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www.intertek.com

TEST REPORT

Report Number: 23031222HKG-001

Application for Original of 47 CFR Part 15 Certification

New Family of RSS-247 Issue 2 Equipment

This report contains the data of 2.4GHz WiFi portion only.

FCC ID: 2A7PS-LOMIBLOOM

IC: 28807-LOMIBLOOM

Prepared and Checked by:	**Approved by:**
Signed On File Leung Chun Ning, Peter Assistant Engineer	Digitally signed by Herbert Wong Location: Intertek Testing Services Hong Kong Limited Wong Cheuk Ho, Herbert Assistant Supervisor Date: June 15, 2023

TEST REPORT

GENERAL INFORMATION

Applicant Name:	OPEN MIND DEVELOPMENTS CORPORATION
Applicant Address:	604-460 DOYLE AVE., UNIT 604, KELOWNA, BC V1Y 0C2, Canada.
Manufacturer Name:	OPEN MIND DEVELOPMENTS CORPORATION
Manufacturer Address:	604-460 DOYLE AVE., UNIT 604, KELOWNA, BC V1Y 0C2, Canada.
FCC Specification Standard:	FCC Part 15, October 1, 2021 Edition
FCC ID:	2A7PS-LOMIBLOOM
FCC Model:	80201-LOMI-BLOOM-WH
Additional Model:	80202-LOMI-BLOOM-SAGE, 80203-LOMI-BLOOM-BLK, 80204-LOMI-BLOOM-D, 80205-LOMI-BLOOM-E, 80206-LOMI-BLOOM-F, 80207-LOMI-BLOOM-G, 80208-LOMI-BLOOM-H, 80209-LOMI-BLOOM-I
IC Specification Standard:	RSS-247 Issue 2, February 2017 RSS-Gen Issue 5 Amendment 2, February 2021
IC:	28807-LOMIBLOOM
HVIN:	80201
PMN:	80201-LOMI-BLOOM-WH, 80202-LOMI-BLOOM-SAGE, 80203-LOMI-BLOOM-BLK, 80204-LOMI-BLOOM-D, 80205-LOMI-BLOOM-E, 80206-LOMI-BLOOM-F, 80207-LOMI-BLOOM-G, 80208-LOMI-BLOOM-H, 80209-LOMI-BLOOM-I
Type of EUT:	Spread Spectrum Transmitter
Description of EUT:	Kitchen Composter/Bloom
Sample Receipt Date:	March 30, 2023
Date of Test:	April 04, 2023 to April 08, 2023

TEST REPORT

Report Date:	June 15, 2023
Environmental Conditions:	Temperature: +10 to 40°C Humidity: 10 to 90%
Conclusion:	Test was conducted by client submitted sample. The submitted sample as received complied with the 47 CFR Part 15 / RSS-247 Issue 2 Certification.

TEST REPORT

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TEST REPORT

1.0 TEST RESULTS SUMMARY & STATEMENT OF COMPLIANCE

1.1 Summary of Test Results

Test Items	FCC Part 15 Section	RSS-247/ RSS-Gen# Section	Results	Details See Section
Antenna Requirement	15.203	6.8#	Pass	2.1
Max. Conducted Output Power (Peak)	15.247(b)(3)&(4)	5.4(e)	Pass	4.1
Min. 6dB RF Bandwidth	15.247(a)(2)	5.2(a)	Pass	4.2
Max. Power Density	15.247(e)	5.2(b)	Pass	4.3
Out of Band Antenna Conducted Emission	15.247(d)	5.5	Pass	4.4
Radiated Emission in Restricted Bands and Spurious Emissions	15.247(d), 15.209 & 15.109	5.5	Pass	4.6
AC Power Line Conducted Emission	15.207 & 15.107	8.8#	Pass	4.7

Note: Pursuant to FCC Part 15 Section 15.215(c), the 20dB bandwidth of the emission was contained within the frequency band designated (mentioned as above) which the EUT operated. The effects, if any, from frequency sweeping, frequency hopping, other modulation techniques and frequency stability over expected variations in temperature and supply voltage were considered.

1.2 Statement of Compliance

The equipment under test is found to be complying with the following standard:

FCC Part 15, October 1, 2021 Edition
RSS-247 Issue 2, February 2017
RSS-Gen Issue 5 Amendment 2, February 2021

TEST REPORT

2.0 GENERAL DESCRIPTION

2.1 Product Description

The Equipment Under Test (EUT) is a composite device which consists of 2.4GHz Wi-Fi, Bluetooth 3.0 and BLE functions.

For IC, the PMN: 80201-LOMI-BLOOM-WH,80202-LOMI-BLOOM-SAGE,80203-LOMI-BLOOM-BLK, 80204-LOMI-BLOOM-D,80205-LOMI-BLOOM-E,80206-LOMI-BLOOM-F,80207-LOMI-BLOOM-G, 80208-LOMI-BLOOM-H,80209-LOMI-BLOOM-I are the same as the IC HVIN: 80201 in hardware aspect. The difference in PMN and color serves as marketing strategy.

For FCC, the Model: 80201-LOMI-BLOOM-WH,80202-LOMI-BLOOM-SAGE,80203-LOMI-BLOOM-BLK, 80204-LOMI-BLOOM-D,80205-LOMI-BLOOM-E,80206-LOMI-BLOOM-F,80207-LOMI-BLOOM-G, 80208-LOMI-BLOOM-H,80209-LOMI-BLOOM-I are the same as the IC HVIN: 80201 in hardware aspect. The difference in model number and color serves as marketing strategy.

The tested model is IC HVIN: 80201.

For 802.11b mode, it operates at frequency range of 2412.000MHz to 2462.000MHz with 11 channels. It transmits via Direct-sequence spread spectrum (DSSS) modulation. Maximum bit rate can be up to 11Mbps.
For 802.11g mode, it operates at frequency range of 2412.000MHz to 2462.000MHz with 11 channels. It transmits via Orthogonal Frequency Division Multiplexing (OFDM) modulation. Maximum bit rate can be up to 54Mbps.
For 802.11n (with 20MHz bandwidth) mode, it operates at frequency range of 2412.000MHz to 2462.000MHz with 11 channels. It transmits via Orthogonal Frequency Division Multiplexing (OFDM) modulation. Maximum bit rate can support up to 65Mbps.
For 802.11n (with 40MHz bandwidth) mode, it operates at frequency range of 2422.000MHz to 2452.000MHz with 9 channels. It transmits via Orthogonal Frequency Division Multiplexing (OFDM) modulation. Maximum bit rate can support up to 150Mbps.

This report contains the data of 2.4GHz WiFi portion only.

The EUT is power by 120VAC.

The antenna(s) used in the EUT is internal, integral, and the test sample is a prototype.
Peak Antenna Gain = 2.3 dBi

The circuit description is saved with filename: descri.pdf.

TEST REPORT

2.2 Test Methodology

Both AC power line-conducted and radiated emission measurements were performed according to the procedures in ANSI C63.10 (2013). Preliminary radiated scans and all radiated measurements were performed in radiated emission test sites. All Radiated tests were performed at an antenna to EUT distance of 3 meters, unless stated otherwise in the "**Justification Section**" of this Application. Antenna port conducted measurements were performed according to ANSI C63.10 (2013) and KDB Publication No.558074 D01 v05r02 (02-April-2019) All other measurements were made in accordance with the procedures in 47 CFR Part 2 and RSS-Gen Issue 5 Amendment 2, February 2021.

2.3 Test Facility

The radiated emission test site and antenna port conducted measurement facility used to collect the radiated data and conductive data are at Shenzhen UnionTrust Quality and Technology Co., Ltd. at 16/F., Block A, Building 6, Baoneng Science and Technology Park, Qingxiang Road No.1, Longhua New District, Shenzhen, China 518109. This test facility and site measurement data have been fully placed on file with the FCC and Industry Canada No.: 21600, CABID “HKAP01”, “CN0023”.

2.4 Related Submittal(s) Grants

This is a single application for certification of a transceiver (WiFi portion).

TEST REPORT

3.0 SYSTEM TEST CONFIGURATION

3.1 Justification

For radiated emissions testing, the equipment under test (EUT) was setup to transmit / receive continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, all cables (if any) were manipulated to produce worst case emissions.

The EUT was powered by 120VAC.

For the measurements, the EUT was attached to a plastic stand if necessary and placed on the wooden turntable at 0.8m height from the ground plane for emission testing at or below 1GHz and 1.5m for emission measurements above 1GHz.

The signal was maximized through rotation and placement in the three orthogonal axes. The antenna height and polarization were varied during the search for maximum signal level. The antenna height was varied from 1 to 4 meters. Radiated emissions were taken at three meters unless the signal level was too low for measurement at that distance. If necessary, a pre-amplifier was used and/or the test was conducted at a closer distance.

For any intentional radiator powered by AC power line, measurements of the radiated signal level of the fundamental frequency component of the emission was performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

Radiated emission measurement for transmitter were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

Emission that are directly caused by digital circuits in the transmit path and transmitter portion were measured, and the limit are according to FCC Part 15 Section 15.209 / RSS-247 2.5. Digital circuitries used to control additional functions other than the operation of the transmitter are subject to FCC Part 15 Section 15.109 / RSS-247 Section 5.5 Limits.

TEST REPORT

3.1 Justification – Cont'd

Detector function for radiated emissions was in peak mode. Average readings, when required, were taken by measuring the duty cycle of the equipment under test and subtracting the corresponding amount in dB from the measured peak readings. A detailed description for the calculation of the average factor can be found in section 4.6.

Determination of pulse desensitization was made according to *Hewlett Packard Application Note 150-2, Spectrum Analysis... Pulsed RF.* The effective period (Teff) was referred to Exhibit 4.6. With the resolution bandwidth 1MHz and spectrum analyzer IF bandwidth 3dB, the pulse desensitization factor was 0dB.

For AC line conducted emission test, the EUT along with its peripherals were placed on a 1.0m(W)x1.5m(L) and 0.8m in height wooden table and the EUT was adjusted to maintain a 0.4 meter space from a vertical reference plane. The EUT was connected to power mains through a line impedance stabilization network (LISN), which provided 50ohm coupling impedance for measuring instrument. The LISN housing, measuring instrument case, reference ground plane, and vertical ground plane were bounded together. The excess power cable between the EUT and the LISN was bundled.

All connecting cables of EUT and peripherals were manipulated to find the maximum emission.

Different data rates have been tested. Worst case is reported only.

All relevant operation modes have been tested, and the worst-case data is included in this report.

For simultaneous transmission, both wifi and Bluetooth portions are also switched on when taking radiated emission for determining worst-case spurious emission.

3.2 EUT Exercising Software

The EUT exercise program (Tera Terms Version 4.57) used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use.

TEST REPORT

3.3 Details of EUT and Description of Accessories

None.

3.4 Measurement Uncertainty

Decision Rule for compliance: For FCC/IC standard, the measured value must be within the limits of applicable standard without accounting for the measurement uncertainty. For EN/IEC/HKTA/HKTC standard, conformity rules will be used as per standard directly excepted EN/IEC 61000-3-2, EN/IEC 61000-3-3, HKTA1004, HKCA1008, HKTA1019, HKTA1020, HKTA1041 and HKTA1044. For these excepted or not mentioned standards, Cl 4.2.2 of ILAC-G8:09/2019 decision rules will be reference and guard band will be equal to our measurement uncertainty with 95% confidence level (k=2). In case, the measured value is within guard band region, undetermined decision will be used. The values of the Measurement uncertainty for radiated emission test and RF conducted measurement test are ± 5.3dB and ±0.99dB respectively. The value of the Measurement uncertainty for conducted emission test is ±4.2dB.

Uncertainty and Compliance - Unless the standard specifically states that measured values are to be extended by the measurement uncertainty in determining compliance, all compliance determinations are based on the actual measured value.

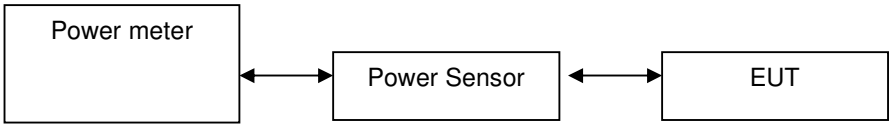
TEST REPORT

4.0 TEST RESULTS

4.1 Maximum Conducted (peak) Output Power at Antenna Terminals

RF Conduct Measurement Test Setup

The figure below shows the test setup, which is utilized to make these measurements.



The antenna port of the EUT was connected to the input of a spectrum analyzer.

☒ The antenna power of the EUT was connected to the input of a power meter. Power was read directly and cable loss correction was added to the reading to the obtain power at the EUT antenna terminals. The measurement procedure 8.3.2.3 was used.

☐ The EUT should be configured to transmit continuously (at a minimum duty cycle of 98%) at full power over the measurement duration. The measurement procedure AVG1 was used.

Peak Antenna Gain = 2.3 dBi

IEEE 802.11b (DSSS, 1 Mbps)

Frequency (MHz)		Output in dBm	Output in mWatt
Low Channel:	2412	19.32	85.51
Middle Channel:	2437	18.81	76.03
High Channel:	2462	18.37	68.71

IEEE 802.11g (OFDM, 6 Mbps)

Frequency (MHz)		Output in dBm	Output in mWatt
Low Channel:	2412	19.96	99.08
Middle Channel:	2437	19.38	86.70
High Channel:	2462	19.02	79.80

TEST REPORT

4.1 Maximum Conducted Output Power at Antenna Terminals – Cont'd

IEEE 802.11n (20MHz) (OFDM, MCS0)

Frequency (MHz)		Output in dBm	Output in mWatt
Low Channel:	2412	20.13	103.04
Middle Channel:	2437	19.56	99.36
High Channel:	2462	19.23	83.75

IEEE 802.11n (40MHz) (OFDM, MCS0)

Frequency (MHz)		Output in dBm	Output in mWatt
Low Channel:	2422	19.71	93.54
Middle Channel:	2437	19.36	86.30
High Channel:	2452	19.14	82.04

Cable loss: 0.5 dB External Attenuation: 0 dB

Cable loss, external attenuation: ☒ included in OFFSET function
☐ added to SA raw reading

IEEE 802.11b (DSSS, 1 Mbps)
max. conducted (peak) output level = 19.32 dBm

IEEE 802.11g (OFDM, 9 Mbps)
max. conducted (peak) output level = 19.96 dBm

IEEE 802.11n (20MHz) (OFDM, MCS0)
max. conducted (peak) output level = 20.13 dBm

IEEE 802.11n (40MHz) (OFDM, MCS0)
max. conducted (peak) output level = 19.71 dBm

Limits:
☒ 1W (30dBm) for antennas with gains of 6dBi or less

☐ ___W (___dBm) for antennas with gains more than 6dBi

Tested by: Rain Wang

TEST REPORT

4.2 Minimum 6dB RF Bandwidth

The antenna port of the EUT was connected to the input of a spectrum analyzer. The EBW measurement procedure was used. A PEAK output reading was taken, a DISPLAY line was drawn 6dB lower than PEAK level. The 6dB bandwidth was determined from where the channel output spectrum intersected the display line.

IEEE 802.11b (DSSS, 1 Mbps)

	Frequency (MHz)	6dB Bandwidth (MHz)
Low Channel:	2412	9.095
Middle Channel:	2437	9.522
High Channel:	2462	9.374

IEEE 802.11g (OFDM, 6 Mbps)

	Frequency (MHz)	6dB Bandwidth (MHz)
Low Channel:	2412	16.39
Middle Channel:	2437	16.41
High Channel:	2462	16.40

IEEE 802.11n (20MHz) (OFDM, MCS0)

	Frequency (MHz)	6dB Bandwidth (MHz)
Low Channel:	2412	17.08
Middle Channel:	2437	17.03
High Channel:	2462	17.01

IEEE 802.11n (40MHz) (OFDM, MCS0)

	Frequency (MHz)	6dB Bandwidth (MHz)
Low Channel:	2422	32.55
Middle Channel:	2437	33.31
High Channel:	2452	33.17

Limits: 6dB bandwidth shall be at least 500kHz

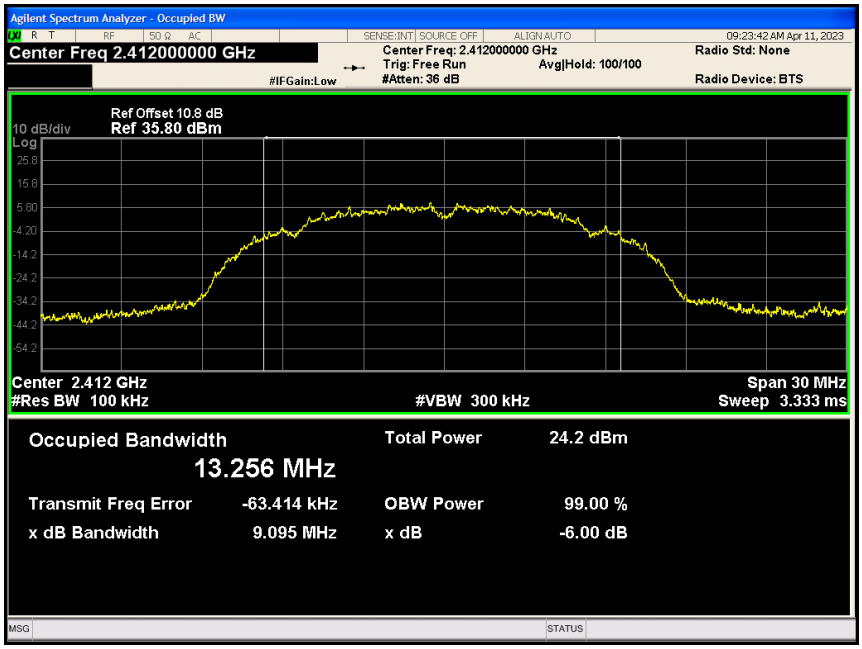
The plots of 6dB RF bandwidth are saved as below.

Tested by: Rain Wang

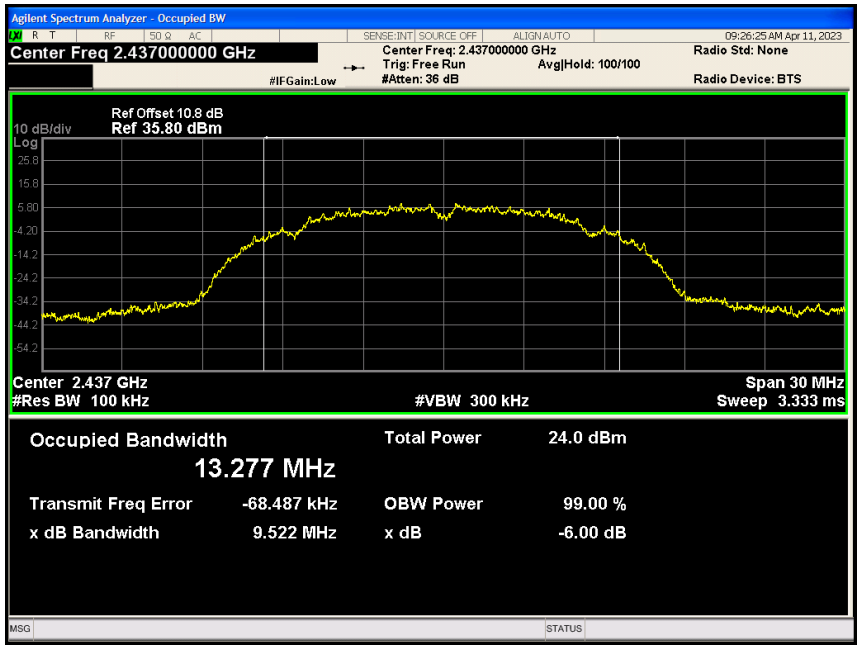
TEST REPORT

PLOTS OF 6dB RF BANDWIDTH

802.11b, Lowest Channel



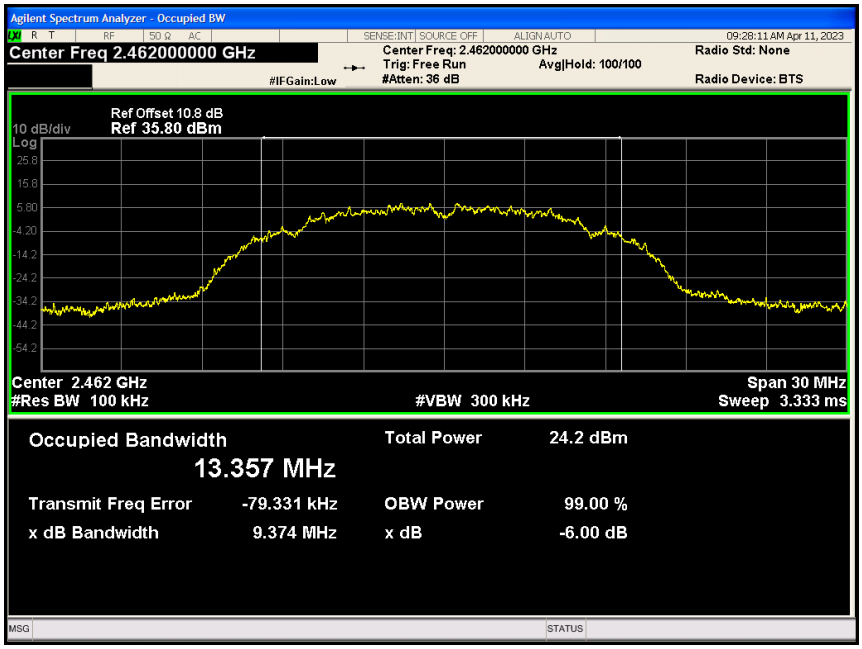
802.11b, Middle Channel



TEST REPORT

PLOTS OF 6dB RF BANDWIDTH

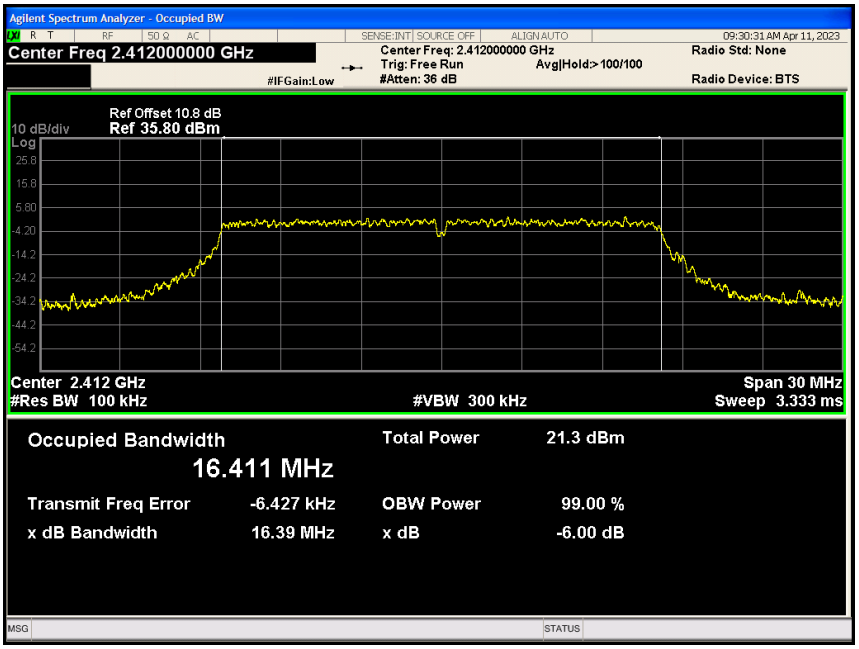
802.11b, Highest Channel



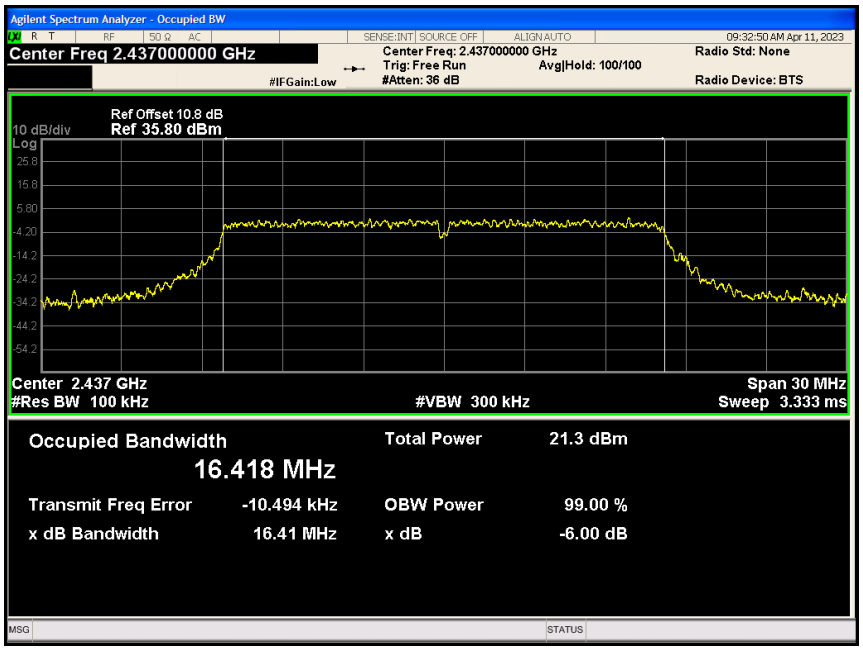
TEST REPORT

PLOTS OF 6dB RF BANDWIDTH

802.11g, Lowest Channel



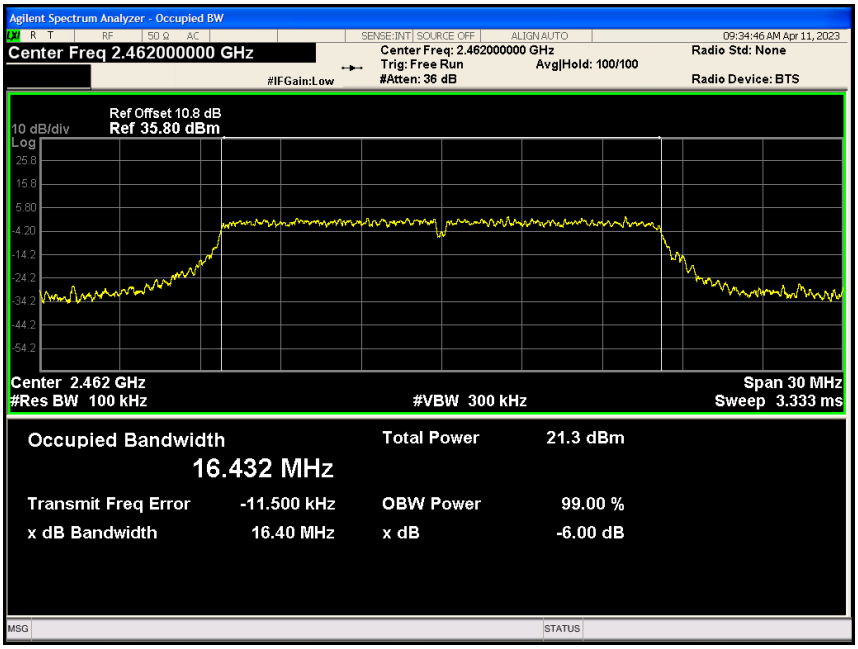
802.11g, Middle Channel



TEST REPORT

PLOTS OF 6dB RF BANDWIDTH

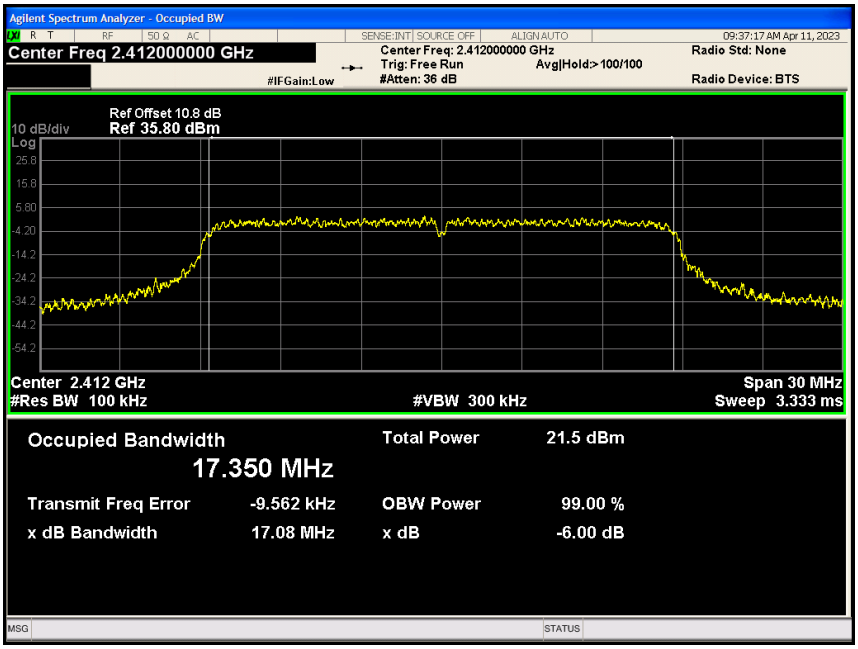
802.11g, Highest Channel



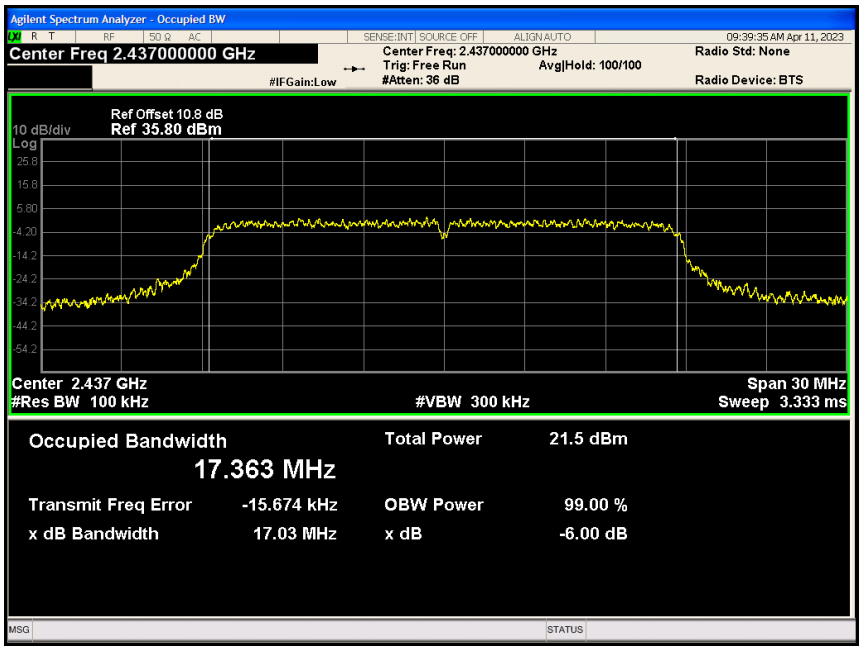
TEST REPORT

PLOTS OF 6dB RF BANDWIDTH

802.11n (20MHz), Lowest Channel



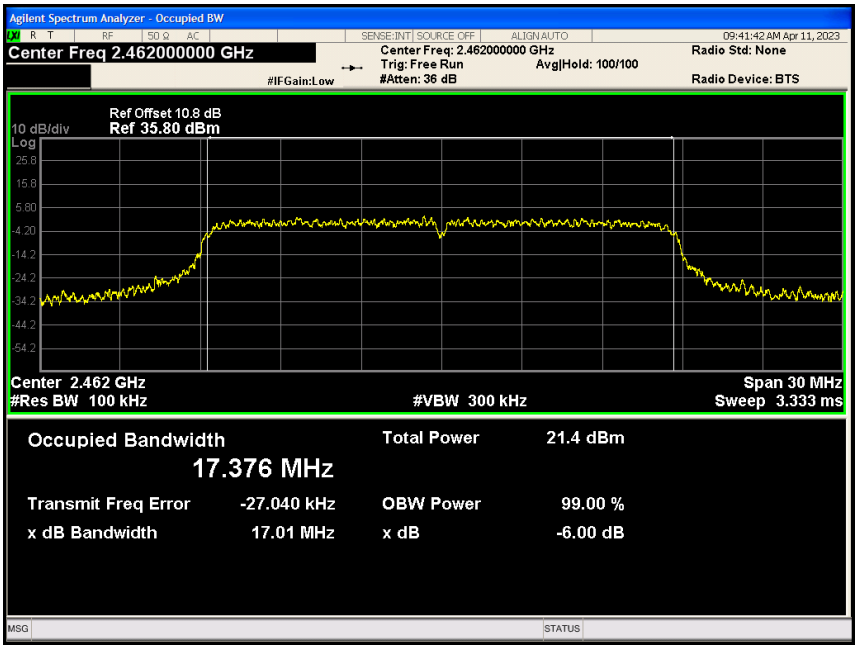
802.11n (20MHz), Middle Channel



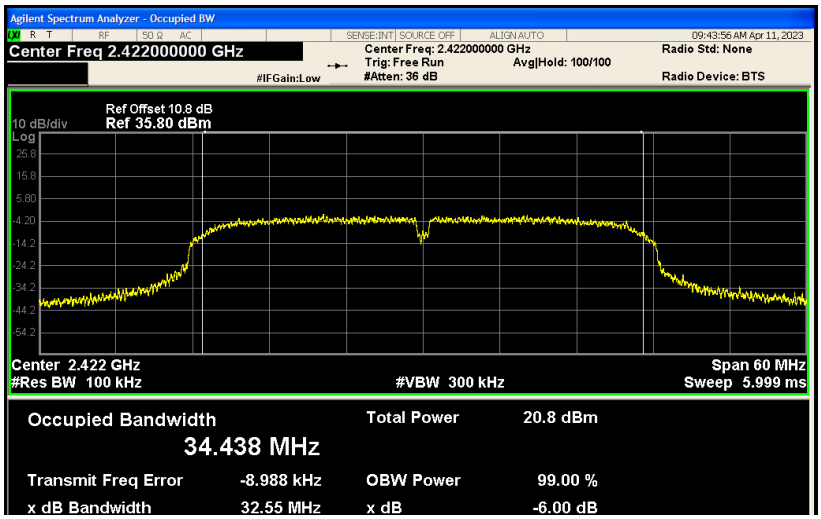
TEST REPORT

PLOTS OF 6dB RF BANDWIDTH

802.11n (20MHz), Highest Channel



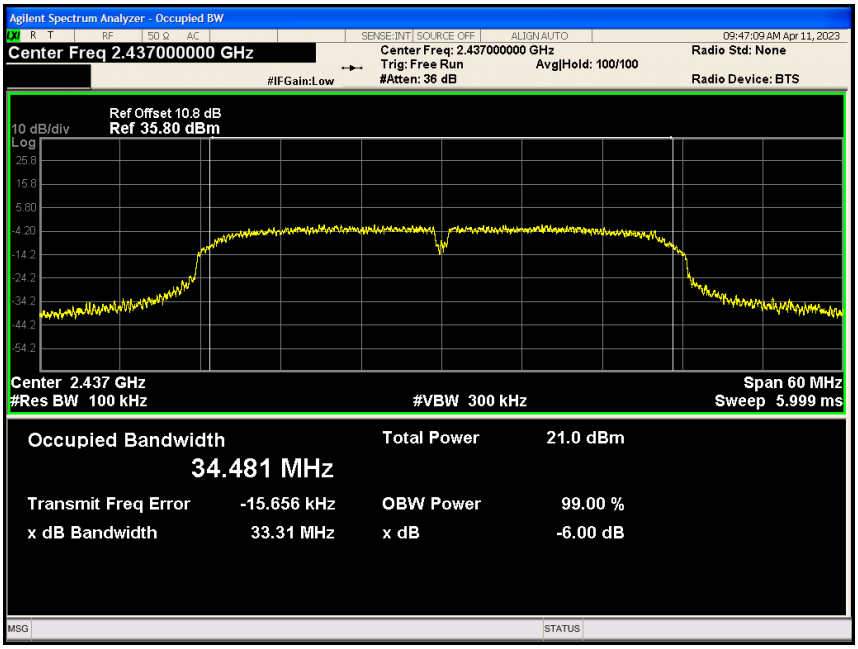
802.11n (40MHz), Lowest Channel



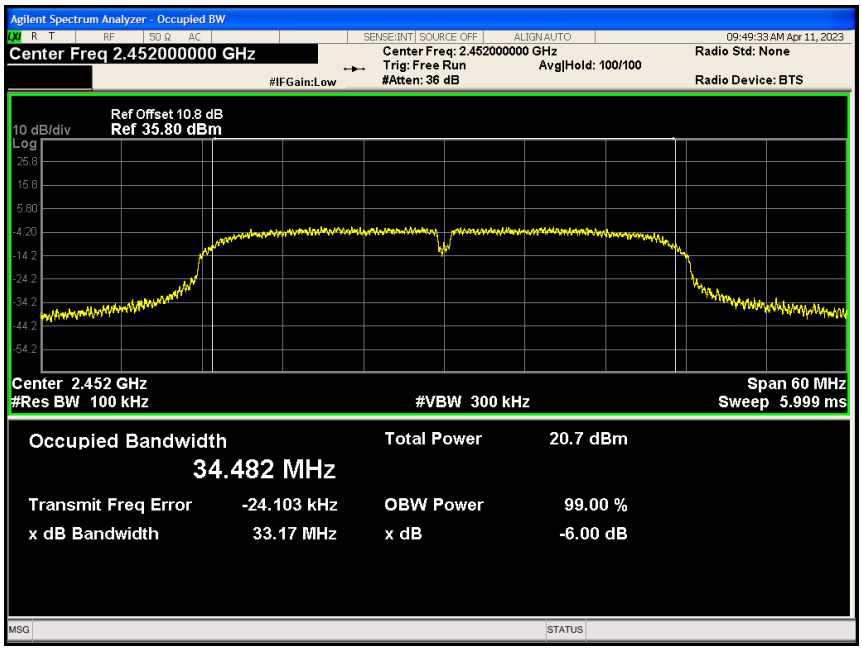
TEST REPORT

PLOTS OF 6dB RF BANDWIDTH

802.11n (40MHz), Middle Channel



802.11n (40MHz), Highest Channel



TEST REPORT

4.3 Maximum Power Spectral Density

Antenna output of the EUT was coupled directly to spectrum analyzer. The measurement procedure 10.2 PKPSD was used. If an external attenuator and/or cable was used, these losses are compensated for using the OFFSET function of the analyser.

IEEE 802.11b (DSSS, 1 Mbps)

Frequency (MHz)		PSD in 3kHz (dBm)
Low Channel:	2412	-7.2130
Middle Channel:	2437	-7.3040
High Channel:	2462	-7.2500

IEEE 802.11g (OFDM, 6 Mbps)

Frequency (MHz)		PSD in 3kHz (dBm)
Low Channel:	2412	-12.926
Middle Channel:	2437	-12.905
High Channel:	2462	-12.898

IEEE 802.11n (20MHz) (OFDM, MCS0)

Frequency (MHz)		PSD in 3kHz (dBm)
Low Channel:	2412	-12.838
Middle Channel:	2437	-12.916
High Channel:	2462	-12.948

IEEE 802.11n (40MHz) (OFDM, MCS0)

Frequency (MHz)		PSD in 3kHz (dBm)
Low Channel:	2422	-14.148
Middle Channel:	2437	-13.814
High Channel:	2452	-14.629

Cable Loss: 0.5dB

Limit: 8dBm

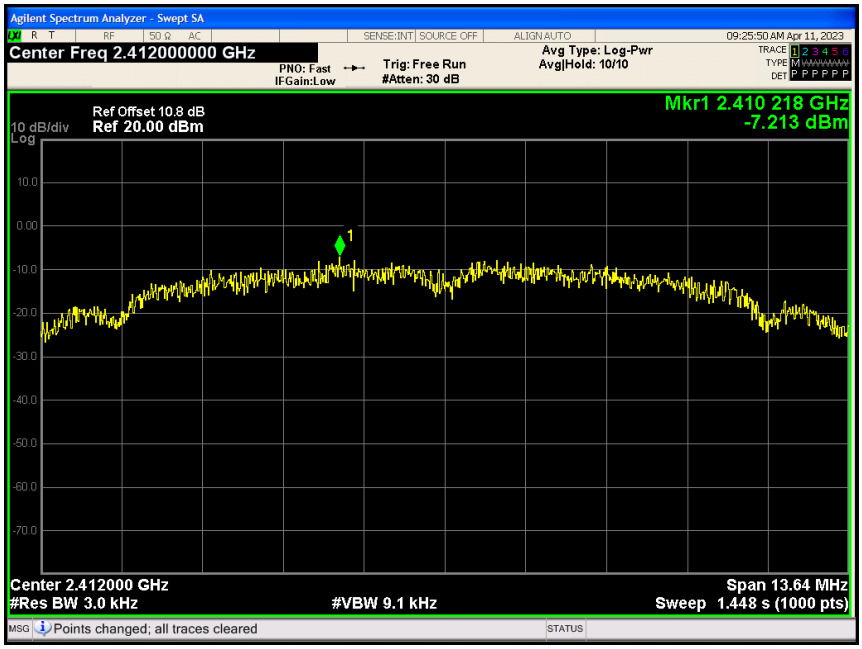
The plots of power spectral density are as below.

Tested by: Rain Wang

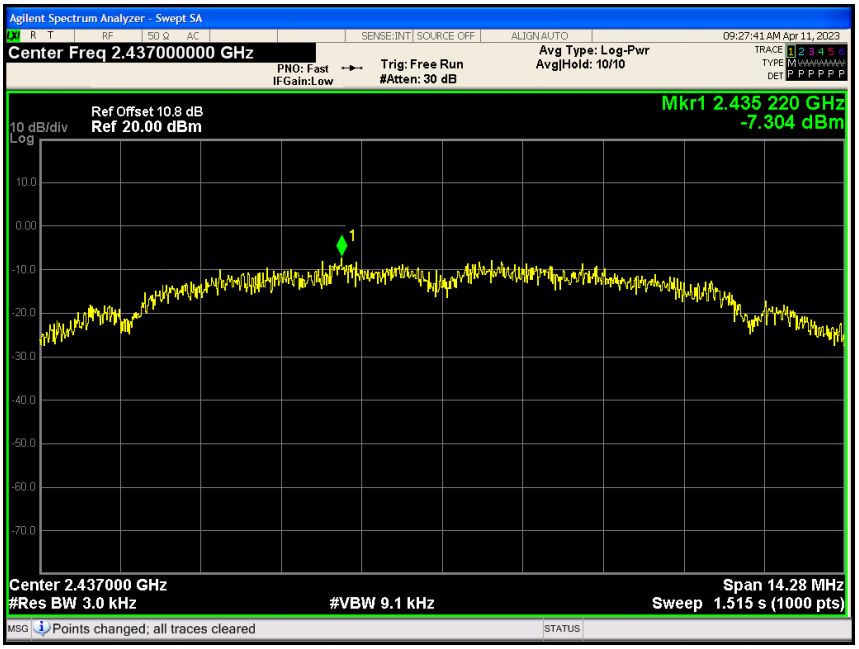
TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

802.11b, Lowest Channel



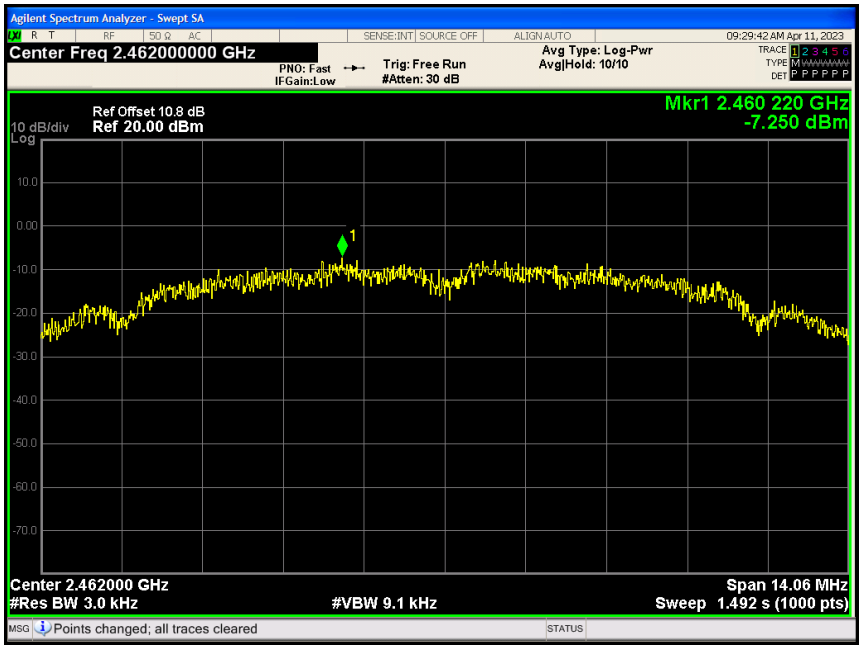
802.11b, Middle Channel



TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

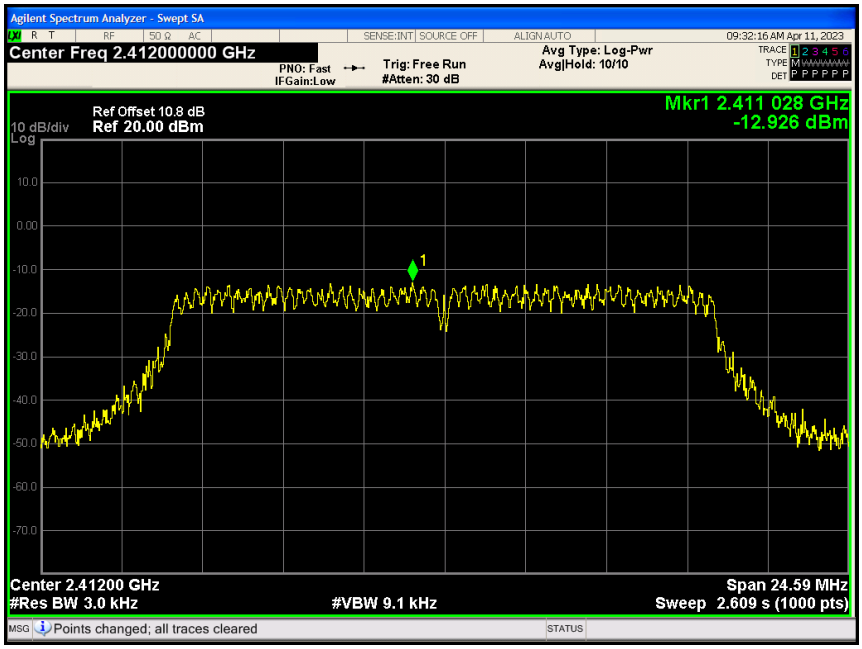
802.11b, Highest Channel



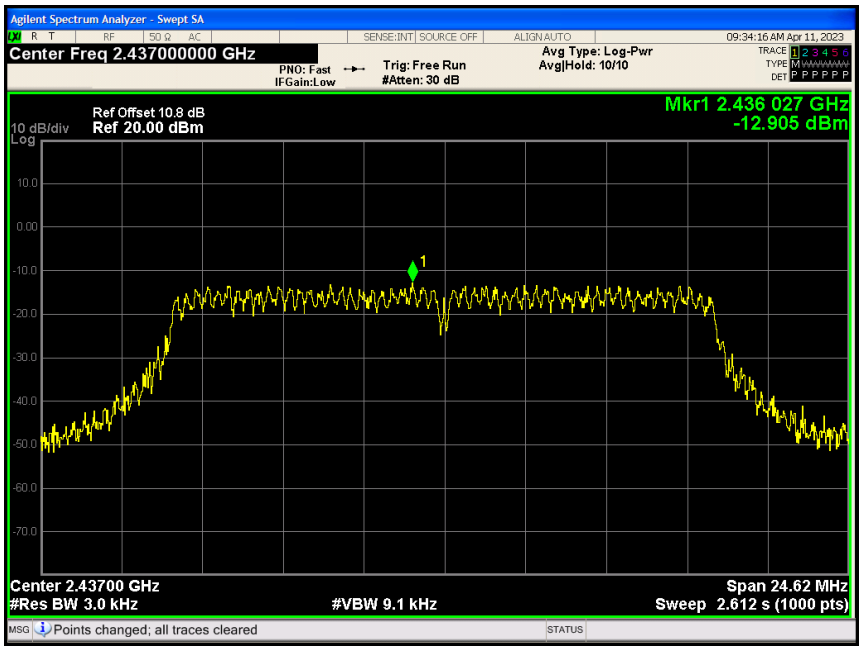
TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

802.11g, Lowest Channel



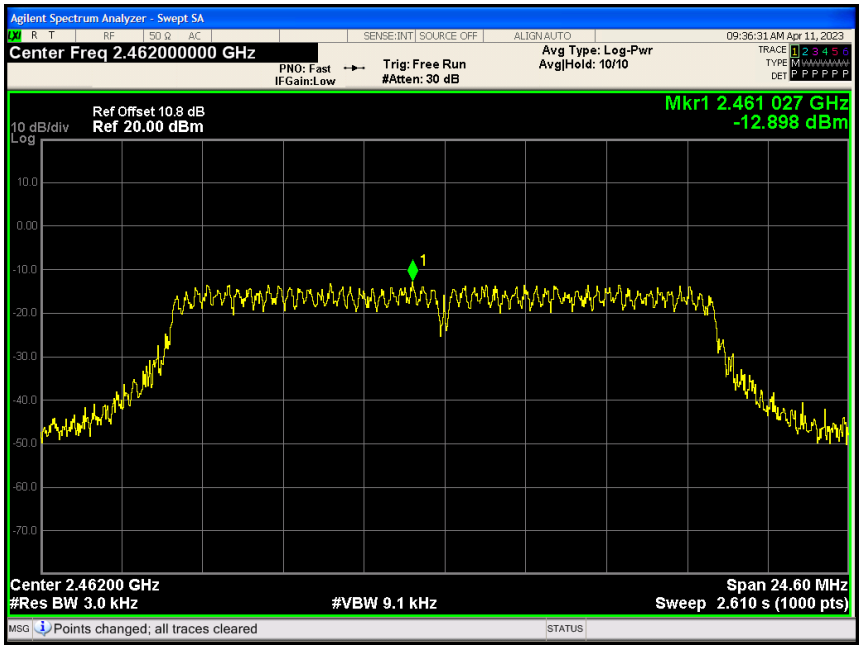
802.11g, Middle Channel



TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

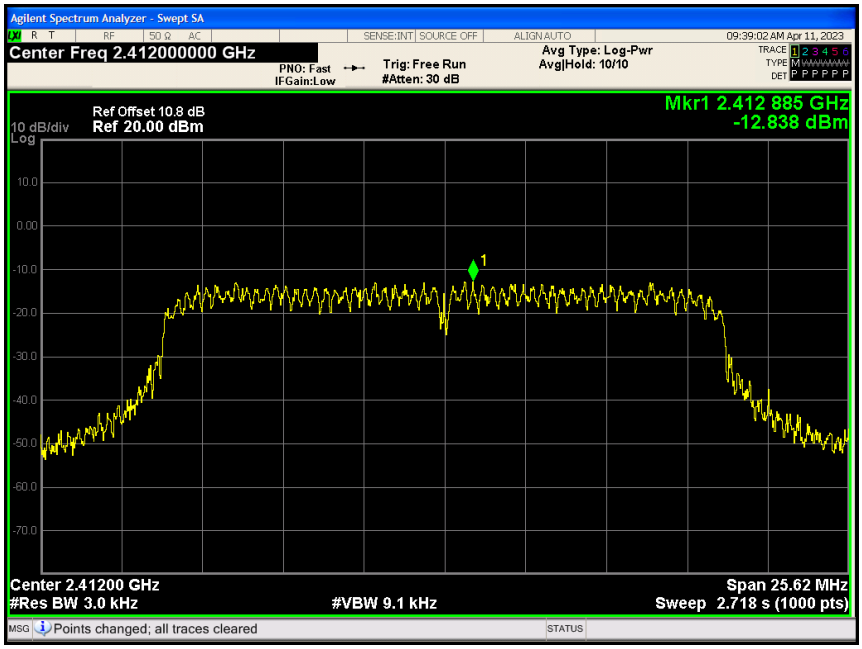
802.11g, Highest Channel



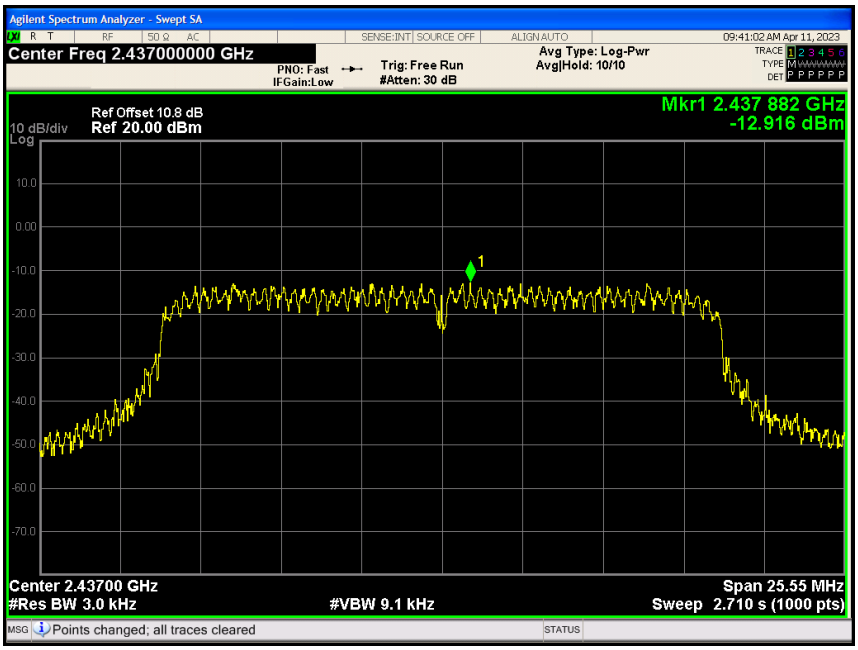
TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

802.11n (20MHz), Lowest Channel



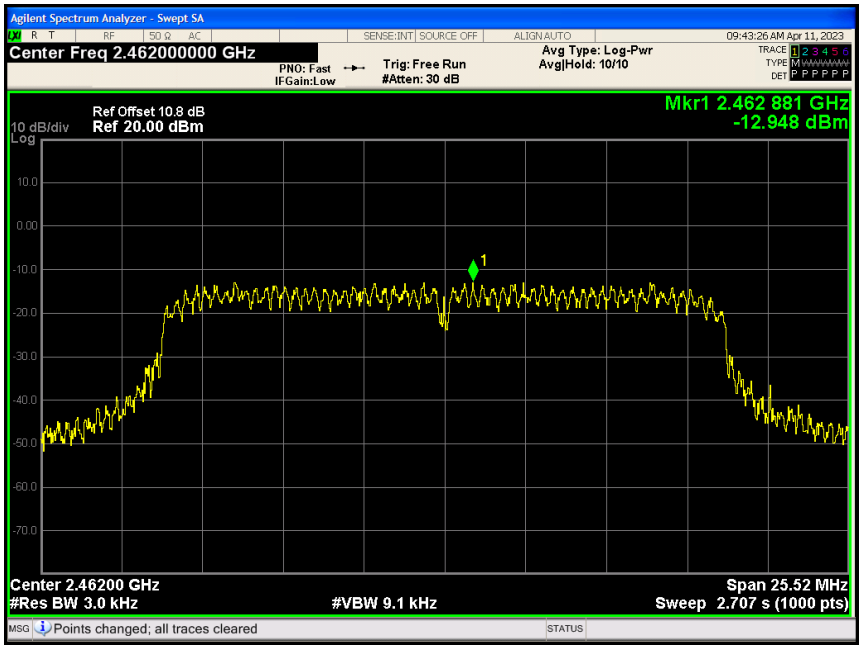
802.11n (20MHz), Middle Channel



TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

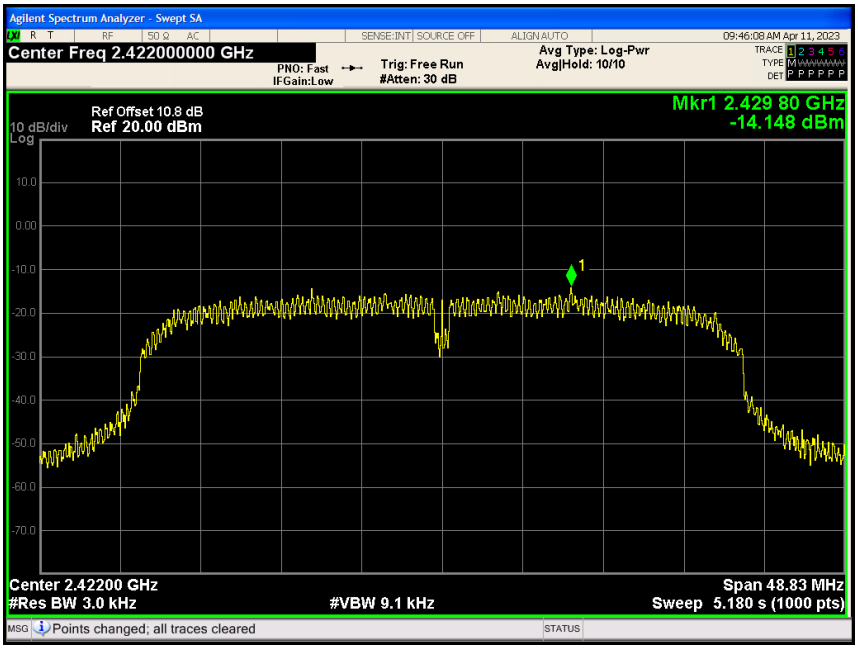
802.11n (20MHz), Highest Channel



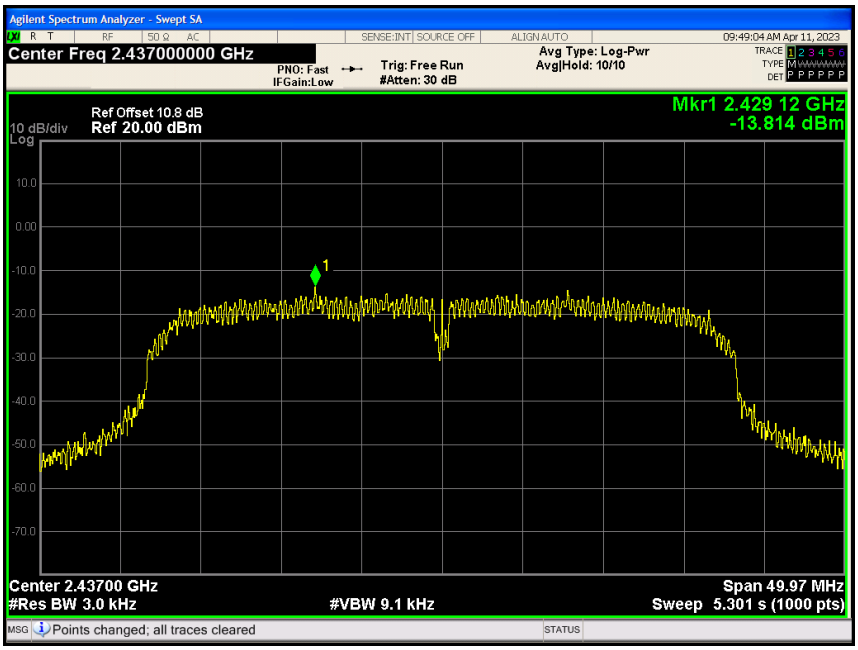
TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

802.11n (40MHz), Lowest Channel



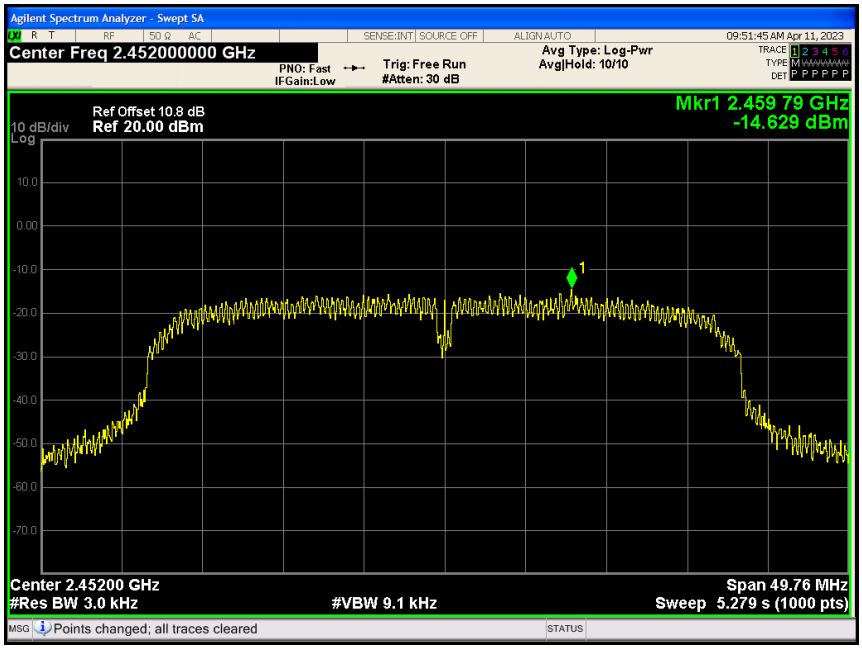
802.11n (40MHz), Middle Channel



TEST REPORT

PLOTS OF POWER SPECTRAL DENSITY

802.11n (40MHz), Highest Channel



TEST REPORT

4.4 Out of Band Conducted Emissions

For 802.11b/g/n20MHz/n40MHz, the maximum conducted (peak) output power was used to demonstrate compliance as described in 9.1. Then the display line (in red) shown in the following plots denotes the limit at 20dB below maximum measured in-band peak PSD level in 100 kHz bandwidth for 802.11b/g/n20MHz/n40MHz.

The measurement procedures under sections 11 of KDB558074 D01 v05r02 (02-April-2019) were used.

Furthermore, delta measurement technique for measuring bandedge emissions was incorporated in the test of the edge at 2483.5MHz.

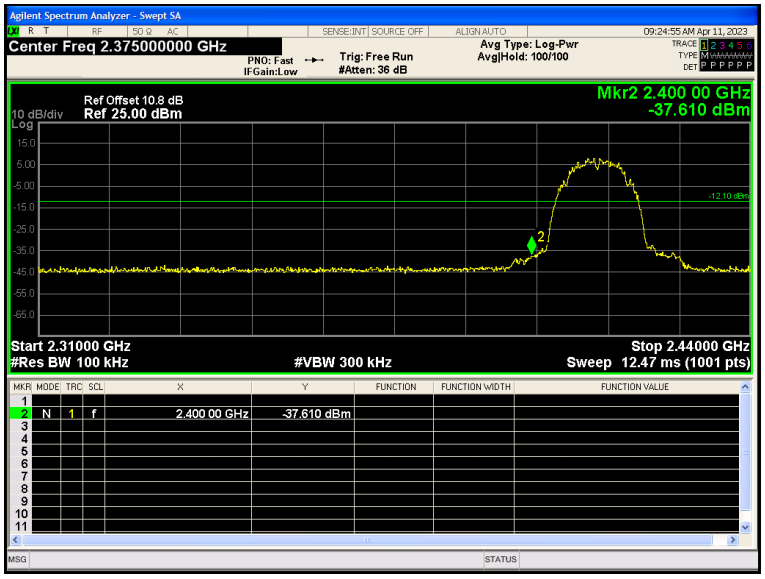
Limits:
All spurious emission and up to the tenth harmonic was measured and they were found to be at least 20dB below the maximum measured in-band peak PSD level for 802.11b,g,n20MHz/n40MHz.

Tested by: Rain Wang

TEST REPORT

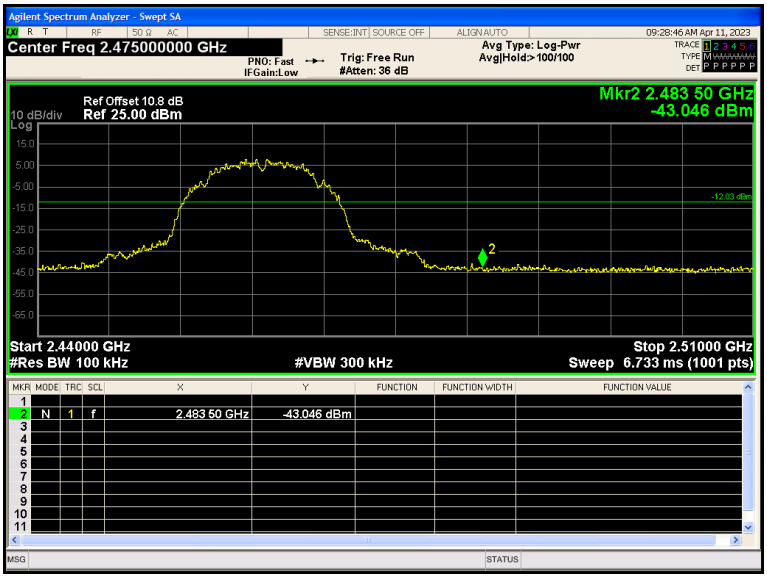
PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

802.11b, Lowest Channel, Bandedge



TEST REPORT

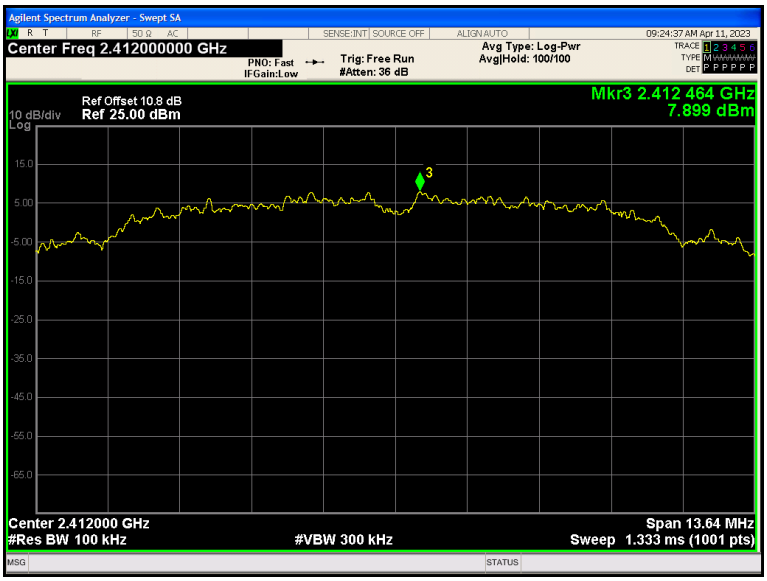
802.11b, Highest Channel, Bandedge

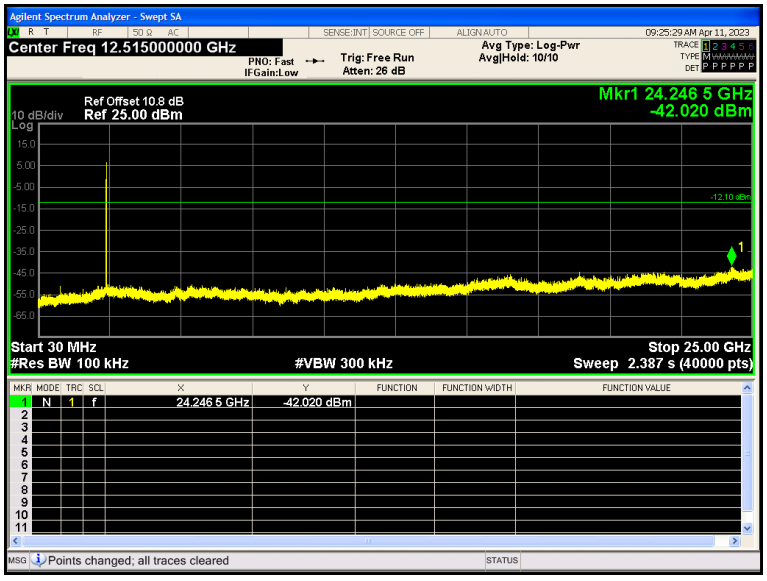


TEST REPORT

PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

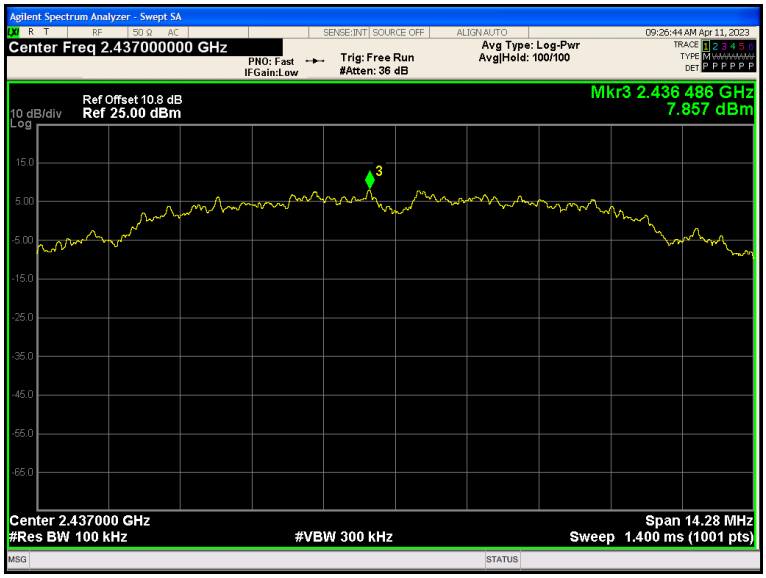
802.11b, Lowest Channel

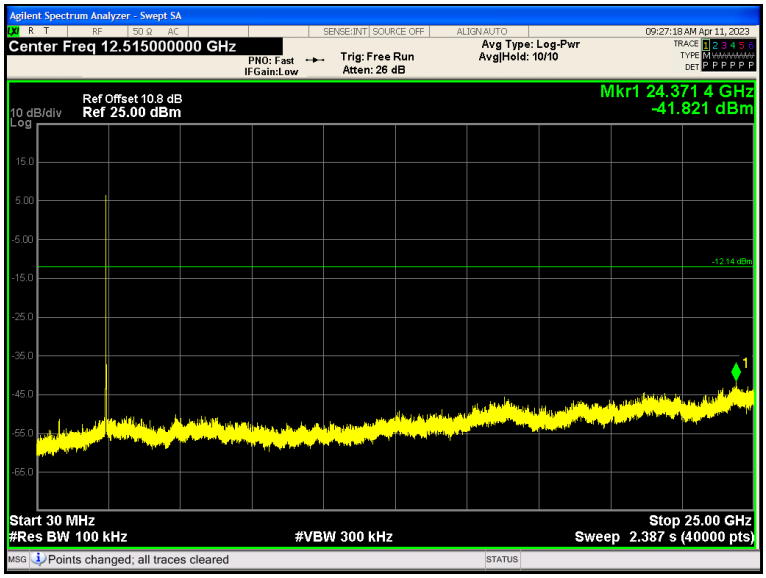




TEST REPORT

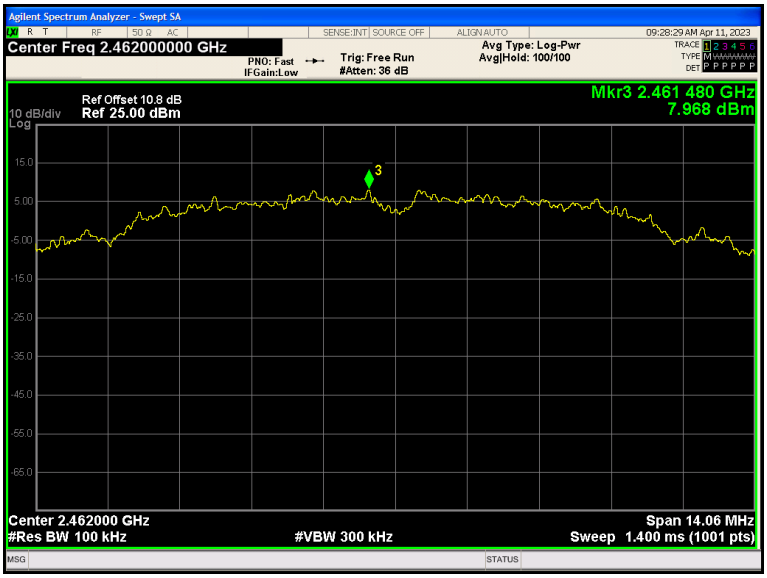
802.11b, Middle Channel

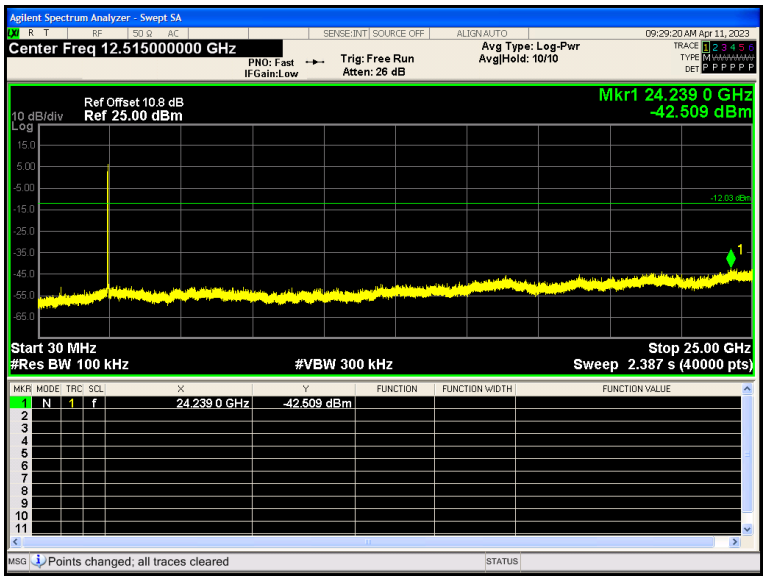




TEST REPORT

802.11b, Highest Channel

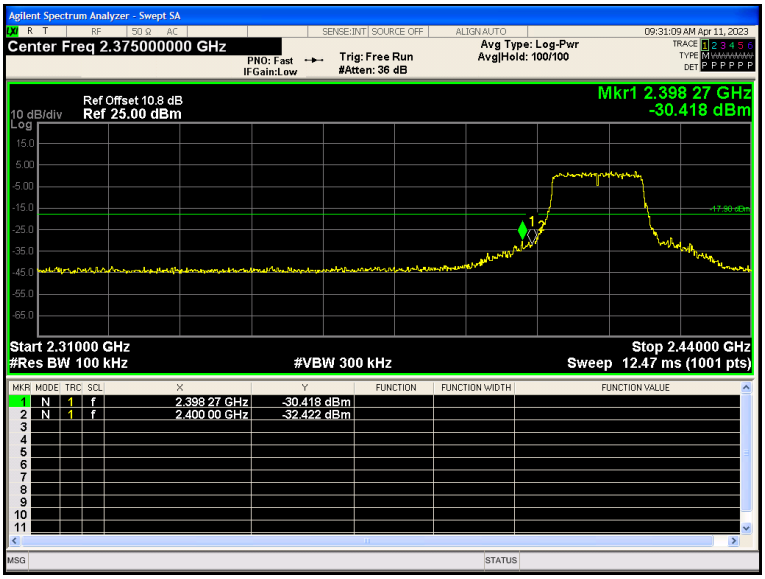




TEST REPORT

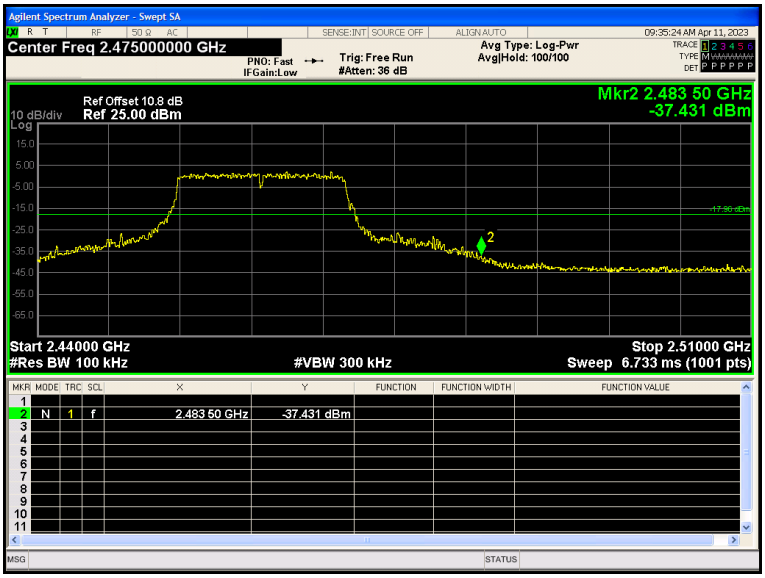
PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

802.11g, Lowest Channel, Bandedge



TEST REPORT

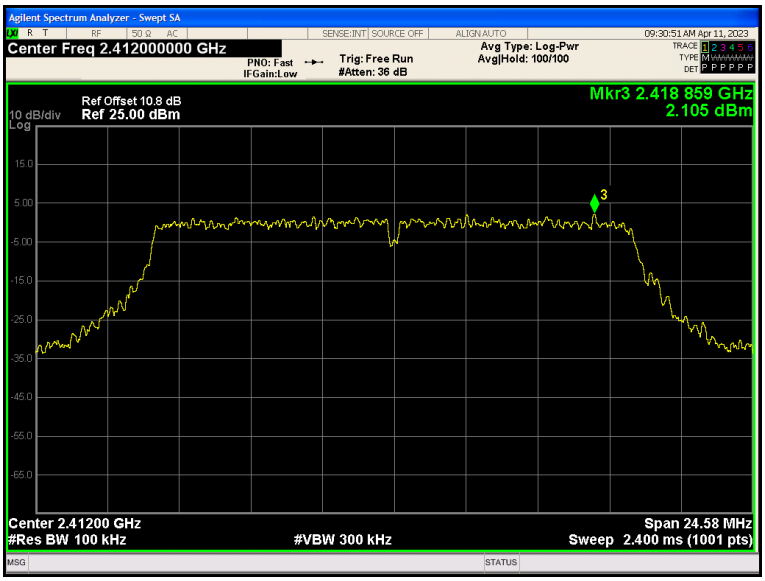
802.11g, Highest Channel, Bandedge

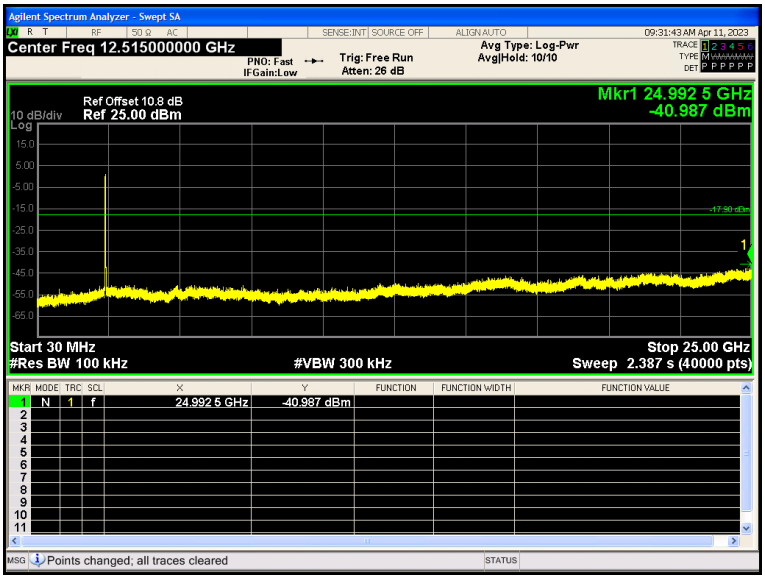


TEST REPORT

PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

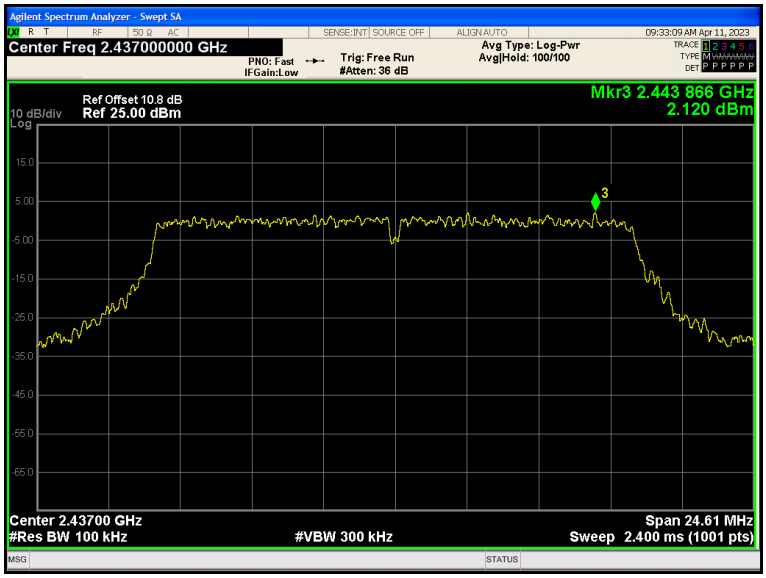
802.11g, Lowest Channel

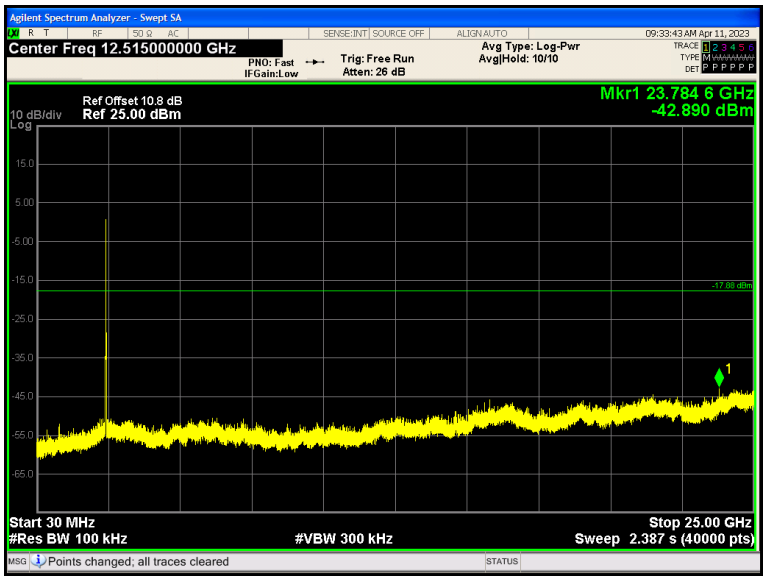




TEST REPORT

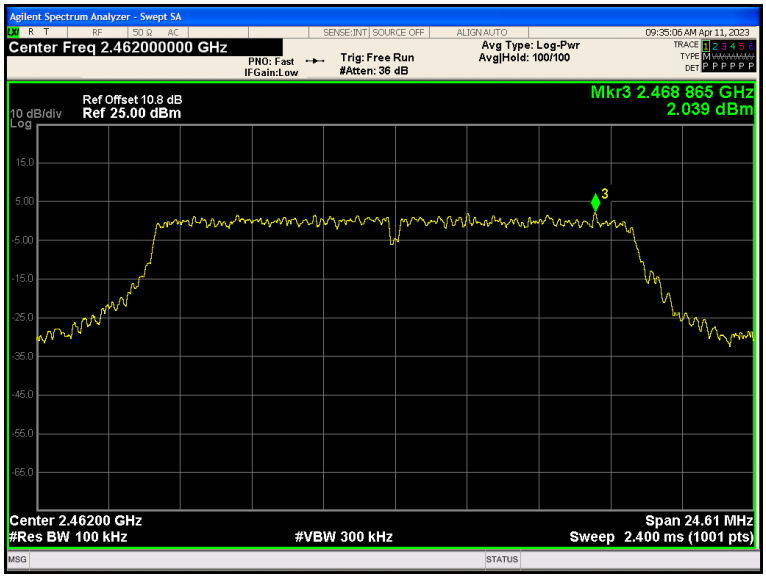
802.11g, Middle Channel

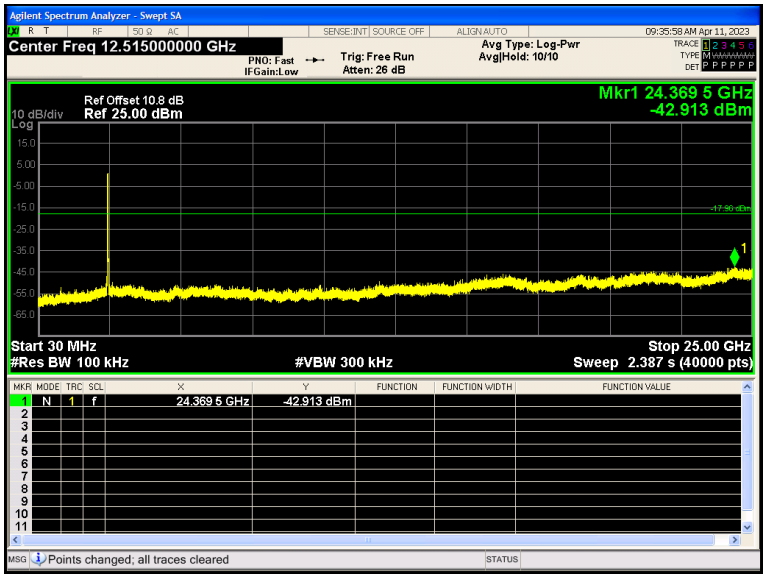




TEST REPORT

802.11g, Highest Channel

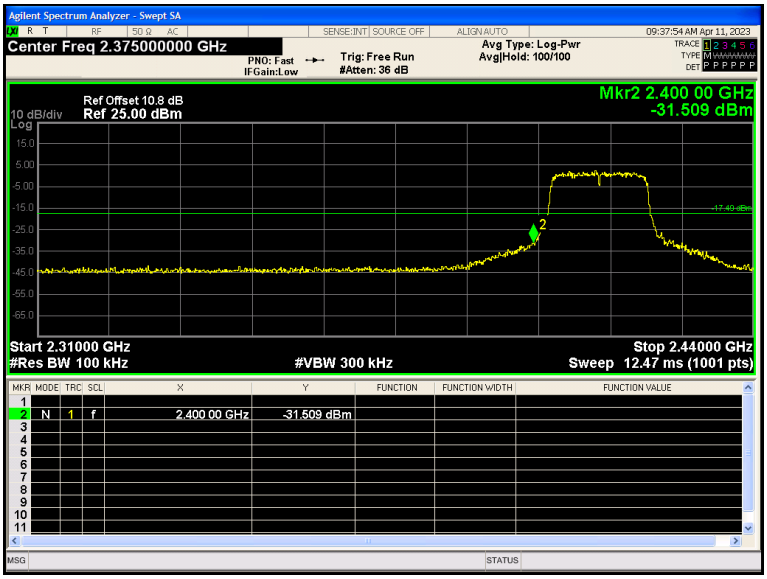




TEST REPORT

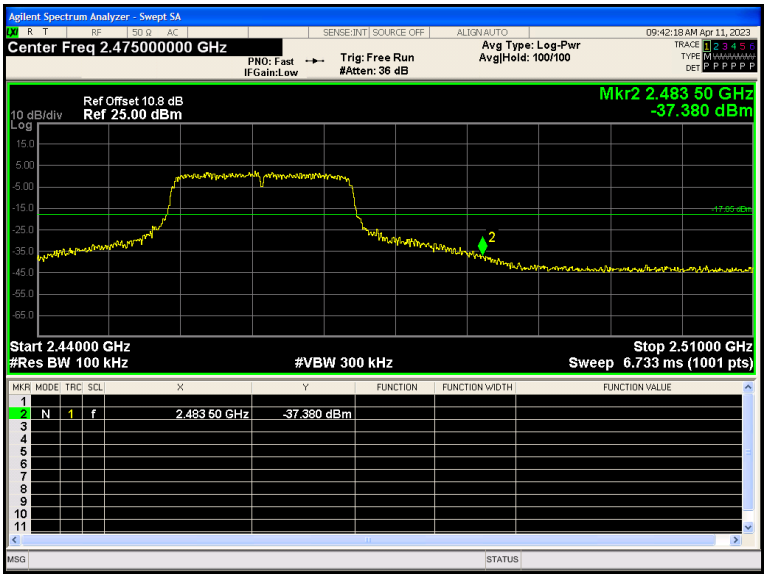
PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

802.11n (20MHz), Lowest Channel, Bandedge



TEST REPORT

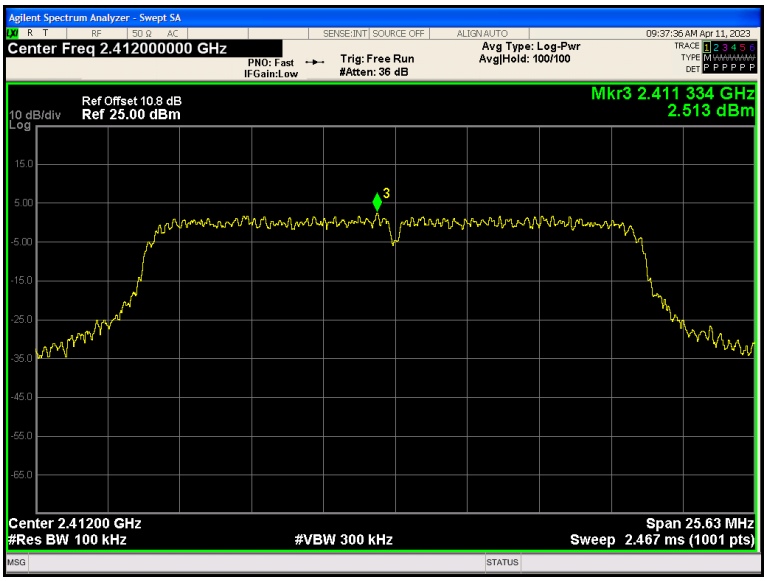
802.11n (20MHz), Highest Channel, Bandedge

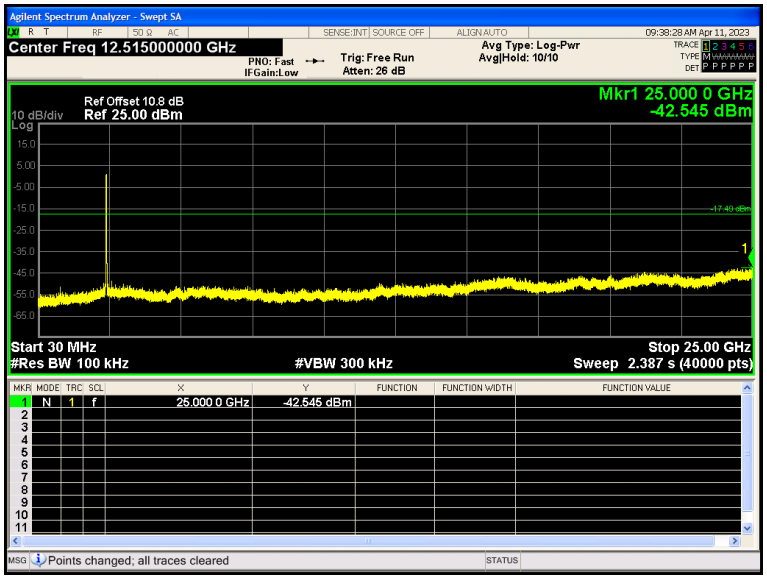


TEST REPORT

PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

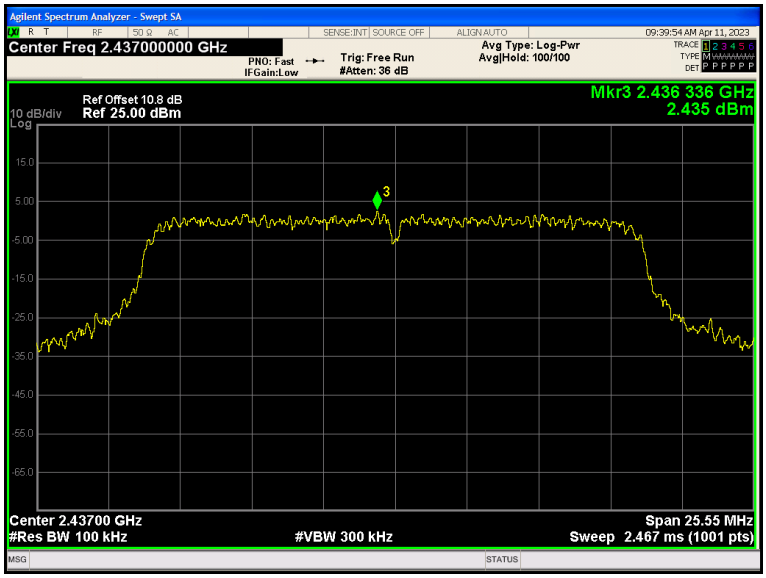
802.11n (20MHz), Lowest Channel

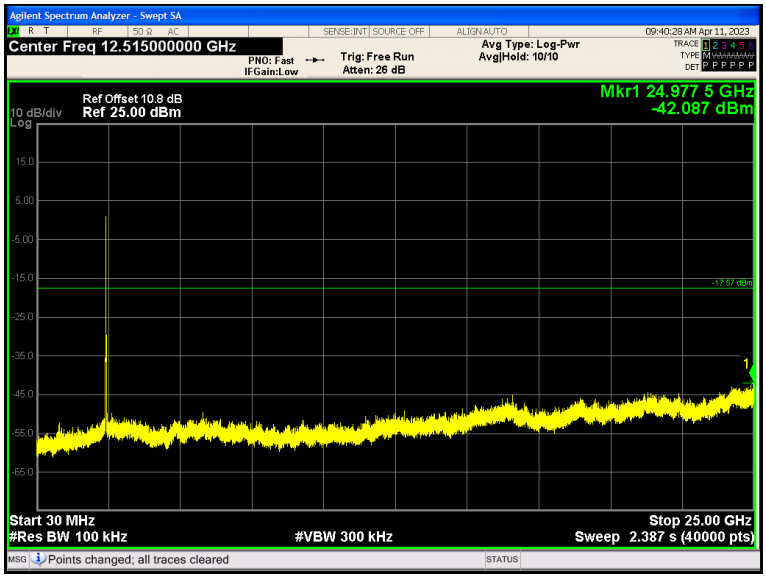




TEST REPORT

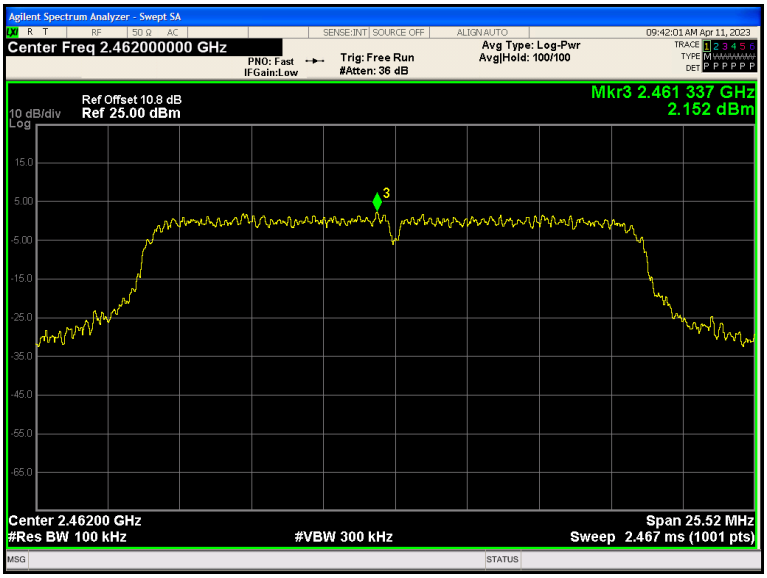
802.11n (20MHz), Middle Channel

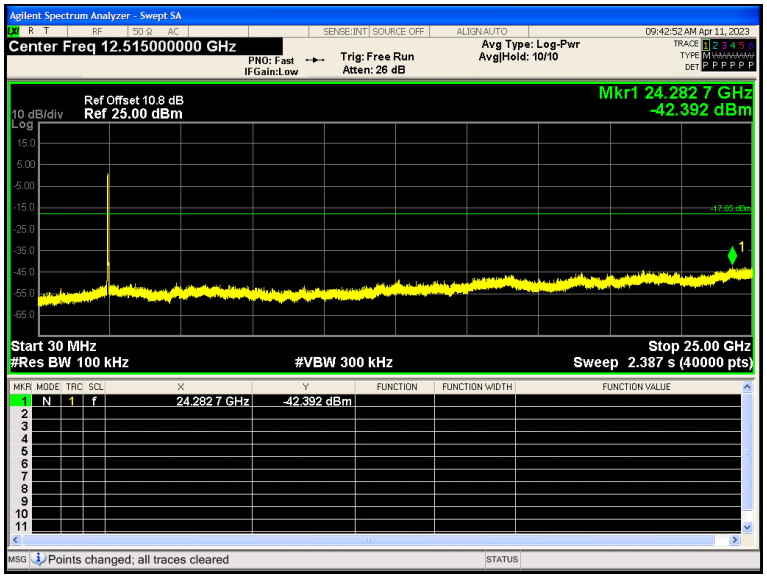




TEST REPORT

802.11n (20MHz), Highest Channel

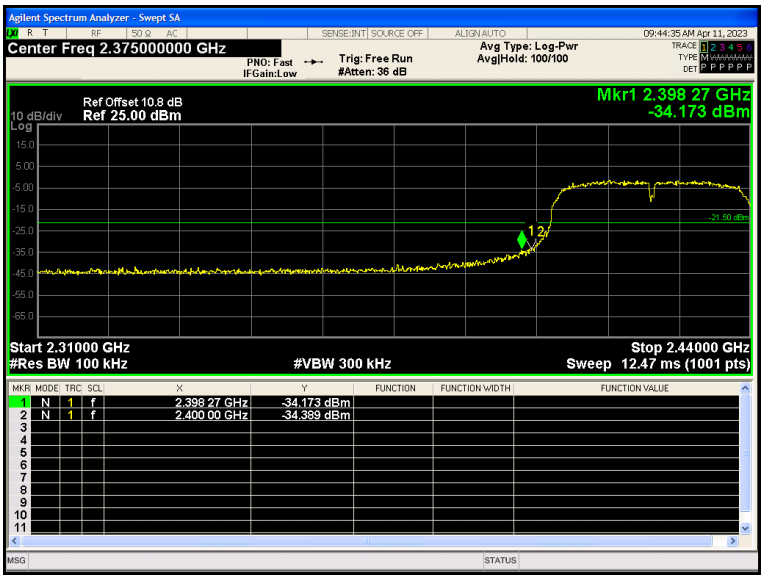




TEST REPORT

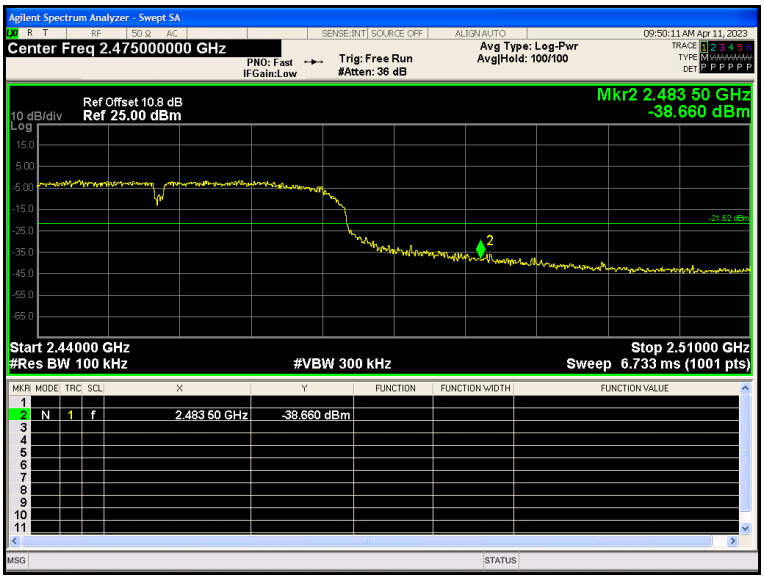
PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

802.11n (40MHz), Lowest Channel, Bandedge



TEST REPORT

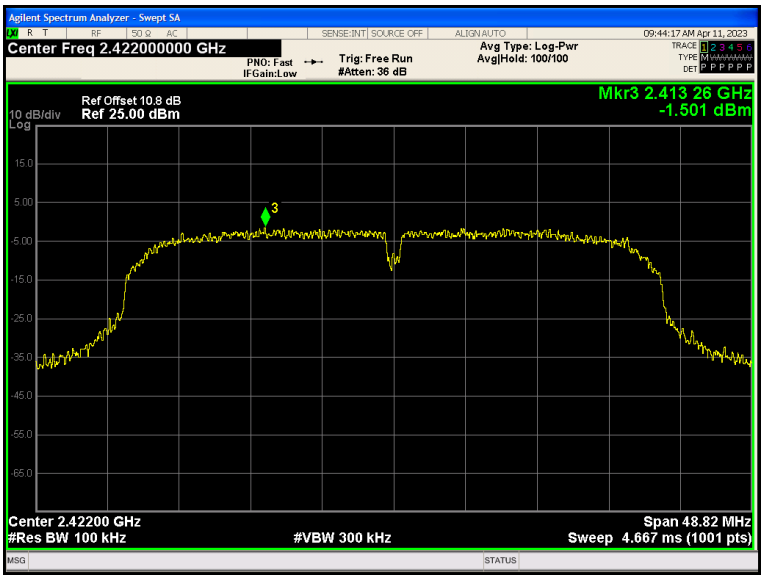
802.11n (40MHz), Highest Channel, Bandedge

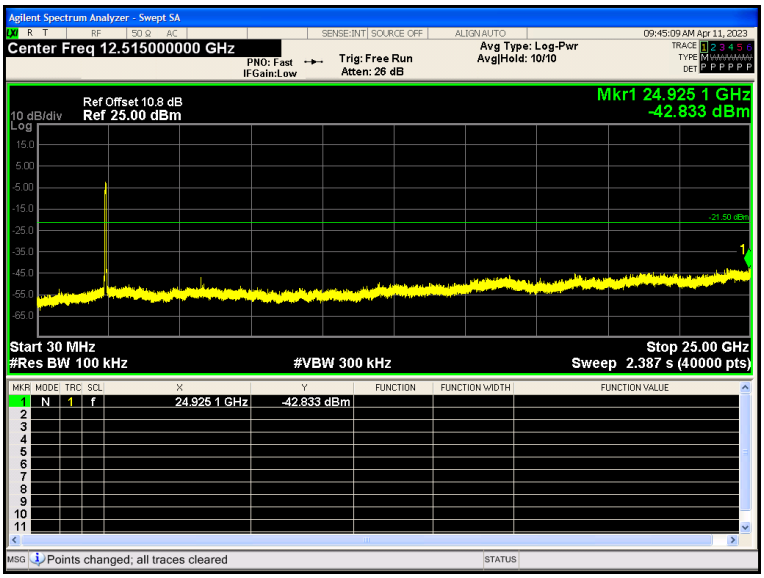


TEST REPORT

PLOTS OF OUT OF BAND CONDUCTED EMISSIONS

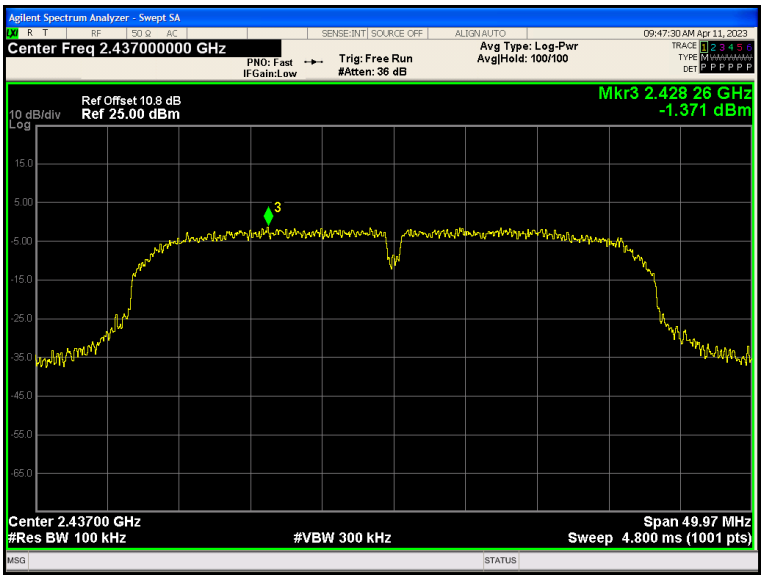
802.11n (40MHz), Lowest Channel

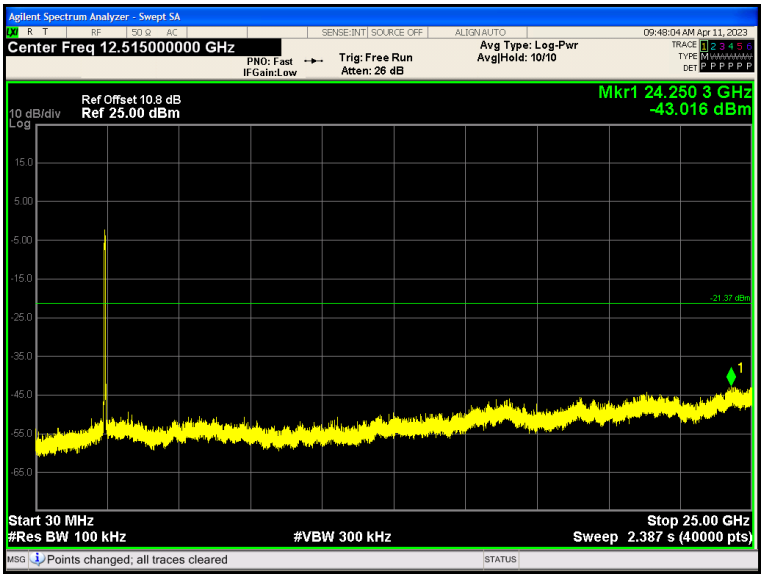




TEST REPORT

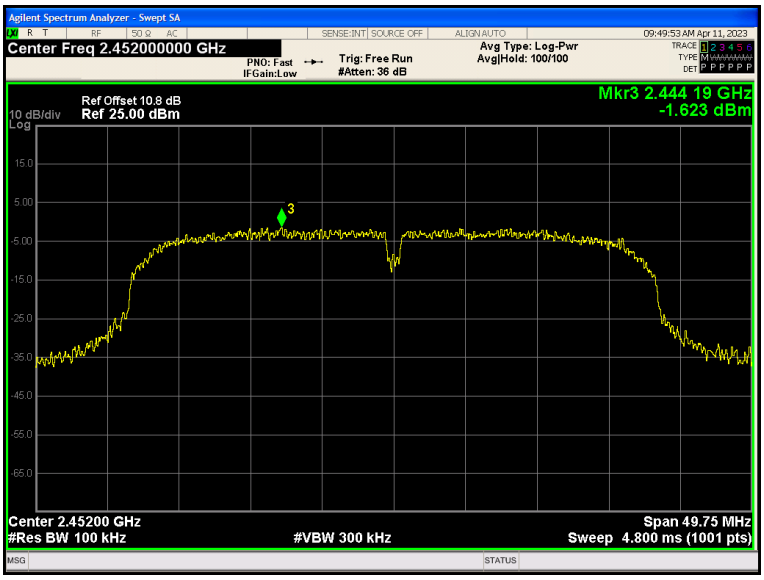
802.11n (40MHz), Middle Channel

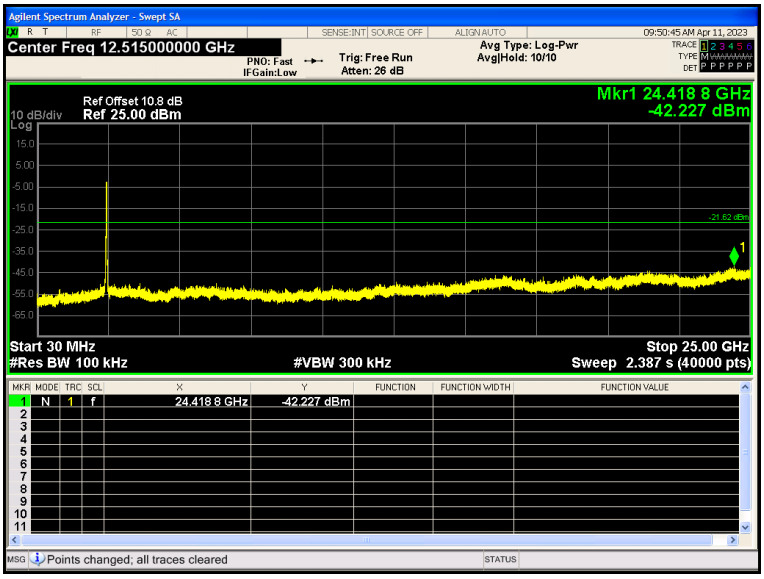




TEST REPORT

802.11n (40MHz), Highest Channel





TEST REPORT

4.5 Field Strength Calculation

The field strength is calculated by adding the reading on the Spectrum Analyzer to the factors associated with preamplifiers (if any), antennas, cables, pulse desensitization and average factors (when specified limit is in average and measurements are made with peak detectors). A sample calculation is included below.

FS = RA + AF + CF - AG + PD + AV

Where FS = Field Strength in dBµV/m
RA = Receiver Amplitude (including preamplifier) in dBµV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB
AG = Amplifier Gain in dB
PD = Pulse Desensitization in dB
AV = Average Factor in -dB

In the radiated emission table which follows, the reading shown on the data table may reflect the preamplifier gain. An example of the calculations, where the reading does not reflect the preamplifier gain, follows:

FS = RA + AF + CF - AG + PD + AV

Example
Assume a receiver reading of 62.0 dBµV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29.0 dB is subtracted. The pulse desensitization factor of the spectrum analyzer is 0.0 dB, and the resultant average factor is -10.0 dB. The net field strength for comparison to the appropriate emission limit is 32.0 dBµV/m. This value in dBµV/m is converted to its corresponding level in µV/m.

RA = 62.0 dBµV
AF = 7.4 dB
CF = 1.6 dB
AG = 29.0 dB
PD = 0.0 dB
AV = -10 dB

FS = 62.0 + 7.4 + 1.6 – 29.0 + 0.0 + (-10.0) = 32.0 dBµV/m

Level in µV/m = Common Antilogarithm [(32.0 dBµV/m)/20] = 39.8 µV/m

TEST REPORT

4.6 Transmitter Radiated Emissions in Restricted Bands and Spurious Emissions

Data is included of the worst-case configuration (the configuration which resulted in the highest emission levels). A sample calculation, configuration photographs and data tables of the emissions are included.

The data on the following pages list the significant emission frequencies, the limit and the margin of compliance.

4.6.1 Radiated Emission Configuration Photograph

Worst Case Restricted Band Radiated Emission
at

2483.50 MHz

The worst case radiated emission configuration photographs are saved with filename: config photos.pdf.

4.6.2 Radiated Emission Data

The data in tables 1-10 list the significant emission frequencies, the limit and the margin of compliance.

Judgement -

Passed by 9.9 dB margin

Tested by: Andy Lin

TEST REPORT

RADIATED EMISSION DATA

Mode: TX-Channel 01

Table 1
IEEE 802.11b (DSSS, 1 Mbps)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2390.00	51.86	-8.44	43.42	74.00	-30.58	Peak	Horizontal
2	2390.00	38.86	-8.44	30.42	54.00	-23.58	Average	Horizontal
3	4824.00	37.56	-2.33	35.23	74.00	-38.77	Peak	Horizontal
4	4824.00	24.95	-2.33	22.62	54.00	-31.38	Average	Horizontal
5	7236.00	38.86	1.47	40.33	74.00	-33.67	Peak	Horizontal
6	7236.00	25.13	1.47	26.60	54.00	-27.40	Average	Horizontal
7	2390.00	49.60	-8.44	41.16	74.00	-32.84	Peak	Vertical
8	2390.00	37.39	-8.44	28.95	54.00	-25.05	Average	Vertical
9	4824.00	36.65	-2.33	34.32	74.00	-39.68	Peak	Vertical
10	4824.00	23.52	-2.33	21.19	54.00	-32.81	Average	Vertical
11	7236.00	36.33	1.47	37.80	74.00	-36.20	Peak	Vertical
12	7236.00	25.33	1.43	26.80	54.00	-27.20	Average	Vertical

NOTES:

1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement.
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 06

Table 2
IEEE 802.11b (DSSS, 1 Mbps)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4874.00	37.43	-2.29	35.14	74.00	-38.86	Peak	Horizontal
2	4874.00	25.86	-2.29	23.57	54.00	-30.43	Average	Horizontal
3	7311.00	38.15	1.60	39.75	74.00	-34.25	Peak	Horizontal
4	7311.00	25.84	1.60	27.44	54.00	-26.56	Average	Horizontal
5	4874.00	37.56	-2.29	35.27	74.00	-38.73	Peak	Vertical
6	4874.00	25.86	-2.29	23.57	54.00	-30.43	Average	Vertical
7	7311.00	37.27	1.60	38.87	74.00	-35.13	Peak	Vertical
8	7311.00	25.98	1.43	27.58	54.00	-26.42	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 11

Table 3
IEEE 802.11b (DSSS, 1 Mbps)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2483.50	51.74	-8.11	43.63	74.00	-30.37	Peak	Horizontal
2	2483.50	39.14	-8.11	31.03	54.00	-22.97	Average	Horizontal
3	4924.00	37.87	-2.26	35.61	74.00	-38.39	Peak	Horizontal
4	4924.00	26.21	-2.26	23.95	54.00	-30.05	Average	Horizontal
5	7386.00	37.46	1.72	39.18	74.00	-34.82	Peak	Horizontal
6	7386.00	25.55	1.72	27.27	54.00	-26.73	Average	Horizontal
7	2483.50	51.21	-8.11	43.10	74.00	-30.90	Peak	Vertical
8	2483.50	38.85	-8.11	30.74	54.00	-23.26	Average	Vertical
9	4924.00	35.76	-2.26	33.50	74.00	-40.50	Peak	Vertical
10	4924.00	26.21	-2.26	23.95	54.00	-30.05	Average	Vertical
11	7386.00	37.58	1.72	39.30	74.00	-34.70	Peak	Vertical
12	7386.00	25.48	1.43	27.20	54.00	-26.80	Average	Vertical

NOTES:

1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 01

Table 4
IEEE 802.11g (OFDM, 6 Mbps)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2390.00	58.03	-8.44	49.59	74.00	-24.41	Peak	Horizontal
2	2390.00	44.64	-8.44	36.20	54.00	-17.80	Average	Horizontal
3	4824.00	35.25	-2.33	32.92	74.00	-41.08	Peak	Horizontal
4	4824.00	23.81	-2.33	21.48	54.00	-32.52	Average	Horizontal
5	7236.00	36.44	1.47	37.91	74.00	-36.09	Peak	Horizontal
6	7236.00	23.83	1.47	25.30	54.00	-28.70	Average	Horizontal
7	2390.00	61.59	-8.44	53.15	74.00	-20.85	Peak	Vertical
8	2390.00	46.78	-8.44	38.34	54.00	-15.66	Average	Vertical
9	4824.00	34.30	-2.33	31.97	74.00	-42.03	Peak	Vertical
10	4824.00	23.72	-2.33	21.39	54.00	-32.61	Average	Vertical
11	7236.00	36.24	1.47	37.71	74.00	-36.29	Peak	Vertical
12	7236.00	23.64	1.43	25.11	54.00	-28.89	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 06

Table 5
IEEE 802.11g (OFDM, 6 Mbps)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4874.00	37.23	-2.29	34.94	74.00	-39.06	Peak	Horizontal
2	4874.00	25.71	-2.29	23.42	54.00	-30.58	Average	Horizontal
3	7311.00	37.40	1.60	39.00	74.00	-35.00	Peak	Horizontal
4	7311.00	26.05	1.60	27.65	54.00	-26.35	Average	Horizontal
5	4874.00	37.90	-2.29	35.61	74.00	-38.39	Peak	Vertical
6	4874.00	25.71	-2.29	23.42	54.00	-30.58	Average	Vertical
7	7311.00	37.21	1.60	38.81	74.00	-35.19	Peak	Vertical
8	7311.00	26.27	1.43	27.87	54.00	-26.13	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 11

Table 6
IEEE 802.11g (OFDM, 6 Mbps)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2483.50	64.52	-8.11	56.41	74.00	-17.59	Peak	Horizontal
2	2483.50	49.64	-8.11	41.53	54.00	-12.47	Average	Horizontal
3	4924.00	34.82	-2.26	32.56	74.00	-41.44	Peak	Horizontal
4	4924.00	23.11	-2.26	20.85	54.00	-33.15	Average	Horizontal
5	7386.00	36.65	1.72	38.37	74.00	-35.63	Peak	Horizontal
6	7386.00	25.40	1.72	27.12	54.00	-26.88	Average	Horizontal
7	2483.50	60.36	-8.11	52.25	74.00	-21.75	Peak	Vertical
8	2483.50	45.92	-8.11	37.81	54.00	-16.19	Average	Vertical
9	4924.00	34.42	-2.26	32.16	74.00	-41.84	Peak	Vertical
10	4924.00	23.01	-2.26	20.75	54.00	-33.25	Average	Vertical
11	7386.00	37.99	1.72	39.71	74.00	-34.29	Peak	Vertical
12	7386.00	25.16	1.43	26.88	54.00	-27.12	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 01

Table 7
IEEE 802.11n (20MHz) (OFDM, MCS0)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2390.00	59.46	-8.44	51.02	74.00	-22.98	Peak	Horizontal
2	2390.00	42.88	-8.44	34.44	54.00	-19.56	Average	Horizontal
3	4824.00	35.42	-2.33	33.09	74.00	-40.91	Peak	Horizontal
4	4824.00	23.81	-2.33	21.48	54.00	-32.52	Average	Horizontal
5	7236.00	36.03	1.47	37.50	74.00	-36.50	Peak	Horizontal
6	7236.00	23.74	1.47	25.21	54.00	-28.79	Average	Horizontal
7	2390.00	63.17	-8.44	54.73	74.00	-19.27	Peak	Vertical
8	2390.00	48.42	-8.44	39.98	54.00	-14.02	Average	Vertical
9	4824.00	35.02	-2.33	32.69	74.00	-41.31	Peak	Vertical
10	4824.00	23.81	-2.33	21.48	54.00	-32.52	Average	Vertical
11	7236.00	36.50	1.47	37.97	74.00	-36.03	Peak	Vertical
12	7236.00	24.01	1.43	25.48	54.00	-28.52	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 06

Table 8
IEEE 802.11n (20MHz) (OFDM, MCS0)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	4874.00	38.12	-2.29	35.83	74.00	-38.17	Peak	Horizontal
2	4874.00	25.78	-2.29	23.49	54.00	-30.51	Average	Horizontal
3	7311.00	38.43	1.60	40.03	74.00	-33.97	Peak	Horizontal
4	7311.00	26.12	1.60	27.72	54.00	-26.28	Average	Horizontal
5	4874.00	37.48	-2.29	35.19	74.00	-38.81	Peak	Vertical
6	4874.00	26.00	-2.29	23.71	54.00	-30.29	Average	Vertical
7	7311.00	38.15	1.60	39.75	74.00	-34.25	Peak	Vertical
8	7311.00	26.12	1.43	27.72	54.00	-26.28	Average	Vertical

NOTES:

1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 11

Table 9
IEEE 802.11n (20MHz) (OFDM, MCS0)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2483.50	68.08	-8.11	59.97	74.00	-14.03	Peak	Horizontal
2	2483.50	51.47	-8.11	43.36	54.00	-10.64	Average	Horizontal
3	4924.00	34.19	-2.26	31.93	74.00	-42.07	Peak	Horizontal
4	4924.00	23.11	-2.26	20.85	54.00	-33.15	Average	Horizontal
5	7386.00	36.71	1.72	38.43	74.00	-35.57	Peak	Horizontal
6	7386.00	25.55	1.72	27.27	54.00	-26.73	Average	Horizontal
7	2483.50	64.03	-8.11	55.92	74.00	-18.08	Peak	Vertical
8	2483.50	46.29	-8.11	38.18	54.00	-15.82	Average	Vertical
9	4924.00	35.13	-2.26	32.87	74.00	-41.13	Peak	Vertical
10	4924.00	23.51	-2.26	21.25	54.00	-32.75	Average	Vertical
11	7386.00	36.43	1.72	38.15	74.00	-35.85	Peak	Vertical
12	7386.00	25.40	1.43	27.12	54.00	-26.88	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 03

Table 10
IEEE 802.11n (40MHz) (OFDM, MCS0)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2390.00	58.95	-8.44	50.51	74.00	-23.49	Peak	Horizontal
2	2390.00	43.06	-8.44	34.62	54.00	-19.38	Average	Horizontal
3	4844.00	34.48	-2.32	32.16	74.00	-41.84	Peak	Horizontal
4	4844.00	23.80	-2.32	21.48	54.00	-32.52	Average	Horizontal
5	7266.00	35.96	1.52	37.48	74.00	-36.52	Peak	Horizontal
6	7266.00	23.87	1.52	25.39	54.00	-28.61	Average	Horizontal
7	2390.00	60.85	-8.44	52.41	74.00	-21.59	Peak	Vertical
8	2390.00	46.29	-8.44	37.85	54.00	-16.15	Average	Vertical
9	4844.00	35.34	-2.32	33.02	74.00	-40.98	Peak	Vertical
10	4844.00	23.89	-2.32	21.57	54.00	-32.43	Average	Vertical
11	7266.00	36.07	1.52	37.59	74.00	-36.41	Peak	Vertical
12	7266.00	23.87	1.43	25.39	54.00	-28.61	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 06

Table 11
IEEE 802.11n (40MHz) (OFDM, MCS0)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
3	4874.00	37.62	-2.29	35.33	74.00	-38.67	Peak	Horizontal
4	4874.00	26.07	-2.29	23.78	54.00	-30.22	Average	Horizontal
5	7311.00	37.54	1.60	39.14	74.00	-34.86	Peak	Horizontal
6	7311.00	26.12	1.60	27.72	54.00	-26.28	Average	Horizontal
9	4874.00	38.06	-2.29	35.77	74.00	-38.23	Peak	Vertical
10	4874.00	25.71	-2.29	23.42	54.00	-30.58	Average	Vertical
11	7311.00	37.27	1.60	38.87	74.00	-35.13	Peak	Vertical
12	7311.00	25.98	1.43	27.58	54.00	-26.42	Average	Vertical

NOTES:

1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

TEST REPORT

Mode: TX-Channel 09

Table 12
IEEE 802.11n (40MHz) (OFDM, MCS0)

No.	Frequency (MHz)	Reading (dBuV/m)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Antenna Polaxis
1	2483.50	66.18	-8.11	58.07	74.00	-15.93	Peak	Horizontal
2	2483.50	52.21	-8.11	44.10	54.00	-9.90	Average	Horizontal
3	4904.00	34.94	-2.28	32.66	74.00	-41.34	Peak	Horizontal
4	4904.00	23.23	-2.28	20.95	54.00	-33.05	Average	Horizontal
5	7356.00	37.24	1.67	38.91	74.00	-35.09	Peak	Horizontal
6	7356.00	25.45	1.67	27.12	54.00	-26.88	Average	Horizontal
7	2483.50	62.41	-8.11	54.30	74.00	-19.70	Peak	Vertical
8	2483.50	49.70	-8.11	41.59	54.00	-12.41	Average	Vertical
9	4904.00	36.13	-2.28	33.85	74.00	-40.15	Peak	Vertical
10	4904.00	23.23	-2.28	20.95	54.00	-33.05	Average	Vertical
11	7356.00	37.74	1.67	39.41	74.00	-34.59	Peak	Vertical
12	7356.00	26.47	1.43	28.14	54.00	-25.86	Average	Vertical

NOTES:
1. Peak detector is used for the emission measurement.
2. Average detector is used for the average data of emission measurement
3. All measurements were made at 3 meters.
4. Negative value in the margin column shows emission below limit.
5. Horn antenna is used for the emission over 1000MHz.
6. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.
7. For the measurement of radiated emission, summation method was used which numerical integrating (in terms of linear power) over the transmitter occupied bandwidth.
8. For the linear power measurement, data in 1MHz spacing was collected by spectrum analyzer with 1MHz resolution bandwidth.

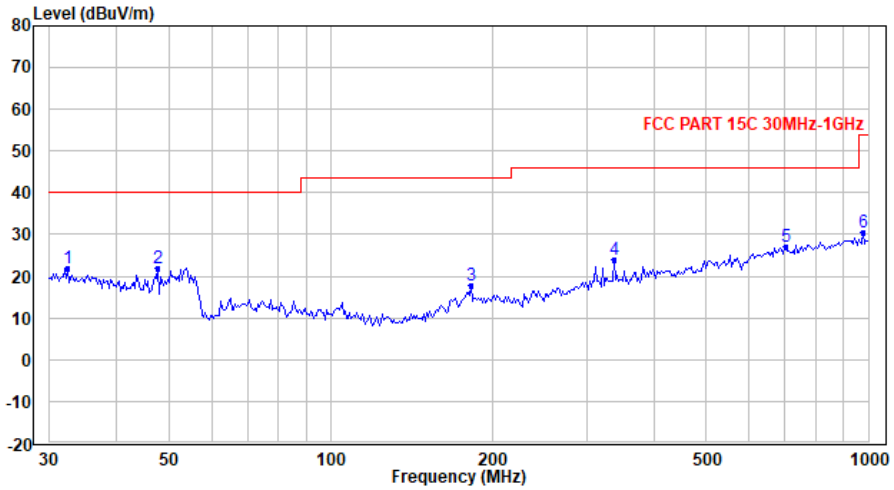
TEST REPORT

Mode: 2.4G Wi-Fi & Bluetooth simultaneously

Table 13-Horizontal

No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	32.411	27.13	-5.21	21.92	40.00	-18.08	QP
2	47.703	35.22	-13.31	21.91	40.00	-18.09	QP
3	182.578	27.76	-9.98	17.78	43.50	-25.72	QP
4	336.482	29.01	-5.19	23.82	46.00	-22.18	QP
5	703.731	25.48	1.76	27.24	46.00	-18.76	QP
6	979.139	25.71	4.95	30.66	54.00	-23.34	QP

NOTES:
1. Quasi-Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.
4. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.

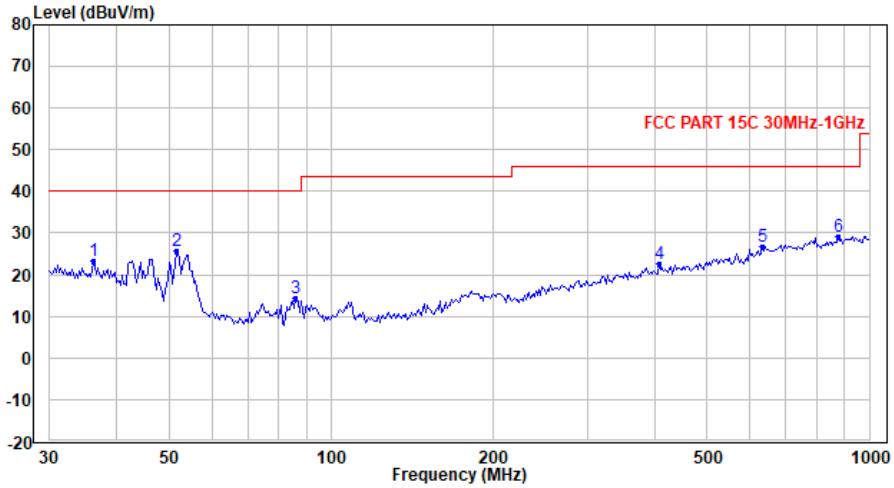


TEST REPORT

Table 14-Vertical

No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	36.268	29.31	-5.85	23.46	40.00	-16.54	QP
2	51.536	40.91	-15.36	25.55	40.00	-14.45	QP
3	86.080	30.66	-16.33	14.33	40.00	-25.67	QP
4	406.782	26.49	-3.87	22.62	46.00	-23.38	QP
5	633.328	26.38	0.30	26.68	46.00	-19.32	QP
6	875.013	25.19	4.07	29.26	46.00	-16.74	QP

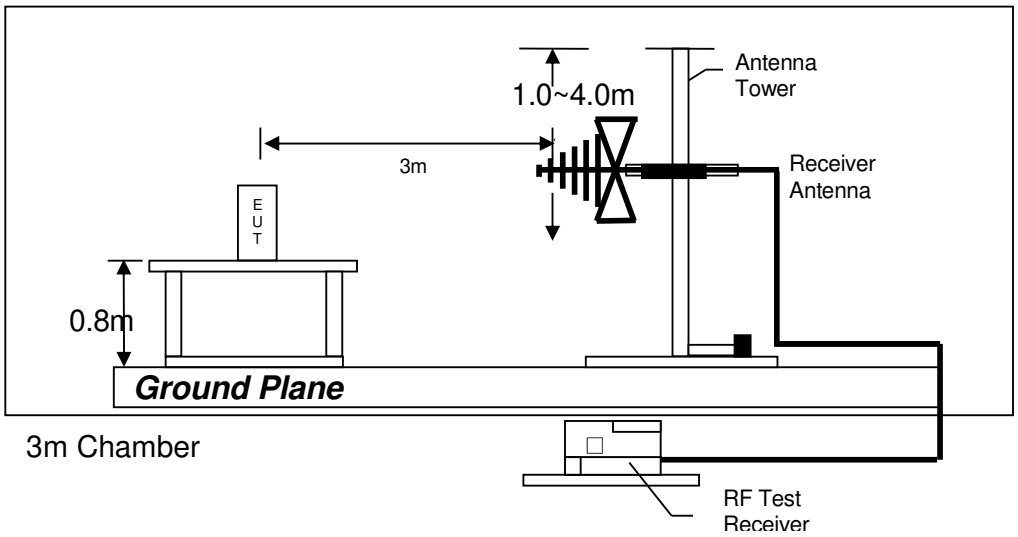
NOTES:
1. Quasi-Peak detector is used for the emission measurement.
2. All measurements were made at 3 meters.
3. Negative value in the margin column shows emission below limit.
4. Emissions within the restricted band meet the requirement of FCC Part 15 Section 15.205 / RSS-Gen Section 8.10.



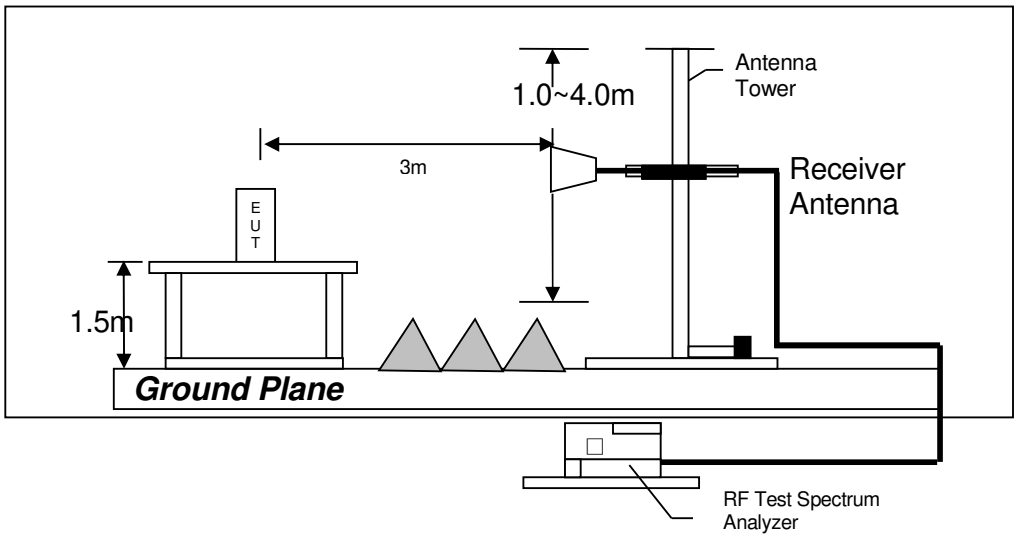
TEST REPORT

4.6.3 Radiated Emission Test Setup

The figure below shows the test setup, which is utilized to make these measurements.



Test setup of radiated emissions up to 1GHz



Test setup of radiated emissions above 1GHz

TEST REPORT

4.6.4 Transmitter Duty Cycle Calculation

Not applicable – No average factor is required.

TEST REPORT

4.7 AC Power Line Conducted Emission

☐ Not applicable – EUT is only powered by battery for operation.

☒ EUT connects to AC power line. Emission Data is listed in following pages.

☐ Base Unit connects to AC power line and has transmission. Handset connects to AC power line but has no transmission. Emission Data of Base Unit is listed in following pages.

4.7.1 AC Power Line Conducted Emission Configuration Photograph

Worst Case Line-Conducted Configuration
at

0.446 MHz

The worst-case line conducted configuration photographs are attached in the Appendix and saved with filename: config photos.pdf

4.7.2 AC Power Line Conducted Emission Data

The plot(s) and data in the following pages list the significant emission frequencies, the limit and the margin of compliance.

Passed by 8.79 dB margin

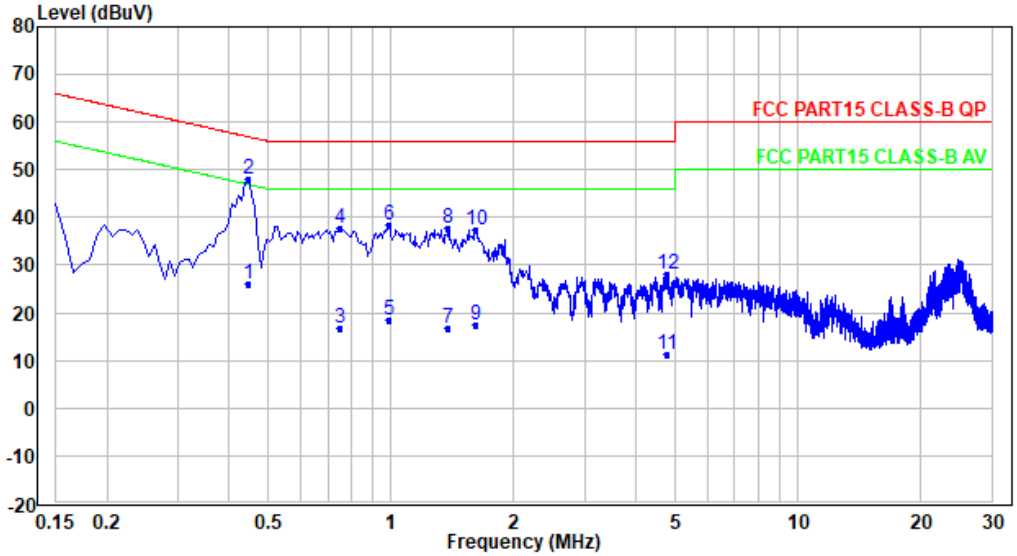
Tested by: Yana Zeng

TEST REPORT

AC POWER LINE CONDUCTED EMISSION

Mode: 2.4G Wi-Fi & Bluetooth simultaneously

Live:



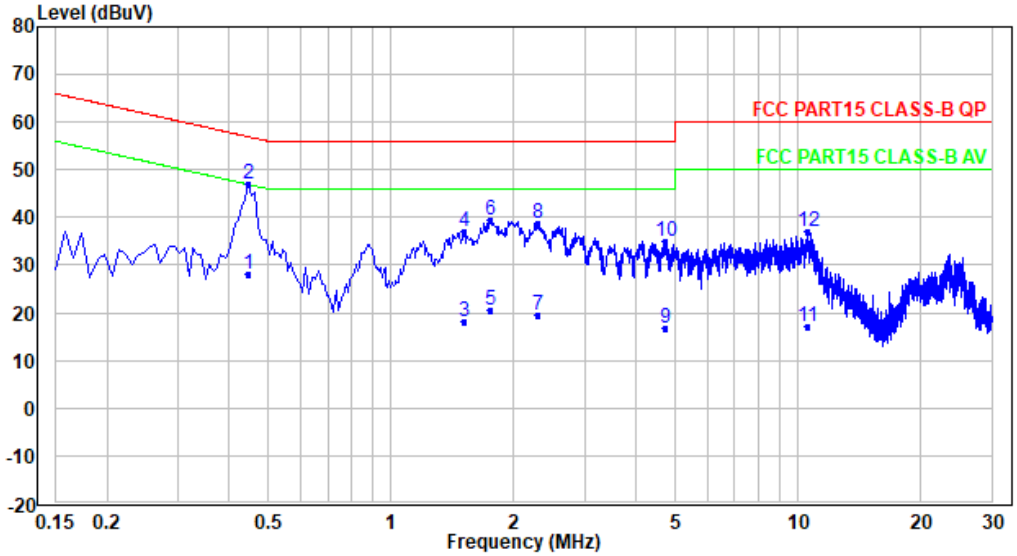
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.446	16.12	10.04	26.16	46.95	-20.79	Average
2	0.446	38.12	10.04	48.16	56.95	-8.79	QP
3	0.750	6.67	10.05	16.72	46.00	-29.28	Average
4	0.750	27.67	10.05	37.72	56.00	-18.28	QP
5	0.990	8.31	10.06	18.37	46.00	-27.63	Average
6	0.990	28.31	10.06	38.37	56.00	-17.63	QP
7	1.382	6.64	10.09	16.73	46.00	-29.27	Average
8	1.382	27.64	10.09	37.73	56.00	-18.27	QP
9	1.614	7.44	10.11	17.55	46.00	-28.45	Average
10	1.614	27.44	10.11	37.55	56.00	-18.45	QP
11	4.765	0.81	10.30	11.11	46.00	-34.89	Average
12	4.765	17.81	10.30	28.11	56.00	-27.89	QP

Remark:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

TEST REPORT

Mode: 2.4G Wi-Fi & Bluetooth simultaneously
Neutral:



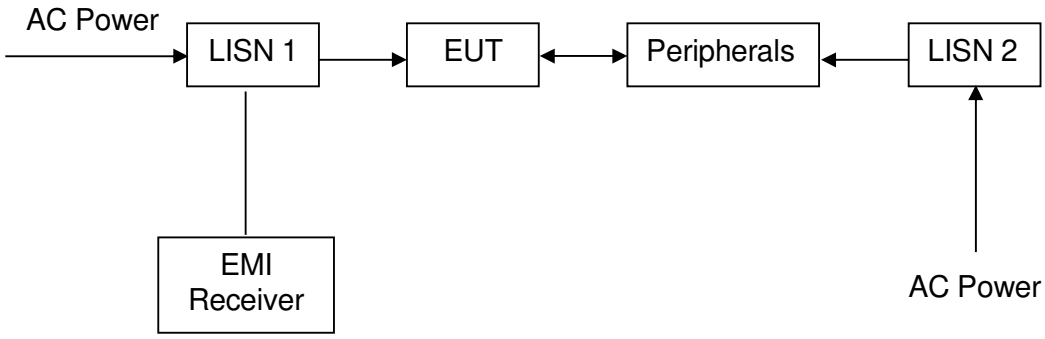
No.	Frequency (MHz)	Reading (dBuV)	Correction factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.446	18.04	10.02	28.06	46.95	-18.89	Average
2	0.446	37.04	10.02	47.06	56.95	-9.89	QP
3	1.518	8.06	10.07	18.13	46.00	-27.87	Average
4	1.518	27.06	10.07	37.13	56.00	-18.87	QP
5	1.750	10.37	10.09	20.46	46.00	-25.54	Average
6	1.750	29.37	10.09	39.46	56.00	-16.54	QP
7	2.286	9.51	10.13	19.64	46.00	-26.36	Average
8	2.286	28.51	10.13	38.64	56.00	-17.36	QP
9	4.733	6.58	10.30	16.88	46.00	-29.12	Average
10	4.733	24.58	10.30	34.88	56.00	-21.12	QP
11	10.580	6.55	10.53	17.08	50.00	-32.92	Average
12	10.580	26.55	10.53	37.08	60.00	-22.92	QP

Remark:

1. Correct Factor = LISN Factor + Cable Loss + Pulse Limiter Factor, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result - Limit
4. An initial pre-scan was performed on the Phase and neutral lines with peak detector. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

TEST REPORT

4.7.3 Conducted Emission Test Setup



TEST REPORT

5.0 EQUIPMENT LIST

1) Radiated Emissions Test

Equipment	Manufacturer	Model No.	Serial Number	Cal. Due date
3m SAC	ETS-LINDGREN	3m	N/A	Jan. 21, 2024
Receiver	R&S	ESIB26	100114	Nov. 02, 2023
Broadband Antenna	ETS-LINDGREN	3142E	00201566	Dec. 12, 2023
6dB Attenuator	Talent	RA6A5-N-18	18103001	Dec. 12, 2023
Preamplifier	HP	8447F	2805A02960	Oct. 31, 2023
Double-Ridged Waveguide Horn Antenna	ETS-LINDGREN	3117-PA	00201541	Apr. 16, 2024
(Pre-amplifier)	ETS-LINDGREN	00118385	00201874	Oct. 31, 2023
Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A
Test Software	Audix	e3	Software Version: 9.160323	

2) Conducted Emissions Test

Equipment	Manufacturer	Model No.	Serial Number	Cal. Due date
Receiver	R&S	ESR7	101181	Oct. 31, 2023
Pulse Limiter	R&S	ESH3-Z2	0357.8810.54	Oct. 31, 2023
LISN	R&S	ESH2-Z5	860014/024	Oct. 31, 2023
Test Software	Audix	e3	Software Version: 9.20151119i	

3) RF Test

Equipment	Manufacturer	Model No.	Serial Number	Cal. Due date
EXA Spectrum Analyzer	KEYSIGHT	N9010A	MY51440197	Apr. 13, 2024
USB Wideband Power Sensor	KEYSIGHT	U2021XA	MY55430035	Nov. 02, 2023

END OF TEST REPORT