

Project No: TM-2207000085P  
Report No.: TMWK2207002731KR

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Rev. 01

# RADIO TEST REPORT

## FCC 47 CFR PART 15 SUBPART E

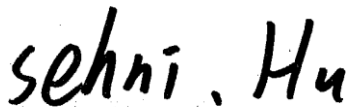
<b>Test Standard</b>	<b>FCC Part 15.407</b>
<b>FCC ID</b>	<b>NOIKB-E70P24</b>
<b>Product name</b>	<b>7.8" Digital Note Pad; 7.8" Color Digital Note Pad; 7.8" Digital Reader; 7.8" Color Digital Reader</b>
<b>Brand Name</b>	<b>MobiScribe</b>
<b>Model No.</b>	<b>E70P24</b>
<b>Test Result</b>	<b>Pass</b>
<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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Sehni Hu  
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	November 7, 2022	Initial Issue	ALL	Allison Chen
01	November 10, 2022	See the following Note Rev.(01)	P.28	Allison Chen

**Note:****Rev.(01)**

1. Modify test limit in section 4.3.

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## 1. GENERAL INFORMATION

### 1.1 EUT INFORMATION

<b>Applicant</b>	NETRONIX, INC. No. 945, Boai St., Jubei City, Hsin-Chu, 30265, Taiwan
<b>Manufacturer</b>	NETRONIX, INC. No. 945, Boai St., Jubei City, Hsin-Chu, 30265, Taiwan
<b>Equipment</b>	7.8" Digital Note Pad; 7.8" Color Digital Note Pad; 7.8" Digital Reader; 7.8" Color Digital Reader
<b>Model Name</b>	E70P24
<b>Product Discrepancy</b>	Please see remark as below.
<b>Brand Name</b>	MobiScribe
<b>Received Date</b>	August 5, 2022
<b>Date of Test</b>	September 1~October 4, 2022
<b>Power Supply</b>	1. Power from Host System. (DC 5V) 2. Power from Battery. Brand / Model: EVE Energy Co., LTD. / EVE2275A7GH Rating: 3.85VDC, 9.63Wh

**Remark:**

- For more details, please refer to the User's manual of the EUT.
- Disclaimer: Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.
- Disclaimer: Variant information between/among model numbers / trademarks is provided by the applicant, test results of this report are applicable to the sample EUT received of main test model name.
- Model Discrepancy:

<b>Product Name</b>	7.8" Digital Note Pad	7.8" Color Digital Note Pad	7.8" Digital Reader	7.8" Color Digital Reader
<b>Model Name</b>	E70P24			
<b>Button</b>	N/A	N/A	Yes	Yes
<b>Touch Pen</b>	Yes	Yes	N/A	N/A
<b>Panel display</b>	Black and White	Color	Black and White	Color
<b>Appearance</b>				

## 1.2 EUT CHANNEL INFORMATION

Frequency Range	<b>UNII-1</b>	
	IEEE 802.11a	5180 ~ 5240 MHz
	IEEE 802.11n HT20	5180 ~ 5240 MHz
	IEEE 802.11n HT40	5190 ~ 5230 MHz
	IEEE 802.11ac VHT20	5180 ~ 5240 MHz
	IEEE 802.11ac VHT40	5190 ~ 5230 MHz
	IEEE 802.11ac VHT80	5210 MHz
Modulation Type	<ol style="list-style-type: none"> <li>1. IEEE 802.11a mode: OFDM</li> <li>2. IEEE 802.11n HT20 mode: OFDM</li> <li>3. IEEE 802.11n HT40 mode: OFDM</li> <li>4. IEEE 802.11ac VHT20 mode: OFDM</li> <li>5. IEEE 802.11ac VHT40 mode: OFDM</li> <li>6. IEEE 802.11ac VHT80 mode: OFDM</li> </ol>	

**Remark:**

1. 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

<b>Antenna Specification</b>	<input type="checkbox"/> PIFA <input checked="" type="checkbox"/> PCB <input type="checkbox"/> Dipole <input type="checkbox"/> Coils
<b>Antenna Gain</b>	Gain: 5.72 dBi
<b>Brand / Model</b>	INPAQ Technology Co., Ltd. / RFPCA310710EMLB301

**Notes:**

1.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	± 2.1183
Channel Bandwidth	± 2.1863
RF output power (Power Meter + Power sensor)	± 1.2688
Power Spectral density	± 2.1855
Conducted Bandedge	± 2.1866
Conducted Spurious Emission	± 2.1859
Radiated Emission_9kHz-30MHz	± 3.814
Radiated Emission_30MHz-200MHz	± 4.272
Radiated Emission_200MHz-1GHz	± 4.619
Radiated Emission_1GHz-6GHz	± 5.522
Radiated Emission_6GHz-18GHz	± 5.228
Radiated Emission_18GHz-26GHz	± 4.089
Radiated Emission_26GHz-40GHz	± 4.019

**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.

No. 12, Ln. 116, Wugong 3rd Rd., Wugu Dist., New Taipei City, Taiwan.

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Tony Chao	-
Radiation	Tony Chao	-
RF Conducted	Jack Chen	-

**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

RF Conducted Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
Coaxial Cable	Woken	SUMITOMO	12	2022-03-02	2023-03-01
Power Meter	Anritsu	ML2496A	2136002	2021-12-06	2022-12-05
EXA Signal Analyzer	Keysight	N9010B	MY60242460	2022-01-30	2023-01-29
Power Sensor	Anritsu	MA2411B	1911386	2022-08-08	2023-08-07
Power Sensor	Anritsu	MA2411B	1911387	2022-08-08	2023-08-07
<b>Software</b>	Radio Test Software Ver. 21				

AC Power-line Conducted Test Room					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
CABLE	EMCI	CFD300-NL	CERF	2022-06-27	2023-06-26
EMI Test Receiver	R&S	ESCI	100064	2022-06-17	2023-06-16
LISN	SCHAFFNER	NNB 41	03/10013	2022-02-15	2023-02-14
<b>Software</b>	EZ-EMC(CCS-3A1-CE-wugu)				

**Remark:**

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

3M 966 Chamber Test Site					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
K-Type Cable	Huber+Suhner	SUCOFLEX 102	29406/2	2021-12-05	2022-12-04
Pre-Amplifier	MITEQ	AMF-6F-180 04000-37-8P	985646	2021-09-08	2022-09-07
				2022-09-07	2023-09-06
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2022-08-03	2023-08-02
Spectrum Analyzer	Agilent	E4446A	MY46180323	2021-12-06	2022-12-05
Thermo-Hygro Meter	WISEWIND	1206	D07	2021-12-28	2022-12-27
Loop Antenna	COM-POWER	AL-130	121051	2022-04-13	2023-04-12
Coaxial Cable	EMCI	EMC101G- KM-KM-500	211041	2021-12-23	2022-12-22
Coaxial Cable	EMC	EMC101G-K M-KM-9000	211042	2021-12-23	2022-12-22
Horn Antenna	ETS LINDGREN	3116	00026370	2021-11-30	2022-11-29
Cable	Woken	J-1099	201709090004	2021-12-23	2022-12-22
Preamplifier	EMEC	EM330	060609	2022-02-23	2023-02-22
Preamplifier	HP	8449B	3008A00965	2021-12-24	2022-12-23
Cable	Huber+Suhner	104PEA	20995+11112+ 182330	2022-02-23	2023-02-22
Coaxial Cable	EMCI	EMC105	190914+33953	2022-06-15	2023-06-14
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2022-01-25	2023-01-24
High Pass Filters	MICRO TRONICS	HPM13195	003	2022-02-10	2023-02-09
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
<b>Software</b>	e3 210616				

**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.	FCC ID	IC
	N/A					

Support Equipment						
No.	Equipment	Brand	Model	Series No.	FCC ID	IC
1	NB(E)	Lenovo	IBM 7663	N/A	PD97260H	N/A
2	NB(G)	Lenovo	IBM 1951	N/A	N/A	N/A
3	Adapter	SAMSUNG	ETA-U90JWS	N/A	N/A	N/A

## 1.8 TEST METHODOLOGY AND APPLIED STANDARDS

The test methodology, setups and results comply with all requirements in accordance with ANSI C63.10:2013, FCC Part 2, FCC Part 15.407, KDB 789033 D02.

## 2. TEST SUMMARY

FCC Standard Sec.	Chapter	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207	4.1	AC Conducted Emission	Pass
15.407(a)	4.2	26dB Bandwidth	Pass
15.407(e)	4.2	6dB Bandwidth	Pass
2.1049	4.2	Occupied Bandwidth (99%)	Pass
15.407(a)	4.3	Output Power Measurement	Pass
15.407(a)	4.4	Power Spectral Density	Pass
15.407(b)	4.5	Radiation Band Edge	Pass
15.407(b)	4.5	Radiation Spurious Emission	Pass

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### 3. DESCRIPTION OF TEST MODES

#### 3.1 THE EUT CHANNEL NUMBER OF OPERATING CONDITION

<p>Operation mode</p>	<ol style="list-style-type: none"> <li>1. IEEE 802.11a mode: 6Mbps</li> <li>2. IEEE 802.11n HT20 mode: MCS0</li> <li>3. IEEE 802.11n HT40 mode: MCS0</li> <li>4. IEEE 802.11ac VHT20 mode: MCS0</li> <li>5. IEEE 802.11ac VHT40 mode: MCS0</li> <li>6. IEEE 802.11ac VHT80 mode: MCS0</li> </ol>																
<p>Operating Frequency</p>	<table border="1"> <thead> <tr> <th></th> <th>Mode</th> <th>Frequency Range (MHz)</th> </tr> </thead> <tbody> <tr> <td rowspan="6">U-NII-1</td> <td>IEEE 802.11a</td> <td>5180, 5220, 5240</td> </tr> <tr> <td>IEEE 802.11n HT20</td> <td>5180, 5220, 5240</td> </tr> <tr> <td>IEEE 802.11n HT40</td> <td>5190, 5230</td> </tr> <tr> <td>IEEE 802.11ac VHT20</td> <td>5180, 5220, 5240</td> </tr> <tr> <td>IEEE 802.11ac VHT40</td> <td>5190, 5230</td> </tr> <tr> <td>IEEE 802.11ac VHT80</td> <td>5210</td> </tr> </tbody> </table>		Mode	Frequency Range (MHz)	U-NII-1	IEEE 802.11a	5180, 5220, 5240	IEEE 802.11n HT20	5180, 5220, 5240	IEEE 802.11n HT40	5190, 5230	IEEE 802.11ac VHT20	5180, 5220, 5240	IEEE 802.11ac VHT40	5190, 5230	IEEE 802.11ac VHT80	5210
	Mode	Frequency Range (MHz)															
U-NII-1	IEEE 802.11a	5180, 5220, 5240															
	IEEE 802.11n HT20	5180, 5220, 5240															
	IEEE 802.11n HT40	5190, 5230															
	IEEE 802.11ac VHT20	5180, 5220, 5240															
	IEEE 802.11ac VHT40	5190, 5230															
	IEEE 802.11ac VHT80	5210															

**Remark:**

1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. The system support 802.11a/n ht20/n ht40/ac vht20/40/80, the vht20/vht40 were reduced since the identical parameters with 802.11n ht20 and ht40.
3. The worst-case data rates are determined to be as follows for each mode based upon investigations by evaluation judgment the average power and PSD across all date rates, bandwidths, and modulations.

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### 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 (7.8" Digital Note Pad) power by Adapter Mode 2: EUT (7.8" Digital Reader) power by Adapter Mode 3: EUT (7.8" Color Digital Note Pad) power by Adapter Mode 4: EUT (7.8" Color Digital Reader) 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 Below 1G	
Test Condition	Radiated Emission Below 1G
Power supply Mode	Mode 1: EUT (7.8" Digital Reader) power by Host System Mode 2: EUT (7.8" Digital Note Pad) power by Host System Mode 3: EUT (7.8" Color Digital Reader) power by Host System Mode 4: EUT (7.8" Color Digital Note Pad) power by Host System
Worst Mode	<input checked="" type="checkbox"/> Mode 1 <input checked="" type="checkbox"/> Mode 2 <input checked="" type="checkbox"/> Mode 3 <input checked="" type="checkbox"/> Mode 4

Radiated Emission Measurement Above 1G	
Test Condition	Radiated Emission Above 1G
Power supply Mode	Mode 1: EUT (7.8" Digital Reader) power by Host System Mode 2: EUT (7.8" Digital Note Pad) power by Host System Mode 3: EUT (7.8" Color Digital Reader) power by Host System Mode 4: EUT (7.8" Color Digital Note Pad) power by Host System
Worst Mode	<input type="checkbox"/> Mode 1 <input type="checkbox"/> Mode 2 <input type="checkbox"/> Mode 3 <input checked="" type="checkbox"/> Mode 4
Worst Position	<input type="checkbox"/> Placed in fixed position. <input checked="" type="checkbox"/> Placed in fixed position at X-Plane (E2-Plane) <input type="checkbox"/> Placed in fixed position at Y-Plane (E1-Plane) <input type="checkbox"/> Placed in fixed position at Z-Plane (H-Plane)

**Remark:**

1. The worst mode was record in this test report.
2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report.
3. Samples are available in four configurations. RF hardware components and antenna parts are the same. For different configurations, RSE is evaluated at below 1GHz and ac line, all test items are tested using the worst model.
4. AC power line conducted emission were performed the EUT transmit at the highest output power channel as worst case.
5. Radiation emission (below 1GH) were performed the EUT transmit at the IEEE802.11a mode's high channel as worst case.

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### 3.3 EUT DUTY CYCLE

Temperature: 22.3~25.5°C

Test date: September 1~October 4, 2022

Humidity: 50~56% RH

Tested by: Jack Chen

Duty Cycle				
Configuration	Duty Cycle (%)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11a	96.88	0.14	0.32	1.00
802.11n_20	97.91	0.09	0.21	1.00
802.11n_40	95.86	0.18	0.43	1.00
802.11ac_80	91.47	0.39	0.91	1.00



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## 4. TEST RESULT

### 4.1 AC POWER LINE CONDUCTED EMISSION

#### 4.1.1 Test Limit

According to §15.207(a),

Frequency Range (MHz)	Limits(dBµV)	
	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

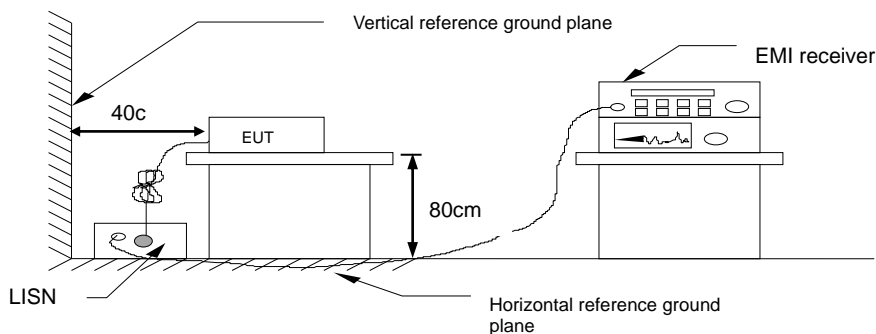
\* Decreases with the logarithm of the frequency.

#### 4.1.2 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.

#### 4.1.3 Test Setup



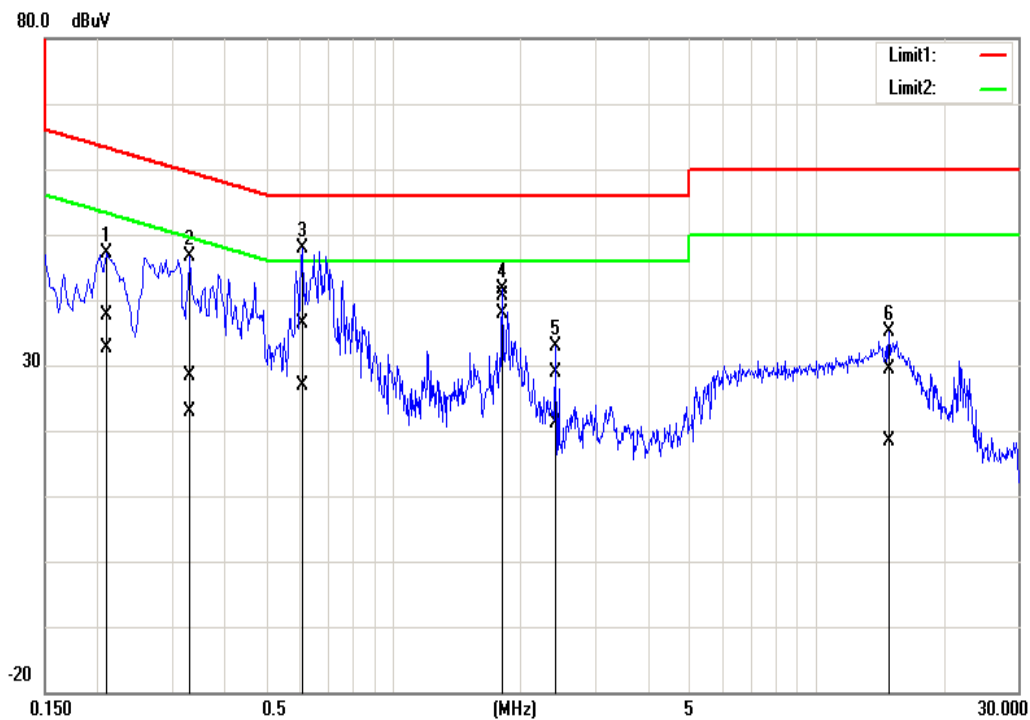
#### 4.1.4 Test Result

**Pass.**



### Test Data

Test Mode:	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase:	Line	Test Date	September 15, 2022
Test Voltage:	120Vac, 60Hz	Test Engineer	Tony Chao

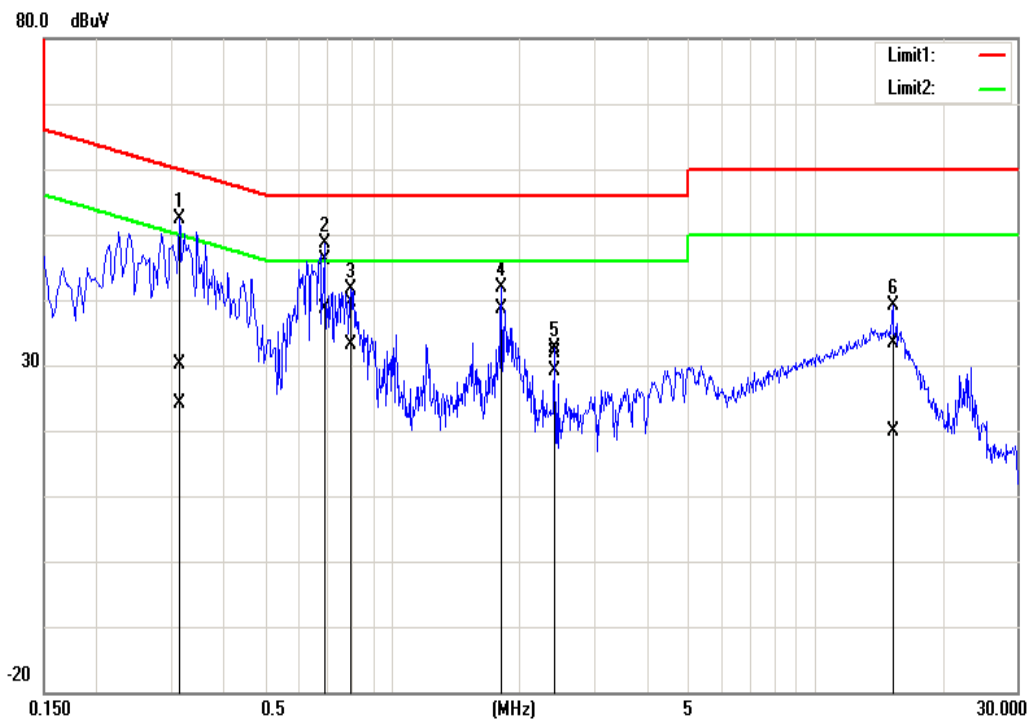


Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.2100	27.53	22.45	10.18	37.71	32.63	63.21	53.21	-25.50	-20.58	Pass
0.3300	18.27	12.68	10.19	28.46	22.87	59.45	49.45	-30.99	-26.58	Pass
0.6100	26.28	16.72	10.19	36.47	26.91	56.00	46.00	-19.53	-19.09	Pass
1.8140	30.34	27.53	10.25	40.59	37.78	56.00	46.00	-15.41	-8.22	Pass
2.4220	18.72	10.90	10.26	28.98	21.16	56.00	46.00	-27.02	-24.84	Pass
14.8580	19.06	8.13	10.36	29.42	18.49	60.00	50.00	-30.58	-31.51	Pass

Note: Correction factor = LISN loss + Cable loss.

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Test Mode:	Mode 1	Temp/Hum	24.3(°C)/ 52%RH
Phase:	Neutral	Test Date	September 15, 2022
Test Voltage:	120Vac, 60Hz	Test Engineer	Tony Chao



Frequency (MHz)	Quasi Peak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	Quasi Peak result (dBuV)	Average result (dBuV)	Quasi Peak limit (dBuV)	Average limit (dBuV)	Quasi Peak margin (dB)	Average margin (dB)	Remark
0.3140	19.99	14.06	10.18	30.17	24.24	59.86	49.86	-29.69	-25.62	Pass
0.6900	35.97	28.48	10.18	46.15	38.66	56.00	46.00	-9.85	-7.34	Pass
0.7980	29.44	23.05	10.20	39.64	33.25	56.00	46.00	-16.36	-12.75	Pass
1.8140	31.67	28.50	10.23	41.90	38.73	56.00	46.00	-14.10	-7.27	Pass
2.4140	21.56	18.99	10.24	31.80	29.23	56.00	46.00	-24.20	-16.77	Pass
15.2300	22.97	9.56	10.38	33.35	19.94	60.00	50.00	-26.65	-30.06	Pass

Note: Correction factor = LISN loss + Cable loss.

## 4.2 26dB BANDWIDTH, 6dB BANDWIDTH AND OCCUPIED BANDWIDTH (99%)

### 4.2.1 Test Limit

**26 dB Bandwidth** : For reporting purposes only.

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

### 4.2.2 Test Procedure

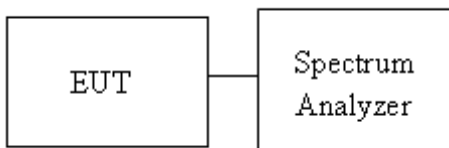
#### 26dB

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set RBW: approximately 1% of the emission bandwidth.
3. Set the VBW>RBW.
4. Detoctor = Peak.
5. Trace mode = max hold.
6. Measure the maximum width of the emission that is 26dB down from the peak of the emission. Compare this with the RBW setting of the analyser. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

## 99%

1. This measurement setting are specified in section D of KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
2. Set center frequency to the nominal EUT channel center frequency.
3. Set span = 1.5 times to 5.0 times the OBW.
4. Set RBW = 1 % to 5% of the OBW.
5. Set VBW  $\geq$  3 xRBW

### 4.2.3 Test Setup



Report No.: TMWK2207002731KR

#### 4.2.4 Test Result

Temperature: 22.3~25.5°C      Test date: September 1~October 4, 2022  
Humidity: 50~56% RH      Tested by: Jack Chen

#### UNII-1 5150-5250 MHz

Test mode: IEEE 802.11a mode

Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)
Low	5180	16.571	19.17
Mid	5220	16.576	19.36
High	5240	16.564	19.69

Test mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)
Low	5180	17.645	19.85
Mid	5220	17.631	19.99
High	5240	17.635	20.01

Test mode: IEEE 802.11n HT40 mode

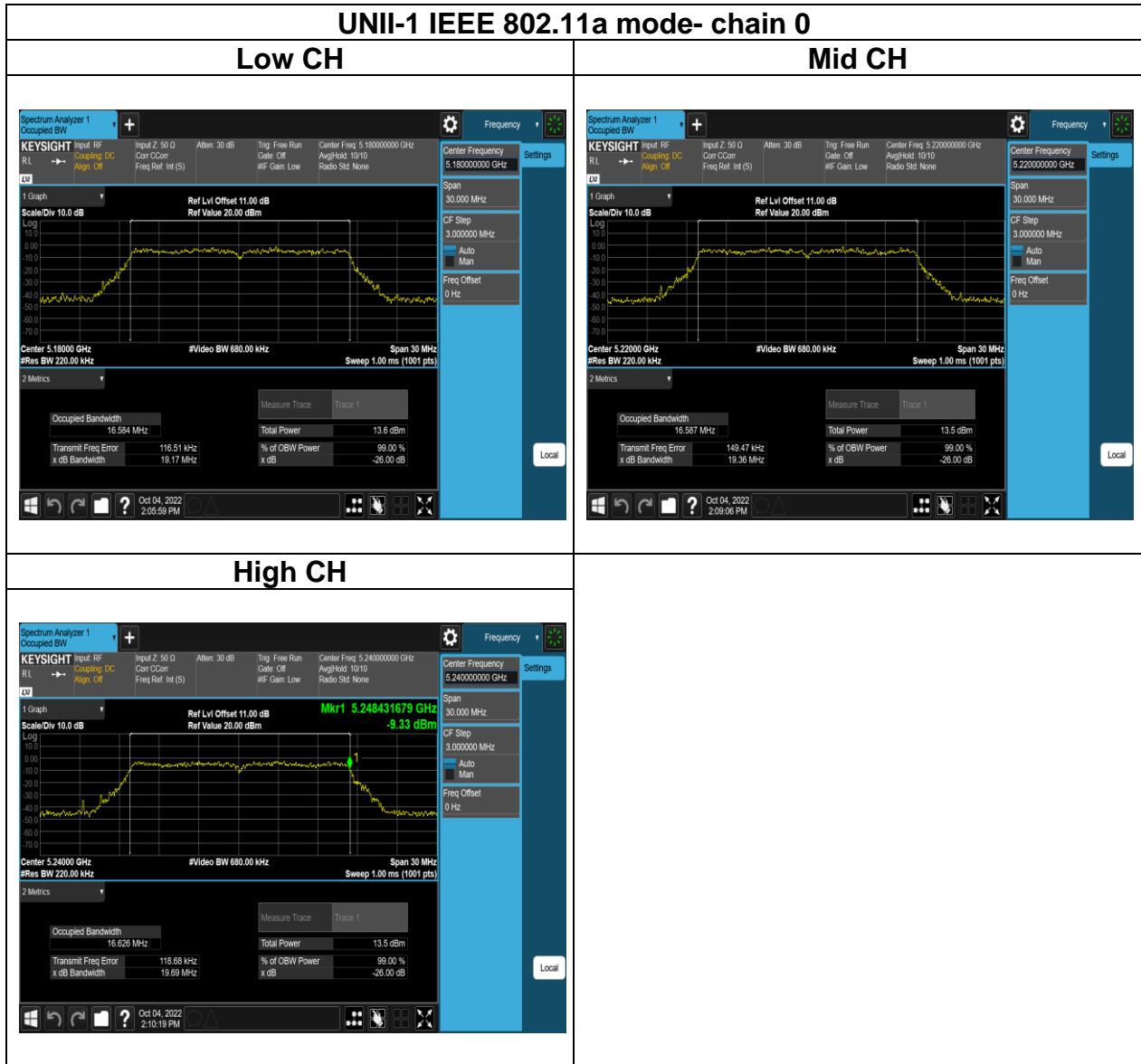
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)
Low	5190	36.191	40.79
High	5230	36.111	40.21

Test mode: IEEE 802.11ac VHT80 mode

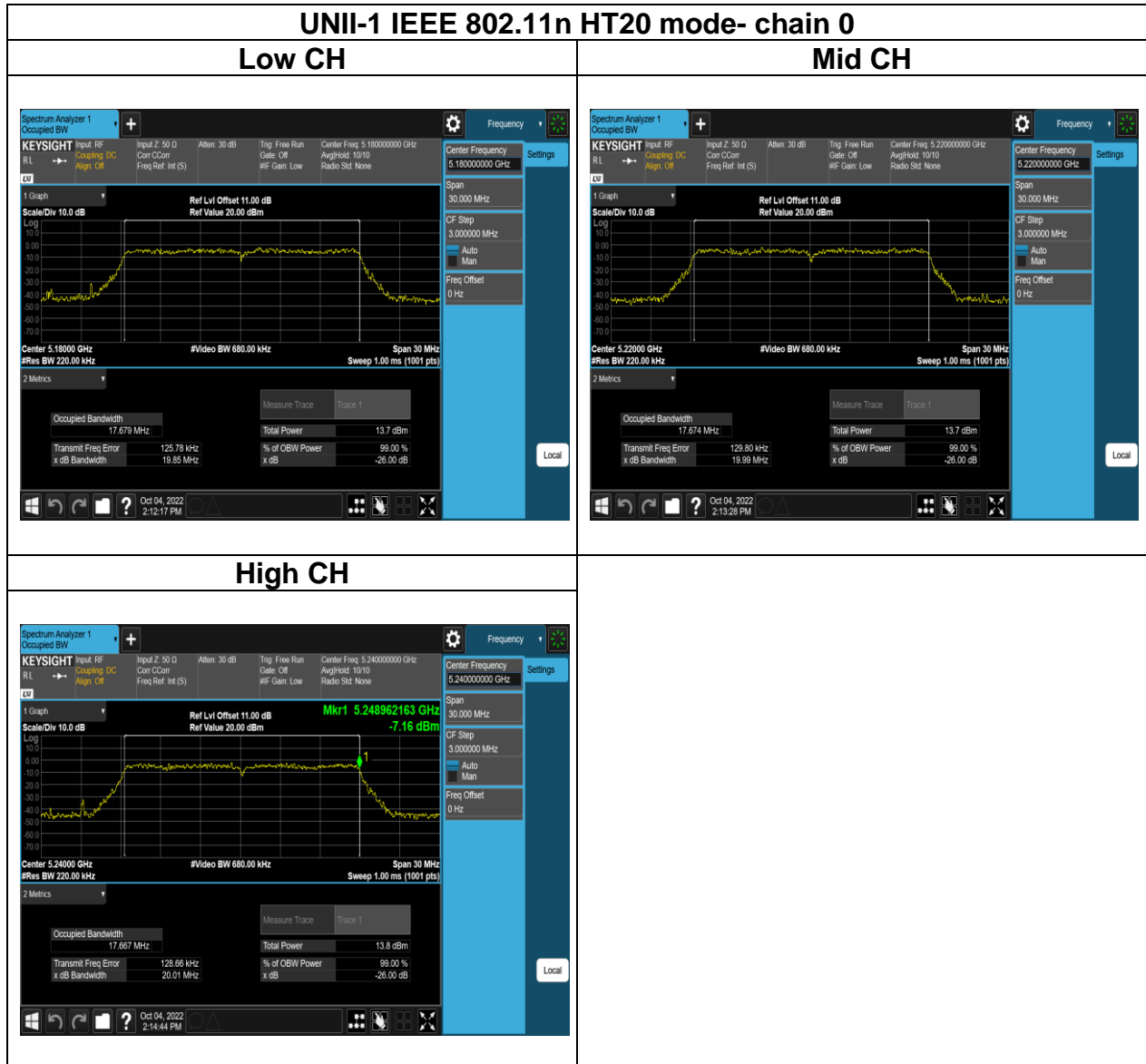
Channel	Frequency (MHz)	Chain 0 OBW(99%) (MHz)	Chain 0 26dB BW (MHz)
Low	5210	75.859	81.13

Report No.: TMWK2207002731KR

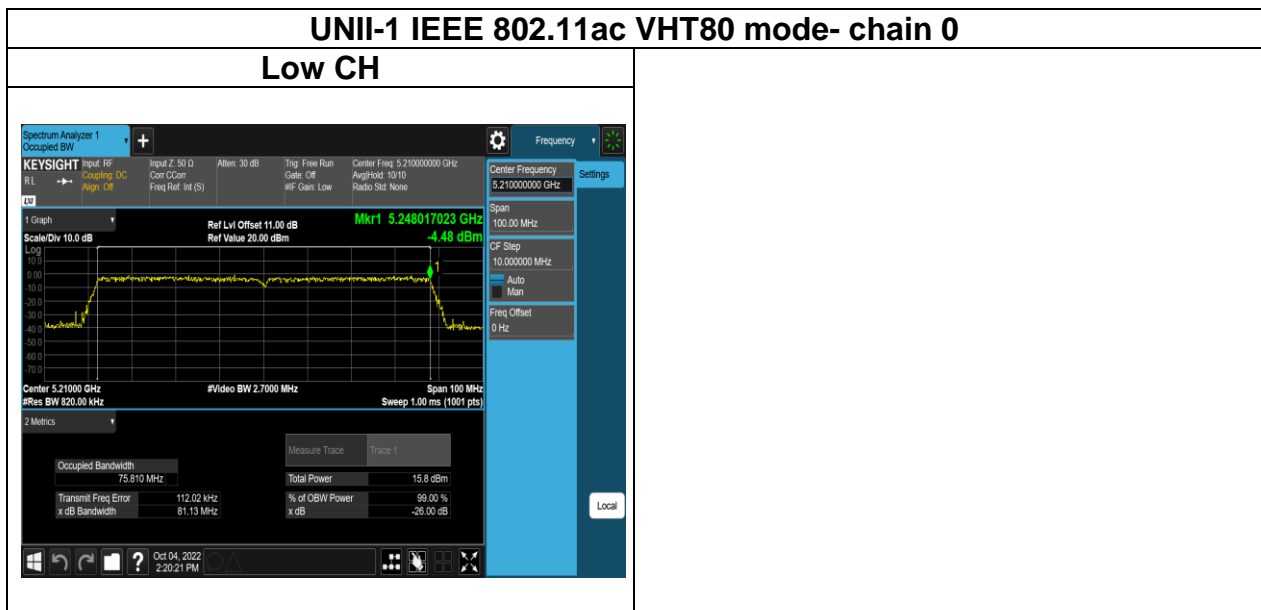
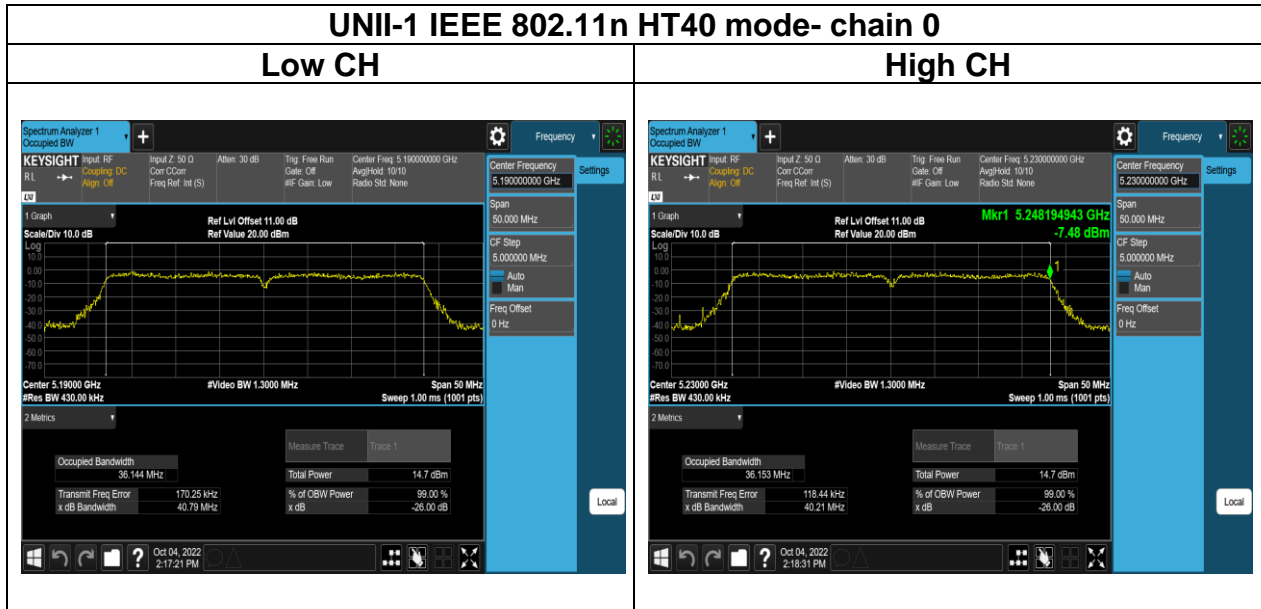
## Test Plots (26dB BANDWIDTH)



Report No.: TMWK2207002731KR



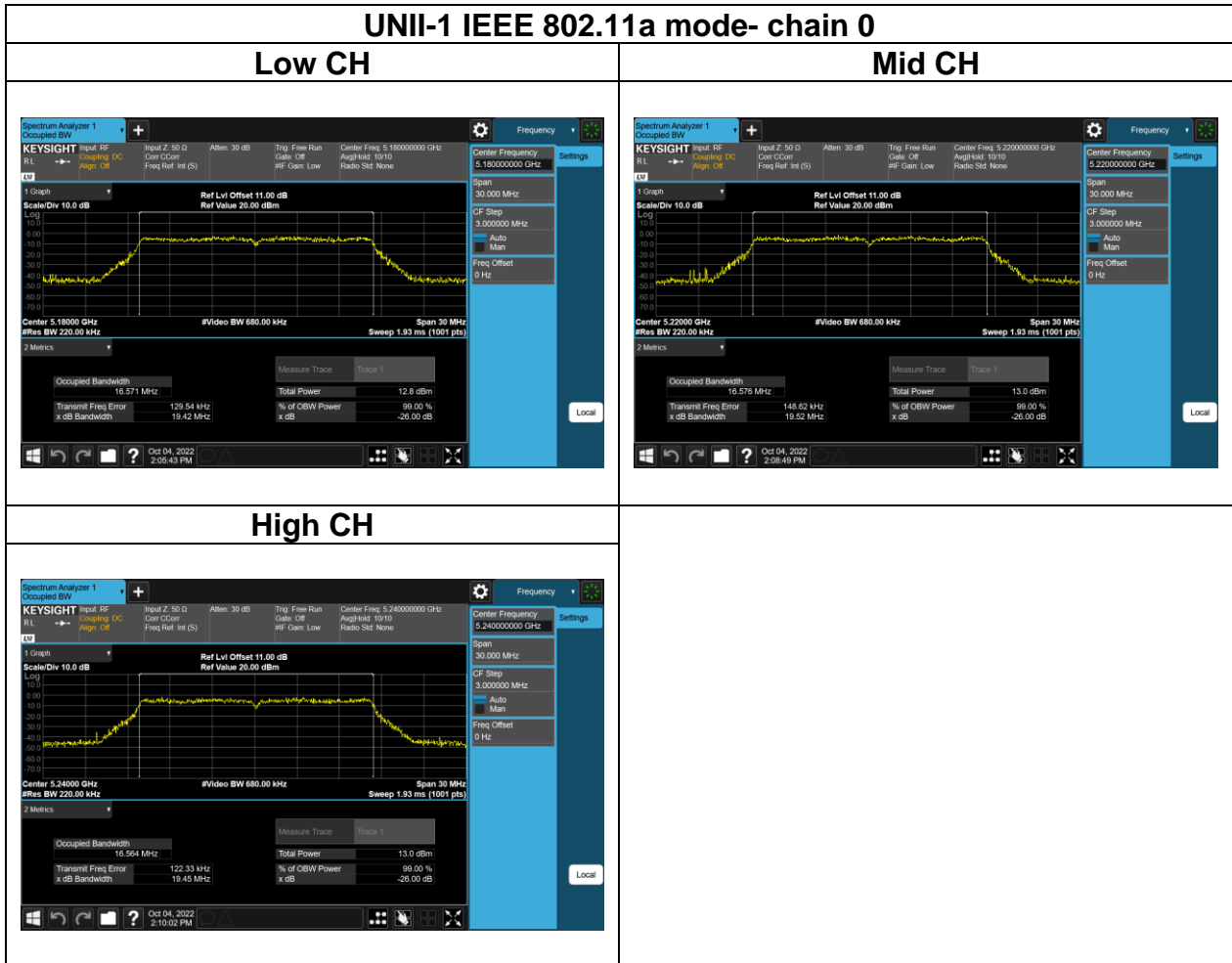
Report No.: TMWK2207002731KR



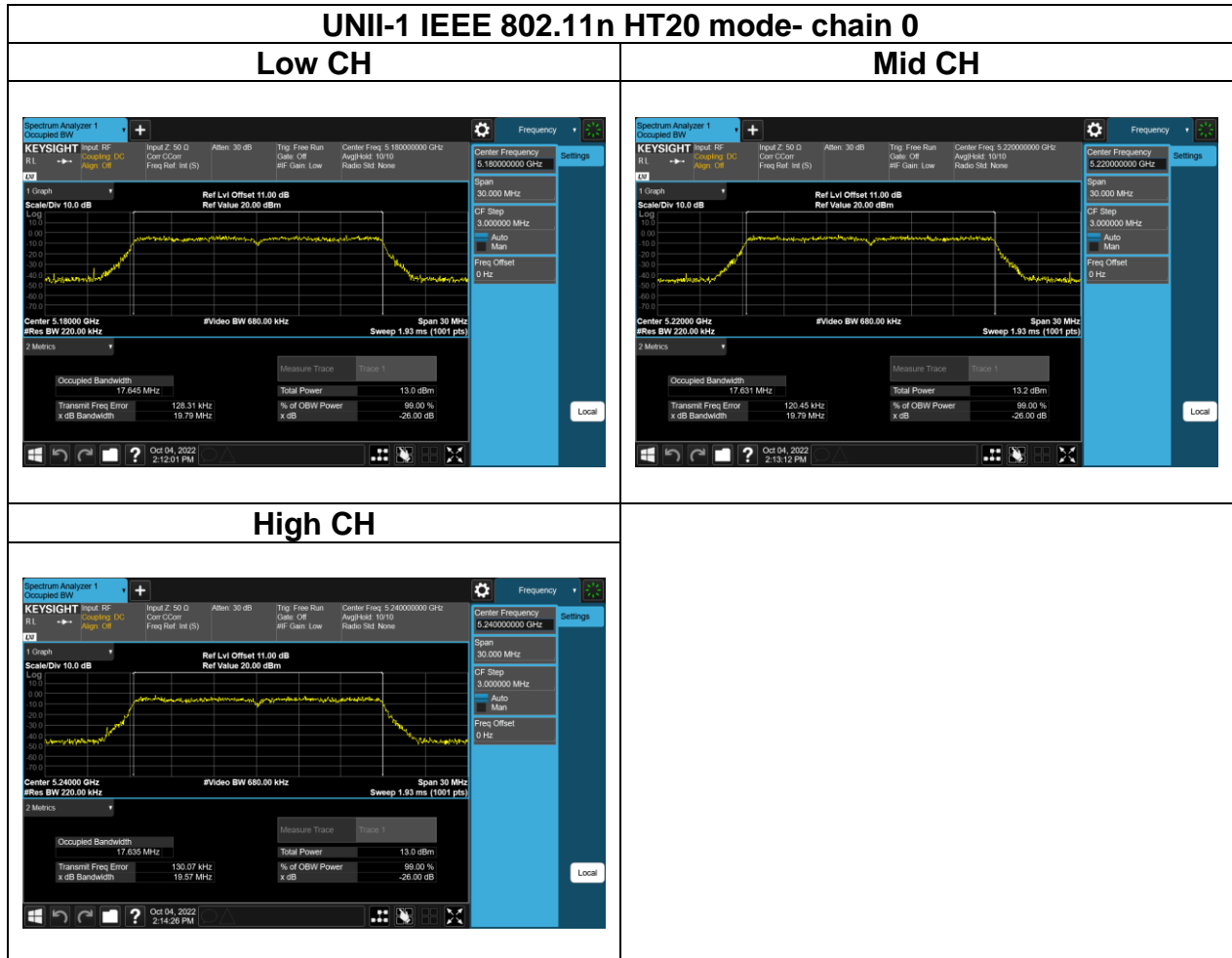


Report No.: TMWK2207002731KR

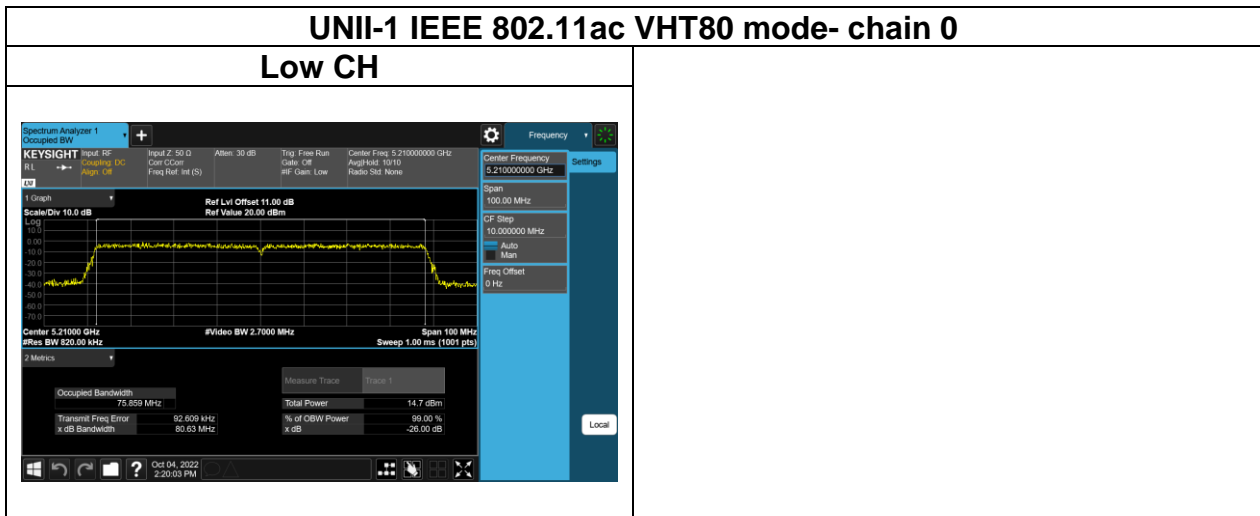
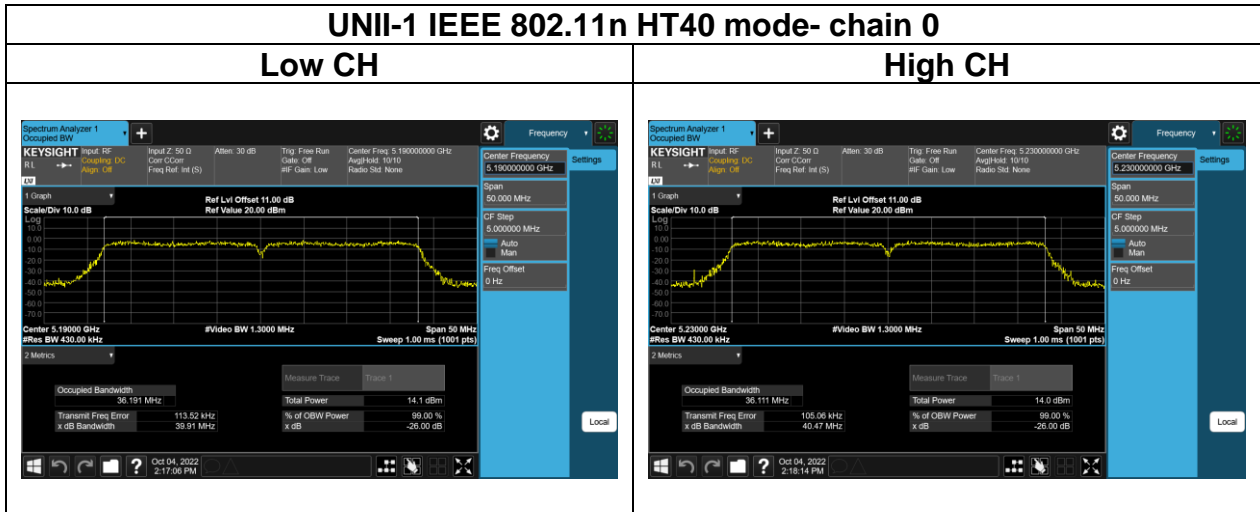
## Test Plots (OBW 99%)



Report No.: TMWK2207002731KR



Report No.: TMWK2207002731KR



Report No.: TMWK2207002731KR

## 4.3 OUTPUT POWER MEASUREMENT

### 4.3.1 Test Limit

According to §15.407 (a)(1),

#### UNII-1 :

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW (24 dBm), whichever power is less. B is the 99% emission bandwidth in megahertz, provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

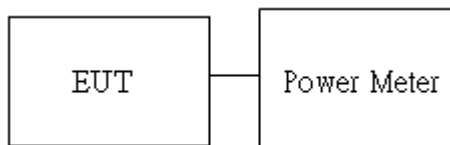
UNII-1 Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 24 dBm <input type="checkbox"/> Antenna with DG greater than 6 dBi : [Limit = 24 – (DG – 6)]
--------------	---

### 4.3.2 Test Procedure

Test method Refer as KDB 789033 D02, Section E.3.

1. The EUT RF output connected to the power meter or spectrum 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 Average output power. in the test report.

### 4.3.3 Test Setup



Report No.: TMWK2207002731KR

#### 4.3.4 Test Result

Temperature: 22.3~25.5°C      Test date: September 1~October 4, 2022  
Humidity: 50~56% RH      Tested by: Jack Chen

#### FCC Conducted output power :

##### Test Mode: IEEE 802.11a mode

CH	Frequency (MHz)	Data Rate	Power set	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	6	8	7.27	5.330	23.98	PASS
44	5220	6	8	<b>7.32</b>	5.392	23.98	PASS
48	5240	6	8	7.18	5.221	23.98	PASS

##### Test Mode: IEEE 802.11n HT20 mode

CH	Frequency (MHz)	Data Rate	Power set	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	8	7.46	5.574	23.98	PASS
44	5220	MCS0	8	<b>7.56</b>	5.704	23.98	PASS
48	5240	MCS0	8	7.42	5.523	23.98	PASS

##### Test Mode: IEEE 802.11n HT40 mode

CH	Frequency (MHz)	Data Rate	Power set	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	8	<b>7.34</b>	5.425	23.98	PASS
46	5230	MCS0	8	7.31	5.387	23.98	PASS

**Test Mode: IEEE 802.11ac VHT20 Mode**

CH	Frequency (MHz)	Data Rate	Power set	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
36	5180	MCS0	8	7.38	5.470	23.98	PASS
44	5220	MCS0	8	<b>7.52</b>	5.649	23.98	PASS
48	5240	MCS0	8	7.37	5.458	23.98	PASS

**Test Mode: IEEE 802.11ac VHT40 Mode**

CH	Frequency (MHz)	Data Rate	Power set	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
38	5190	MCS0	8	<b>7.30</b>	5.370	23.98	PASS
46	5230	MCS0	8	7.26	5.321	23.98	PASS

**Test mode: IEEE 802.11ac VHT80 mode**

CH	Frequency (MHz)	Data Rate	Power set	TOTAL POWER (dBm)	TOTAL POWER (mW)	REQUIRED LIMIT (dBm)	RESULT
42	5210	MCS0	8	<b>7.64</b>	5.804	23.98	PASS

Report No.: TMWK2207002731KR

## 4.4 POWER SPECTRAL DENSITY

### 4.4.1 Test Limit

According to §15.407 (a)(1),

#### UNII-1 :

For client devices, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

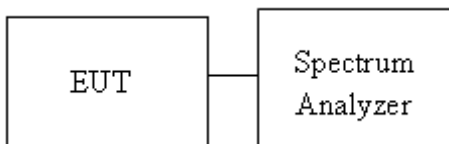
UNII-1 Limit	<input checked="" type="checkbox"/> Antenna not exceed 6 dBi : 11 dBm/MHz <input type="checkbox"/> Antenna with DG greater than 6 dBi : [Limit = 11 – (DG – 6) dBm/MHz]
--------------	---

### 4.4.2 Test Procedure

Test method Refer as KDB 789033 D02

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. UNII-1 SA set RBW = 1MHz, VBW = 3MHz and Detector = RMS, to measurement Power Density.
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.

### 4.4.3 Test Setup





Report No.: TMWK2207002731KR

#### 4.4.4 Test Result

Temperature: 22.3~25.5°C      Test date: September 1~October 4, 2022  
Humidity: 50~56% RH      Tested by: Jack Chen

##### UNII-1 5150-5250 MHz

##### Test Mode: IEEE 802.11a mode

Channel	Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Duty Factor (dB)	Maximum Corr'd PSD (dBm/MHz)	Limit (dBm/MHz)	Margin (dB)
Low	5180	-0.965	0.14	-0.83	11.00	-11.83
Mid	5220	-1.107	0.14	-0.97	11.00	-11.97
High	5240	-1.169	0.14	-1.03	11.00	-12.03

##### Test Mode: IEEE 802.11n HT20 mode

Channel	Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Duty Factor (dB)	Maximum Corr'd PSD (dBm/MHz)	Limit (dBm/MHz)	Margin (dB)
Low	5180	-0.716	0.09	-0.63	11.00	-11.63
Mid	5220	-1.013	0.09	-0.92	11.00	-11.92
High	5240	-1.395	0.09	-1.31	11.00	-12.31

##### Test Mode: IEEE 802.11n HT40 mode

Channel	Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Duty Factor (dB)	Maximum Corr'd PSD (dBm/MHz)	Limit (dBm/MHz)	Margin (dB)
Low	5190	-4.451	0.18	-4.27	11.00	-15.27
High	5230	-4.435	0.18	-4.26	11.00	-15.26

##### Test Mode: IEEE 802.11ac VHT80 mode

Channel	Frequency (MHz)	Ch0 meas PSD (dBm/MHz)	Duty Factor (dB)	Maximum Corr'd PSD (dBm/MHz)	Limit (dBm/MHz)	Margin (dB)
Low	5210	-7.452	0.39	-7.06	11.00	-18.06

Report No.: TMWK2207002731KR

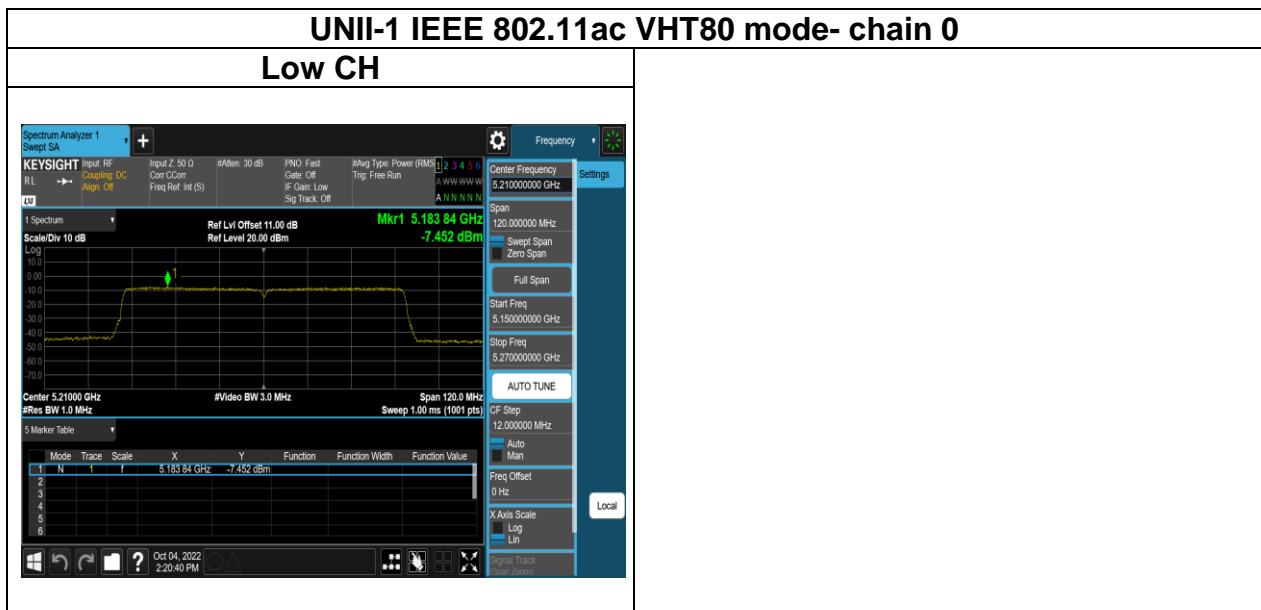
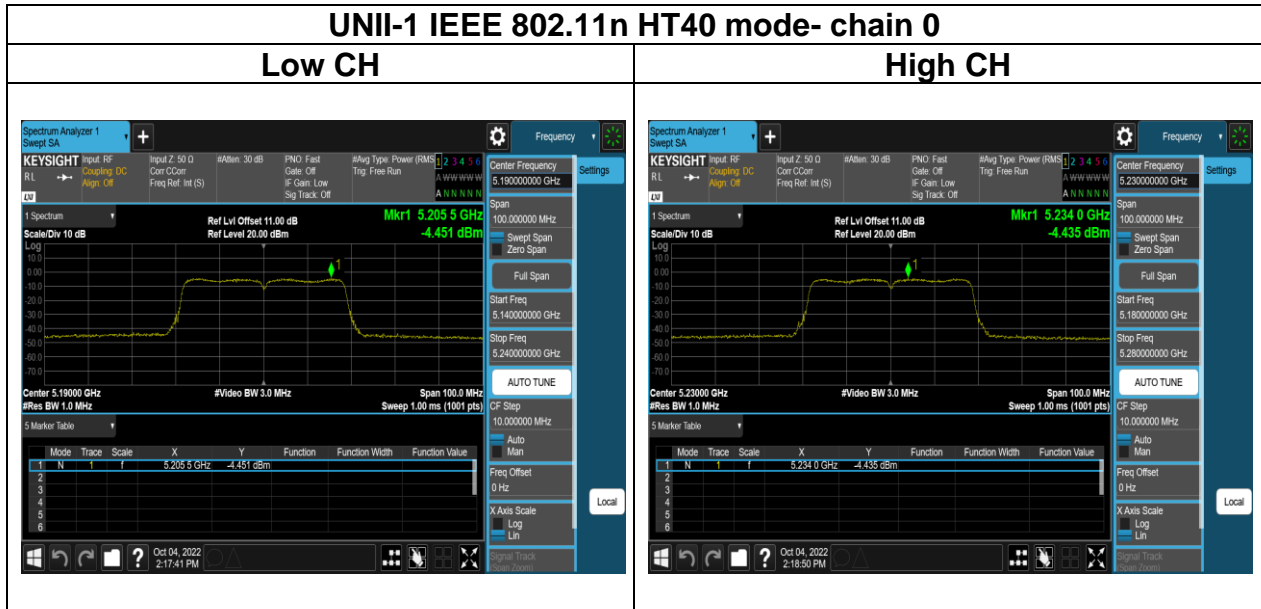
## Test Plots



Report No.: TMWK2207002731KR



Report No.: TMWK2207002731KR



Report No.: TMWK2207002731KR

## 4.5 RADIATION BANDEDGE AND SPURIOUS EMISSION

### 4.5.1 Test Limit

FCC according to §15.407, §15.209 and §15.205,

#### 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 (MHz)	Field Strength microvolts/m at 3 metres (watts, e.i.r.p.)	
	Transmitters	Receivers
30-88	100 (3 nW)	100 (3 nW)
88-216	150 (6.8 nW)	150 (6.8 nW)
216-960	200 (12 nW)	200 (12 nW)
Above 960	500 (75 nW)	500 (75 nW)

#### UNII-1 :

For transmitters operating in the band 5150-5250 MHz, all emissions outside the band 5150-5350 MHz shall not exceed -27 dBm/MHz e.i.r.p. However, any unwanted emissions that fall into the band 5250-5350 MHz must be 26 dBc, when measured using a resolution bandwidth between 1 and 5% of the occupied bandwidth, above 5.25 GHz. Otherwise, the transmission is considered as intentional and the devices shall implement dynamic frequency selection (DFS) and transmitter power control (TPC) as per the requirements for the band 5250-5350 MHz

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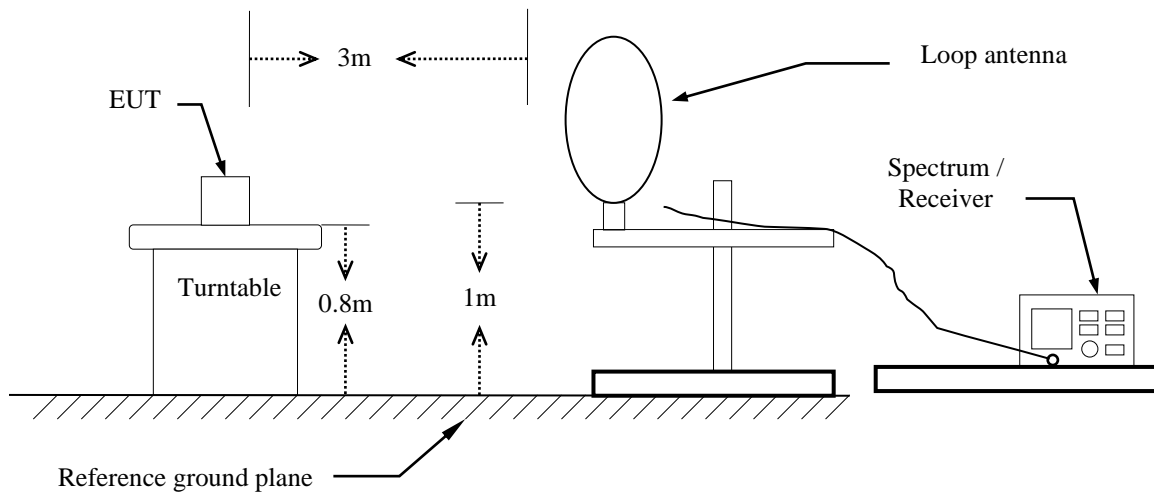
## 4.5.2 Test Procedure

Test method Refer as KDB 789033 D02.

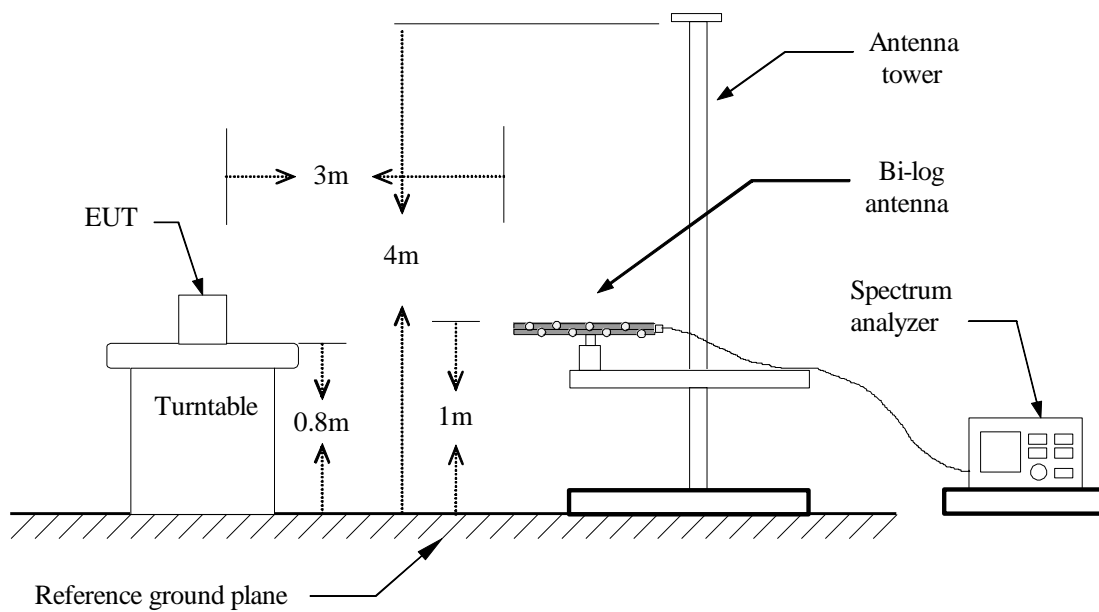
1. The EUT is placed on a turntable, Above 1 GHz is 1.5m and below 1 GHz is 0.8m above ground plane. The EUT Configured un accordance with ANSI C63.10: 2013, and the EUT set in a continuous mode.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. And 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 40GHz set to the low, Mid and High channels with the EUT transmit.
4. No emission found between lowest internal used/generated frequency to 30MHz (9KHz~30MHz)
5. The SA setting following :
  - (1) Below 1G : RBW = 100kHz, VBW  $\geq 3 \times$  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.
6. Data result
  - Actual FS=Spectrum Reading Level + Factor
  - Margin=Actual FS- Limit

## 4.5.3 Test Setup

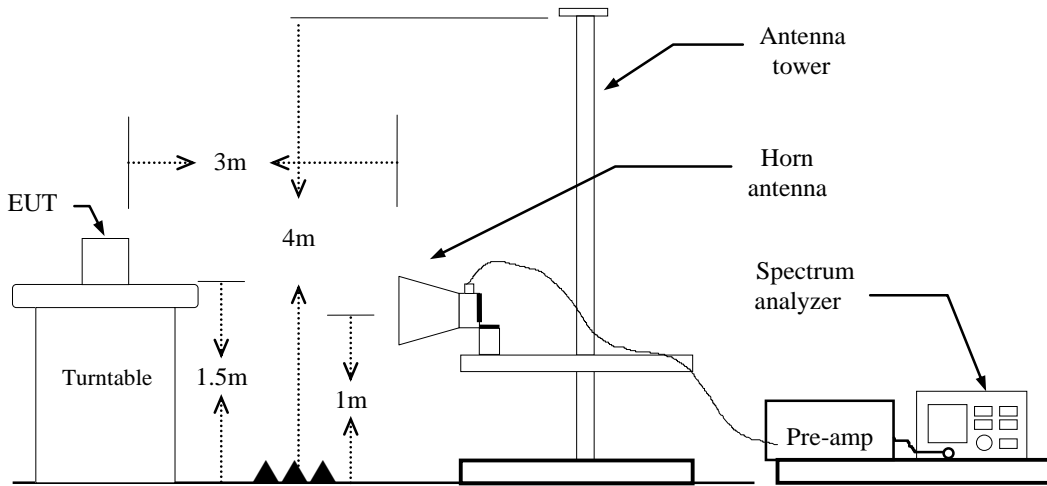
### 9kHz ~ 30MHz



### 30MHz ~ 1GHz



## Above 1 GHz





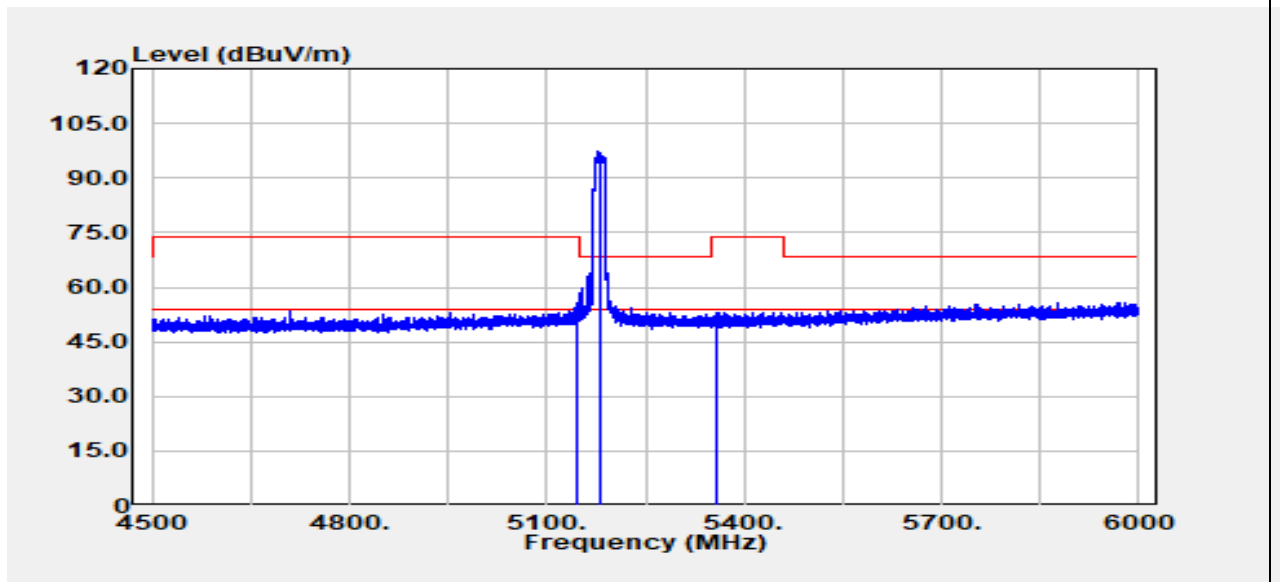
Report No.: TMWK2207002731KR

### 4.5.4 Test Result

#### Band Edge Test Data

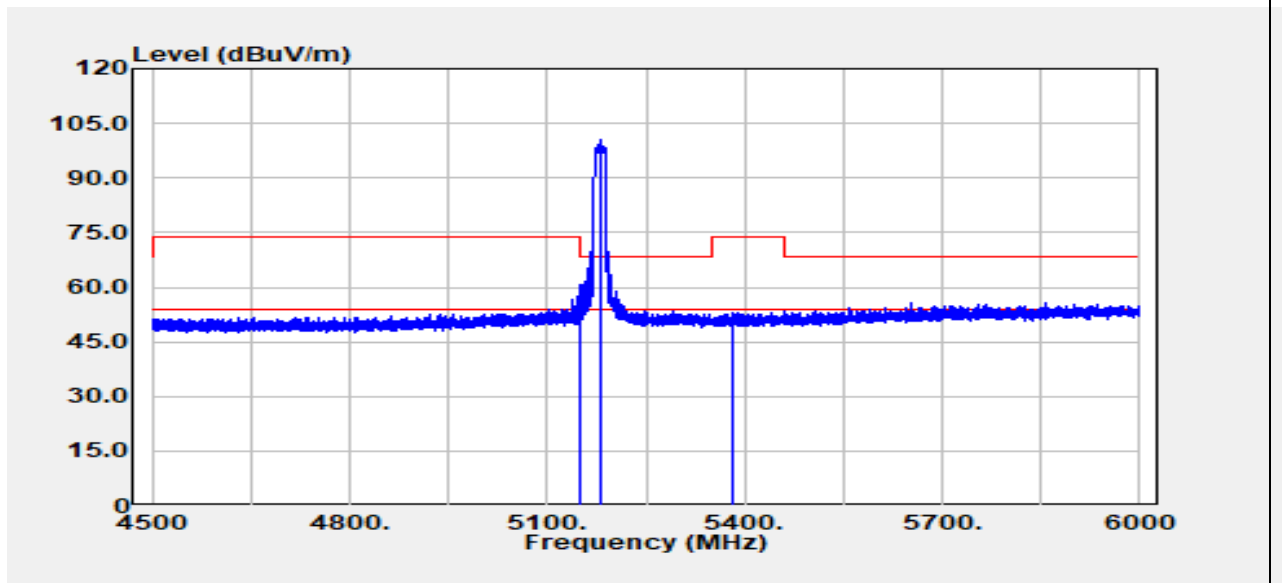
##### Test Data for UNII-1

Test Mode	IEEE 802.11a / 5180 MHz	Temp/Hum	24.6(°C) / 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



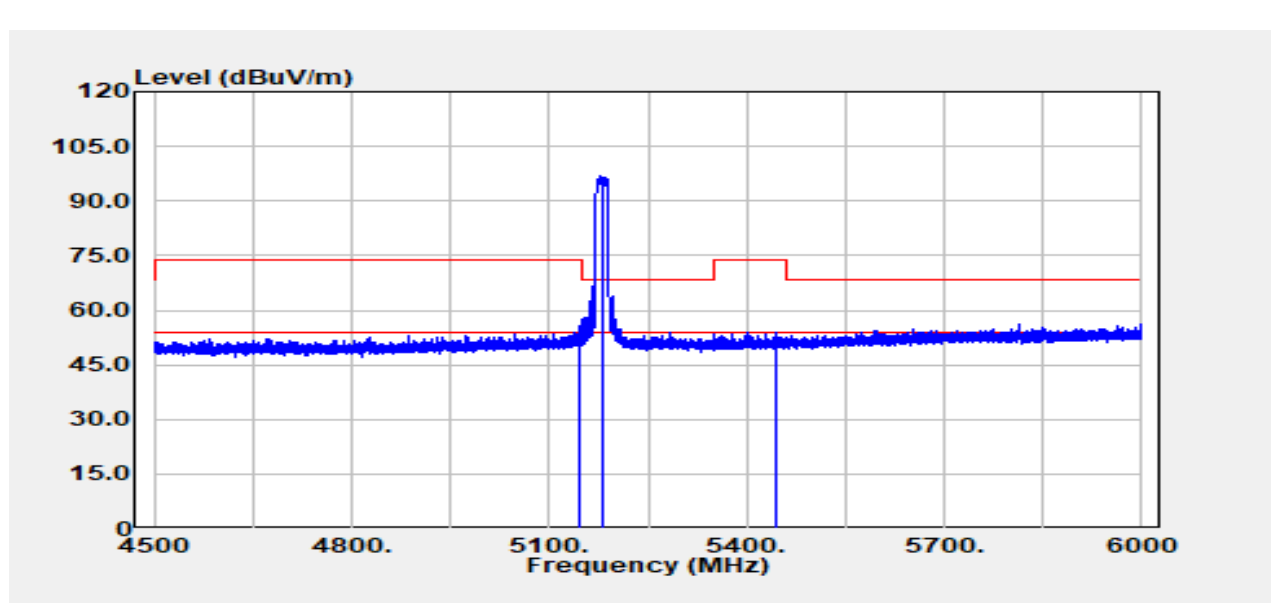
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5146.313	Peak	38.83	16.91	55.74	74.00	-18.26
5146.313	Average	26.94	16.91	43.84	54.00	-10.16
5180.000	Peak	80.44	17.00	97.44	--	--
5180.000	Average	72.89	17.00	89.89	--	--
5357.813	Peak	35.88	17.25	53.12	74.00	-20.88
5357.813	Average	26.15	17.25	43.40	54.00	-10.60

Test Mode	IEEE 802.11a / 5180 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5148.188	Peak	41.90	16.91	58.80	74.00	-15.20
5148.188	Average	27.46	16.91	44.37	54.00	-9.63
5180.000	Peak	83.51	17.00	100.51	--	--
5180.000	Average	75.63	17.00	92.63	--	--
5381.063	Peak	35.81	17.29	53.10	74.00	-20.90
5381.063	Average	26.36	17.29	43.65	54.00	-10.35

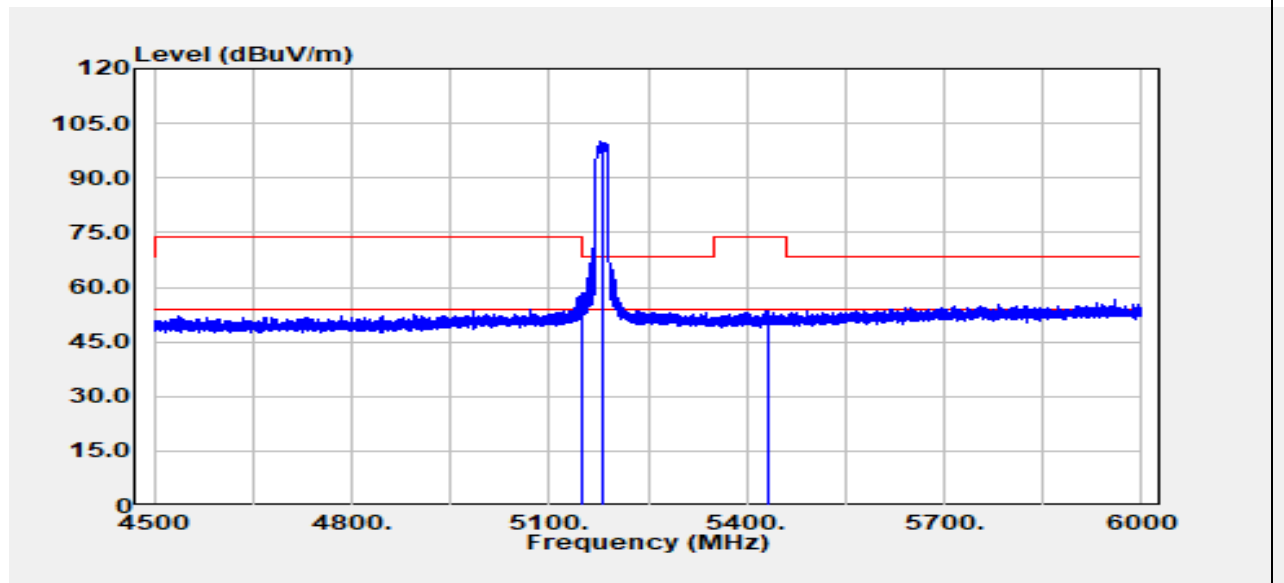
Test Mode	IEEE 802.11n 20 / 5180 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5147.813	Peak	38.82	16.91	55.73	74.00	-18.27
5147.813	Average	27.54	16.91	44.44	54.00	-9.56
5180.000	Peak	79.70	17.00	96.70	--	--
5180.000	Average	72.64	17.00	89.64	--	--
5445.563	Peak	36.57	17.48	54.04	74.00	-19.96
5445.563	Average	25.97	17.48	43.44	54.00	-10.56

Report No.: TMWK2207002731KR

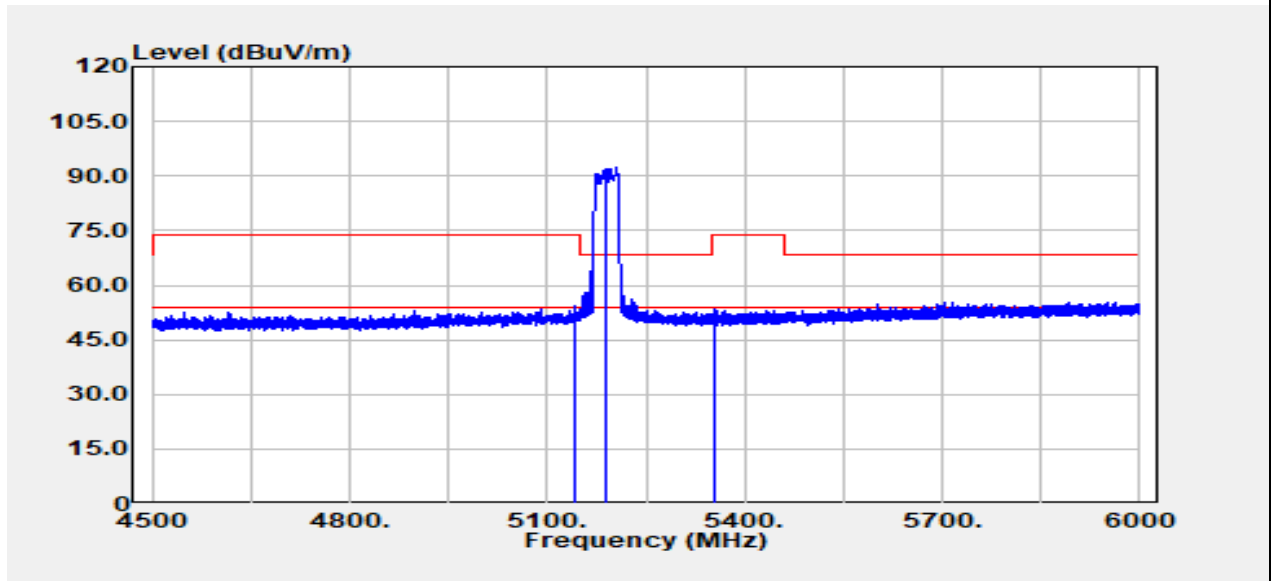
Test Mode	IEEE 802.11n 20 / 5180 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5149.688	Peak	41.49	16.91	58.40	74.00	-15.60
5149.688	Average	27.68	16.91	44.59	54.00	-9.41
5180.000	Peak	82.92	17.00	99.92	--	--
5180.000	Average	75.74	17.00	92.74	--	--
5434.500	Peak	36.08	17.44	53.52	74.00	-20.48
5434.500	Average	26.06	17.44	43.50	54.00	-10.50

Report No.: TMWK2207002731KR

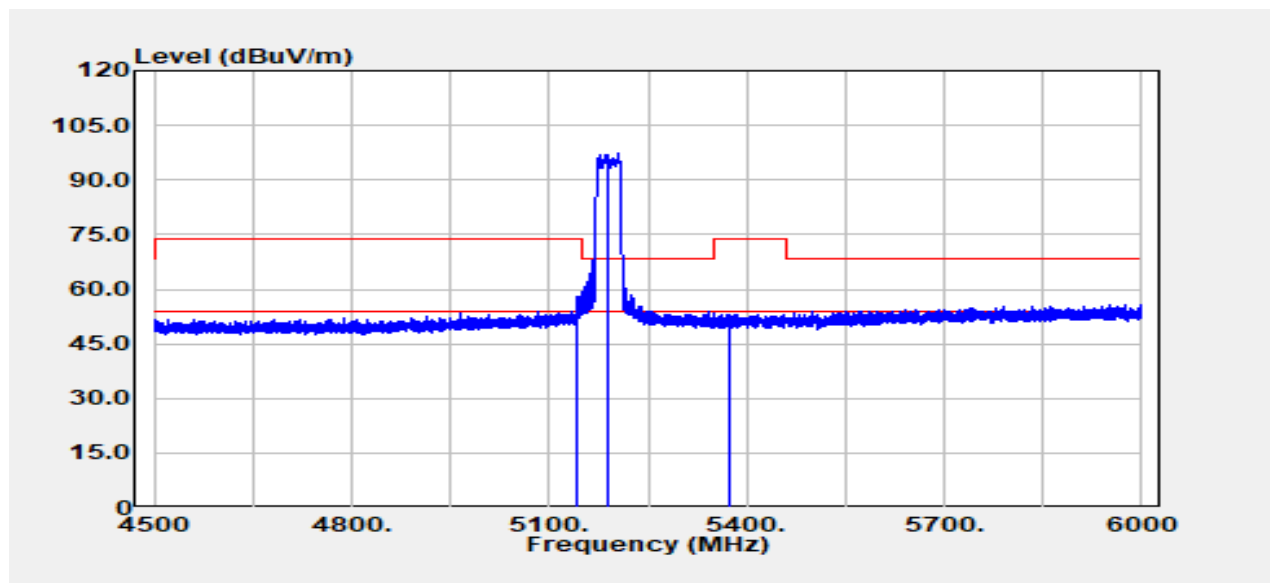
Test Mode	IEEE 802.11n 40 / 5190 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5143.688	Peak	37.31	16.91	54.22	74.00	-19.78
5143.688	Average	27.30	16.91	44.21	54.00	-9.79
5190.000	Peak	75.22	17.03	92.25	--	--
5190.000	Average	67.90	17.03	84.93	--	--
5353.125	Peak	36.11	17.24	53.34	74.00	-20.66
5353.125	Average	26.31	17.24	43.55	54.00	-10.45

Report No.: TMWK2207002731KR

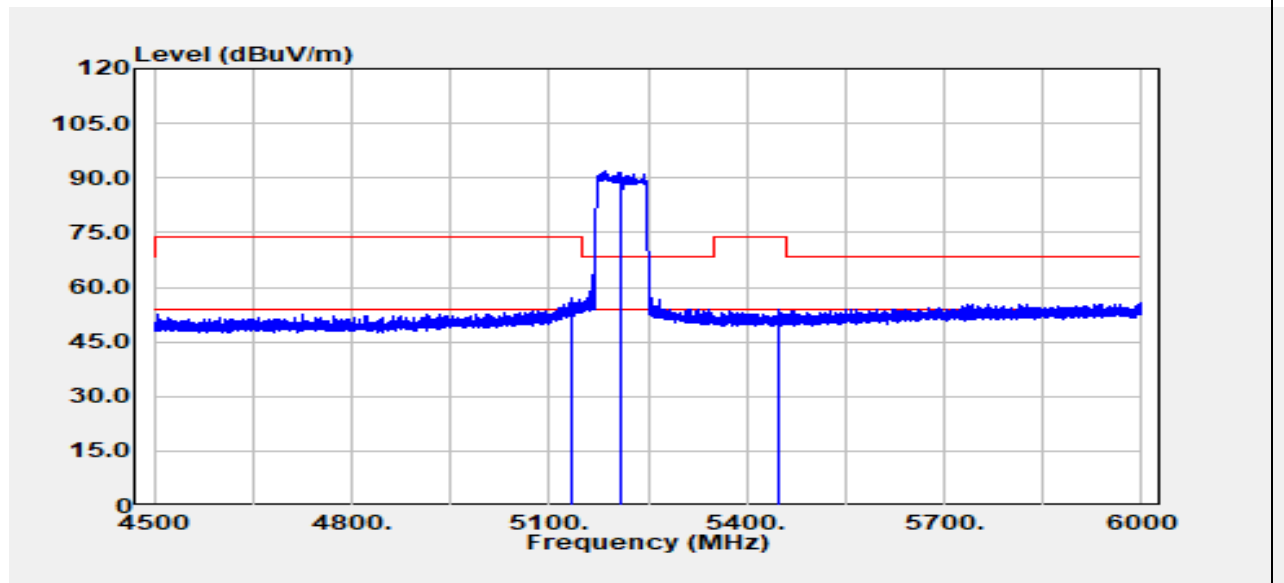
Test Mode	IEEE 802.11n 40 / 5190 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5142.750	Peak	41.26	16.91	58.16	74.00	-15.84
5142.750	Average	29.54	16.91	46.44	54.00	-7.56
5190.000	Peak	80.16	17.03	97.19	--	--
5190.000	Average	72.81	17.03	89.84	--	--
5375.625	Peak	35.73	17.28	53.01	74.00	-20.99
5375.625	Average	26.40	17.28	43.68	54.00	-10.32

Report No.: TMWK2207002731KR

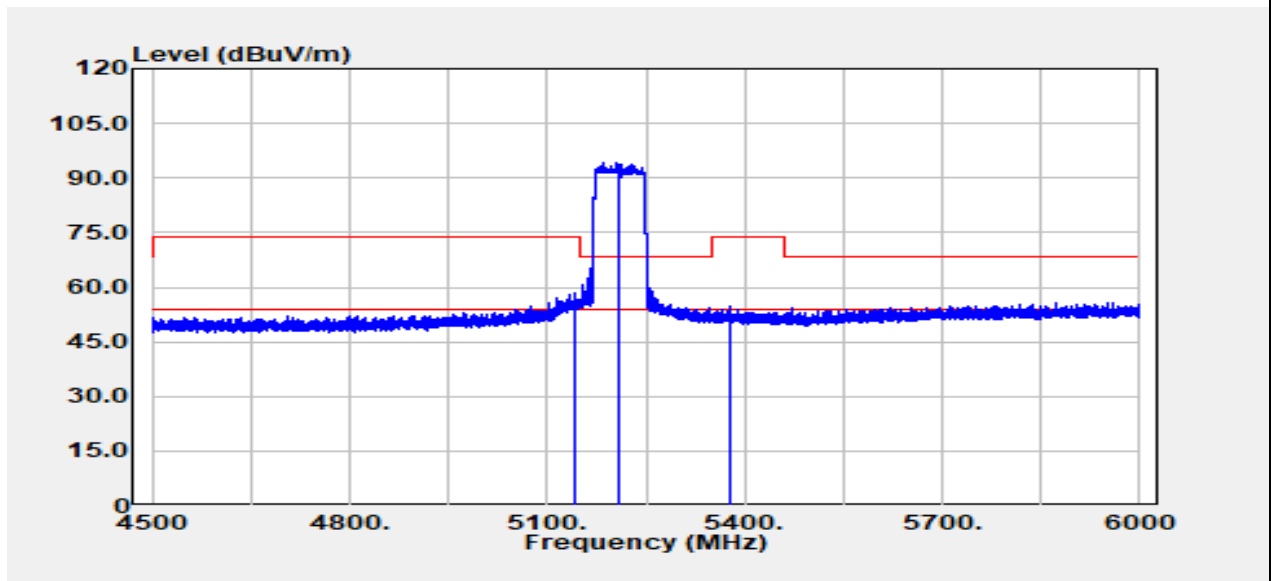
Test Mode	IEEE 802.11ac VHT80 / 5210 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5133.188	Peak	40.13	16.90	57.03	74.00	-16.97
5133.188	Average	29.59	16.90	46.49	54.00	-7.51
5210.000	Peak	74.91	17.07	91.98	--	--
5210.000	Average	66.78	17.07	83.85	--	--
5448.188	Peak	36.35	17.48	53.83	74.00	-20.17
5448.188	Average	26.09	17.48	43.57	54.00	-10.43

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11ac VHT80 / 5210 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Band Edge	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		

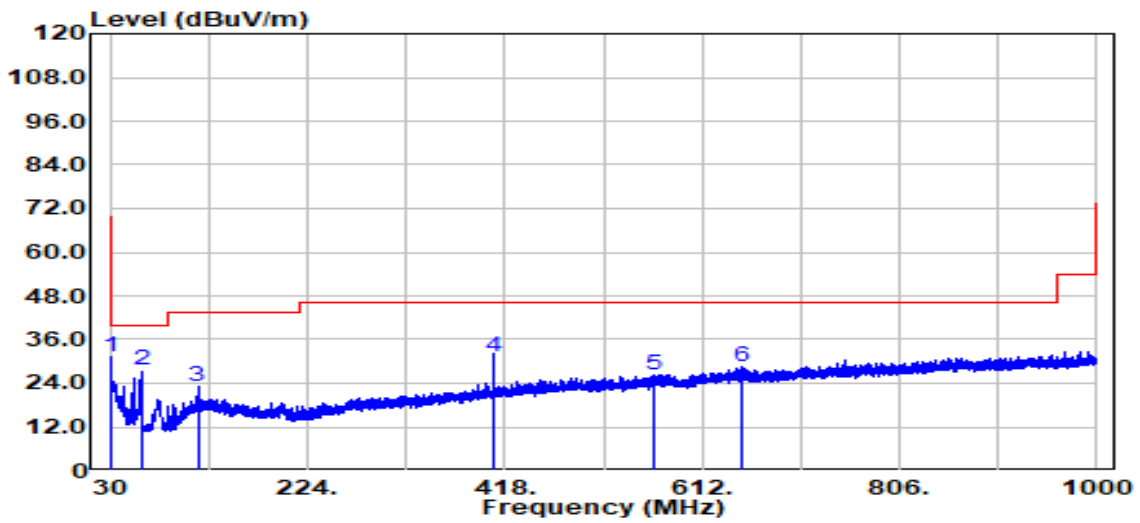


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
5143.688	Peak	41.29	16.91	58.19	74.00	-15.81
5143.688	Average	31.15	16.91	48.06	54.00	-5.94
5210.000	Peak	77.11	17.07	94.18	--	--
5210.000	Average	68.98	17.07	86.05	--	--
5378.063	Peak	37.31	17.29	54.59	74.00	-19.41
5378.063	Average	27.08	17.29	44.36	54.00	-9.64



### Below 1G Test Data

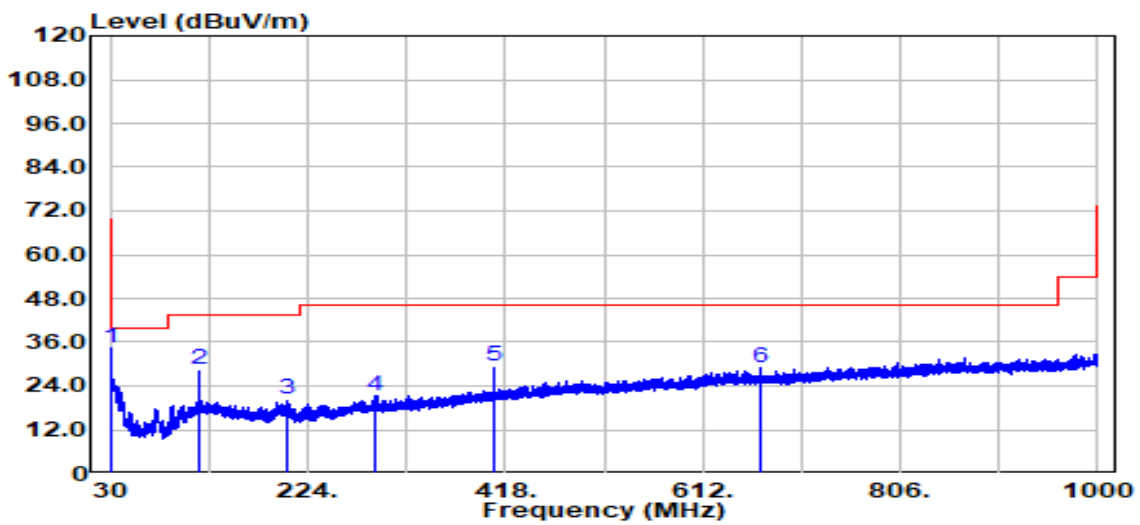
Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 4: 7.8" Color Digital Note Pad



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
30.000	Peak	34.50	-3.22	31.28	40.00	-8.72
62.495	Peak	43.84	-16.10	27.74	40.00	-12.26
116.088	Peak	32.84	-9.92	22.92	43.50	-20.58
408.058	Peak	36.80	-5.71	31.09	46.00	-14.91
563.864	Peak	29.08	-2.60	26.47	46.00	-19.53
650.194	Peak	29.26	-0.94	28.32	46.00	-17.68

**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.

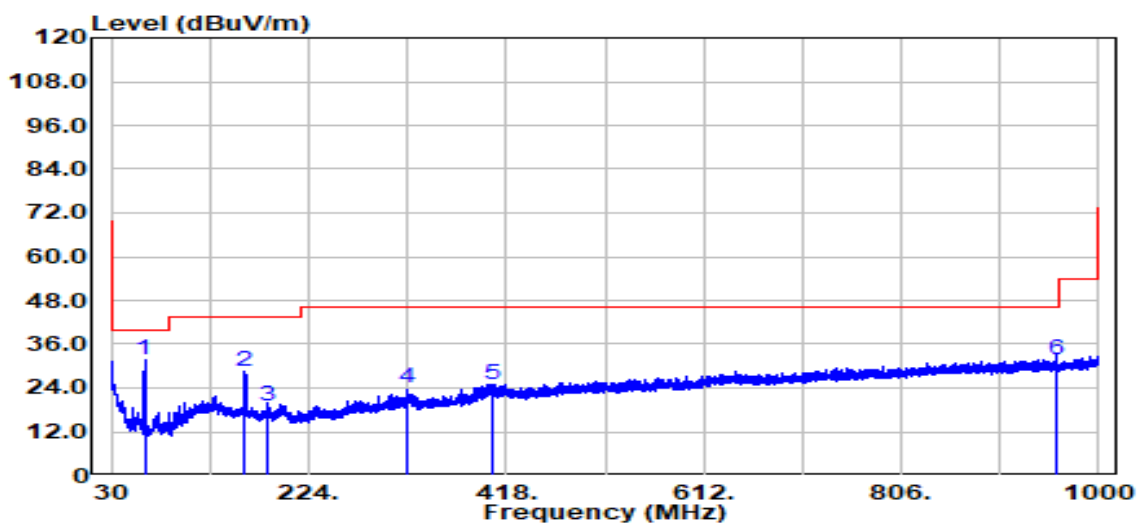
Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 4: 7.8" Color Digital Note Pad



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
30.000	Peak	37.54	-3.22	34.32	40.00	-5.68
116.573	Peak	38.45	-9.72	28.73	43.50	-14.77
204.236	Peak	32.32	-11.76	20.57	43.50	-22.93
291.051	Peak	30.34	-8.97	21.37	46.00	-24.63
408.058	Peak	35.34	-5.71	29.64	46.00	-16.36
667.775	Peak	29.87	-0.89	28.99	46.00	-17.01

**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.

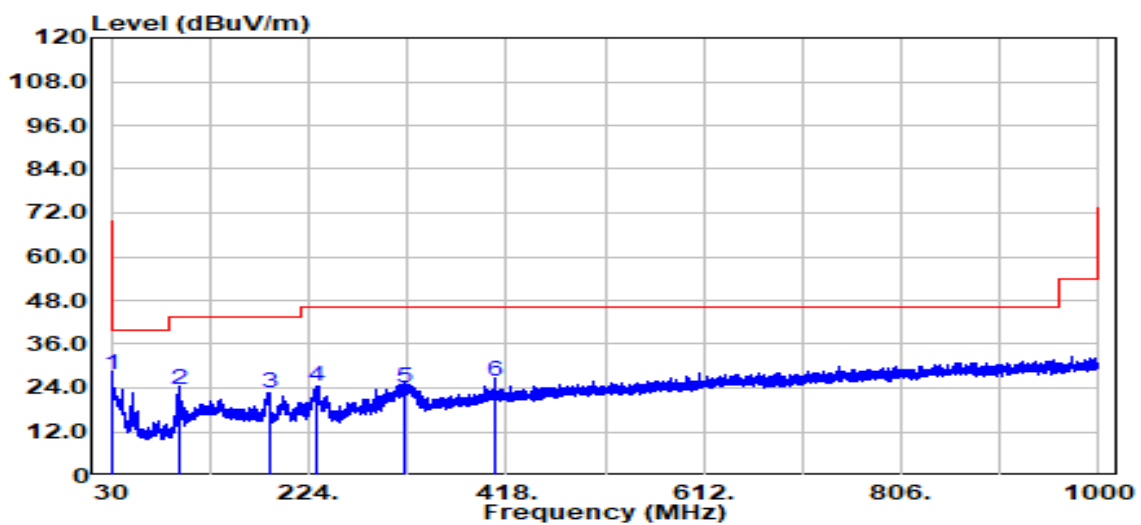
Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 1: 7.8" Digital Reader



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
62.738	Peak	47.87	-16.07	31.80	40.00	-8.20
161.678	Peak	39.32	-10.88	28.44	43.50	-15.06
184.351	Peak	30.84	-11.75	19.09	43.50	-24.41
321.606	Peak	32.24	-8.40	23.84	46.00	-22.16
403.450	Peak	30.85	-5.86	24.99	46.00	-21.01
958.048	Peak	28.64	3.25	31.88	46.00	-14.12

**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.

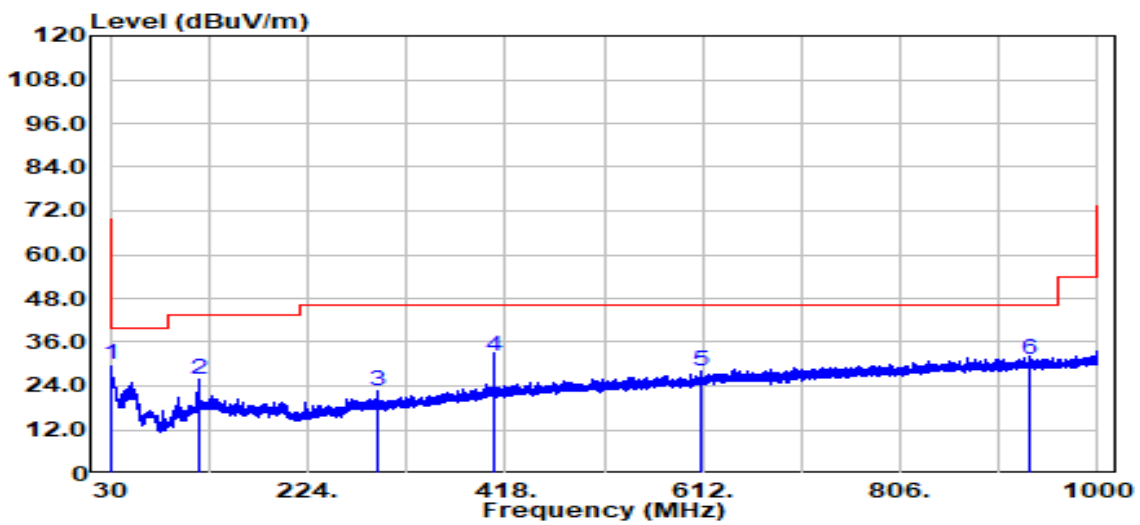
Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C) / 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 1: 7.8" Digital Reader



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
30.000	Peak	30.80	-3.22	27.58	40.00	-12.42
97.658	Peak	37.15	-13.76	23.39	43.50	-20.11
184.958	Peak	34.28	-11.68	22.60	43.50	-20.90
232.124	Peak	35.93	-11.31	24.62	46.00	-21.38
318.818	Peak	32.62	-8.45	24.17	46.00	-21.83
407.936	Peak	31.44	-5.71	25.73	46.00	-20.27

**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.

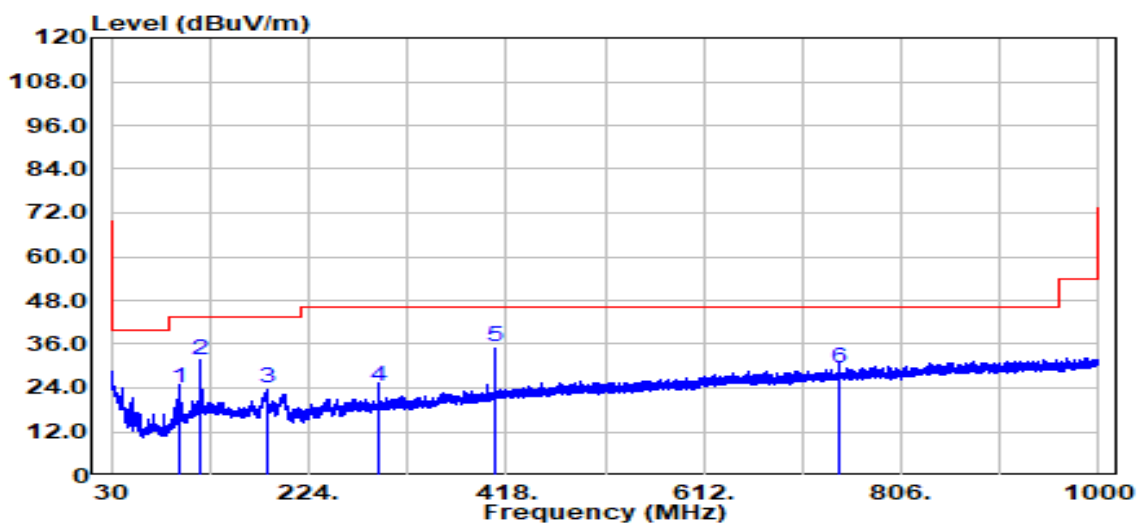
Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 2: 7.8" Digital Note Pad



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
30.000	Peak	32.91	-3.22	29.69	40.00	-10.31
116.330	Peak	35.53	-9.82	25.71	43.50	-17.79
291.779	Peak	31.80	-8.96	22.84	46.00	-23.16
408.058	Peak	37.74	-5.71	32.03	46.00	-13.97
609.939	Peak	30.23	-1.98	28.25	46.00	-17.75
932.343	Peak	27.92	3.13	31.05	46.00	-14.95

**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.

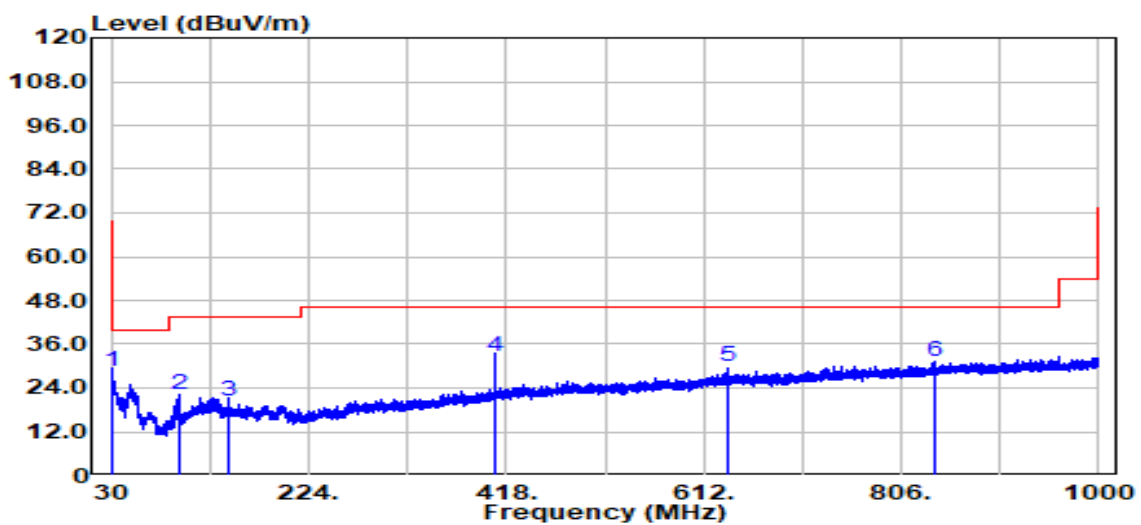
Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 2: 7.8" Digital Note Pad



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBµV)	Factor (dB)	Actual FS (dBµV/m)	Limit @3m (dBµV/m)	Margin (dB)
96.203	Peak	38.10	-14.12	23.98	43.50	-19.52
116.573	Peak	41.28	-9.72	31.56	43.50	-11.94
182.411	Peak	35.78	-11.71	24.08	43.50	-19.42
291.779	Peak	33.27	-8.96	24.30	46.00	-21.70
408.058	Peak	41.20	-5.71	35.49	46.00	-10.51
744.163	Peak	29.22	0.35	29.57	46.00	-16.43

**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.

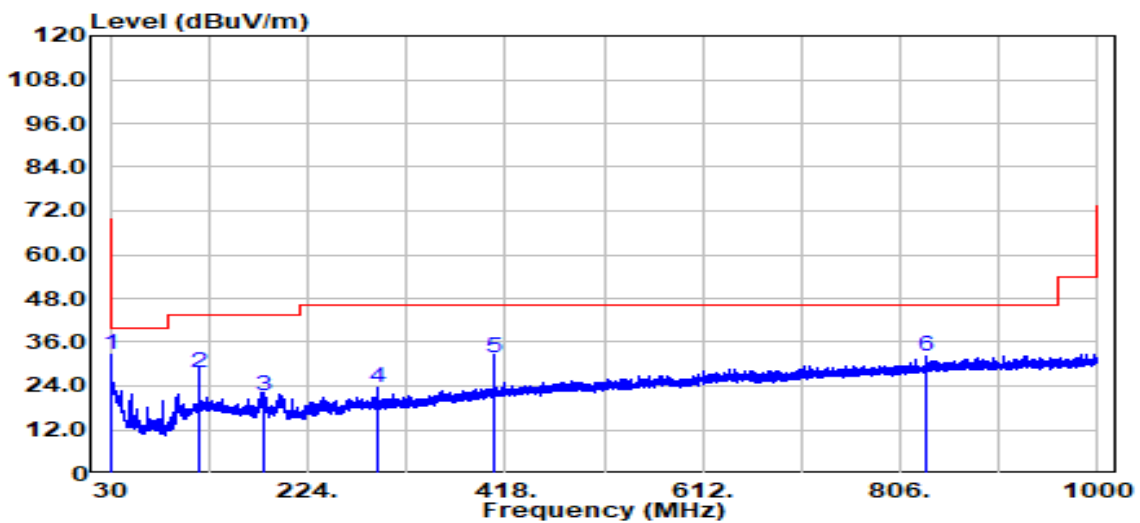
Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 3: 7.8" Color Digital Reader



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBUV)	Factor (dB)	Actual FS (dBUV/m)	Limit @3m (dBUV/m)	Margin (dB)
30.000	Peak	31.74	-3.22	28.52	40.00	-11.48
96.203	Peak	36.14	-14.12	22.02	43.50	-21.48
145.673	Peak	30.91	-10.45	20.46	43.50	-23.04
408.058	Peak	38.35	-5.71	32.65	46.00	-13.35
636.250	Peak	30.93	-1.03	29.90	46.00	-16.10
840.071	Peak	29.53	1.88	31.41	46.00	-14.59

**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.

Test Mode	IEEE 802.11a mode / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	30MHz-1GHz	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak	EUT	Mode 3: 7.8" Color Digital Reader



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
30.000	Peak	35.68	-3.22	32.46	40.00	-7.54
116.573	Peak	37.49	-9.72	27.77	43.50	-15.73
181.684	Peak	33.03	-11.74	21.28	43.50	-22.22
291.536	Peak	32.63	-8.96	23.67	46.00	-22.33
408.058	Peak	37.24	-5.71	31.53	46.00	-14.47
831.463	Peak	30.30	1.66	31.97	46.00	-14.03

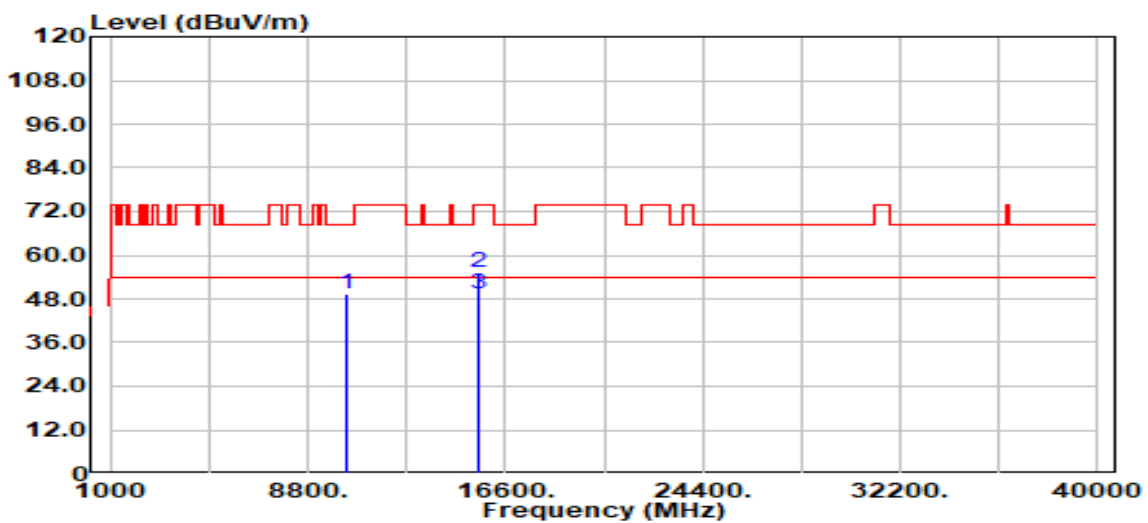
**Note:** 1. No emission found between lowest internal used/generated frequency to 30MHz(9KHz~30MHz)  
 2. For below 1GHz, the EUT peak value was under average limit, therefore the Average value compliance with the average limit.



**Above 1G**

**Test Data for UNII-1**

Test Mode	IEEE 802.11a / 5180 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		

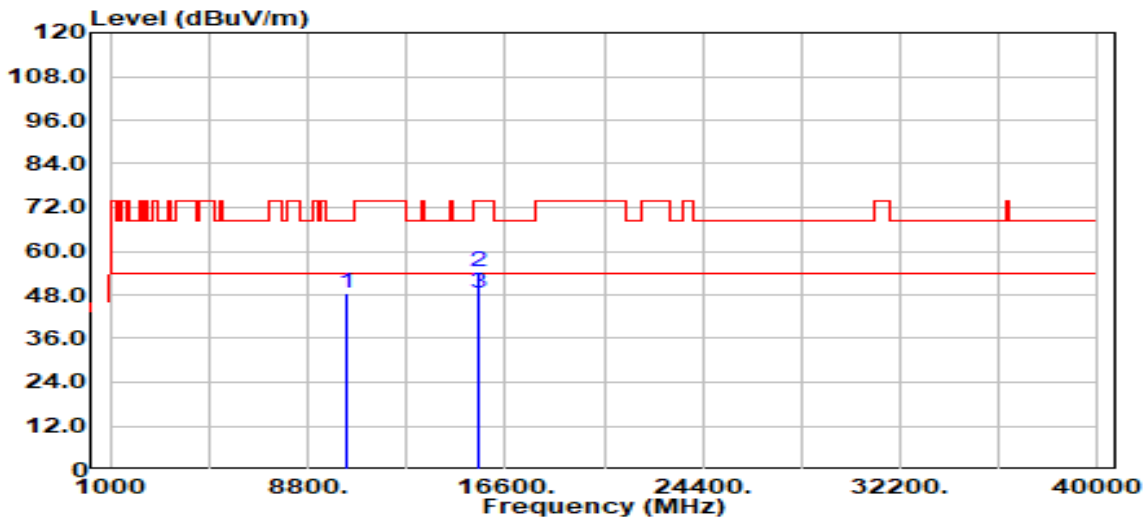


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10360.000	Peak	31.36	18.27	49.63	68.20	-18.57
15540.000	Peak	37.26	22.34	59.60	74.00	-14.40
15540.000	Average	28.04	22.34	50.38	54.00	-3.62
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11a / 5180 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



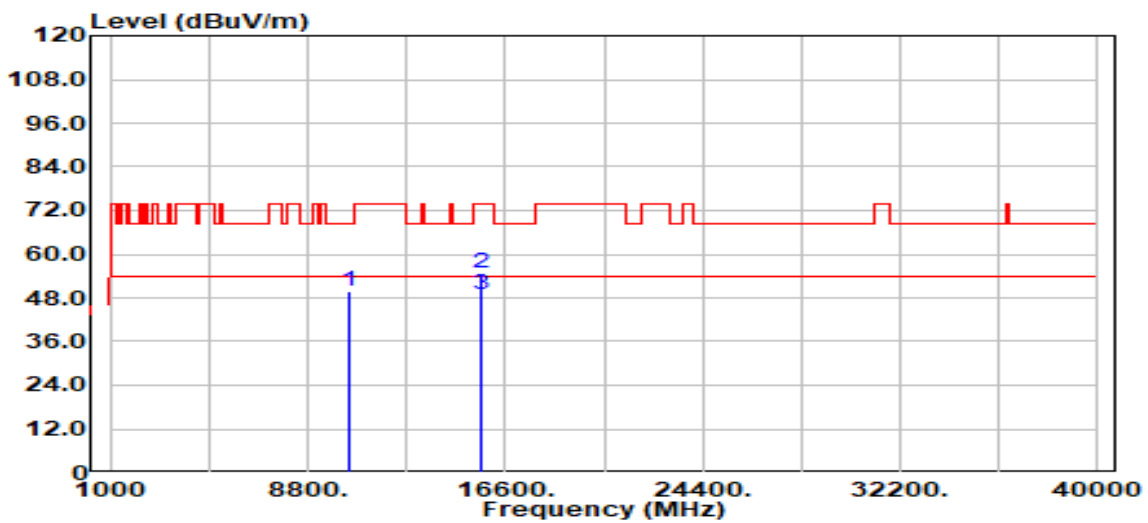
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10360.000	Peak	30.90	18.27	49.17	68.20	-19.03
15540.000	Peak	36.48	22.34	58.81	74.00	-15.19
15540.000	Average	27.60	22.34	49.94	54.00	-4.06
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11a / 5220 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonics	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



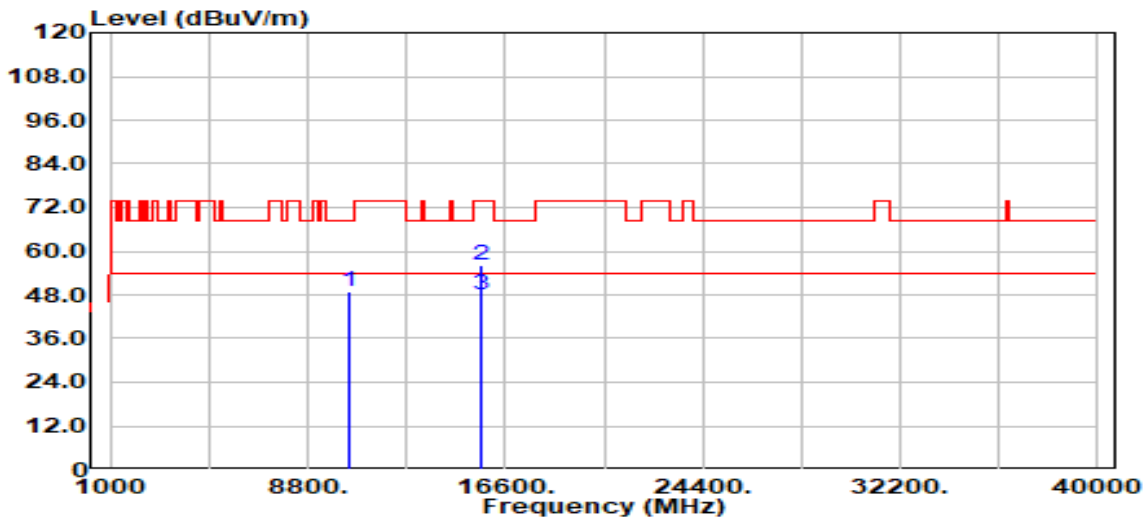
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
10440.000	Peak	31.64	18.35	49.99	68.20	-18.21
15660.000	Peak	32.44	22.55	54.99	74.00	-19.01
15660.000	Average	26.36	22.55	48.91	54.00	-5.09
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11a / 5220 MHz	Temp/Hum	24.6(°C) / 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



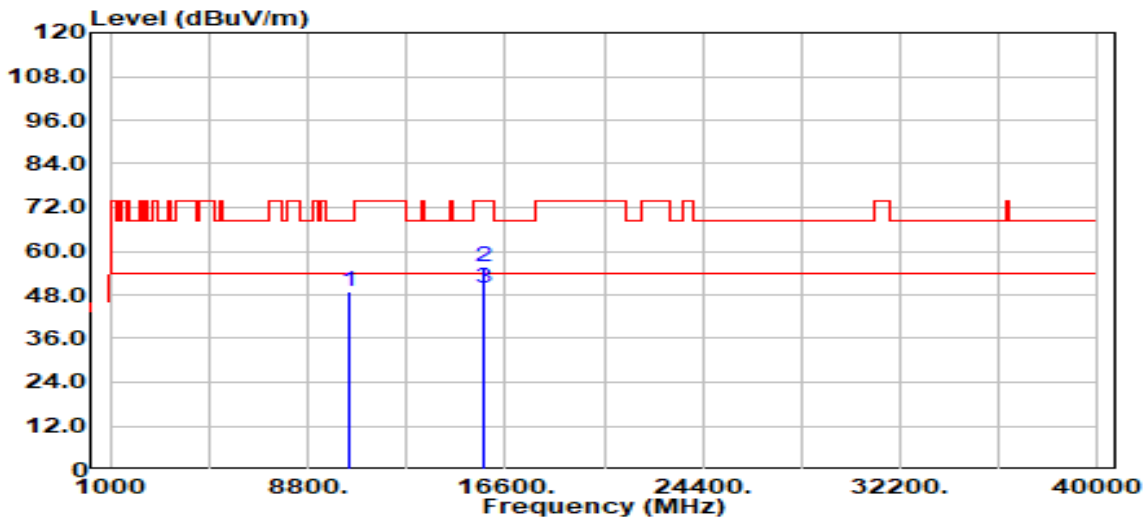
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10440.000	Peak	30.89	18.35	49.24	68.20	-18.96
15660.000	Peak	39.34	22.55	61.89	74.00	-12.11
15660.000	Average	28.11	22.55	50.66	54.00	-3.34
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11a / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



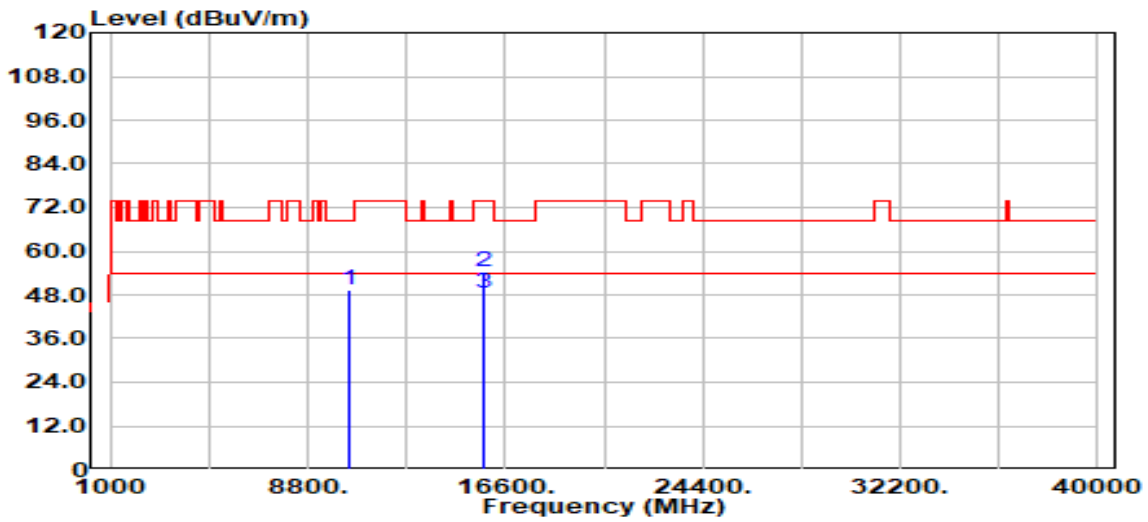
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10480.000	Peak	30.29	18.39	48.68	68.20	-19.52
15720.000	Peak	37.23	23.12	60.35	74.00	-13.65
15720.000	Average	28.87	23.12	51.99	54.00	-2.01
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11a / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		

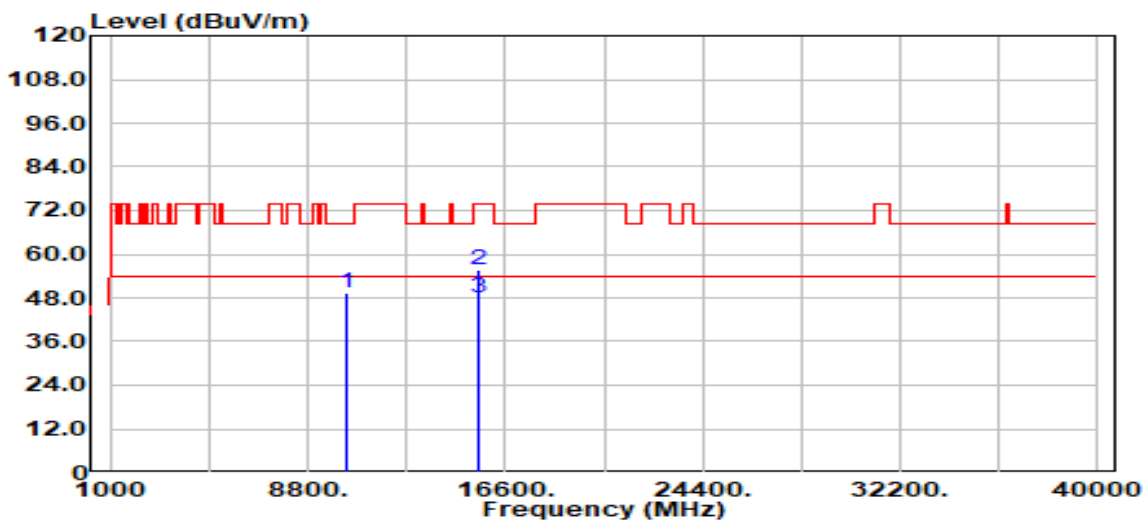


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
10480.000	Peak	30.36	18.39	48.75	68.20	-19.45
15720.000	Peak	35.28	23.12	58.41	74.00	-15.59
15720.000	Average	27.01	23.12	50.13	54.00	-3.87
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11n 20 / 5180 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



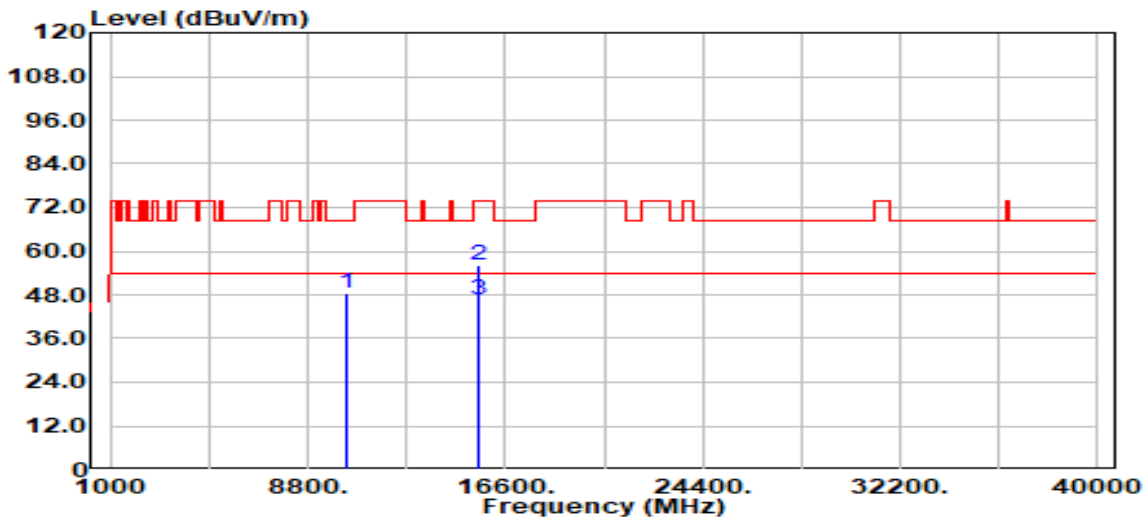
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10360.000	Peak	30.43	18.27	48.70	68.20	-19.50
15540.000	Peak	37.29	22.34	59.63	74.00	-14.37
15540.000	Average	28.12	22.34	50.46	54.00	-3.54
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11n 20 / 5180 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10360.000	Peak	27.86	18.27	46.13	68.20	-22.07
15540.000	Peak	37.56	22.34	59.90	74.00	-14.10
15540.000	Average	27.09	22.34	49.43	54.00	-4.57
N/A						

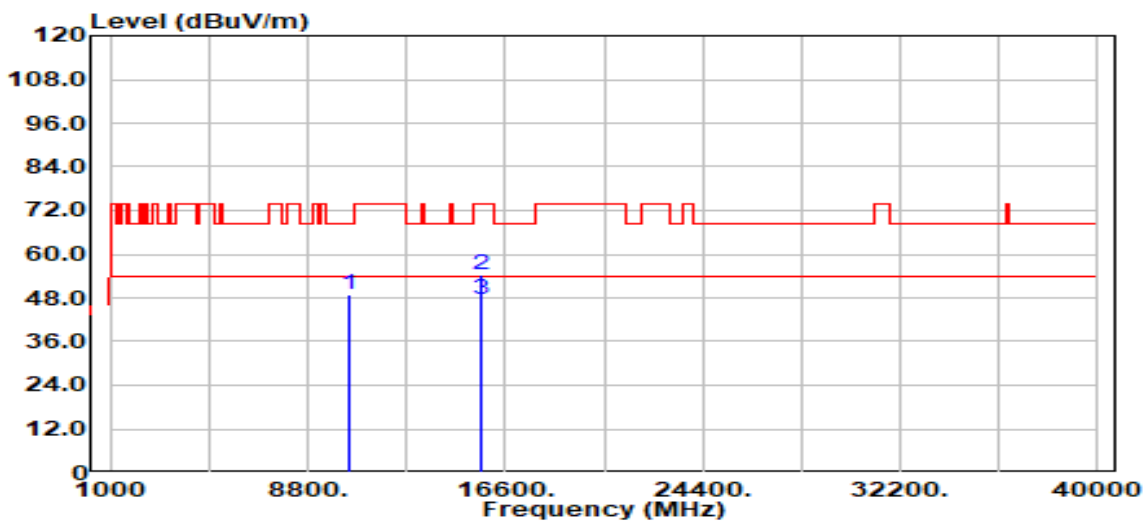
**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.



Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11n 20 / 5220 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



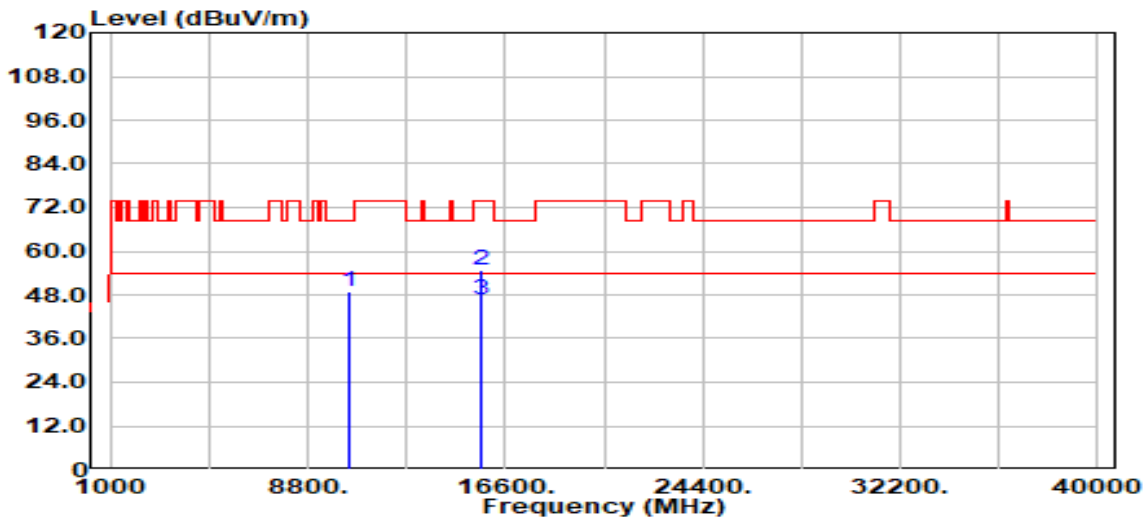
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10440.480	Peak	29.53	18.35	47.88	68.20	-20.32
15660.000	Peak	36.77	22.55	59.32	74.00	-14.68
15660.000	Average	29.22	22.55	51.77	54.00	-2.23
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11n 20 / 5220 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		

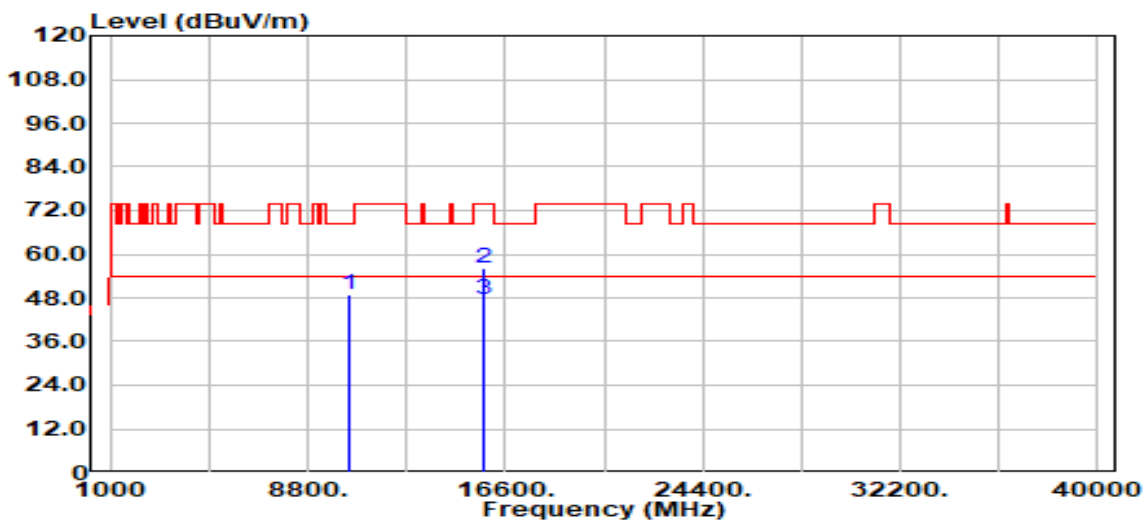


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
10440.480	Peak	28.57	18.35	46.92	68.20	-21.28
15660.000	Peak	36.98	22.55	59.53	74.00	-14.47
15660.000	Average	27.73	22.55	50.28	54.00	-3.72
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11n 20 / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



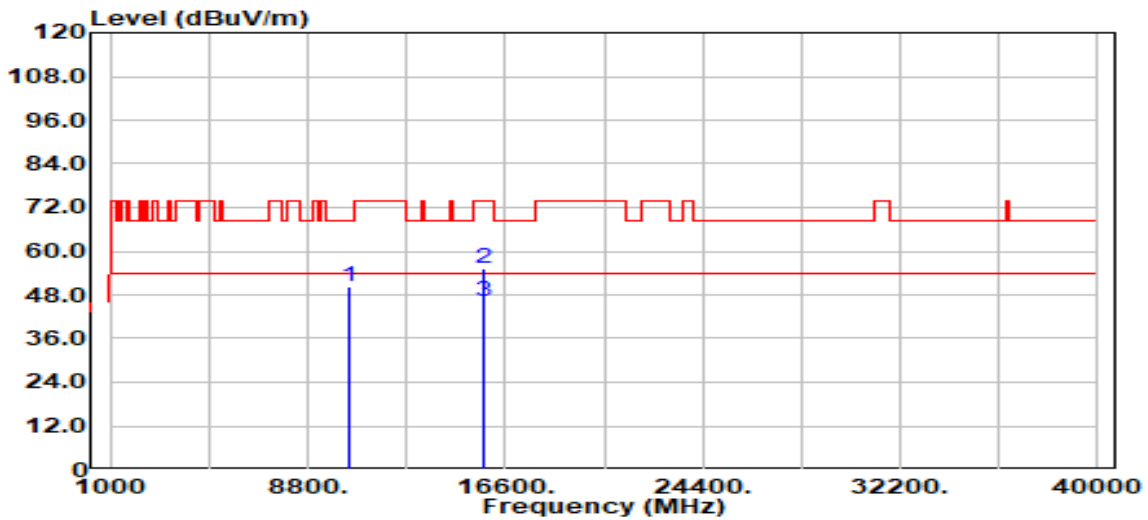
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10480.000	Peak	29.19	18.39	47.58	68.20	-20.62
15720.000	Peak	37.66	23.12	60.78	74.00	-13.22
15720.000	Average	27.80	23.12	50.92	54.00	-3.08
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11n 20 / 5240 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		

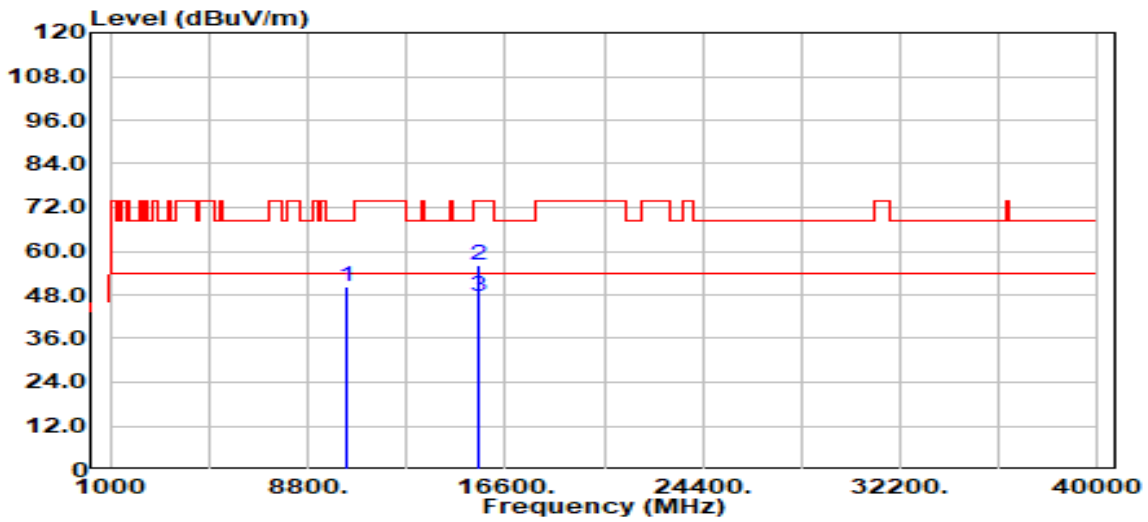


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
10480.000	Peak	29.13	18.39	47.52	68.20	-20.68
15720.000	Peak	36.34	23.12	59.46	74.00	-14.54
15720.000	Average	27.01	23.12	50.13	54.00	-3.87
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11n 40 / 5190 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		

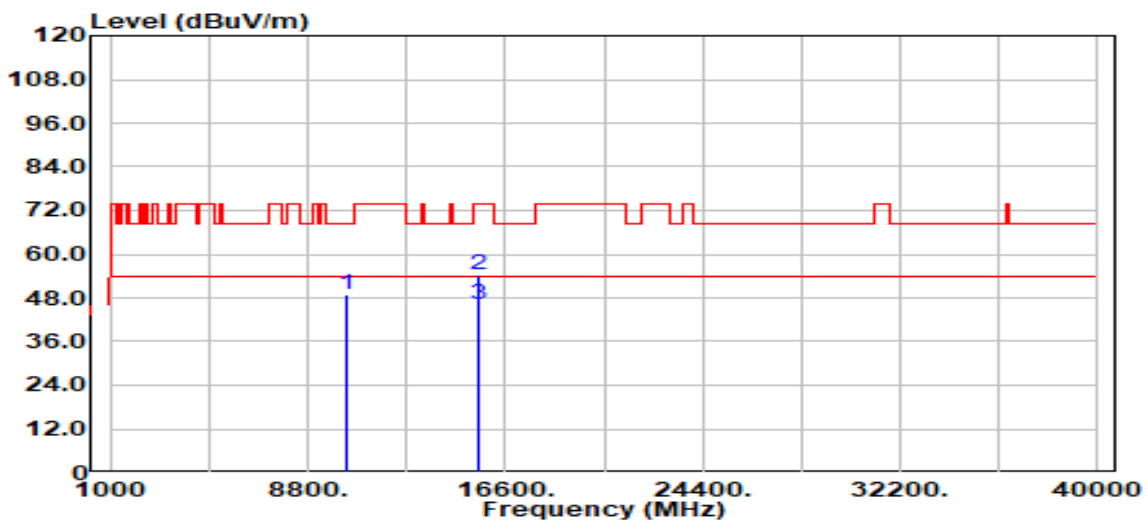


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10380.000	Peak	30.32	18.26	48.59	68.20	-19.61
15570.000	Peak	36.89	22.26	59.15	74.00	-14.85
15570.000	Average	26.45	22.26	48.71	54.00	-5.29
N/A						

**Remark:**

- Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11n 40 / 5190 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		

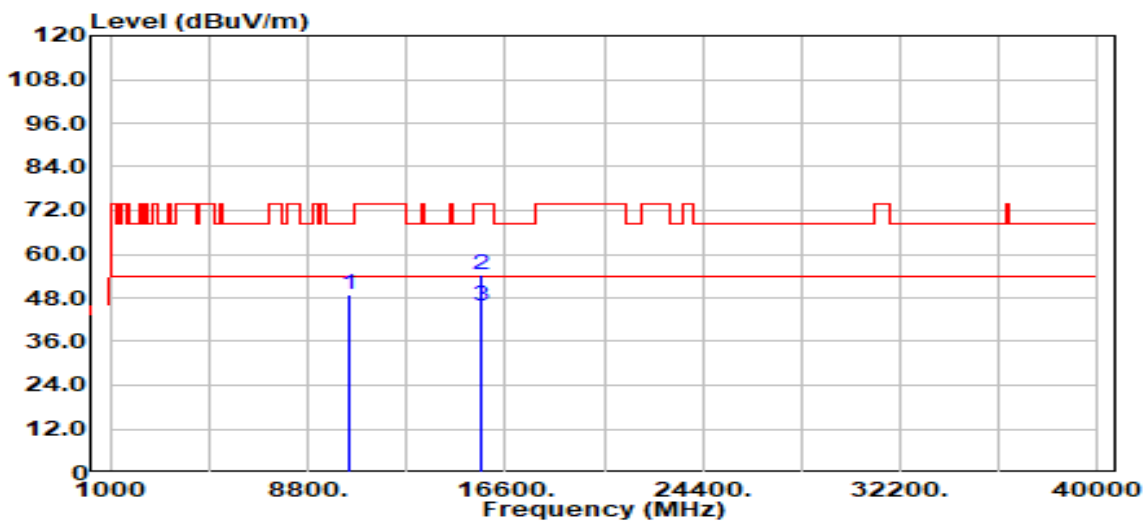


Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10380.000	Peak	29.45	18.26	47.72	68.20	-20.48
15570.000	Peak	35.11	22.26	57.37	74.00	-16.63
15570.000	Average	25.74	22.26	48.00	54.00	-6.00
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Test Mode	IEEE 802.11n 40 / 5230 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



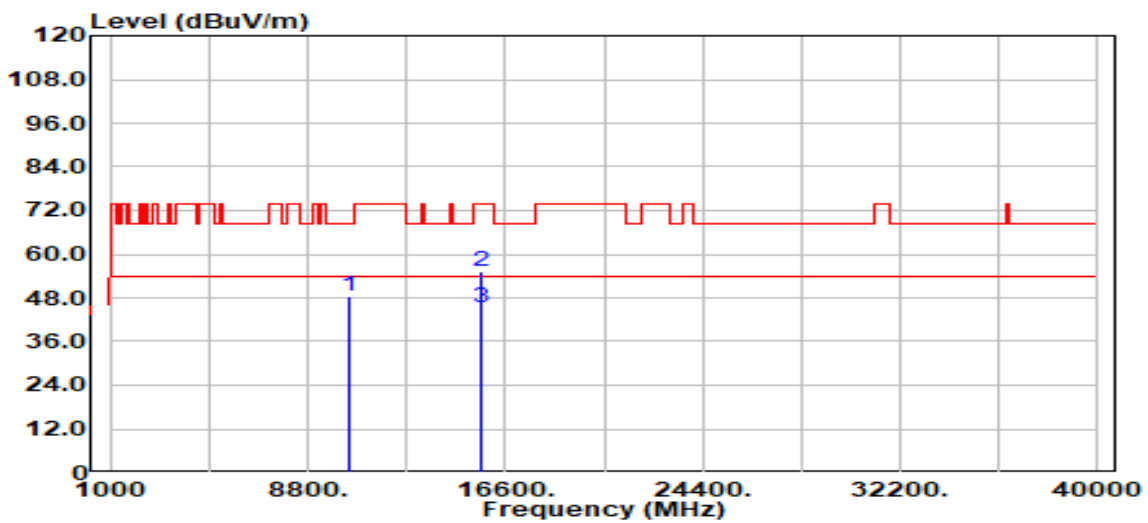
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
10460.000	Peak	31.06	18.38	49.44	68.20	-18.76
15690.000	Peak	37.27	22.92	60.19	74.00	-13.81
15690.000	Average	28.82	22.92	51.74	54.00	-2.26
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11n 40 / 5230 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



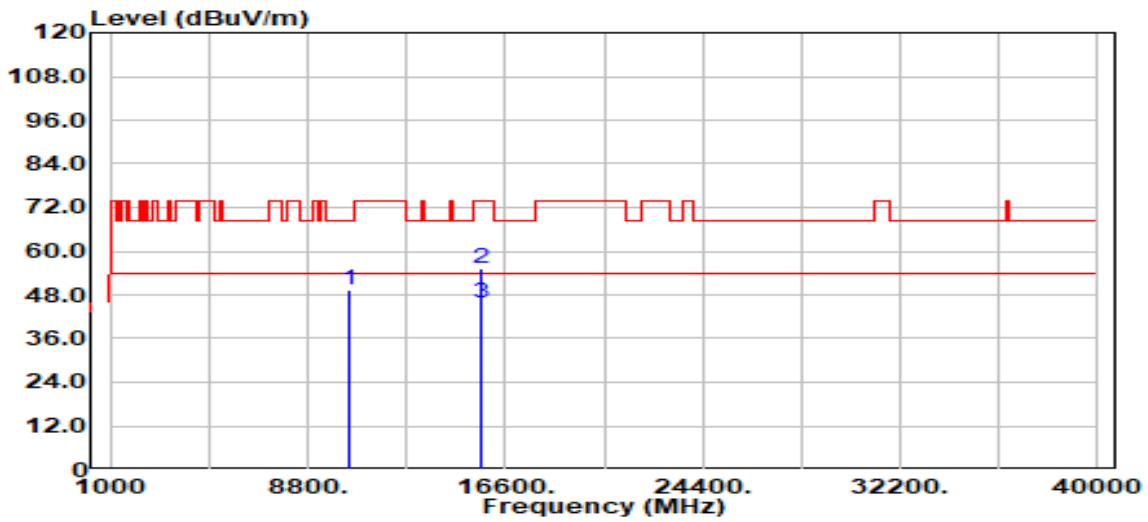
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
10460.000	Peak	30.66	18.38	49.04	68.20	-19.16
15690.000	Peak	36.05	22.92	58.97	74.00	-15.03
15690.000	Average	27.05	22.92	49.97	54.00	-4.03
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.



Test Mode	IEEE 802.11ac VHT80 / 5210 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Vertical	Test Engineer	Tony Chao
Detector	Peak / Average		



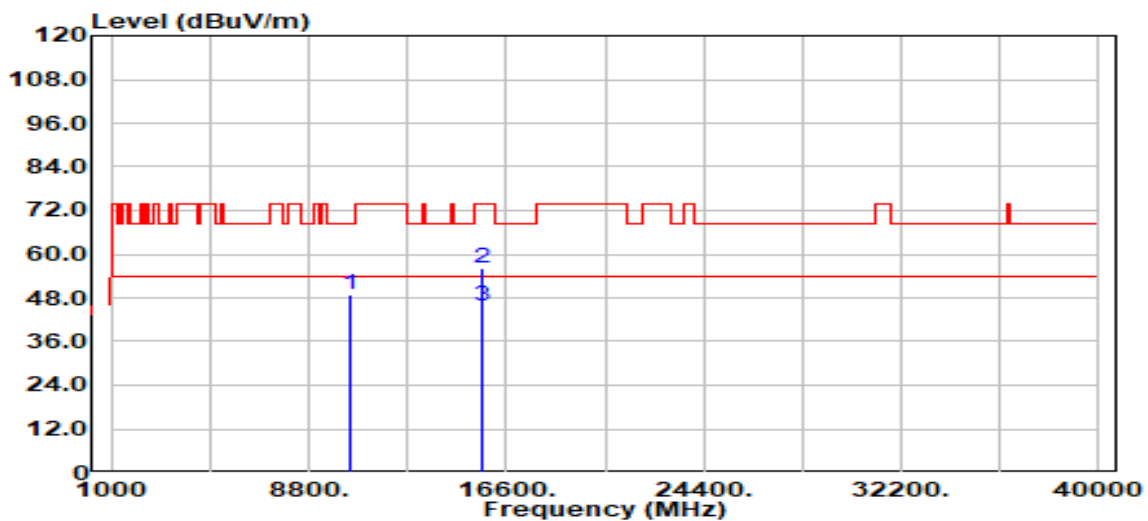
Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dBμV)	Factor (dB)	Actual FS (dBμV/m)	Limit @3m (dBμV/m)	Margin (dB)
10420.000	Peak	31.33	18.30	49.63	68.20	-18.57
15630.000	Peak	32.68	22.32	55.00	74.00	-19.00
15630.000	Average	23.50	22.32	45.82	54.00	-8.18
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

Report No.: TMWK2207002731KR

Test Mode	IEEE 802.11ac VHT80 / 5210 MHz	Temp/Hum	24.6(°C)/ 62%RH
Test Item	Harmonic	Test Date	October 3, 2022
Polarize	Horizontal	Test Engineer	Tony Chao
Detector	Peak / Average		



Freq. (MHz)	Detector Mode (PK/QP/AV)	Spectrum Reading Level (dB $\mu$ V)	Factor (dB)	Actual FS (dB $\mu$ V/m)	Limit @3m (dB $\mu$ V/m)	Margin (dB)
10420.000	Peak	30.78	18.30	49.08	68.20	-19.12
15630.000	Peak	32.56	22.32	54.87	74.00	-19.13
15630.000	Average	23.52	22.32	45.84	54.00	-8.16
N/A						

**Remark:**

1. Measuring frequencies from 1 GHz to the 10th harmonic of highest fundamental frequency.

- End of Test Report -