RADIO TEST REPORT

FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-247 (C3PC)

Test Standard	**FCC Part 15.247** **IC RSS-247 issue 3 and IC RSS-GEN issue 5**
Product name	**Communication module**
Brand Name	**muRata**
Model No.	**LBEE6XX1UR**
Test Result	**Pass**
Statements of Conformity	**Determination of compliance is based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.**

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:

Shawn Wu
Supervisor

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	May 16, 2024	Initial Issue	ALL	Allison Chen
01	May 28, 2024	See the following Note Rev.(01)	P.4	Allison Chen

Note:
Rev.(01)
1. Modify applicant’s and manufacturer’s name and address.

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

FCC Applicant	Murata Manufacturing Co., Ltd. 10-1, Higashikotari 1-chome, Nagaokakyo-shi, Kyoto 617-8555 Japan
IC Applicant	MURATA MANUFACTURING CO., LTD. 10-1, Higashikotari 1-chome, Nagaokakyo-shi Kyoto 617-8555 Japan
Manufacturer	Murata Manufacturing Co., Ltd. 1-10-1, Higashikotari, Nagaokakyo-shi, Kyoto 617-8555 Japan
Equipment	Communication module
Model Name	LBEE6XX1UR
Model Discrepancy	N/A
Brand Name	muRata
Received Date	March 12, 2024
Date of Test	April 2~8, 2024
Power Supply	Powered from power supply: DC 3.3V
HW Version	1.0
SW Version	1.1.1.2
PMN	LBEE6XX1UR
EUT Serial #	conducted test#1
IC Class III permissive changes (C3PC)	1. adds 11b/g/n HT20 of only 2.4 GHz 2. Updated FVIN: LBEE6XX1UR:1.1.1.2

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 HT20 mode : OFDM
Number of channel	1. IEEE 802.11b mode: 11 Channels 2. IEEE 802.11g mode: 11 Channels 3. IEEE 802.11n HT20 mode : 11 Channels

Remark:
Refer as ANSI C63.10: 2013 clause 5.6.1 Table 4 and RSS-GEN Table A1 for test channels

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 1 MHz or less	1	Middle
☐ 1 MHz to 10 MHz	2	1 near top and 1 near bottom
☒ More than 10 MHz	3	1 near top, 1 near middle, and 1 near bottom

1.3 ANTENNA INFORMATION

Antenna Type	☐ PIFA ☐ PCB ☐ Dipole ☐ Coils ☒ Other: Chip
Antenna Gain	Gain: -0.6 dBi
Brand / Model	Brand: INPAQ TECHNOLOGY Model: VGAP-CLB-AS-A1
Antenna Connector	N/A

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 and RSS-Gen §6.8.

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

AC Powerline Conducted Emission and Conducted:

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

Radiated emission 9kHz to 40GHz:

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

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	N/A	Not applicable, because EUT doesn't connect to AC Main Source direct.
Radiation	Ray Li	-
RF Conducted	Marco Chan	-

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

1.6 INSTRUMENT CALIBRATION

Conducted_FCC/NCC_ALL					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
EXA Signal Analyzer	Keysight	N9010B	MY55460167	2024-01-03	2025-01-02
Power Meter	Anritsu	ML2496A	2136002	2023-11-16	2024-11-15
Power Sensor	Anritsu	MA2411B	1911387	2023-07-25	2024-07-24
DC Power Source	LABORATORY	GPC-3030D	8070184	2023-10-02	2024-10-01
Software	Radio Test Software Ver. 21				

966A_Radiated					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Signal Analyzer	KEYSIGHT	N9010A	MY54200716	2023-10-13	2024-10-12
Thermo-Hygro Meter	WISEWIND	1206	D07	2023-12-08	2024-12-07
Loop Antenna	COM-POWER	AL-130	121051	2023-05-23	2024-05-22
Bi-Log Antenna	Sunol Sciences	JB3	A030105	2023-08-08	2024-08-07
Preamplifier	EMEC	EM330	060609	2024-02-21	2025-02-20
Cable	Huber+Suhner	104PEA	20995+21000+182330	2024-02-21	2025-02-20
Horn Antenna	ETC	MCTD 1209	DRH13M02003	2023-12-28	2024-12-27
Preamplifier	HP	8449B	3008A00965	2023-12-22	2024-12-21
Cable	EMCI	EMC101G	221213+221011+221012	2023-10-17	2024-10-16
Attenuator	Mini-Circuits	BW-S9W5	BWS9W5-09-966A-01	2024-02-07	2025-02-06
High Pass Filters	Titan Microwave	T04H30001800070S01	22011402-4	2023-06-17	2024-06-16
Horn Antenna	SCHWARZBECK	BBHA9170	1047	2023-12-13	2024-12-12
Pre-Amplifier	EMCI	EMC184045SE	980860	2023-12-12	2024-12-11
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
Software	e3 V9-210616c				

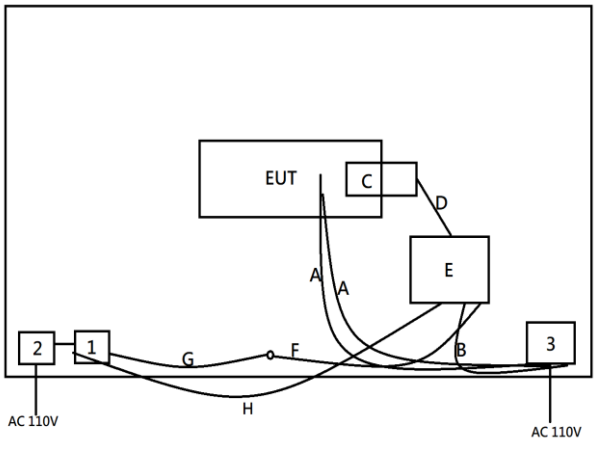
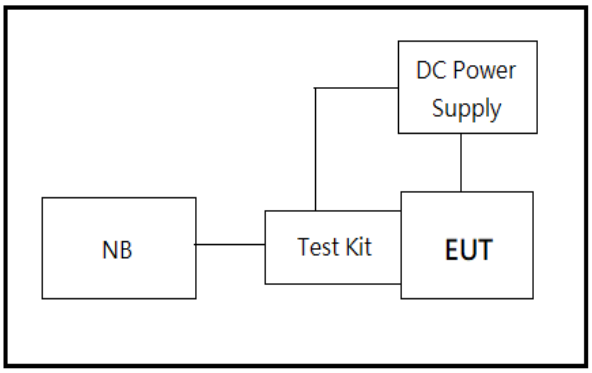
Remark:
1. Each piece of equipment is scheduled for calibration once a year.
2. N.C.R. = No Calibration Required.

1.7 SUPPORT AND EUT ACCESSORIES EQUIPMENT

Support Unit List						Remark
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due	
NB(D)	Lenovo	ThinkPad X260	N/A	N/A	N/A	1
Adapter	Lenovo	ADLX45DLC3A	N/A	N/A	N/A	2
Power Supply	GW	GPC-3030D	8070184	2023-10-02	2024-10-01	3
Power Cable	N/A	N/A	N/A	N/A	N/A	A
Power Cable For Control Board	N/A	N/A	N/A	N/A	N/A	B
Sub Board	N/A	N/A	N/A	N/A	N/A	C
Flat Cable	N/A	N/A	N/A	N/A	N/A	D
Armadillo(w Motherboard)	N/A	N/A	N/A	N/A	N/A	E
RS252C Cable	iBUFFALO	NA	A80122	N/A	N/A	F
USB-Serial Cable	N/A	N/A	N/A	N/A	N/A	G
USB Cable	ELECOM	N/A	B0119I051Z N99	N/A	N/A	H

Conducted_FCC/NCC_ALL					
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due
NB(E)	Lenovo	T470	N/A	N/A	N/A

1.8 TEST SETUP DIAGRAM

RSE Setup	Conducted Setup
	

1.9 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 15.247, KDB 558074 D01, RSS-247 Issue 3 and RSS-GEN Issue 5.

2. TEST SUMMARY

FCC Standard Section	IC Standard Section	Report Section	Test Item	Result
15.203	RSS-GEN 6.8	1.3	Antenna Requirement	Pass
15.207(a)	RSS-GEN 8.8	5.1	AC Conducted Emission	N/A
15.247(a)(2)	RSS-247(5.2)(a)	5.2	6 dB Bandwidth	Pass
-	RSS-GEN 6.7	5.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	RSS-247(5.4)(d)	5.3	Output Power Measurement	Pass
15.247(e)	RSS-247(5.2)(b)	54	Power Spectral Density	Pass
15.247(d)	RSS-247(5.5)	5.5	Conducted Band Edge	Pass
15.247(d)	RSS-247(5.5)	5.5	Conducted Emission	Pass
15.247(d) 15.205 15.209	RSS-GEN 8.9, 8.10	5.6	Radiation Band Edge	Pass
15.247(d) 15.205 15.209	RSS-GEN 8.9, 8.10	5.6	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

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

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

Radiated Emission Measurement Above 1G	
Test Condition	**Radiated Emission Above 1G**
Power supply Mode	**Mode 1: EUT power by Power supply**
Worst Mode	☒ **Mode 1** ☐ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**
Worst Position	☐ **Placed in fixed position.** ☒ **Placed in fixed position at X-Plane (E2-Plane)** ☐ **Placed in fixed position at Y-Plane (E1-Plane)** ☐ **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 Power supply**
Worst Mode	☒ **Mode 1** ☐ **Mode 2** ☐ **Mode 3** ☐ **Mode 4**

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

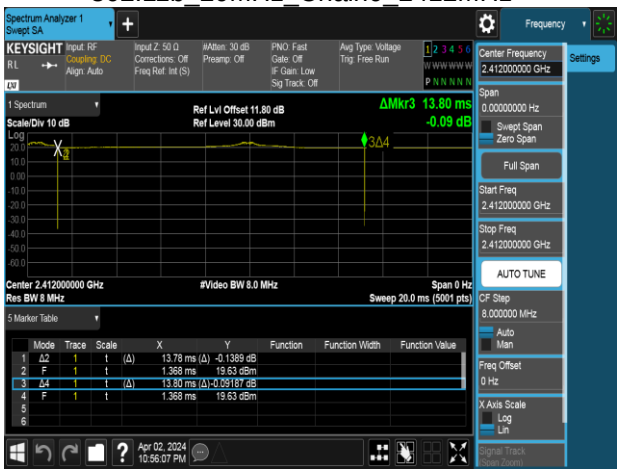
4. EUT DUTY CYCLE

Temperature: 22~23.7℃ **Test date:** April 2~3, 2024

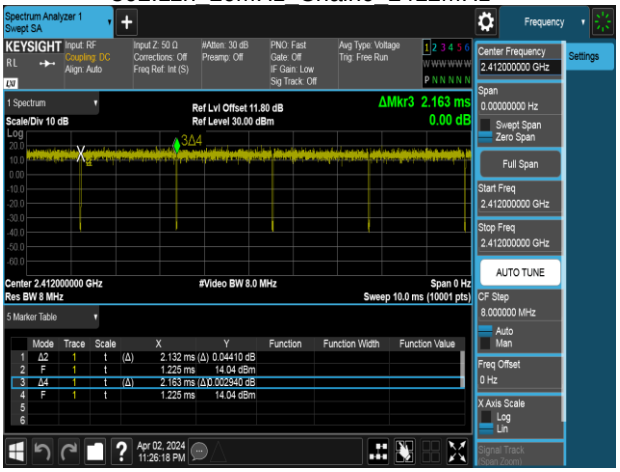
Humidity: 51~63% RH **Tested by:** Marco Chan

Mode	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
802.11b	99.83	0.01	0.07	0.01
802.11g	98.66	0.06	0.44	0.01
802.11n_20	98.57	0.06	0.47	0.01

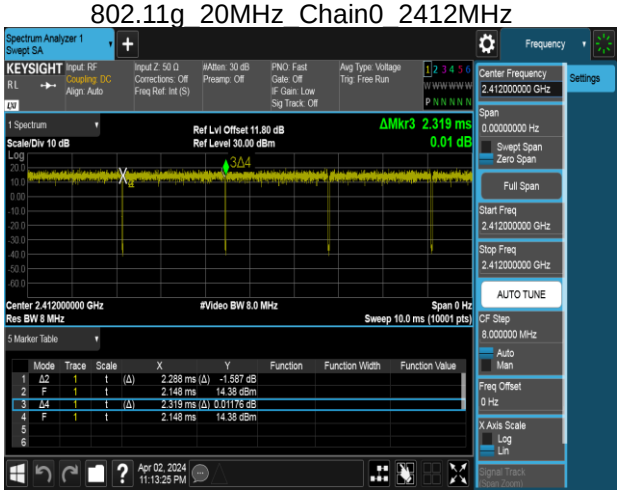
802.11b_20MHz_Chain0_2412MHz



802.11n_20MHz_Chain0_2412MHz



802.11g_20MHz_Chain0_2412MHz



5. TEST RESULT

5.1 AC POWER LINE CONDUCTED EMISSION

5.1.1 Test Limit

According to §15.207(a)(2) and RSS-GEN section 8.8,

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

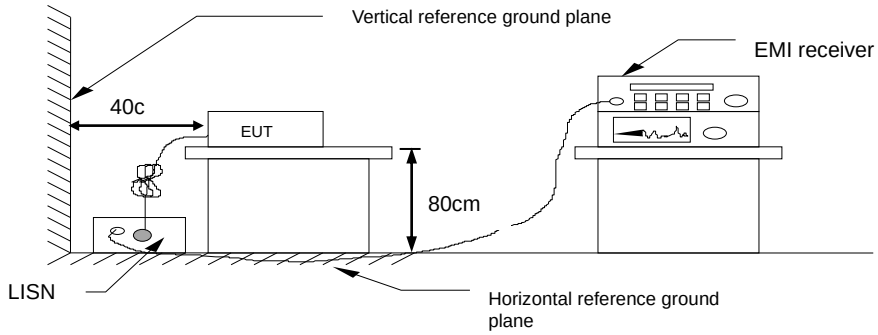
* Decreases with the logarithm of the frequency.

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

Not applicable, because EUT doesn't connect to AC Main Source direct.

5.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

5.2.1 Test Limit

According to §15.247(a)(2) and RSS-247 section 5.2(a),

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

Refer to section 1.8.

5.2.4 Test Result

Temperature:	22~23.7℃	**Test date:**	April 2~3, 2024
Humidity:	51~63% RH	**Tested by:**	Marco Chan

6dB Bandwidth

802.11b Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	9091.00	≧ 500	PASS
2437	**9094.00**	≧ 500	PASS
2462	9072.00	≧ 500	PASS

802.11g Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	**16390.00**	≧ 500	PASS
2437	**16390.00**	≧ 500	PASS
2462	**16390.00**	≧ 500	PASS

802.11n_HT_20M Ch0

Freq. (MHz)	6dB BW (kHz)	Limit (kHz)	Result
2412	17630.00	≧ 500	PASS
2437	**17650.00**	≧ 500	PASS
2462	17630.00	≧ 500	PASS

99% OBW

802.11b Ch0

Freq. (MHz)	99% BW (MHz)
2412	**12.077**
2437	12.057
2462	12.035

802.11g Ch0

Freq. (MHz)	99% BW (MHz)
2412	16.993
2437	17.010
2462	**17.037**

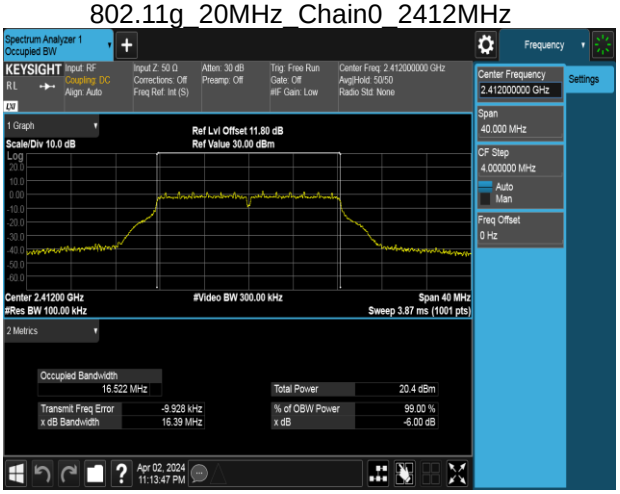
802.11n_HT20M Ch0

Freq. (MHz)	99% BW (MHz)
2412	**18.171**
2437	18.129
2462	18.162

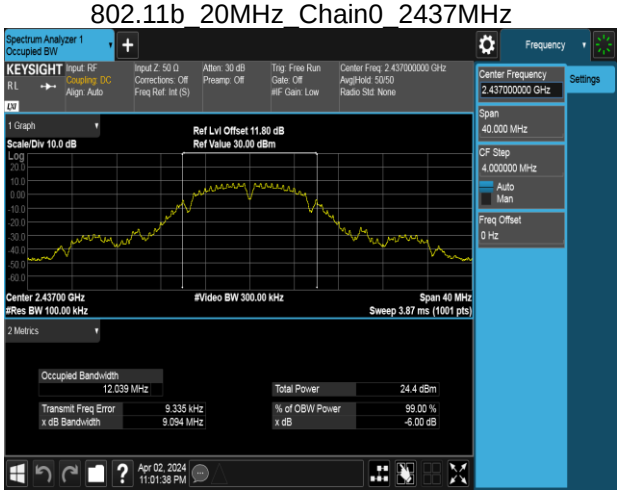
Test Data (6dB Bandwidth)

802.11b_20MHz_Chain0_2412MHz

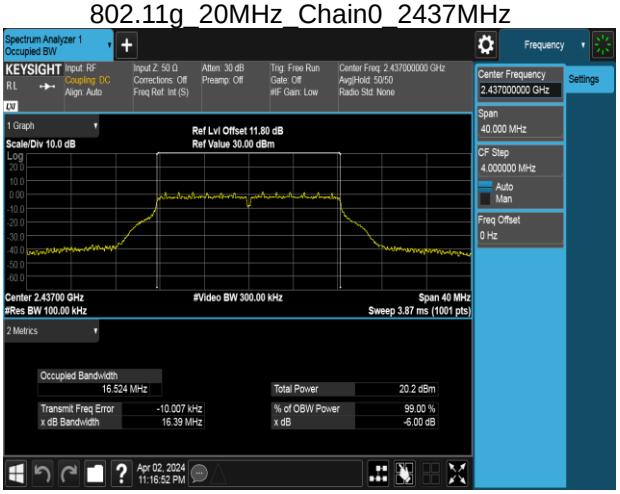
802.11g_20MHz_Chain0_2412MHz



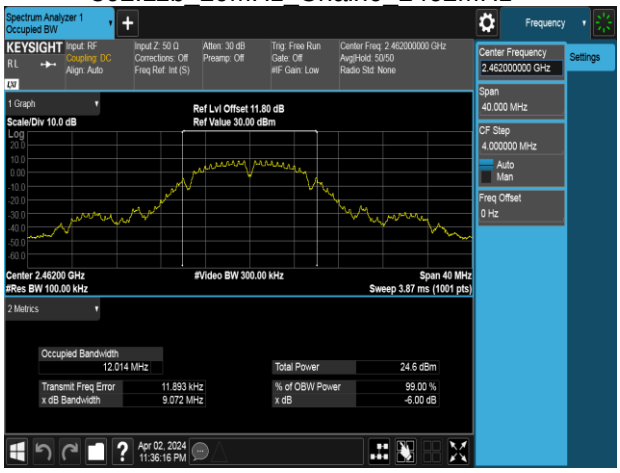
802.11b_20MHz_Chain0_2437MHz



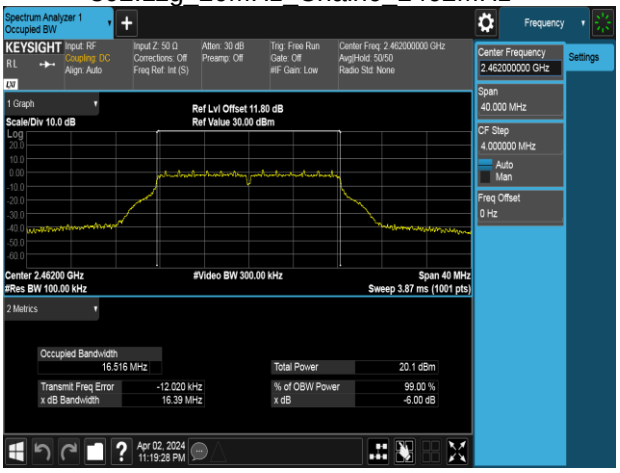
802.11g_20MHz_Chain0_2437MHz



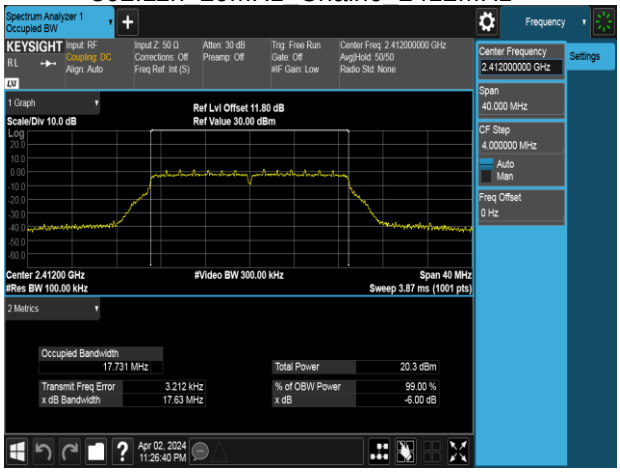
802.11b_20MHz_Chain0_2462MHz



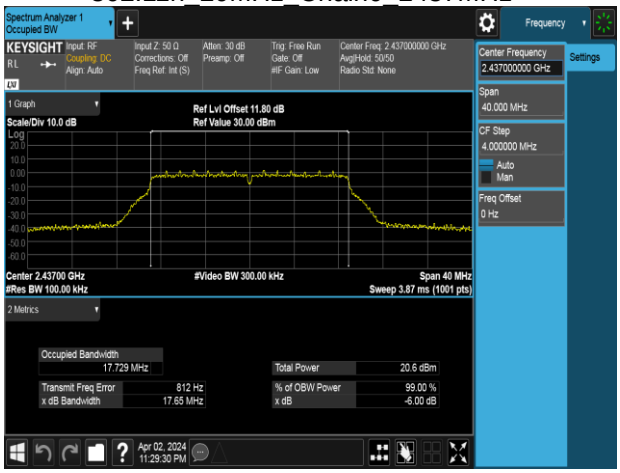
802.11g_20MHz_Chain0_2462MHz



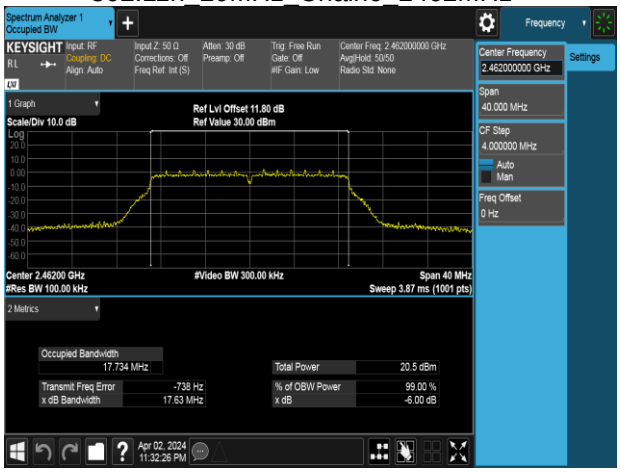
802.11n_20MHz_Chain0_2412MHz



802.11n_20MHz_Chain0_2437MHz



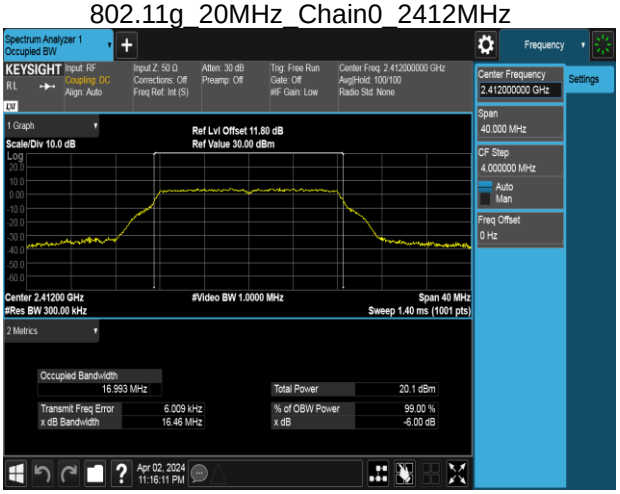
802.11n_20MHz_Chain0_2462MHz



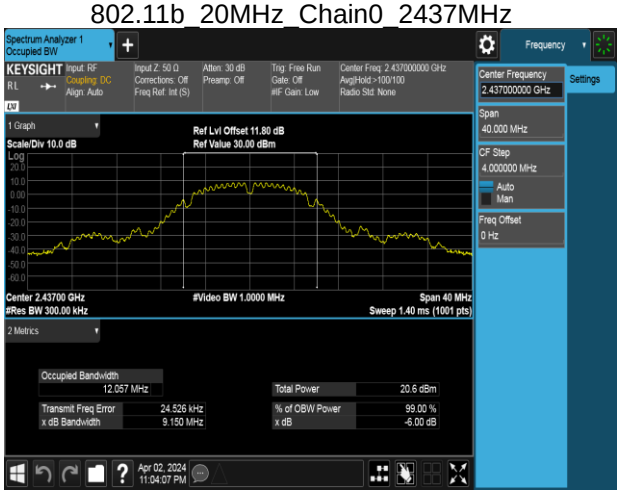
Test Data (Bandwidth 99%)

802.11b_20MHz_Chain0_2412MHz

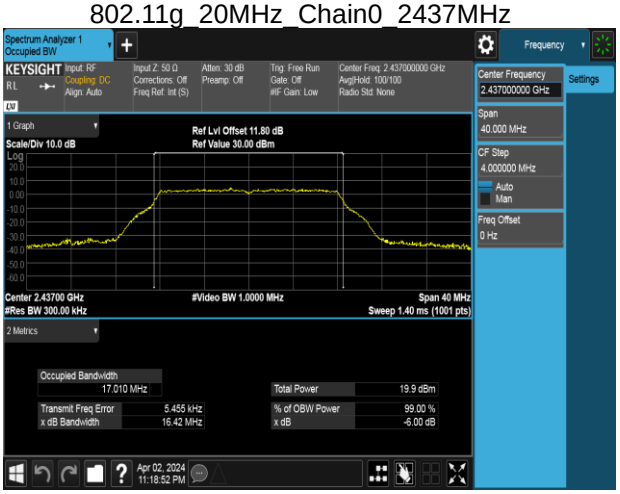
802.11g_20MHz_Chain0_2412MHz



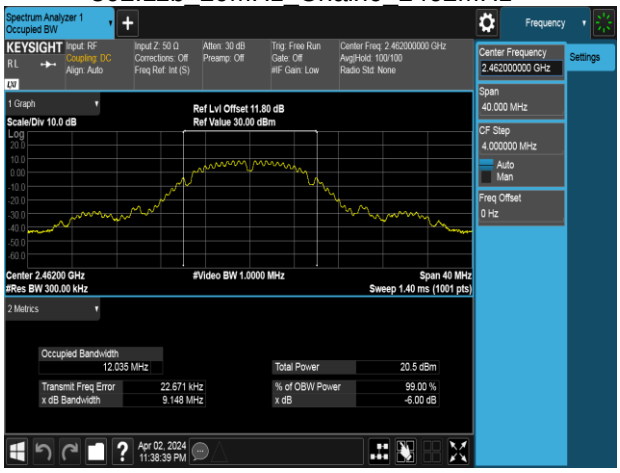
802.11b_20MHz_Chain0_2437MHz



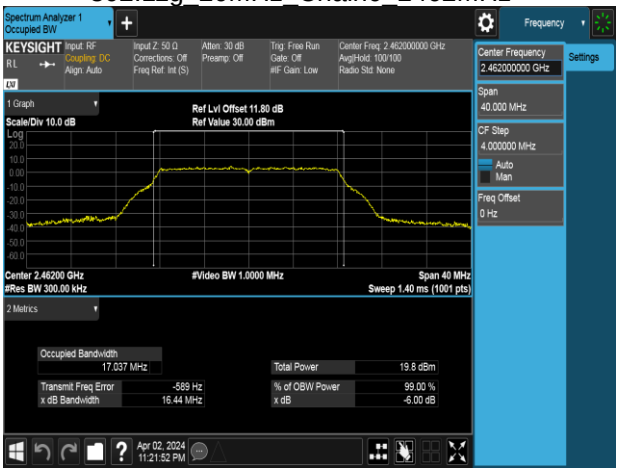
802.11g_20MHz_Chain0_2437MHz



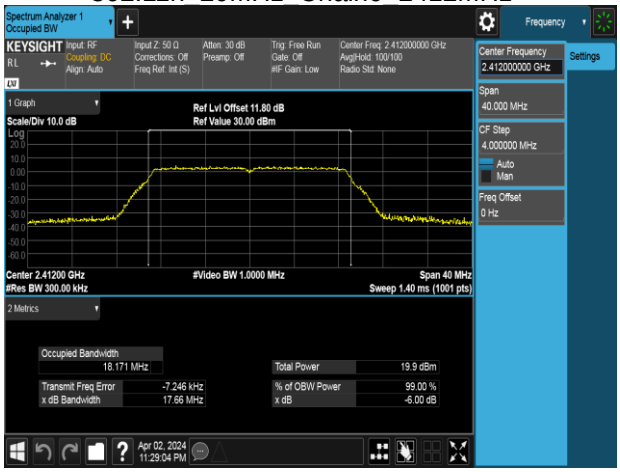
802.11b_20MHz_Chain0_2462MHz



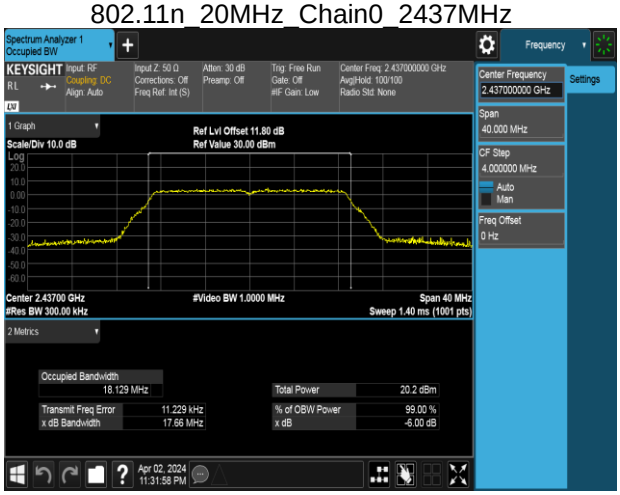
802.11g_20MHz_Chain0_2462MHz



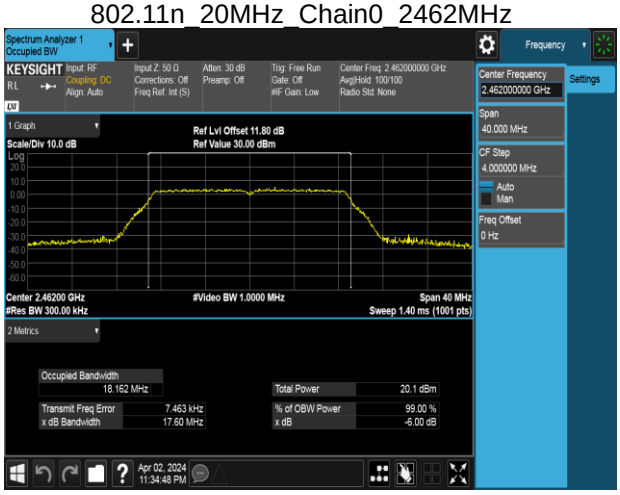
802.11n_20MHz_Chain0_2412MHz



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) and RSS-247 section 5.4(d),

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	☒ Antenna not exceed 6 dBi：30dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 30 – (DG – 6)] ☐ 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

Refer to section 1.8.

5.3.4 Test Result

Temperature:	22~23.7℃	**Test date:**	April 2~3, 2024
Humidity:	51~63% RH	**Tested by:**	Marco Chan

Peak & Average output power：

802.11b Ch0						
CH	**Freq. (MHz)**	**Data Rate**	**Power Setting**	**Peak Output Power (dBm)**	**Limit (dBm)**	**RESULT**
1	2412	1	64	19.78	30.00	PASS
6	2437	1	64	**19.85**	30.00	PASS
11	2462	1	63	19.76	30.00	PASS
802.11b Ch0						
CH	**Freq. (MHz)**	**Data Rate**	**Power Setting**	**Avg. Output Power (dBm)**	**Limit (dBm)**	**RESULT**
1	2412	1	64	16.68	30.00	PASS
6	2437	1	64	**16.96**	30.00	PASS
11	2462	1	63	16.85	30.00	PASS

802.11g Ch0						
CH	**Freq. (MHz)**	**Data Rate**	**Power Setting**	**Peak Output Power (dBm)**	**Limit (dBm)**	**RESULT**
1	2412	6	50	23.33	30.00	PASS
6	2437	6	48	**23.36**	30.00	PASS
11	2462	6	47	23.32	30.00	PASS
802.11g Ch0						
CH	**Freq. (MHz)**	**Data Rate**	**Power Setting**	**Avg. Output Power (dBm)**	**Limit (dBm)**	**RESULT**
1	2412	6	50	12.92	30.00	PASS
6	2437	6	48	**12.95**	30.00	PASS
11	2462	6	47	12.77	30.00	PASS

802.11n_HT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power Setting	Peak Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	49	23.22	30.00	PASS
6	2437	MCS0	49	**23.51**	30.00	PASS
11	2462	MCS0	48	23.36	30.00	PASS
802.11n_HT_20M Ch0						
CH	Freq. (MHz)	Data Rate	Power Setting	Avg. Output Power (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	49	12.74	30.00	PASS
6	2437	MCS0	49	**12.93**	30.00	PASS
11	2462	MCS0	48	12.88	30.00	PASS

EIRP：

802.11b Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	1	16.68	-0.60	16.08	36	PASS
6	2437	1	16.96	-0.60	**16.36**	36	PASS
11	2462	1	16.85	-0.60	16.25	36	PASS

802.11g Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	6	12.92	-0.60	12.32	36	PASS
6	2437	6	12.95	-0.60	**12.35**	36	PASS
11	2462	6	12.77	-0.60	12.17	36	PASS

802.11n_HT_20M Ch0							
CH	Freq. (MHz)	Data Rate	Avg. Output Power (dBm)	Antenna Gain (dBi)	EIRP (dBm)	Limit (dBm)	RESULT
1	2412	MCS0	12.74	-0.60	12.14	36	PASS
6	2437	MCS0	12.93	-0.60	**12.33**	36	PASS
11	2462	MCS0	12.88	-0.60	12.28	36	PASS

5.4 POWER SPECTRAL DENSITY

5.4.1 Test Limit

According to §15.247(e) and RSS-247 section 5.2(b),

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	☒ Antenna not exceed 6 dBi：8dBm ☐ Antenna with DG greater than 6 dBi： [Limit = 8 – (DG – 6)] ☐ 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 = 30kHz, 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

Refer to section 1.8.

5.4.4 Test Result

Temperature:	22~23.7℃	**Test date:**	April 2~3, 2024
Humidity:	51~63% RH	**Tested by:**	Marco Chan

POWER DENSITY 802.11b				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-6.19	-6.19	8.00	PASS
2437	-5.98	-5.98	8.00	PASS
2462	-6.24	-6.24	8.00	PASS

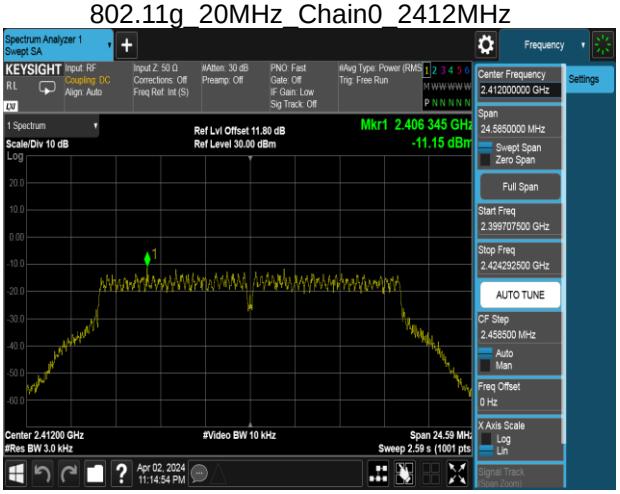
POWER DENSITY 802.11g				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-11.2	-11.15	8.00	PASS
2437	-11.6	-11.62	8.00	PASS
2462	-12.9	-12.90	8.00	PASS

POWER DENSITY 802.11n HT20				
Freq. (MHz)	Ch0 PSD	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Result
2412	-12.8	-12.84	8.00	PASS
2437	-13.2	-13.20	8.00	PASS
2462	-12.6	-12.62	8.00	PASS

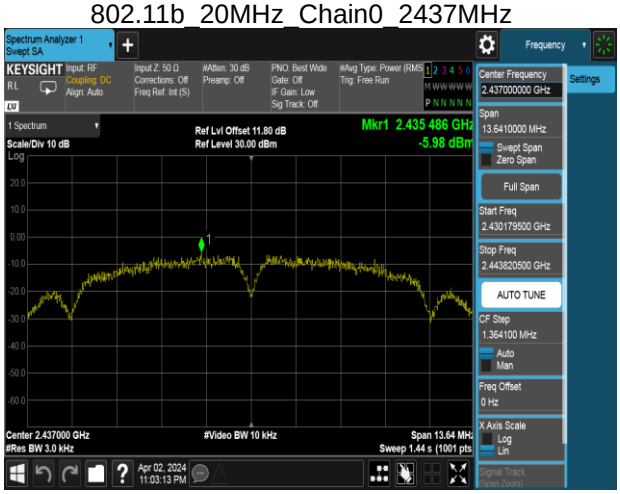
Test Data (Power density)

802.11b_20MHz_Chain0_2412MHz

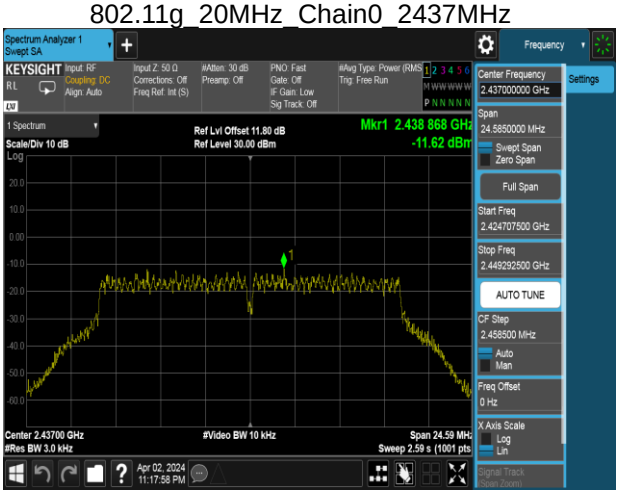
802.11g_20MHz_Chain0_2412MHz



802.11b_20MHz_Chain0_2437MHz

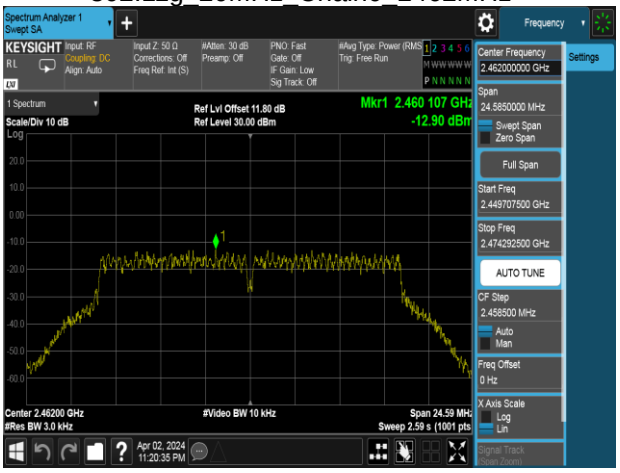


802.11g_20MHz_Chain0_2437MHz

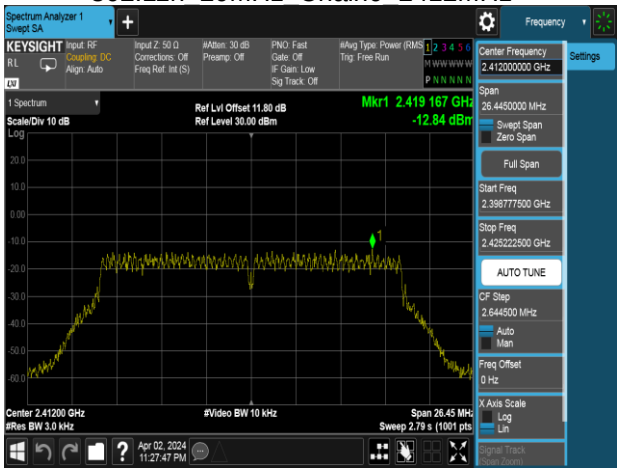


802.11b_20MHz_Chain0_2462MHz

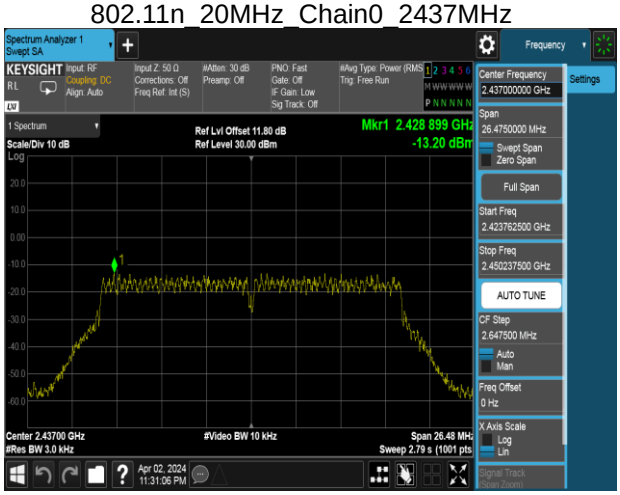
802.11g_20MHz_Chain0_2462MHz



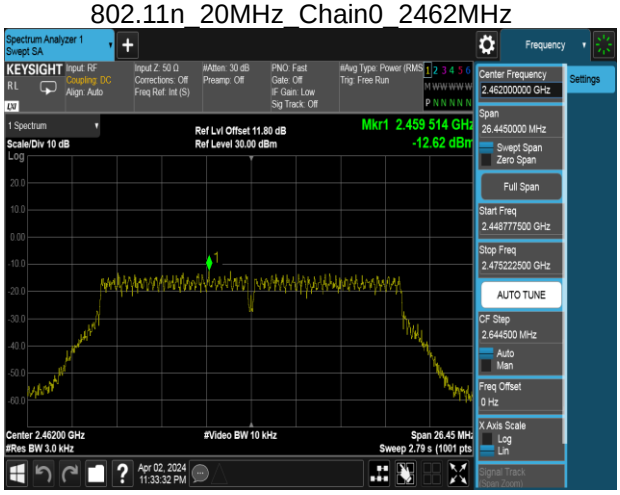
802.11n_20MHz_Chain0_2412MHz



802.11n_20MHz_Chain0_2437MHz



802.11n_20MHz_Chain0_2462MHz



5.5 CONDUCTED BANDEDGE AND SPURIOUS EMISSION

5.5.1 Test Limit

According to §15.247(d) and RSS-247 section 5.5,

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

Refer to section 1.8.

5.5.4 Test Result

Test Data

Temperature: 22~23.7℃ **Test date:** April 2~3, 2024

Humidity: 51~63% RH **Tested by:** Marco Chan

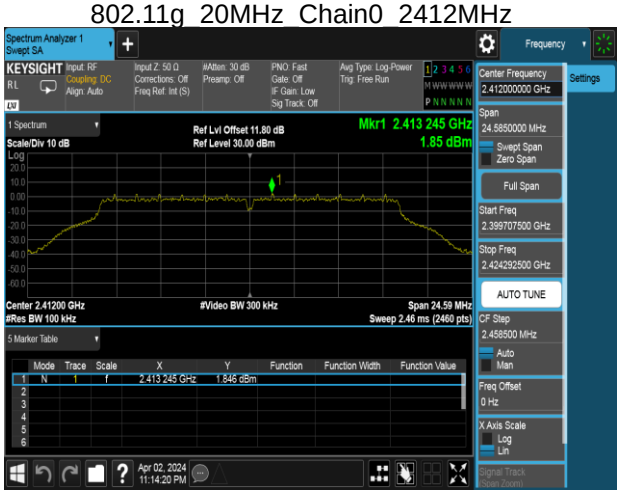
Conducted Reference

802.11b_20MHz_Chain0_2412MHz

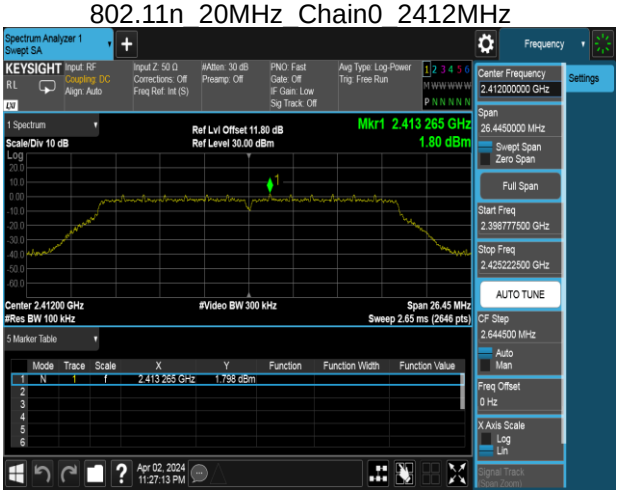
802.11b_20MHz_Chain0_2462MHz

802.11b_20MHz_Chain0_2437MHz

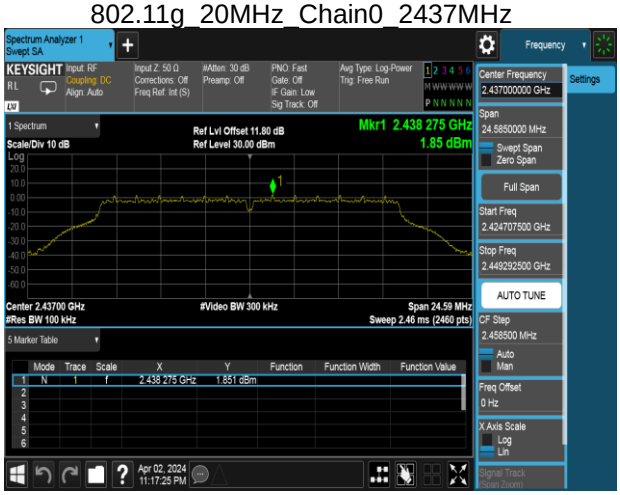
802.11g_20MHz_Chain0_2412MHz



802.11n_20MHz_Chain0_2412MHz

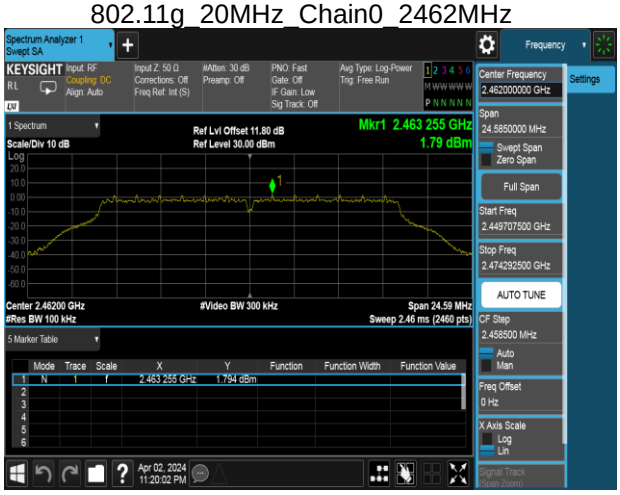


802.11g_20MHz_Chain0_2437MHz



802.11n_20MHz_Chain0_2437MHz

802.11g_20MHz_Chain0_2462MHz

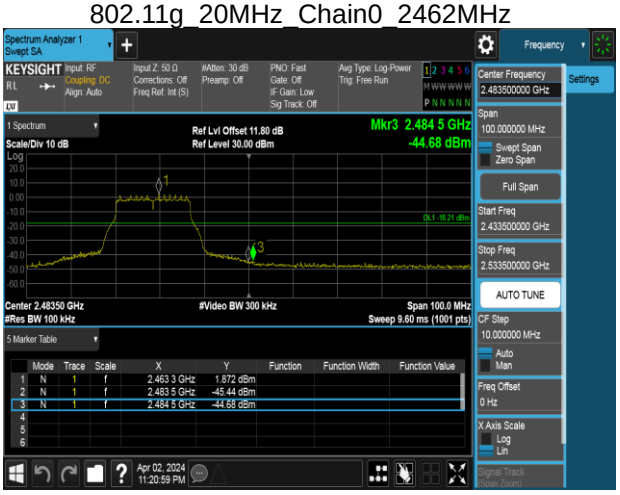


802.11n_20MHz_Chain0_2462MHz

Conducted Band Edge

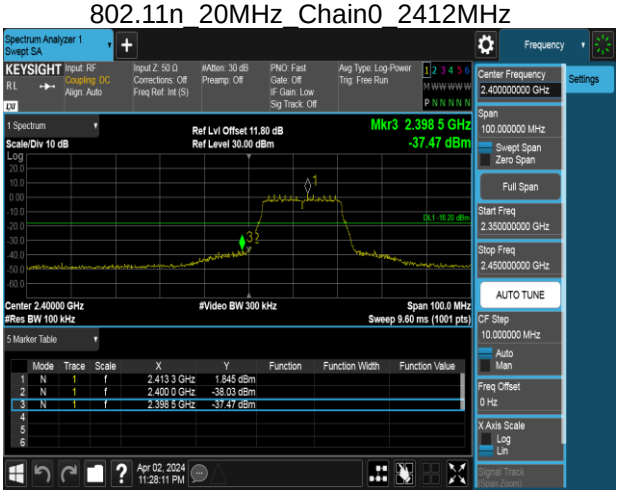
802.11b_20MHz_Chain0_2412MHz

802.11g_20MHz_Chain0_2462MHz



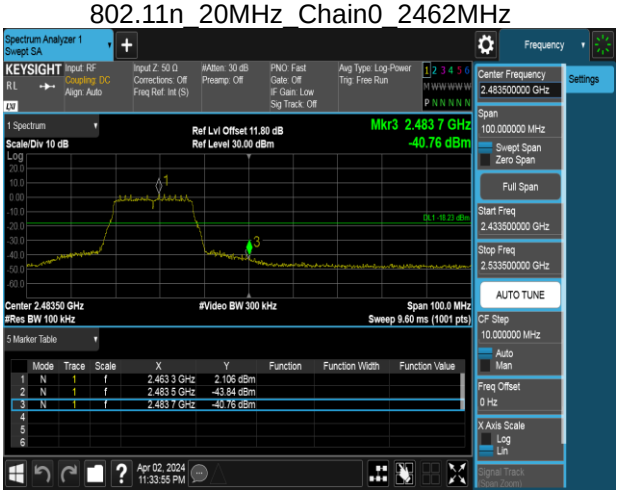
802.11b_20MHz_Chain0_2462MHz

802.11n_20MHz_Chain0_2412MHz



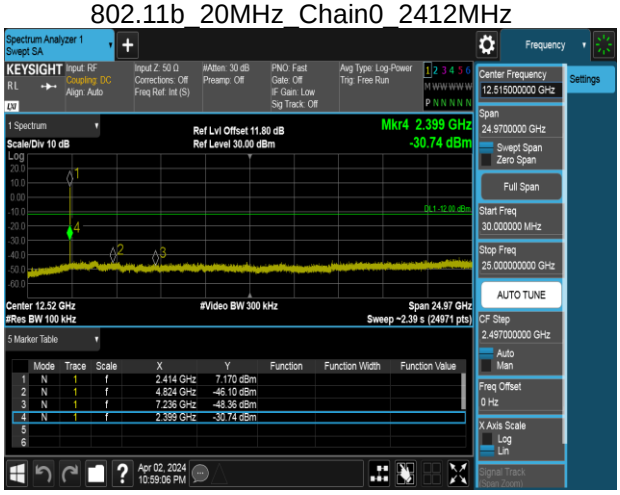
802.11g_20MHz_Chain0_2412MHz

802.11n_20MHz_Chain0_2462MHz

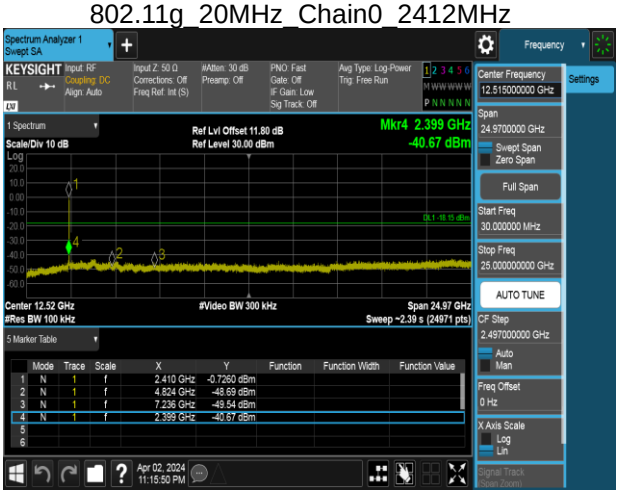


Conducted Spurious Emission

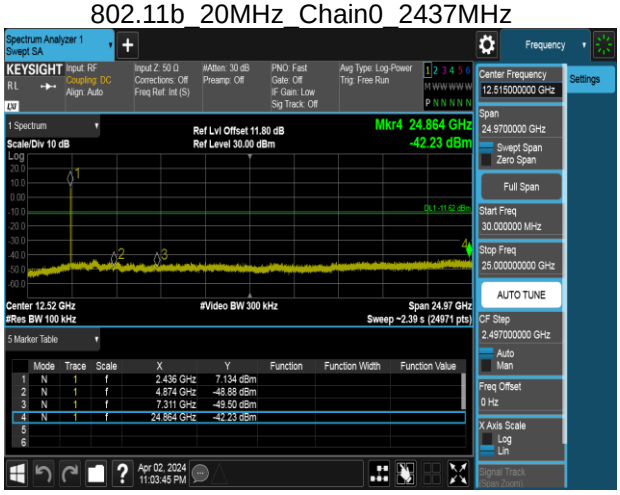
802.11b_20MHz_Chain0_2412MHz



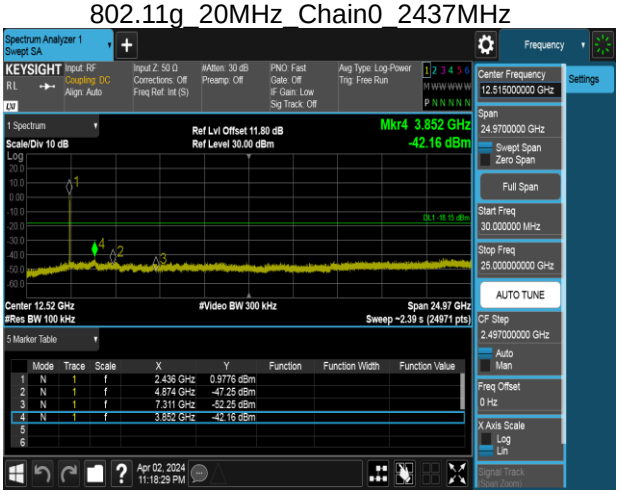
802.11g_20MHz_Chain0_2412MHz



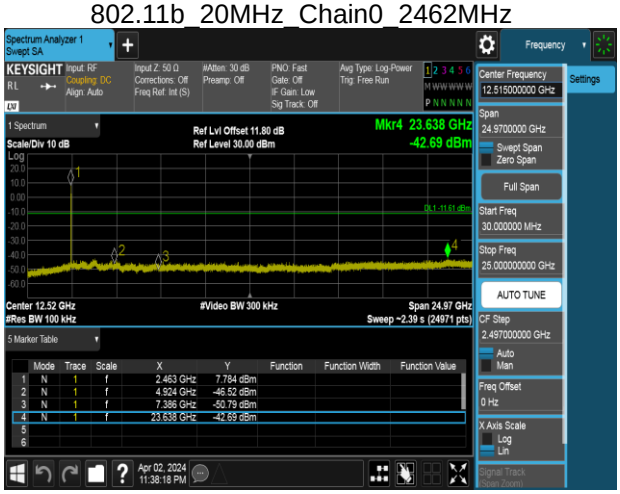
802.11b_20MHz_Chain0_2437MHz



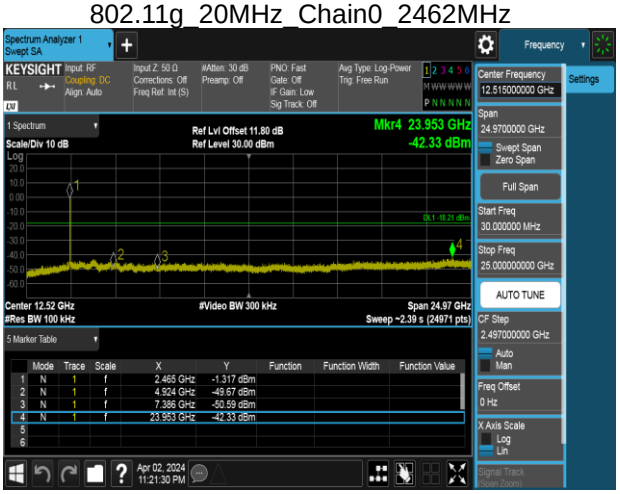
802.11g_20MHz_Chain0_2437MHz



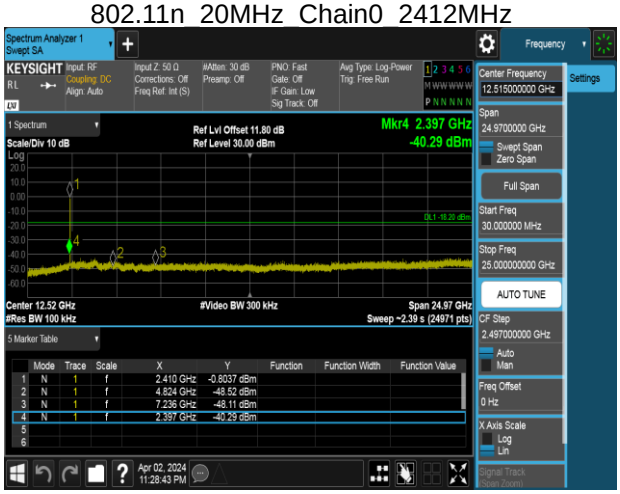
802.11b_20MHz_Chain0_2462MHz



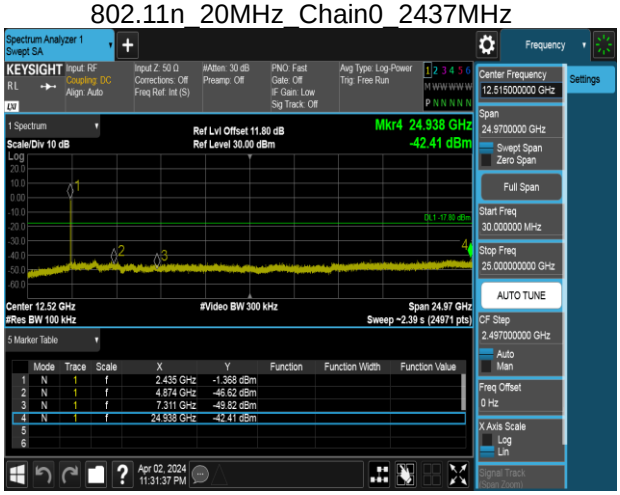
802.11g_20MHz_Chain0_2462MHz



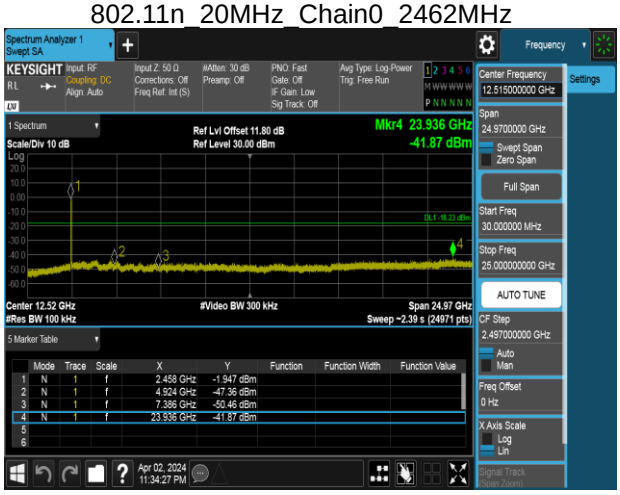
802.11n_20MHz_Chain0_2412MHz



802.11n_20MHz_Chain0_2437MHz



802.11n_20MHz_Chain0_2462MHz



5.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

5.6.1 Test Limit

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

IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

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 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.

IC according to RSS-247 section 5.5, RSS-Gen, Section 8.9 and 8.10

RSS-Gen Table 3 and Table 5 – General Field Strength Limits for Transmitters and Receivers at Frequencies Above 30 MHz (Note)

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)

Note: Measurements for compliance with the limits in table 3 may be performed at distances other than 3 metres, in accordance with Section 6.6.

RSS-Gen Table 6: General Field Strength Limits for Transmitters at Frequencies Below 30 MHz (Transmit)

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement Distance (m)
9-490 kHz Note	6.37/F (F in kHz)	300
490-1,705 kHz	63.7/F (F in kHz)	30
1.705-30 MHz	0.08	30

Note: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

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 ≥ 3 RBW, Sweep = Auto, Detector = Peak, Trace = Max hold.

(2) Above 1G：

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

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

˙If Duty Cycle ≥ 98%, VBW=10Hz.

˙If Duty Cycle < 98%, VBW=1/T.

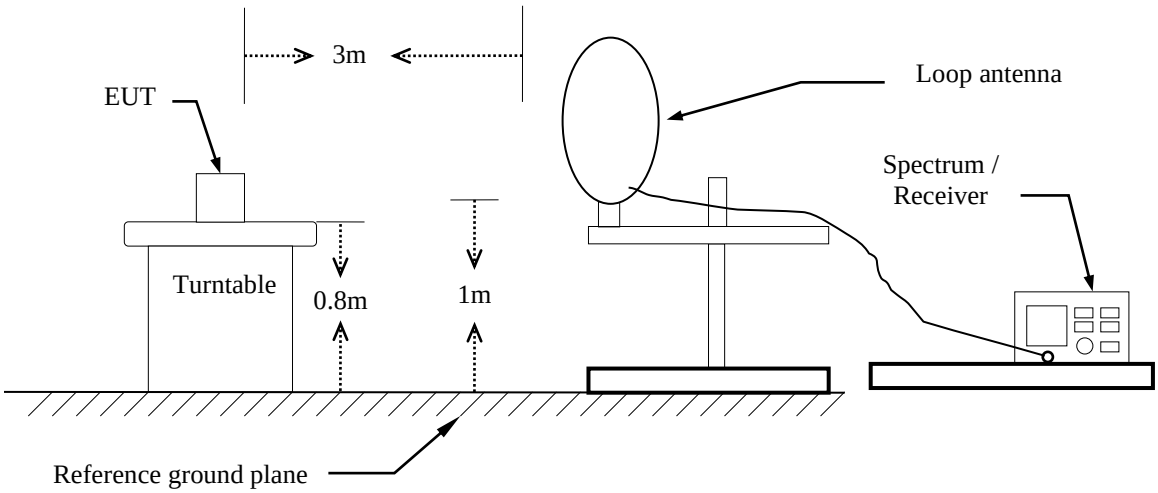
5. Data result：

Actual FS=Spectrum Reading Level + Factor

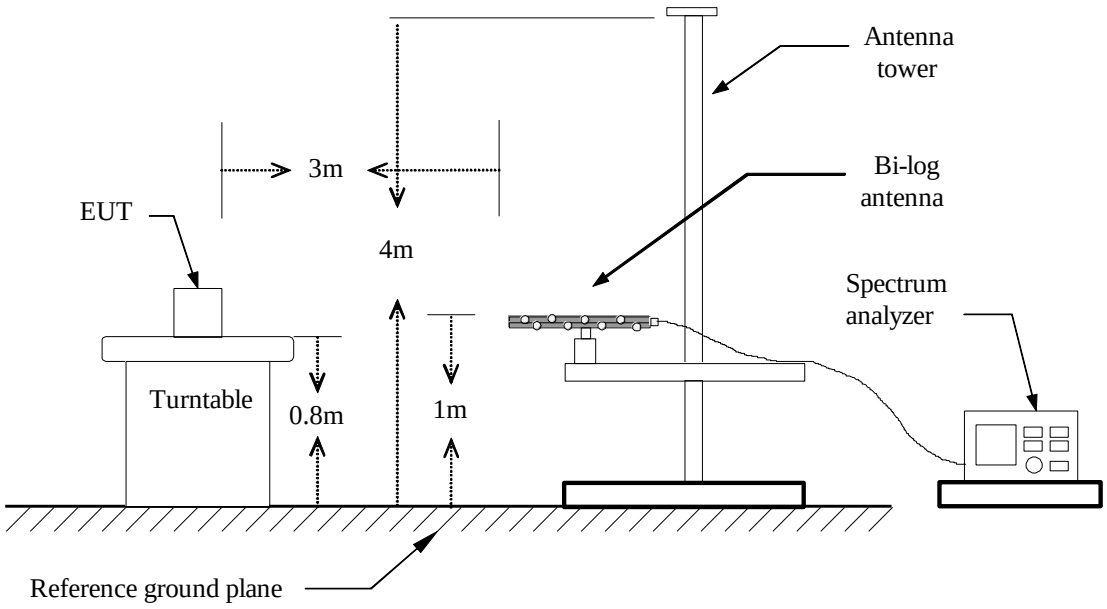
Margin=Actual FS- Limit

5.6.3 Test Setup

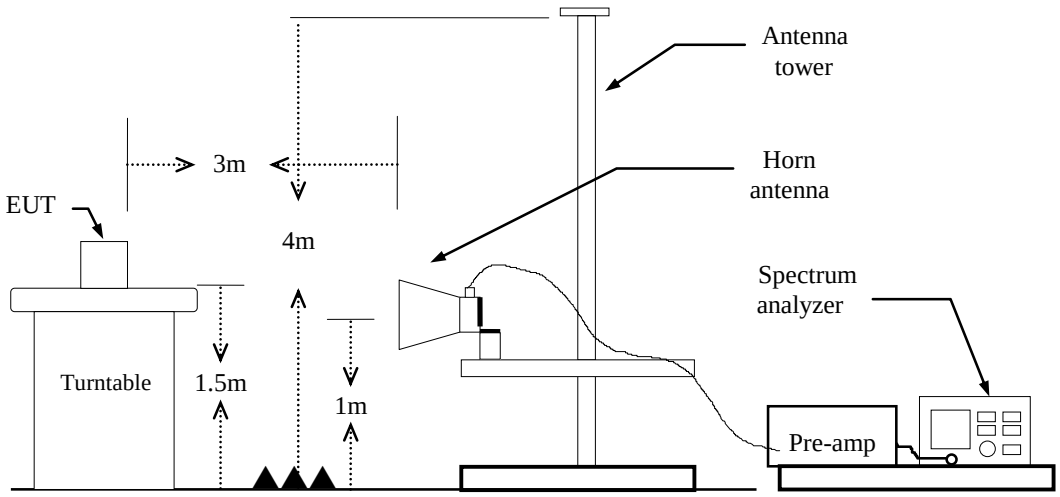
9kHz ~ 30MHz



30MHz ~ 1GHz



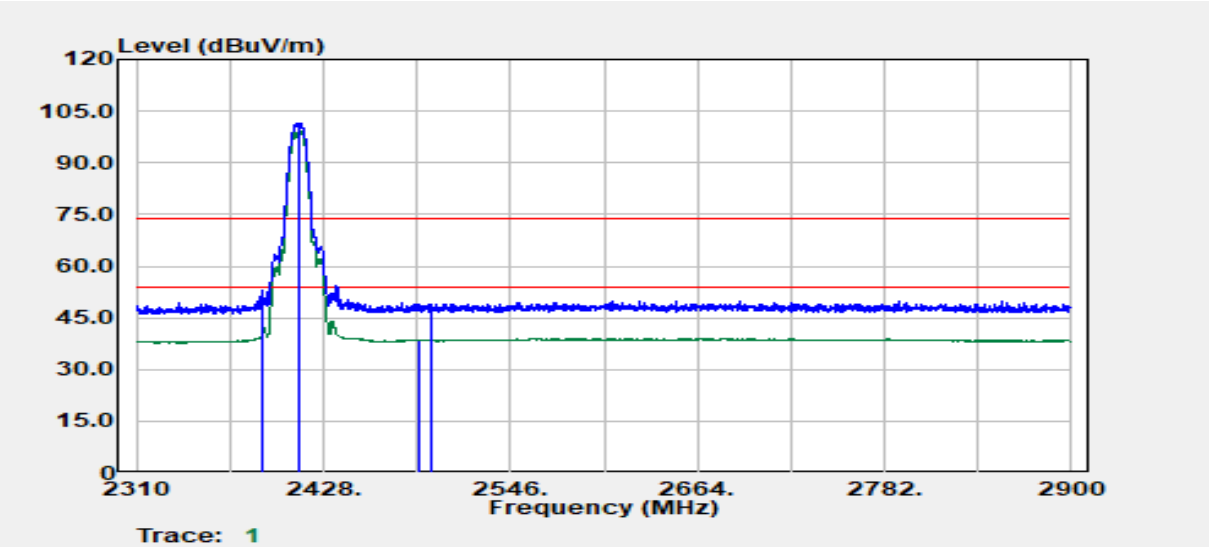
Above 1 GHz



5.6.4 Test Result

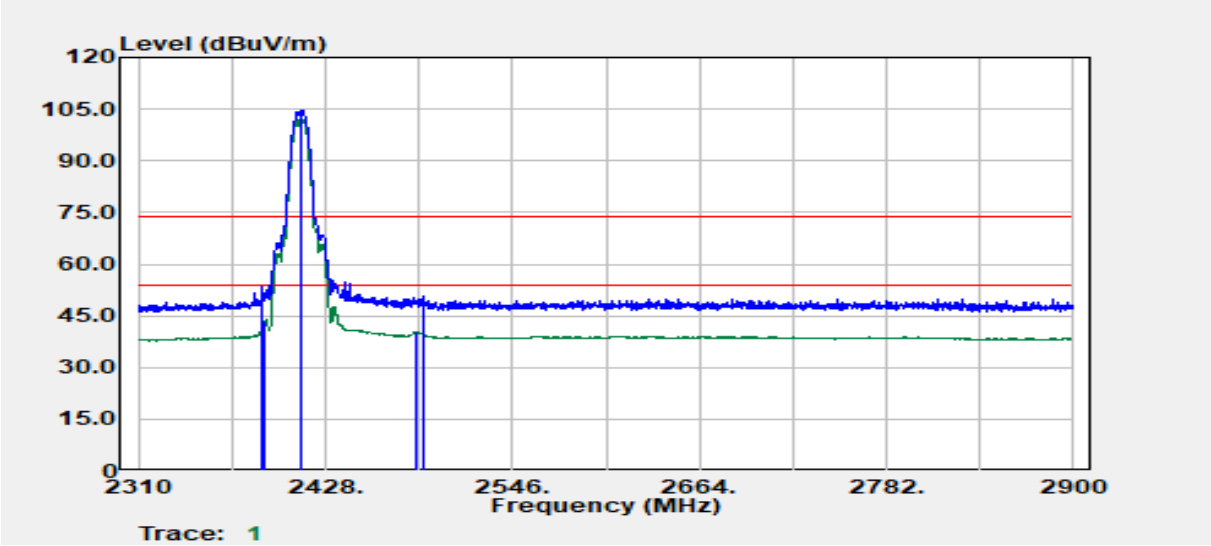
Band Edge Test Data

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:64		



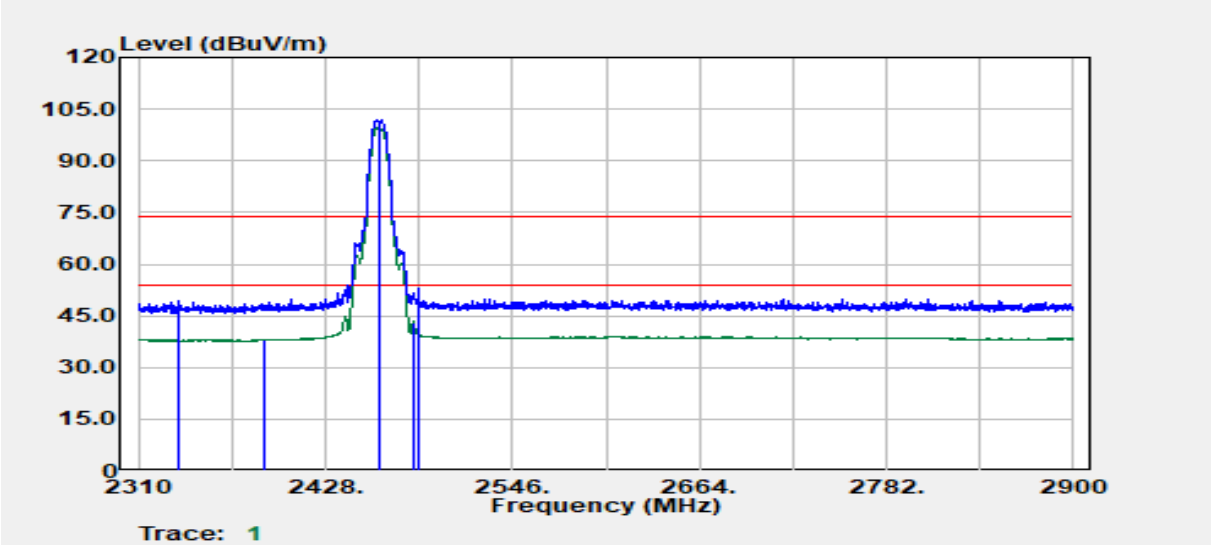
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2389.28	Peak	47.69	5.49	53.19	74.00	-20.81
2390.00	Average	35.64	5.51	41.15	54.00	-12.85
2412.00	Peak	96.02	5.53	101.55	- -	- -
2412.00	Average	93.55	5.53	99.09	- -	- -
2488.58	Average	32.68	6.01	38.69	54.00	-15.31
2496.58	Peak	43.06	6.06	49.11	74.00	-24.89

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:64		



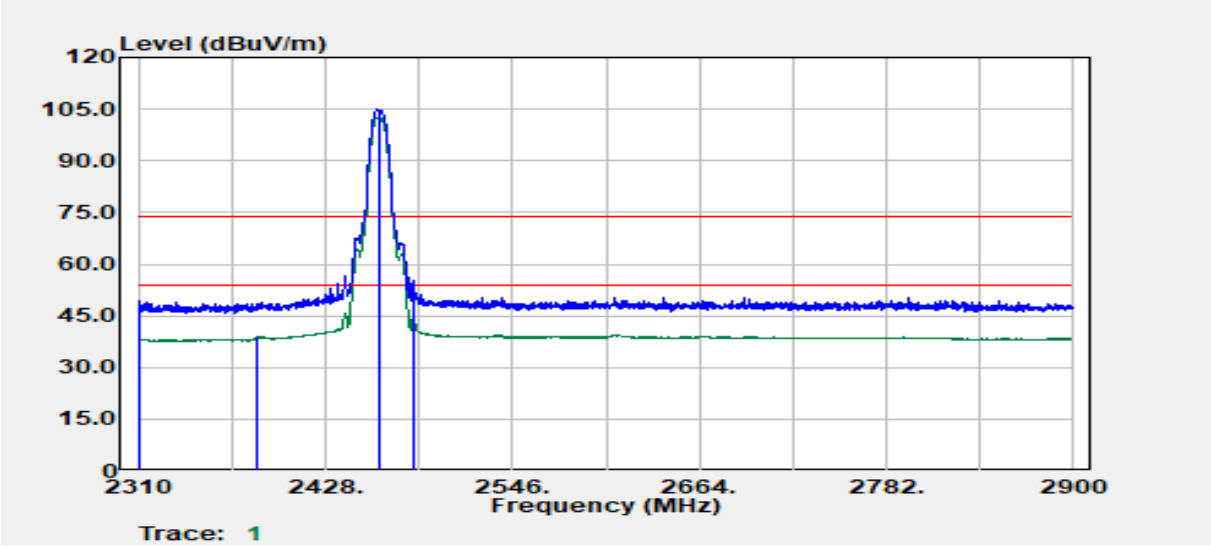
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2388.53	Peak	47.97	5.48	53.45	74.00	-20.55
2390.00	Average	37.77	5.51	43.28	54.00	-10.72
2412.00	Peak	98.90	5.53	104.44	- -	- -
2412.00	Average	96.43	5.53	101.97	- -	- -
2485.82	Average	34.24	5.97	40.21	54.00	-13.79
2489.83	Peak	44.48	6.03	50.51	74.00	-23.49

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:63		



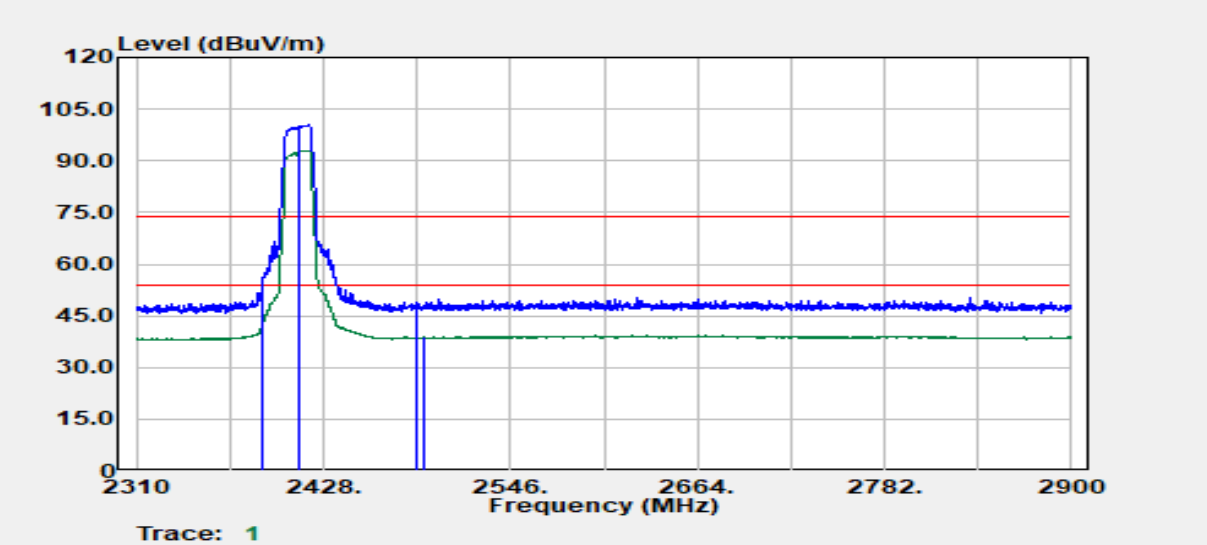
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2335.97	Peak	43.83	5.37	49.20	74.00	-24.80
2389.90	Average	32.65	5.51	38.15	54.00	-15.85
2462.00	Peak	96.45	5.54	101.99	- -	- -
2462.00	Average	93.96	5.54	99.50	- -	- -
2483.53	Average	37.12	5.94	43.06	54.00	-10.94
2486.78	Peak	46.86	5.99	52.85	74.00	-21.15

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:63		



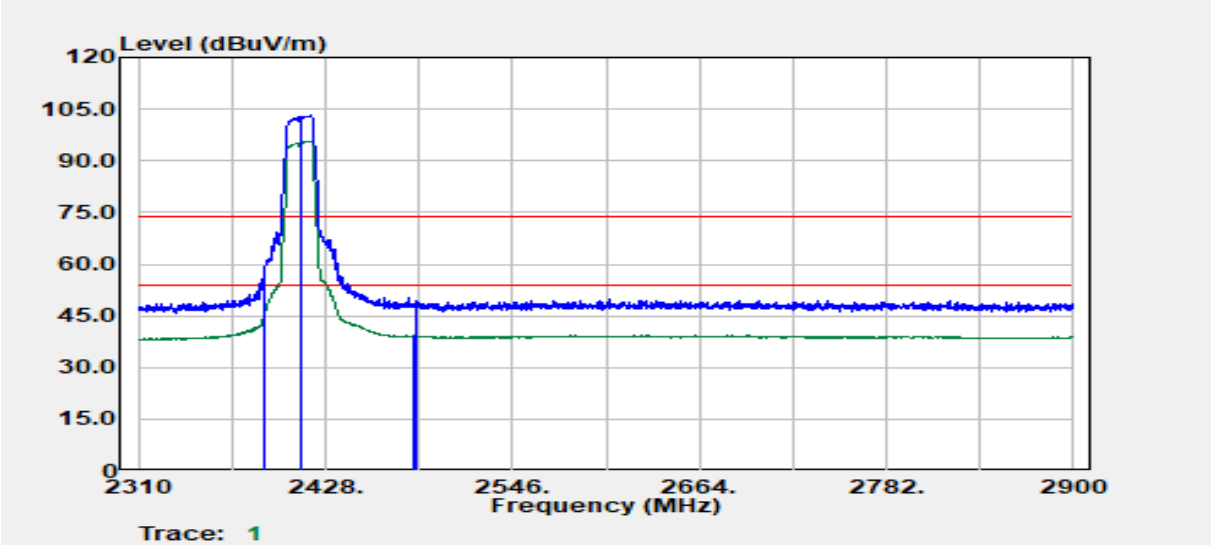
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2311.25	Peak	43.79	5.36	49.15	74.00	-24.85
2385.40	Average	33.41	5.41	38.83	54.00	-15.17
2462.00	Peak	99.38	5.54	104.92	- -	- -
2462.00	Average	96.90	5.54	102.44	- -	- -
2483.53	Peak	49.32	5.94	55.26	74.00	-18.74
2483.53	Average	38.62	5.94	44.56	54.00	-9.44

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:50		



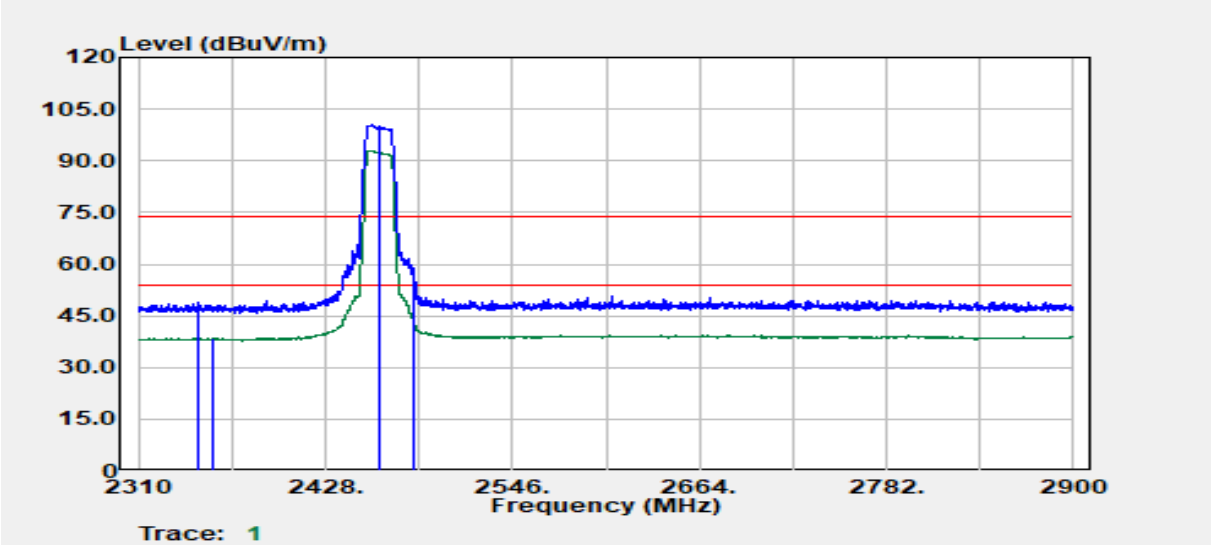
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2389.78	Peak	50.86	5.51	56.36	74.00	-17.64
2390.00	Average	37.78	5.51	43.29	54.00	-10.71
2412.00	Peak	95.01	5.53	100.55	- -	- -
2412.00	Average	87.40	5.53	92.94	- -	- -
2486.58	Peak	43.09	5.98	49.07	74.00	-24.93
2491.83	Average	32.76	6.04	38.80	54.00	-15.20

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:50		



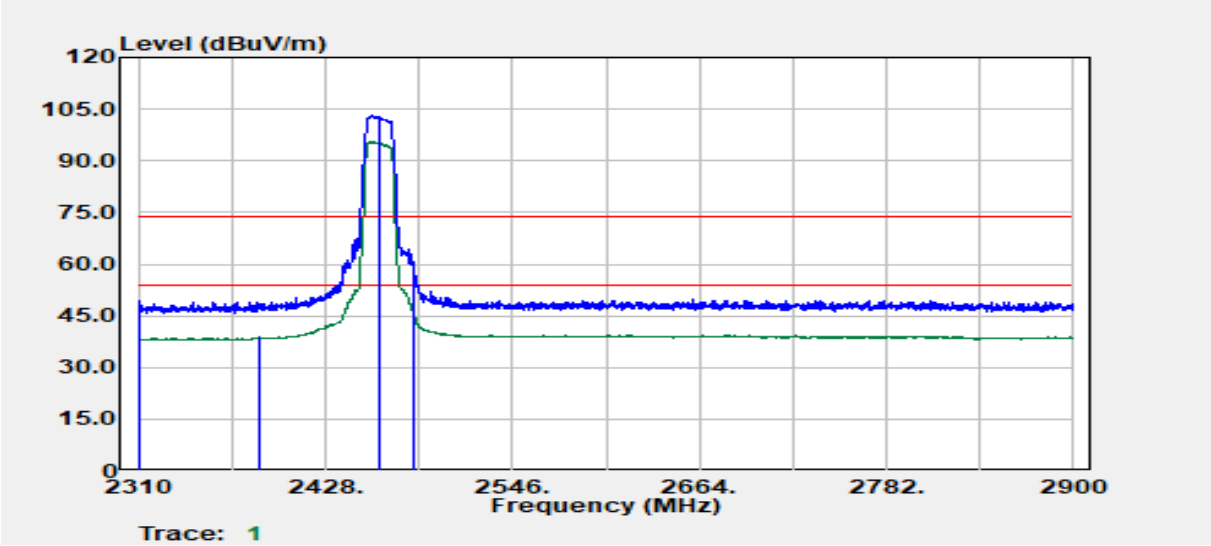
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2390.00	Peak	53.89	5.51	59.40	74.00	-14.60
2390.00	Average	40.99	5.51	46.50	54.00	-7.50
2412.00	Peak	97.64	5.53	103.18	- -	- -
2412.00	Average	90.13	5.53	95.67	- -	- -
2483.82	Average	33.27	5.95	39.21	54.00	-14.79
2485.57	Peak	43.23	5.97	49.20	74.00	-24.80

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:47		



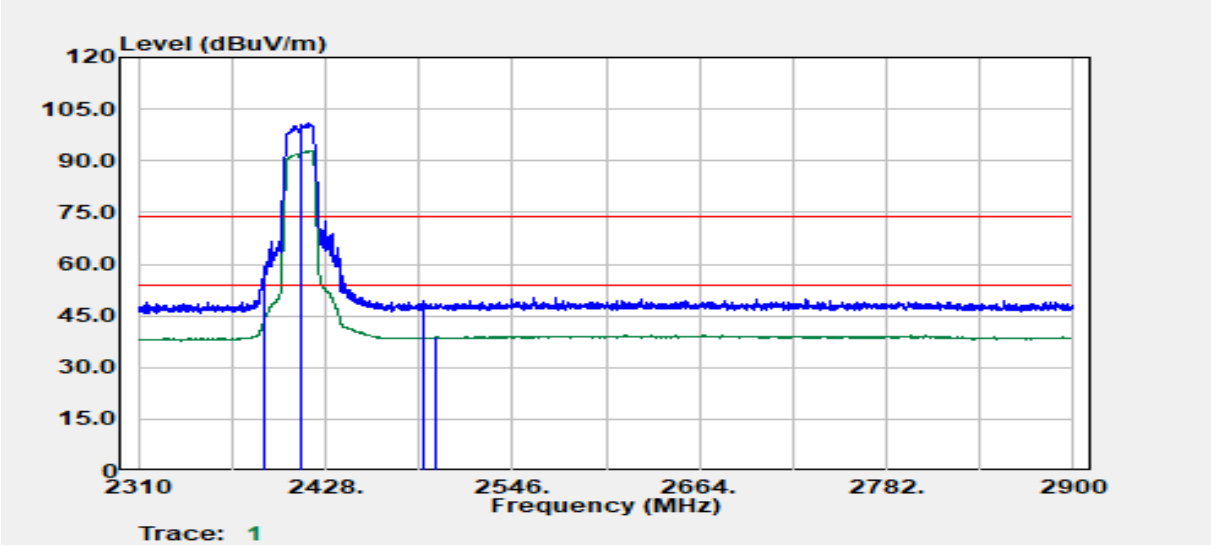
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2347.52	Peak	43.59	5.44	49.03	74.00	-24.97
2356.77	Average	33.13	5.48	38.61	54.00	-15.39
2462.00	Peak	94.84	5.54	100.38	- -	- -
2462.00	Average	87.28	5.54	92.82	- -	- -
2483.57	Peak	50.51	5.94	56.45	74.00	-17.55
2483.57	Average	37.43	5.94	43.37	54.00	-10.63

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:47		



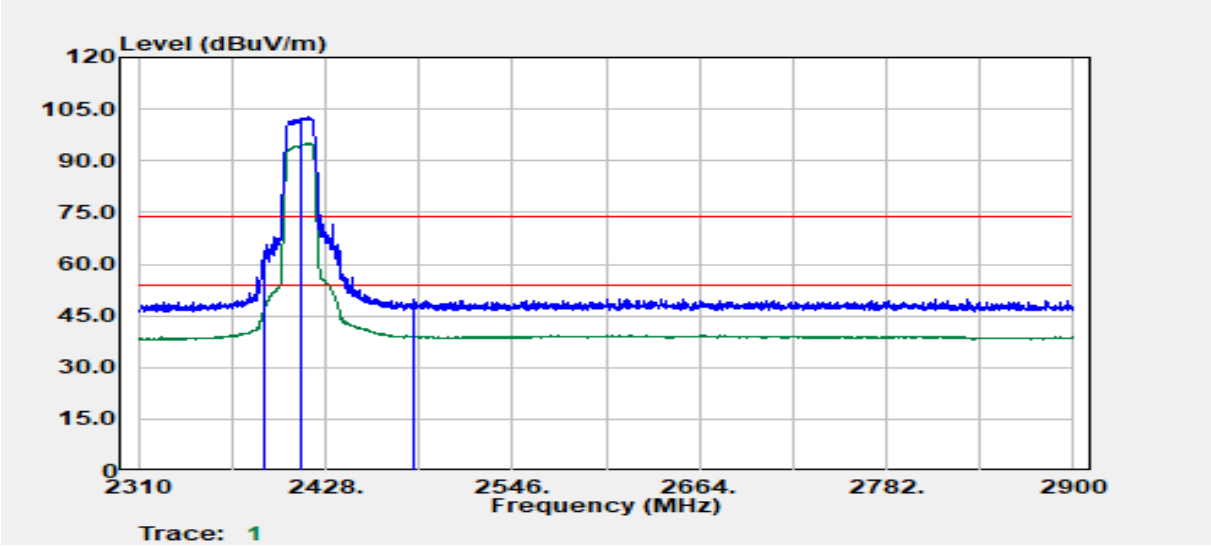
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2311.25	Peak	44.00	5.36	49.36	74.00	-24.64
2387.03	Average	33.27	5.45	38.72	54.00	-15.28
2462.00	Peak	97.51	5.54	103.05	- -	- -
2462.00	Average	89.88	5.54	95.42	- -	- -
2483.57	Average	39.67	5.94	45.61	54.00	-8.39
2483.82	Peak	53.97	5.95	59.91	74.00	-14.09

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:49		



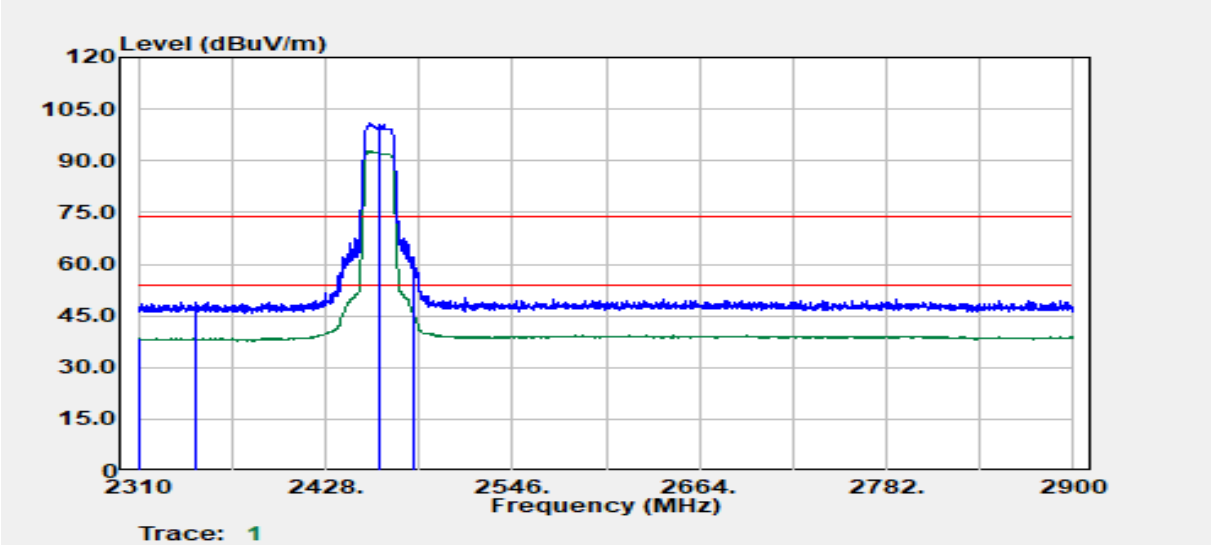
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2389.03	Peak	53.87	5.49	59.36	74.00	-14.64
2390.00	Average	38.87	5.51	44.38	54.00	-9.62
2412.00	Peak	95.65	5.53	101.18	- -	- -
2412.00	Average	87.22	5.53	92.76	- -	- -
2490.08	Peak	43.39	6.03	49.42	74.00	-24.58
2498.33	Average	32.70	6.06	38.77	54.00	-15.23

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:49		



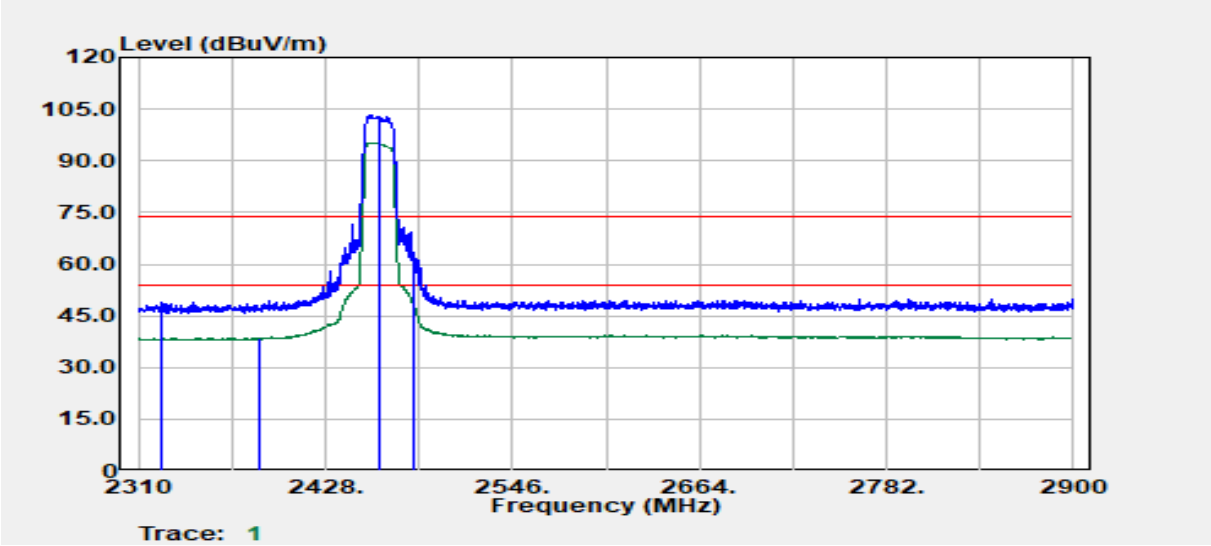
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2389.53	Peak	58.30	5.50	63.80	74.00	-10.20
2390.00	Average	42.10	5.51	47.61	54.00	-6.39
2412.00	Peak	97.17	5.53	102.70	- -	- -
2412.00	Average	89.43	5.53	94.97	- -	- -
2483.82	Average	33.10	5.95	39.04	54.00	-14.96
2484.32	Peak	43.88	5.95	49.83	74.00	-24.17

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:48		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2310.75	Average	33.15	5.36	38.51	54.00	-15.49
2345.52	Peak	43.71	5.41	49.13	74.00	-24.87
2462.00	Peak	95.44	5.54	100.98	- -	- -
2462.00	Average	87.17	5.54	92.72	- -	- -
2483.57	Average	40.17	5.94	46.12	54.00	-7.88
2483.82	Peak	54.69	5.95	60.63	74.00	-13.37

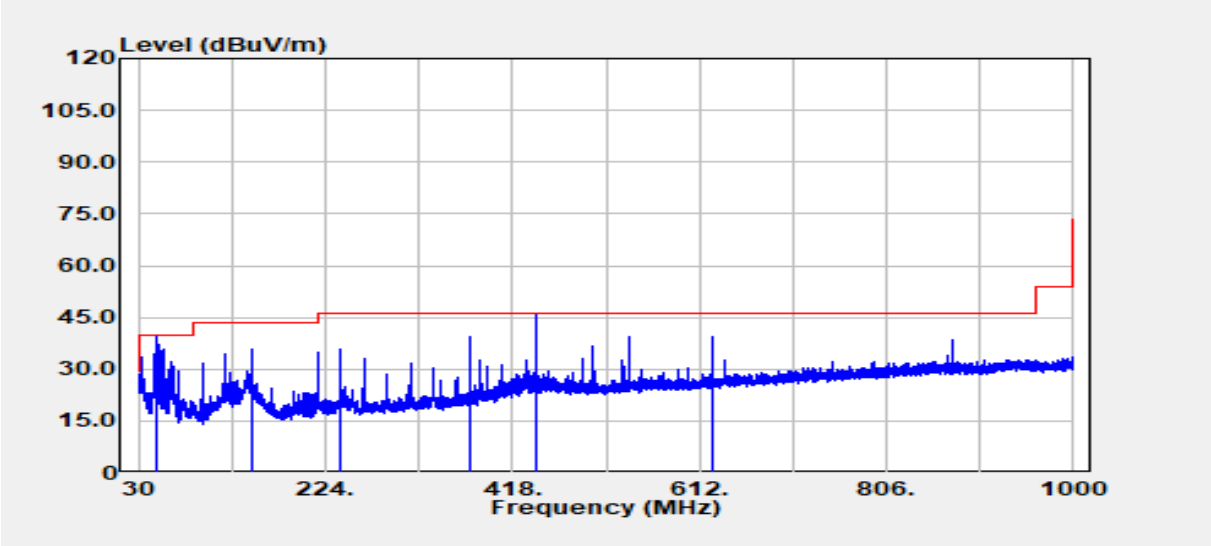
Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:48		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2324.26	Peak	43.61	5.40	49.00	74.00	-25.00
2387.03	Average	33.16	5.45	38.60	54.00	-15.40
2462.00	Peak	97.91	5.54	103.46	- -	- -
2462.00	Average	89.71	5.54	95.26	- -	- -
2483.57	Peak	57.60	5.94	63.54	74.00	-10.46
2483.57	Average	42.73	5.94	48.67	54.00	-5.33

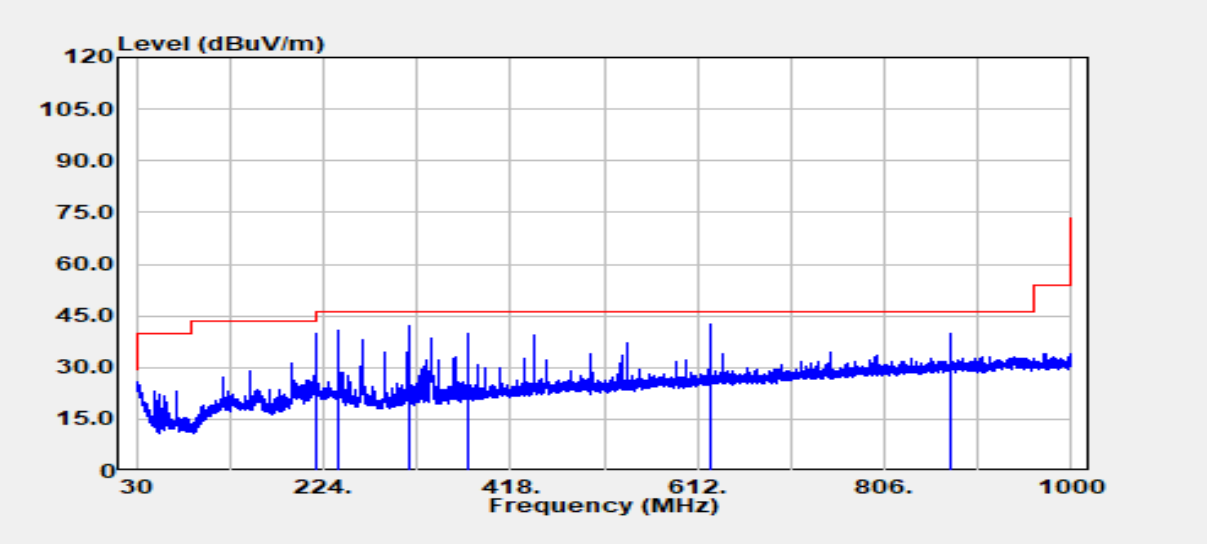
TX Test Data

Project No	:TM-2403000180P	Test Date	:2024-04-08
Operation Band	:802.11g	Temp./Humi.	:24.4/60
Frequency	:2462 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:47		



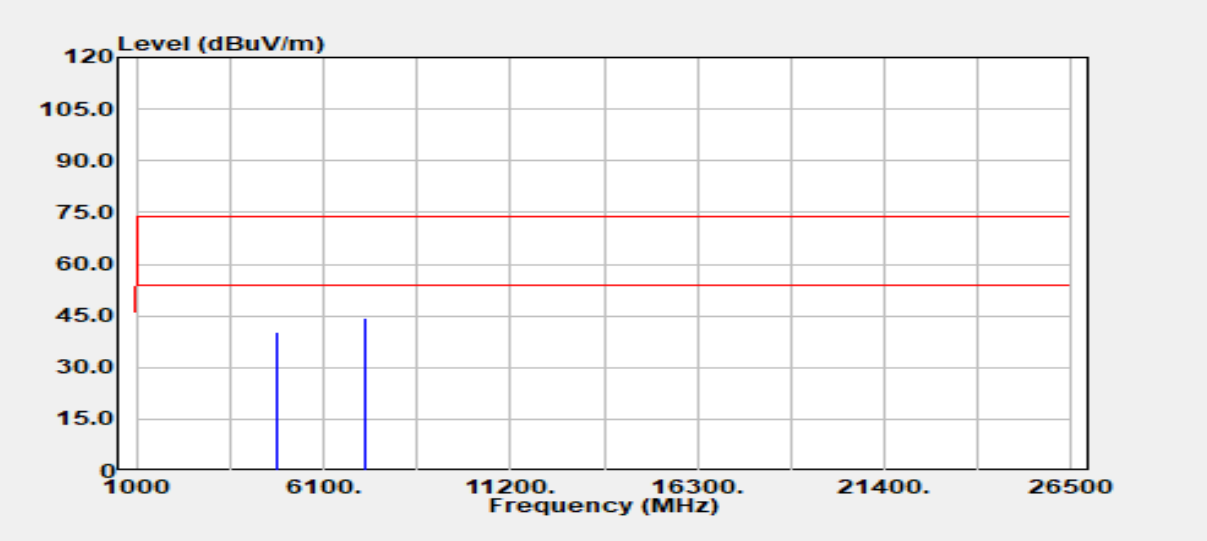
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
47.95	QP	51.96	-14.23	37.73	40.00	-2.27
147.25	Peak	45.79	-10.06	35.73	43.50	-7.77
240.01	Peak	46.39	-10.60	35.79	46.00	-10.21
374.96	Peak	46.01	-6.68	39.33	46.00	-6.67
441.77	QP	48.39	-4.60	43.79	46.00	-2.21
624.97	Peak	40.70	-1.17	39.53	46.00	-6.47

Project No	:TM-2403000180P	Test Date	:2024-04-08
Operation Band	:802.11g	Temp./Humi.	:24.4/60
Frequency	:2462 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:47		



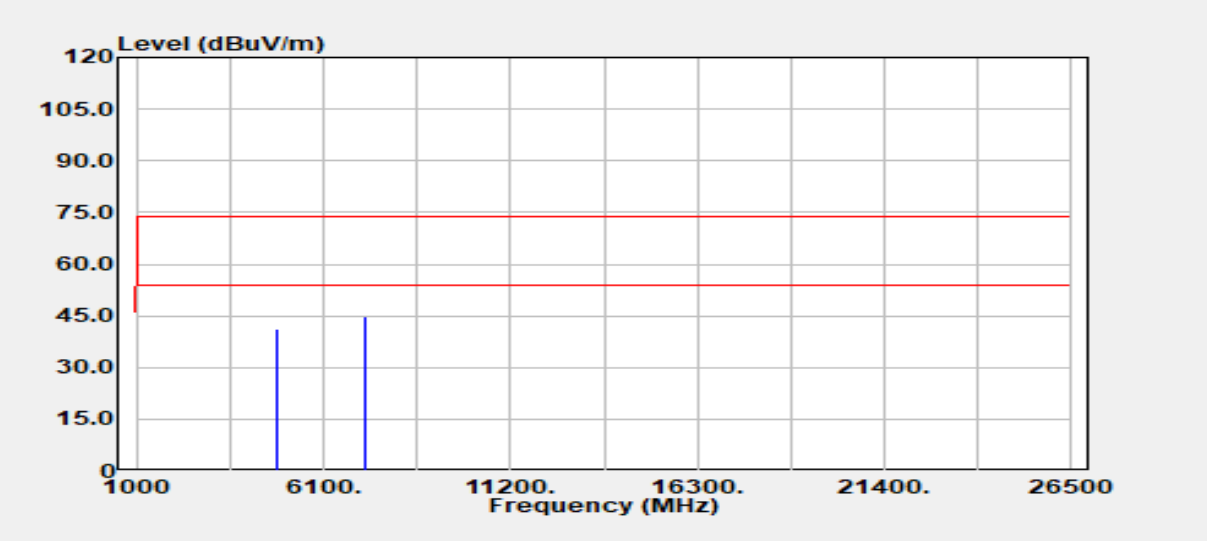
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
216.00	Peak	51.67	-11.79	39.88	43.50	-3.62
240.01	Peak	51.36	-10.60	40.76	46.00	-5.24
312.03	Peak	50.53	-8.25	42.28	46.00	-3.72
374.96	Peak	46.31	-6.68	39.63	46.00	-6.37
624.97	Peak	43.67	-1.17	42.50	46.00	-3.50
874.99	Peak	37.17	2.55	39.72	46.00	-6.28

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:64		



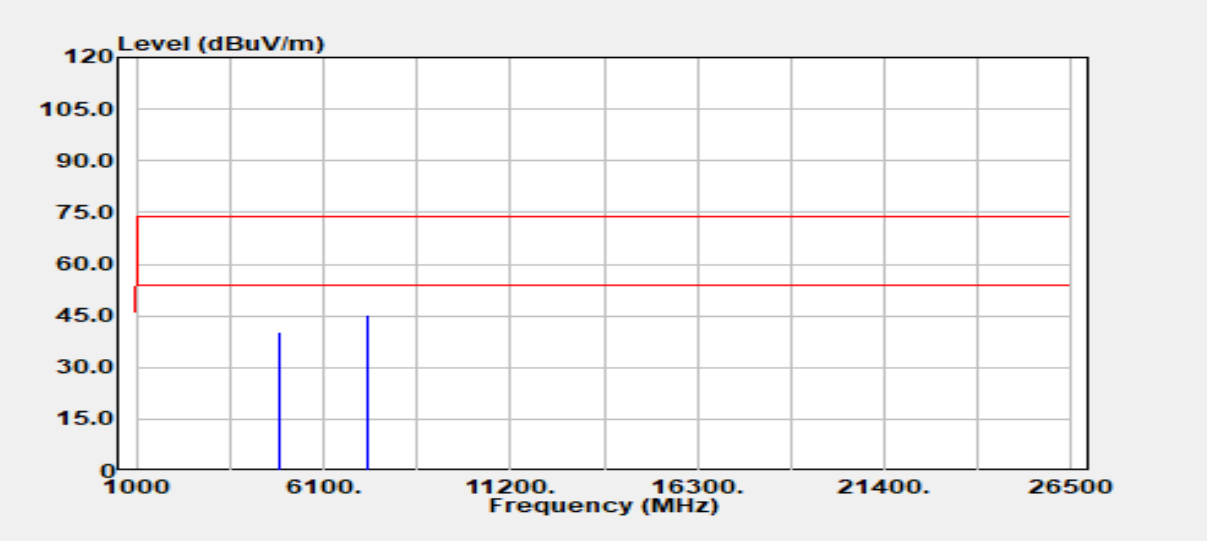
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4824.00	Peak	38.01	2.25	40.26	74.00	-33.74
4824.00	Average	28.14	2.25	30.39	54.00	-23.61
7236.00	Peak	35.41	9.17	44.58	74.00	-29.42
7236.00	Average	26.38	9.17	35.55	54.00	-18.45

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:64		



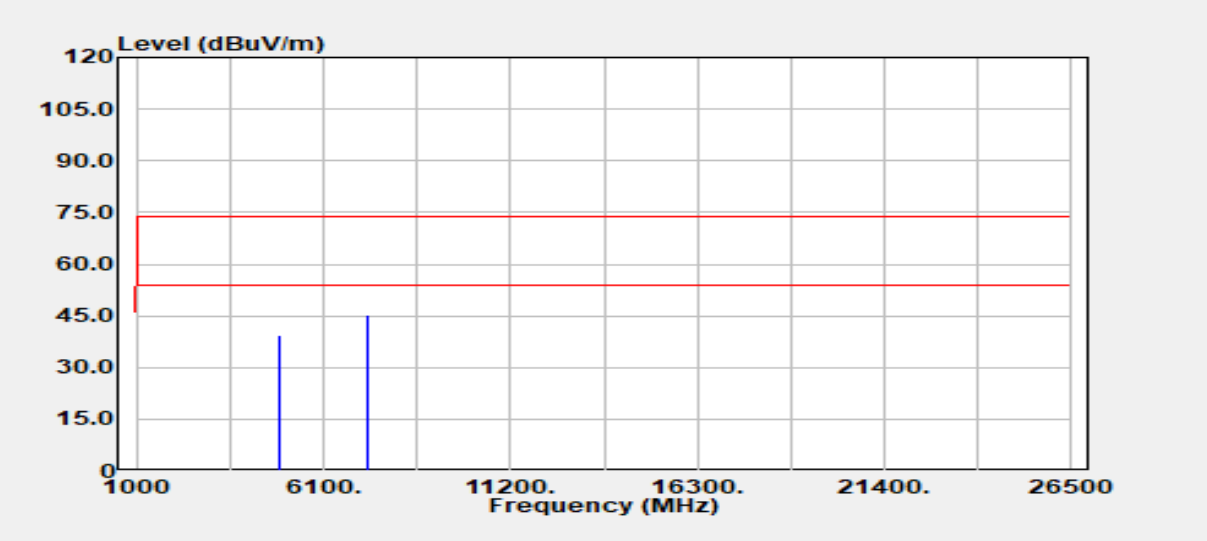
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4824.00	Peak	38.88	2.25	41.14	74.00	-32.86
4824.00	Average	29.91	2.25	32.16	54.00	-21.84
7236.00	Peak	35.83	9.17	45.00	74.00	-29.00
7236.00	Average	27.69	9.17	36.86	54.00	-17.14

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2437 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:64		



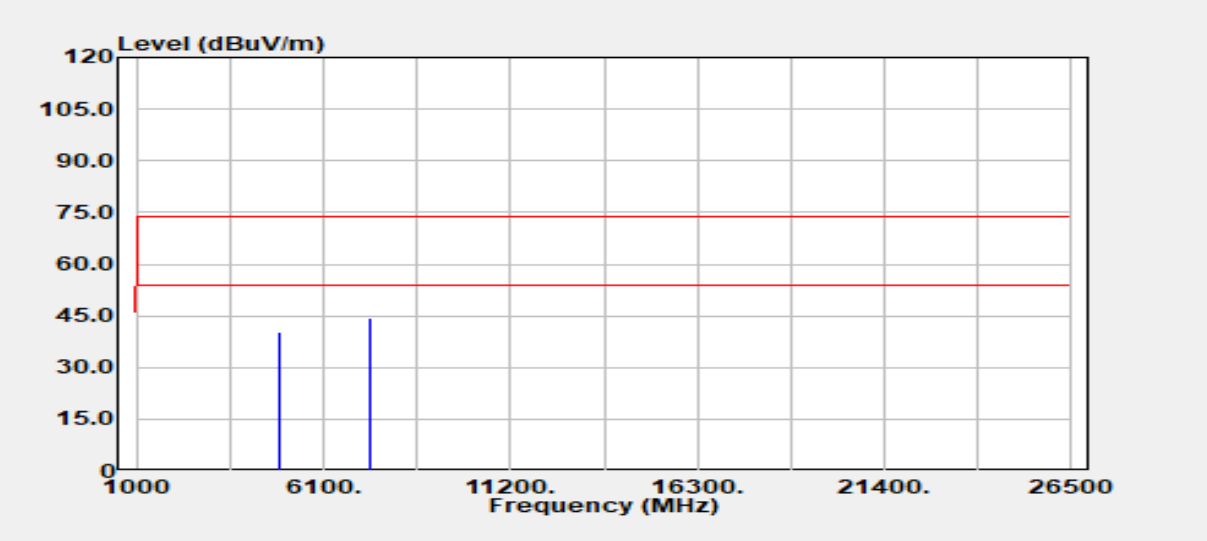
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4874.00	Peak	37.95	2.49	40.44	74.00	-33.56
4874.00	Average	28.17	2.49	30.66	54.00	-23.34
7311.00	Peak	36.37	8.96	45.33	74.00	-28.67
7311.00	Average	26.40	8.96	35.36	54.00	-18.64

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2437 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:64		



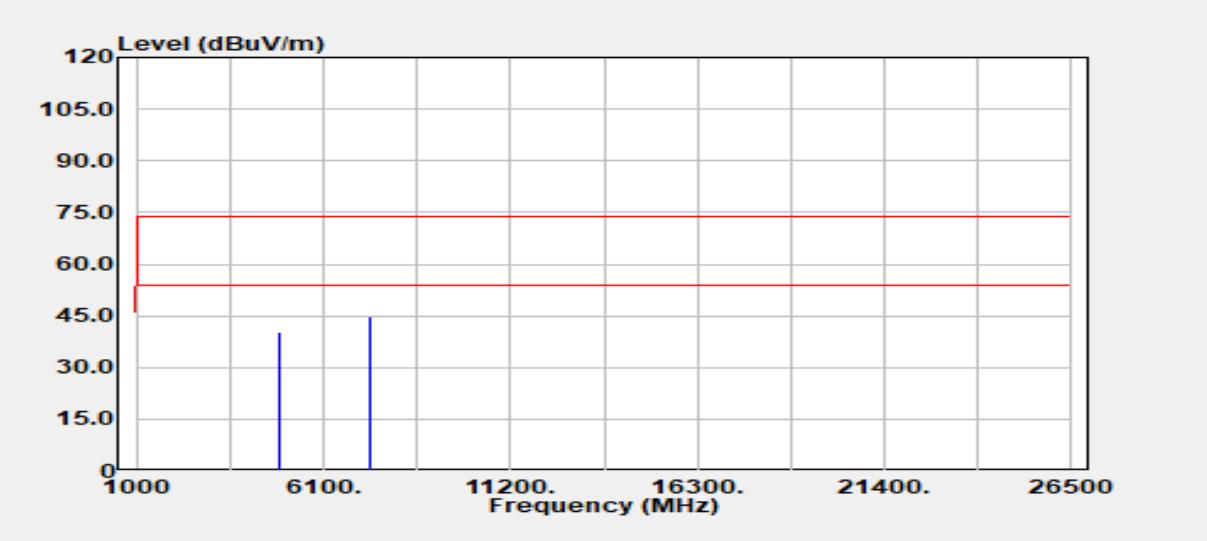
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4874.00	Peak	37.12	2.49	39.62	74.00	-34.38
4874.00	Average	28.17	2.49	30.67	54.00	-23.33
7311.00	Peak	36.48	8.96	45.44	74.00	-28.56
7311.00	Average	26.87	8.96	35.83	54.00	-18.17

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:63		



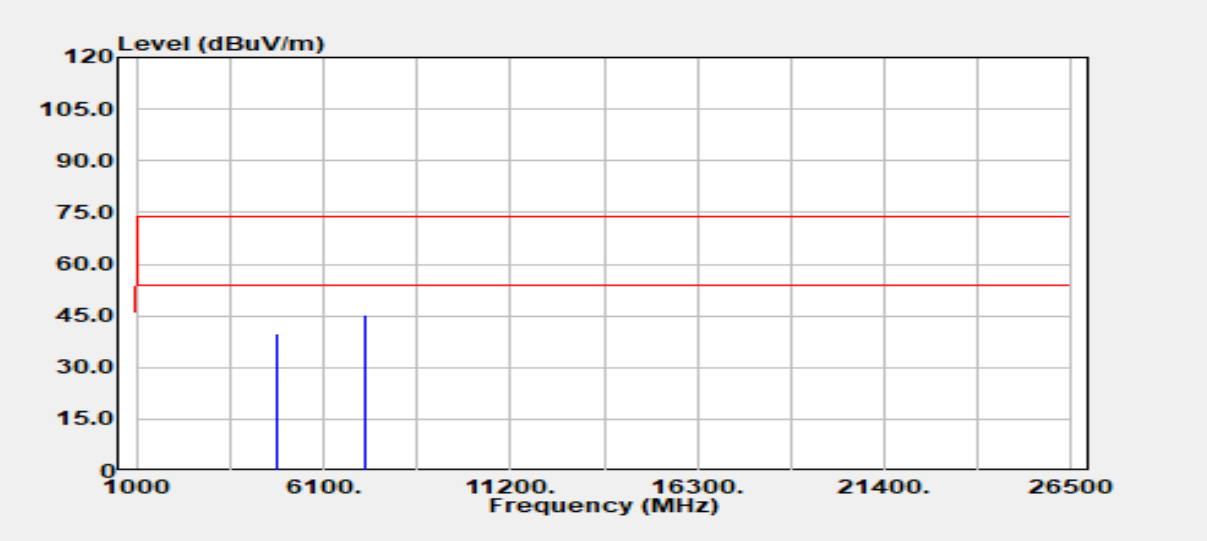
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4924.00	Peak	37.29	2.93	40.22	74.00	-33.78
4924.00	Average	27.57	2.93	30.50	54.00	-23.50
7386.00	Peak	35.35	9.01	44.36	74.00	-29.64
7386.00	Average	26.24	9.01	35.26	54.00	-18.74

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11b	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:63		



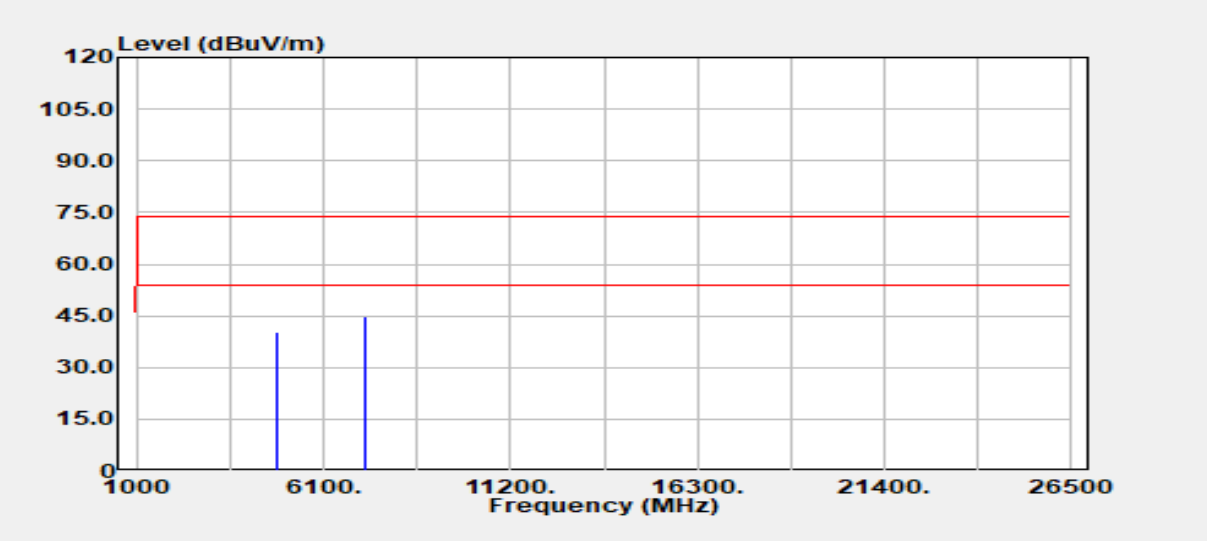
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4924.00	Peak	37.31	2.93	40.24	74.00	-33.76
4924.00	Average	29.30	2.93	32.23	54.00	-21.77
7386.00	Peak	35.64	9.01	44.65	74.00	-29.35
7386.00	Average	27.13	9.01	36.14	54.00	-17.86

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:50		



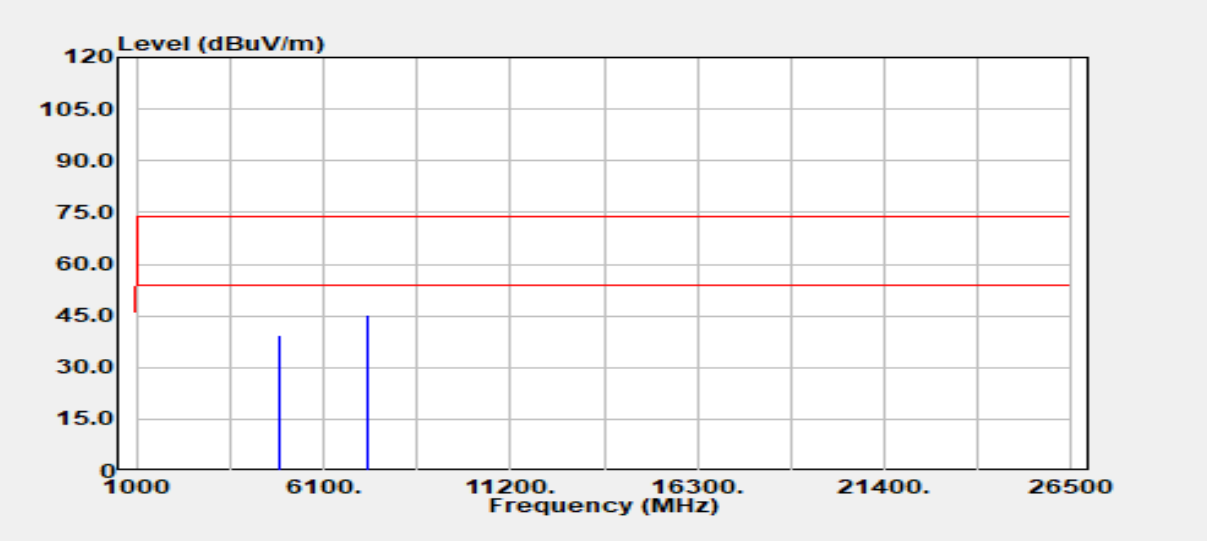
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4824.00	Peak	37.61	2.25	39.86	74.00	-34.14
4824.00	Average	28.25	2.25	30.50	54.00	-23.50
7236.00	Peak	35.96	9.17	45.13	74.00	-28.87
7236.00	Average	26.27	9.17	35.44	54.00	-18.56

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:50		



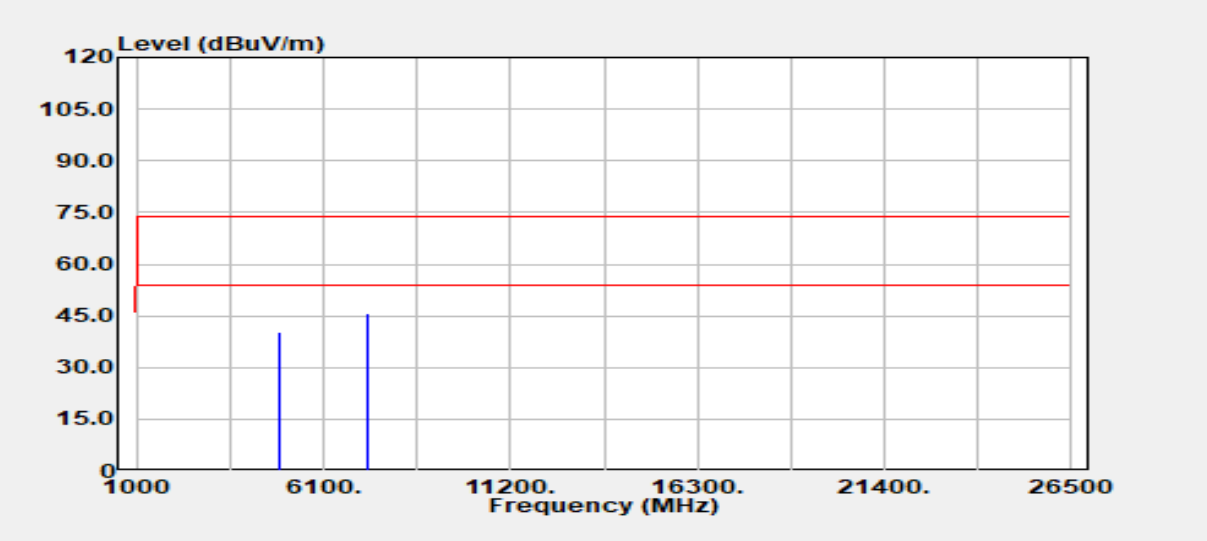
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4824.00	Peak	38.21	2.25	40.46	74.00	-33.54
4824.00	Average	28.18	2.25	30.43	54.00	-23.57
7236.00	Peak	35.68	9.17	44.85	74.00	-29.15
7236.00	Average	27.08	9.17	36.25	54.00	-17.75

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2437 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:48		



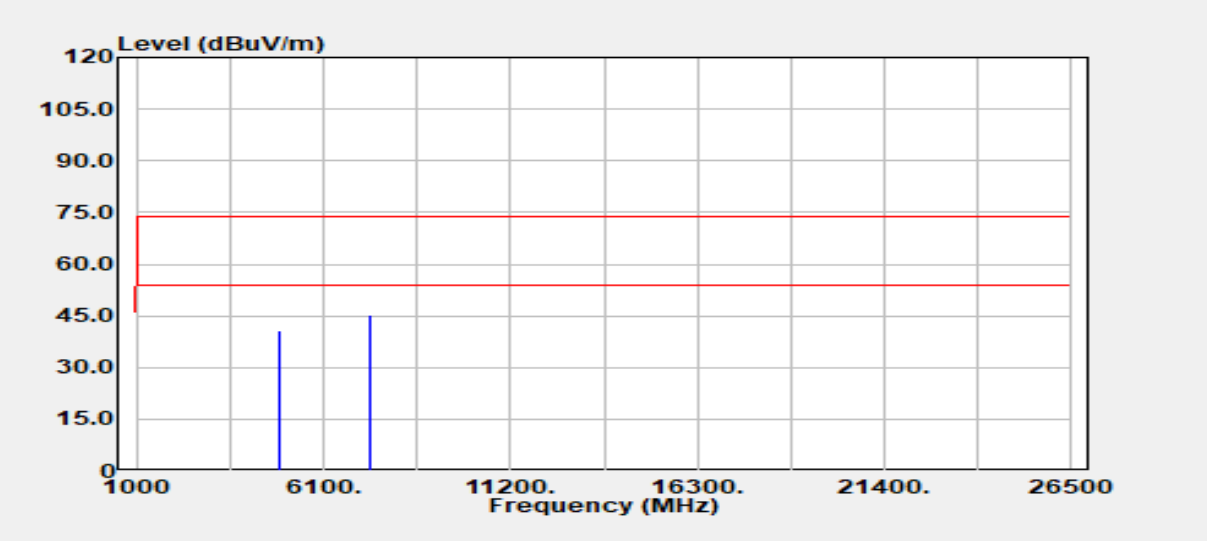
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4874.00	Peak	37.07	2.49	39.57	74.00	-34.43
4874.00	Average	28.07	2.49	30.56	54.00	-23.44
7311.00	Peak	36.51	8.96	45.48	74.00	-28.52
7311.00	Average	26.32	8.96	35.28	54.00	-18.72

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2437 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:48		



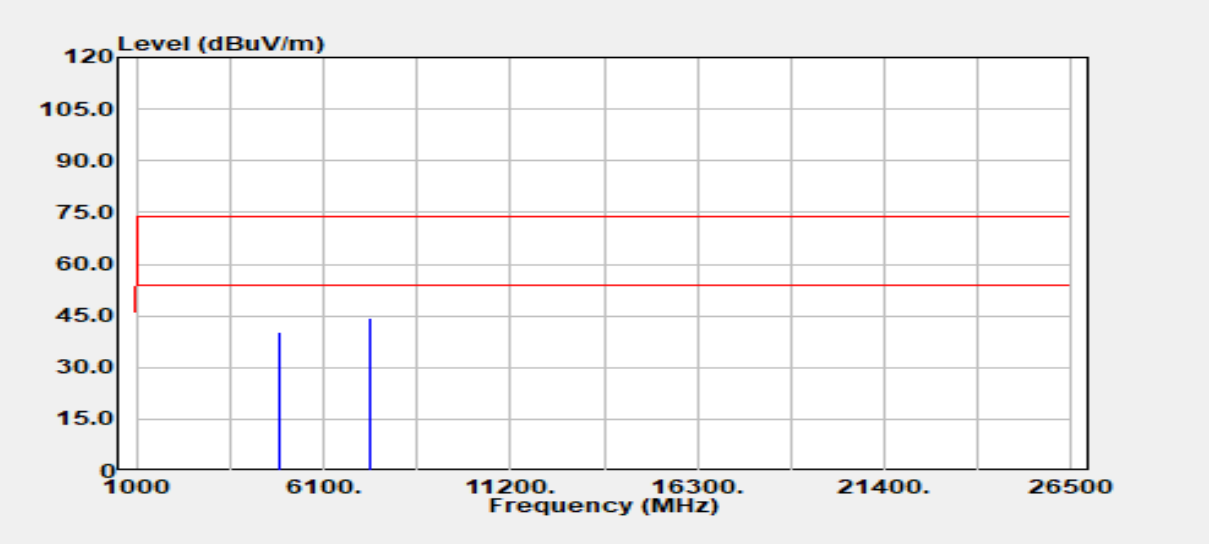
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4874.00	Peak	37.86	2.49	40.35	74.00	-33.65
4874.00	Average	28.07	2.49	30.56	54.00	-23.44
7311.00	Peak	36.68	8.96	45.65	74.00	-28.35
7311.00	Average	27.40	8.96	36.36	54.00	-17.64

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:47		



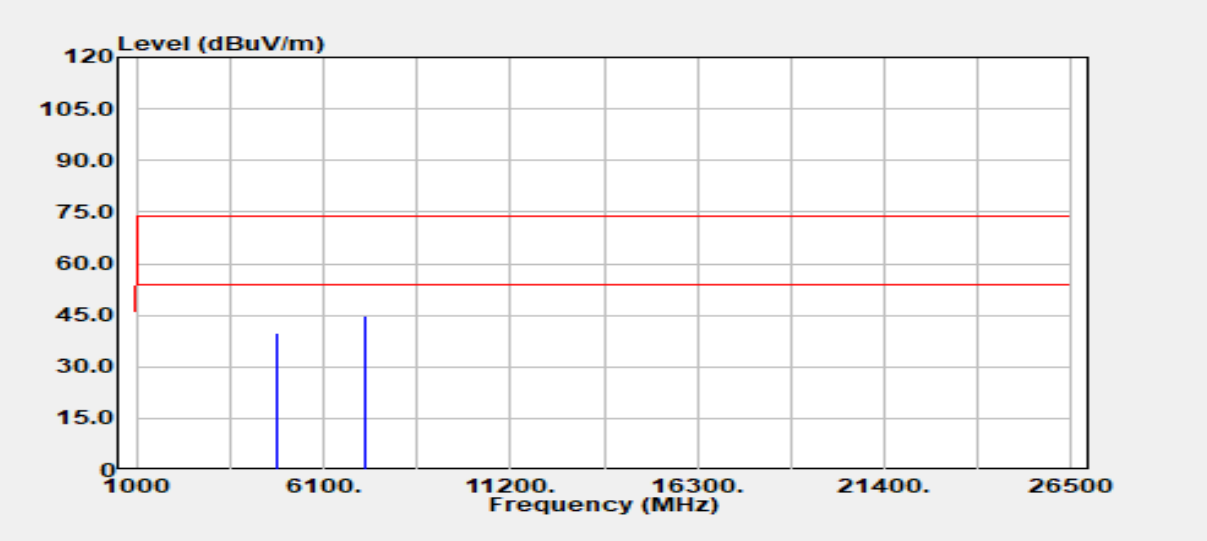
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4924.00	Peak	37.84	2.93	40.77	74.00	-33.23
4924.00	Average	27.45	2.93	30.38	54.00	-23.62
7386.00	Peak	36.18	9.01	45.19	74.00	-28.81
7386.00	Average	27.03	9.01	36.04	54.00	-17.96

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11g	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:47		



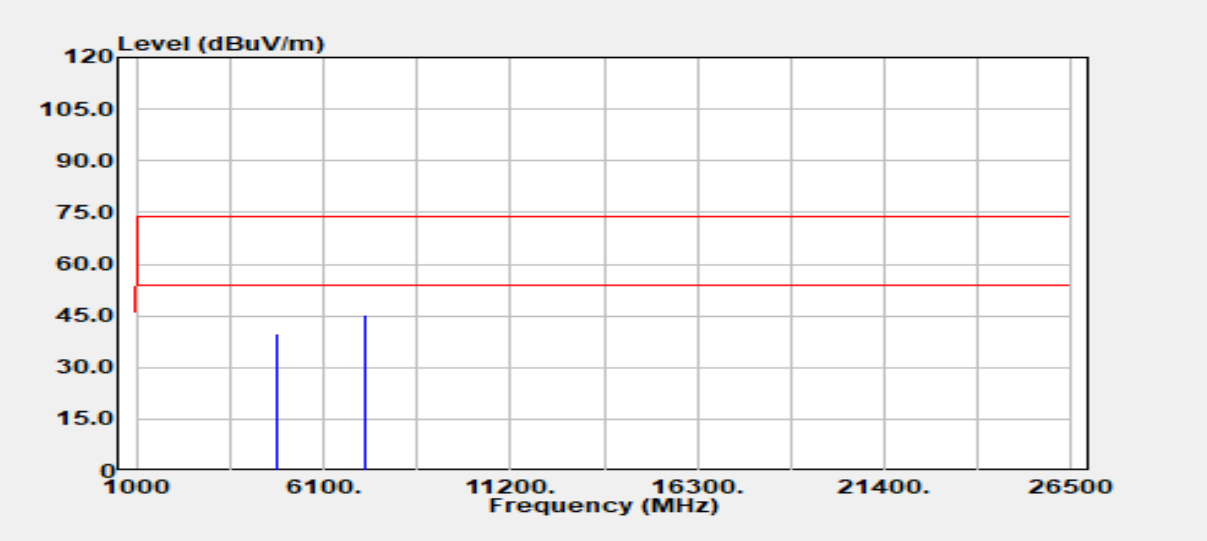
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4924.00	Peak	37.46	2.93	40.39	74.00	-33.61
4924.00	Average	27.51	2.93	30.44	54.00	-23.56
7386.00	Peak	35.49	9.01	44.50	74.00	-29.50
7386.00	Average	26.54	9.01	35.55	54.00	-18.45

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:49		



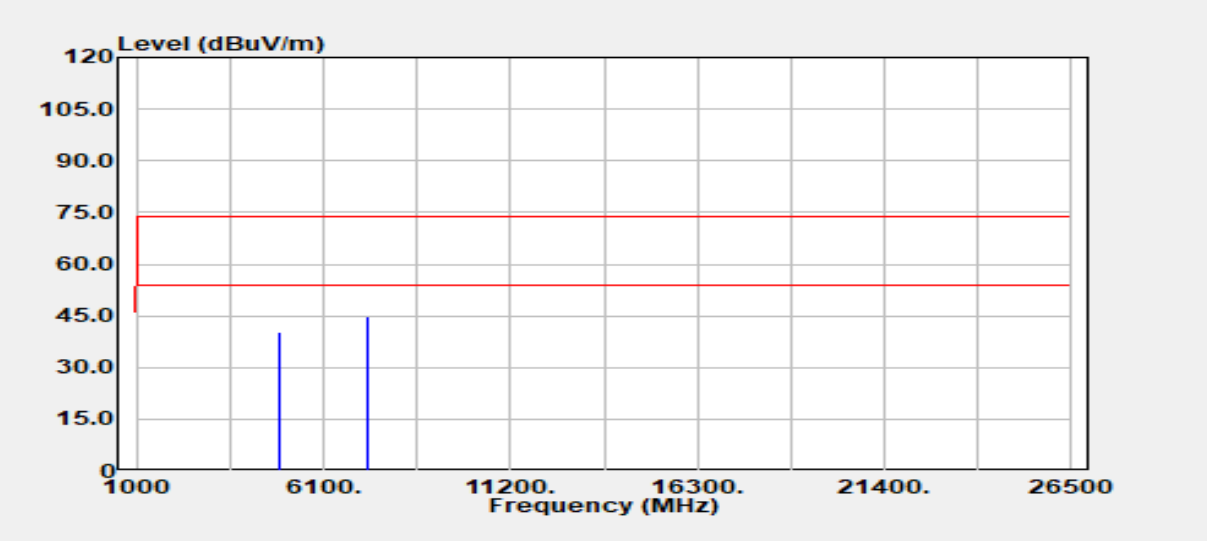
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4824.00	Peak	37.45	2.25	39.71	74.00	-34.29
4824.00	Average	28.95	2.25	31.20	54.00	-22.80
7236.00	Peak	35.70	9.17	44.87	74.00	-29.13
7236.00	Average	26.26	9.17	35.43	54.00	-18.57

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2412 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:49		



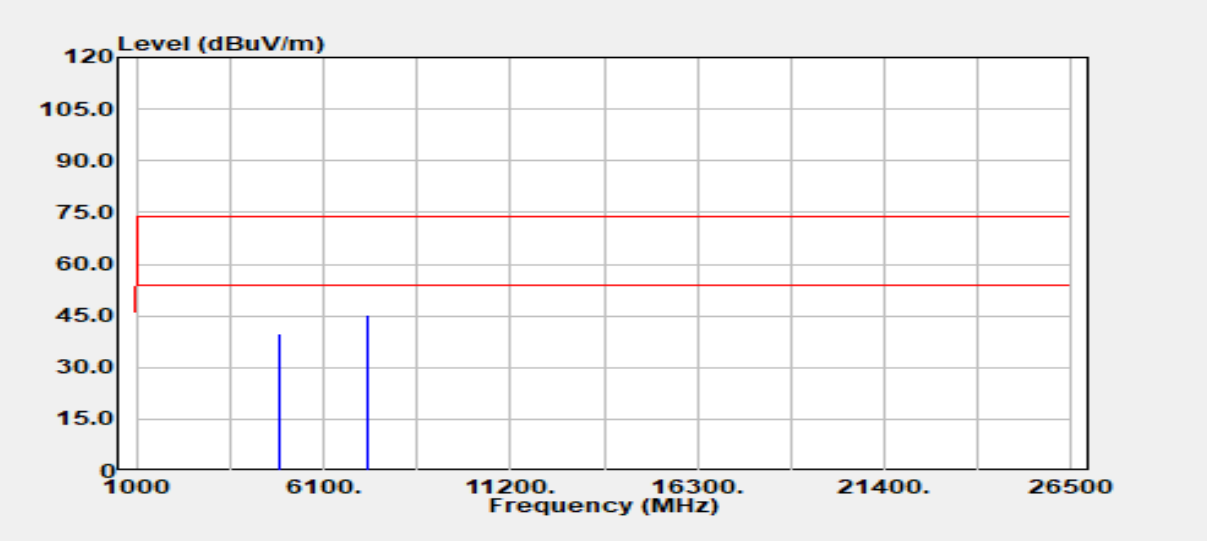
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4824.00	Peak	37.50	2.25	39.75	74.00	-34.25
4824.00	Average	28.20	2.25	30.45	54.00	-23.55
7236.00	Peak	36.02	9.17	45.19	74.00	-28.81
7236.00	Average	26.36	9.17	35.53	54.00	-18.47

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2437 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:49		



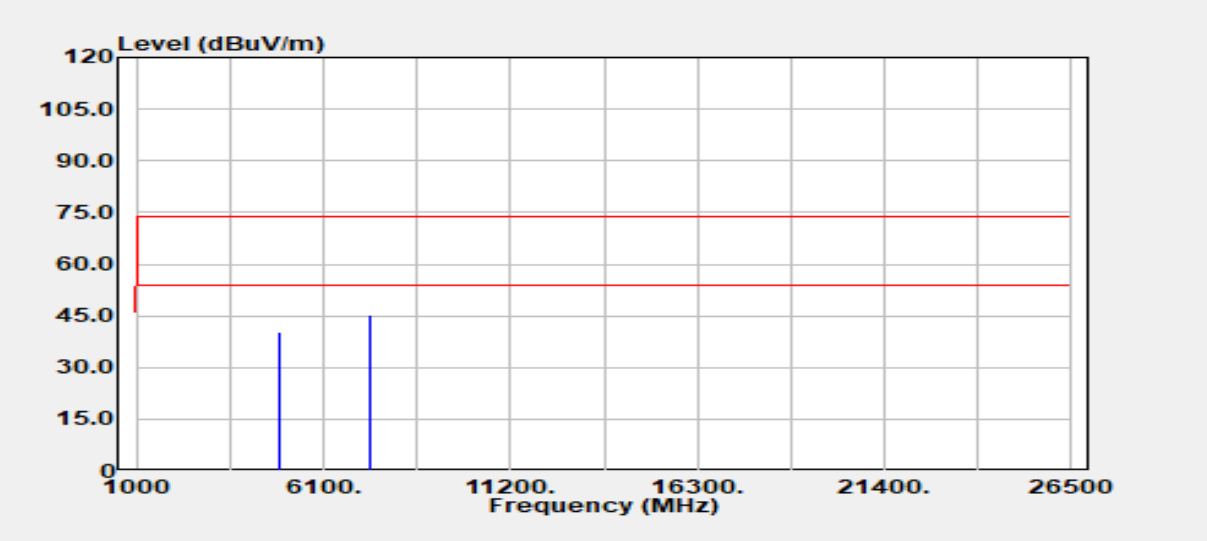
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4874.00	Peak	37.99	2.49	40.48	74.00	-33.52
4874.00	Average	28.11	2.49	30.60	54.00	-23.40
7311.00	Peak	35.78	8.96	44.74	74.00	-29.26
7311.00	Average	26.43	8.96	35.39	54.00	-18.61

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2437 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:49		



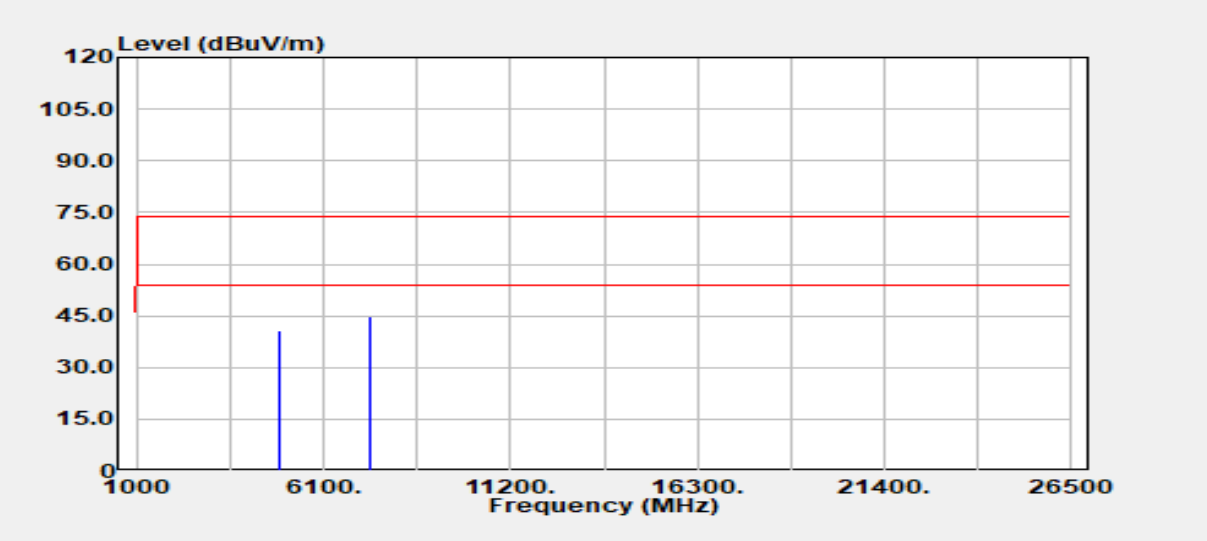
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4874.00	Peak	37.46	2.49	39.95	74.00	-34.05
4874.00	Average	28.10	2.49	30.59	54.00	-23.41
7311.00	Peak	36.24	8.96	45.21	74.00	-28.79
7311.00	Average	26.54	8.96	35.51	54.00	-18.49

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:48		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4924.00	Peak	37.28	2.93	40.21	74.00	-33.79
4924.00	Average	27.53	2.93	30.46	54.00	-23.54
7386.00	Peak	36.23	9.01	45.24	74.00	-28.76
7386.00	Average	26.15	9.01	35.16	54.00	-18.84

Project No	:TM-2403000180P	Test Date	:2024-04-03
Operation Band	:802.11n20	Temp./Humi.	:24.6/57
Frequency	:2462 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray.Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:48		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4924.00	Peak	37.66	2.93	40.59	74.00	-33.41
4924.00	Average	27.71	2.93	30.63	54.00	-23.37
7386.00	Peak	35.89	9.01	44.90	74.00	-29.10
7386.00	Average	26.75	9.01	35.76	54.00	-18.24

- End of Test Report -