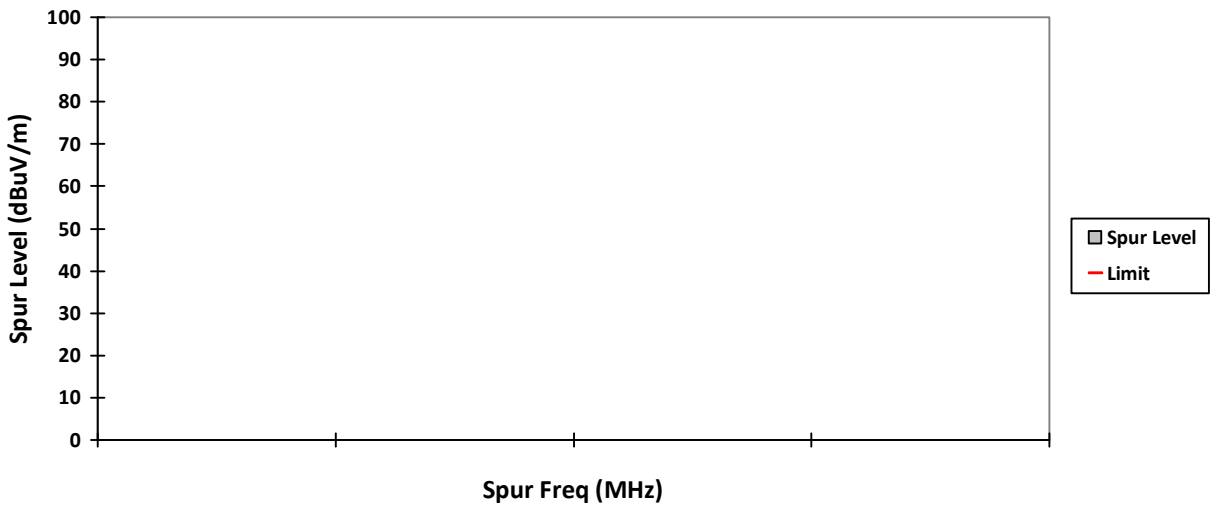
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

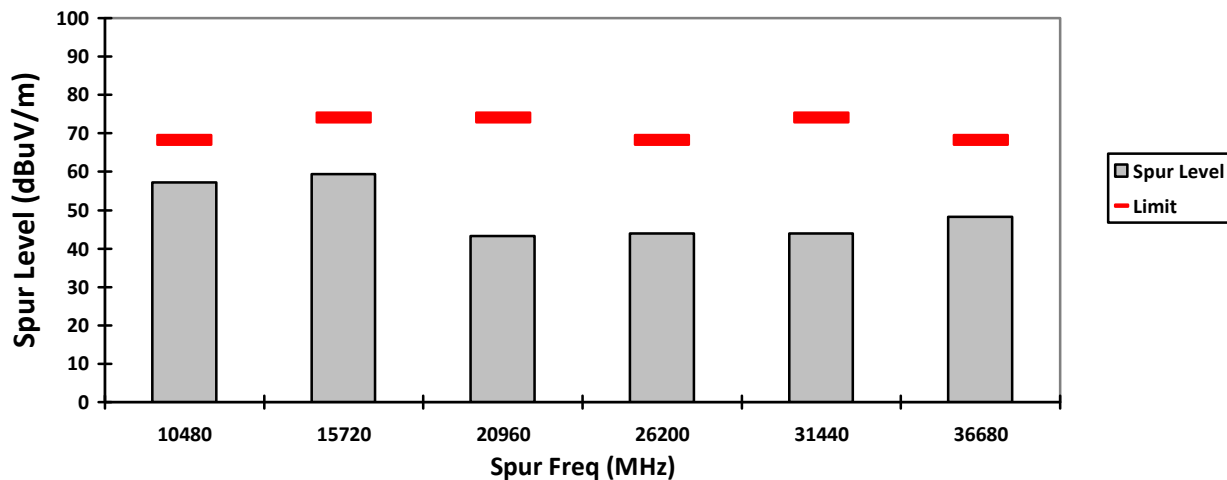
VERTICAL, QPK



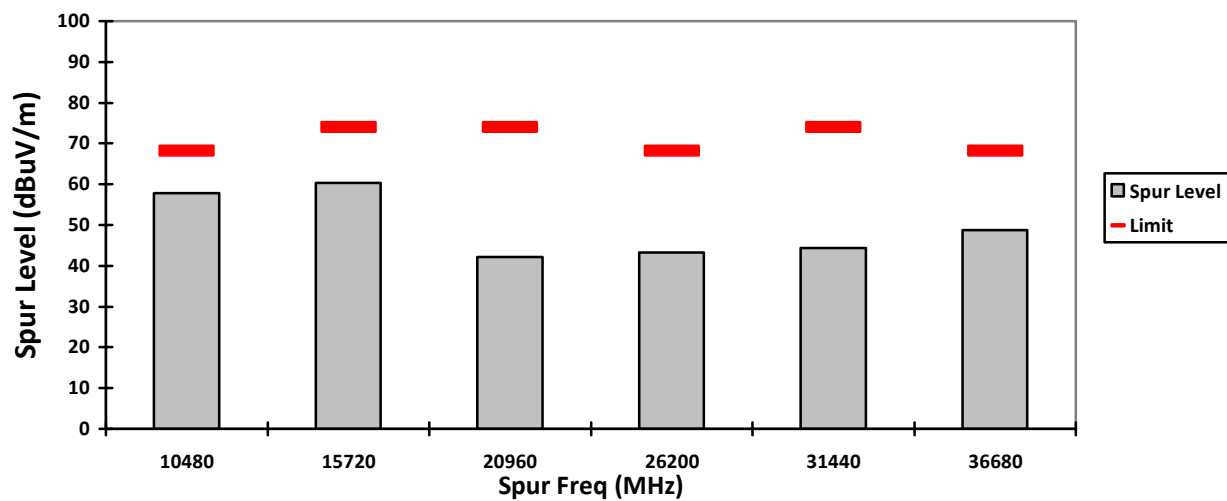
HORIZONTAL, QPK



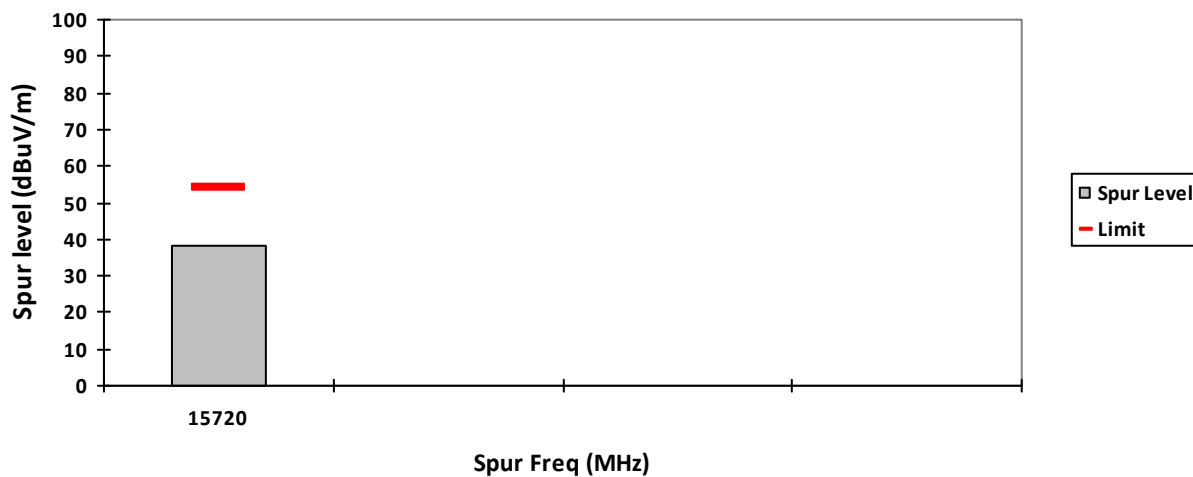
VERTICAL, PK



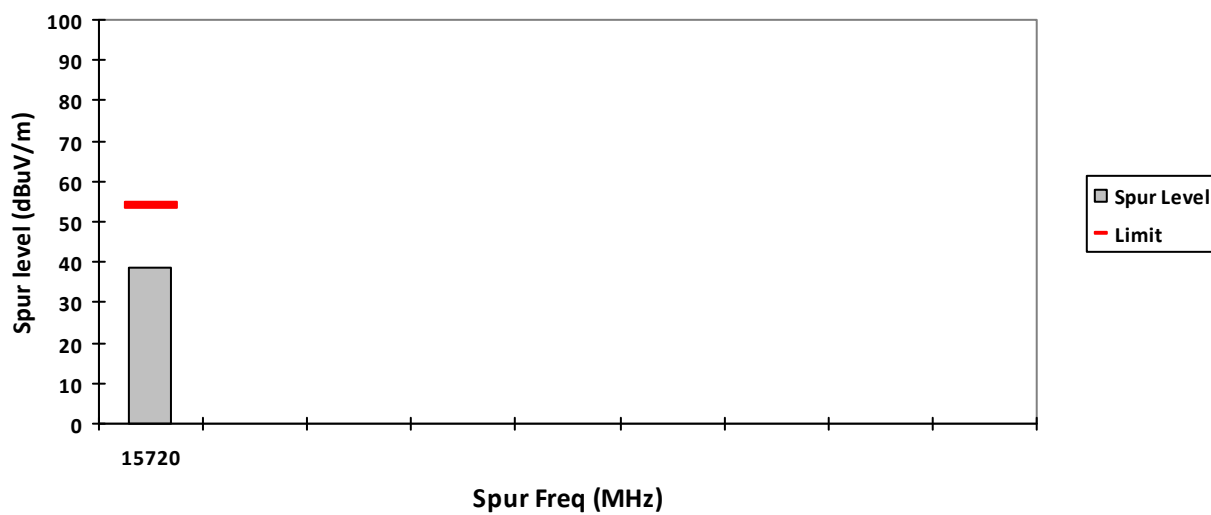
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Low Test Frequency: 5260.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	58.4238**	-	-	68.2	-	-	9.7762**	-	-
15780	-	60.4062**	37.97**	-	74.0	54.0	-	13.5938**	16.03**	-
21040	-	42.8932**	-	-	74.0	-	-	31.1068**	-	-
26300	-	43.1898**	-	-	68.2	-	-	25.0102**	-	-
31560	-	45.0373**	-	-	74.0	-	-	28.9627**	-	-
36820	-	47.2739**	-	-	68.2	-	-	20.9261**	-	-
Horizontal Radiated Emission Result										
10520	-	55.7406**	-	-	68.2	-	-	12.4594**	-	-
15780	-	59.5208**	38.01**	-	74.0	54.0	-	14.4792**	15.99**	-
21040	-	43.0888**	-	-	74.0	-	-	30.9112**	-	-
26300	-	42.5439**	-	-	68.2	-	-	25.6561**	-	-
31560	-	45.6842**	-	-	74.0	-	-	28.3158**	-	-
36820	-	48.2567**	-	-	68.2	-	-	19.9433**	-	-

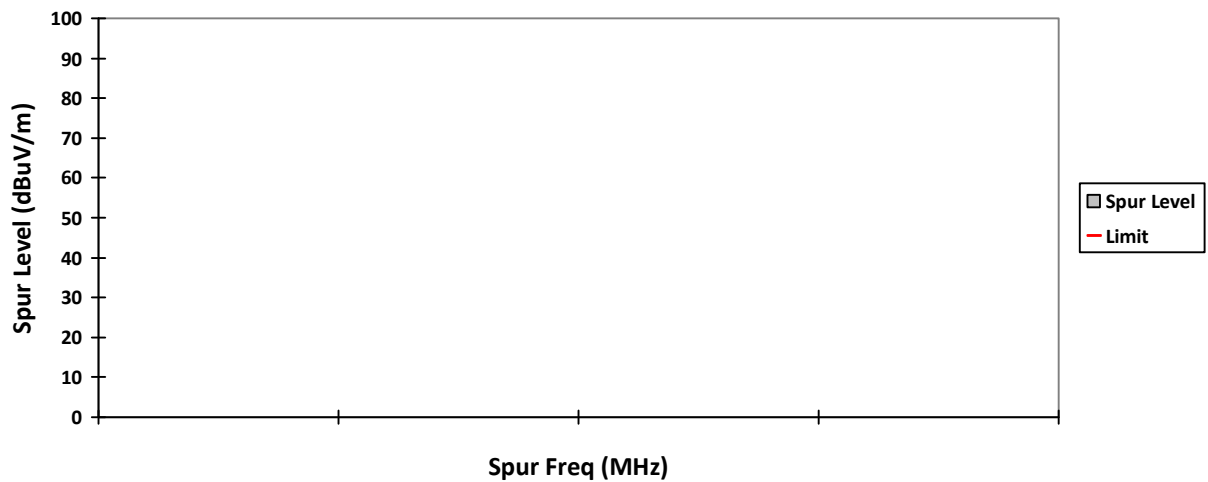
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

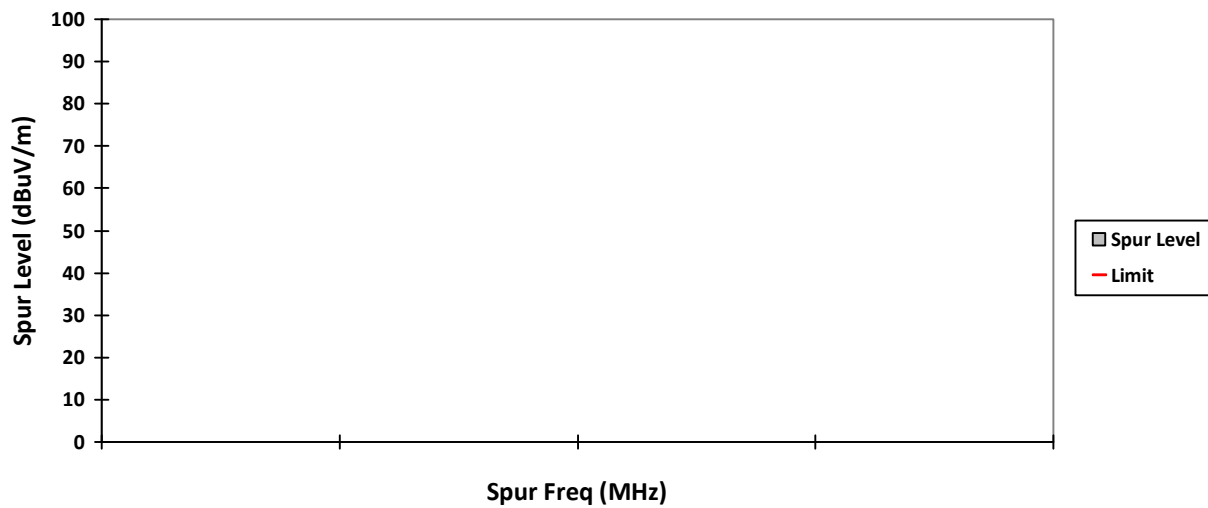
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

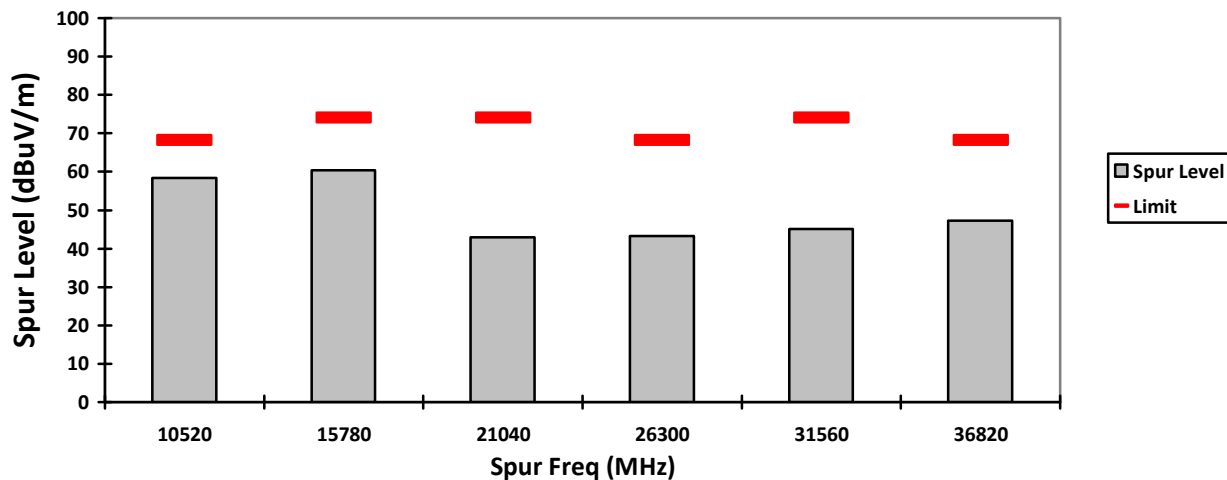
VERTICAL, QPK



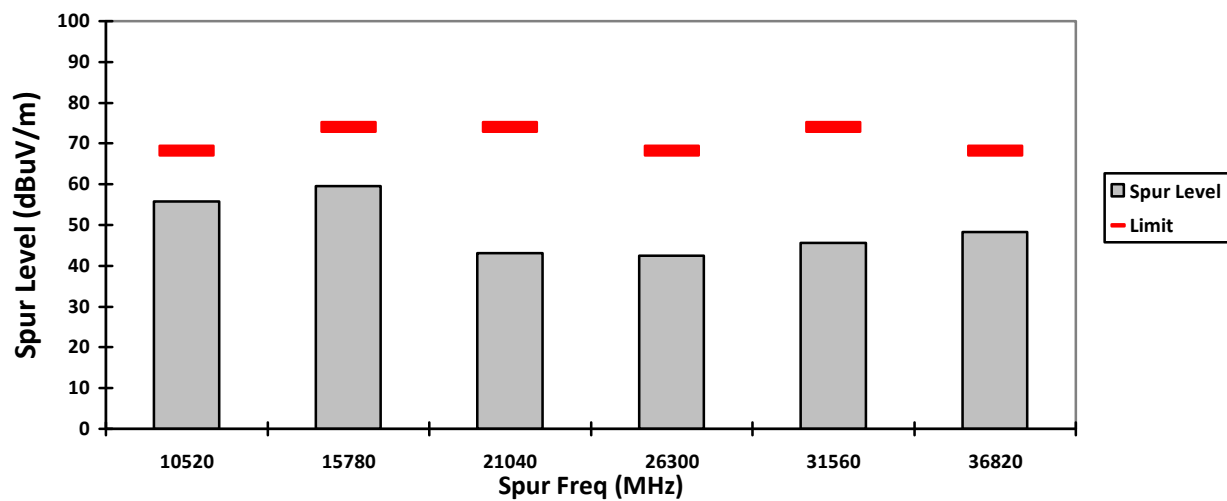
HORIZONTAL, QPK



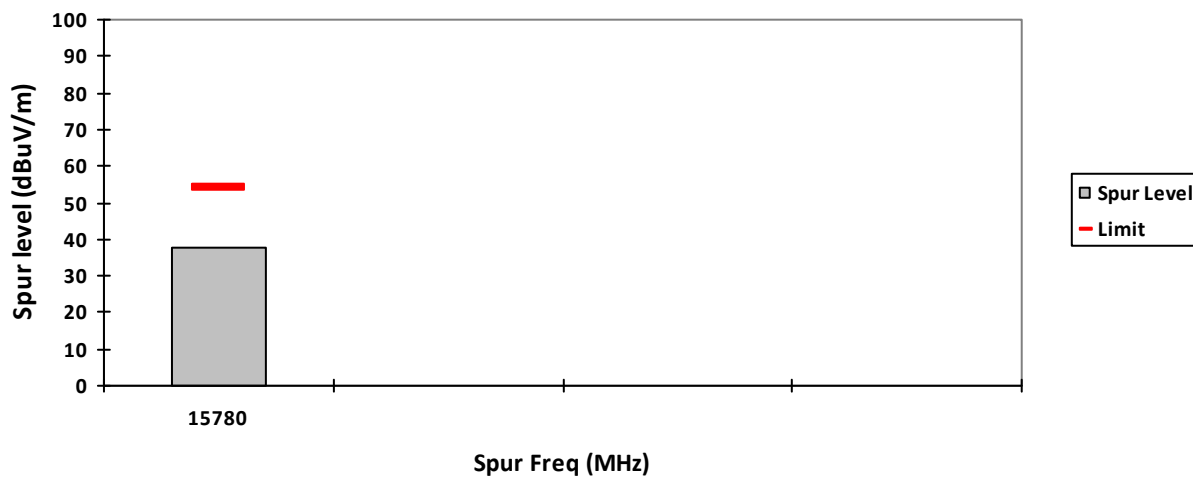
VERTICAL, PK



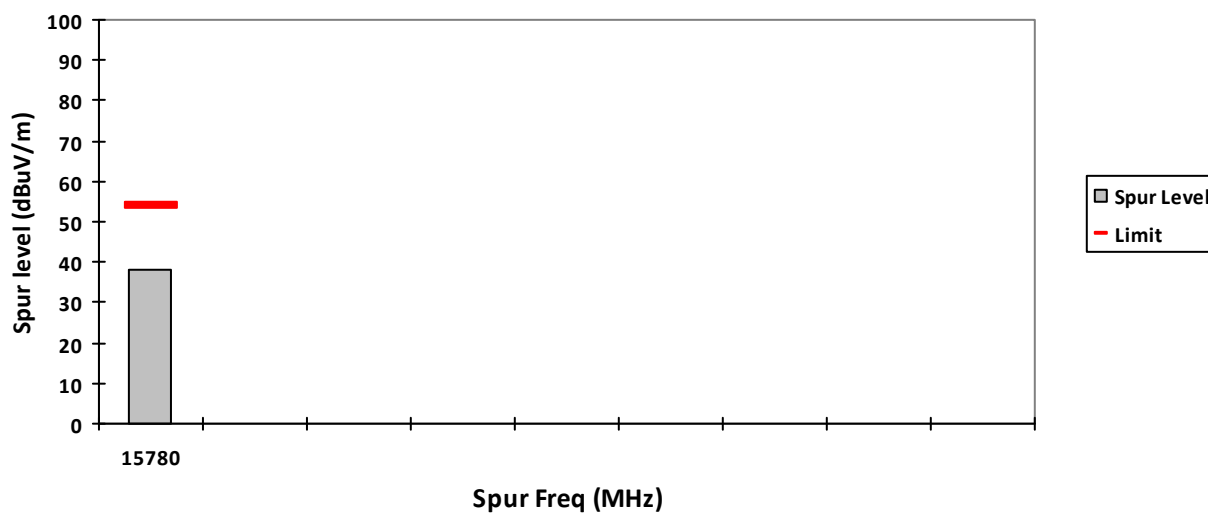
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Mid Test Frequency: 5300.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	58.2485**	35.10**	-	74.0	54.0	-	15.7515**	18.90**	-
15900	-	60.4275**	38.44**	-	74.0	54.0	-	13.5725**	15.56**	-
21200	-	42.9602**	-	-	74.0	-	-	31.0398**	-	-
26500	-	42.4606**	-	-	68.2	-	-	25.7394**	-	-
31800	-	44.8081**	-	-	74.0	-	-	29.1919**	-	-
37100	-	49.3536**	-	-	68.2	-	-	18.8464**	-	-
Horizontal Radiated Emission Result										
10600	-	58.1982**	35.24**	-	74.0	54.0	-	15.8018**	18.76**	-
15900	-	59.5224**	38.56**	-	74.0	54.0	-	14.4776**	15.44**	-
21200	-	42.7702**	-	-	74.0	-	-	31.2298**	-	-
26500	-	41.7171**	-	-	68.2	-	-	26.4829**	-	-
31800	-	44.1952**	-	-	74.0	-	-	29.8048**	-	-
37100	-	49.1887**	-	-	68.2	-	-	19.0113**	-	-

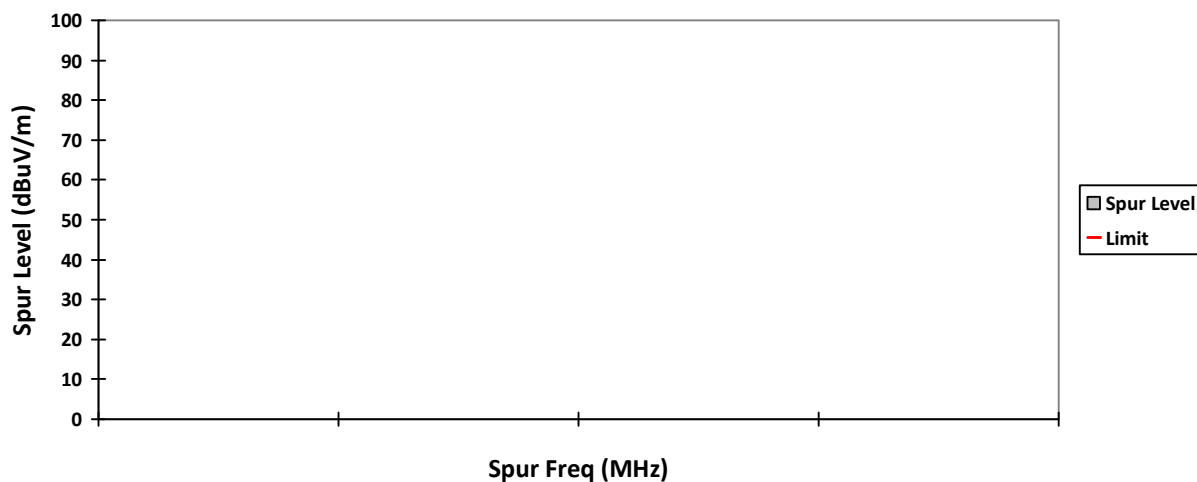
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

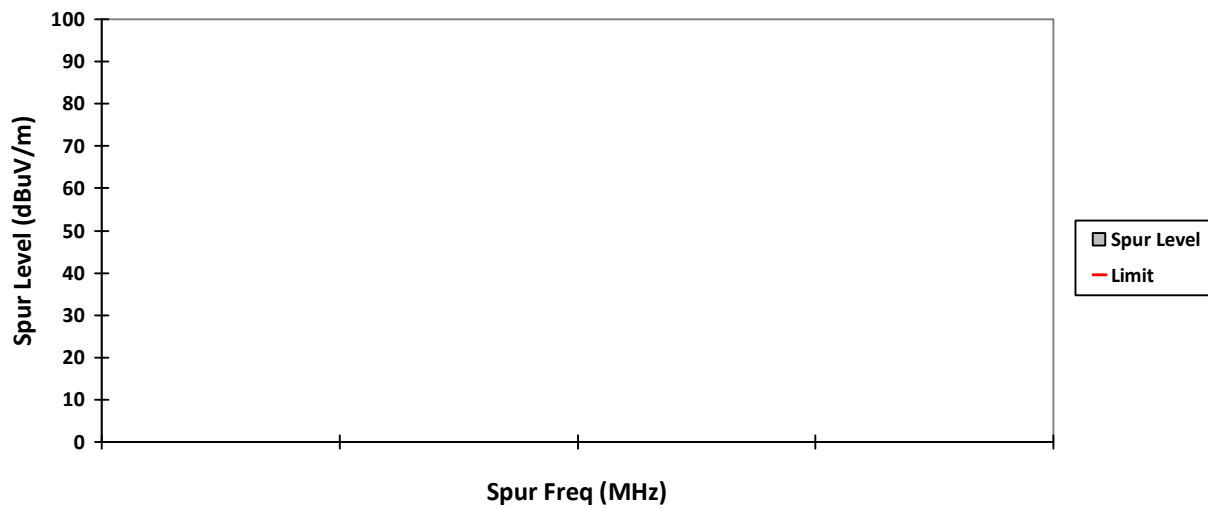
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

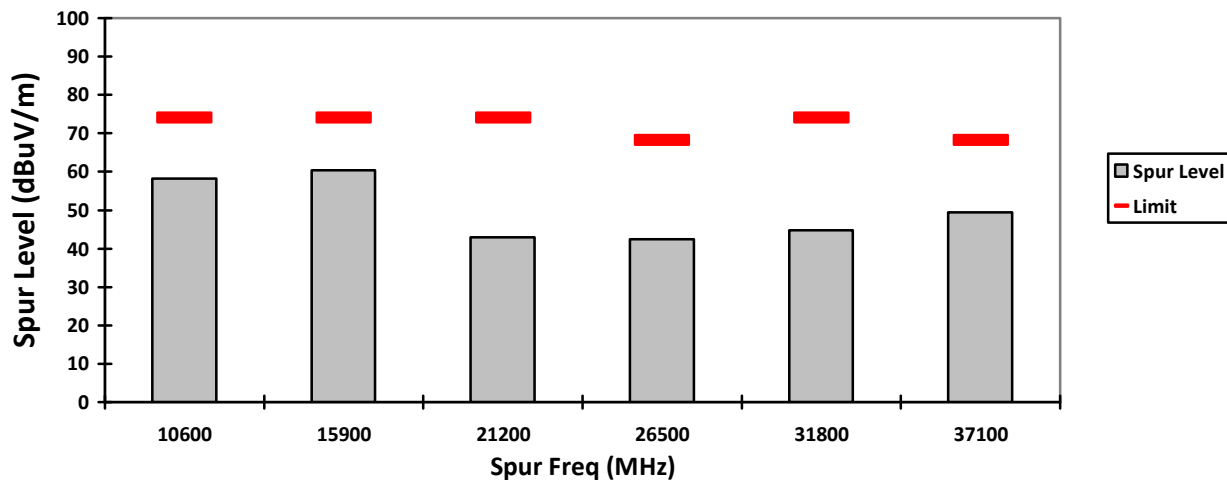
VERTICAL, QPK



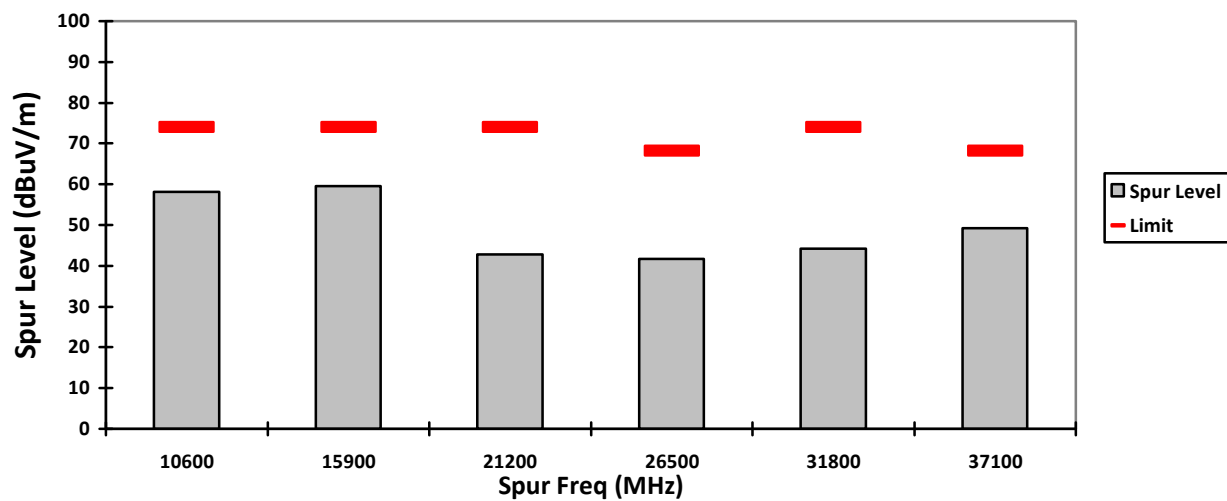
HORIZONTAL, QPK



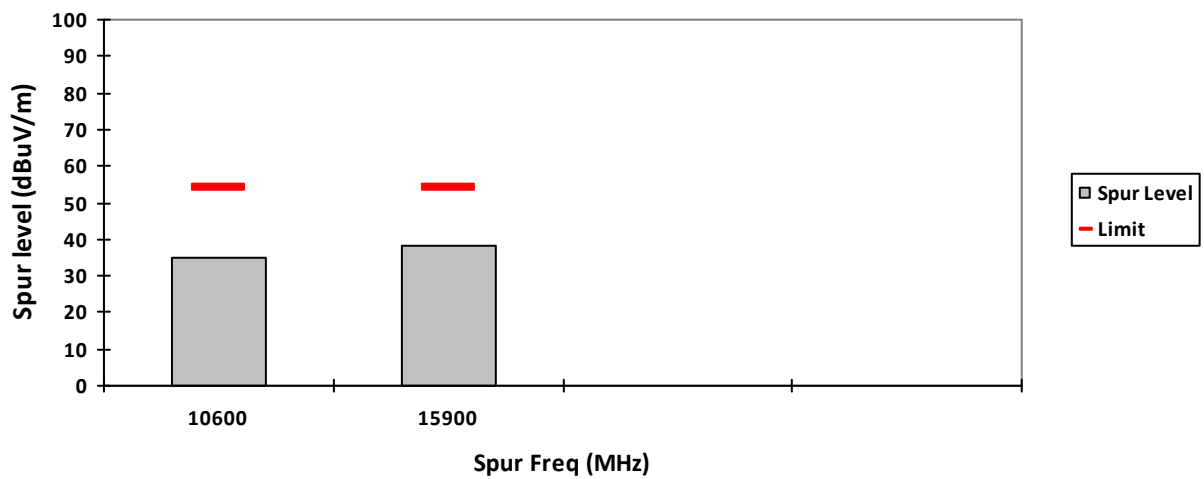
VERTICAL, PK



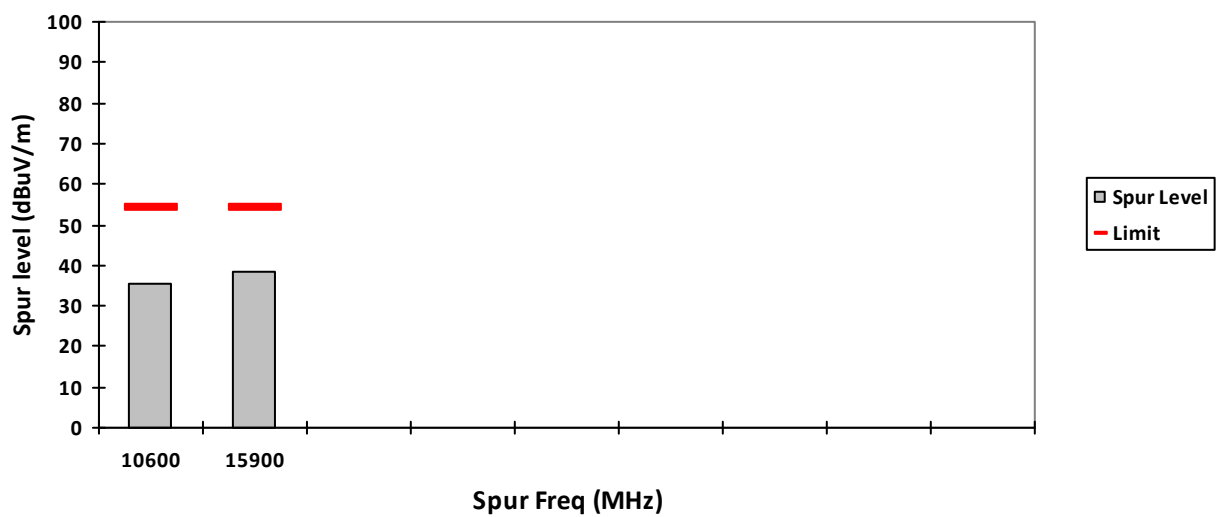
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: High Test Frequency: 5320.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	58.3341**	35.17**	-	74.0	54.0	-	15.6659**	18.83**	-
15960	-	60.8802**	38.31**	-	74.0	54.0	-	13.1198**	15.69**	-
21280	-	43.3444**	-	-	74.0	-	-	30.6556**	-	-
26600	-	42.5061**	-	-	68.2	-	-	25.6939**	-	-
31920	-	45.5401**	-	-	68.2	-	-	22.6599**	-	-
37240	-	47.0712**	-	-	68.2	-	-	21.1288**	-	-
Horizontal Radiated Emission Result										
10640	-	57.5106**	35.22**	-	74.0	54.0	-	16.4894**	18.78**	-
15960	-	59.7804**	38.38**	-	74.0	54.0	-	14.2196**	15.62**	-
21280	-	43.6502**	-	-	74.0	-	-	30.3498**	-	-
26600	-	43.1641**	-	-	68.2	-	-	25.0359**	-	-
31920	-	46.2436**	-	-	68.2	-	-	21.9564**	-	-
37240	-	48.4814**	-	-	68.2	-	-	19.7186**	-	-

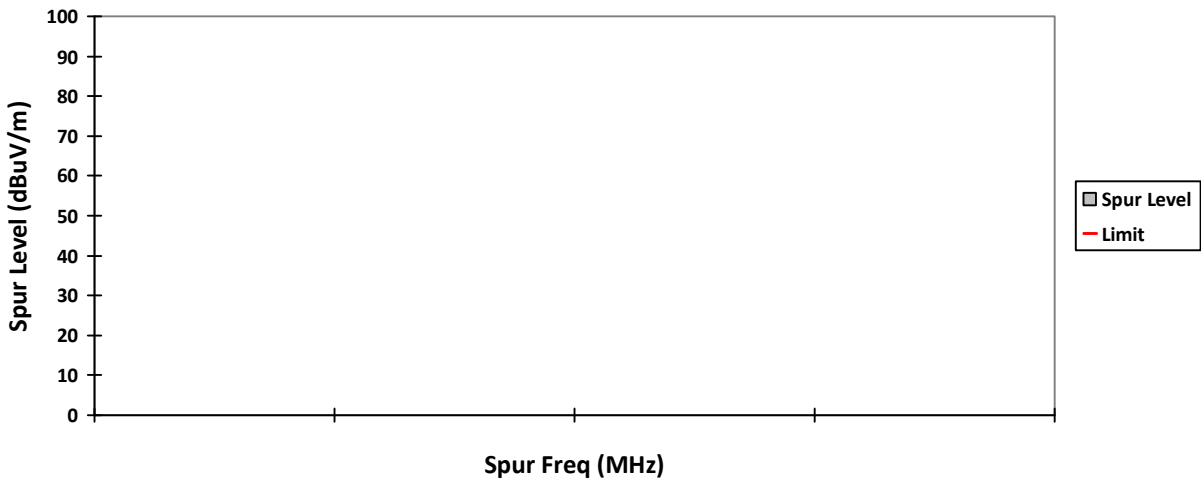
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

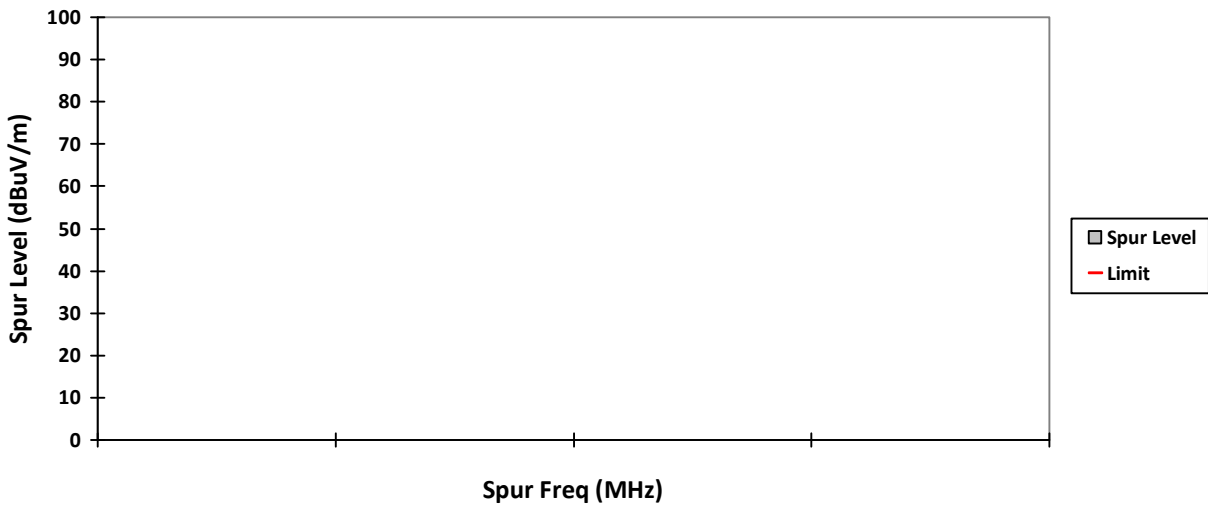
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

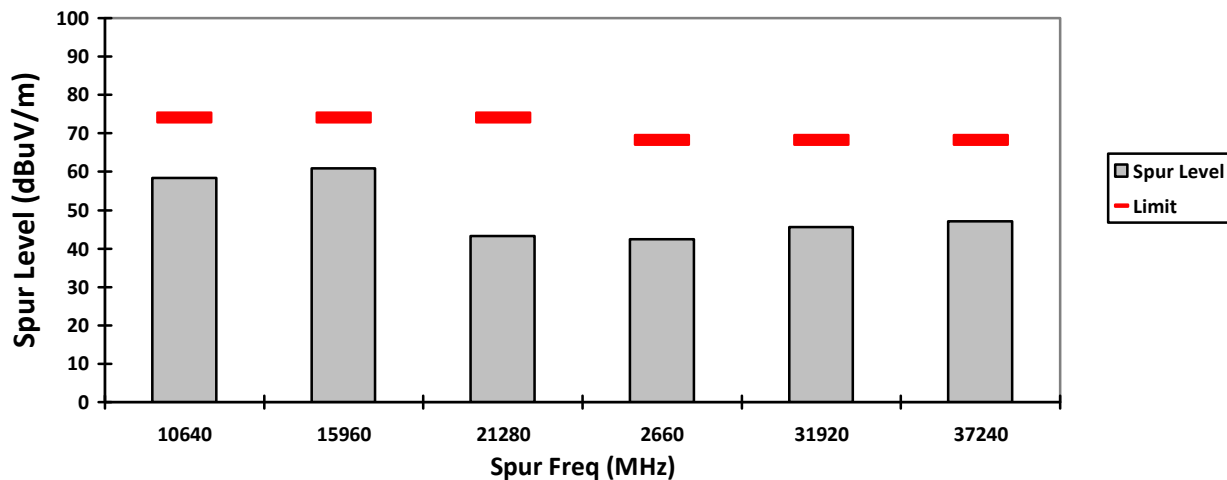
VERTICAL, QPK



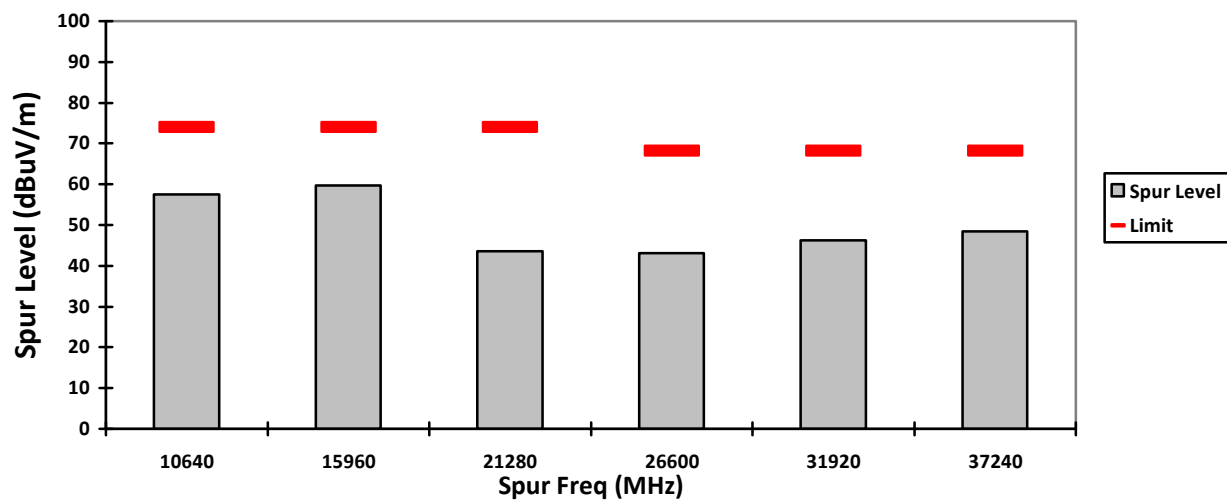
HORIZONTAL, QPK



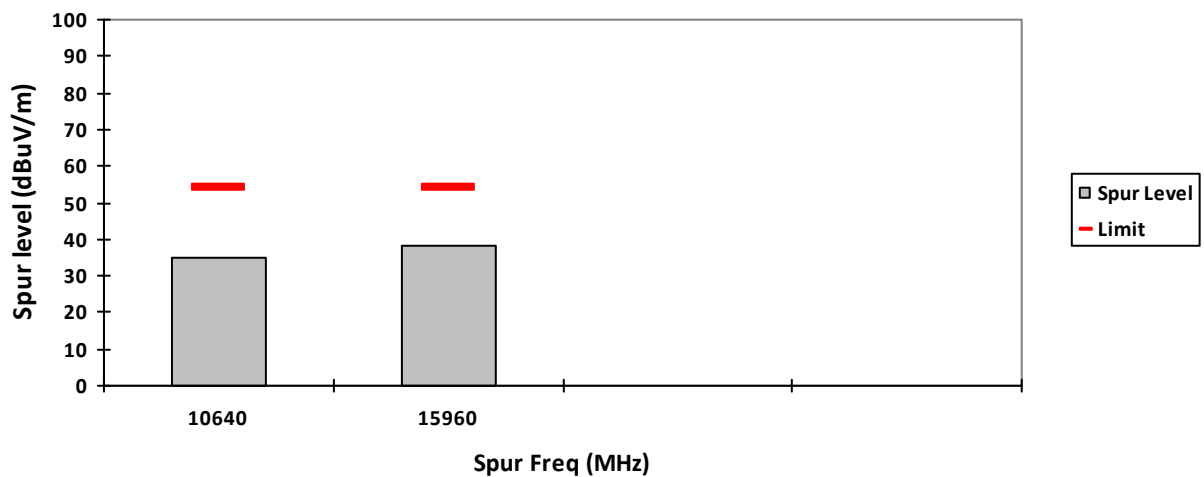
VERTICAL, PK



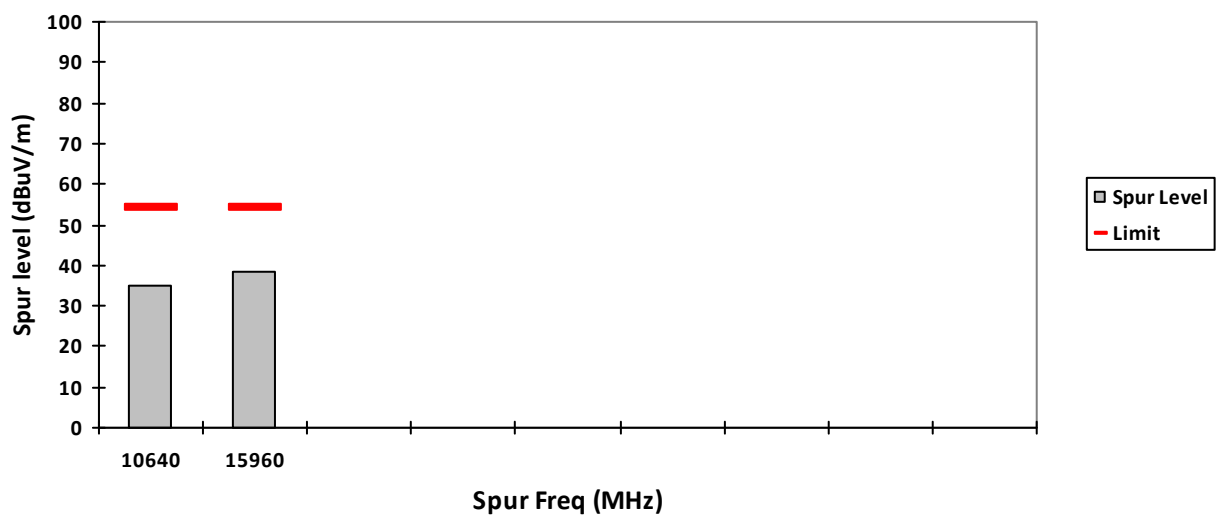
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	56.6271**	36.96**	-	74.0	54.0	-	17.3729**	17.04**	-
16500	-	65.4268**	-	-	68.2	-	-	2.7732**	-	-
22000	-	46.1839**	-	-	74.0	-	-	27.8161**	-	-
27500	-	43.1023**	-	-	68.2	-	-	25.0977**	-	-
33000	-	46.4738**	-	-	68.2	-	-	21.7262**	-	-
38500	-	49.3584**	-	-	68.2	-	-	18.8416**	-	-
Horizontal Radiated Emission Result										
11000	-	56.7823**	37.01**	-	74.0	54.0	-	17.2177**	16.99**	-
16500	-	63.2088**	-	-	68.2	-	-	4.9912**	-	-
22000	-	44.2721**	-	-	74.0	-	-	29.7279**	-	-
27500	-	42.8345**	-	-	68.2	-	-	25.3655**	-	-
33000	-	45.5229**	-	-	68.2	-	-	22.6771**	-	-
38500	-	49.0316**	-	-	68.2	-	-	19.1684**	-	-

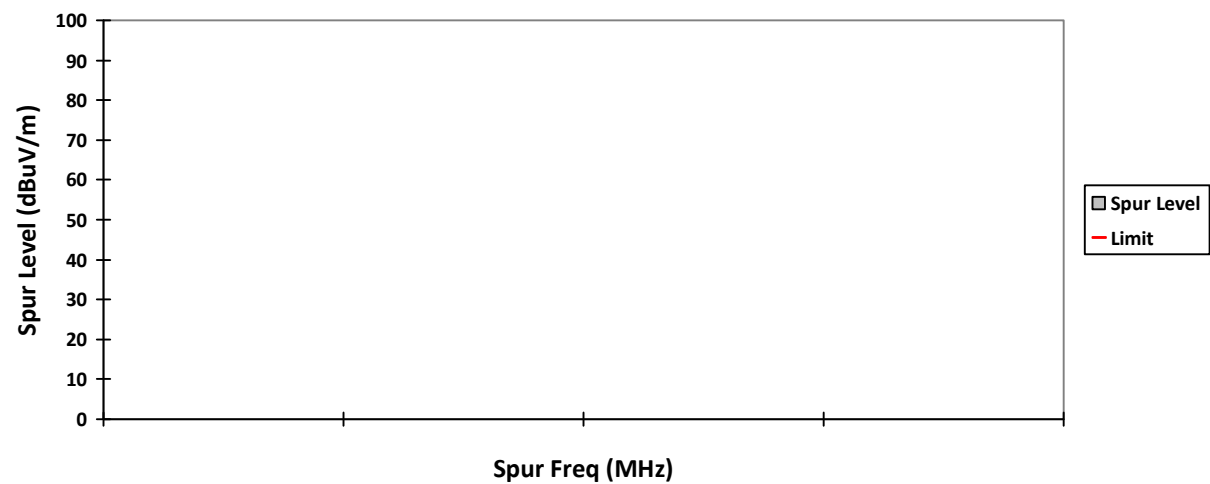
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

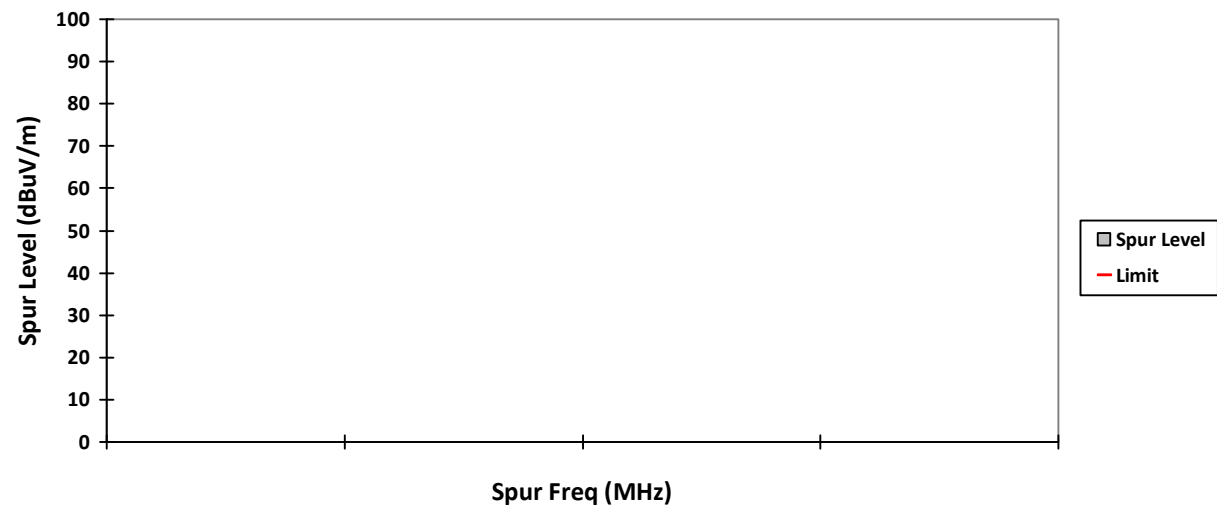
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

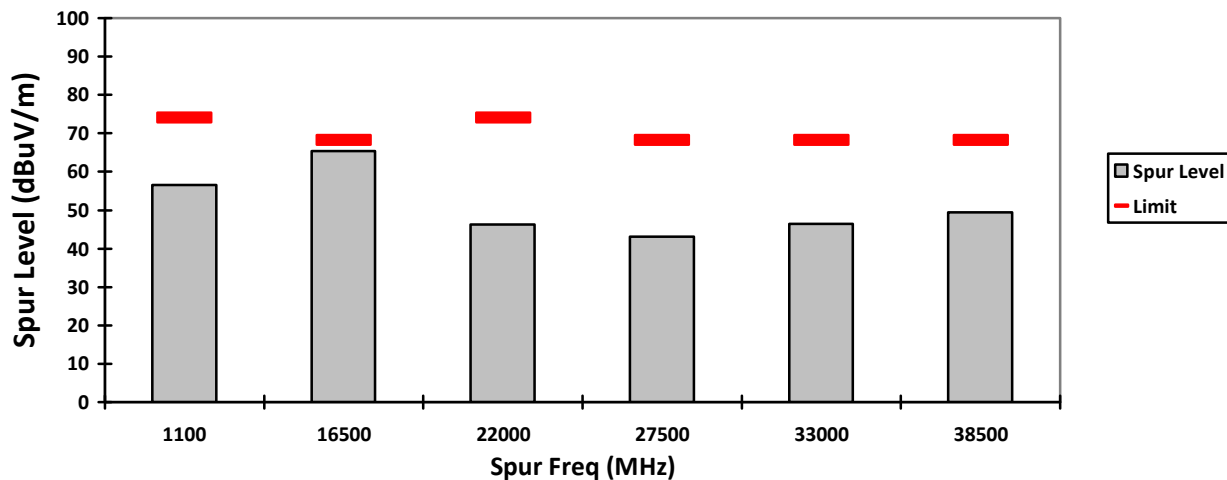
VERTICAL, QPK



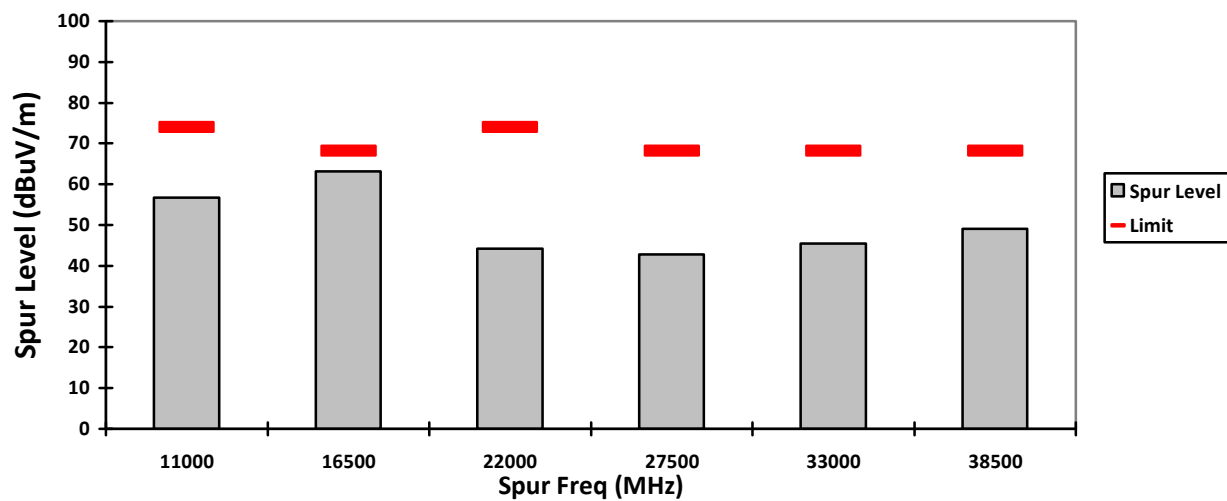
HORIZONTAL, QPK



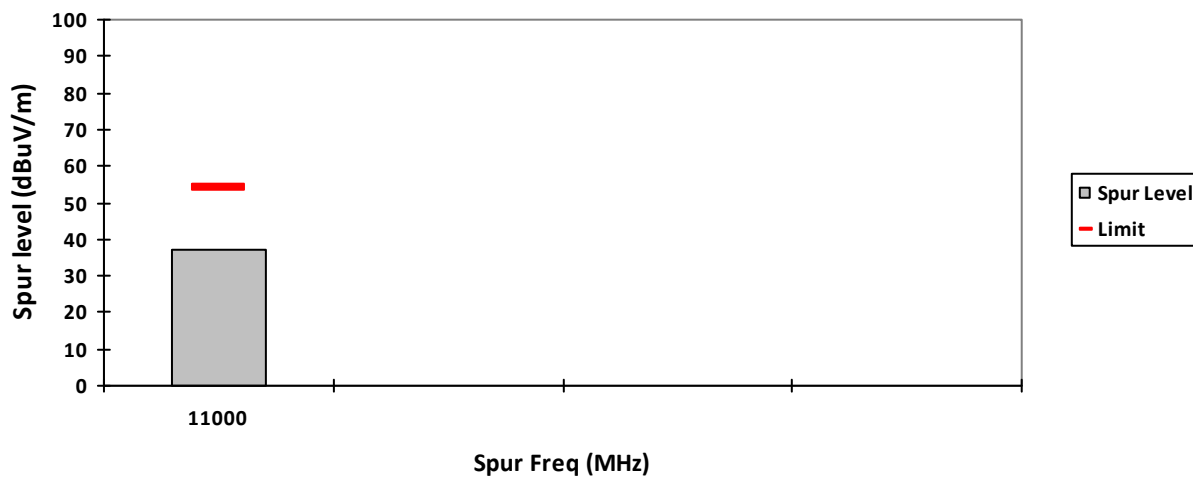
VERTICAL, PK



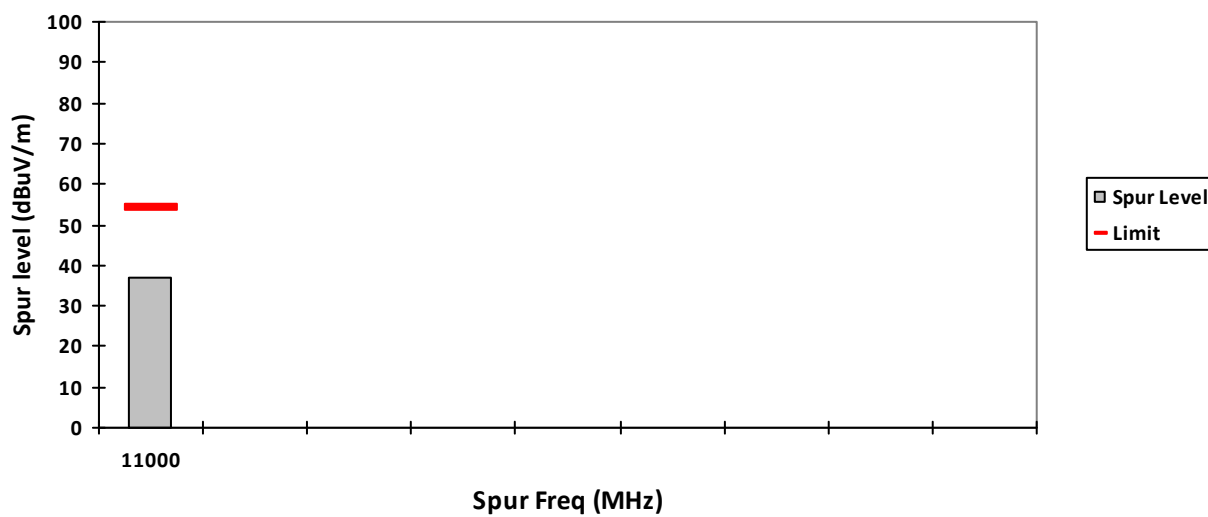
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Mid Test Frequency: 5580.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	59.7527**	35.81**	-	74.0	54.0	-	14.2473**	18.19**	-
16740	-	63.4547**	-	-	68.2	-	-	4.7453**	-	-
22320	-	44.4887**	-	-	74.0	-	-	29.5113**	-	-
27900	-	42.8929**	-	-	68.2	-	-	25.3071**	-	-
33480	-	46.5973**	-	-	68.2	-	-	21.6027**	-	-
39060	-	54.3482**	31.50**	-	74.0	54.0	-	19.6518**	22.50**	-
Horizontal Radiated Emission Result										
11160	-	58.9428**	35.72**	-	74.0	54.0	-	15.0572**	18.28**	-
16740	-	62.5603**	-	-	68.2	-	-	5.6397**	-	-
22320	-	41.2871**	-	-	74.0	-	-	32.7129**	-	-
27900	-	44.4649**	-	-	68.2	-	-	23.7351**	-	-
33480	-	46.2906**	-	-	68.2	-	-	21.9094**	-	-
39060	-	52.4975**	31.58**	-	74.0	54.0	-	21.5025**	22.42**	-

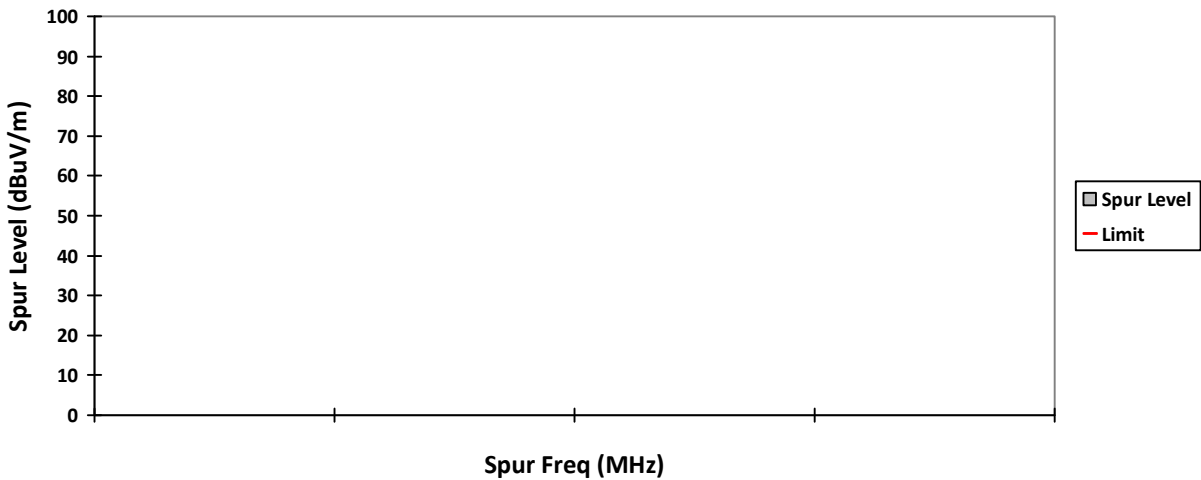
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

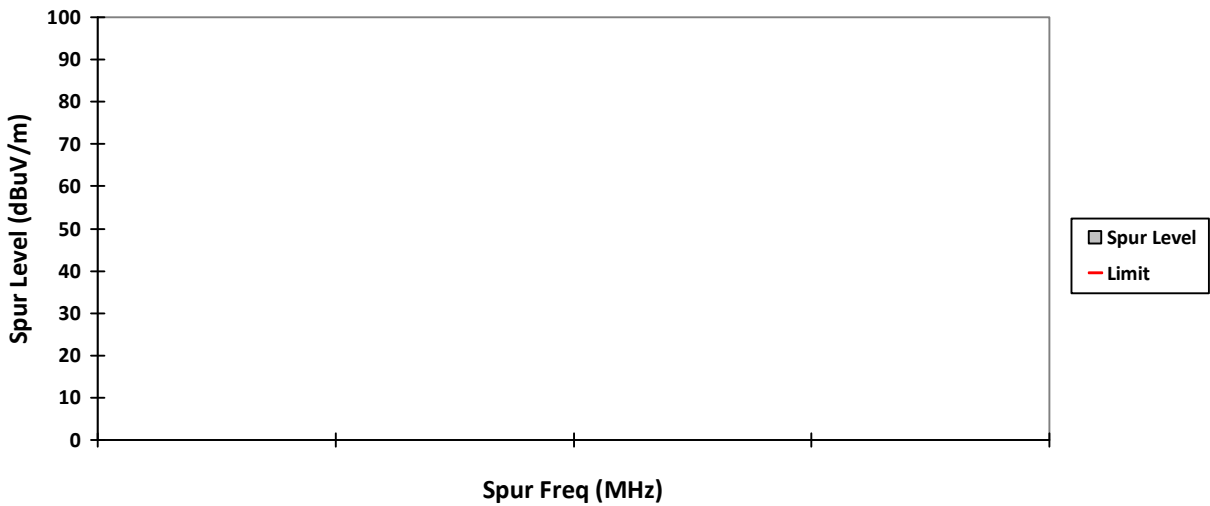
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

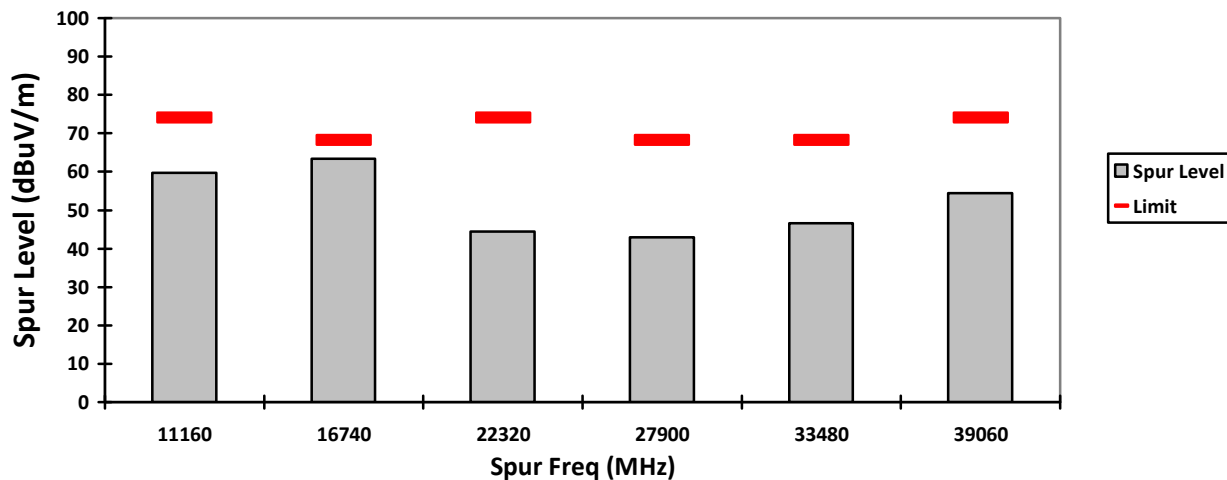
VERTICAL, QPK



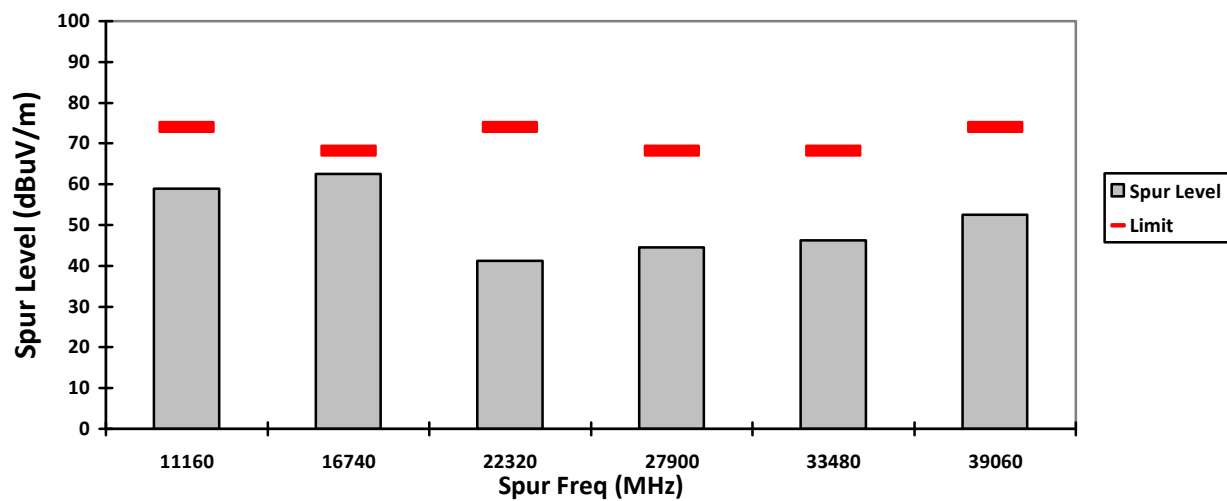
HORIZONTAL, QPK



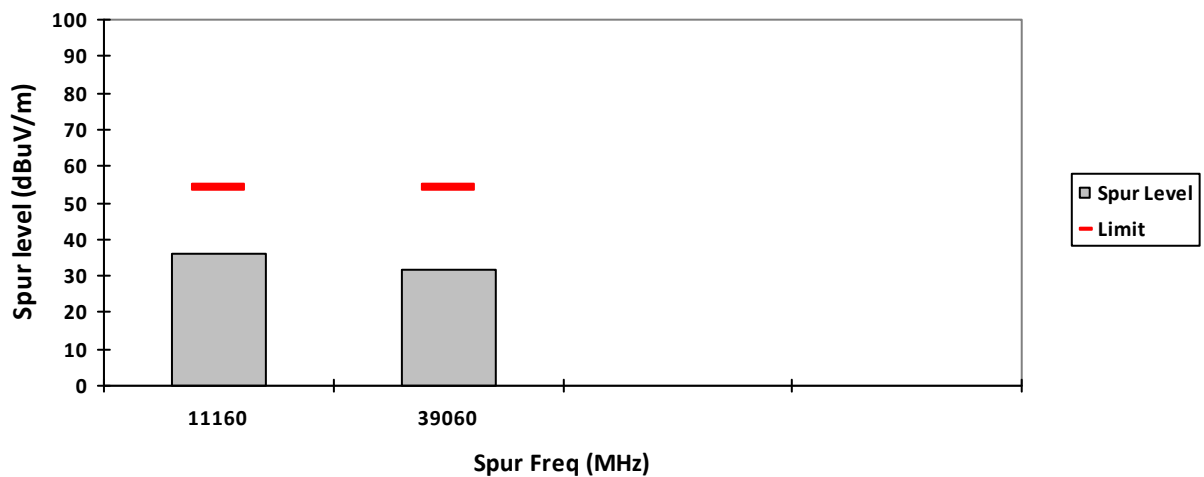
VERTICAL, PK



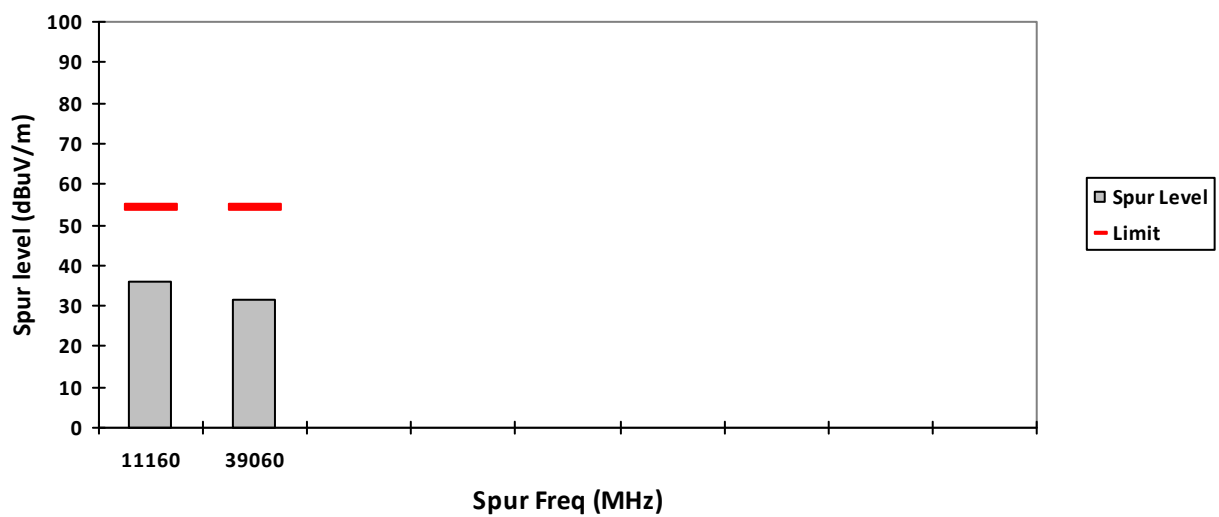
HORIZONTAL, PK



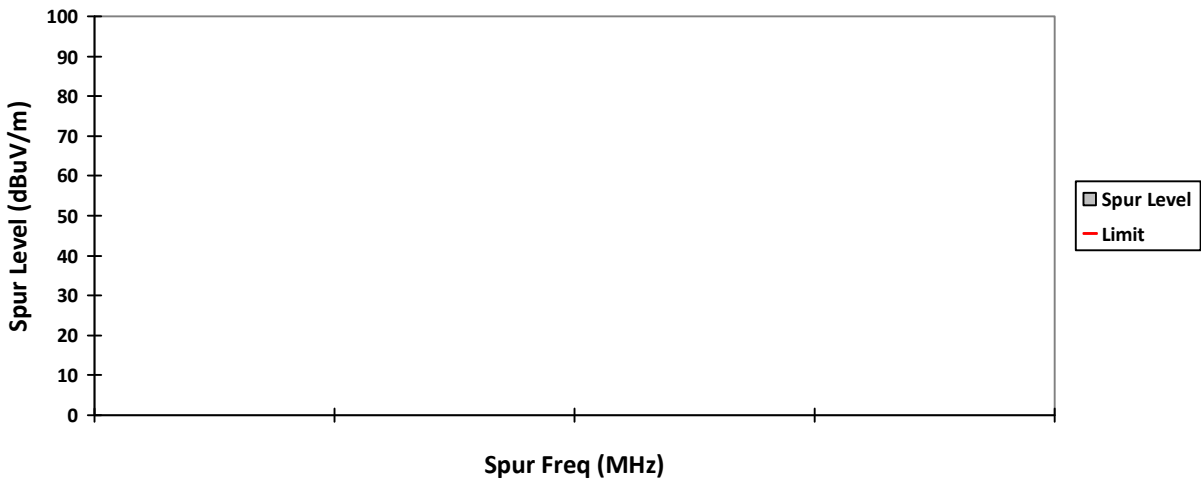
VERTICAL, AV



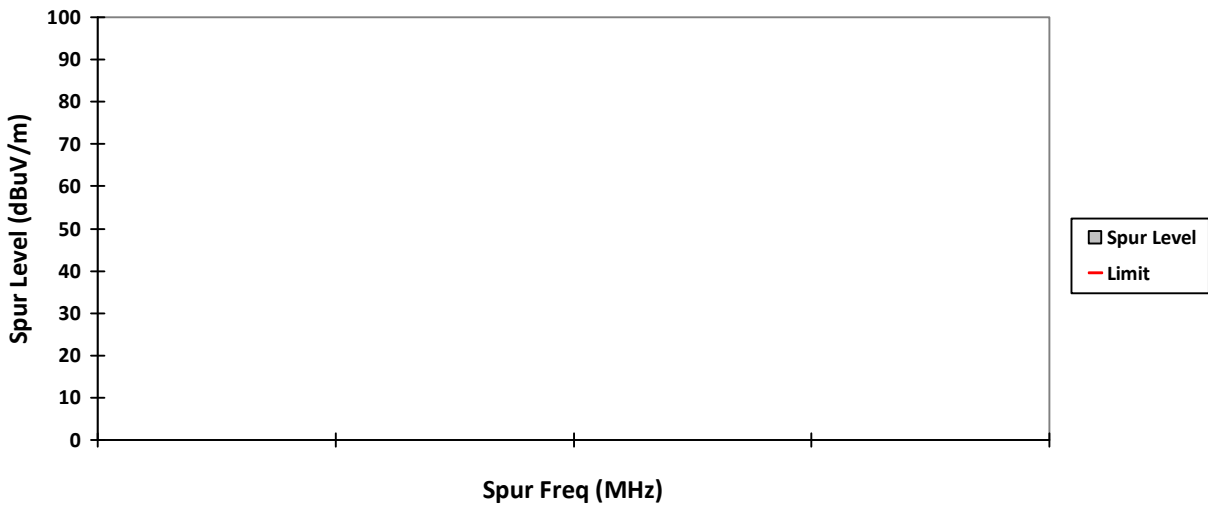
HORIZONTAL, AV



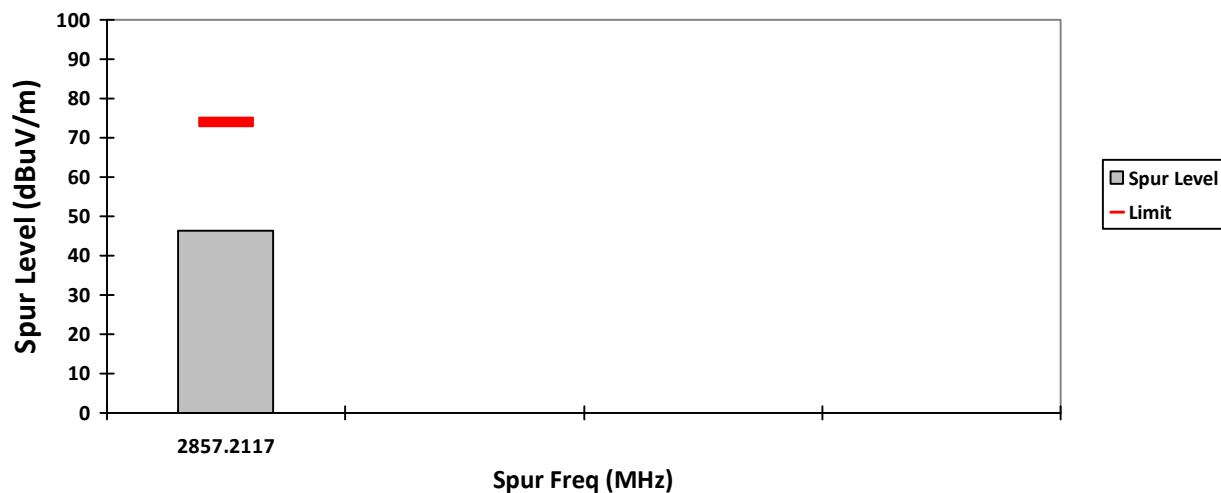
VERTICAL, QPK



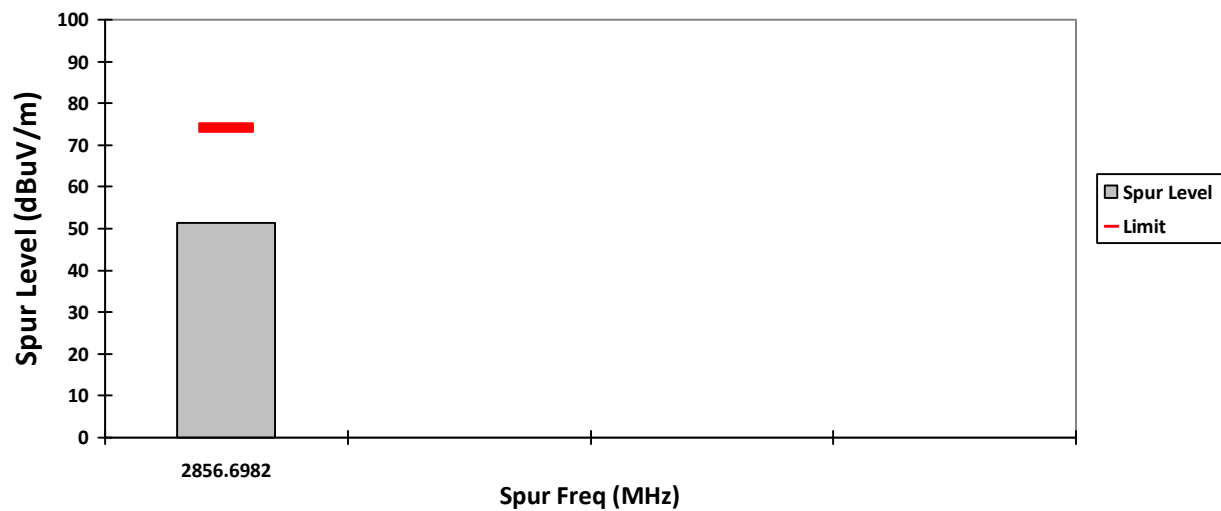
HORIZONTAL, QPK



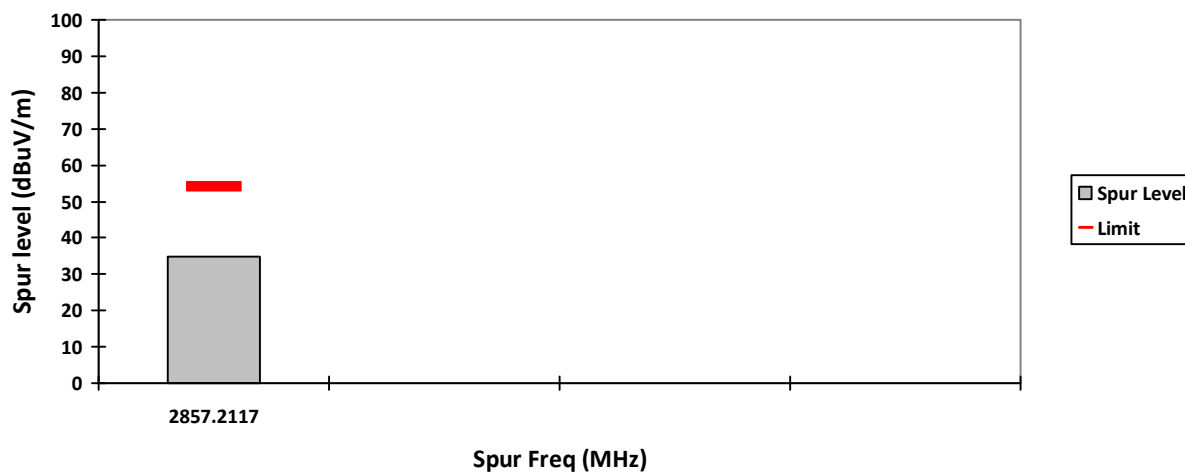
VERTICAL, PK



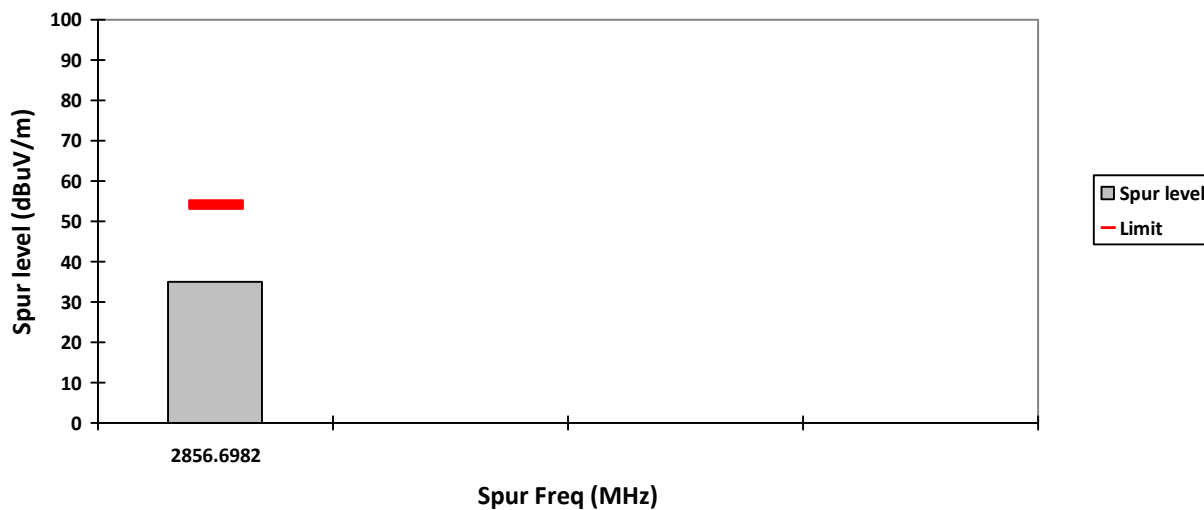
HORIZONTAL, PK



VERTICAL, AV



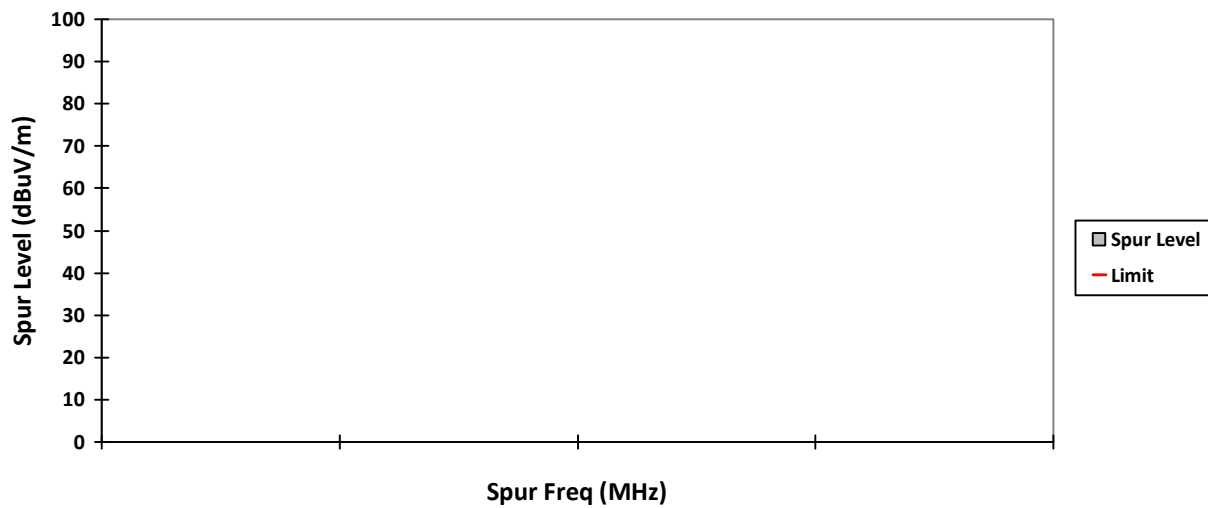
HORIZONTAL, AV



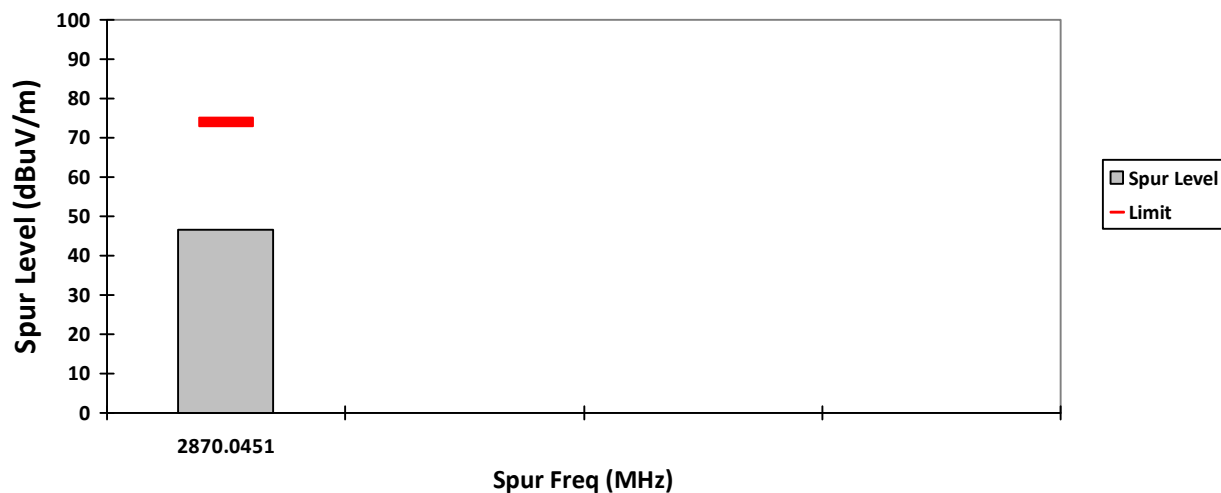
VERTICAL, QPK



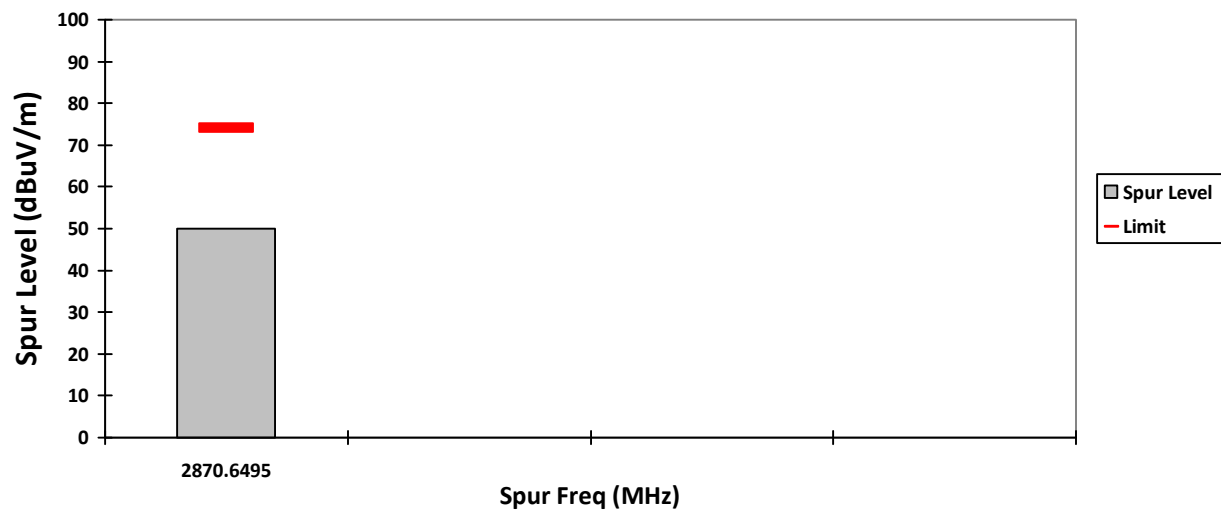
HORIZONTAL, QPK



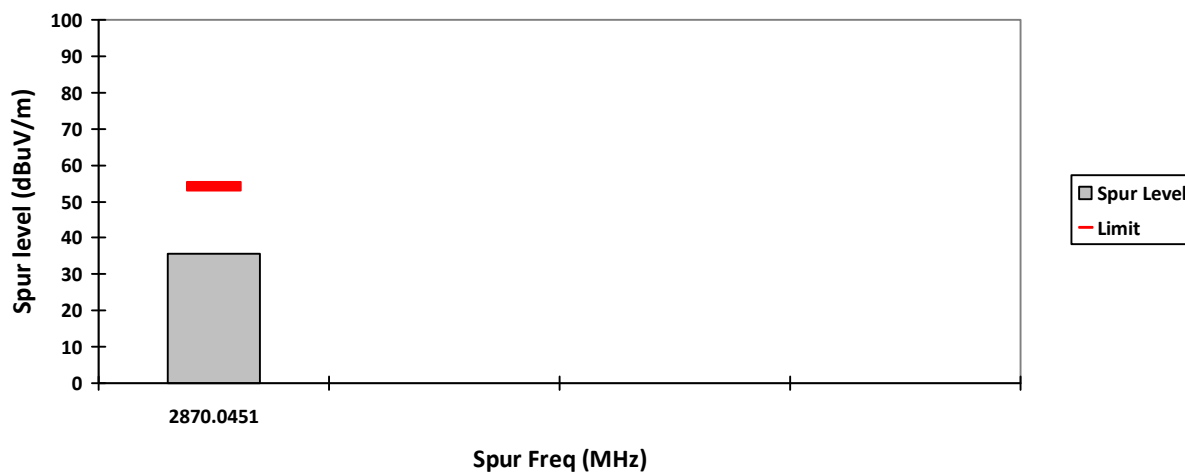
VERTICAL, PK



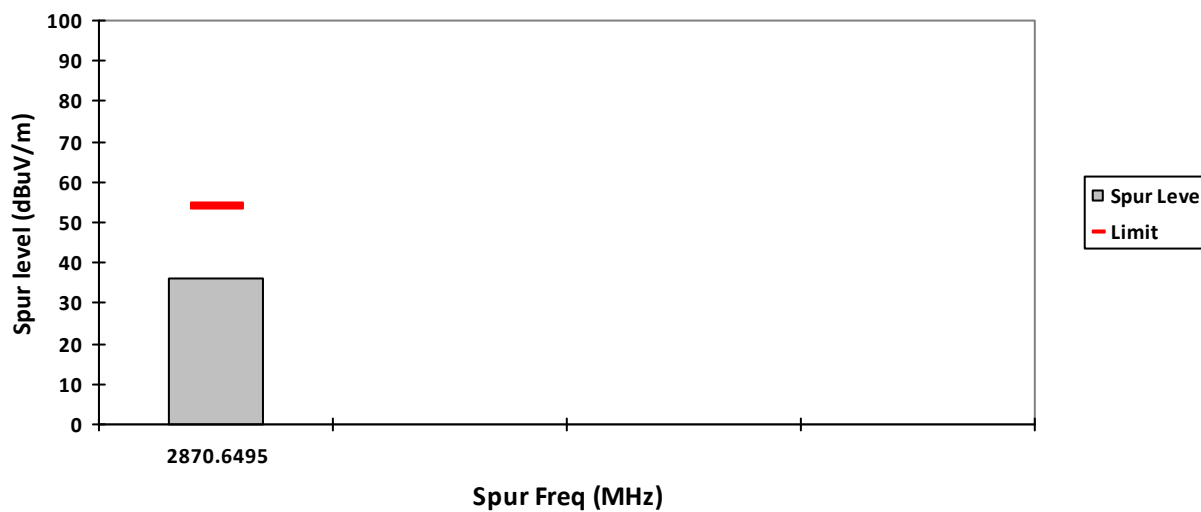
HORIZONTAL, PK



VERTICAL, AV



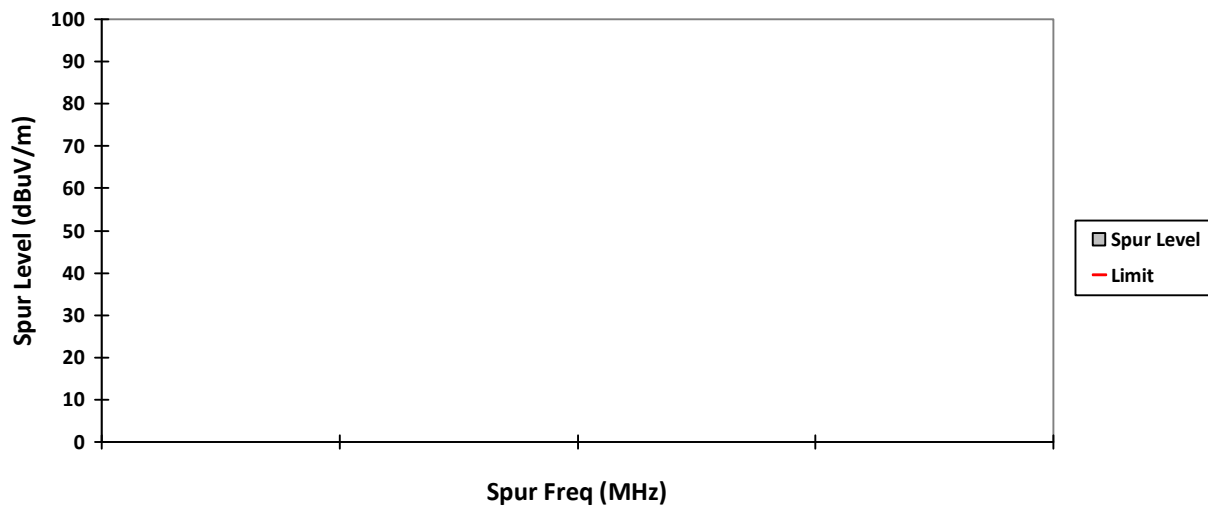
HORIZONTAL, AV



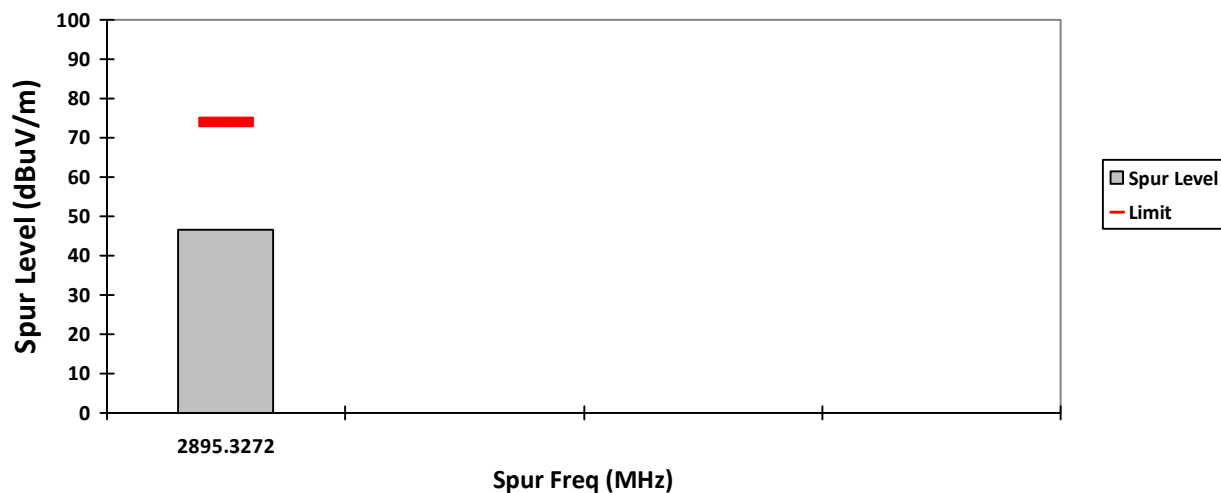
VERTICAL, QPK



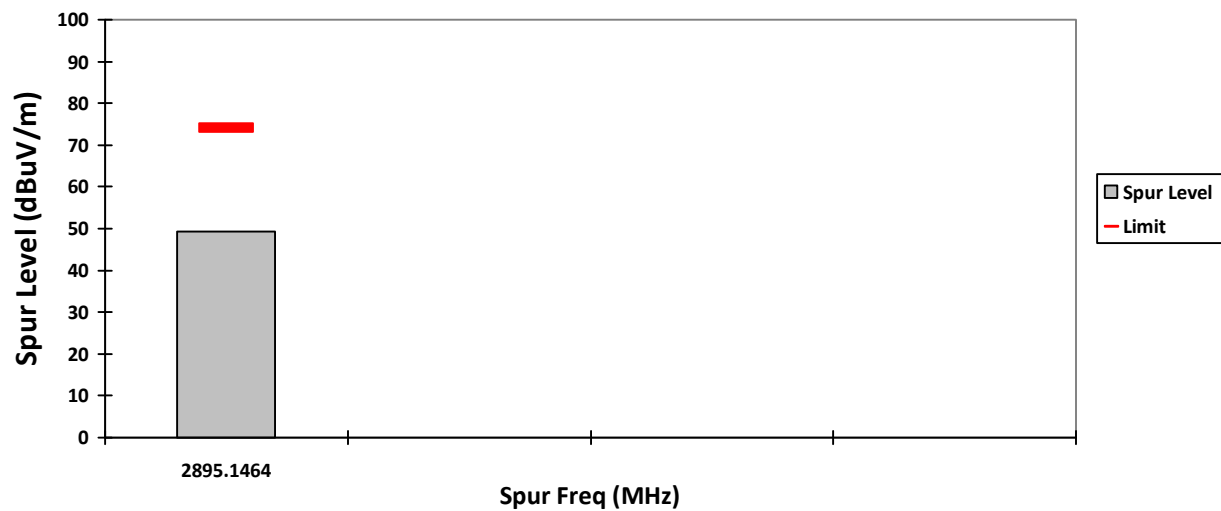
HORIZONTAL, QPK



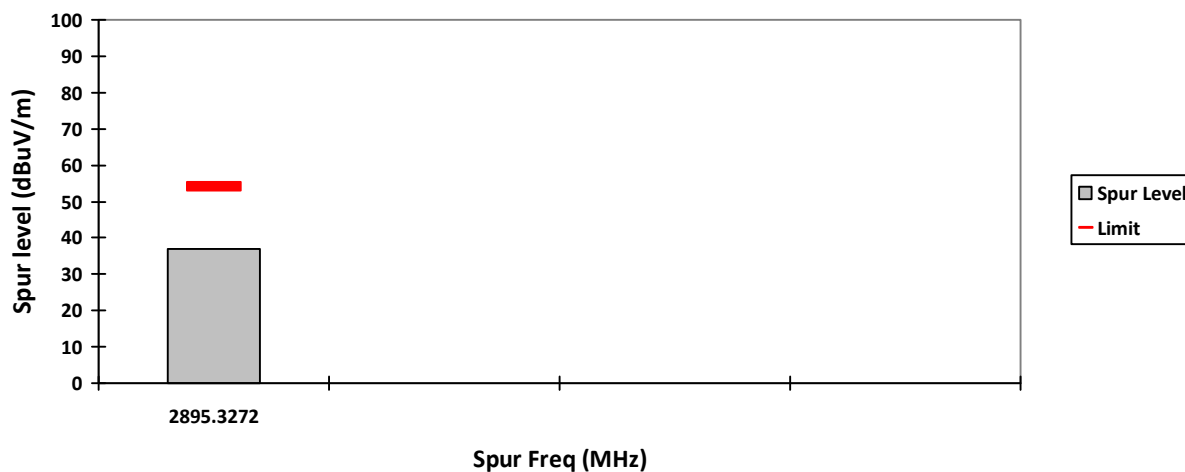
VERTICAL, PK



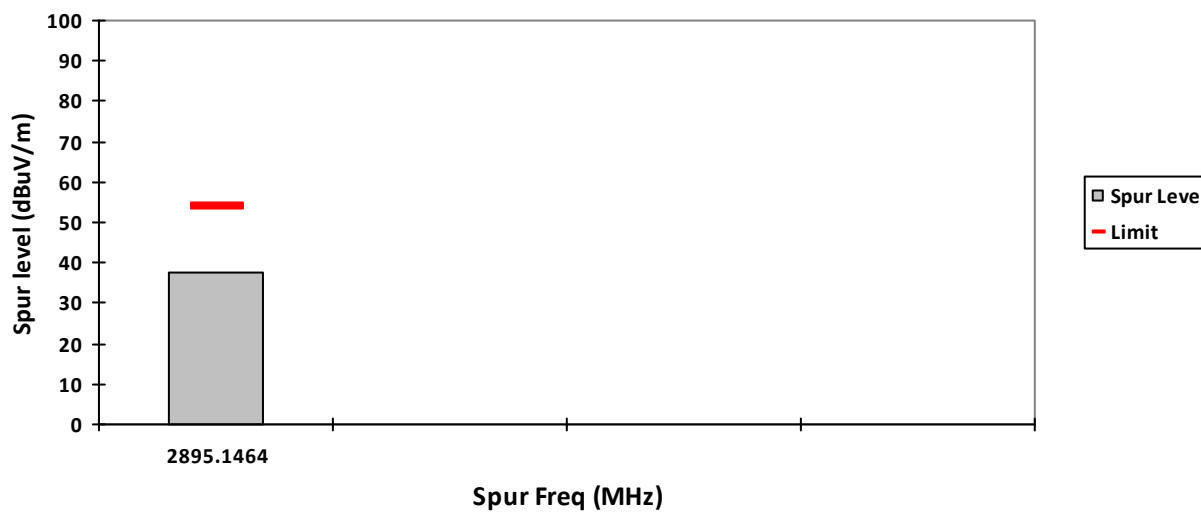
HORIZONTAL, PK



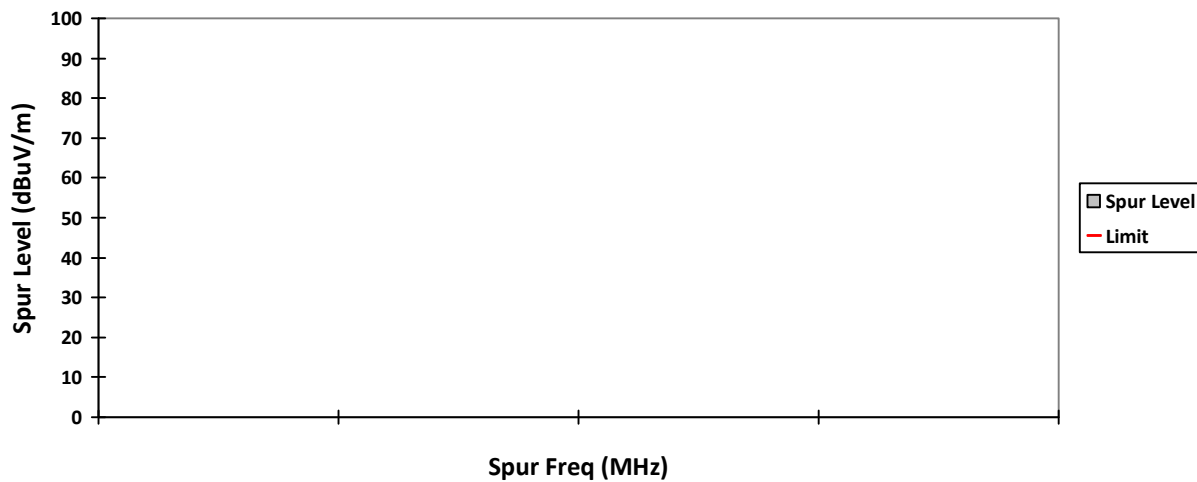
VERTICAL, AV



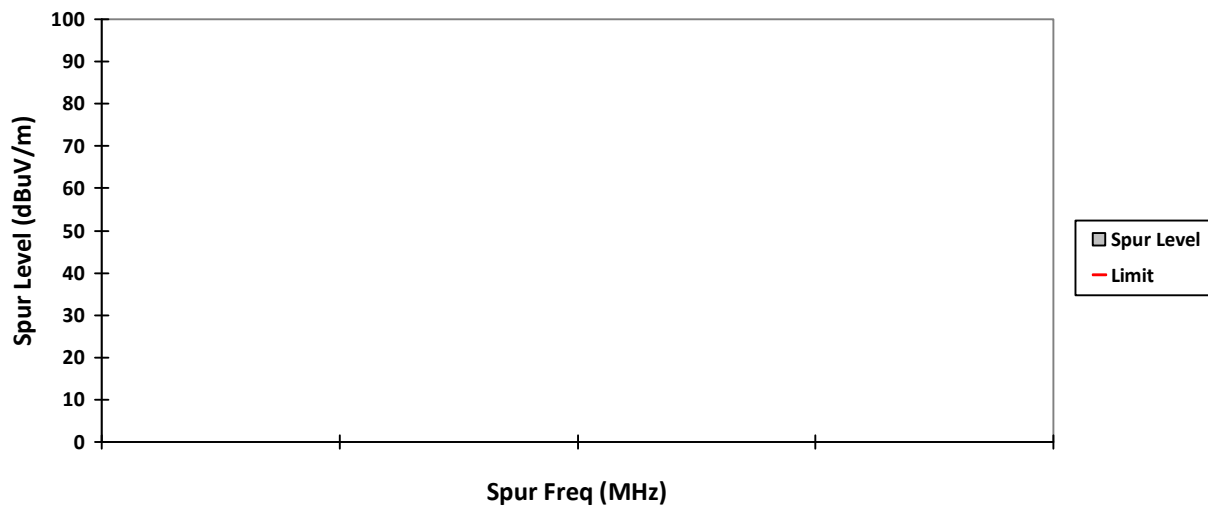
HORIZONTAL, AV



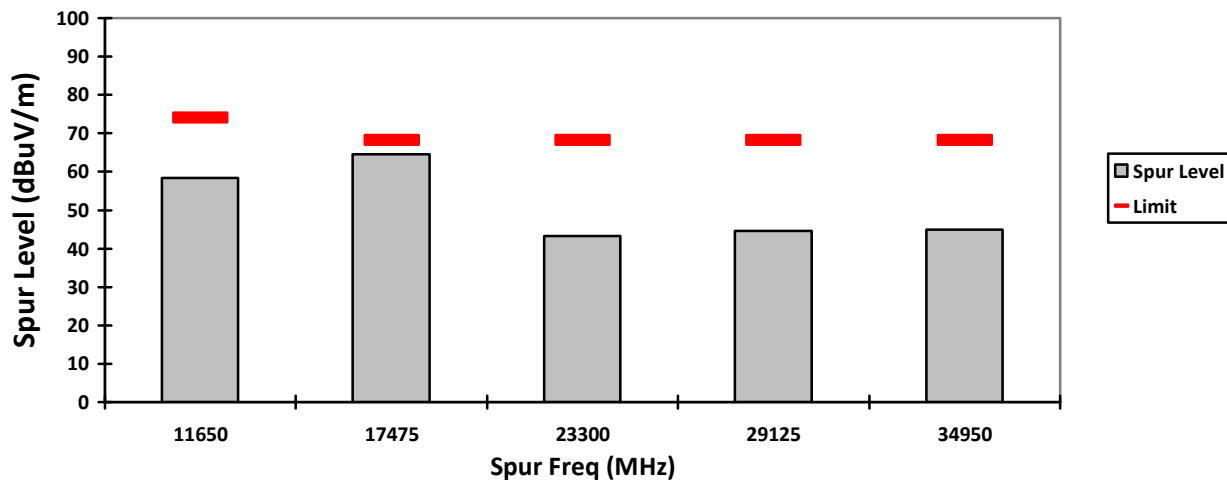
VERTICAL, QPK



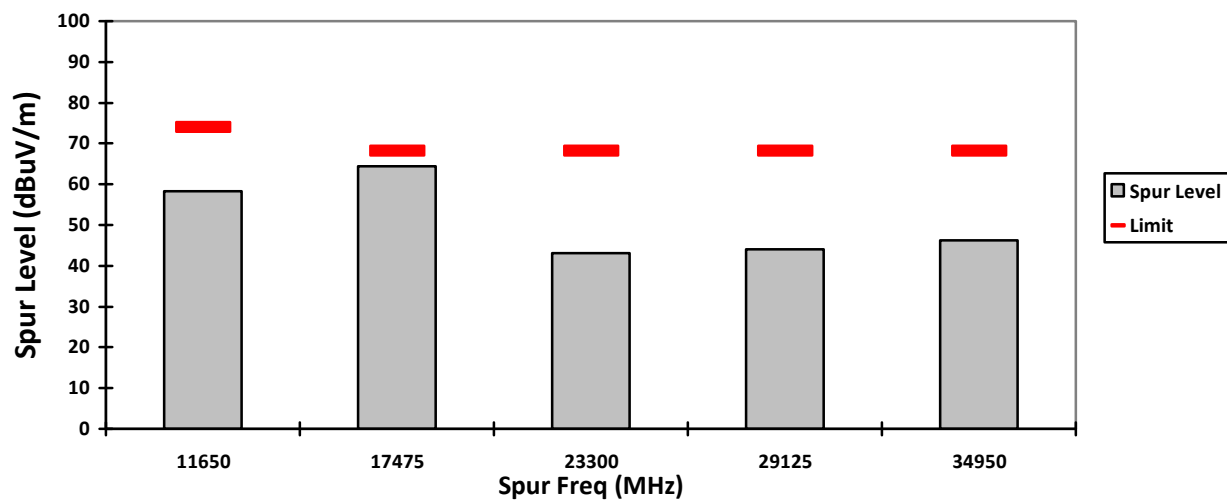
HORIZONTAL, QPK



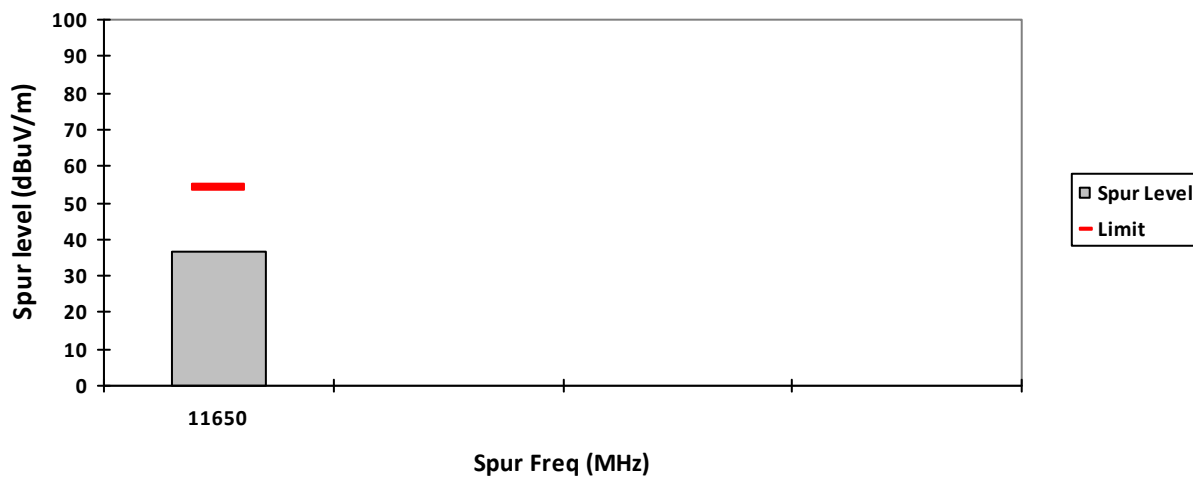
VERTICAL, PK



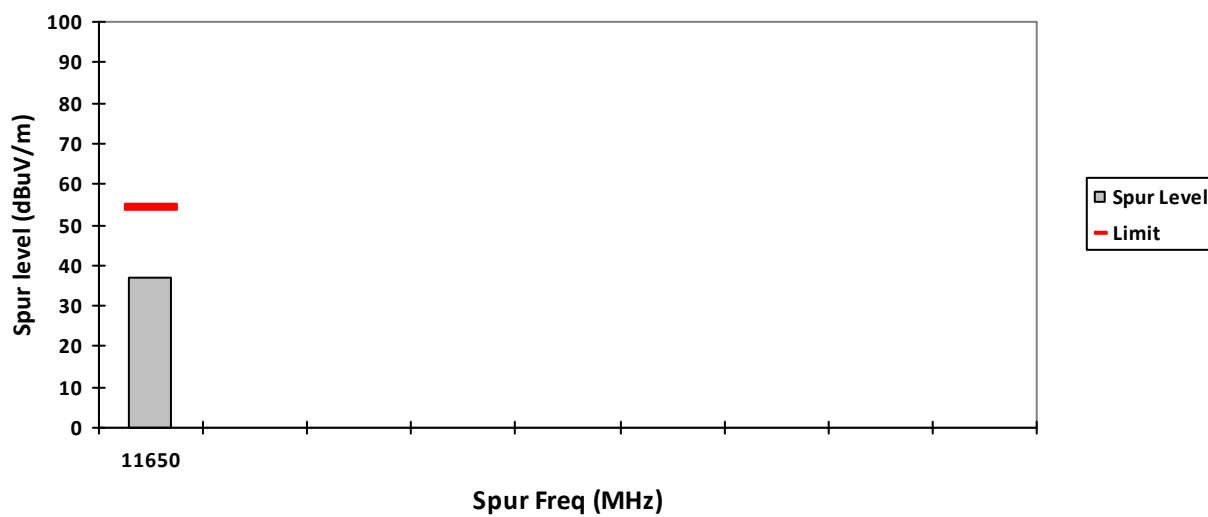
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



802.11n (HT20)

Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Low Test Frequency: 5180.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	56.3288**	-	-	68.2	-	-	11.8712**	-	-
15540	-	60.0393**	38.58**	-	74.0	54.0	-	13.9607**	15.42**	-
20720	-	41.7107**	-	-	74.0	-	-	32.2893**	-	-
25900	-	42.5854**	-	-	68.2	-	-	25.6146**	-	-
31080	-	45.0384**	-	-	68.2	-	-	23.1616**	-	-
36260	-	46.6200**	-	-	68.2	-	-	21.58**	-	-
Horizontal Radiated Emission Result										
10360	-	58.0231**	-	-	68.2	-	-	10.1769**	-	-
15540	-	60.0424**	38.64**	-	74.0	54.0	-	13.9576**	15.36**	-
20720	-	42.9493**	-	-	74.0	-	-	31.0507**	-	-
25900	-	43.0576**	-	-	68.2	-	-	25.1424**	-	-
31080	-	45.0199**	-	-	68.2	-	-	23.1801**	-	-
36260	-	46.4396**	-	-	68.2	-	-	21.7604**	-	-

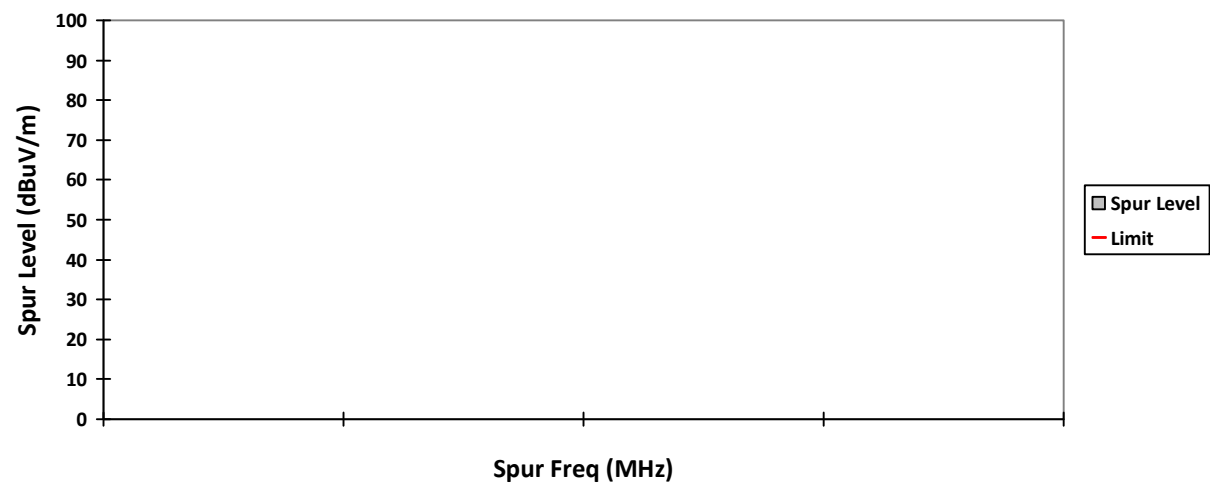
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
Test Performed by: Qawiman&Amaluddin
System MU: 4.03dB

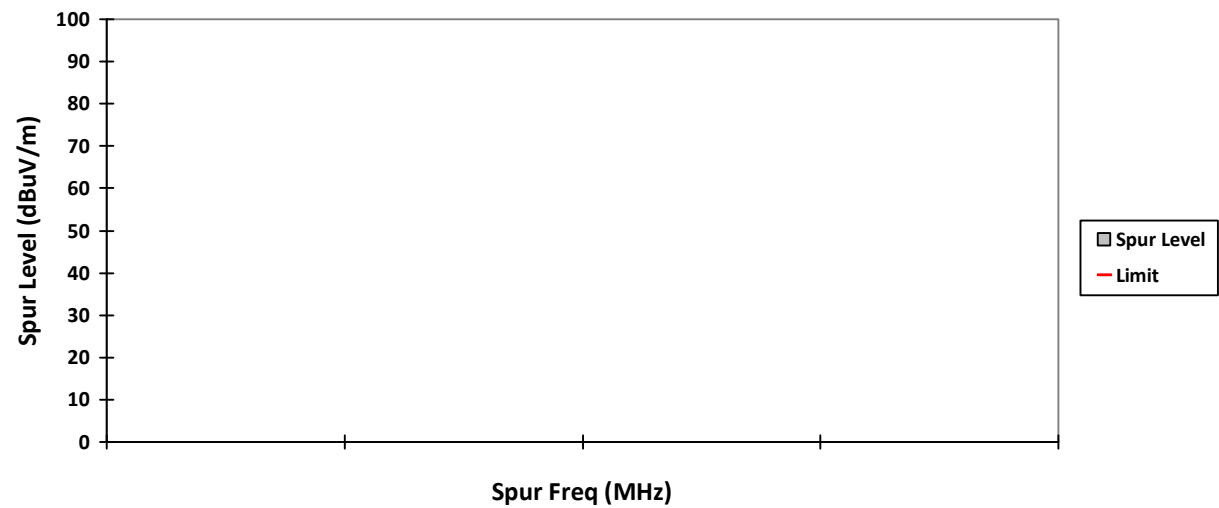
Humidity (%): 69.7
Test Date: Tue, 7 Sept, 2021

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.

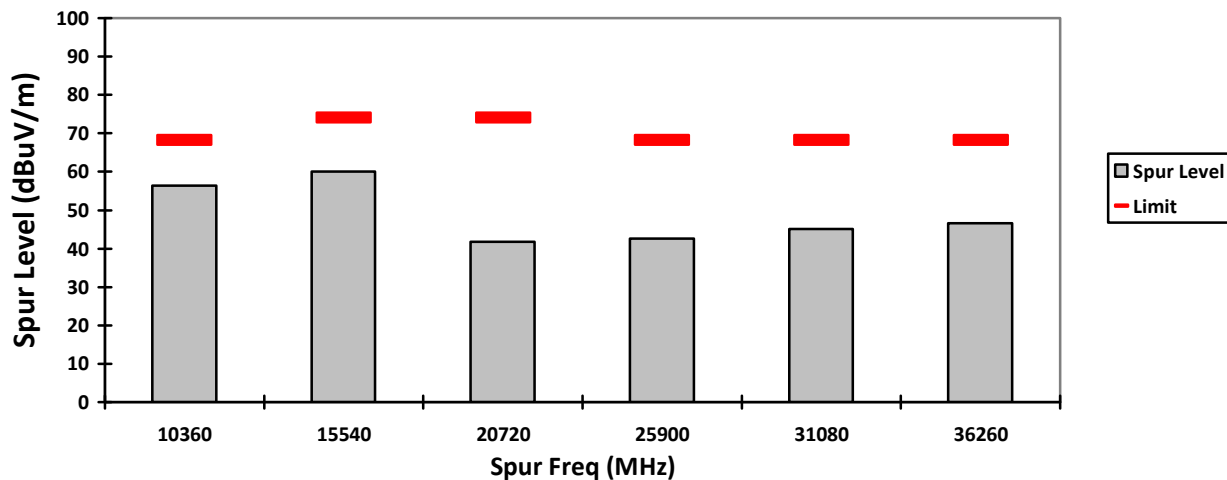
VERTICAL, QPK



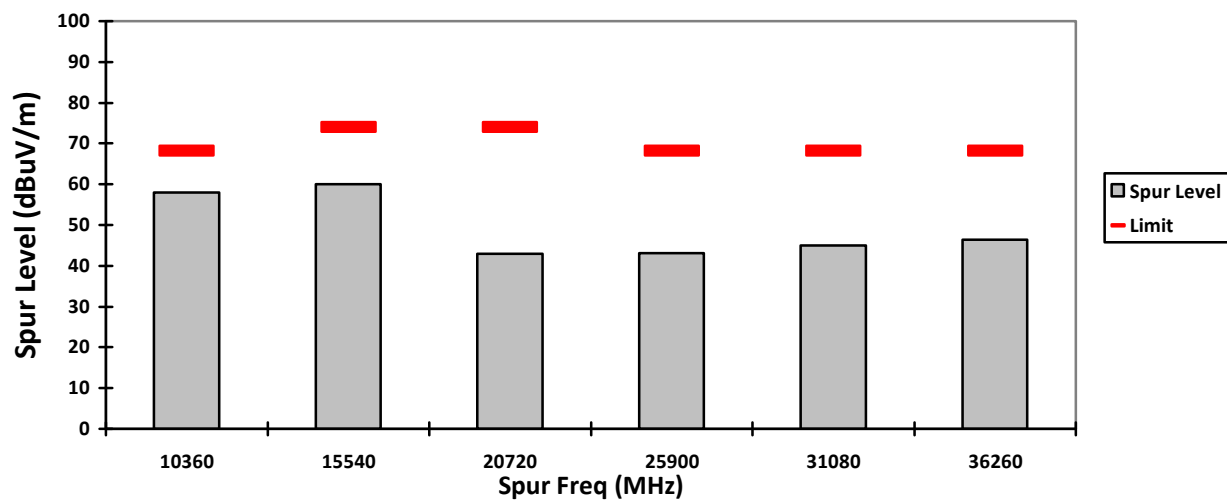
HORIZONTAL, QPK



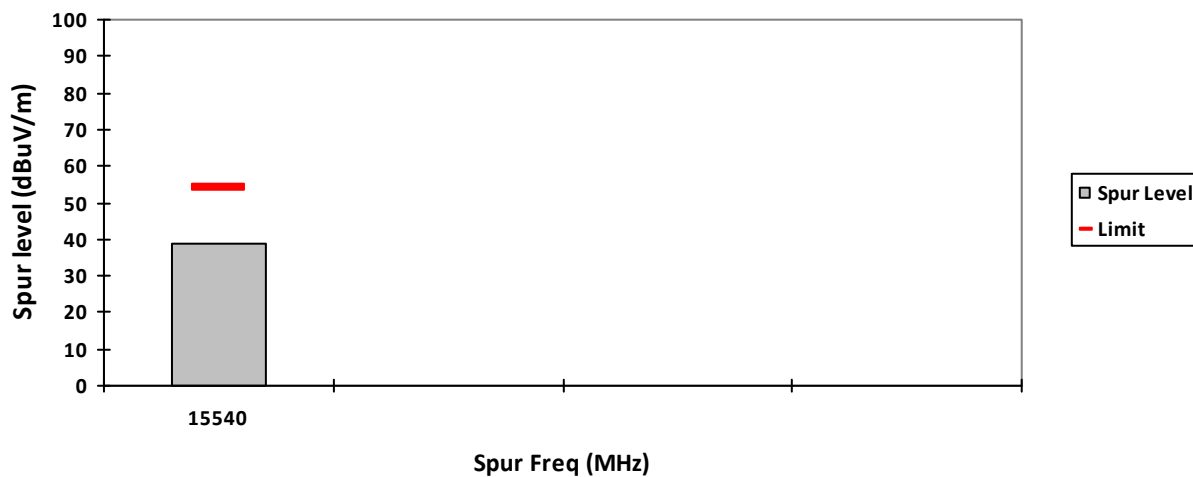
VERTICAL, PK



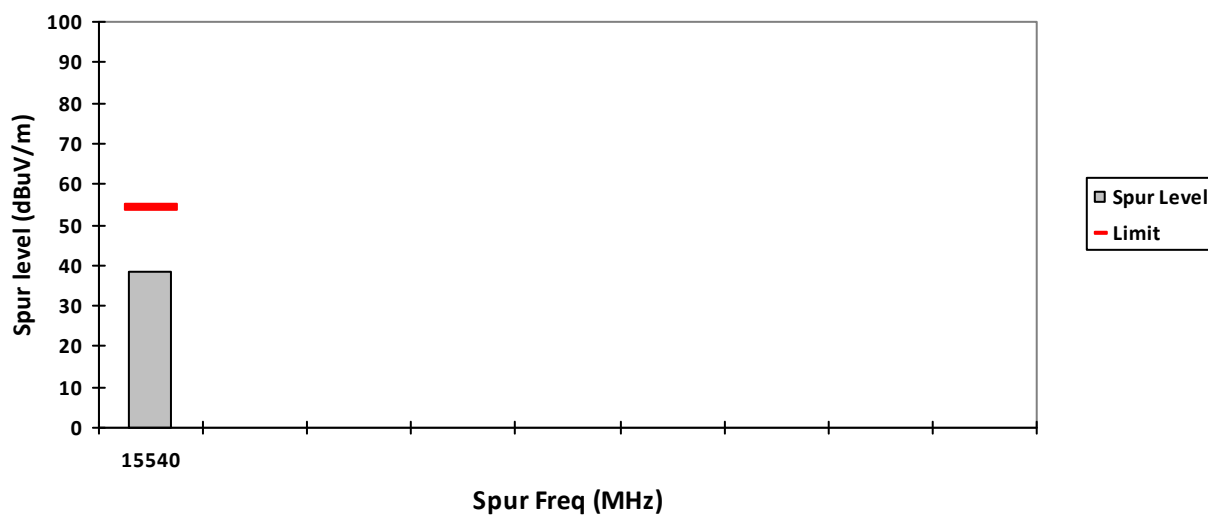
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Mid Test Frequency: 5220.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	57.1760**	-	-	68.2	-	-	11.024**	-	-
15660	-	59.9549**	38.34**	-	74.0	54.0	-	14.0451**	15.66**	-
20880	-	42.7692**	-	-	74.0	-	-	31.2308**	-	-
26100	-	43.3511**	-	-	68.2	-	-	24.8489**	-	-
31320	-	42.9252**	-	-	74.0	-	-	31.0748**	-	-
36540	-	47.8985**	-	-	74.0	-	-	26.1015**	-	-
Horizontal Radiated Emission Result										
10440	-	58.5048**	-	-	68.2	-	-	9.6952**	-	-
15660	-	58.2032**	38.37**	-	74.0	54.0	-	15.7968**	15.63**	-
20880	-	43.9089**	-	-	74.0	-	-	30.0911**	-	-
26100	-	42.9366**	-	-	68.2	-	-	25.2634**	-	-
31320	-	45.0205**	-	-	74.0	-	-	28.9795**	-	-
36540	-	47.2473**	-	-	74.0	-	-	26.7527**	-	-

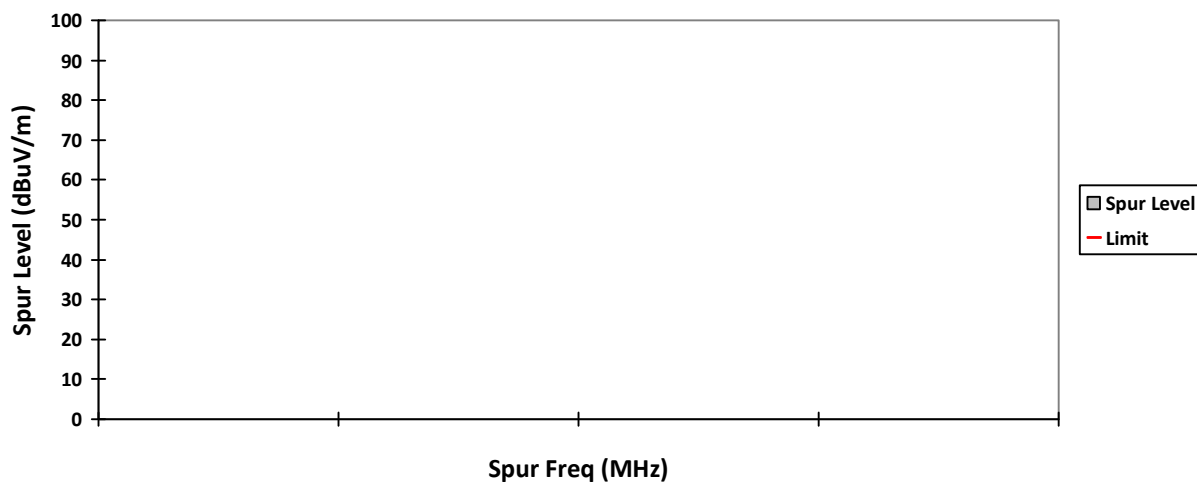
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

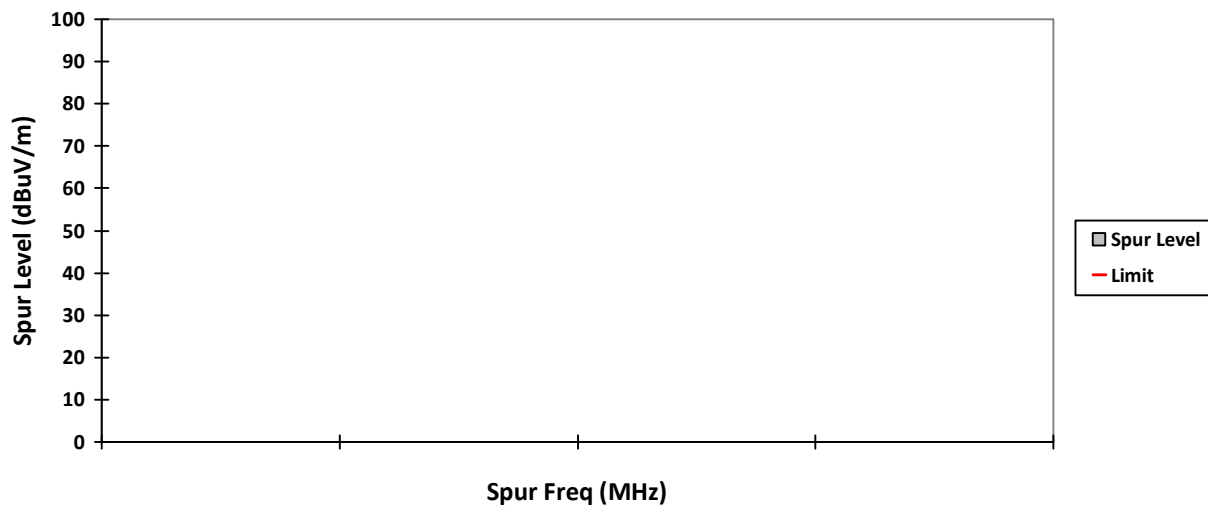
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.**

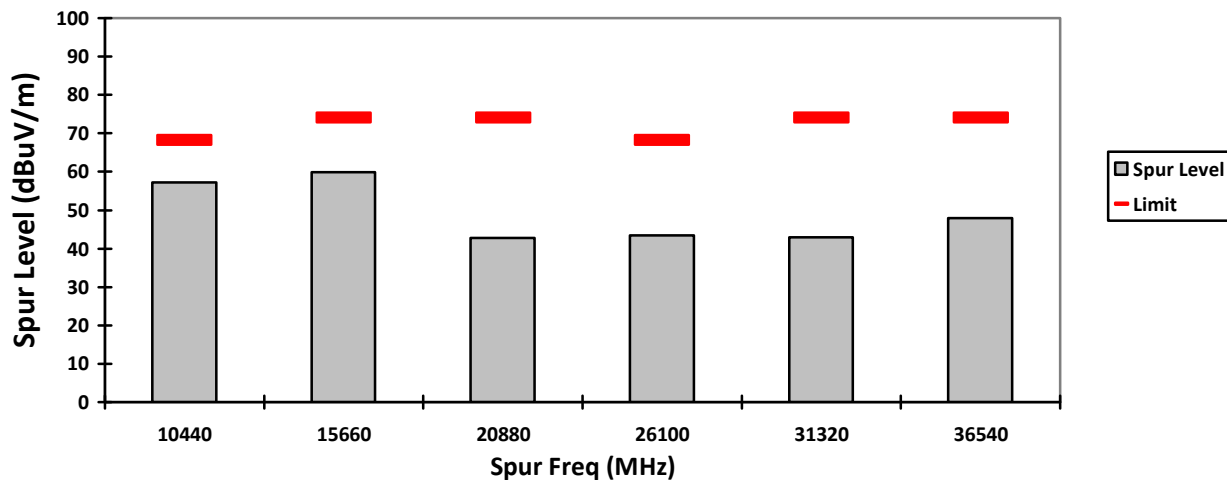
VERTICAL, QPK



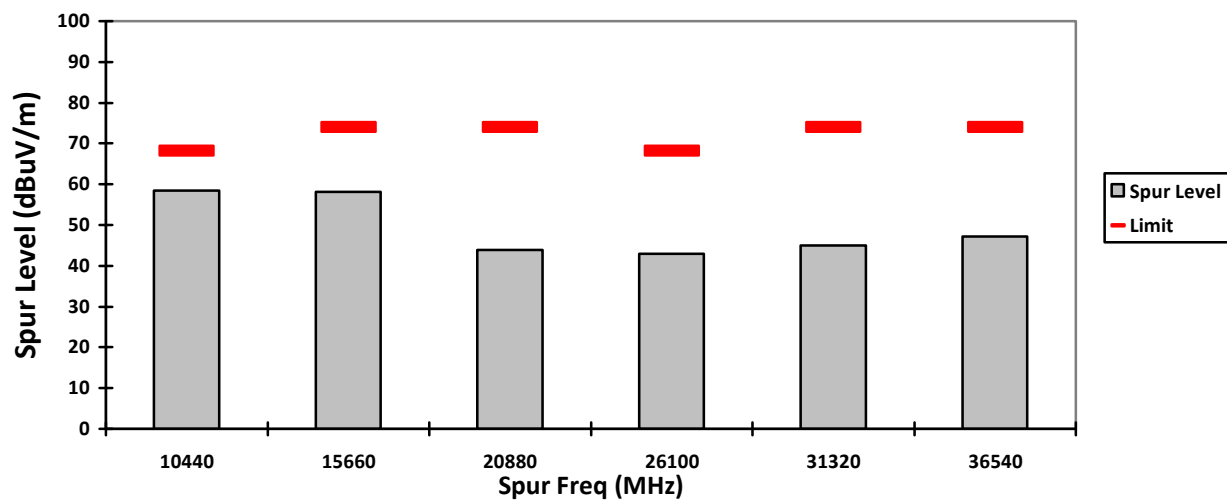
HORIZONTAL, QPK



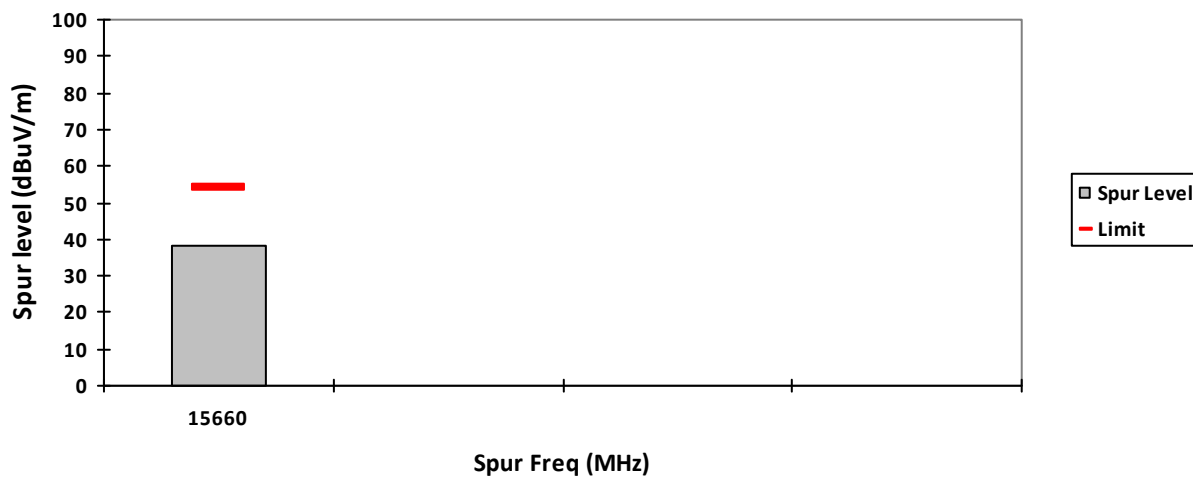
VERTICAL, PK



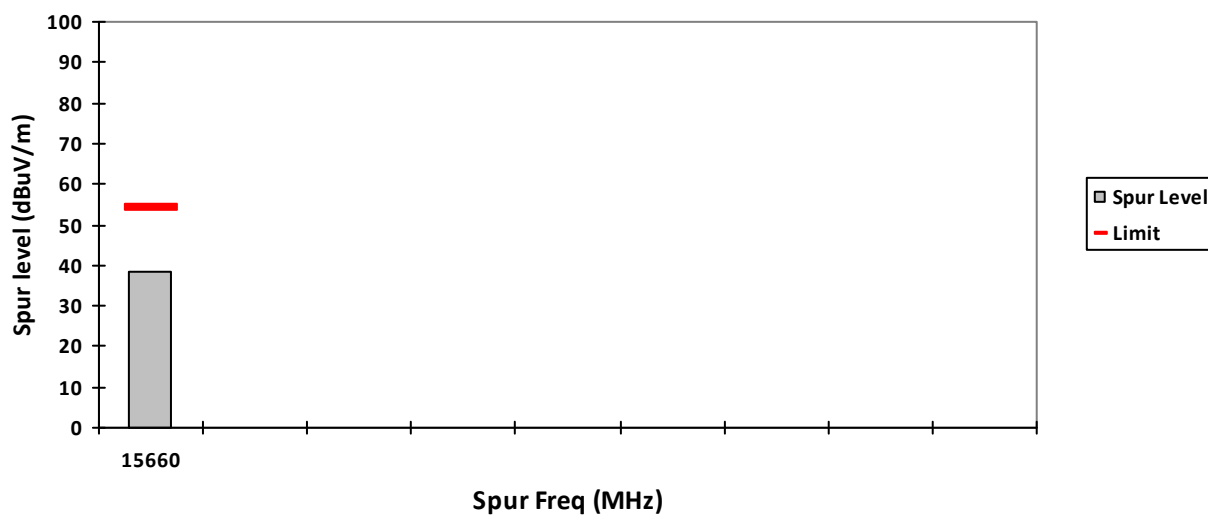
HORIZONTAL, PK



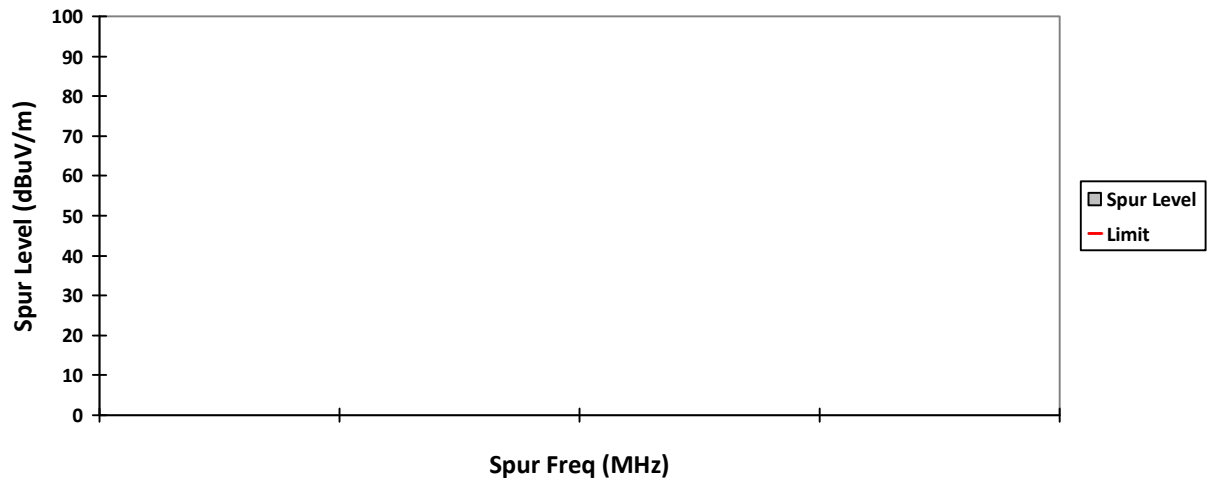
VERTICAL, AV



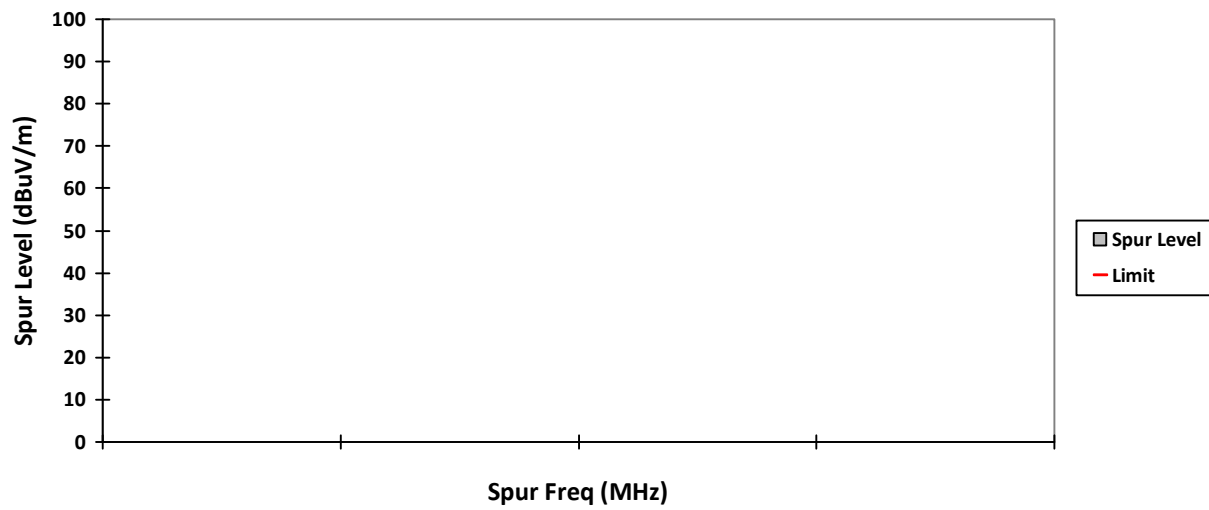
HORIZONTAL, AV



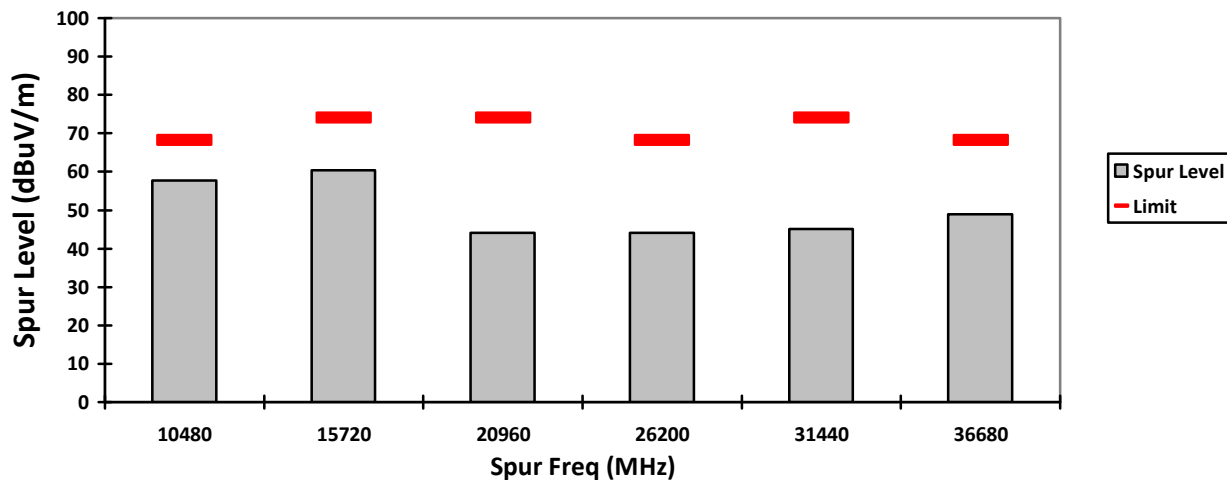
VERTICAL, QPK



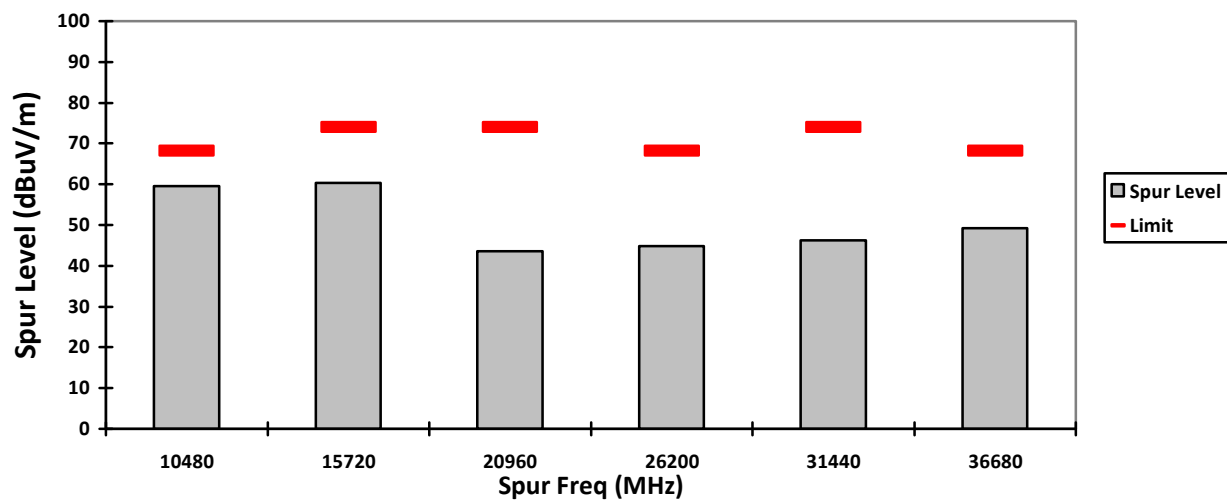
HORIZONTAL, QPK



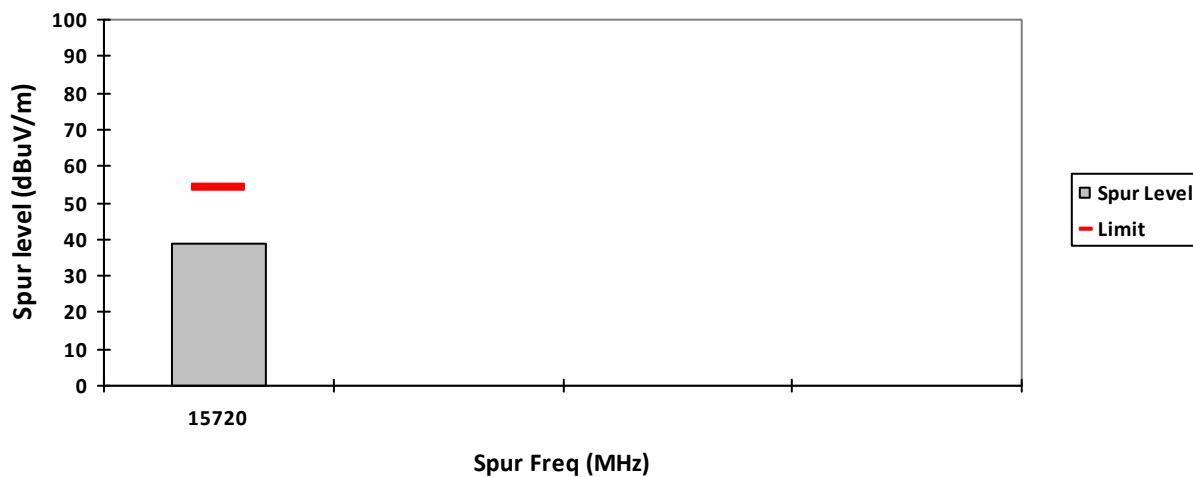
VERTICAL, PK



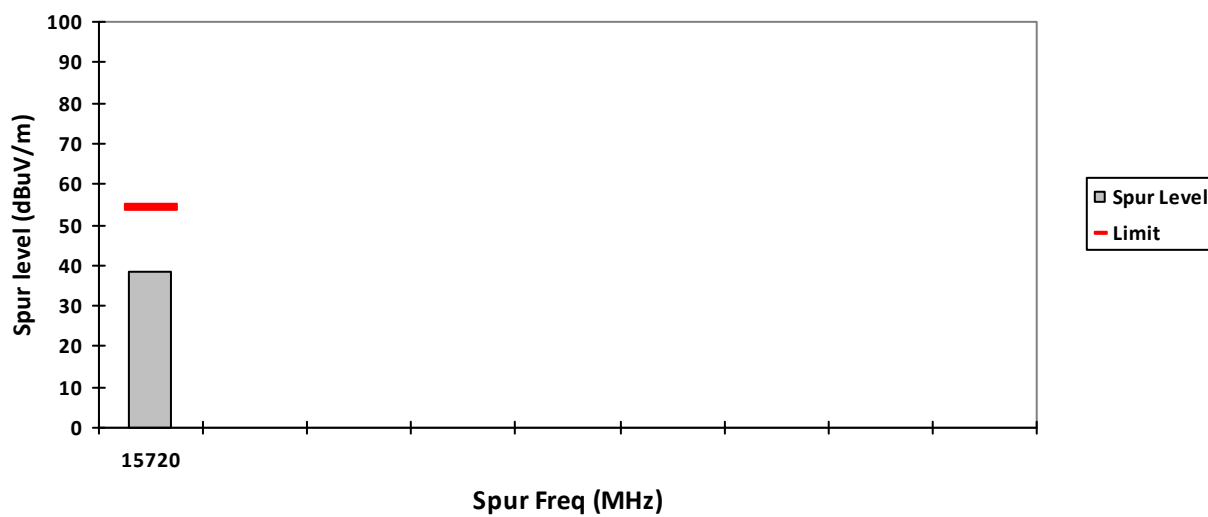
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Low Test Frequency: 5260.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	56.6990**	-	-	68.2	-	-	11.501**	-	-
15780	-	61.2873**	38.11**	-	74.0	54.0	-	12.7127**	15.89**	-
21040	-	41.5933**	-	-	74.0	-	-	32.4067**	-	-
26300	-	42.4360**	-	-	68.2	-	-	25.764**	-	-
31560	-	45.3983**	-	-	74.0	-	-	28.6017**	-	-
36820	-	47.8101**	-	-	68.2	-	-	20.3899**	-	-
Horizontal Radiated Emission Result										
10520	-	56.9773**	-	-	68.2	-	-	11.2227**	-	-
15780	-	59.7251**	38.19**	-	74.0	54.0	-	14.2749**	15.81**	-
21040	-	43.9221**	-	-	74.0	-	-	30.0779**	-	-
26300	-	42.0176**	-	-	68.2	-	-	26.1824**	-	-
31560	-	45.7309**	-	-	74.0	-	-	28.2691**	-	-
36820	-	48.8959**	-	-	68.2	-	-	19.3041**	-	-

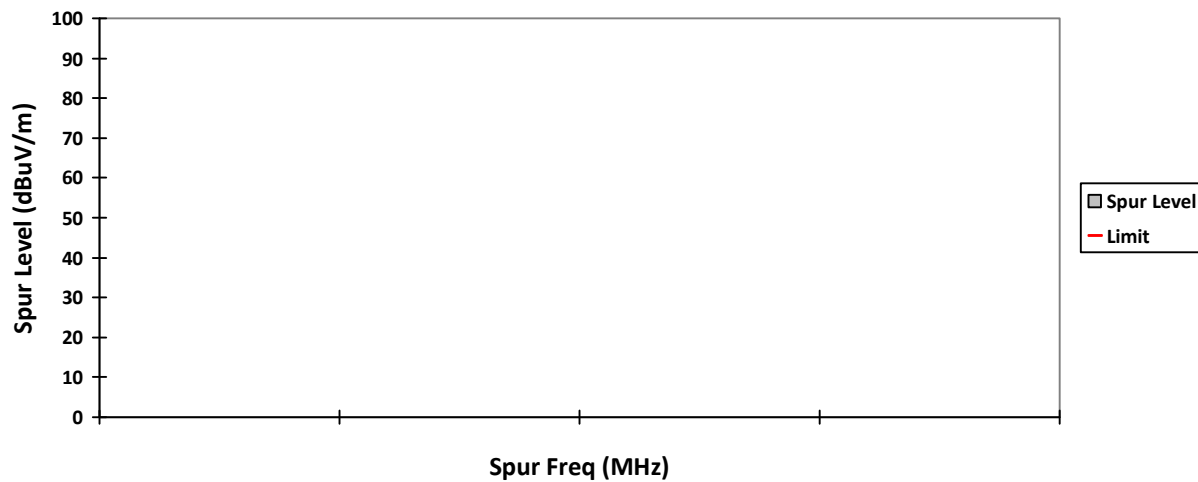
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

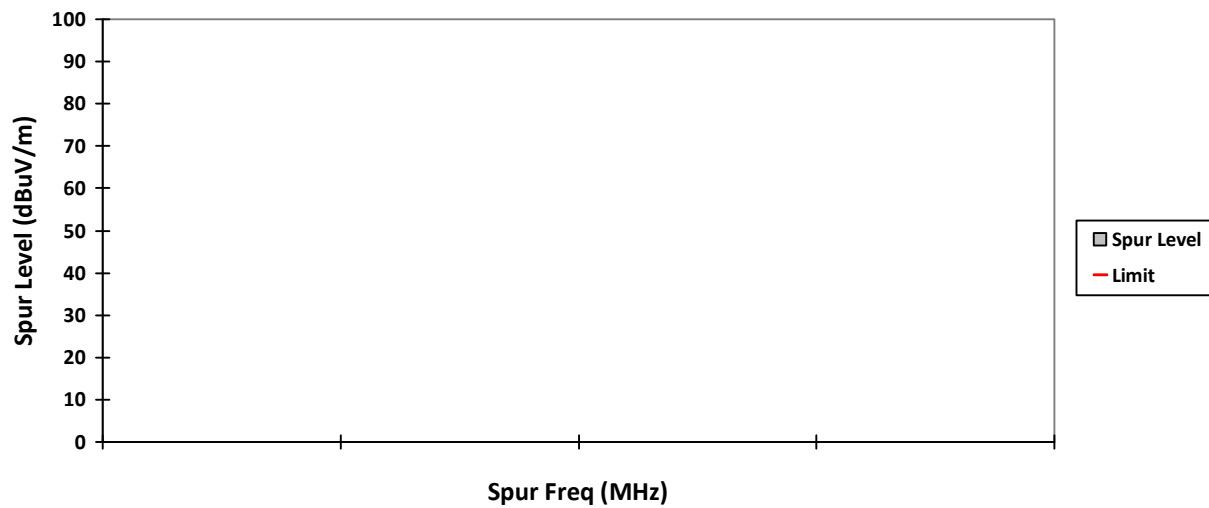
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

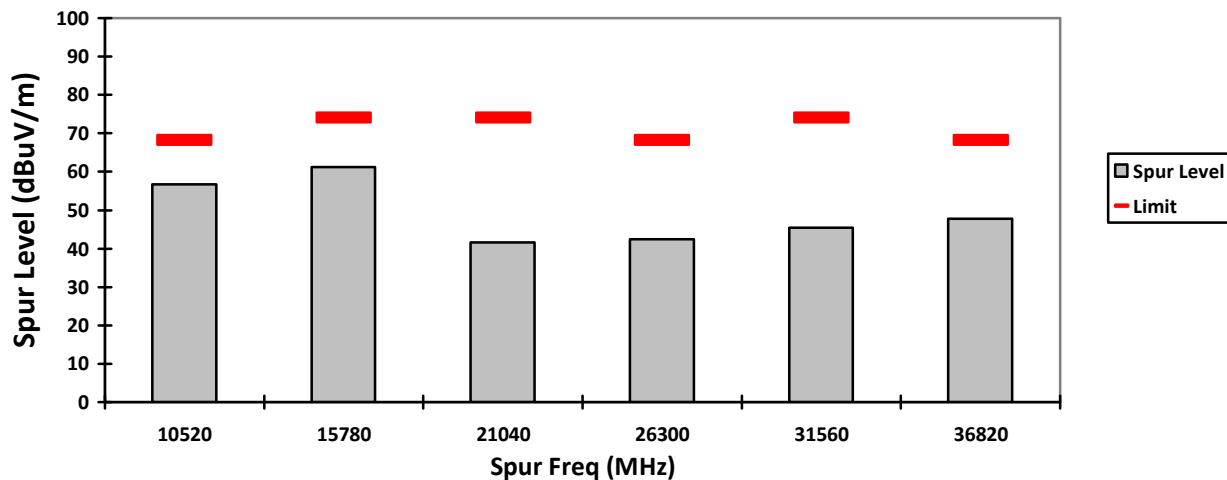
VERTICAL, QPK



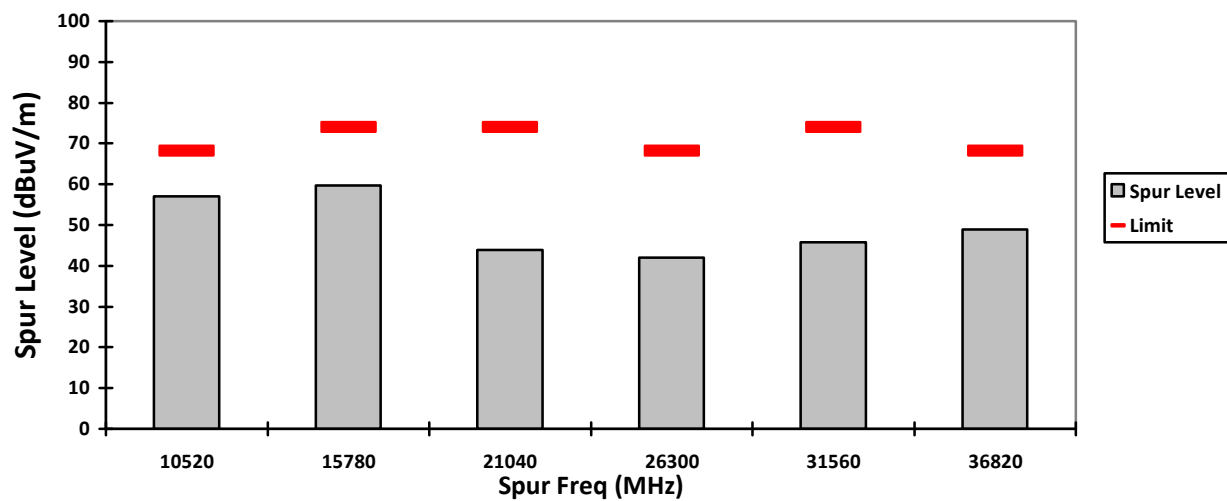
HORIZONTAL, QPK



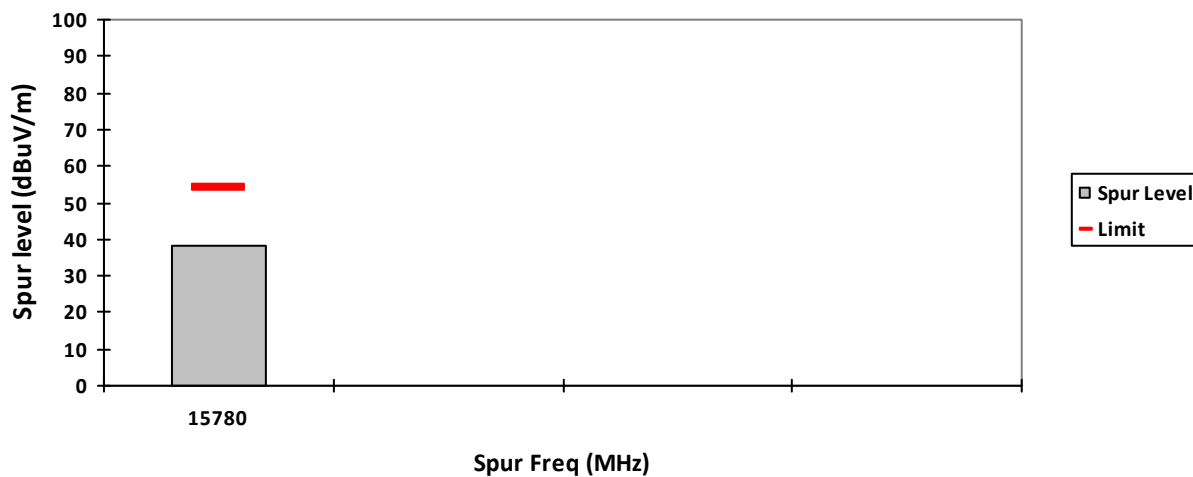
VERTICAL, PK



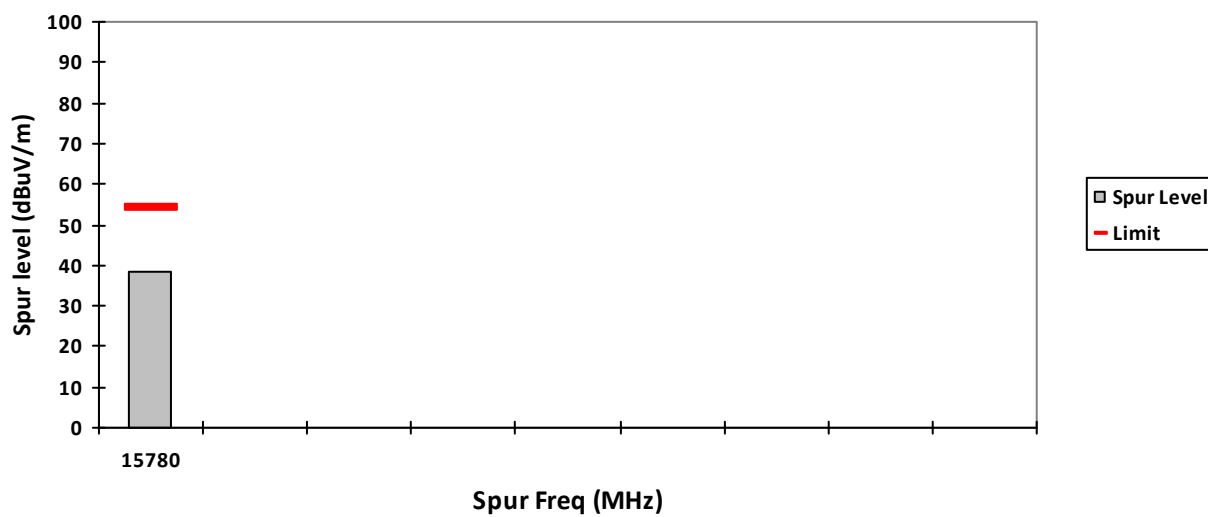
HORIZONTAL, PK



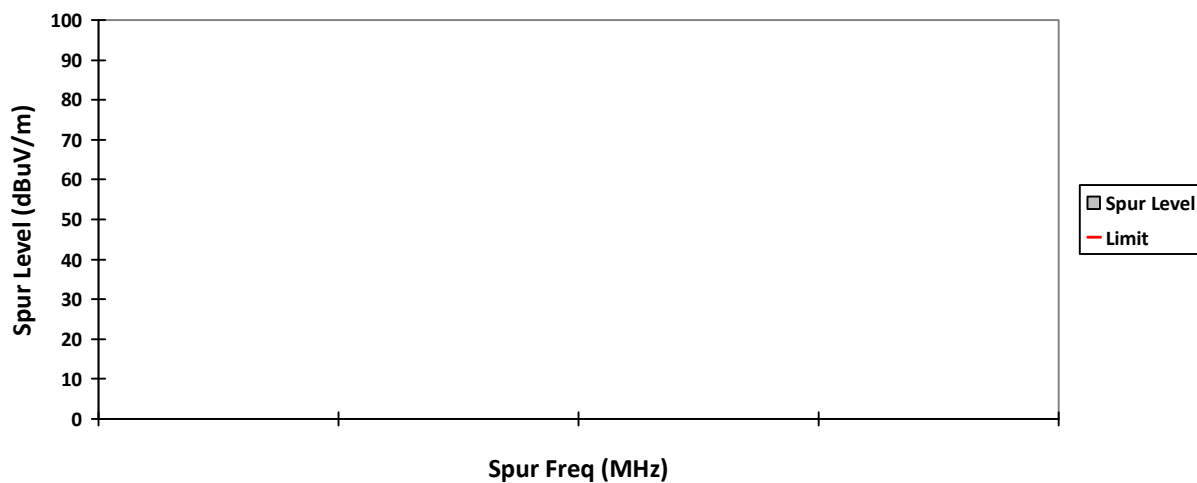
VERTICAL, AV



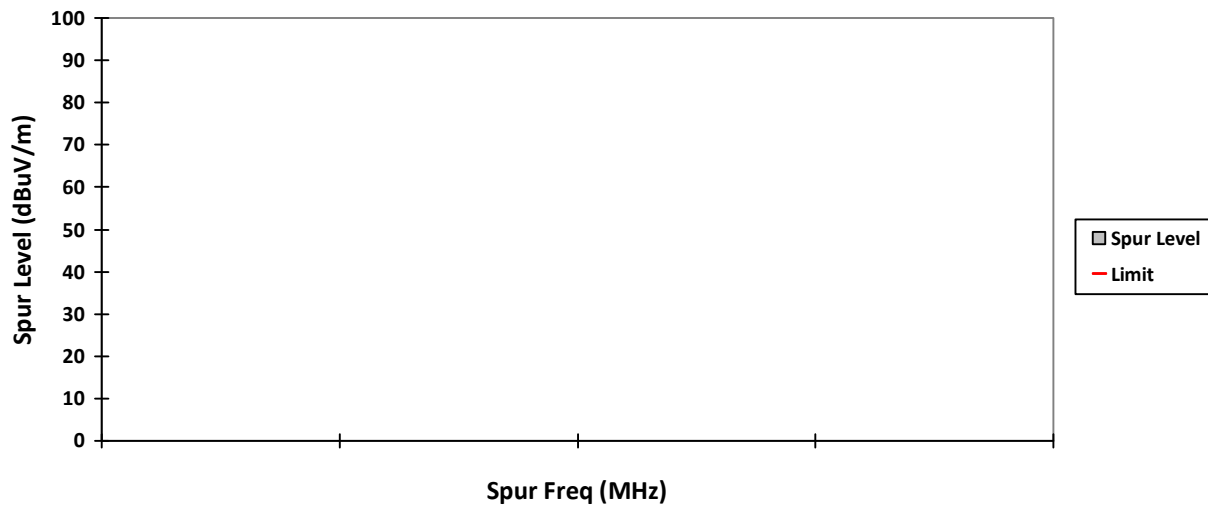
HORIZONTAL, AV



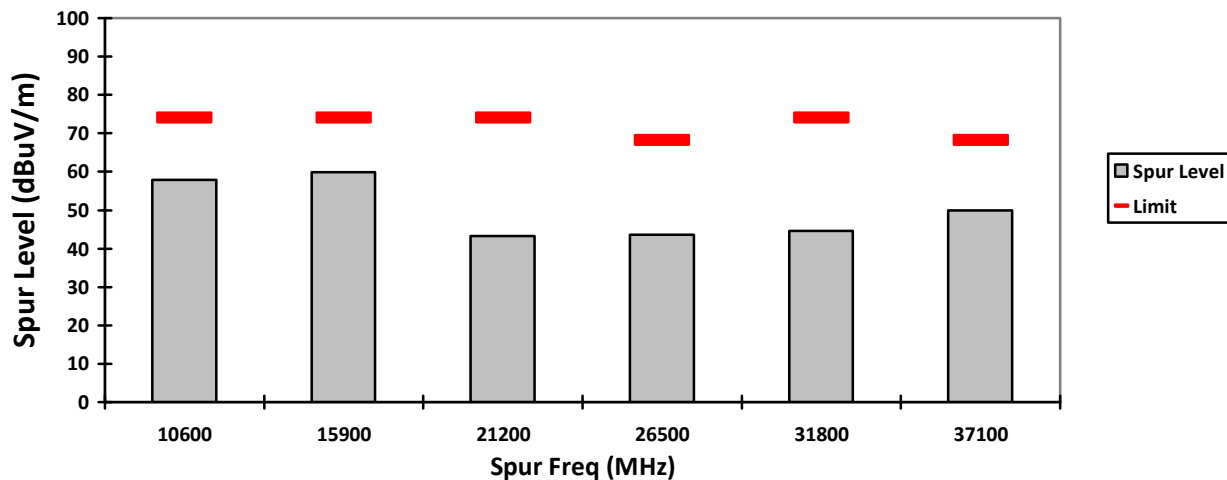
VERTICAL, QPK



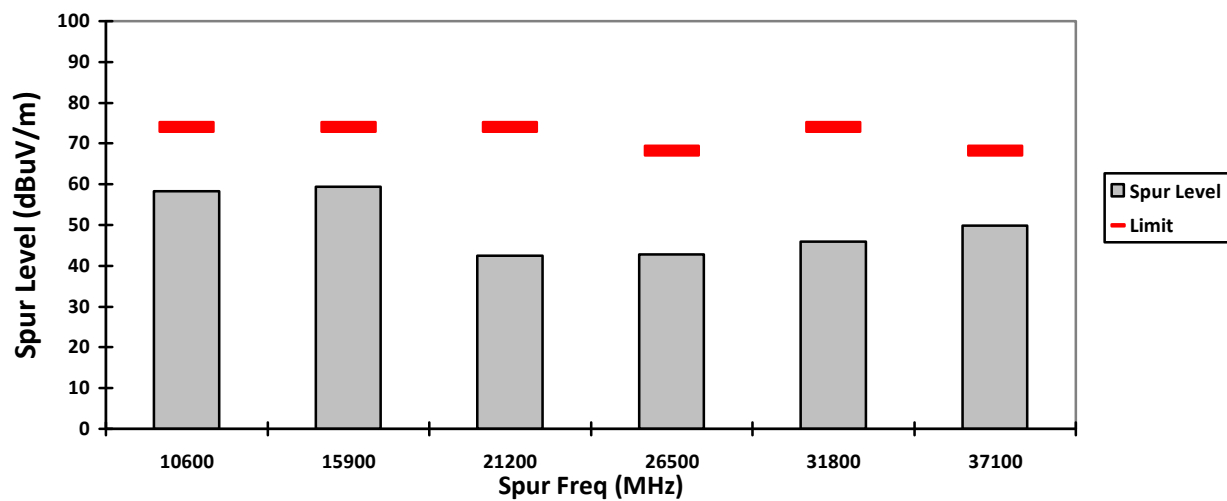
HORIZONTAL, QPK



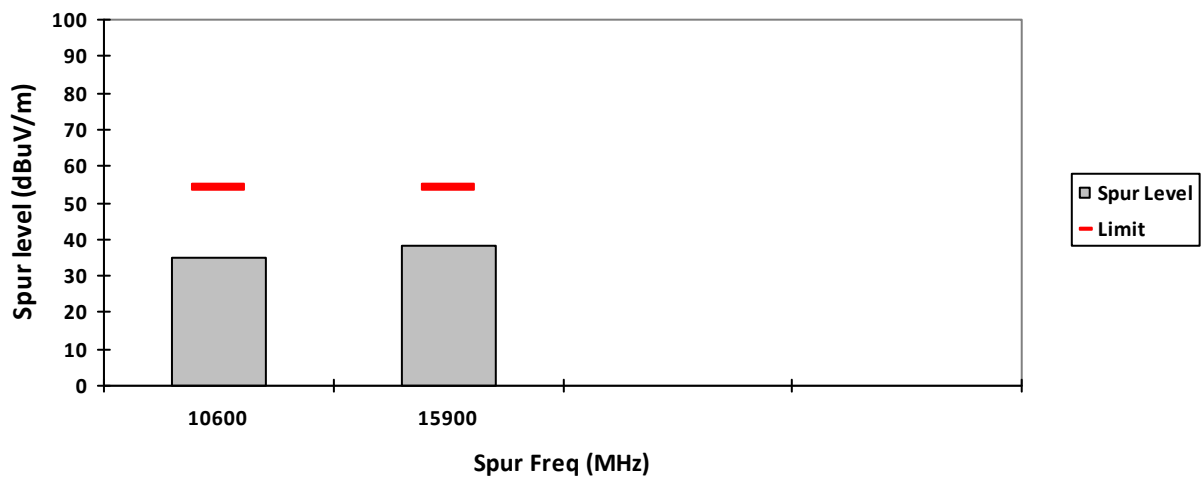
VERTICAL, PK



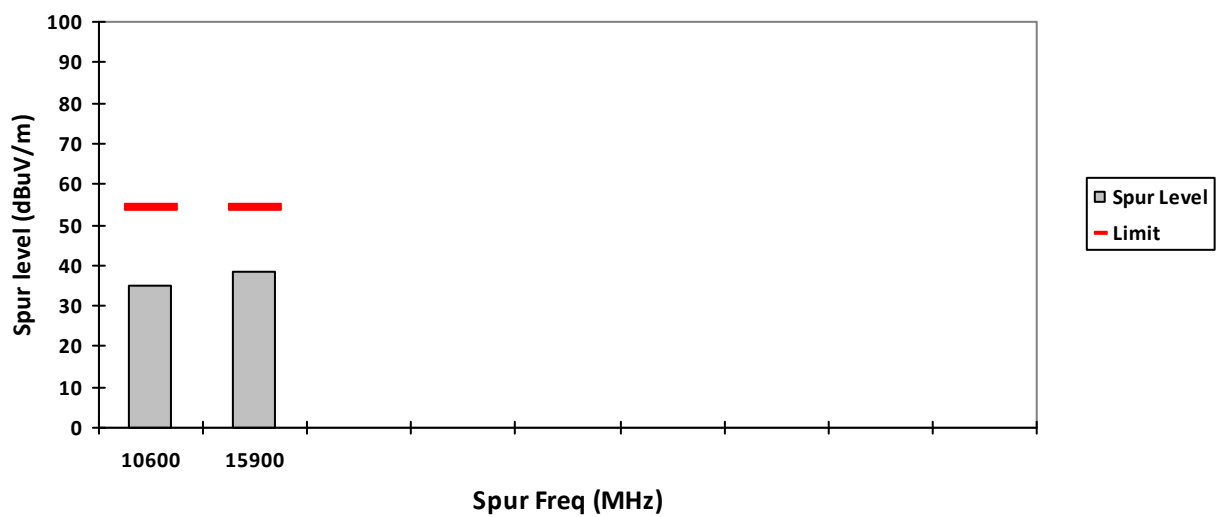
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: High Test Frequency: 5320.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	57.3579**	35.14**	-	74.0	54.0	-	16.6421**	18.86**	-
15960	-	60.6986**	38.29**	-	74.0	54.0	-	13.3014**	15.71**	-
21280	-	42.6696**	-	-	74.0	-	-	31.3304**	-	-
26600	-	41.8431**	-	-	68.2	-	-	26.3569**	-	-
31920	-	46.2725**	-	-	68.2	-	-	21.9275**	-	-
37240	-	47.7759**	-	-	68.2	-	-	20.4241**	-	-
Horizontal Radiated Emission Result										
10640	-	58.9849**	35.18**	-	74.0	54.0	-	15.0151**	18.82**	-
15960	-	59.8124**	38.30**	-	74.0	54.0	-	14.1876**	15.70**	-
21280	-	43.4731**	-	-	74.0	-	-	30.5269**	-	-
26600	-	42.9325**	-	-	68.2	-	-	25.2675**	-	-
31920	-	46.2174**	-	-	68.2	-	-	21.9826**	-	-
37240	-	47.6929**	-	-	68.2	-	-	20.5071**	-	-

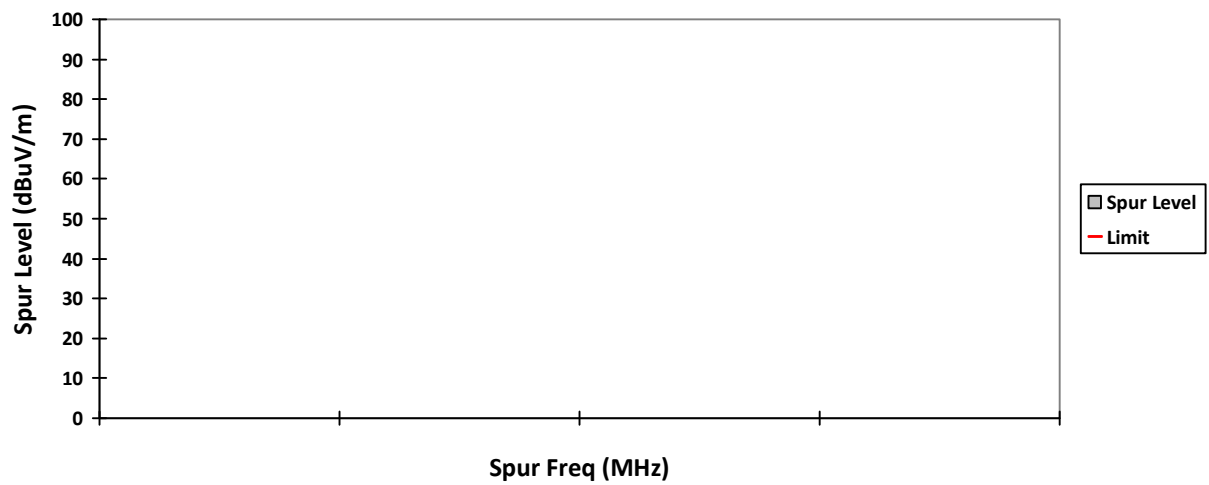
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

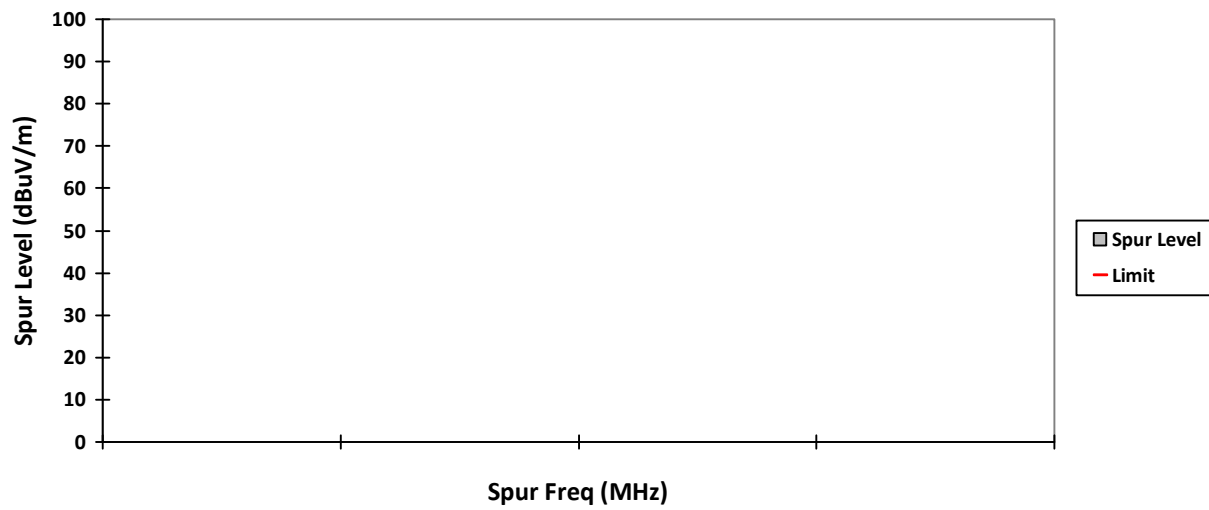
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

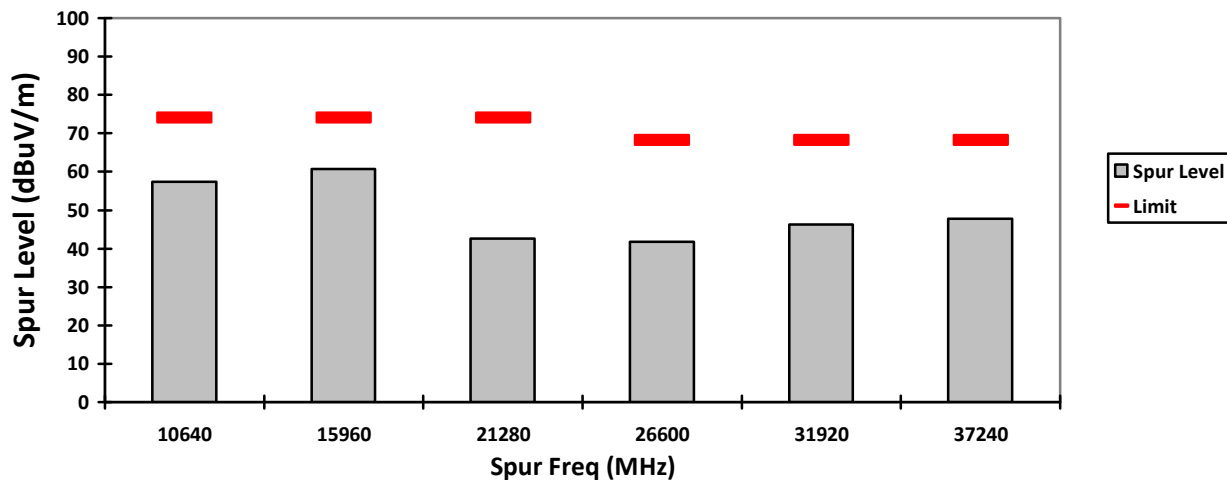
VERTICAL, QPK



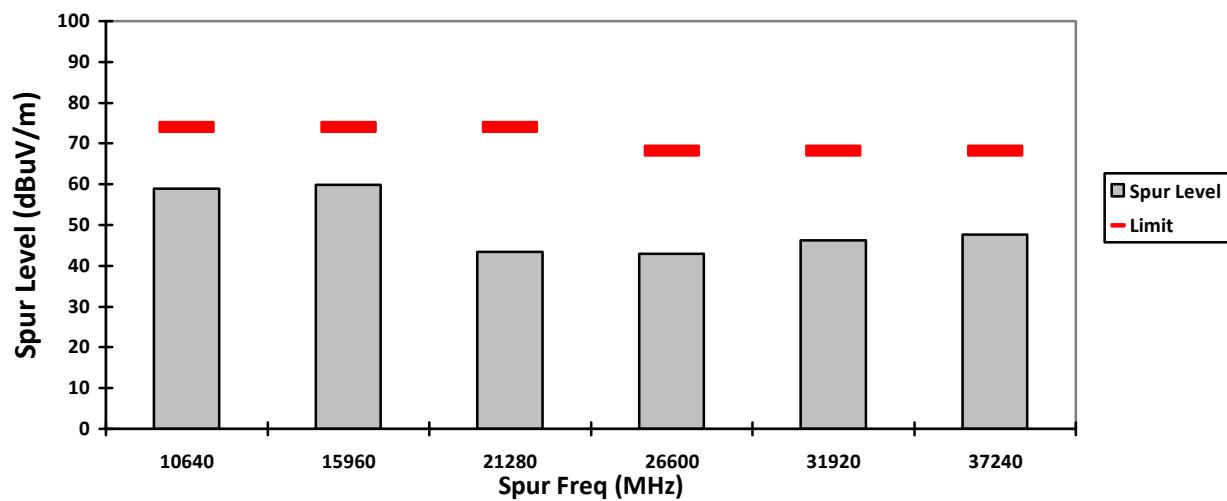
HORIZONTAL, QPK



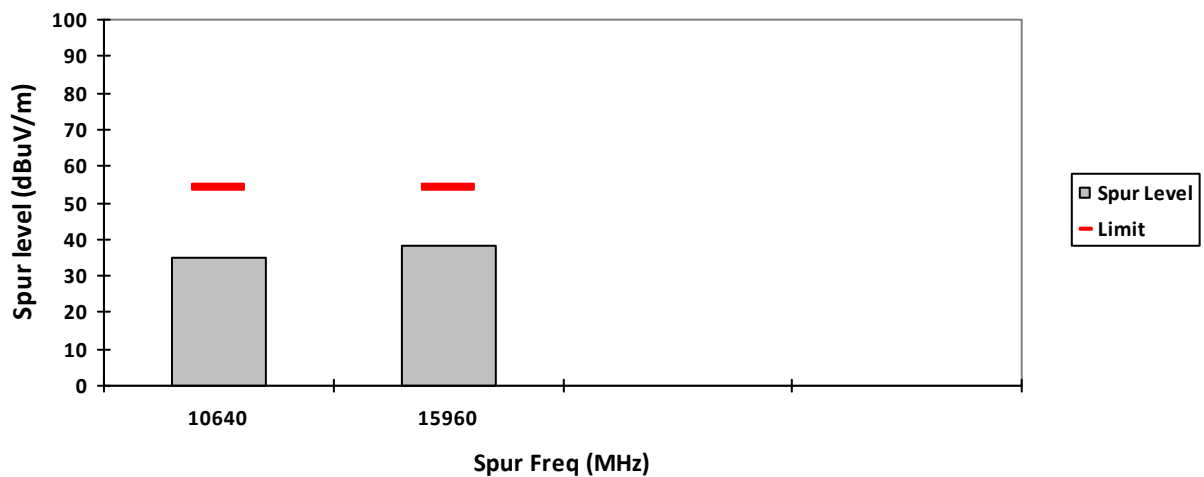
VERTICAL, PK



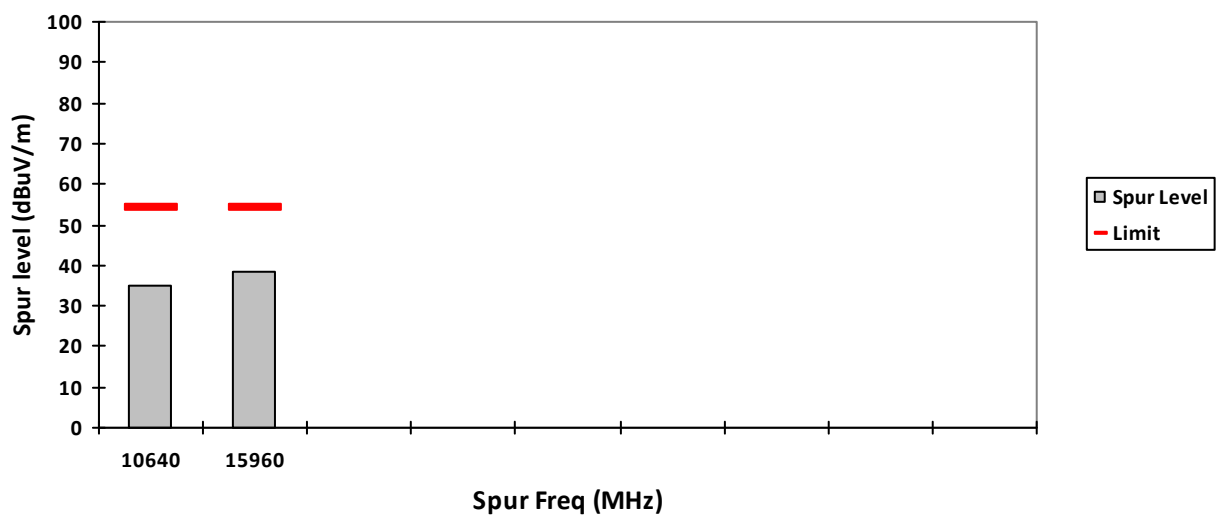
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Low Test Frequency: 5500.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	58.0580**	36.97**	-	74.0	54.0	-	15.942**	17.03**	-
16500	-	62.5272**	-	-	68.2	-	-	5.6728**	-	-
22000	-	44.0316**	-	-	74.0	-	-	29.9684**	-	-
27500	-	43.6102**	-	-	68.2	-	-	24.5898**	-	-
33000	-	46.3582**	-	-	68.2	-	-	21.8418**	-	-
38500	-	50.1338**	-	-	68.2	-	-	18.0662**	-	-
Horizontal Radiated Emission Result										
11000	-	56.9171**	37.01**	-	74.0	54.0	-	17.0829**	16.99**	-
16500	-	62.4880**	-	-	68.2	-	-	5.712**	-	-
22000	-	44.7179**	-	-	74.0	-	-	29.2821**	-	-
27500	-	43.2442**	-	-	68.2	-	-	24.9558**	-	-
33000	-	46.1849**	-	-	68.2	-	-	22.0151**	-	-
38500	-	50.8994**	-	-	68.2	-	-	17.3006**	-	-

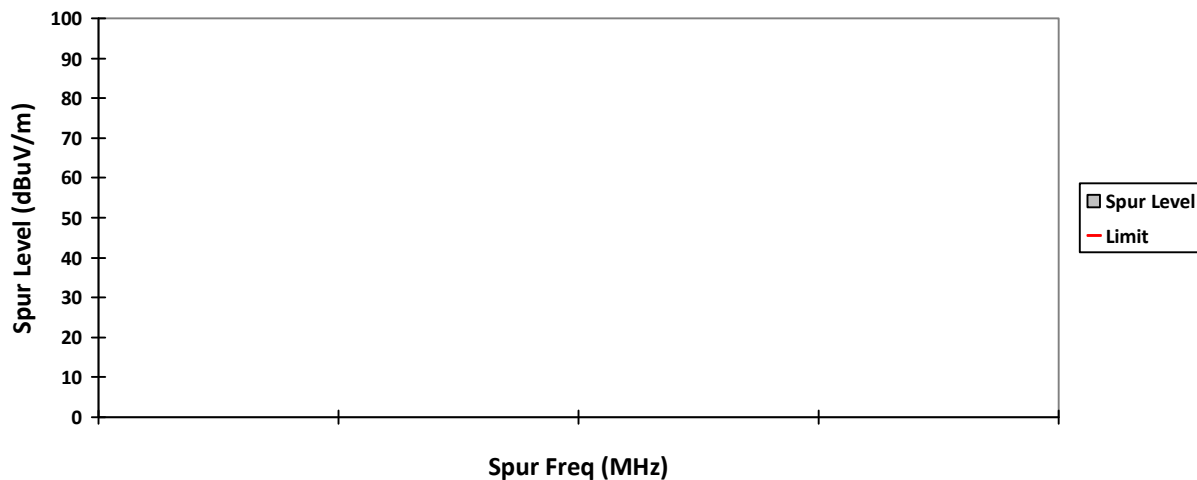
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
Test Performed by: Qawiman&Amaluddin
System MU: 4.03dB

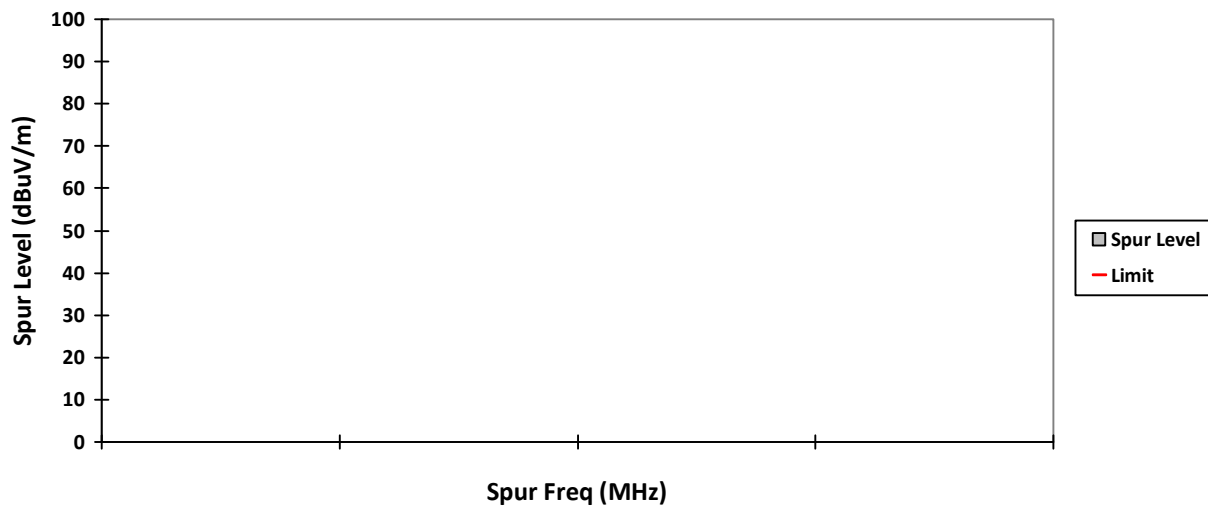
Humidity (%): 69.7
Test Date: Tue, 7 Sept, 2021

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.

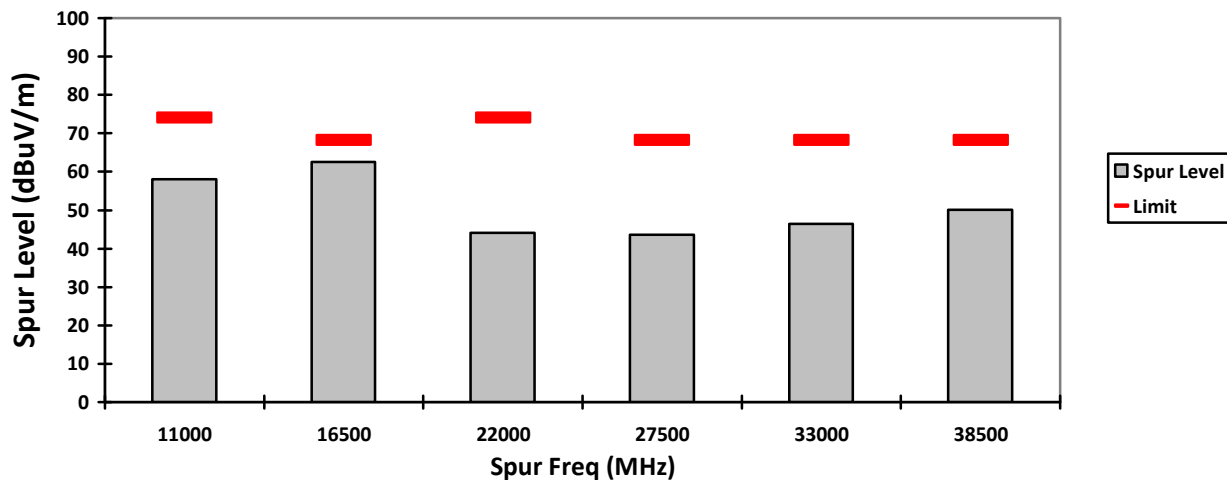
VERTICAL, QPK



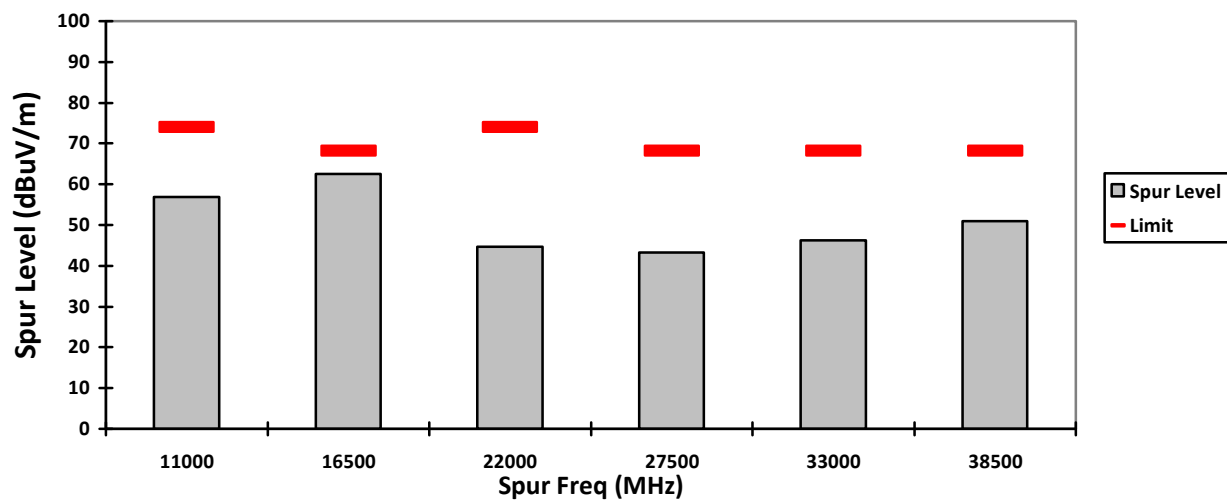
HORIZONTAL, QPK



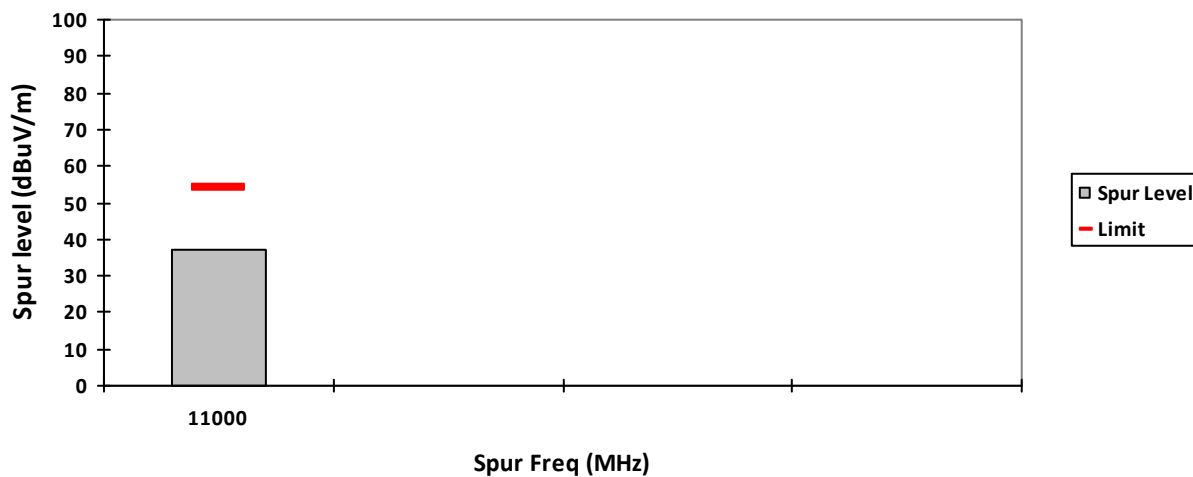
VERTICAL, PK



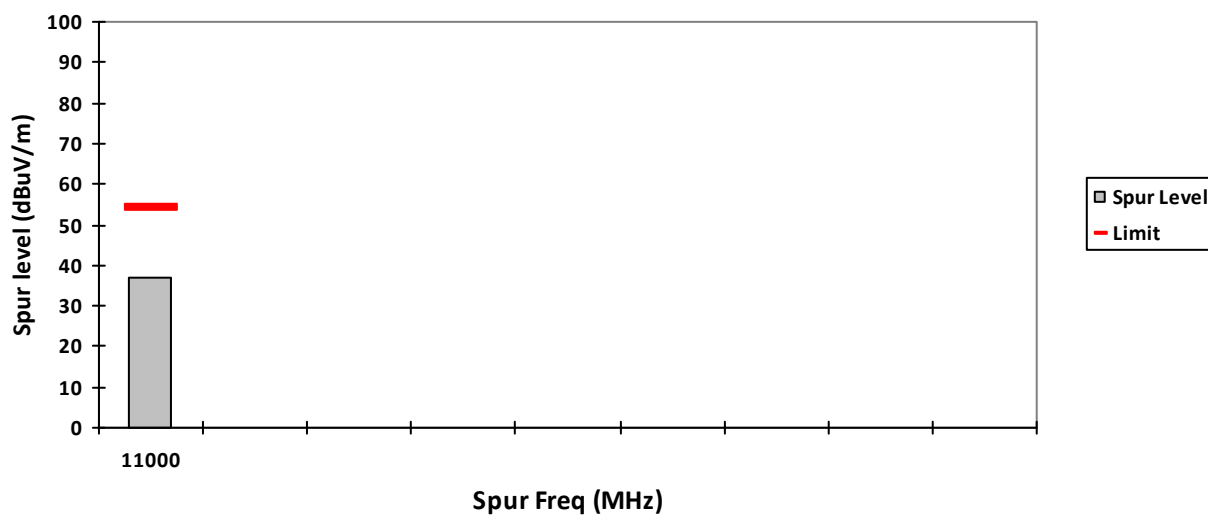
HORIZONTAL, PK



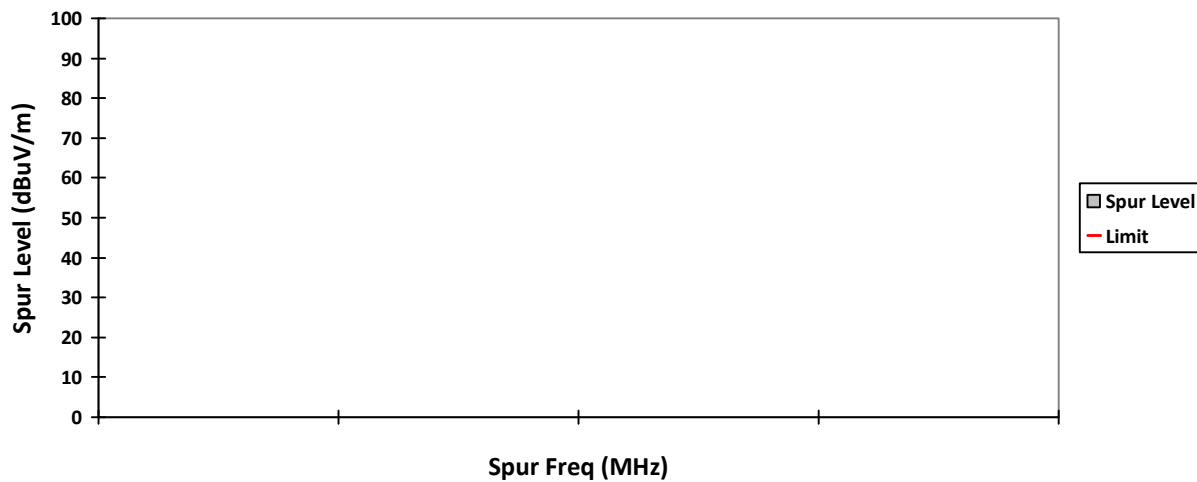
VERTICAL, AV



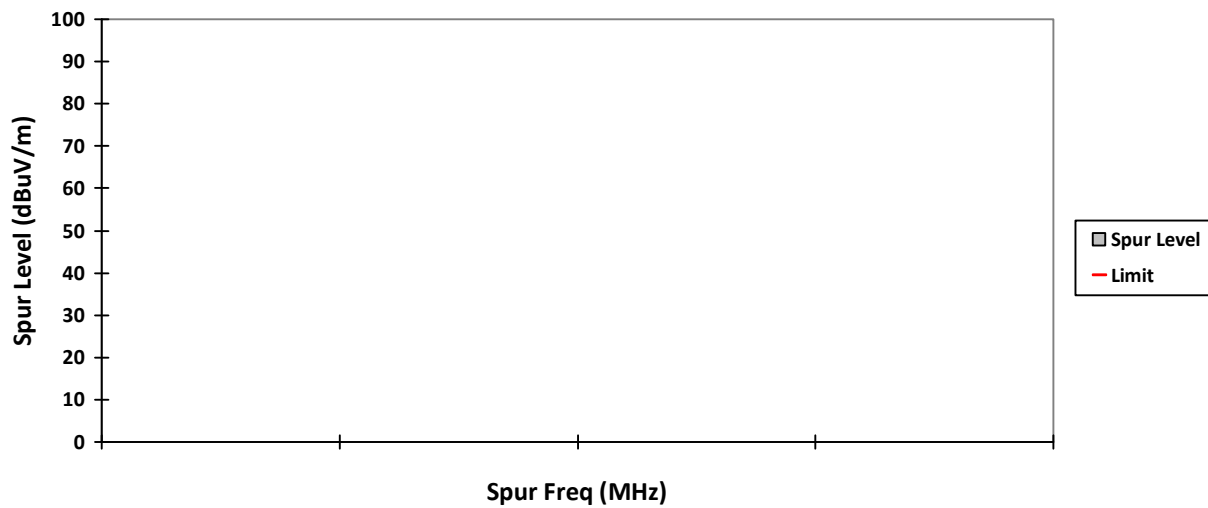
HORIZONTAL, AV



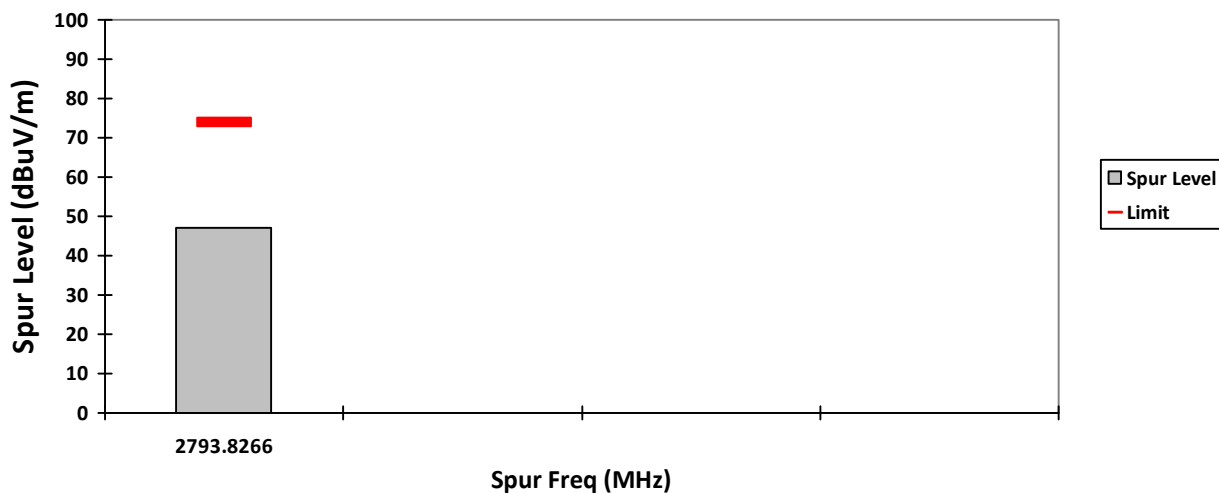
VERTICAL, QPK



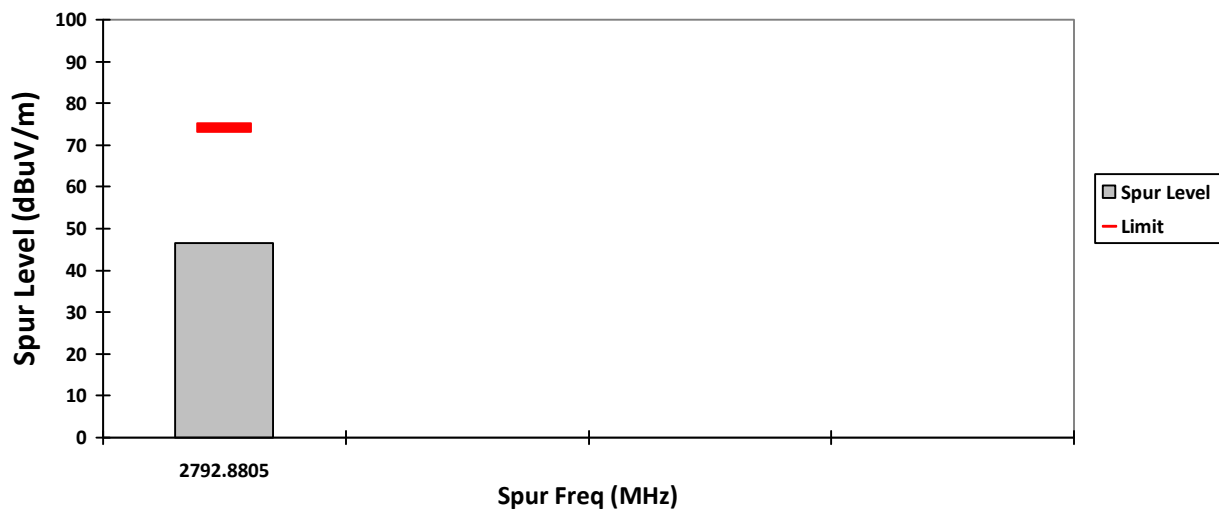
HORIZONTAL, QPK



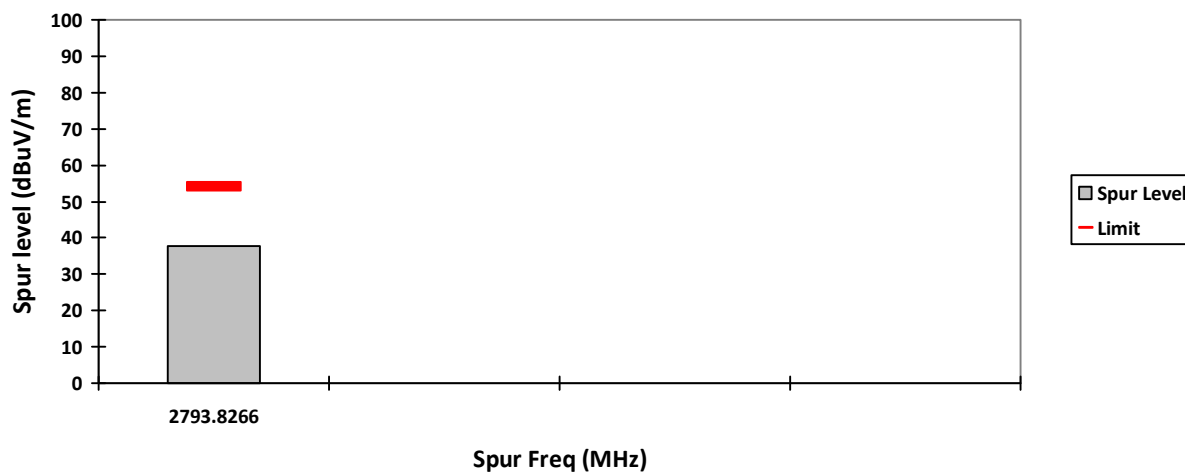
VERTICAL, PK



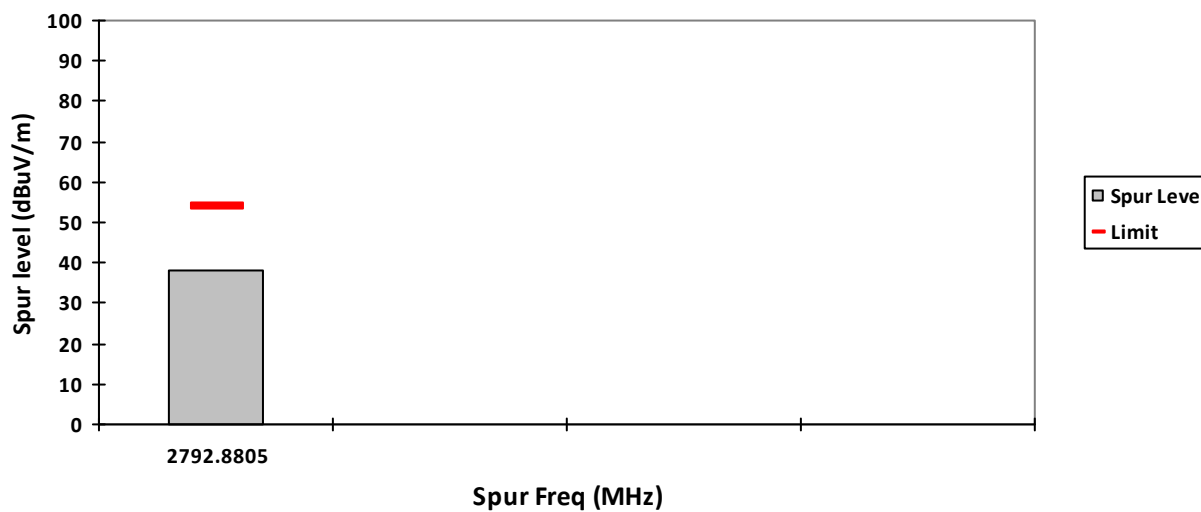
HORIZONTAL, PK



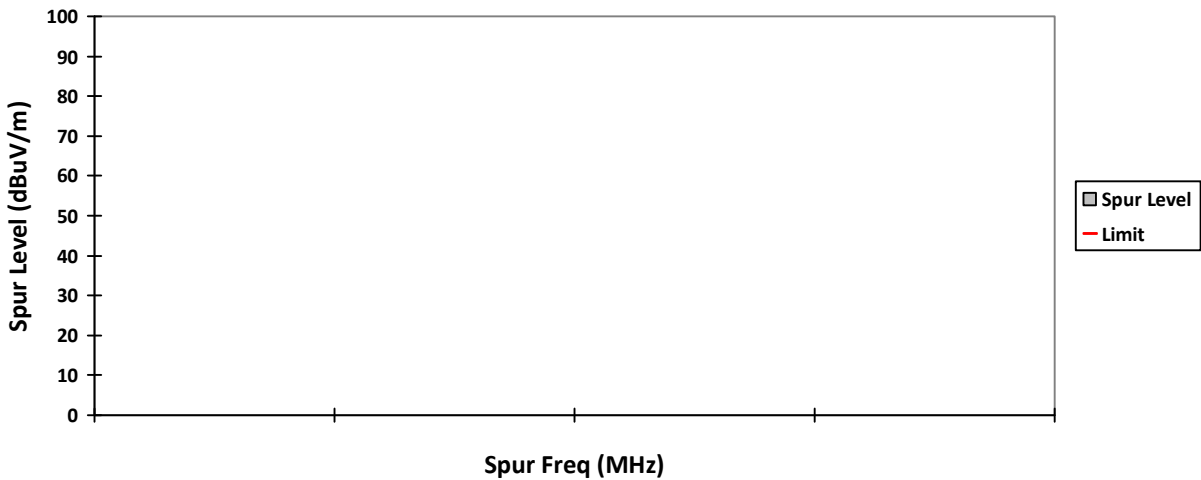
VERTICAL, AV



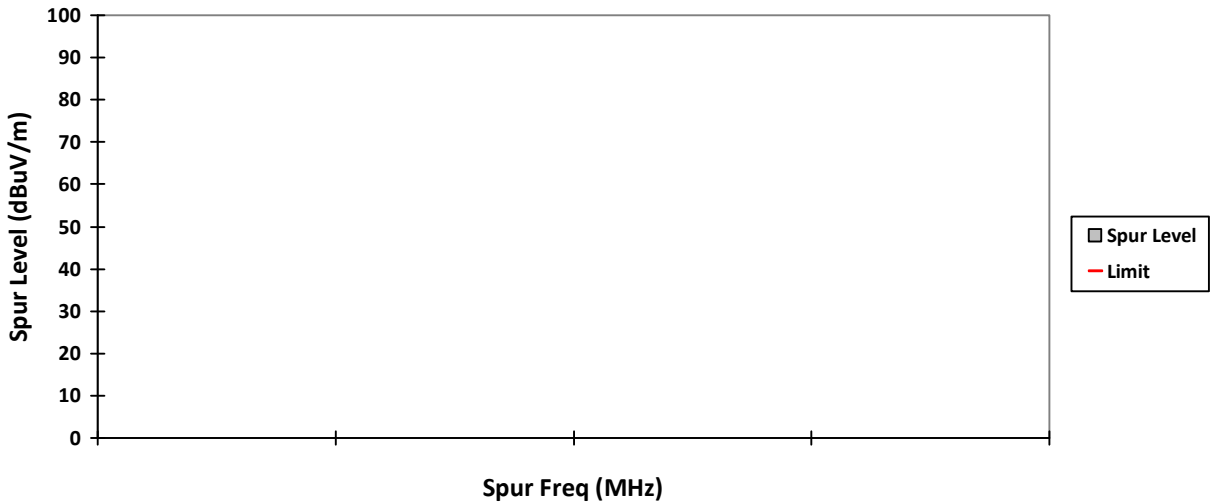
HORIZONTAL, AV



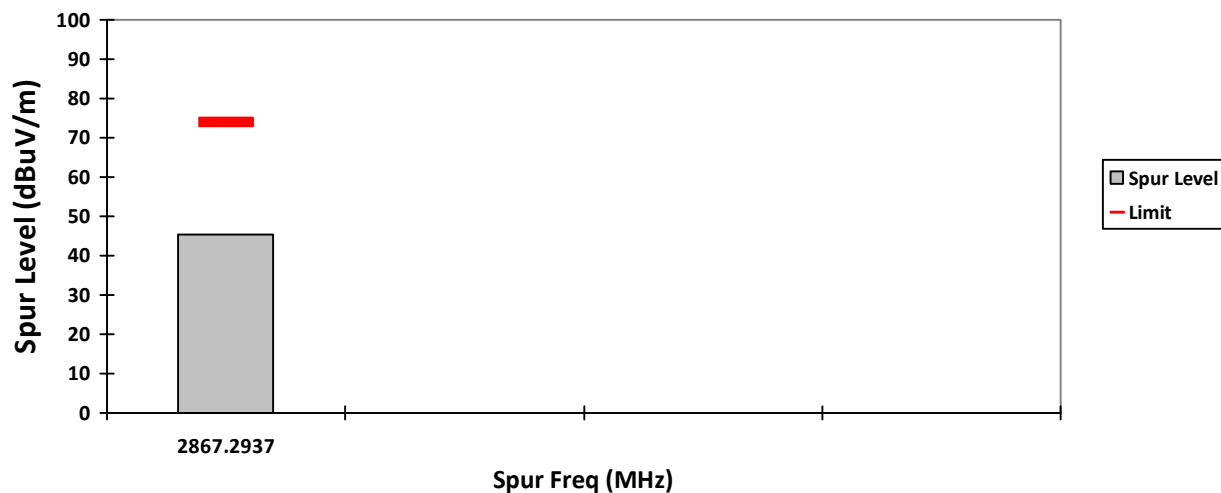
VERTICAL, QPK



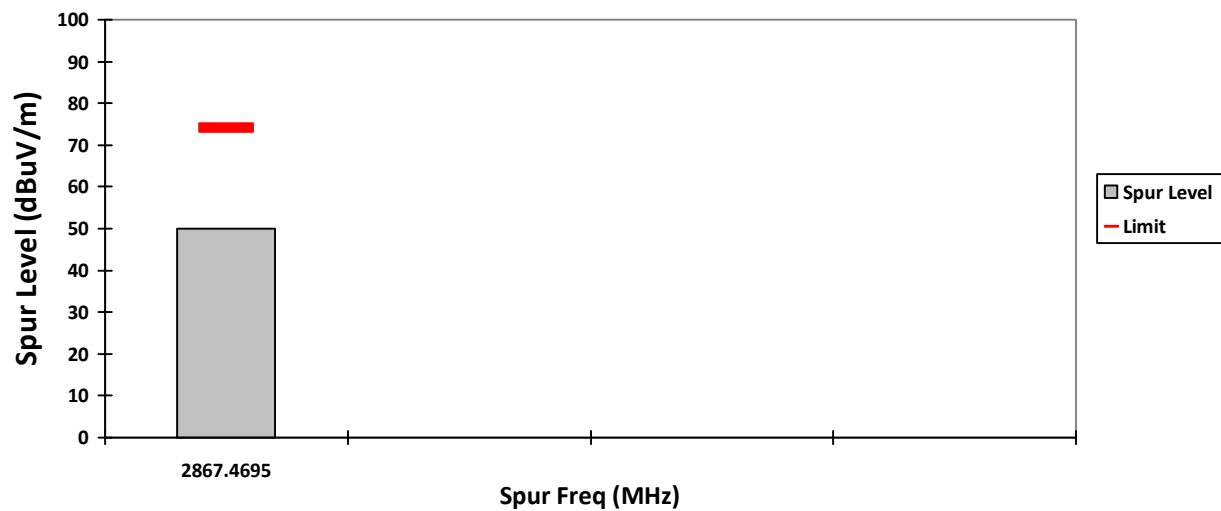
HORIZONTAL, QPK



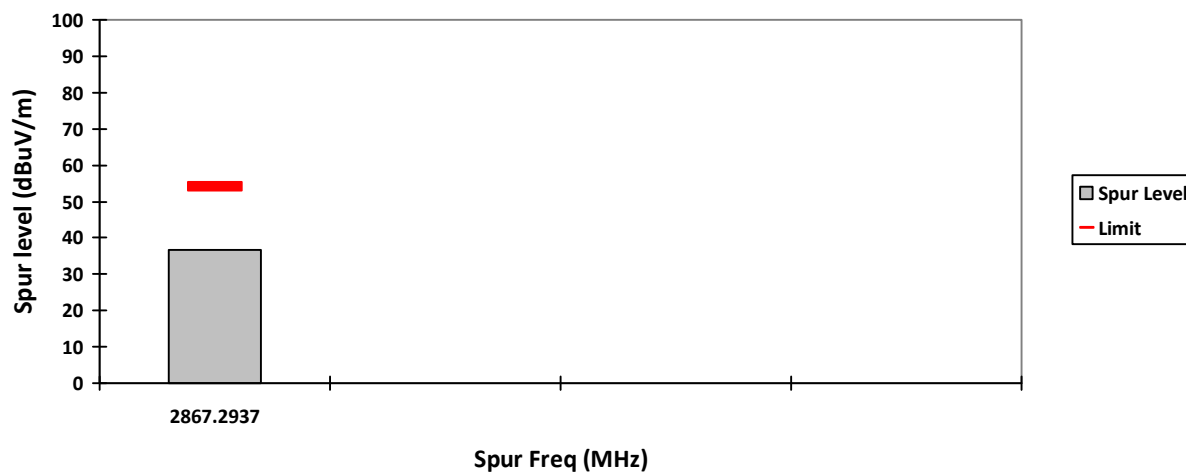
VERTICAL, PK



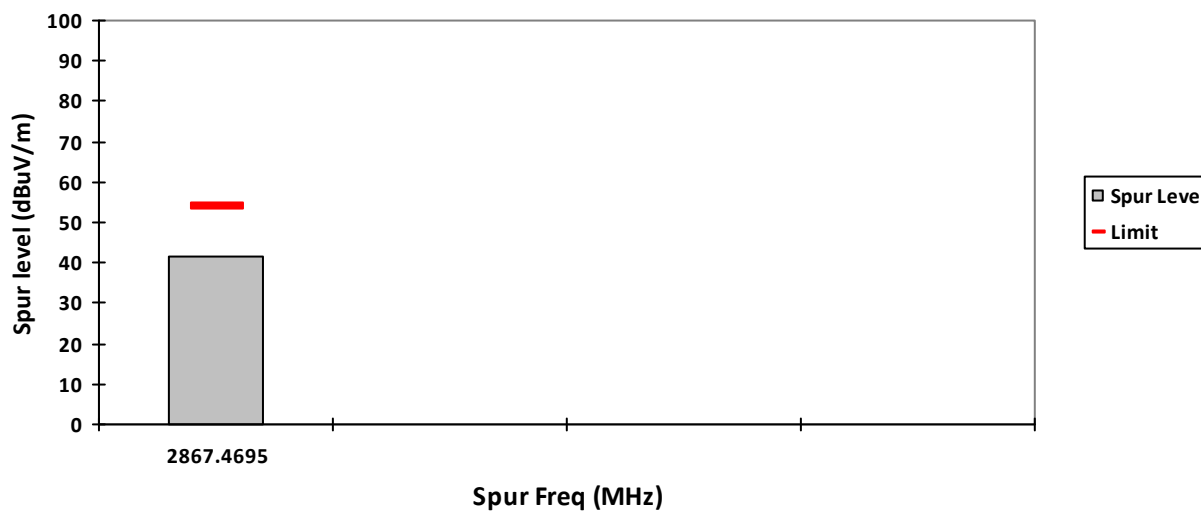
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06JDN9RA1AN S/N: 865TXP0473 EMC SR ID#: 22640-EMC-00113
Battery: PMNN4810A Accessory: PMAD4147A
Test Channel: Low Test Frequency: 5745.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: X-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	-	58.9789**	37.41**	-	74.0	54.0**	-	15.0211**	16.59**	-
17235	-	63.3659**	-	-	68.2	-	-	4.8341**	-	-
22980	-	43.9200**	-	-	74.0	-	-	30.08**	-	-
28725	-	43.3604**	-	-	68.2	-	-	24.8396**	-	-
34470	-	44.6853**	-	-	68.2	-	-	23.5147**	-	-
Horizontal Radiated Emission Result										
11490	-	59.3691**	37.46**	-	74.0	54.0	-	14.6309**	16.54**	-
17235	-	64.9438**	-	-	68.2	-	-	3.2562**	-	-
22980	-	43.4490**	-	-	74.0	-	-	30.551**	-	-
28725	-	44.1068**	-	-	68.2	-	-	24.0932**	-	-
34470	-	45.3449**	-	-	68.2	-	-	22.8551**	-	-

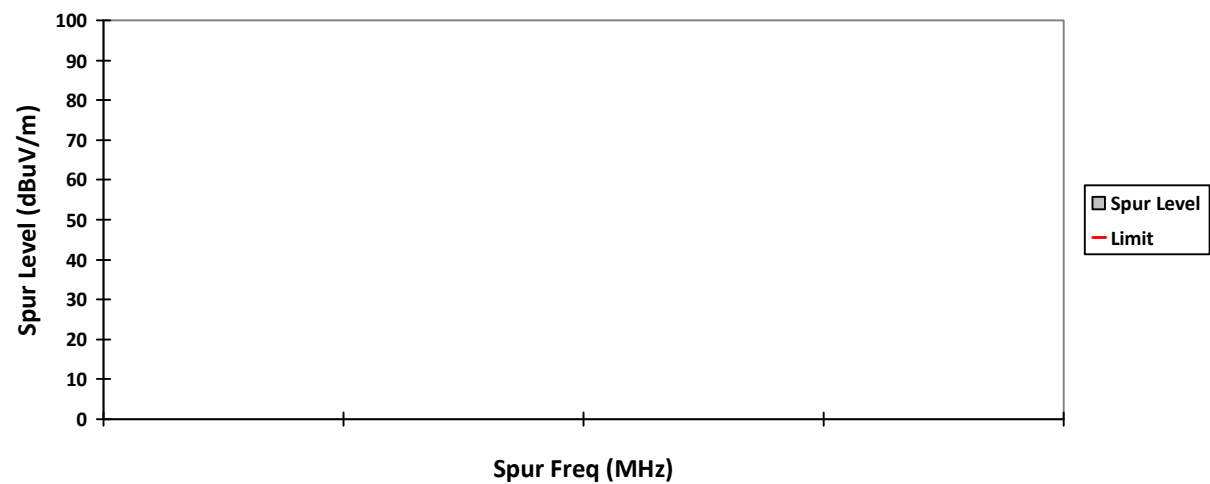
Remarks: Pass Result	Marginal Result	Fail Result
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Temperature (degC): 23.8
 Test Performed by: Qawiman&Amaluddin
 System MU: 4.03dB

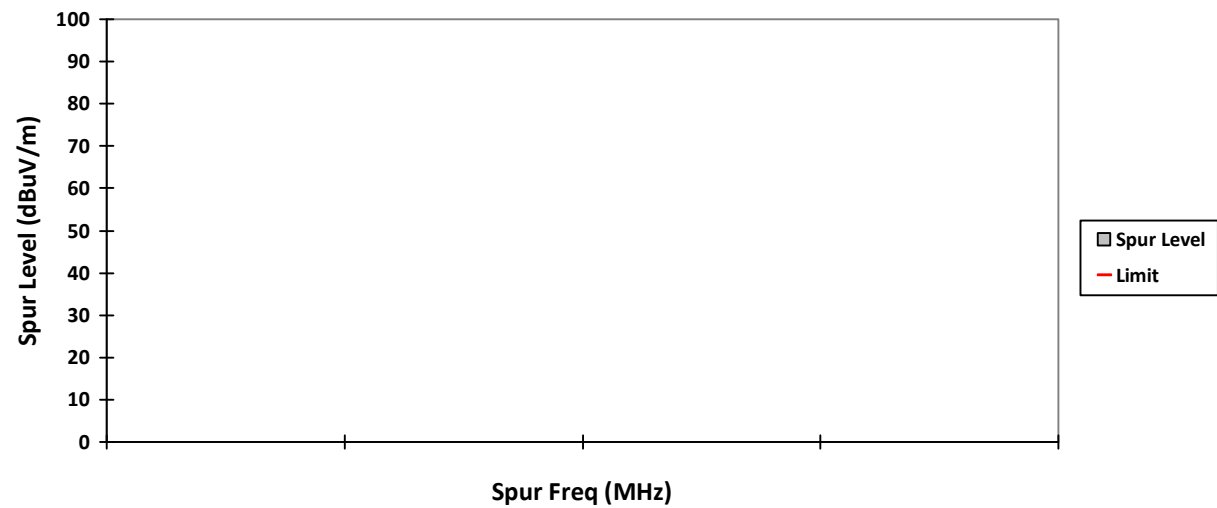
Humidity (%): 69.7
 Test Date: Tue, 7 Sept, 2021

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.

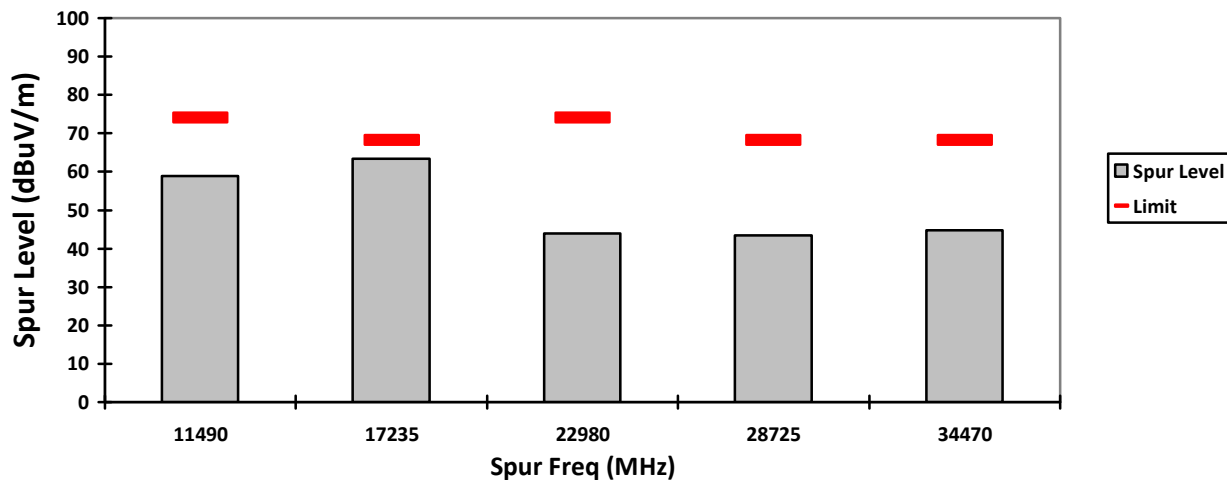
VERTICAL, QPK



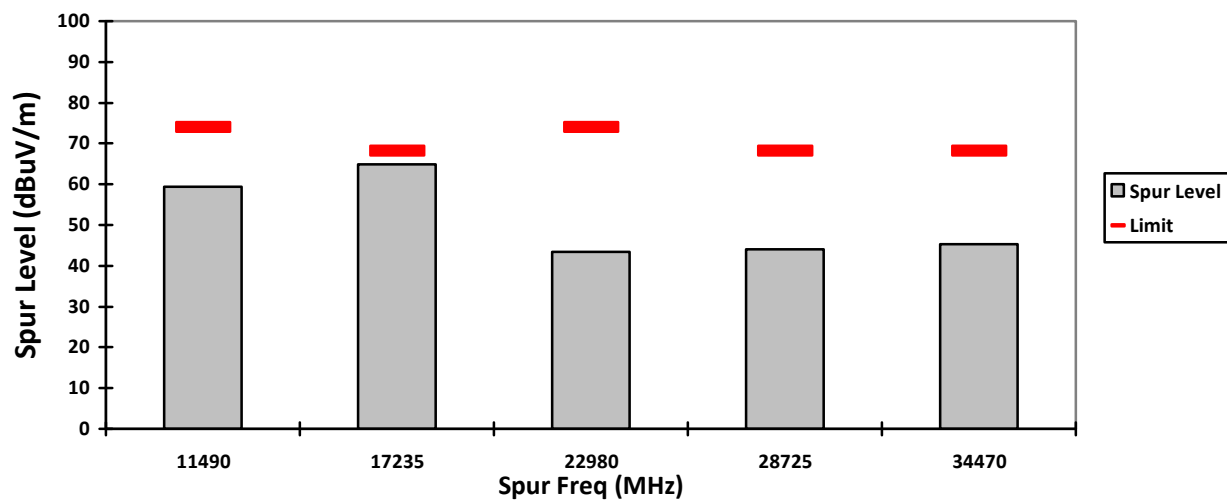
HORIZONTAL, QPK



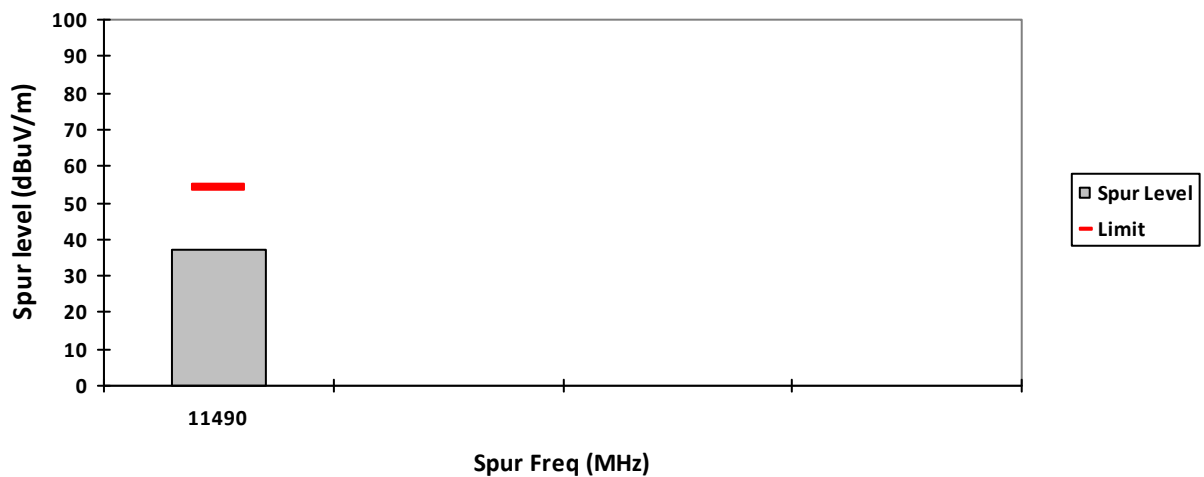
VERTICAL, PK



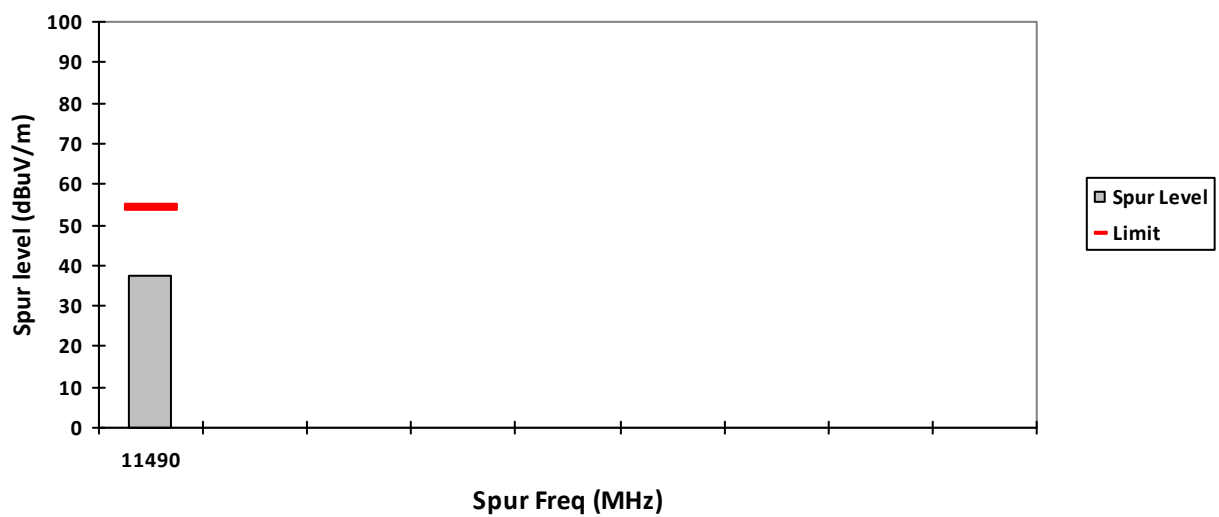
HORIZONTAL, PK



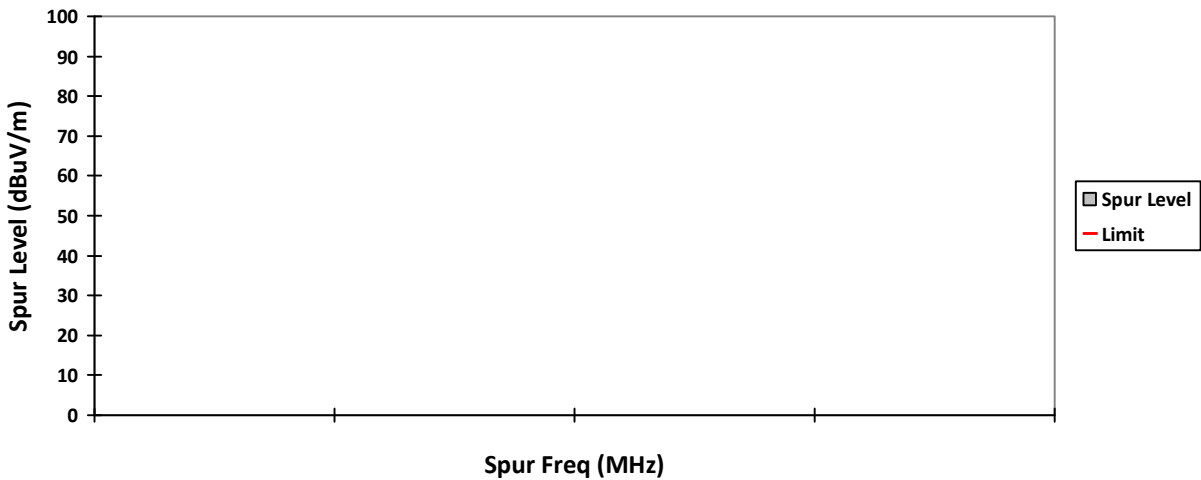
VERTICAL, AV



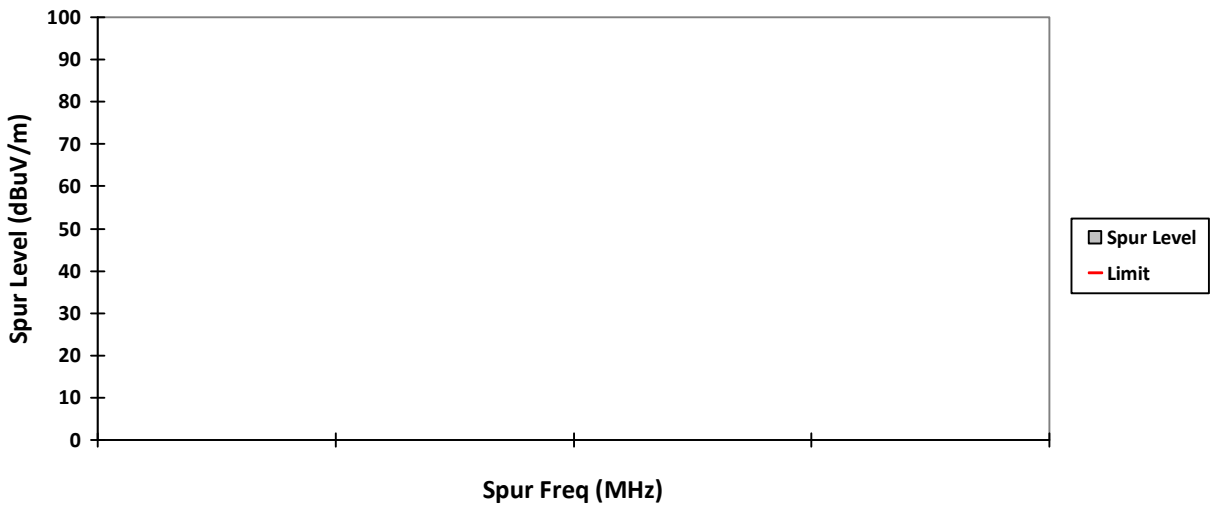
HORIZONTAL, AV



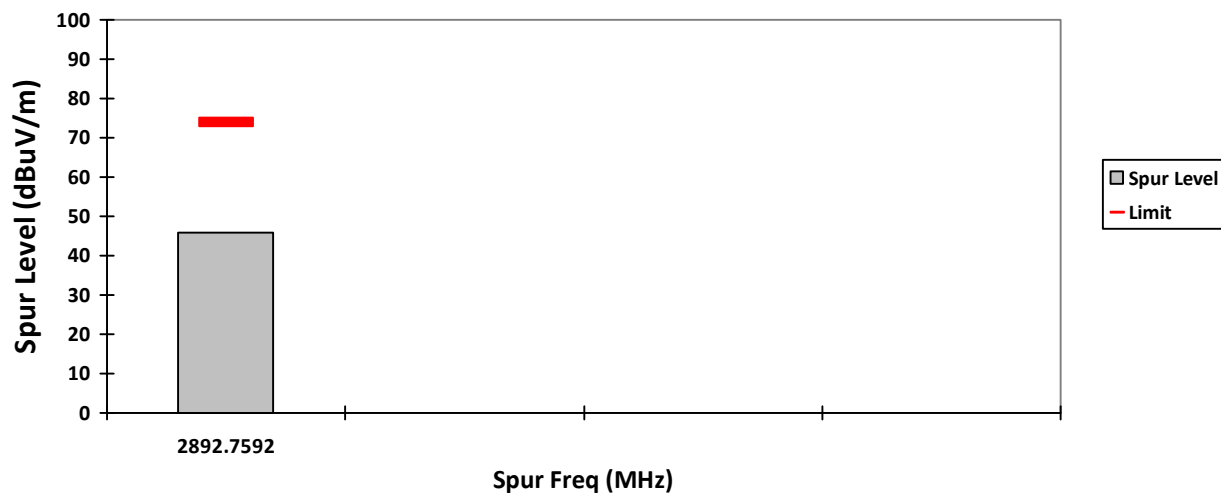
VERTICAL, QPK



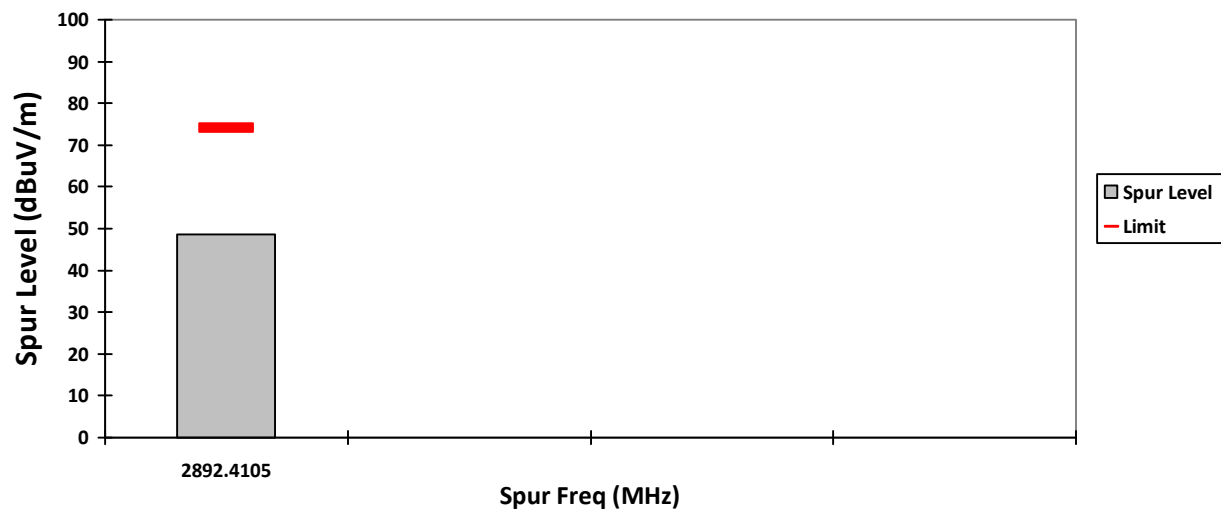
HORIZONTAL, QPK



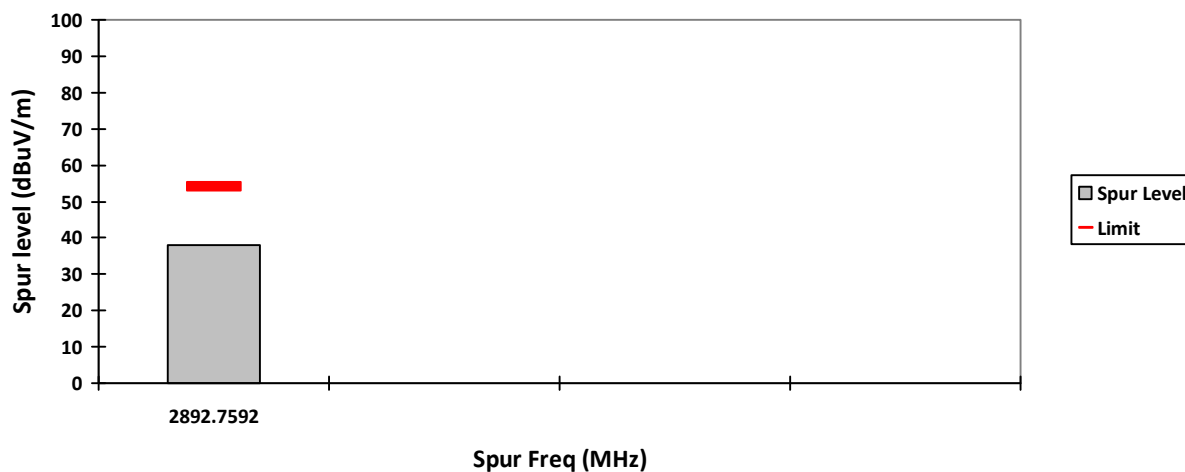
VERTICAL, PK



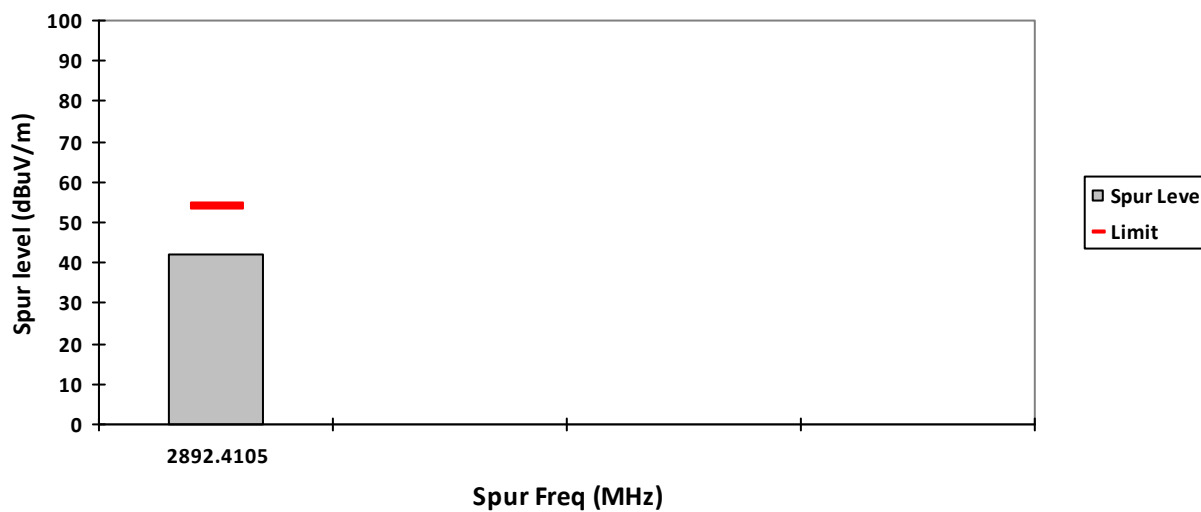
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



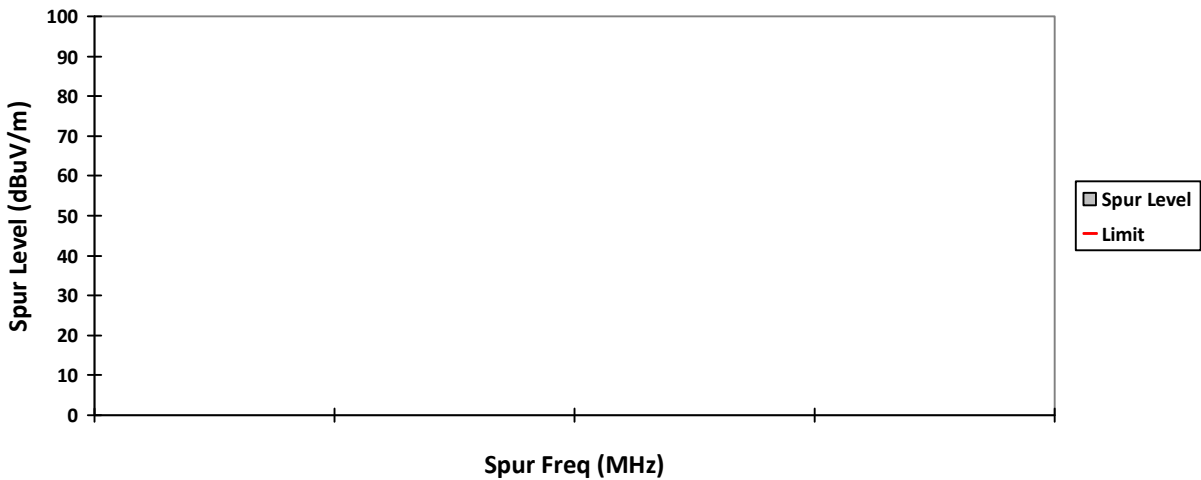
Radiated Emission (High Channel) tabular data

Remarks: Pass Result	Marginal Result	Fail Result
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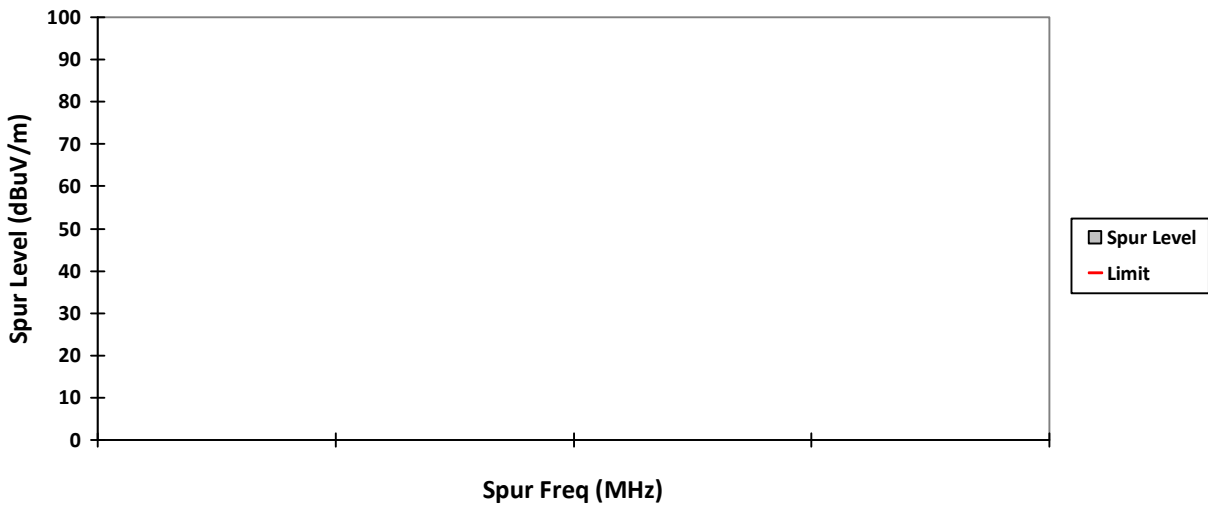
Humidity (%): 69.7
Test Date: Tue, 7 Sept, 2021

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.**

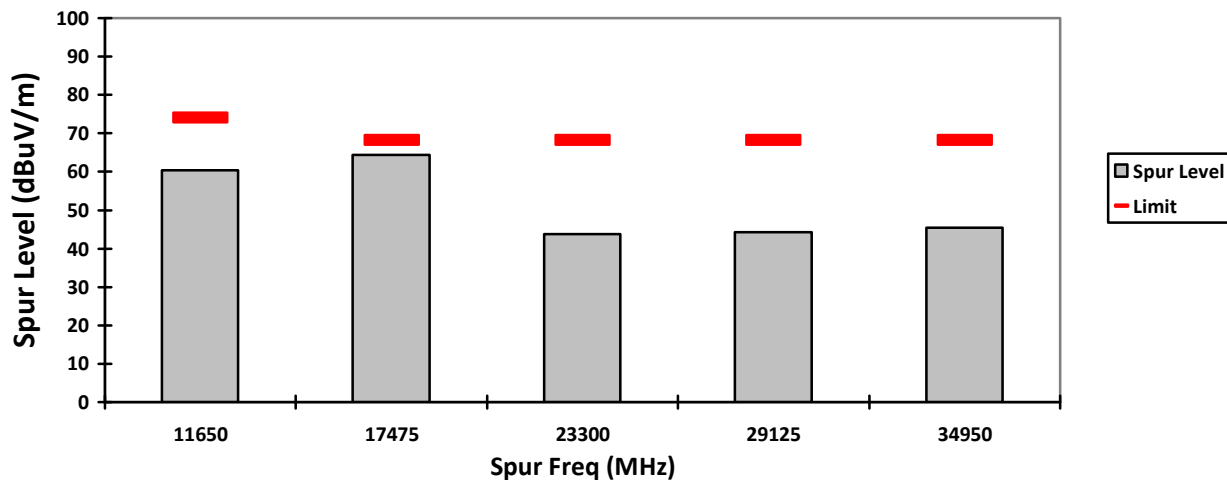
VERTICAL, QPK



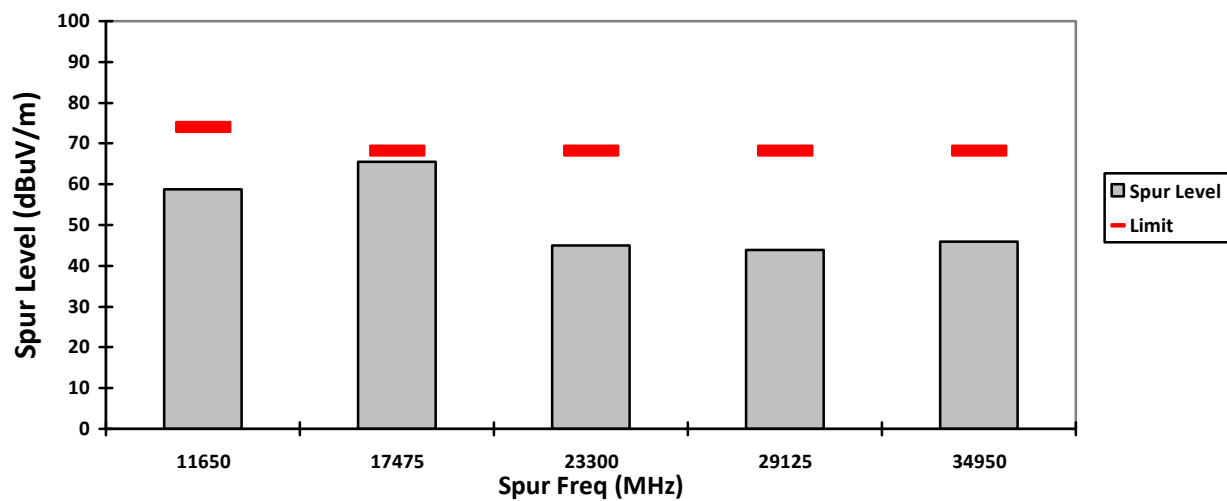
HORIZONTAL, QPK



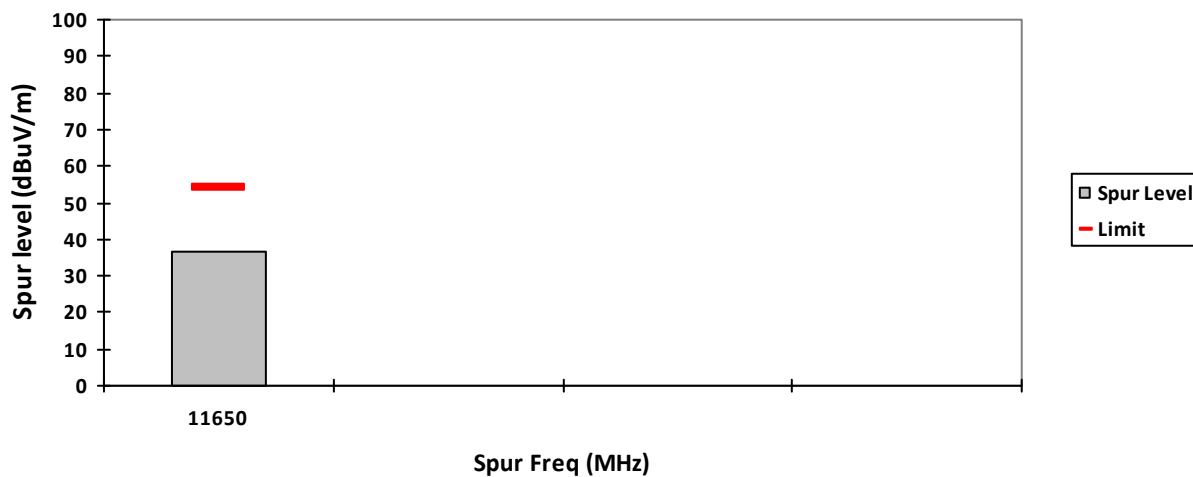
VERTICAL, PK



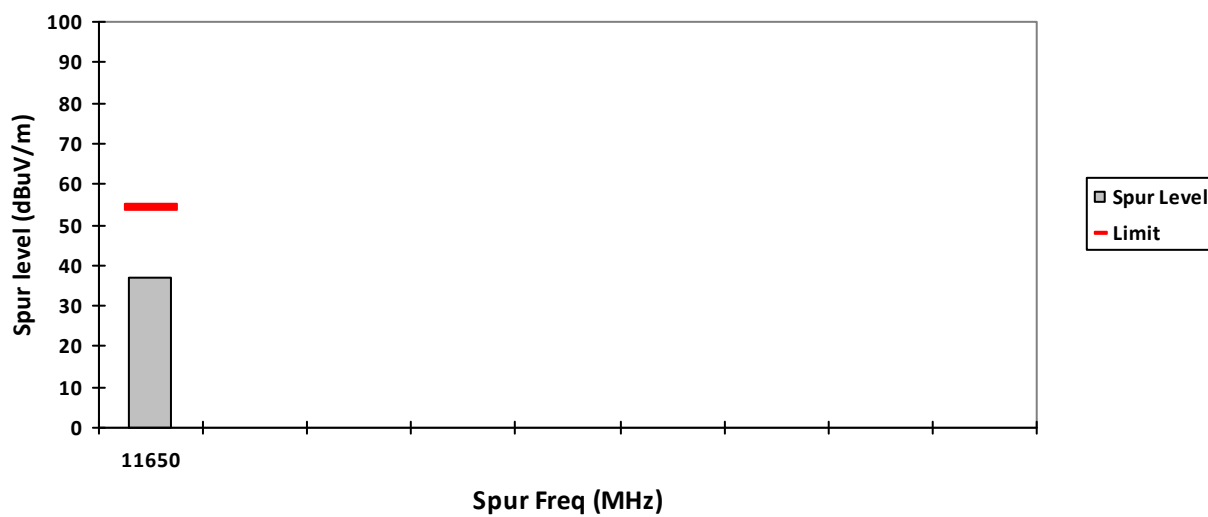
HORIZONTAL, PK



VERTICAL, AV

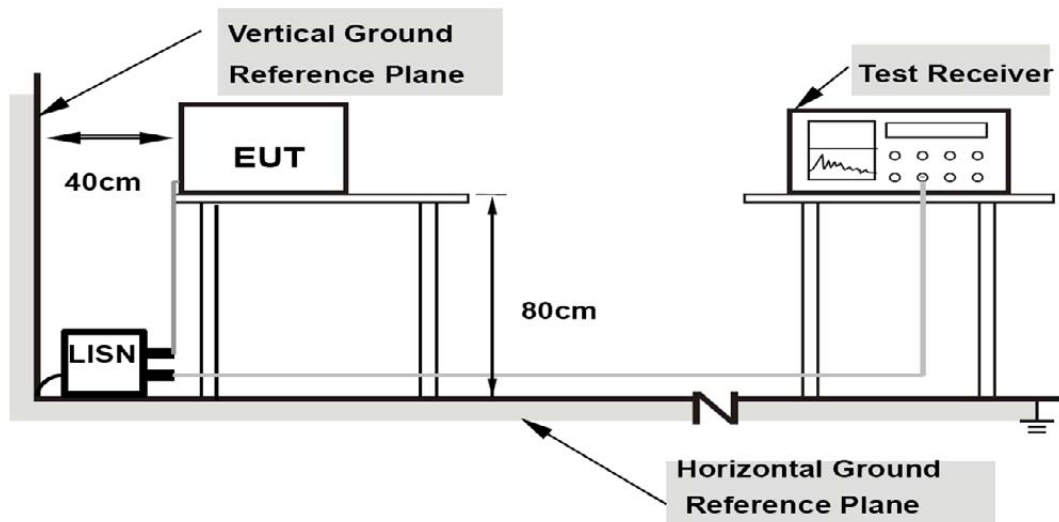


HORIZONTAL, AV



7.8. AC Powerline Conducted Emission

7.8.1. 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.

7.8.2. 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(μ V)	
	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.		

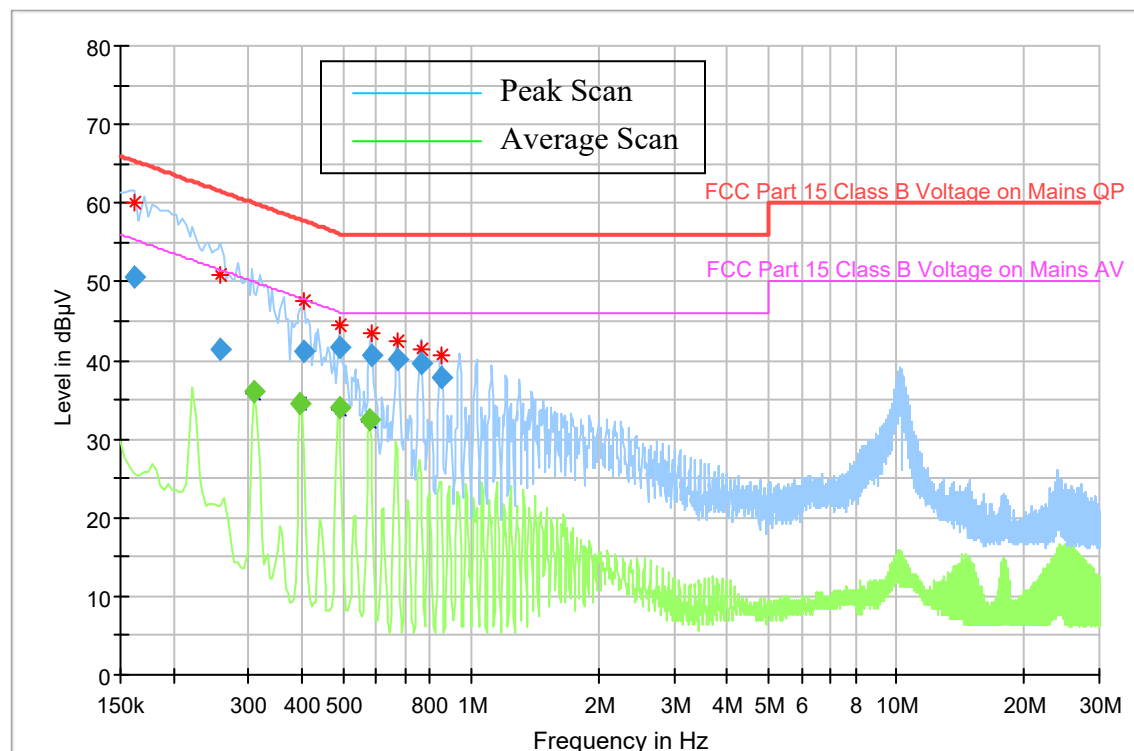
Table 2: Limits for Conducted Disturbance at the Mains Ports of Class B ITE

7.8.3. Test Data

120VAC , 60Hz

1) Charger + Radio in Wifi 5GHz Tx

Full Spectrum



Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBμV)	CAverage (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.162000	50.61	---	65.36	14.75	1000.0	9.000	L1	ON	10.2	PASS
0.258000	41.52	---	61.50	19.98	1000.0	9.000	N	ON	10.2	PASS
0.310000	---	35.92	49.97	14.05	1000.0	9.000	L1	ON	10.1	PASS
0.398000	---	34.41	47.90	13.49	1000.0	9.000	L1	ON	10.1	PASS
0.406000	41.23	---	57.73	16.50	1000.0	9.000	L1	ON	10.1	PASS
0.490000	---	33.89	46.17	12.28	1000.0	9.000	L1	ON	10.1	PASS
0.494000	41.61	---	56.10	14.49	1000.0	9.000	L1	ON	10.1	PASS
0.578000	---	32.44	46.00	13.56	1000.0	9.000	L1	ON	10.1	PASS
0.582000	40.76	---	56.00	15.24	1000.0	9.000	L1	ON	10.1	PASS
0.674000	40.06	---	56.00	15.94	1000.0	9.000	L1	ON	10.1	PASS
0.762000	39.51	---	56.00	16.49	1000.0	9.000	L1	ON	10.1	PASS
0.850000	37.72	---	56.00	18.28	1000.0	9.000	L1	ON	10.1	PASS

* Expanded Uncertainty (U) = +/- 3.48dB

END OF TEST REPORT