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Report Template Version: V05
Report Template Revision Date: 2021-11-03

Test Report

Report No.:	CQASZ20250100029E-01
Applicant:	Shenzhen DO Intelligent Technology Co., Ltd
Address of Applicant:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China
Equipment Under Test (EUT):	
Product:	Smart Watch
Model No.:	ID208 Plus
Test Model No.:	ID208 Plus
Brand Name:	IDO
FCC ID:	2AHFT7982
Standards:	47 CFR Part 15, Subpart C KDB558074 D01 15.247 Meas Guidance v05r02 ANSI C63.10:2013
Date of Receipt:	2025-01-03
Date of Test:	2025-01-03 to 2025-02-11
Date of Issue:	2025-03-04
Test Result:	**PASS***

***In the configuration tested, the EUT complied with the standards specified above.**

Tested By: lewis zhou

(Lewis Zhou)

Reviewed By: Timo Lei

(Timo Lei)

Approved By:

(Jack Ai)

The test report is effective only with both signature and specialized stamp, The result(s) shown in this report refer only to the sample(s) tested. Without written approval of CQA, this report can't be reproduced except in full.

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250100029E-01	Rev.01	Initial report	2025-03-04

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203/15.247 (c)	ANSI C63.10 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2013	PASS
Conducted Peak Output Power	47 CFR Part 15, Subpart C Section 15.247 (b)(3)	ANSI C63.10 2013	PASS
6dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.247 (a)(2)	ANSI C63.10 2013	PASS
Power Spectral Density	47 CFR Part 15, Subpart C Section 15.247 (e)	ANSI C63.10 2013	PASS
Band-edge for RF Conducted Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	ANSI C63.10 2013	PASS
RF Conducted Spurious Emissions	47 CFR Part 15, Subpart C Section 15.247(d)	ANSI C63.10 2013	PASS
Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS

Note:

AC Power Line Conducted Emission and Radiated Spurious Emissions1G and below have tested all batteries, motor, speaker and provided data, RF project only tested product #1 because PCB and RF circuit are consistent.

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4 General Information

4.1 Client Information

Applicant:	Shenzhen DO Intelligent Technology Co., Ltd
Address of Applicant:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China
Manufacturer:	Shenzhen DO Intelligent Technology Co., Ltd
Address of Manufacturer:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China
Factory:	Shenzhen DO Intelligent Technology Co., Ltd
Address of Factory:	11th Floor, 3# Building, Guole Tech Park, Lirong Road, Dalang, Longhua District, Shenzhen, China

4.2 General Description of EUT

Product Name:	Smart Watch
Model No.:	ID208 Plus
Test Model No.:	ID208 Plus
Trade Mark:	IDO
Software Version:	V1.00.00
Hardware Version:	V1.0
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.3
Modulation Type:	GFSK
Transfer Rate:	1Mbps, 2Mbps
Number of Channel:	40
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Test Software of EUT:	BT FCC Tool V2.24
Antenna Type:	Internal antenna
Antenna Gain:	-3.7dBi
EUT Power Supply:	Li-ion battery DC 3.85V 350mAh(551925 04) Li-ion battery DC 3.85V 350mAh(551925 16)
Simultaneous Transmission	☐ Simultaneous TX is supported and evaluated in this report. ☒ Simultaneous TX is not supported.

Note:

The difference between product #1 and product #2 is that the battery model, motor model, speaker model are different, and the supplier is different.

The battery model for product #1 is 551925 04; and the battery model for product #2 is 551925 16.

The motor model for product #1 is CY0827-503-P11-15; and the motor model for product #2 is LC-D80A.

The speaker model for product #1 is 1507-9002; and the speaker model for product #2 is QSQ-S1507H27CW-10.

The key differences are in supplier and model. These changes do not affect RF performance.

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

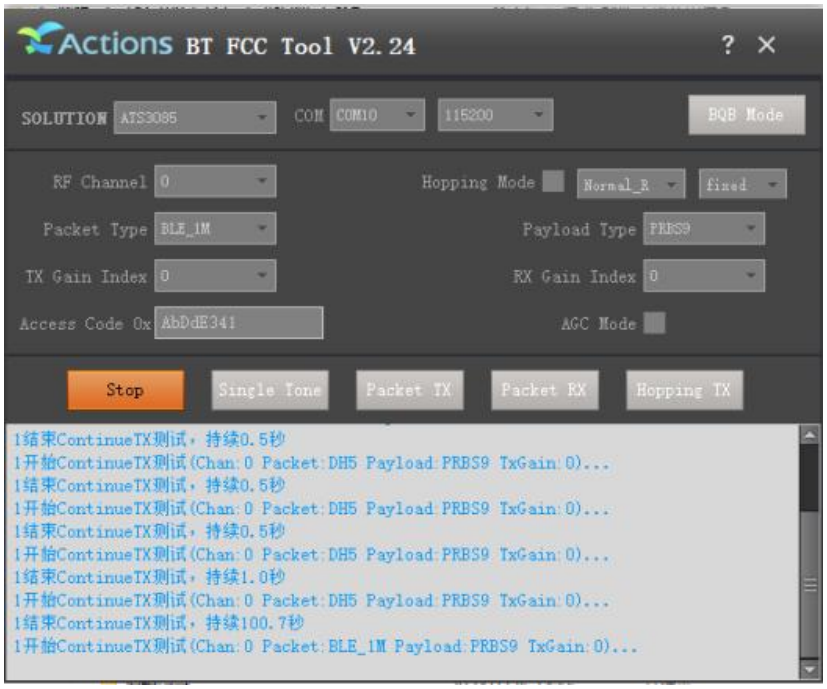
Note:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel (CH0)	2402MHz
The middle channel (CH19)	2440MHz
The highest channel (CH39)	2480MHz

4.3 Additional Instructions

EUT Test Software Settings:		
Mode:	☒ Special software is used. ☐ Through engineering command into the engineering mode. engineering command: *#*#3646633#*#*	
EUT Power level:	Class2 (Power level is built-in set parameters and cannot be changed and selected)	
Use test software to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.		
Mode	Channel	Frequency(MHz)
GFSK	CH0	2402
	CH19	2440
	CH39	2480

Run Software:



4.4 Test Environment

Operating Environment:	
Temperature:	24.5°C
Humidity:	59% RH
Atmospheric Pressure:	1009mbar
Test Mode:	Use test software to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

1）Support equipment

Description	Manufacturer	Model No.	Certification	Supplied by
Adapter	/	/	/	CQA

2) Cable

Cable No.	Description	Manufacturer	Cable Type/Length	Supplied by
/	/	/	/	/

4.6 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate.

The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities.

The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the **Shenzhen Huaxia Testing Technology Co., Ltd.** quality system acc. to DIN EN ISO/IEC 17025.

Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CQA laboratory is reported:

No.	Item	Uncertainty
1	Radiated Emission (Below 1GHz)	5.12dB
2	Radiated Emission (Above 1GHz)	4.60dB
3	Conducted Disturbance (0.15~30MHz)	3.34dB
4	Radio Frequency	3×10^{-8}
5	Duty cycle	0.6 %
6	Occupied Bandwidth	1.1%
7	RF conducted power	0.86dB
8	RF power density	0.74
9	Conducted Spurious emissions	0.86dB
10	Temperature test	0.8℃
11	Humidity test	2.0%
12	Supply voltages	0.5 %
13	Frequency Error	5.5 Hz

4.7 Test Location

All tests were performed at:

Shenzhen Huaxia Testing Technology Co., Ltd.

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

4.8 Test Facility

- **A2LA (Certificate No. 4742.01)**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4742.01.

- **FCC Registration No.: 522263**

Shenzhen Huaxia Testing Technology Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration No.:522263

4.9 Deviation from Standards

None.

4.10 Other Information Requested by the Customer

None.

4.11 Equipment List

Test Equipment	Manufacturer	Model No.	Instrument No.	Calibration Date	Calibration Due Date
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU26	CQA-038	2024/9/2	2025/9/1
Spectrum analyzer	R&S	FSU40	CQA-075	2024/9/2	2025/9/1
Preamplifier	MITEQ	AFS4-00010300-18-10P-4	CQA-035	2024/9/2	2025/9/1
Preamplifier	MITEQ	AMF-6D-02001800-29-20P	CQA-036	2024/9/2	2025/9/1
Preamplifier	EMCI	EMC184055SE	CQA-089	2024/9/2	2025/9/1
Loop antenna	Schwarzbeck	FMZB1516	CQA-060	2023/9/8	2026/9/7
Bilog Antenna	R&S	HL562	CQA-011	2023/11/01	2026/10/31
Horn Antenna	R&S	HF906	CQA-012	2023/11/01	2026/10/31
Horn Antenna	Schwarzbeck	BBHA 9170	CQA-088	2023/9/7	2026/9/6
Coaxial Cable (Above 1GHz)	CQA	N/A	C007	2024/9/2	2025/9/1
Coaxial Cable (Below 1GHz)	CQA	N/A	C013	2024/9/2	2025/9/1
Antenna Connector	CQA	RFC-01	CQA-080	2024/9/2	2025/9/1
RF cable(9KHz~40GHz)	CQA	RF-01	CQA-079	2024/9/2	2025/9/1
Power meter	R&S	NRVD	CQA-029	2024/9/2	2025/9/1
Power divider	MIDWEST	PWD-2533-02-SMA-79	CQA-067	2024/9/2	2025/9/1
EMI Test Receiver	R&S	ESR7	CQA-005	2024/9/2	2025/9/1
LISN	R&S	ENV216	CQA-003	2024/9/2	2025/9/1
Coaxial cable	CQA	N/A	CQA-C009	2024/9/2	2025/9/1
DC power	KEYSIGHT	E3631A	CQA-028	2024/9/2	2025/9/1

Test software:

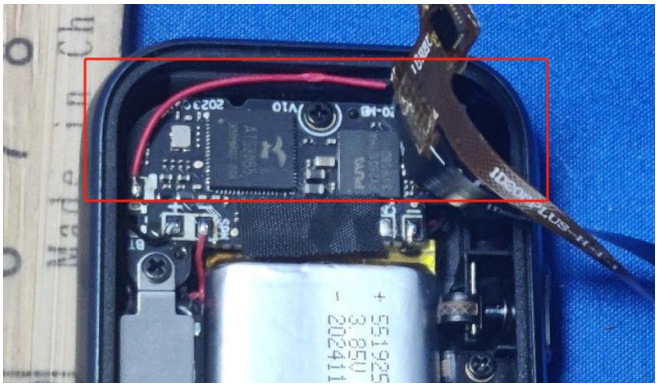
	Manufacturer	Software brand	Software version
Radiated Emissions test software	Tonscend	JS1120-3	Version:8
Conducted Emissions test software	Audix	e3	Version:9
RF Conducted test software	Audix	e3	V3.5.39

Note:

The temporary antenna connector is soldered on the pcb board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.

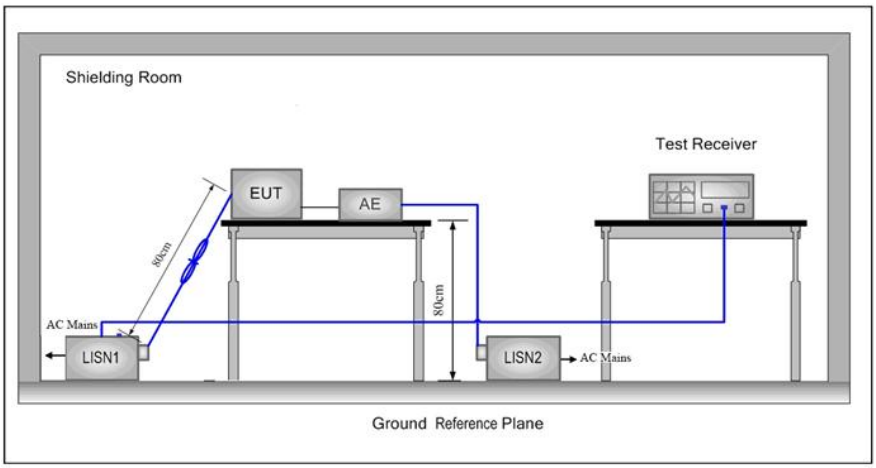
5 Test results and Measurement Data

5.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement: 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, 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. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
EUT Antenna:	
The antenna is Internal antenna. The connection/connection type between the antenna to the EUT's antenna port is: permanently attachment. This is either permanently attachment or a unique coupling that satisfies the requirement.	

5.2 Conducted Emissions

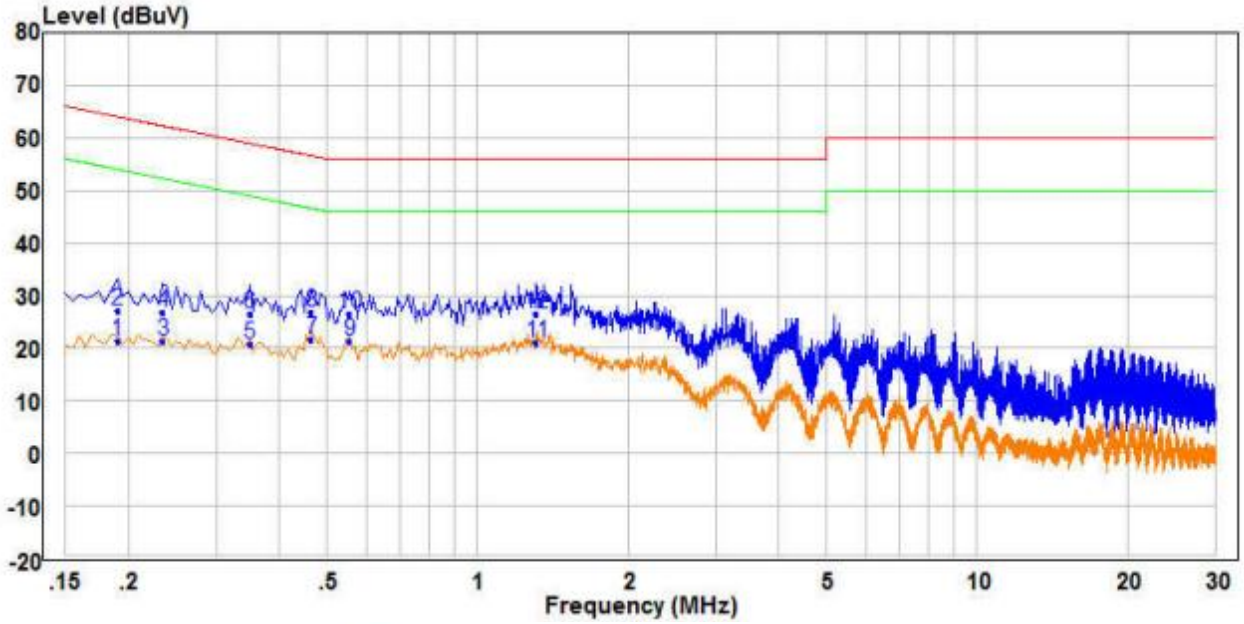
<table>
<tr><td>Test Requirement:</td><td>47 CFR Part 15C Section 15.207</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.10: 2013</td></tr>
<tr><td>Test Frequency Range:</td><td>150kHz to 30MHz</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr>
<tr><td>Quasi-peak</td><td>Average</td></tr>
<tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr>
<tr><td>0.5-5</td><td>56</td><td>46</td></tr>
<tr><td>5-30</td><td>60</td><td>50</td></tr>
</table>
* Decreases with the logarithm of the frequency.
</td></tr>
<tr><td>Test Procedure:</td><td>1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.</td></tr>
</table>

Test Setup:	
Test Mode:	Through Pre-scan, find the transmitting mode at the lowest channel is the worst case.
Test Voltage:	AC 120V/60Hz
Test Results:	Pass

1#

Measurement Data

Live line:



		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.190	11.81	9.63	21.44	54.04	-32.60	Average	Line
2		0.190	17.60	9.63	27.23	64.04	-36.81	QP	Line
3		0.235	11.74	9.56	21.30	52.27	-30.97	Average	Line
4		0.235	17.33	9.56	26.89	62.27	-35.38	QP	Line
5		0.350	11.05	9.55	20.60	48.96	-28.36	Average	Line
6		0.350	16.85	9.55	26.40	58.96	-32.56	QP	Line
7		0.465	11.84	9.67	21.51	46.60	-25.09	Average	Line
8		0.465	17.13	9.67	26.80	56.60	-29.80	QP	Line
9	PP	0.555	11.56	9.76	21.32	46.00	-24.68	Average	Line
10		0.555	16.83	9.76	26.59	56.00	-29.41	QP	Line
11		1.310	10.72	10.46	21.18	46.00	-24.82	Average	Line
12	QP	1.310	16.14	10.46	26.60	56.00	-29.40	QP	Line

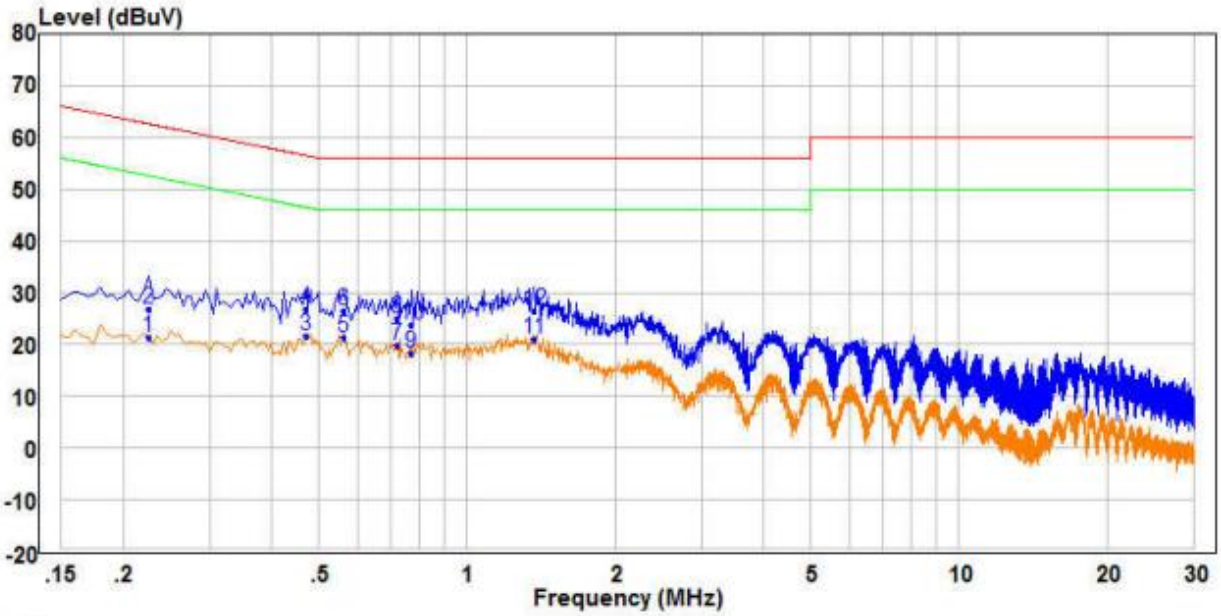
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.225	11.71	9.57	21.28	52.63	-31.35	Average	Neutral
2		0.225	17.36	9.57	26.93	62.63	-35.70	QP	Neutral
3		0.470	12.00	9.67	21.67	46.51	-24.84	Average	Neutral
4		0.470	17.03	9.67	26.70	56.51	-29.81	QP	Neutral
5	PP	0.560	11.54	9.76	21.30	46.00	-24.70	Average	Neutral
6	QP	0.560	16.72	9.76	26.48	56.00	-29.52	QP	Neutral
7		0.720	9.88	9.89	19.77	46.00	-26.23	Average	Neutral
8		0.720	15.17	9.89	25.06	56.00	-30.94	QP	Neutral
9		0.770	8.46	9.85	18.31	46.00	-27.69	Average	Neutral
10		0.770	14.01	9.85	23.86	56.00	-32.14	QP	Neutral
11		1.365	11.24	9.72	20.96	46.00	-25.04	Average	Neutral
12		1.365	16.71	9.72	26.43	56.00	-29.57	QP	Neutral

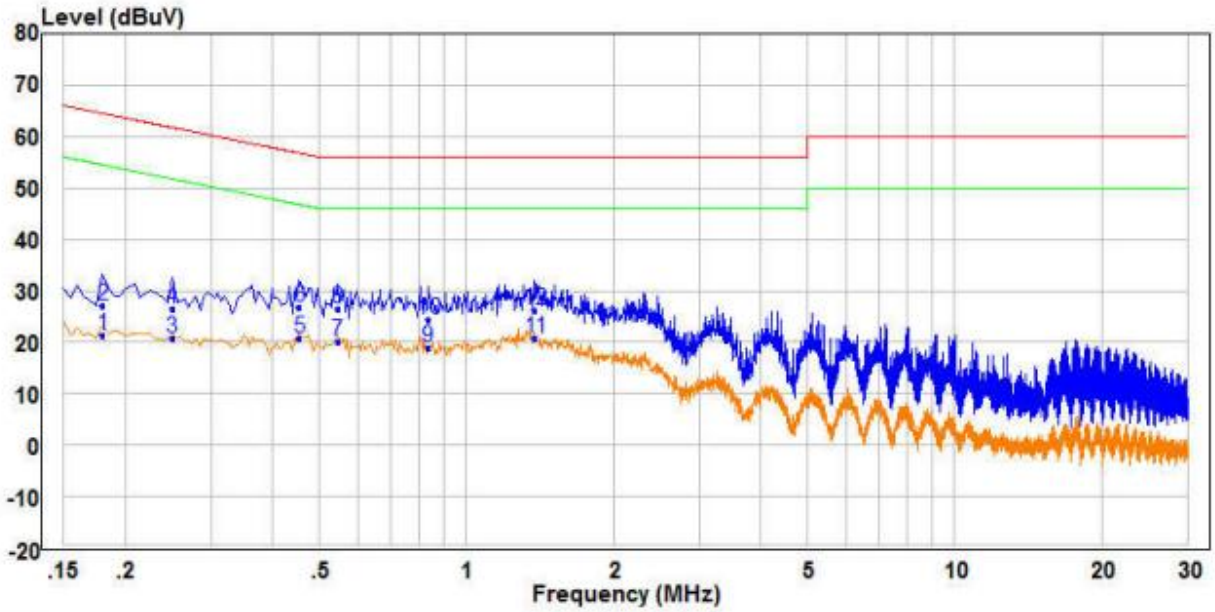
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

2#

Measurement Data

Live line:



		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.180	11.74	9.64	21.38	54.49	-33.11	Average	Line
2		0.180	17.49	9.64	27.13	64.49	-37.36	QP	Line
3		0.250	11.17	9.55	20.72	51.76	-31.04	Average	Line
4		0.250	16.83	9.55	26.38	61.76	-35.38	QP	Line
5		0.455	10.97	9.66	20.63	46.78	-26.15	Average	Line
6		0.455	17.09	9.66	26.75	56.78	-30.03	QP	Line
7		0.545	10.26	9.75	20.01	46.00	-25.99	Average	Line
8	QP	0.545	16.67	9.75	26.42	56.00	-29.58	QP	Line
9		0.835	9.26	9.81	19.07	46.00	-26.93	Average	Line
10		0.835	14.65	9.81	24.46	56.00	-31.54	QP	Line
11	PP	1.380	10.10	10.60	20.70	46.00	-25.30	Average	Line
12		1.380	15.56	10.60	26.16	56.00	-29.84	QP	Line

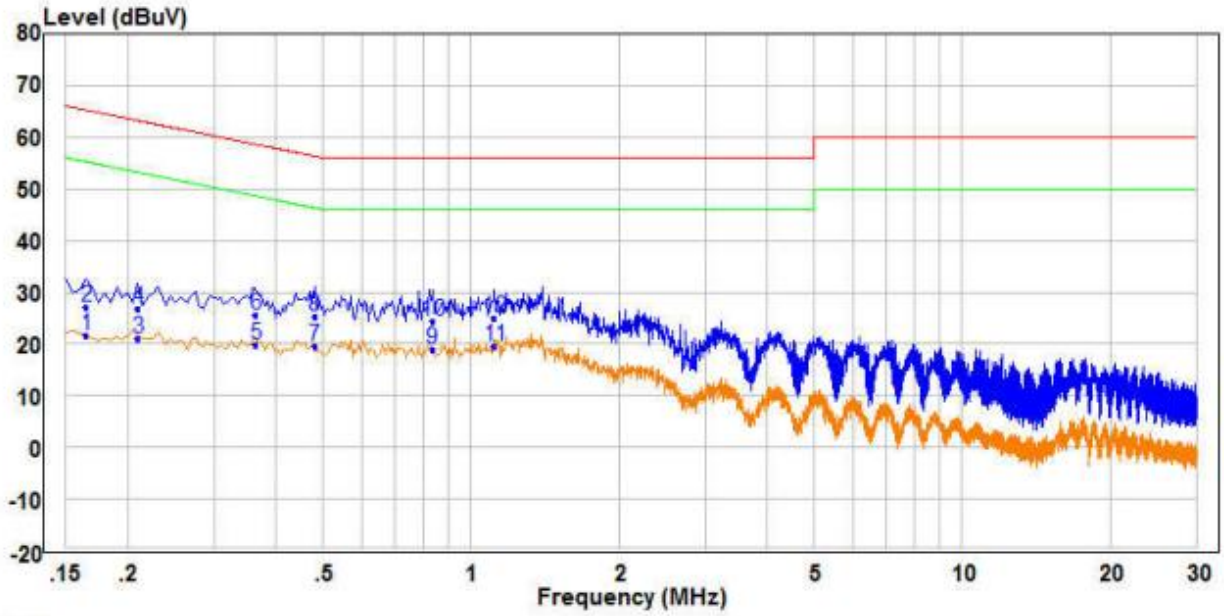
Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:

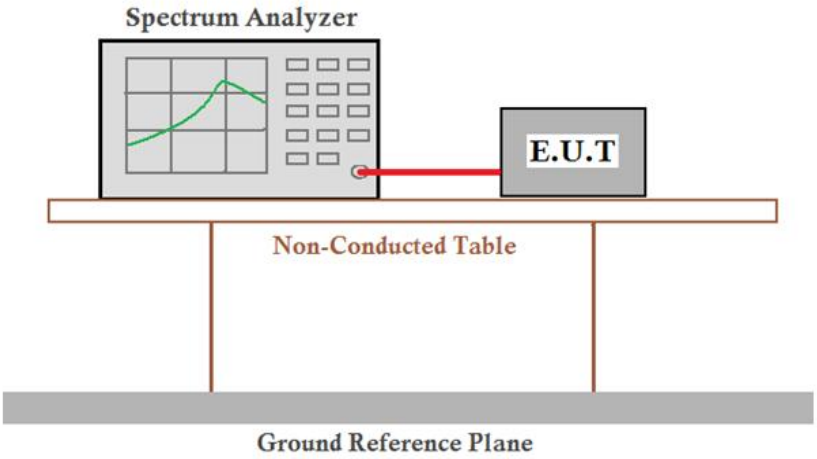


		Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark	Pol/Phase
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.165	11.93	9.67	21.60	55.21	-33.61	Average	Neutral
2		0.165	17.41	9.67	27.08	65.21	-38.13	QP	Neutral
3		0.210	11.58	9.59	21.17	53.21	-32.04	Average	Neutral
4		0.210	17.11	9.59	26.70	63.21	-36.51	QP	Neutral
5		0.365	10.37	9.56	19.93	48.61	-28.68	Average	Neutral
6		0.365	16.10	9.56	25.66	58.61	-32.95	QP	Neutral
7		0.480	9.97	9.68	19.65	46.34	-26.69	Average	Neutral
8	QP	0.480	15.64	9.68	25.32	56.34	-31.02	QP	Neutral
9		0.835	8.97	9.81	18.78	46.00	-27.22	Average	Neutral
10		0.835	14.49	9.81	24.30	56.00	-31.70	QP	Neutral
11	PP	1.115	9.85	9.71	19.56	46.00	-26.44	Average	Neutral
12		1.115	15.25	9.71	24.96	56.00	-31.04	QP	Neutral

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

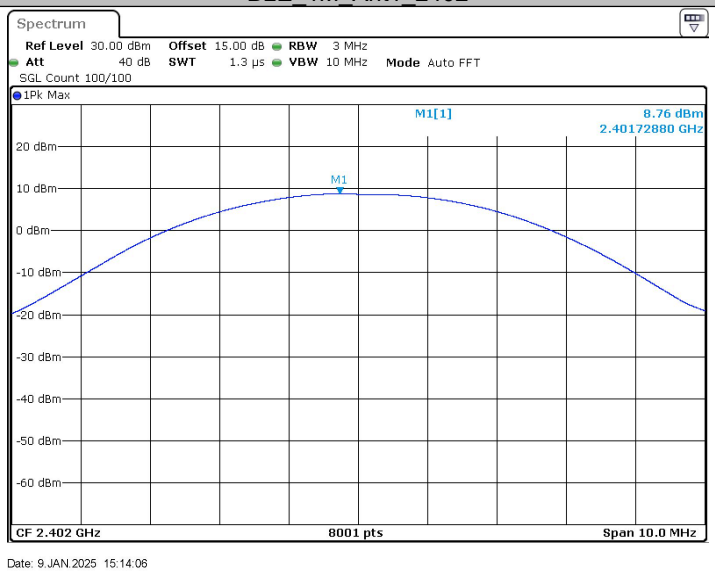
5.3 Conducted Peak Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10 2013
Test Setup:	 *Remark: Offset=Cable loss+ attenuation factor.*
Limit:	30dBm
Test Mode:	Transmitting with GFSK modulation.
Test Results:	Pass

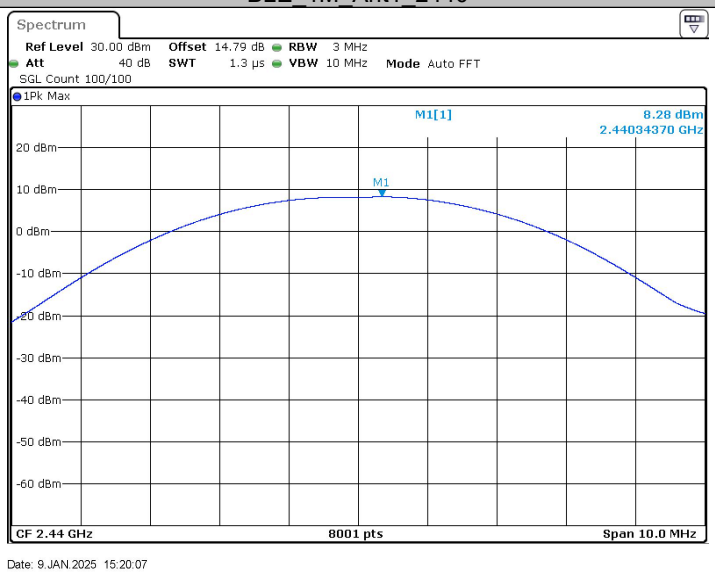
Measurement Data

GFSK mode (1Mbps)			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	8.76	30.00	Pass
Middle	8.28	30.00	Pass
Highest	8.56	30.00	Pass
GFSK mode (2Mbps)			
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	8.71	30.00	Pass
Middle	8.14	30.00	Pass
Highest	8.42	30.00	Pass

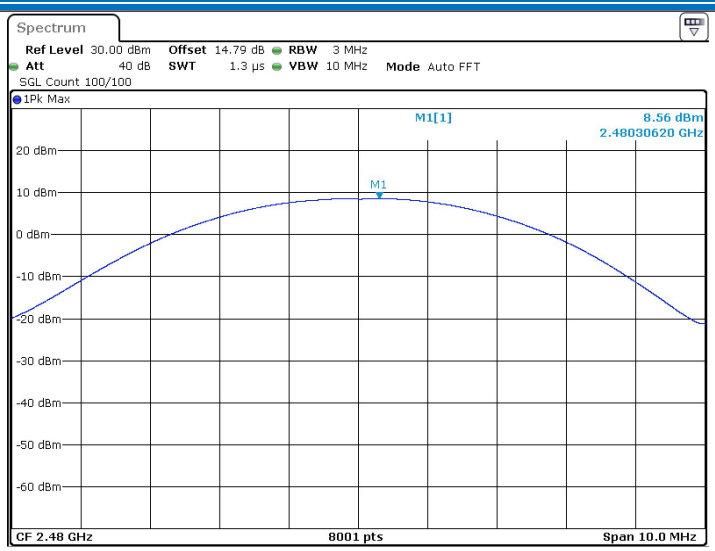
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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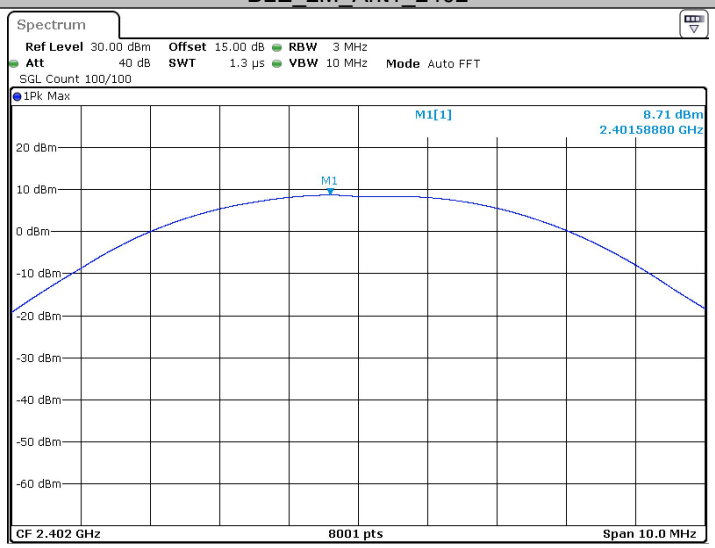
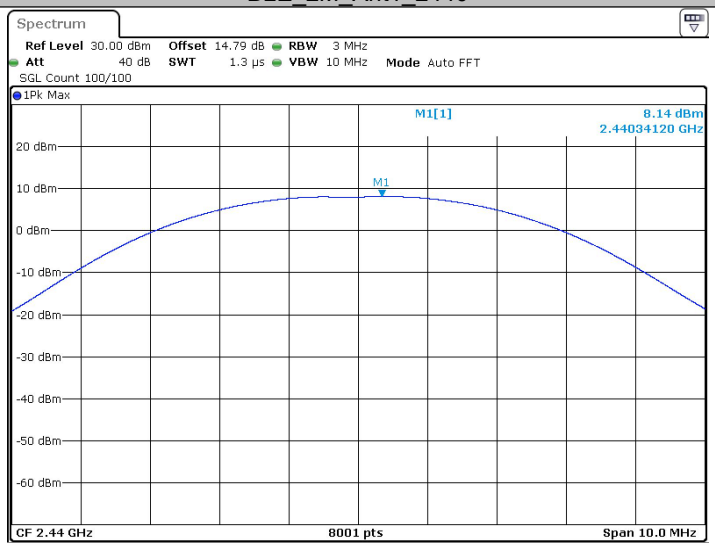
BLE_2M_Ant1_2402



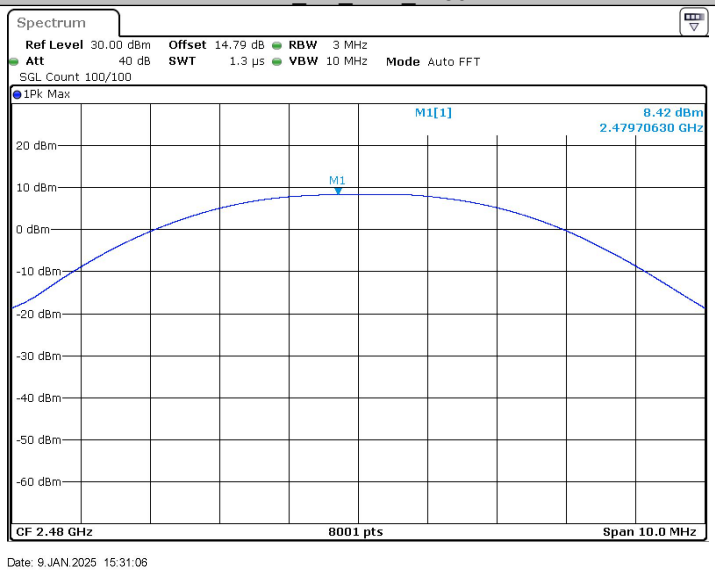
Date: 9.JAN.2025 15:27:09

BLE_2M_Ant1_2440

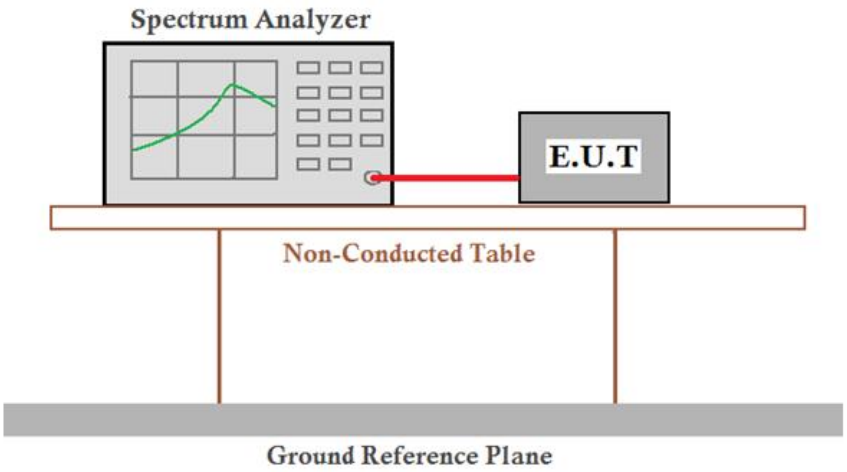


Date: 9.JAN.2025 15:30:18

BLE_2M_Ant1_2480



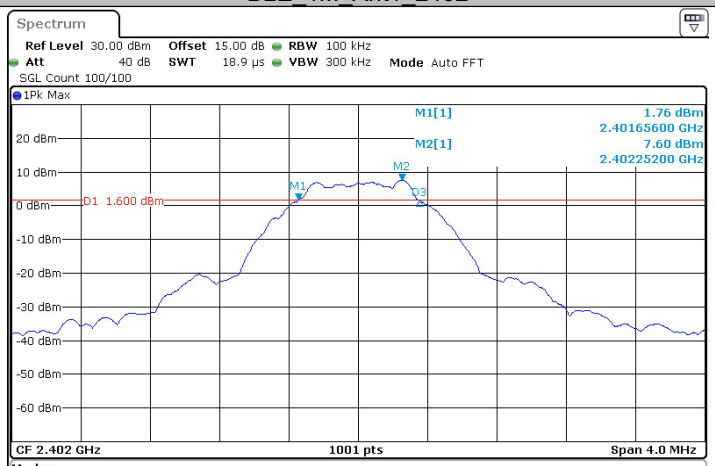
5.4 6dB Occupy Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10 2013
Test Setup:	 *Remark: Offset=Cable loss+ attenuation factor.*
Limit:	≥ 500 kHz
Instruments Used:	Refer to section 4.11 for details.
Test Results:	Pass

Measurement Data

GFSK mode (1Mbps)			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	0.70	≥500	Pass
Middle	0.65	≥500	Pass
Highest	0.67	≥500	Pass
GFSK mode (2Mbps)			
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result
Lowest	1.13	≥500	Pass
Middle	1.14	≥500	Pass
Highest	1.12	≥500	Pass

BLE_1M_Ant1_2402



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.401656 GHz	1.76 dBm		
M2		1	2.402252 GHz	7.60 dBm		
D3	M1	1	696.0 kHz	-0.14 dB		

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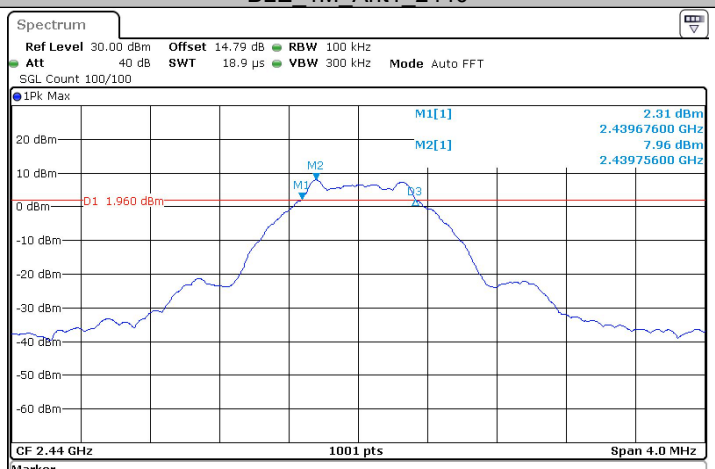
BLE_1M_Ant1_2440

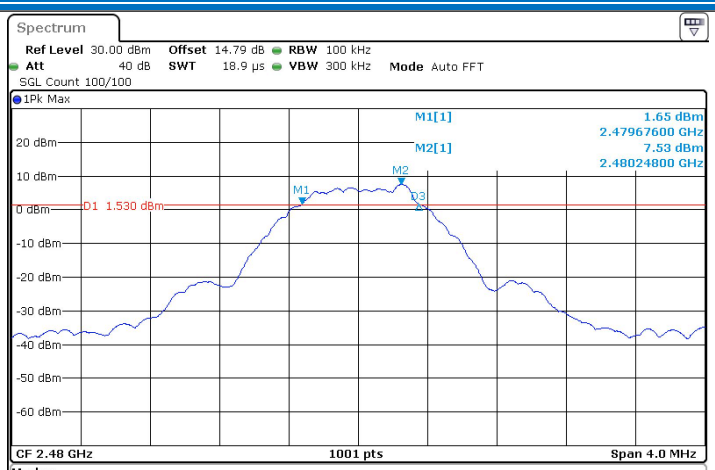


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.439676 GHz	2.31 dBm		
M2		1	2.439756 GHz	7.96 dBm		
D3	M1	1	652.0 kHz	-0.01 dB		

Date: 9.JAN.2025 15:19:58

BLE_1M_Ant1_2480



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.479676 GHz	1.65 dBm		
M2		1	2.480248 GHz	7.53 dBm		
D3	M1	1	672.0 kHz	0.05 dB		

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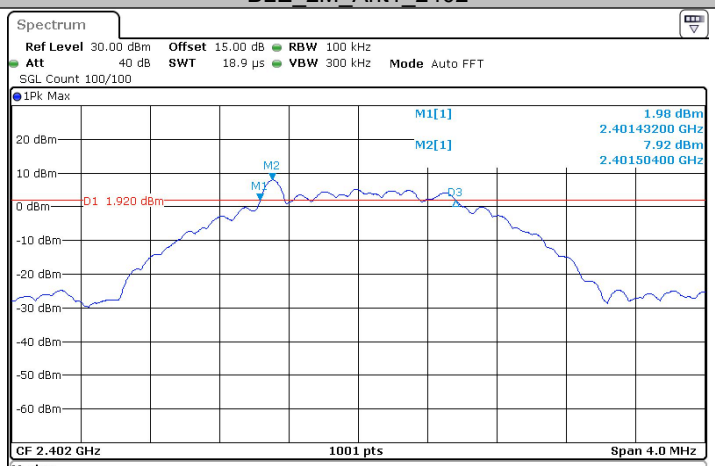
BLE_2M_Ant1_2402

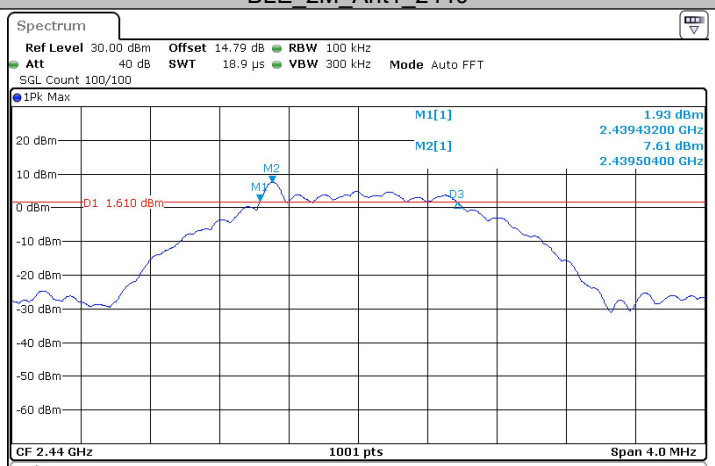


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.401432 GHz	1.98 dBm		
M2		1	2.401504 GHz	7.92 dBm		
D3	M1	1	1.128 MHz	0.10 dB		

Date: 9.JAN.2025 15:27:01

BLE_2M_Ant1_2440

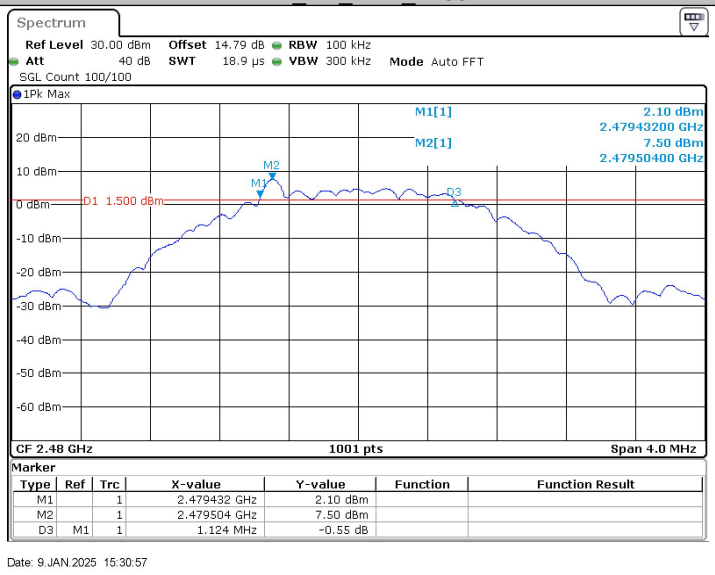


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.439432 GHz	1.93 dBm		
M2		1	2.439504 GHz	7.61 dBm		
D3	M1	1	1.14 MHz	-0.29 dB		

Date: 9.JAN.2025 15:30:09

BLE_2M_Ant1_2480

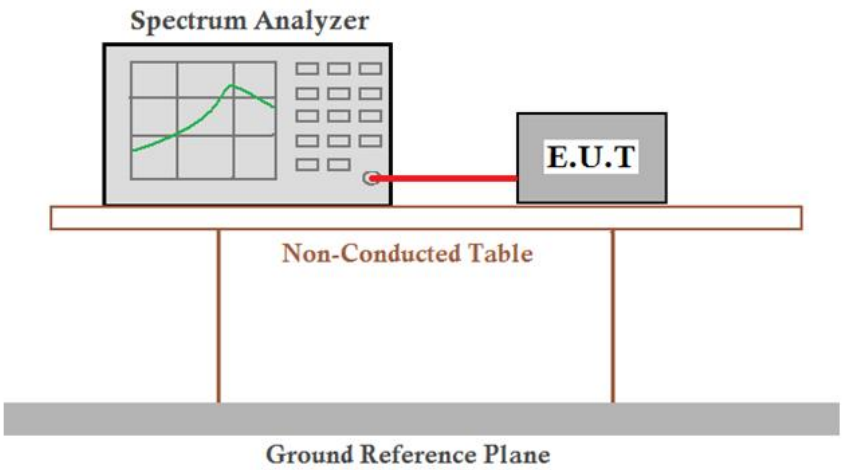


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.479432 GHz	2.10 dBm		
M2		1	2.479504 GHz	7.50 dBm		
D3	M1	1	1.124 MHz	-0.55 dB		

Date: 9.JAN.2025 15:30:57

5.5 Power Spectral Density

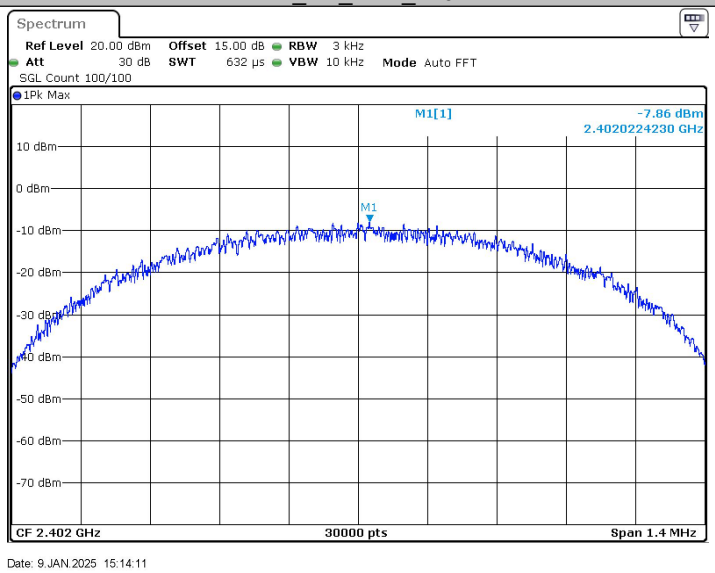
Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10 2013
Test Setup:	 *Remark: Offset=Cable loss+ attenuation factor.*
Limit:	≤8.00dBm/3kHz
Test Mode:	Transmitting with GFSK modulation.
Test Results:	Pass

Measurement Data

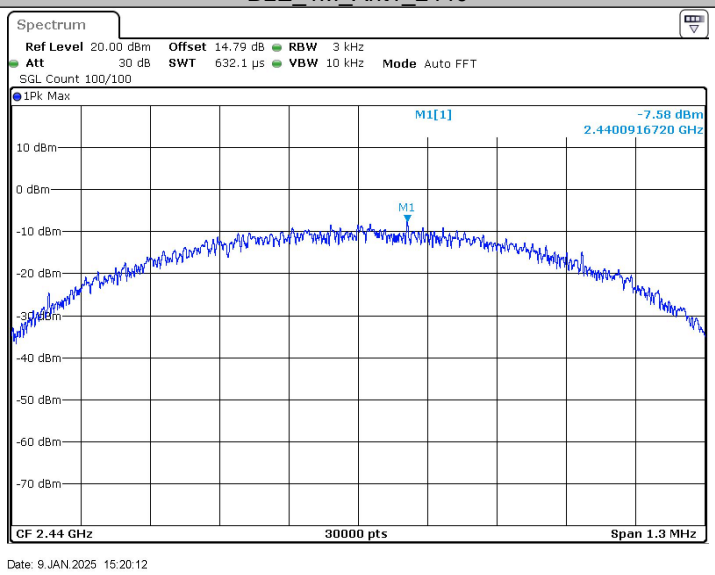
GFSK mode (1Mbps)			
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-7.86	≤8.00	Pass
Middle	-7.58	≤8.00	Pass
Highest	-7.40	≤8.00	Pass
GFSK mode (2Mbps)			
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
Lowest	-10.67	≤8.00	Pass
Middle	-10.98	≤8.00	Pass
Highest	-10.75	≤8.00	Pass

Test plot as follows:

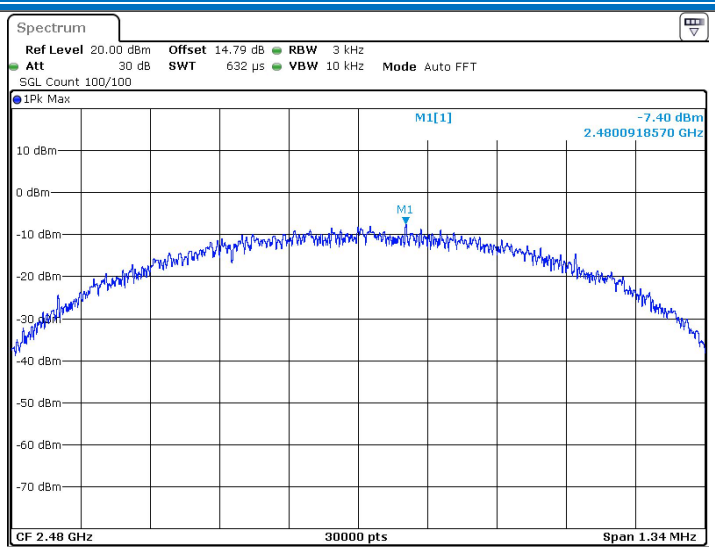
BLE_1M_Ant1_2402



BLE_1M_Ant1_2440



BLE_1M_Ant1_2480



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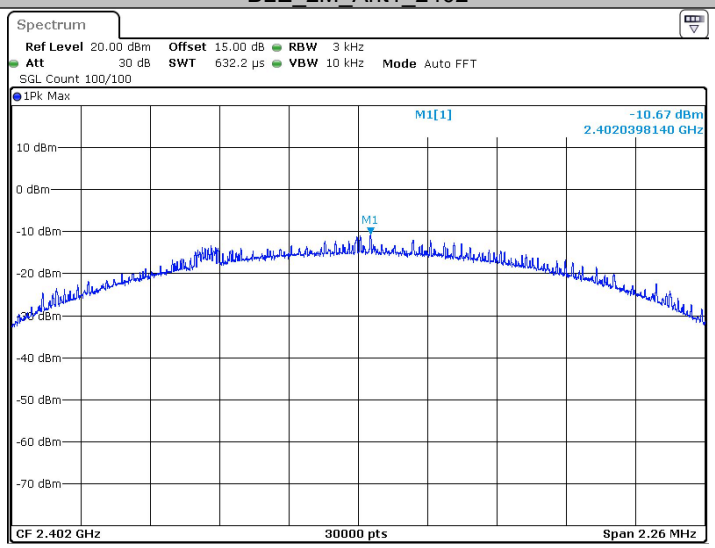
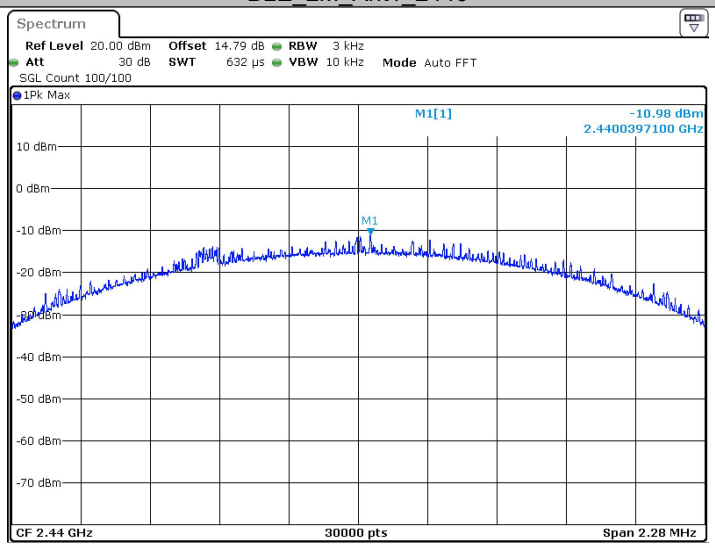
BLE_2M_Ant1_2402



Date: 9.JAN.2025 15:27:15

BLE_2M_Ant1_2440



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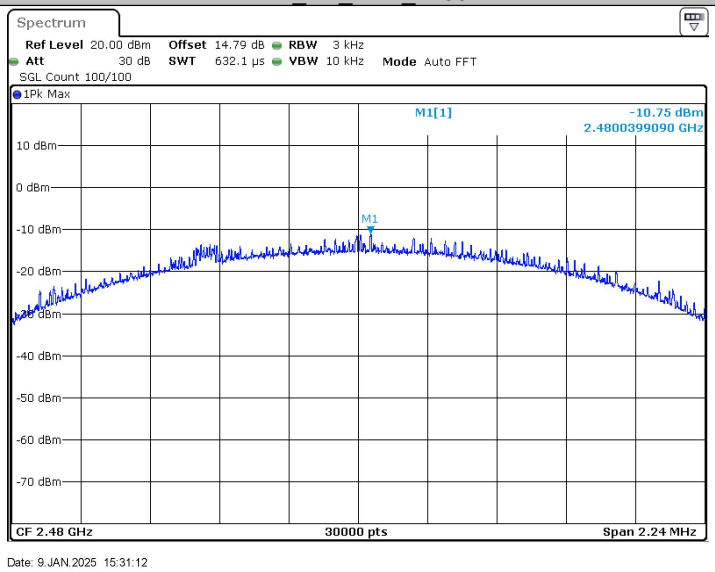
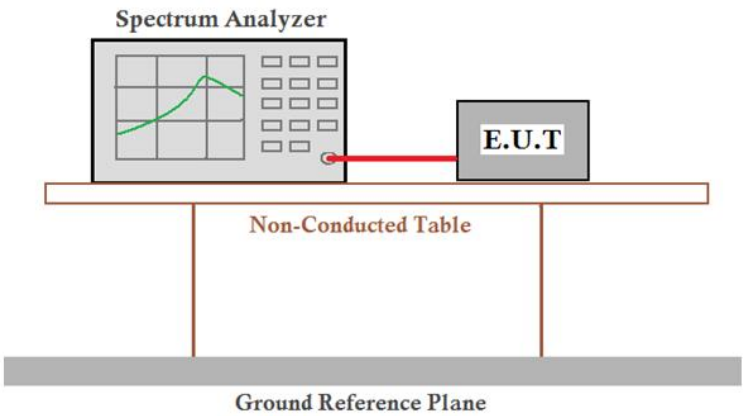
BLE_2M_Ant1_2480



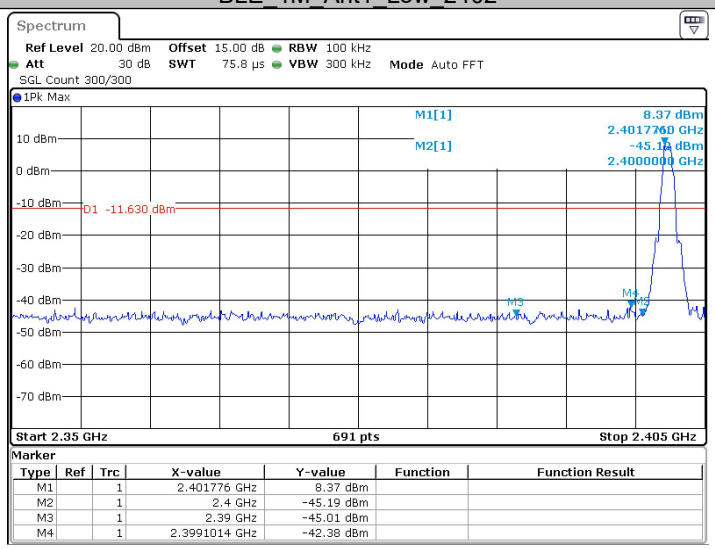
5.6 Band-edge for RF Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10 2013
Test Setup:	 *Remark: Offset=Cable loss+ attenuation factor.*
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum 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.
Test Mode:	Transmitting with GFSK modulation.
Test Results:	Pass

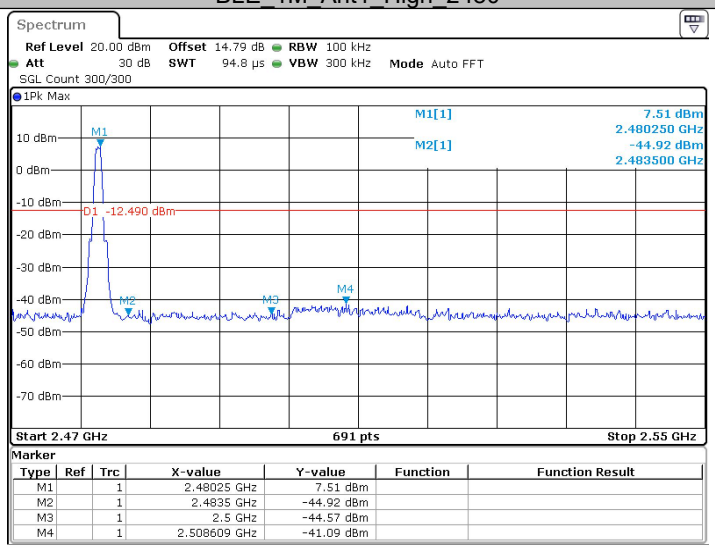
TestMode	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
BLE_1M	Low	2402	8.37	-42.38	≤-11.63	PASS
	High	2480	7.51	-41.09	≤-12.49	PASS
BLE_2M	Low	2402	7.46	-28.21	≤-12.54	PASS
	High	2480	7.92	-41.4	≤-12.08	PASS

Test plot as follows:

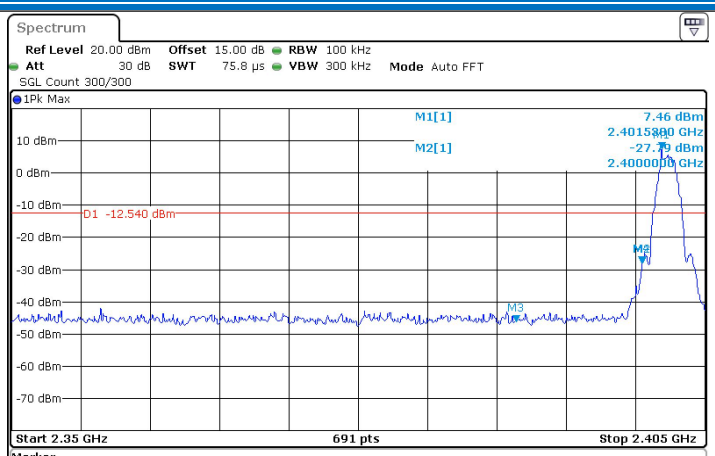
BLE_1M_Ant1_Low_2402



BLE_1M_Ant1_High_2480



BLE_2M_Ant1_Low_2402



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.401538 GHz	7.46 dBm		
M2		1	2.4 GHz	-27.79 dBm		
M3		1	2.39 GHz	-46.33 dBm		
M4		1	2.3999783 GHz	-28.21 dBm		

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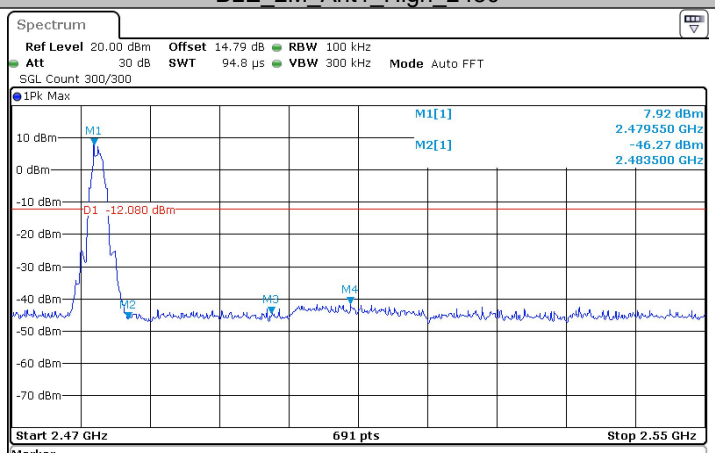
BLE_2M_Ant1_High_2480

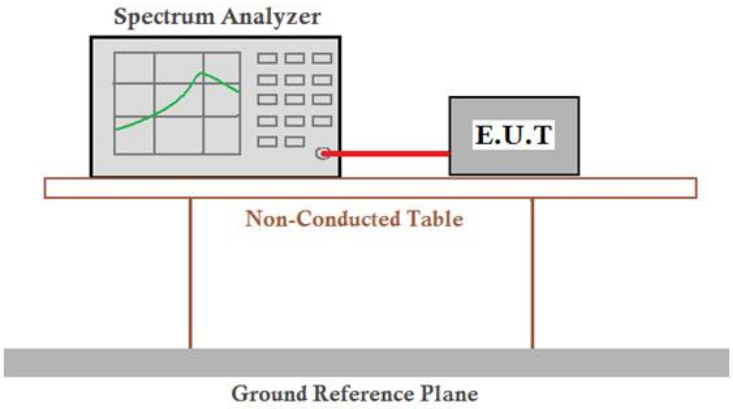


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.47955 GHz	7.92 dBm		
M2		1	2.4835 GHz	-46.27 dBm		
M3		1	2.5 GHz	-44.66 dBm		
M4		1	2.509072 GHz	-41.40 dBm		

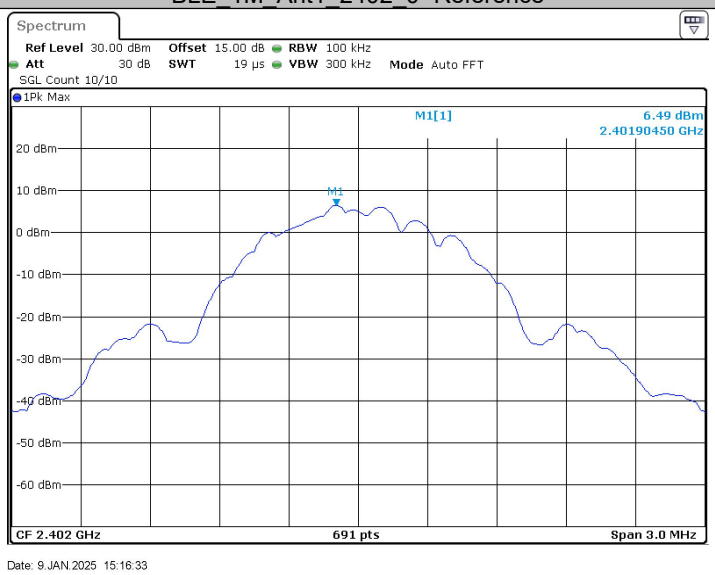
Date: 9.JAN.2025 15:31:18

5.7 Spurious RF Conducted Emissions

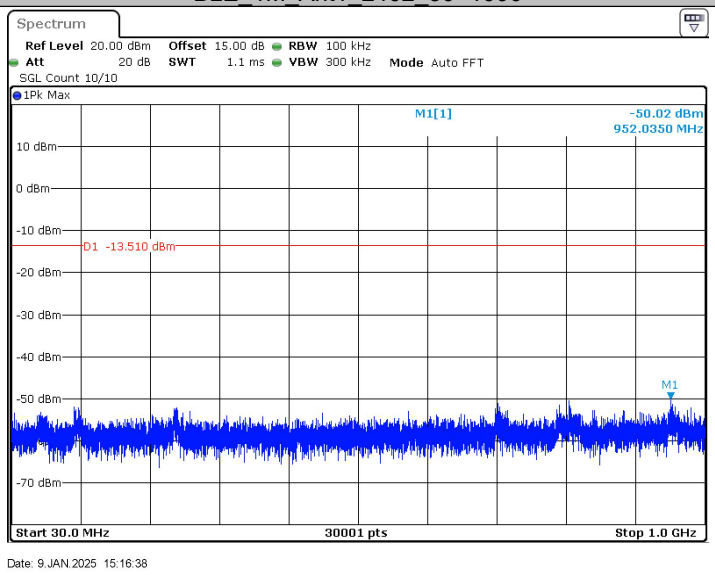
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10 2013
Test Setup:	 *Remark: Offset=Cable loss+ attenuation factor.*
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is 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.
Test Mode:	Transmitting with GFSK modulation.
Test Results:	Pass

Test plot as follows:

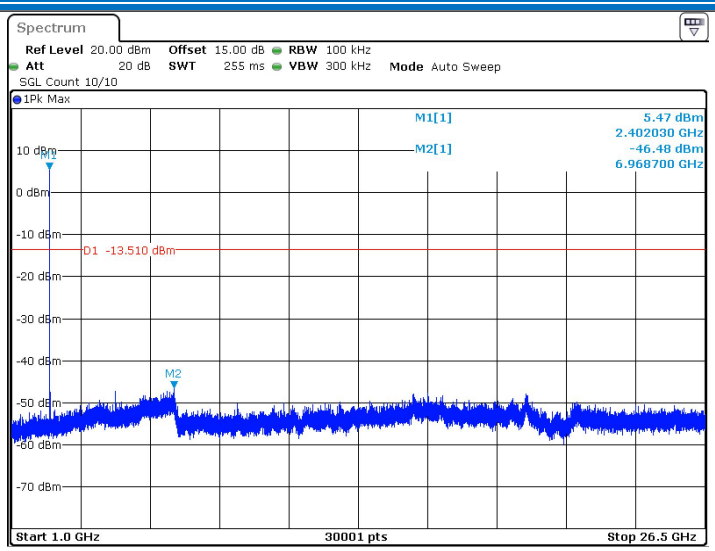
BLE_1M_Ant1_2402_0~Reference



BLE_1M_Ant1_2402_30~1000



BLE_1M_Ant1_2402_1000~26500



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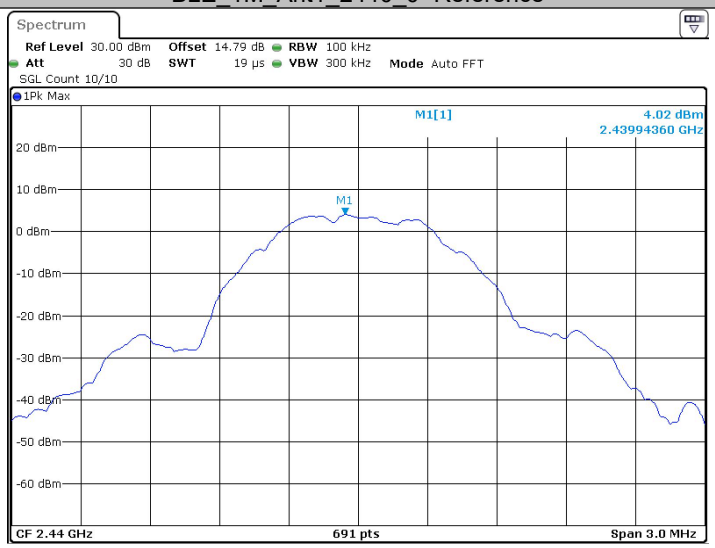
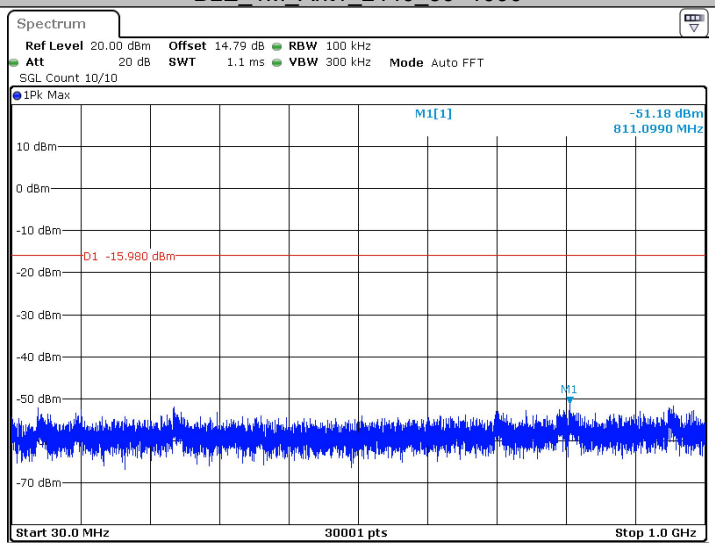
BLE_1M_Ant1_2440_0~Reference



Date: 9.JAN.2025 15:20:16

BLE_1M_Ant1_2440_30~1000



Date: 9.JAN.2025 15:20:20