FCC PART 15.247
RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT2
RSS-247 ISSUE 4, JULY 24, 2025

TEST REPORT

For

Xiamen Renhe Sports Equipment Co., Ltd

FCC: 4F 1129 Jicheng Road Industrial Concentration Zone Tongan, Xiamen city Fujian Province, China

IC: 4/F, 1129, Jicheng Road, Industrial Concentration Zone, Tong'an, Xiamen, Fujian 361100 China

FCC ID: 2ASII-AP01
IC: 34495-AP01

Report Type:	**Product Name:**
Original Report	TREADMILL

Report Number:	2507W27469E-RF-01
Report Date:	2025-10-30
Reviewed By:	Ash Lin
Approved By:	Miles Chen
Prepared By:	Bay Area Compliance Laboratories Corp. (Xiamen) Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen Tel: +86-592-3200111 www.baclcorp.com.cn

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2507W27469E-RF-01	R1V1	2025-10-30	Initial Release

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant:	Xiamen Renhe Sports Equipment Co., Ltd
Product Name:	TREADMILL
Tested Model:	AP01
HVIN:	AP01
Multiple Model(s):	R3, X20
Trade Mark:	N/A
Power Supply:	AC 120V/60Hz
Maximum Peak Conducted Output Power:	5.02 dBm
Frequency Range:	2402~2480MHz
Modulation Technique:	GFSK
Antenna Type:	PCB antenna
★Maximum Antenna Gain:	0 dBi
EUT Received Status:	Good
Note: *1. The Maximum Antenna Gain was declared by manufacturer.* *2. The test model is identify with the series model except for the model name, please refer to declaration letter for more detail.* *3. All measurement and test data in this report was gathered from production sample serial number: 382M-1 (RF conducted), 382M-2 (Conducted Emission and Radiated Emission) (Assigned by the BACL (Xiamen). The EUT supplied by the applicant was received on 2025-08-07)*	

Objective

This test report is prepared for *Xiamen Renhe Sports Equipment Co., Ltd* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commissions's rules and RSS-247 Issue 4, July 24, 2025 and RSS-Gen, Issue 5, February 2021 Amendment 2 of the Innovation, Science and Economic Development Canada.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020 + Cor.1-2023▲, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices and KDB 558074 D01 15.247 Meas Guidance v05r02.

All tests and measurements indicated in this document were performed in accordance with RSS-247 Issue 4, July 24, 2025 of the Innovation, Science and Economic Development Canada & RSS-Gen, Issue 5, February 2021 Amendment 2: General Requirements for Compliance of Radio Apparatus & ANSI C63.10-2020 + Cor.1-2023▲: American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on the Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen.

Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No. : CN1384.

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Measurement Uncertainty

Item		U_{lab}
Conducted Emission	150kHz-30MHz	2.45 dB
Radiated Emission	9kHz-150kHz	2.82dB
	150kHz-30MHz	2.74dB
	30MHz~200MHz	3.47dB
	200MHz~1GHz	4.86dB
	1GHz~6GHz	4.88dB
	6GHz~18GHz	4.95dB
	18GHz~26.5GHz	4.45dB
Occupied Channel Bandwidth		2%
Transmitter Conducted Power(Conducted RF power)		1.49 dB
Conducted Spurious Emission		2.92 dB
Power Spectral Density		0.61 dB
Duty Cycle		1 %
Temperature		1 ℃
Humidity		5 %
Supply voltages		1 %

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

SYSTEM TEST CONFIGURATION

Test Mode and Voltage

The system was configured for testing in a typical mode (as normally used by a typical user).	
Test mode:	Test mode 1: Transmitting
Test voltage:	Test mode 1: AC 120V/60Hz
Remark:	During all emission tests, the EUT was configured to measure its highest possible emission level and the worst case's test data was presented in this test report.

Description of Test Configuration

For BLE mode, 40 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

EUT was tested with Channel 0, 19 and 39.

Equipment Modifications

No modification was made to the EUT tested.

★EUT Exercise Software

RF Test Tool: Wifi_Test_Tool_V1.9.0

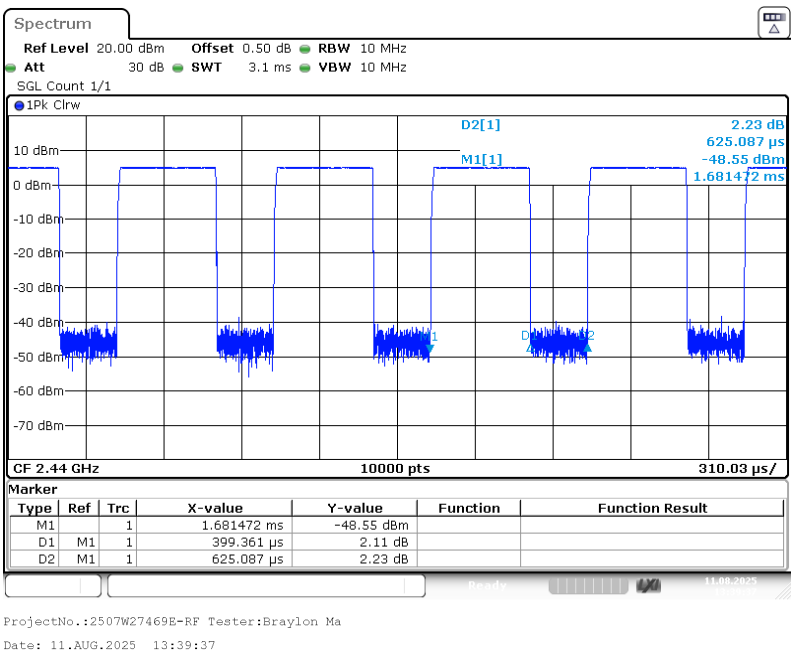
Mode	Power level		
	Low channel	Middle channel	High channel
BLE 1Mbps	default	default	default

Duty Cycle

Test Mode:	Transmitting	Test Engineer:	Braylon Ma
Test Date:	2025-08-11	Test Voltage:	AC 120V/60Hz
Environment:	Temp.: 25.3℃; Humi.: 61%; Atm :100.3kPa		

Mode	Test Frequency (MHz)	Ton (ms)	Ton+Toff (ms)	Duty Cycle (%)	1/Ton (Hz)	VBW Setting (kHz)
BLE 1Mbps	2440	0.399	0.625	63.84	2506	3.00

BLE 1Mbps Middle Channel



Support Equipment List and Details

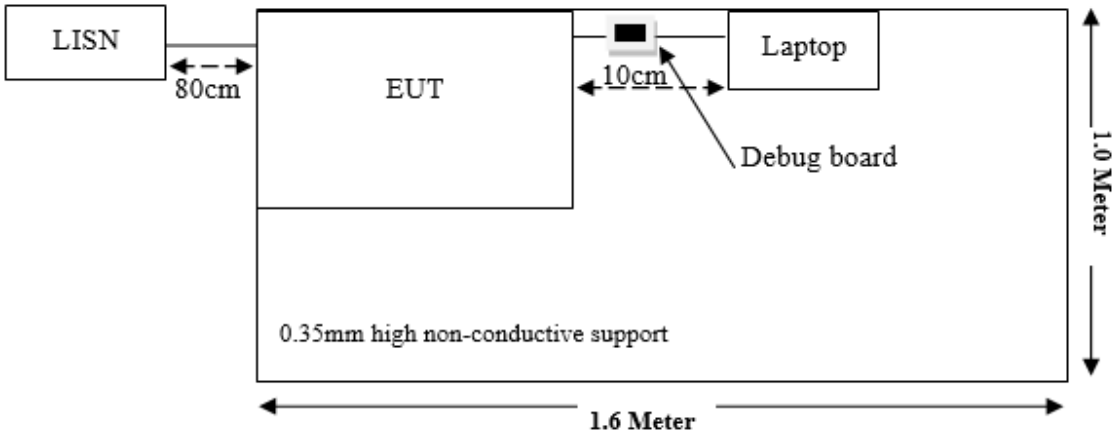
Manufacturer	Description	Model	Serial Number
Lenovo	Laptop	T480	PF1P5K4F
Unknown	Debug board	Unknown	Unknown

External I/O Cable

Cable Description	Length (m)	From Port	To
Dupont Cable	0.2	EUT	Debug board
USB cable	10	Laptop	Debug board
USB cable	1.5	Laptop	Debug board
RF Cable	0.1	EUT antenna port	Spectrum Analyzer

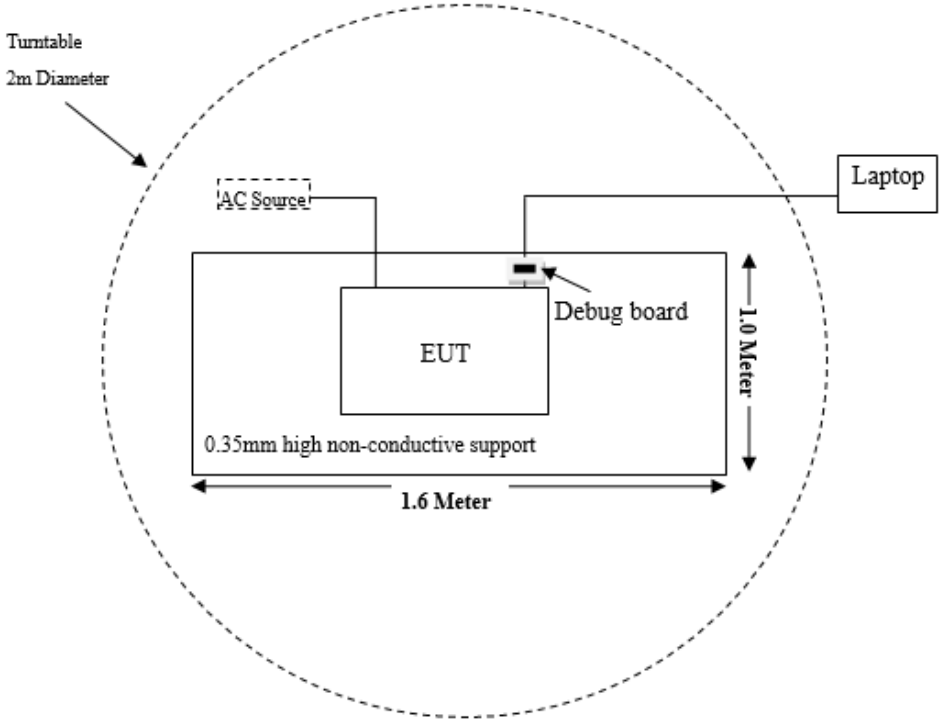
Block Diagram of Test Setup

Conducted Emission:



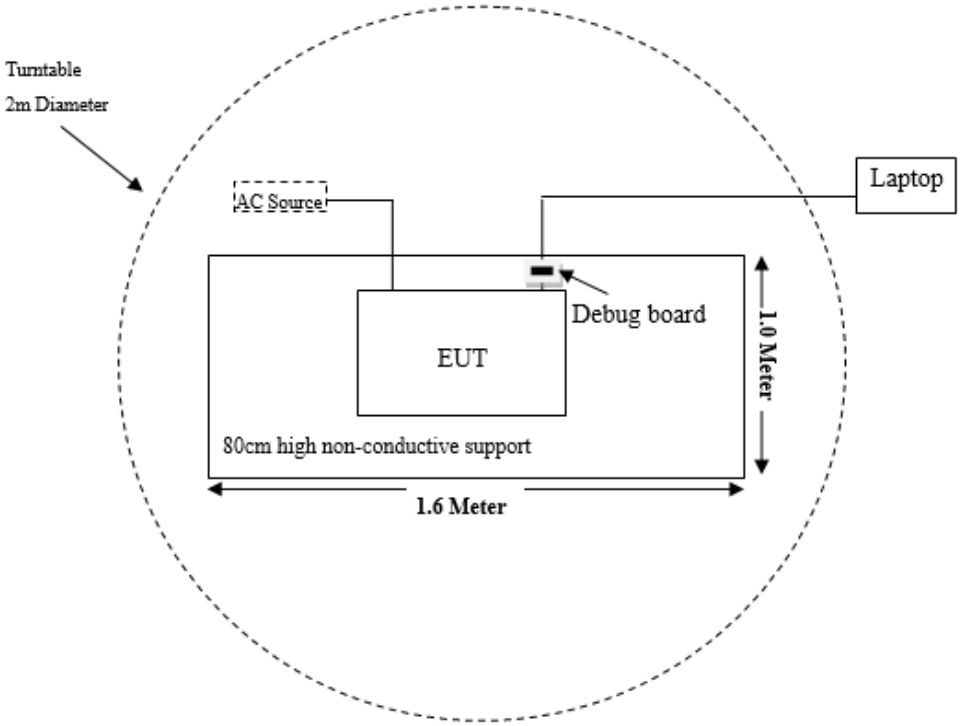
Radiated Emission:

Below 1GHz:



Note: Antenna is 0.8m above ground.

Above 1GHz:



Note: Antenna is 1.5m above ground.

SUMMARY OF TEST RESULTS

Standard(s)/Rule(s)	Description of Test	Result
FCC §15.203 RSS-Gen Issue 5 Clause 6.8	Antenna Requirement	Compliance
FCC §15.207 (a) RSS-Gen Issue 5 Clause 8.8	AC Line Conducted Emissions	Compliance
FCC §15.205, §15.209, §15.247(d) RSS-247 Issue 4 Clause 6.6 RSS-Gen Issue 5 Clause 8.10	Radiated Emissions & Restricted Bands Emissions & Antenna-port conducted emission	Compliance
FCC §15.247 (a)(2) RSS-247 Issue 4 Clause 6.3.1 a	6 dB Emission Bandwidth	Compliance
RSS-Gen Issue 5 Clause 6.7	99% Occupied Bandwidth	Compliance
FCC §15.247(b)(3) RSS-247 Issue 4 Clause 6.3.2	Maximum Conducted Output Power	Compliance
FCC §15.247(d) RSS-247 Issue 4 Clause 6.6	100 kHz Bandwidth of Frequency Band Edge	Compliance
FCC §15.247(e) RSS-247 Issue 4 Clause 6.3.1 b	Power Spectral Density	Compliance

TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions					
EMI Test Receiver	Rohde & Schwarz	ESR	103105	2025/2/20	2026/2/19
LISN	Rohde & Schwarz	ENV216	100129	2025/2/20	2026/2/19
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	0357.8810.54	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC001	2025/2/20	2026/2/19
EMI Test software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Below 1GHz					
EMI Test Receiver	Rohde & Schwarz	ESR	103103	2025/2/20	2026/2/19
Loop Antenna	Rohde & Schwarz	HFH2-Z2	830749/001	2023/7/27	2026/7/26
Antenna	Sunol Sciences	JB6	A122022-5	2023/7/27	2026/7/26
Amplifier	Sonoma	310B	120903	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC002	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	XH460B-N-2M	CC006	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	XH460B-N-12M	CC007	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	HFH2-CC	335.3609	2025/2/20	2026/2/19
Test Software	Audix	E3	18621a	N/A	N/A
Radiated Emissions Above 1 GHz					
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102051	2025/2/20	2026/2/19
Filter Switch Unit	Decentest	DT7220FSU	DS79904	2025/2/21	2026/2/20
Multiplex Switch Test Control Set	Decentest	DT7220SCU	DS79901	2025/2/21	2026/2/20
Horn Antenna	EMCO	3115	9002-3355	2024/11/19	2027/11/18
Preamplifier	GLOBAL	1313-A100M18G	4121301	2025/1/16	2026/1/15
Coaxial Cable	XINHANGWEIBO	XH800A-N-6M	CC003	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	XH800A-N-1M	CC005	2025/2/20	2026/2/19
Horn Antenna	EMCO	3116	9407-2232	2023/7/31	2026/7/30
Preamplifier	A.H.Systems	PAM-1840	200	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-3M	CC008	2025/2/20	2026/2/19
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-1M	CC009	2025/2/20	2026/2/19
Test Software	Audix	E3	18621a	N/A	N/A
RF Conducted Test					
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102051	2025/2/20	2026/2/19
Test Software	JD	JDAutoTestSystem	1.0.0.3813	N/A	N/A

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Xiamen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.203 & RSS-Gen Clause 6.8 - ANTENNA REQUIREMENT

Applicable Standard

According to FCC §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

a. Antenna must be permanently attached to the unit.
b. Antenna must use a unique type of connector to attach to the EUT.
c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

According to RSS-Gen Clause 6.8 The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent is otropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

Antenna Connector Construction

The EUT has one PCB antenna arrangement for BLE, which was permanently attached and the antenna gain is 0 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

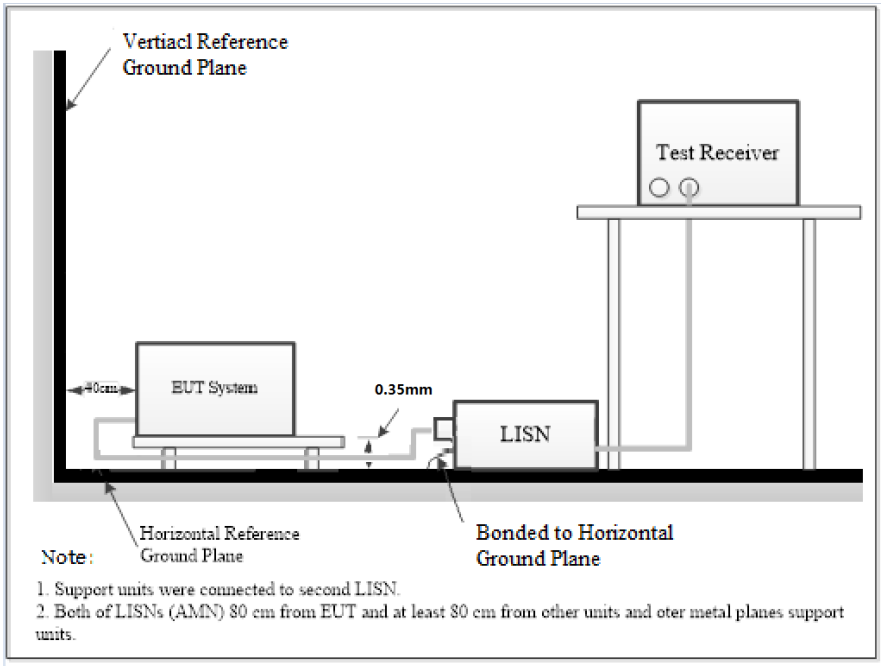
Result: Compliance

FCC §15.207 (a) & RSS-Gen Clause 8.8 – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207, RSS-Gen Clause 8.8

EUT Setup



The setup of EUT is according with per ANSI C63.10-2020 + Cor.1-2023▲ measurement procedure. The specification used was with the FCC Part 15.207, RSS-Gen limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

Result &Margin Calculation

The result is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

Factor (dB) = LISN VDF (dB) + Cable Loss (dB) + Transient Limiter Attenuation (dB)
Result (dBµV) = Reading (dBµV) + Factor (dB)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBµV) –Result (dBµV)

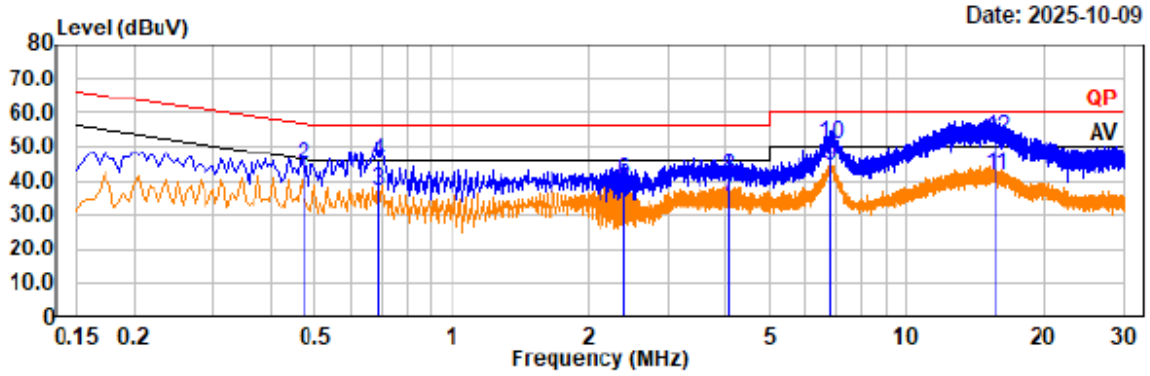
Test Data

Temperature:	23.4 ℃
Relative Humidity:	59 %
ATM Pressure:	100.1 kPa
Test Date:	2025-10-09
Test Engineer:	Wlif Wu

Note: The maximum output power mode: BLE 1Mbps middle channel was tested.

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01

Temp/Humi/ATM: 23.4℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

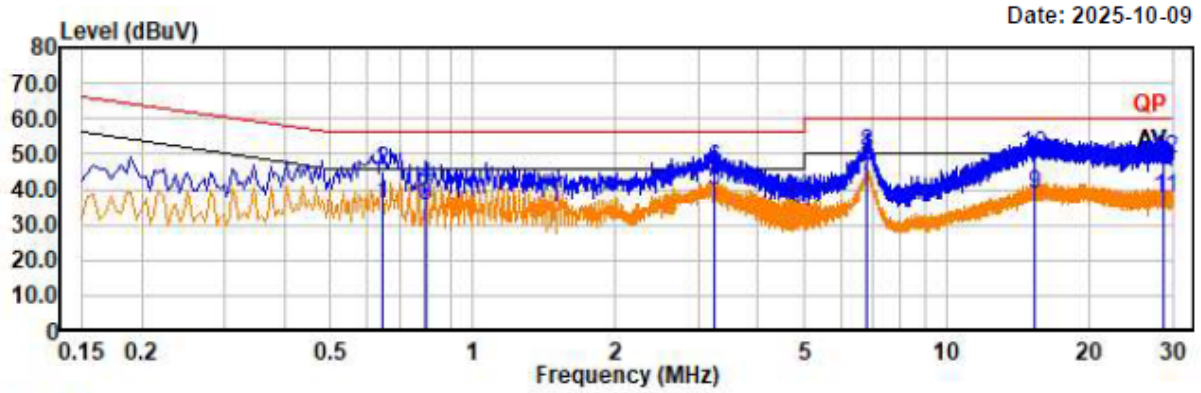


Trace: 1
Condition: IF B/W 9kHz PK/AV

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.471	19.76	20.24	40.00	46.50	6.50	Line	Average
0.471	24.42	20.24	44.66	56.50	11.84	Line	QP
0.691	16.40	20.36	36.76	46.00	9.24	Line	Average
0.691	25.70	20.36	46.06	56.00	9.94	Line	QP
2.387	16.13	20.96	37.09	46.00	8.91	Line	Average
2.387	18.89	20.96	39.85	56.00	16.15	Line	QP
4.047	14.57	20.93	35.50	46.00	10.50	Line	Average
4.047	20.10	20.93	41.03	56.00	14.97	Line	QP
6.793	23.99	20.35	44.34	50.00	5.66	Line	Average
6.793	30.57	20.35	50.92	60.00	9.08	Line	QP
15.744	20.44	20.97	41.41	50.00	8.59	Line	Average
15.744	31.26	20.97	52.23	60.00	7.77	Line	QP

Project No.: 2507W27469E-RF
Test Mode:BLE 1M 2440MHz
EUT Model: AP01

Temp/Humi/ATM: 23.4℃/59%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Trace: 1
Condition: IF B/W 9kHz PK/AV

Freq MHz	Reading dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dB	Phase	Remark
0.645	15.21	20.52	35.73	46.00	10.27	Neutral	Average
0.645	24.68	20.52	45.20	56.00	10.80	Neutral	QP
0.796	14.54	20.50	35.04	46.00	10.96	Neutral	Average
0.796	20.18	20.50	40.68	56.00	15.32	Neutral	QP
3.247	19.01	20.92	39.93	46.00	6.07	Neutral	Average
3.247	24.83	20.92	45.75	56.00	10.25	Neutral	QP
6.799	23.51	20.35	43.86	50.00	6.14	Neutral	Average
6.799	29.75	20.35	50.10	60.00	9.90	Neutral	QP
15.262	17.68	20.95	38.63	50.00	11.37	Neutral	Average
15.262	28.45	20.95	49.40	60.00	10.60	Neutral	QP
28.706	16.79	20.61	37.40	50.00	12.60	Neutral	Average
28.706	28.19	20.61	48.80	60.00	11.20	Neutral	QP

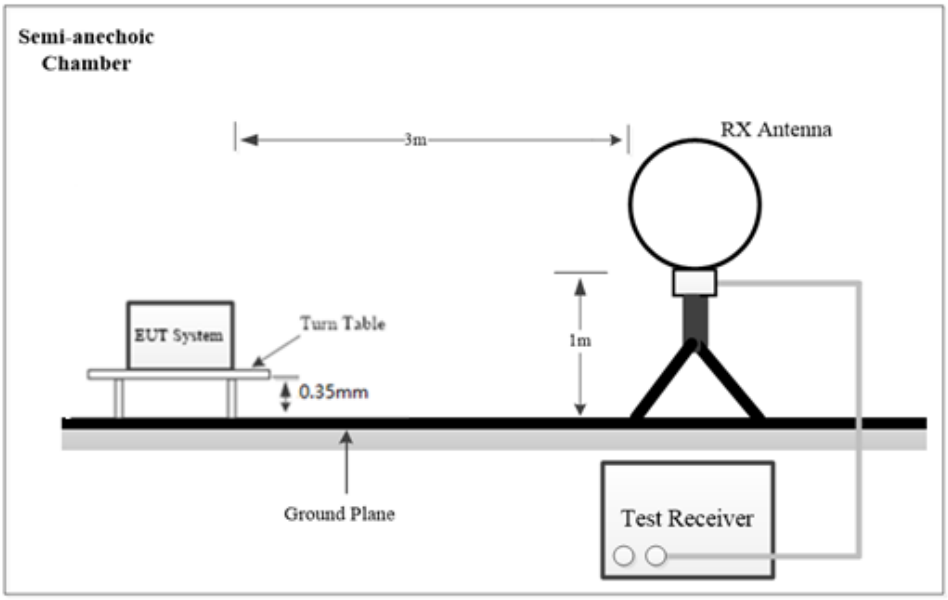
FCC §15.209, §15.205 & §15.247(d) & RSS-247 ISSUE 4 Clause 6.6, RSS-GEN ISSUE5 CLAUSE 8.10 - SPURIOUS EMISSIONS

Applicable Standard

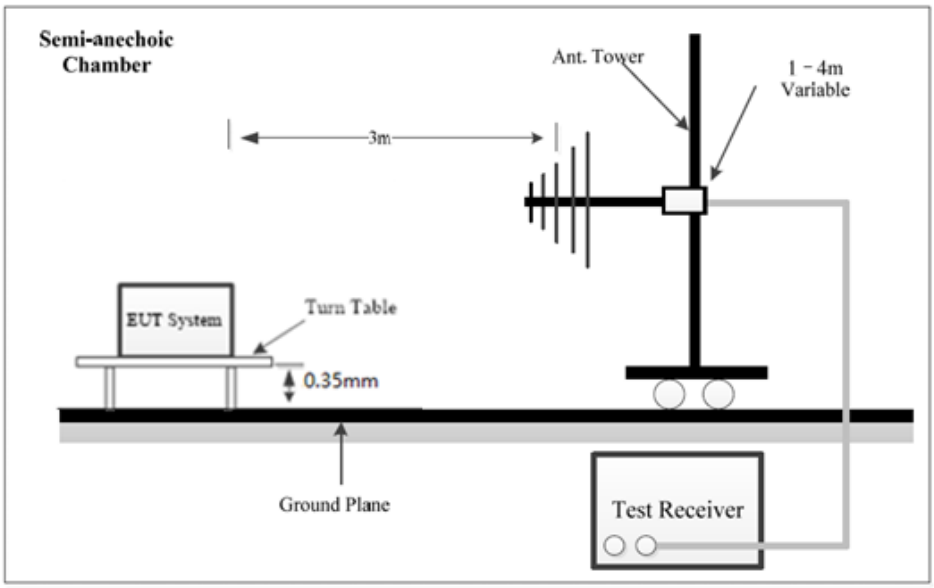
FCC §15.247 (d); §15.209; §15.205; RSS-247 Issue 4 Clause 6.6; RSS-Gen Issue5 Clause 8.10

EUT Setup

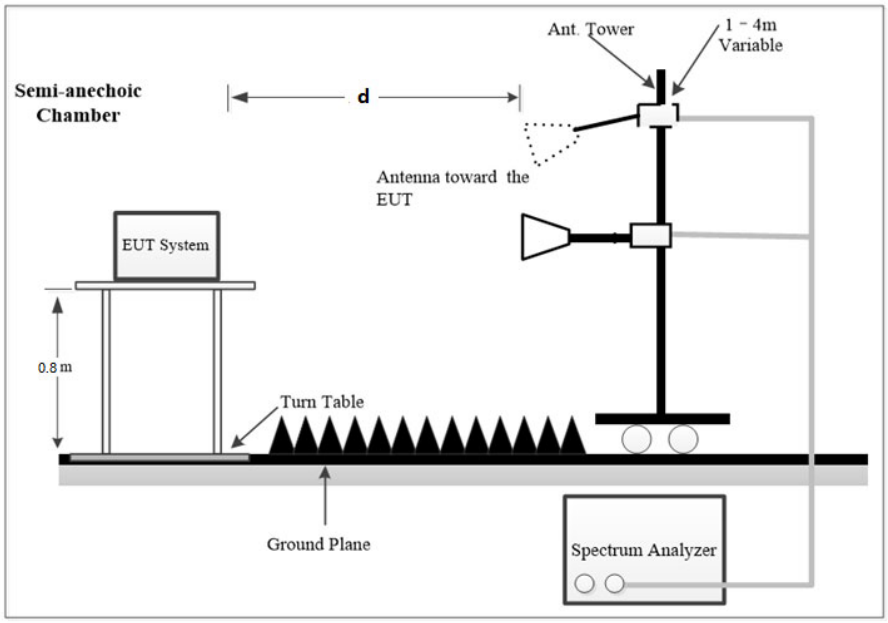
9 kHz-30MHz:



30MHz -1 GHz:



Above 1GHz:

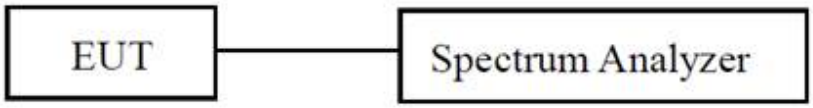


The radiated emission tests using the setup accordance with the ANSI C63.10-2020 + Cor.1-2023▲. The specification used was the FCC 15.209, FCC 15.247, RSS-247, RSS-Gen limits.

NOTE: d is testing distance;
For Radiated Emission test (1GHz-18GHz) and Bandedge Emission test, which was performed at 3 m distance.

For Radiated Emission test (18GHz-25GHz), which was performed at 1.5 m distance, according to ANSI C63.10-2020 + Cor.1-2023▲ the test result shall be extrapolated to the specified distance using an extrapolation Factor of 20dB/decade from 3m to 1.5m.
Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1.5m]) dB= 6 dB

Antenna-port conducted emission:



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was offset into the setting of test equipment:
TDF = Insert loss of RF cable
★ The Insert loss was declared by manufacturer.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Below 1GHz:

Frequency Range	RBW	VBW	Measurement
9 kHz – 150 kHz	300Hz	1 kHz	PK
	200Hz	/	QP
150 kHz – 30 MHz	10 kHz	30 kHz	PK
	9kHz	/	QP
30 MHz – 1000 MHz	100 kHz	300 kHz	PK
	120kHz	/	QP

Above 1GHz:
Pre-scan:

Duty Cycle	RBW	VBW	Measurement	Detector
Any	1MHz	3MHz	PK	PK
＞98%	1MHz	5kHz	AV	PK
＜98%	1MHz	1/T, not less than 5kHz	AV	PK

Final measurement for emission identified during the pre-scan:

Duty Cycle	RBW	VBW	Measurement	Detector
Any	1MHz	3MHz	PK	PK
＞98%	1MHz	10Hz	AV	PK
＜98%	1MHz	1/T	AV	PK

Note: T is minimum transmission duration

Test Procedure

Radiated Emissions:

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

For each measurement antenna alignment, the EUT shall be rotated through 0°to 360°on a turntable. The report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground parallel) unless the margin is greater than 20 dB, then the following statement shall be made: “all emissions were greater than 20 dB below the limit.”

Below 1GHz, if the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is at least 6 dB below the QP emission limit, there's no need to record the measured QP level of the emissions in the report.

Above 1GHz, if the measured peak level of the emissions that the measuring receiver reading level plus corrected factor is below the AV emission limit, there's no need to record the measured AV level of the emissions in the report.

Antenna-port conducted emission:

Connect the primary antenna port through an attenuator to the spectrum analyzer input; in the results, account for all losses between the unlicensed wireless device output and the spectrum analyzer. The frequency range of testing shall span 30 MHz to 10 times the operating frequency and this may be done in a single sweep or, to aid resolution, across a number of sweeps. The resolution bandwidth shall be 100 kHz, video bandwidth 300 kHz, and a coupled sweep time with a peak detector.

The limit is based on the highest in-band level across all channels measured using the same instrument settings (resolution bandwidth of 100 kHz, video bandwidth of 300 kHz, and a coupled sweep time with a peak detector). To help clearly demonstrate compliance a display line may be set at the required offset (typically 20 dB) below the highest in-band level. Where the highest in-band level is not clearly identified in the out-of-band measurements a separate spectral plot showing the in-band level shall be provided. When conducted measurements cannot be made (for example a device with integrated, non-removable antenna) radiated measurements shall be used. The reference level for determining the limit shall be established by maximizing

the field strength from the highest power channel and measuring using the resolution and video bandwidth settings and peak detector as described above. The field strength limit for spurious emissions outside of restricted-bands shall then be set at the required offset (typically 20 dB) below the highest in-band level. Radiated measurements will follow the standards measurement procedures described in Clause 6 with the exception that the resolution bandwidth shall be 100 kHz, video bandwidth 300 kHz, and a coupled sweep time with a peak detector. Note that use of wider measurement bandwidths are acceptable for measuring the spurious emissions provided that the peak detector is used and that the measured value of spurious emissions are compared to the highest in-band level measured with the 100 kHz / 300 kHz bandwidth settings to determine compliance.

Result &Margin Calculation

The Result is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

For 9 kHz to 18GHz Radiated emission test and Bandedge emissions test

Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB)

For 18GHz to 25GHz Radiated emission test
Factor (dB/m) =Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB) - Extrapolation factor (dB)

Extrapolation factor=6 dB (distance=1.5m)

Result (dBμV/m) = Reading (dBμV) + Factor (dB/m)

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dBμV/m) –Result (dBμV/m)

The spurious emission from 9 kHz-30MHz of IC RSS-Gen standard, the unit of final result on the test plots are dBμV/m, so the limit should be added by 51.5dB from dBμA/m to dBμV/m.

Test Data

Please refer to the below table and plots.

Frequency Range:	Below 1 GHz	Above 1 GHz	Antenna-port conducted emission
Temperature:	24.5 ℃	24.5℃	25.3 ℃
Relative Humidity:	56 %	56 %	61 %
ATM Pressure:	100.1 kPa	100.1kPa	100.3 kPa
Test Date:	2025-10-04	2025-10-04	2025-08-11
Test Engineer:	Wlif Wu	Wlif Wu	Braylon Ma

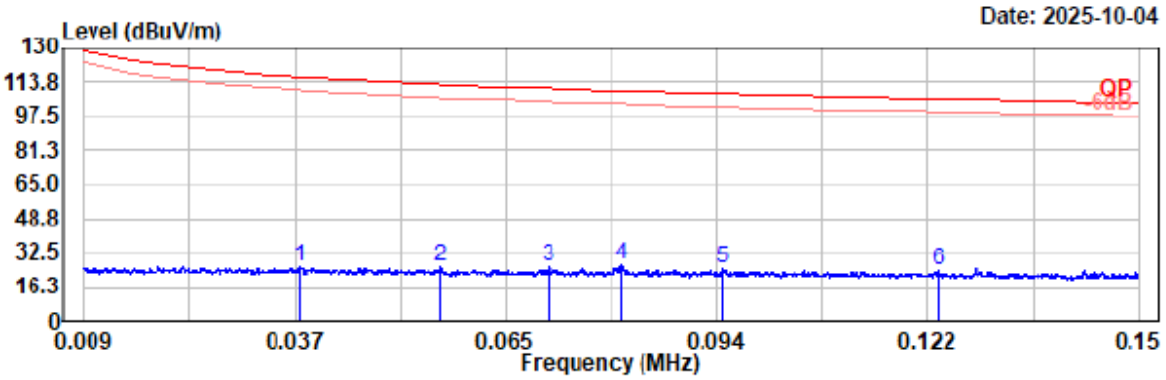
1) 9 kHz~30MHz

Pre-scan in parallel, ground-parallel and perpendicular of orientation of loop antenna, parallel is worst case.

Note: The maximum output power mode: BLE 1Mbps middle channel was tested.

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

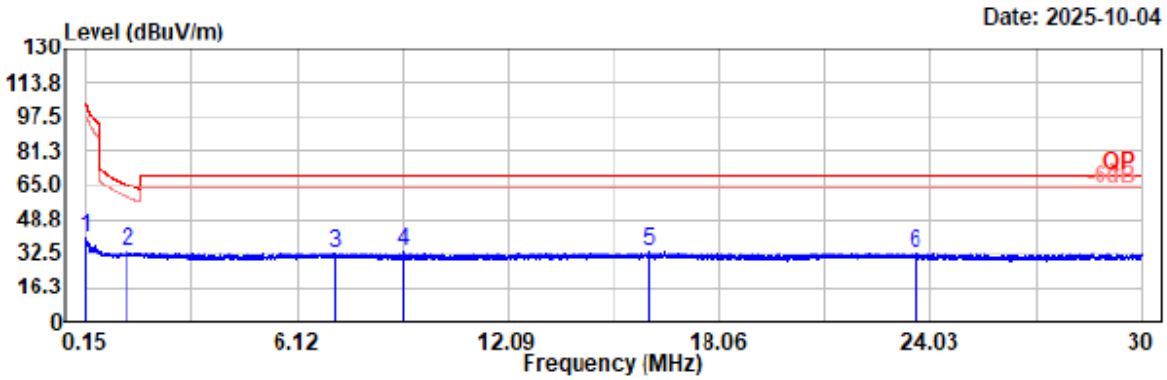


Condition: PK RBW:300Hz VBW:1kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.038	5.74	19.91	25.65	116.07	90.42	Peak
0.057	5.68	19.91	25.59	112.53	86.94	Peak
0.071	6.05	19.80	25.85	110.58	84.73	Peak
0.081	6.83	19.72	26.55	109.46	82.91	Peak
0.094	4.95	19.78	24.73	108.11	83.38	Peak
0.123	4.06	19.73	23.79	105.79	82.00	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Condition: PK RBW:10kHz VBW:30kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark
0.156	20.33	19.72	40.05	103.74	63.69	Peak
1.293	14.42	19.69	34.11	65.37	31.26	Peak
7.195	13.24	19.68	32.92	69.54	36.62	Peak
9.120	14.14	19.70	33.84	69.54	35.70	Peak
16.051	14.26	19.83	34.09	69.54	35.45	Peak
23.621	12.98	20.18	33.16	69.54	36.38	Peak

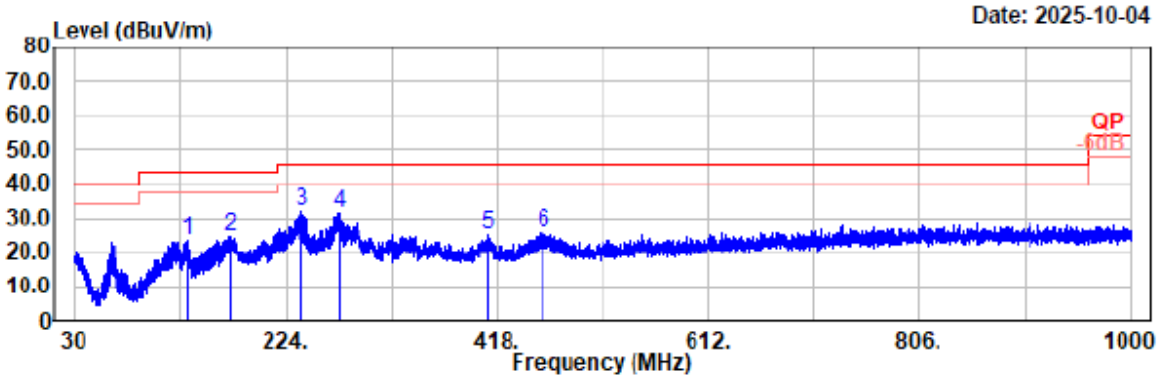
Note: dBuV/m=dBuA/m+51.5dB

2) 30MHz -1GHz

Note: The maximum output power mode: BLE 1Mbps middle channel was tested.

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

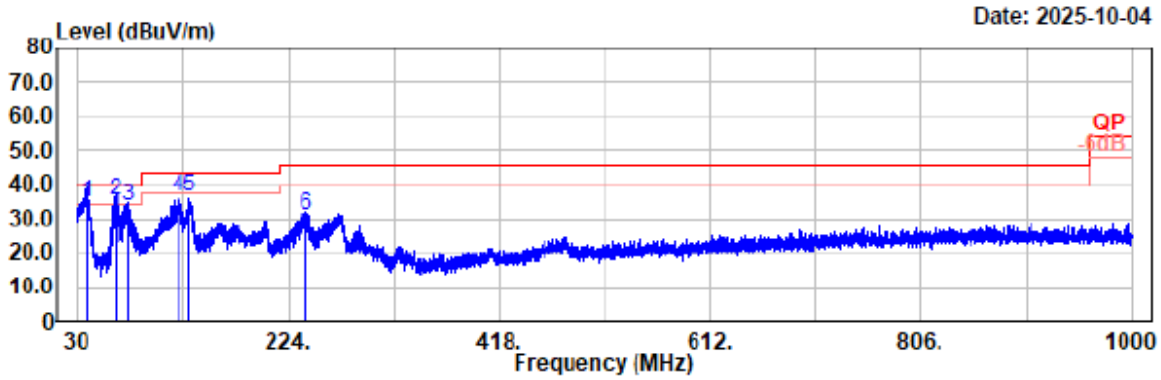


Condition: PK RBW:100kHz VBW:300kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
133.31	33.83	-10.26	23.57	43.50	19.93	Horizontal	Peak
172.88	36.83	-11.94	24.89	43.50	18.61	Horizontal	Peak
237.97	43.59	-11.83	31.76	46.00	14.24	Horizontal	Peak
273.08	41.32	-9.70	31.62	46.00	14.38	Horizontal	Peak
409.95	31.56	-6.05	25.51	46.00	20.49	Horizontal	Peak
460.78	30.60	-4.61	25.99	46.00	20.01	Horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



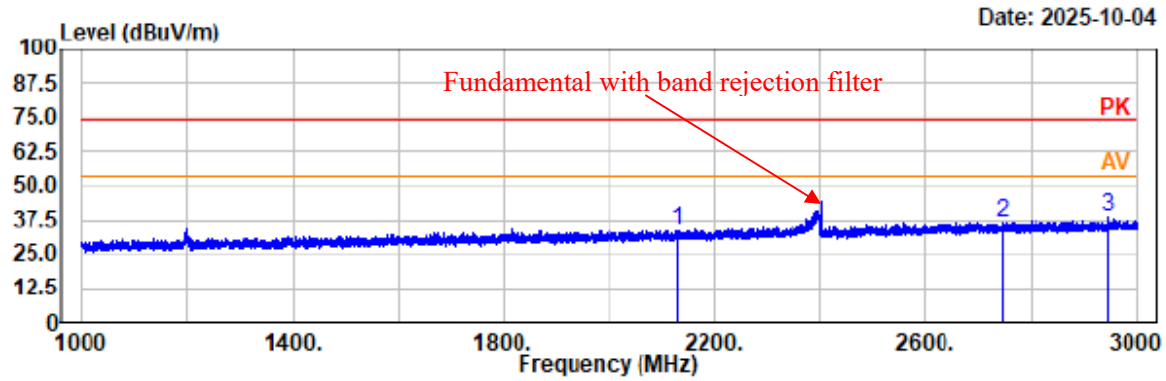
Condition: PK RBW:100kHz VBW:300kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
38.14	45.05	-10.35	34.70	40.00	5.30	Vertical	QP
64.98	52.72	-17.25	35.47	40.00	4.53	Vertical	QP
76.17	50.89	-17.16	33.73	40.00	6.27	Vertical	QP
121.57	46.78	-10.21	36.57	43.50	6.93	Vertical	Peak
132.72	46.54	-10.21	36.33	43.50	7.17	Vertical	Peak
239.42	42.48	-11.73	30.75	46.00	15.25	Vertical	Peak

3) 1GHz~3GHz

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

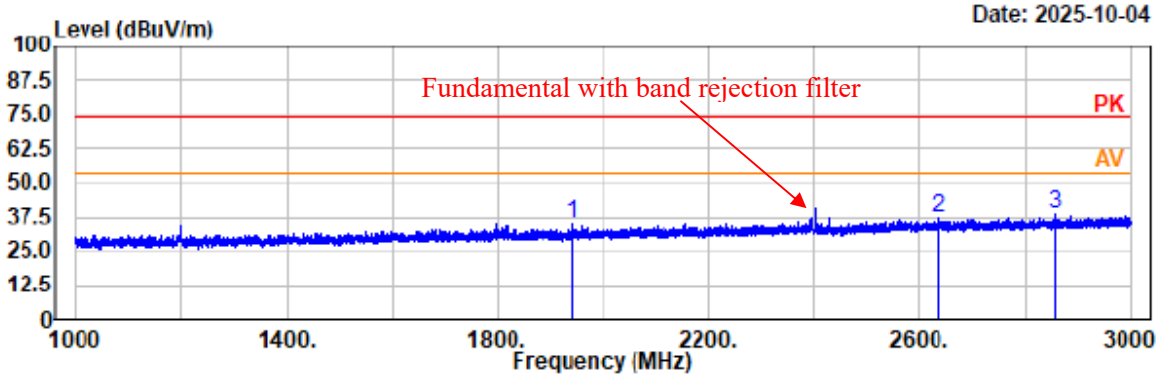


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2131.40	46.30	-12.18	34.12	74.00	39.88	horizontal	Peak
2745.20	46.68	-9.96	36.72	74.00	37.28	horizontal	Peak
2948.40	47.55	-9.22	38.33	74.00	35.67	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

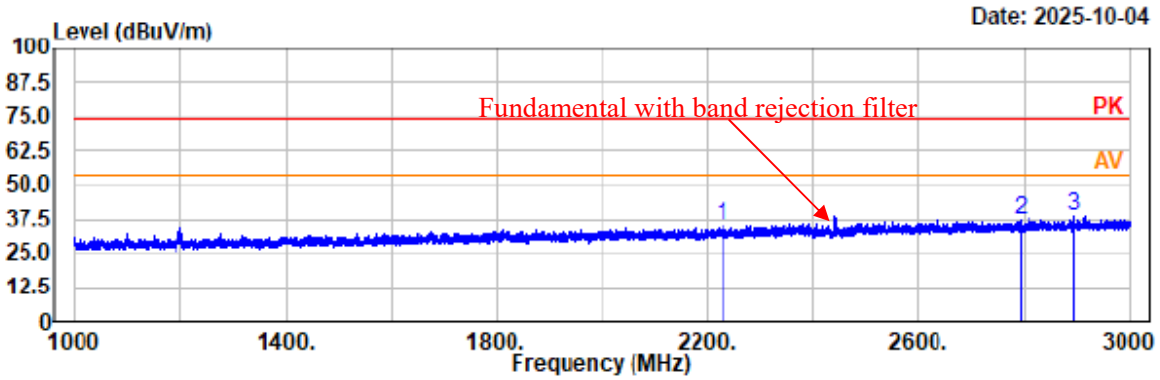


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1942.40	47.95	-12.78	35.17	74.00	38.83	vertical	Peak
2635.40	47.36	-10.26	37.10	74.00	36.90	vertical	Peak
2859.20	47.94	-9.61	38.33	74.00	35.67	vertical	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

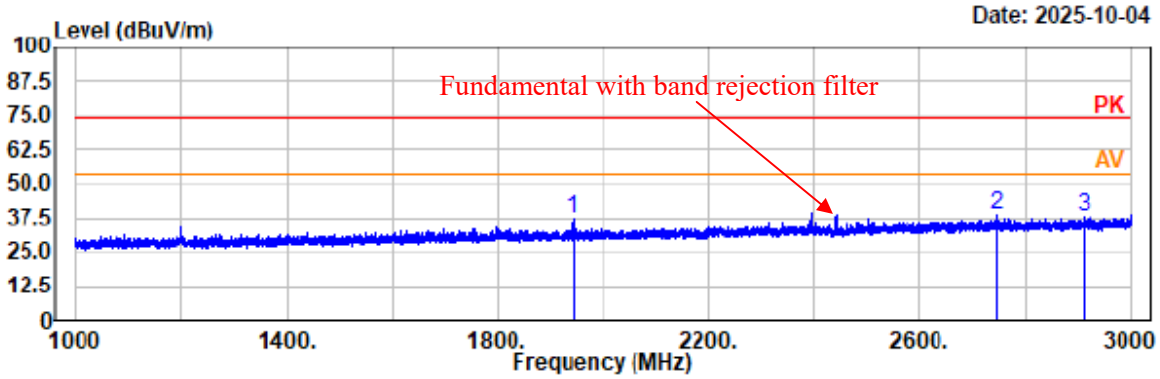


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2227.80	47.14	-11.85	35.29	74.00	38.71	horizontal	Peak
2794.20	47.14	-9.80	37.34	74.00	36.66	horizontal	Peak
2891.80	47.89	-9.57	38.32	74.00	35.68	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

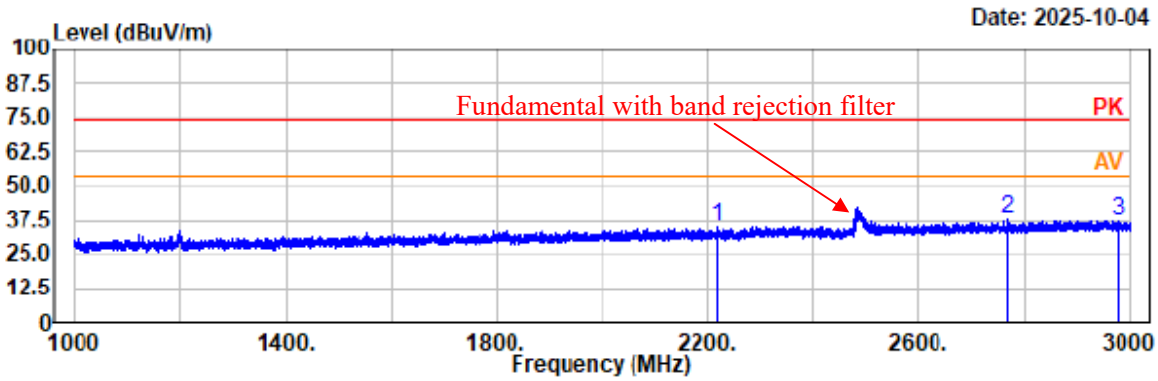


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
1942.80	49.74	-12.78	36.96	74.00	37.04	vertical	Peak
2746.40	48.49	-9.96	38.53	74.00	35.47	vertical	Peak
2911.20	47.33	-9.47	37.86	74.00	36.14	vertical	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

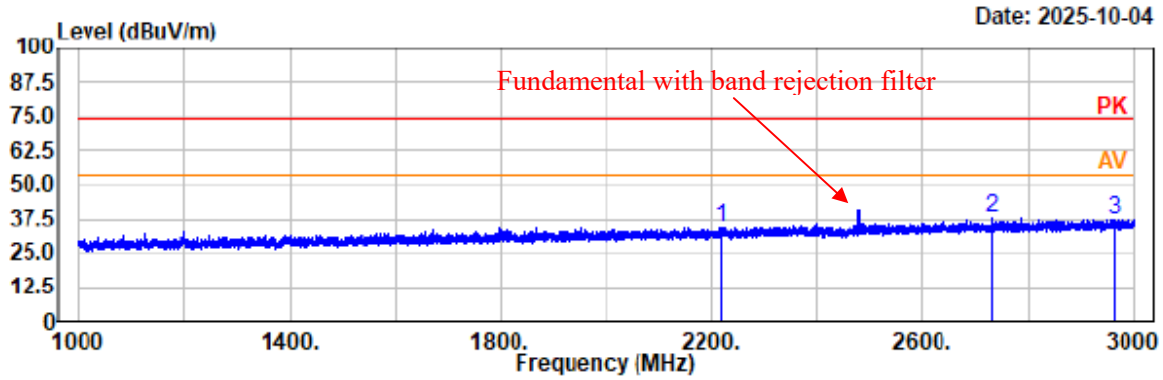


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2218.00	47.17	-11.89	35.28	74.00	38.72	horizontal	Peak
2767.00	47.48	-9.89	37.59	74.00	36.41	horizontal	Peak
2980.60	46.26	-9.05	37.21	74.00	36.79	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



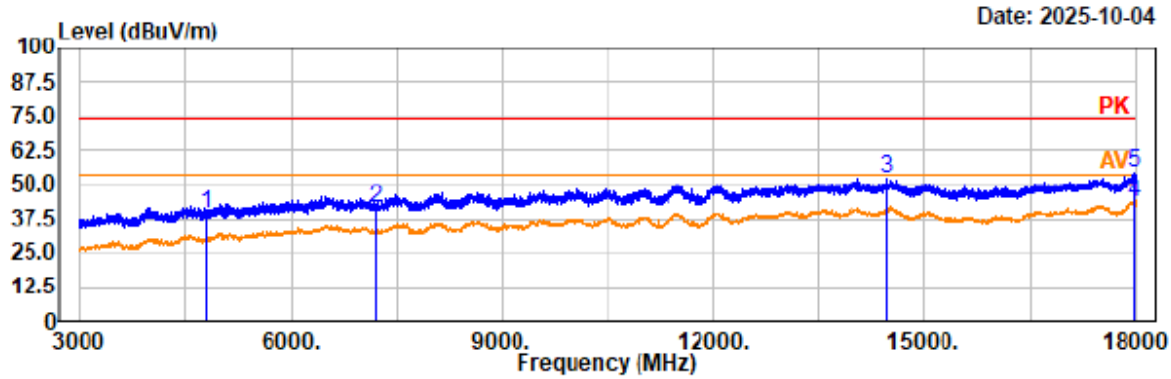
Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2217.80	46.57	-11.89	34.68	74.00	39.32	vertical	Peak
2732.80	47.74	-9.96	37.78	74.00	36.22	vertical	Peak
2965.20	46.66	-9.12	37.54	74.00	36.46	vertical	Peak

4) 3GHz~18GHz

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

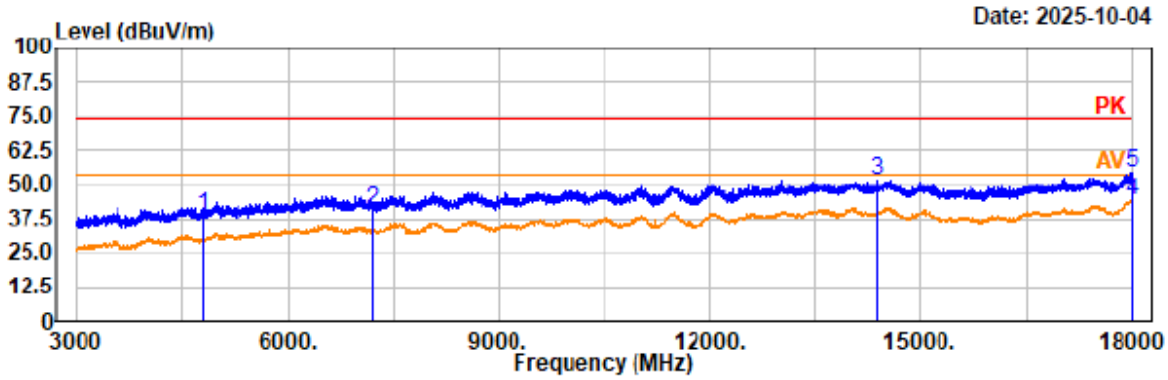


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4804.50	44.30	-5.24	39.06	74.00	34.94	horizontal	Peak
7206.00	44.24	-2.55	41.69	74.00	32.31	horizontal	Peak
14452.50	47.09	5.15	52.24	74.00	21.76	horizontal	Peak
17970.00	36.42	6.88	43.30	54.00	10.70	horizontal	Average
17970.00	47.38	6.88	54.26	74.00	19.74	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

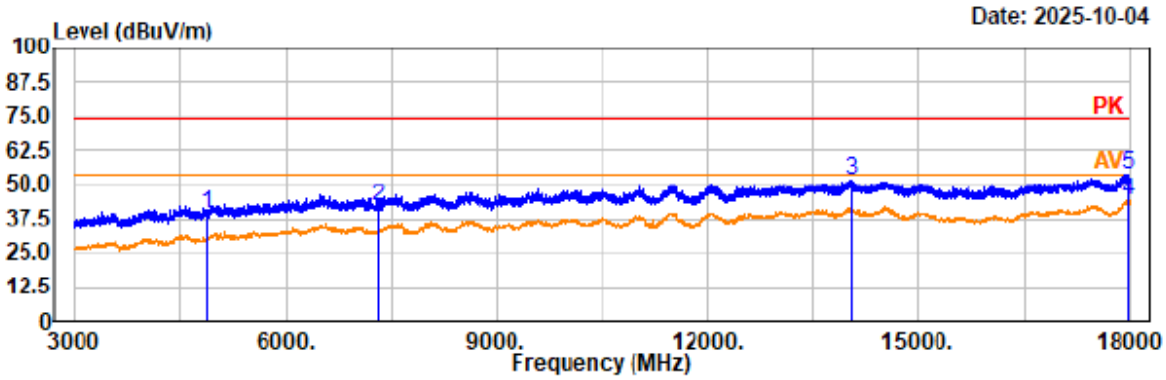


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4804.00	43.55	-5.24	38.31	74.00	35.69	vertical	Peak
7206.00	43.42	-2.55	40.87	74.00	33.13	vertical	Peak
14391.00	46.51	5.24	51.75	74.00	22.25	vertical	Peak
17995.50	36.92	6.91	43.83	54.00	10.17	vertical	Average
17995.50	47.39	6.91	54.30	74.00	19.70	vertical	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

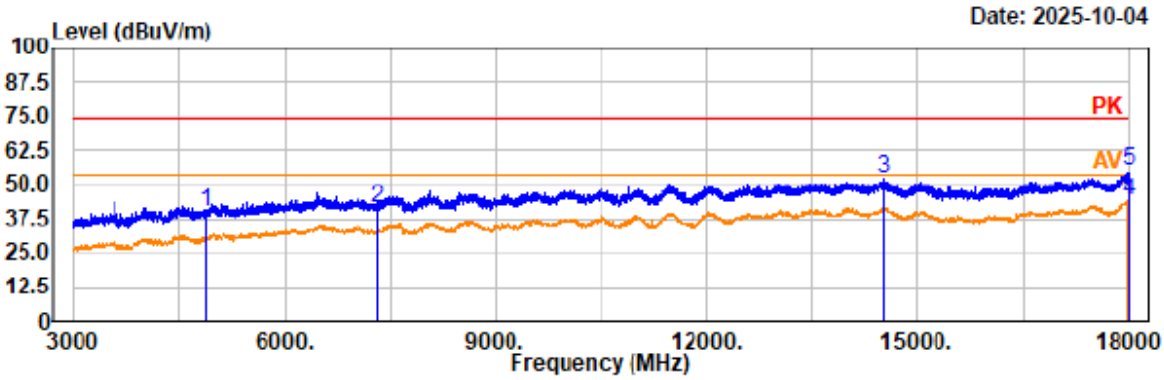


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4880.00	44.70	-5.30	39.40	74.00	34.60	horizontal	Peak
7320.00	44.35	-2.25	42.10	74.00	31.90	horizontal	Peak
14055.00	46.53	5.28	51.81	74.00	22.19	horizontal	Peak
17982.00	37.22	6.89	44.11	54.00	9.89	horizontal	Average
17982.00	47.23	6.89	54.12	74.00	19.88	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

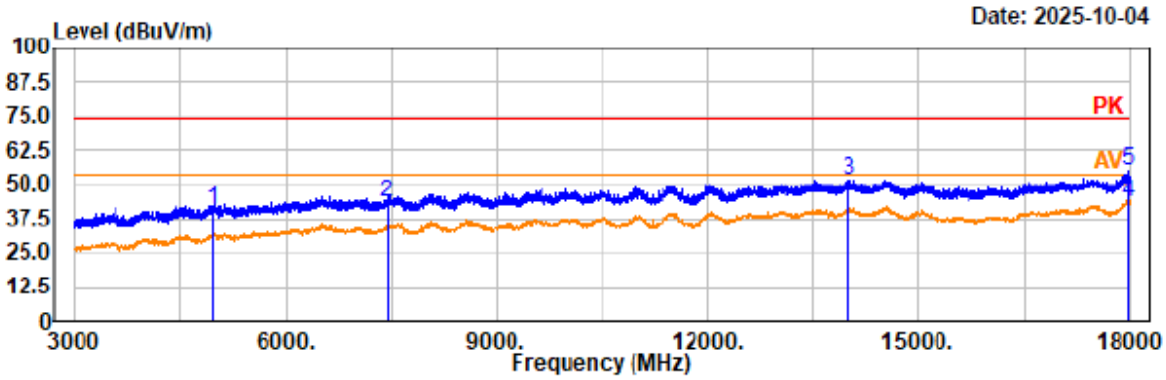


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4880.00	45.64	-5.30	40.34	74.00	33.66	vertical	Peak
7320.00	43.52	-2.25	41.27	74.00	32.73	vertical	Peak
14518.50	47.02	5.06	52.08	74.00	21.92	vertical	Peak
17999.99	37.04	6.91	43.95	54.00	10.05	vertical	Average
17999.99	48.34	6.91	55.25	74.00	18.75	vertical	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

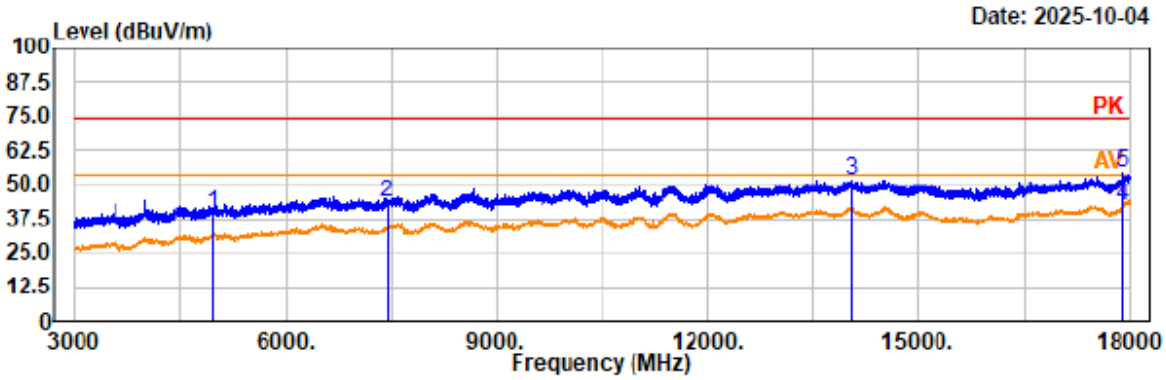


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4960.00	45.92	-5.11	40.81	74.00	33.19	horizontal	Peak
7440.00	45.53	-2.03	43.50	74.00	30.50	horizontal	Peak
14008.50	46.57	5.22	51.79	74.00	22.21	horizontal	Peak
17991.00	36.73	6.90	43.63	54.00	10.37	horizontal	Average
17991.00	48.10	6.90	55.00	74.00	19.00	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

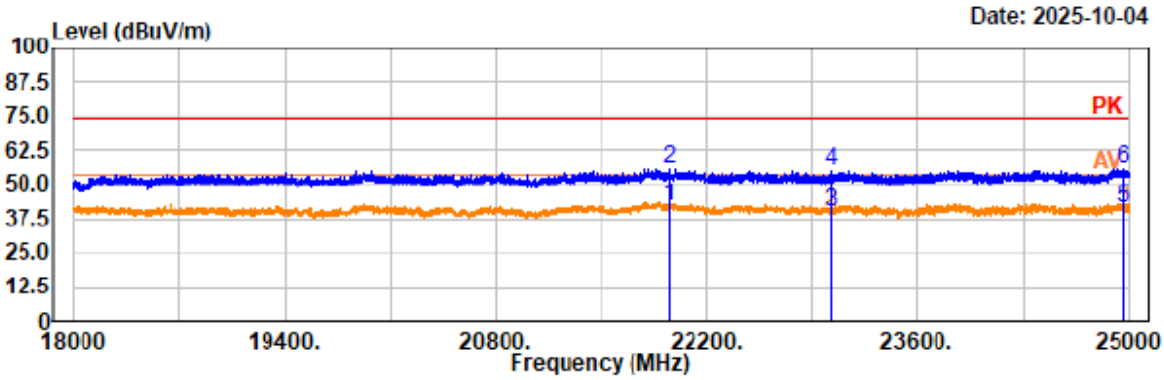
Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
4960.00	44.65	-5.11	39.54	74.00	34.46	vertical	Peak
7440.00	45.44	-2.03	43.41	74.00	30.59	vertical	Peak
14061.00	46.67	5.28	51.95	74.00	22.05	vertical	Peak
17908.50	35.56	6.81	42.37	54.00	11.63	vertical	Average
17908.50	47.91	6.81	54.72	74.00	19.28	vertical	Peak

5) Above 18GHz

Note: The maximum output power mode: BLE 1Mbps middle channel was tested.

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 1.5m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

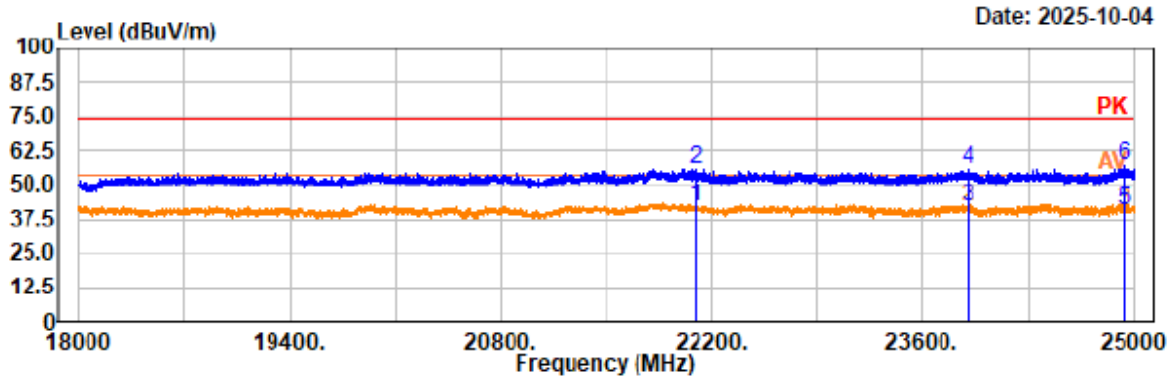


Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
21962.00	36.72	5.22	41.94	54.00	12.06	horizontal	Average
21962.00	50.61	5.22	55.83	74.00	18.17	horizontal	Peak
23026.70	35.37	4.96	40.33	54.00	13.67	horizontal	Average
23026.70	50.39	4.96	55.35	74.00	18.65	horizontal	Peak
24969.20	34.97	6.32	41.29	54.00	12.71	horizontal	Average
24969.20	49.75	6.32	56.07	74.00	17.93	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2440MHz
EUT Model: AP01
Test distance: 1.5m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz



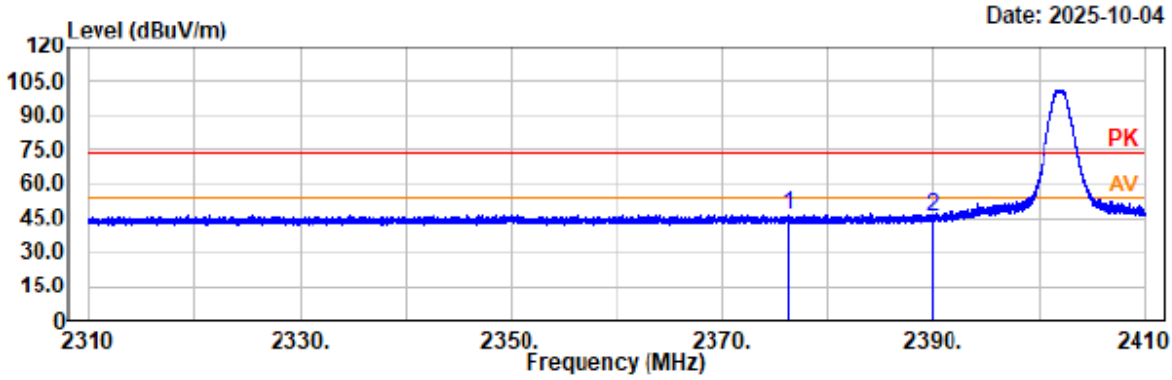
Trace: 1
Condition: PK RBW:1MHz VBW:3MHz SWT:auto
AV RBW:1MHz VBW:5kHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
22095.70	37.29	5.01	42.30	54.00	11.70	vertical	Average
22095.70	51.12	5.01	56.13	74.00	17.87	vertical	Peak
23896.10	36.60	5.37	41.97	54.00	12.03	vertical	Average
23896.10	50.25	5.37	55.62	74.00	18.38	vertical	Peak
24944.00	34.60	6.32	40.92	54.00	13.08	vertical	Average
24944.00	50.64	6.32	56.96	74.00	17.04	vertical	Peak

Restricted Bands Emissions:

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

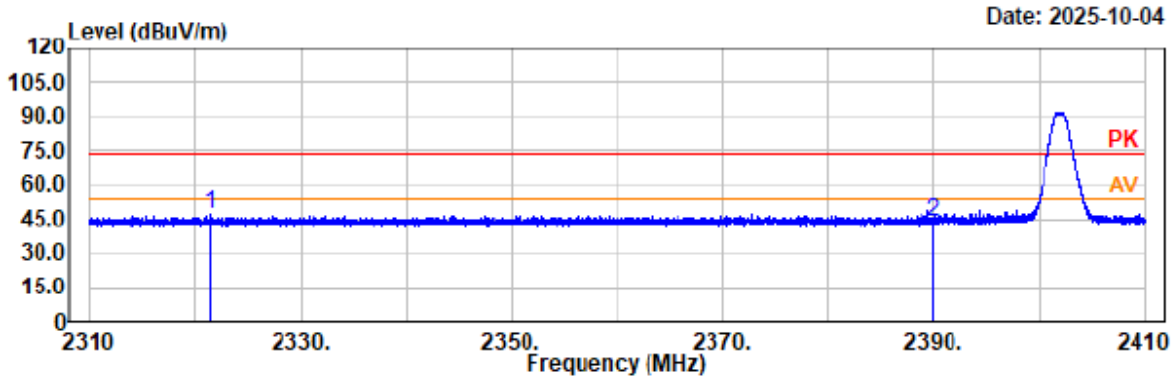


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2376.14	47.87	-1.22	46.65	74.00	27.35	horizontal	Peak
2390.00	46.60	-1.15	45.45	74.00	28.55	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2402MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

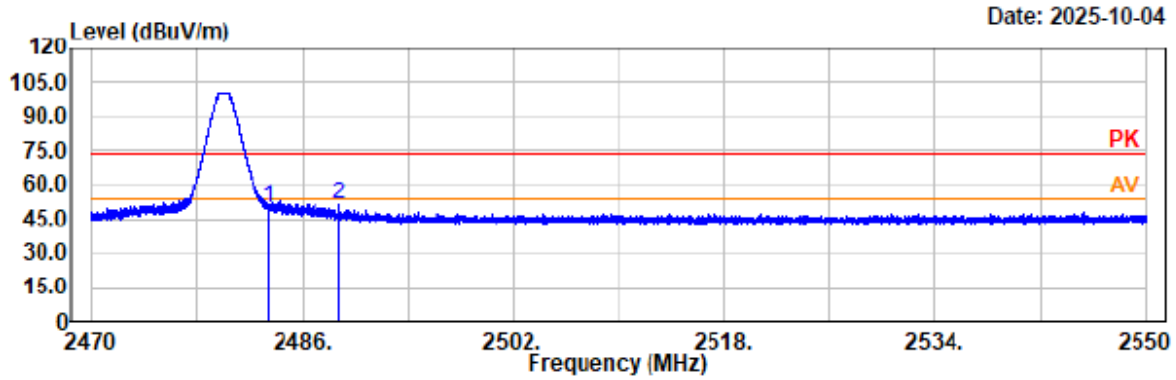


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2321.51	48.51	-1.38	47.13	74.00	26.87	vertical	Peak
2390.00	45.15	-1.15	44.00	74.00	30.00	vertical	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

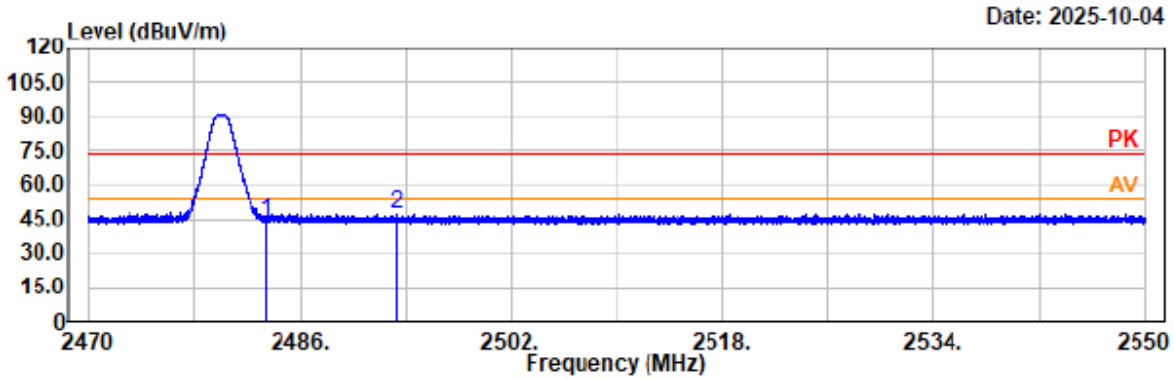


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	50.64	-0.77	49.87	74.00	24.13	horizontal	Peak
2488.77	51.65	-0.75	50.90	74.00	23.10	horizontal	Peak

Project No.: 2507W27469E-RF
Test Mode: BLE 1M 2480MHz
EUT Model: AP01
Test distance: 3m

Temp/Humi/ATM: 24.5℃/56%/100.1kPa
Tested by: Wlif Wu
Power Source: AC 120V/60Hz

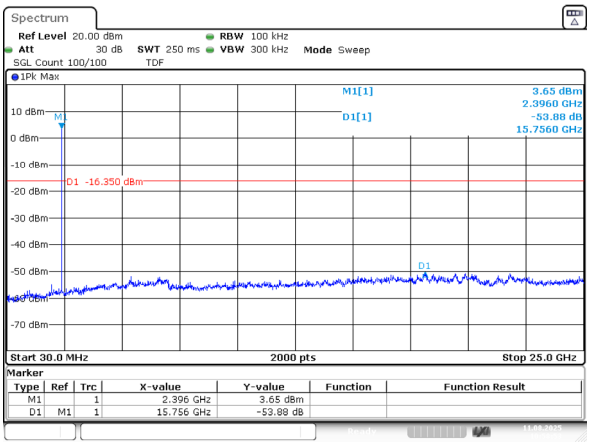


Condition: PK RBW:1MHz VBW:3MHz SWT:auto

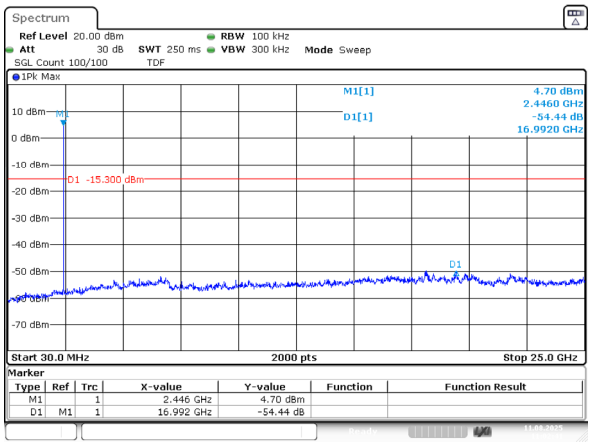
Freq	Reading	Factor	Result	Limit	Margin	Polarity	Remark
MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		
2483.50	44.84	-0.77	44.07	74.00	29.93	vertical	Peak
2493.35	47.92	-0.73	47.19	74.00	26.81	vertical	Peak

Antenna-port conducted emission

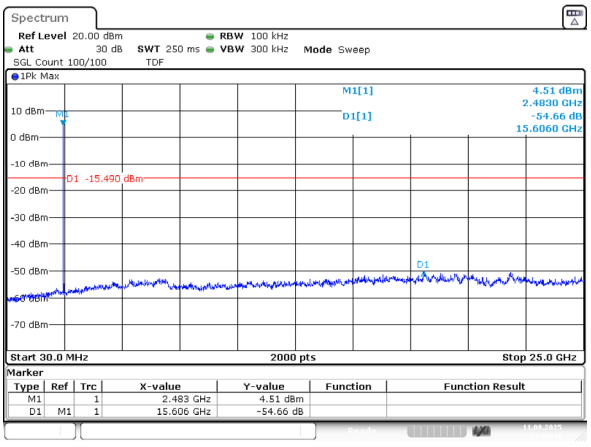
BLE_1M_Low_Channel



BLE_1M_Middle_Channel



BLE_1M_High_Channel



FCC §15.247(a) (2) & RSS-247 ISSUE 4 Clause 6.3.1 a - 6 dB EMISSION BANDWIDTH

Applicable Standard

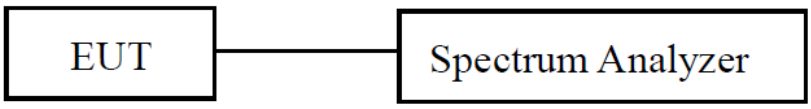
FCC§15.247 (a)(2)

Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

RSS-247 ISSUE 4 Clause 6.3.1 a

The minimum 6 dB bandwidth shall be 500 kHz.

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was offset into the setting of test equipment:
Offset = Insert loss of RF cable
★ The Insert loss was declared by manufacturer.

Test Procedure

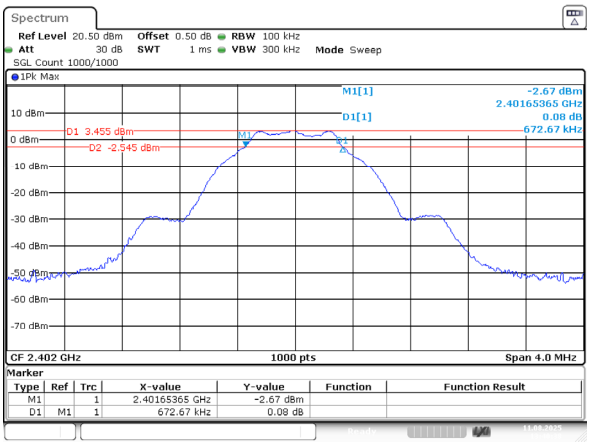
According to ANSI C63.10-2020 + Cor.1-2023▲ Section 11.8

a) Set RBW = shall be in the range of 1% to 5% of the OBW but not less than 100 kHz.
b) Set the VBW ≥ [3 × RBW].
c) Detector = peak.
d) Trace mode = max-hold.
e) Sweep = No faster than coupled (auto) time.
f) Allow the trace to stabilize.
g) Measure the maximum width of the emission by placing two markers, one at the lowest frequency and the other at the highest frequency of the envelope of the spectral display, such that each marker is at or slightly below the "−6 dB down amplitude". If a marker is below this "−6 dB down amplitude" value, then it shall be as close as possible to this value.

Test Data

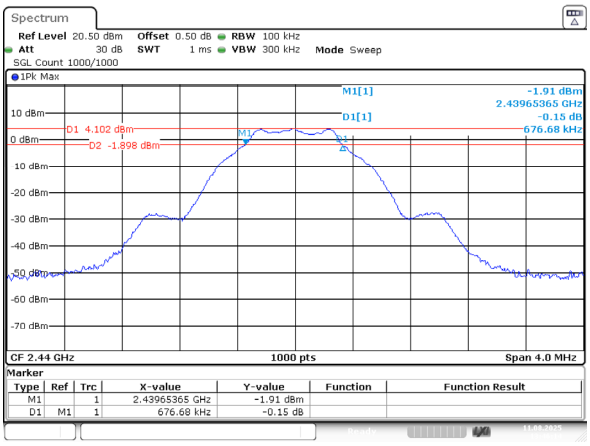
Test Mode:	Transmitting	**Test Engineer:**	Braylon Ma
Test Date:	2025-08-11	**Test Voltage:**	AC 120V/60Hz
Test Result:	Compliance	**Environment:**	Temp.: 25.3°C Humi.: 61% Atm :100.3kPa
Test Modes	**Test Frequency (MHz)**	**6 dB Bandwidth (MHz)**	**Limit (MHz)**
BLE 1Mbps	2402	0.673	≥0.5
	2440	0.677	≥0.5
	2480	0.673	≥0.5

BLE_1M_Low_Channel



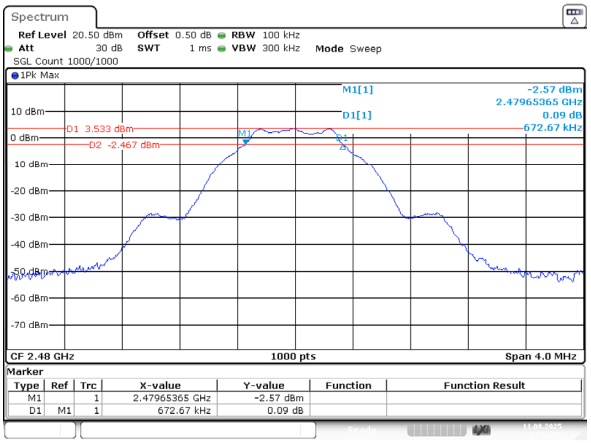
ProjectNo.:2507W27469E-RF Tester:Braylon Ma
Date: 11.AUG.2025 13:40:38

BLE_1M_Middle_Channel



ProjectNo.:2507W27469E-RF Tester:Braylon Ma
Date: 11.AUG.2025 13:46:14

BLE_1M_High_Channel



ProjectNo.:2507W27469E-RF Tester:Braylon Ma
Date: 11.AUG.2025 13:51:17

RSS-Gen ISSUE 5 Clause 6.7 – 99% OCCUPIED BANDWIDTH

Applicable Standard

According to RSS-Gen Issue 5 Clause 6.7

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum in-band power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

The transmitter shall be operated at its maximum carrier power measured under normal test conditions.

The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.

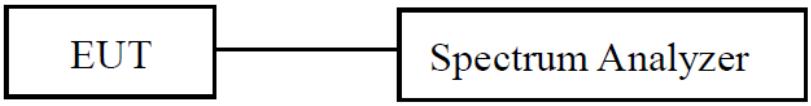
The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.

The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was offset into the setting of test equipment:

Offset = Insert loss of RF cable
★ The Insert loss was declared by manufacturer.

Test Procedure

According to ANSI C63.10-2020 + Cor.1-2023▲ Section 6.9.3

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.
The following procedure shall be used for measuring 99% power bandwidth:

a) The instrument center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be between 1.5 times and 5.0 times the OBW.

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1% to 5% of the OBW, and VBW shall be at least three times the RBW, unless otherwise specified by the applicable requirement.

c) Set the reference level of the instrument as required, keeping the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than [10 log (OBW/RBW)] below the reference level. Specific guidance is given in 4.1.6.2.

d) Step a) through step c) might require iteration to adjust within the specified range.

e) Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max-hold mode (until the trace stabilizes) shall be used.

f) Use the 99% power bandwidth function of the instrument (if available) and report the measured bandwidth.

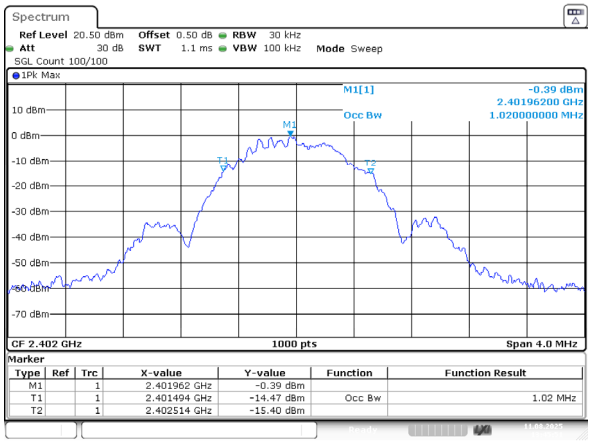
g) If the instrument does not have a 99% power bandwidth function, then the trace data points are recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5% of the total is reached; that frequency is recorded as the upper frequency. The 99% power bandwidth is the difference between these two frequencies.

h) The occupied bandwidth shall be reported by providing spectral plot(s) of the measuring instrument display; the plot axes and the scale units per division shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

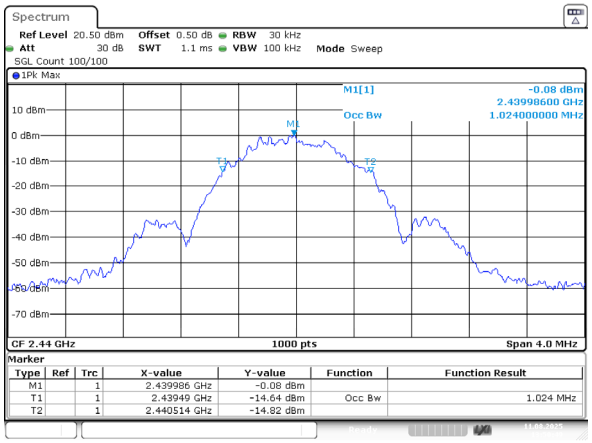
Test Data

Test Mode:	Transmitting	**Test Engineer:**	Braylon Ma
Test Date:	2025-08-11	**Test Voltage:**	AC 120V/60Hz
Test Result:	Compliance	**Environment:**	Temp.: 25.3°C Humi.: 61% Atm :100.3kPa
Test Modes	**Test Channel**	**Test Frequency (MHz)**	**99% Occupied Bandwidth (MHz)**
BLE 1Mbps	Lowest	2402	1.02
	Middle	2440	1.024
	Highest	2480	1.02

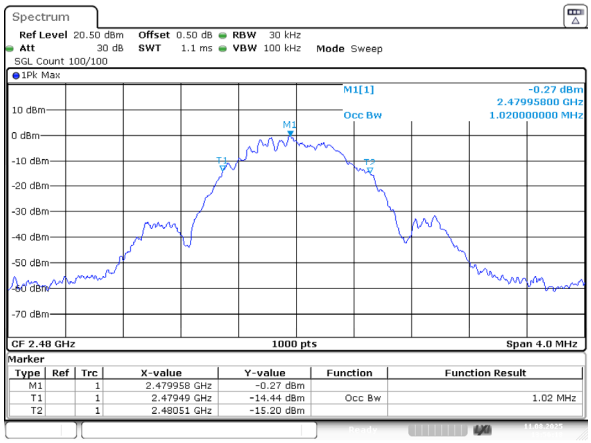
BLE_1M_Low_Channel



BLE_1M_Middle_Channel



BLE_1M_High_Channel



FCC §15.247(b) (3) & RSS-247 ISSUE 4 Clause 6.3.2 – MAXIMUM CONDUCTED OUTPUT POWER

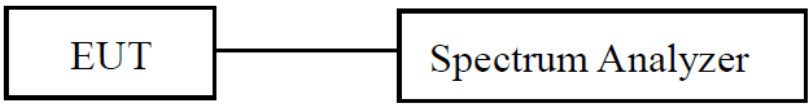
Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

According to RSS-247 Clause 6.3.2, for DTS operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W, and the e.i.r.p. shall not exceed 4 W, except as provided in section 6.5 a) and b).

As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power.

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was offset into the setting of test equipment:
Offset = Insert loss of RF cable
★ The Insert loss was declared by manufacturer.

Test Procedure

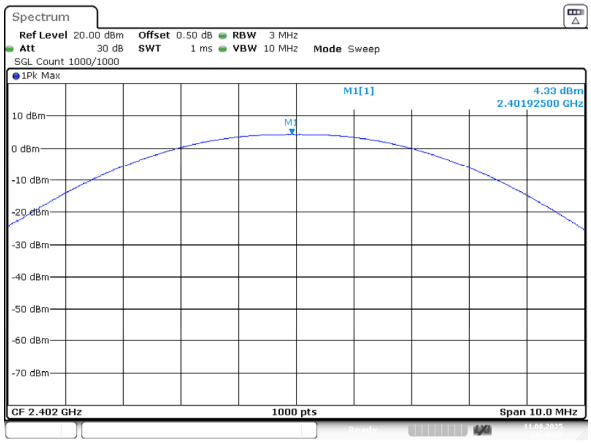
According to ANSI C63.10-2020 + Cor.1-2023▲ Section 11.9.1.1
the DTS bandwidth is available to perform the measurement:
a) Set the RBW ≥ DTS bandwidth.
b) Set VBW ≥ [3 × RBW].
c) Set span ≥ [3 × RBW].
d) Sweep time = No faster than coupled (auto) time.
e) Detector = peak.
f) Trace mode = max-hold.
g) Allow trace to fully stabilize.
h) Use peak marker function to determine the peak amplitude level.

Test Data

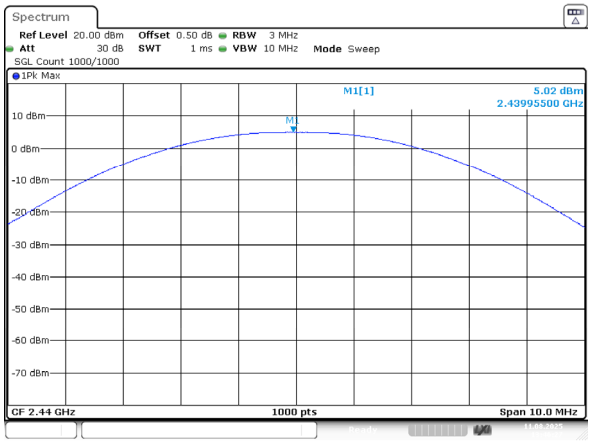
Test Mode:	Transmitting	**Test Engineer:**	Braylon Ma
Test Date:	2025-08-11	**Test Voltage:**	AC 120V/60Hz
Test Result:	Compliance	**Environment:**	Temp.: 25.3℃ Humi.: 61% Atm :100.3kPa
Test Modes	**Test Frequency (MHz)**	**Maximum Peak Conducted Output Power(dBm)**	**Limit (dBm)**
BLE 1Mbps	2402	4.33	≤30
	2440	5.02	≤30
	2480	4.46	≤30
Antenna gain(dBi):	0	Max.EIRP(dBm):	5.02
EIRP Limit for RSS-247:36 dBm			

Please refer to the below plots:

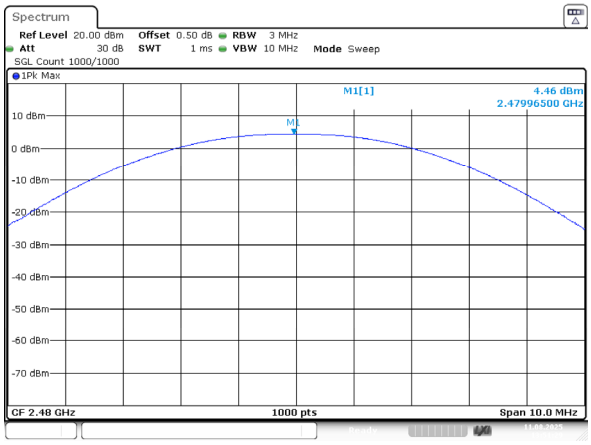
BLE_1M_Low_Channel



BLE_1M_Middle_Channel



BLE_1M_High_Channel



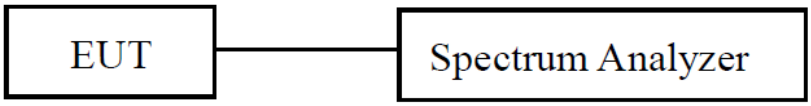
FCC §15.247(d) & RSS-247 ISSUE 4 Clause 6.6 – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

FCC §15.247 (d)
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions 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) (see §15.205(c)).

RSS-247 Issue 4 Clause 6.6
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum device, digitally modulated device, or hybrid system is operating, the RF power that is produced shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power – based on either an RF conducted or a radiated measurement – provided that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 6.3.2, the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was offset into the setting of test equipment:
Offset = Insert loss of RF cable
★ The Insert loss was declared by manufacturer.

Test Procedure

According to ANSI C63.10-2020 + Cor.1-2023▲ Section 11.11
a) Set the center frequency and span to encompass frequency range to be measured. Note that the frequency range might need to be divided into multiple frequency ranges to retain frequency resolution.
NOTE—the number of points can also be increased for large spans to retain frequency resolution
b) Set the RBW = 100 kHz.
c) Set the VBW ≥ [3 × RBW].
d) Detector = peak.
e) Sweep time = No faster than coupled (auto) time.
f) Trace mode = max-hold.
g) Allow trace to fully stabilize.
h) Use the peak marker function to determine the maximum amplitude level.

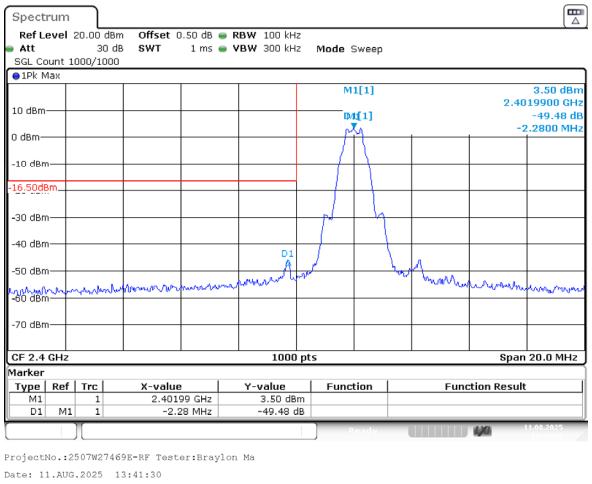
Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

Test Data

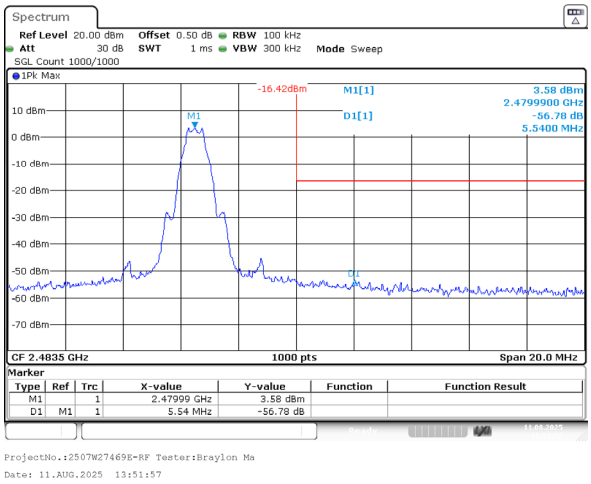
Test Mode:	Transmitting	**Test Engineer:**	Braylon Ma
Test Date:	2025-08-11	**Test Voltage:**	AC 120V/60Hz
Test Result:	Compliance	**Environment:**	Temp.: 25.3℃ Humi.: 61% Atm :100.3kPa

Please refer to the below plots:

BLE_1M_Low_Channel



BLE_1M_High_Channel



FCC §15.247(e) & RSS-247 ISSUE 4 CLAUSE 6.3.1 b- POWER SPECTRAL DENSITY

Applicable Standard

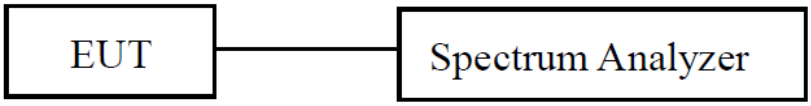
FCC §15.247 (e)

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. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

RSS-247 Clause 6.3.1 b

the transmitter power spectral density conducted from the transmitter to the antenna(s) shall not be greater than 8 dBm/3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of section 6.3.2. The power spectral density shall be determined using the same method as is used to determine the maximum conducted output power.

EUT Setup



Note: A short RF cable with low cable loss connected to the EUT antenna port. The insert loss of this RF cable was offset into the setting of test equipment:
Offset = Insert loss of RF cable
★ The Insert loss was declared by manufacturer.

Test Procedure

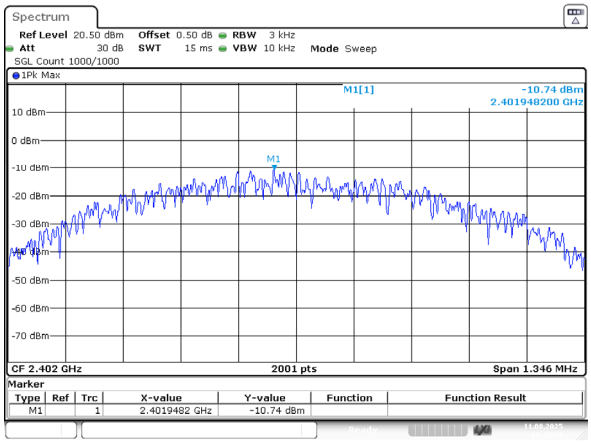
According to ANSI C63.10-2020 + Cor.1-2023▲ Section 11.10.2

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span >1.5 times the DTS bandwidth.
c) Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ [3 × RBW].
e) Detector = peak.
f) Sweep time = No faster than coupled (auto) time.
g) Trace mode = max-hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.
j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

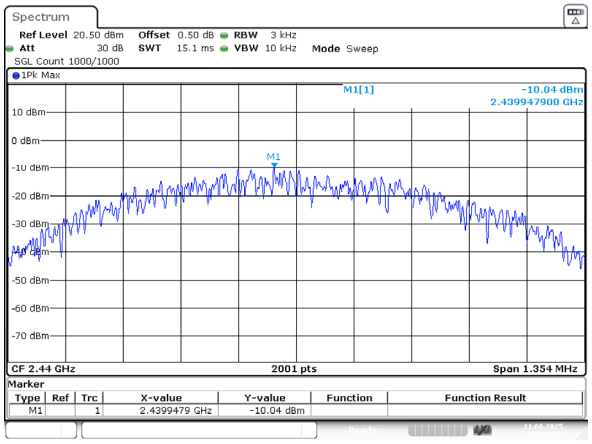
Test Data

Test Mode:	Transmitting	Test Engineer:	Braylon Ma
Test Date:	2025-08-11	Test Voltage:	AC 120V/60Hz
Test Result:	Compliance	Environment:	Temp.: 25.3°C Humi.: 61% Atm :100.3kPa
Test Modes	**Test Frequency (MHz)**	**Power Spectral Density (dBm/3kHz)**	**Limit (dBm/3kHz)**
BLE 1Mbps	2402	-10.74	≤8.00
	2440	-10.04	≤8.00
	2480	-10.58	≤8.00

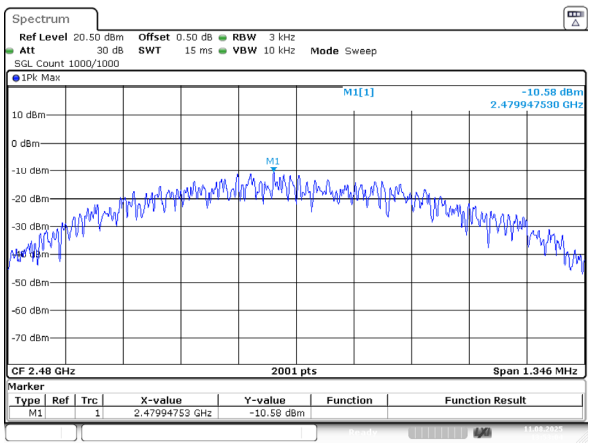
BLE_1M_Low_Channel



BLE_1M_Middle_Channel



BLE_1M_High_Channel



EUT PHOTOGRAPHS

Please refer to the attachment 2507W27469E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and 2507W27469E-RF-INP EUT INTERNAL PHOTOGRAPHS.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2507W27469E-RF-TSP TEST SETUP PHOTOGRAPHS.

Declarations

1. Bay Area Compliance Laboratories Corp. (Xiamen) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk "★".

2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.

3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.

4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95% confidence interval.

5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Xiamen).

6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

7. This report may contain data that are not covered by the accreditation scope and shall be marked with ▲.

******* END OF REPORT *******