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Website: www.cqa-cert.com Report Template Revision Date: 2021-11-03

Report Template Version: V05

Test Report

Report No.: CQASZ20250100131E-02

Applicant: Augustlab corp.

Address of Applicant: 301ho, 3rd flore, 142, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea

(14118)

Equipment Under Test (EUT):

Product: PEOZ guitar

Model No.: TR1, TR2, TR3

Test Model No.: TR1

Brand Name: PEOZ

FCC ID: 2BNL9-TR1

Standards: 47 CFR Part 15, Subpart C

KDB558074 D01 15.247 Meas Guidance v05r02

ANSI C63.10:2013

Date of Receipt: 2025-01-16

Date of Test: 2025-01-16 to 2025-02-24

Date of Issue: 2025-02-24
Test Result: PASS*

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

Tested By:

(Lewis Zhou)

Reviewed By:

(Timo Lei)

Approved By:

(Jack Ai)





Report No.: CQASZ20250100131E-02

1 Version

Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20250100131E-02	Rev.01	Initial report	2025-02-24





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



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4 General Information

4.1 Client Information

Applicant:	Augustlab corp.
Address of Applicant:	301ho, 3 rd flore, 142, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea (14118)
Manufacturer:	Augustlab corp.
Address of Manufacturer:	301ho, 3 rd flore, 142, LS-ro, Dongan-gu, Anyang-si, Gyeonggi-do, South Korea (14118)
Factory:	ZhaoQing YingHai Musical Instrument Manufacturer Co.,Ltd
Address of Factory:	A District, Hengdong Industrial Park, Huaicheng Town, Huaiji County, Zhaoqing City, Guangdong Province, China, 526400

4.2 General Description of EUT

Product Name:	PEOZ guitar	
Model No.:	TR1, TR2, TR3	
Test Model No.:	TR1	
Trade Mark:	PEOZ	
Software Version:	PEOZ_V1.9.0_SW	
Hardware Version:	PEOZ_V1.9.0_HW	
Operation Frequency:	2402MHz~2480MHz	
Bluetooth Version:	V5.0	
Modulation Type:	GFSK	
Transfer Rate:	1Mbps, 2Mbps	
Number of Channel:	40	
Product Type:	☐ Mobile ☐ Portable	
Test Software of EUT:	FCC_Test_Tools_V2.25	
Antenna Type:	Chip antenna	
Antenna Gain:	4.08dBi	
EUT Power Supply:	Li-ion battery DC 3.7V 1500mAh, Charge by DC 5V for adapter	
Simultaneous Transmission	☐ Simultaneous TX is supported and evaluated in this report.	
	⊠ Simultaneous TX is not supported.	



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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	

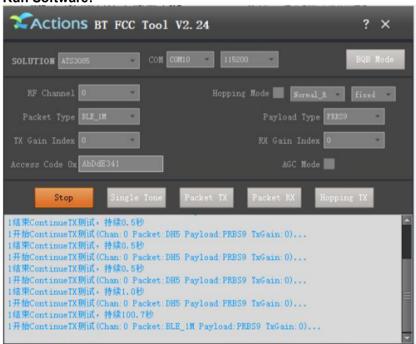


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4.3 Additional Instructions

EUT Test Software Settings:					
Mode:	⊠ Special software is used.				
		☐ Through engineering command into the engineering mode. engineering command: *#*#3646633#*#*			
EUT Power level:	Class0				
Use test software to set the lowest frequency, the middle frequency and the highest frequency keep transmitting of the EUT.					
Mode	Channel	Frequency(MHz)			
	CH0	2402			
GFSK CH19 2440					
	CH39 2480				

Run Software:





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4.4 Test Environment

Operating 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	XIAOMI	1	1	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



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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

			Instrument	Calibration	Calibration
Test Equipment	Manufacturer	Model No.	No.	Date	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

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 Chip 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.

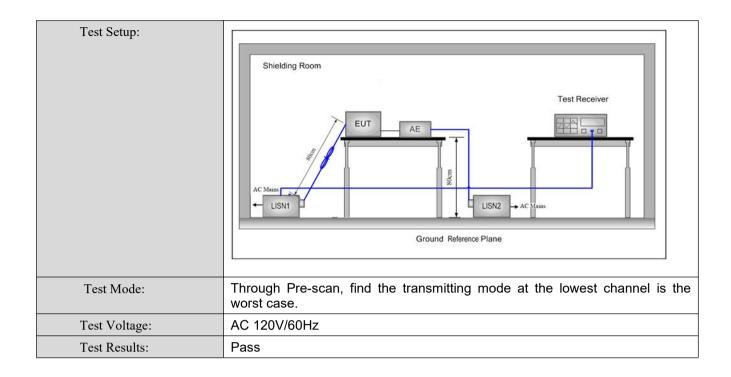


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5.2 Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	150kHz to 30MHz				
Limit:		Limit (dBuV)			
	Frequency range (MHz)	Quasi-peak	Average		
	0.15-0.5	66 to 56*	56 to 46*		
	0.5-5	56	46		
	5-30	60	50		
	* Decreases with the logarithm o	f the frequency.			
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded				
	 The mains terminal disturbance voltage test was conducted in a room. The EUT was connected to AC power source through a LISN 1 (Li Impedance Stabilization Network) which provides a 50Ω/50μH + 5 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 multipower cables to a single LISN provided the rating of the LISN was exceeded. The tabletop EUT was placed upon a non-metallic table 0.8m aboug round reference plane. And for floor-standing arrangement, the Eplaced on the horizontal ground reference plane, The test was performed with a vertical ground reference plane. The of the EUT shall be 0.4 m from the vertical ground reference plane vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary 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 ur the EUT and associated equipment was at least 0.8 m from the LIS In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed accord 				

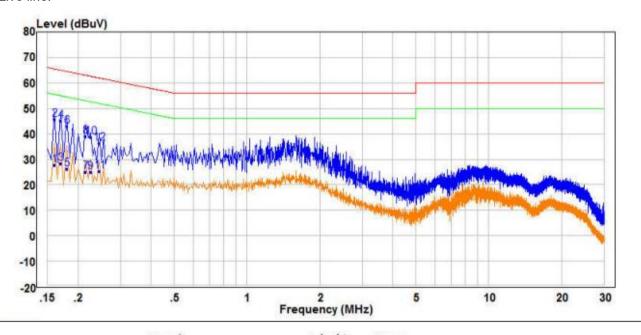






Measurement Data

Live line:



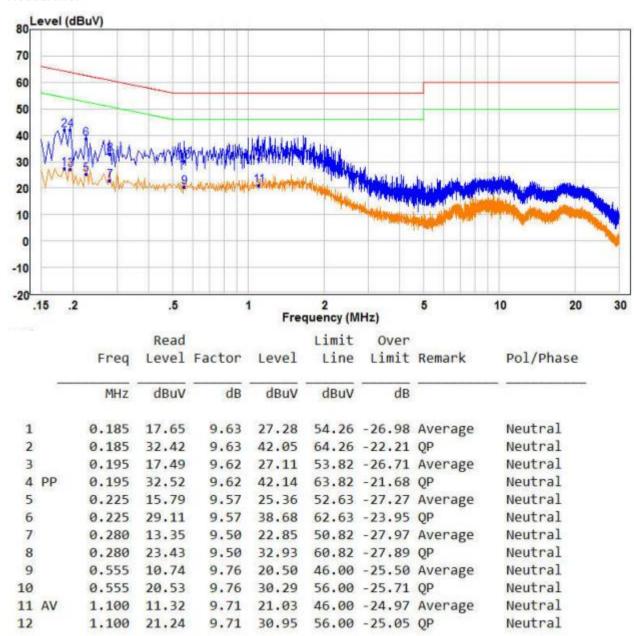
			Read			Limit	Over		
		Freq	Level	Factor	Level	Line	Limit	Remark	Pol/Phase
	-	MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.160	18.03	9.68	27.71	55.46	-27.75	Average	Line
2		0.160	35.96	9.68	45.64	65.46	-19.82	QP	Line
3		0.170	18.55	9.66	28.21	54.96	-26.75	Average	Line
4	PP	0.170	35.53	9.66	45.19	64.96	-19.77	QP	Line
5		0.180	16.69	9.64	26.33	54.49	-28.16	Average	Line
6		0.180	33.16	9.64	42.80	64.49	-21.69	QP	Line
7		0.215	15.48	9.59	25.07	53.01	-27.94	Average	Line
8		0.215	29.40	9.59	38.99	63.01	-24.02	QP	Line
9		0.225	15.44	9.58	25.02	52.63	-27.61	Average	Line
10		0.225	28.99	9.58	38.57	62.63	-24.06	QP	Line
11	AV	0.245	15.68	9.55	25.23	51.92	-26.69	Average	Line
12		0.245	26.79	9.55	36.34	61.92	-25.58	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:



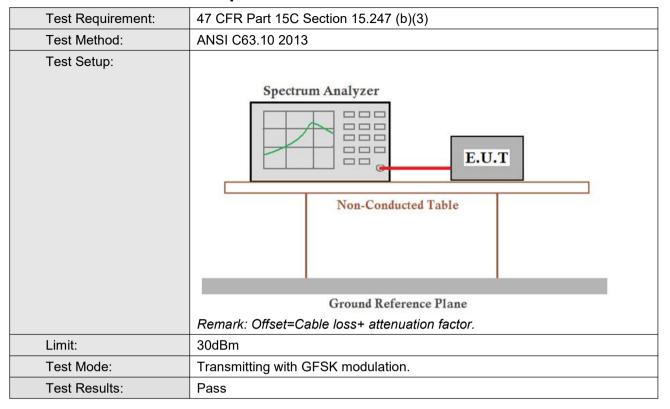
Remark:

- 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



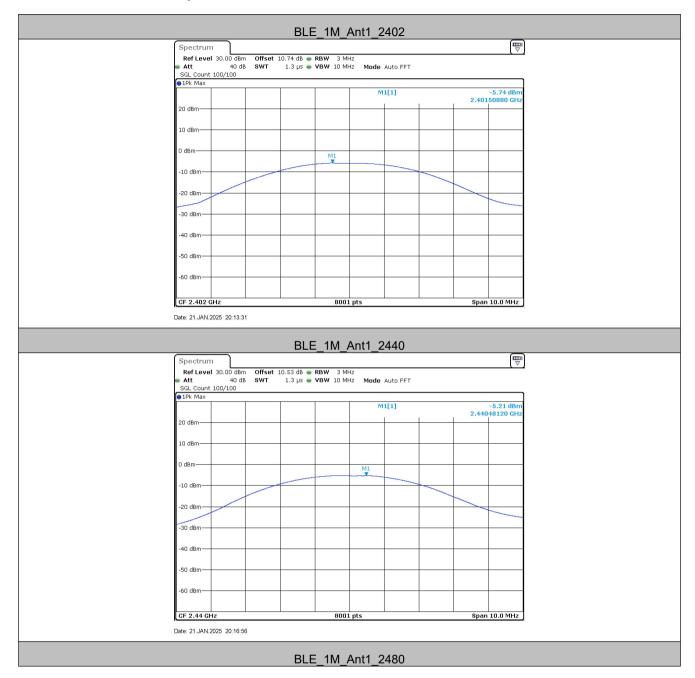
Measurement Data

GFSK mode (1Mbps)						
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result			
Lowest	-5.74	30.00	Pass			
Middle	-5.21	30.00	Pass			
Highest	-4.05	30.00	Pass			
	GFSK mode (2Mbps)					
Test channel	Peak Output Power (dBm)	Limit (dBm)	Result			
Lowest	-5.66	30.00	Pass			
Middle	-5.17	30.00	Pass			
Highest	-4.47	30.00	Pass			

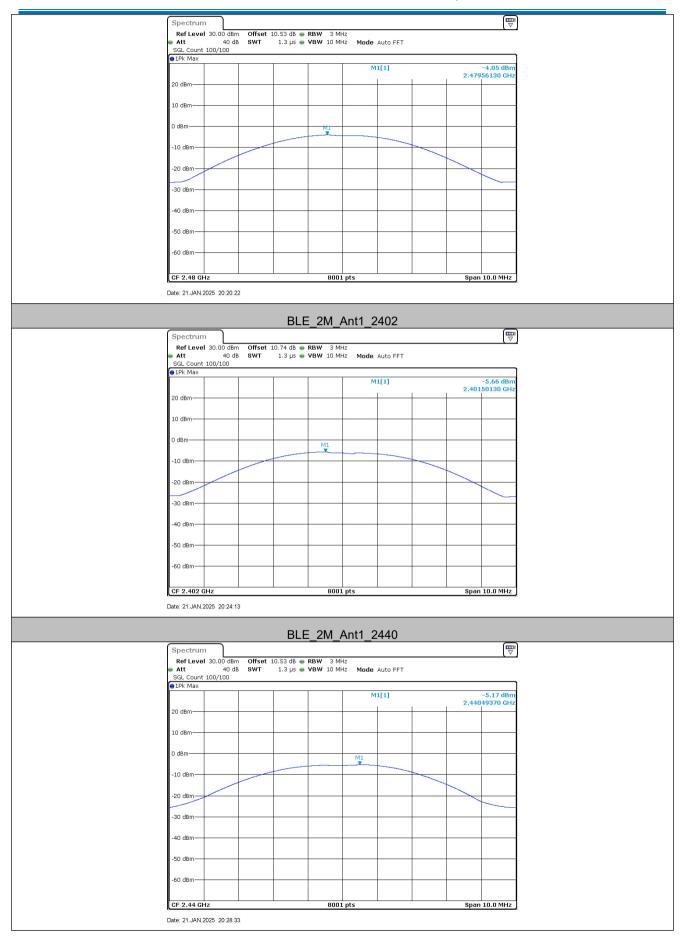


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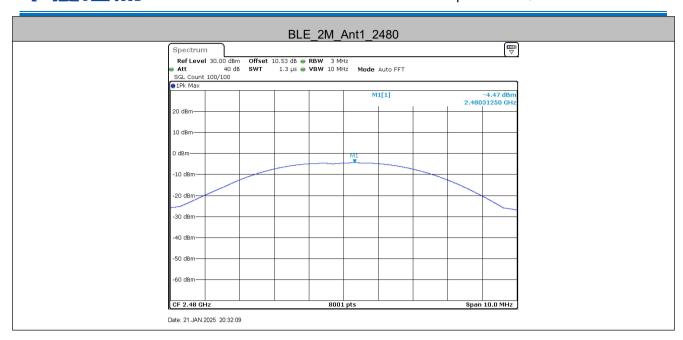
5.3.1 Test Graphs Peak





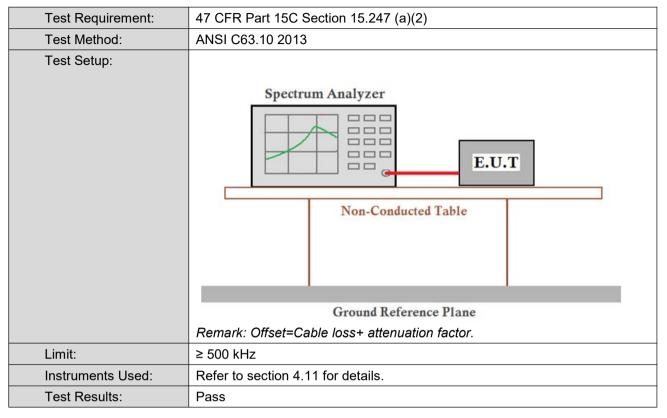








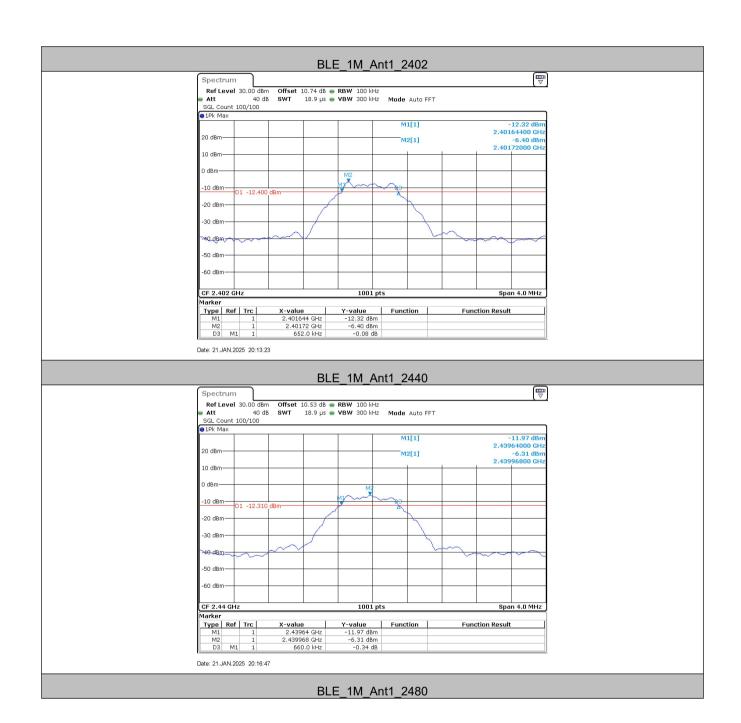
5.4 6dB Occupy Bandwidth



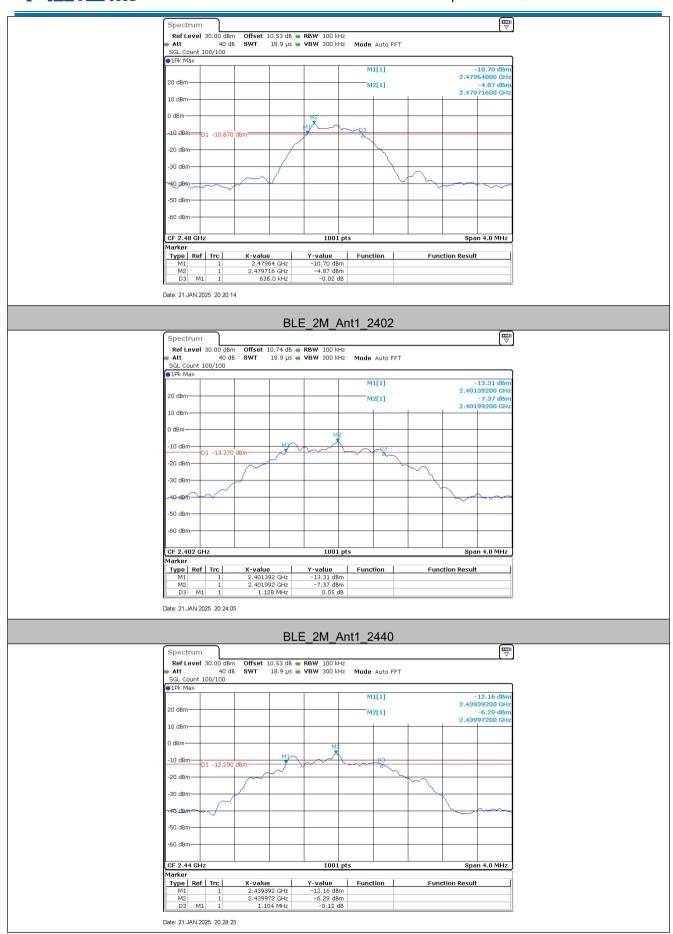
Measurement Data

medsdrement buta						
GFSK mode (1Mbps)						
Test channel	6dB Occupy Bandwidth (MHz)	Result				
Lowest	0.65	≥500	Pass			
Middle	0.66	≥500	Pass			
Highest	0.64	≥500	Pass			
	GFSK mode (2Mbps)					
Test channel	6dB Occupy Bandwidth (MHz)	Limit (kHz)	Result			
Lowest	1.13	≥500	Pass			
Middle	1.10	≥500	Pass			
Highest	1.11	≥500	Pass			

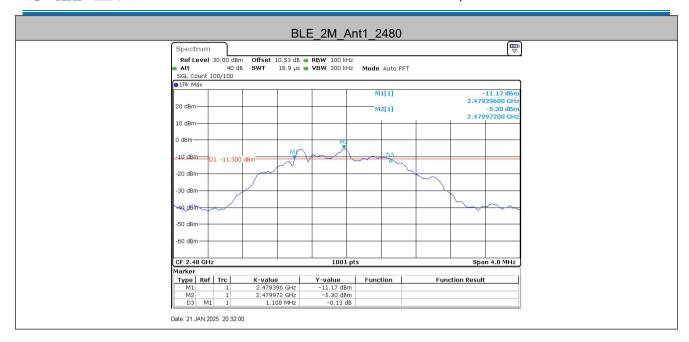






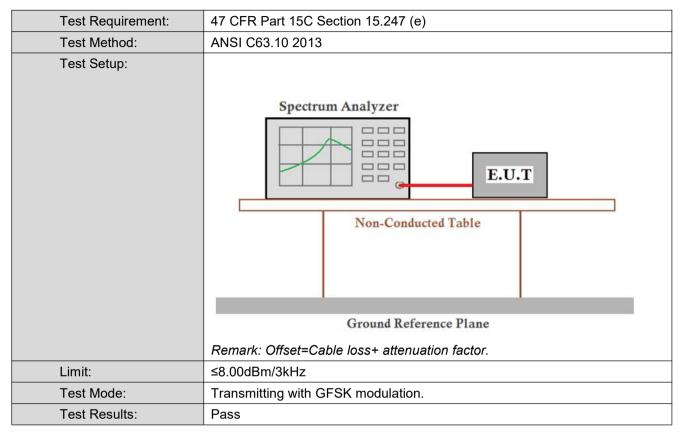








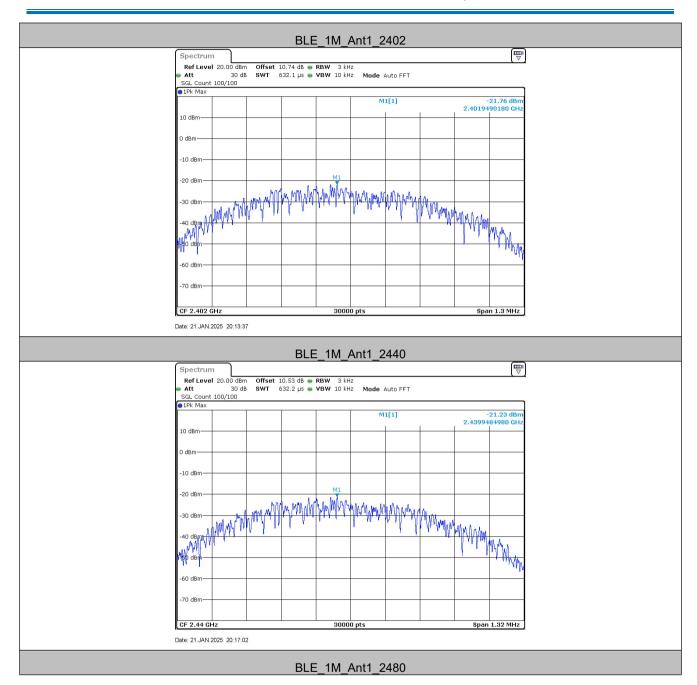
5.5 Power Spectral Density



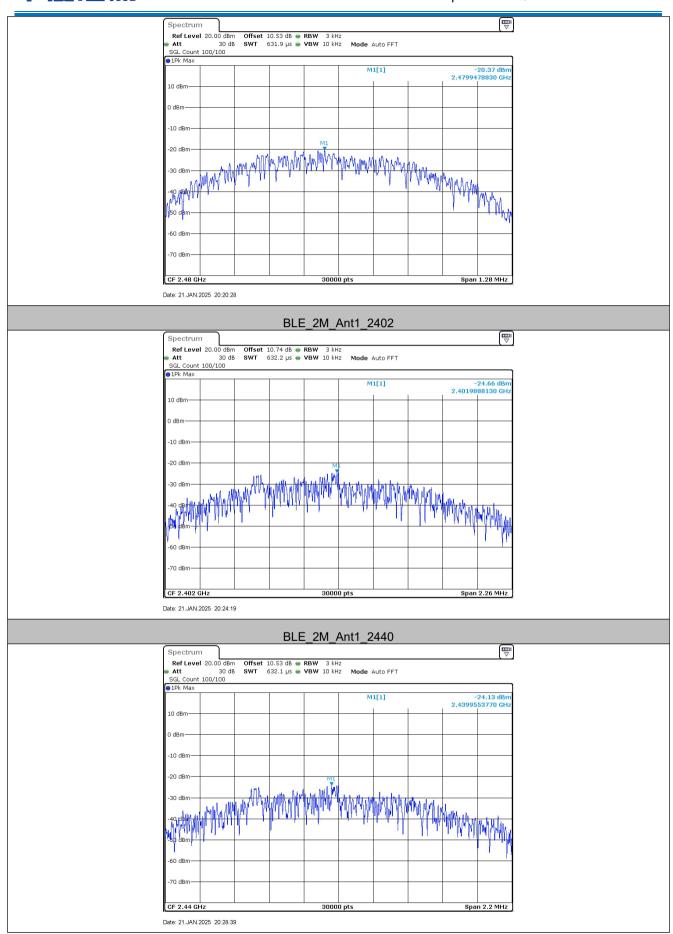
Measurement Data

Measurement Data						
GFSK mode (1Mbps)						
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result			
Lowest	-21.76	≤8.00	Pass			
Middle	-21.23	≤8.00	Pass			
Highest	-20.37	≤8.00	Pass			
GFSK mode (2Mbps)						
Test channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result			
Lowest	-24.66	≤8.00	Pass			
Middle	-24.13	≤8.00	Pass			
Highest	-23.12	≤8.00	Pass			

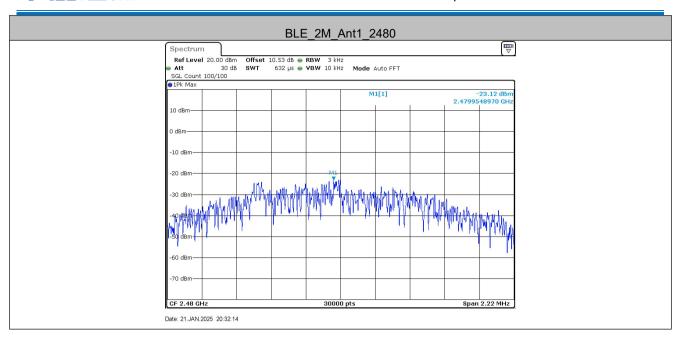








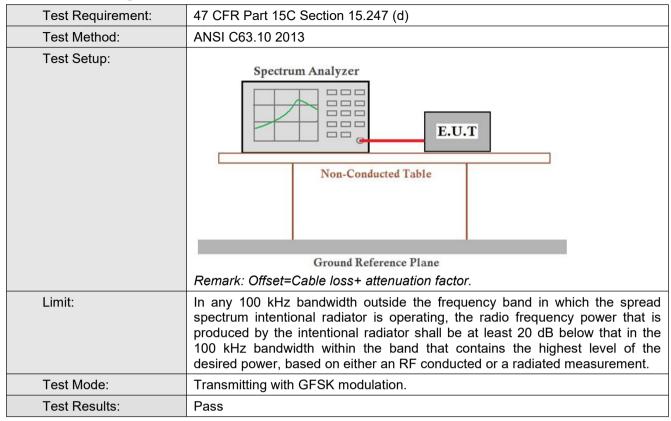






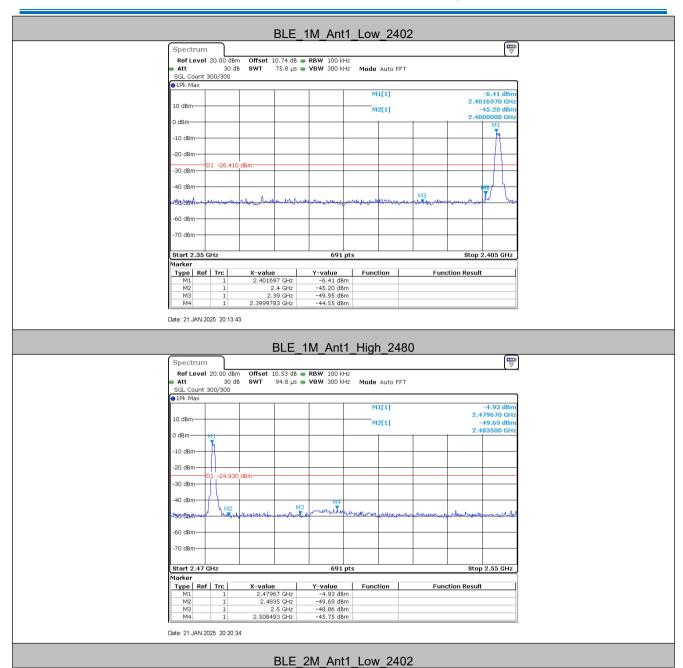
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5.6 Band-edge for RF Conducted Emissions



TestMode	ChName	Freq(MHz)	RefLevel[dBm]	Result[dBm]	Limit[dBm]	Verdict
	Low	2402	-6.41	-44.55	≤-26.41	PASS
BLE_1M	High	2480	-4.93	-45.75	≤-24.93	PASS
	Low	2402	-6.67	-40.33	≤-26.67	PASS
BLE_2M	High	2480	-5.18	-45.32	≤-25.18	PASS













5.7 Spurious RF Conducted Emissions

