TEST REPORT

Applicant Name:	NEXTSCAPE Inc.
Address:	16 Floor, Toranomon Hills Moritower Building, 1-23-1 Toranomon Minato-ku, Tokyo, Japan
Report Number:	SZ1231225-78191E-RF
FCC ID:	2BEZN-AL03GB00
IC:	32046-AL03GB00

Test Standard (s)

FCC PART 15.247; RSS-GEN ISSUE 5, FEBRUARY 2021 AMENDMENT 2;
RSS-247 ISSUE 3, AUGUST 2023

Sample Description

Product Type:	AlterLock Gen3
Model No.:	AL03GB
Multiple Model(s) No.:	N/A
Trade Mark:	AlterLock
Date Received:	2024/01/25
Report Date:	2024/02/05

Test Result:	Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Black Chen
RF Engineer

Approved By:

Nancy Wang
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZ1231225-78191E-RF	Original Report	2024/02/05

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

HVIN	V1.2
FVIN	V1.0.0
Product	AlterLock Gen3
Tested Model	AL03GB
Multiple Model(s)	N/A
Frequency Range	BLE 1M: 2402-2480MHz
Maximum Conducted Peak Output Power	BLE: 0.94dBm
Modulation Technique	BLE: GFSK
Antenna Specification#	2.45dBi (provided by the applicant)
Voltage Range	DC 5V from USB port or DC 3.8V from battery
Sample serial number	2FQQ-6 for Conducted and Radiated Emissions Test 2FQQ-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Adapter Information	N/A

Objective

This report is in accordance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, 15.247 rules and RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023 of the Innovation, Science and Economic Development Canada rules.

Test Methodology

All tests and measurements indicated in this document were performed in accordance ANSI C63.10-2013, RSS-GEN Issue 5, February 2021 Amendment 2 and RSS-247 Issue 3, August 2023.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF Frequency		213.55 Hz(k=2, 95% level of confidence)
RF output power, conducted		0.72 dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.75 dB(k=2, 95% level of confidence)
AC Power Lines Conducted Emissions	9 kHz~150 KHz	3.94dB(k=2, 95% level of confidence)
	150 kHz ~30MHz	3.84dB(k=2, 95% level of confidence)
Radiated Emissions	9kHz - 30MHz	3.30dB(k=2, 95% level of confidence)
	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(k=2, 95% level of confidence)
Temperature		±1℃
Humidity		±1%
Supply voltages		±0.4%

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.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) , 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0023.

SYSTEM TEST CONFIGURATION

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.

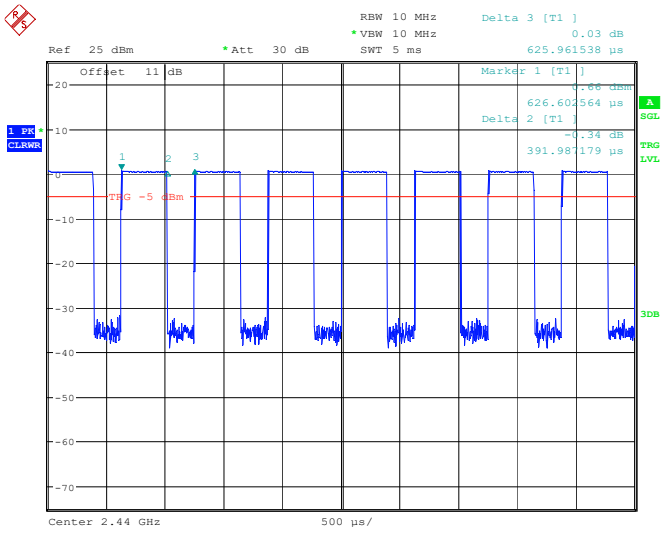
EUT Exercise Software

"nRFgo.exe"[#] software was used to test and power level is default[#]. The software and power level was provided by the applicant.

Duty cycle

Test Modes	Ton (ms)	Ton+off (ms)	Duty Cycle (%)	1/T (Hz)	VBW Setting (Hz)
BLE 1Mbps	0.392	0.626	62.62	2551	3000

BLE 1M



ProjectNo.:SZ1231225-78191E-RF Tester:Cheeb Huang
Date: 1.FEB.2024 05:42:31

Support Equipment List and Details

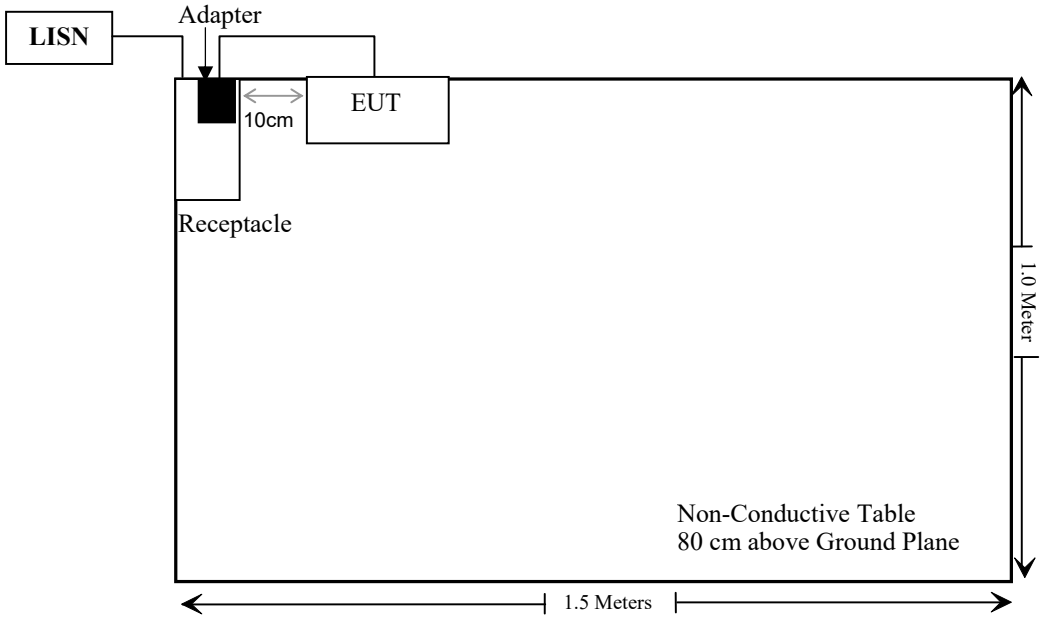
Manufacturer	Description	Model	Serial Number
TIANYIN	Adapter	TPA46050200UU	Unknown

External I/O Cable

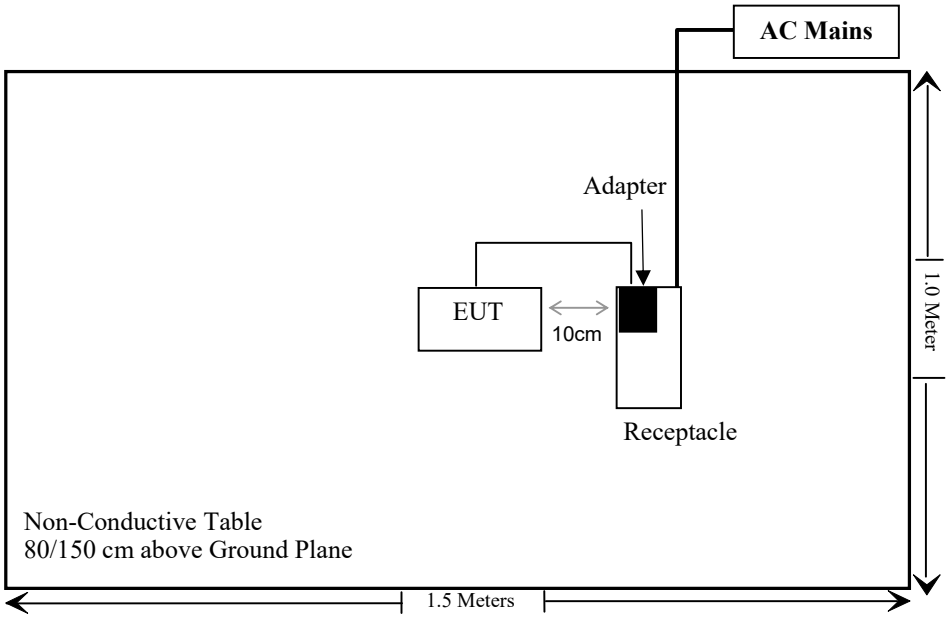
Cable Description	Length (m)	From/Port	To
Un-shielding Detachable USB Cable	1.0	EUT	Adapter
Un-shielding Detachable USB Cable	0.6	EUT	Adapter

Block Diagram of Test Setup

For Conducted Emissions:



For Radiated Emissions:



SUMMARY OF TEST RESULTS

FCC Rules	RSS Rules	Description of Test	Result
§1.1307 ,§2.1091	/	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	Compliant
/	RSS-102 § 4	Exposure Limits	Compliant
§15.203	RSS-Gen §6.8	Antenna Requirement	Compliant
§15.207 (a)	RSS-Gen §8.8	AC Line Conducted Emissions	Compliant
§15.205, §15.209, §15.247(d)	RSS-GEN § 8.10 & RSS-247 § 5.5	Spurious Emissions	Compliant
§15.247 (a)(2)	RSS- Gen§6.7 RSS-247 § 5.2 (a)	99% Occupied Bandwidth & 6 dB Emission Bandwidth	Compliant
§15.247(b)(3)	RSS-247 § 5.4(d)	Maximum Conducted Output Power	Compliant
§15.247(e)	RSS-247 § 5.2 (b)	Power Spectral Density	Compliant
§15.247(d)	RSS-247 § 5.5	100 kHz Bandwidth of Frequency Band Edge	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emissions Test					
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2023/02/08	2024/02/07
Rohde & Schwarz	LISN	ENV216	101613	2023/02/08	2024/02/07
Rohde & Schwarz	Transient Limiter	ESH3Z2	DE25985	2023/08/03	2024/08/02
Unknown	CE Cable	CE Cable	UF A210B-1-0720-504504	2023/08/03	2024/08/02
Audix	EMI Test software	E3	191218	NCR	NCR
Radiated Emissions Test					
R&S	EMI Test Receiver	ESR3	102455	2023/02/08	2024/02/07
Sonoma instrument	Pre-amplifier	310 N	186238	2023/06/08	2024/06/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2024/07/19
ETS	Passive Loop Antenna	6512	29604	2023/07/07	2024/07/06
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
Audix	EMI Test software	E3	19821b(V9)	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2023/04/18	2024/04/17
COM-POWER	Pre-amplifier	PA-122	181919	2023/06/29	2024/06/28
Schwarzbeck	Horn Anetenna	BBHA9120D(1201)	1143	2023/07/26	2024/07/25
Unknown	RF Cable	KMSE	0735	2023/10/08	2024/10/07
Unknown	RF Cable	UFA147	219661	2023/10/08	2024/10/07
Unknown	RF Cable	XH750A-N	J-10M	2023/10/08	2024/10/07
MICRO-TRONICS	2.8G Passband filter	HPM50111	F-03-EM217	2023/08/03	2024/08/02
A.H.System	Pre-amplifier	PAM-1840VH	190	2023/08/03	2024/08/02
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2023/08/03	2024/08/02

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200982	2023/12/18	2024/12/17
MARCONI	10dB Attenuator	6534/3	2942	2023/07/04	2024/07/03

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

FCC §1.1307(b) & 2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (V/m)**	**Magnetic Field Strength (A/m)**	**Power Density (mW/cm^2)**	**Averaging Time (Minutes)**
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*($180/f^2$)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Result

For worst case:

Mode	Frequency (MHz)	Antenna Gain#		Tune up conducted power#		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
BLE	2402-2480	2.45	1.76	1.0	1.26	20	0.0004	1
LTE Band 2(Only for FCC)	1850-1910	2.59	1.82	21.0	125.89	20	0.045	1
LTE Band 4	1710-1755	2.5	1.78	21.0	125.89	20	0.045	1
LTE Band 5	824-849	-1.72	0.67	21.5	141.25	20	0.019	0.549
LTE Band 12	699-716	-3.17	0.48	21.0	125.89	20	0.012	0.466

Note: The tune-up power and antenna gain was declared by the applicant.

Simultaneous transmitting consideration (worst case):

The ratio=MPE_{BLE}/limit $_{BLE}$ + $MPE_{LTE\ Band\ 2}$/limit $_{LTE\ Band\ 2}$ = 0.0004/1+0.045 /1=0.045＜1.0

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.

RSS-102 § 4 –EXPOSURE LIMITS

Applicable Standard

According to RSS-102 §4:

Table 4: RF Field Strength Limits for Devices Used by the General Public (Uncontrolled Environment)				
Frequency Range (MHz)	Electric Field (V/m rms)	Magnetic Field (A/m rms)	Power Density (W/m^2)	Reference Period (minutes)
0.003-10[21]	83	90	-	Instantaneous*
0.1-10	-	0.73/ ƒ	-	6**
1.1-10	87/ $ƒ^{0.5}$	-	-	6**
10-20	27.46	0.0728	2	6
20-48	58.07/ $ƒ^{0.25}$	0.1540/ $ƒ^{0.25}$	8.944/ $ƒ^{0.5}$	6
48-300	22.06	0.05852	1.291	6
300-6000	3.142 $ƒ^{0.3417}$	0.008335 $ƒ^{0.3417}$	0.02619 $ƒ^{0.6834}$	6
6000-15000	61.4	0.163	10	6
15000-150000	61.4	0.163	10	616000/ $ƒ^{1.2}$
150000-300000	0.158 $ƒ^{0.5}$	4.21×10^{-4} $ƒ^{0.5}$	6.67×10^{-5} ƒ	616000/$ƒ^{1.2}$

Note: ƒ is frequency in MHz.
* Based on nerve stimulation (NS).
** Based on specific absorption rate (SAR).

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm^2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \le 1$$

Mode	Frequency (MHz)	Antenna Gain#		Tune up output power#		Evaluation Distance (m)	Power Density (W/m^2)	MPE Limit (W/m^2)
		(dBi)	(numeric)	(dBm)	(W)			
BLE	2402-2480	2.45	1.76	1.0	0.001	0.2	0.004	5.35
LTE Band 4	1710-1755	2.5	1.78	21.0	0.126	0.2	0.445	4.24
LTE Band 5	824-849	-1.72	0.67	21.5	0.141	0.2	0.189	2.58
LTE Band 12	699-716	-3.17	0.48	21.0	0.126	0.2	0.121	2.30

Note: The tune-up power and antenna gain was declared by the applicant.

Simultaneous transmitting consideration (worst case):

The ratio=MPE_{BLE}/limit $_{BLE}$ + $MPE_{LTE\ Band\ 4}$/limit $_{LTE\ Band\ 4}$= 0.004/5.35+0.445 /4.24=0.106＜1.0

To maintain compliance with the ISEDC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant

FCC §15.203 & RSS-GEN §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 use of a standard antenna jack or electrical connector is prohibited.

According to RSS-GEN, 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 isotropically 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 internal antenna arrangement which was permanently attached and the maximum antenna gain[#] is 2.45dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna Type	Antenna Gain[#]	Impedance	Frequency Range
PIFA	2.45dBi	50 Ω	2.4~2.5GHz

Result: Compliant

FCC § 15.207 (a) & RSS-GEN §8.8 AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC § 15.207 (a) & RSS-GEN §8.8

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 4, as measured using a 50 μH / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 4 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Table 4 - AC Power Lines Conducted Emission Limits		
Frequency range (MHz)	Conducted limit (dBμV)	
	Quasi-Peak	Average
0.15 – 0.5	66 to 56[1]	56 to 46[1]
0.5 – 5	56	46
5 – 30	60	50

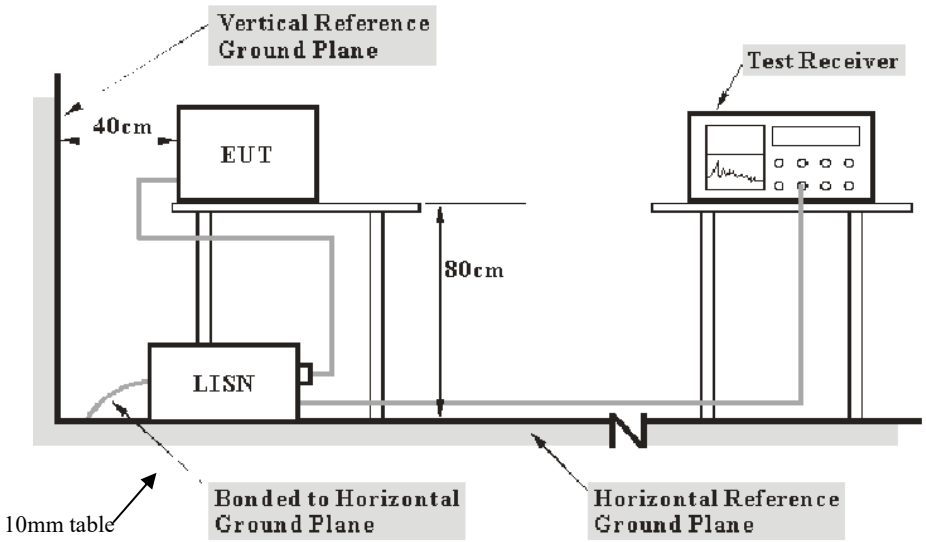
Note 1: The level decreases linearly with the logarithm of the frequency.

For an EUT with a permanent or detachable antenna operating between 150 kHz and 30 MHz, the AC power-line conducted emissions must be measured using the following configurations:

(a) Perform the AC power-line conducted emissions test with the antenna connected to determine compliance with the limits of table 4 outside the transmitter's fundamental emission band.

(b) Retest with a dummy load instead of the antenna to determine compliance with the limits of table 4 within the transmitter's fundamental emission band. For a detachable antenna, remove the antenna and connect a suitable dummy load to the antenna connector. For a permanent antenna, remove the antenna and terminate the RF output with a dummy load or network that simulates the antenna in the fundamental frequency band.

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 & RSS-247/RSS-Gen limits.

The spacing between the peripherals was 10 cm.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

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

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.

Factor & Over Limit Calculation

The factor is calculated by adding LISN VDF (Voltage Division Factor) and Cable Loss. The basic equation is as follows:

Factor = LISN VDF + Cable Loss

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

Over Limit = Level – Limit
Level = Read Level + Factor

Note: The term "cable loss" refers to the combination of a cable and a 10dB transient limiter (attenuator).

Test Data

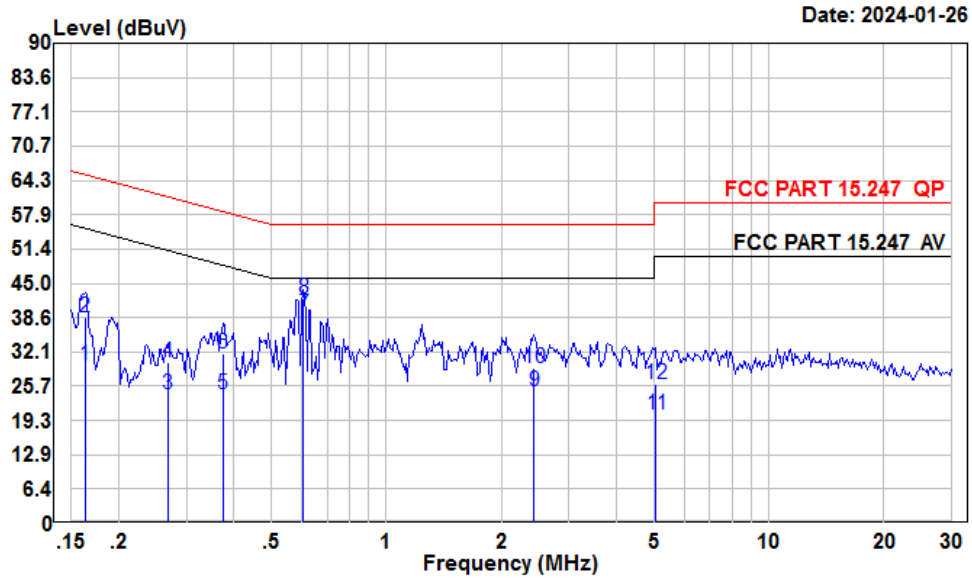
Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	38 %
ATM Pressure:	101 kPa

The testing was performed by Macy Shi on 2024-01-26.

EUT operation mode: Transmitting (maximum output power mode (low channel))

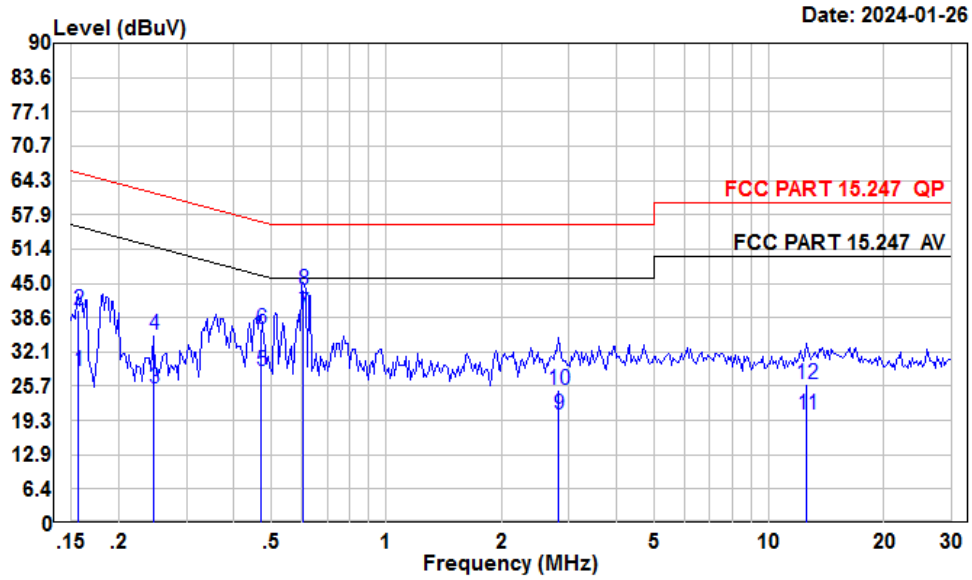
AC 120V/60 Hz, Line



Condition: Line
Project : SZ1231225-78191E-RF
Tester : Macy shi
Note : BLE

	Freq	Read Level	Level	LISN Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.16	8.82	29.57	10.60	10.15	55.30	-25.73	Average
2	0.16	18.00	38.75	10.60	10.15	65.30	-26.55	QP
3	0.27	3.50	24.31	10.63	10.18	51.16	-26.85	Average
4	0.27	9.25	30.06	10.63	10.18	61.16	-31.10	QP
5	0.37	3.44	24.30	10.67	10.19	48.43	-24.13	Average
6	0.37	11.03	31.89	10.67	10.19	58.43	-26.54	QP
7	0.61	18.33	39.25	10.70	10.22	46.00	-6.75	Average
8	0.61	21.15	42.07	10.70	10.22	56.00	-13.93	QP
9	2.44	3.93	24.88	10.74	10.21	46.00	-21.12	Average
10	2.44	8.25	29.20	10.74	10.21	56.00	-26.80	QP
11	5.06	-0.38	20.52	10.68	10.22	50.00	-29.48	Average
12	5.06	5.31	26.21	10.68	10.22	60.00	-33.79	QP

AC 120V/60 Hz, Neutral



Condition: Neutral
Project : SZ1231225-78191E-RF
Tester : Macy shi
Note : BLE

	Freq	Read Level	LISN Level	Factor	Cable Loss	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dB	dBuV	dB	
1	0.16	7.79	28.47	10.53	10.15	55.65	-27.18	Average
2	0.16	19.26	39.94	10.53	10.15	65.65	-25.71	QP
3	0.25	4.33	25.25	10.72	10.20	51.86	-26.61	Average
4	0.25	14.51	35.43	10.72	10.20	61.86	-26.43	QP
5	0.47	7.54	28.50	10.79	10.17	46.49	-17.99	Average
6	0.47	15.57	36.53	10.79	10.17	56.49	-19.96	QP
7	0.61	18.68	39.53	10.63	10.22	46.00	-6.47	Average
8	0.61	23.02	43.87	10.63	10.22	56.00	-12.13	QP
9	2.82	-0.59	20.36	10.70	10.25	46.00	-25.64	Average
10	2.82	4.17	25.12	10.70	10.25	56.00	-30.88	QP
11	12.58	-0.47	20.34	10.63	10.18	50.00	-29.66	Average
12	12.58	5.38	26.19	10.63	10.18	60.00	-33.81	QP

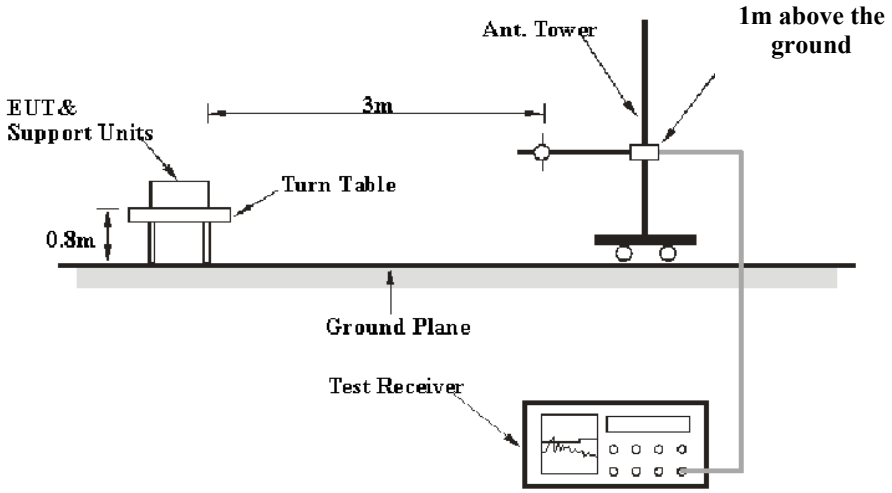
FCC §15.209, §15.205 & §15.247(D), RSS-GEN § 8.10 & RSS-247 § 5.5 – UNWANTED EMISSION FREQUENCIES AND RESTRICTED BANDS

Applicable Standard

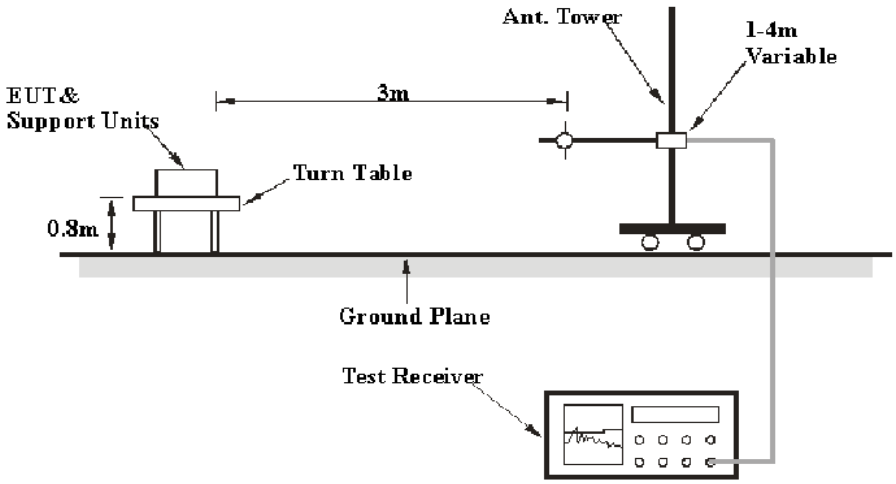
FCC §15.247 (d); §15.209; §15.205; RSS-247 §5.5, RSS-GEN §8.10.

EUT Setup

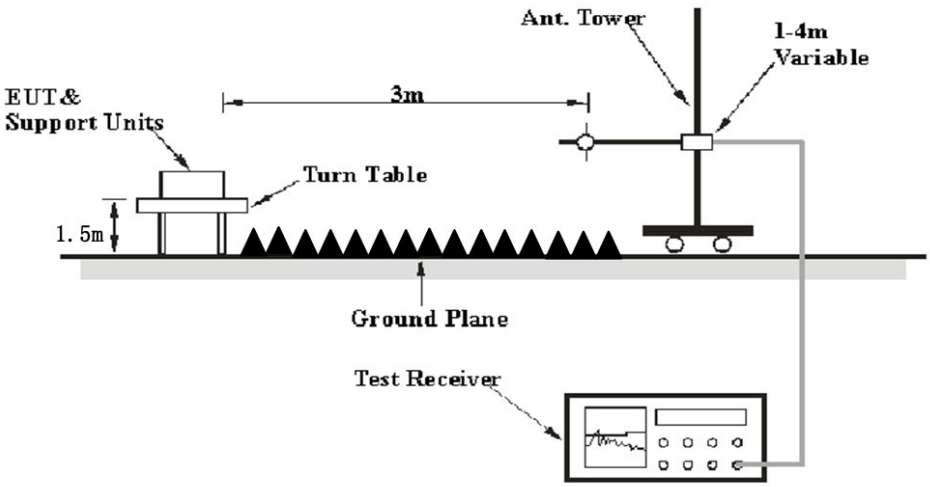
9 kHz-30MHz:



30MHz-1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3meters test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.205, FCC 15.209, FCC 15.247, RSS-Gen and RSS-247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

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:

9 kHz-1GHz:

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

1-25GHz:

Measurement	Duty cycle	RBW	Video B/W
PK	Any	1MHz	3 MHz
AV	>98%	1MHz	10 Hz
	<98%	1MHz	≥1/T

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

Test Procedure

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

All final data was recorded in Quasi-peak detection mode except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz, average detection modes for frequency bands 9–90 kHz and 110–490 kHz, peak and average detection modes for frequencies above 1 GHz.

Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

Repeat above procedures until all measured frequencies were complete.

Factor & Over Limit/ Margin Calculation

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

Factor = Antenna Factor + Cable Loss - Amplifier Gain

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

Over Limit/Margin = Level / Corrected Amplitude – Limit
Level / Corrected Amplitude = Read Level + Factor

Test Results Summary

According to the data in the following table, the EUT complied with the FCC 15.205, FCC 15.209, FCC 15.247, RSS-Gen and RSS-247.

Test Data

Environmental Conditions

Temperature:	22~24.9 ℃
Relative Humidity:	50~55 %
ATM Pressure:	101 kPa

The testing was performed by Warren Huang on 2024-01-27for below 1GHz and Tyler Wu from 2024-01-24 to 2024-01-26 for above 1GHz.

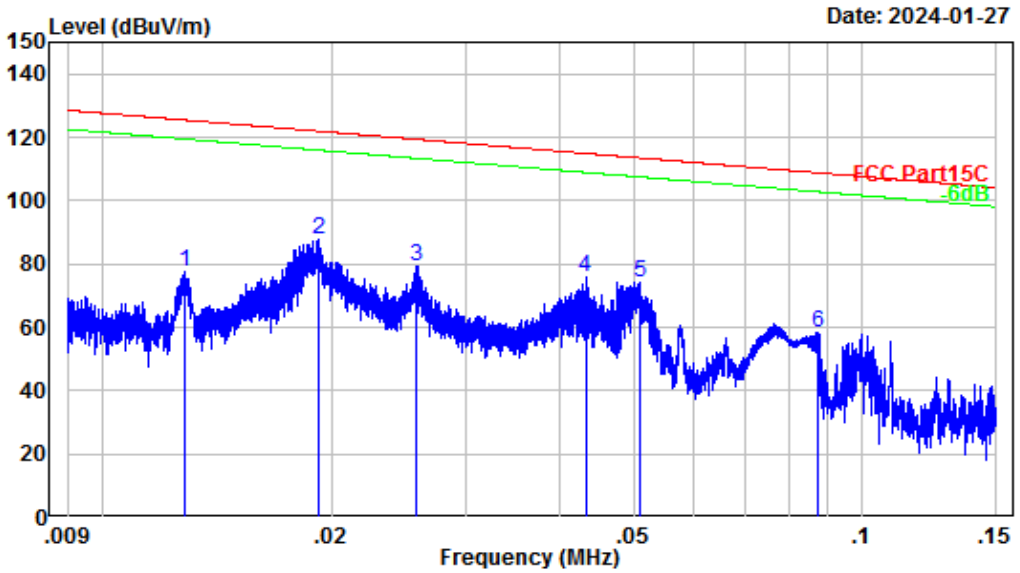
EUT operation mode: Transmitting

Note: Pre-scan in the X, Y and Z axes of orientation, the worst case X-axis of orientation was recorded;

9 kHz-30MHz: *(maximum output power mode (low channel))*

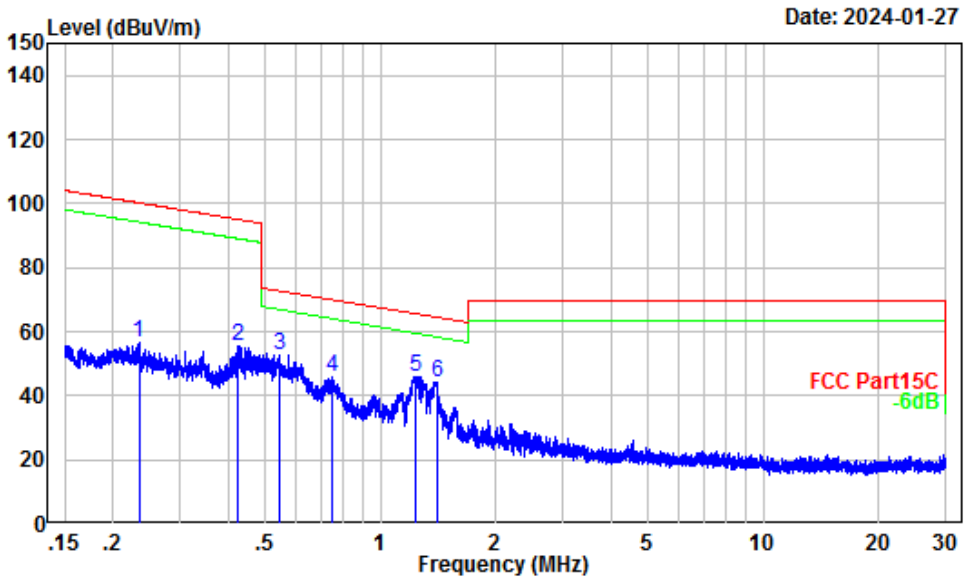
Note: When the test result of peak was less than the limit of QP/Average more than 6dB, just peak value were recorded.

Parallel (worst case):




```
Site           : chamber
Condition      : 3m
Project Number: SZ1231225-78191E-RF
Note           : BLE
Tester         : Warren Huang
```

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.01	52.43	24.92	77.35	125.43	-48.08	Peak
2	0.02	50.46	37.20	87.66	121.91	-34.25	Peak
3	0.03	48.44	30.81	79.25	119.36	-40.11	Peak
4	0.04	43.08	32.69	75.77	114.89	-39.12	Peak
5	0.05	40.85	33.14	73.99	113.44	-39.45	Peak
6	0.09	35.88	22.70	58.58	108.78	-50.20	Peak

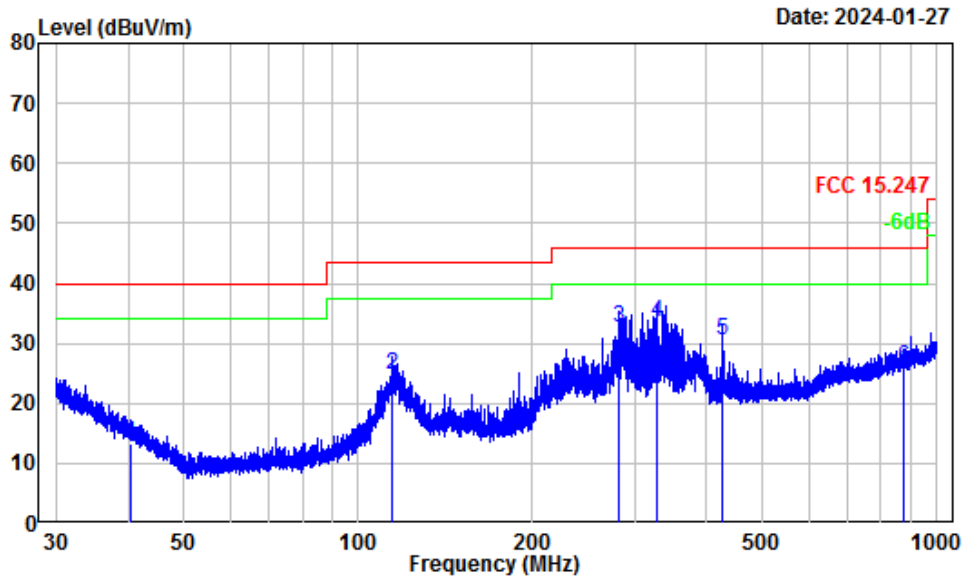


Site : chamber
Condition : 3m
Project Number: SZ1231225-78191E-RF
Note : BLE
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	0.23	27.77	28.95	56.72	100.22	-43.50	Peak
2	0.43	21.98	33.66	55.64	95.02	-39.38	Peak
3	0.55	20.35	32.39	52.74	72.81	-20.07	Peak
4	0.75	17.63	28.19	45.82	70.05	-24.23	Peak
5	1.23	14.31	31.68	45.99	65.64	-19.65	Peak
6	1.40	13.45	30.74	44.19	64.47	-20.28	Peak

30MHz-1GHz: *(maximum output power mode (low channel))*

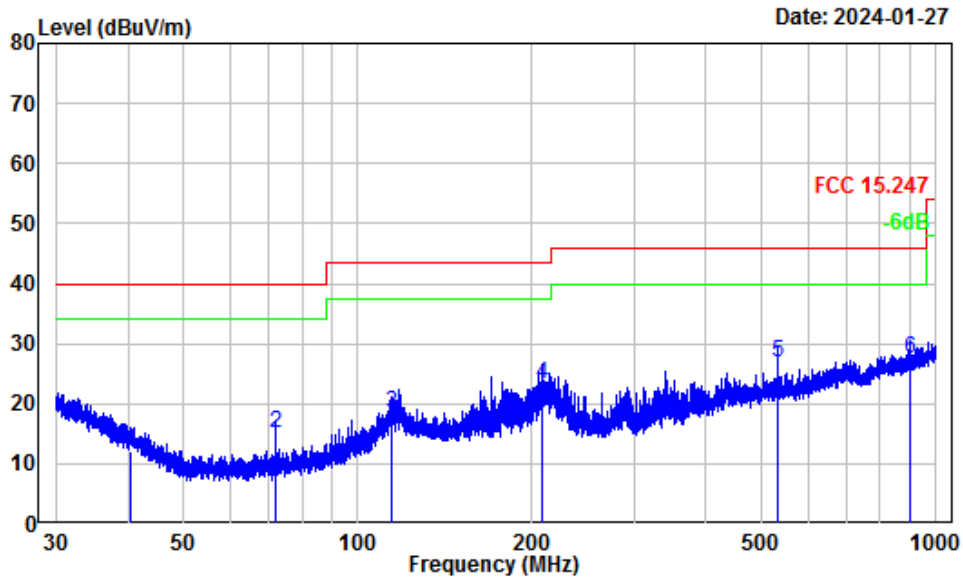
Horizontal



Site : chamber
Condition : 3m Horizontal
Project Number: SZ1231225-78191E-RF
Note : BLE
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.33	-10.60	23.74	13.14	40.00	-26.86	QP
2	114.41	-10.79	35.52	24.73	43.50	-18.77	QP
3	281.38	-10.66	43.40	32.74	46.00	-13.26	QP
4	329.18	-9.89	43.26	33.37	46.00	-12.63	QP
5	426.15	-6.45	36.81	30.36	46.00	-15.64	QP
6	874.86	0.60	25.47	26.07	46.00	-19.93	QP

Vertical



Site : chamber
Condition : 3m Vertical
Project Number: SZ1231225-78191E-RF
Note : BLE
Tester : Warren Huang

	Freq	Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dBuV	dBuV/m	dBuV/m	dB	
1	40.45	-12.14	24.07	11.93	40.00	-28.07	QP
2	72.02	-17.28	32.40	15.12	40.00	-24.88	QP
3	114.46	-11.63	30.10	18.47	43.50	-25.03	QP
4	207.85	-12.23	35.53	23.30	43.50	-20.20	QP
5	531.50	-5.01	31.80	26.79	46.00	-19.21	QP
6	900.15	0.61	26.76	27.37	46.00	-18.63	QP

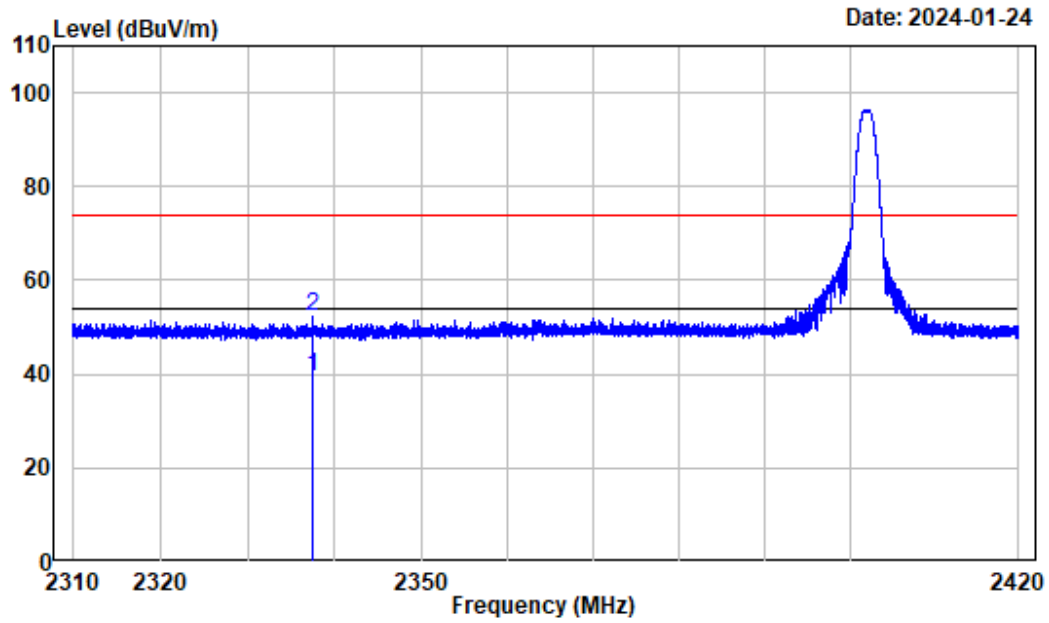
1-25 GHz:

Frequency (MHz)	Receiver		Polar (H/V)	Factor (dB/m)	Corrected Amplitude (dBμV/m)	Limit (dBμV/m)	Margin (dB)
	Reading (dBμV)	PK/Ave					
BLE 1M							
Low Channel(2402MHz)							
4804.00	46.89	PK	H	2.42	49.31	74	-24.69
4804.00	34.67	AV	H	2.42	37.09	54	-16.91
4804.00	46.12	PK	V	2.42	48.54	74	-25.46
4804.00	34.54	AV	V	2.42	36.96	54	-17.04
Middle Channel(2440MHz)							
4880.00	46.87	PK	H	2.68	49.55	74	-24.45
4880.00	35.18	AV	H	2.68	37.86	54	-16.14
4880.00	46.32	PK	V	2.68	49.00	74	-25.00
4880.00	34.75	AV	V	2.68	37.43	54	-16.57
High Channel(2480 MHz)							
4960.00	46.86	PK	H	2.68	49.54	74	-24.46
4960.00	35.48	AV	H	2.68	38.16	54	-15.84
4960.00	46.51	PK	V	2.68	49.19	74	-24.81
4960.00	34.92	AV	V	2.68	37.60	54	-16.40

Note:
Corrected Factor = Antenna factor (RX) + Cable Loss – Amplifier Factor
Corrected Amplitude = Corrected Factor + Reading
Margin = Corrected. Amplitude - Limit
The other spurious emission which is in the noise floor level was not recorded.

Test plots for Band Edge Measurements (Radiated):

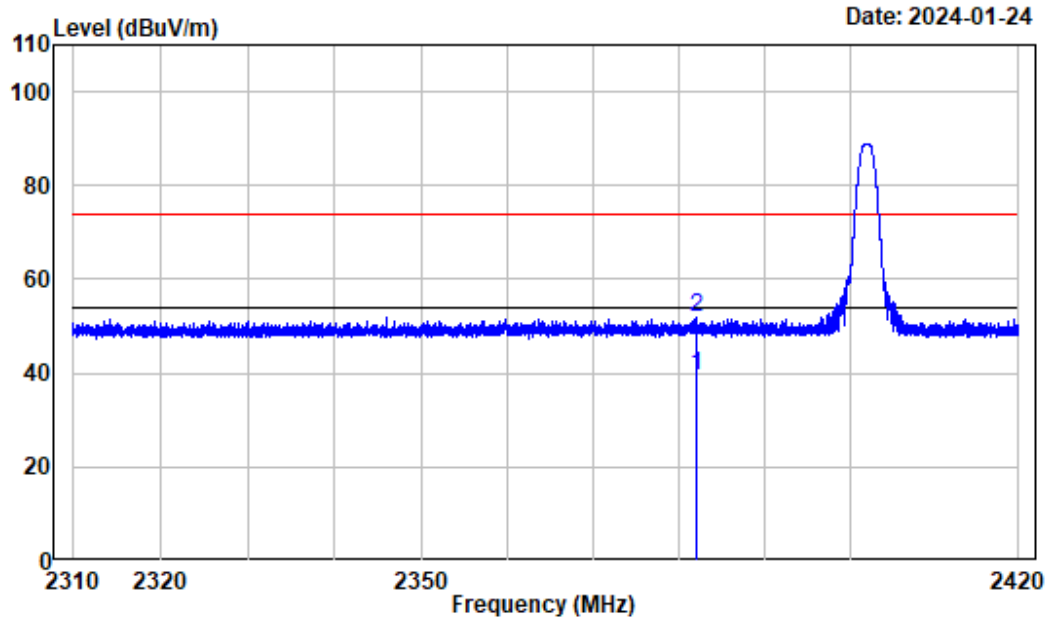
BLE 1M			
Test Channel:	**2402MHz**	**Ant. Polar. :**	**Horizontal**



Condition : Horizontal
Project No.: SZ1231225-78191E
Tester : Tyler
Note : BLE1M

	Freq	Factor	Read Level	Level	Limit Line	Remark	Over Limit
	MHz	dB/m	dBuV	dBuV/m	dBuV/m		dB
1	2337.486	-3.13	42.62	39.49	54.00	Average	-14.51
2	2337.486	-3.13	55.26	52.13	74.00	peak	-21.87

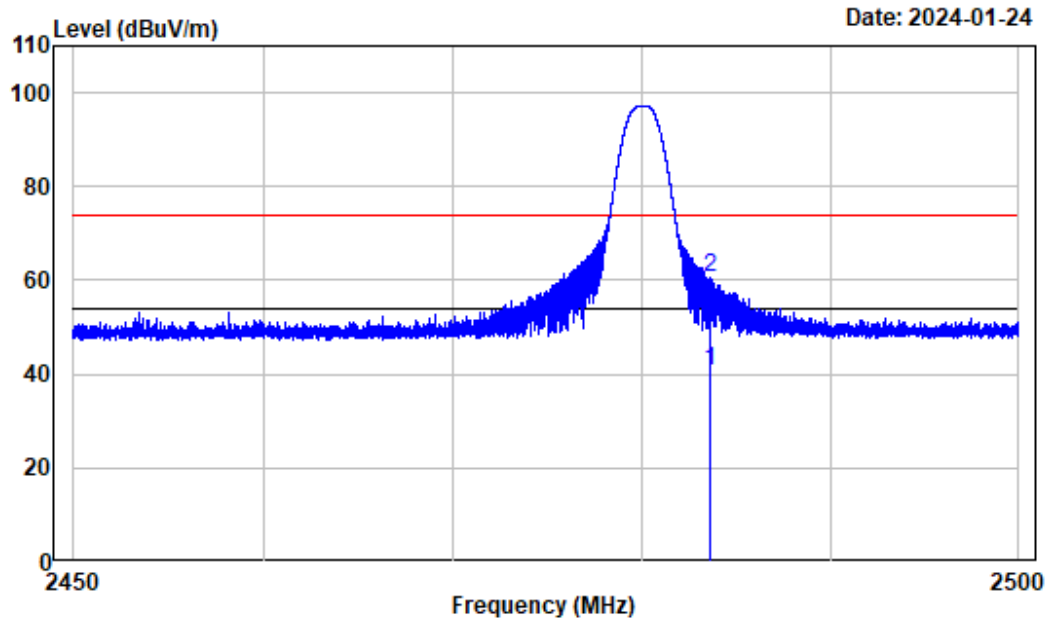
BLE 1M			
Test Channel:	**2402MHz**	**Ant. Polar. :**	**Vertical**



Condition : Vertical
Project No.: SZ1231225-78191E
Tester : Tyler
Note : BLE1M

	Freq	Factor	Read Level	Level	Limit Line	Remark	Over Limit
	MHz	dB/m	dBuV	dBuV/m	dBuV/m		dB
1	2382.077	-3.19	42.51	39.32	54.00	Average	-14.68
2	2382.077	-3.19	54.99	51.80	74.00	peak	-22.20

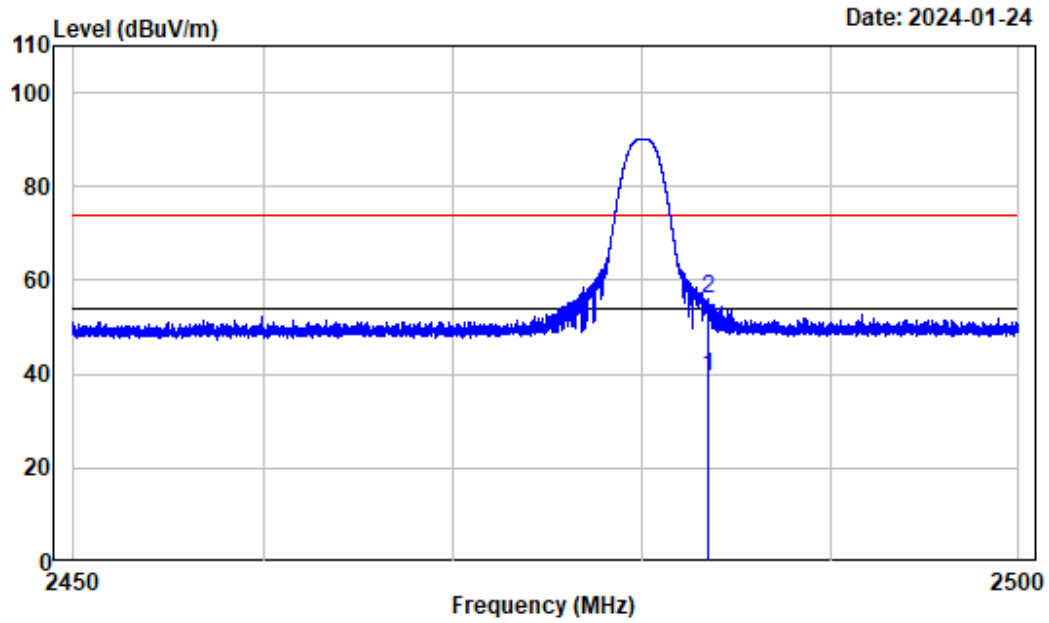
BLE 1M			
Test Channel:	**2480MHz**	**Ant. Polar. :**	**Horizontal**



Condition : Horizontal
Project No.: SZ1231225-78191E
Tester : Tyler
Note : BLE1M

	Freq	Factor	Read Level	Level	Limit Line	Remark	Over Limit
	MHz	dB/m	dBuV	dBuV/m	dBuV/m		dB
1	2483.606	-3.17	43.69	40.52	54.00	Average	-13.48
2	2483.606	-3.17	63.79	60.62	74.00	peak	-13.38

BLE 1M			
Test Channel:	**2480MHz**	**Ant. Polar. :**	**Vertical**

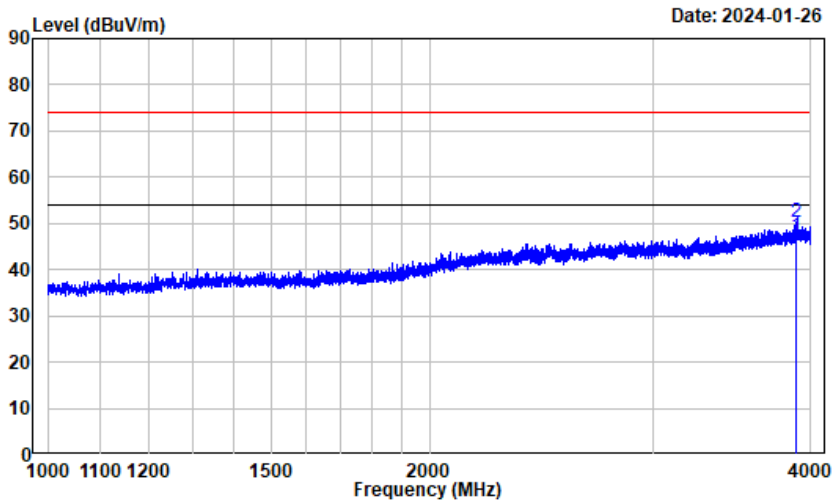


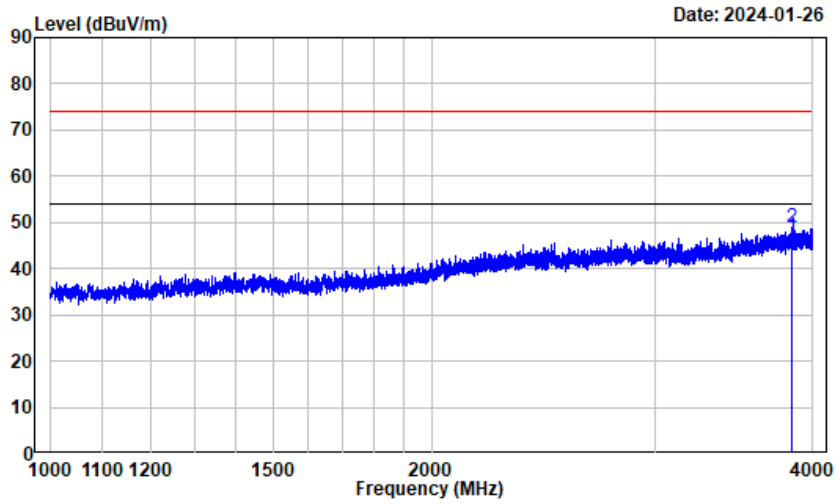
Condition : Vertical
Project No.: SZ1231225-78191E
Tester : Tyler
Note : BLE1M

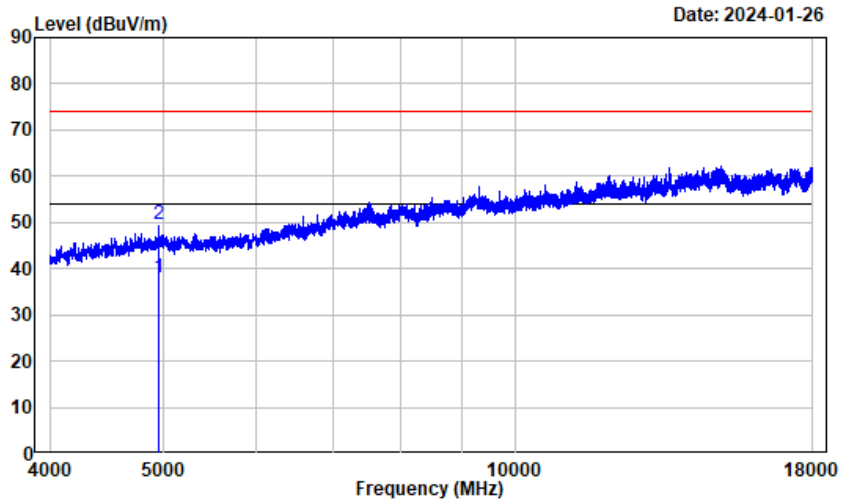
	Freq	Factor	Read Level	Level	Limit Line	Remark	Over Limit
	MHz	dB/m	dBuV	dBuV/m	dBuV/m		dB
1	2483.531	-3.17	42.81	39.64	54.00	Average	-14.36
2	2483.531	-3.17	59.25	56.08	74.00	peak	-17.92

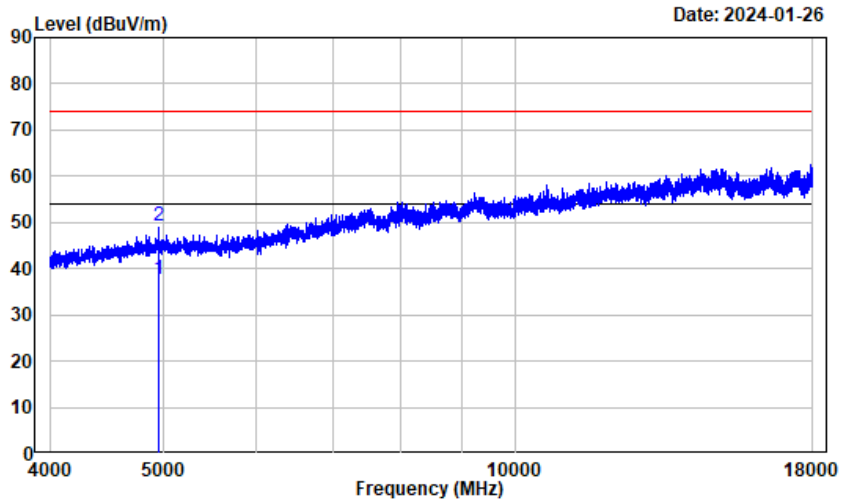
Listed with the worst harmonic margin test plot:

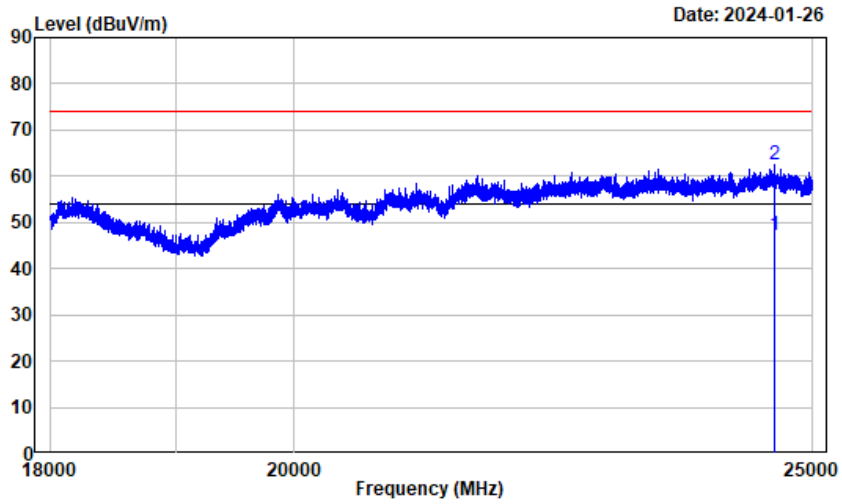
Pre-scan, High Channel (worst case)

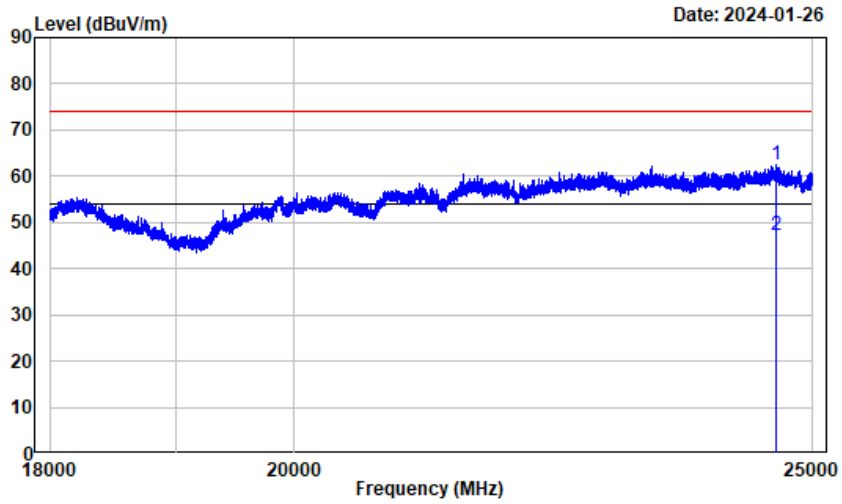
Horizontal	
1-4GHz	 Project No. : SZ1231225-78191E Tester : Tyler Polarization: Horizontal Note : BLE1M | | Freq | Factor | Read Level | Level | Limit Line | Remark | Over Limit | | | MHz | dB/m | dBuV | dBuV/m | dBuV/m | | dB | | 1 | 3898.375 | -0.54 | 47.79 | 47.25 | 54.00 | Average | -6.75 | | 2 | 3898.375 | -0.54 | 50.72 | 50.18 | 74.00 | Peak | -23.82 |

Vertical	
1-4GHz	 Project No. : SZ1231225-78191E Tester : Tyler Polarization: Vertical Note : BLE1M Freq / Factor / Read Level / Limit Level / Limit Line / Remark / Over Limit MHz / dB/m / dBuV / dBuV/m / dBuV/m / / dB 1 3852.250 -0.77 47.73 46.96 54.00 Average -7.04 2 3852.250 -0.77 49.79 49.02 74.00 Peak -24.98

Horizontal	
4-18GHz	 Project No. : SZ1231225-78191E Tester : Tyler Polarization: Horizontal Note : BLE1M Freq / Factor / Read Level / Limit Level / Limit Line / Remark / Over Limit MHz / dB/m / dBuV / dBuV/m / dBuV/m / / dB 1 4960.000 2.68 35.48 38.16 54.00 Average -15.84 2 4960.000 2.68 46.86 49.54 74.00 Peak -24.46

Vertical	
4-18GHz	 Project No. : SZ1231225-78191E Tester : Tyler Polarization: Vertical Note : BLE1M Freq / Factor / Read Level / Limit Level / Limit Line / Remark / Over Limit MHz / dB/m / dBuV / dBuV/m / dBuV/m / / dB 1 4960.000 2.68 34.92 37.60 54.00 Average -16.40 2 4960.000 2.68 46.51 49.19 74.00 Peak -24.81

Horizontal	
18-25GHz	 Project No. : SZ1231225-78191E Tester : Tyler Polarization: Horizontal Note : BLE1M Freq / Factor / Read Level / Limit Level / Limit Line / Remark / Over Limit MHz / dB/m / dBuV / dBuV/m / dBuV/m / / dB 1 24592.250 18.89 28.17 47.06 54.00 Average -6.94 2 24592.250 18.89 43.44 62.33 74.00 Peak -11.67

Vertical	
18-25GHz	 Project No. : SZ1231225-78191E Tester : Tyler Polarization: Vertical Note : BLE1M Freq / Factor / Read Level / Limit Level / Limit Line / Remark / Over Limit MHz / dB/m / dBuV / dBuV/m / dBuV/m / / dB 1 24615.880 18.85 43.47 62.32 74.00 Peak -11.68 2 24615.880 18.85 28.40 47.25 54.00 Average -6.75

FCC §15.247(a) (2), RSS-GEN § 6.7 & RSS-247 § 5.2 (a) – 99% OCCUPIED BANDWIDTH & 6 dB EMISSON BANDWIDTH

Standard Applicable

According to 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.

According to RSS-247 §5.2 a)
The minimum 6 dB bandwidth shall be 500 kHz.

According to RSS-Gen §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.

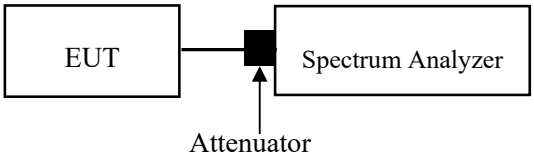
Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.
For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the 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).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.8.1 & Clause 6.9.3

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 6 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

99% Occupied bandwidth test:
Use Occupied bandwidth test function, measure the 99% Occupied bandwidth.
Repeat above procedures until all frequencies measured were complete.



Test Data

Environmental Conditions

Temperature:	25.8 ℃
Relative Humidity:	57 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang on 2024-02-01.

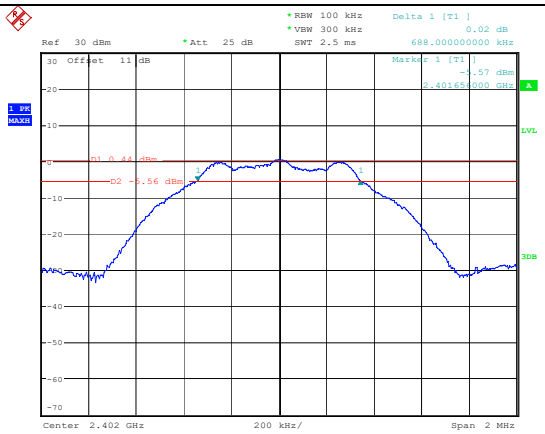
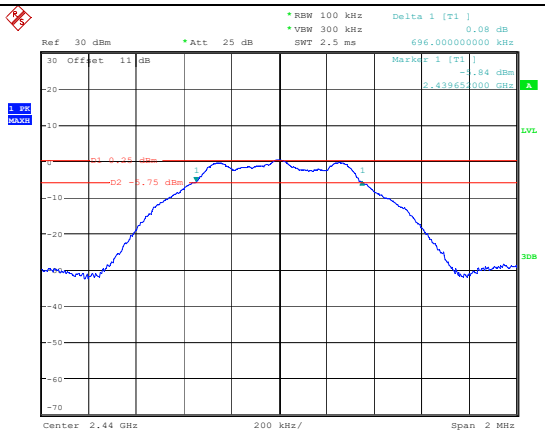
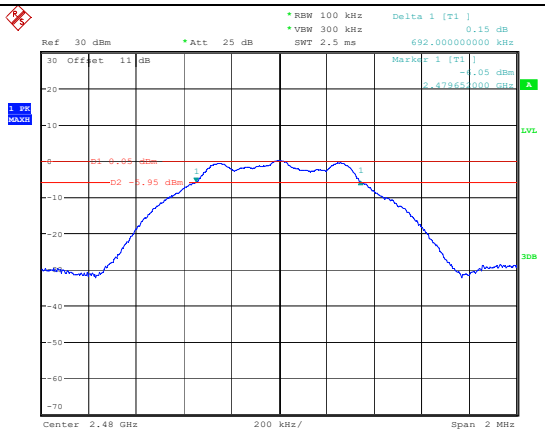
EUT operation mode: Transmitting

Test Result: Compliant.

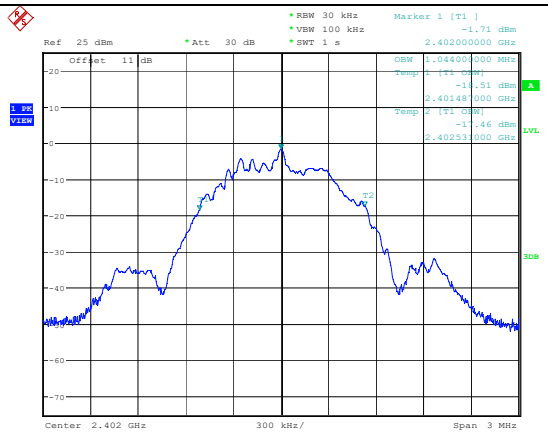
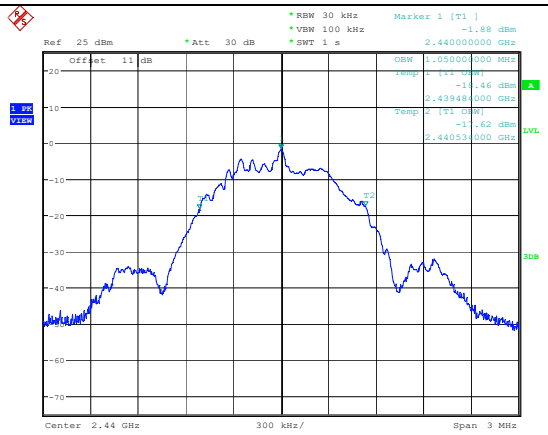
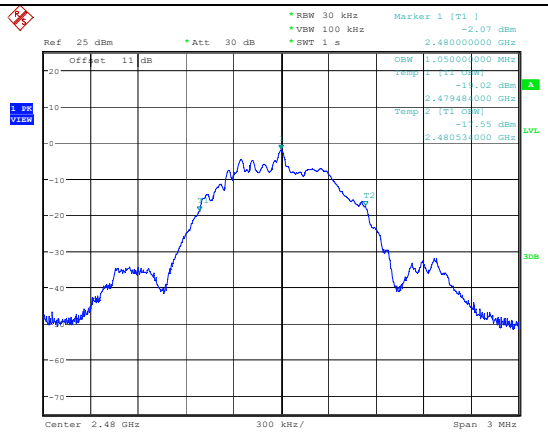
BLE 1M

Test Channel	Test Frequency (MHz)	6 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Limit (MHz)
Lowest	2402	0.688	1.044	≥0.5
Middle	2440	0.696	1.050	≥0.5
Highest	2480	0.692	1.050	≥0.5

6 dB Bandwidth

BLE 1M	
Low Channel	
Middle Channel	
High Channel	

99% Occupied Bandwidth

BLE 1M	
Low Channel	
Middle Channel	
High Channel	

FCC §15.247(b) (3), RSS-247 §5.4 (d) - PEAK OUTPUT POWER MEASUREMENT

Applicable Standard

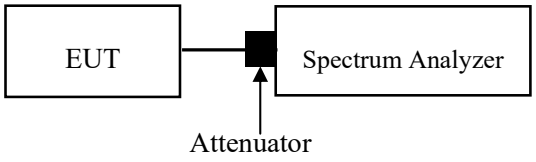
According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted 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§5.4 d) For DTSs employing digital modulation techniques operating in the bands 902-928 MHz and 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1W. Except as provided in Section 5.4(e), the e.i.r.p. shall not exceed 4 W.
As an alternative to a peak power measurement, compliance can be based on a measurement of the maximum conducted output power. The maximum conducted output power is the total transmit power delivered to all antennas and antenna elements, averaged across all symbols in the signalling 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 transmitting at a reduced power level. If multiple modes of operation are implemented, the maximum conducted output power is the highest total transmit power occurring in any mode.

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.9.1.1

1. Place the EUT on a bench and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to one test equipment.
3. Add a correction factor to the display.



Test Data

Environmental Conditions

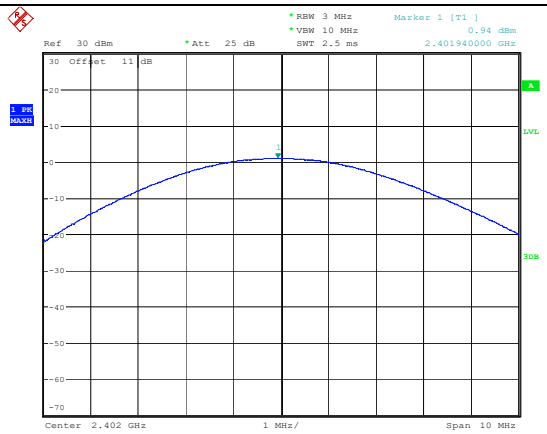
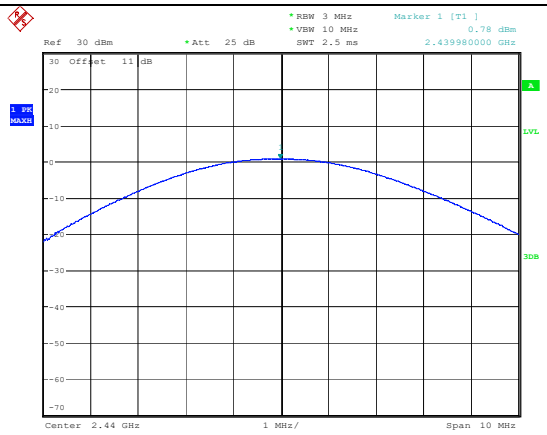
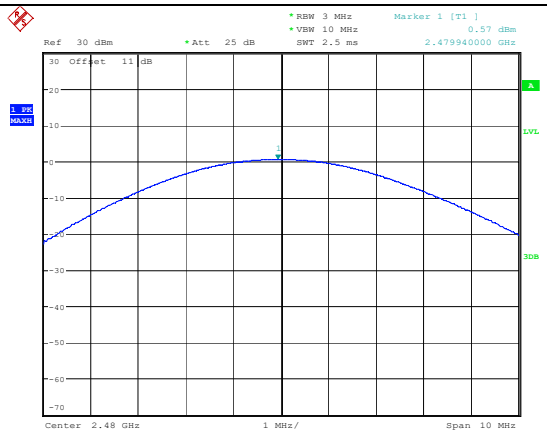
Temperature:	25.8 ℃
Relative Humidity:	57 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang on 2024-02-01.

EUT operation mode: Transmitting

Test Result: Compliant.

Test Channel	Test Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)	Limit (dBm)
Lowest	2402	0.94	≤30
Middle	2440	0.78	≤30
Highest	2480	0.57	≤30
Max.EIRP:	3.39	dBm	
EIRP Limit for RSS-247:36 dBm			

BLE 1M	
Low Channel	 ProjectNo.:SZ1231225-78191E-RF Tester:Cheeb Huang Date: 1.FEB.2024 05:33:17
Middle Channel	 ProjectNo.:SZ1231225-78191E-RF Tester:Cheeb Huang Date: 1.FEB.2024 05:34:29
High Channel	 ProjectNo.:SZ1231225-78191E-RF Tester:Cheeb Huang Date: 1.FEB.2024 05:36:03

FCC §15.247(e), RSS-247 §5.2 (b) – POWER SPECTRAL DENSITY

Applicable Standard

According to 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.

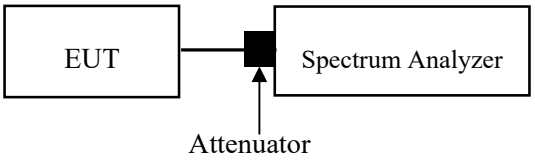
According to RSS-247 §5.2 b):

b) The transmitter power spectral density conducted from the transmitter 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 section 5.4(d), (i.e. the power spectral density shall be determined using the same method as is used to determine the conducted output power).

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.10.2

1. Use this procedure when the maximum peak conducted output power in the fundamental emission is used to demonstrate compliance.
2. Set the RBW to: 3kHz≤ RBW≤100 kHz.
3. Set the VBW ≥ 3×RBW.
4. Set the span to 1.5 times the DTS bandwidth.
5. Detector = peak.
6. Sweep time = auto couple.
7. Trace mode = max hold.
8. Allow trace to fully stabilize.
9. Use the peak marker function to determine the maximum amplitude level within the RBW.
10. If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.



Test Data

Environmental Conditions

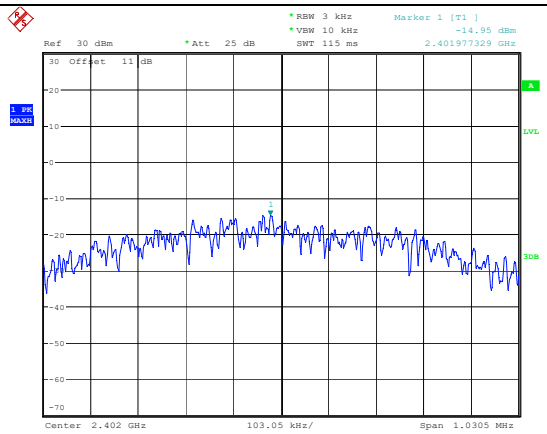
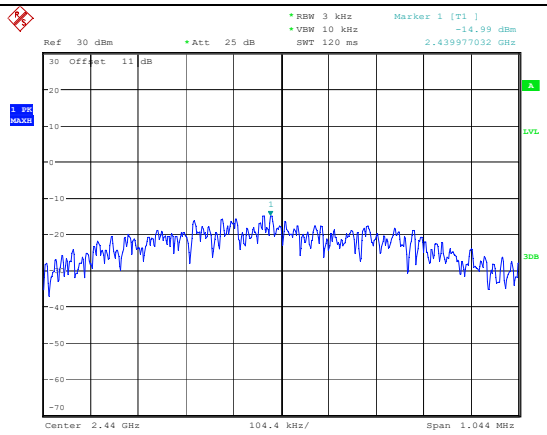
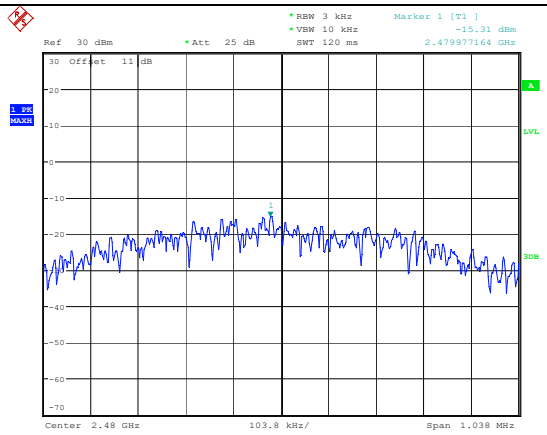
Temperature:	25.8 ℃
Relative Humidity:	57 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang on 2024-02-01.

Test Mode: Transmitting

Test Result: Compliant.

Test Modes	Test Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
BLE 1M	2402	-14.95	≤8.00
	2440	-14.99	≤8.00
	2480	-15.31	≤8.00

BLE 1M	
Low Channel	
Middle Channel	
High Channel	

FCC §15.247(d) & RSS-247 §5.5 – 100 kHz BANDWIDTH OF FREQUENCY BAND EDGE

Applicable Standard

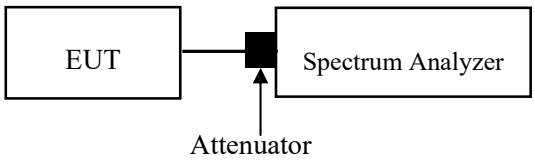
In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the 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)).

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device 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 5.4(d), 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

Test Procedure

Test Method: ANSI C63.10-2013 Clause 11.11

1. Set the RBW =100 kHz.
2. Set the VBW ≥ 3×RBW.
3. Detector = peak
4. Sweep time = auto couple.
5. Trace mode=max hold
6. All trace to fully stabilize
7. Use the peak marker function to determine the maximum amplitude level.
   Ensure that amplitude of all unwanted emissions outside of the authorized frequency band(excluding restricted frequency bands) is attenuated by at least the minimum requirement specified in 11.11.
   Report the three highest emissions relative to the limit.



Test Data

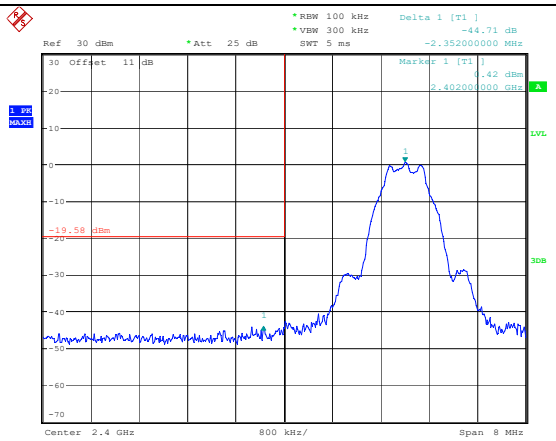
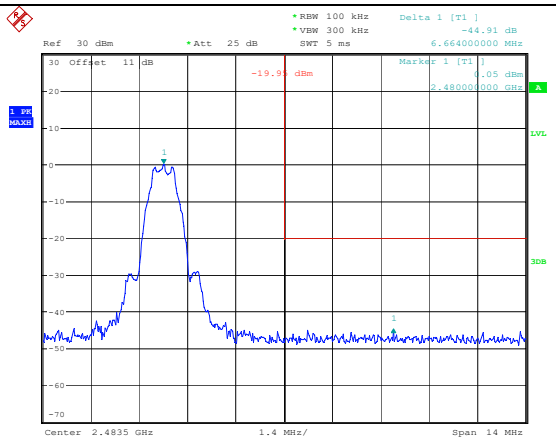
Environmental Conditions

Temperature:	25.8 ℃
Relative Humidity:	57 %
ATM Pressure:	101 kPa

The testing was performed by Cheeb Huang on 2024-02-01.

EUT operation mode: Transmitting

Test Result: Compliant.

Band Edge, Single Channel	
BLE 1M, Left Side	
BLE 1M, Right Side	

EUT PHOTOGRAPHS

Please refer to the attachment SZ1231225-78191E-RF External photo and SZ1231225-78191E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment SZ1231225-78191E-RF Test Setup photo.

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