MOTOROLA SOLUTIONS

CERTIFICATE 2518.08

SAMM 825

MOTOROLA PENANG ADV. COMM. LABORATORY

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

FCC / ISED TEST REPORT

Report Revision : Rev.B

Date/s Tested	:	22-March-2024 - 26-April-2024
Report Issue Date	:	18-July-2024
Manufacturer/Location	:	Motorola Solutions Malaysia Sdn Bhd Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900, Bayan Lepas, Penang, Malaysia
Requestor	:	WONG CHEW LOOI
Product Type	:	Portable
Product Marketing Name (PMN)	:	R7
Hardware Version Identification Number (HVIN)	:	AAH06RDN9RA1AN (IC Model: PMUE5722ABB)
Frequency Band	:	2.412-2.462 GHz
Max RF Output Power	:	802.11b - 31.62 mWatts 802.11g - 31.62 mWatts 802.11n - 31.62 mWatts
Applicant Name	:	Motorola Solutions Inc
Applicant Address		Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia
FCC Registrations	:	461337
ISED Registrations	:	MY0001
Firmware Version Identification Number (FVIN)	:	D02.24.02.0078

The equipment was tested accordance to the requirement listed below:

(2.4GHz Wifi) **47CFR Part 15C** **ISED RSS 247 Issue 2** **February 2017**	**PASS**

Prepared By:

NUR ALIEYA BINTI MAT YUSOFF
Test Personnel

Approved Signatory:

MAHESVARAN A/L RAJAGOPAL
Responsible Engineer

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REVISION HISTORY

Revision History	Description	Date	Originator
Rev. A	Initial Report	**31-May-2024**	**Alieya**
Rev. B	Update antenna type and cover page HVIN from “AAH06RDN9RA1AN” to “AAH06RDN9RA1AN (IC Model: PMUE5722ABB)”	**18-July-2024**	**Alieya**

1.0. General Information

EUT Description:

Technologies	2.4GHz Wi-Fi
TX Frequency range	2412MHz – 2462MHz
Modulation Type	DSSS, OFDM
Connector type	PROGRAMMING, TEST & ALIGNMENT CABLE
Antenna type	PCB

1.1. Channel number and frequency information:

There are two bandwidth systems.
For 20MHz Bandwidth systems (802.11b, 802.11g, 802.11n), use channel 1 ~ channel 11
For 40MHz Bandwidth systems (802.11n), use channel 3 ~ channel 9

Channel	Frequency	Channel	Frequency
1	2412	7	2442
2	2417	8	2447
3	2422	9	2452
4	2427	10	2457
5	2432	11	2462
6	2437		

The EUT contains following accessory devices and data cable:

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

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 47 CFR Part 15 Subpart C
KDB 558074 D01 15.247 Meas Guidance v05
ANSI C63.10-2013

Deviation from standard

Not applicable as no deviation from standard test method

Modifications to EUT

For RF conducted measurements a pigtail was soldered out of the board while for radiated measurements there were no modifications to the device

2.0. Summary of Test Results

FCC Clause	IC Clause	Test Item	Result	Remark	Serial number tested	Tested by
15.247 (a)(2)	RSS-247 5.2(a)	DTS & 99% Channel Bandwidth	Pass	Highest 99% OCB: 802.11b: 13.470MHz (13M5G1D) 802.11g: 16.766MHz (16M8D1D) 802.11n: 17.709MHz (17M7D1D)	865EAD9539	Alieya
15.247 (b)(3)	RSS-247 5.4(d)	Conducted RF Output Power (Average)	Pass	Highest output power: 802.11b: 14.606 dBm (28.880 mW) 802.11g: 14.441 dBm (27.804 mW) 802.11n: 14.579 dBm (28.701 mW)	865EAD9539	Alieya
15.247(e)	RSS-247 5.2(b)	Maximum Power Spectral Density	Pass	Meet the limit requirement.	865EAD9539	Alieya
15.247(d)	RSS-247 5.5	Conducted Spurious Emissions	Pass	Worst case emission: 802.11b: -41.391 dBm 802.11g: -42.300 dBm 802.11n: -42.653 dBm	865EAD9539	Alieya
15.247 (d)	RSS-247 5.5	Band edge Conducted Spurious Emission	Pass	Worst case emission: 802.11b: -48.79 dBm 802.11g: -30.24 dBm 802.11n: -28.21 dBm	865EAD9539	Alieya
15.205, 15.209, 15.247 (d)	RSS-247 5.5	Radiated Emission within Restricted Bands	Pass	Worst case emission: RBE: 68.0435 dBuV/m (margin: 5.9565 dB) RSE: 53.0414 dBuV/m (margin: 0.9586 dB), Noise floor	865EAD9538	Nazrin & Rezza
15.207	RSS-Gen 8.8	AC Power Line Conducted Emission	NA	Meet the limit requirement.	865EAD9538	Shidee
15.203		Antenna requirement	NA	Internal antenna is not accessible to the enduser	NA	NA

NA → Not Available

3.0. Measurement Uncertainty

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

4.0. Equipment List

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

Description	Model	Serial Number	Calibration Date	Calibration Due Date
CHAMBER	SH-641	92003820	18-Jul-23	18-Jul-24
POWER SUPPLY	6652A	3541A02371	18-Jul-23	18-Jul-24
PULSE SENSOR	MA2411B	1726287	22-Aug-23	22-Aug-24
PULSE POWER METER	ML2495A	1845014	16-Aug-23	16-Aug-24
SPECTRUM ANALYZER	E4440A	MY48250517	8-Nov-23	8-Nov-24

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

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

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

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

5.0. Test Mode Applicability and Test Channel Detail

The device employs MIMO technology. Below are the possible configurations.

WLAN Configurations		Mode					
		SISO		Spatial Diversity Multiplexing (MIMO)		Cyclic Delay Diversity (MIMO)	
	Antenna	Primary	Secondary	Primary	Secondary	Primary	Secondary
2.4GHz	802.11b	√	√	x	x	x	x
	802.11g	√	√	x	x	x	x
	802.11n (HT20)	√	√	x	x	x	x
	802.11n (HT40)	x	x	x	x	x	x

√ = Support;
x = NOT Support

Note: This Device supports simultaneous transmission operation, which allows for two SISO or two MIMO channels to operate independent of one another in the 2.4GHz band on each antenna. 802.11n mode is capable of transmitting simultaneously on two antennas using Cyclic Delay Diversity and Spatial Diversity Multiplexing (2x2 MIMO).
The following tables show the worst case configurations determined during testing. The data for these configurations is contained in this test report.

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	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Date Rate (Mbps)	Mode	Environmental Conditions
Test Mode	802.11b	1 to 11	1,6,11	DSSS	QPSK	2	SISO	22.8°C, 70.1%RH
Test Mode	802.11g	1 to 11	1,6,11	OFDM	BPSK	6	SISO	22.8°C, 70.1%RH
Test Mode	802.11n (HT20)	1 to 11	1,6,11	OFDM	BPSK	6.5	SISO CDD (MIMO)	22.8°C, 70.1%RH
Test Mode	802.11n (HT40)	3 to 9	3,6,9	OFDM	BPSK	6.5	SISO CDD (MIMO)	NA

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	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Date Rate (Mbps)	Mode	Environmental Conditions
Test Mode	802.11b	1 to 11	1,6,11	DSSS	QPSK	2	SISO	22.8°C, 70.1%RH
Test Mode	802.11g	1 to 11	1,6,11	OFDM	BPSK	6	SISO	22.8°C, 70.1%RH
Test Mode	802.11n (HT20)	1 to 11	1,6,11	OFDM	BPSK	6.5	SISO CDD (MIMO)	22.8°C, 70.1%RH
Test Mode	802.11n (HT40)	3 to 9	3,6,9	OFDM	BPSK	6.5	SISO CDD (MIMO)	NA

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	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Date Rate (Mbps)	Environmental Conditions
Application Mode	802.11bgn mixed	1 to 11	AUTO	DSSS, OFDM	AUTO	AUTO	NA

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	Modulation	Available Channel	Tested Channel	Modulation Technology	Data Modulation Type	Data Rate (Mbps)	Mode	Environmental Conditions
Test Mode	802.11b	1 to 11	1,6,11	DSSS	QPSK	2	SISO	25°C, 54.8%RH
Test Mode	802.11g	1 to 11	1,6,11	OFDM	BPSK	6	SISO	25°C, 54.8%RH
Test Mode	802.11n (HT20)	1 to 11	1,6,11	OFDM	BPSK	6.5	SISO CDD (MIMO)	25°C, 54.8%RH
Test Mode	802.11n (HT40)	1 to 11	3,6,9	OFDM	BPSK	6.5	SISO CDD (MIMO)	NA

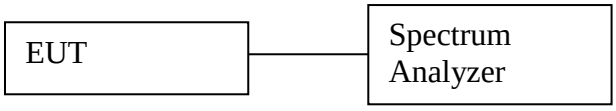
Duty Cycle of Test Signal

802.11b, 802.11g and 802.11n : Duty cycle of test signal is ≥98%. (Refer to Clause 6.3 for duty cycle test signal)

6.0. Transmitter Test Parameters

6.1. 6dB Channel Bandwidth

6.1.1. **Test Setup**



a) Check and ensure the spectrum analyzer well calibrate.
b) Turn on the DUT and set DUT to transmit maximum power.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) Setting of Spectrum analyzer :
    a. RBW = 100 kHz
    b. VBW = 300 kHz
    c. Detector mode = Peak
    d. Trace = Max hold
    e. Sweep = auto
e) Measure the freq different of two frequencies that were attenuated 6dB from peak of the emission & record the frequency difference as the emission bandwidth.
f) Measure every antenna port by repeat the step above for MIMO measurement.

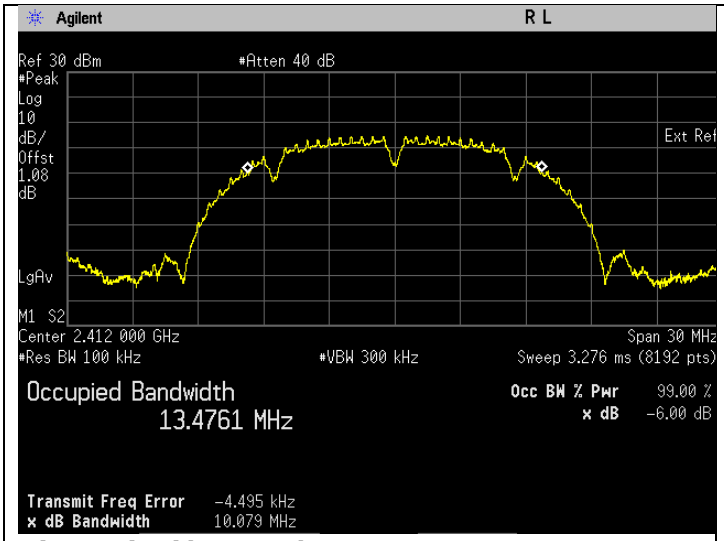
6.1.2. **Test Limits:**

Normal Condition (25 º C)
≥500 kHz

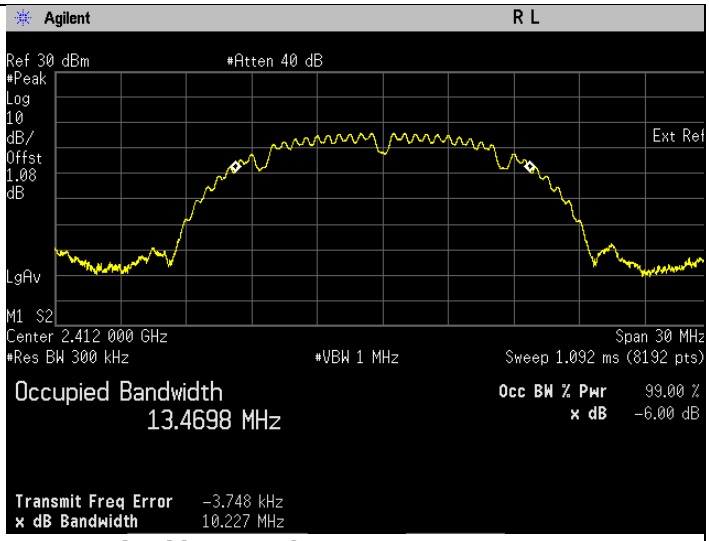
6.1.3. **Test Data:**

802.11 b

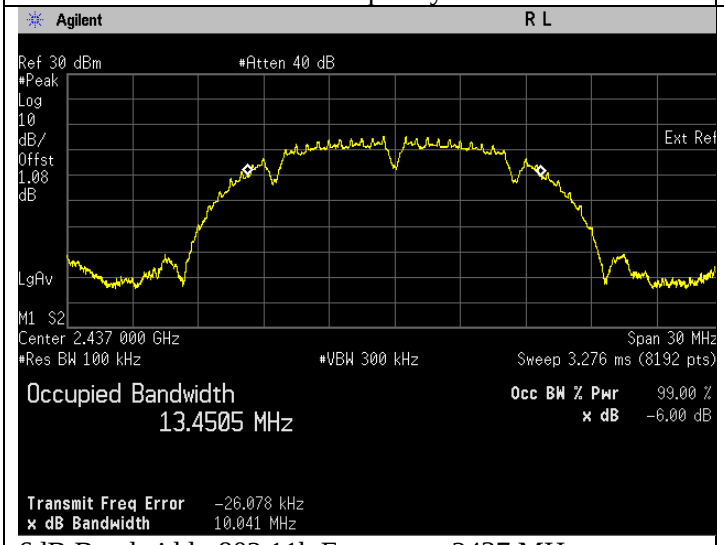
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
802.11b	DSSS	QPSK	1	2412	10.079	13.470	Pass
802.11b	DSSS	QPSK	1	2437	10.041	13.469	Pass
802.11b	DSSS	QPSK	1	2462	10.068	13.448	Pass



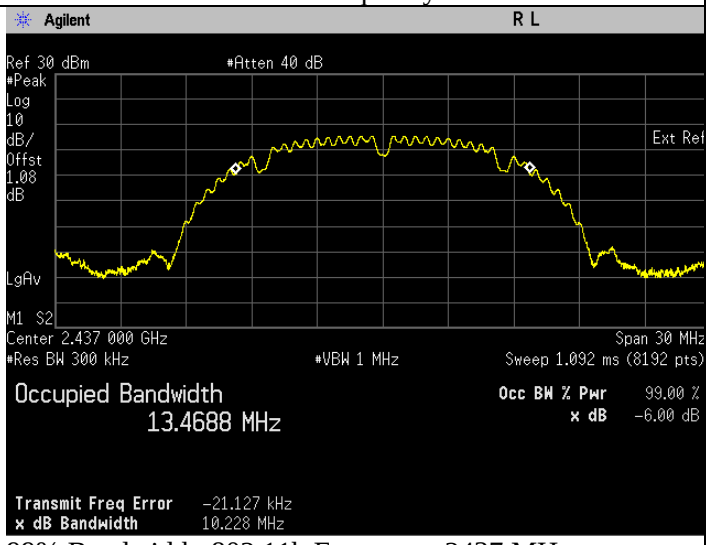
6dB Bandwidth. 802.11b Frequency 2412 MHz



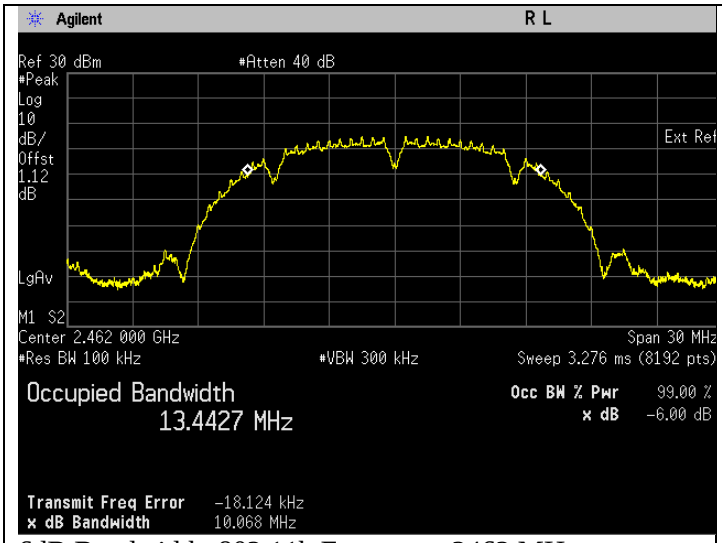
99% Bandwidth. 802.11b Frequency 2412 MHz



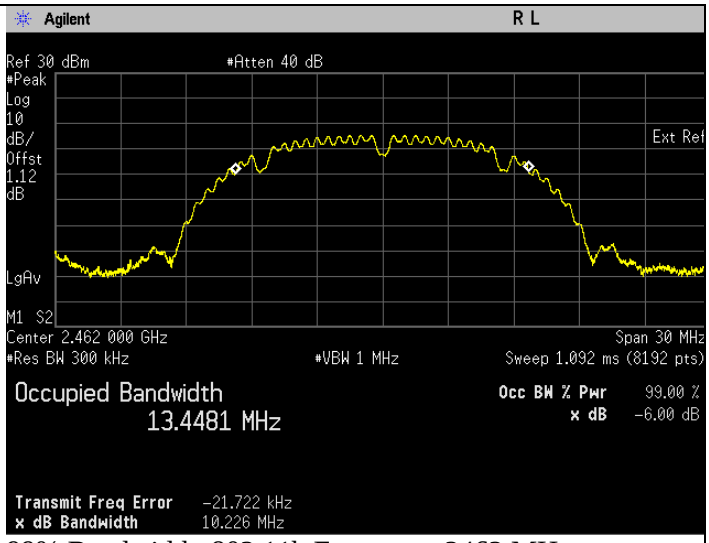
6dB Bandwidth. 802.11b Frequency 2437 MHz



99% Bandwidth. 802.11b Frequency 2437 MHz



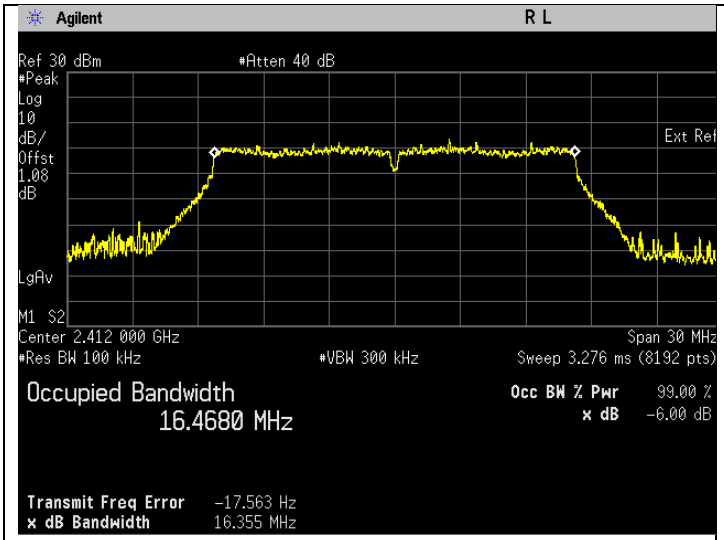
6dB Bandwidth. 802.11b Frequency 2462 MHz



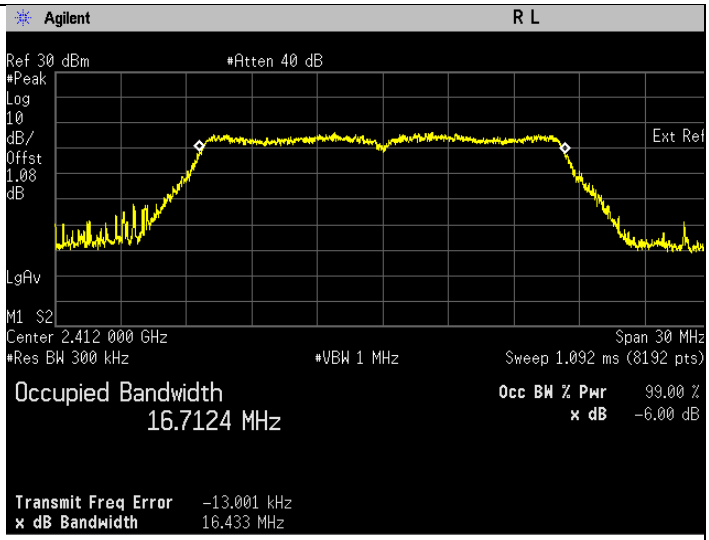
99% Bandwidth. 802.11b Frequency 2462 MHz

802.11 g

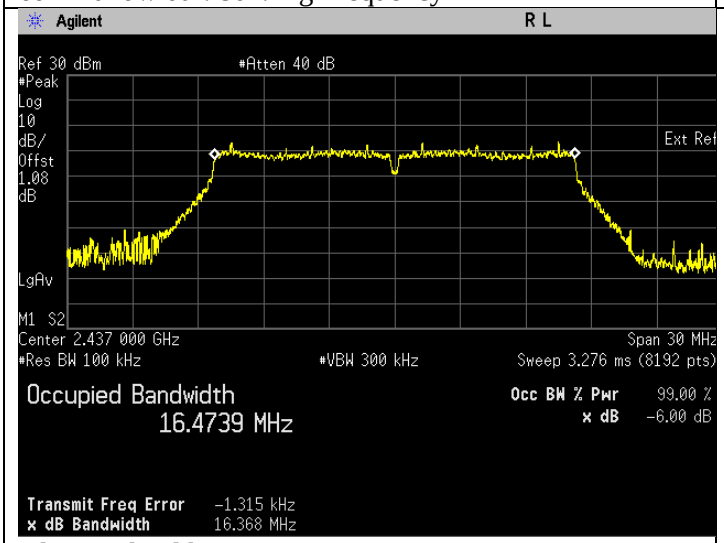
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
802.11g	OFDM	BPSK	6	2412	16.355	16.712	Pass
802.11g	OFDM	BPSK	6	2437	16.368	16.766	Pass
802.11g	OFDM	BPSK	6	2462	16.354	16.729	Pass



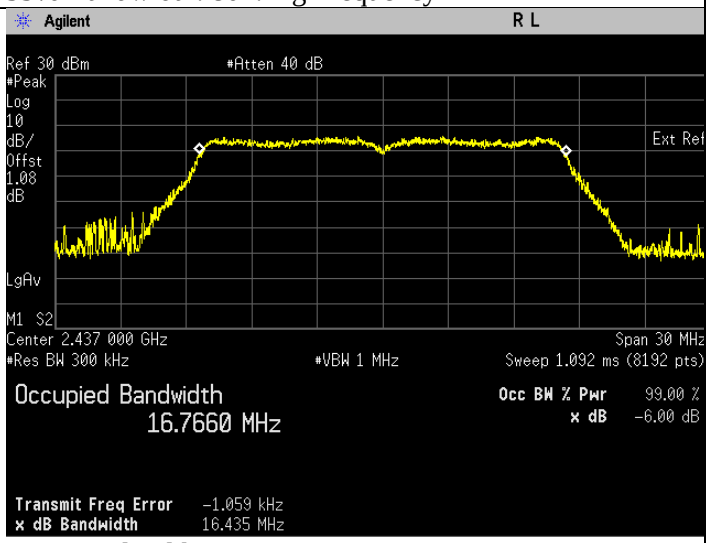
6dB Bandwidth. 802.11g Frequency 2412 MHz



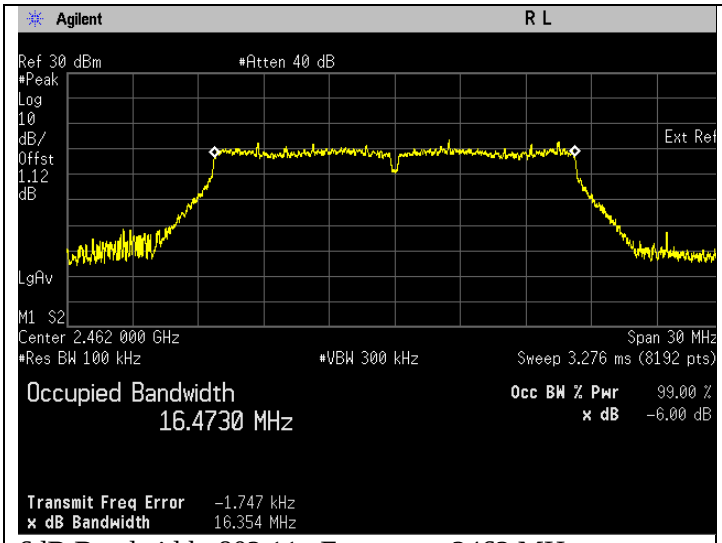
99% Bandwidth. 802.11g Frequency 2412 MHz



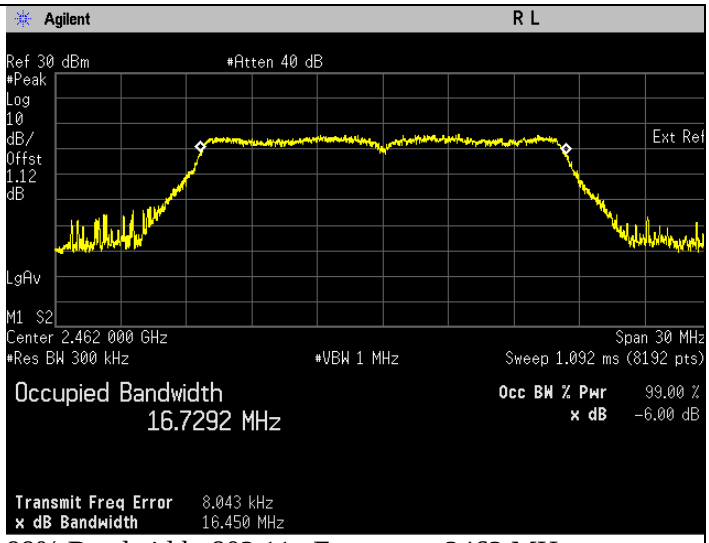
6dB Bandwidth. 802.11g Frequency 2437 MHz



99% Bandwidth. 802.11g Frequency 2437 MHz



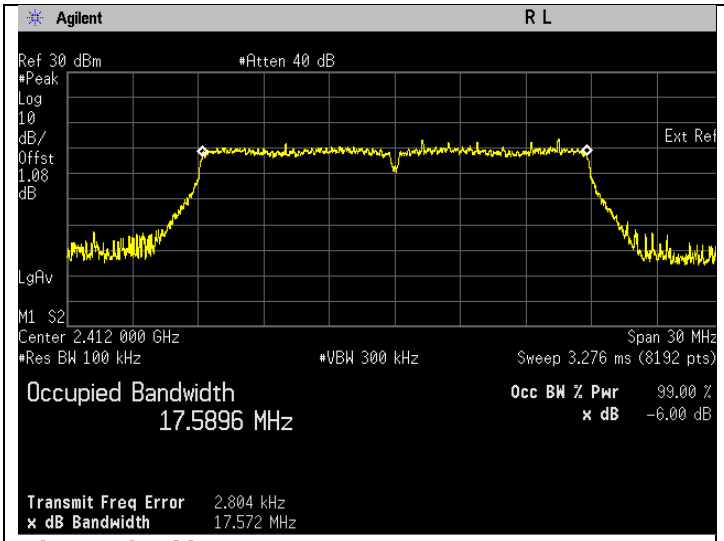
6dB Bandwidth. 802.11g Frequency 2462 MHz



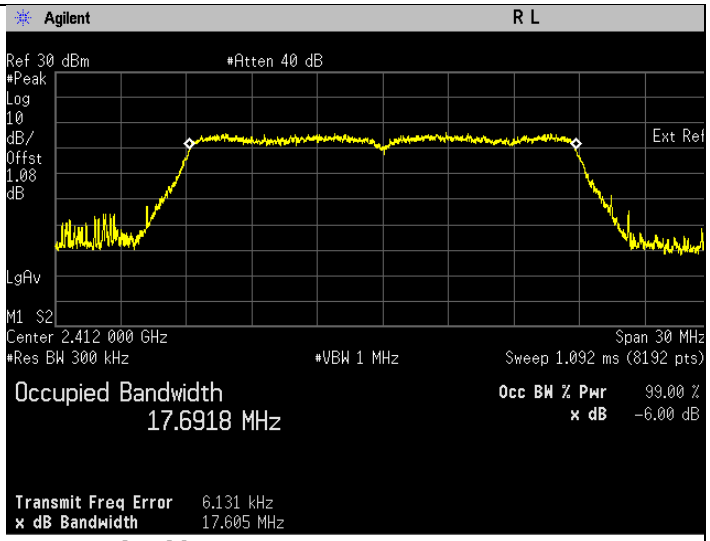
99% Bandwidth. 802.11g Frequency 2462 MHz

802.11n (HT20)

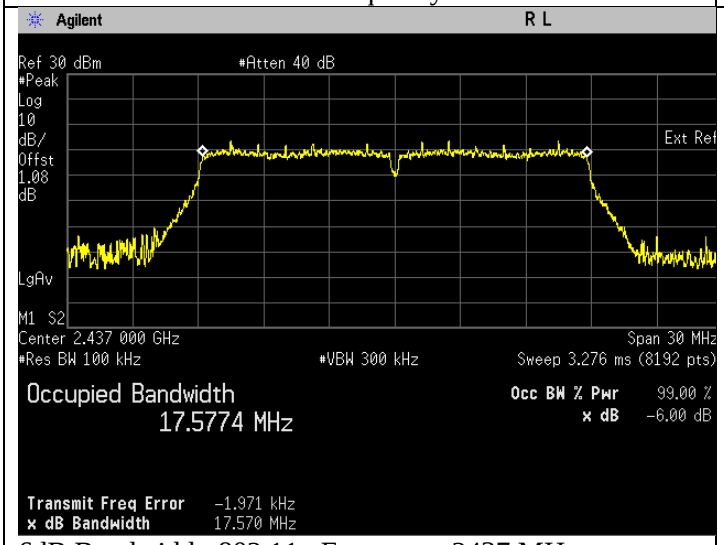
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	6dB Bandwidth (MHz)	99% Bandwidth (MHz)	Status
802.11n	OFDM	DBPSK	6.5	2412	17.572	17.692	Pass
802.11n	OFDM	DBPSK	6.5	2437	17.570	17.698	Pass
802.11n	OFDM	DBPSK	6.5	2462	17.614	17.709	Pass



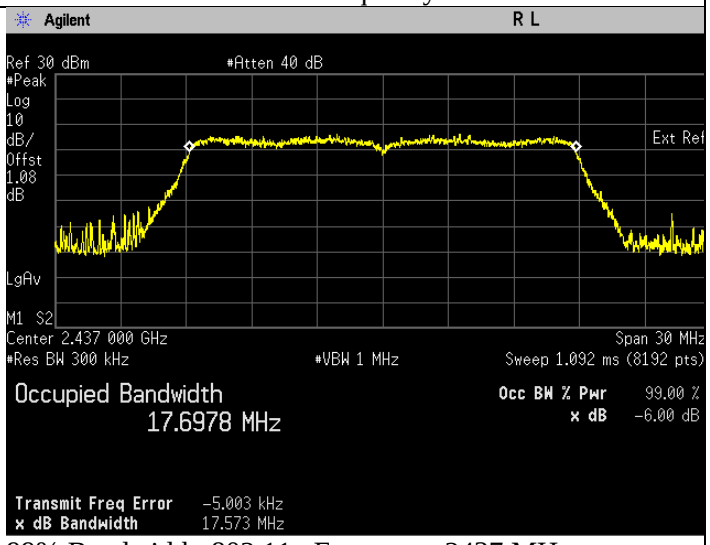
6dB Bandwidth. 802.11n Frequency 2412 MHz



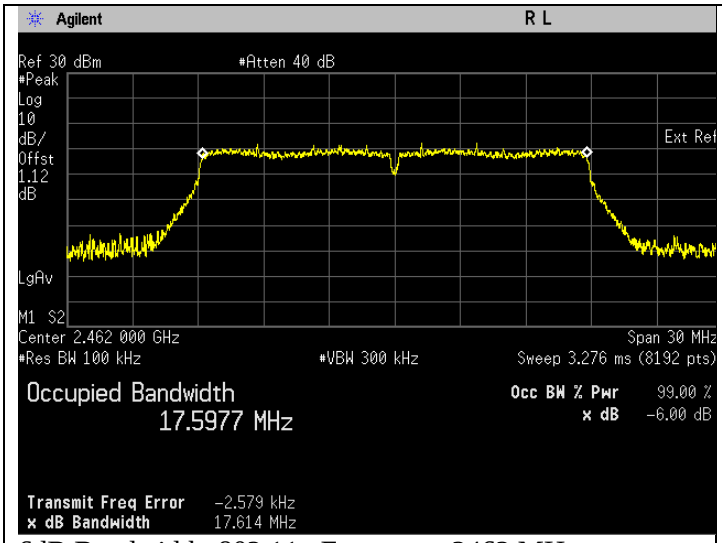
99% Bandwidth. 802.11n Frequency 2412 MHz



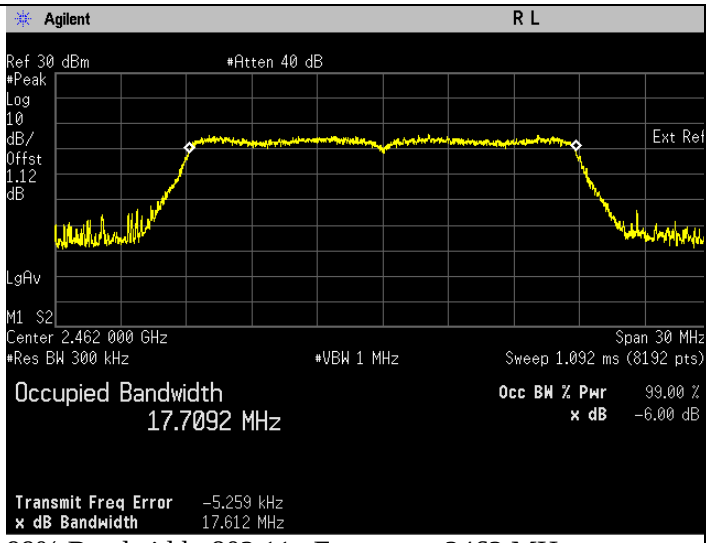
6dB Bandwidth. 802.11n Frequency 2437 MHz



99% Bandwidth. 802.11n Frequency 2437 MHz



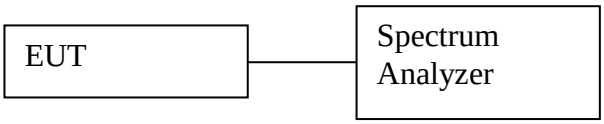
6dB Bandwidth. 802.11n Frequency 2462 MHz



99% Bandwidth. 802.11n Frequency 2462 MHz

6.2. Conducted RF Output Power

6.2.1. Test Setup



Average

a) Check and ensure the spectrum analyzer well calibrate.
b) Turn on the DUT and set DUT to transmit maximum power.
c) Measure the duty cycle of transmitter output signal.
d) Setting of Spectrum analyzer :
    a. Set the RBW = 300 kHz.
    b. Set the VBW ≥ [3 × RBW].
    c. Set the span ≥ [1.5 × OBW bandwidth].
    d. Detector = average.
    e. Sweep time = auto couple.
    f. Trace mode = free run.
    g. Allow trace to fully stabilize.
e) Add in duty cycle correction into final test result.
f) Duty cycle correction is calculated as below:
    10 log (1/x)
g) Measure every antenna port by repeat the step above for MIMO measurement.

6.2.2. Test Limits:

Normal Condition (25 ° C)
≤1 Watt(30 dBm)

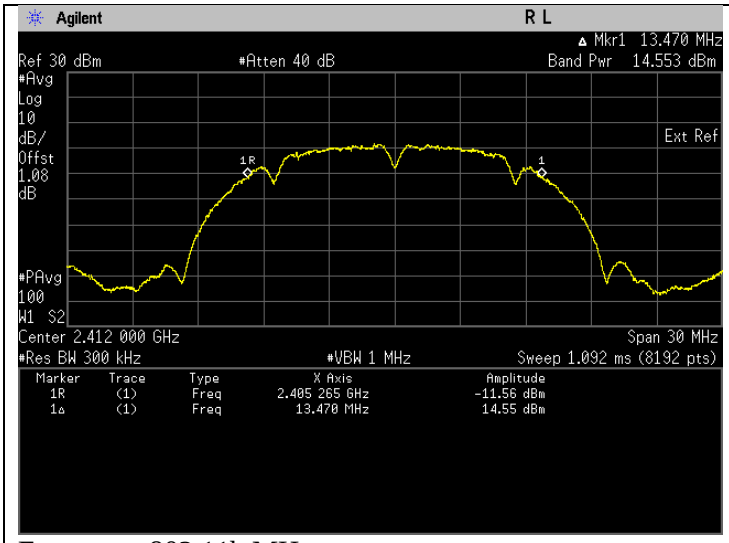
6.2.3. **Test Data:**

Test was conducted with average power.

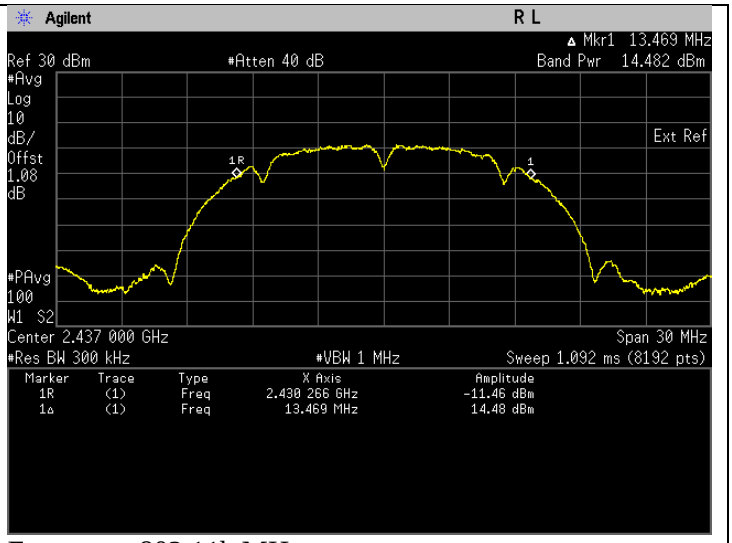
802.11b

Output Power = Band Power + Duty Cycle Factor
= Band Power + 0.053dBm

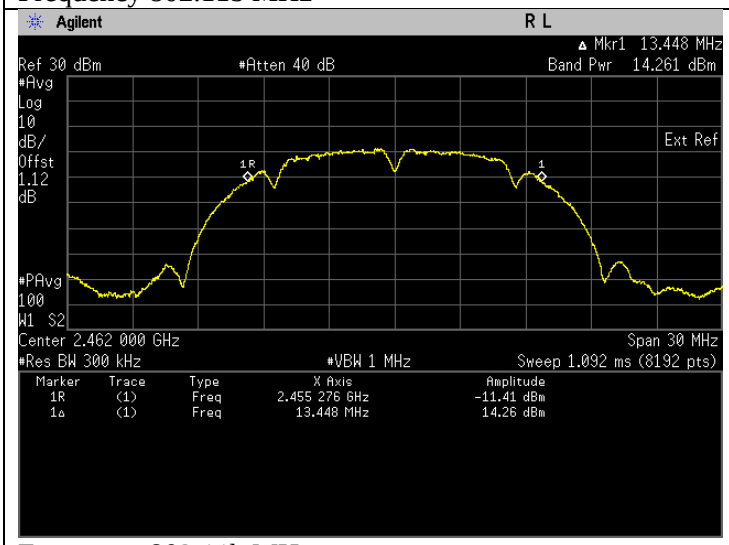
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Output Power (dBm)	Status
802.11b	DSSS	QPSK	1	2412	14.606	Pass
802.11b	DSSS	QPSK	1	2437	14.535	Pass
802.11b	DSSS	QPSK	1	2462	14.314	Pass



Frequency 802.11b MHz



Frequency 802.11b MHz

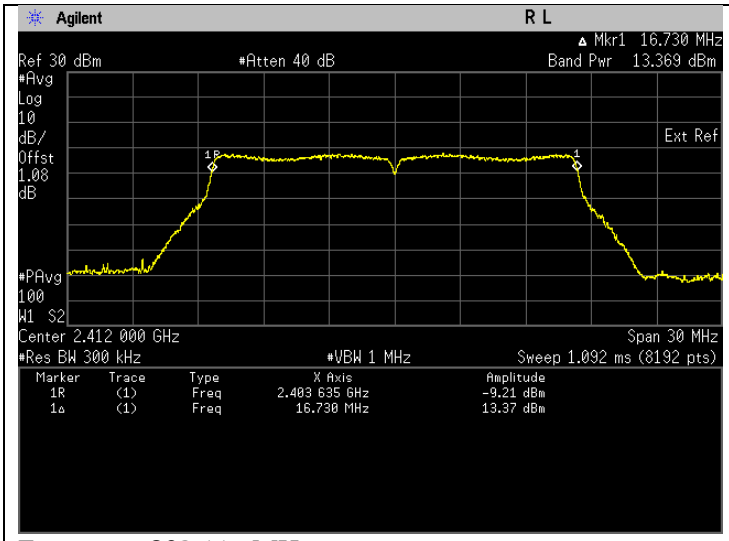


Frequency 802.11b MHz

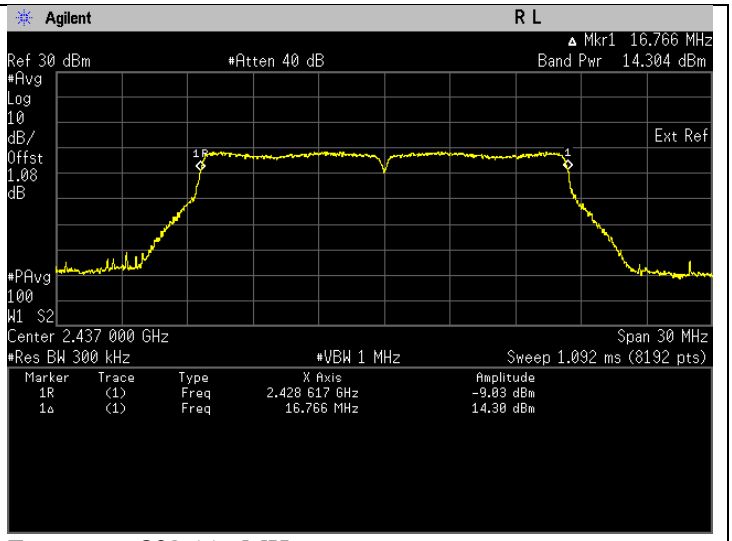
802.11g

Output Power = Band Power + Duty Cycle Factor
= Band Power + 0.137dBm

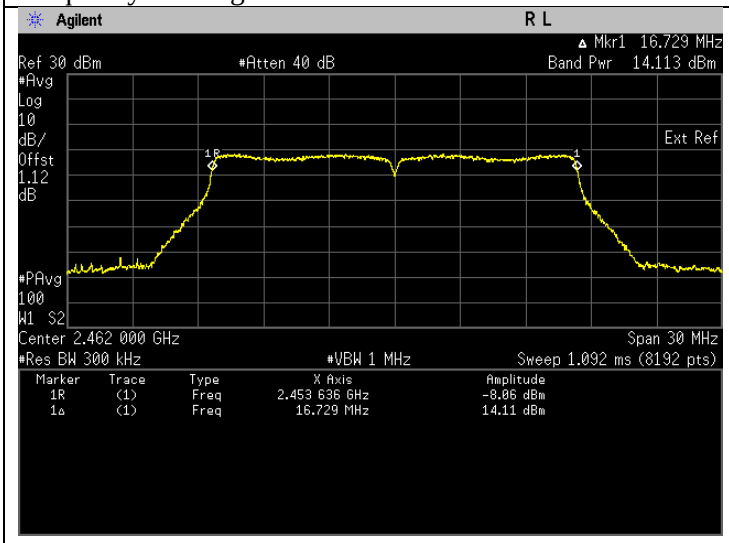
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Output Power (dBm)	Status
802.11g	OFDM	BPSK	6	2412	13.506	Pass
802.11g	OFDM	BPSK	6	2437	14.441	Pass
802.11g	OFDM	BPSK	6	2462	14.250	Pass



Frequency 802.11g MHz



Frequency 802.11g MHz

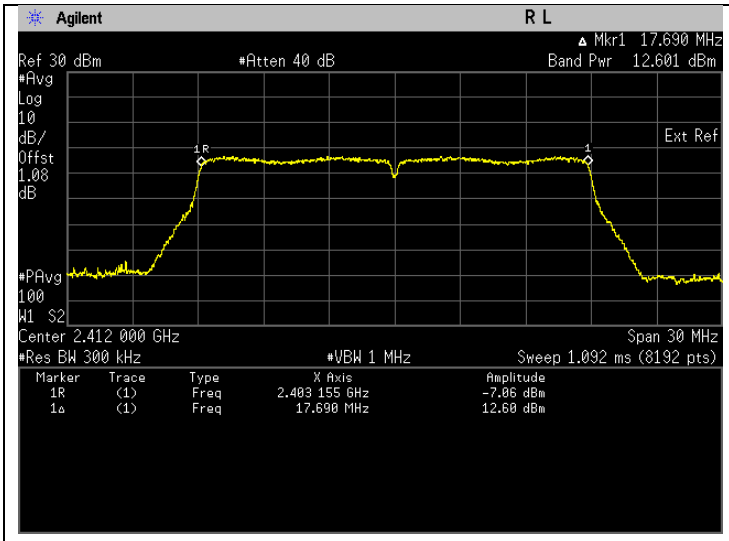


Frequency 802.11g MHz

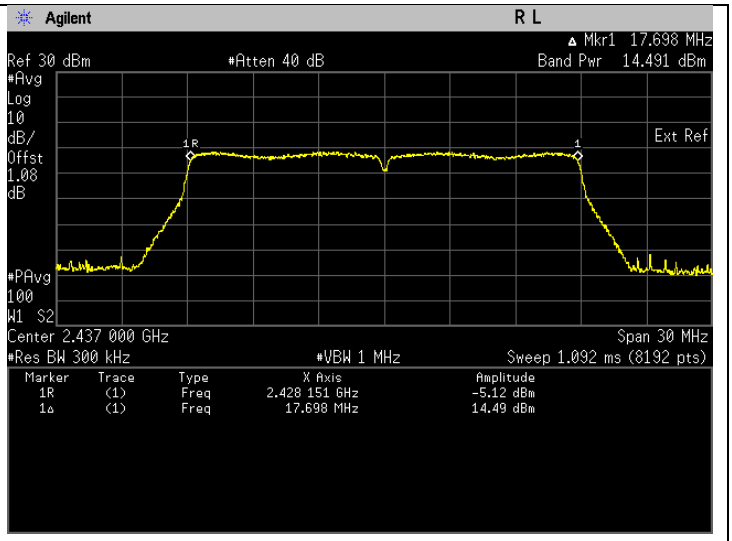
802.11n (HT20)

Output Power = Band Power + Duty Cycle Factor
= Band Power + 0.088dBm

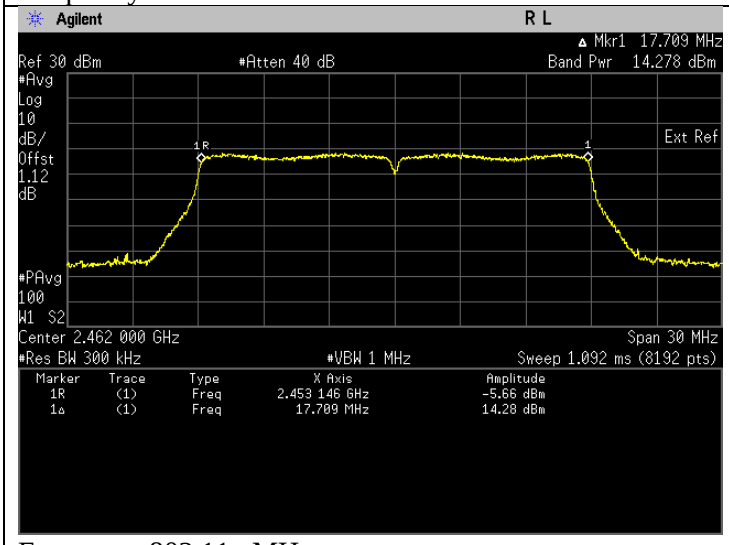
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Output Power (dBm)	Status
802.11n	OFDM	DBPSK	6.5	2412	12.689	Pass
802.11n	OFDM	DBPSK	6.5	2437	14.579	Pass
802.11n	OFDM	DBPSK	6.5	2462	14.366	Pass



Frequency 802.11n MHz



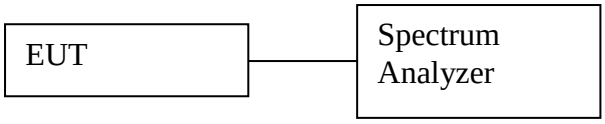
Frequency 802.11n MHz



Frequency 802.11n MHz

6.3.Duty Cycle of the test signal

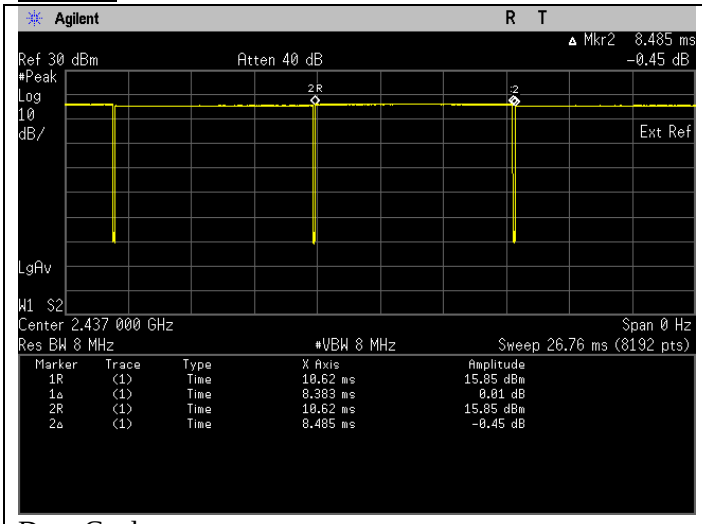
6.3.1. **Test Setup**



1) Check and ensure the spectrum analyzer well calibrate.
2) Turn on the DUT and set DUT to transmit maximum power.
3) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
4) 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 the span ≥ [1.5 × DTS bandwidth].
    d. Detector = Peak.
    e. Sweep time = 10ms or others that allow to measure accurate duty cycle.
    f. Trace mode = max hold.
    g. Allow trace to fully stabilize.
5) Record the duty cycle as X and save the plot.
6) Measure every antenna port by repeat the step above for MIMO measurement.

6.3.2. **Test Data**

802.11b

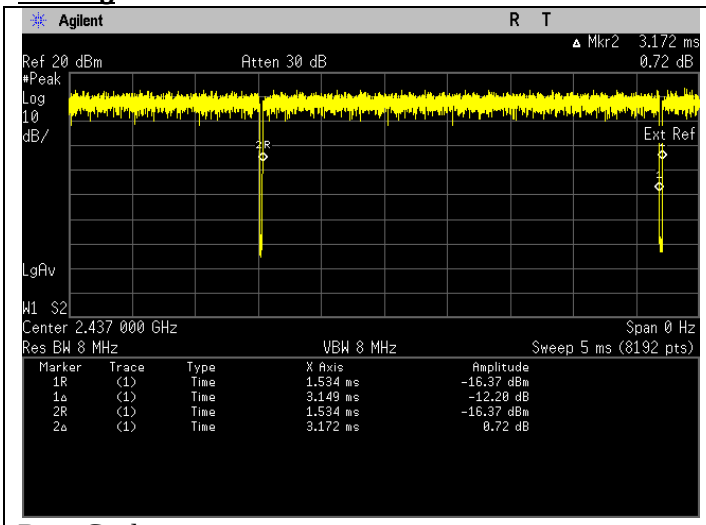


Duty Cycle

On time (ms)	8.383
On + Off Time (ms)	8.485
Duty cycle	0.9880
Duty Cycle factor	0.053

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

802.11g

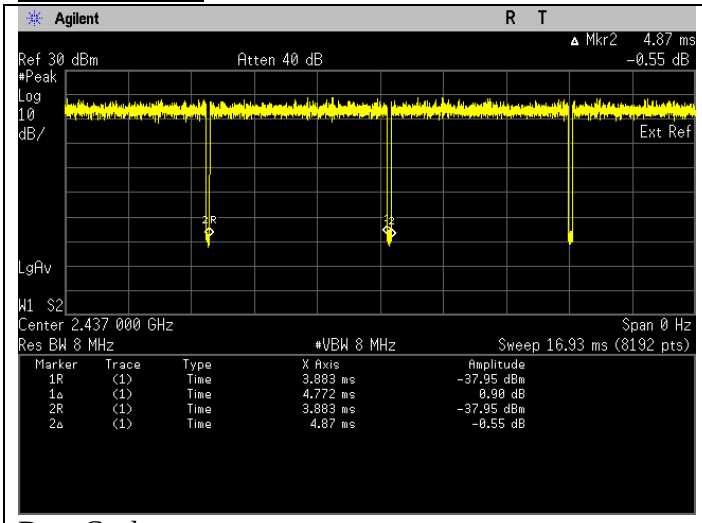


Duty Cycle

On time (ms)	3.110
On + Off Time (ms)	3.210
Duty cycle	0.9688
Duty Cycle factor	0.137

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

802.11n (HT20)



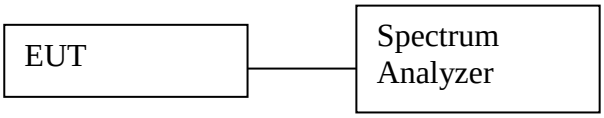
Duty Cycle

On time (ms)	4.772
On + Off Time (ms)	4.870
Duty cycle	0.9799
Duty Cycle factor	0.088

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

6.4. Maximum Peak Power Spectral Density

6.4.1. Test Setup



Maximum Peak

a) Check and ensure the spectrum analyzer well calibrate.
b) Turn on the DUT and set DUT to transmit maximum power.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) Setting of Spectrum analyzer :
    a. Set analyzer center frequency to DTS channel center frequency.
    b. Set the span to 1.5 times the DTS bandwidth.
    c. Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
    d. Set the VBW ≥ [3 × RBW].
    e. Detector = peak.
    f. Sweep time = auto couple.
    g. Trace mode = max hold.
    h. Allow trace to fully stabilize.
    i. Use the peak marker function to determine the maximum amplitude level within the RBW.
    j. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.
e) Measure every antenna port by repeat the step above for MIMO measurement.

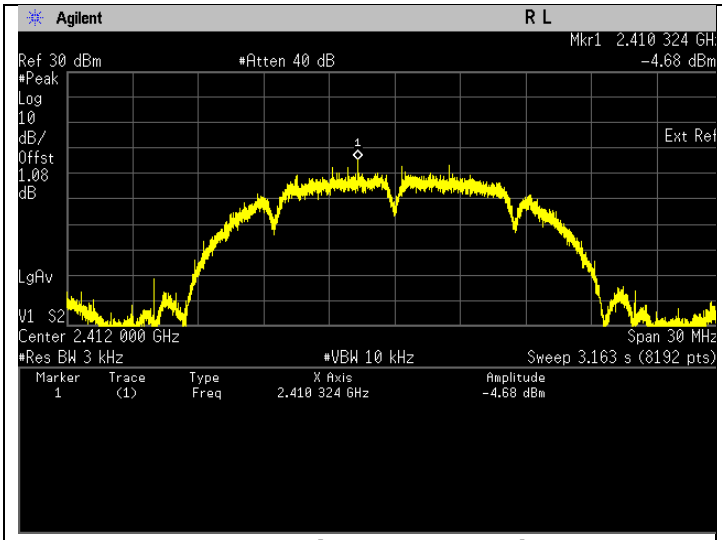
6.4.2. Test Limits

Normal Condition (25 º C)
≤ 8 dBm/3kHz

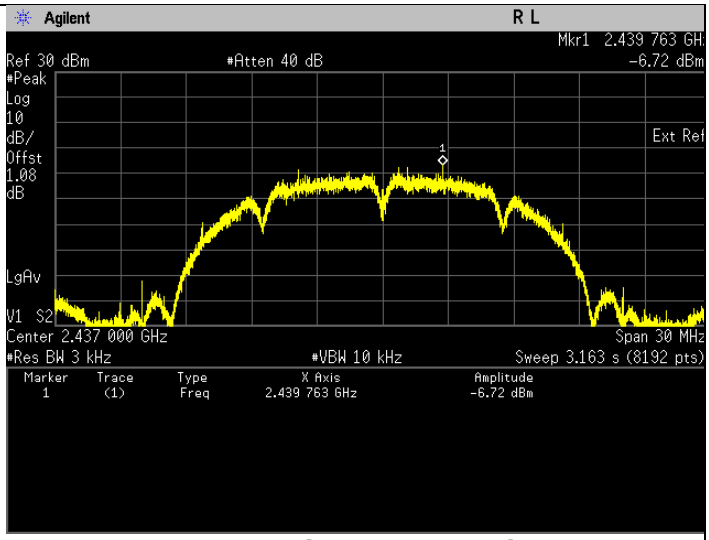
6.4.3. **Test Result**

802.11b

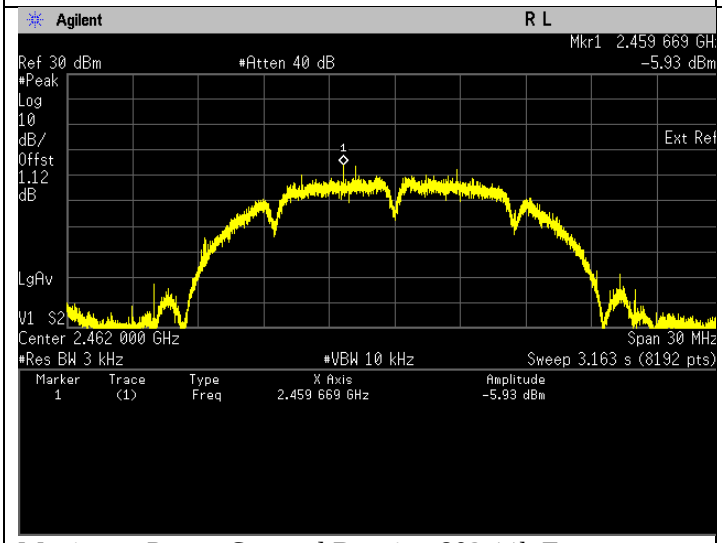
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Power (dBm/3kHz)	Status
802.11b	DSSS	QPSK	1	2412	-4.68	Pass
802.11b	DSSS	QPSK	1	2437	-6.72	Pass
802.11b	DSSS	QPSK	1	2462	-5.93	Pass



Maximum Power Spectral Density. 802.11b Frequency 2412 MHz



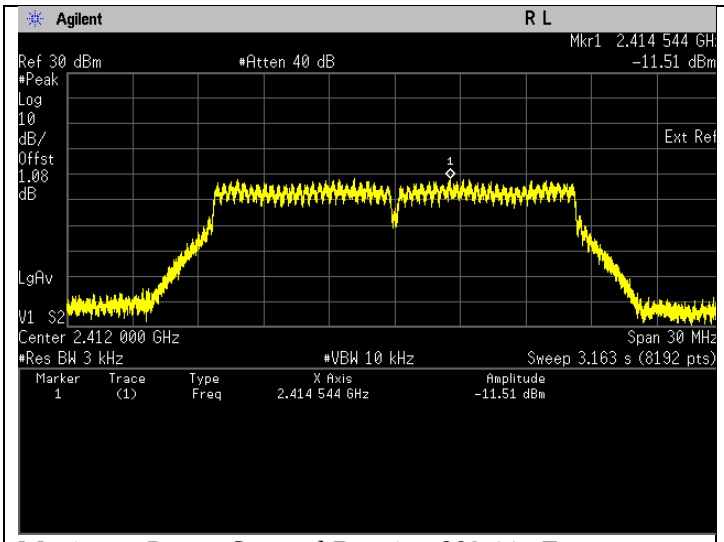
Maximum Power Spectral Density. 802.11b Frequency 2437 MHz



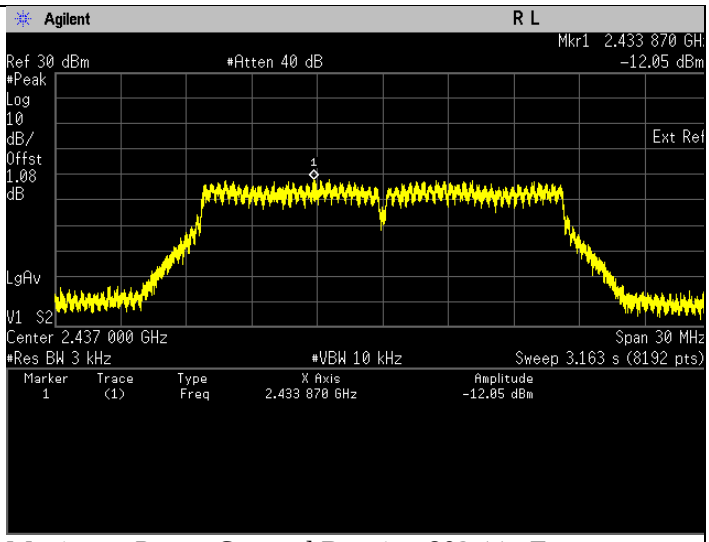
Maximum Power Spectral Density. 802.11b Frequency 2462 MHz

802.11g

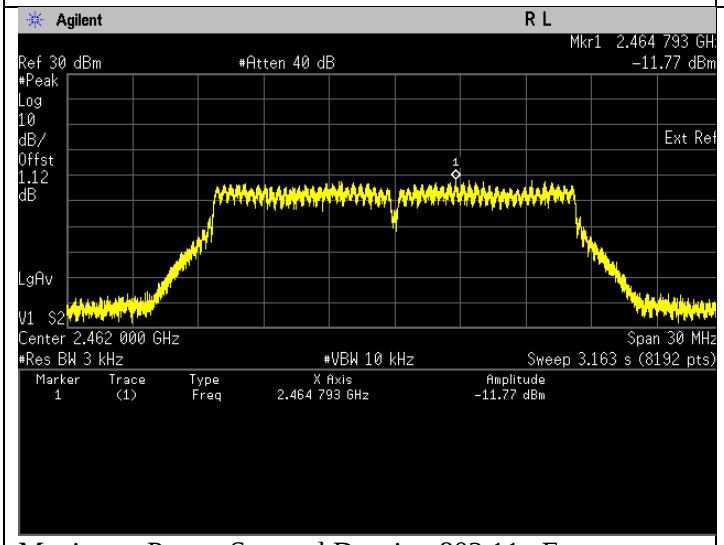
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Power (dBm/3kHz)	Status
802.11g	OFDM	BPSK	6	2412	-11.51	Pass
802.11g	OFDM	BPSK	6	2437	-12.05	Pass
802.11g	OFDM	BPSK	6	2462	-11.77	Pass



Maximum Power Spectral Density. 802.11g Frequency 2412 MHz



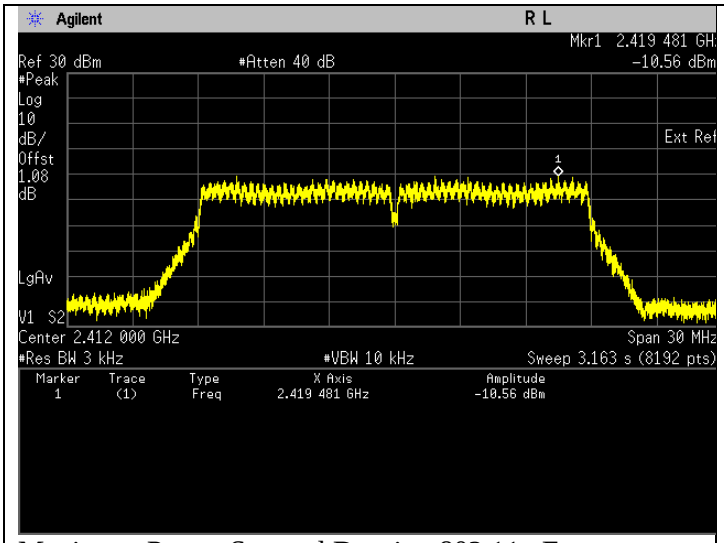
Maximum Power Spectral Density. 802.11g Frequency 2437 MHz



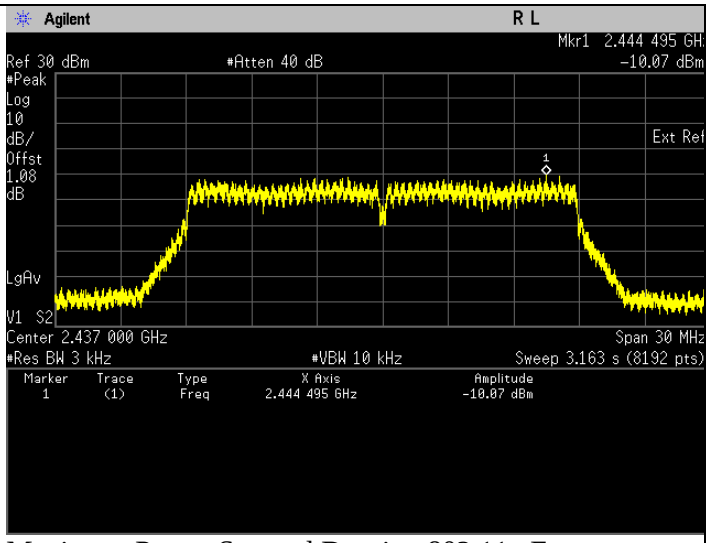
Maximum Power Spectral Density. 802.11g Frequency 2462 MHz

802.11n (HT20)

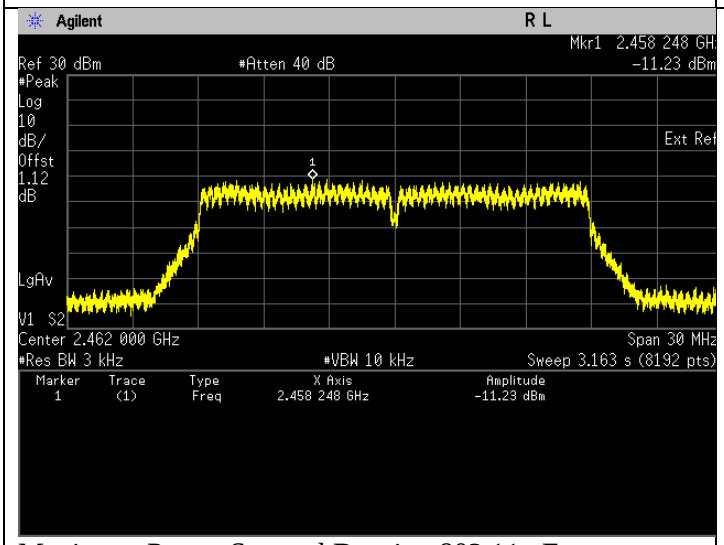
Test Conditions				Test Frequency	Results	
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Power (dBm/3kHz)	Status
802.11n	OFDM	DBPSK	6.5	2412	-10.56	Pass
802.11n	OFDM	DBPSK	6.5	2437	-10.07	Pass
802.11n	OFDM	DBPSK	6.5	2462	-11.23	Pass



Maximum Power Spectral Density. 802.11n Frequency 2412 MHz



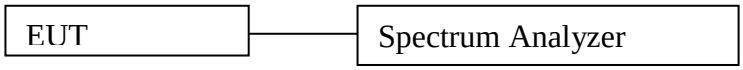
Maximum Power Spectral Density. 802.11n Frequency 2437 MHz



Maximum Power Spectral Density. 802.11n Frequency 2462 MHz

6.5. Conducted Spurious Emission

6.5.1. Test Setup



a) Check and ensure the spectrum analyzer well calibrate.
b) Turn on the DUT and set DUT to transmit maximum power.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) Setting of Spectrum analyzer :
    a. RBW = 100 kHz
    b. VBW = 300 kHz
    c. Detector mode = Peak
    d. Trace = Max Hold
    e. Sweep = auto
e) Use the peak marker function to measure highest emission and scan up to 10th harmonic.
f) Measure every antenna port by repeat the step above for MIMO measurement.

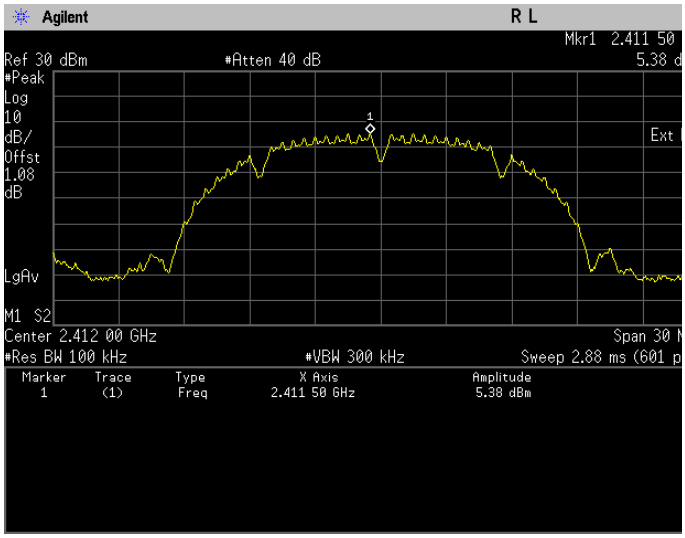
6.5.2. Test Limits:

Normal Condition (25 ° C)
Shall be at least 30 dB below max power. (Average detector)

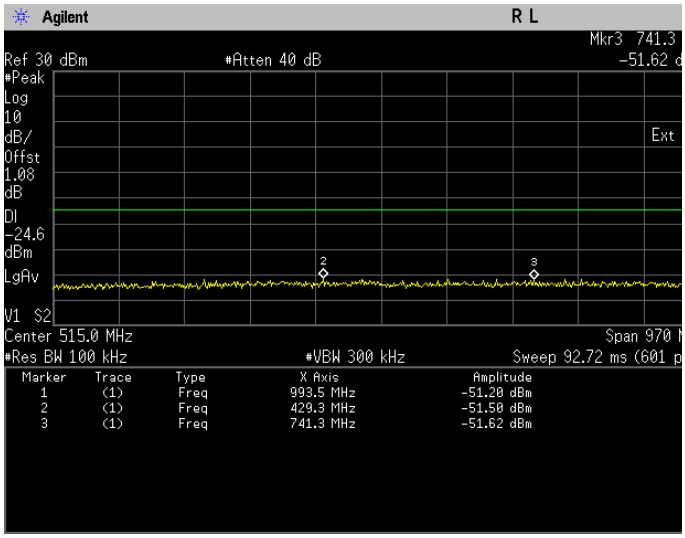
6.5.3. Test Result

802.11b

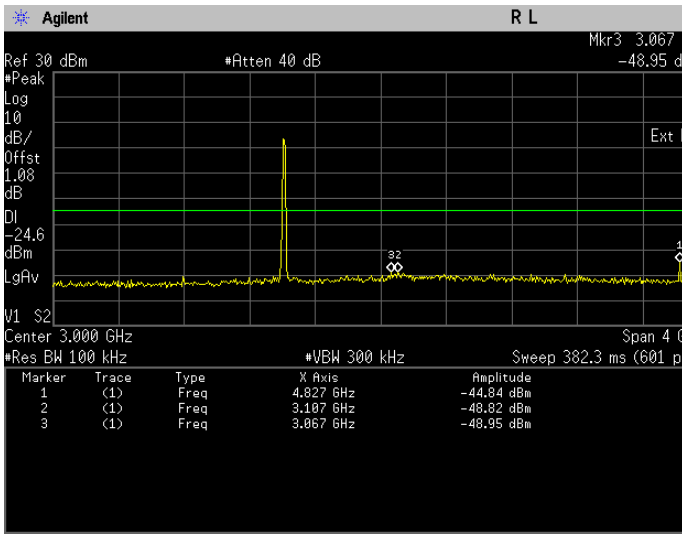
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
802.11b	DSSS	QPSK	1	2412	24983.000	-43.4010	Pass
					24758.000	-43.4930	Pass
					24342.000	-43.6360	Pass
802.11b	DSSS	QPSK	1	2437	24867.000	-42.7740	Pass
					24325.000	-42.9540	Pass
					24942.000	-43.4080	Pass
802.11b	DSSS	QPSK	1	2462	24925.000	-41.3910	Pass
					24300.000	-42.8140	Pass
					24842.000	-43.1340	Pass



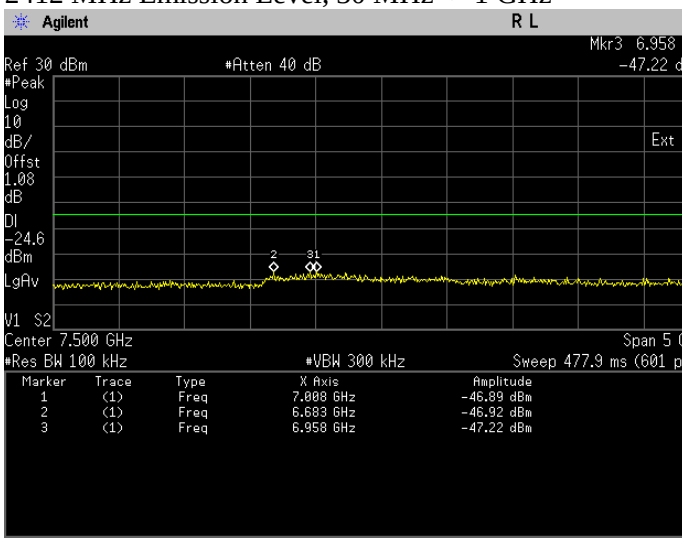
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Reference Level



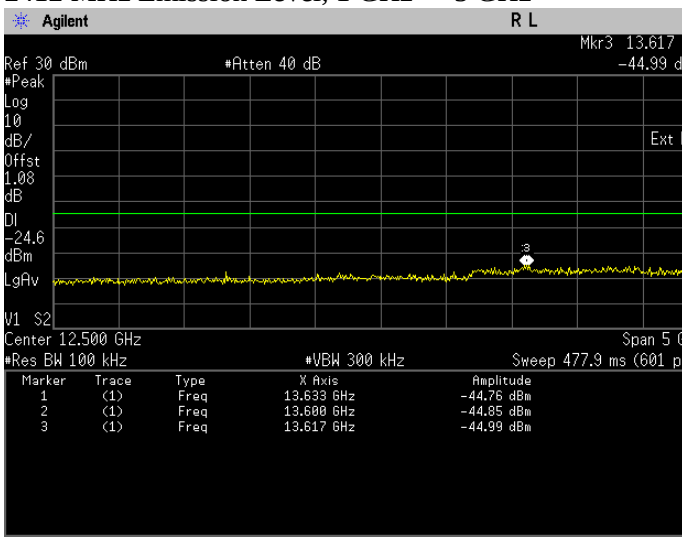
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 30 MHz -> 1 GHz



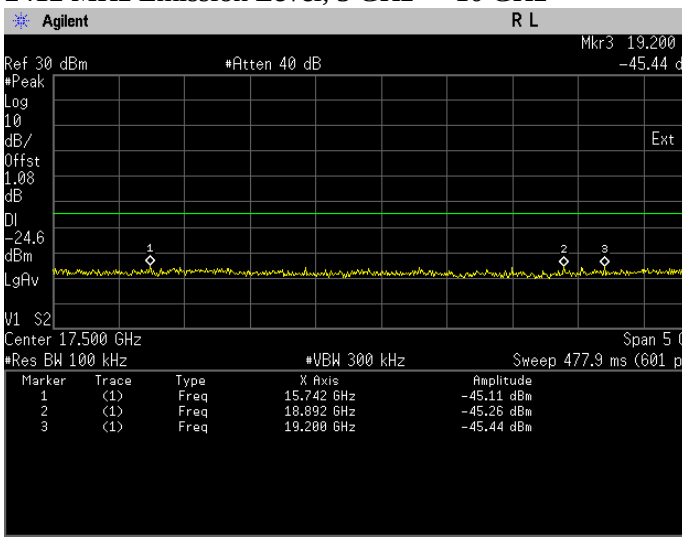
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 1 GHz -> 5 GHz



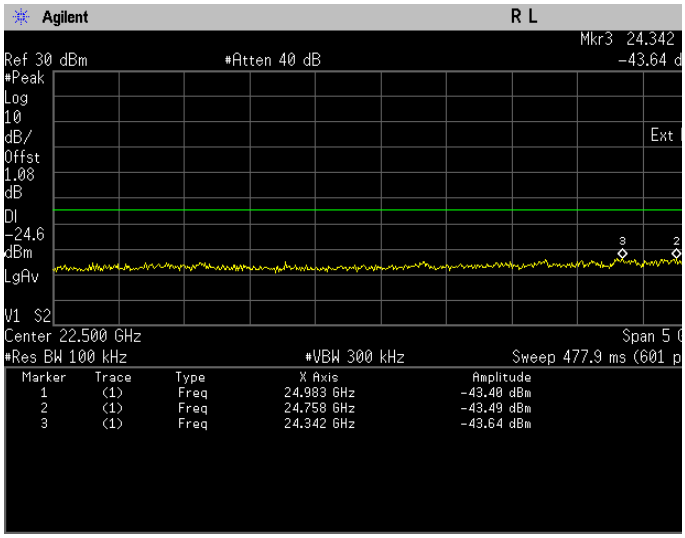
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 5 GHz -> 10 GHz



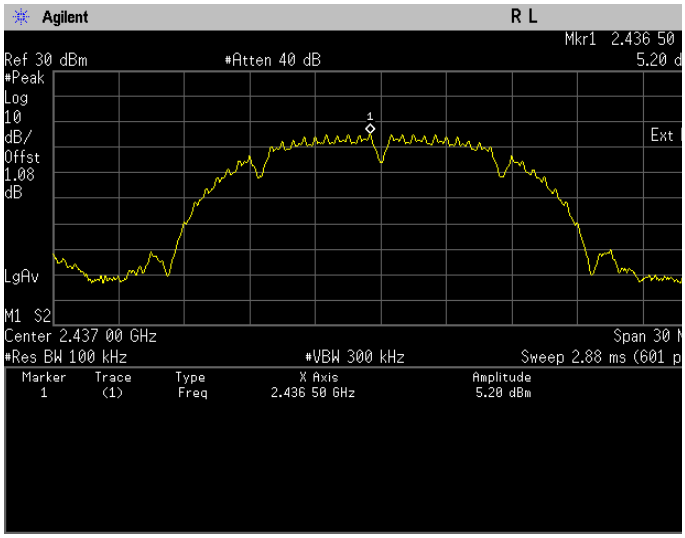
Conducted Emissions(Average). 802.11b, Frequency 2412 Emission Level, 10 GHz -> 15 GHz



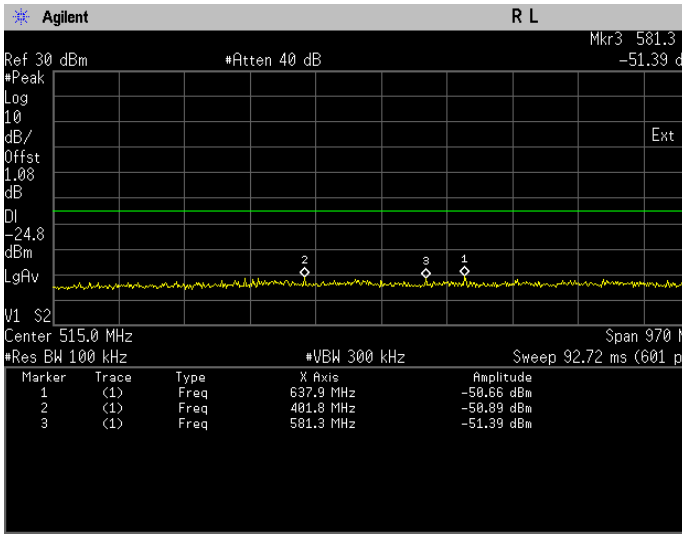
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 15 GHz -> 20 GHz



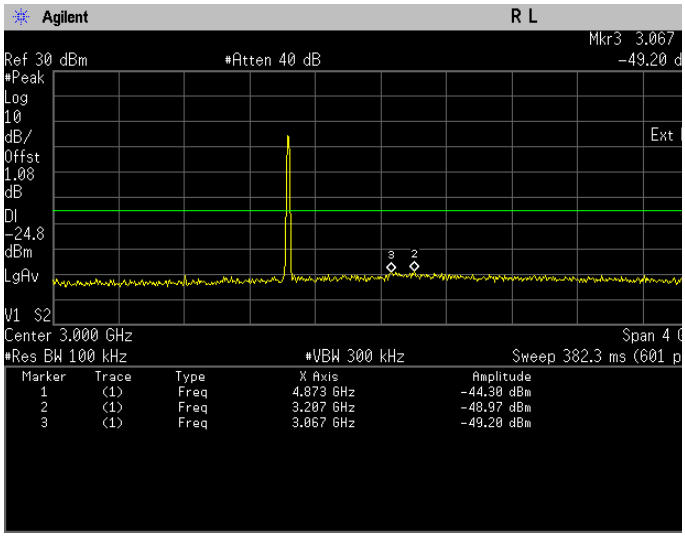
Conducted Emissions(Average). 802.11b, Frequency 2412 MHz Emission Level, 20 GHz -> 25 GHz



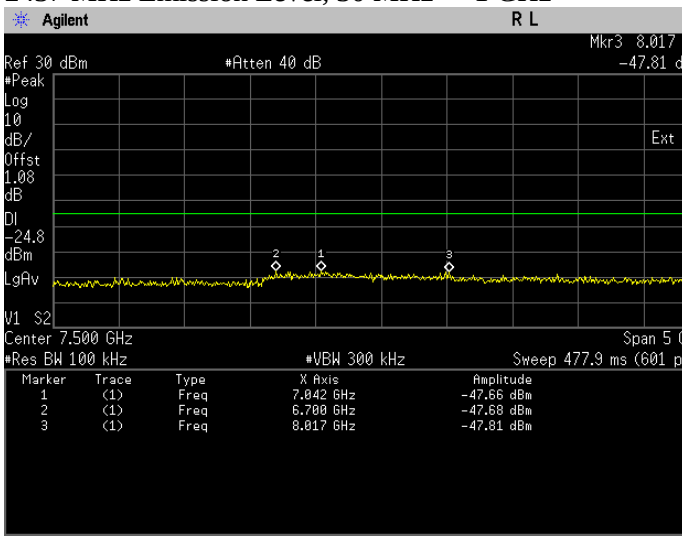
Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Reference Level



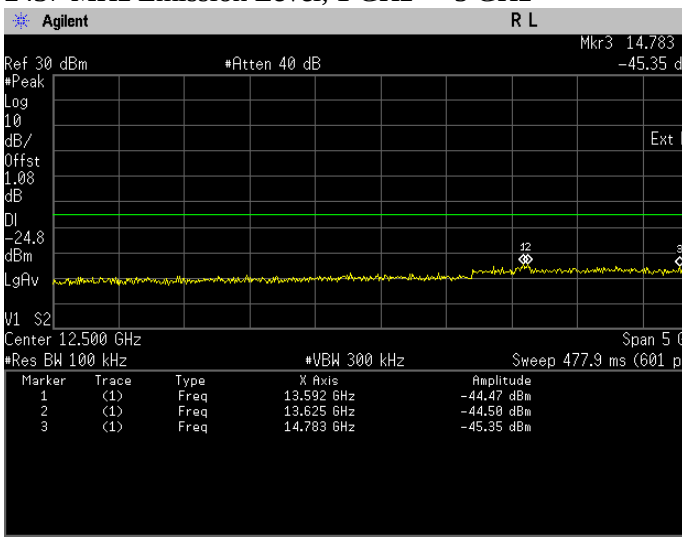
Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Emission Level, 30 MHz -> 1 GHz



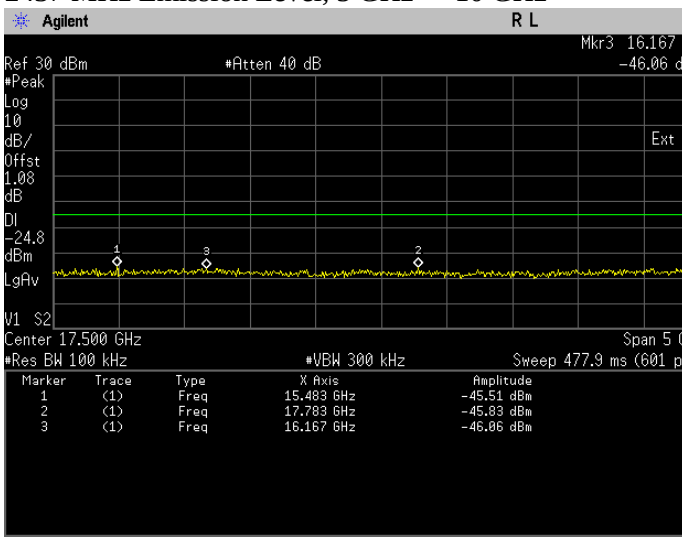
Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Emission Level, 1 GHz -> 5 GHz



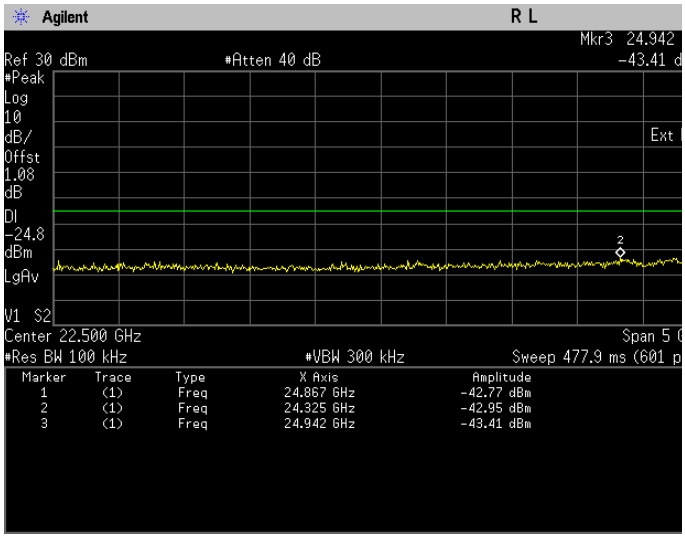
Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Emission Level, 5 GHz -> 10 GHz



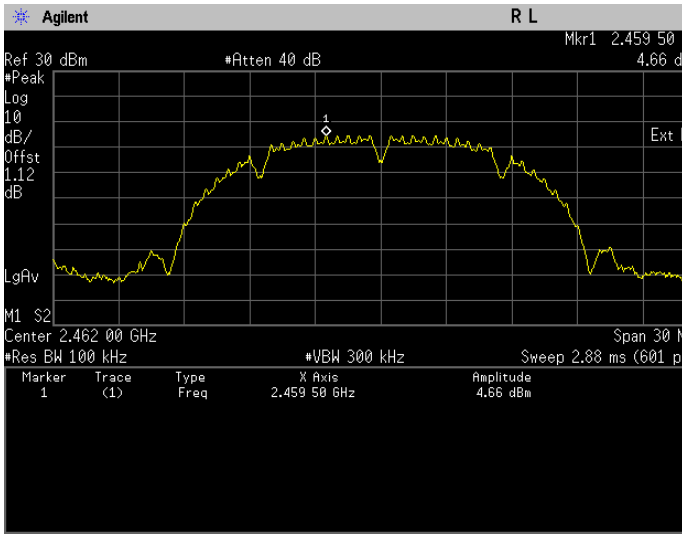
Conducted Emissions(Average). 802.11b, Frequency 2437 Emission Level, 10 GHz -> 15 GHz



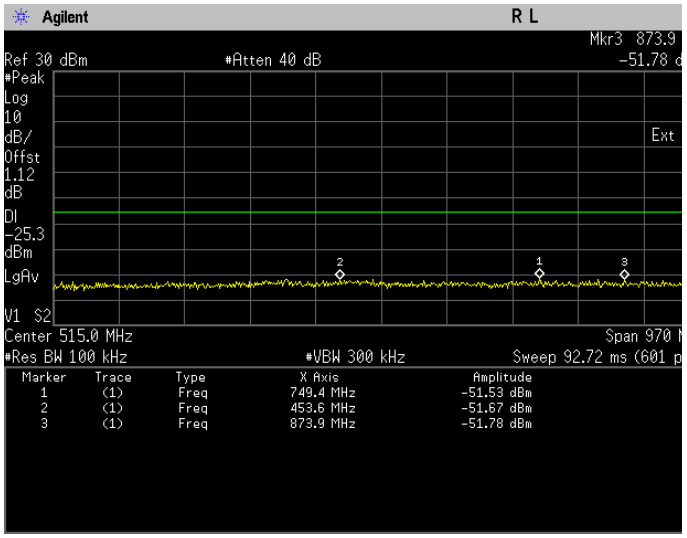
Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Emission Level, 15 GHz -> 20 GHz



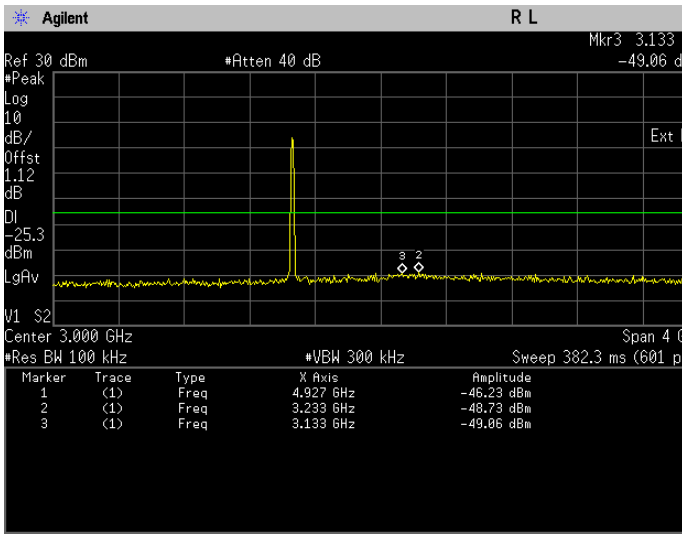
Conducted Emissions(Average). 802.11b, Frequency 2437 MHz Emission Level, 20 GHz -> 25 GHz



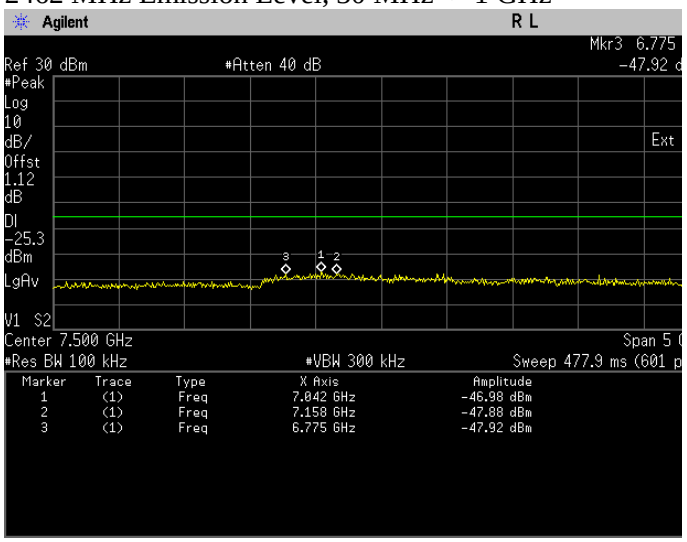
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Reference Level



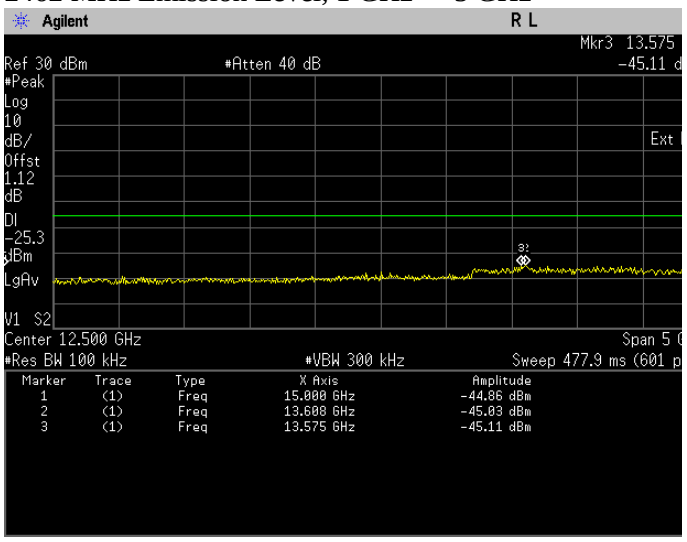
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 30 MHz -> 1 GHz



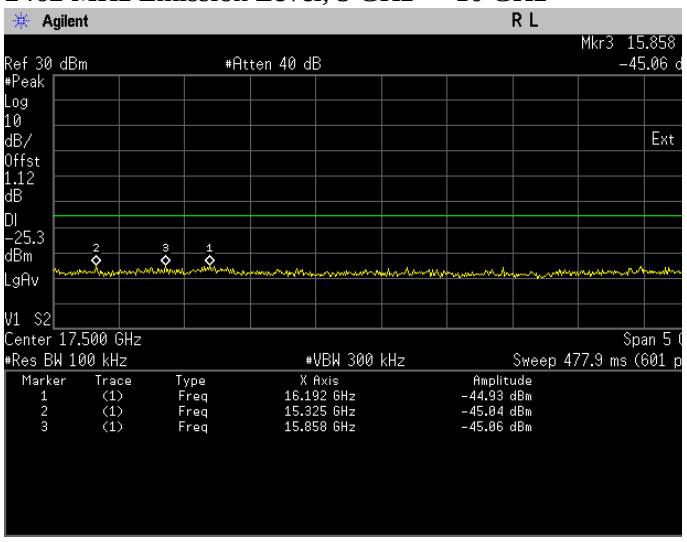
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 1 GHz -> 5 GHz



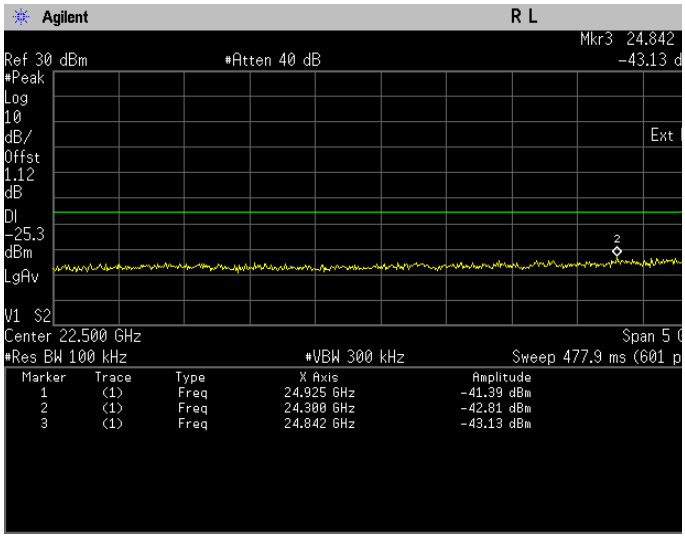
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions(Average). 802.11b, Frequency 2462 Emission Level, 10 GHz -> 15 GHz



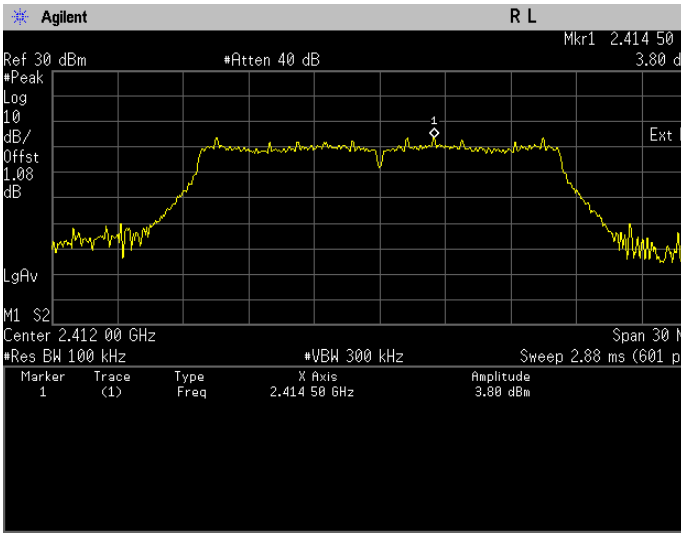
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 15 GHz -> 20 GHz



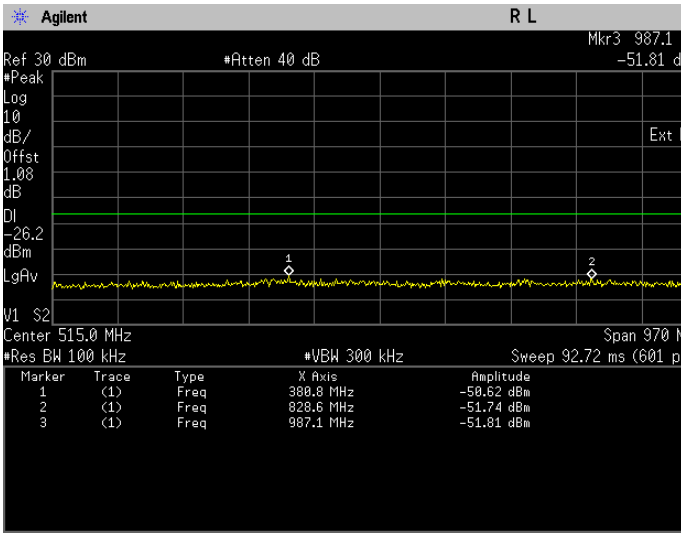
Conducted Emissions(Average). 802.11b, Frequency 2462 MHz Emission Level, 20 GHz -> 25 GHz

802.11g

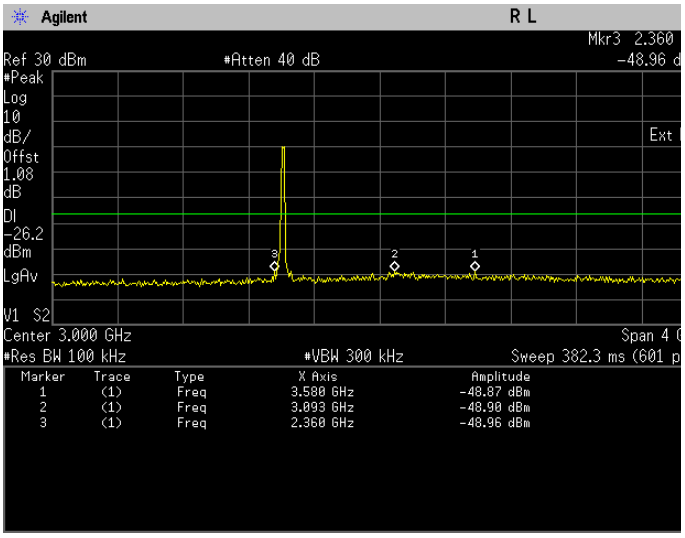
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
802.11g	OFDM	BPSK	6	2412	24950.000	-43.2910	Pass
					24883.000	-43.4690	Pass
					24617.000	-43.6860	Pass
802.11g	OFDM	BPSK	6	2437	24767.000	-42.3000	Pass
					24533.000	-42.9810	Pass
					24683.000	-43.3030	Pass
802.11g	OFDM	BPSK	6	2462	24942.000	-43.1600	Pass
					24683.000	-43.4340	Pass
					24383.000	-43.4670	Pass



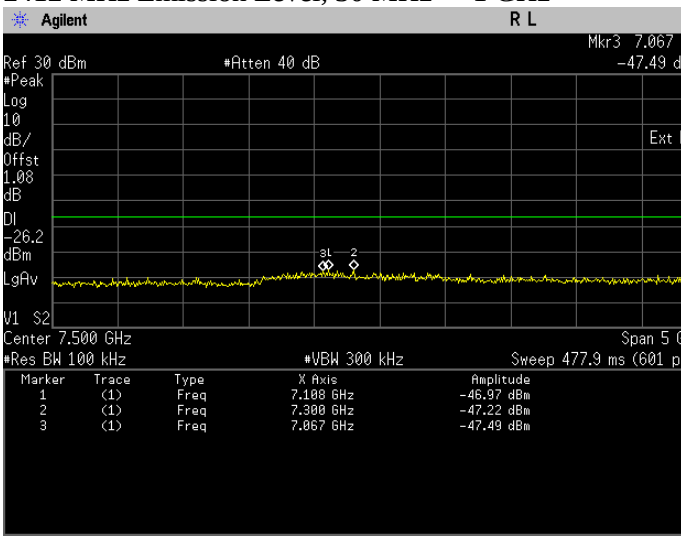
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Reference Level



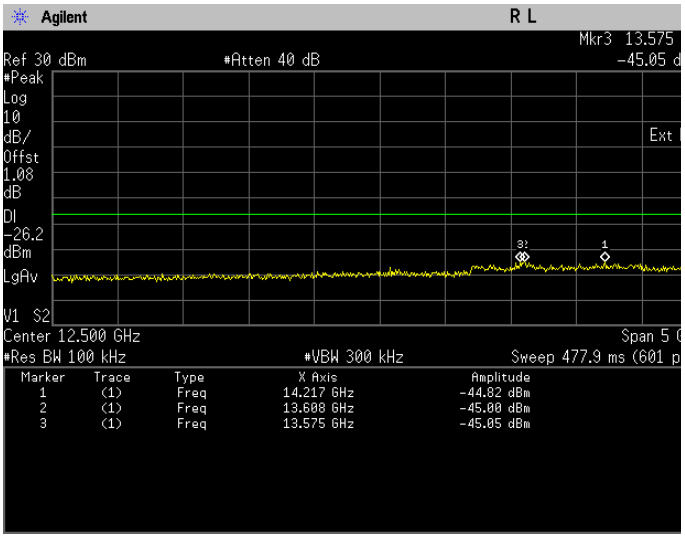
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 30 MHz -> 1 GHz



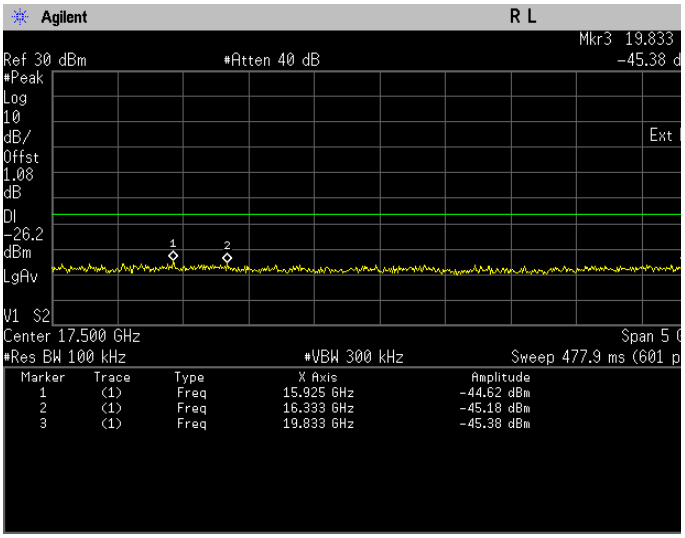
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 1 GHz -> 5 GHz



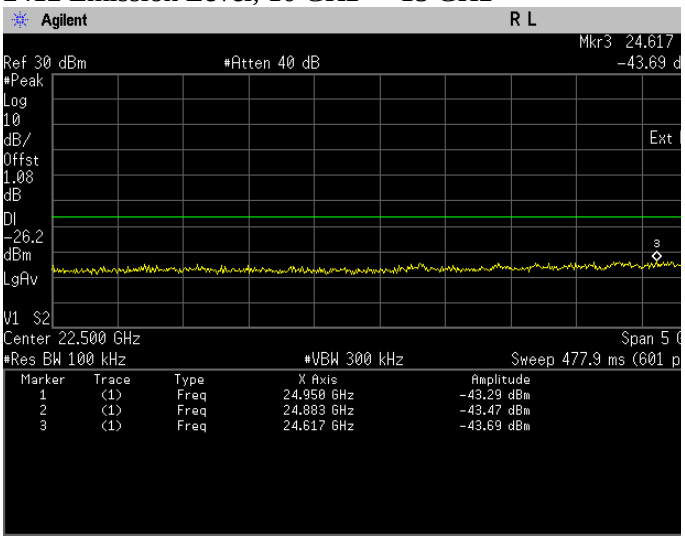
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 5 GHz -> 10 GHz



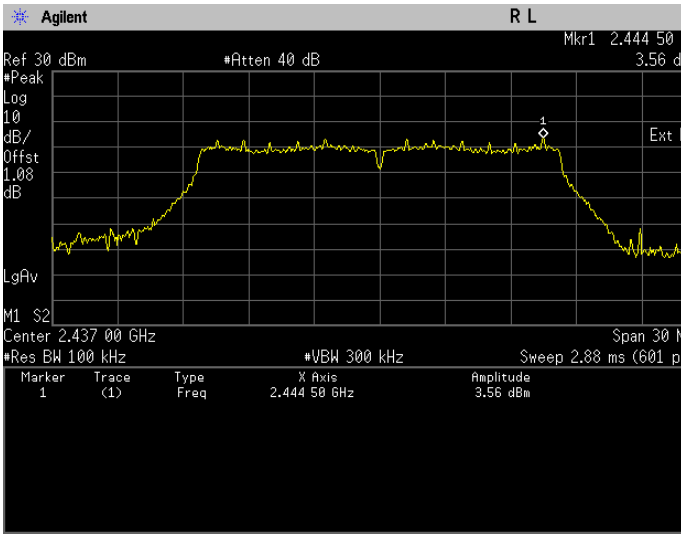
Conducted Emissions(Average). 802.11g, Frequency 2412 Emission Level, 10 GHz -> 15 GHz



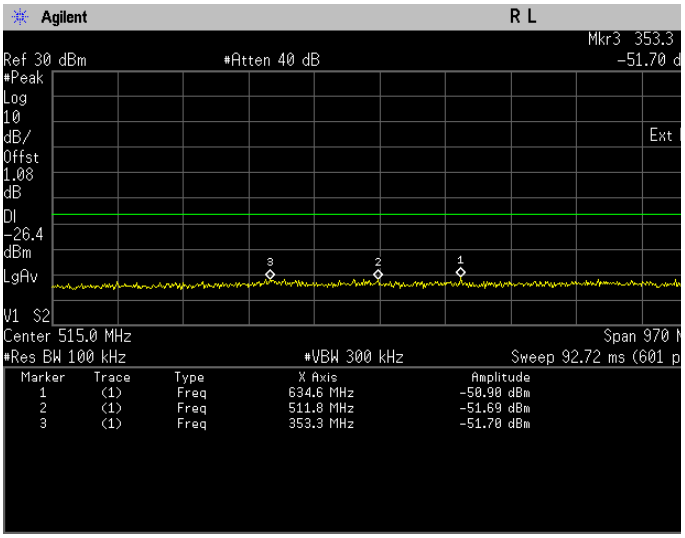
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 15 GHz -> 20 GHz



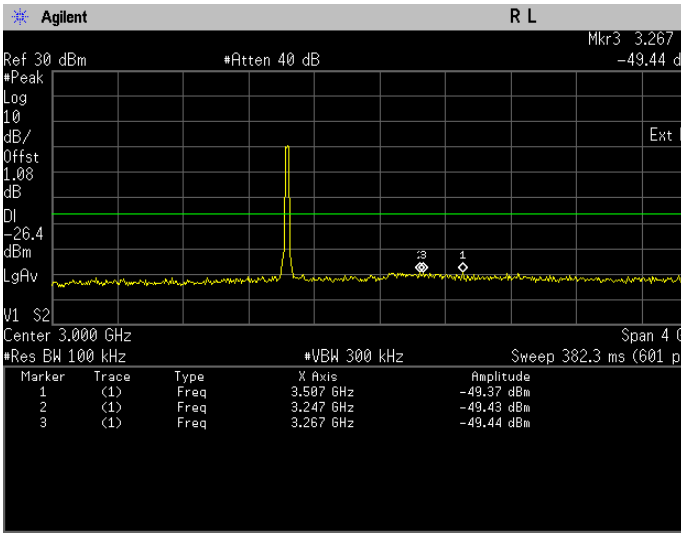
Conducted Emissions(Average). 802.11g, Frequency 2412 MHz Emission Level, 20 GHz -> 25 GHz



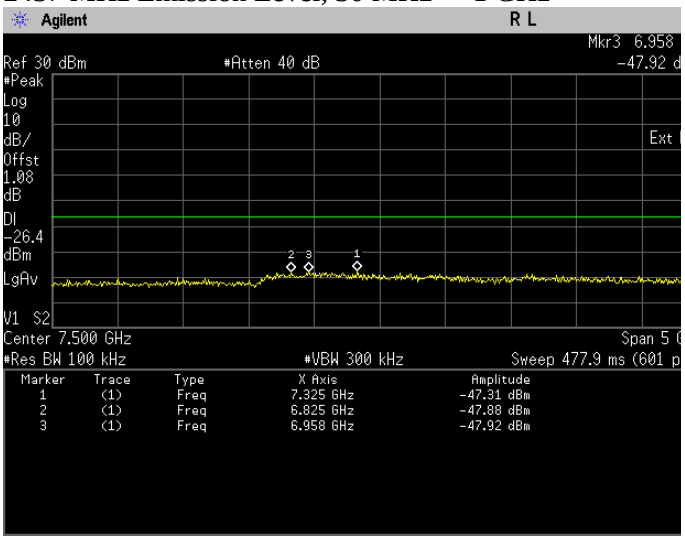
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Reference Level



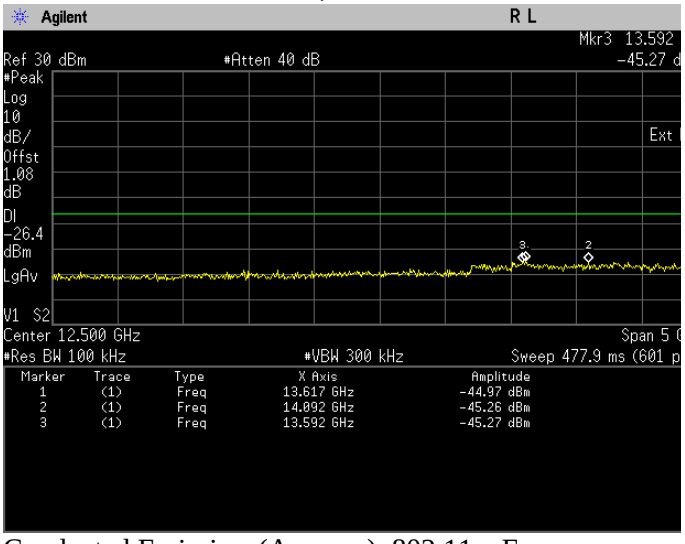
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 30 MHz -> 1 GHz



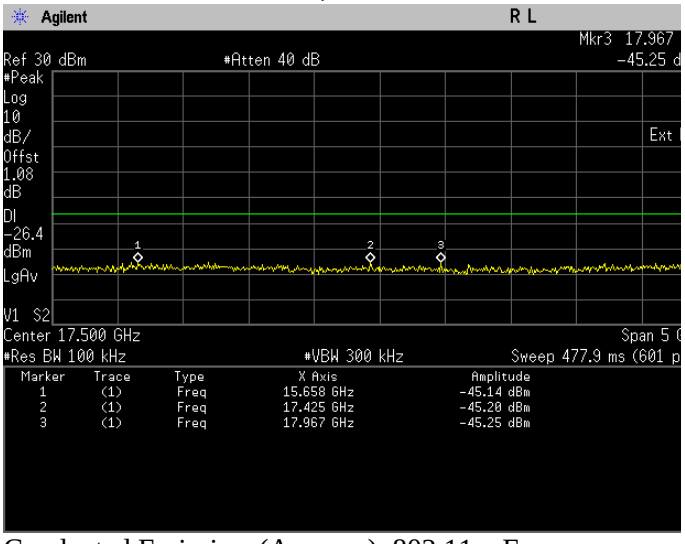
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 1 GHz -> 5 GHz



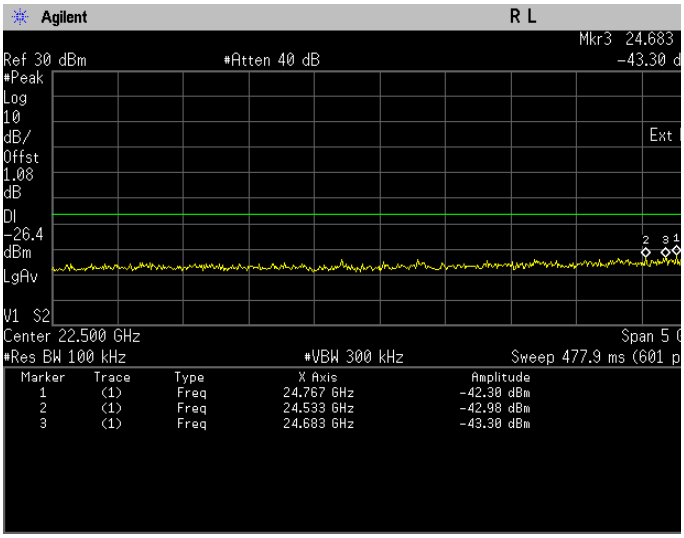
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 5 GHz -> 10 GHz



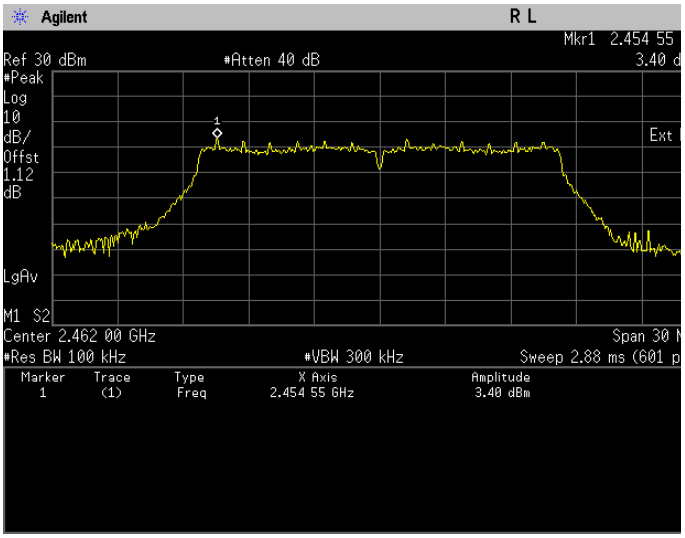
Conducted Emissions(Average). 802.11g, Frequency 2437 Emission Level, 10 GHz -> 15 GHz



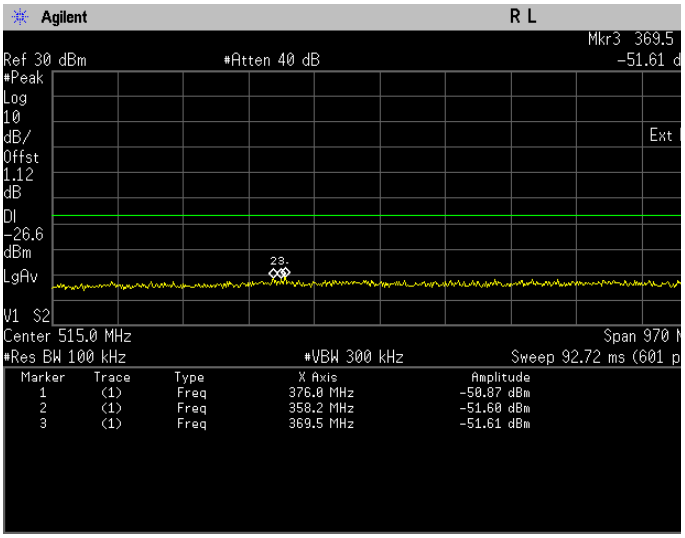
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 15 GHz -> 20 GHz



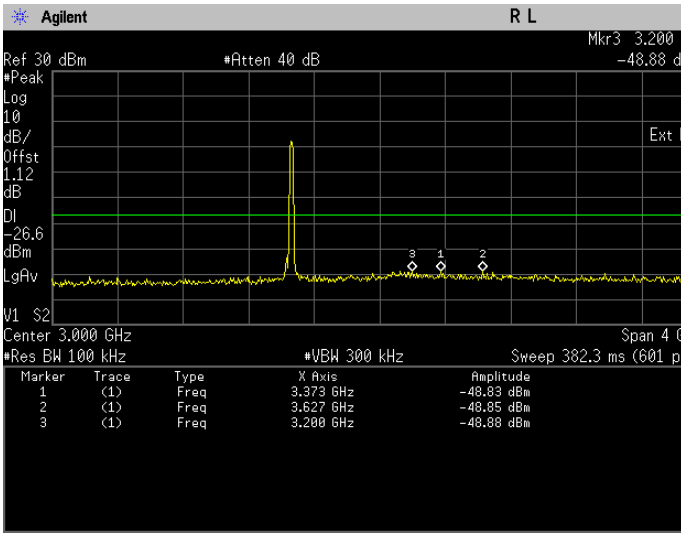
Conducted Emissions(Average). 802.11g, Frequency 2437 MHz Emission Level, 20 GHz -> 25 GHz



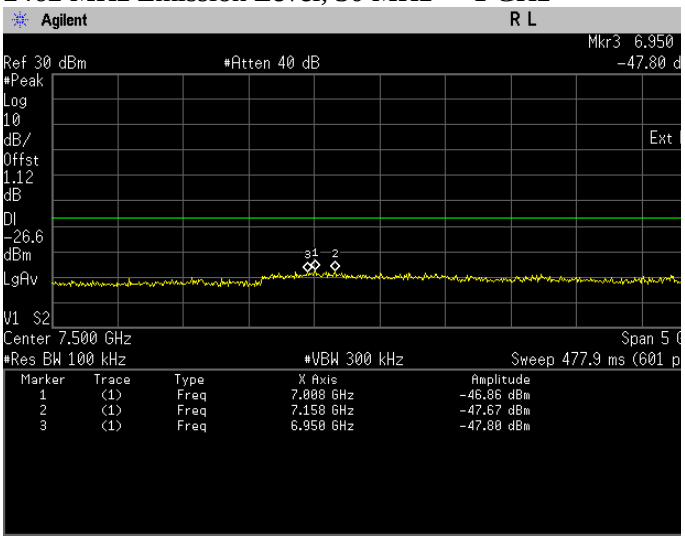
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Reference Level



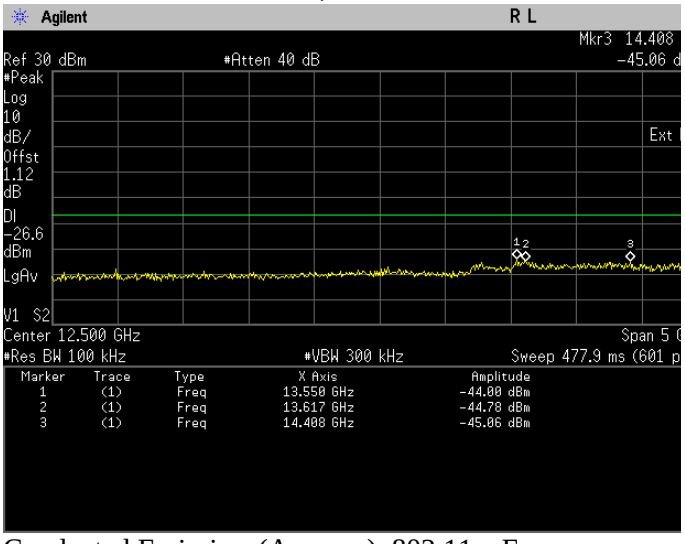
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 30 MHz -> 1 GHz



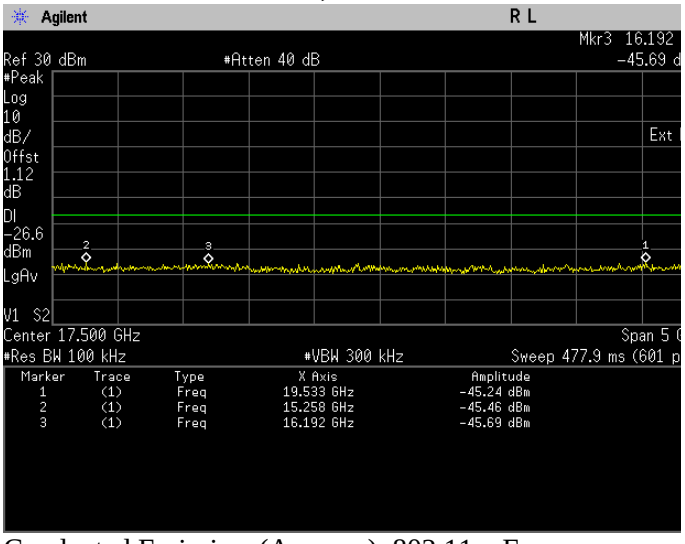
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 1 GHz -> 5 GHz



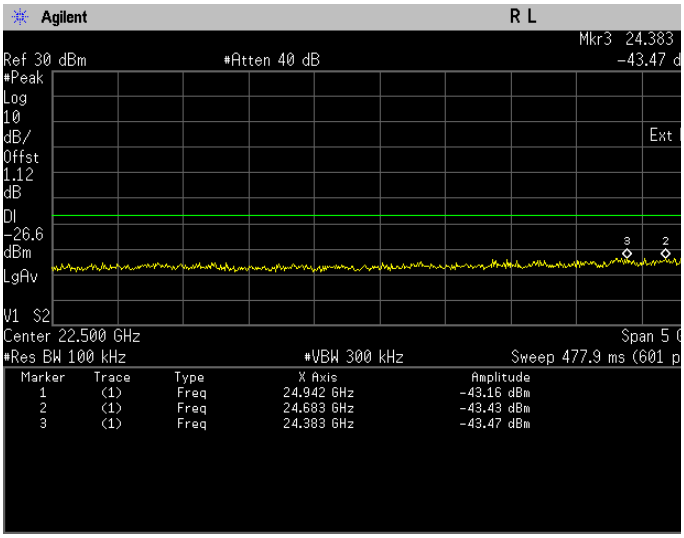
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions(Average). 802.11g, Frequency 2462 Emission Level, 10 GHz -> 15 GHz



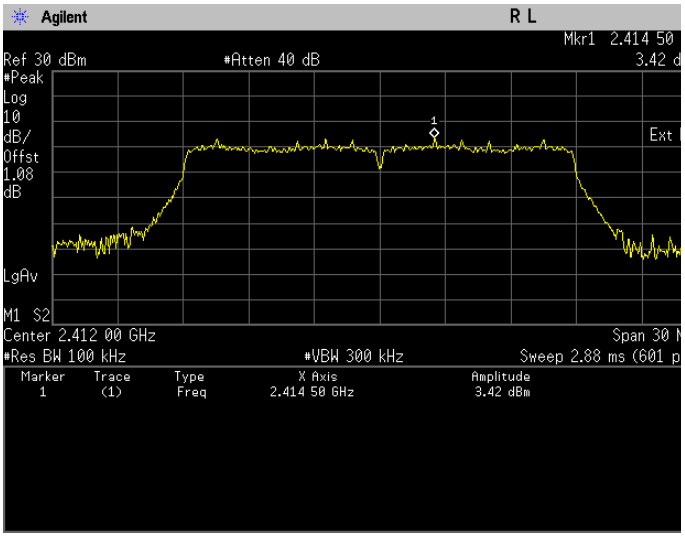
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 15 GHz -> 20 GHz



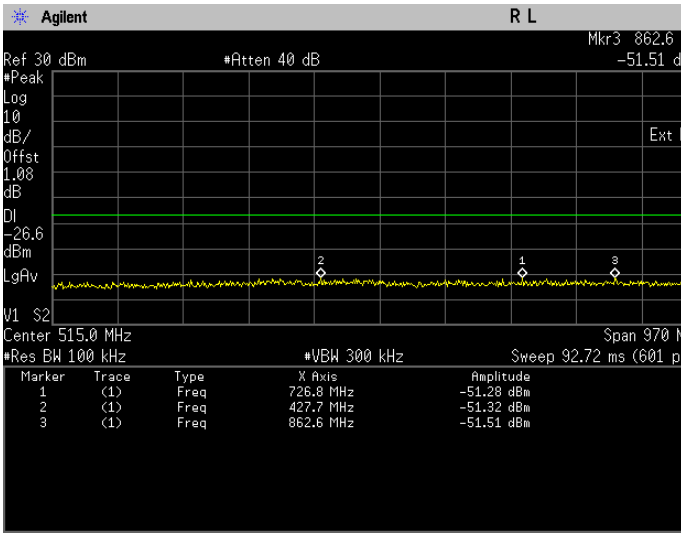
Conducted Emissions(Average). 802.11g, Frequency 2462 MHz Emission Level, 20 GHz -> 25 GHz

802.11n (HT20)

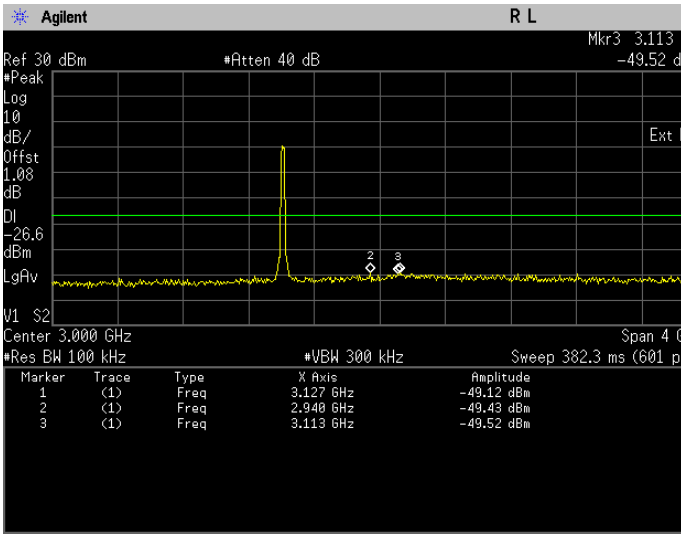
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Spurs (MHz)	Level (dBm)	Status
802.11n	OFDM	DBPSK	6.5	2412	24867.000	-43.4710	Pass
					24700.000	-43.4960	Pass
					24767.000	-43.8700	Pass
802.11n	OFDM	DBPSK	6.5	2437	24933.000	-42.6530	Pass
					24308.000	-43.0340	Pass
					24283.000	-43.1860	Pass
802.11n	OFDM	DBPSK	6.5	2462	24875.000	-43.0850	Pass
					24858.000	-43.2800	Pass
					23817.000	-43.3300	Pass



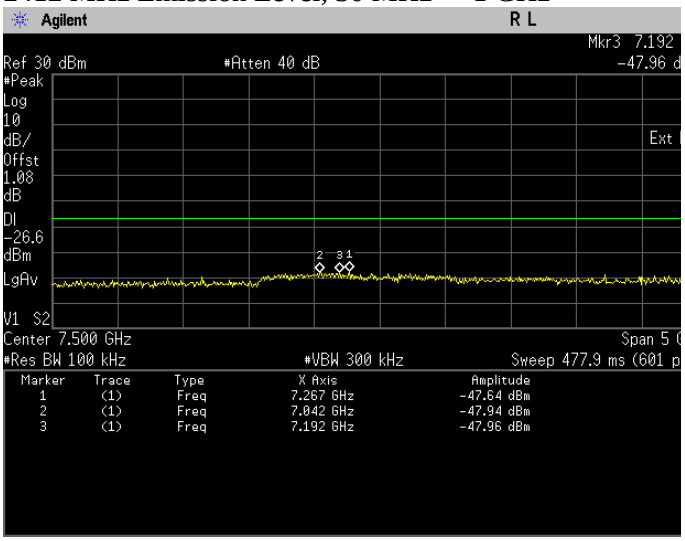
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Reference Level



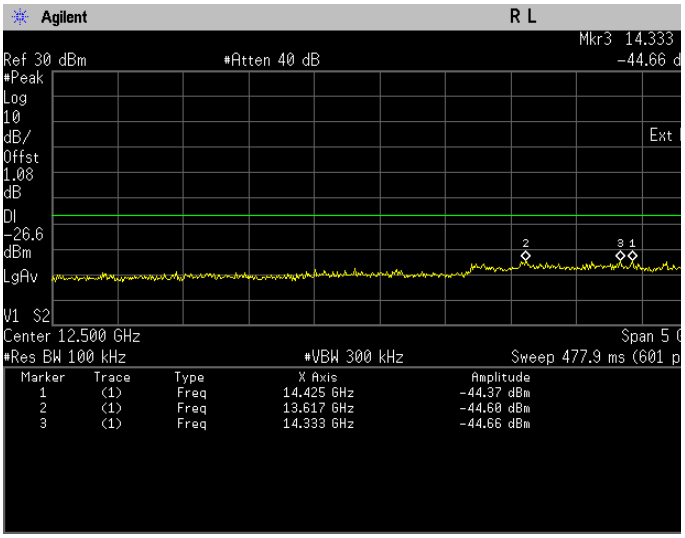
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 30 MHz -> 1 GHz



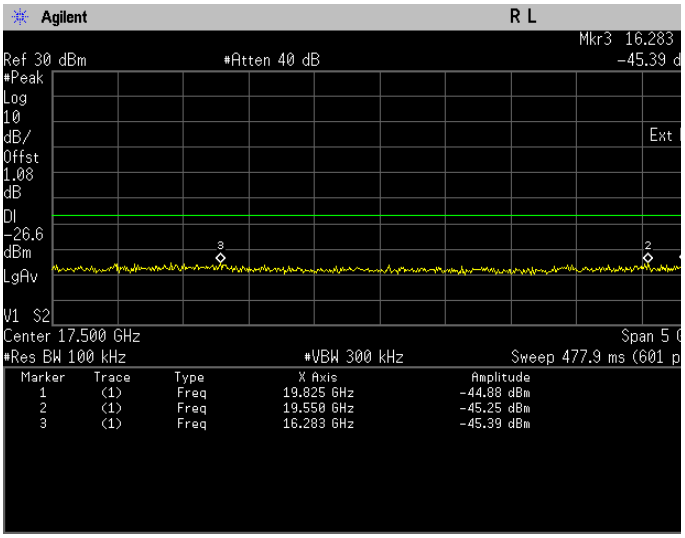
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 1 GHz -> 5 GHz



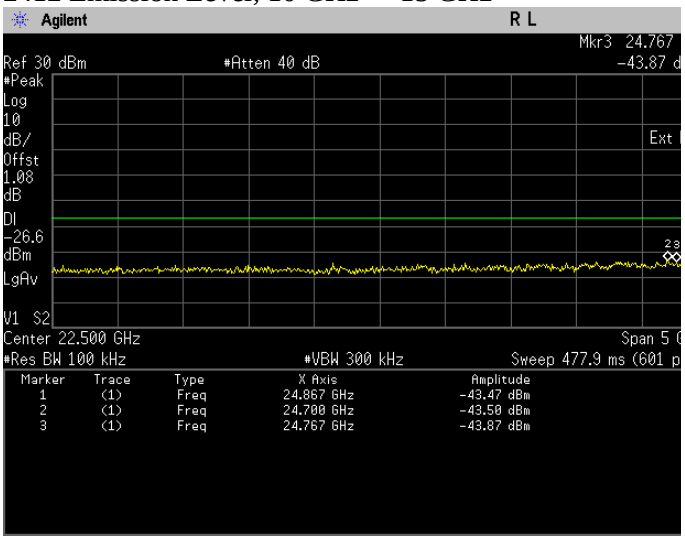
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 5 GHz -> 10 GHz



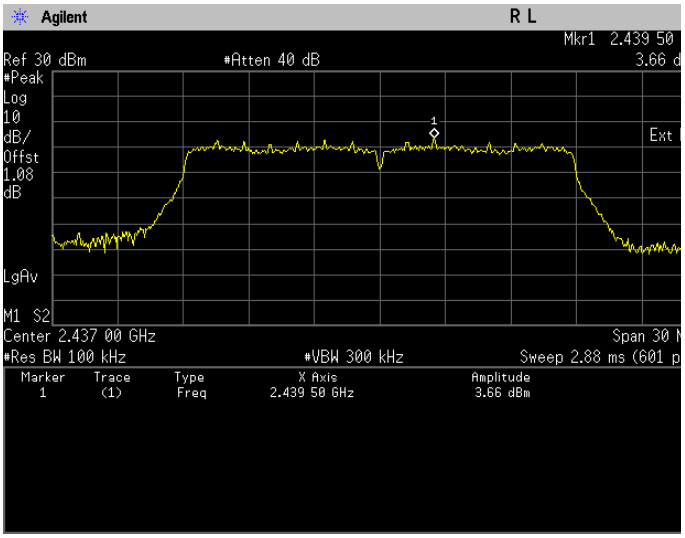
Conducted Emissions(Average). 802.11n, Frequency 2412 Emission Level, 10 GHz -> 15 GHz



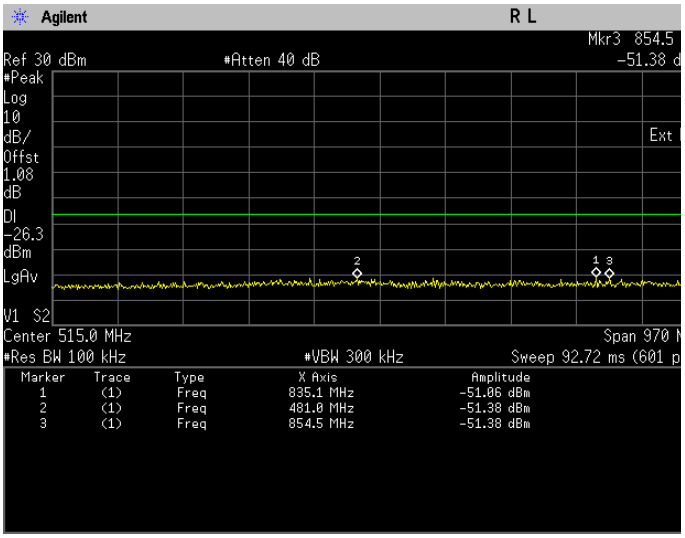
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 15 GHz -> 20 GHz



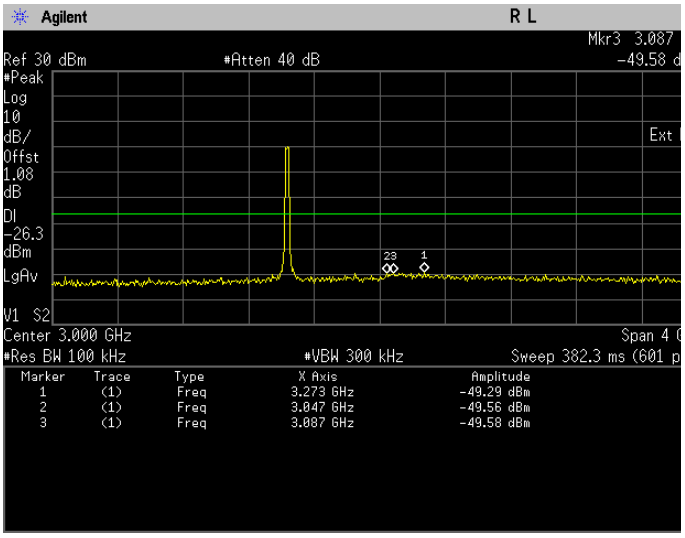
Conducted Emissions(Average). 802.11n, Frequency 2412 MHz Emission Level, 20 GHz -> 25 GHz



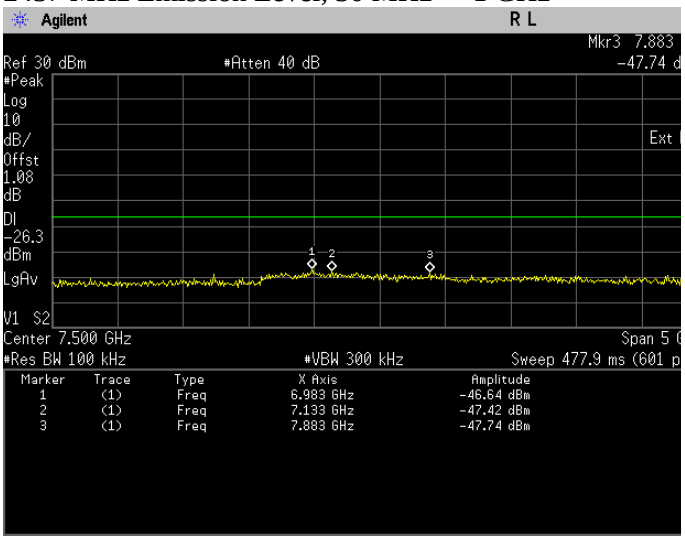
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Reference Level



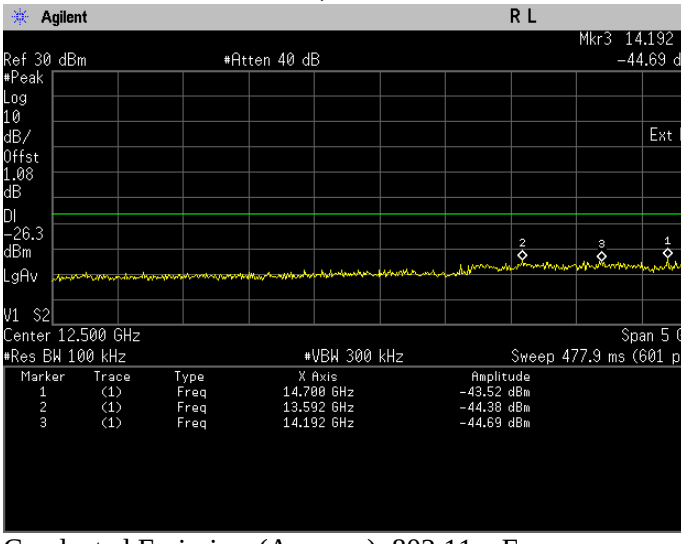
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 30 MHz -> 1 GHz



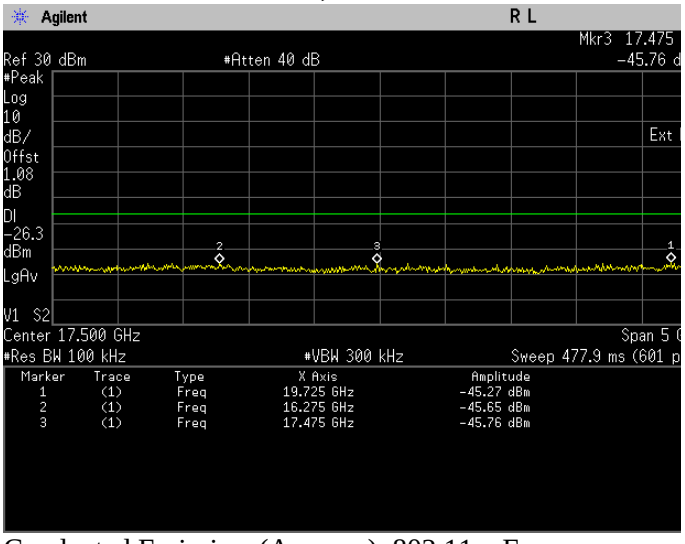
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 1 GHz -> 5 GHz



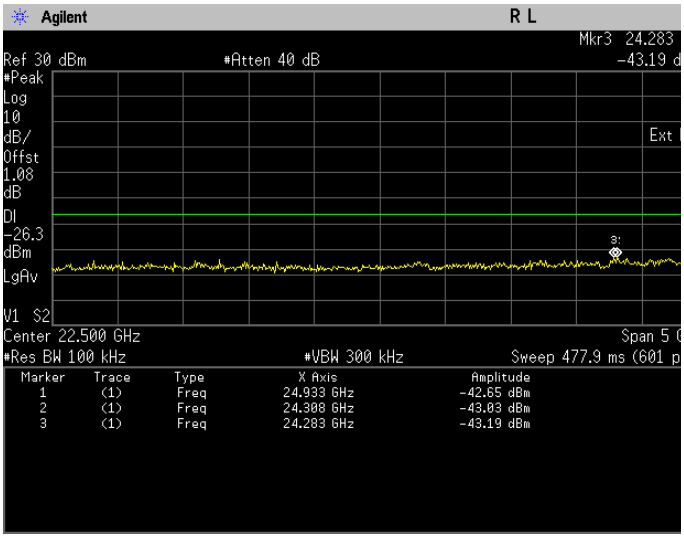
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 5 GHz -> 10 GHz



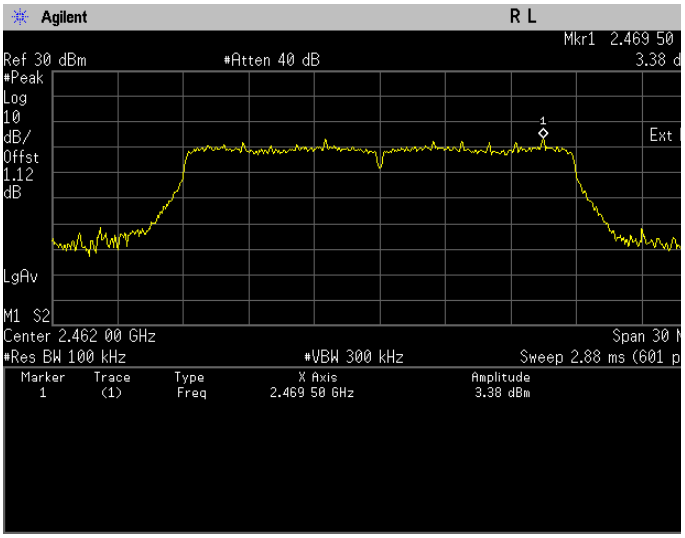
Conducted Emissions(Average). 802.11n, Frequency 2437 Emission Level, 10 GHz -> 15 GHz



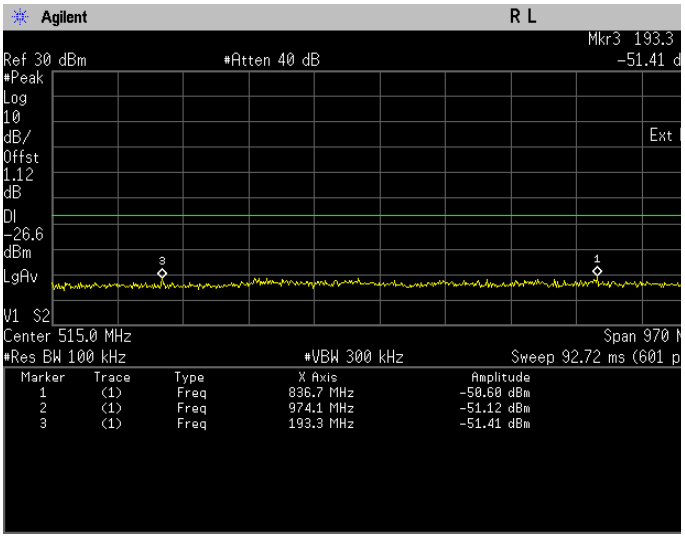
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 15 GHz -> 20 GHz



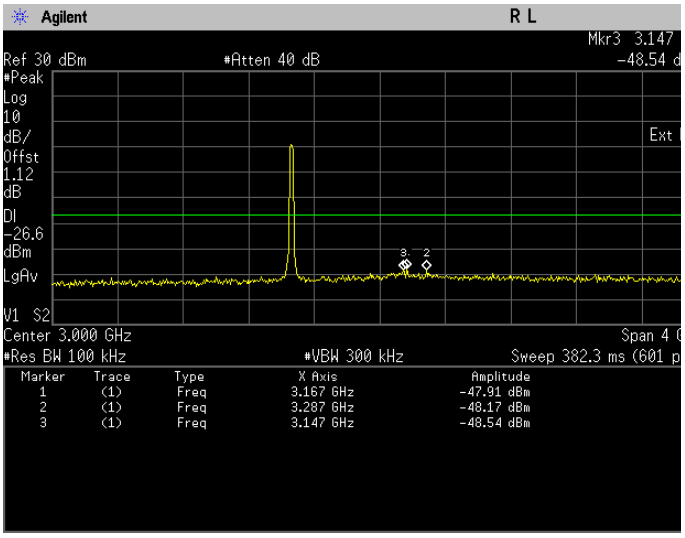
Conducted Emissions(Average). 802.11n, Frequency 2437 MHz Emission Level, 20 GHz -> 25 GHz



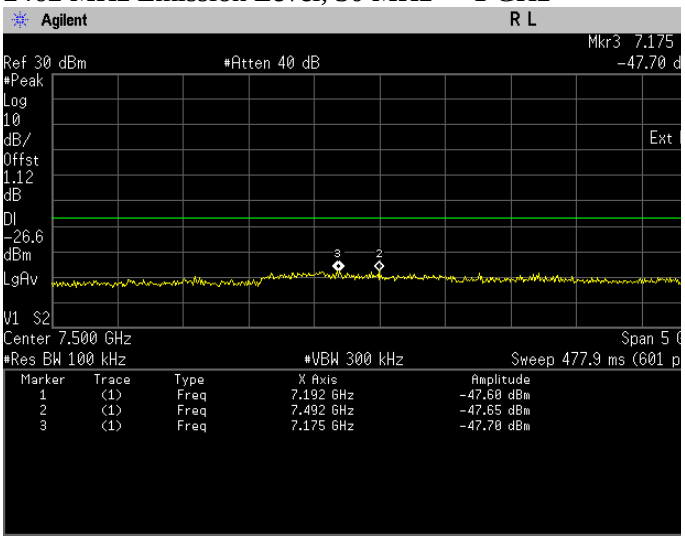
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Reference Level



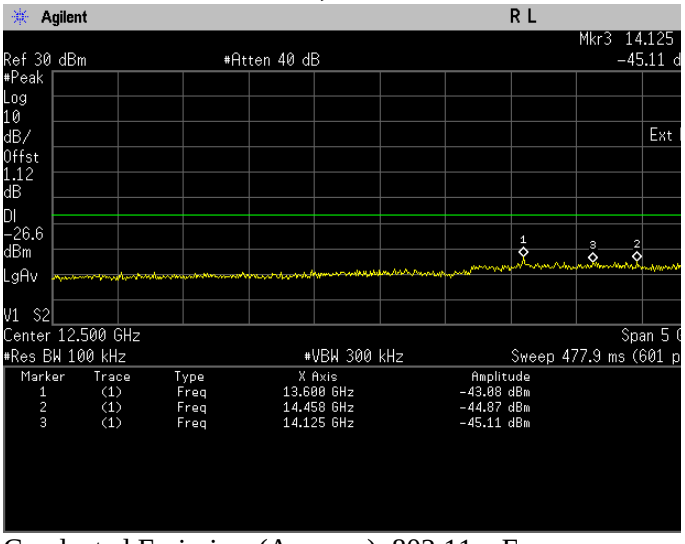
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 30 MHz -> 1 GHz



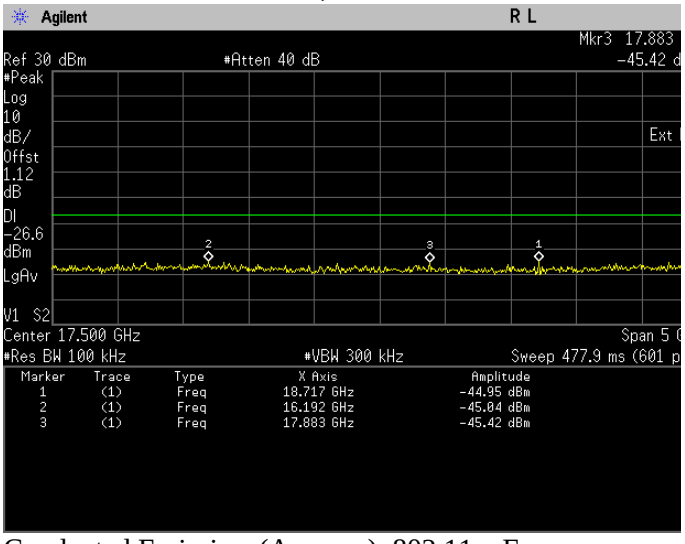
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 1 GHz -> 5 GHz



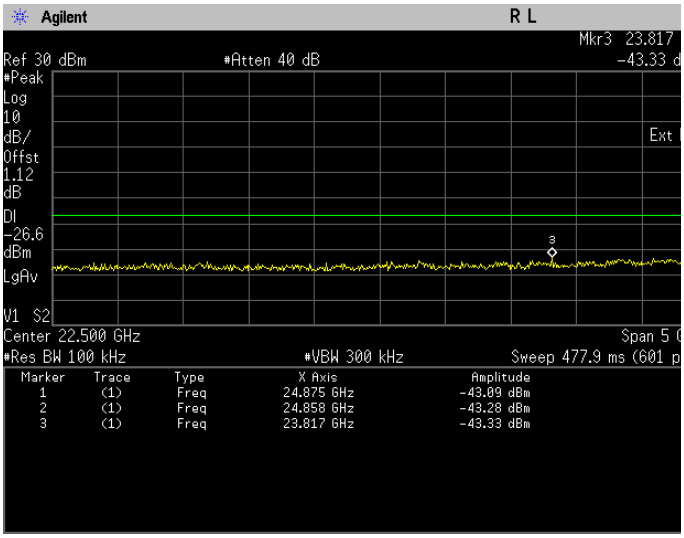
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 5 GHz -> 10 GHz



Conducted Emissions(Average). 802.11n, Frequency 2462 Emission Level, 10 GHz -> 15 GHz



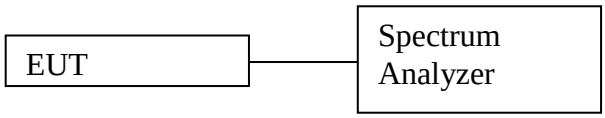
Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 15 GHz -> 20 GHz



Conducted Emissions(Average). 802.11n, Frequency 2462 MHz Emission Level, 20 GHz -> 25 GHz

6.6. Band edge Conducted Spurious Emission

6.6.1. Test Setup



a) Check and ensure the spectrum analyzer well calibrate.
b) Turn on the DUT and set DUT to transmit maximum power.
c) Connect DUT's antenna terminal to spectrum analyzer with a low loss cable.
d) Setting of Spectrum analyzer :
    a. RBW = 100 kHz
    b. VBW = 300 kHz
    c. Detector mode = Peak
    d. Trace = Max Hold
    e. Sweep = auto
e) Use the peak marker function to measure highest emission.
f) Measure every antenna port by repeat the step above for MIMO measurement.

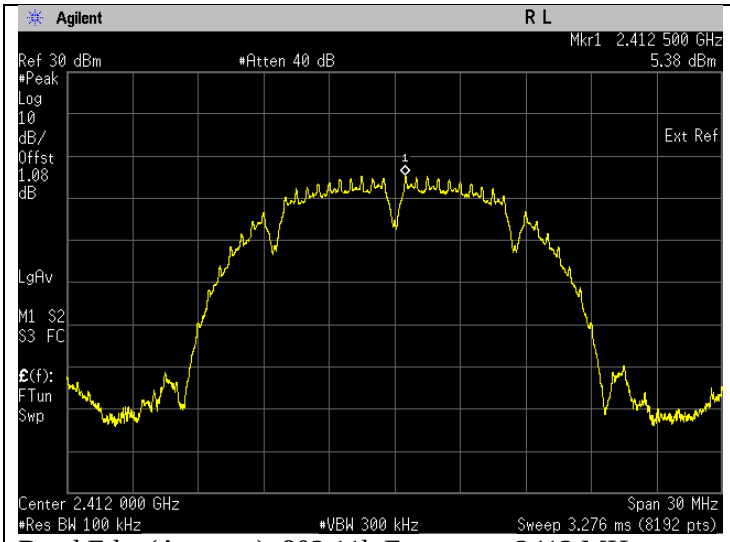
6.6.2. Test Limits:

Normal Condition (25 º C)
Shall be at least 30 dB below max power. (Average detector)

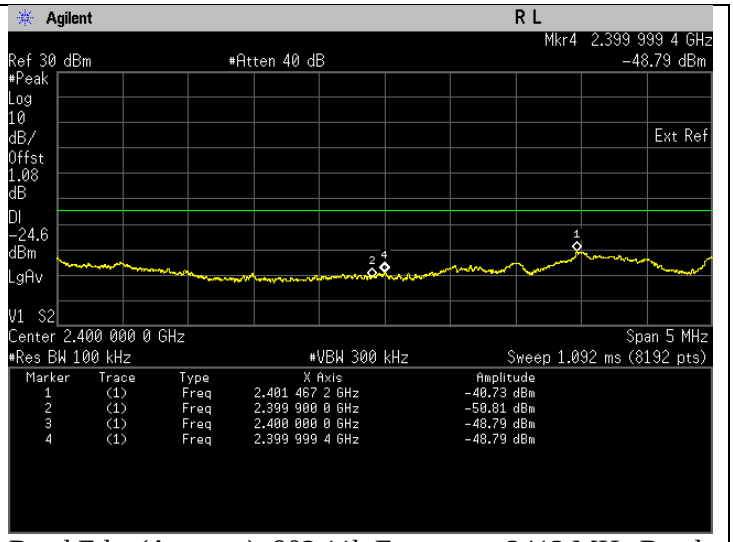
6.6.3. **Test Result**

802.11b

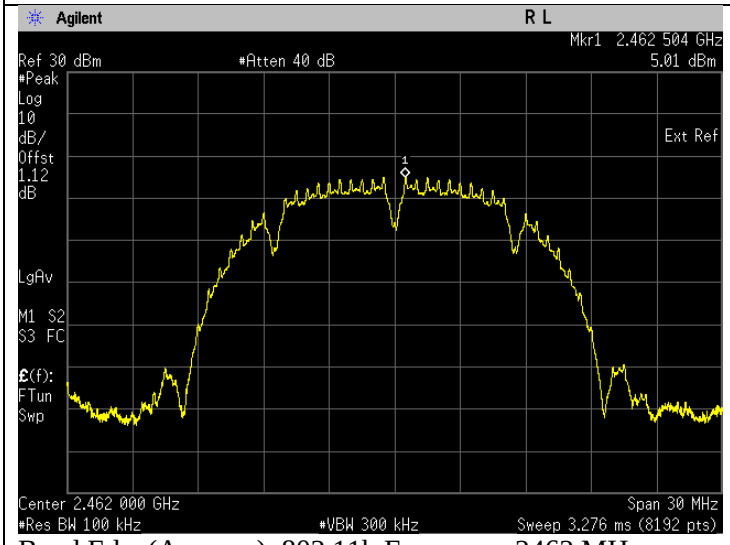
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
802.11b	DSSS	QPSK	1	2412	2400.00	-48.79	Pass
802.11b	DSSS	QPSK	1	2462	2483.57	-51.00	Pass



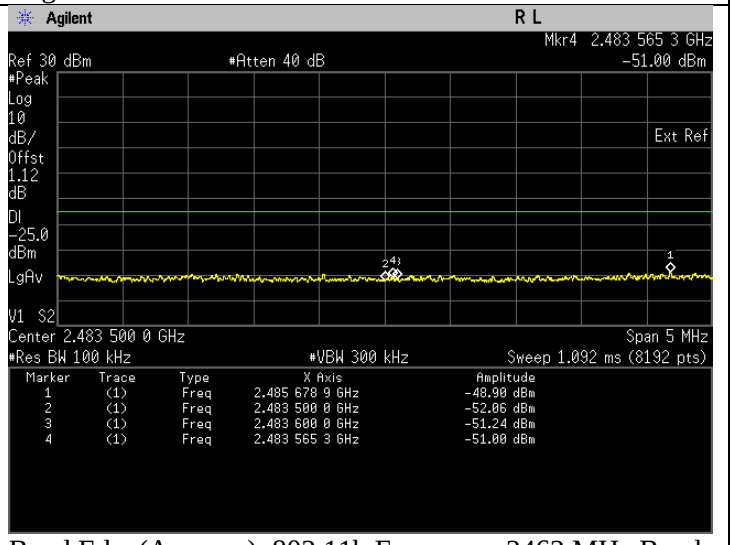
Band Edge(Average). 802.11b Frequency 2412 MHz Reference Level



Band Edge(Average). 802.11b Frequency 2412 MHz Band Edge



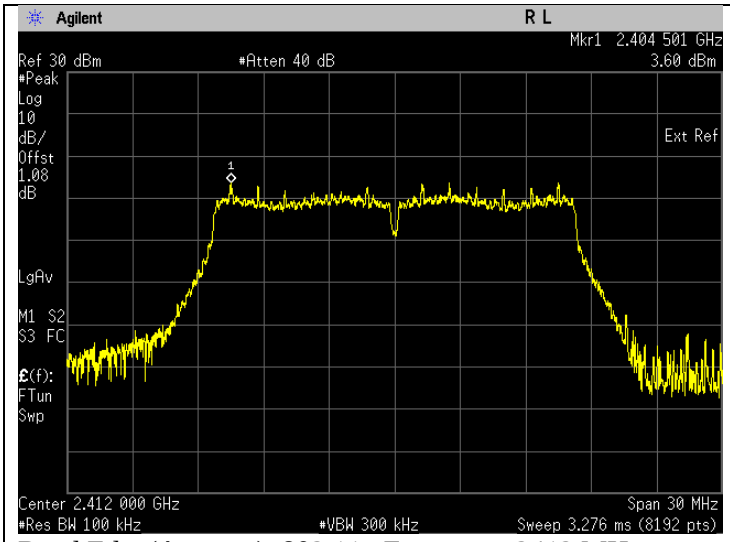
Band Edge(Average). 802.11b Frequency 2462 MHz Reference Level



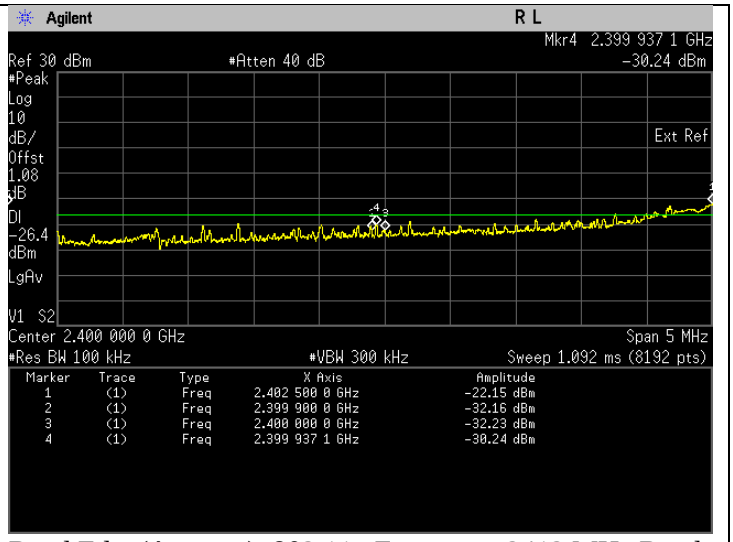
Band Edge(Average). 802.11b Frequency 2462 MHz Band Edge

802.11g

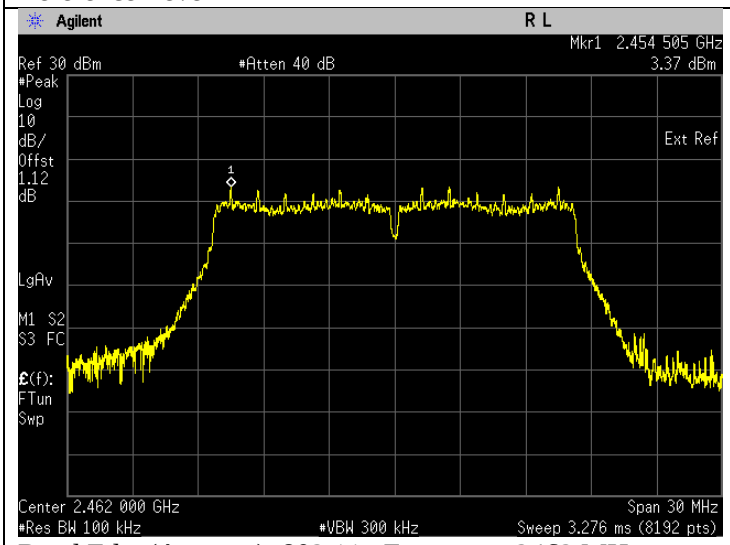
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
802.11g	OFDM	BPSK	6	2412	2399.94	-30.24	Pass
802.11g	OFDM	BPSK	6	2462	2483.59	-43.37	Pass



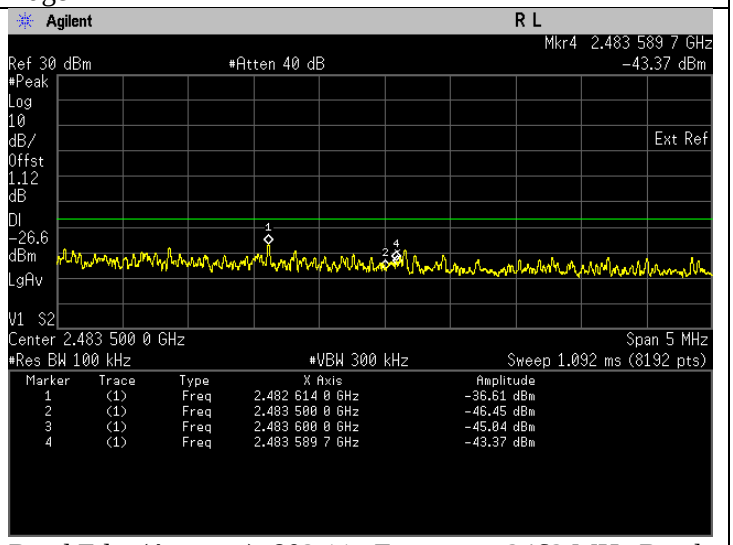
Band Edge(Average). 802.11g Frequency 2412 MHz Reference Level



Band Edge(Average). 802.11g Frequency 2412 MHz Band Edge



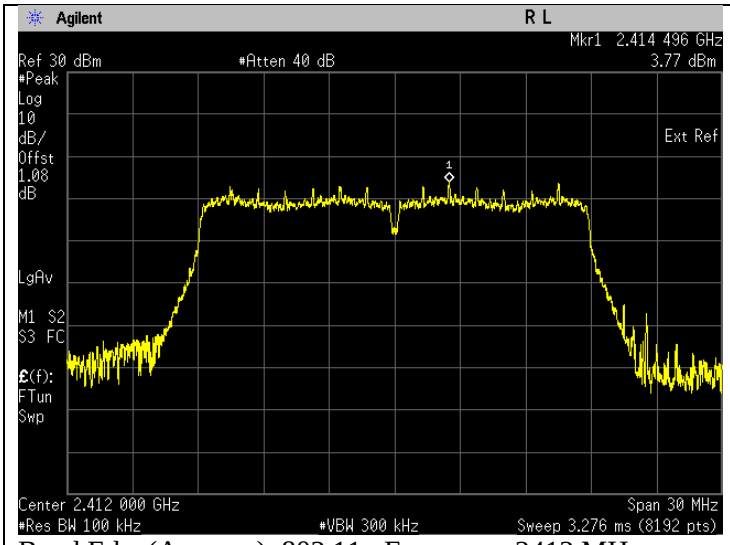
Band Edge(Average). 802.11g Frequency 2462 MHz Reference Level



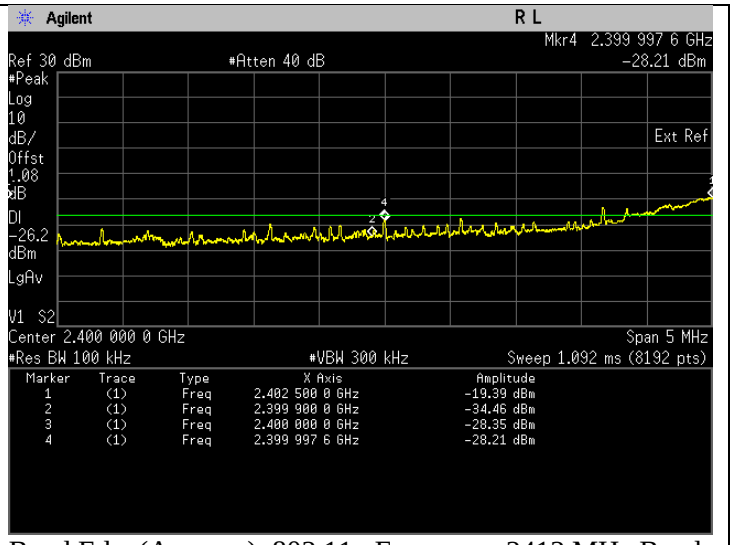
Band Edge(Average). 802.11g Frequency 2462 MHz Band Edge

802.11n (HT20)

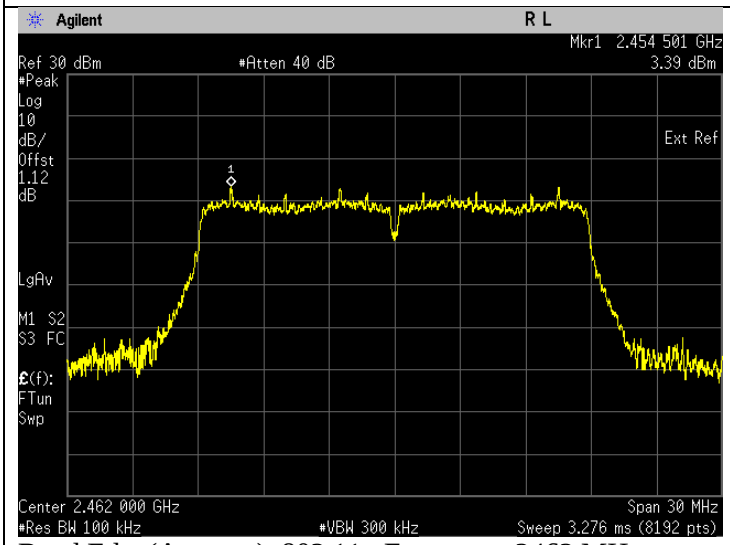
Test Conditions				Test Frequency	Results		
Standard	Modulation Type	Modulation Technology	Data Rate (mbps)	Tx (MHz)	Frequencies (MHz)	Power (dBm)	Status
802.11n	OFDM	DBPSK	6.5	2412	2400.00	-28.21	Pass
802.11n	OFDM	DBPSK	6.5	2462	2483.56	-41.89	Pass



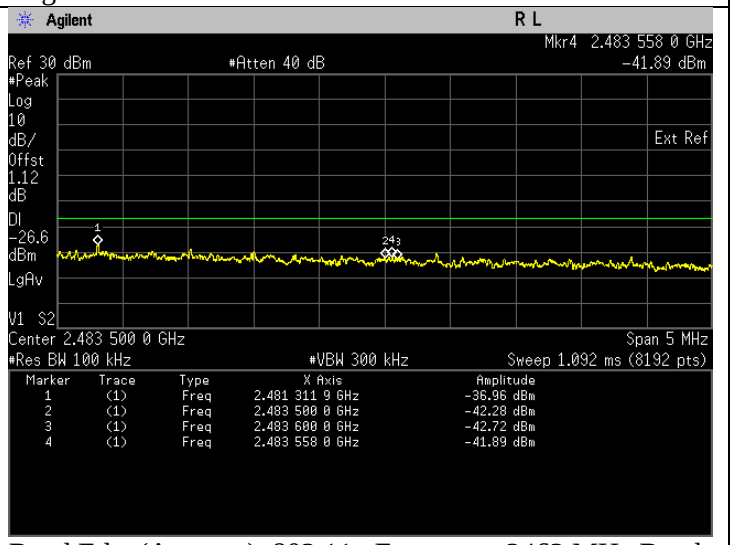
Band Edge(Average). 802.11n Frequency 2412 MHz Reference Level



Band Edge(Average). 802.11n Frequency 2412 MHz Band Edge



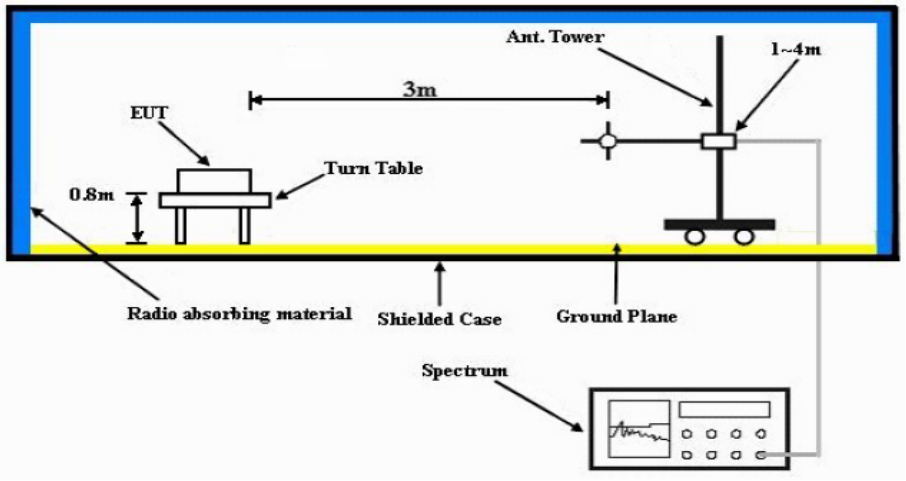
Band Edge(Average). 802.11n Frequency 2462 MHz Reference Level



Band Edge(Average). 802.11n Frequency 2462 MHz Band Edge

6.7. Radiated Emission within restricted Bands

6.7.1. Test Setup



a. The EUT is placed on the top of a rotating table 0.8m above the ground (<1GHz) and 1.5m above the ground (>1GHz) at a 3m semi-anechoic chamber. The table is rotated 360 degrees to determine the position of the highest radiation.
b. The EUT is set 3m away from the interference-receiving antenna, which is mounted on the top of a variable-height antenna tower.
c. 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.
d. 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.
e. The test-receiver system is set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode is fall within the range of 10dB from the limit specified, the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. Otherwise, the testing could be stopped and the peak values of the EUT would be reported.

NOTE:

a. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-peak detection at frequency below 1GHz.
b. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3 MHz for Peak detection at frequency above 1 GHz.
c. All modes of operation were investigated and the worst-case emissions are reported.

6.7.2. **Test Limits:**

Radiated emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table. Other emissions shall be at least 20dB below the highest level of the desired power.

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

NOTE:

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

6.7.3. Test Data:

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 2412.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11b)

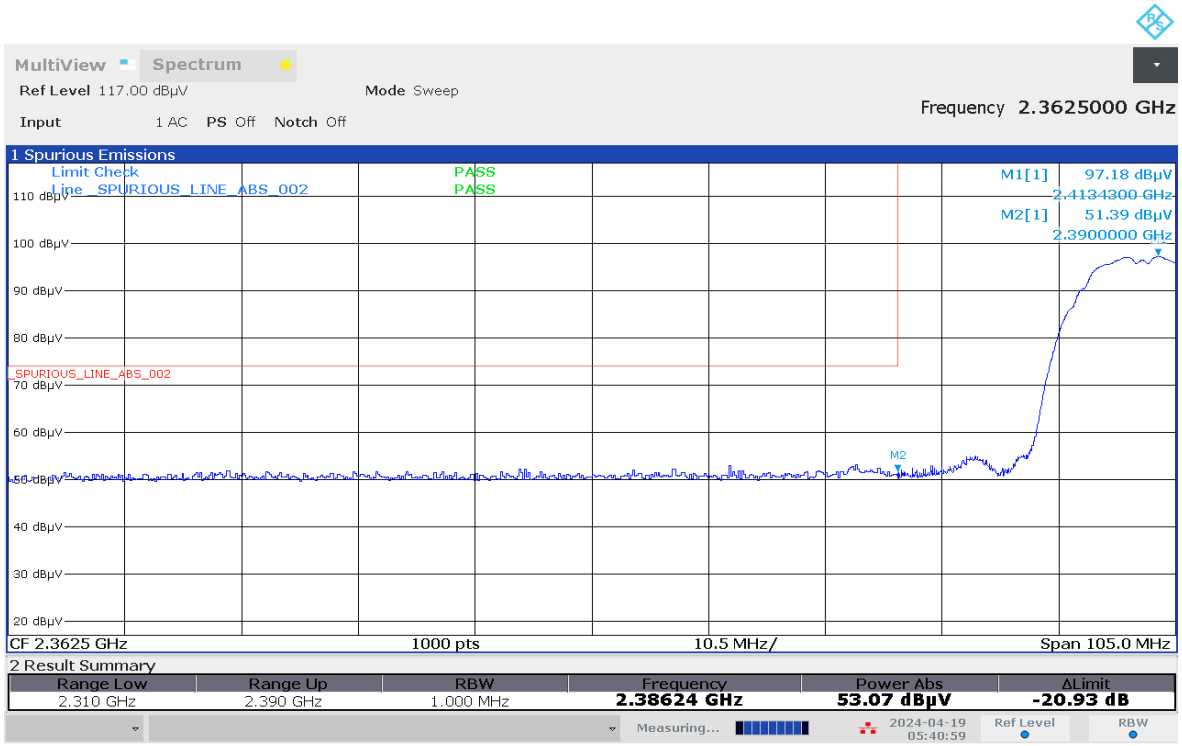
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
2390.0000	-	51.3864	40.2891	-	74.0000	54.0000	-	22.6136	13.7109	-
Horizontal Radiated Emission Result										
2390.0000	-	52.2395	42.1945	-	74.0000	54.0000	-	21.7605	11.8055	-

Remarks: Pass Result	Marginal Result	Fail Result

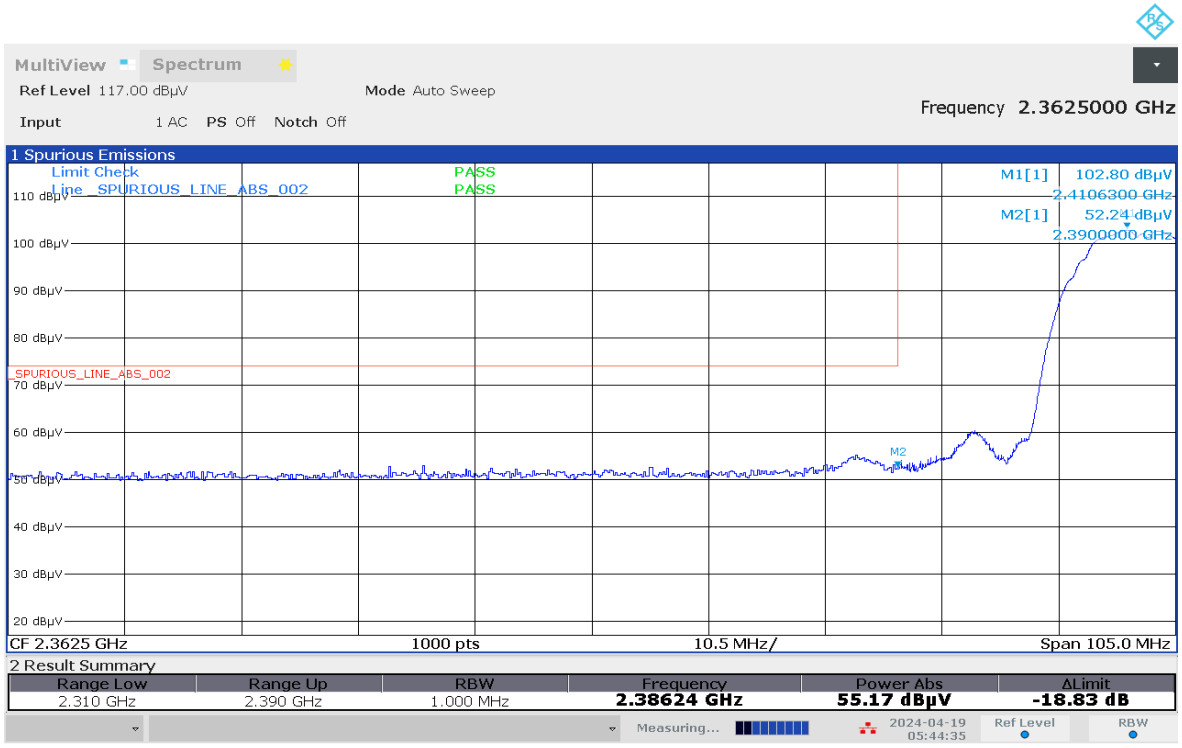
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.84dB

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



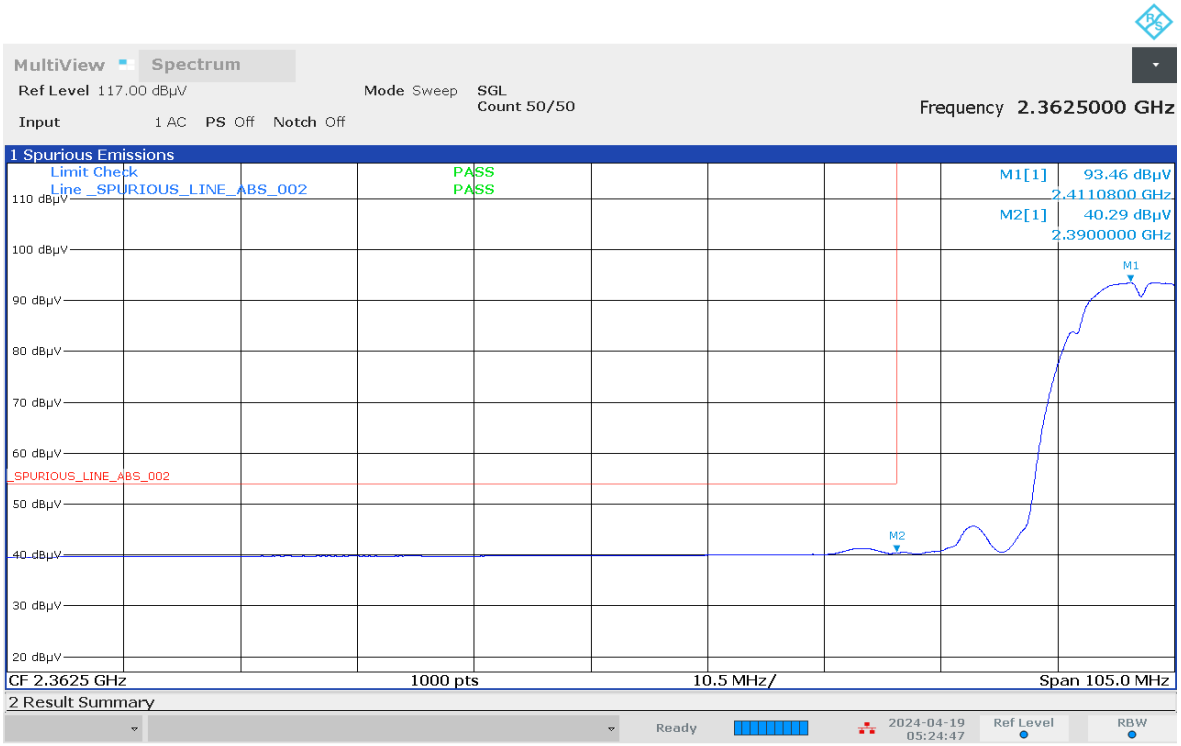
05:40:59 AM 04/19/2024

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



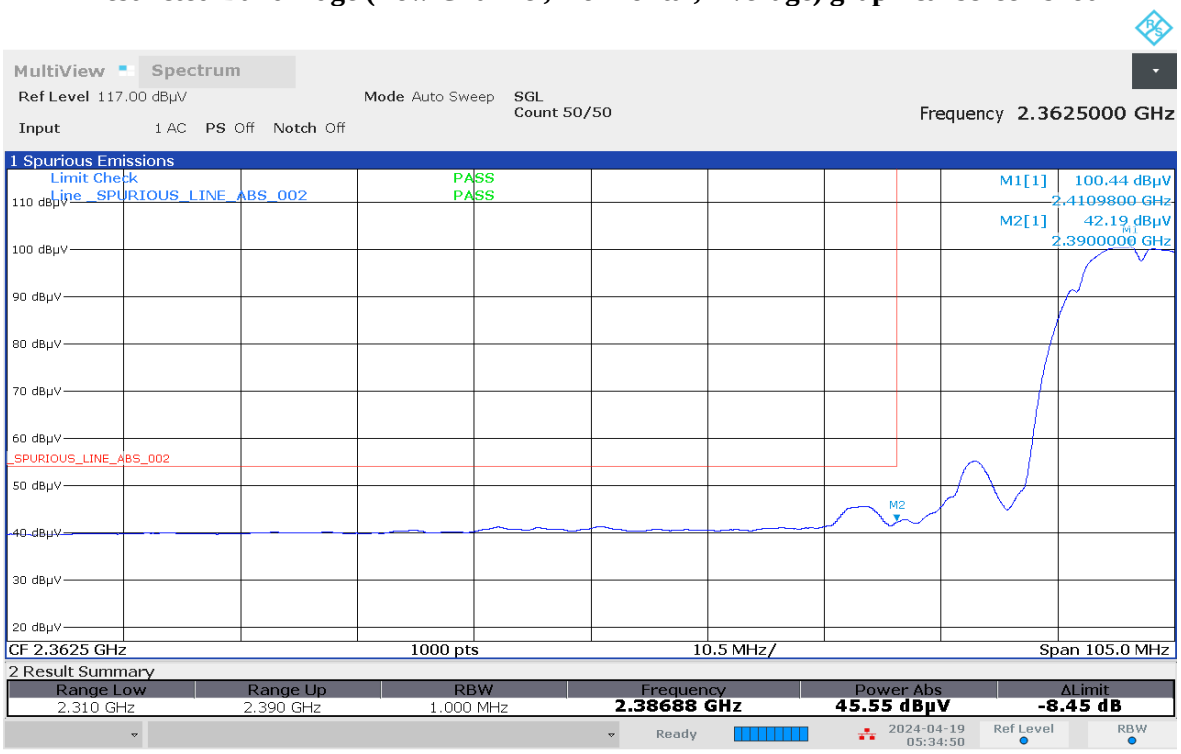
05:44:35 AM 04/19/2024

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



05:24:48 AM 04/19/2024

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



05:34:50 AM 04/19/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 2462.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11b)

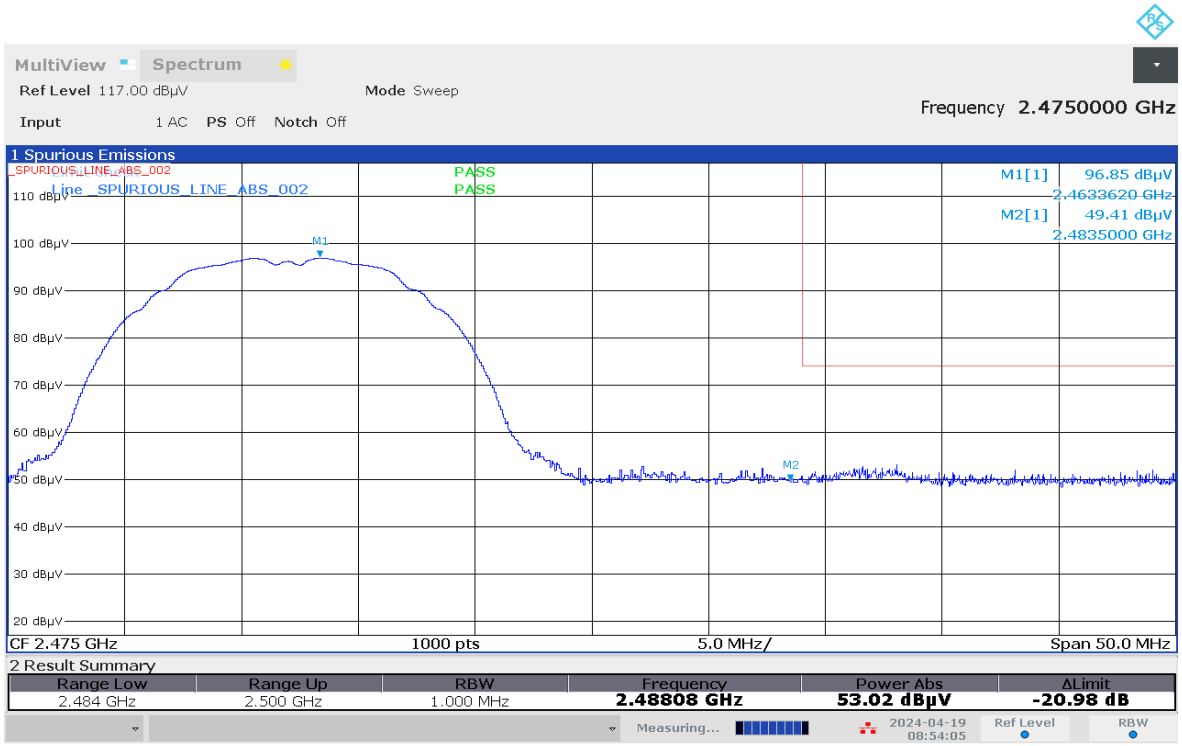
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
2483.5000	-	49.4116	40.3617	-	74.0000	54.0000	-	24.5884	13.6383	-
Horizontal Radiated Emission Result										
2483.5000	-	48.7168	40.2946	-	74.0000	54.0000	-	25.2832	13.7054	-

Remarks: Pass Result	Marginal Result	Fail Result

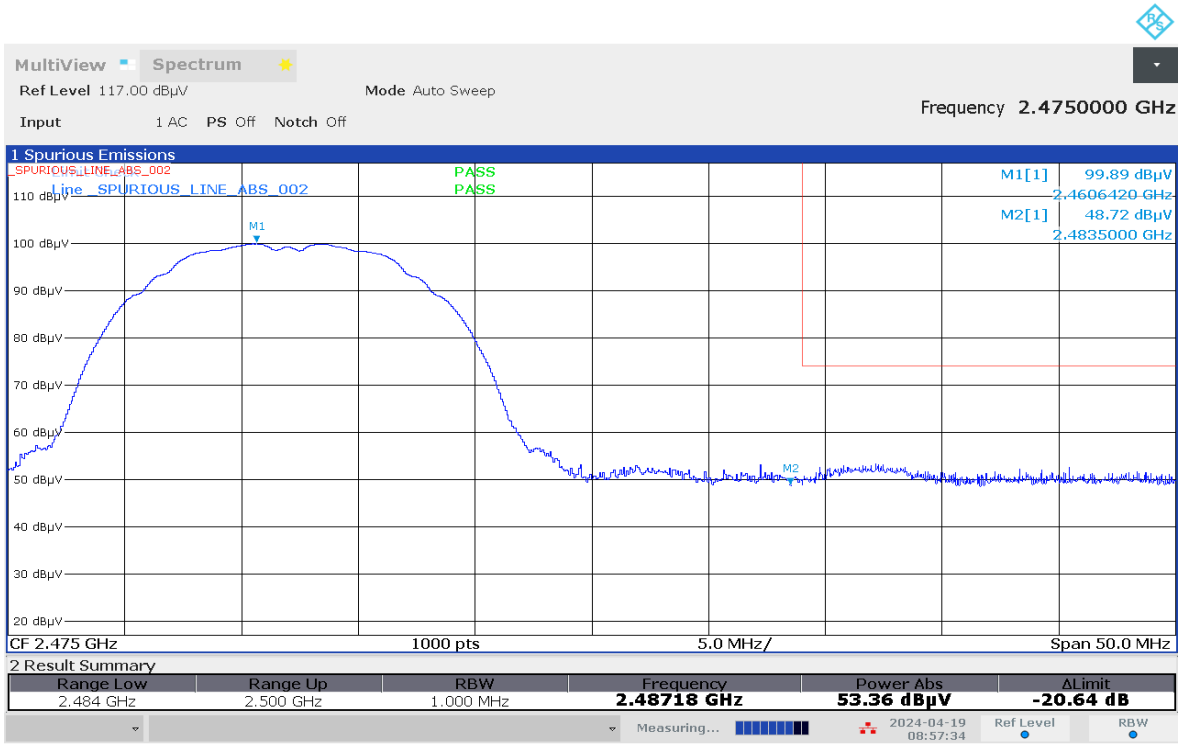
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.84dB

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



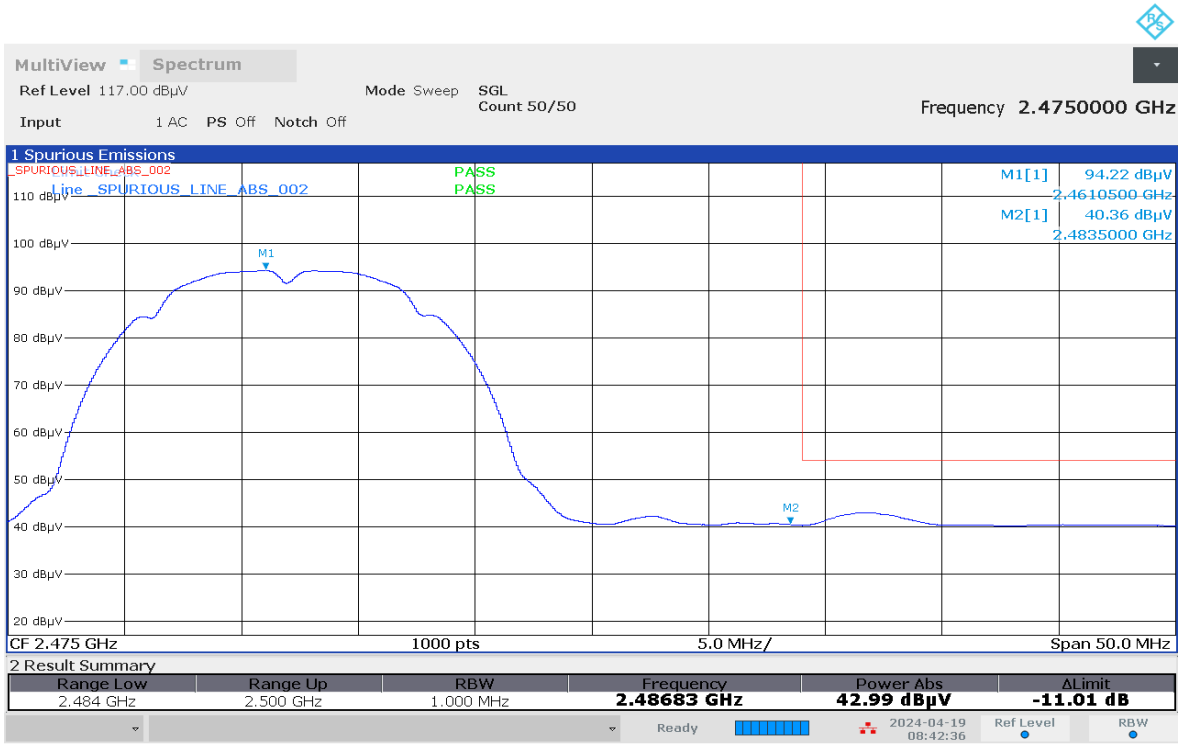
08:54:06 AM 04/19/2024

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



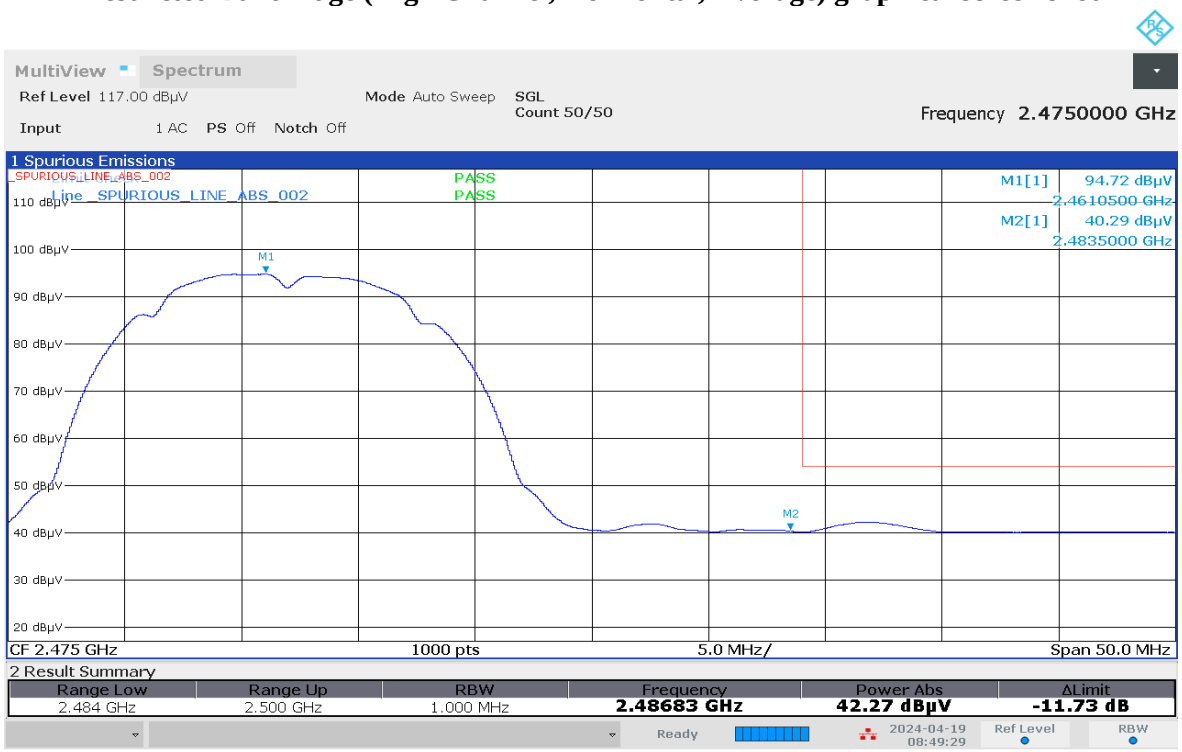
08:57:34 AM 04/19/2024

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



08:42:37 AM 04/19/2024

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



08:49:30 AM 04/19/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (14dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 2412.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11g)

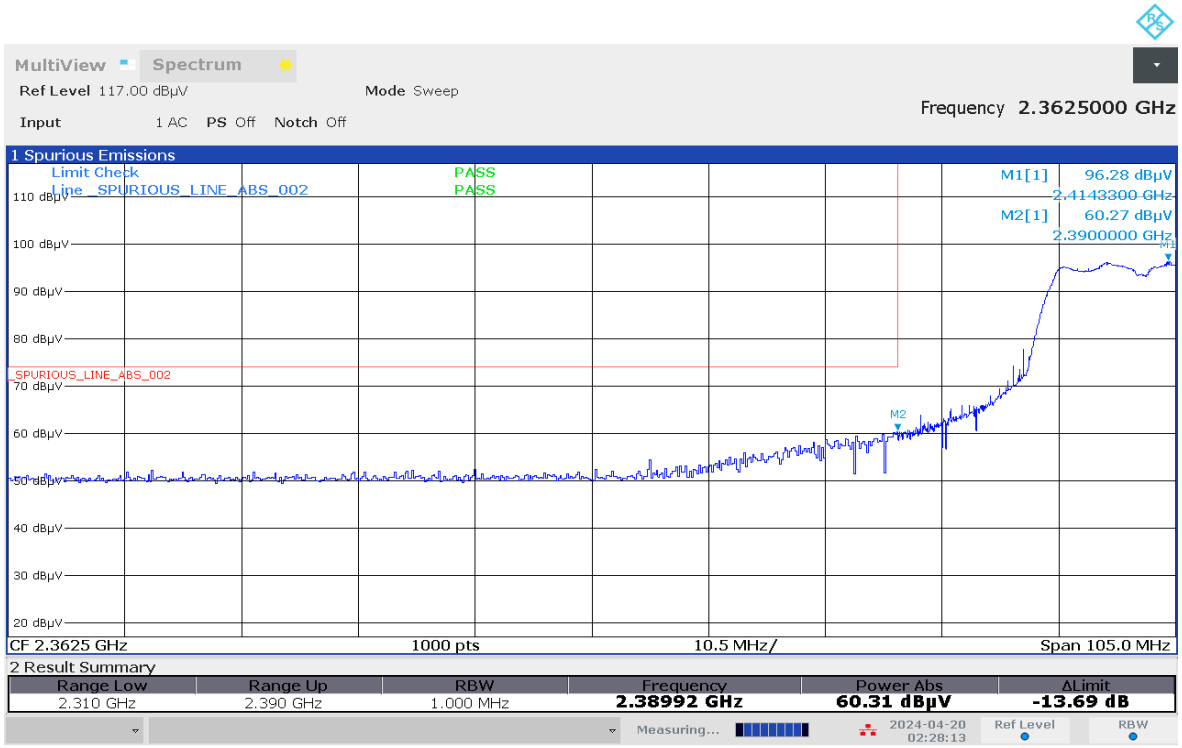
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
2390.0000	-	60.2695	42.3251	-	74.0000	54.0000	-	13.7305	11.6749	-
Horizontal Radiated Emission Result										
2389.7600	-	68.0435	-	-	74.0000	-	-	5.9565	-	-
2390.0000	-	67.6790	47.2412	-	74.0000	54.0000	-	6.3210	6.7588	-

Remarks: Pass Result	Marginal Result	Fail Result

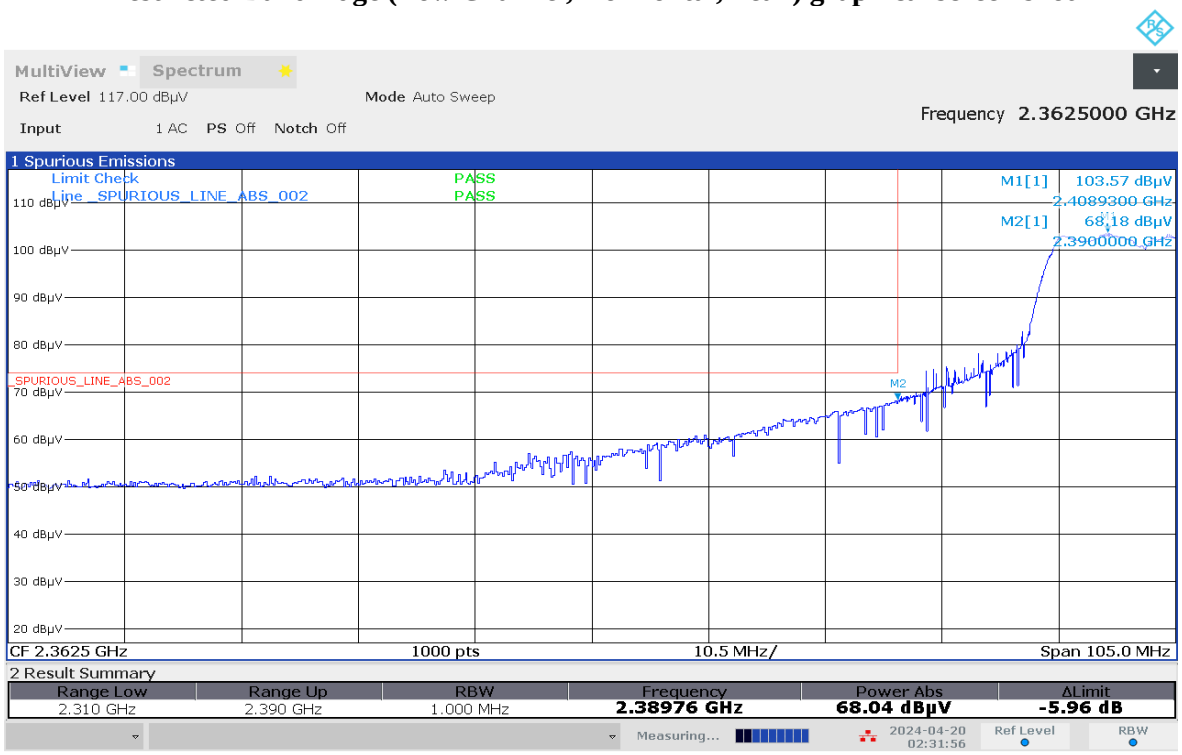
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.84dB

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



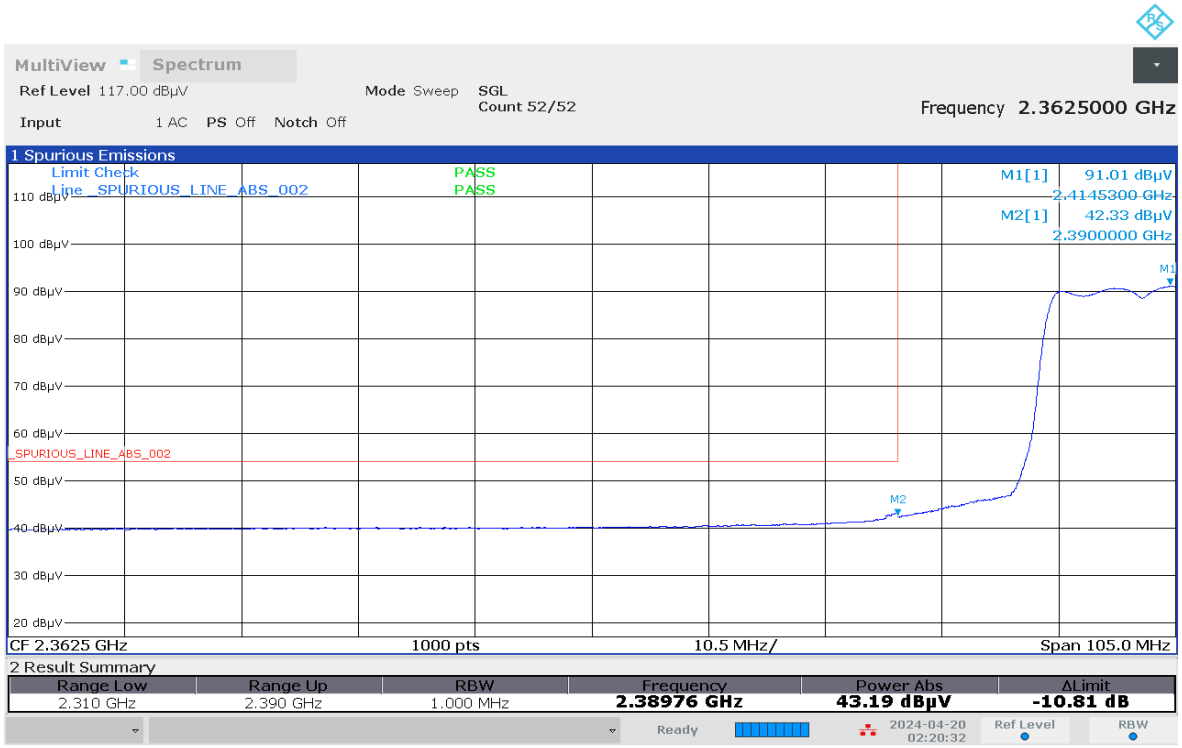
02:28:14 AM 04/20/2024

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



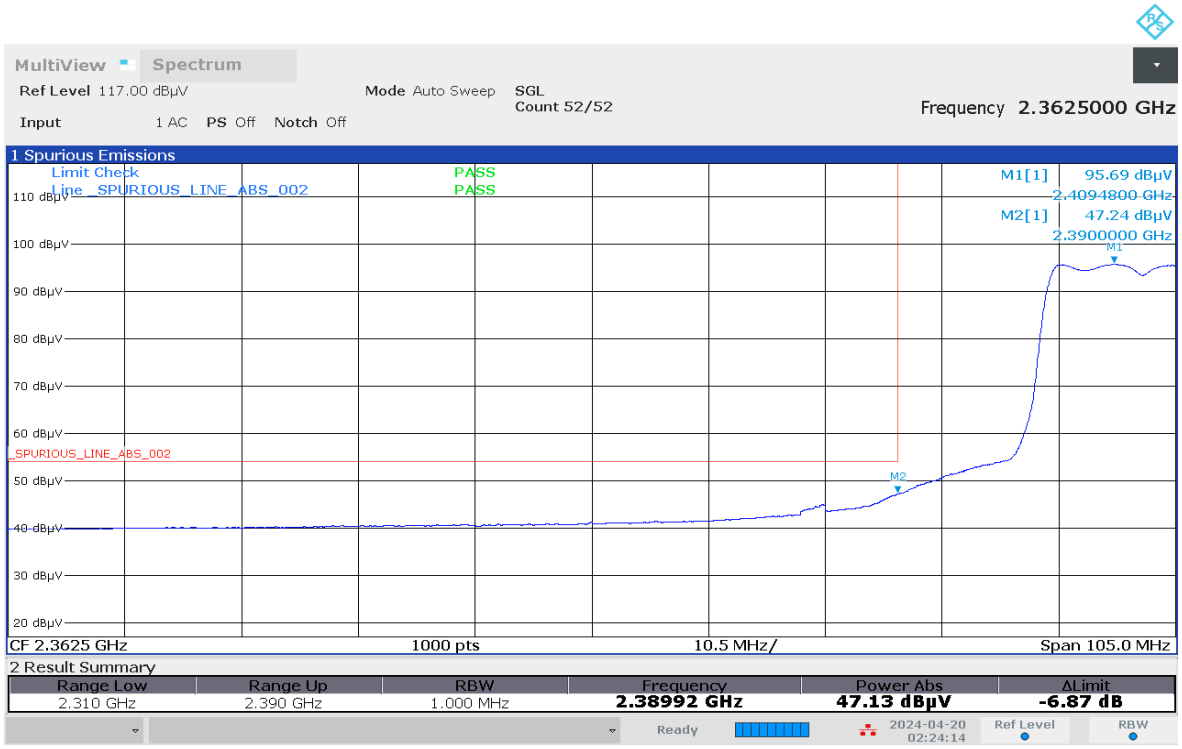
02:31:56 AM 04/20/2024

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



02:20:33 AM 04/20/2024

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



02:24:15 AM 04/20/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 2462.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11g)

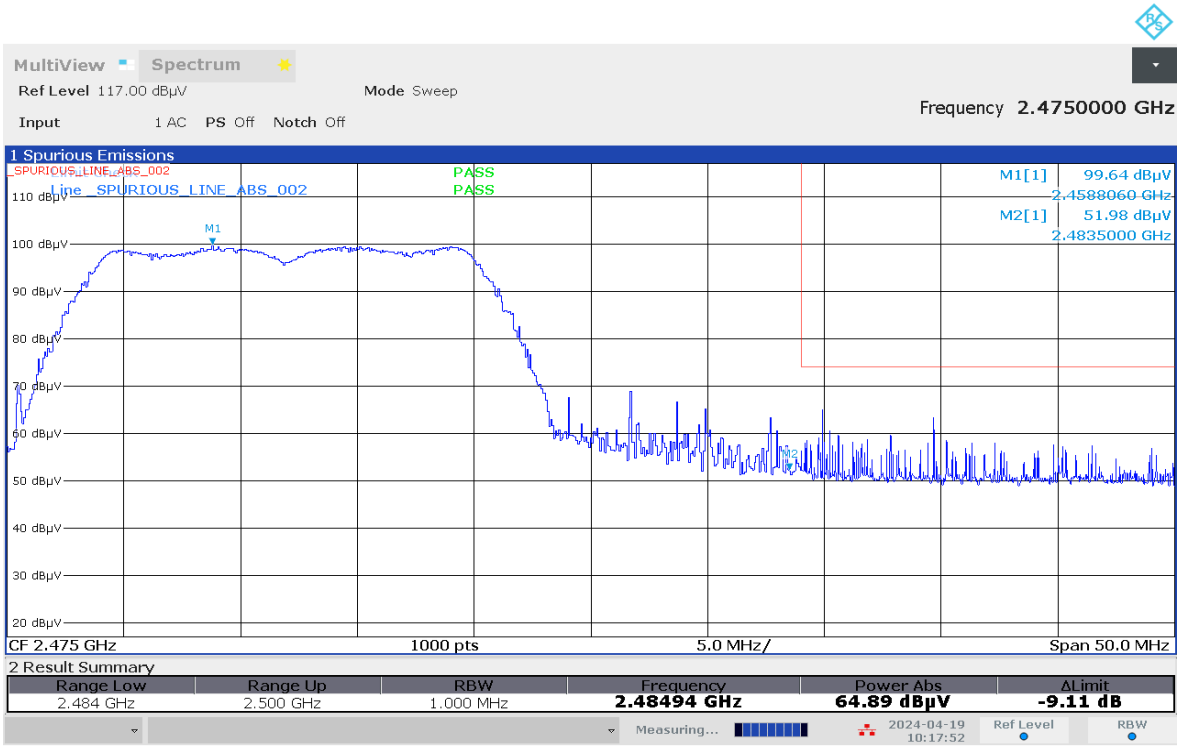
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
2483.5000	-	51.9818	41.7766	-	74.0000	54.0000	-	22.0182	12.2234	-
Horizontal Radiated Emission Result										
2483.5000	-	51.6885	42.4325	-	74.0000	54.0000	-	22.3115	11.5675	-

Remarks: Pass Result	Marginal Result	Fail Result

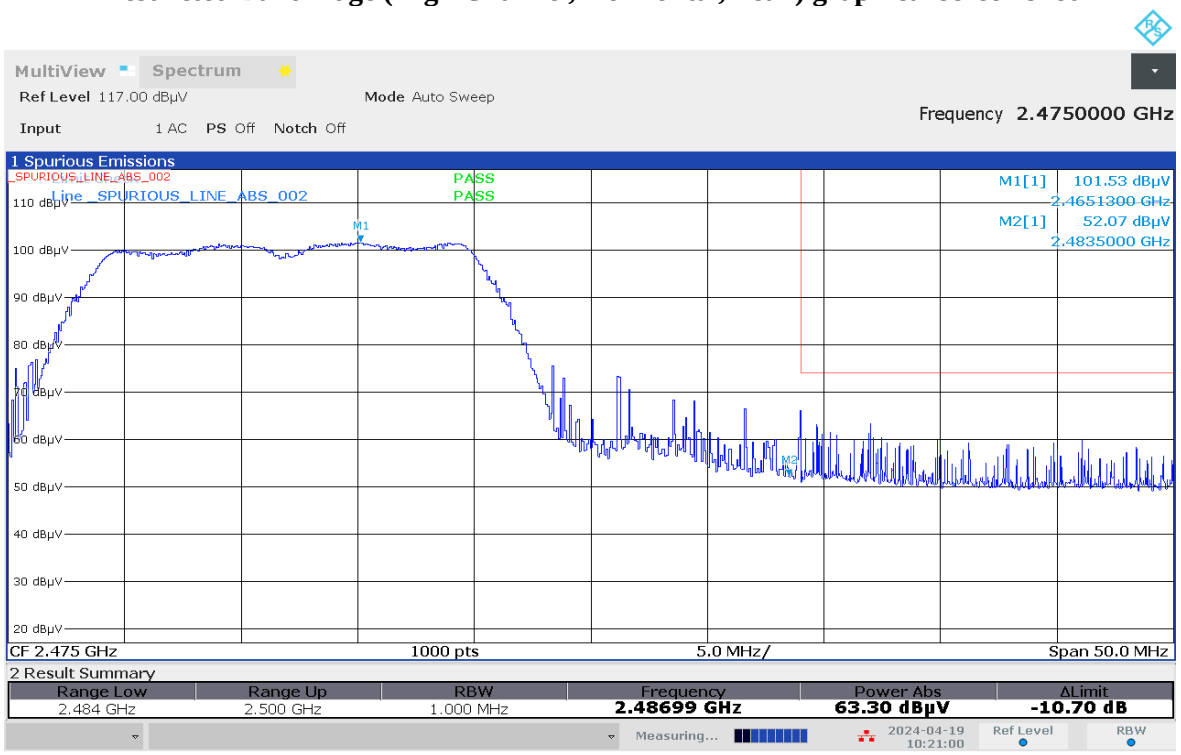
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.84dB

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



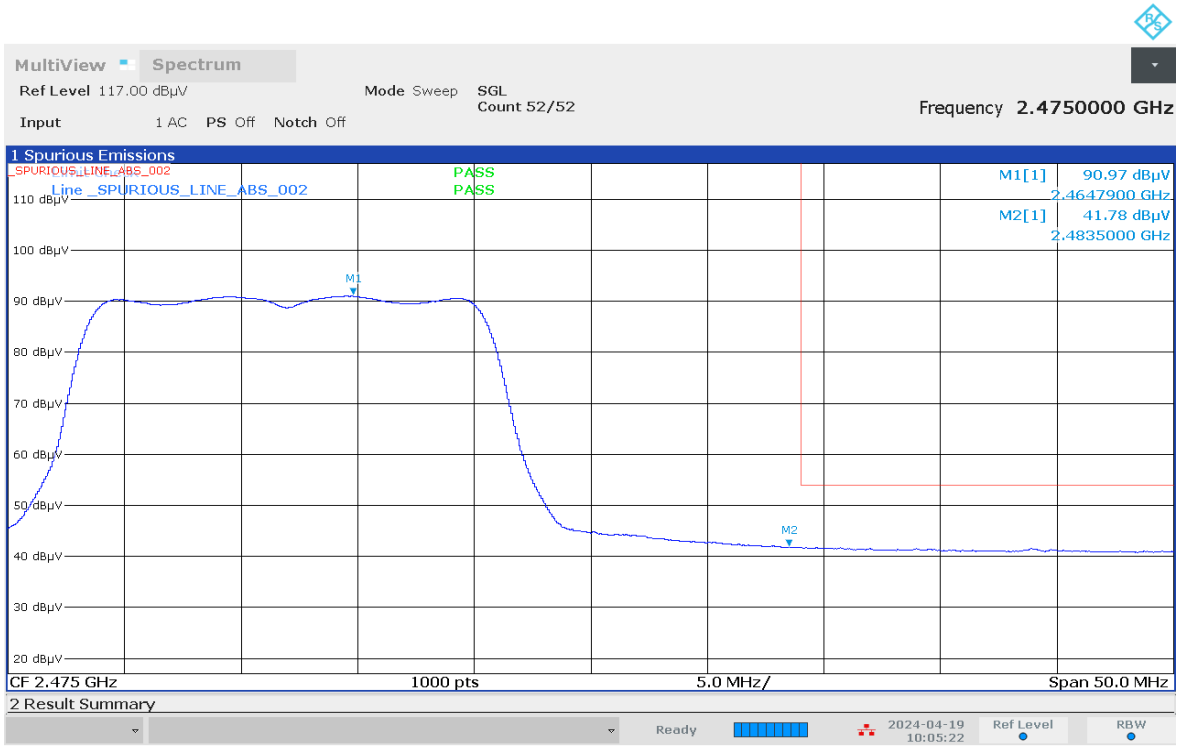
10:17:52 AM 04/19/2024

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



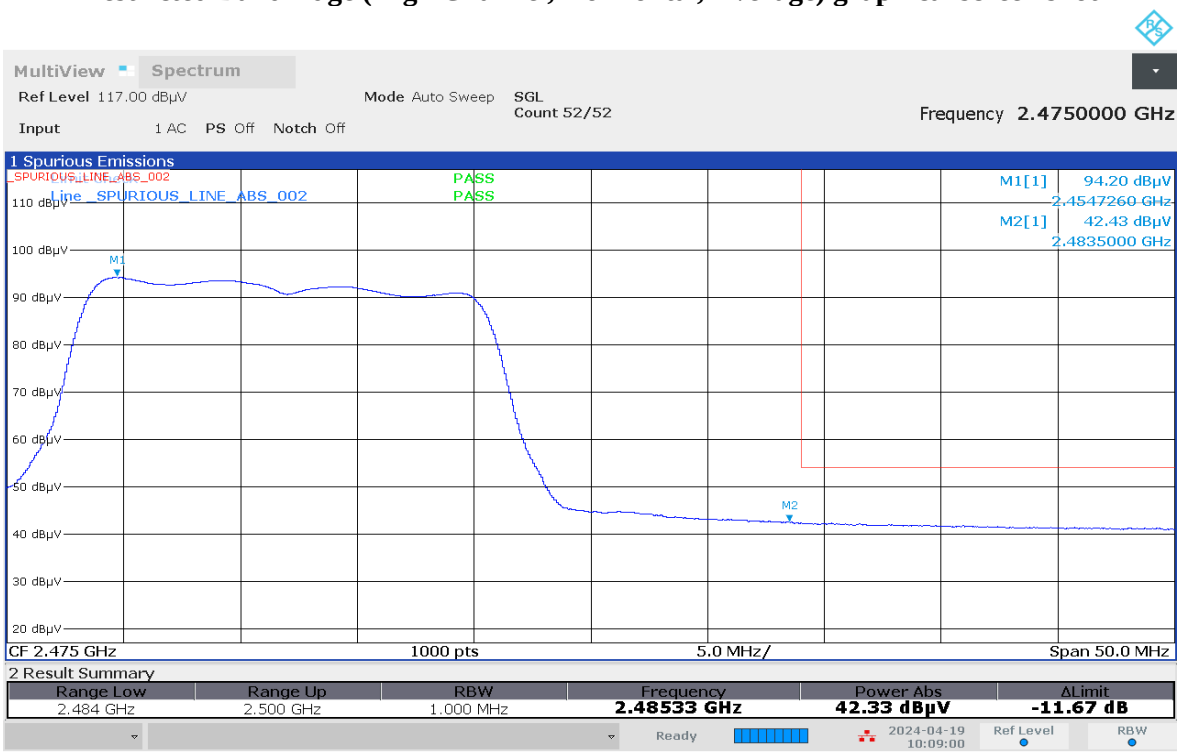
10:21:01 AM 04/19/2024

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



10:05:23 AM 04/19/2024

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



10:09:01 AM 04/19/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (13dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 2412.0000 MHz Test Standard: ANSI C63.10
Worst Case Plane: Z-Plane (802.11n 20MHz)

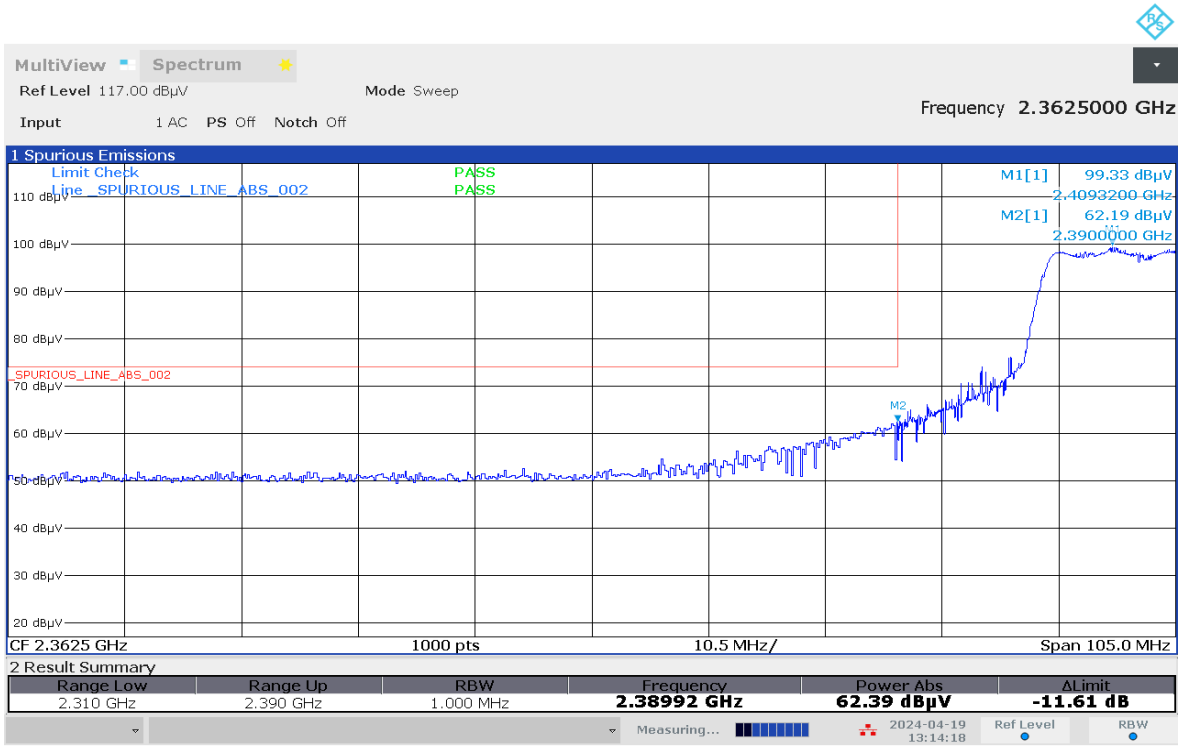
Restricted Band Edge (Low Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
2390.0000	-	62.1908	41.7212	-	74.0000	54.0000	-	11.8092	12.2788	-
Horizontal Radiated Emission Result										
2390.0000	-	65.6042	47.2412	-	74.0000	54.0000	-	8.3958	6.7588	-

Remarks: Pass Result	Marginal Result	Fail Result

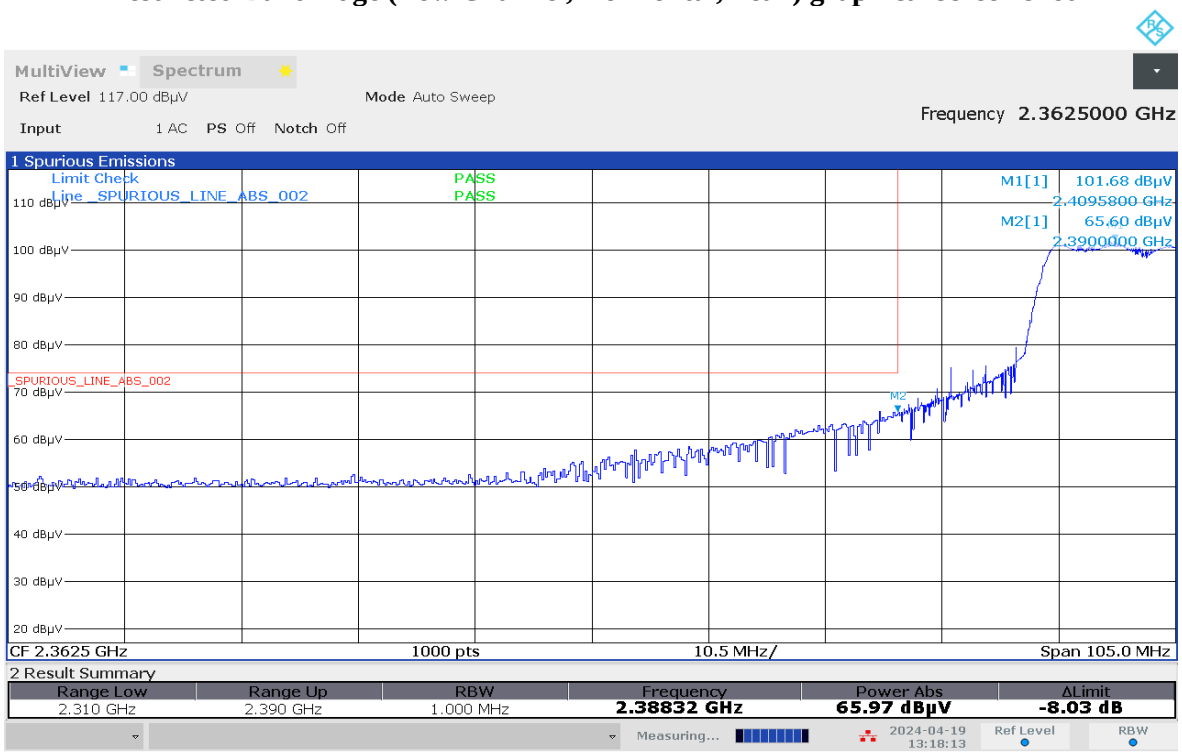
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.84dB

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



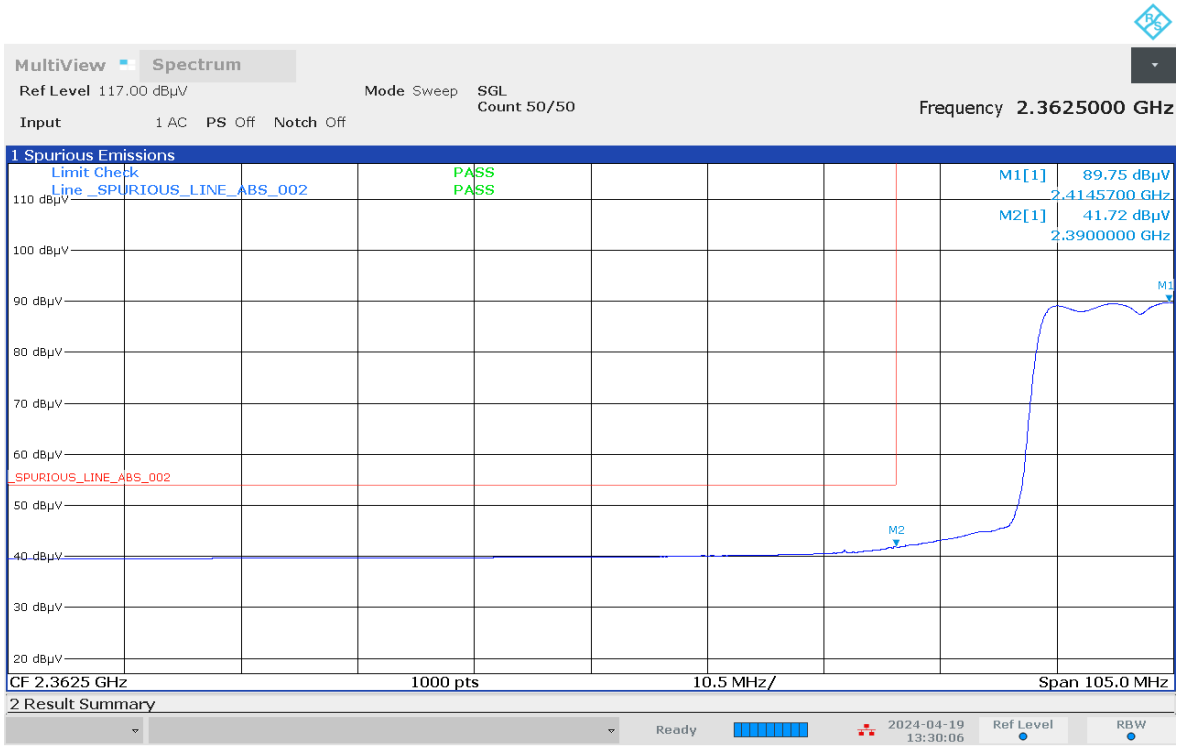
01:14:19 PM 04/19/2024

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



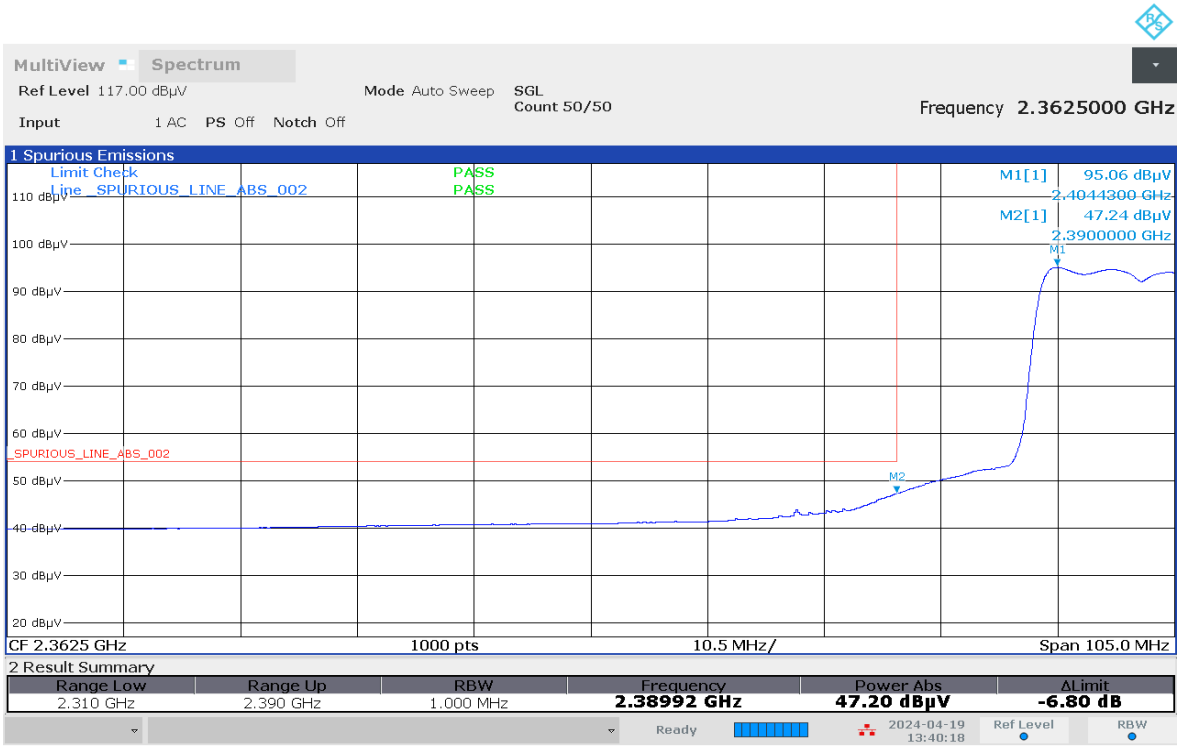
01:18:13 PM 04/19/2024

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



01:30:07 PM 04/19/2024

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



01:40:19 PM 04/19/2024

Test: WIFI SAC Restricted Band Edge
Model Number: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 2462.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n 20MHz)

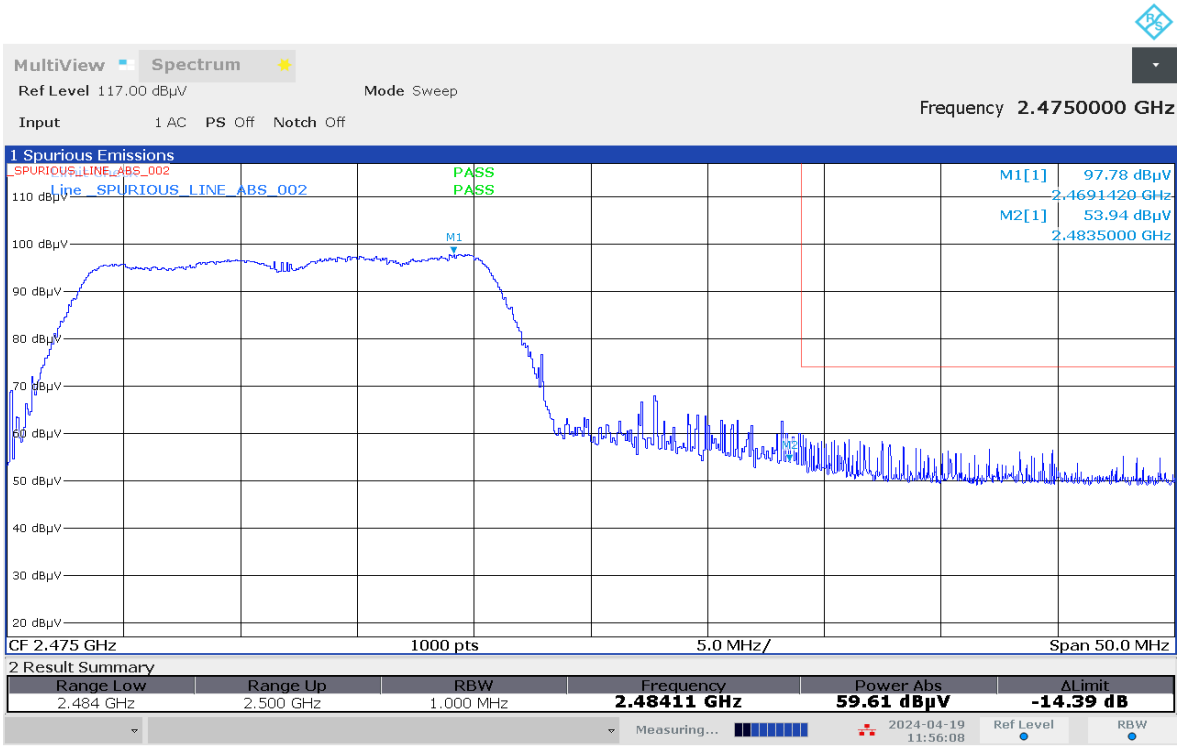
Restricted Band Edge (High Channel) tabular data

Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
2483.5000	-	53.9389	42.2731	-	74.0000	54.0000	-	20.0611	11.7269	-
Horizontal Radiated Emission Result										
2483.5000	-	53.7287	43.3318	-	74.0000	54.0000	-	20.2713	10.6682	-

Remarks: Pass Result	Marginal Result	Fail Result

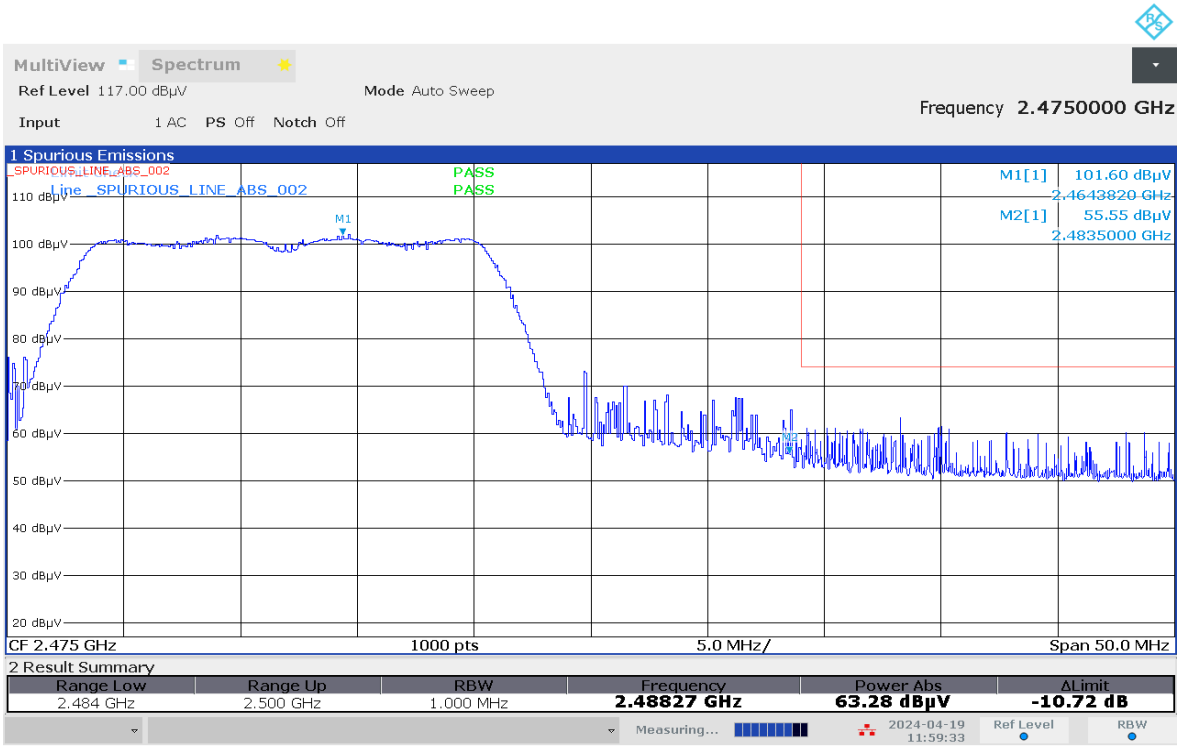
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.84dB

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



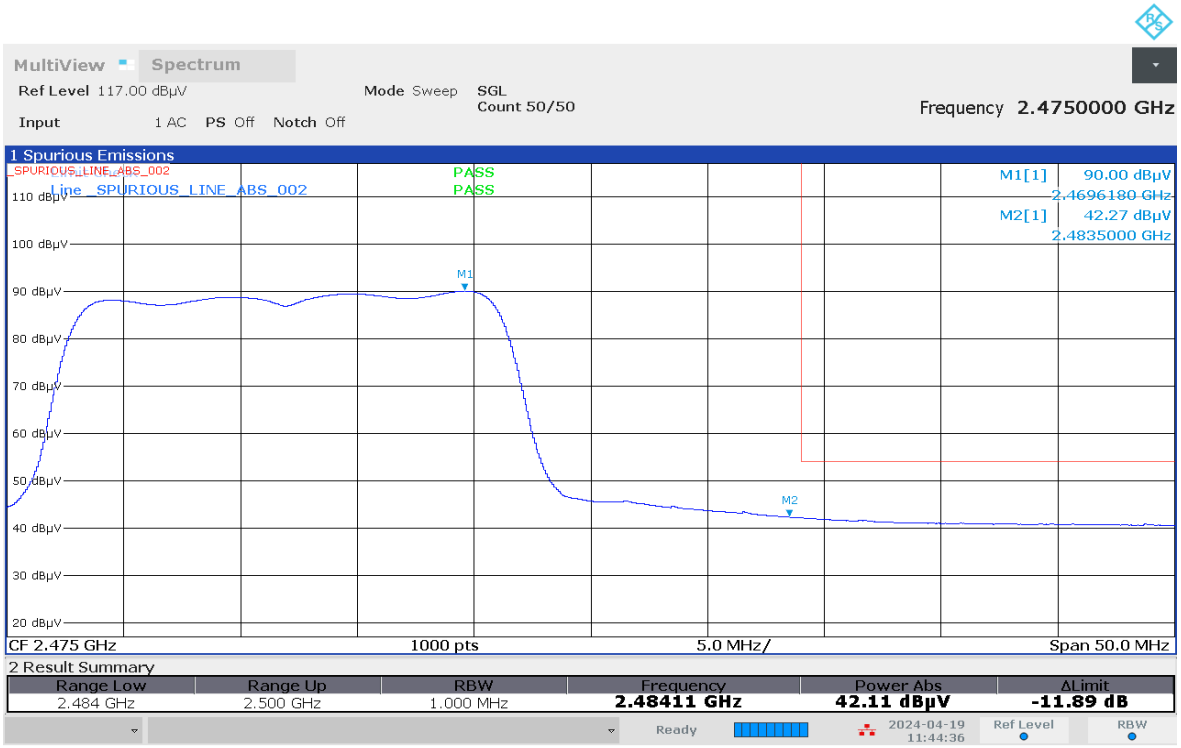
11:56:09 AM 04/19/2024

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



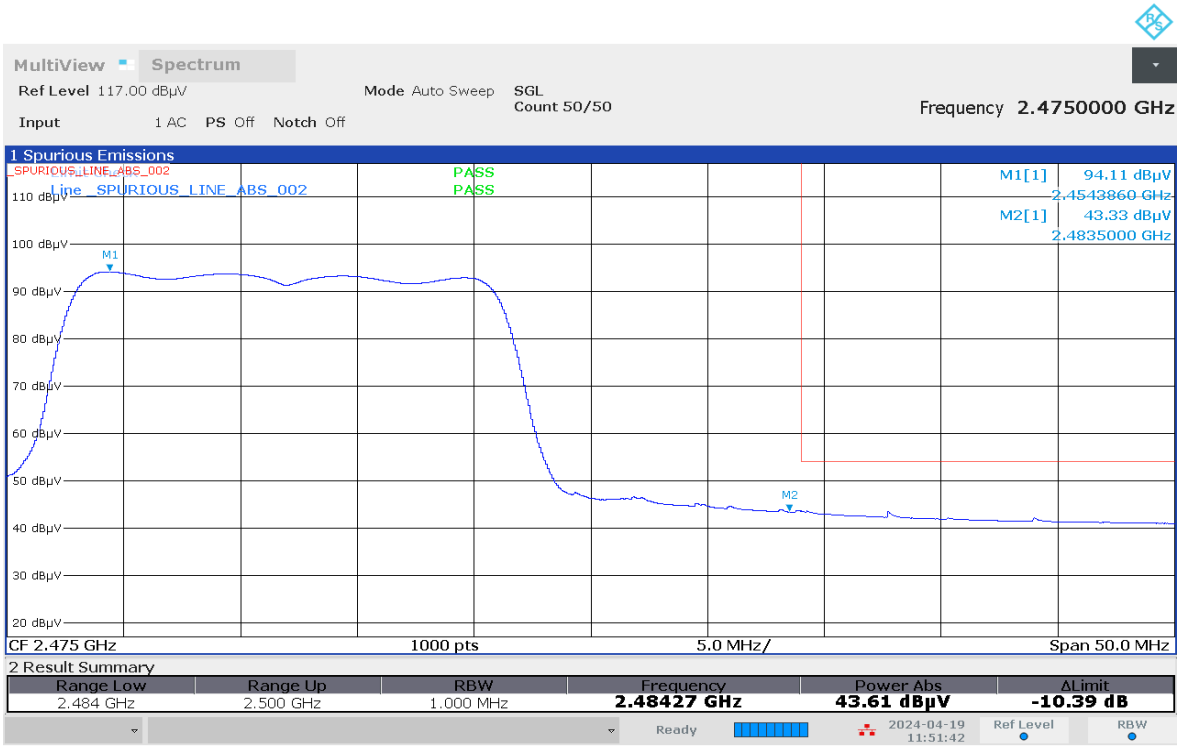
11:59:33 AM 04/19/2024

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



11:44:37 AM 04/19/2024

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



11:51:43 AM 04/19/2024

Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 2412.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11b)

Radiated Emission (Low Channel) tabular data

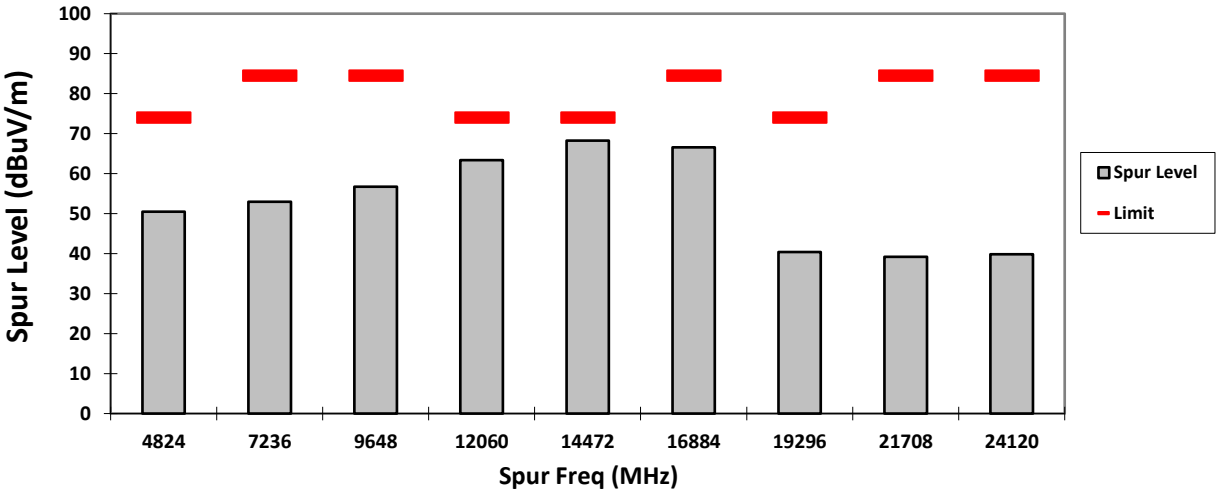
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4824	-	50.4974**	-	-	74.0000	-	-	23.5026	-	-
7236	-	52.9571**	-	-	84.5127	-	-	31.5556	-	104.5127
9648	-	56.7587**	-	-	84.5127	-	-	27.7540	-	104.5127
12060	-	63.3765**	49.3922**	-	74.0000	54.0000	-	10.6235	4.6078	-
14472	-	68.2948**	52.5841**	-	74.0000	54.0000	-	5.7052	1.4159	-
16884	-	66.6145**	-	-	84.5127	-	-	17.8982	-	104.5127
19296	-	40.3928**	-	-	74.0000	-	-	33.6072	-	-
21708	-	39.1599**	-	-	84.5127	-	-	45.3528	-	104.5127
24120	-	39.8230**	-	-	84.5127	-	-	44.6897	-	104.5127
Horizontal Radiated Emission Result										
4824	-	49.1970**	-	-	74.0000	-	-	24.8030	-	-
7236	-	53.3993**	-	-	84.5127	-	-	31.1134	-	104.5127
9648	-	55.6450**	-	-	84.5127	-	-	28.8677	-	104.5127
12060	-	63.4985**	49.3921**	-	74.0000	54.0000	-	10.5015	4.6079	-
14472	-	69.3213**	52.6148**	-	74.0000	54.0000	-	4.6787	1.3852	-
16884	-	66.6077**	-	-	84.5127	-	-	17.9050	-	104.5127
19296	-	39.8804**	-	-	74.0000	-	-	34.1196	-	-
21708	-	40.9587**	-	-	84.5127	-	-	43.5540	-	104.5127
24120	-	39.6809**	-	-	84.5127	-	-	44.8318	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

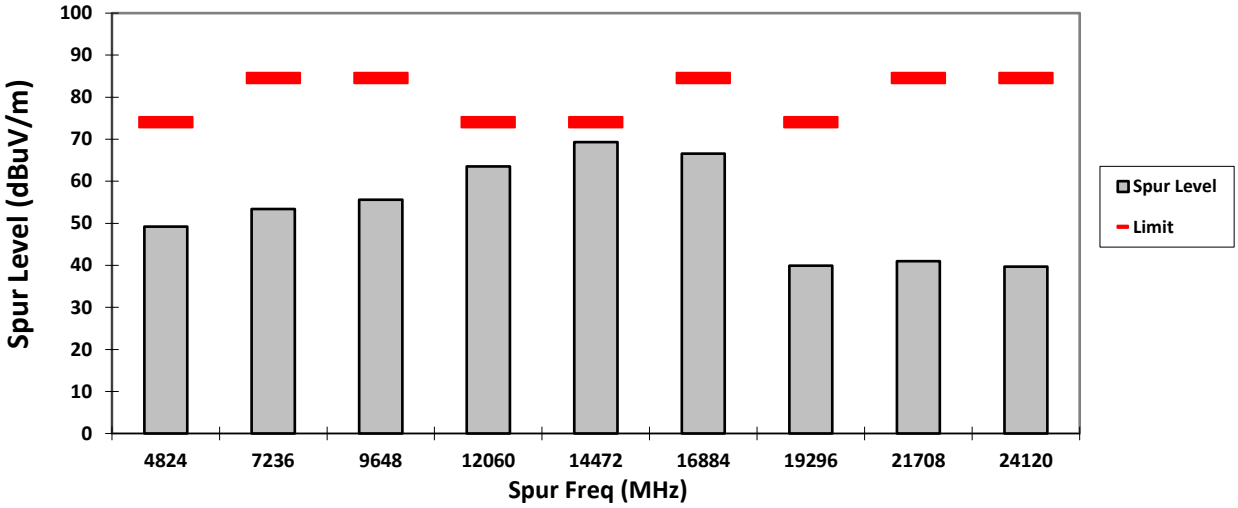
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

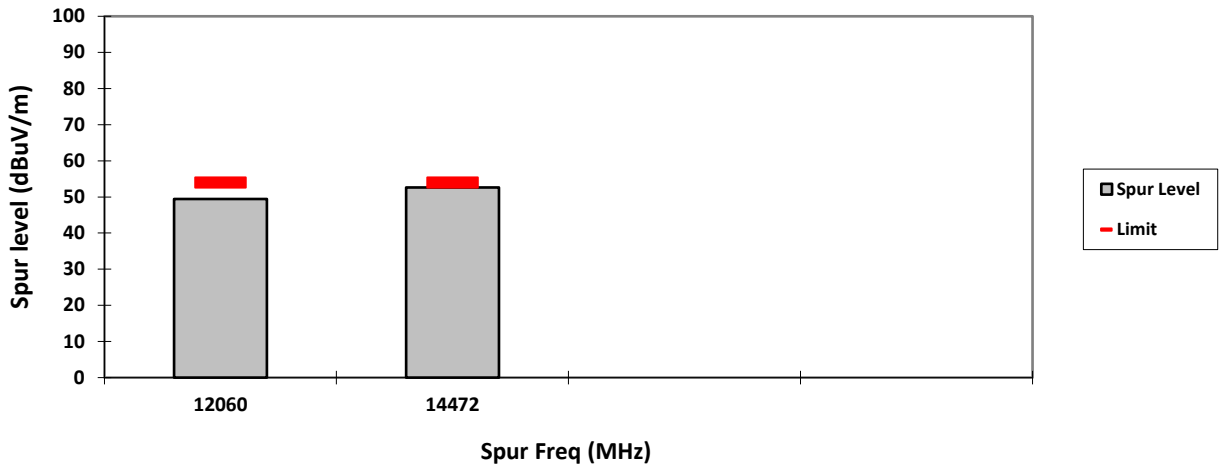
VERTICAL, PK



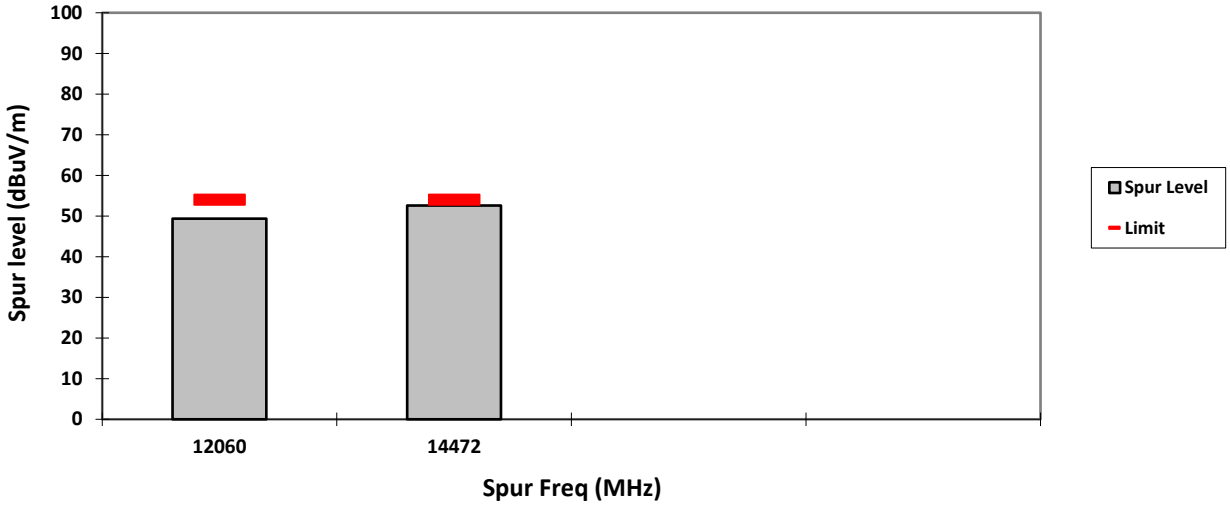
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 2437.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11b)

Radiated Emission (Mid Channel) tabular data

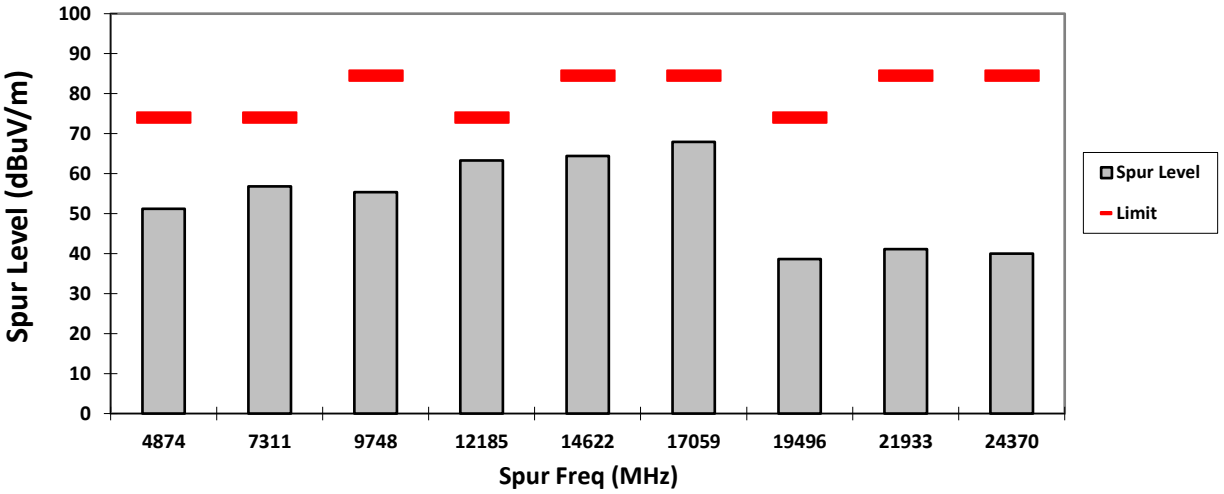
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4874	-	51.1712**	-	-	74.0000	-	-	22.8288	-	-
7311	-	56.7964**	42.7089**	-	74.0000	54.0000	-	17.2036	11.2911	-
9748	-	55.3693**	-	-	84.5127	-	-	29.1434	-	104.5127
12185	-	63.3027**	49.4244**	-	74.0000	54.0000	-	10.6973	4.5756	-
14622	-	64.3906**	-	-	84.5127	-	-	20.1221	-	104.5127
17059	-	67.9202**	-	-	84.5127	-	-	16.5925	-	104.5127
19496	-	38.6463**	-	-	74.0000	-	-	35.3537	-	-
21933	-	41.0843**	-	-	84.5127	-	-	43.4284	-	104.5127
24370	-	40.0087**	-	-	84.5127	-	-	44.5040	-	104.5127
Horizontal Radiated Emission Result										
4874	-	48.7963**	-	-	74.0000	-	-	25.2037	-	-
7311	-	56.9148**	42.7108**	-	74.0000	54.0000	-	17.0852	11.2892	-
9748	-	56.5931**	-	-	84.5127	-	-	27.9196	-	104.5127
12185	-	63.6921**	49.4244**	-	74.0000	54.0000	-	10.3079	4.5756	-
14622	-	64.7138**	-	-	84.5127	-	-	19.7989	-	104.5127
17059	-	67.1020**	-	-	84.5127	-	-	17.4107	-	104.5127
19496	-	39.0369**	-	-	74.0000	-	-	34.9631	-	-
21933	-	43.0541**	-	-	84.5127	-	-	41.4586	-	104.5127
24370	-	40.1579**	-	-	84.5127	-	-	44.3548	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

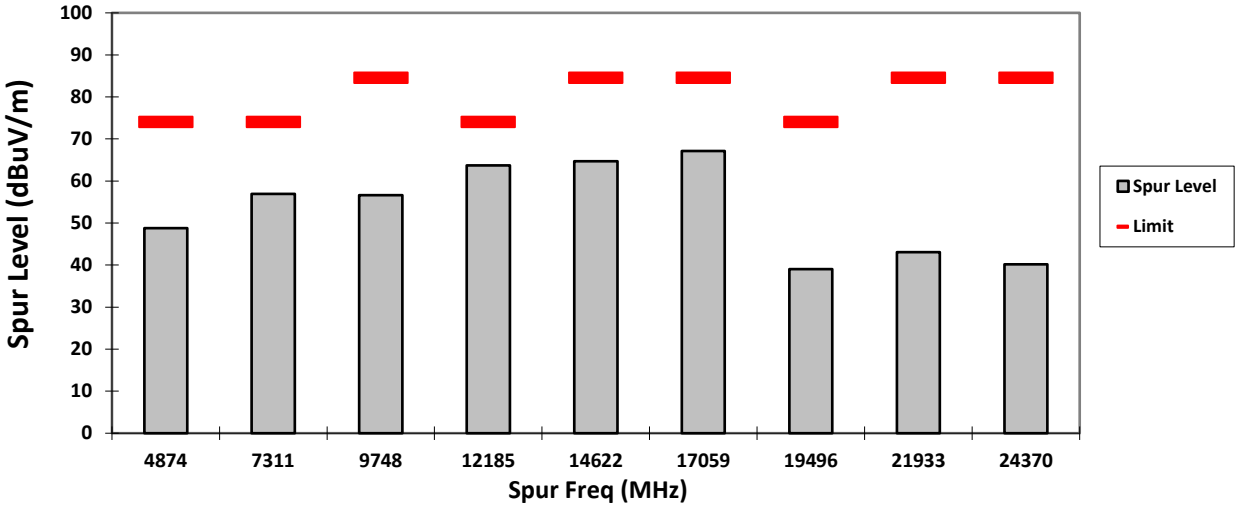
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

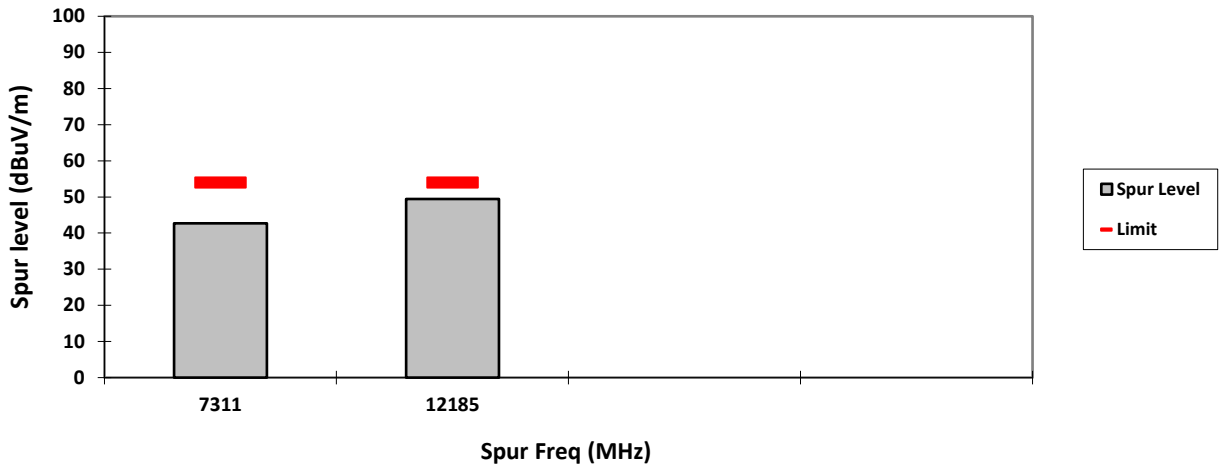
VERTICAL, PK



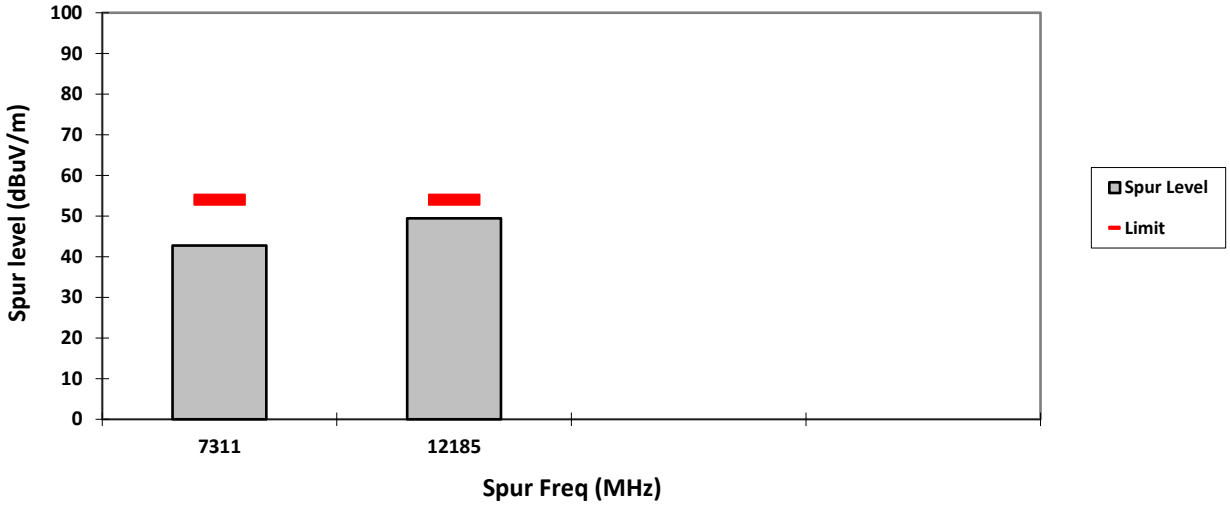
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 2462.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11b)

Radiated Emission (High Channel) tabular data

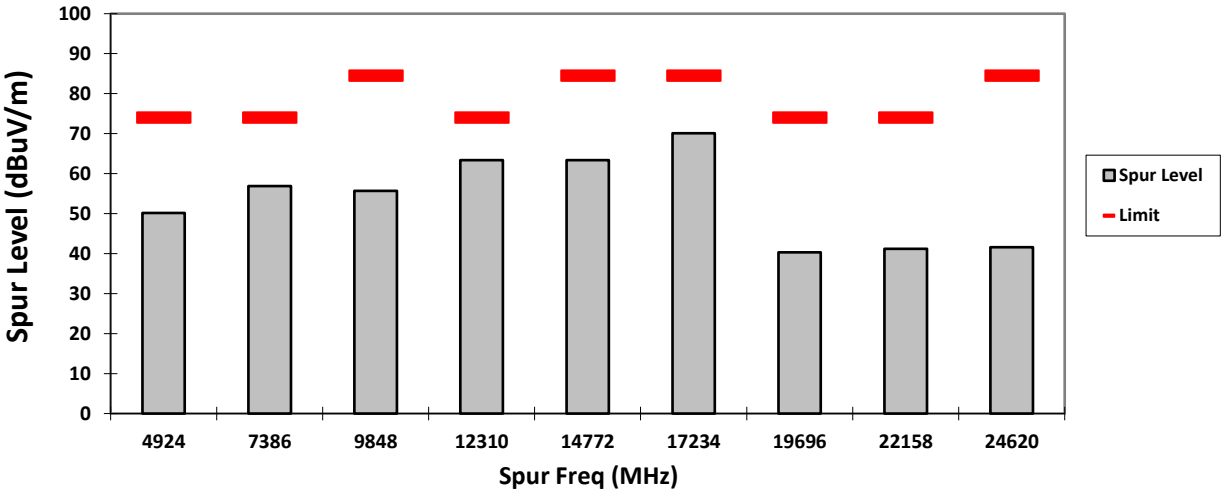
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4924	-	50.1770**	-	-	74.0000	-	-	23.8230	-	-
7386	-	56.8911**	42.9461**	-	74.0000	54.0000	-	17.1089	11.0539	-
9848	-	55.6886**	-	-	84.5127	-	-	28.8241	-	104.5127
12310	-	63.3886**	49.5067**	-	74.0000	54.0000	-	10.6114	4.4933	-
14772	-	63.3438**	-	-	84.5127	-	-	21.1689	-	104.5127
17234	-	70.0779**	-	-	84.5127	-	-	14.4348	-	104.5127
19696	-	40.2802**	-	-	74.0000	-	-	33.7198	-	-
22158	-	41.1768**	-	-	74.0000	-	-	32.8232	-	-
24620	-	41.6332**	-	-	84.5127	-	-	42.8795	-	104.5127
Horizontal Radiated Emission Result										
4924	-	48.8240**	-	-	74.0000	-	-	25.1760	-	-
7386	-	56.6612**	42.7860**	-	74.0000	54.0000	-	17.3388	11.2140	-
9848	-	55.6028**	-	-	84.5127	-	-	28.9099	-	104.5127
12310	-	63.5545**	49.5086**	-	74.0000	54.0000	-	10.4455	4.4914	-
14772	-	64.1671**	-	-	84.5127	-	-	20.3456	-	104.5127
17234	-	71.7110**	-	-	84.5127	-	-	12.8017	-	104.5127
19696	-	40.4657**	-	-	74.0000	-	-	33.5343	-	-
22158	-	41.1066**	-	-	74.0000	-	-	32.8934	-	-
24620	-	40.6215**	-	-	84.5127	-	-	43.8912	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

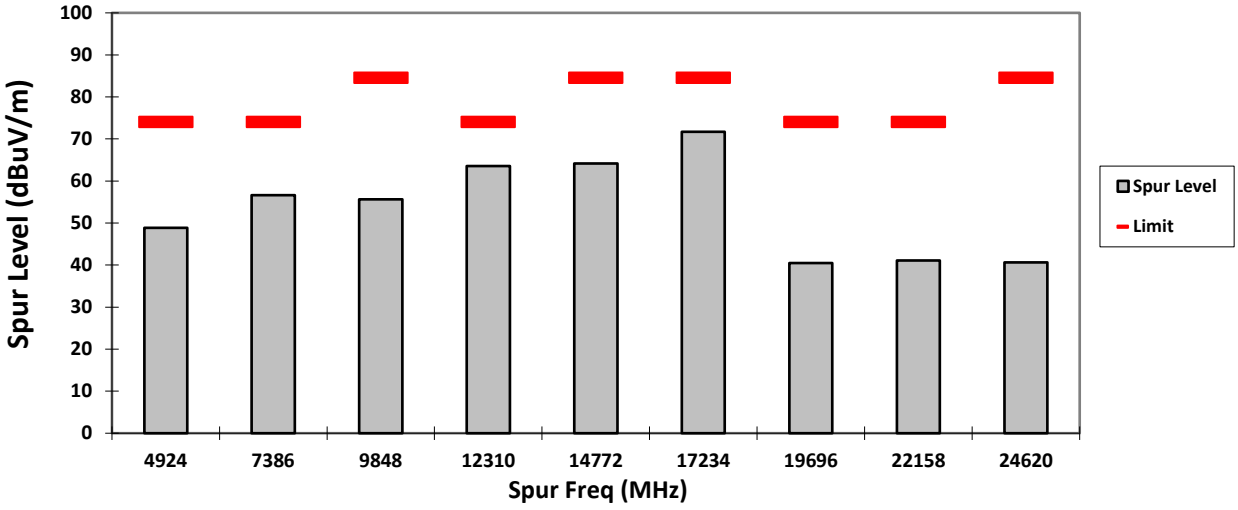
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

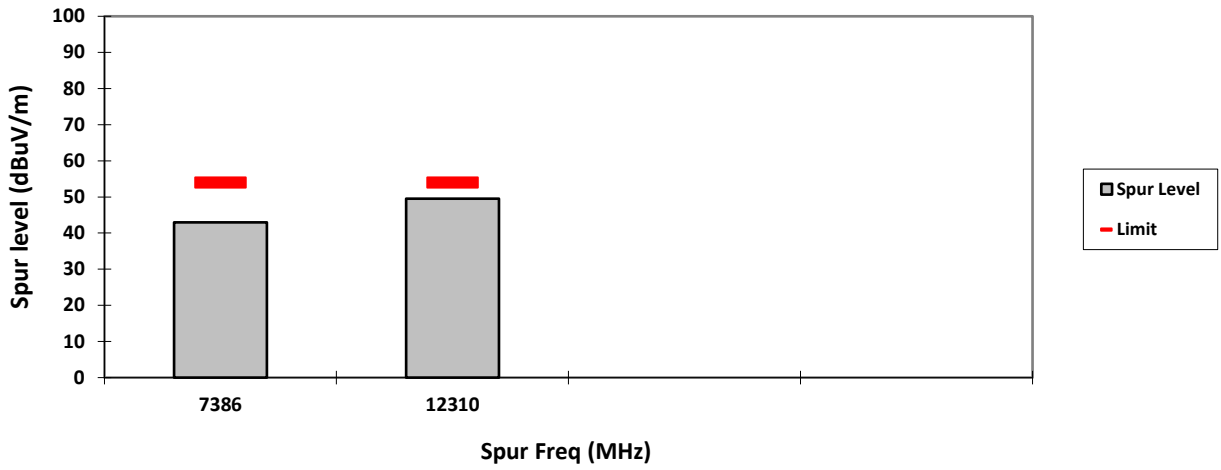
VERTICAL, PK



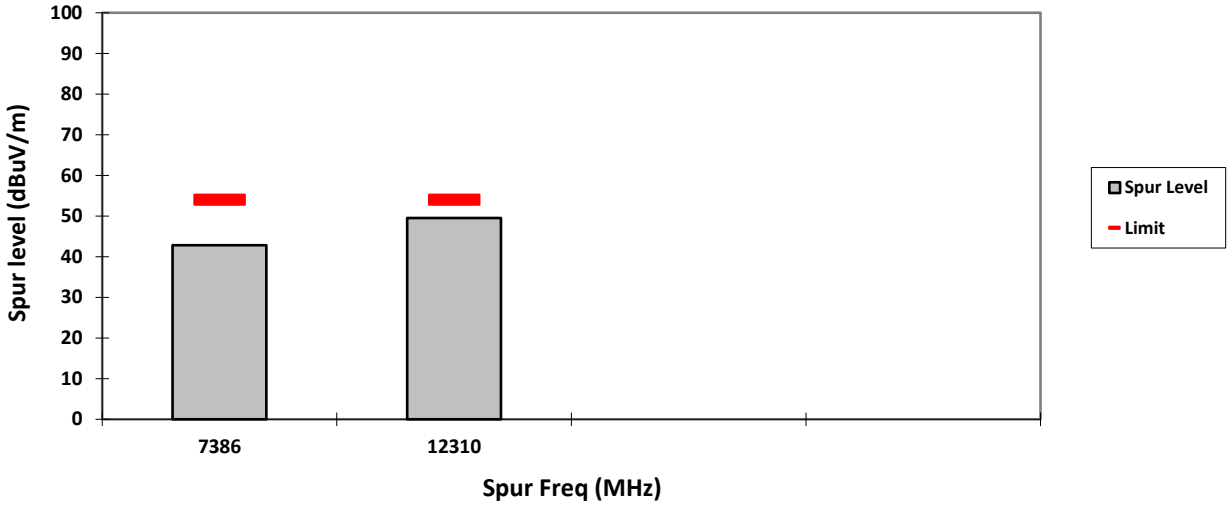
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 2412.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11g)

Radiated Emission (Low Channel) tabular data

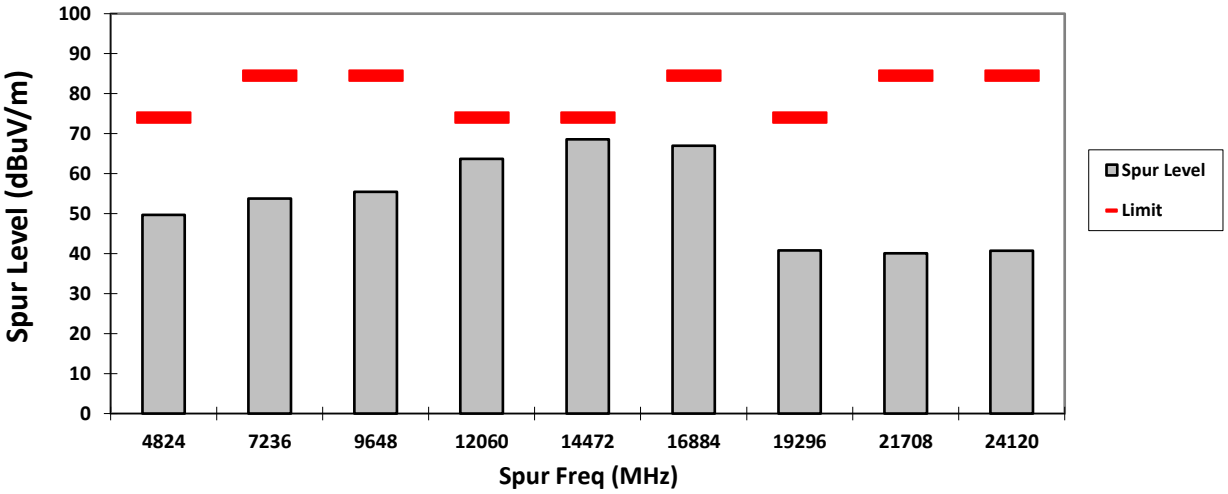
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4824	-	49.6725**	-	-	74.0000	-	-	24.3275	-	-
7236	-	53.7614**	-	-	84.5127	-	-	30.7513	-	104.5127
9648	-	55.4748**	-	-	84.5127	-	-	29.0379	-	104.5127
12060	-	63.6561**	49.8528**	-	74.0000	54.0000	-	10.3439	4.1472	-
14472	-	68.5919**	53.0414**	-	74.0000	54.0000	-	5.4081	0.9586	-
16884	-	66.9519**	-	-	84.5127	-	-	17.5608	-	104.5127
19296	-	40.7600**	-	-	74.0000	-	-	33.2400	-	-
21708	-	40.0821**	-	-	84.5127	-	-	44.4306	-	104.5127
24120	-	40.7163**	-	-	84.5127	-	-	43.7964	-	104.5127
Horizontal Radiated Emission Result										
4824	-	47.7587**	-	-	74.0000	-	-	26.2413	-	-
7236	-	53.1089**	-	-	84.5127	-	-	31.4038	-	104.5127
9648	-	56.1533**	-	-	84.5127	-	-	28.3594	-	104.5127
12060	-	62.9766**	49.8653**	-	74.0000	54.0000	-	11.0234	4.1347	-
14472	-	68.5386**	53.0210**	-	74.0000	54.0000	-	5.4614	0.979	-
16884	-	67.3728**	-	-	84.5127	-	-	17.1399	-	104.5127
19296	-	39.4929**	-	-	74.0000	-	-	34.5071	-	-
21708	-	39.5333**	-	-	84.5127	-	-	44.9794	-	104.5127
24120	-	39.9632**	-	-	84.5127	-	-	44.5495	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

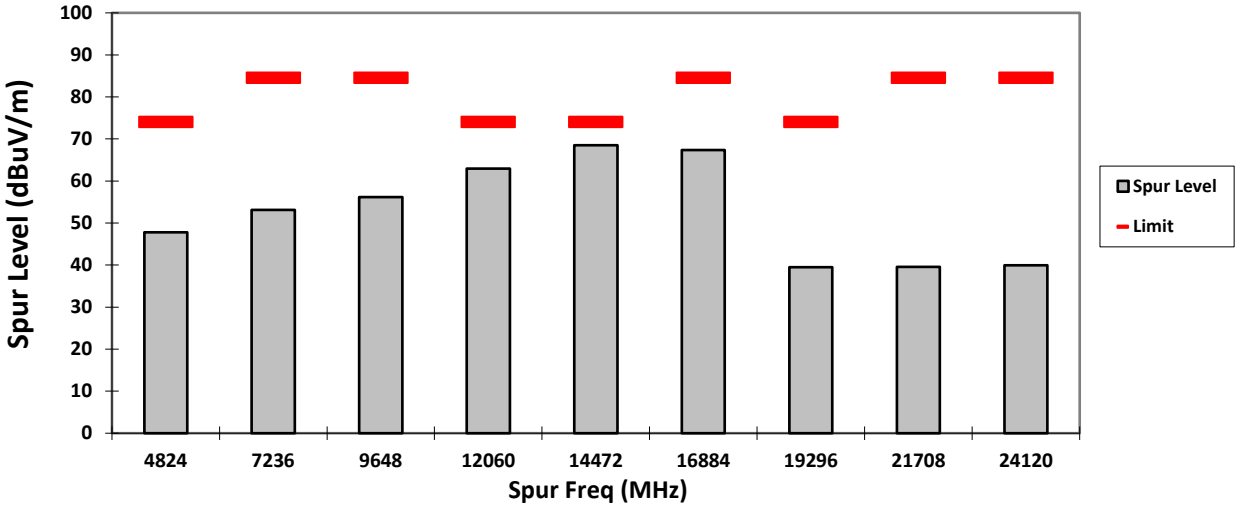
Temperature (degC): 23.5 Humidity (%): 69.4
Test Performed by: Nazrin & Rezza Test Date: Thu, 25 Apr, 2024
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

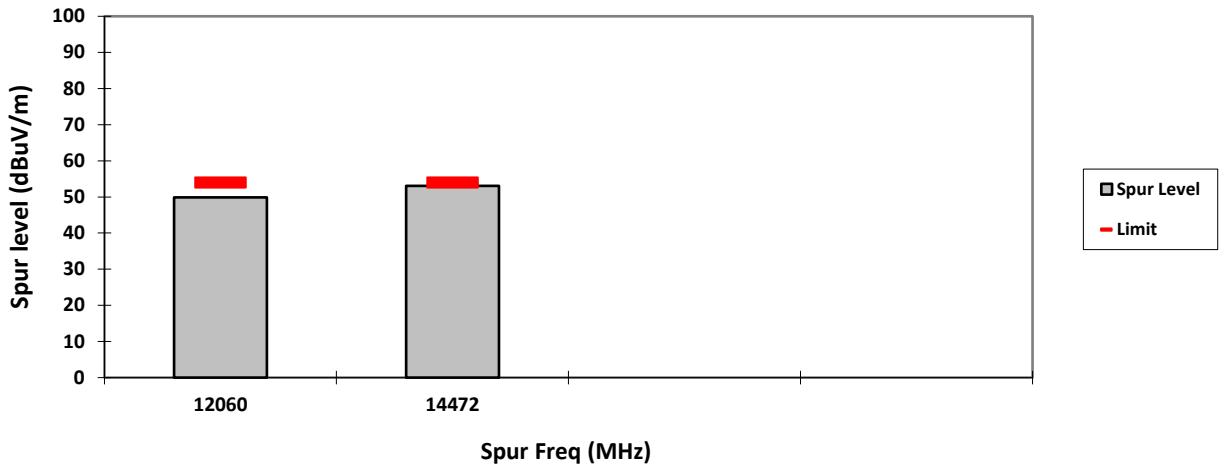
VERTICAL, PK



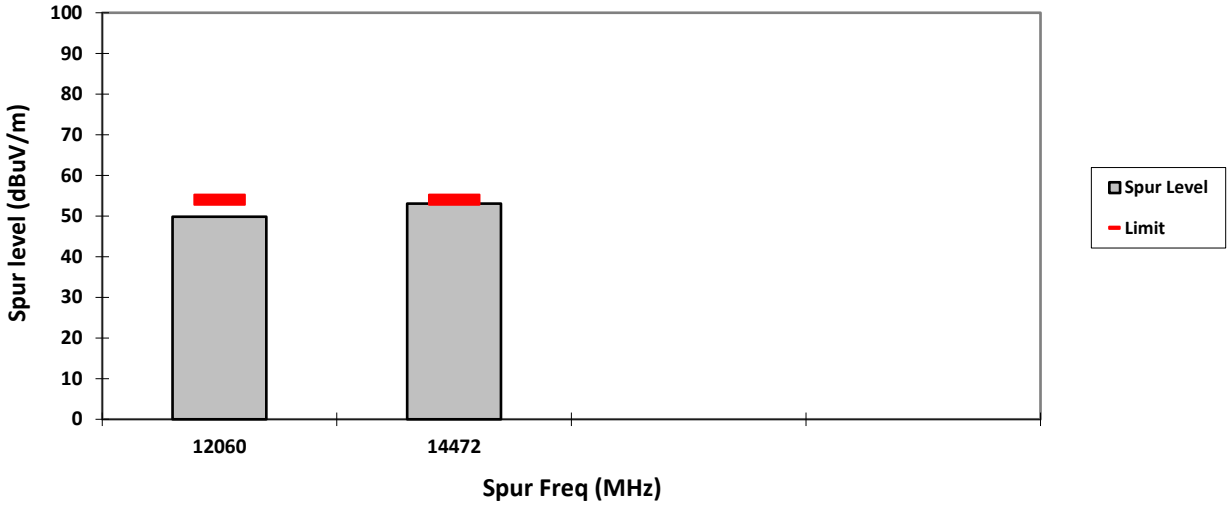
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 2437.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11g)

Radiated Emission (Mid Channel) tabular data

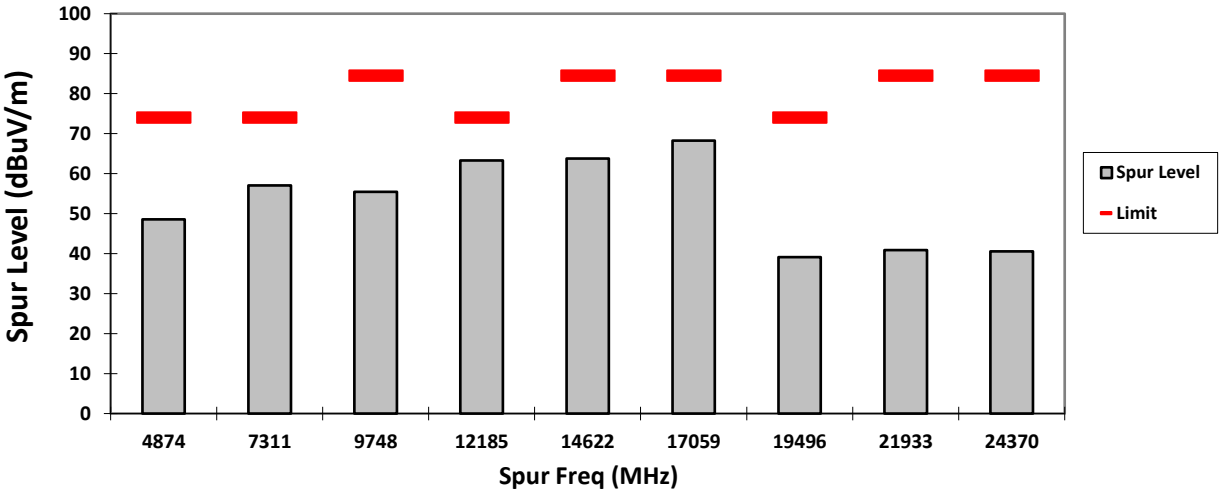
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4874	-	48.5842**	-	-	74.0000	-	-	25.4158	-	-
7311	-	57.0090**	43.1166**	-	74.0000	54.0000	-	16.9910	10.8834	-
9748	-	55.4843**	-	-	84.5127	-	-	29.0284	-	104.5127
12185	-	63.2965**	49.6623**	-	74.0000	54.0000	-	10.7035	4.3377	-
14622	-	63.7624**	-	-	84.5127	-	-	20.7503	-	104.5127
17059	-	68.2809**	-	-	84.5127	-	-	16.2318	-	104.5127
19496	-	39.1023**	-	-	74.0000	-	-	34.8977	-	-
21933	-	40.8904**	-	-	84.5127	-	-	43.6223	-	104.5127
24370	-	40.5586**	-	-	84.5127	-	-	43.9541	-	104.5127
Horizontal Radiated Emission Result										
4874	-	47.9821**	-	-	74.0000	-	-	26.0179	-	-
7311	-	56.6217**	43.1586**	-	74.0000	54.0000	-	17.3783	10.8414	-
9748	-	55.7353**	-	-	84.5127	-	-	28.7774	-	104.5127
12185	-	63.4393**	49.8939**	-	74.0000	54.0000	-	10.5607	4.1061	-
14622	-	64.1218**	-	-	84.5127	-	-	20.3909	-	104.5127
17059	-	67.9075**	-	-	84.5127	-	-	16.6052	-	104.5127
19496	-	38.9862**	-	-	74.0000	-	-	35.0138	-	-
21933	-	40.2622**	-	-	84.5127	-	-	44.2505	-	104.5127
24370	-	39.7158**	-	-	84.5127	-	-	44.7969	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

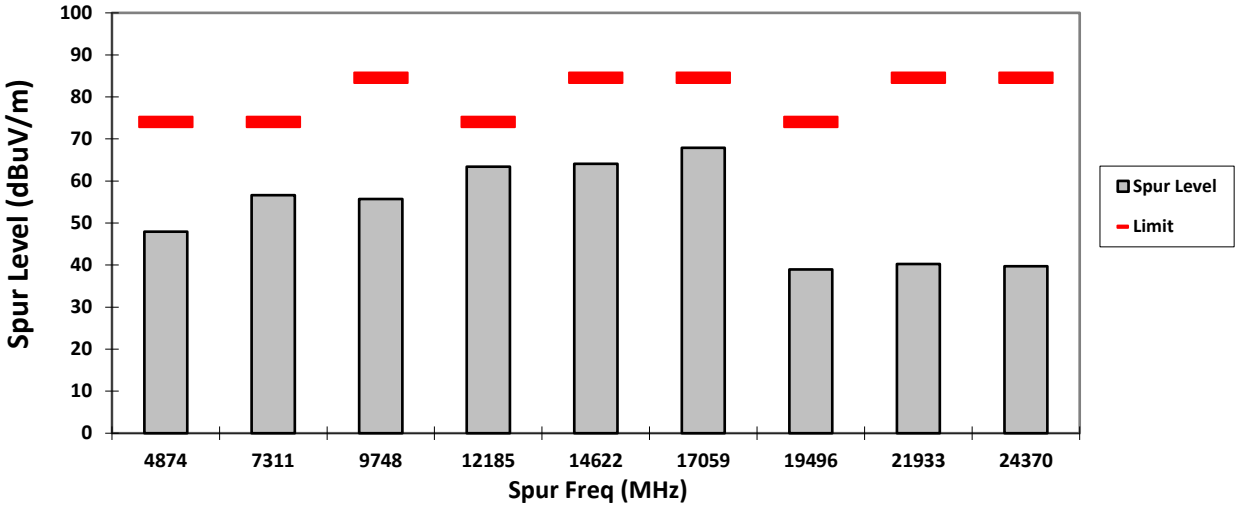
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

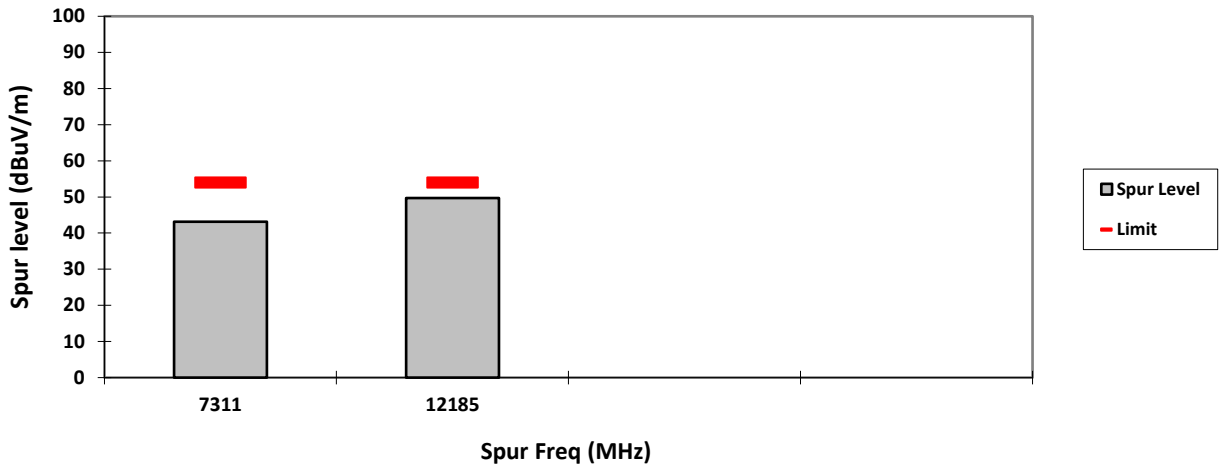
VERTICAL, PK



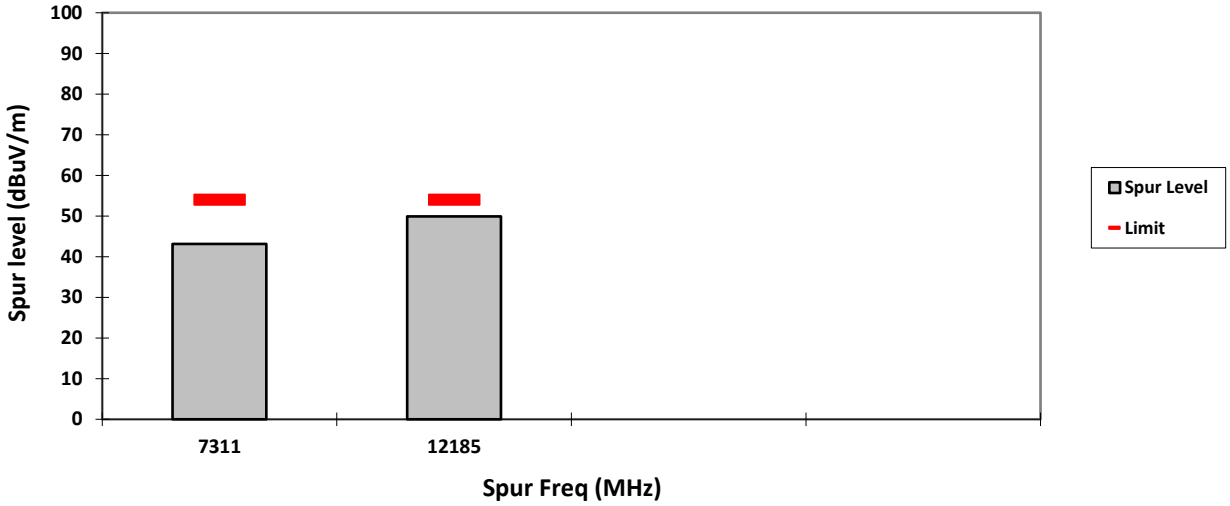
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 2462.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11g)

Radiated Emission (High Channel) tabular data

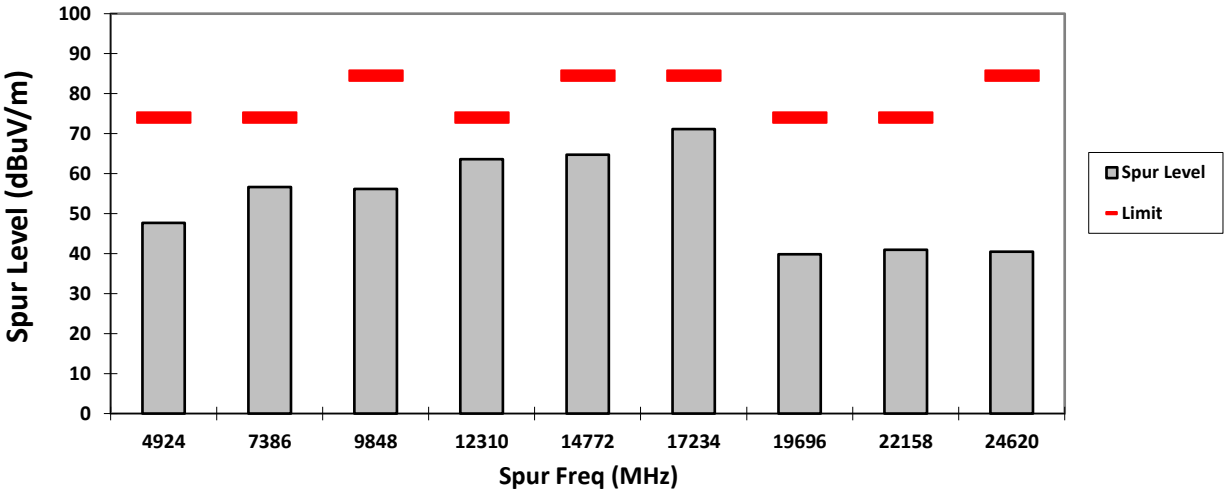
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4924	-	47.7038**	-	-	74.0000	-	-	26.2962	-	-
7386	-	56.6508**	43.3934**	-	74.0000	54.0000	-	17.3492	10.6066	-
9848	-	56.1299**	-	-	84.5127	-	-	28.3828	-	104.5127
12310	-	63.5881**	50.0835**	-	74.0000	54.0000	-	10.4119	3.9165	-
14772	-	64.7681**	-	-	84.5127	-	-	19.7446	-	-
17234	-	71.1318**	-	-	84.5127	-	-	13.3809	-	104.5127
19696	-	39.8295**	-	-	74.0000	-	-	34.1705	-	-
22158	-	40.9220**	-	-	74.0000	-	-	33.0780	-	-
24620	-	40.4481**	-	-	84.5127	-	-	44.0646	-	104.5127
Horizontal Radiated Emission Result										
4924	-	48.9838**	-	-	74.0000	-	-	25.0162	-	-
7386	-	57.2221**	43.1894**	-	74.0000	54.0000	-	16.7779	10.8106	-
9848	-	55.3828**	-	-	84.5127	-	-	29.1299	-	104.5127
12310	-	63.3758**	50.0827**	-	74.0000	54.0000	-	10.6242	3.9173	-
14772	-	64.5878**	-	-	84.5127	-	-	19.9249	-	-
17234	-	70.4774**	-	-	84.5127	-	-	14.0353	-	104.5127
19696	-	39.2954**	-	-	74.0000	-	-	34.7046	-	-
22158	-	40.5751**	-	-	74.0000	-	-	33.4249	-	-
24620	-	41.1772**	-	-	84.5127	-	-	43.3355	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

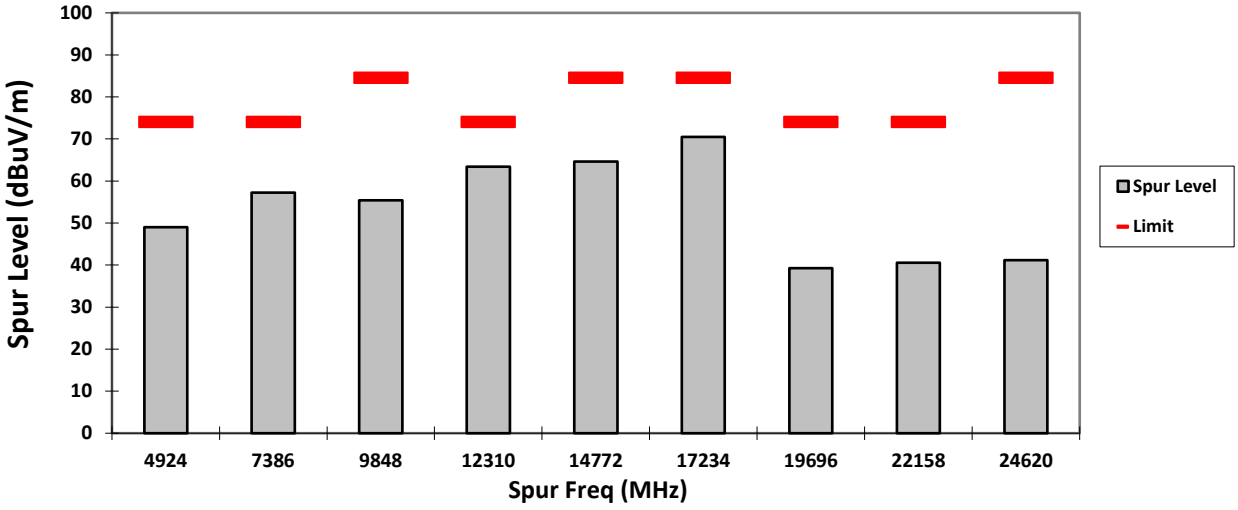
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

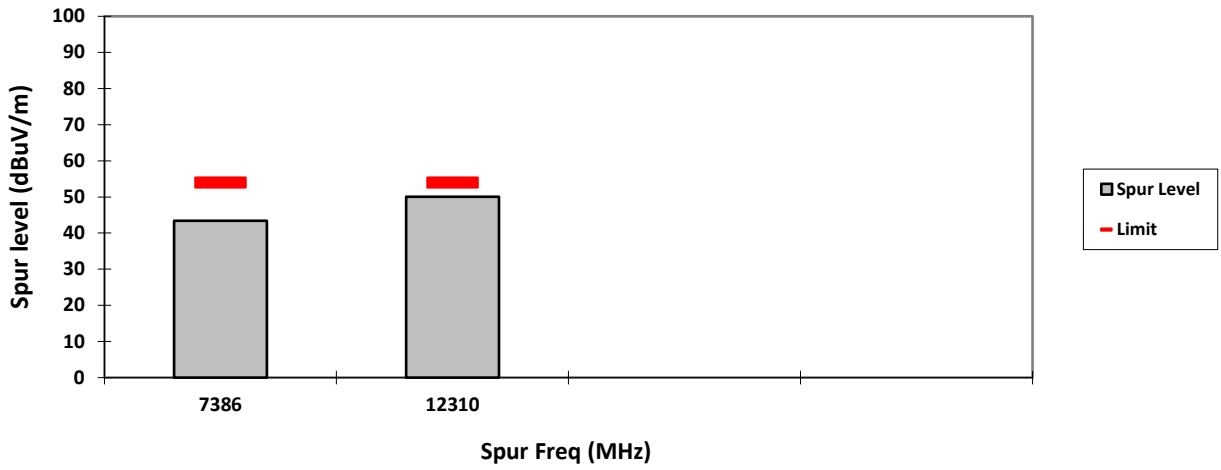
VERTICAL, PK



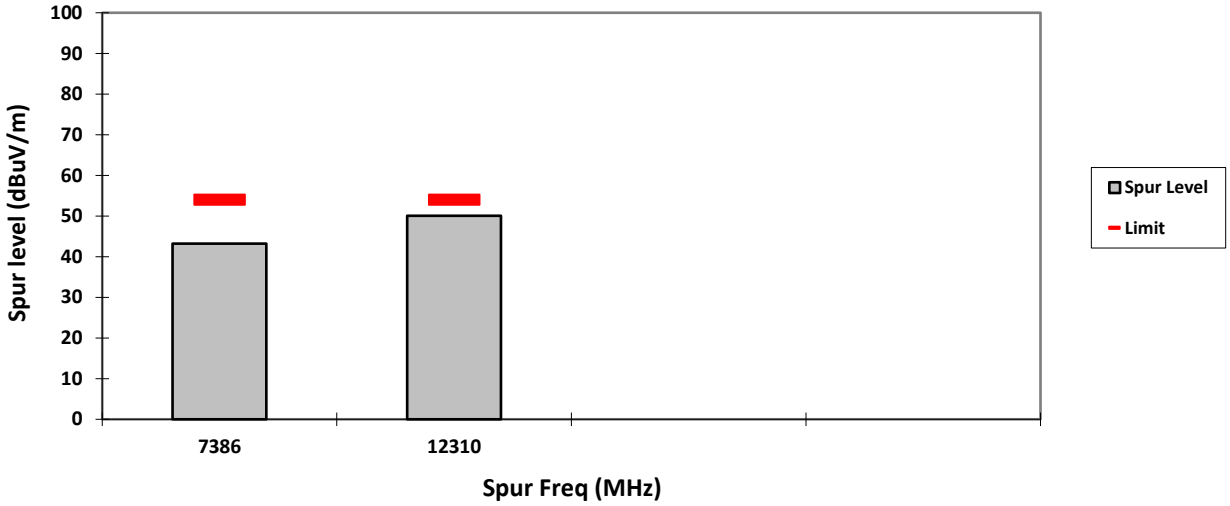
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Low Test Frequency: 2412.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n20)

Radiated Emission (Low Channel) tabular data

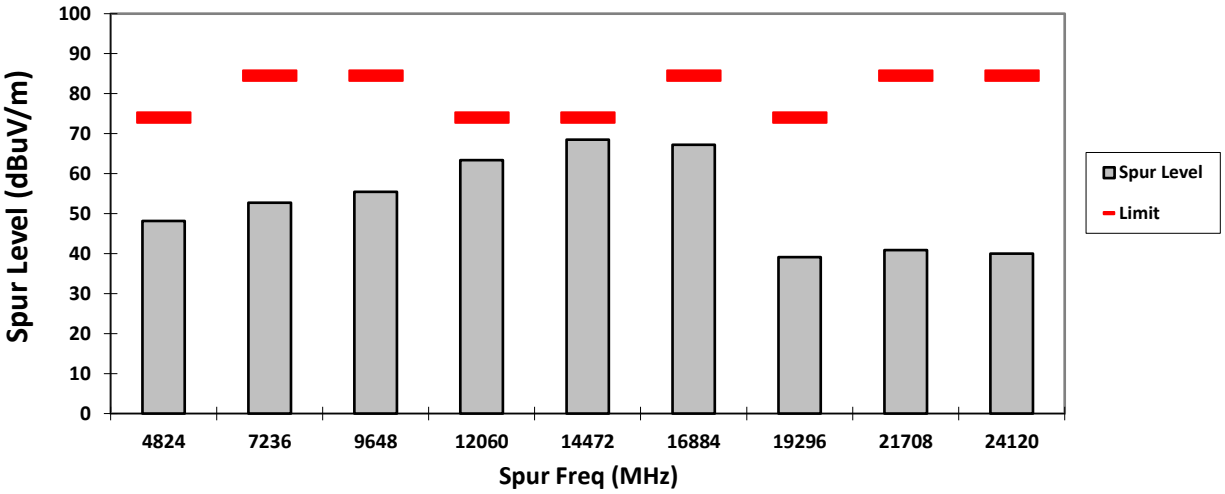
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4824	-	48.1635**	-	-	74.0000	-	-	25.8365	-	-
7236	-	52.7202**	-	-	84.5127	-	-	31.7925	-	104.5127
9648	-	55.4360**	-	-	84.5127	-	-	29.0767	-	104.5127
12060	-	63.3781**	49.7400**	-	74.0000	54.0000	-	10.6219	4.2600	-
14472	-	68.5015**	52.9327**	-	74.0000	54.0000	-	5.4985	1.0763	-
16884	-	67.2133**	-	-	84.5127	-	-	17.2994	-	104.5127
19296	-	39.1268**	-	-	74.0000	-	-	34.8732	-	-
21708	-	40.8964**	-	-	84.5127	-	-	43.6163	-	104.5127
24120	-	40.0228**	-	-	84.5127	-	-	44.4899	-	104.5127
Horizontal Radiated Emission Result										
4824	-	46.8296**	-	-	74.0000	-	-	27.1704	-	-
7236	-	52.3978**	-	-	84.5127	-	-	32.1149	-	104.5127
9648	-	55.3047**	-	-	84.5127	-	-	29.2080	-	104.5127
12060	-	63.0035**	49.6253**	-	74.0000	54.0000	-	10.9965	4.3747	-
14472	-	68.4536**	52.9429**	-	74.0000	54.0000	-	5.5464	1.0571	-
16884	-	66.9582**	-	-	84.5127	-	-	17.5545	-	104.5127
19296	-	39.2447**	-	-	74.0000	-	-	34.7553	-	-
21708	-	39.5895**	-	-	84.5127	-	-	44.9232	-	104.5127
24120	-	39.9384**	-	-	84.5127	-	-	44.5743	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

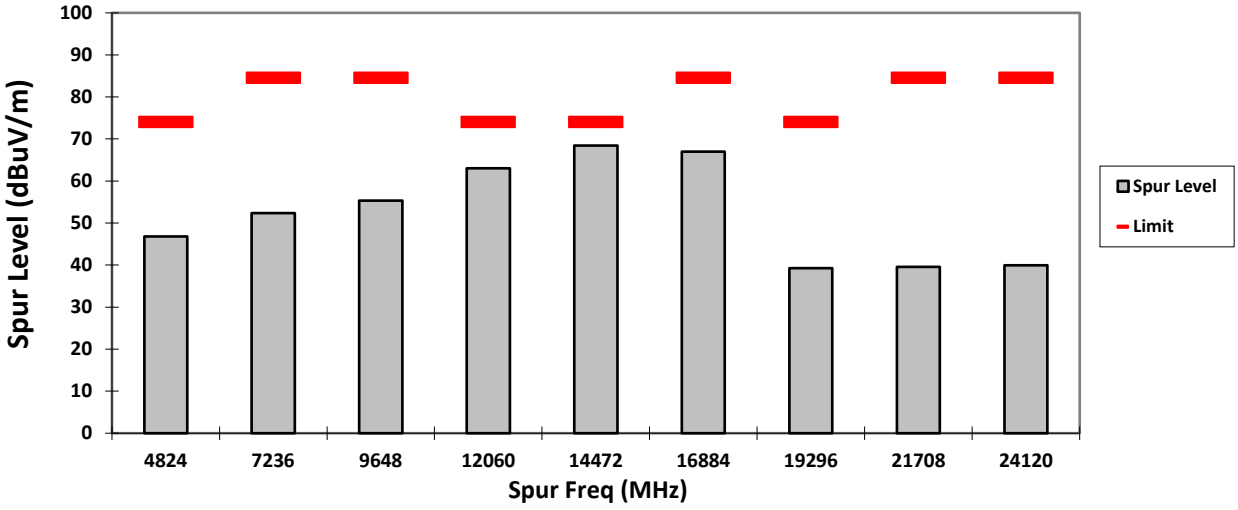
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

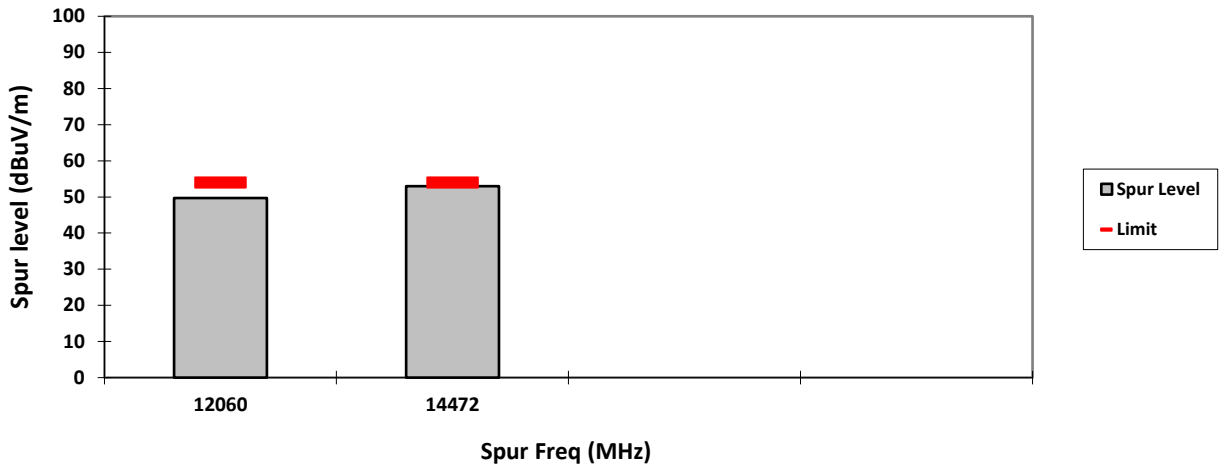
VERTICAL, PK



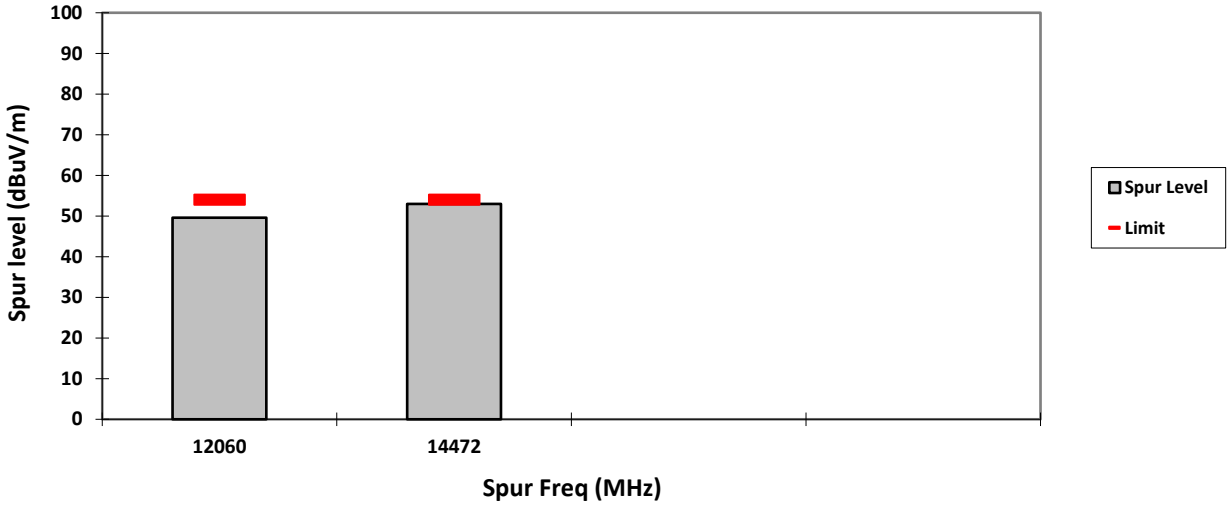
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: Mid Test Frequency: 2437.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n20)

Radiated Emission (Mid Channel) tabular data

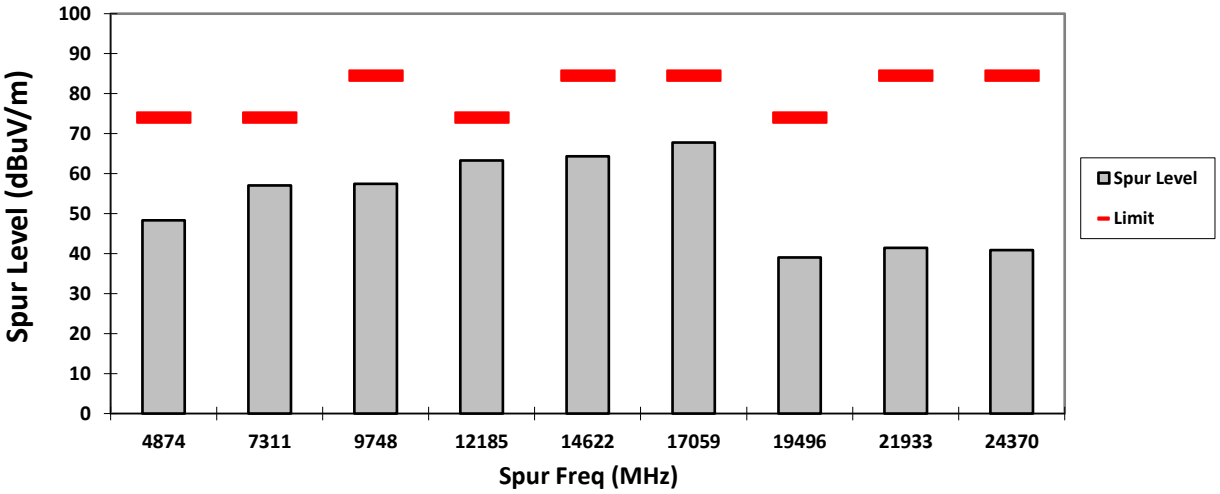
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4874	-	48.2820**	-	-	74.0000	-	-	25.7180	-	-
7311	-	57.0827**	42.9978**	-	74.0000	54.0000	-	16.9173	11.0022	-
9748	-	57.4309**	-	-	84.5127	-	-	27.0818	-	104.5127
12185	-	63.2955**	49.6624**	-	74.0000	54.0000	-	10.7045	4.3376	-
14622	-	64.3624**	-	-	84.5127	-	-	20.1503	-	104.5127
17059	-	67.8012**	-	-	84.5127	-	-	16.7115	-	104.5127
19496	-	39.0266**	-	-	74.0000	-	-	34.9734	-	-
21933	-	41.4296**	-	-	84.5127	-	-	43.0831	-	104.5127
24370	-	40.8742**	-	-	84.5127	-	-	43.6385	-	104.5127
Horizontal Radiated Emission Result										
4874	-	46.9625**	-	-	74.0000	-	-	27.0375	-	-
7311	-	56.4674**	43.0767**	-	74.0000	54.0000	-	17.5326	10.9233	-
9748	-	55.8358**	-	-	84.5127	-	-	28.6769	-	104.5127
12185	-	63.6832**	49.6624**	-	74.0000	54.0000	-	10.3168	4.3376	-
14622	-	63.1359**	-	-	84.5127	-	-	21.3768	-	104.5127
17059	-	69.1803**	-	-	84.5127	-	-	15.3324	-	104.5127
19496	-	39.8485**	-	-	74.0000	-	-	34.1515	-	-
21933	-	42.5314**	-	-	84.5127	-	-	41.9813	-	104.5127
24370	-	40.6518**	-	-	84.5127	-	-	43.8609	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

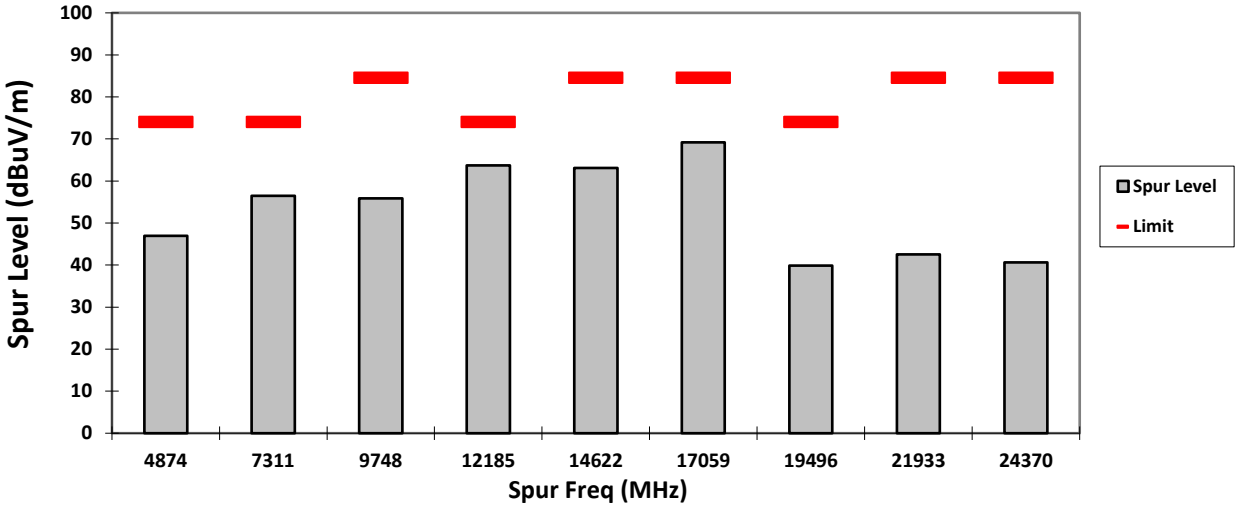
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

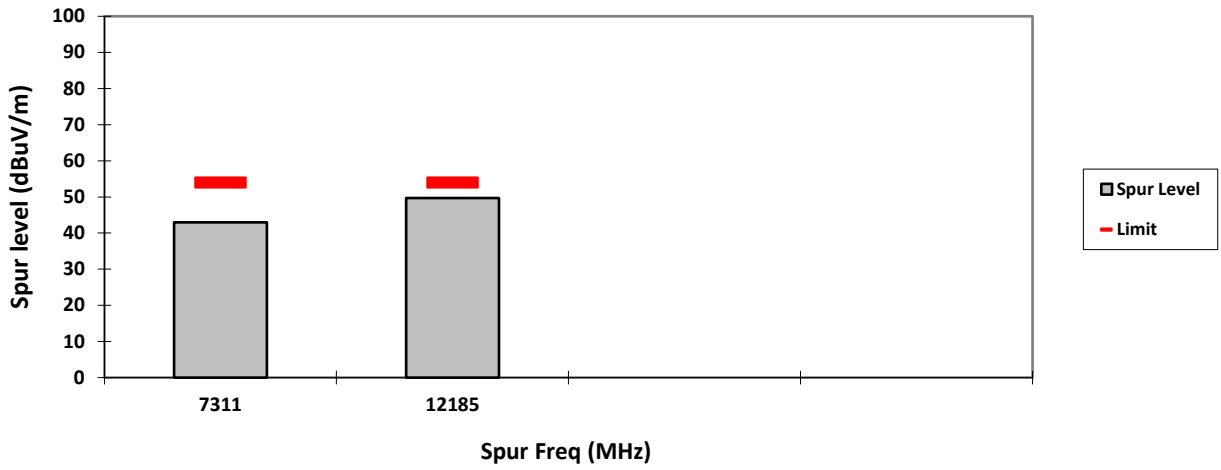
VERTICAL, PK



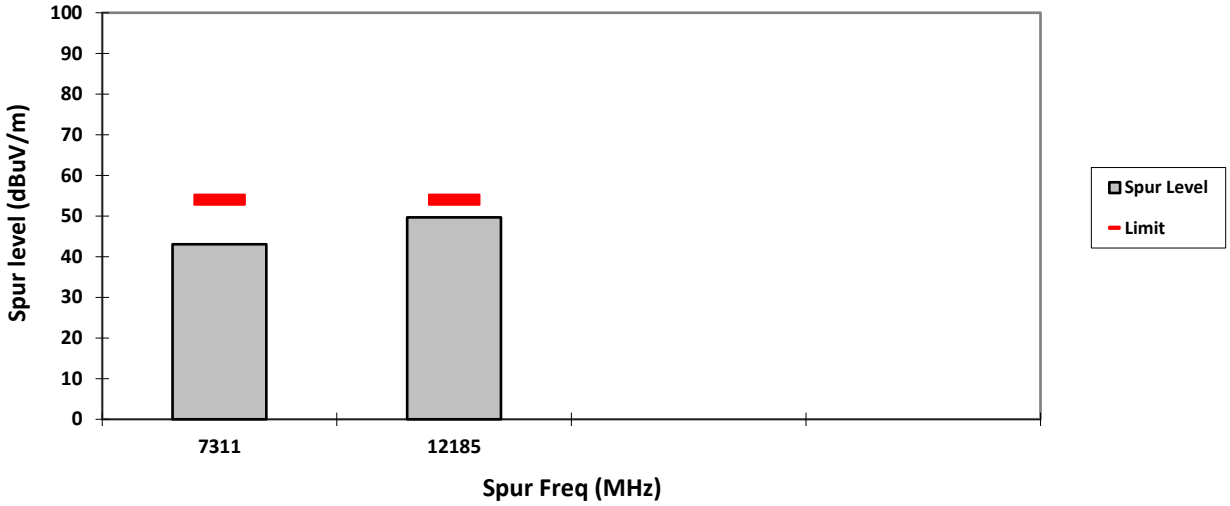
HORIZONTAL, PK



VERTICAL, AV



HORIZONTAL, AV



Test: WIFI SAC Transmitter Radiated Emission
Model#: AAH06RDN9RA1AN S/N: 865EAD9538 EMC SR ID#: 0512P01-EMC-00007
Battery: PMNN4810A Softpot power (15dBm) Accessory: PMAE4079A
Test Channel: High Test Frequency: 2462.0000 MHz Test Standard: ANSI C63.10-2013
Worst Case Plane: Z-Plane (802.11n20)

Radiated Emission (High Channel) tabular data

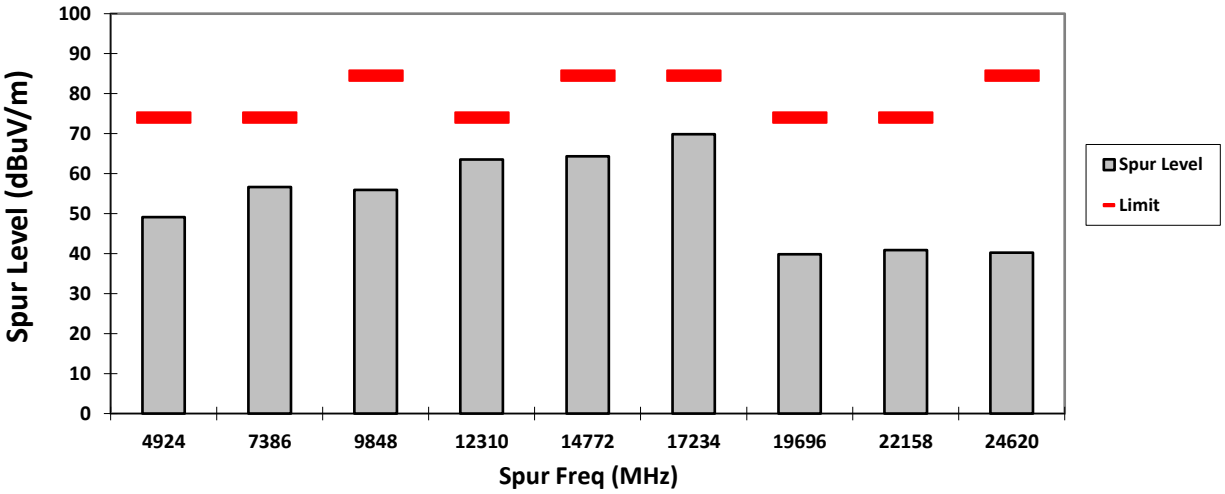
Vertical Radiated Emission Result										
Spur Freq (MHz)	Spur level QPK (dBµV/m)	Spur level PK (dBµV/m)	Spur level AV (dBµV/m)	Limit QPK (dBµV/m)	Limit PK (dBµV/m)	Limit AV (dBµV/m)	Margin QPK (dBµV/m)	Margin PK (dBµV/m)	Margin AV (dBµV/m)	Carrier PK Power (dBµV/m)
4924	-	49.1131**	-	-	74.0000	-	-	24.8869	-	-
7386	-	56.6106**	43.0657**	-	74.0000	54.0000	-	17.3894	10.9343	-
9848	-	55.9014**	-	-	84.5127	-	-	28.6113	-	104.5127
12310	-	63.5374**	49.9476**	-	74.0000	54.0000	-	10.4626	4.0524	-
14772	-	64.3720**	-	-	84.5127	-	-	20.1407	-	104.5127
17234	-	69.8836**	-	-	84.5127	-	-	14.6291	-	104.5127
19696	-	39.8089**	-	-	74.0000	-	-	34.1911	-	-
22158	-	40.9074**	-	-	74.0000	-	-	33.0926	-	-
24620	-	40.2428**	-	-	84.5127	-	-	44.2699	-	104.5127
Horizontal Radiated Emission Result										
4924	-	47.5155**	-	-	74.0000	-	-	26.4845	-	-
7386	-	57.1037**	43.2407**	-	74.0000	54.0000	-	16.8963	10.7593	-
9848	-	54.9166**	-	-	84.5127	-	-	29.5961	-	104.5127
12310	-	63.5451**	49.9419**	-	74.0000	54.0000	-	10.4549	4.0581	-
14772	-	64.9733**	-	-	84.5127	-	-	19.5394	-	104.5127
17234	-	70.4879**	-	-	84.5127	-	-	14.0248	-	104.5127
19696	-	38.4192**	-	-	74.0000	-	-	35.5808	-	-
22158	-	40.8393**	-	-	74.0000	-	-	33.1607	-	-
24620	-	40.4679**	-	-	84.5127	-	-	44.0448	-	104.5127

Remarks: Pass Result	Marginal Result	Fail Result

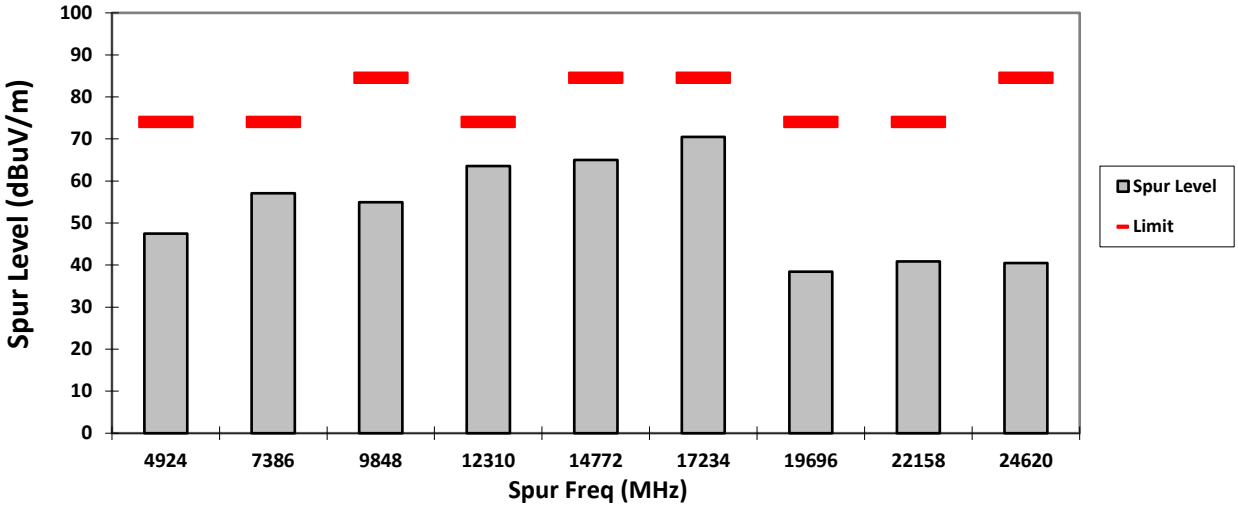
Temperature (degC): 23.5 **Humidity (%): 69.4**
Test Performed by: Nazrin & Rezza **Test Date: Thu, 25 Apr, 2024**
System MU: 5.88 dB (30-1000MHz), 5.84 dB (1000-18000MHz), 6.02 dB (18000MHz-40000MHz)

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

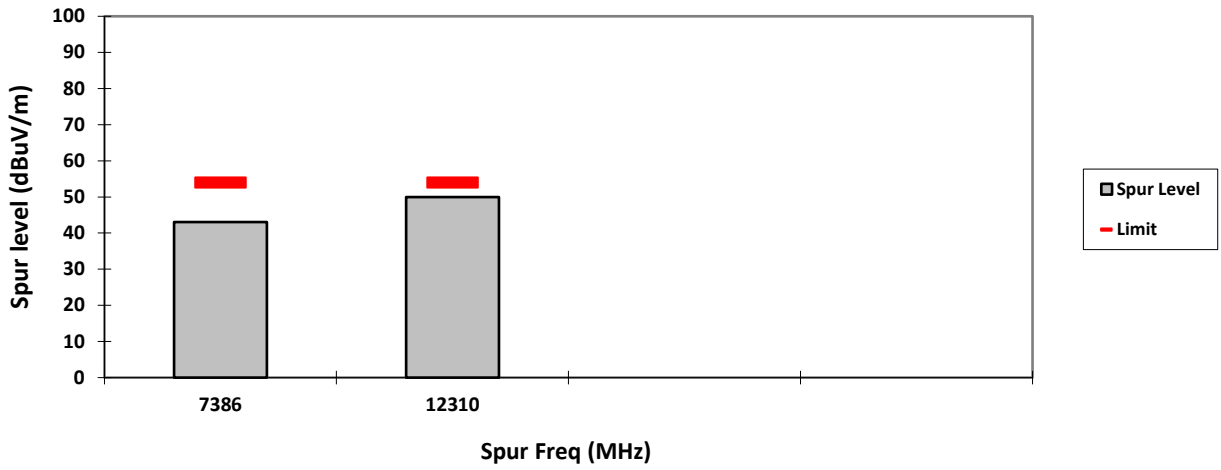
VERTICAL, PK



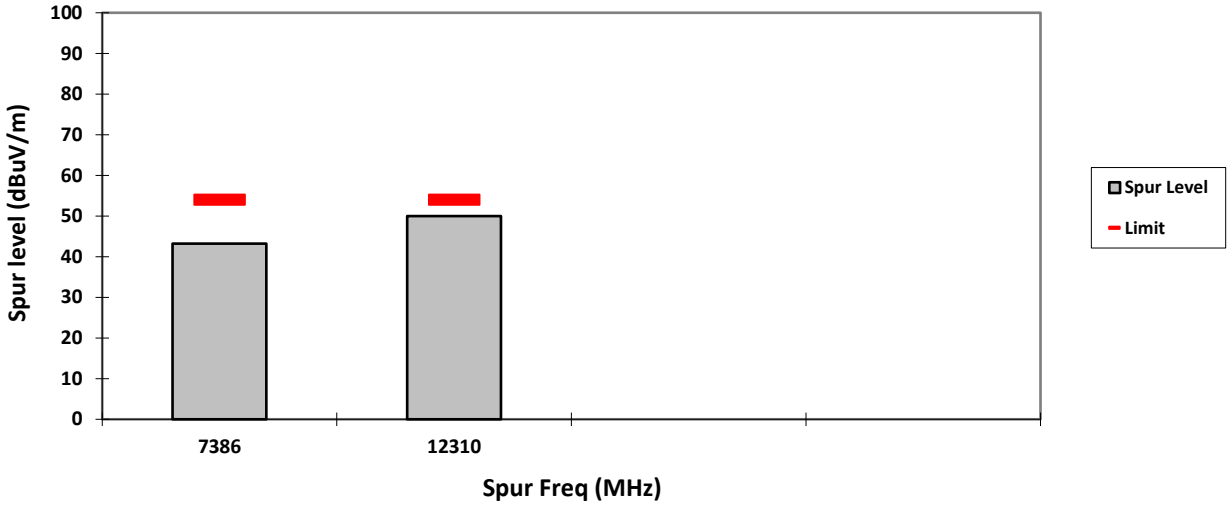
HORIZONTAL, PK



VERTICAL, AV

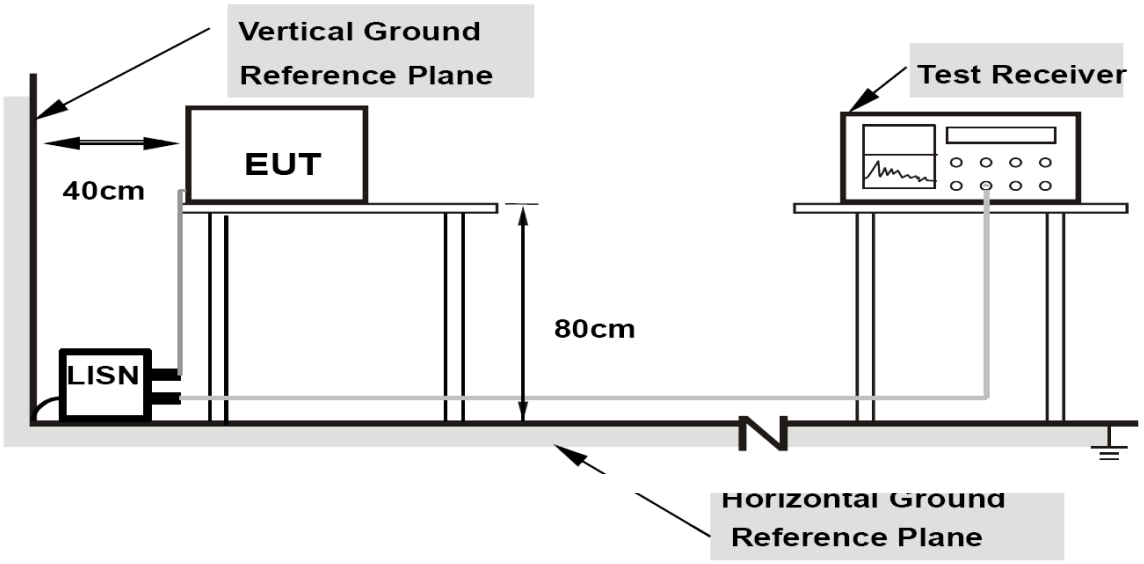


HORIZONTAL, AV



6.8. AC Powerline Conducted Emission

6.8.1. Test Setup



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

6.8.2. Test Limits:

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

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

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

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

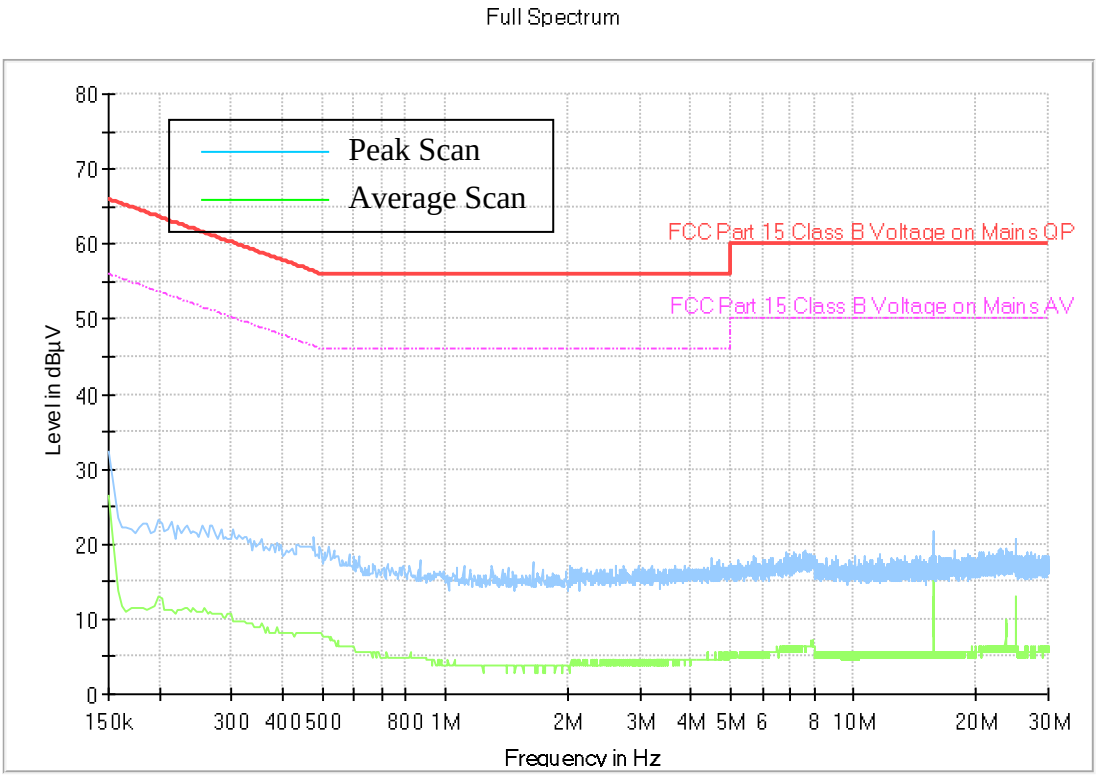
Limits for conducted disturbance at the mains ports of class B ITE

Frequency range MHz	Limits dB(μV)	
	Quasi-peak	Average
0,15 to 0,50	66 to 56	56 to 46
0,50 to 5	56	46
5 to 30	60	50
NOTE 1 The lower limit shall apply at the transition frequencies. NOTE 2 The limit decreases linearly with the logarithm of the frequency in the range 0,15 MHz to 0,50 MHz.		

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

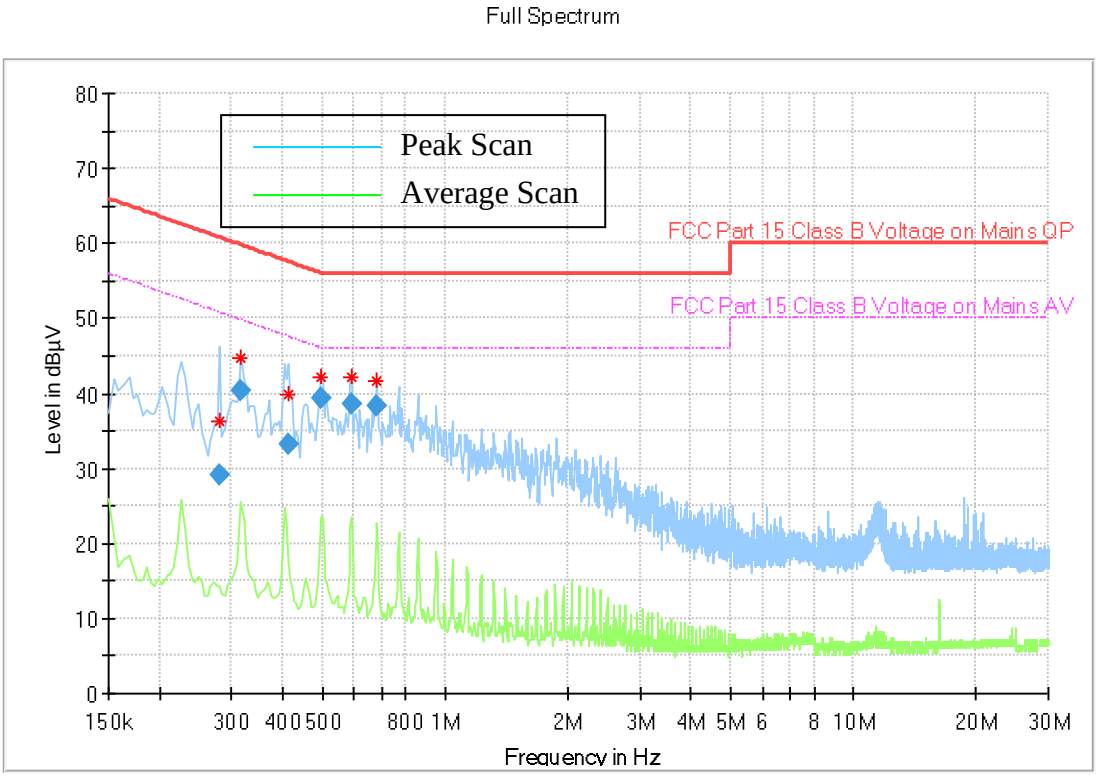
6.8.3. **Test Result**

1) Ambient



120 Vac, 60Hz

1) Charger Alone

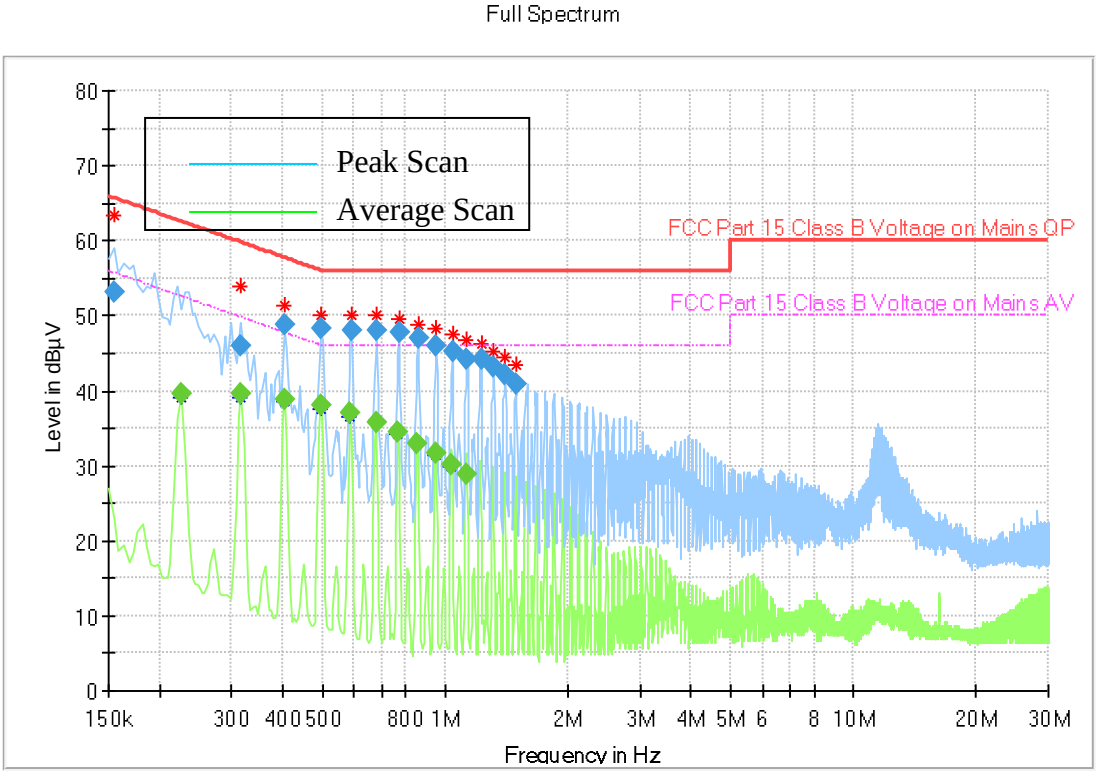


Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.280500	29.06	---	60.80	31.74	1000.0	9.000	L1	ON	10.3	Pass
0.316500	40.34	---	59.80	19.46	1000.0	9.000	N	ON	10.3	Pass
0.415500	33.24	---	57.54	24.30	1000.0	9.000	L1	ON	10.3	Pass
0.496500	39.47	---	56.06	16.59	1000.0	9.000	L1	ON	10.3	Pass
0.591000	38.72	---	56.00	17.28	1000.0	9.000	L1	ON	10.3	Pass
0.681000	38.38	---	56.00	17.62	1000.0	9.000	L1	ON	10.3	Pass

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

2) Charger + Radio Off

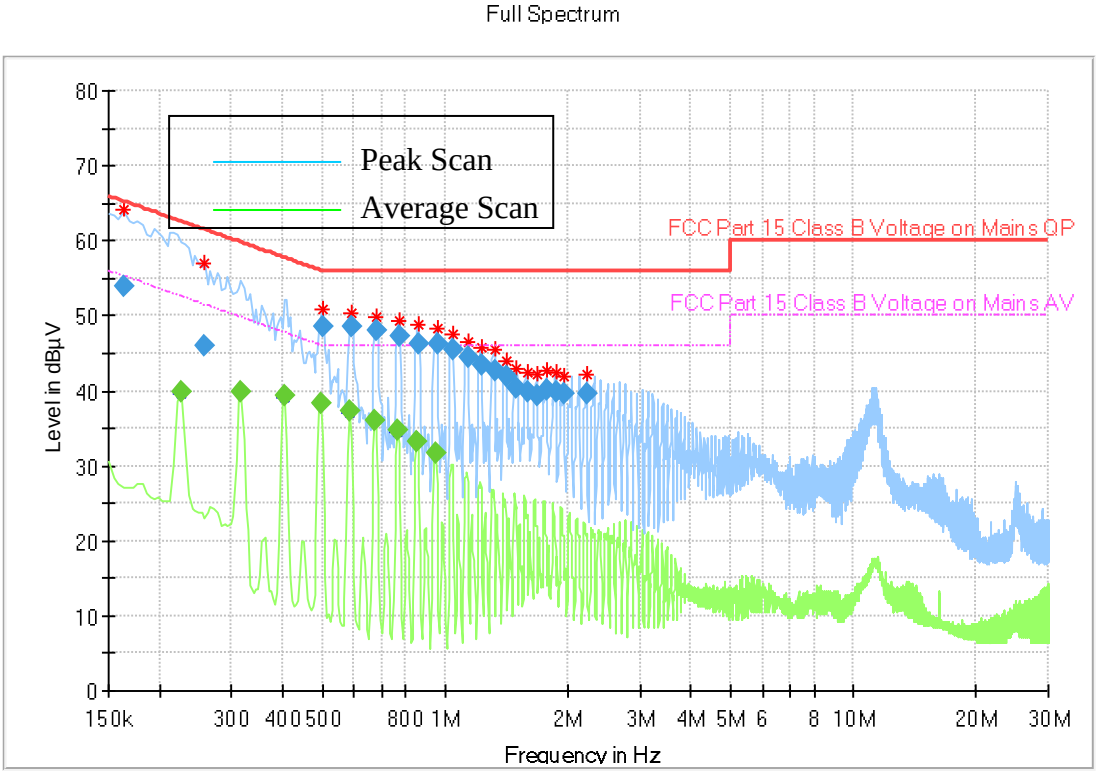


Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.154500	53.06	---	65.75	12.70	1000.0	9.000	L1	ON	10.3	Pass
0.226500	---	39.57	52.58	13.01	1000.0	9.000	L1	ON	10.3	Pass
0.316500	46.08	---	59.80	13.71	1000.0	9.000	N	ON	10.3	Pass
0.316500	---	39.58	49.80	10.22	1000.0	9.000	L1	ON	10.3	Pass
0.406500	48.77	---	57.72	8.95	1000.0	9.000	L1	ON	10.3	Pass
0.406500	---	38.91	47.72	8.81	1000.0	9.000	L1	ON	10.3	Pass
0.496500	---	38.04	46.06	8.02	1000.0	9.000	L1	ON	10.3	Pass
0.496500	48.25	---	56.06	7.81	1000.0	9.000	L1	ON	10.3	Pass
0.586500	---	36.95	46.00	9.05	1000.0	9.000	L1	ON	10.3	Pass
0.591000	48.01	---	56.00	7.99	1000.0	9.000	L1	ON	10.3	Pass
0.676500	---	35.75	46.00	10.25	1000.0	9.000	L1	ON	10.3	Pass
0.681000	48.06	---	56.00	7.94	1000.0	9.000	L1	ON	10.3	Pass
0.766500	---	34.44	46.00	11.56	1000.0	9.000	L1	ON	10.3	Pass
0.771000	47.71	---	56.00	8.29	1000.0	9.000	L1	ON	10.3	Pass
0.856500	---	33.09	46.00	12.91	1000.0	9.000	L1	ON	10.3	Pass
0.861000	46.95	---	56.00	9.05	1000.0	9.000	L1	ON	10.3	Pass
0.946500	---	31.66	46.00	14.34	1000.0	9.000	L1	ON	10.3	Pass
0.951000	46.03	---	56.00	9.97	1000.0	9.000	L1	ON	10.3	Pass
1.036500	---	30.26	46.00	15.74	1000.0	9.000	L1	ON	10.3	Pass
1.041000	45.13	---	56.00	10.87	1000.0	9.000	L1	ON	10.3	Pass
1.126500	---	28.82	46.00	17.18	1000.0	9.000	L1	ON	10.3	Pass
1.131000	44.20	---	56.00	11.80	1000.0	9.000	L1	ON	10.3	Pass
1.225500	44.19	---	56.00	11.81	1000.0	9.000	L1	ON	10.3	Pass
1.315500	43.25	---	56.00	12.75	1000.0	9.000	L1	ON	10.3	Pass
1.405500	42.09	---	56.00	13.91	1000.0	9.000	L1	ON	10.3	Pass
1.495500	40.86	---	56.00	15.14	1000.0	9.000	L1	ON	10.3	Pass

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

3) Charger + Radio Standby

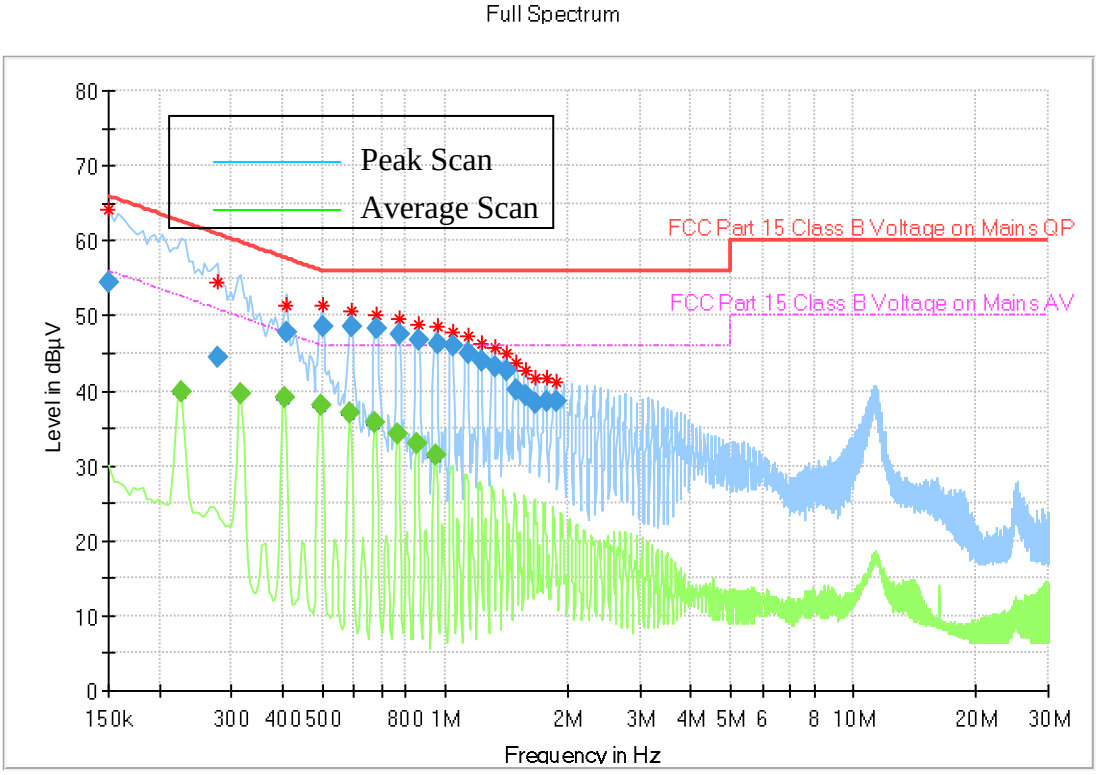


Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.163500	54.00	---	65.28	11.28	1000.0	9.000	N	ON	10.3	Pass
0.226500	---	39.91	52.58	12.67	1000.0	9.000	L1	ON	10.3	Pass
0.258000	46.02	---	61.50	15.48	1000.0	9.000	L1	ON	10.3	Pass
0.316500	---	39.95	49.80	9.85	1000.0	9.000	L1	ON	10.3	Pass
0.406500	---	39.28	47.72	8.44	1000.0	9.000	L1	ON	10.3	Pass
0.496500	---	38.35	46.06	7.70	1000.0	9.000	L1	ON	10.3	Pass
0.501000	48.56	---	56.00	7.44	1000.0	9.000	L1	ON	10.3	Pass
0.586500	---	37.23	46.00	8.77	1000.0	9.000	L1	ON	10.3	Pass
0.591000	48.57	---	56.00	7.43	1000.0	9.000	L1	ON	10.3	Pass
0.672000	---	36.04	46.00	9.96	1000.0	9.000	L1	ON	10.3	Pass
0.681000	48.06	---	56.00	7.94	1000.0	9.000	L1	ON	10.3	Pass
0.762000	---	34.66	46.00	11.34	1000.0	9.000	L1	ON	10.3	Pass
0.771000	47.21	---	56.00	8.79	1000.0	9.000	L1	ON	10.3	Pass
0.856500	---	33.16	46.00	12.84	1000.0	9.000	L1	ON	10.3	Pass
0.865500	46.29	---	56.00	9.71	1000.0	9.000	L1	ON	10.3	Pass
0.946500	---	31.70	46.00	14.30	1000.0	9.000	L1	ON	10.3	Pass
0.955500	46.21	---	56.00	9.79	1000.0	9.000	L1	ON	10.3	Pass
1.045500	45.55	---	56.00	10.45	1000.0	9.000	L1	ON	10.3	Pass
1.135500	44.53	---	56.00	11.47	1000.0	9.000	L1	ON	10.3	Pass
1.225500	43.41	---	56.00	12.59	1000.0	9.000	L1	ON	10.3	Pass
1.320000	42.76	---	56.00	13.24	1000.0	9.000	L1	ON	10.3	Pass
1.410000	41.96	---	56.00	14.04	1000.0	9.000	L1	ON	10.3	Pass
1.500000	40.42	---	56.00	15.58	1000.0	9.000	N	ON	10.3	Pass
1.590000	39.98	---	56.00	16.02	1000.0	9.000	N	ON	10.3	Pass
1.680000	39.46	---	56.00	16.54	1000.0	9.000	N	ON	10.3	Pass
1.774500	40.05	---	56.00	15.95	1000.0	9.000	N	ON	10.3	Pass
1.864500	39.87	---	56.00	16.13	1000.0	9.000	N	ON	10.3	Pass
1.954500	39.51	---	56.00	16.49	1000.0	9.000	N	ON	10.3	Pass
2.229000	39.65	---	56.00	16.35	1000.0	9.000	N	ON	10.3	Pass

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

4) Charger + Radio TX WiFi 2.4GHz 802.11b



Quasipeak and Average Measurement

Frequency (MHz)	QuasiPeak (dBµV)	CAverage (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)	Comment
0.150000	54.44	---	66.00	11.56	1000.0	9.000	L1	ON	10.3	Pass
0.226500	---	39.77	52.58	12.81	1000.0	9.000	L1	ON	10.3	Pass
0.276000	44.54	---	60.94	16.40	1000.0	9.000	N	ON	10.3	Pass
0.316500	---	39.72	49.80	10.08	1000.0	9.000	L1	ON	10.3	Pass
0.406500	---	39.03	47.72	8.69	1000.0	9.000	L1	ON	10.3	Pass
0.411000	47.85	---	57.63	9.78	1000.0	9.000	L1	ON	10.3	Pass
0.496500	---	38.10	46.06	7.96	1000.0	9.000	L1	ON	10.3	Pass
0.501000	48.53	---	56.00	7.47	1000.0	9.000	L1	ON	10.3	Pass
0.582000	---	37.02	46.00	8.98	1000.0	9.000	L1	ON	10.3	Pass
0.591000	48.67	---	56.00	7.33	1000.0	9.000	L1	ON	10.3	Pass
0.672000	---	35.75	46.00	10.25	1000.0	9.000	L1	ON	10.3	Pass
0.681000	48.27	---	56.00	7.73	1000.0	9.000	L1	ON	10.3	Pass
0.762000	---	34.32	46.00	11.68	1000.0	9.000	L1	ON	10.3	Pass
0.771000	47.49	---	56.00	8.51	1000.0	9.000	L1	ON	10.3	Pass
0.856500	---	32.86	46.00	13.14	1000.0	9.000	L1	ON	10.3	Pass
0.861000	46.67	---	56.00	9.33	1000.0	9.000	L1	ON	10.3	Pass
0.946500	---	31.38	46.00	14.62	1000.0	9.000	L1	ON	10.3	Pass
0.955500	46.37	---	56.00	9.63	1000.0	9.000	L1	ON	10.3	Pass
1.045500	45.93	---	56.00	10.07	1000.0	9.000	L1	ON	10.3	Pass
1.135500	45.09	---	56.00	10.91	1000.0	9.000	L1	ON	10.3	Pass
1.225500	44.07	---	56.00	11.93	1000.0	9.000	L1	ON	10.3	Pass
1.320000	43.16	---	56.00	12.84	1000.0	9.000	L1	ON	10.3	Pass
1.410000	42.66	---	56.00	13.34	1000.0	9.000	L1	ON	10.3	Pass
1.486500	40.14	---	56.00	15.86	1000.0	9.000	L1	ON	10.3	Pass
1.581000	39.43	---	56.00	16.57	1000.0	9.000	L1	ON	10.3	Pass
1.671000	38.22	---	56.00	17.78	1000.0	9.000	L1	ON	10.3	Pass
1.774500	38.66	---	56.00	17.34	1000.0	9.000	N	ON	10.3	Pass
1.864500	38.61	---	56.00	17.39	1000.0	9.000	N	ON	10.3	Pass

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

END OF TEST REPORT