RADIO TEST REPORT
FCC 47 CFR PART 15 SUBPART C

Test Standard	**FCC Part 15.247**
Product name	**AX3000 Wi-Fi 6 Smart Home Gateway Wi-Fi 6 AX3000 IoT Gateway**
Brand Name	**D-Link**
Model No.	**MS30**
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:

Sehni Hu
Supervisor

Revision History

Rev.	Issue Date	Revisions	Effect Page	Revised By
00	July 30, 2024	Initial Issue	ALL	Peggy Tsai

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1. GENERAL INFORMATION

1.1 EUT INFORMATION

Applicant	D-Link Corporation 14420 Myford Road Suite 100 Irvine California United States 92606
Manufacturer	D-Link Corporation 14420 Myford Road Suite 100 Irvine California United States 92606
Equipment	AX3000 Wi-Fi 6 Smart Home Gateway Wi-Fi 6 AX3000 IoT Gateway
Model No.	MS30
Model Discrepancy	N/A
Brand Name	D-Link
Received Date	January 31, 2024
Date of Test	April 23 ~ June 24, 2024
EUT Power Rating	EUT Power from Adapter. (1) AMIGO / AMS200-1201500FU I/P: 100-240Vac, 50/60Hz, 0.8A Max/50VA O/P: 12.0Vdc, 1.5A (2) AMIGO / AMS200-1201500F I/P: 100-240Vac, 50/60Hz, 0.8A Max/50VA O/P: 12.0Vdc, 1.5A, 18.0W
S.W Version	1.00
H.W: Version	A1

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	2405MHz-2480MHz
Modulation Type	OQPSK
Number of channel	16 Channels

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

Number of frequencies to be tested		
Frequency range in which device operates	**Number of frequencies**	**Location in frequency range of operation**
☐ 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
Antenna Gain	Gain: 0.34 dBi
Antenna Trade / Model	JAE / AP02DL2527489C0
Antenna Connector	MHF compatible

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

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

1.5 FACILITIES AND TEST LOCATION

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

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

CAB identifier: TW1309

Test site	Test Engineer	Remark
AC Conduction Room	Ben Yang	-
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/IC/NCC (All)					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
Power Sensor	Anritsu	MA2411B	1911387	2023-07-25	2024-07-24
Power Meter	Anritsu	ML2496A	2136002	2023-11-16	2024-11-15
Signal Analyzer	KEYSIGHT	N9030B	MY62291089	2023-10-13	2024-10-12
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
Active Loop Antenna	SCHWARZBECK	FMZB 1513-60	1513-60-028	2023-12-13	2024-12-12
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
				2024-06-12	2025-06-11
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.

AC Mains Conduction					
Name of Equipment	**Manufacturer**	**Model**	**Serial Number**	**Calibration Date**	**Calibration Due**
EMI Test Receiver	R&S	ESCI	100064	2024-06-14	2025-06-13
LISN	TESEQ	LN2-16N	22012	2024-02-29	2025-02-27
Cable	EMCI	CFD300-NL	CERF	2023-06-27	2024-06-26
				2024-06-26	2025-06-25
Software	e3 V6-110812				

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

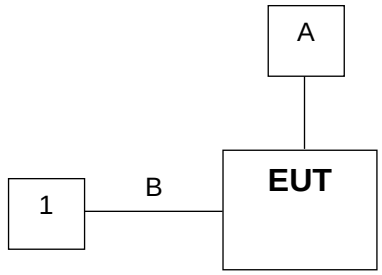
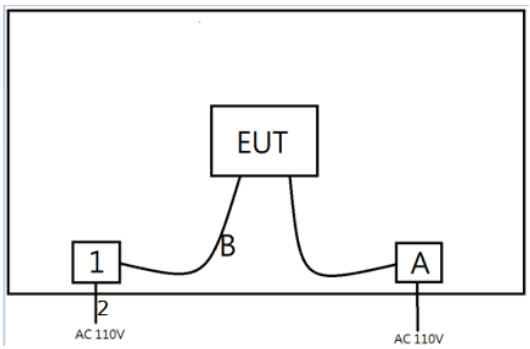
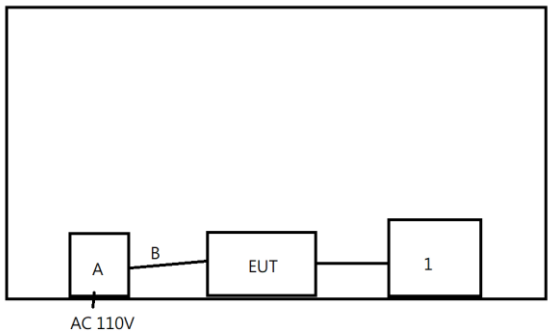
EUT Accessories Equipment						
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**	**IC**
	N/A					

Support Equipment (Conducted)					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
1	NB(L)	Lenovo	X260	N/A	N/A
A	Adapter	AMIGO	AMS200-1201500FU	N/A	N/A
B	Cable Type A to TTL	Nienyi Group	OP-1012C33V-PBAM04D1	N/A	N/A

Support Equipment (RSE)					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
2	Adapter	Lenovo	ADLX45DLC3A	N/A	N/A
A	Adapter	AMIGO	AMS200-1201500FU	N/A	N/A
B	Cable Type A to TTL	Nienyi Group	OP-1012C33V-PBAM04D1	N/A	N/A

Support Equipment (Conduction)					
No.	**Equipment**	**Brand**	**Model**	**Series No.**	**FCC ID**
1	NB(D)	Lenovo	ThinkPad X260	N/A	N/A
A	Adapter	AMIGO	AMS200-1201500FU	N/A	N/A
B	Cable Type A to TTL	Nienyi Group	OP-1012C33V-PBAM04D1	N/A	N/A

1.8 TEST SET UP DIAGRAM

Conducted	RSE
	
Conduction	
	

1.9 TEST PROGRAM

The EUT connection corresponds to the surrounding fixture control board.

This EUT uses " Iot_Evaluation v1.3.5" software to set the frequency, modulation, and power to allow the sample to continuously transmit (including frequency hopping mode and Co-Location).

1.10 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.

2. TEST SUMMERY

FCC Standard Section	Report Section	Test Item	Result
15.203	1.3	Antenna Requirement	Pass
15.207(a)	4.1	AC Conducted Emission	Pass
15.247(a)(2)	4.2	6 dB Bandwidth	Pass
-	4.2	Occupied Bandwidth (99%)	Pass
15.247(b)(3)	4.3	Output Power Measurement	Pass
15.247(e)	4.4	Power Spectral Density	Pass
15.247(d)	4.5	Conducted Band Edge	Pass
15.247(d)	4.5	Conducted Spurious Emission	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Band Edge	Pass
15.247(d) 15.205, 15.209	4.6	Radiation Spurious Emission	Pass

3. DESCRIPTION OF TEST MODES

3.1 THE WORST MODE OF OPERATING CONDITION

Operation mode	Zigbee
Test Channel Frequencies	1.Lowest Channel : 2405MHz 2.Middle Channel : 2440MHz 3.Highest Channel : 2480MHz

Remark:
1. EUT pre-scanned data rate of output power for each mode, the worst data rate were recorded in this report.
2. Based on FCC Part 15.31(m), the laboratory conducts a comprehensive evaluation of CH low, CH middle, and CH high. Other additional channels only evaluate the radiated restricted bands of operation and powers.

3.2 THE WORST MODE OF MEASUREMENT

AC Power Line Conducted Emission	
Test Condition	**AC Power line conducted emission for line and neutral**
Power supply Mode	**Mode 1: EUT Power by Adapter(AMS200-1201500FU) Mode 2: EUT Power by Adapter(AMS200-1201500F)**
Worst Mode	**☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4**

Radiated Emission Measurement Above 1G	
Test Condition	**Radiated Emission Above 1G**
Power supply Mode	**Mode 1: EUT Power by Adapter(AMS200-1201500FU) Mode 2: EUT Power by Adapter(AMS200-1201500F)**
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 Adapter(AMS200-1201500FU) Mode 2: EUT Power by Adapter(AMS200-1201500F)**
Worst Mode	**☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4**

Radiated Emission Measurement [Co-Location]	
Test Condition	**Radiated Emission [Co-Location]**
Power supply Mode	**Mode 1: EUT Power by Zigbee+Wi-Fi 2.4G+Wi-Fi 5G**
Worst Mode	**☒ Mode 1 ☐ Mode 2 ☐ Mode 3 ☐ Mode 4**

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

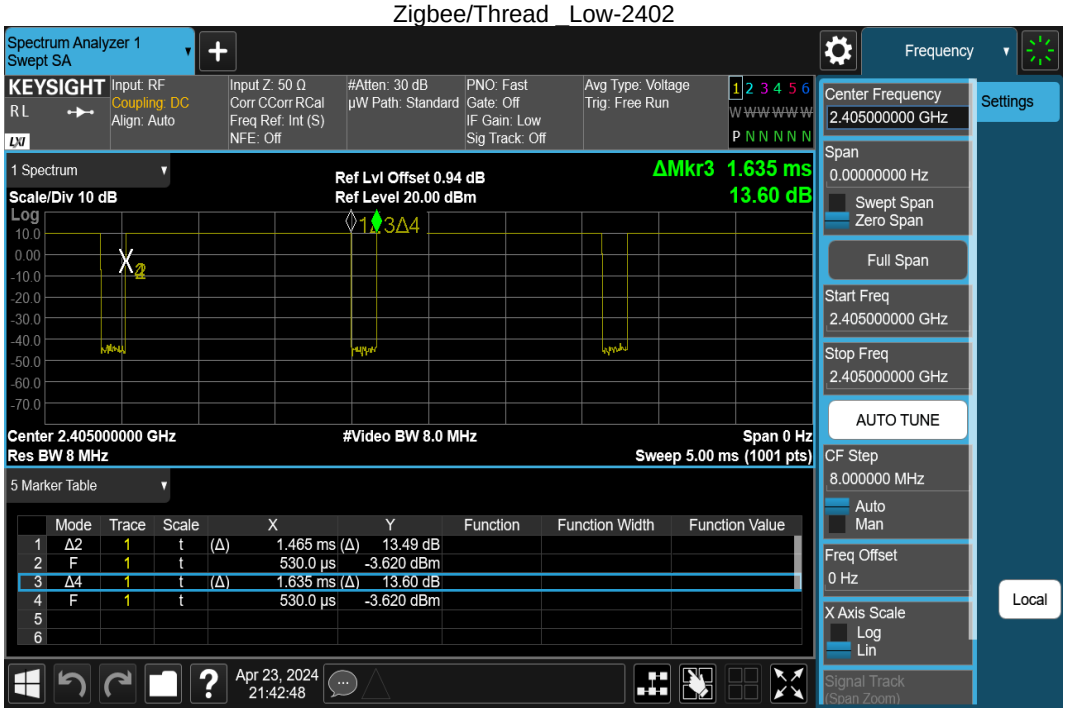
3.3 EUT DUTY CYCLE

Temperature: 21.1 ~ 23.6℃ **Test date:** April 23 ~ May 4, 2024

Humidity: 54 ~ 66% RH **Tested by:** Marco Chan

	Duty Cycle (%) = Ton / (Ton+Toff)	Duty Factor (dB) =10*log (1/Duty Cycle)	1/T (kHz)	VBW setting (kHz)
Zigbee/Thread	89.60	0.48	0.68	1.00

Zigbee/Thread_Low-2402



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

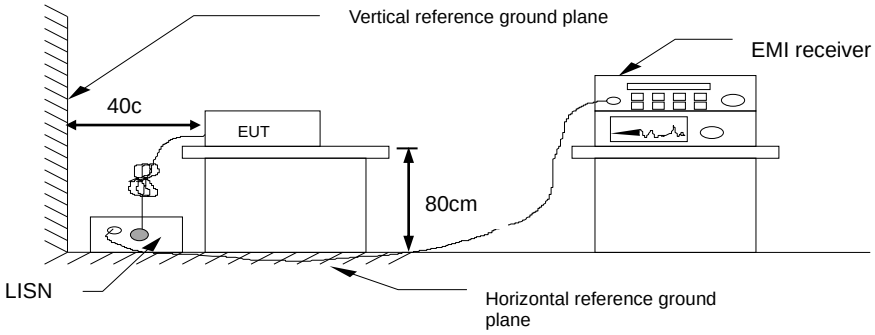
* Decreases with the logarithm of the frequency.

4.1.2 Test Procedure

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

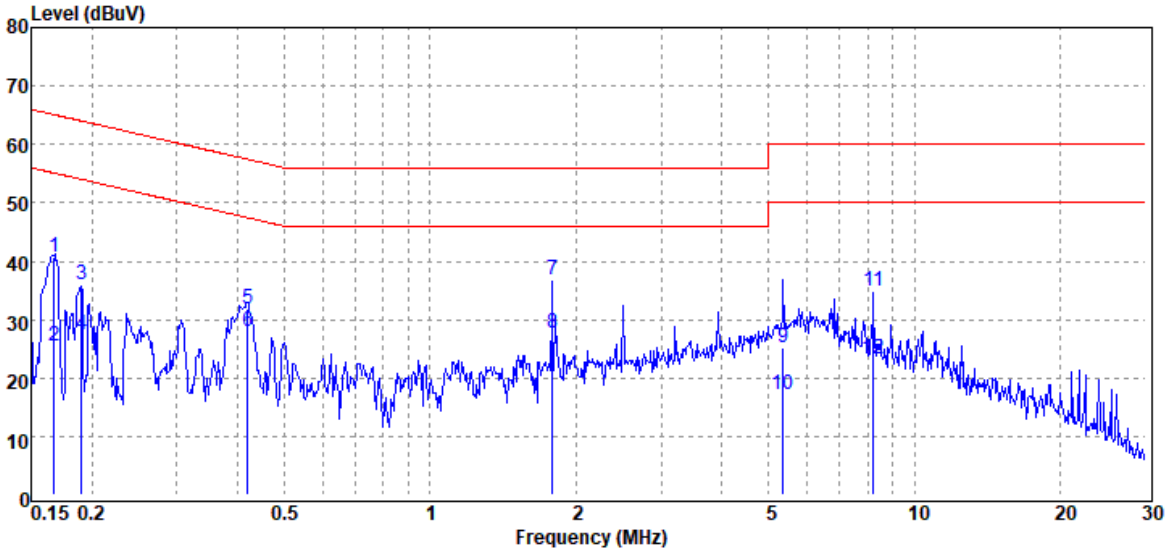
1. The EUT was placed on a non-conducted table, which is 0.8m above horizontal ground plane and 0.4m above vertical ground plane.
2. EUT connected to the line impedance stabilization network (LISN)
3. Receiver set RBW of 9kHz and Detector Peak, and note as quasi-peak and average.
4. Maximum procedure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

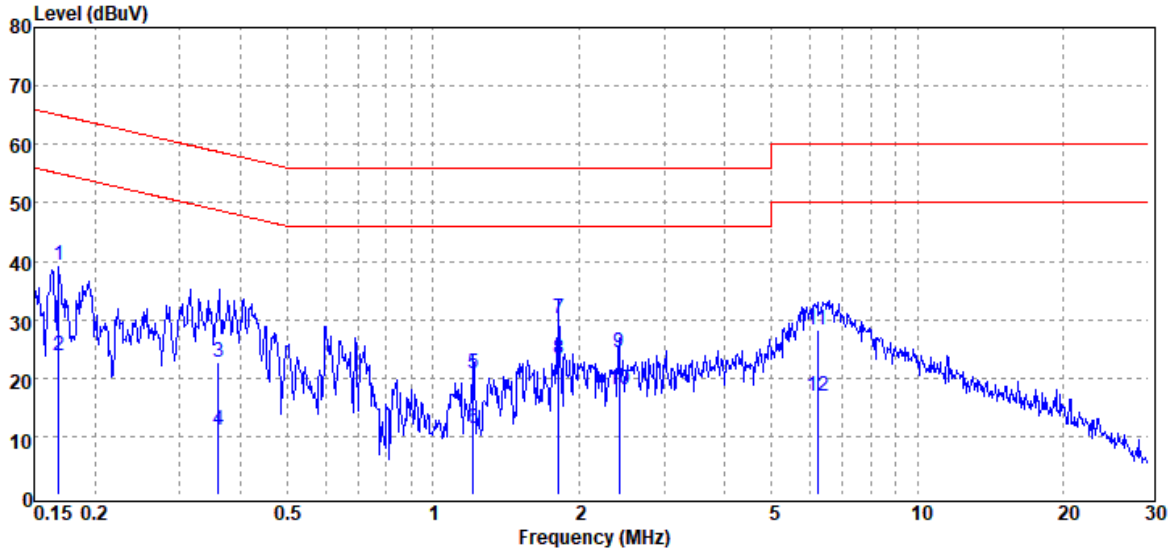
Project No	: TM-2309000207P	Test Date	: 2024-06-24
Operation Mode	: ZIGBEE	Temp./Humi.	: 23.4°C / 54%
Test Chamber	: Conduction	Engineer	: Ben Yang
Probe	: LINE	Test Voltage	: AC 120V/60Hz
Note	:		



Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV	dBµV	dB
0.167	QP	40.64	0.14	40.78	65.09	-24.31
0.167	Average	25.24	0.14	25.38	55.09	-29.71
0.191	QP	35.74	0.14	35.88	64.01	-28.13
0.191	Average	27.39	0.14	27.53	54.01	-26.48
0.419	QP	31.82	0.14	31.96	57.47	-25.51
0.419	Average	27.72	0.14	27.86	47.47	-19.61
1.785	QP	36.70	0.20	36.90	56.00	-19.10
1.785	Average	27.39	0.20	27.59	46.00	-18.41
5.357	QP	24.95	0.29	25.24	60.00	-34.76
5.357	Average	16.88	0.29	17.17	50.00	-32.83
8.211	QP	34.47	0.32	34.79	60.00	-25.21
8.211	Average	23.03	0.32	23.35	50.00	-26.65

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

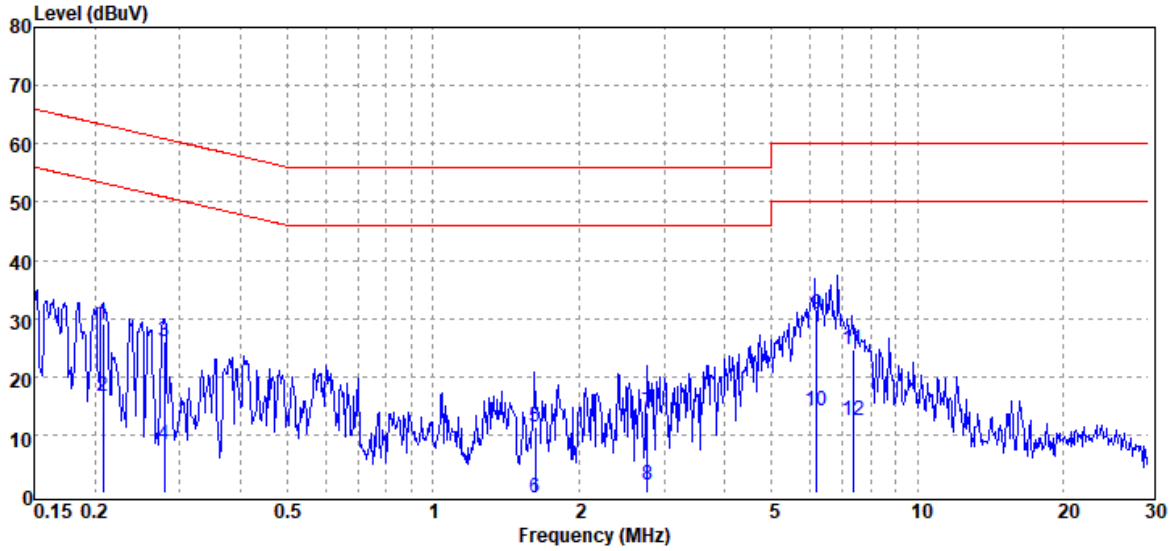
Project No	: TM-2309000207P	Test Date	: 2024-06-24
Operation Mode	: ZIGBEE	Temp./Humi.	: 23.4°C / 54%
Test Chamber	: Conduction	Engineer	: Ben Yang
Probe	: NEUTRAL	Test Voltage	: AC 120V/60Hz
Note	:		



Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV	dBµV	dB
0.169	QP	39.09	0.11	39.20	65.03	-25.83
0.169	Average	23.64	0.11	23.75	55.03	-31.28
0.360	QP	22.46	0.11	22.57	58.74	-36.17
0.360	Average	11.08	0.11	11.19	48.74	-37.55
1.211	QP	20.67	0.15	20.82	56.00	-35.18
1.211	Average	11.14	0.15	11.29	46.00	-34.71
1.816	QP	30.09	0.18	30.27	56.00	-25.73
1.816	Average	23.20	0.18	23.38	46.00	-22.62
2.419	QP	24.03	0.21	24.24	56.00	-31.76
2.419	Average	17.80	0.21	18.01	46.00	-27.99
6.225	QP	28.06	0.27	28.33	60.00	-31.67
6.225	Average	16.59	0.27	16.86	50.00	-33.14

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

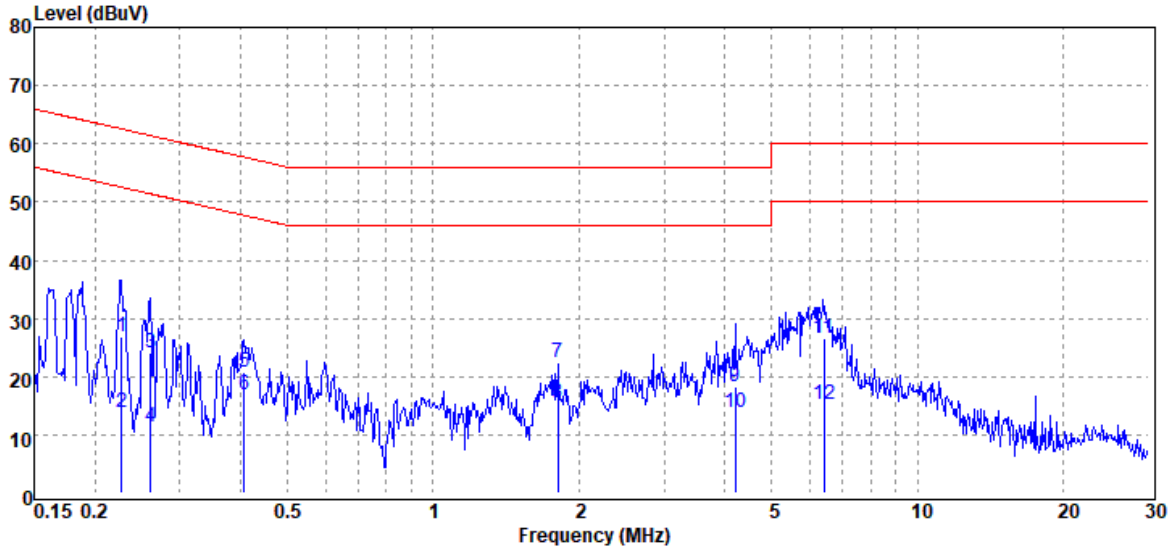
Project No	: TM-2309000207P	Test Date	: 2024-07-03
Operation Mode	: ZIGBEE	Temp./Humi.	: 23.4°C / 54%
Test Chamber	: Conduction	Engineer	: Ben Yang
Probe	: LINE	Test Voltage	: AC 230V/50Hz
Note	:		



Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV	dBµV	dB
0.209	QP	28.89	0.12	29.01	63.26	-34.25
0.209	Average	16.57	0.12	16.69	53.26	-36.57
0.279	QP	25.90	0.12	26.02	60.86	-34.84
0.279	Average	8.28	0.12	8.40	50.86	-42.46
1.624	QP	11.08	0.14	11.22	56.00	-44.78
1.624	Average	-0.96	0.14	-0.82	46.00	-46.82
2.765	QP	13.56	0.17	13.73	56.00	-42.27
2.765	Average	1.34	0.17	1.51	46.00	-44.49
6.184	QP	30.52	0.25	30.77	60.00	-29.23
6.184	Average	13.94	0.25	14.19	50.00	-35.81
7.365	QP	24.41	0.27	24.68	60.00	-35.32
7.365	Average	12.25	0.27	12.52	50.00	-37.48

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

Project No	: TM-2309000207P	Test Date	: 2024-07-03
Operation Mode	: ZIGBEE	Temp./Humi.	: 23.4°C / 54%
Test Chamber	: Conduction	Engineer	: Ben Yang
Probe	: NEUTRAL	Test Voltage	: AC 230V/50Hz
Note	:		



Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV	dBµV	dB
0.227	QP	26.68	0.09	26.77	62.54	-35.77
0.227	Average	13.65	0.09	13.74	52.54	-38.80
0.261	QP	23.94	0.09	24.03	61.41	-37.38
0.261	Average	11.21	0.09	11.30	51.41	-40.11
0.407	QP	20.61	0.08	20.69	57.72	-37.03
0.407	Average	16.76	0.08	16.84	47.72	-30.88
1.809	QP	22.32	0.13	22.45	56.00	-33.55
1.809	Average	15.46	0.13	15.59	46.00	-30.41
4.213	QP	18.20	0.18	18.38	56.00	-37.62
4.213	Average	13.54	0.18	13.72	46.00	-32.28
6.412	QP	26.25	0.24	26.49	60.00	-33.51
6.412	Average	14.95	0.24	15.19	50.00	-34.81

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

4.2 6dB BANDWIDTH AND OCCUPIED BANDWIDTH(99%)

4.2.1 Test Limit

According to §15.247(a)(2),

6 dB Bandwidth ：

Limit	Shall be at least 500kHz

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

4.2.2 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.

4.2.3 Test Setup

Refer to section 1.8.

4.2.4 Test Result

Temperature:	21.1 ~ 23.6℃	**Test date:**	April 23 ~ May 4, 2024
Humidity:	54 ~ 66% RH	**Tested by:**	Marco Chan

6dB BANDWIDTH

Zigbee/Thread mode

Frequency (MHz)	6dB BW (MHz)	Required BW (MHz)	Result
2405	0.9492	≧ 0.5	PASS
2440	0.9502	≧ 0.5	PASS
2480	0.9542	≧ 0.5	PASS

BANDWIDTH 99%

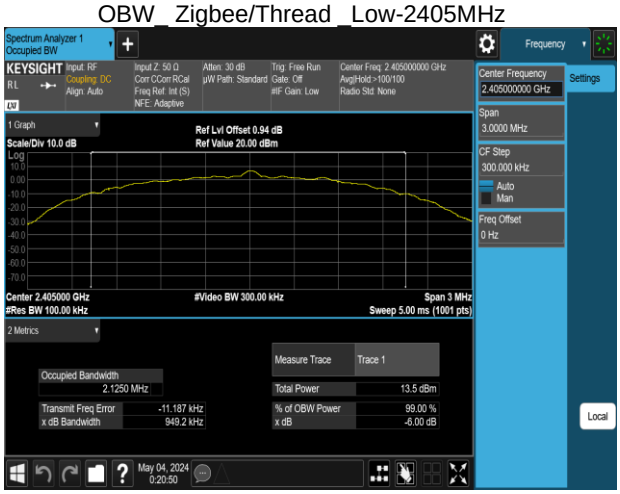
Zigbee/Thread mode

Frequency (MHz)	99%Bandwidth (MHz)
2405	2.1174
2440	2.1175
2480	2.1142

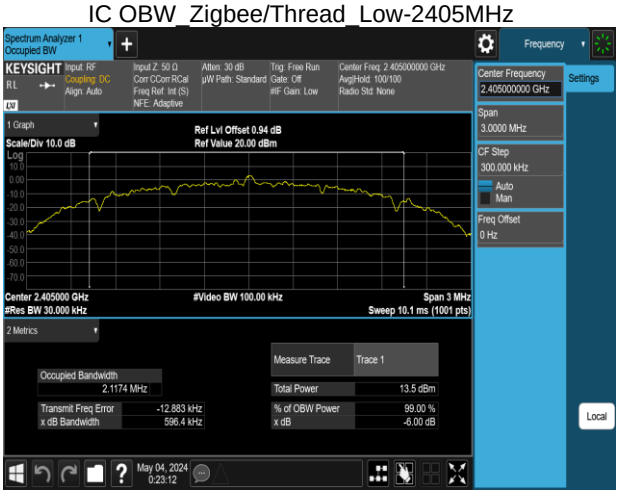
Test Data

6dB BANDWIDTH

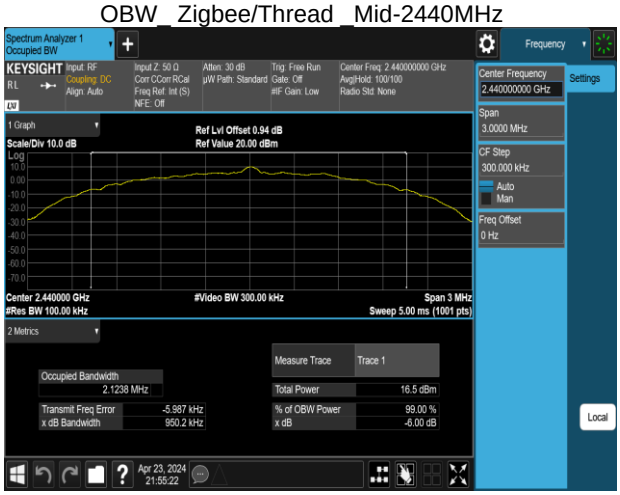
OBW_ Zigbee/Thread _Low-2405MHz



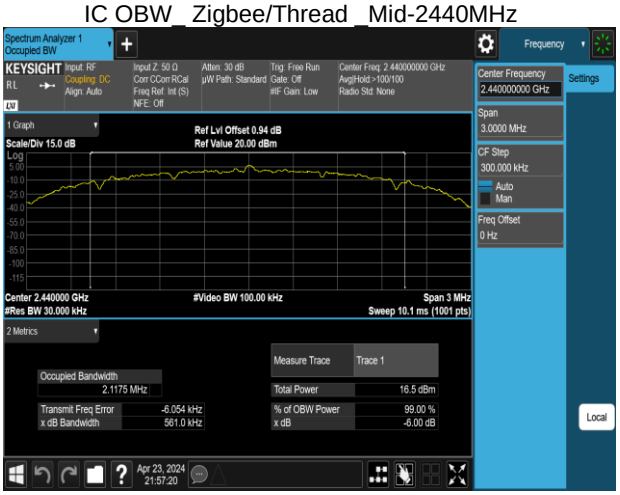
IC OBW_ Zigbee/Thread _Low-2405MHz



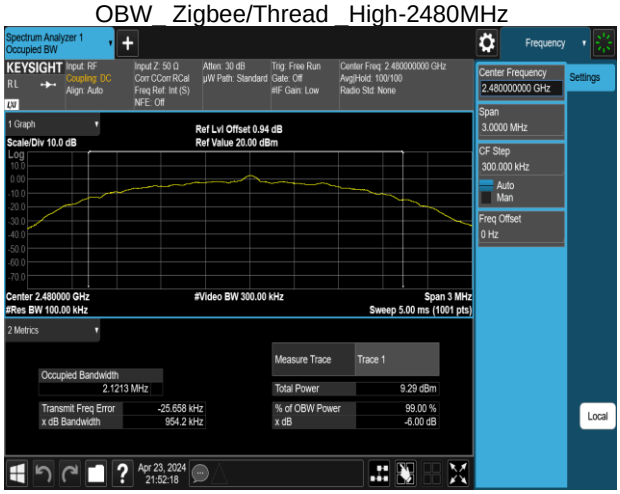
OBW_ Zigbee/Thread _Mid-2440MHz



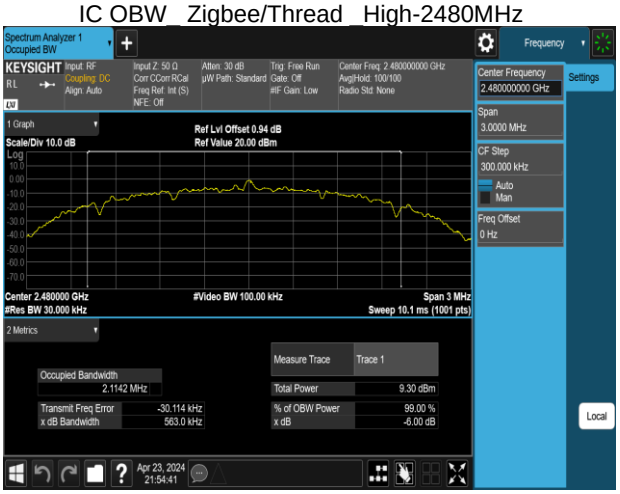
IC OBW_ Zigbee/Thread _Mid-2440MHz



OBW_ Zigbee/Thread _High-2480MHz



IC OBW_ Zigbee/Thread _High-2480MHz



BANDWIDTH 99%

4.3 OUTPUT POWER MEASUREMENT

4.3.1 Test Limit

According to §15.247(b)(3),

Peak output power：

FCC

For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt.

Average output power：For reporting purposes only.

4.3.2 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.

4.3.3 Test Setup

Refer to section 1.8.

4.3.4 Test Result

Temperature:	21.1 ~ 23.6℃	**Test date:**	April 23 ~ May 4, 2024
Humidity:	54 ~ 66% RH	**Tested by:**	Marco Chan

Peak & Average output power：

Zigbee/Thread mode:

CH	Frequency (MHz)	Power Setting	Peak Output Power (dBm)	Required Limit (dBm)
16	2405	25	7.43	30
18	2440	31	9.67	30
24	2470	31	**9.87**	30
25	2475	28	8.47	30
26	2480	18	3.08	30
CH	**Frequency (MHz)**	**Power Setting**	**Avg. Output Power (dBm)**	**Required Limit (dBm)**
16	2405	25	7.30	30
18	2440	31	9.64	30
24	2470	31	9.84	30
25	2475	28	8.44	30
26	2480	18	2.68	30

Note:

1.Measured by power meter, cable loss 0.94 dB + Duty cycle factor has been offseted to the power meter for Avg. power and cable loss has been offseted for Peak power measurement.

4.4 POWER SPECTRAL DENSITY

4.4.1 Test Limit

According to §15.247(e),

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

Limit	☒ Antenna not exceed 6 dBi：8dBm ☐ Antenna with DG greater than 6 dBi [Limit = 8 – (DG – 6)] ☐ Point-to-point operation：

4.4.2 Test Procedure

Test method Refer as KDB 558074 D01

1. The EUT RF output connected to the spectrum analyzer by RF cable.
2. Setting maximum power transmit of EUT
3. SA set RBW = 3kHz, VBW = 10kHz, Span = 1.5 times DTS Bandwidth (6 dB BW), Detector = Peak, Sweep Time = Auto and Trace = Max hold.
4. The path loss was 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

Refer to section 1.8.

4.4.4 Test Result

Temperature:	21.1 ~ 23.6℃	**Test date:**	April 23 ~ May 4, 2024
Humidity:	54 ~ 66% RH	**Tested by:**	Marco Chan

Zigbee/Thread mode

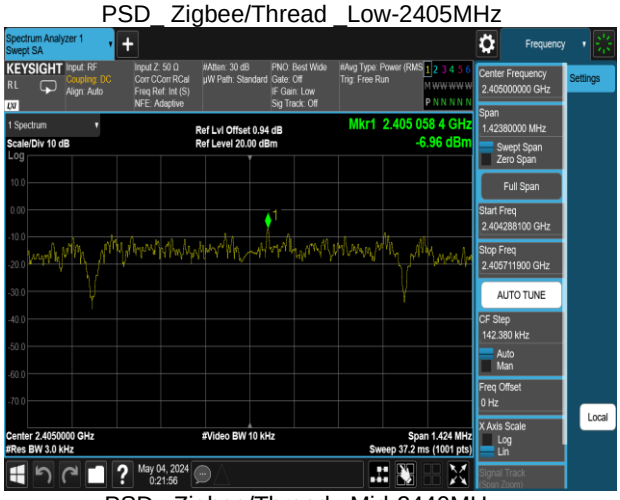
Frequency (MHz)	RF Power Density (dBm/3kHz)	Maximum Limit (dBm/3kHz)	Result
2405	-6.96	8	PASS
2440	-4.08	8	PASS
2480	-11.18	8	PASS

Note:

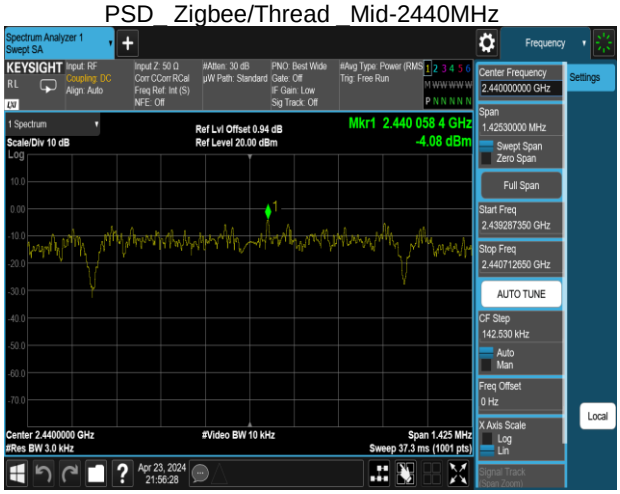
1.cable loss as 0.94dB that offsets in the spectrum

Test Data

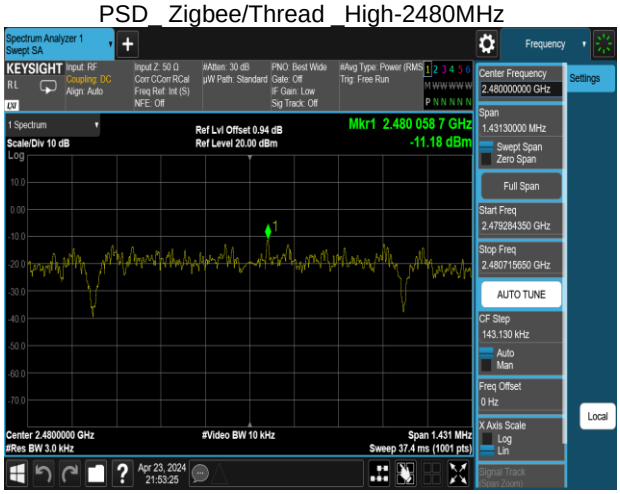
PSD_Zigbee/Thread_Low-2405MHz



PSD_Zigbee/Thread_Mid-2440MHz



PSD_Zigbee/Thread_High-2480MHz



4.5 CONDUCTED BAND EDGE AND SPURIOUS EMISSION

4.5.1 Test Limit

According to §15.247(d),

FCC: 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).

4.5.2 Test Procedure

Test method Refer as 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. If 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.

4.5.3 Test Setup

Refer to section 1.8.

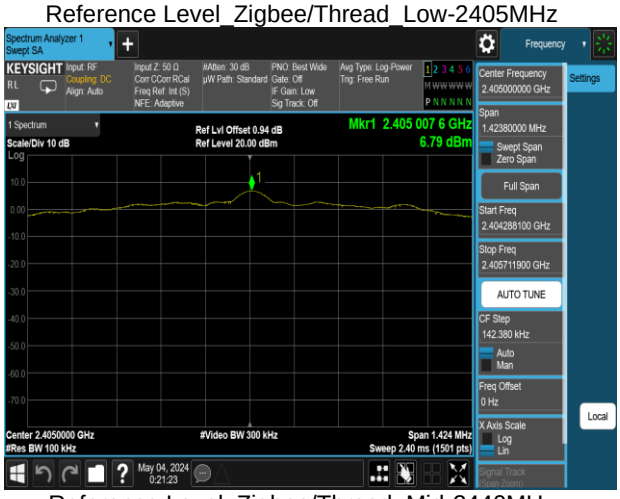
4.5.4 Test Result

Temperature:	21.1 ~ 23.6℃	**Test date:**	April 23 ~ May 4, 2024
Humidity:	54 ~ 66% RH	**Tested by:**	Marco Chan

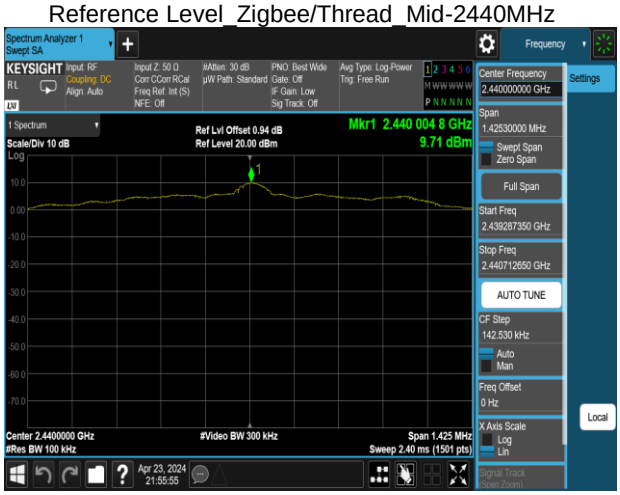
Test Data

Reference Level

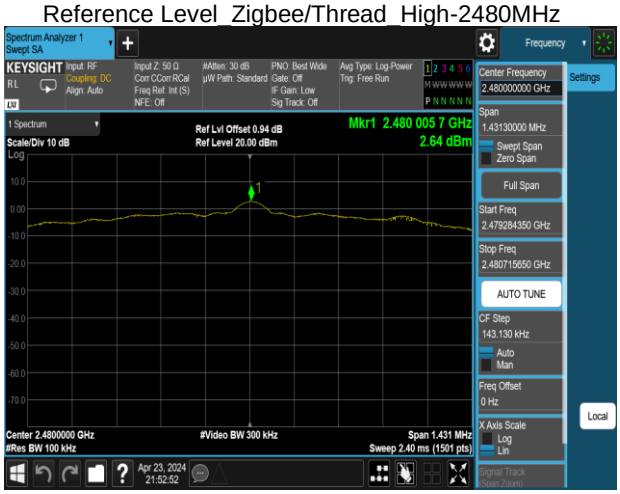
Reference Level_Zigbee/Thread_Low-2405MHz



Reference Level_Zigbee/Thread_Mid-2440MHz

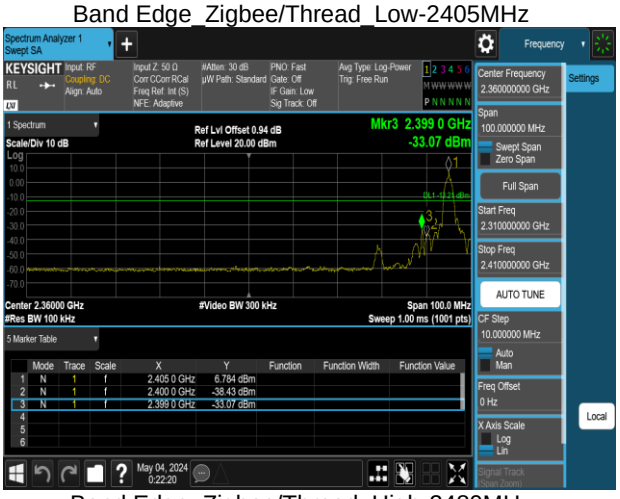


Reference Level_Zigbee/Thread_High-2480MHz

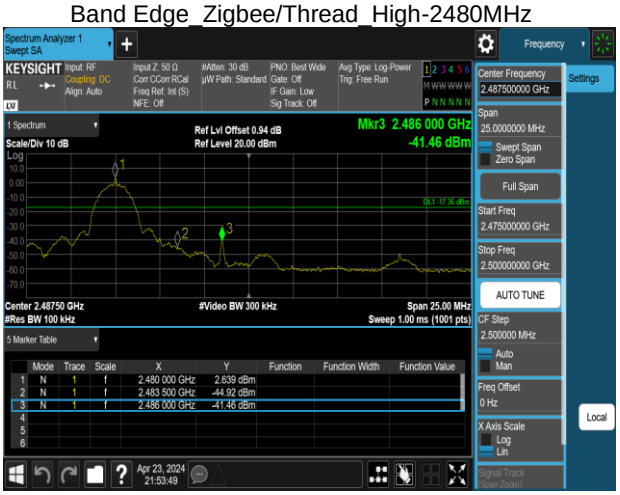


Band Edge

Band Edge_Zigbee/Thread_Low-2405MHz

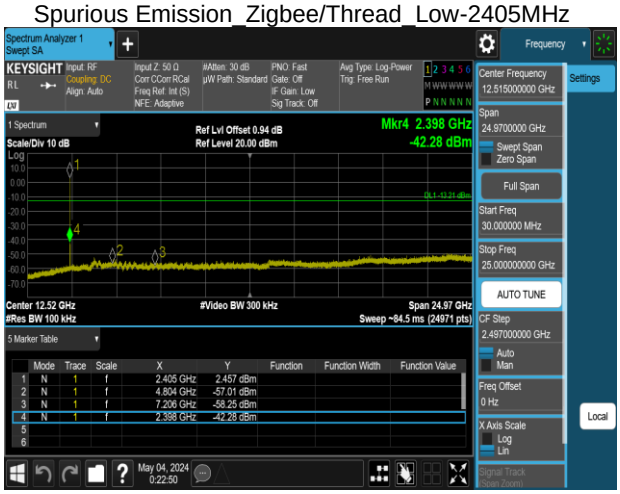


Band Edge_Zigbee/Thread_High-2480MHz

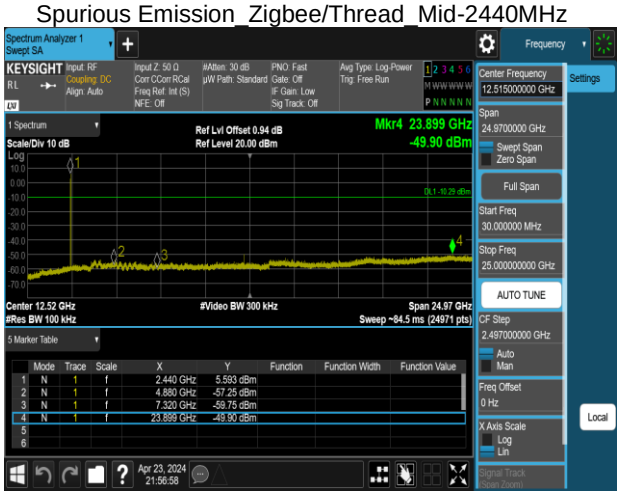


Spurious Emission

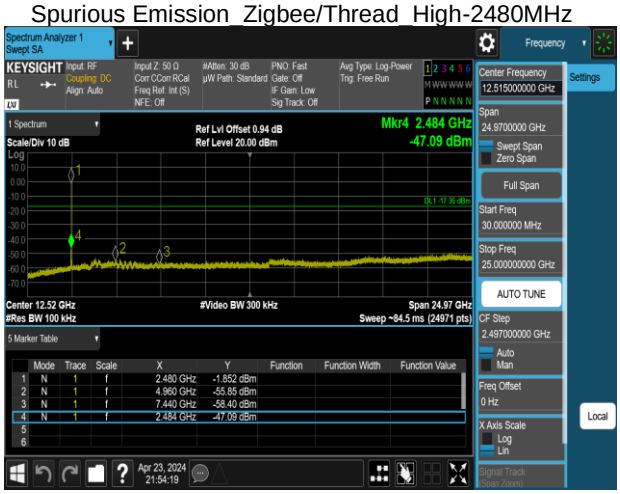
Spurious Emission_Zigbee/Thread_Low-2405MHz



Spurious Emission_Zigbee/Thread_Mid-2440MHz



Spurious Emission_Zigbee/Thread_High-2480MHz



4.6 RADIATION BANDEDGE AND SPURIOUS EMISSION

4.6.1 Test Limit

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

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

Below 30 MHz

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

Above 30 MHz

Frequency (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)

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.

4.6.2 Test Procedure

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.

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

Radiated emission below 30MHz is measured in a 9m*6m*6m semi-ane choic chamber, the measurements correspond to those obtained at an open-field test site. There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

5. The SA setting following：

(1) Below 30MHz：

(1.1) 9KHz-490KHz : RBW=200Hz / VBW=1kHz / Sweep=AUTO

(1.2) 490KHz-30MHz : RBW=10kHz / VBW=30kHz / Sweep=AUTO

(2) 30MHz to 1GHz：RBW = 100kHz, VBW ≥ 3*RBW, Sweep = Auto,

Detector = Peak, Trace = Max hold.

(3) Above 1GHz：

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

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

˙If Duty Cycle ≥ 98%, VBW=10Hz.

˙If Duty Cycle < 98%, VBW=1/T.

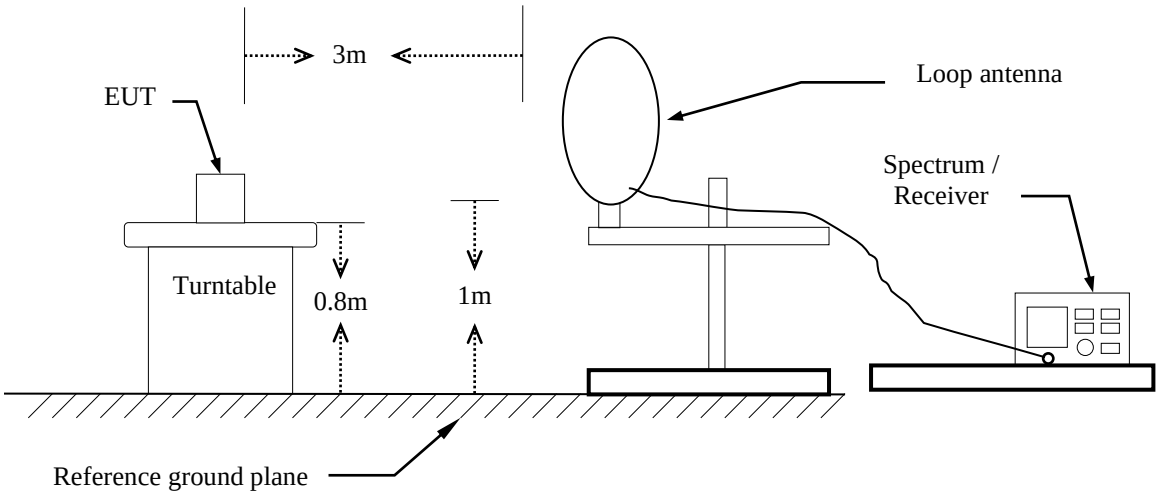
6. Data result：

Actual FS=Spectrum Reading Level + Factor

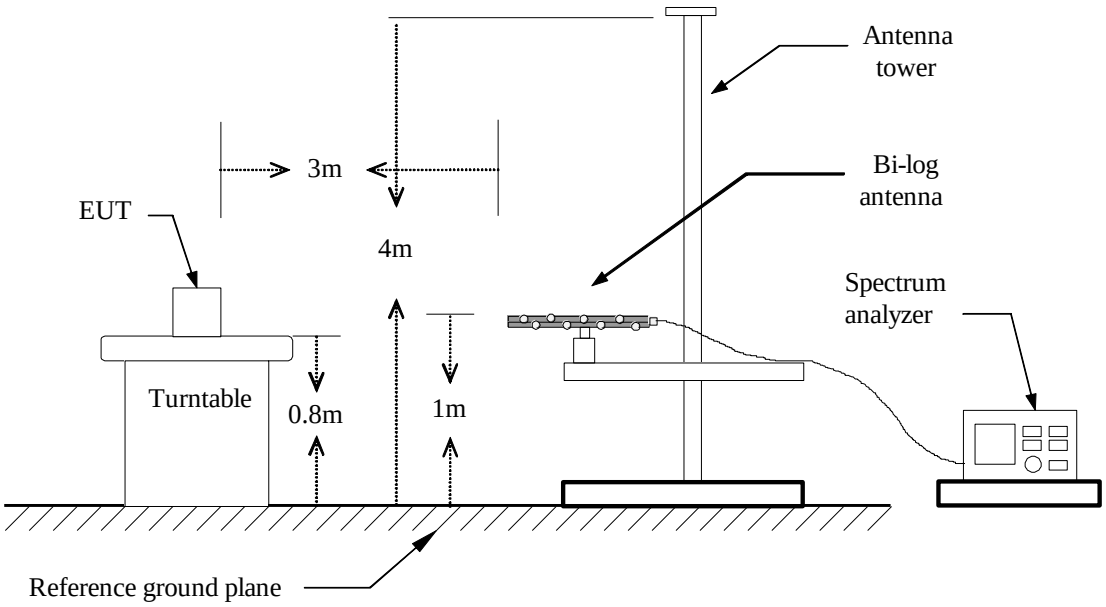
Margin=Actual FS- Limit

4.6.3 Test Setup

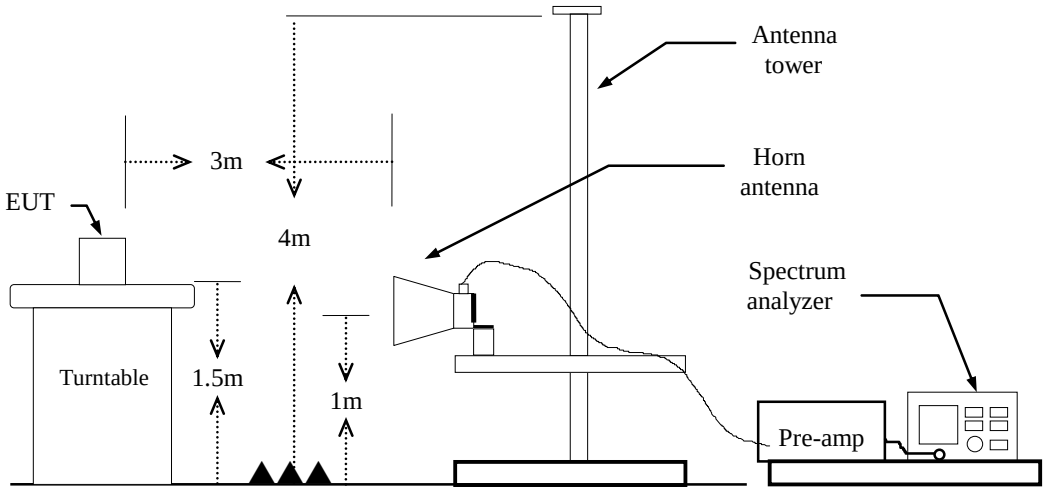
9kHz ~ 30MHz



30MHz ~ 1GHz



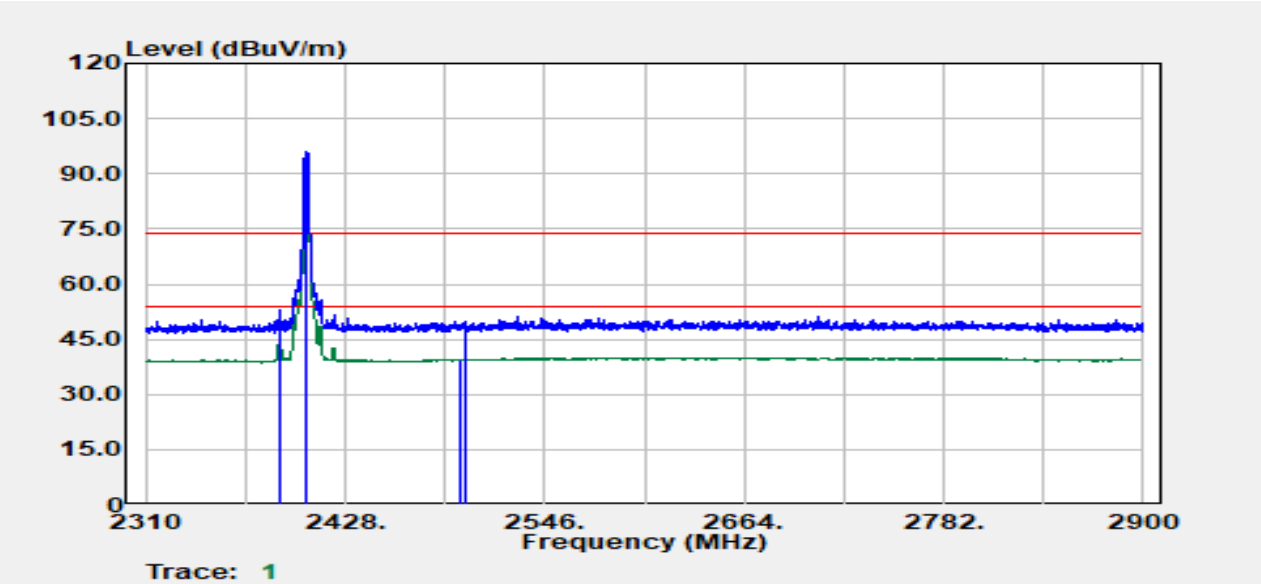
Above 1 GHz



4.6.4 Test Result

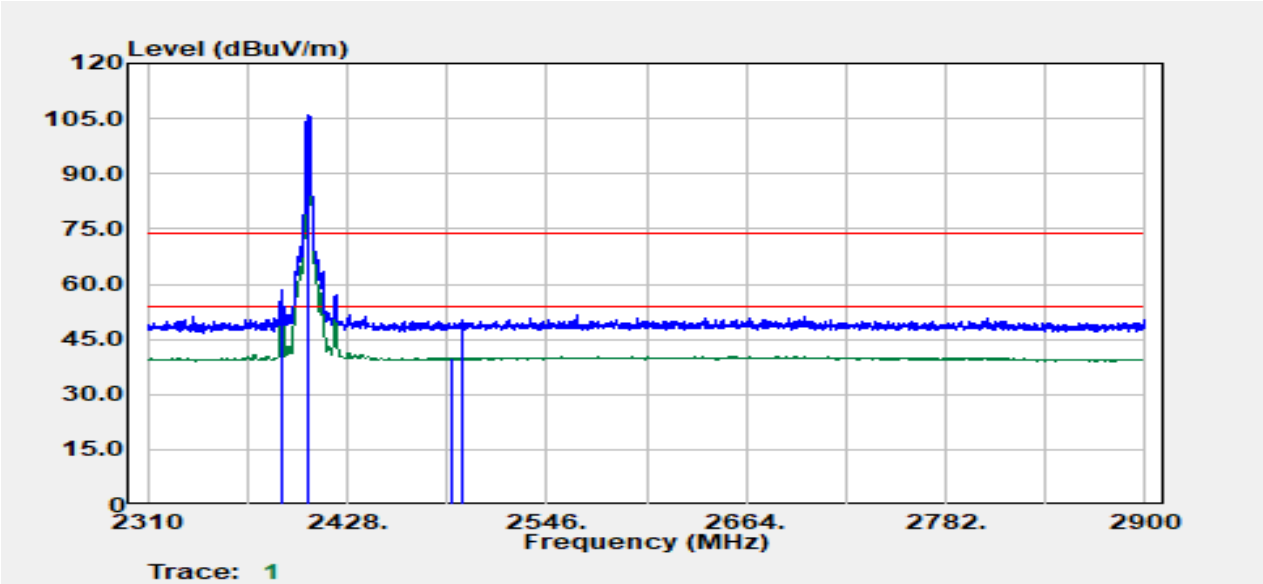
Band Edge Test Data

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2405 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25		



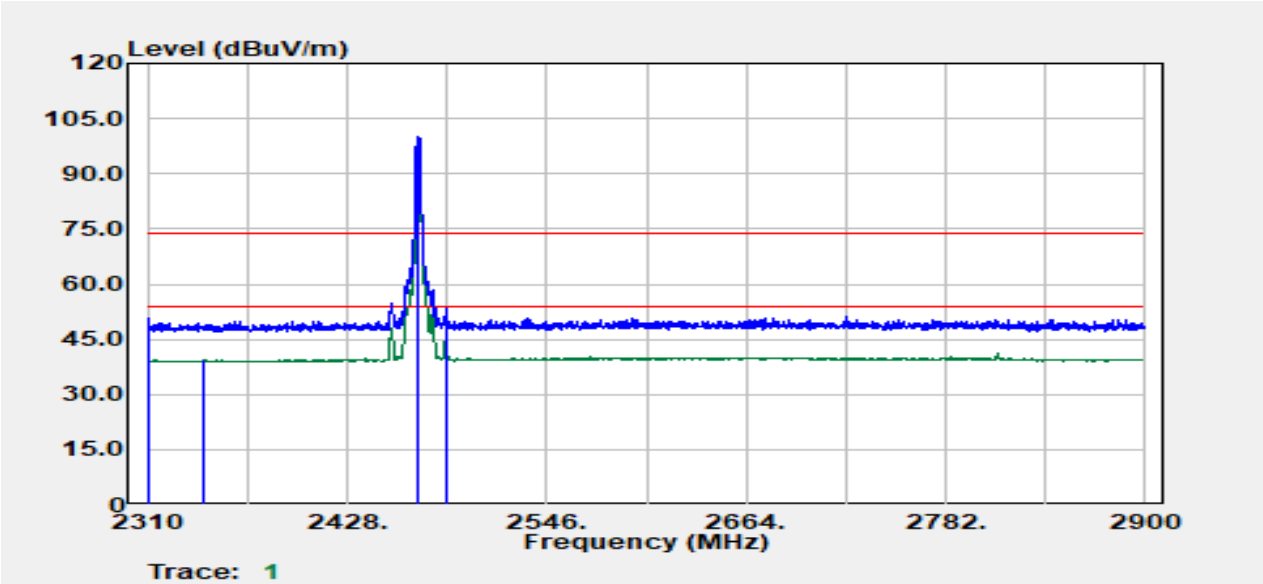
Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2389.40	Average	39.00	6.27	45.27	54.00	-8.73
2389.65	Peak	46.58	6.27	52.85	74.00	-21.15
2405.00	Peak	89.77	6.30	96.07	--	--
2405.00	Average	88.13	6.30	94.42	--	--
2495.76	Average	32.73	6.82	39.56	54.00	-14.44
2499.01	Peak	43.08	6.84	49.92	74.00	-24.08

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2405 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25		



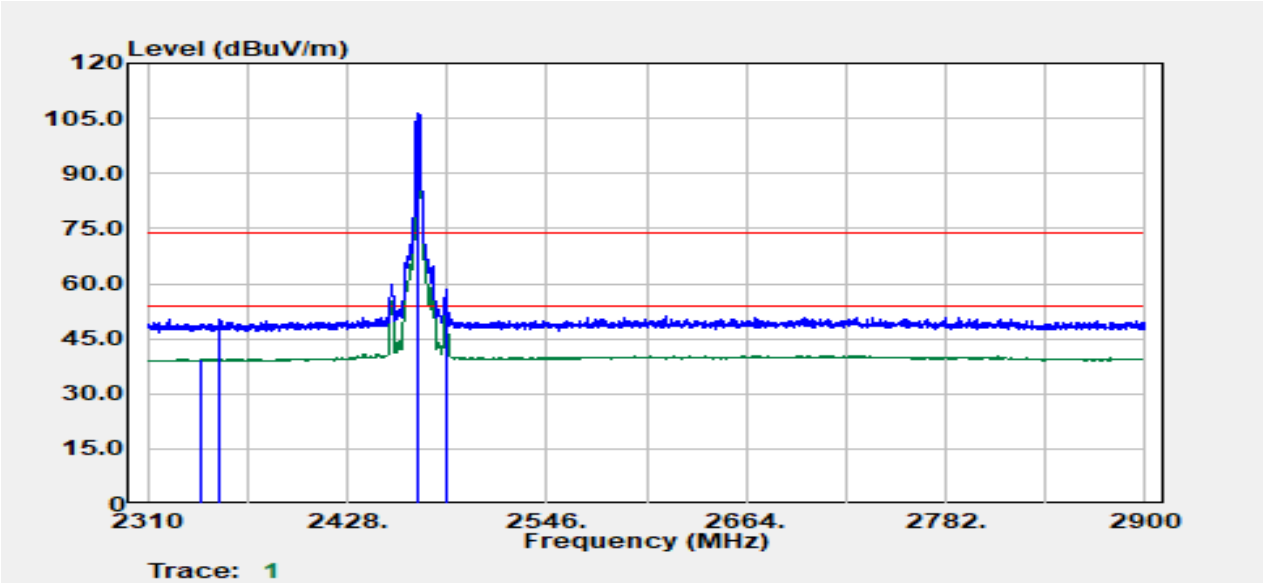
Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2389.40	Average	47.08	6.27	53.35	54.00	-0.65
2389.65	Peak	52.31	6.27	58.59	74.00	-15.41
2405.00	Peak	99.53	6.30	105.82	--	--
2405.00	Average	97.79	6.30	104.09	--	--
2489.77	Average	33.16	6.80	39.96	54.00	-14.04
2495.76	Peak	43.24	6.82	50.07	74.00	-23.93

Project No	:TM-2309000207P	Test Date	:2024-04-30
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2470 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:31		



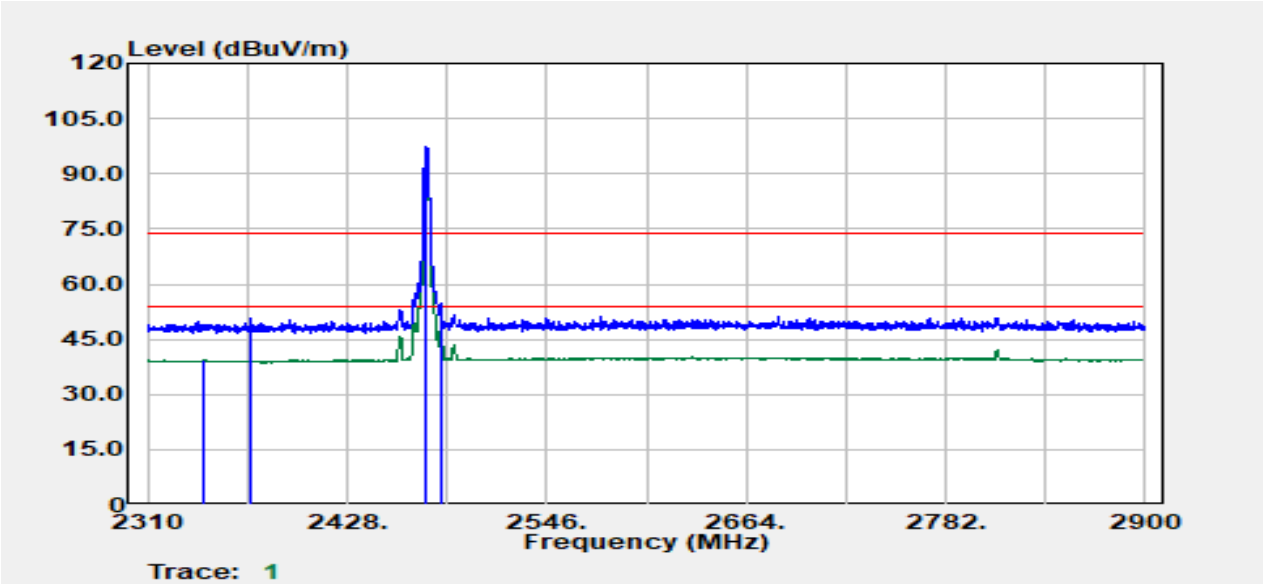
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2310.50	Peak	44.45	6.13	50.58	74.00	-23.42
2343.51	Average	33.35	6.16	39.51	54.00	-14.49
2470.00	Peak	93.65	6.43	100.08	--	--
2470.00	Average	91.97	6.43	98.40	--	--
2486.33	Peak	46.78	6.75	53.53	74.00	-20.47
2486.33	Average	37.95	6.75	44.70	54.00	-9.30

Project No	:TM-2309000207P	Test Date	:2024-04-30
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2470 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:31		



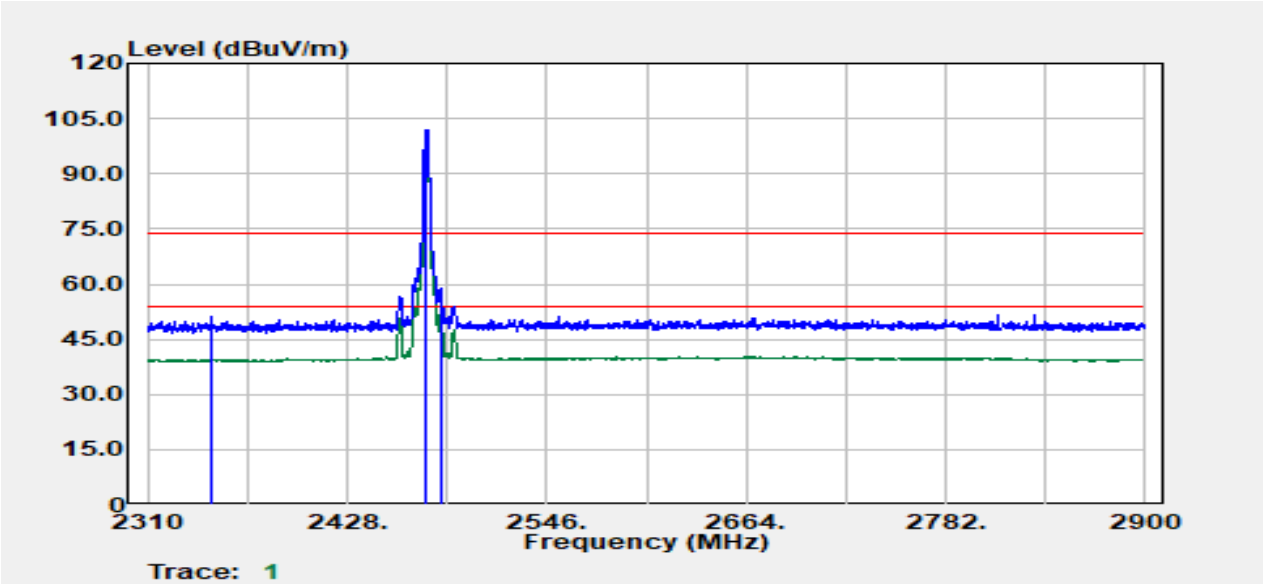
Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2341.76	Average	33.35	6.13	39.48	54.00	-14.52
2352.77	Peak	43.96	6.24	50.21	74.00	-23.79
2470.00	Peak	99.81	6.43	106.24	--	--
2470.00	Average	98.35	6.43	104.77	--	--
2486.33	Peak	51.63	6.75	58.38	74.00	-15.62
2486.33	Average	46.05	6.75	52.81	54.00	-1.19

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2475 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:28		



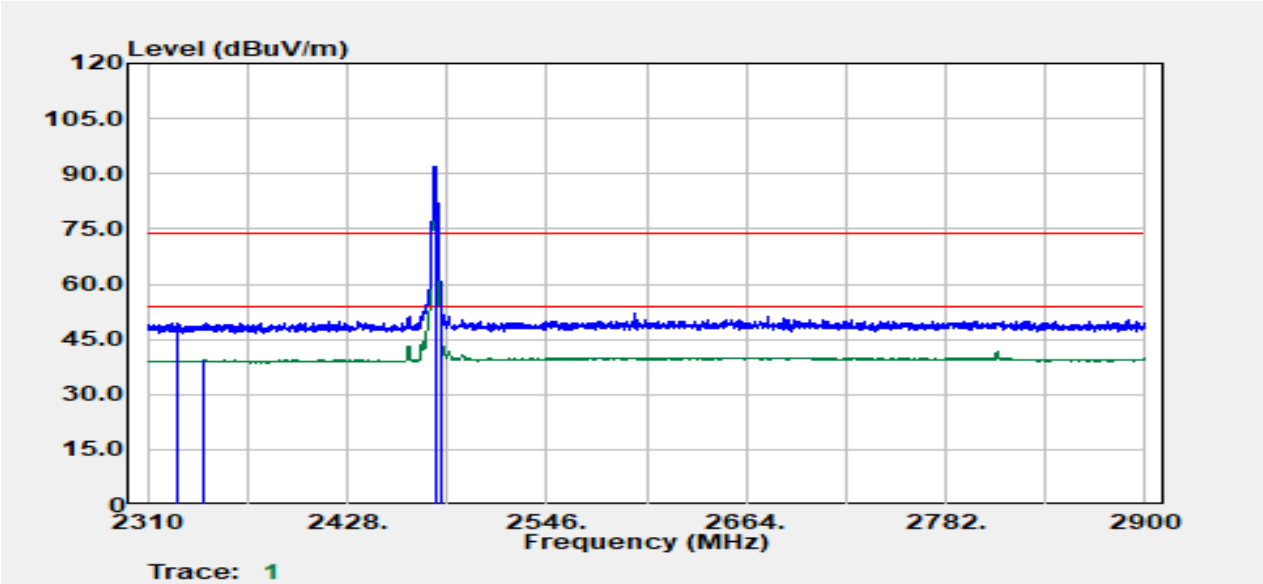
Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2343.76	Average	33.41	6.16	39.57	54.00	-14.43
2371.53	Peak	44.66	6.15	50.80	74.00	-23.20
2475.00	Peak	90.87	6.55	97.42	--	--
2475.00	Average	89.05	6.55	95.59	--	--
2483.57	Peak	48.09	6.72	54.81	74.00	-19.19
2483.57	Average	41.01	6.72	47.73	54.00	-6.27

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2475 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:28		



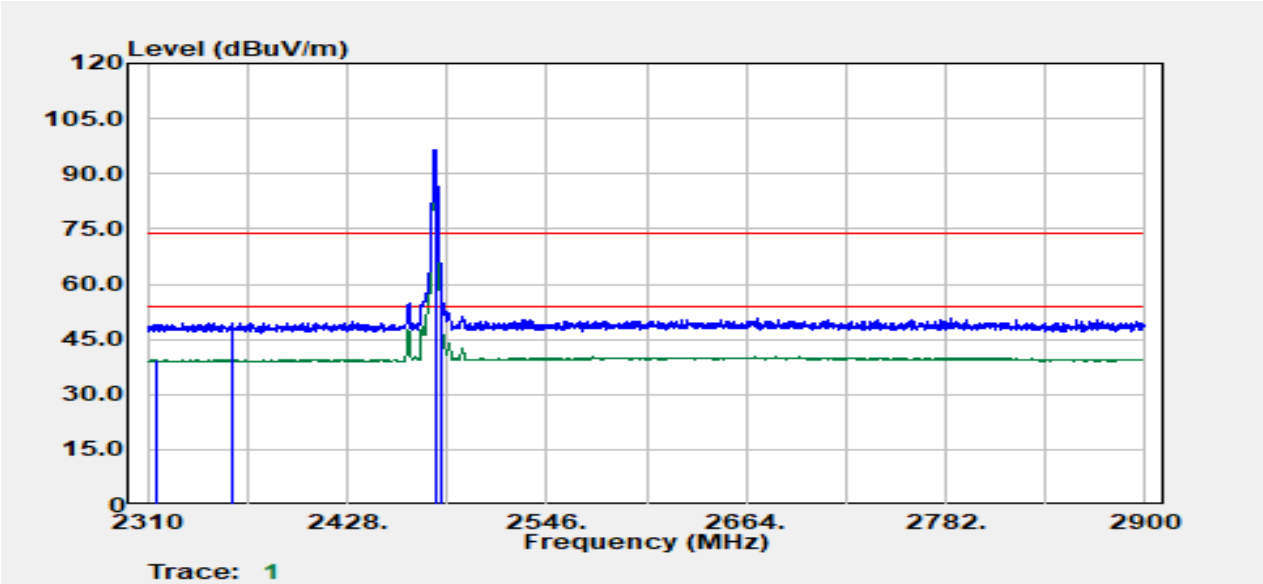
Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2347.27	Average	33.36	6.21	39.56	54.00	-14.44
2348.02	Peak	45.06	6.21	51.28	74.00	-22.72
2475.00	Peak	95.56	6.55	102.11	--	--
2475.00	Average	93.97	6.55	100.52	--	--
2483.57	Peak	52.30	6.72	59.02	74.00	-14.98
2483.57	Average	45.67	6.72	52.38	54.00	-1.62

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2480 MHz	Antenna Pol.	:VERTICAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:18		



Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
2328.26	Peak	43.37	6.18	49.55	74.00	-24.45
2343.76	Average	33.38	6.16	39.54	54.00	-14.46
2480.00	Peak	85.19	6.67	91.86	--	--
2480.00	Average	83.25	6.67	89.92	--	--
2483.57	Average	40.20	6.72	46.91	54.00	-7.09
2483.82	Peak	48.06	6.72	54.78	74.00	-19.22

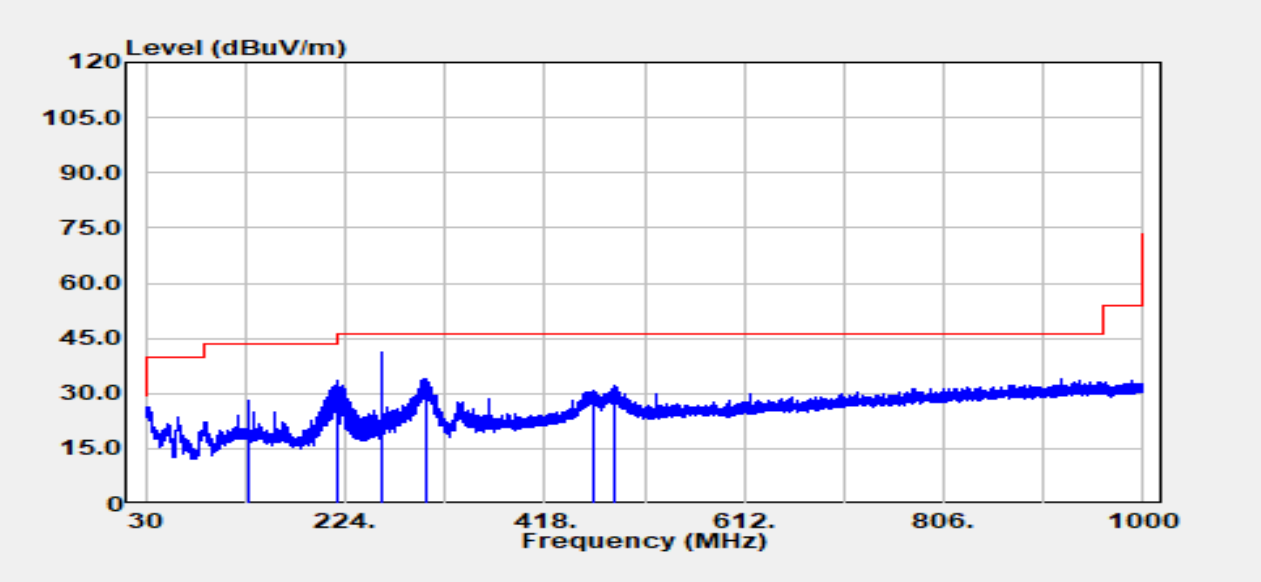
Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2480 MHz	Antenna Pol.	:HORIZONTAL
Operation Mode	:Bandedge	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:18		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
2314.50	Average	33.41	6.14	39.56	54.00	-14.44
2360.52	Peak	43.29	6.25	49.53	74.00	-24.47
2480.00	Peak	89.98	6.67	96.65	--	--
2480.00	Average	88.03	6.67	94.70	--	--
2483.57	Average	44.27	6.72	50.98	54.00	-3.02
2483.82	Peak	53.03	6.72	59.74	74.00	-14.26

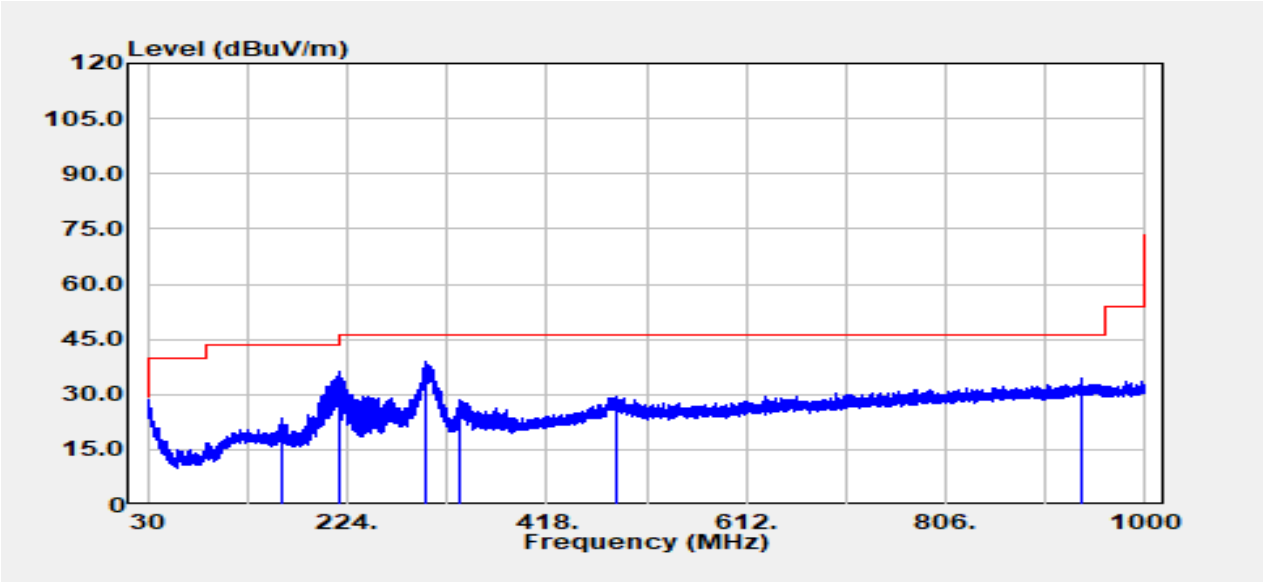
TX Test Data

Project No	:TM-2309000207P	Test Date	:2024-04-27
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2405 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25		



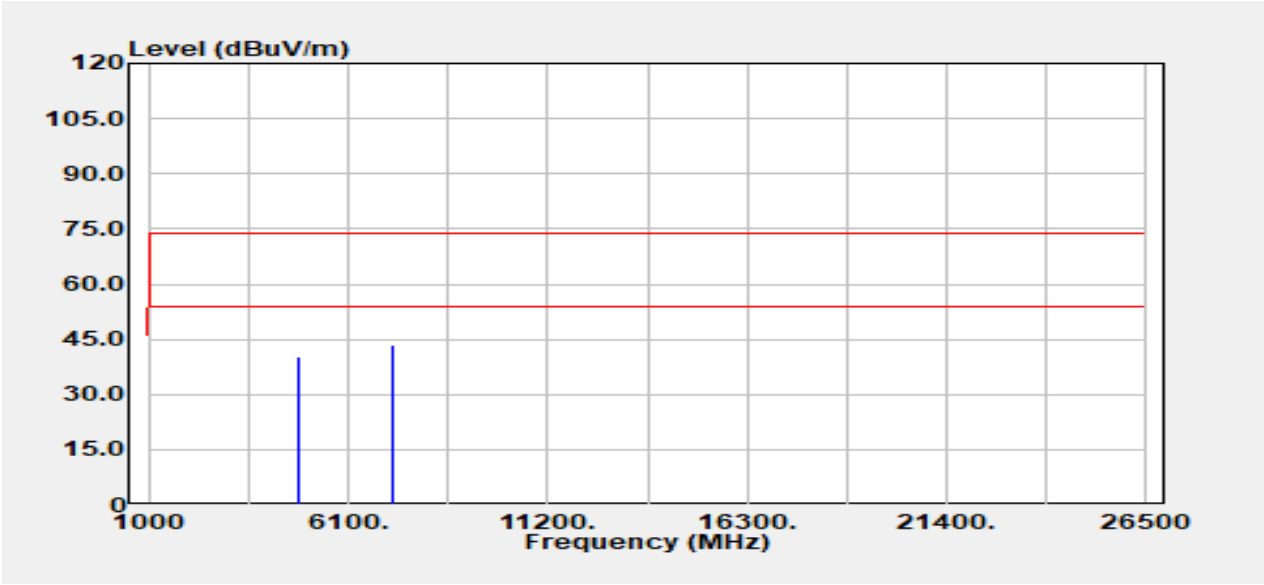
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
129.70	Peak	37.07	-9.13	27.94	43.50	-15.56
217.40	Peak	45.21	-11.76	33.46	46.00	-12.54
260.00	Peak	51.31	-10.14	41.17	46.00	-4.83
303.60	Peak	42.59	-8.49	34.10	46.00	-11.90
464.70	Peak	34.86	-4.02	30.84	46.00	-15.16
484.90	Peak	35.76	-3.43	32.33	46.00	-13.67

Project No	:TM-2309000207P	Test Date	:2024-04-27
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2405 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25		



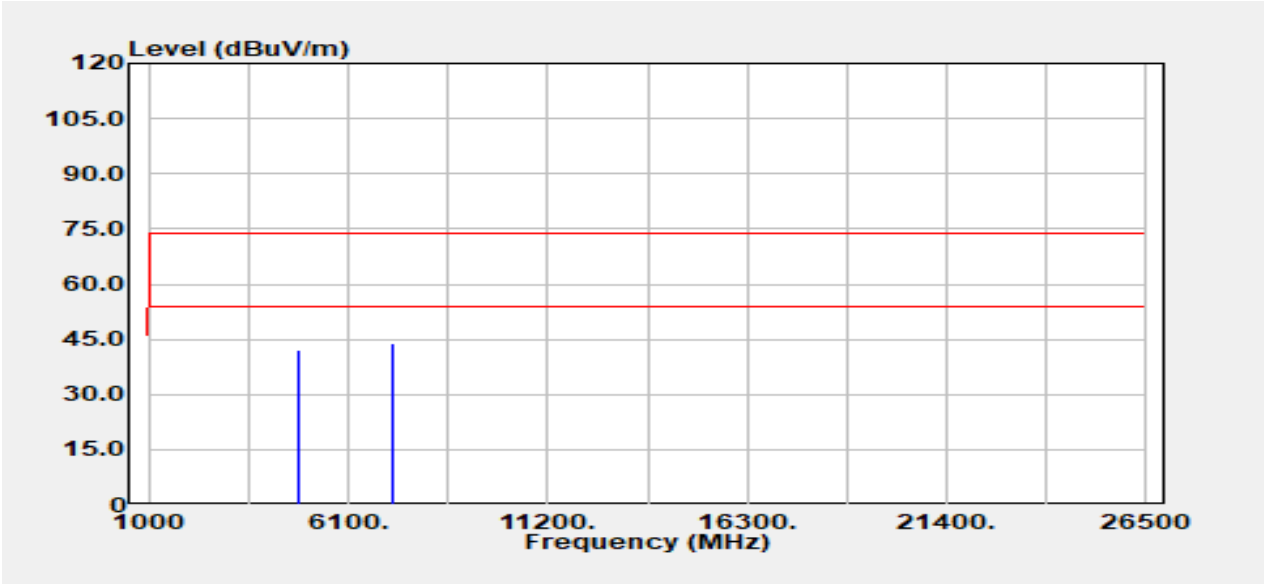
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
160.80	Peak	34.12	-10.47	23.65	43.50	-19.85
215.20	Peak	48.13	-11.81	36.33	43.50	-7.17
300.10	Peak	47.28	-8.55	38.73	46.00	-7.27
334.20	Peak	36.40	-7.82	28.58	46.00	-17.42
486.80	Peak	32.69	-3.42	29.27	46.00	-16.73
937.50	Peak	30.52	3.79	34.31	46.00	-11.69

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2405 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25		



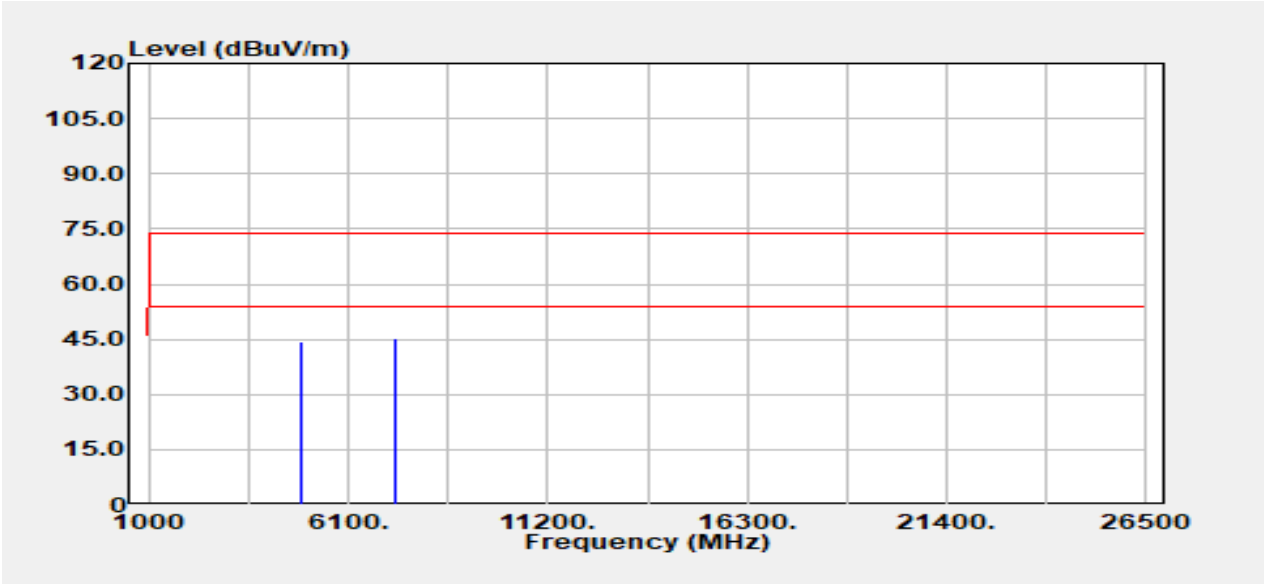
Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4810.00	Peak	37.91	2.23	40.14	74.00	-33.86
4810.00	Average	30.16	2.23	32.39	54.00	-21.61
7215.00	Peak	34.46	9.06	43.52	74.00	-30.48
7215.00	Average	26.03	9.06	35.08	54.00	-18.92

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2405 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25		



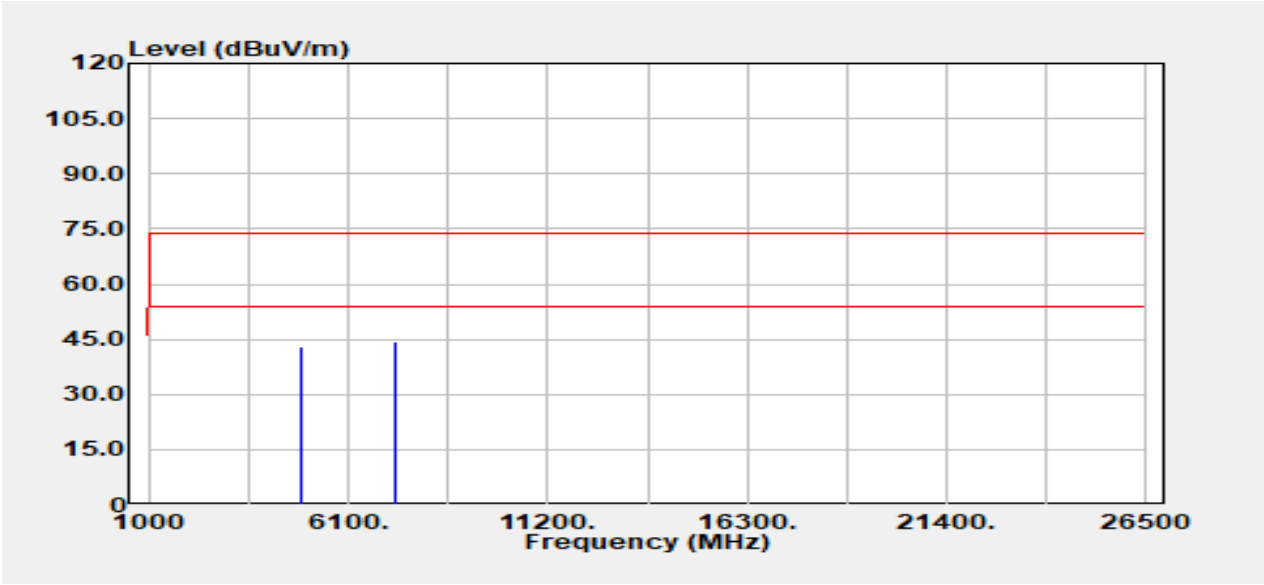
Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4810.00	Peak	39.82	2.23	42.05	74.00	-31.95
4810.00	Average	34.54	2.23	36.78	54.00	-17.22
7215.00	Peak	35.05	9.06	44.11	74.00	-29.89
7215.00	Average	26.04	9.06	35.10	54.00	-18.90

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2440 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:31		



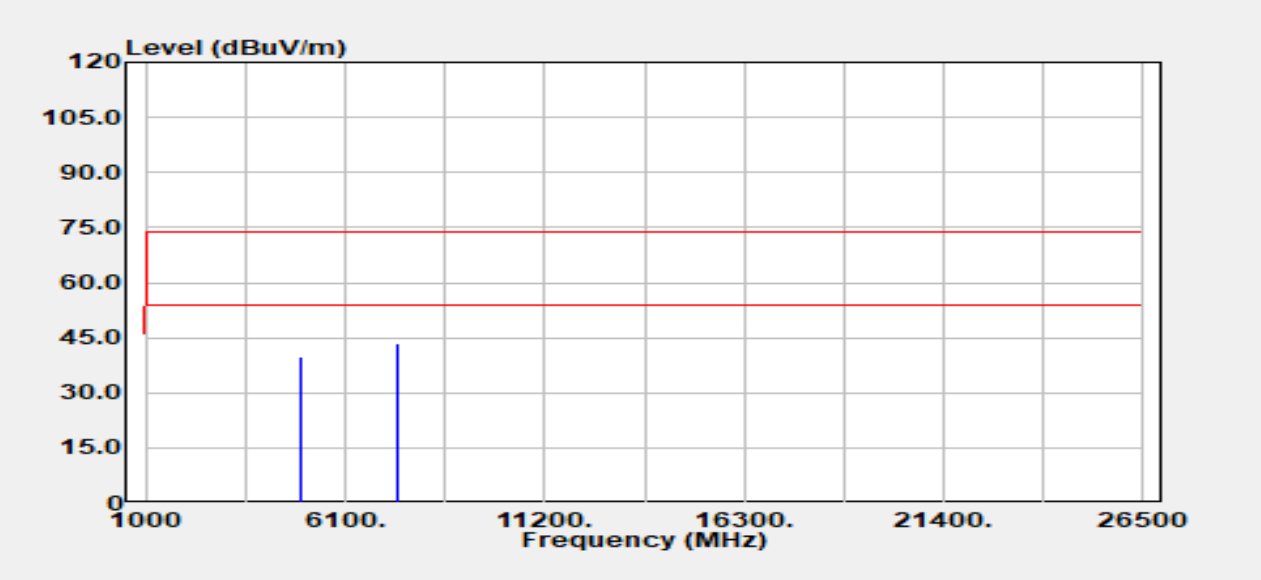
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4880.00	Peak	41.89	2.55	44.43	74.00	-29.57
4880.00	Average	34.12	2.55	36.67	54.00	-17.33
7320.00	Peak	36.35	8.96	45.31	74.00	-28.69
7320.00	Average	27.43	8.96	36.39	54.00	-17.61

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2440 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:31		



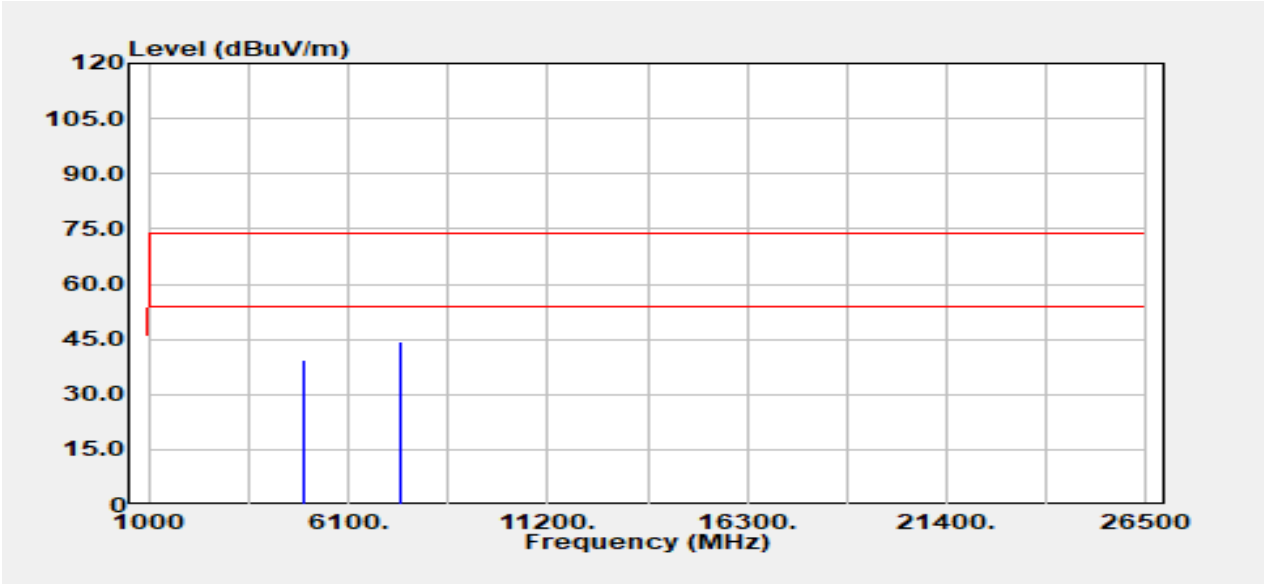
Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4880.00	Peak	40.34	2.55	42.88	74.00	-31.12
4880.00	Average	33.91	2.55	36.45	54.00	-17.55
7320.00	Peak	35.62	8.96	44.58	74.00	-29.42
7320.00	Average	27.77	8.96	36.73	54.00	-17.27

Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2480 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:18		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4960.00	Peak	36.51	3.21	39.72	74.00	-34.28
4960.00	Average	27.84	3.21	31.05	54.00	-22.95
7440.00	Peak	34.58	8.92	43.50	74.00	-30.50
7440.00	Average	25.85	8.92	34.77	54.00	-19.23

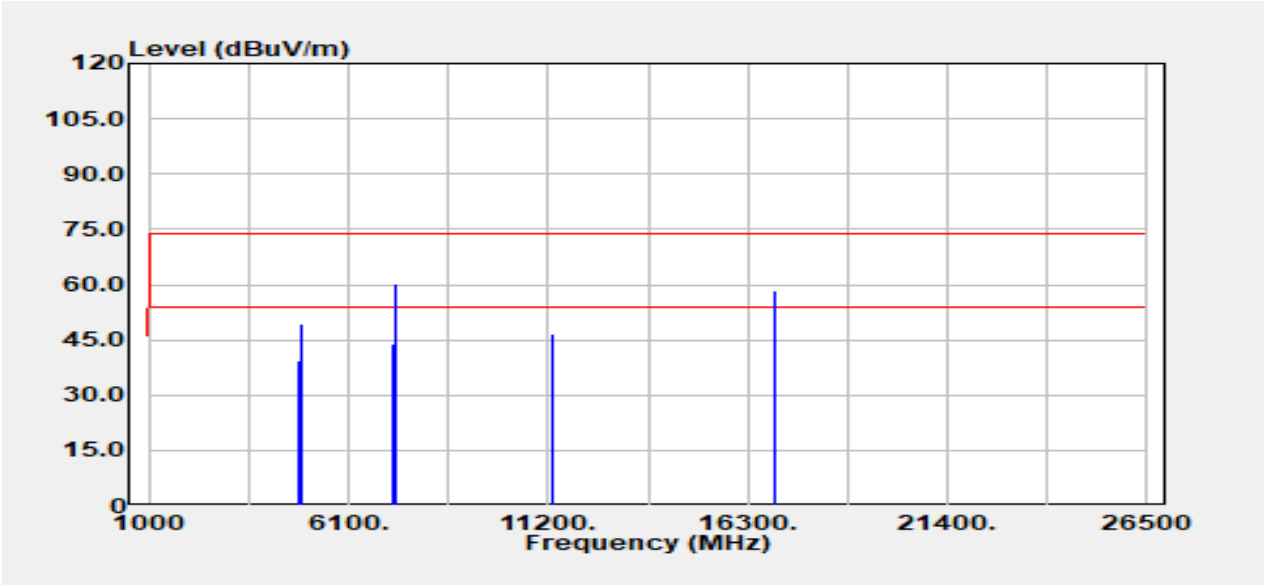
Project No	:TM-2309000207P	Test Date	:2024-04-26
Operation Band	:Zigbee	Temp./Humi.	:24.5/59
Frequency	:2480 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:18		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4960.00	Peak	36.32	3.21	39.53	74.00	-34.47
4960.00	Average	28.64	3.21	31.85	54.00	-22.15
7440.00	Peak	35.34	8.92	44.26	74.00	-29.74
7440.00	Average	25.92	8.92	34.84	54.00	-19.16

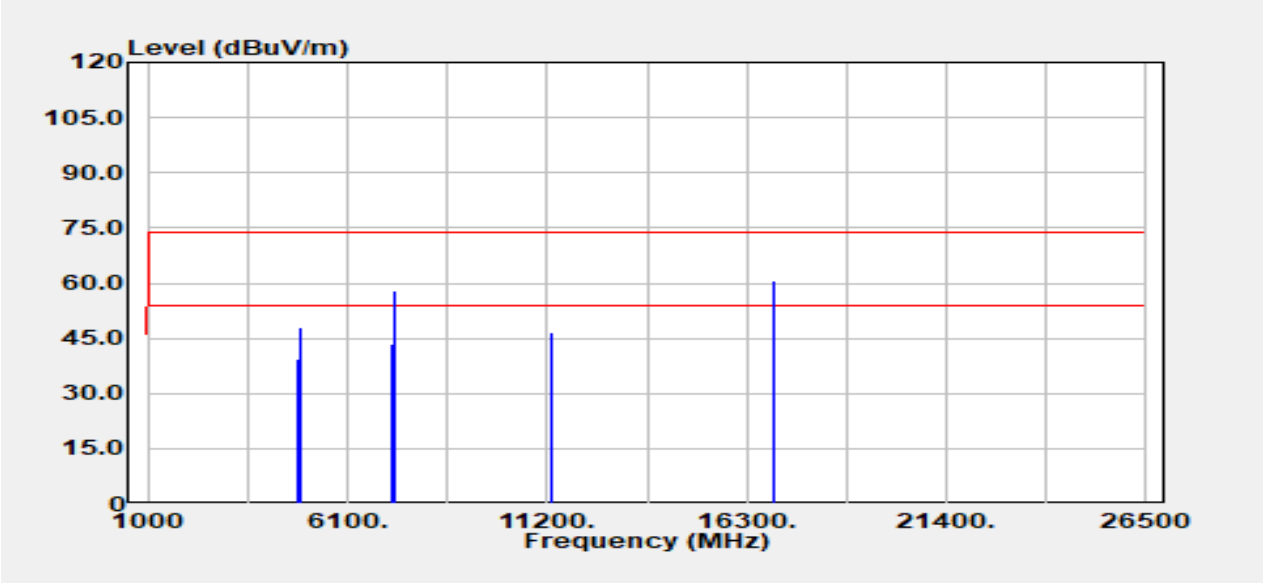
Co-Location

Project No	:TM-2309000207P	Test Date	:2024-06-26
Operation Band	:802.11g_ax40/Band3_Zigbee	Temp./Humi.	:24.6/57
Frequency	:2405_2437_5670 MHz	Antenna Pol.	:Vertical
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25_20_20		



Freq.	Detector Mode	Spectrum Read Level	Factor	Actual FS	Limit	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4810.00	Peak	37.04	2.23	39.27	74.00	-34.73
4810.00	Average	29.77	2.23	32.01	54.00	-21.99
4874.00	Peak	46.93	2.49	49.42	74.00	-24.58
4874.00	Average	37.96	2.49	40.45	54.00	-13.55
7215.00	Peak	34.77	9.06	43.83	74.00	-30.17
7215.00	Average	26.21	9.06	35.27	54.00	-18.73
7311.00	Peak	51.28	8.96	60.25	74.00	-13.75
7311.00	Average	43.83	8.96	52.79	54.00	-1.21
11340.00	Peak	32.63	13.87	46.50	74.00	-27.50
11340.00	Average	26.76	13.87	40.62	54.00	-13.38
17010.00	Peak	31.50	26.82	58.33	74.00	-15.67

Project No	:TM-2309000207P	Test Date	:2024-06-26
Operation Band	:802.11g_ax40/Band3_Zigbee	Temp./Humi.	:24.6/57
Frequency	:2405_2437_5670 MHz	Antenna Pol.	:Horizontal
Operation Mode	:TX	Engineer	:Ray Li
EUT Pol	:E2	Test Chamber	: 966A
Setting	:25_20_20		



Freq. MHz	Detector Mode PK/QP/AV	Spectrum Read Level dBµV	Factor dB	Actual FS dBµV/m	Limit dBµV/m	Margin dB
4810.00	Peak	37.24	2.23	39.47	74.00	-34.53
4810.00	Average	29.92	2.23	32.15	54.00	-21.85
4874.00	Peak	45.42	2.49	47.92	74.00	-26.08
4874.00	Average	37.73	2.49	40.22	54.00	-13.78
7215.00	Peak	34.49	9.06	43.55	74.00	-30.45
7215.00	Average	26.16	9.06	35.22	54.00	-18.78
7311.00	Peak	48.97	8.96	57.94	74.00	-16.06
7311.00	Average	40.59	8.96	49.55	54.00	-4.45
11340.00	Peak	32.79	13.87	46.65	74.00	-27.35
11340.00	Average	25.61	13.87	39.48	54.00	-14.52
17010.00	Peak	34.01	26.82	60.83	74.00	-13.17

- End of Test Report -