

# RADIO TEST REPORT

## FCC 47 CFR PART 15 SUBPART C

<b>Test Standard</b>	<b>FCC Part 15.247</b>
<b>Product name</b>	<b>Human Presence Sensor</b>
<b>Brand Name</b>	<b>GOOD WAY</b>
<b>Model No.</b>	<b>SD42000N1</b>
<b>Test Result</b>	<b>Pass</b>
<b>Statements of Conformity</b>	<b>Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.</b>

The test Result was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were given in ANSI C63.10: 2013 and compliance standards.

The test results of this report relate only to the tested sample (EUT) identified in this report.

The test Report of full or partial shall not copy. Without written approval of Compliance Certification Services Inc. (Wugu Laboratory).

Approved by:




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Shawn Wu  
Supervisor

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.  
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## Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	January 23, 2024	Initial Issue	ALL	Peggy Tsai
01	February 1, 2024	See the following Note Rev. (01)	P.4, 8, 9, 10, 11, 27, 28, 29, 43-64	Peggy Tsai
02	February 7, 2024	See the following Note Rev. (02)	P.4, 8, 27, 28, 31-33, 46, 47, 52-55, 76, 77,	Peggy Tsai
03	February 21, 2024	See the following Note Rev. (03)	P.67, A-2	Peggy Tsai
04	March 1, 2024	See the following Note Rev. (04)	P.5	Peggy Tsai
05	March 13, 2024	See the following Note Rev. (05)	P.8, 9, A-1	Peggy Tsai

**Rev. (01):**

1. Modify Date of Test in section 1.1.
2. Modify Instrument Calibration in section 1.6.
3. Modify Support and EUT Accessories Equipment in section 1.7.
4. Modify Test Summary in section 2.
5. Modify Output Power in section 5.3.4.
5. Modify Test Procedure in section 5.4.2.
6. Modify Radiation Data in section 5.6.4.

**Rev. (02):**

1. Modify Date of Test in section 1.1.
2. Modify Instrument Calibration in section 1.6.
2. Modify Output Power Measurement in section 5.3.4.
3. Modify Power Spectral Density in section 5.4.4.
4. Modify Radiation Data in section 5.6.4.

**Rev. (03):**

1. Modify Band Edge Test Data in section 5.6.4.
2. Modify Conducted Emission Set Up Photo.

**Rev. (04):**

1. Modify Antenna Type in section 1.3.

**Rev. (05):**

1. Modify Instrument Calibration in section 1.6.
2. Modify Radiation test photo in Appendix-A.

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# 1. GENERAL INFORMATION

## 1.1 EUT INFORMATION

<b>Applicant</b>	GOOD WAY TECHNOLOGY CO., LTD. 3F, No. 135, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan
<b>Manufacturer</b>	GOOD WAY TECHNOLOGY CO., LTD. 3F, No. 135, Ln. 235, Baociao Rd., Sindian Dist., New Taipei City 231, Taiwan
<b>Equipment</b>	Human Presence Sensor
<b>Model No.</b>	SD42000N1
<b>Model Discrepancy</b>	N/A
<b>Trade Name</b>	GOOD WAY
<b>Received Date</b>	November 9, 2023
<b>Date of Test</b>	November 23, 2023 ~ February 6, 2024
<b>Power Supply</b>	1. Power from host system. (DC 5V) 2. Power from Adapter. I/P: 100-240Vac, 50/60Hz, 0.6A O/P: 5Vdc / 3A, 9Vdc / 2A, 12Vdc / 1.5A
<b>HW Version</b>	A11
<b>SW Version</b>	V1.8

**Remark:**

1. For more details, please refer to the User's manual of the EUT.
2. Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.

## 1.2 EUT CHANNEL INFORMATION

Frequency Range	802.11b/g/n HT 20: 2412MHz ~ 2462MHz
Modulation Type	1. IEEE 802.11b mode: CCK 2. IEEE 802.11g mode: OFDM 3. IEEE 802.11n HT 20 MHz mode : OFDM
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT 20 MHz mode : 11 Channels

**Remark:**

Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	Number of frequencies	Location in frequency range of operation
<input type="checkbox"/> 1 MHz or less	1	Middle
<input type="checkbox"/> 1 MHz to 10 MHz	2	1 near top and 1 near bottom
<input checked="" type="checkbox"/> More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

## 1.3 ANTENNA INFORMATION

Antenna Type	<input checked="" type="checkbox"/> PIFA <input type="checkbox"/> PCB <input type="checkbox"/> Dipole <input type="checkbox"/> Coils
Antenna Gain	ESPRESSIF / ESP-ANT E Gain: 2.7 dBi
Antenna Connector	N/A

**Notes:**

1. Power Directional Gain:  $10\text{LOG}(((10^{Ant1/10})+10^{Ant2/10})/2)$
2. The antenna(s) of the EUT are permanently attached and there are no provisions for connection to an external antenna. So the EUT complies with the requirements of §15.203.

## 1.4 MEASUREMENT UNCERTAINTY

PARAMETER	UNCERTAINTY
AC Powerline Conducted Emission	± 2.213 dB
Channel Bandwidth	± 2.7 %
RF output power (Power Meter + Power sensor)	± 0.243 dB
Power Spectral density	± 2.739 dB
Conducted Bandedge	± 2.739 dB
Conducted Spurious Emission	± 2.742 dB
Radiated Emission_9kHz-30MHz	± 3.761 dB
Radiated Emission_30MHz-200MHz	± 3.473 dB
Radiated Emission_200MHz-1GHz	± 3.946 dB
Radiated Emission_1GHz-6GHz	± 4.797 dB
Radiated Emission_6GHz-18GHz	± 4.803 dB
Radiated Emission_18GHz-26GHz	± 3.459 dB
Radiated Emission_26GHz-40GHz	± 3.297 dB

**Remark:**

- 1.This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2
2. ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report.

## 1.5 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at

No.11, Wugong 6th Rd., Wugu Dist., New Taipei City, Taiwan.

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Czerny Lin	-
Radiation	Tony Chao · Ray Li	-
RF Conducted	Allen Shen	-

**Remark:** The lab has been recognized as the FCC accredited lab. under the KDB 974614 D01 and is listed in the FCC public Access Link (PAL) database, FCC Registration No. :444940, the FCC Designation No.:TW1309

## 1.6 INSTRUMENT CALIBRATION

Conducted_FCC/IC/NCC (All)					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Power Sensor	Anritsu	MA2411B	1911386	2023-07-25	2024-07-24
Power Sensor	Anritsu	MA2411B	1911387	2023-07-25	2024-07-24
Power Meter	Anritsu	ML2496A	2136002	2023-11-16	2024-11-15
EXA Signal Analyzer	Keysight	N9010B	MY60242460	2023-02-02	2024-02-01
				2024-01-18	2025-01-17
Attenuator	Marvelous Microwave Inc	MVE2213-10	08	2023-11-07	2024-11-06
<b>Software</b>	Radio Test Software Ver. 21				

AC Mains Conduction					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
EMI Test Receiver	R&S	ESCI	100064	2023-06-07	2024-06-06
LISN	TESEQ	LN2-16N	22012	2023-03-08	2024-03-07
Cable	EMCI	CFD300-NL	CERF	2023-06-27	2024-06-26
<b>Software</b>	e3 V6-110812				

**Remark:**

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.



966A_Radiated Wi-Fi 2.4GHz					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Loop Antenna	COM-POWER	AL-130	121051	2023-05-23	2024-05-22
Preamplifier	EMEC	EM330	060609	2023-02-22	2024-02-21
Thermo-Hygro Meter	WISEWIND	1206	D07	2022-12-19	2023-12-18
				2023-12-08	2024-12-07
Signal Analyzer	KEYSIGHT	N9010A	MY54200716	2023-10-13	2024-10-12
Preamplifier	HP	8449B	3008A00965	2022-12-23	2023-12-22
				2023-12-22	2024-12-21
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2023-08-08	2024-08-07
Cable	Huber+Suhner	104PEA	20995+21000+182330	2023-02-22	2024-02-21
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2023-01-12	2024-01-11
				2023-12-28	2024-12-27
High Pass Filters	Titan Microwave	T04H30001800070S01	22011402-4	2023-06-17	2024-06-16
Horn Antenna	SCHWARZBECK	BBHA9170	1047	2022-12-30	2023-12-29
				2023-12-13	2024-12-12
Pre-Amplifier	EMCI	EMC184045SE	980860	2022-12-27	2023-12-26
				2023-12-12	2024-12-11
Cable	EMCI	EMC101G	221213+211011+211012	2023-10-17	2024-10-16
Turn Table	CCS	CC-T-1F	N/A	N.C.R	N.C.R
Controller	CCS	CC-C-1F	N/A	N.C.R	N.C.R
Antenna Tower	CCS	CC-A-1F	N/A	N.C.R	N.C.R
Site Validation	CCS	966A	N/A	2023-07-10	2024-07-09
<b>Software</b>	e3 V9-210616c				

**Remark:**

1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.

## 1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

EUT Accessories Equipment						
No.	Equipment	Brand	Model	Series No.	Calibration Date	Calibration Due
	N/A					

Support Equipment						
No.	Equipment	Brand	Model	Series No.	Calibration Date	Calibration Due
1	NB(E)	Lenovo	T460	N/A	N/A	N/A
2	Cable	SP	Type C Cable	N/A	N/A	N/A
3	Test fixture	ONEPING TECHNOLOGIES CO., LTD.	PL2303GC	N/A	N/A	N/A
4	NB	Lenovo	IBM 7663	N/A	N/A	N/A
5	NB(D)	Lenovo	ThinkPad X260	N/A	N/A	N/A

## 1.8 TEST METHODOLOGY AND APPLIED STANDARDS

Test Mode:

1. After the EUT is connected to the fixture and power supply, open EspRFTTestTool\_v3.6\_Manual.exe and open COM PORT.
2. Select the WIFI industry according to the test requirements and select the required modulation, CH, MODE and transmit signals according to the requirements.

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.247, KDB 558074.

## 2. TEST SUMMARY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	5.1	AC Conducted Emission	Pass
15.247(a)(2)	5.2	6 dB Bandwidth	Pass
-	5.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	5.3	Output Power Measurement	Pass
15.247(e)	54	Power Spectral Density	Pass
15.247(d)	5.5	Conducted Band Edge	Pass
15.247(d)	5.5	Conducted Emission	Pass
15.247(d) 15.205 15.209	5.6	Radiation Band Edge	Pass
15.247(d) 15.205 15.209	5.6	Radiation Spurious Emission	Pass

### 3. DESCRIPTION OF TEST MODES

#### 3.1 THE WORST MODE OF OPERATING CONDITION

<p>Operation mode</p>	<p>IEEE 802.11b mode :1Mbps          IEEE 802.11g mode :6Mbps          IEEE 802.11n HT20 mode :MCS0</p>
<p>Test Channel Frequencies</p>	<p><b>IEEE 802.11b mode :</b>          1. Lowest Channel : 2412MHz          2. Middle Channel : 2437MHz          3. Highest Channel : 2462MHz  <b>IEEE 802.11g mode :</b>          1. Lowest Channel : 2412MHz          2. Middle Channel : 2437MHz          3. Highest Channel : 2462MHz  <b>IEEE 802.11n HT20 mode :</b>          1. Lowest Channel : 2412MHz          2. Middle Channel : 2437MHz          3. Highest Channel : 2462MHz</p>
<p>Operation Transmitter</p>	<p>IEEE 802.11b mode :1T1R          IEEE 802.11g mode :1T1R          IEEE 802.11n HT20 mode : 1T1R</p>

**Remark:**

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.

### 3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	AC Power line conducted emission for line and neutral
Power supply Mode	Mode 1:EUT power by Adapter
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT power by Host System
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4
Worst Position	<input type="checkbox"/> Placed in fixed position. <input type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input checked="" type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane)

Radiated Emission Measurement Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT power by Host System
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input type="checkbox"/> Mode 4

**Remark:**

1. The worst mode was record in this test report.
2. AC power line conducted emission and for below 1G radiation emission were performed the EUT transmit at the highest output power channel as worse case.
3. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(Z-Plane) were recorded in this report

#### 4. EUT DUTY CYCLE

**Temperature:** 22.6°C

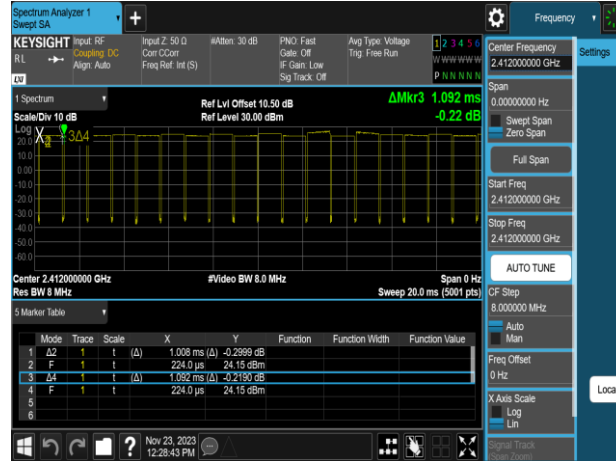
**Test date:** November 23, 2023

**Humidity:** 53% RH

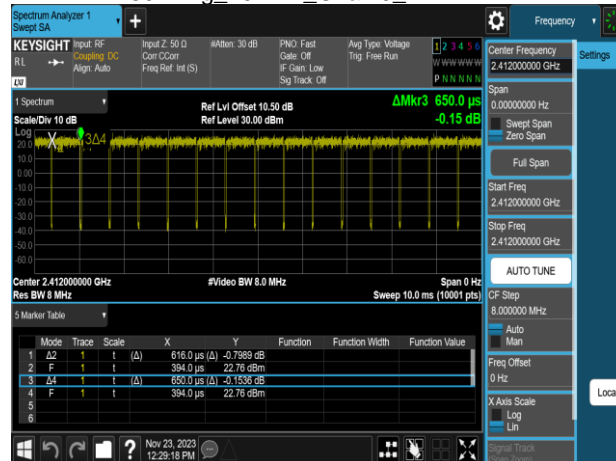
**Tested by:** Allen Shen

	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log ( 1/Duty Cycle )	1/T (kHz)	VBW setting (kHz)
802.11b	92.31	0.35	0.99	1.00
802.11g	94.77	0.23	1.62	2.00
802.11n_20	94.74	0.23	1.63	2.00

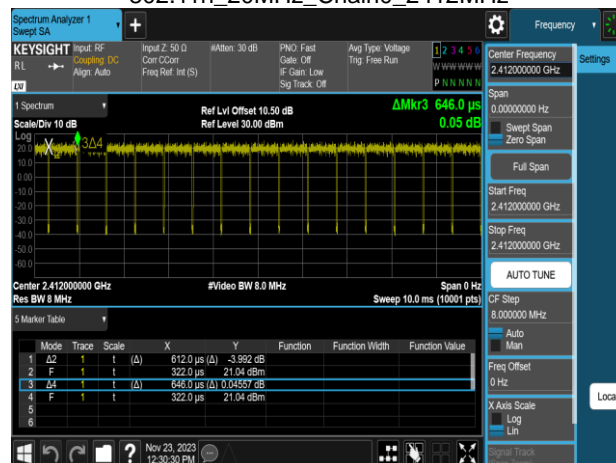
802.11b\_20MHz\_Chain0\_2412MHz



802.11g\_20MHz\_Chain0\_2412MHz



802.11n\_20MHz\_Chain0\_2412MHz



## 5. TEST RESULT

### 5.1 AC POWER LINE CONDUCTED EMISSION

#### 5.1.1 Test Limit

According to §15.207(a)(2),

Frequency Range (MHz)	Limits(dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

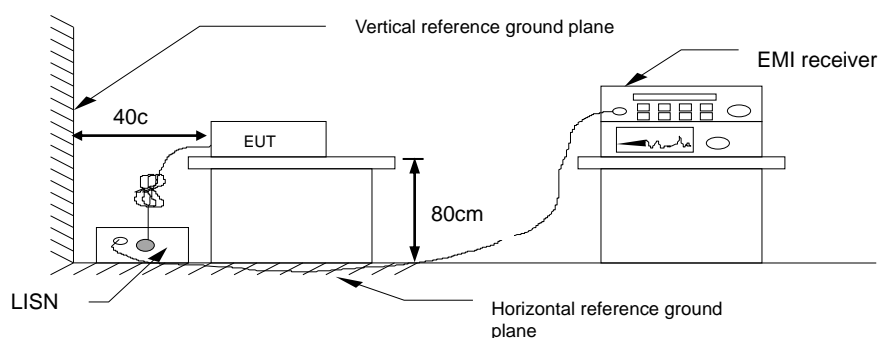
\* Decreases with the logarithm of the frequency.

#### 5.1.2 Test Procedure

Test method Refer as ANSI C63.10: 2013 clause 6.2,

1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. Recorded Line for Neutral and Line.

#### 5.1.3 Test Setup



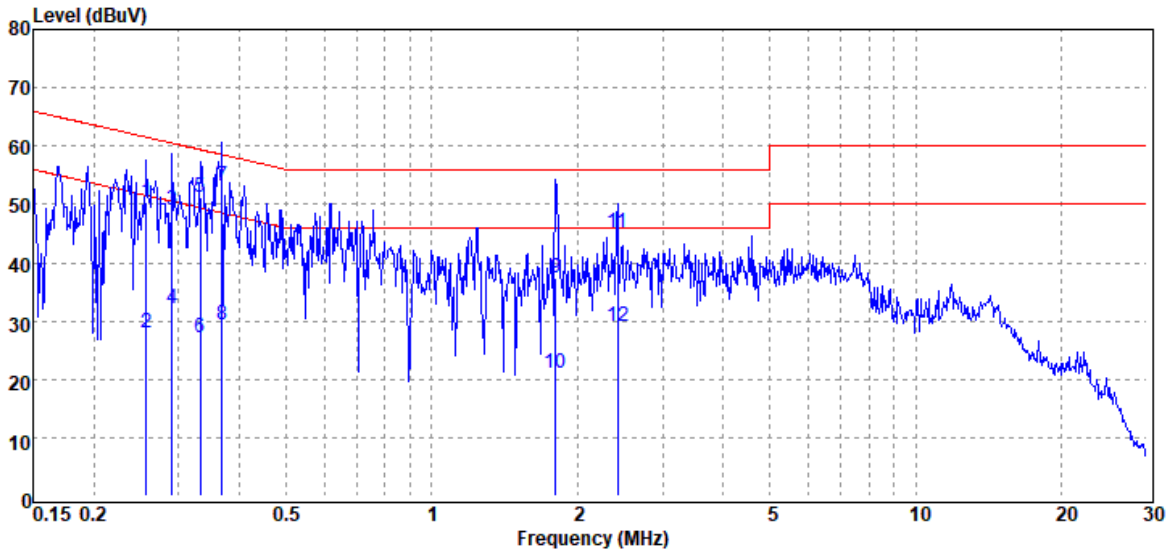
#### 5.1.4 Test Result

**Pass.**



## Test Data

Project No	: TM-2311000089P	Test Date	: 2023-12-05
Operation Mode	: Wifi2.4G	Temp./Humi.	: 23.6°C / 55%
Test Chamber	: Conduction	Engineer	: Czerny.Lin
Probe	: LINE	Test Voltage	: AC 120V/60Hz
Note	:		



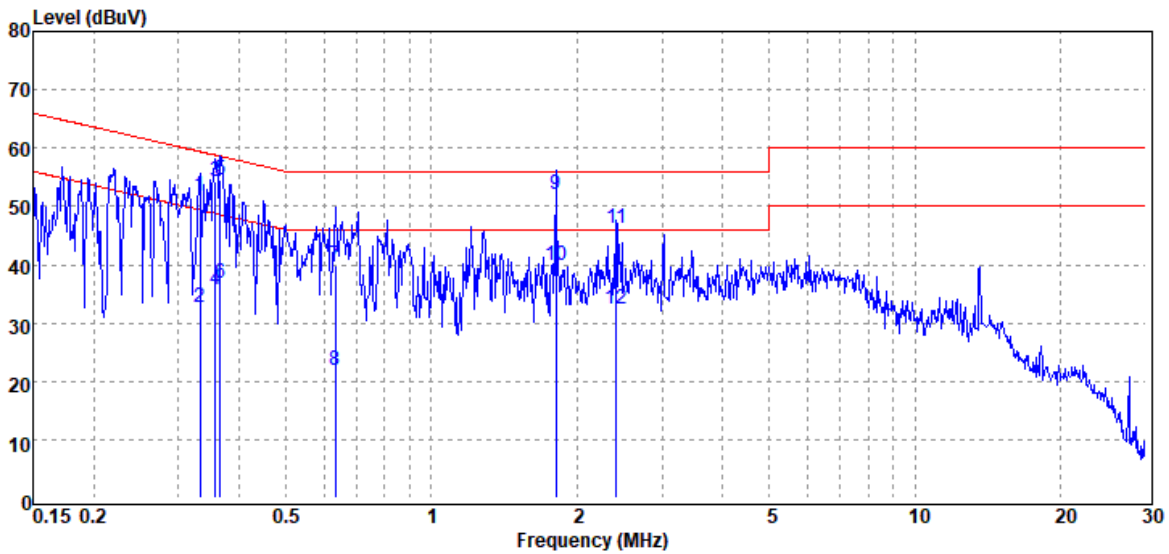
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV	Limit dBuV	Margin dB
0.258	QP	50.32	0.15	50.47	61.51	-11.04
0.258	Average	27.80	0.15	27.95	51.51	-23.56
0.291	QP	48.83	0.15	48.98	60.50	-11.52
0.291	Average	32.01	0.15	32.16	50.50	-18.34
0.332	QP	50.96	0.15	51.11	59.40	-8.29
0.332	Average	26.95	0.15	27.10	49.40	-22.30
0.369	QP	52.91	0.15	53.06	58.52	-5.46
0.369	Average	29.16	0.15	29.31	48.52	-19.21
1.800	QP	37.02	0.21	37.23	56.00	-18.77
1.800	Average	20.87	0.21	21.08	46.00	-24.92
2.422	QP	45.01	0.24	45.25	56.00	-10.75
2.422	Average	28.70	0.24	28.94	46.00	-17.06

Note: 1. Actual FS= Spectrum Read Level + Factor

Note: 2. Margin= Actual FS - Limit

Project No : TM-2311000089P  
 Operation Mode : Wifi2.4G  
 Test Chamber : Conduction  
 Probe : NEUTRAL  
 Note :

Test Date : 2023-12-05  
 Temp./Humi. : 23.6°C / 55%  
 Engineer : Czerny.Lin  
 Test Voltage : AC 120V/60Hz



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV	Limit dBμV	Margin dB
0.332	QP	51.61	0.19	51.80	59.40	-7.60
0.332	Average	32.35	0.19	32.54	49.40	-16.86
0.358	QP	54.20	0.19	54.39	58.78	-4.39
0.358	Average	35.54	0.19	35.73	48.78	-13.05
0.365	QP	54.29	0.19	54.48	58.61	-4.13
0.365	Average	36.54	0.19	36.73	48.61	-11.88
0.634	QP	39.63	0.19	39.82	56.00	-16.18
0.634	Average	21.62	0.19	21.81	46.00	-24.19
1.810	QP	51.86	0.25	52.11	56.00	-3.89
1.810	Average	39.60	0.25	39.85	46.00	-6.15
2.409	QP	46.08	0.28	46.36	56.00	-9.64
2.409	Average	32.07	0.28	32.35	46.00	-13.65

Note: 1. Actual FS= Spectrum Read Level + Factor  
 Note: 2. Margin= Actual FS - Limit

## 5.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

### 5.2.1 Test Limit

According to §15.247(a)(2),

#### 6 dB Bandwidth :

Limit	Shall be at least 500kHz
-------	--------------------------

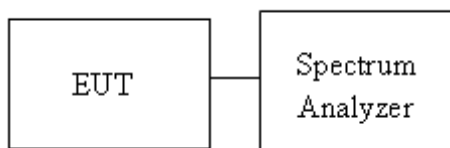
Occupied Bandwidth(99%) : For reporting purposes only.

### 5.2.2 Test Procedure

Test method Refer as KDB 558074 D01 and ANSI C63.10: 2013 clause 6.9.2,

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 100kHz, VBW = 300kHz and Detector = Peak, to measurement 6 dB Bandwidth.
4. SA set RBW = 1% ~ 5% OBW, VBW = three times the RBW and Detector = Peak, to measurement 99% Bandwidth
5. Measure and record the result of 6 dB Bandwidth and 99% Bandwidth. in the test report.

### 5.2.3 Test Setup



### 5.2.4 Test Result

Temperature: 22.6°C

Test date: November 23, 2023

Humidity: 53% RH

Tested by: Allen Shen

#### 802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	10040.00	≥ 500	PASS
2437	<b>10060.00</b>	≥ 500	PASS
2462	<b>10060.00</b>	≥ 500	PASS

#### 802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	16320.00	≥ 500	PASS
2437	16350.00	≥ 500	PASS
2462	<b>16360.00</b>	≥ 500	PASS

#### 802.11n HT\_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	17070.00	≥ 500	PASS
2437	<b>17540.00</b>	≥ 500	PASS
2462	17230.00	≥ 500	PASS

**802.11b Ch0**

<b>Freq. (MHz)</b>	<b>99% BW (MHz)</b>
2412	13.045
2437	13.139
2462	<b>13.152</b>

**802.11g Ch0**

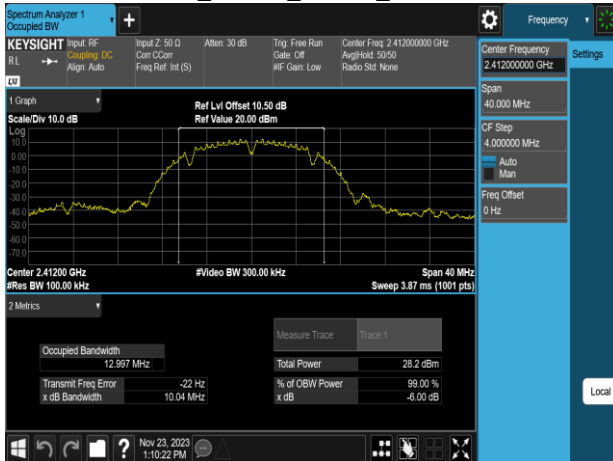
<b>Freq. (MHz)</b>	<b>99% BW (MHz)</b>
2412	17.040
2437	<b>17.276</b>
2462	17.035

**802.11n\_HT20M Ch0**

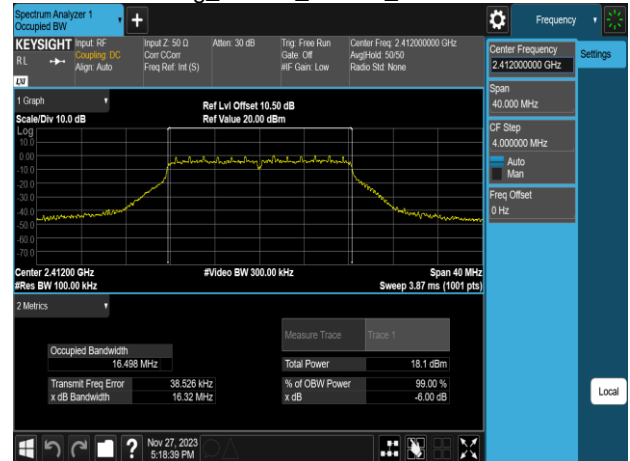
<b>Freq. (MHz)</b>	<b>99% BW (MHz)</b>
2412	18.017
2437	<b>18.081</b>
2462	18.003

## Test Data(6dB BANDWIDTH)

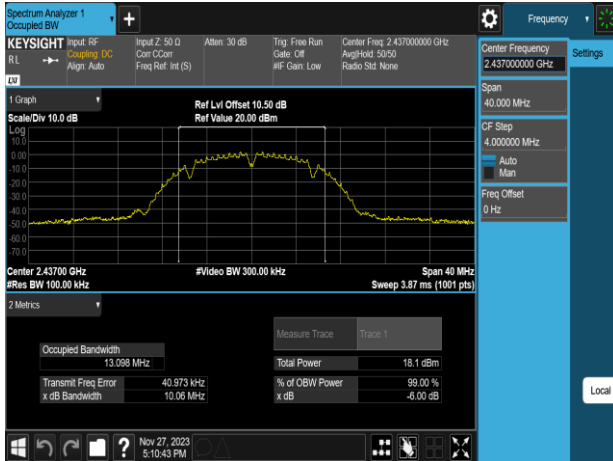
802.11b\_20MHz\_Chain0\_2412MHz



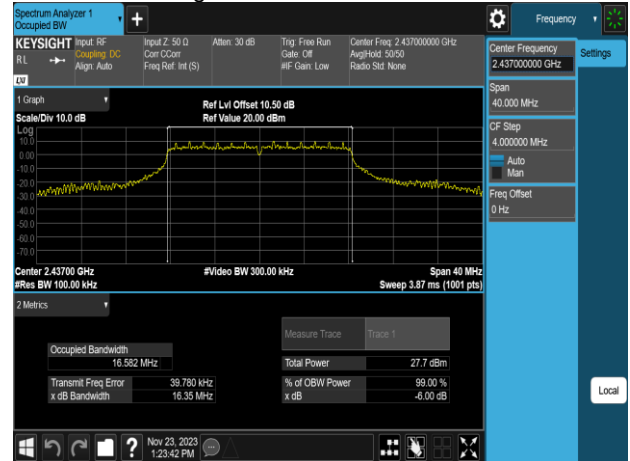
802.11g\_20MHz\_Chain0\_2412MHz



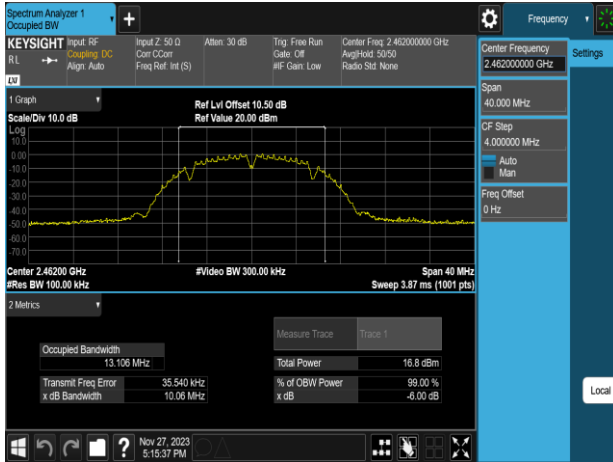
802.11b\_20MHz\_Chain0\_2437MHz



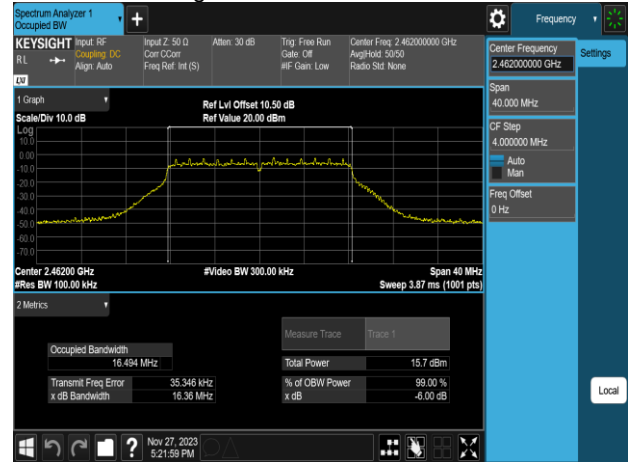
802.11g\_20MHz\_Chain0\_2437MHz



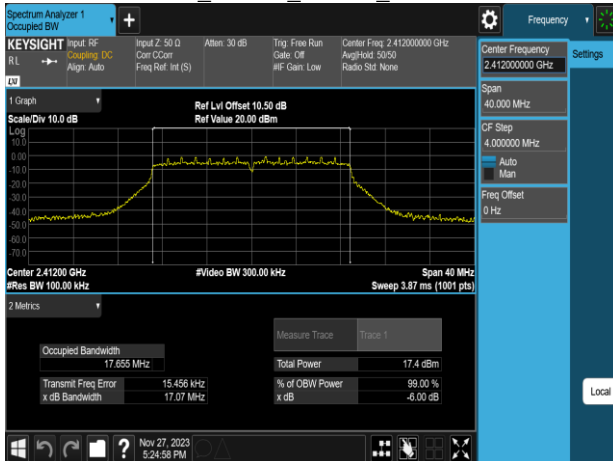
802.11b\_20MHz\_Chain0\_2462MHz



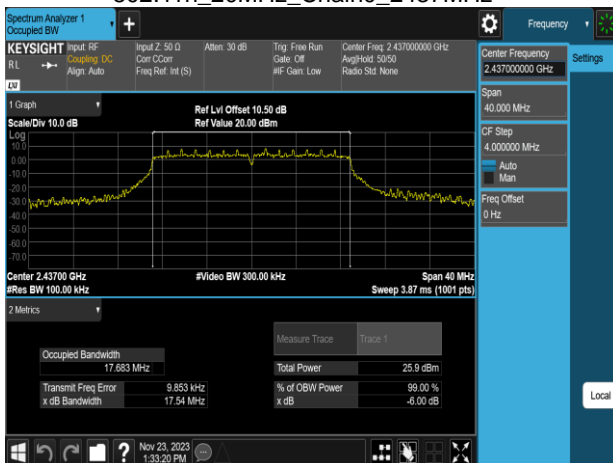
802.11g\_20MHz\_Chain0\_2462MHz



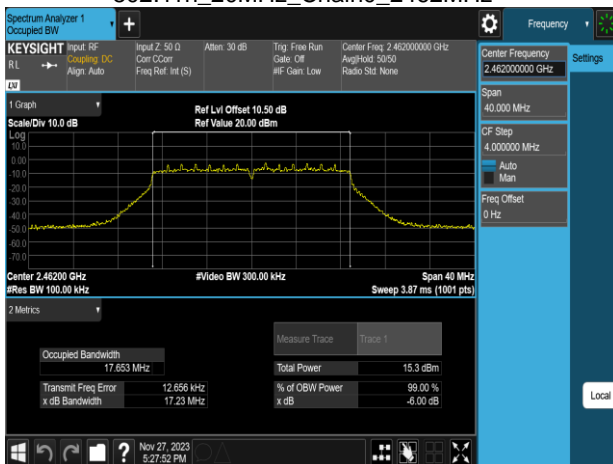
802.11n\_20MHz\_Chain0\_2412MHz



802.11n\_20MHz\_Chain0\_2437MHz



802.11n\_20MHz\_Chain0\_2462MHz

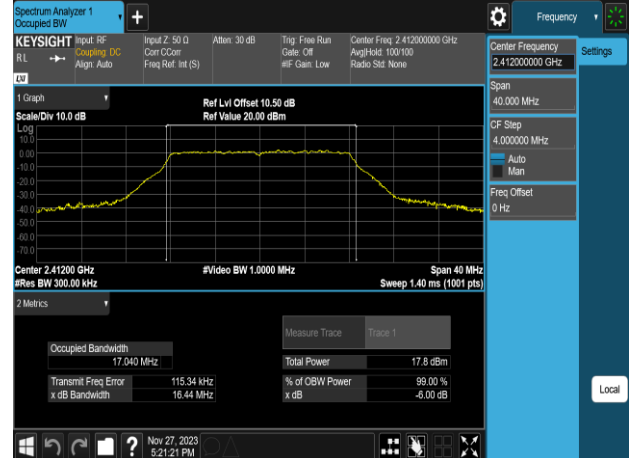


## Test Data(BANDWIDTH 99%)

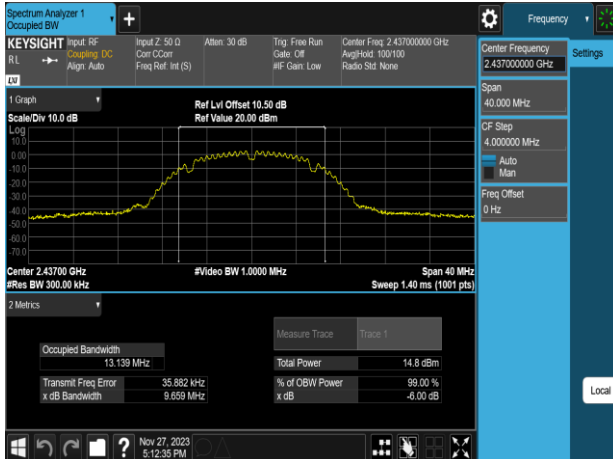
802.11b\_20MHz\_Chain0\_2412MHz



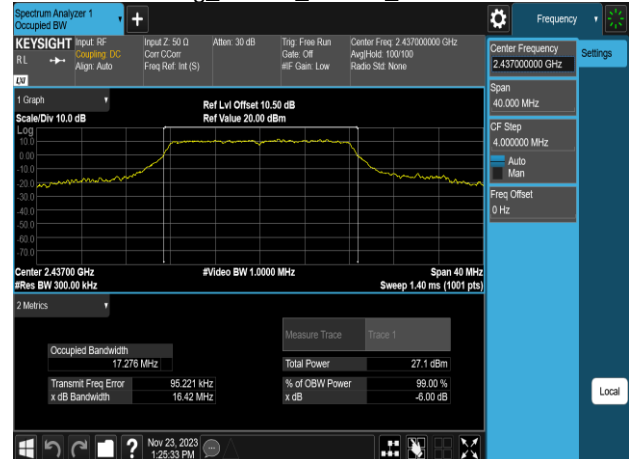
802.11g\_20MHz\_Chain0\_2412MHz



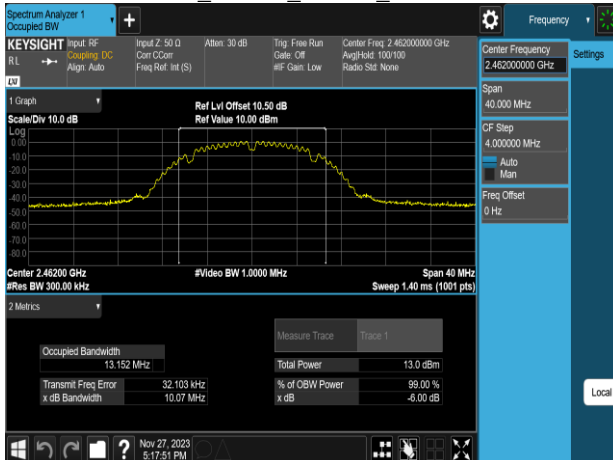
802.11b\_20MHz\_Chain0\_2437MHz



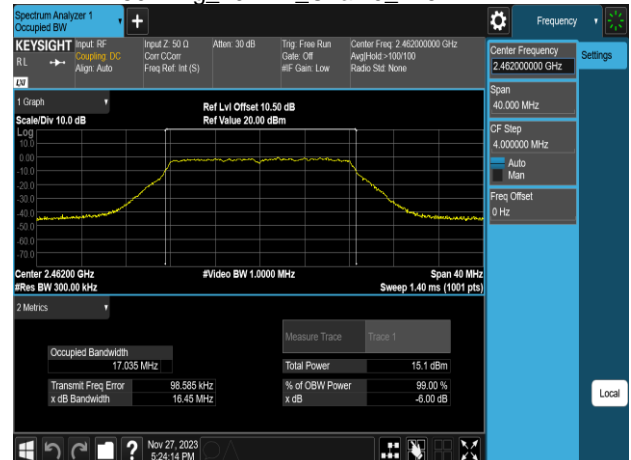
802.11g\_20MHz\_Chain0\_2437MHz



802.11b\_20MHz\_Chain0\_2462MHz

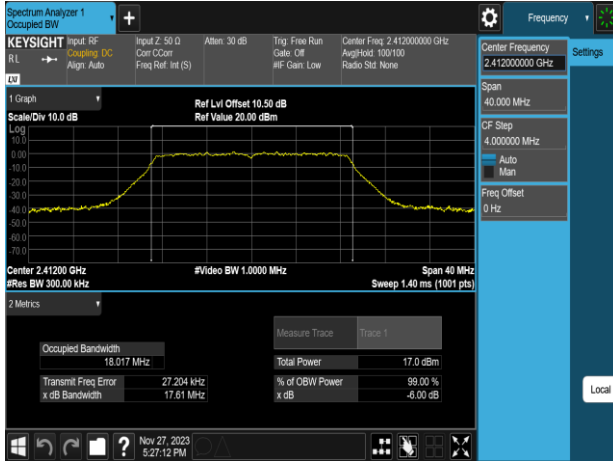


802.11g\_20MHz\_Chain0\_2462MHz

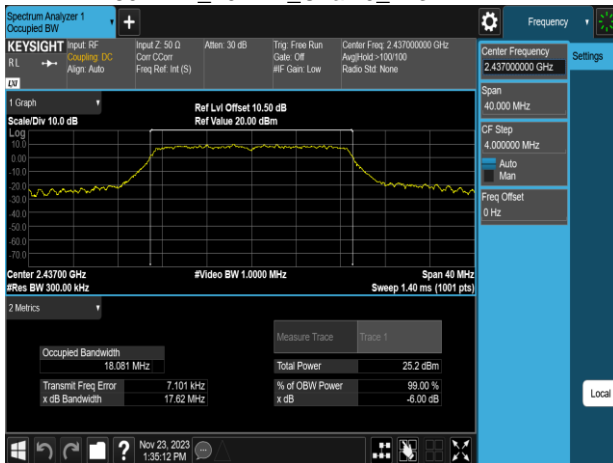




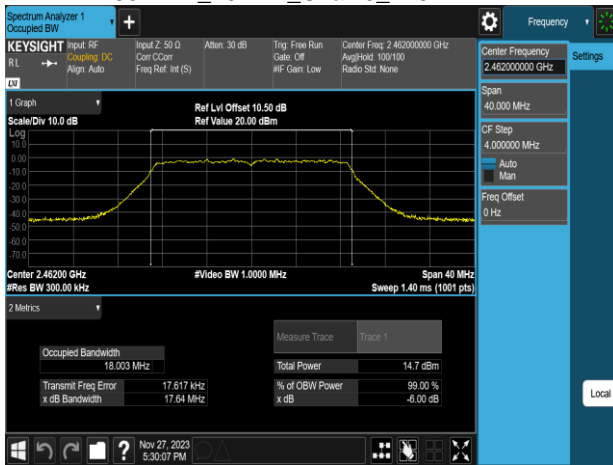
802.11n\_20MHz\_Chain0\_2412MHz



802.11n\_20MHz\_Chain0\_2437MHz



802.11n\_20MHz\_Chain0\_2462MHz



## 5.3 OUTPUT POWER MEASUREMENT

### 5.3.1 Test Limit

According to §15.247(b),

#### Peak output power :

For systems using digital modulation in the 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt(30 dBm) and the e.i.r.p. shall not exceed 4Watt(36 dBm), base on the use of antennas with directional gain not exceed 6 dBi If transmitting antennas of directional gain greater than 6dBi are used the peak output power the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 30dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi : [Limit = 30 – (DG – 6)] <input type="checkbox"/> Point-to-point operation :
-------	---

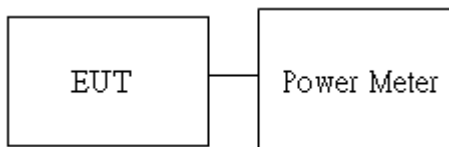
Average output power : For reporting purposes only.

### 5.3.2 Test Procedure

Test method Refer as KDB 558074 D01.

1. The EUT RF output connected to the power meter by RF cable.
2. Setting maximum power transmit of EUT.
3. The path loss was compensated to the results for each measurement.
4. Measure and record the result of Peak output power and Average output power. in the test report.

### 5.3.3 Test Setup



### 5.3.4 Test Result

Temperature: 22.6°C

Test date:

November 23, 2023 ~  
February 6, 2024

Humidity: 53% RH

Tested by:

Allen Shen

#### Peak & Average output power :

802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	0	23.34	30.00	PASS
6	2437	1	14	19.38	30.00	PASS
10	2457	1	6	23.15	30.00	PASS
11	2462	1	25	16.95	30.00	PASS
802.11b Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	1	0	20.48	30.00	PASS
6	2437	1	14	16.71	30.00	PASS
10	2457	1	6	20.36	30.00	PASS
11	2462	1	25	14.26	30.00	PASS

802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	14	26.51	30.00	PASS
2	2417	6	3	27.51	30.00	PASS
3	2422	6	0	27.60	30.00	PASS
6	2437	6	0	27.65	30.00	PASS
9	2452	6	12	<b>27.70</b>	30.00	PASS
10	2457	6	12	27.65	30.00	PASS
11	2462	6	28	24.25	30.00	PASS
802.11g Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	6	14	16.72	30.00	PASS
2	2417	6	3	19.28	30.00	PASS
3	2422	6	0	20.14	30.00	PASS
6	2437	6	0	<b>20.45</b>	30.00	PASS
9	2452	6	12	17.62	30.00	PASS
10	2457	6	12	17.63	30.00	PASS
11	2462	6	28	13.51	30.00	PASS

802.11n_HT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	9	25.47	30.00	PASS
6	2437	MCS0	0	26.81	30.00	PASS
9	2452	MCS0	4	<b>27.09</b>	30.00	PASS
10	2457	MCS0	4	26.96	30.00	PASS
11	2462	MCS0	22	22.75	30.00	PASS
802.11n_HT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power set	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	9	16.04	30.00	PASS
6	2437	MCS0	0	<b>18.41</b>	30.00	PASS
9	2452	MCS0	4	17.46	30.00	PASS
10	2457	MCS0	4	17.49	30.00	PASS
11	2462	MCS0	22	12.97	30.00	PASS

## 5.4 POWER SPECTRAL DENSITY

### 5.4.1 Test Limit

According to §15.247(e),

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

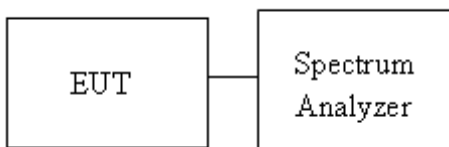
Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 8dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi : [ Limit = 8 – (DG – 6) ] <input type="checkbox"/> Point-to-point operation :
-------	---

### 5.4.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss and Duty Factor were compensated to the results for each measurement by SA.
5. Mark the maximum level.
6. Measure and record the result of power spectral density. in the test report.

### 5.4.3 Test Setup



Report No.: TMWK2311004152KR

#### 5.4.4 Test Result

Temperature: 22.6°C

Test date:

November 23, 2023 ~  
February 6, 2024

Humidity: 53% RH

Tested by:

Allen Shen

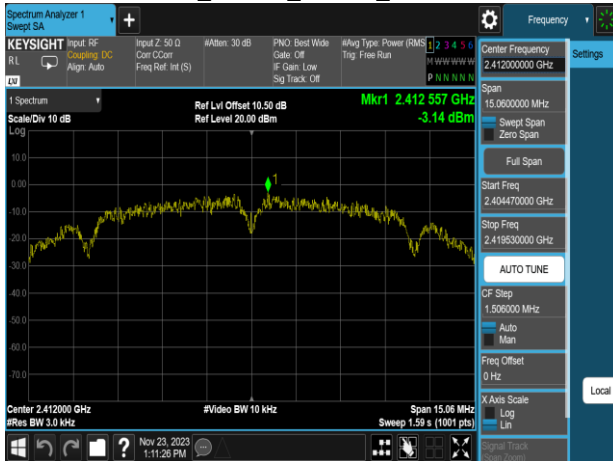
POWER DENSITY 802.11b				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-3.14	-3.14	8.00	PASS
2437	-12.70	-12.70	8.00	PASS
2462	-15.39	-15.39	8.00	PASS

POWER DENSITY 802.11g				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-14.55	-14.55	8.00	PASS
2437	-5.36	-5.36	8.00	PASS
2452	-11.36	-11.36	8.00	PASS
2462	-17.64	-17.64	8.00	PASS

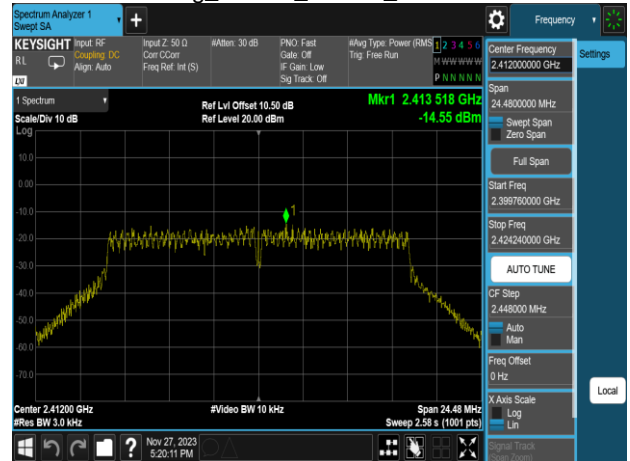
POWER DENSITY 802.11n HT20				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-15.00	-15.00	8.00	PASS
2437	-6.25	-6.25	8.00	PASS
2452	-12.79	-12.79	8.00	PASS
2462	-17.26	-17.26	8.00	PASS

## Test Data

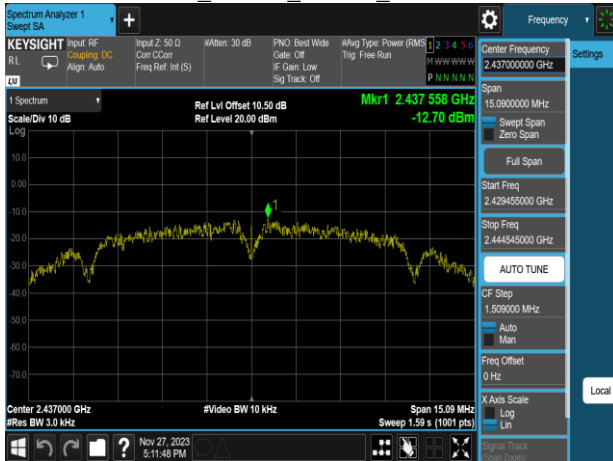
802.11b\_20MHz\_Chain0\_2412MHz



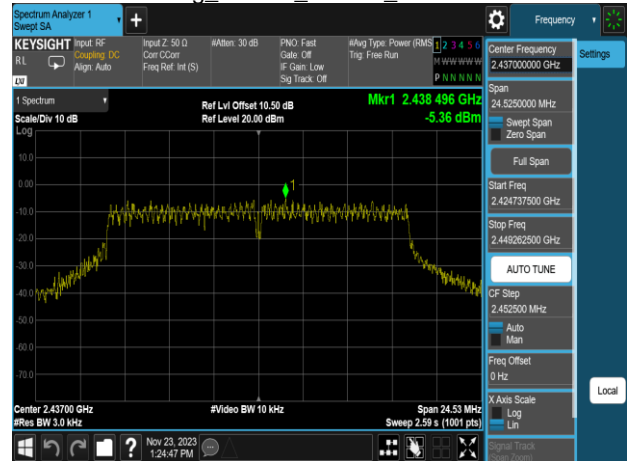
802.11g\_20MHz\_Chain0\_2412MHz



802.11b\_20MHz\_Chain0\_2437MHz



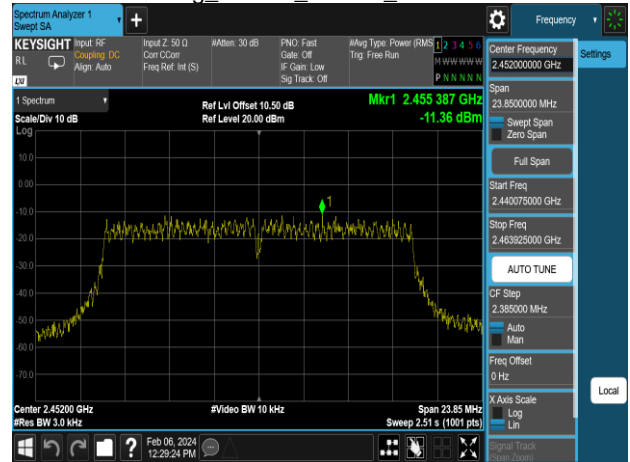
802.11g\_20MHz\_Chain0\_2437MHz



802.11b\_20MHz\_Chain0\_2462MHz

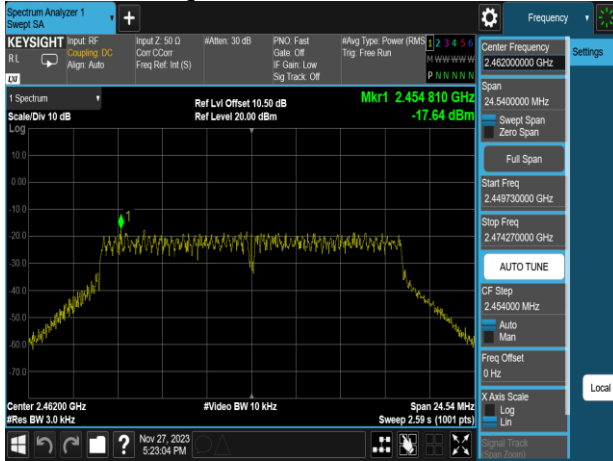


802.11g\_20MHz\_Chain0\_2462MHz

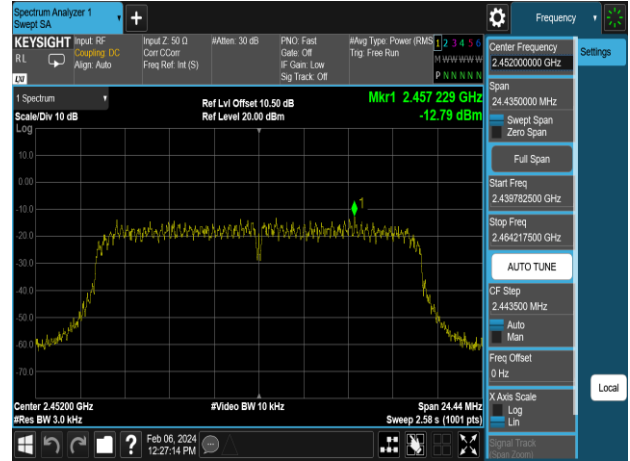




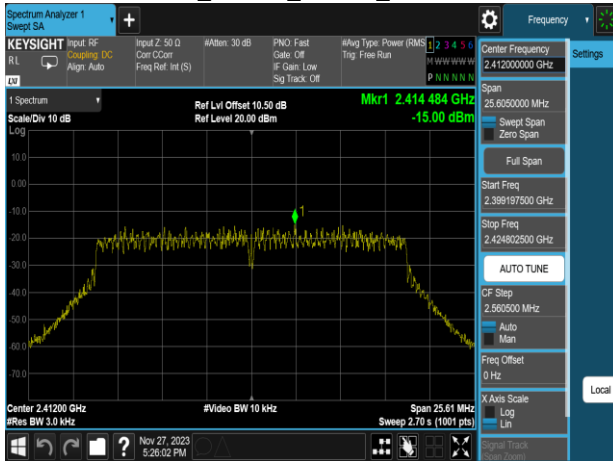
802.11g\_20MHz\_Chain0\_2462MHz



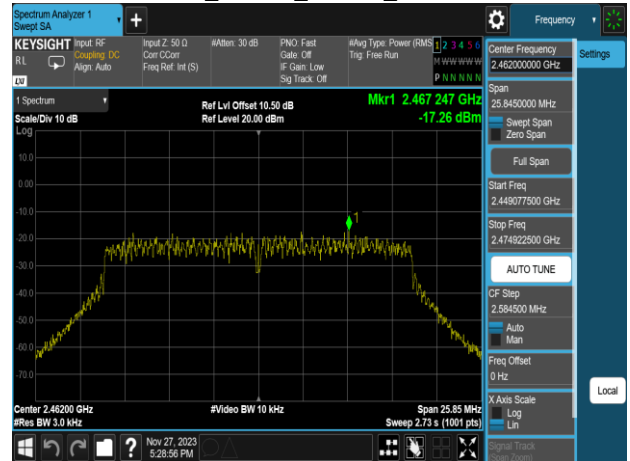
802.11n\_20MHz\_Chain0\_2452MHz



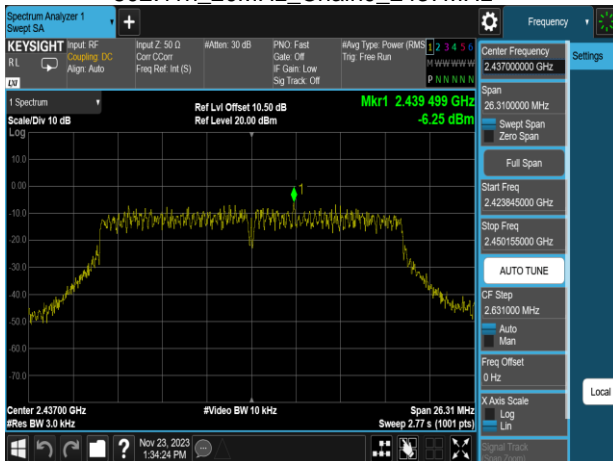
802.11n\_20MHz\_Chain0\_2412MHz



802.11n\_20MHz\_Chain0\_2462MHz



802.11n\_20MHz\_Chain0\_2437MHz



## 5.5 CONDUCTED BANDEGE AND SPURIOUS EMISSION

### 5.5.1 Test Limit

According to §15.247(d),

In any 100 kHz bandwidth outside the authorized frequency band,

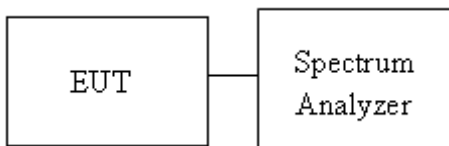
Non-restricted bands shall be attenuated at least 20 dB/30 dB relative to the maximum PSD level in 100 kHz by RF conducted or a radiated measurement which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a).

### 5.5.2 Test Procedure

Test method Refer as KDB 662911 D01, KDB 558074 D01.

1. EUT RF output port connected to the SA by RF cable, and the path loss was compensated to result.
2. SA setting, RBW=100kHz, VBW=300kHz, Detector=Peak, Trace mode = max hold, SWT = Auto.
3. In any 100 kHz bandwidth outside the authorized frequency band, shall be attenuated at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz when conducted power procedure is used. f the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB.

### 5.5.3 Test Setup



### 5.5.4 Test Result

**Temperature:** 22.6°C

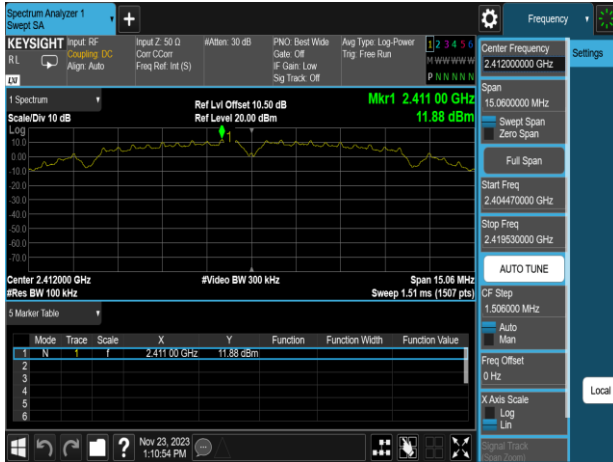
**Test date:** November 23, 2023

**Humidity:** 53% RH

**Tested by:** Allen Shen

## Test Data Reference

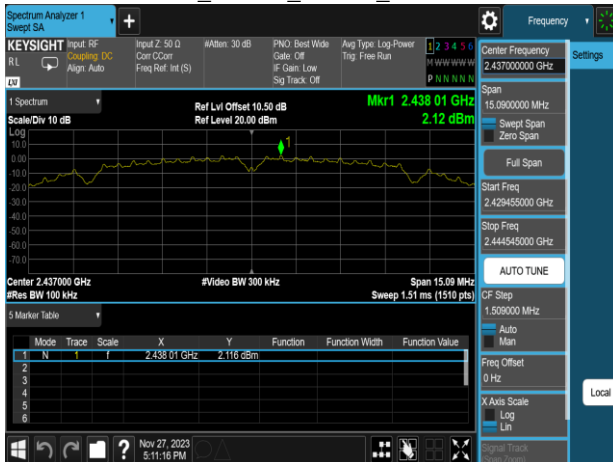
802.11b\_20MHz\_Chain0\_2412MHz



802.11g\_20MHz\_Chain0\_2412MHz



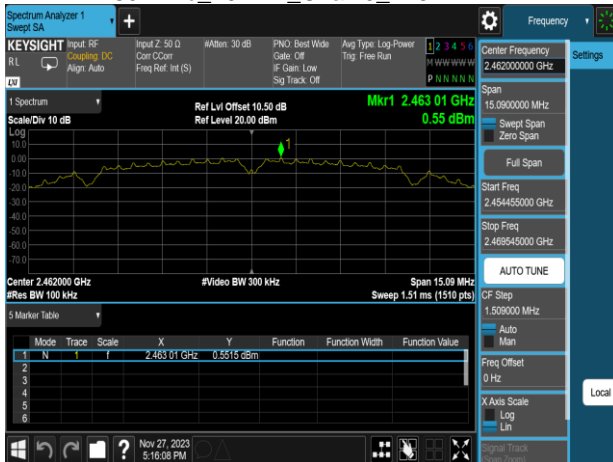
802.11b\_20MHz\_Chain0\_2437MHz



802.11g\_20MHz\_Chain0\_2437MHz



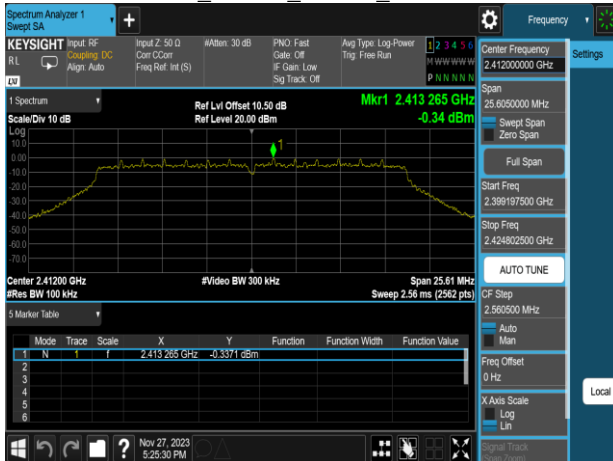
802.11b\_20MHz\_Chain0\_2462MHz



802.11g\_20MHz\_Chain0\_2462MHz



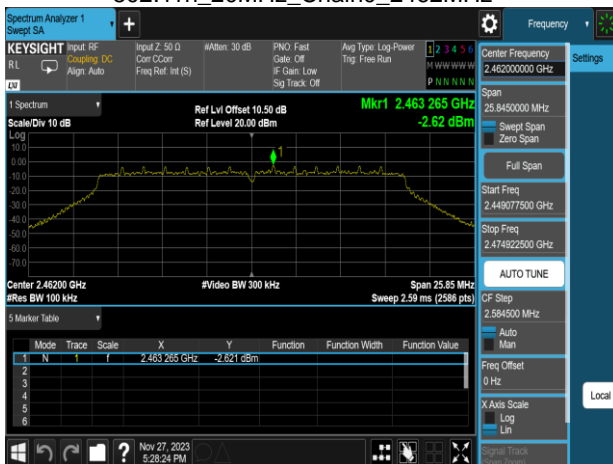
802.11n 20MHz\_Chain0\_2412MHz



802.11n 20MHz\_Chain0\_2437MHz

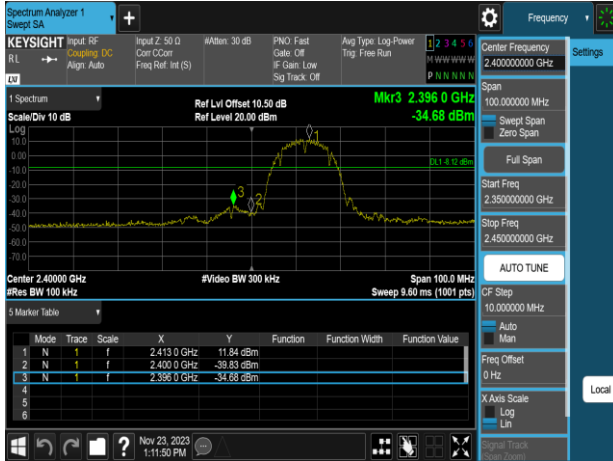


802.11n 20MHz\_Chain0\_2462MHz

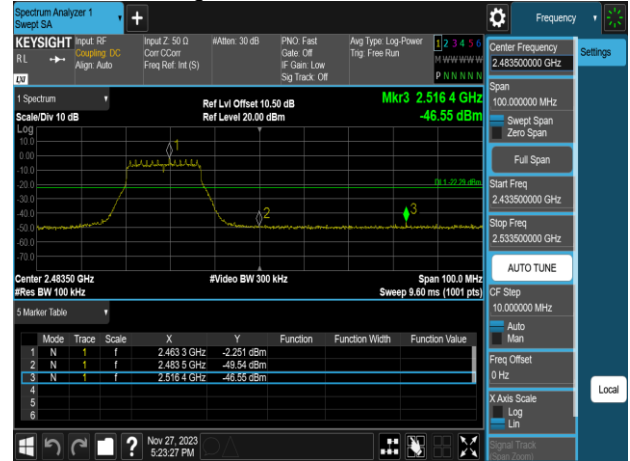


## Band Edge

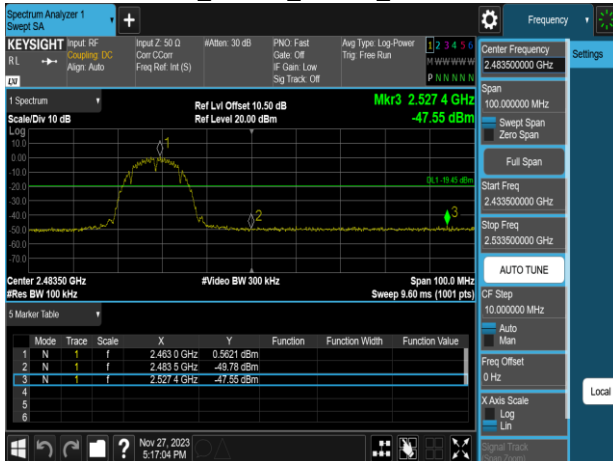
802.11b\_20MHz\_Chain0\_2412MHz



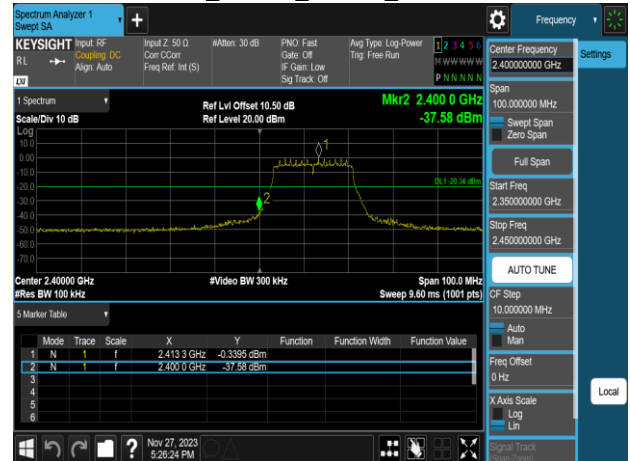
802.11g\_20MHz\_Chain0\_2462MHz



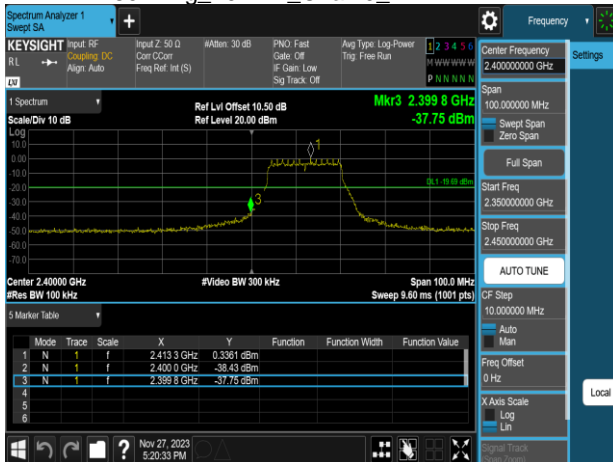
802.11b\_20MHz\_Chain0\_2462MHz



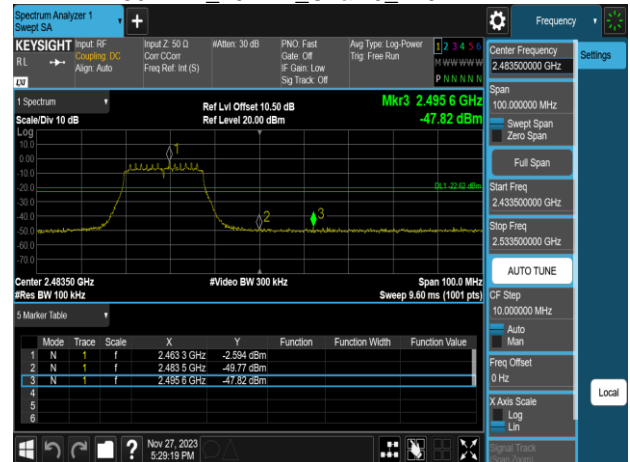
802.11n\_20MHz\_Chain0\_2412MHz



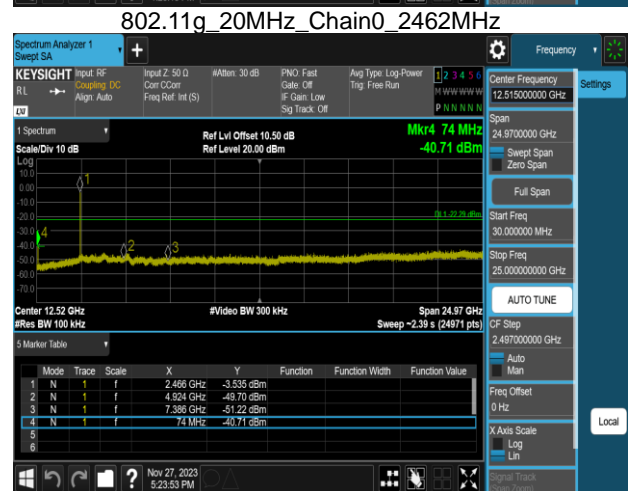
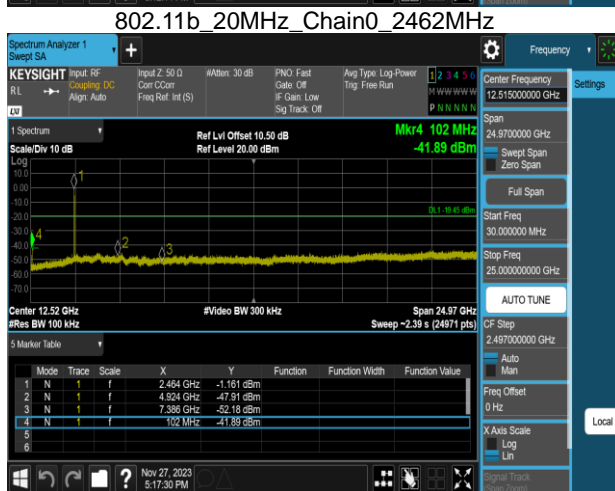
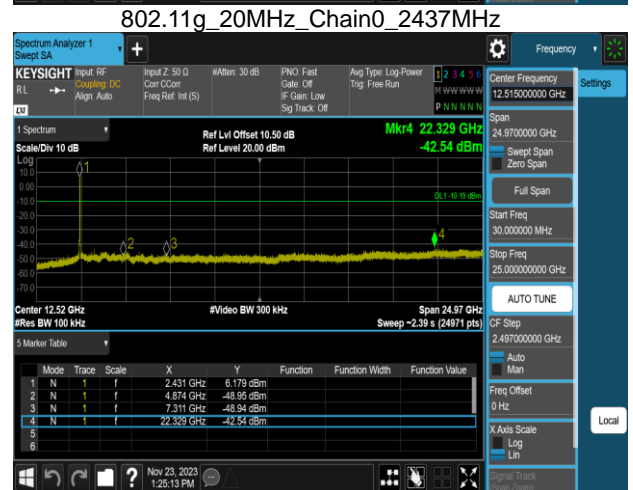
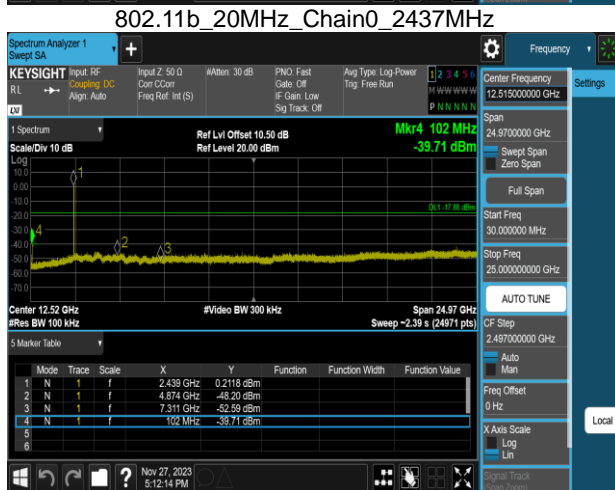
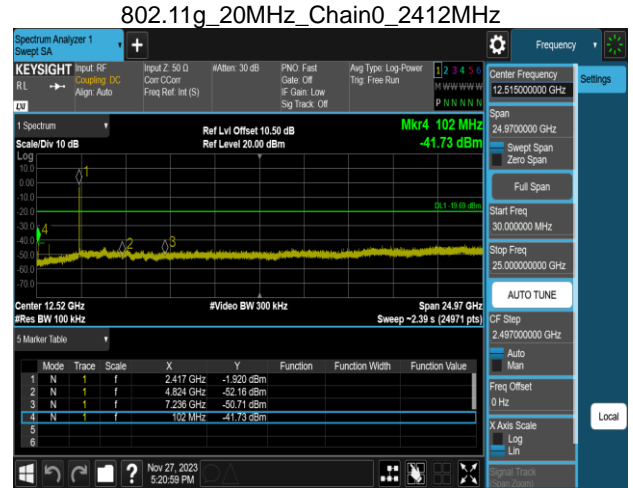
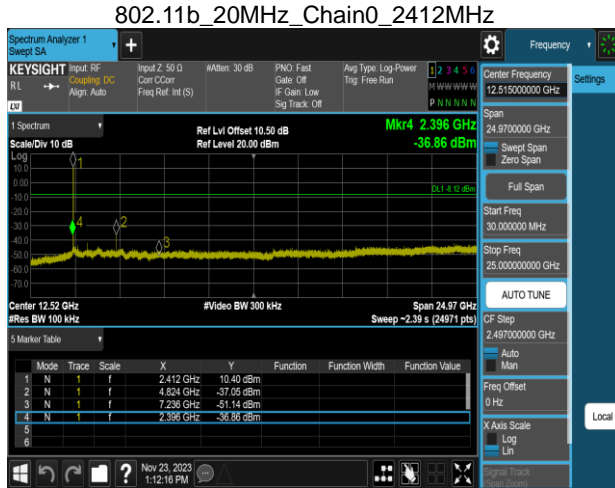
802.11g\_20MHz\_Chain0\_2412MHz



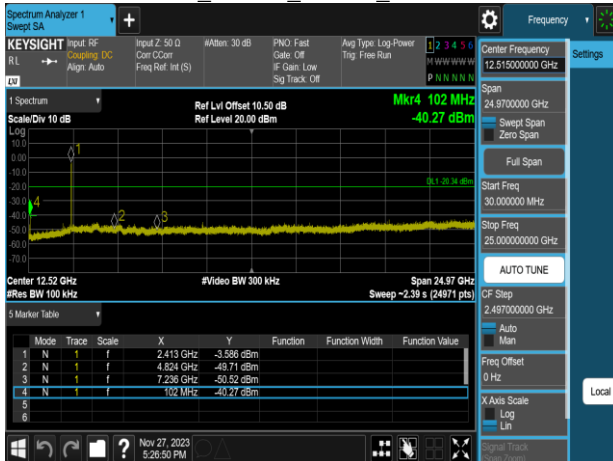
802.11n\_20MHz\_Chain0\_2462MHz



## Spurious Emission



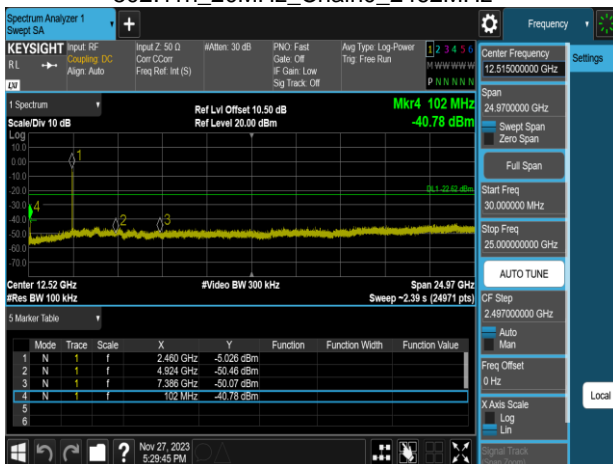
802.11n 20MHz\_Chain0\_2412MHz



802.11n 20MHz\_Chain0\_2437MHz



802.11n 20MHz\_Chain0\_2462MHz



## 5.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

### 5.6.1 Test Limit

FCC according to §15.247(d), §15.209 and §15.205,

In any 100 kHz bandwidth outside the authorized frequency band, all harmonic and spurious must be least 20 dB below the highest emission level with the authorized frequency band. Radiation emission which fall in the restricted bands must also follow the FCC section 15.209 as below limit in table.

#### Below 30 MHz

Frequency	Field Strength (microvolts/m)	Magnetic H-Field (microamperes/m)	Measurement Distance (metres)
9-490 kHz	2,400/F (F in kHz)	2,400/F (F in kHz)	300
490-1,705 kHz	24,000/F (F in kHz)	24,000/F (F in kHz)	30
1.705-30 MHz	30	N/A	30

#### Above 30 MHz

Frequency	Field Strength (microvolts/m)	Measurement Distance (metres)
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**Remark:**

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open area test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.



## 5.6.2 Test Procedure

Test method Refer as ANSI C63.10:2013.

1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.

2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And EUT is set 3m away from the receiving antenna, which is scanned from 1m to 4m above the ground plane to find out the highest emissions. Measurement are made polarized in both the vertical and the horizontal positions with antenna.

3. Span shall wide enough to full capture the emission measured. The SA from 9kHz to 26.5GHz set to the low, Mid and High channels with the EUT transmit.

Note: No emission found between lowest internal used/generated frequency to 30MHz (9KHz~30MHz)

Remark:

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

4. The SA setting following :

(1) Below 1G : RBW = 100kHz, VBW  $\geq$  3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G :

(2.1) For Peak measurement : RBW = 1MHz, VBW  $\geq$  3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2.2) For Average measurement : RBW = 1MHz, VBW

·If Duty Cycle  $\geq$  98%, VBW=10Hz.

·If Duty Cycle < 98%, VBW=1/T.

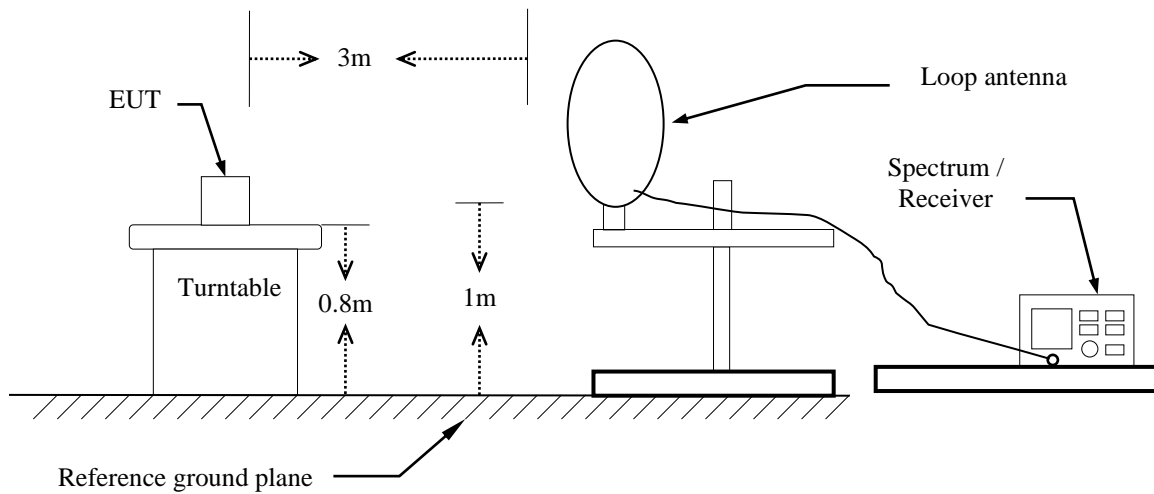
5. Data result :

Actual FS=Spectrum Reading Level + Factor

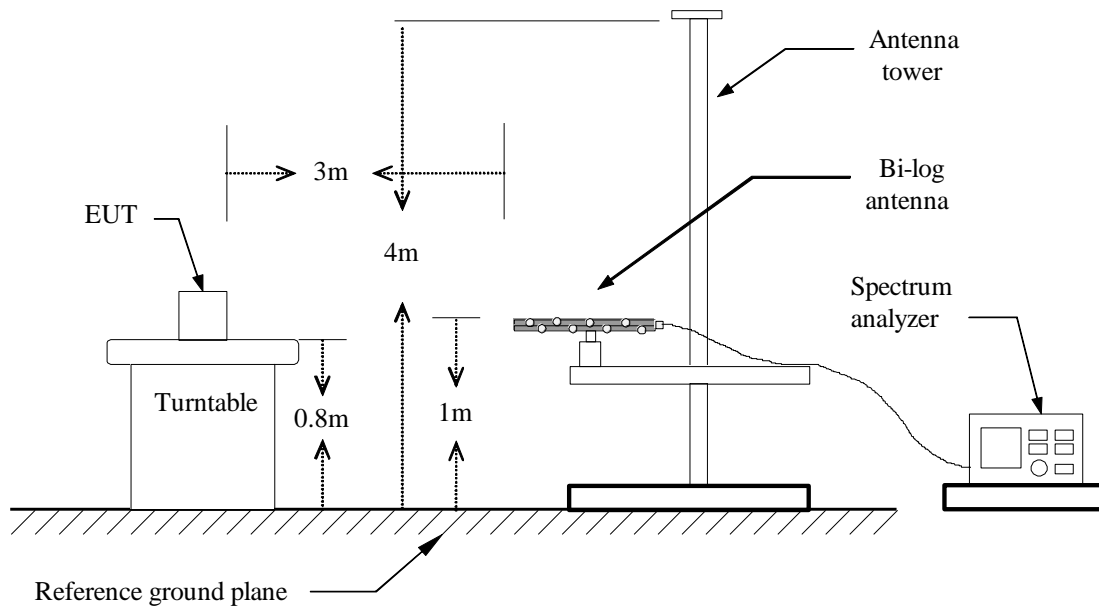
Margin=Actual FS- Limit

## 5.6.3 Test Setup

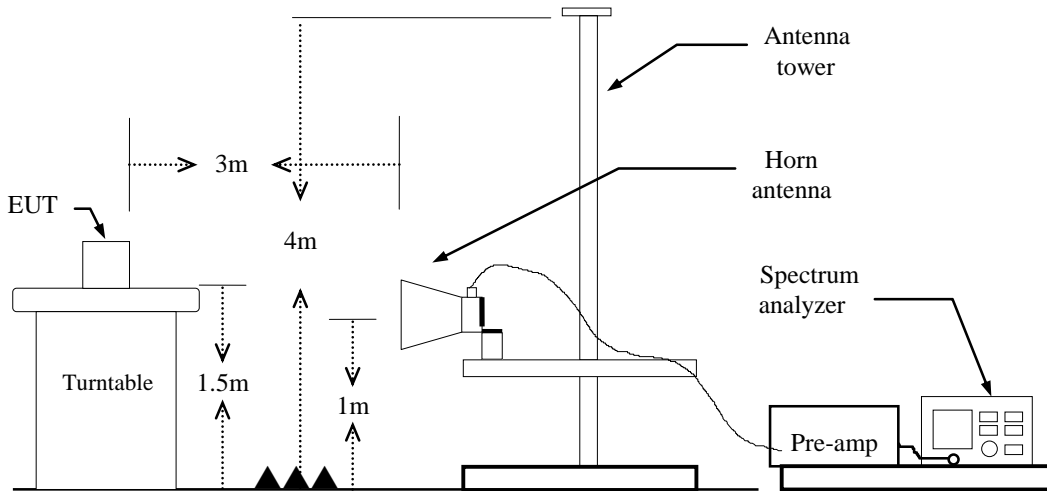
### 9kHz ~ 30MHz



### 30MHz ~ 1GHz



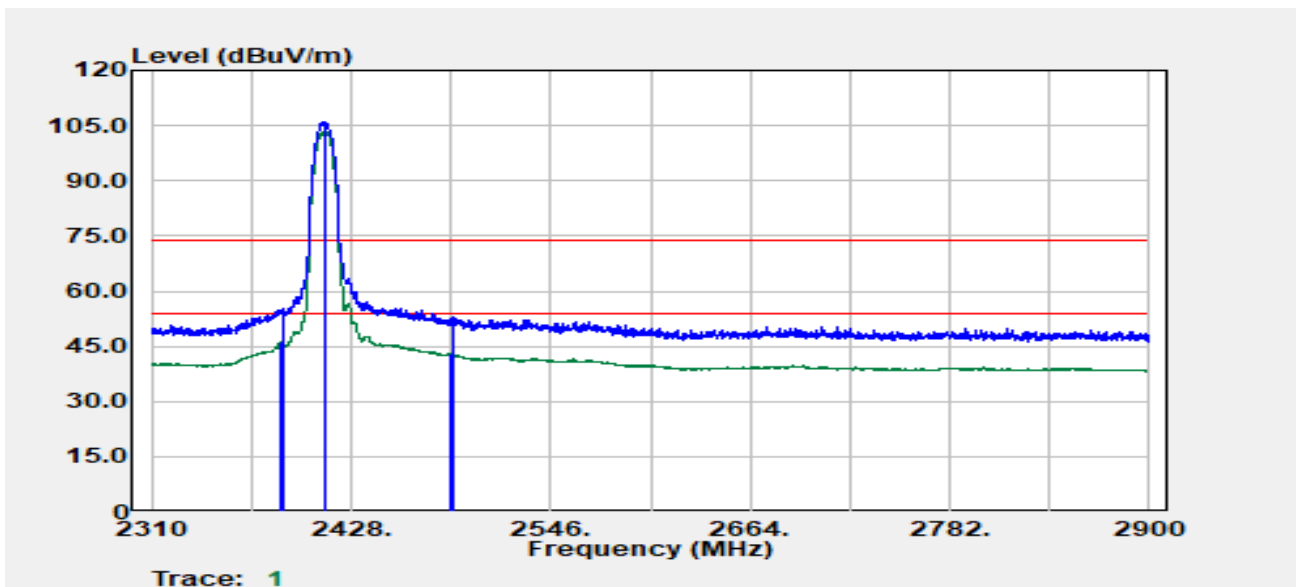
## Above 1 GHz



## 5.6.4 Test Result

### Band Edge Test Data

Project No	:TM-2311000089P	Test Date	:2023-11-24
Operation Band	:802.11b	Temp./Humi.	:24.5/57
Frequency	:2412 MHz	Antenna Pol.	:Vertical
Operation Mode	:Bandedge	Engineer	:Tony.Chao
EUT Pol	:H	Test Chamber	: 966A
Setting	:0		



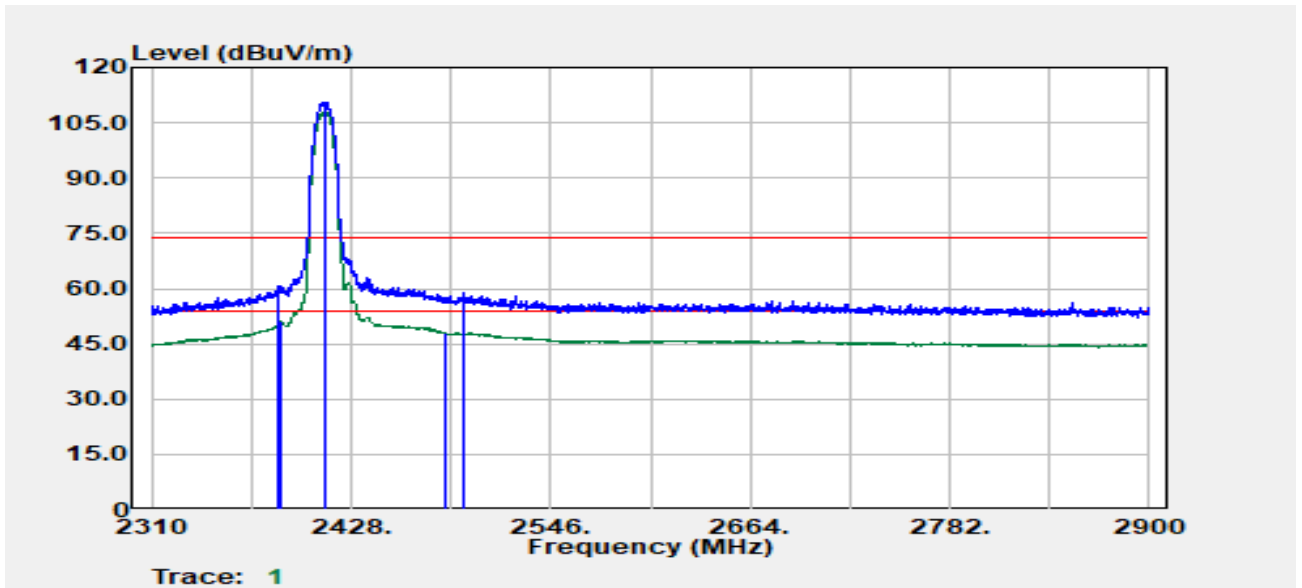
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2386.28	Average	40.97	5.17	46.14	54.00	-7.86
2387.28	Peak	50.26	5.19	55.45	74.00	-18.55
2412.00	Peak	100.79	5.08	105.87	--	--
2412.00	Average	98.20	5.08	103.27	--	--
2486.33	Average	37.47	5.51	42.98	54.00	-11.02
2487.58	Peak	47.32	5.52	52.84	74.00	-21.16

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Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2412 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :0

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



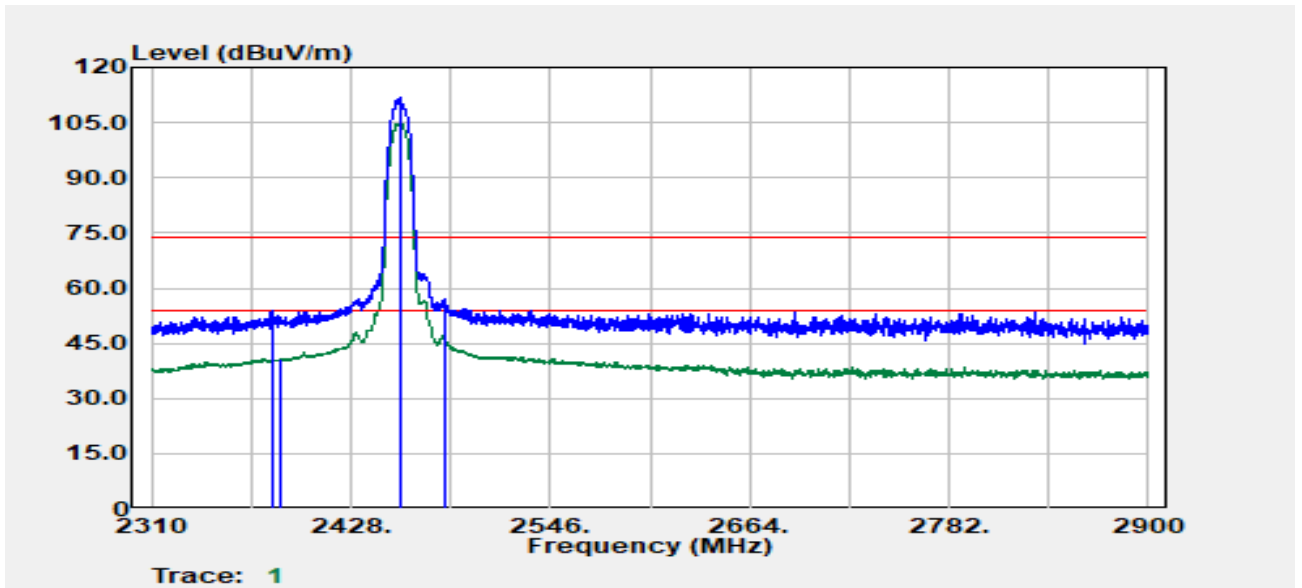
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2385.28	Peak	55.49	5.16	60.66	74.00	-13.34
2386.53	Average	45.94	5.18	51.12	54.00	-2.88
2412.00	Peak	105.41	5.08	110.48	--	--
2412.00	Average	102.82	5.08	107.90	--	--
2483.82	Average	42.36	5.51	47.88	54.00	-6.12
2494.08	Peak	53.37	5.52	58.90	74.00	-15.10

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Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2457 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :6

Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



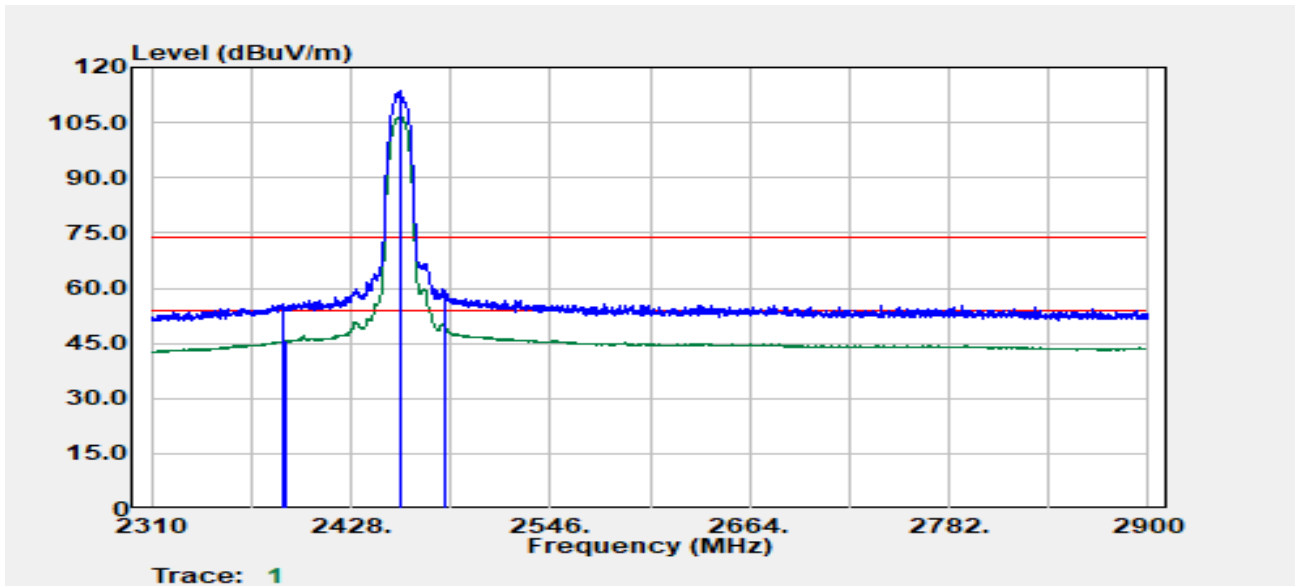
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
2381.78	Peak	48.67	5.34	54.01	74.00	-19.99
2386.28	Average	35.42	5.43	40.85	54.00	-13.15
2457.00	Peak	106.19	5.53	111.72	--	--
2457.00	Average	99.19	5.53	104.72	--	--
2483.57	Peak	51.09	5.94	57.03	74.00	-16.97
2483.57	Average	40.75	5.94	46.69	54.00	-7.31

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2457 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :6

Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



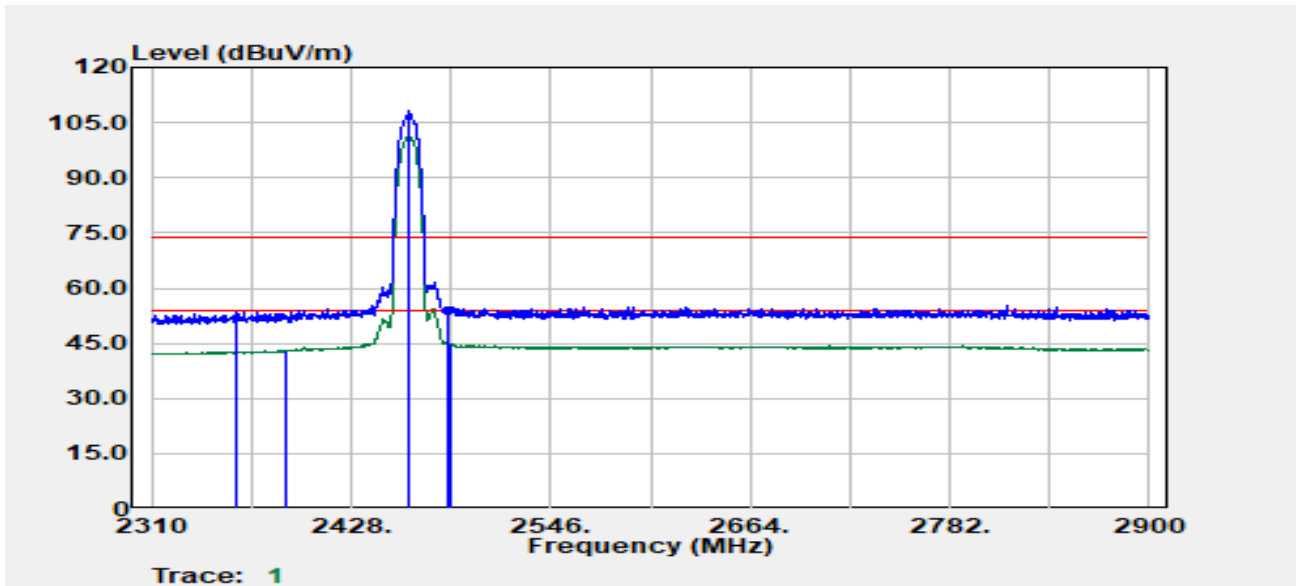
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2387.28	Peak	50.04	5.45	55.49	74.00	-18.51
2389.53	Average	40.02	5.50	45.52	54.00	-8.48
2457.00	Peak	107.99	5.53	113.52	--	--
2457.00	Average	100.94	5.53	106.47	--	--
2483.57	Peak	53.24	5.94	59.18	74.00	-14.82
2483.57	Average	44.24	5.94	50.18	54.00	-3.82

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Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2462 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :25

Test Date :2024-01-30  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
2359.27	Peak	48.01	5.48	53.49	74.00	-20.51
2389.78	Average	37.69	5.51	43.20	54.00	-10.80
2462.00	Peak	102.61	5.54	108.15	--	--
2462.00	Average	95.51	5.54	101.05	--	--
2485.57	Peak	48.86	5.97	54.83	74.00	-19.17
2487.08	Average	38.85	5.99	44.84	54.00	-9.16

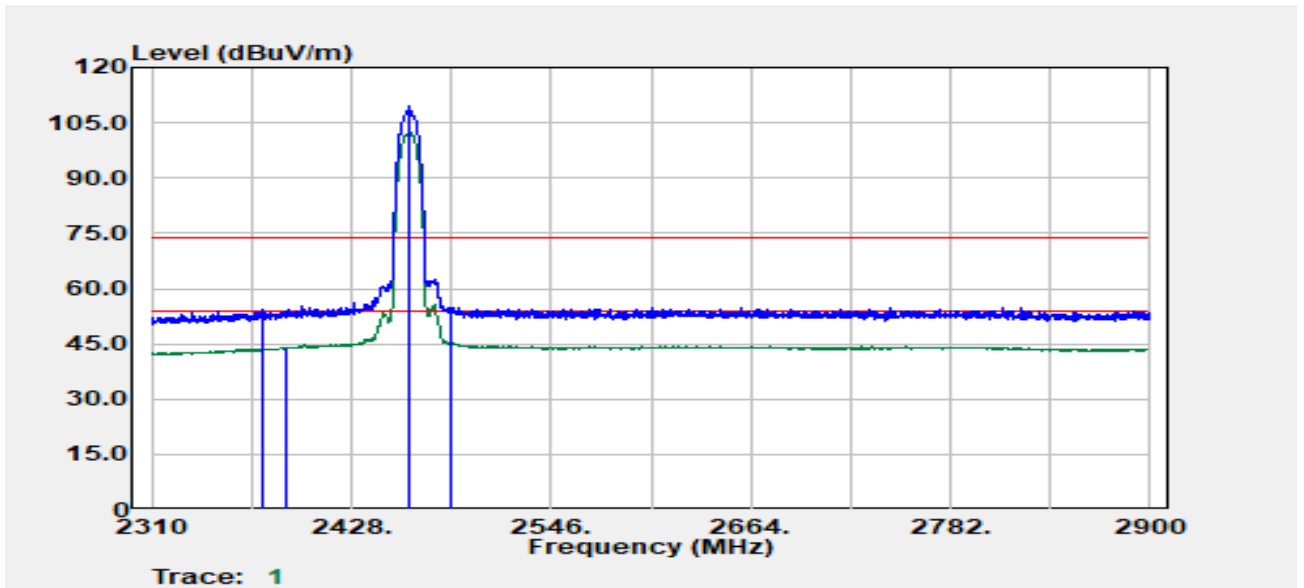


Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2462 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :25

Test Date :2024-01-30  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



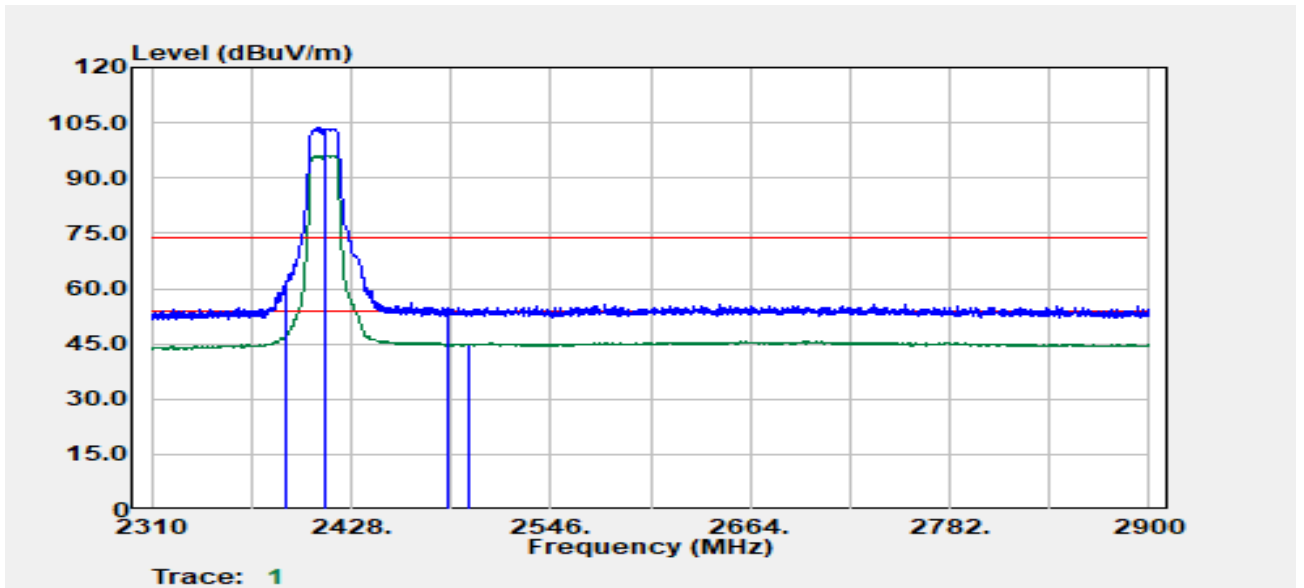
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2375.53	Peak	48.78	5.34	54.12	74.00	-19.88
2389.53	Average	38.50	5.50	44.00	54.00	-10.00
2462.00	Peak	103.88	5.54	109.43	--	--
2462.00	Average	96.75	5.54	102.29	--	--
2486.83	Peak	49.03	5.99	55.01	74.00	-18.99
2486.83	Average	39.32	5.99	45.30	54.00	-8.70

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2412 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :14

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



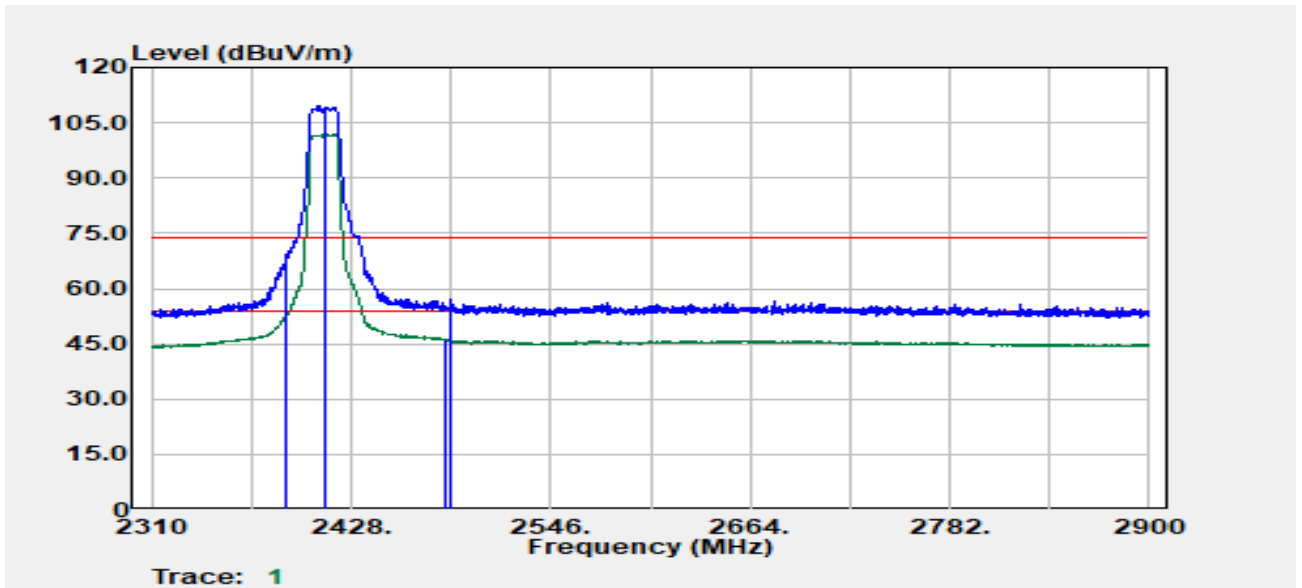
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
2389.78	Average	42.41	5.21	47.62	54.00	-6.38
2390.00	Peak	56.99	5.21	62.20	74.00	-11.80
2412.00	Peak	98.79	5.08	103.87	--	--
2412.00	Average	91.03	5.08	96.11	--	--
2485.82	Peak	49.22	5.51	54.73	74.00	-19.27
2498.33	Average	39.52	5.53	45.04	54.00	-8.96

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2412 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :14

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



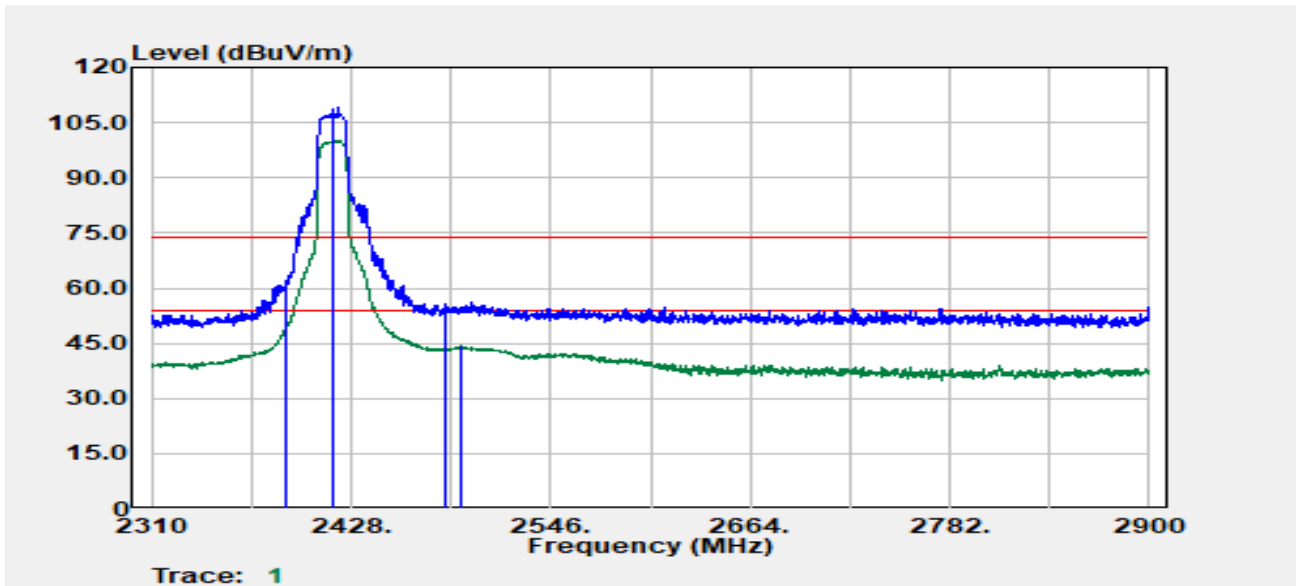
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2389.78	Peak	63.86	5.21	69.07	74.00	-4.93
2390.00	Average	47.83	5.21	53.05	54.00	-0.95
2412.00	Peak	104.41	5.08	109.49	--	--
2412.00	Average	96.72	5.08	101.79	--	--
2484.32	Average	40.86	5.51	46.37	54.00	-7.63
2486.58	Peak	51.47	5.52	56.98	74.00	-17.02

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Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2417 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :3

Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



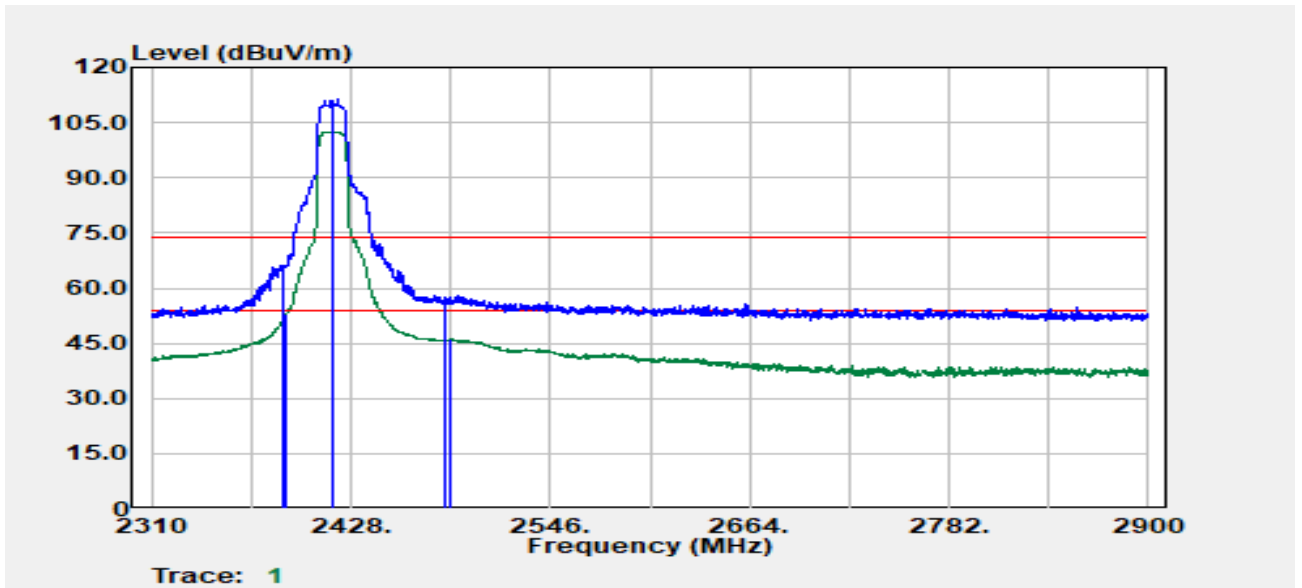
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2390.03	Peak	56.56	5.51	62.07	74.00	-11.93
2390.03	Average	44.16	5.51	49.67	54.00	-4.33
2417.00	Peak	103.41	5.54	108.95	--	--
2417.00	Average	94.41	5.54	99.95	--	--
2483.50	Peak	50.19	5.94	56.13	74.00	-17.87
2492.33	Average	38.16	6.04	44.20	54.00	-9.80

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2417 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :3

Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



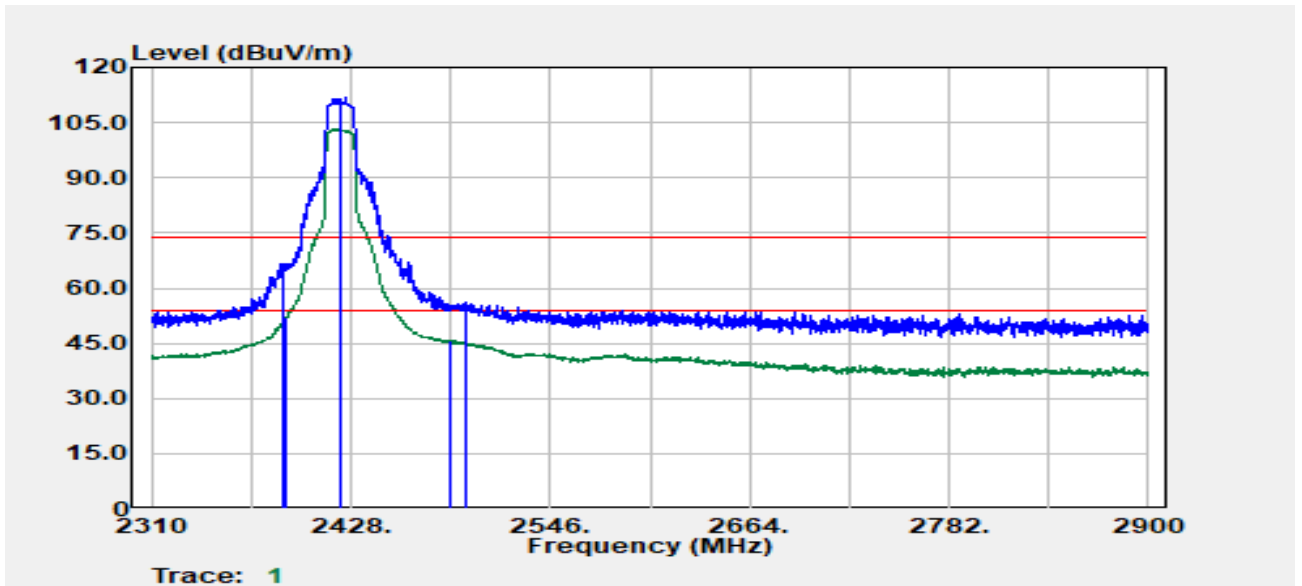
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
2388.03	Peak	60.86	5.47	66.33	74.00	-7.67
2390.03	Average	47.36	5.51	52.87	54.00	-1.13
2417.00	Peak	106.08	5.54	111.62	--	--
2417.00	Average	96.99	5.54	102.53	--	--
2483.50	Peak	51.84	5.94	57.78	74.00	-16.22
2487.08	Average	40.05	5.99	46.04	54.00	-7.96

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Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2422 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :0

Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



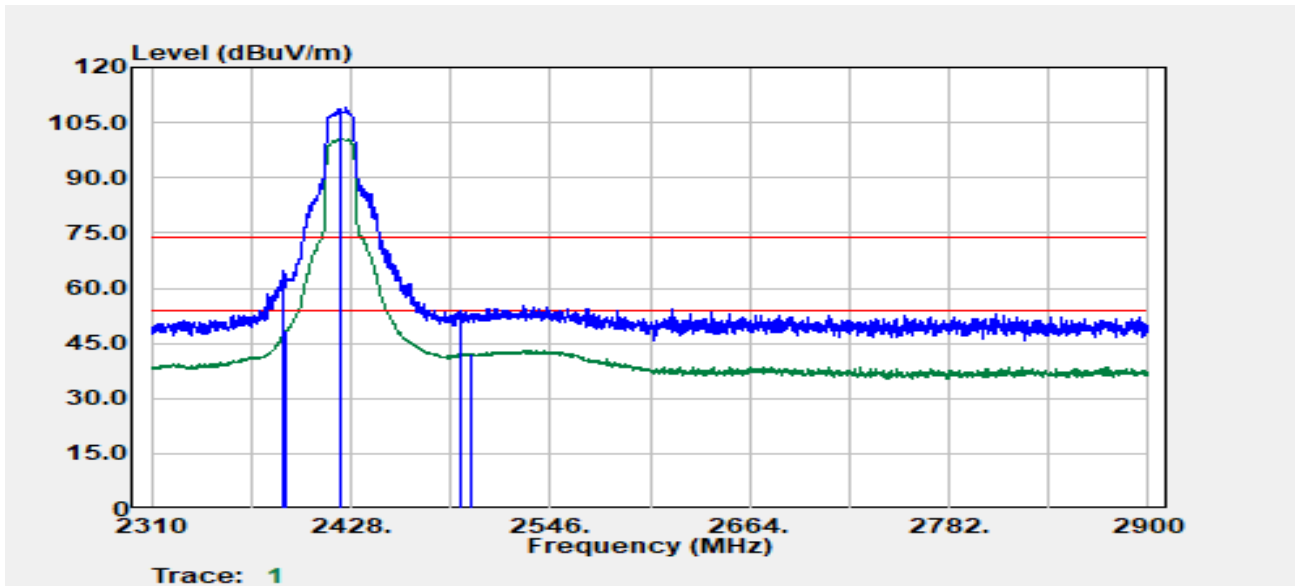
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBUV	Factor dB	Actual FS dBUV/m	Limit dBUV/m	Margin dB
2388.53	Peak	61.15	5.48	66.63	74.00	-7.37
2390.00	Average	46.73	5.51	52.24	54.00	-1.76
2422.00	Peak	106.32	5.56	111.89	--	--
2422.00	Average	97.59	5.56	103.15	--	--
2486.08	Average	39.73	5.98	45.70	54.00	-8.30
2496.33	Peak	50.31	6.06	56.36	74.00	-17.64

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2422 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :0

Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



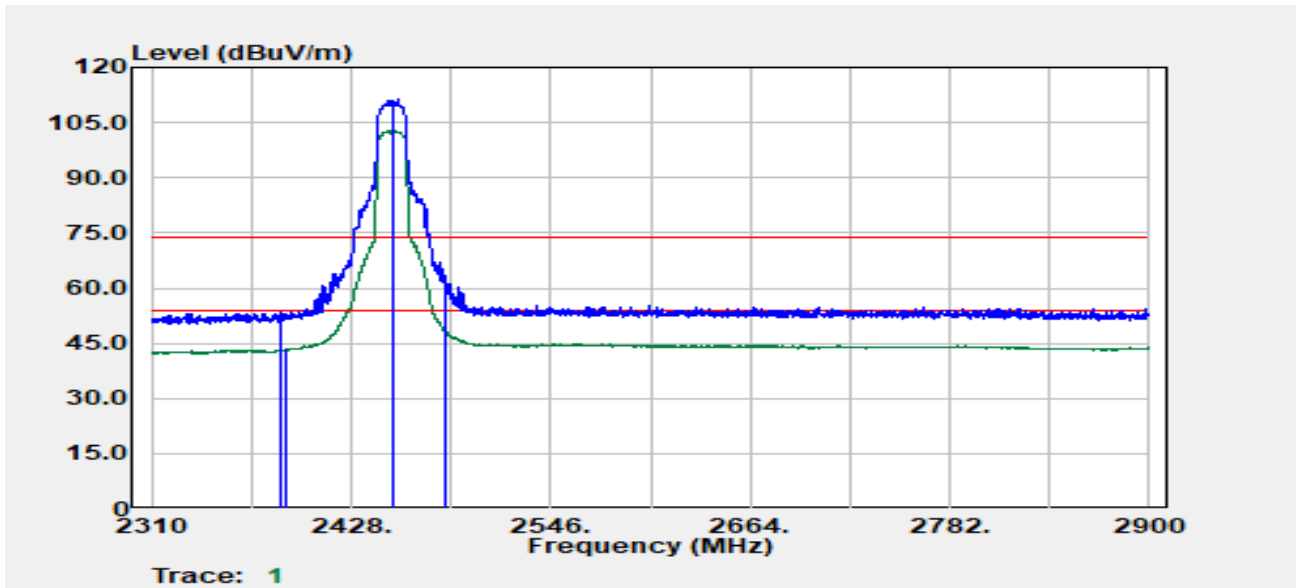
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2388.53	Peak	59.09	5.48	64.57	74.00	-9.43
2390.00	Average	43.13	5.51	48.64	54.00	-5.36
2422.00	Peak	103.37	5.56	108.93	--	--
2422.00	Average	94.93	5.56	100.49	--	--
2492.33	Peak	47.87	6.04	53.91	74.00	-20.09
2499.08	Average	36.27	6.07	42.34	54.00	-11.66

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Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2452 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :12

Test Date :2024-01-31  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBμV	Factor dB	Actual FS dBμV/m	Limit dBμV/m	Margin dB
2386.78	Peak	47.92	5.44	53.36	74.00	-20.64
2390.00	Average	37.77	5.51	43.28	54.00	-10.72
2452.00	Peak	105.93	5.56	111.49	--	--
2452.00	Average	97.18	5.56	102.74	--	--
2483.57	Average	42.62	5.94	48.56	54.00	-5.44
2484.07	Peak	57.25	5.95	63.20	74.00	-10.80

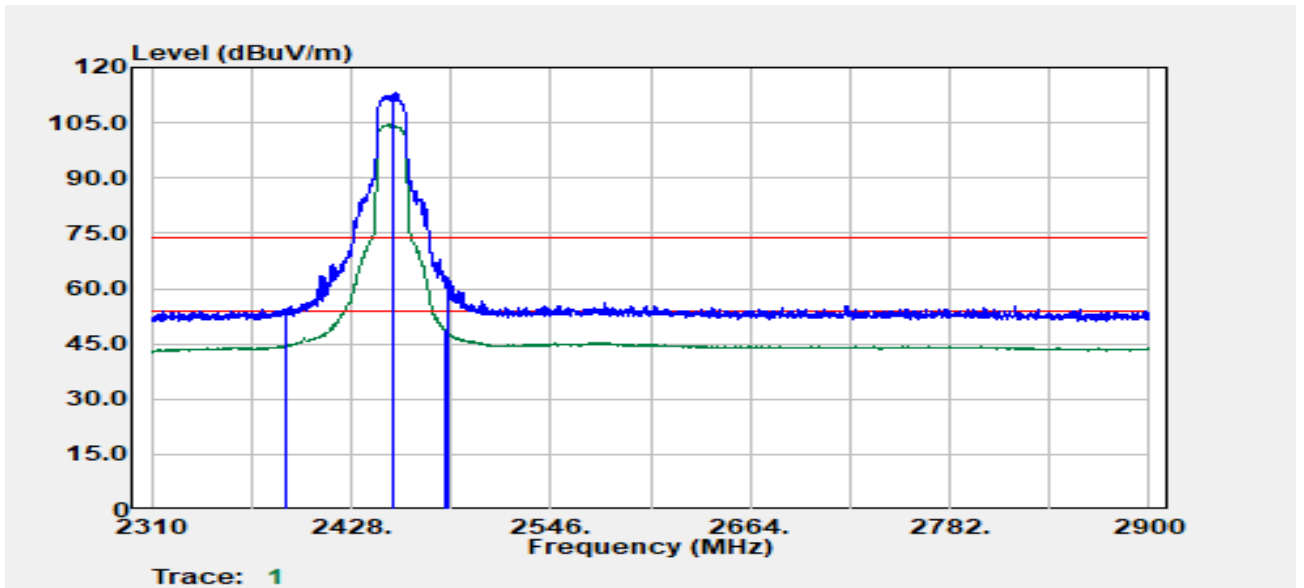


Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2452 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :12

Test Date :2024-01-31  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



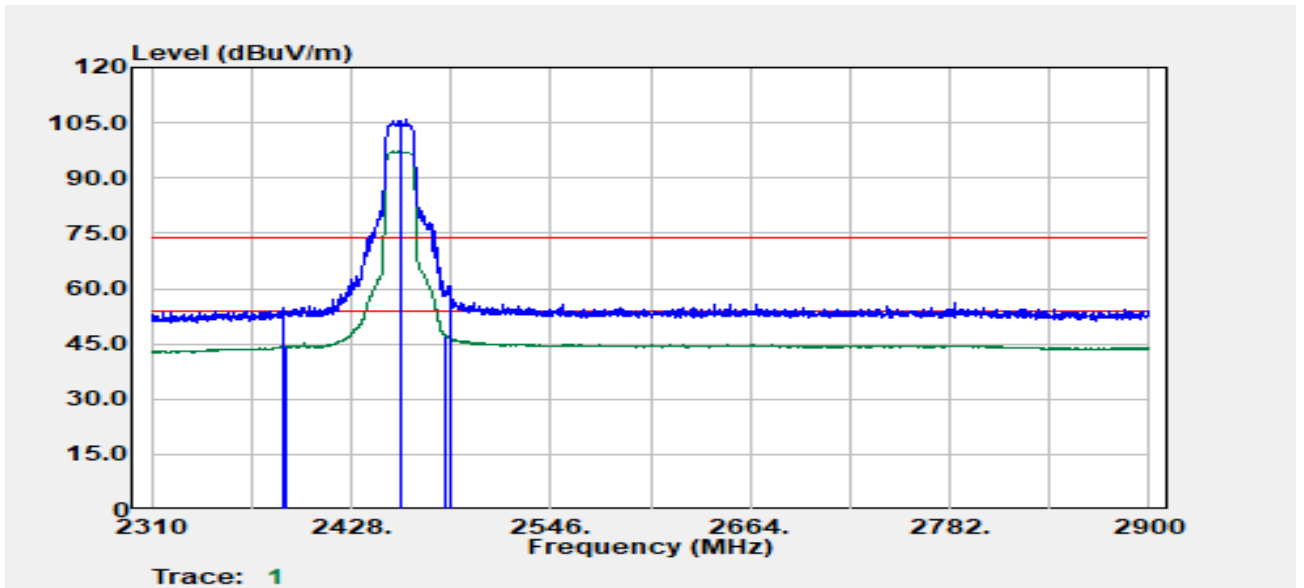
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2389.03	Average	39.07	5.49	44.56	54.00	-9.44
2389.53	Peak	48.82	5.50	54.32	74.00	-19.68
2452.00	Peak	107.54	5.56	113.10	--	--
2452.00	Average	98.94	5.56	104.50	--	--
2483.57	Average	43.02	5.94	48.97	54.00	-5.03
2484.57	Peak	56.98	5.96	62.94	74.00	-11.06

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2457 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :12

Test Date :2024-01-31  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



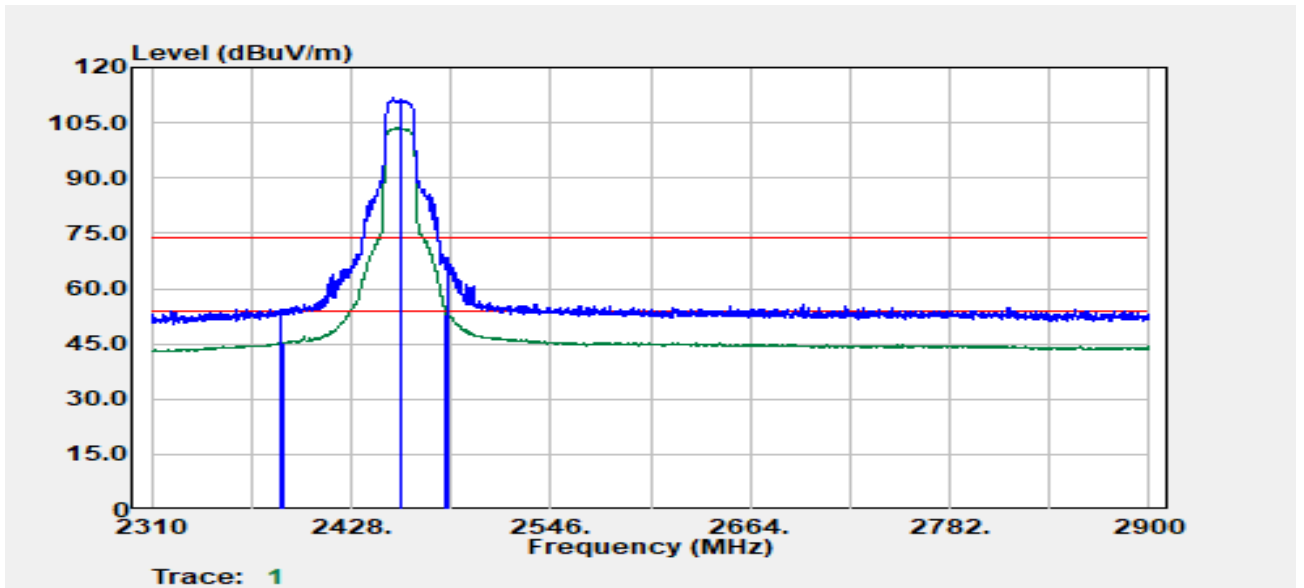
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2387.28	Peak	49.42	5.45	54.88	74.00	-19.12
2388.78	Average	38.82	5.48	44.31	54.00	-9.69
2457.00	Peak	100.42	5.53	105.96	--	--
2457.00	Average	91.76	5.53	97.30	--	--
2483.57	Average	41.34	5.94	47.28	54.00	-6.72
2486.08	Peak	54.64	5.98	60.62	74.00	-13.38

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2457 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :12

Test Date :2024-01-30  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



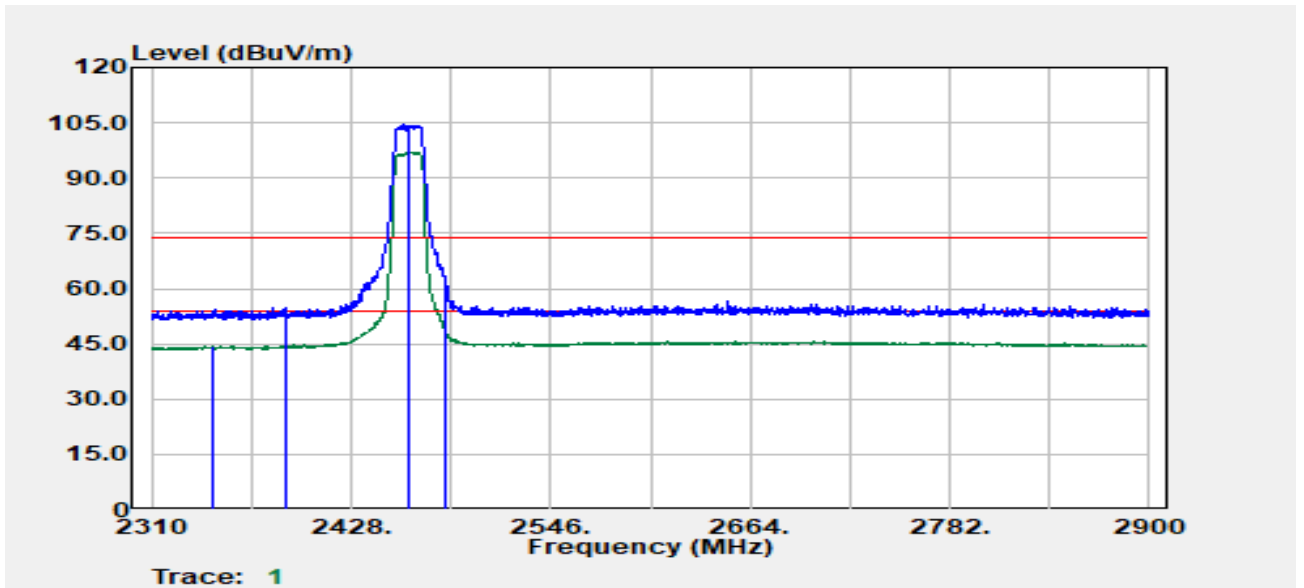
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2386.53	Peak	49.09	5.44	54.53	74.00	-19.47
2388.28	Average	39.64	5.47	45.11	54.00	-8.89
2457.00	Peak	106.32	5.53	111.85	--	--
2457.00	Average	98.23	5.53	103.77	--	--
2483.57	Average	47.06	5.94	53.01	54.00	-0.99
2484.82	Peak	62.19	5.96	68.15	74.00	-5.85

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2462 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :28

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



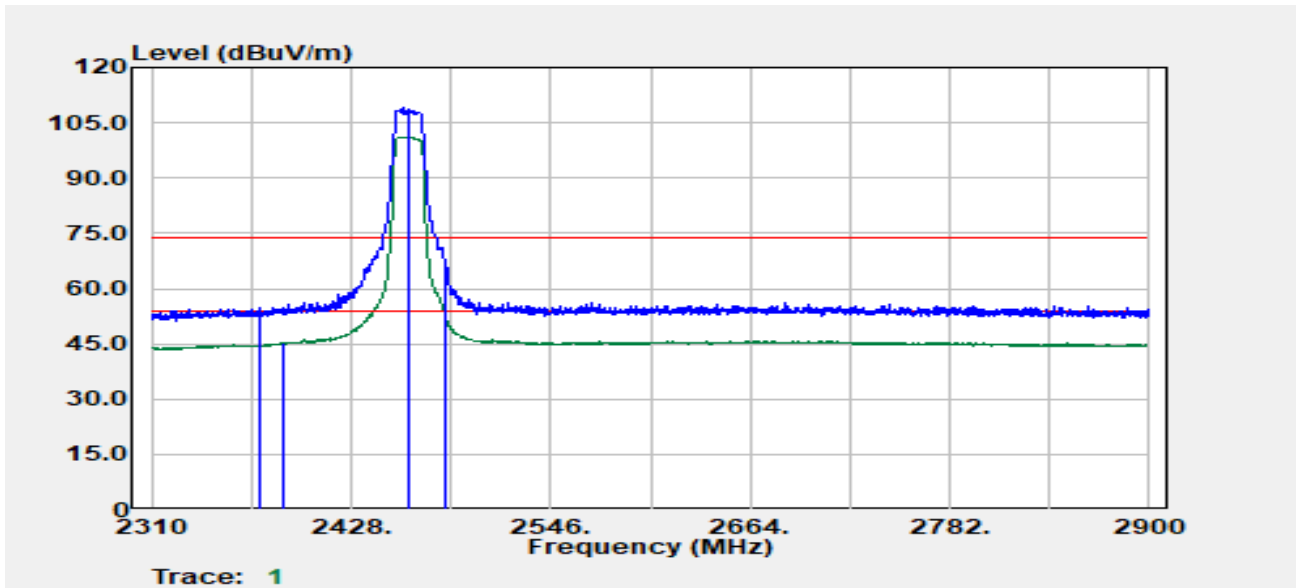
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2346.77	Average	39.43	5.15	44.58	54.00	-9.42
2389.28	Peak	49.49	5.21	54.70	74.00	-19.30
2462.00	Peak	99.05	5.41	104.46	--	--
2462.00	Average	91.61	5.41	97.02	--	--
2483.57	Peak	56.93	5.51	62.45	74.00	-11.55
2483.57	Average	43.01	5.51	48.52	54.00	-5.48

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2462 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :28

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



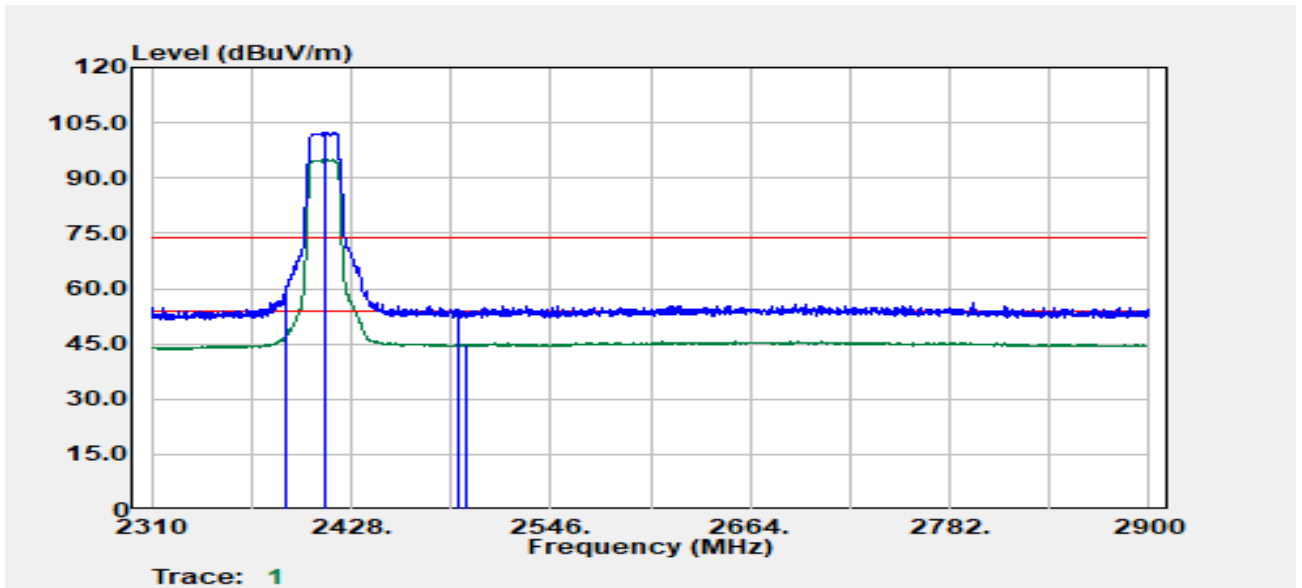
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2373.28	Peak	49.64	5.04	54.68	74.00	-19.32
2388.53	Average	40.16	5.20	45.36	54.00	-8.64
2462.00	Peak	103.56	5.41	108.96	--	--
2462.00	Average	95.72	5.41	101.13	--	--
2483.57	Peak	62.04	5.51	67.55	74.00	-6.45
2483.57	Average	47.35	5.51	52.87	54.00	-1.13

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2412 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :9

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



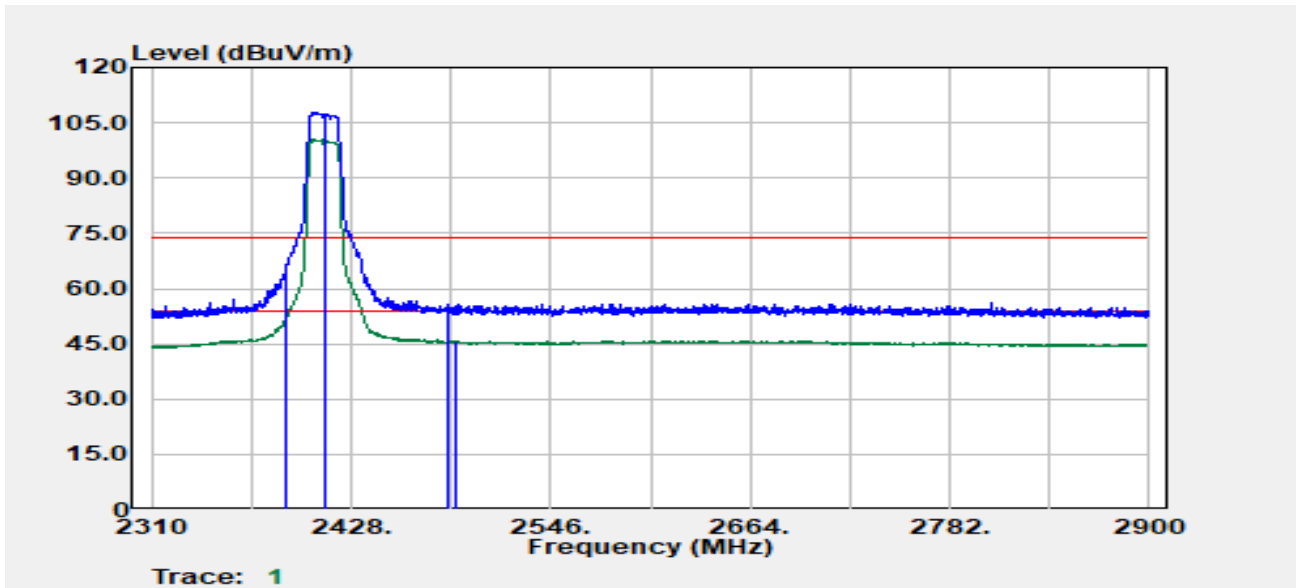
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
2390.00	Peak	55.41	5.21	60.62	74.00	-13.38
2390.00	Average	42.24	5.21	47.45	54.00	-6.55
2412.00	Peak	97.21	5.08	102.29	--	--
2412.00	Average	90.08	5.08	95.16	--	--
2491.58	Peak	48.68	5.52	54.20	74.00	-19.80
2496.33	Average	39.25	5.53	44.78	54.00	-9.22

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2412 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :9

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



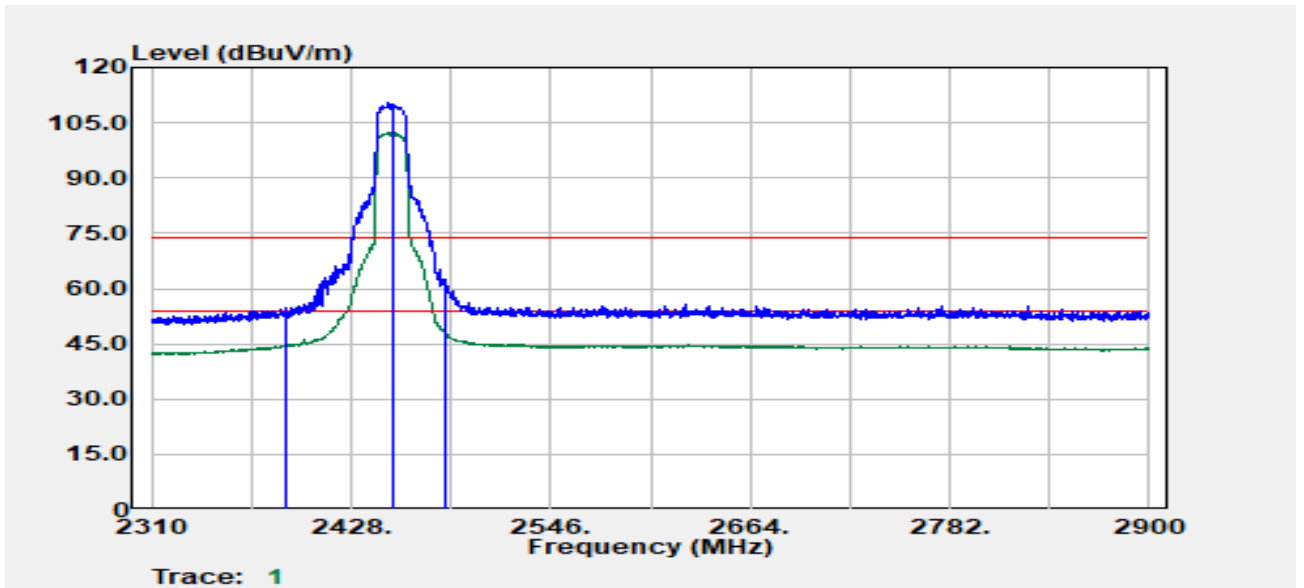
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2390.00	Peak	61.15	5.21	66.37	74.00	-7.63
2390.00	Average	47.26	5.21	52.47	54.00	-1.53
2412.00	Peak	102.59	5.08	107.67	--	--
2412.00	Average	95.43	5.08	100.50	--	--
2485.82	Peak	50.02	5.51	55.53	74.00	-18.47
2489.83	Average	40.15	5.52	45.67	54.00	-8.33

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2452 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :4

Test Date :2024-01-31  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2389.78	Peak	49.17	5.51	54.68	74.00	-19.32
2389.78	Average	38.95	5.51	44.46	54.00	-9.54
2452.00	Peak	104.86	5.56	110.42	--	--
2452.00	Average	96.65	5.56	102.21	--	--
2483.57	Average	41.95	5.94	47.89	54.00	-6.11
2483.82	Peak	55.58	5.95	61.52	74.00	-12.48

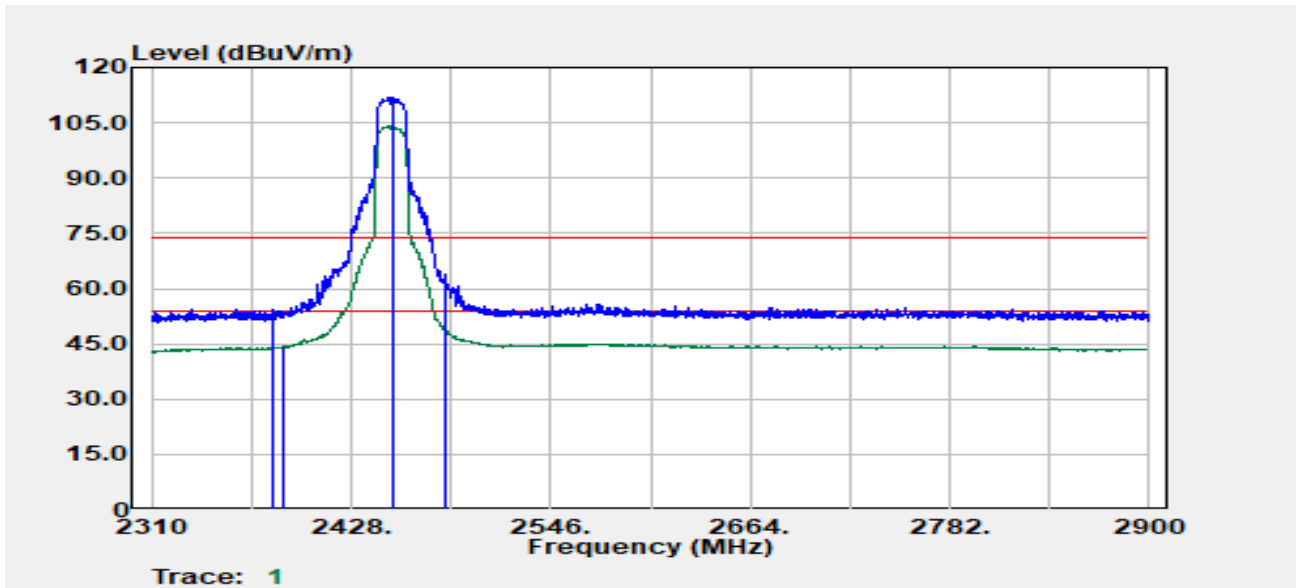


Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2452 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :4

Test Date :2024-01-31  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



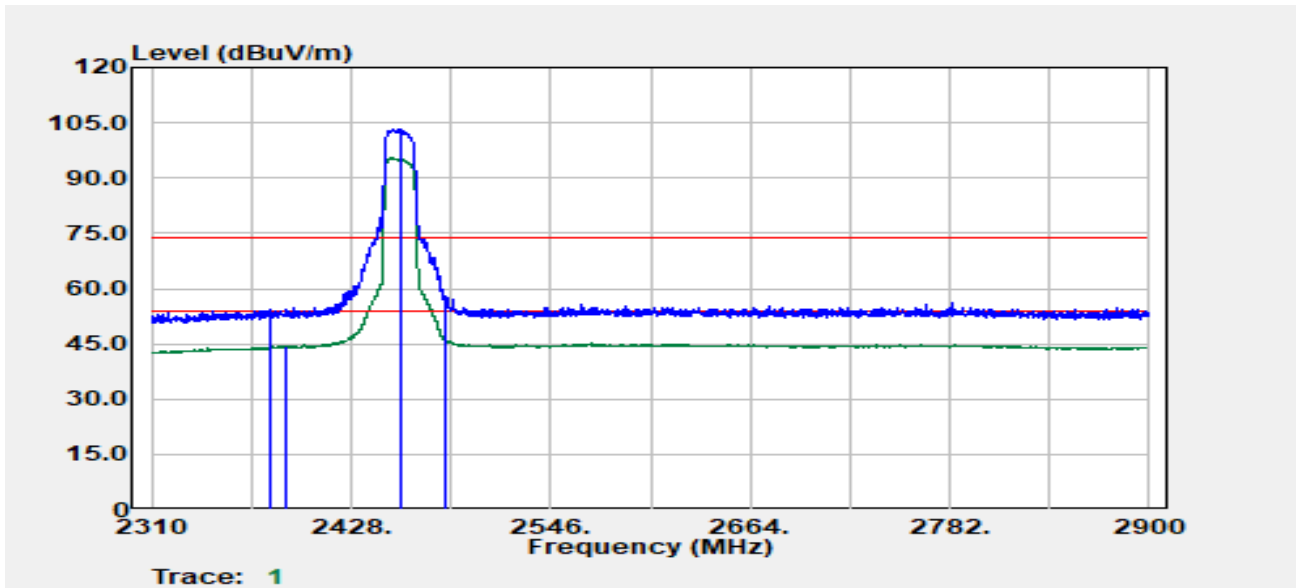
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2382.03	Peak	49.22	5.34	54.56	74.00	-19.44
2388.03	Average	38.71	5.47	44.18	54.00	-9.82
2452.00	Peak	106.47	5.56	112.04	--	--
2452.00	Average	98.54	5.56	104.10	--	--
2483.57	Peak	57.71	5.94	63.65	74.00	-10.35
2483.57	Average	42.88	5.94	48.83	54.00	-5.17

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2457 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :4

Test Date :2024-01-31  
 Temp./Humi. :24.4/58  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



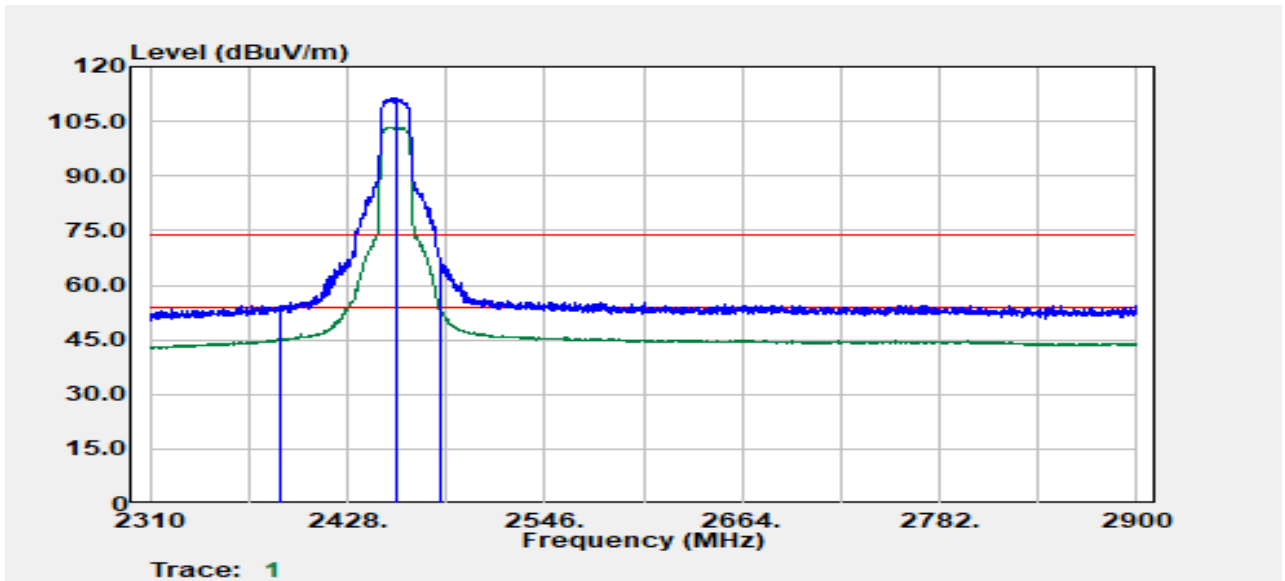
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
2379.78	Peak	49.13	5.30	54.43	74.00	-19.57
2388.78	Average	38.83	5.48	44.32	54.00	-9.68
2457.00	Peak	97.89	5.53	103.42	--	--
2457.00	Average	89.97	5.53	95.50	--	--
2483.57	Average	40.11	5.94	46.05	54.00	-7.95
2484.32	Peak	52.03	5.95	57.98	74.00	-16.02

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2457 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :4

Test Date :2024-01-30  
 Temp./Humi. :24.4/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



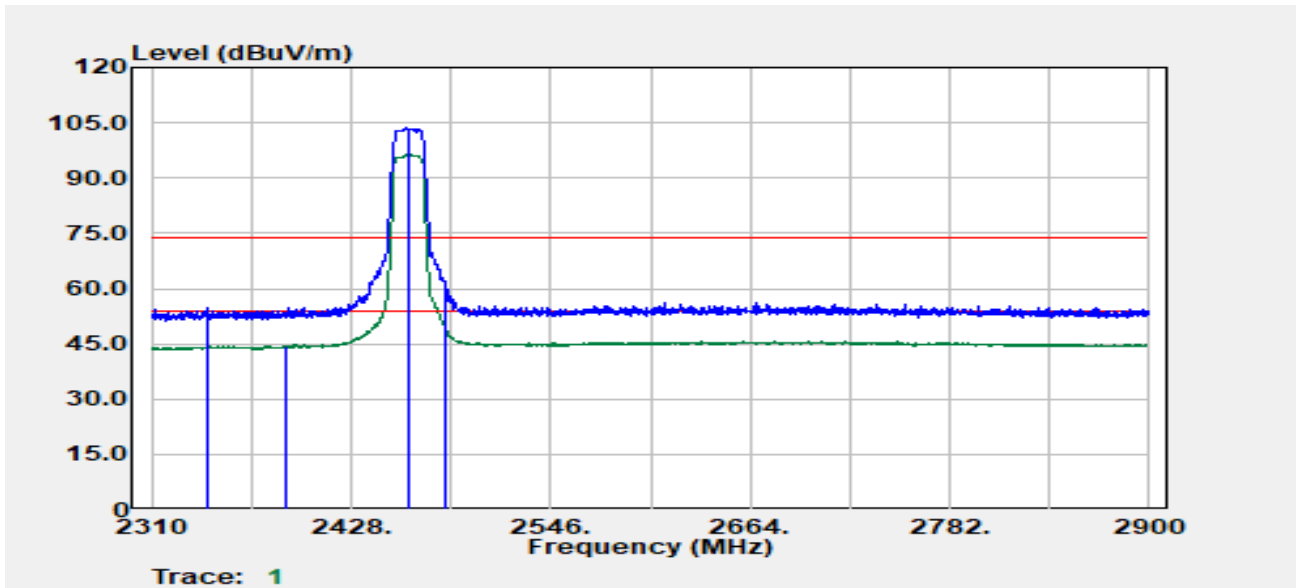
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level d $\mu$ V	Factor dB	Actual FS d $\mu$ V/m	Limit d $\mu$ V/m	Margin dB
2387.28	Average	39.91	5.45	45.36	54.00	-8.64
2387.53	Peak	48.96	5.46	54.42	74.00	-19.58
2457.00	Peak	105.99	5.53	111.52	--	--
2457.00	Average	97.90	5.53	103.43	--	--
2483.57	Average	47.35	5.94	53.29	54.00	-0.71
2484.32	Peak	60.54	5.95	66.49	74.00	-7.51

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2462 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :22

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :VERTICAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



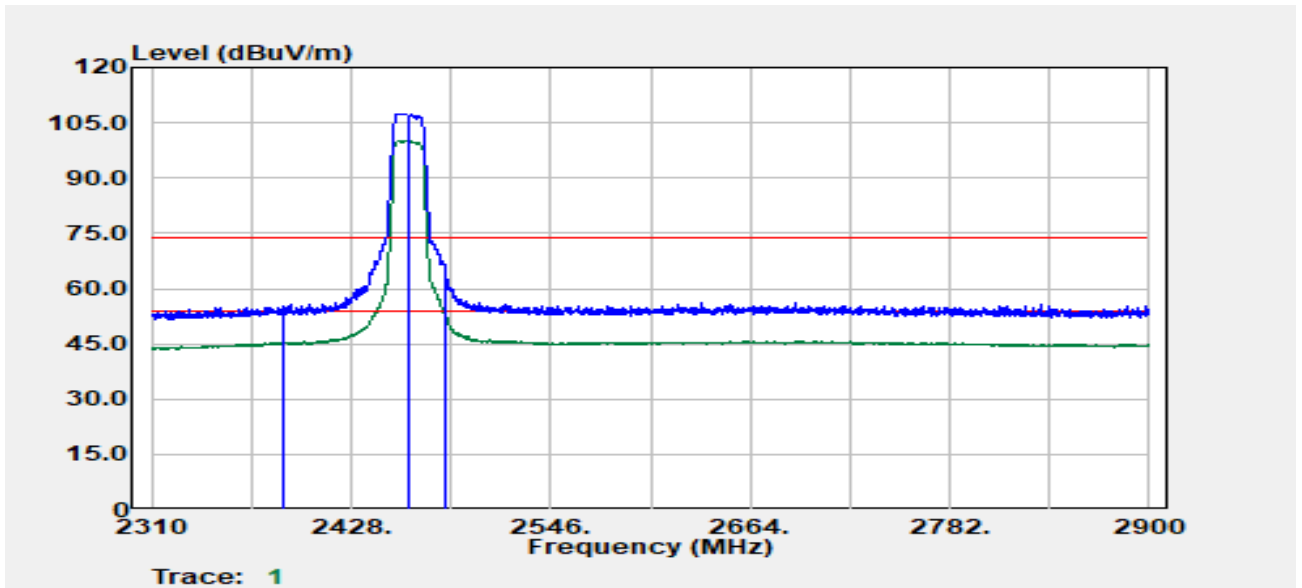
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
2343.51	Peak	49.73	5.11	54.84	74.00	-19.16
2390.00	Average	39.16	5.21	44.38	54.00	-9.62
2462.00	Peak	98.08	5.41	103.49	--	--
2462.00	Average	90.98	5.41	96.39	--	--
2483.57	Average	44.29	5.51	49.80	54.00	-4.20
2483.82	Peak	56.44	5.51	61.96	74.00	-12.04

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2462 MHz  
 Operation Mode :Bandedge  
 EUT Pol :H  
 Setting :22

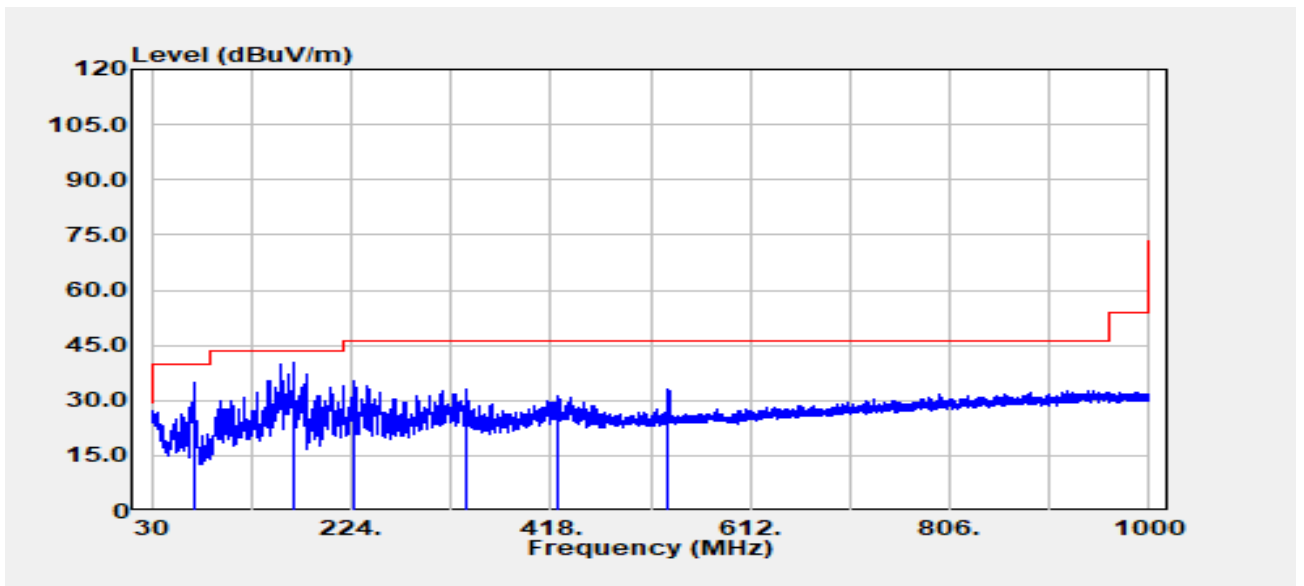
Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony.Chao  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
2388.28	Average	40.38	5.20	45.58	54.00	-8.42
2388.53	Peak	50.18	5.20	55.37	74.00	-18.63
2462.00	Peak	102.03	5.41	107.44	--	--
2462.00	Average	94.83	5.41	100.24	--	--
2483.57	Peak	60.99	5.51	66.51	74.00	-7.49
2483.57	Average	47.67	5.51	53.19	54.00	-0.81

## TX Test Data

Project No	:TM-2311000089P	Test Date	:2023-11-27
Operation Band	:802.11b	Temp./Humi.	:24.6/58
Frequency	:2412 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:TX	Engineer	:Tony Chao
EUT Pol	:H	Test Chamber	: 966A
Setting	:		

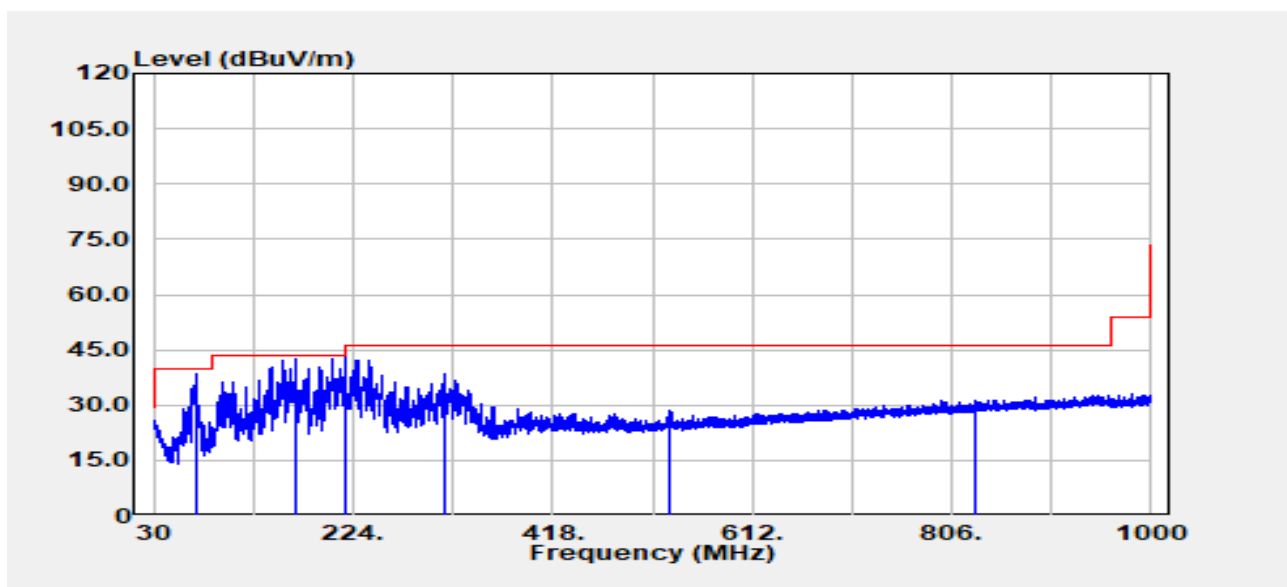


Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
72.07	Peak	50.02	-15.26	34.76	40.00	-5.24
168.47	Peak	51.29	-11.03	40.26	43.50	-3.24
227.76	Peak	46.67	-11.48	35.19	46.00	-10.81
335.55	Peak	41.09	-7.88	33.21	46.00	-12.79
424.79	Peak	36.21	-5.14	31.06	46.00	-14.94
531.01	Peak	36.18	-3.14	33.04	46.00	-12.96

Report No.: TMWK2311004152KR

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2412 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :

Test Date :2023-11-27  
 Temp./Humi. :24.6/58  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony Chao  
 Test Chamber : 966A



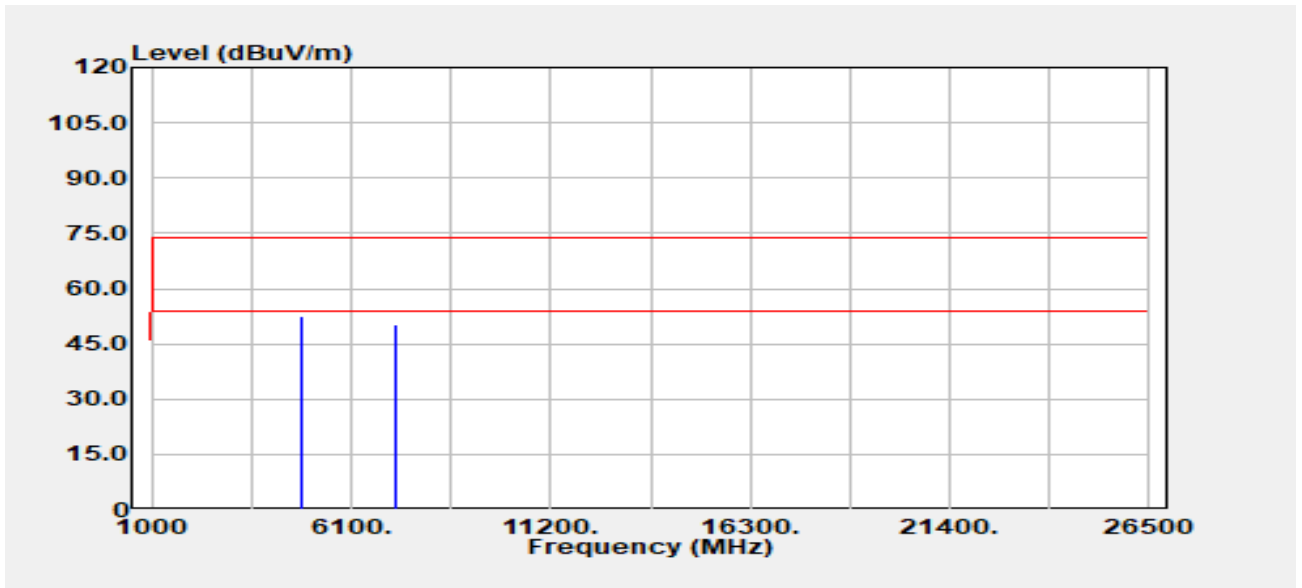
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
71.83	Peak	53.75	-15.24	38.51	40.00	-1.49
168.10	QP	50.40	-11.00	39.40	43.50	-4.10
216.36	Peak	55.03	-11.93	43.10	46.00	-2.90
312.15	Peak	46.82	-8.34	38.48	46.00	-7.52
531.25	Peak	31.72	-3.14	28.58	46.00	-17.42
829.89	Peak	29.36	1.81	31.17	46.00	-14.83

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2412 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :0

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :VERTICAL  
 Engineer :Tony Chao  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4824.00	Peak	50.33	1.98	52.31	74.00	-21.69
4824.00	Average	49.78	1.98	51.76	54.00	-2.24
7236.00	Peak	41.75	8.64	50.39	74.00	-23.61
7236.00	Average	37.65	8.64	46.29	54.00	-7.71

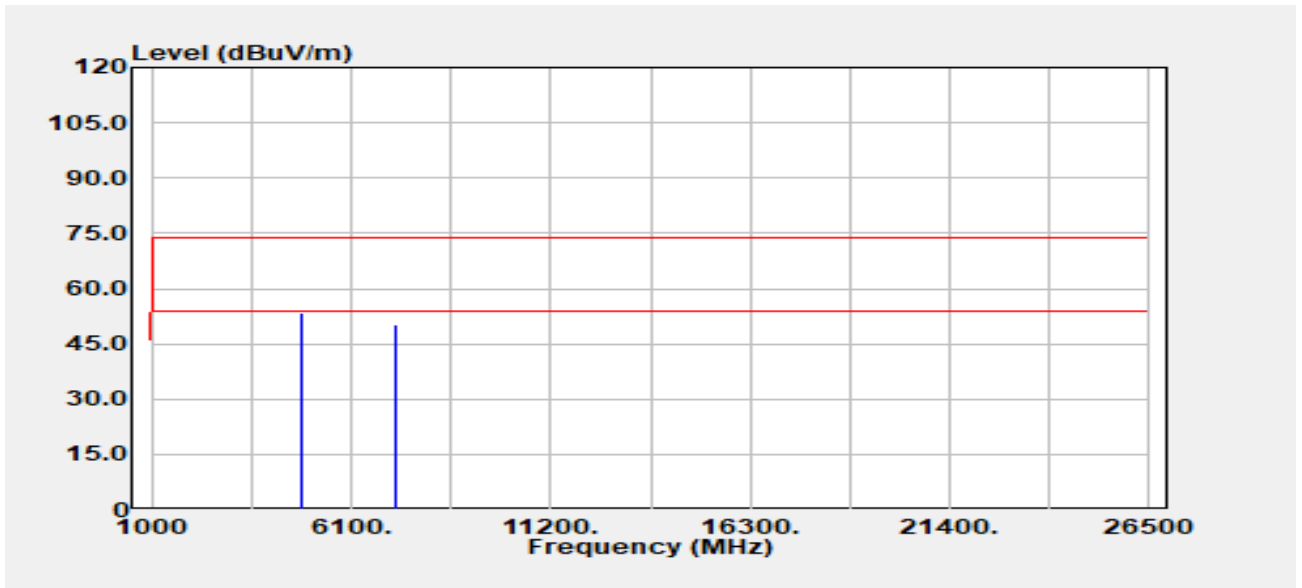


Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2412 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :0

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony Chao  
 Test Chamber : 966A



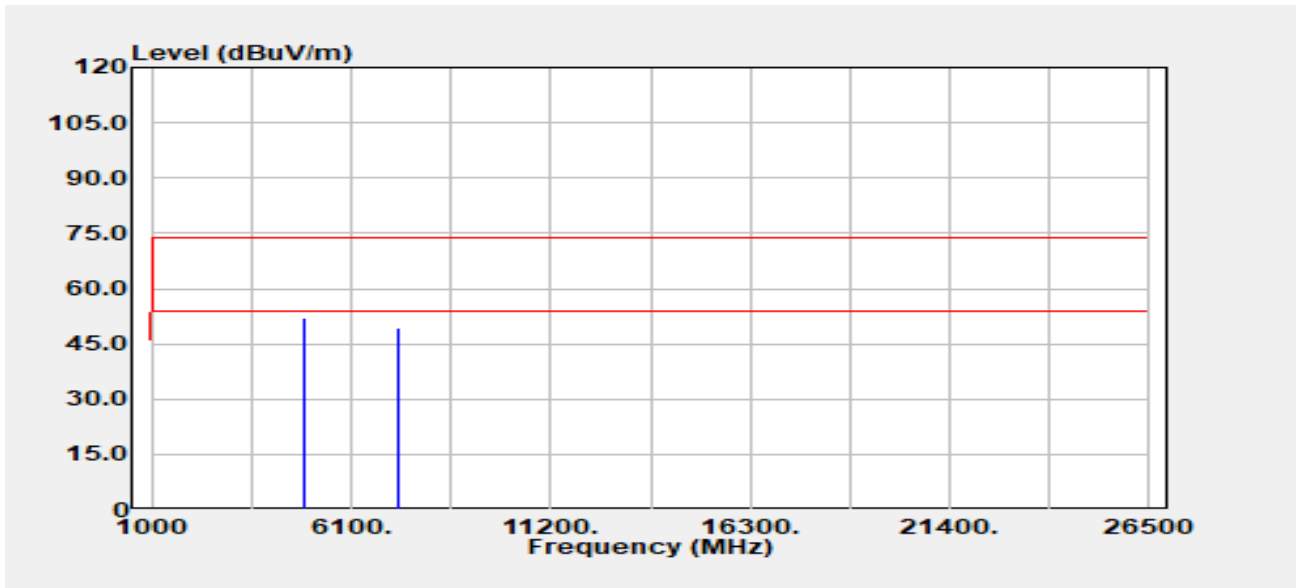
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4824.00	Peak	51.62	1.98	53.60	74.00	-20.40
4824.00	Average	51.26	1.98	53.24	54.00	-0.76
7236.00	Peak	41.74	8.64	50.38	74.00	-23.62
7236.00	Average	36.49	8.64	45.13	54.00	-8.87

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2437 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :14

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :VERTICAL  
 Engineer :Tony Chao  
 Test Chamber : 966A



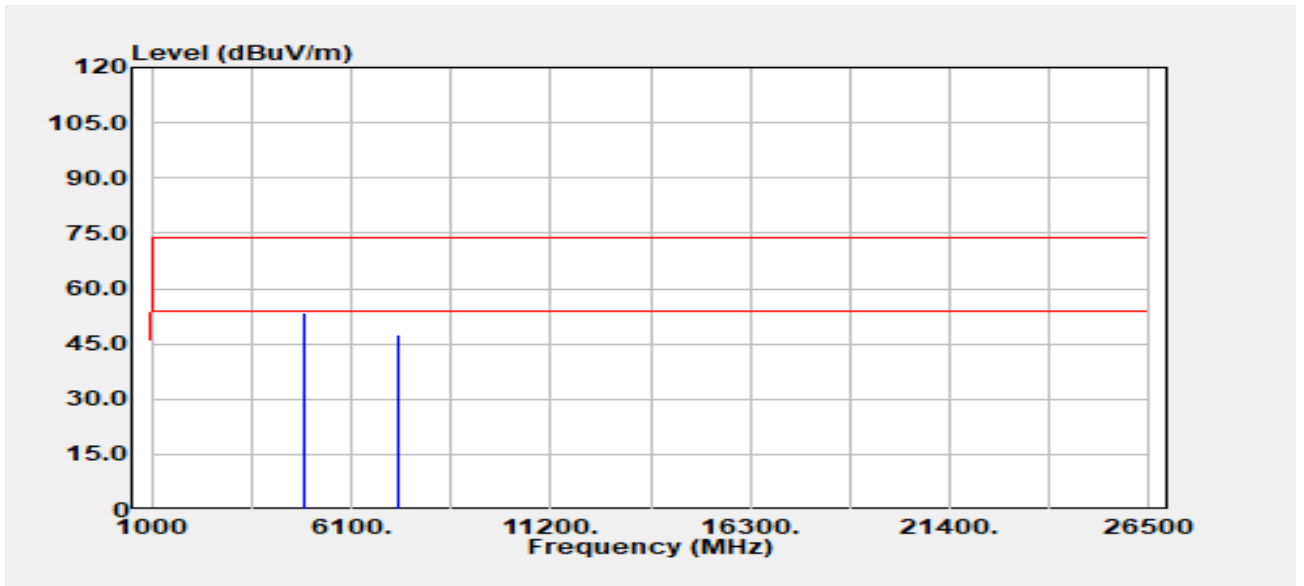
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4874.00	Peak	49.69	2.19	51.88	74.00	-22.12
4874.00	Average	49.41	2.19	51.60	54.00	-2.40
7311.00	Peak	40.69	8.59	49.28	74.00	-24.72
7311.00	Average	34.21	8.59	42.80	54.00	-11.20

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2437 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :14

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :HORIZONTAL  
 Engineer :Tony Chao  
 Test Chamber : 966A



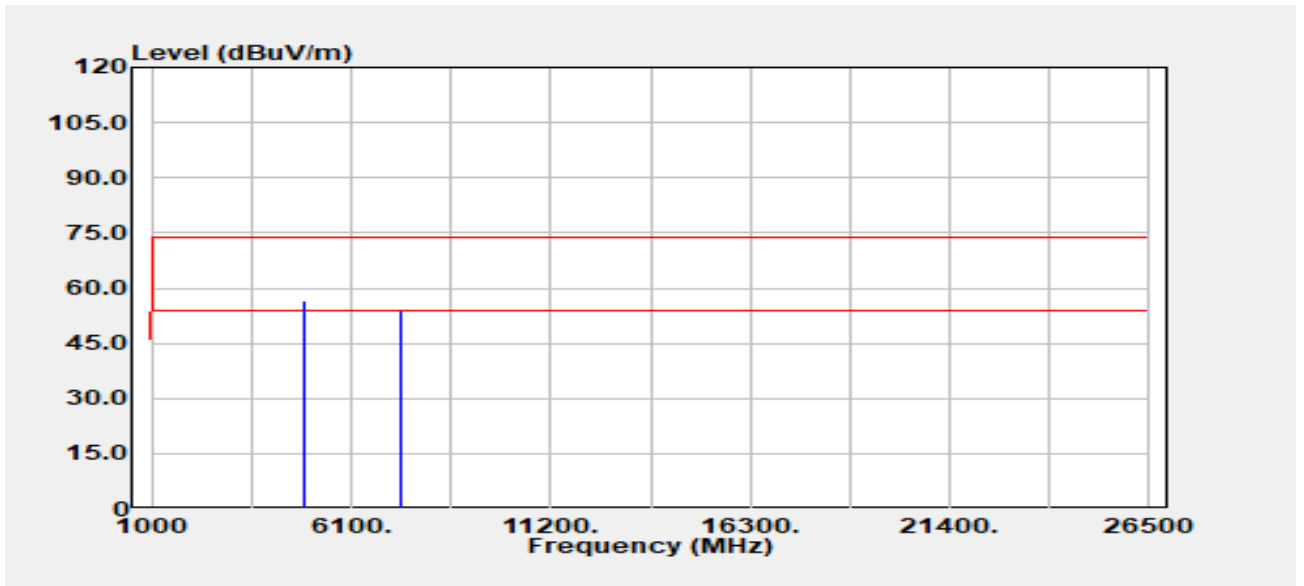
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4874.00	Peak	51.03	2.19	53.21	74.00	-20.79
4874.00	Average	50.97	2.19	53.16	54.00	-0.84
7311.00	Peak	38.91	8.59	47.50	74.00	-26.50
7311.00	Average	32.39	8.59	40.98	54.00	-13.02

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2457 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :6

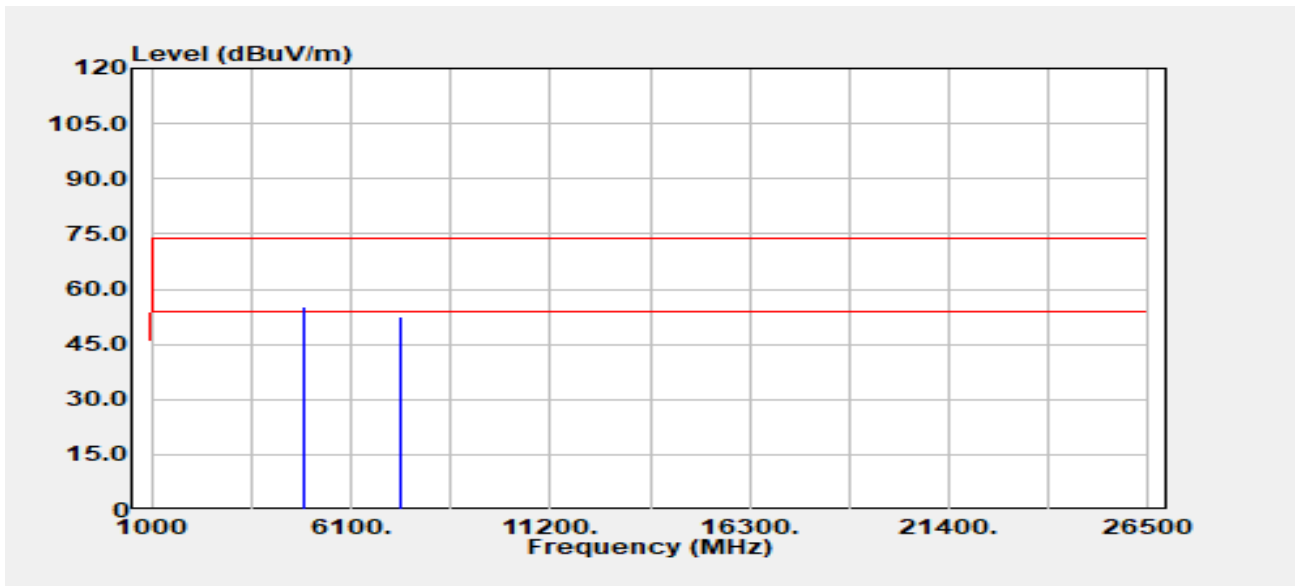
Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :Vertical  
 Engineer :Tony.Chao  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
4914.00	Peak	53.67	2.84	56.51	74.00	-17.49
4914.00	Average	49.15	2.84	51.99	54.00	-2.01
7371.00	Peak	44.88	8.98	53.86	74.00	-20.14
7371.00	Average	38.72	8.98	47.70	54.00	-6.30

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2457 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :6

Test Date :2024-02-06  
 Temp./Humi. :24.4/58  
 Antenna Pol. :Horizontal  
 Engineer :Tony.Chao  
 Test Chamber : 966A



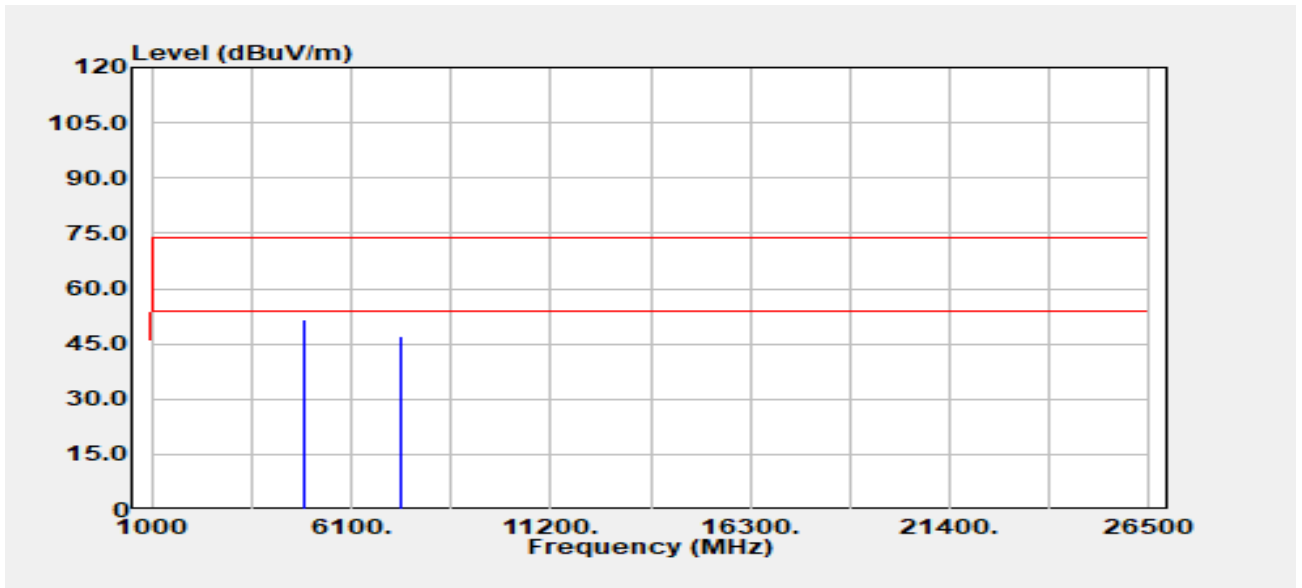
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dB $\mu$ V	Factor dB	Actual FS dB $\mu$ V/m	Limit dB $\mu$ V/m	Margin dB
4914.00	Peak	52.62	2.84	55.46	74.00	-18.54
4914.00	Average	50.35	2.84	53.19	54.00	-0.81
7371.00	Peak	43.33	8.98	52.31	74.00	-21.69
7371.00	Average	37.56	8.98	46.55	54.00	-7.45

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2462 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :25

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Vertical  
 Engineer :Ray Li  
 Test Chamber : 966A



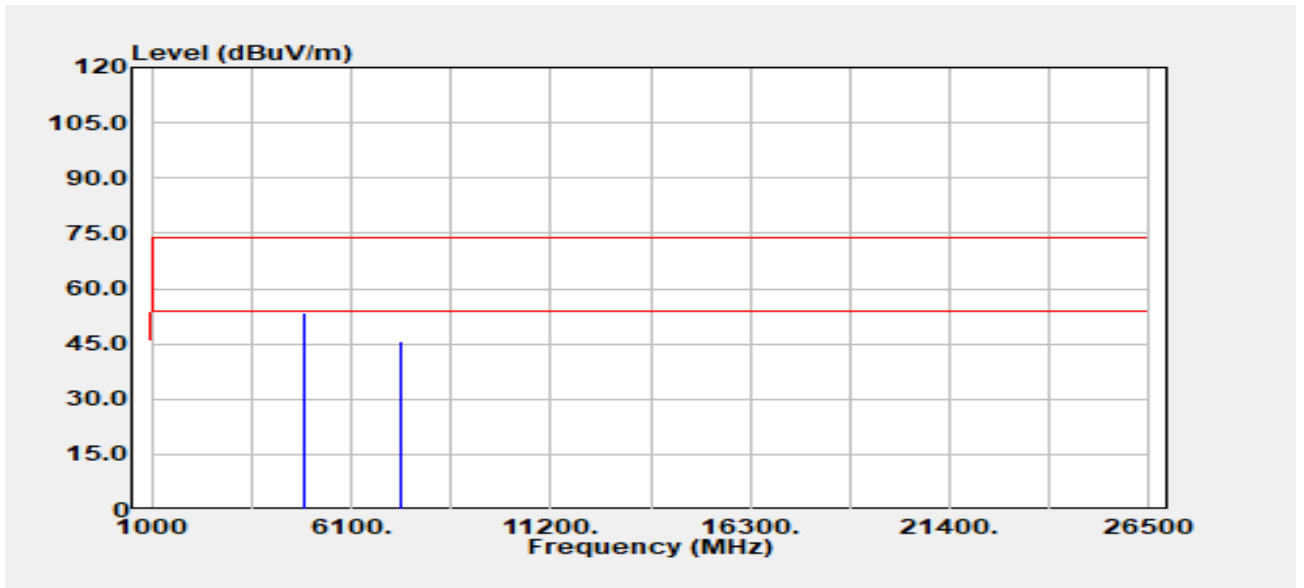
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4924.00	Peak	49.76	2.54	51.30	74.00	-22.70
4924.00	Average	49.16	2.54	51.70	54.00	-2.30
7386.00	Peak	38.40	8.60	47.01	74.00	-26.99
7386.00	Average	31.47	8.60	40.07	54.00	-13.93

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11b  
 Frequency :2462 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :25

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Horizontal  
 Engineer :Ray Li  
 Test Chamber : 966A



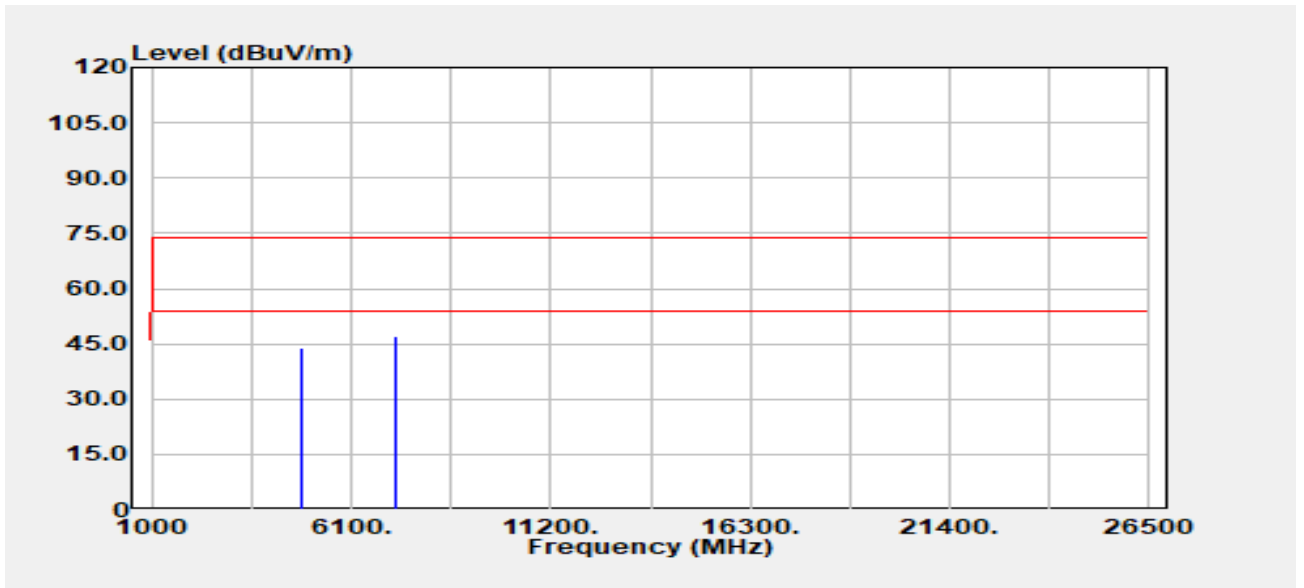
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4924.00	Peak	50.69	2.54	53.23	74.00	-20.77
4924.00	Average	50.65	2.54	53.19	54.00	-0.81
7386.00	Peak	37.01	8.60	45.62	74.00	-28.38
7386.00	Average	30.37	8.60	38.97	54.00	-15.03

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2412 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :14

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Vertical  
 Engineer :Ray Li  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4824.00	Peak	41.99	1.98	43.97	74.00	-30.03
4824.00	Average	35.22	1.98	37.20	54.00	-16.80
7236.00	Peak	38.55	8.64	47.19	74.00	-26.81
7236.00	Average	31.15	8.64	39.79	54.00	-14.21

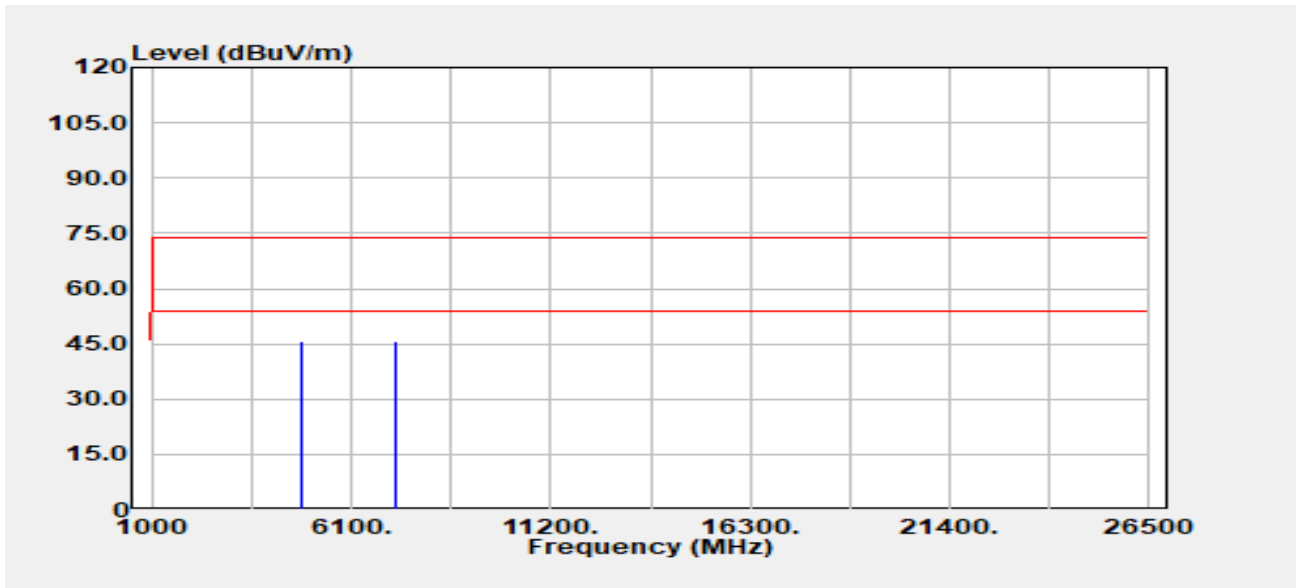


Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2412 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :14

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Horizontal  
 Engineer :Ray Li  
 Test Chamber : 966A



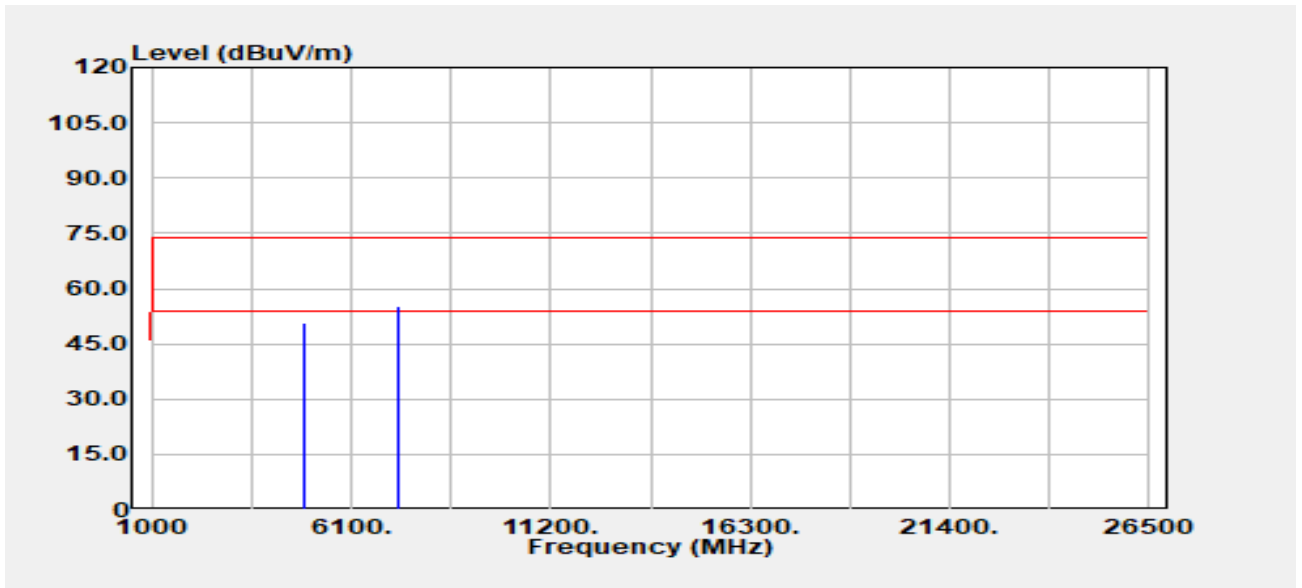
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4824.00	Peak	43.88	1.98	45.86	74.00	-28.14
4824.00	Average	37.53	1.98	39.51	54.00	-14.49
7236.00	Peak	36.97	8.64	45.61	74.00	-28.39
7236.00	Average	29.12	8.64	37.76	54.00	-16.24

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2437 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :0

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Vertical  
 Engineer :Ray Li  
 Test Chamber : 966A



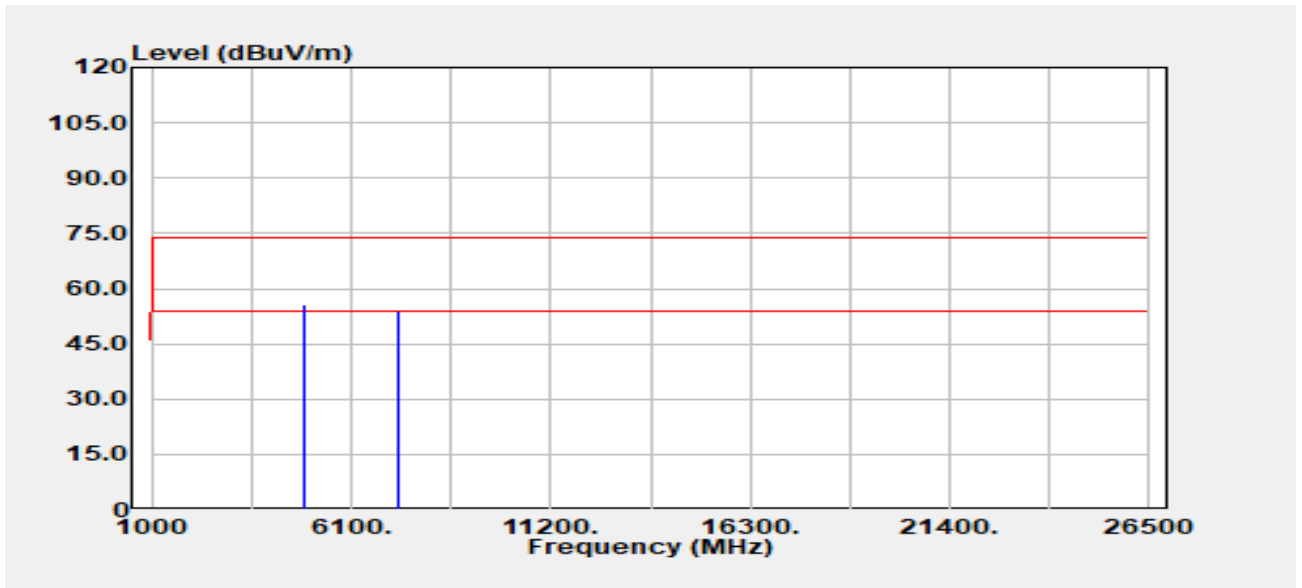
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4874.00	Peak	48.68	2.19	50.86	74.00	-23.14
4874.00	Average	44.05	2.19	46.24	54.00	-7.76
7311.00	Peak	46.43	8.59	55.02	74.00	-18.98
7311.00	Average	39.32	8.59	47.91	54.00	-6.09

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2437 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :0

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Horizontal  
 Engineer :Ray Li  
 Test Chamber : 966A



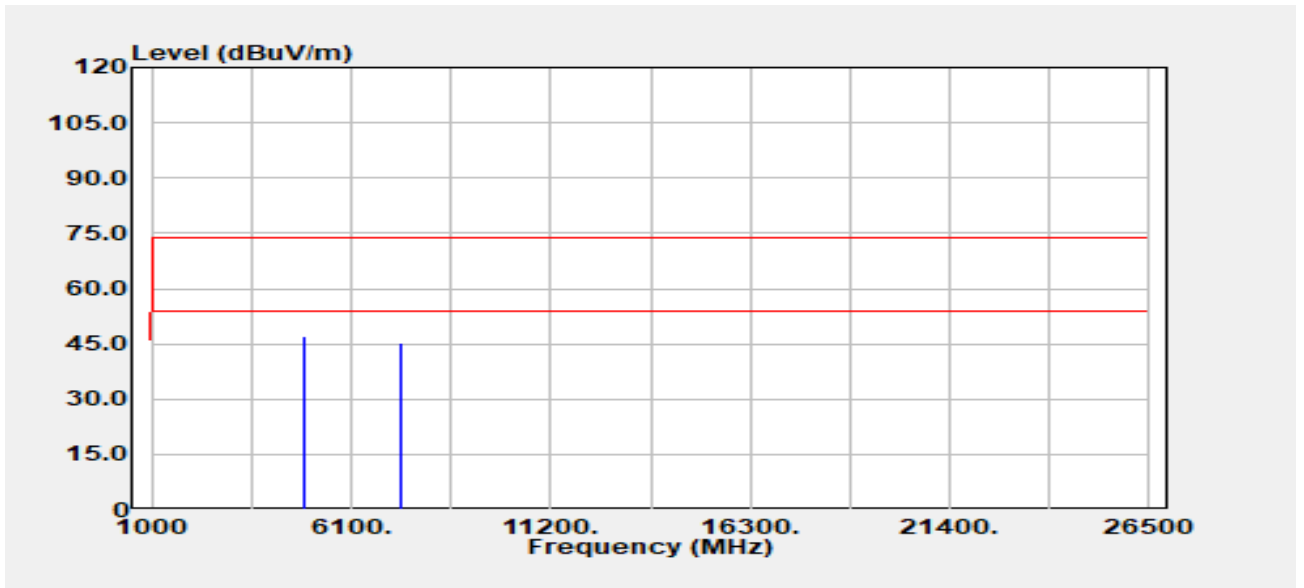
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4874.00	Peak	53.40	2.19	55.59	74.00	-18.41
4874.00	Average	46.72	2.19	48.91	54.00	-5.09
7311.00	Peak	45.22	8.59	53.81	74.00	-20.19
7311.00	Average	37.73	8.59	46.32	54.00	-7.68

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2462 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :28

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Vertical  
 Engineer :Ray Li  
 Test Chamber : 966A



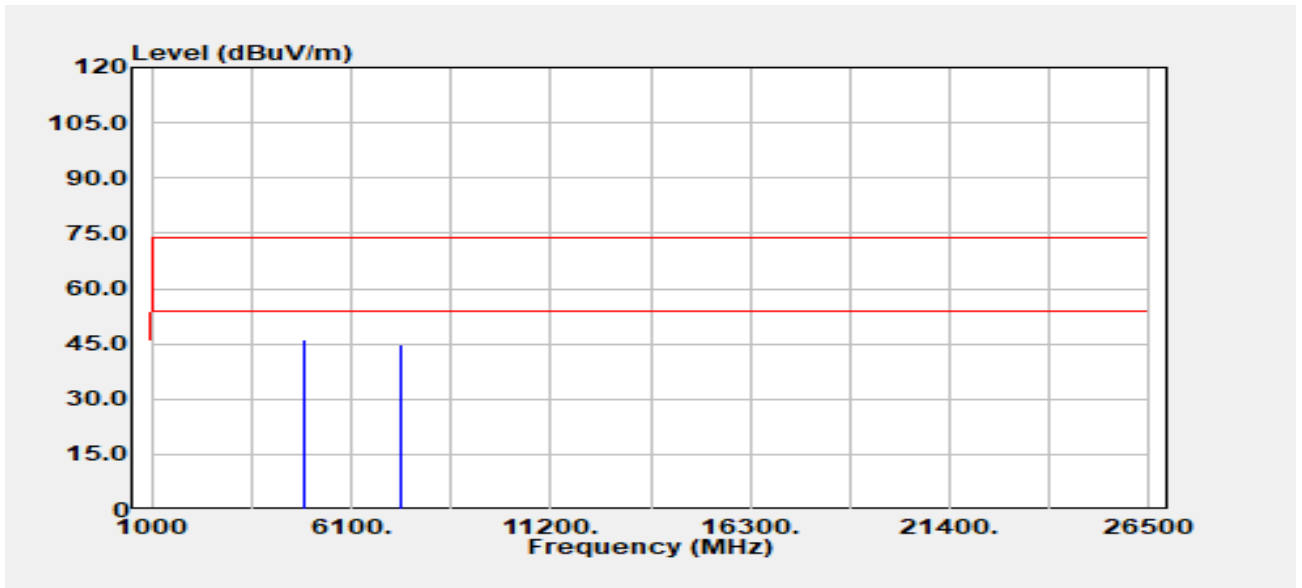
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4924.00	Peak	44.62	2.54	47.16	74.00	-26.84
4924.00	Average	38.77	2.54	41.31	54.00	-12.69
7386.00	Peak	36.81	8.60	45.41	74.00	-28.59
7386.00	Average	29.00	8.60	37.60	54.00	-16.40

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11g  
 Frequency :2462 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :28

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Horizontal  
 Engineer :Ray Li  
 Test Chamber : 966A



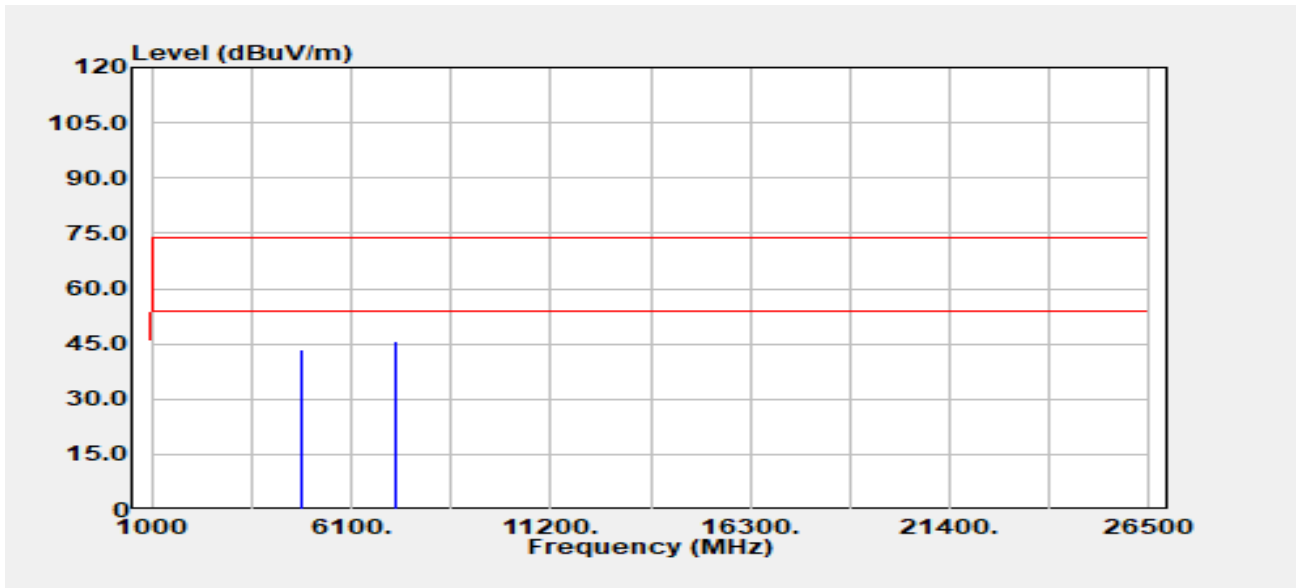
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4924.00	Peak	43.59	2.54	46.14	74.00	-27.86
4924.00	Average	39.49	2.54	42.03	54.00	-11.97
7386.00	Peak	36.03	8.60	44.63	74.00	-29.37
7386.00	Average	28.34	8.60	36.94	54.00	-17.06

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2412 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :9

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Vertical  
 Engineer :Ray Li  
 Test Chamber : 966A



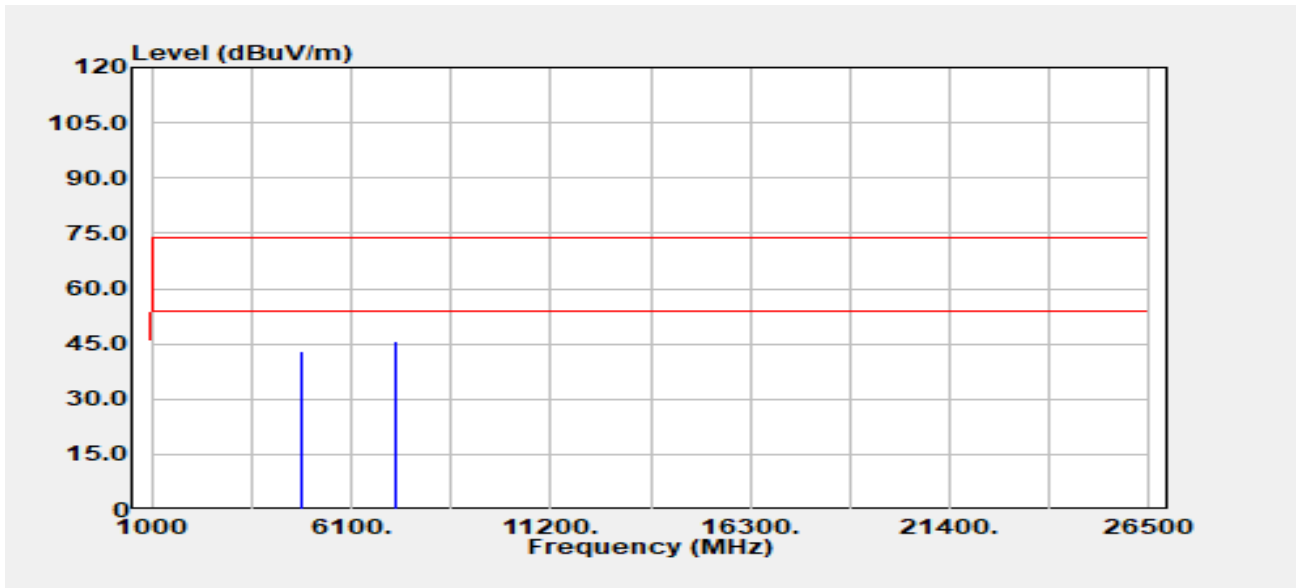
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4824.00	Peak	41.43	1.98	43.41	74.00	-30.59
4824.00	Average	34.79	1.98	36.77	54.00	-17.23
7236.00	Peak	37.32	8.64	45.96	74.00	-28.04
7236.00	Average	29.43	8.64	38.07	54.00	-15.93

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2412 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :9

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Horizontal  
 Engineer :Ray Li  
 Test Chamber : 966A



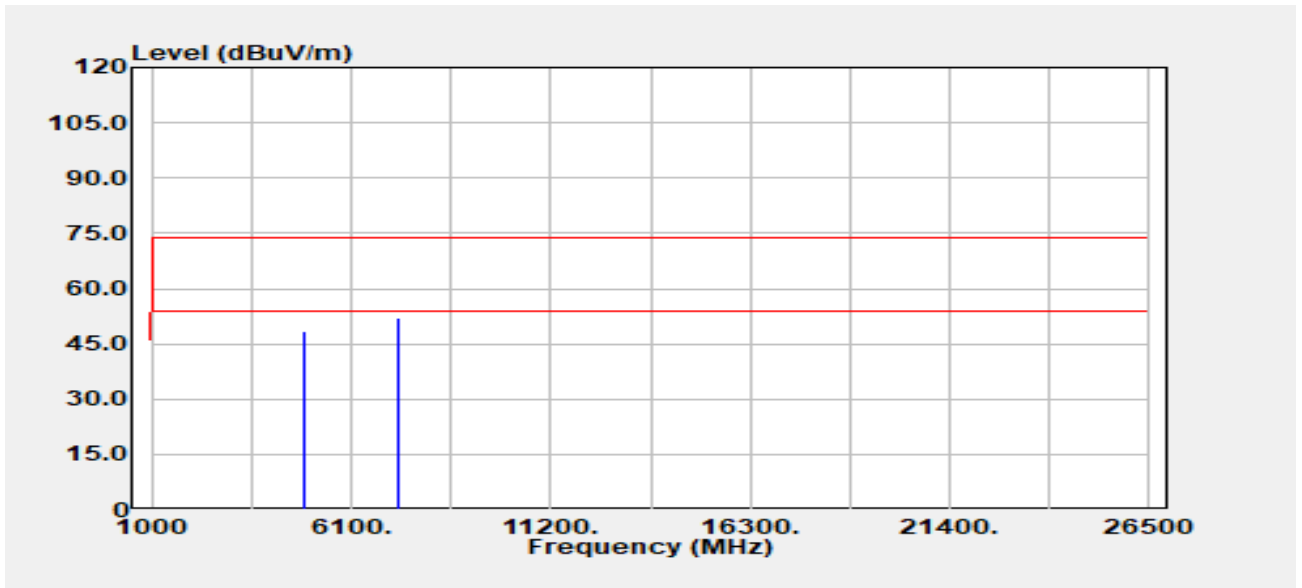
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4824.00	Peak	41.01	1.98	42.99	74.00	-31.01
4824.00	Average	35.76	1.98	37.74	54.00	-16.26
7236.00	Peak	37.21	8.64	45.85	74.00	-28.15
7236.00	Average	28.18	8.64	36.82	54.00	-17.18

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2437 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :0

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Vertical  
 Engineer :Ray Li  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4874.00	Peak	46.22	2.19	48.41	74.00	-25.59
4874.00	Average	40.78	2.19	42.96	54.00	-11.04
7311.00	Peak	43.32	8.59	51.92	74.00	-22.08
7311.00	Average	34.26	8.59	42.86	54.00	-11.14

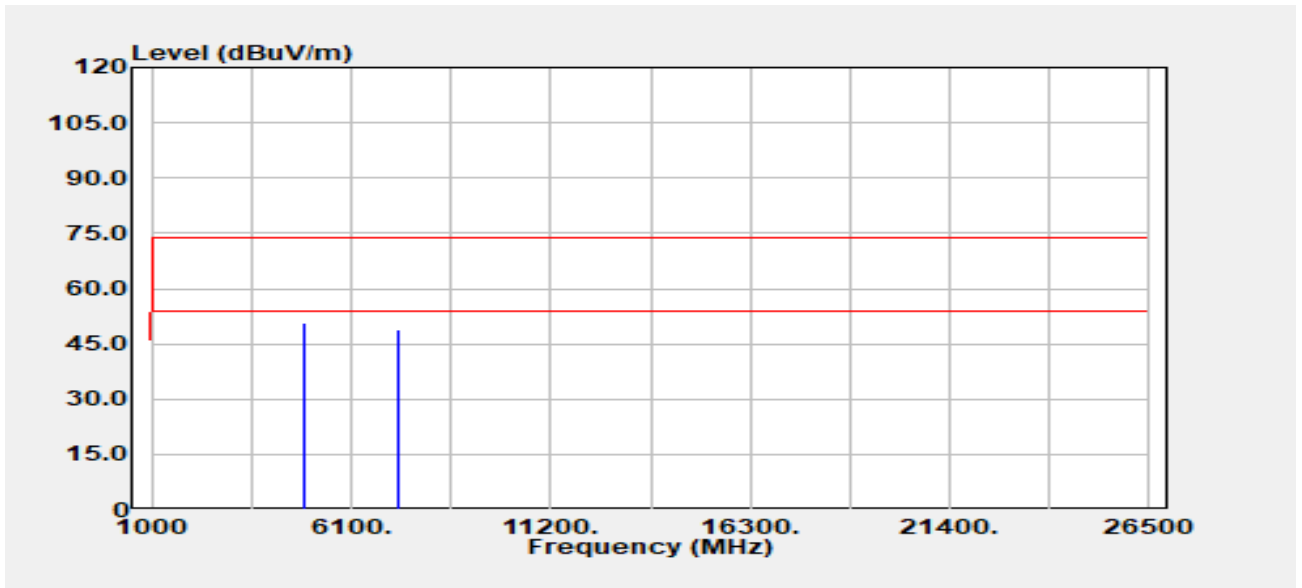


Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2437 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :0

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Horizontal  
 Engineer :Ray Li  
 Test Chamber : 966A



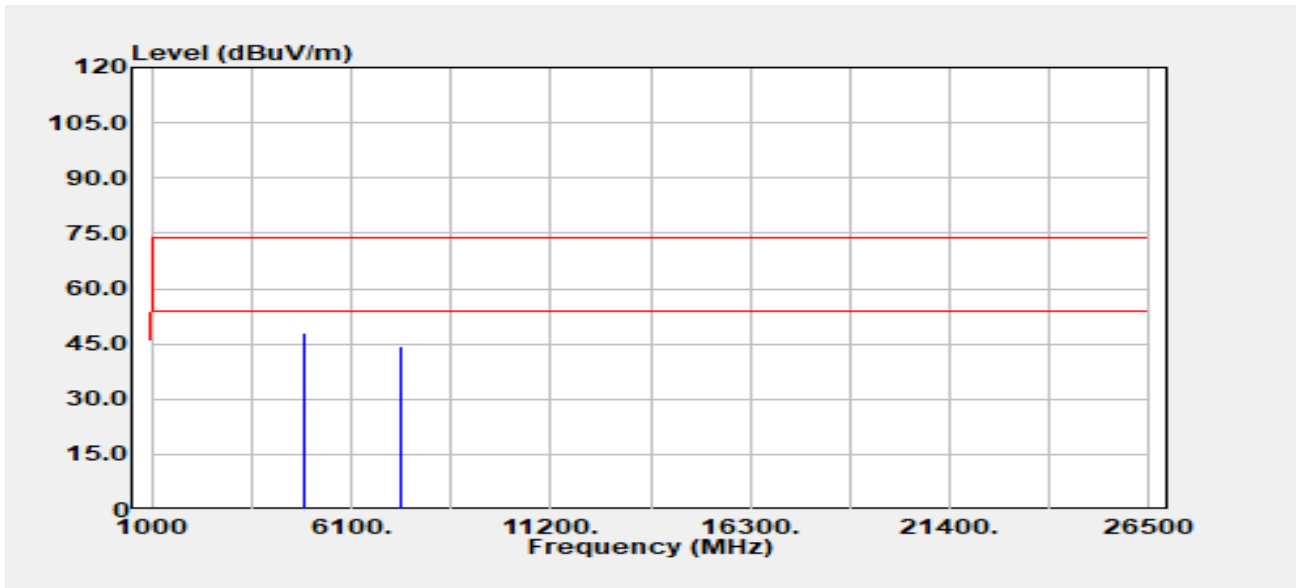
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4874.00	Peak	48.39	2.19	50.57	74.00	-23.43
4874.00	Average	43.40	2.19	45.58	54.00	-8.42
7311.00	Peak	40.44	8.59	49.03	74.00	-24.97
7311.00	Average	31.94	8.59	40.53	54.00	-13.47

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2462 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :22

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Vertical  
 Engineer :Ray Li  
 Test Chamber : 966A



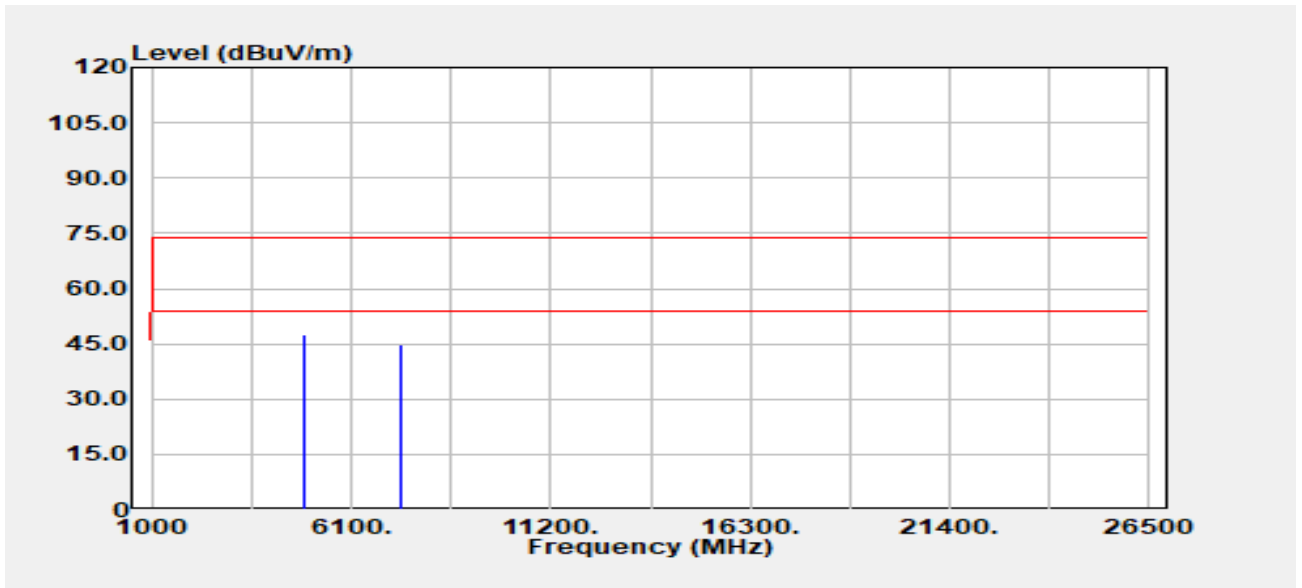
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4924.00	Peak	45.42	2.54	47.96	74.00	-26.04
4924.00	Average	37.10	2.54	39.64	54.00	-14.36
7386.00	Peak	35.86	8.60	44.46	74.00	-29.54
7386.00	Average	28.19	8.60	36.80	54.00	-17.20

Report No.: TMWK2311004152KR

Rev.: 05

Project No :TM-2311000089P  
 Operation Band :802.11n20  
 Frequency :2462 MHz  
 Operation Mode :TX  
 EUT Pol :H  
 Setting :22

Test Date :2023-11-24  
 Temp./Humi. :24.5/57  
 Antenna Pol. :Horizontal  
 Engineer :Ray Li  
 Test Chamber : 966A



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBuV	Factor dB	Actual FS dBuV/m	Limit dBuV/m	Margin dB
4924.00	Peak	45.13	2.54	47.68	74.00	-26.32
4924.00	Average	38.75	2.54	41.29	54.00	-12.71
7386.00	Peak	36.18	8.60	44.78	74.00	-29.22
7386.00	Average	28.07	8.60	36.67	54.00	-17.33

**- End of Test Report -**