

TEST REPORT

On behalf of

SUPRA Foto-Elektronik-Vertriebs-GmbH**Bauhn KMA-1 Karaoke Microphone Assortment (BKS-30)****Model No.: BKS-30 Black, BKS-30 Pink****FCC ID: Z5CBKS-30M**

Prepared For: SUPRA Foto-Elektronik-Vertriebs-GmbH
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Date of Test : 2026.06.05-08.20
Date of Report : 2026.08.31

The statement is based on a single evaluation of one sample of the above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab logo. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

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TEST REPORT

Applicant : SUPRA Foto-Elektronik-Vertriebs-GmbH
EUT Description : Bauhn KMA-1 Karaoke Microphone Assortment (BKS-30)
(A) Model No. : BKS-30 Black, BKS-30 Pink
(B) Power Supply : DC 3.7V (Battery)
(C) Test Voltage : DC 3.7V (Battery),
DC 3.3V from test fixture
AC 120V/60Hz(for Adapter)

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART C
AND ANSI C63.10:2020*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: Refer to Sec2.1), which was tested is technically compliance with the FCC limits.

This report applies to above tested Sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.

Date of Test : 2026.06.05-08.20 Date of Report : 2026.08.31

Producer : Huimin Yan
HUIMIN YAN / Assistant

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JAREY LU / Deputy Assistant Manager
For and on behalf of
 Audix Technology (Shanghai) Co., Ltd.

Signatory : Kamp Chen
Authorized Signature(s) KAMP CHEN / Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The result is determined according to the decision rules of customer selection in the ASC-403 application service form.

1. According to IEC GUIDE 115 Procedure 2 and ILAC-G8, the uncertainties value is not used in determining the PASS/FAIL results.

2. If the required specification or standard already contains the decision rules, it will be carried out in accordance with the regulations or standard documents or the requirements of the competent units. If the required specification or standard does not contain a decision rule, the same paragraph 1.

3. If your company has a required decision rule, it will be implemented in accordance with the requirements and ISO/IEC Guide 98-4 specifications.

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Results	Meets Limit
EMISSION			
Conducted Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.207
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.209(a) 15.205(a)(c)
6 dB Bandwidth Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(a)(2)
Maximum Peak Output Power Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(b)(3)
Emission Limitations Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(d)
Band Edge Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(d)
Power Spectral Density Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.247(e)
Antenna Requirement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2020	Pass	15.203
N/A is an abbreviation for Not Applicable.			

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Type of EUT : ☒ Production ☐ Pre-product ☐ Pro-type

Description : Bauhn KMA-1 Karaoke Microphone Assortment (BKS-30)

Model Number : BKS-30 Black, BKS-30 Pink

Note#1 : The models are all the same except for the color.

Note#2 : According the difference as above, we selected Model BKS-30 Black to do the test in current report.

Test Model : BKS-30 Black

Radio Tech : BLE;

Channel Freq. : BLE: 2402MHz-2480MHz.

Modulation : BLE: GFSK.

Antenna Info. : Transmit Type: 1T1X;
Connector Type: PCB;
Antenna Type: PCB Antenna;
Antenna Gain: 1.7dBi.

Note#3 : The Antenna information was provided by the customer.

Applicant : SUPRA Foto-Elektronik-Vertriebs-GmbH
Denisstr. 28a, Kaiserslautern, 67663, Germany

Manufacturer : same as Applicant

2.2 EUT Specifications Assessed in Current Report

Mode	Modulation	Data Rate(Mbps)
BLE	GFSK	Up to 1

Channel List			
Channel No.	Frequency (MHz)	Channel No.	Frequency (MHz)
00	2402	20	2442
01	2404	21	2444
02	2406	22	2446
...	...	...	...
...	...	...	...
...	...	...	...
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

2.3 Test Information

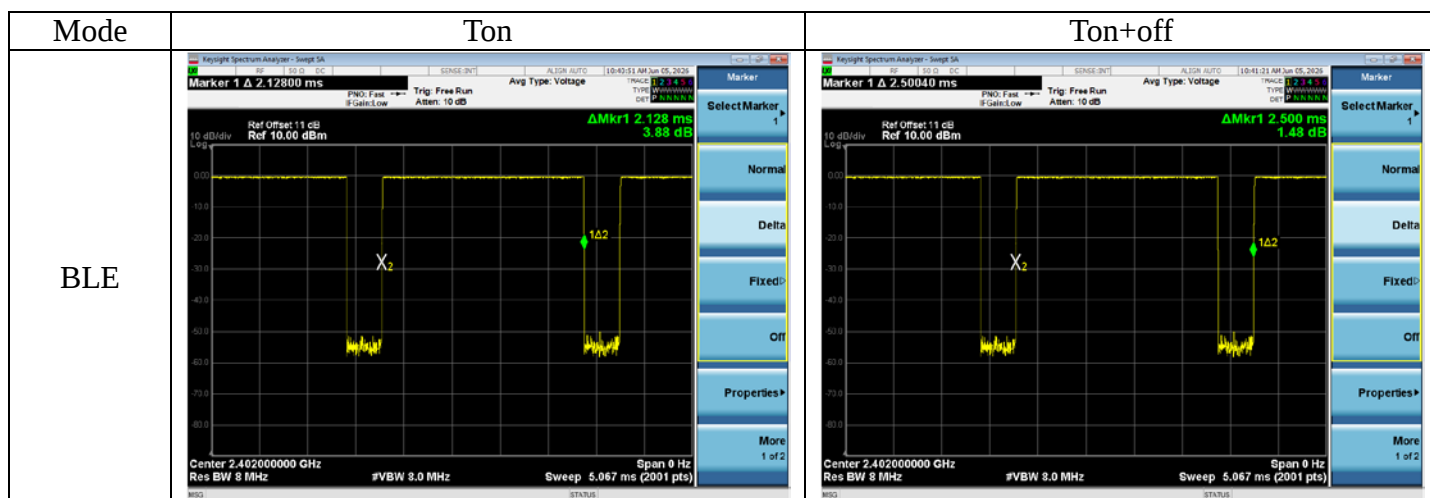
The test software “ BT Tool.exe” was used to control EUT work in TX mode, Power Setting and select test channel.

Mode	data rate (Mbps)	Tx Power Setting	Test Channel		Frequency (MHz)
BLE	1	7	Low:	00	2402
		7	Middle:	20	2442
		7	High:	39	2480

Note: The setting information was provided by the customer.

2.4 Duty Cycle Check

Mode	Transmission Duration (ms)	Transmission Period (ms)	Duty Cycle (%)
BLE	2.128	2.5	85.12



2.5 Sample Description

Test Item	Model Number	Sample Number	Date of receipted
Conducted Emission	BKS-30 Black	E20260521-01-01/03	2026.05.21
Radiated Emission	BKS-30 Black	E20260521-01-02/03	2026.05.21
Conducted RF Test	BKS-30 Black	E20260521a-01-01/03	2026.05.21

2.6 Supported equipment

Brand : Xiaomi
 Product Name : Adapter
 Model Number : MDY-08-ES
 Serial Number : 4A41807P140530C
 Input : 100-240VAC, 50/60Hz, 0.5A
 Output : 5Vdc 3A, 9Vdc 2A, 12Vdc 1.5A.

Brand : Acer
 Product Name: : Notebook PC
 Model Name : TravelMate P238 series
 Model Number : N15W8

Product Name : Test Fixture
 Product Function : USB to TTL

2.7 Description of Test Facility

Name of Firm	: Audix Technology (Shanghai) Co., Ltd.
Site Location	: 3F, Building 34, No. 680 Guiping Rd., Caohejing, Hi-Tech Park, Shanghai 200233, China
Accredited by NVLAP, Lab Code	: 200371-0
FCC Designation Number	: CN5027
Test Firm Registration Number	: 954668

3 CONDUCTED EMISSION TEST

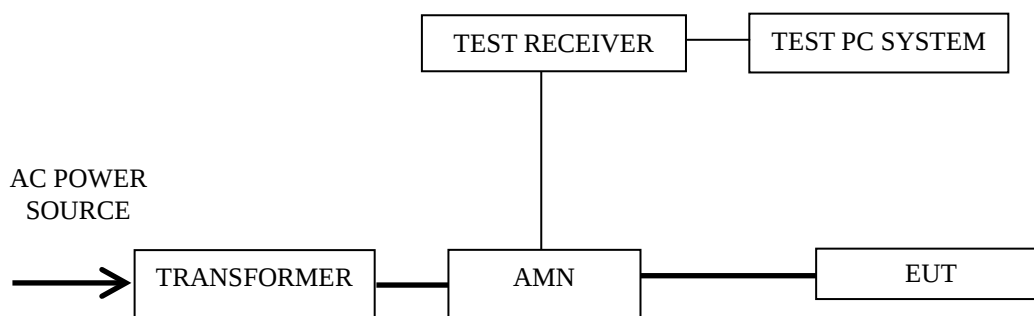
3.1 Test Equipment

The following test equipments are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Test Receiver	R&S	ESCI	101302	2026.02.24	1 Year
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	2026.02.24	1 Year
3.	Fixed Attenuator	SHYL	TTS-1	001	2026.02.24	1 Year
4.	50Ω Coaxial Switch	Anritsu	MP59B	6200655085	2026.02.24	1 Year
5.	Coaxial Cable	Audix	CE Cable	CE-SH1-001	2026.02.24	1 Year
6.	Software	Audix	e3	e3.v9.210616	--	--

3.2 Block Diagram of Test Setup

3.2.1 Conducted Disturbance Test Setup



— : Signal Line
 — : Power Line

3.3 Conducted Emission Limits (§15.207)

Frequency Range (MHz)	Limits dB(μ V)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz		

3.4 Test Configuration

The EUT (listed in Sec.2.1) was installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner which tends to maximize its emission level in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT as shown in Sec. 3.2.

3.5.2 Turn on the power of all equipment.

3.5.3 Turn the EUT on the test mode, and then test.

3.6 Test Procedures

The EUT was placed upon a non-metallic table, which is 0.8 m above the horizontal conducting ground plane and 0.4 m from a vertical reference plane. The EUT was connected to the power mains through an Artificial Mains Network (AMN) to provide a 50 Ω coupling impedance for the measuring equipment. Both sides of AC line (Line & Neutral) were checked to find out the maximum conducted emission according to FCC Part 15 Subpart C and ANSI C63.10:2020 requirements during conducted disturbance test.

The I.F. bandwidth of Test Receiver ESCI was set at 9 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

Test with a dummy load in lieu of the antenna to determine compliance with Section 15.207 limits within the transmitter's fundamental emission band. (According to KDB 174176 D01 Line Conducted FAQ)

The test modes were done on conducted disturbance test and all the test results are listed in Sec. 3.7

3.7 Test Results

< **PASS** >

The frequency and amplitude of the highest conducted emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Worst case emission:

No.	Operation	Mode	Channel	Frequency (MHz)	Data Page
1.	Transmitting	BLE	00	2402	P13-14

NOTE 1 –Emission Level (dB μ V/m) = Read Level (dB μ V) + AMN Factor (dB) + Aux Factor (dB) + Cable Loss (dB)

Margin (dB) = Limits (dB μ V) - Emission Level (dB μ V)

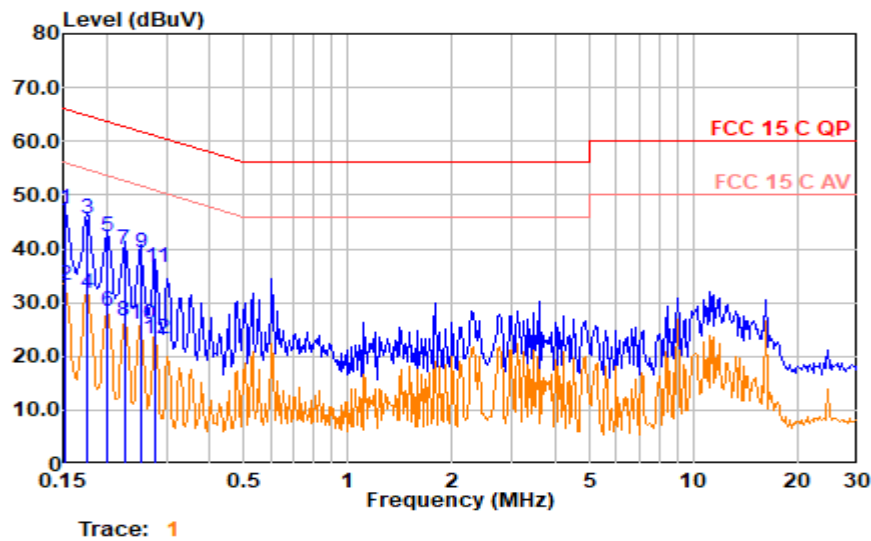
NOTE 2 – “QP” means “Quasi-Peak” values

NOTE 3 – The emission levels which not reported are too low against the official limit.

Worst case emission

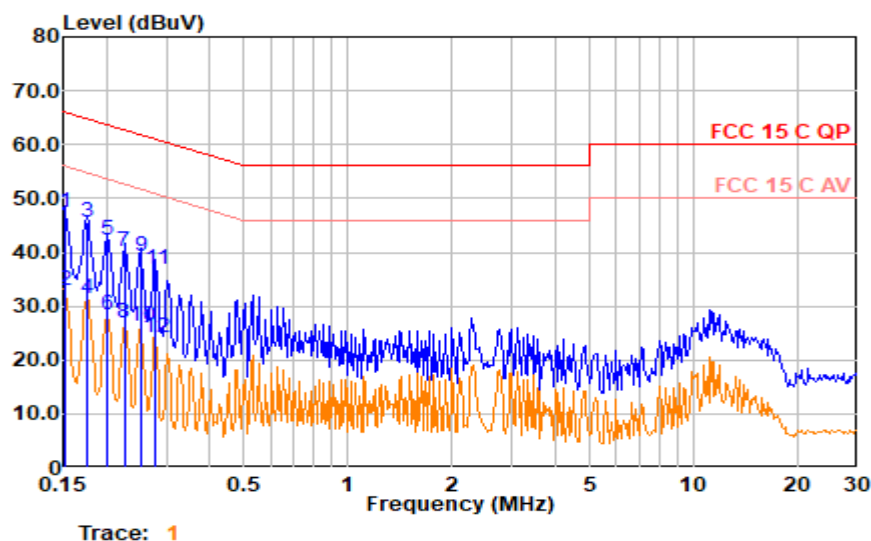
Test Date:	2026.08.10	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BLE CH2402MHz



Polarization at Line

Frequency (MHz)	Meter Reading dB (μV)	AMN Factor (dB)	Aux Factor (dB)	Cable Loss (dB)	Emission Level dB (μV)	Limits dB (μV)	Margin (dB)	Remark
0.151	37.79	0.10	9.50	0.11	47.51	65.92	18.41	QP
0.151	23.45	0.10	9.50	0.11	33.16	55.92	22.76	Average
0.176	35.89	0.10	9.50	0.12	45.61	64.68	19.07	QP
0.176	21.83	0.10	9.50	0.12	31.55	54.68	23.13	Average
0.202	32.64	0.10	9.50	0.12	42.36	63.52	21.17	QP
0.202	18.74	0.10	9.50	0.12	28.46	53.52	25.07	Average
0.225	30.22	0.10	9.50	0.12	39.94	62.61	22.68	QP
0.225	16.82	0.10	9.50	0.12	26.53	52.61	26.08	Average
0.252	29.42	0.10	9.50	0.12	39.14	61.71	22.57	QP
0.252	16.28	0.10	9.50	0.12	26.00	51.71	25.71	Average
0.278	26.79	0.10	9.50	0.12	36.51	60.88	24.37	QP
0.278	13.65	0.10	9.50	0.12	23.37	50.88	27.51	Average

Mode: BLE CH2402MHz**Polarization at Neutral**

Frequency (MHz)	Meter Reading dB (μV)	AMN Factor (dB)	Aux Factor (dB)	Cable Loss (dB)	Emission Level dB (μV)	Limits dB (μV)	Margin (dB)	Remark
0.151	37.75	0.10	9.50	0.11	47.46	65.92	18.46	QP
0.151	23.25	0.10	9.50	0.11	32.97	55.92	22.95	Average
0.176	35.82	0.10	9.50	0.12	45.53	64.68	19.15	QP
0.176	21.65	0.10	9.50	0.12	31.37	54.68	23.31	Average
0.202	32.63	0.10	9.50	0.12	42.35	63.52	21.18	QP
0.202	18.71	0.10	9.50	0.12	28.43	53.52	25.09	Average
0.225	30.34	0.10	9.50	0.12	40.06	62.61	22.56	QP
0.225	17.01	0.10	9.50	0.12	26.73	52.61	25.89	Average
0.252	29.63	0.10	9.50	0.12	39.35	61.71	22.36	QP
0.252	16.61	0.10	9.50	0.12	26.33	51.71	25.38	Average
0.278	27.13	0.10	9.50	0.12	36.85	60.88	24.03	QP
0.278	14.37	0.10	9.50	0.12	24.09	50.88	26.79	Average

4 RADIATED EMISSION TEST

4.1 Test Equipment

The following test equipment are used during the radiated emission test in a semi-anechoic chamber:

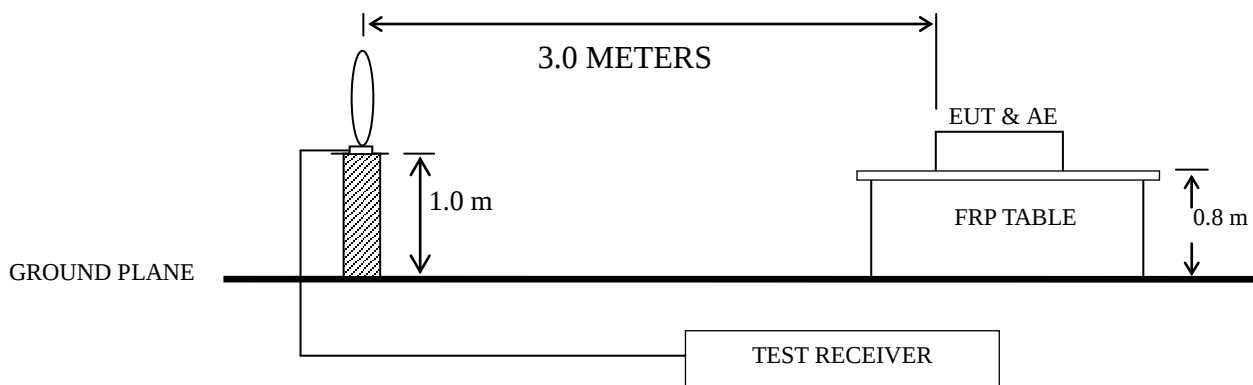
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Preamplifier	Agilent	8447D	2944A10548	2026.02.24	1 Year
2.	Preamplifier	HP	8449B	3008A00864	2026.02.24	1 Year
3.	Preamplifier	EM Electronics	EM18G40GA	060770	2026.02.24	1 Year
4.	EXA Signal Analyzer	Agilent	N9010A	MY52221182	2026.07.03	1 Year
5.	Test Receiver	R&S	ESCI	101303	2026.02.24	1 Year
6.	Loop Antenna	Schaffner	HLA6120	1193	2026.08.04	1 Year
7.	Bilog Antenna+ 6dB Attenuator	Schwarzbeck	VULB 9168+ EMCI-N-6-06	707+AT-N0637	2026.08.07	1 Year
8.	Horn Antenna	EMCO	3115	96074878	2026.08.06	1 Year
9.	Horn Antenna	EMCO	3116	00062643	2025.01.21	2 Year
10.	Cavity Band Rejection Filter	WT	WT-A3882-R10	WT200312-1-2	2026.02.24	1 Year
11.	3.5G High Pass Filter	Agilent	84300-80038	066	2026.02.24	1 Year
12.	RE Cable-3m+ Coaxial Switch	TIMES+ANRI TSU	LMR400-NMNM-3.0M+MP59B	20250211-0001+6200655086	2026.02.24	1 Year
13.	RE Cable-1m	TIMES	LMR400UF-NM NM-1.0M	20260303-001	2026.02.24	1 Year
14.	RE Cable-11m	TIMES	LMR400UF-NM NM-11.0M	20260303-001	2026.02.24	1 Year
15.	Coaxial Cable(CH.3)	Mini-Circuits	FLC-2FT-SMSM+	21112086	2026.02.24	1 Year
16.	RE Cable-5m	TIMES	SFT205-SMNM -5.0M	20250211-0001	2026.02.24	1 Year
17.	RF Cable-0.6m+4m	EM Electronics	EM102-0.6M+EM 102-4M	W0061790001+W0061800001	2026.02.24	1 Year
18.	Software	Audix	e3	e3.v9.210616	--	--

4.2 Block Diagram of Test Setup

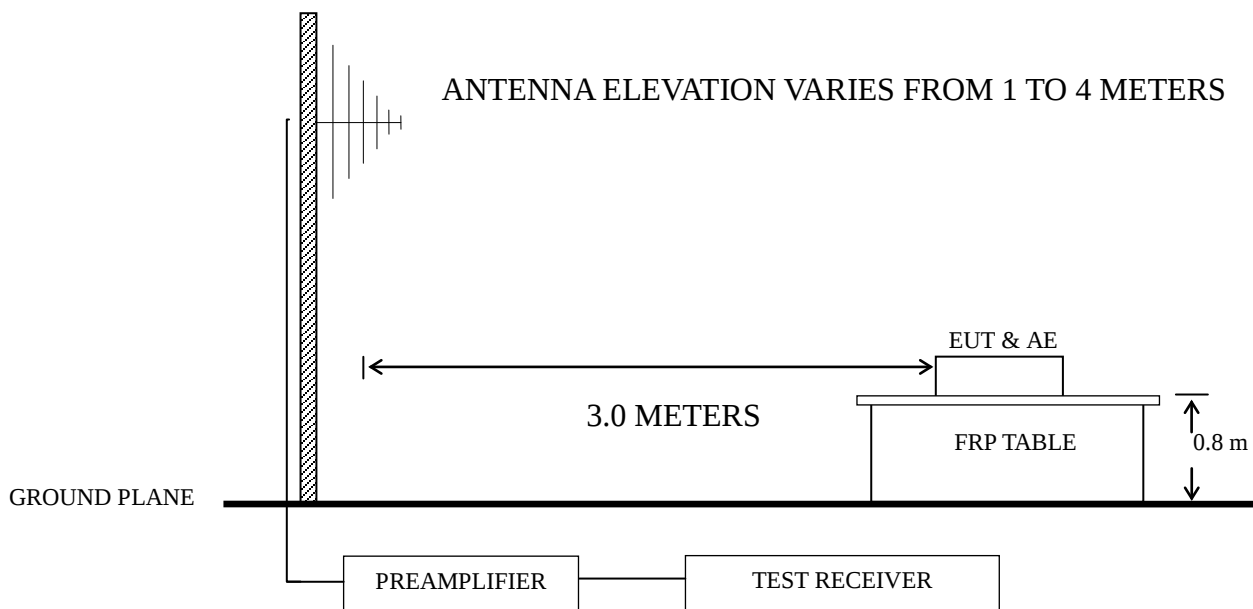
4.2.1 EUT & Peripherals



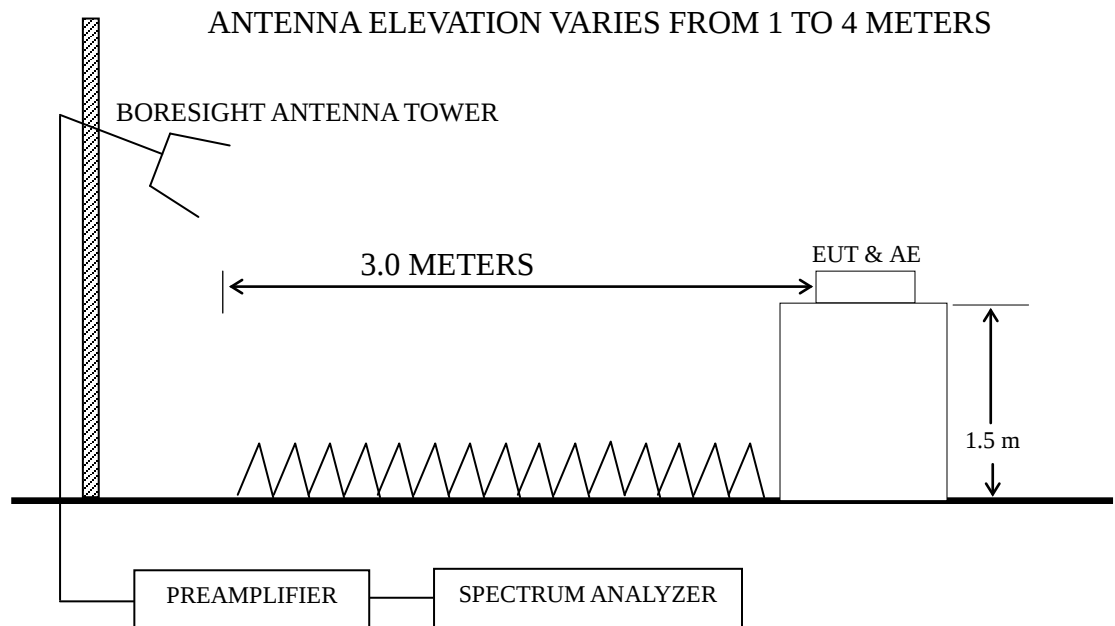
4.2.2 9kHz to 30MHz



4.2.3 30MHz to 1GHz



4.2.4 Above 1GHz



4.3 Radiated Emission Limit (§15.209)

Frequency (MHz)	Distance (m)	Field strength limits (μV/m)	
		(μV/m)	dB (μV/m)
0.009 ~ 0.490	300	2400/F(kHz)	20log(2400/F(kHz))
0.490 ~ 1.705	30	24000/F(kHz)	20log(24000/F(kHz))
1.705 ~ 30	30	30	29.5
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0

NOTE 1 - Emission Level dB (μV/m) = 20 log Emission Level (μV/m)

NOTE 2 - The tighter limit applies at the band edges.

NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

NOTE 4 - The limits shown are based on Quasi-peak value detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 1000 MHz. The limits in these three bands are based on average detector.

NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT

4.4 Test Configuration

The EUT (listed in Sec.2.1) and the simulators (listed in Sec.2.2) were installed as shown on Sec.4.2 to meet FCC requirements and operating in a manner that tends to maximize its emission level in a normal application.

4.5 Operating Condition of EUT

4.5.1 Setup the EUT as shown in Sec. 3.2.

4.5.2 Turn the EUT on (powered by internal battery).

4.5.3 Connect the EUT and the TTL terminal of Test Fixture through three HCI cables of EUT, as follows (VCC to DC3V3, RX to TXD, GND to GND). Plug the USB terminal of Test Fixture to the USB port of Notebook PC.

4.5.4 Use the software as section 2.3 to select the test mode, remove Test Fixture and Notebook PC out of test area, and then test.

4.5.5 Repeat step 4.5.3 and 4.5.4, until the test of all modes finished.

4.6 Test Procedures

Radiated emission test applies to harmonics/spurs that fall in the restricted bands listed in Section 15.205. The maximum permitted average field strength is listed in Section 15.209. A pre-amp is necessary for this measurement. For measurement above 1 GHz, set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation.

The EUT was placed on a turntable. Below 1 GHz, the table height is 80 cm above the reference ground plane. Above 1 GHz, the table height is 1.5 m. The turntable rotated 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) or Horn antenna was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.10:2020 requirements during radiated emission test.

The resolution bandwidth of Test Receiver R&S ESCI was set at 200 Hz from 9kHz to 150kHz, set 9kHz from 150kHz to 30MHz, and set at 120 kHz from 30MHz to 1000MHz.

The resolution bandwidth of Agilent N9010A was set at 1MHz for above 1GHz.

The frequency range from 9 kHz to 25 GHz (Up to 10th harmonics from fundamental frequency) was checked.

All the test results are listed in Sec.4.7.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Frequency range: below 1GHz (Worst case emission):

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402MHz	P20-21

Note: The emissions between 9kHz to 30MHz were too low against the limit.

Frequency range: 1GHz to 18GHz (Worst case emission)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402 MHz	P22-25

Frequency range: above 18GHz (Worst case emission)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402 MHz	P26-27

Band-Edge and Restricted bands:

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BR-DH5	00	2402 MHz	P28-29
2.			78	2480 MHz	P30-31

NOTE 1 – Emission Level (dBμV/m) = Read Level (dBμV) + Antenna Factor (dB/m) + Cable Loss (dB) - Preamp Factor (dB)

Margin (dB) = Limits (dBμV/m) - Emission Level (dBμV/m).

NOTE 2 – “QP” means “Quasi-Peak” values.

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The emission levels which not reported are too low against the official limit.

NOTE 5 – The emission levels recorded below is data of EUT configured in Side direction, for this direction was the maximum emission direction during the test. The data of Stand & Lying direction are too low against the official limit to be reported.

NOTE 6 – All reading are Quasi-Peak values below or equal to 1GHz, Peak and Average values above 1GHz.

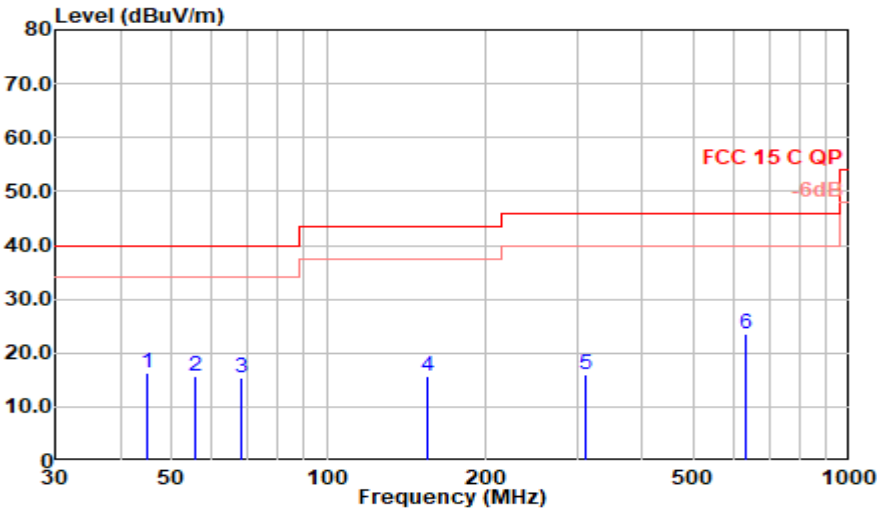
For above 1GHz test, if the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

NOTE 7 – The frequency range 2310-2390MHz & 2483.5-2500MHz were tested for Restricted bands.

Radiated emission < 1GHz

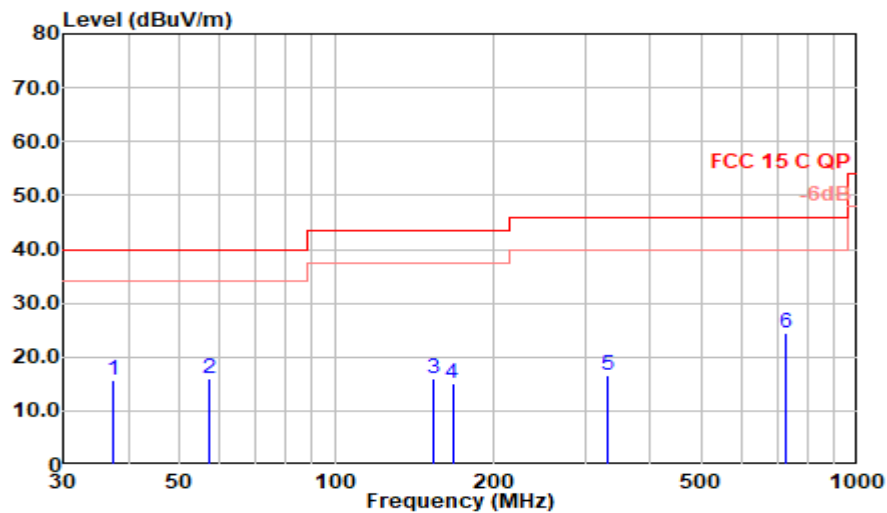
Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BLE CH2402MHz



Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
45.035	25.68	19.50	0.62	29.52	16.28	40.00	23.72	QP
55.705	24.97	19.43	0.66	29.48	15.58	40.00	24.42	QP
68.315	26.39	17.91	0.69	29.43	15.55	40.00	24.45	QP
155.615	24.59	19.20	0.93	29.00	15.72	43.50	27.78	QP
311.785	23.15	19.67	1.42	28.32	15.92	46.00	30.08	QP
632.370	24.21	26.15	1.93	28.70	23.58	46.00	22.42	QP

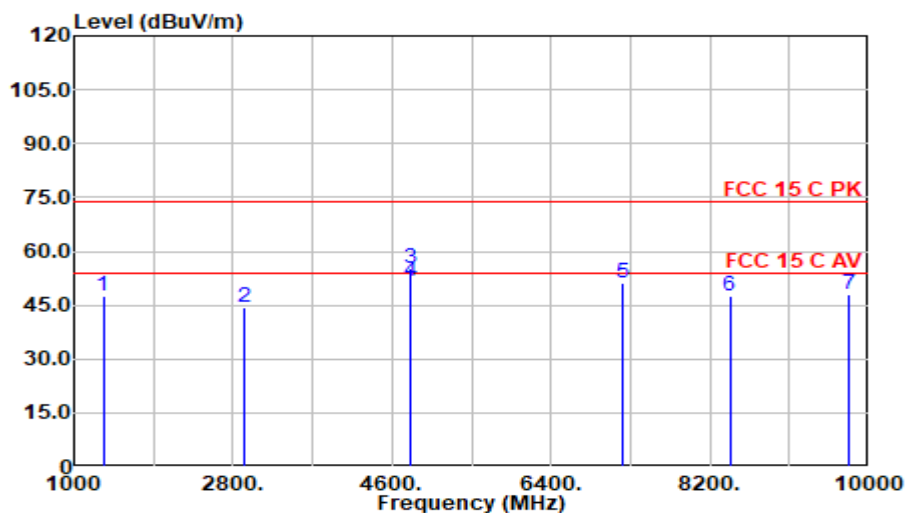
Mode: BLE CH2402MHz**Polarization at Vertical**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
37.275	25.90	18.66	0.59	29.56	15.59	40.00	24.41	QP
57.160	25.50	19.37	0.66	29.47	16.06	40.00	23.94	QP
153.675	24.73	19.20	0.93	29.00	15.86	43.50	27.64	QP
167.255	24.22	18.90	0.95	29.00	15.07	43.50	28.43	QP
331.185	23.33	20.30	1.45	28.52	16.56	46.00	29.44	QP
725.005	23.12	27.40	2.07	28.25	24.33	46.00	21.67	QP

Radiated Emission 1GHz to 18GHz

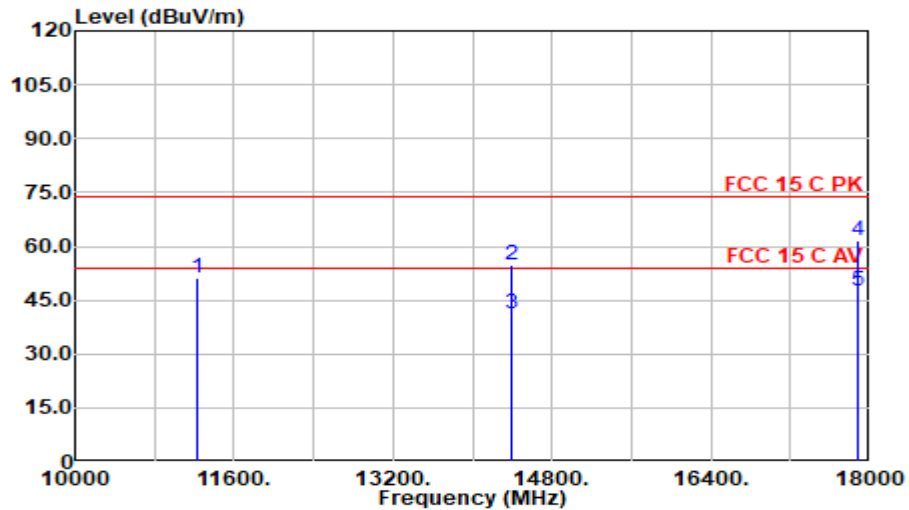
Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BLE CH2402MHz

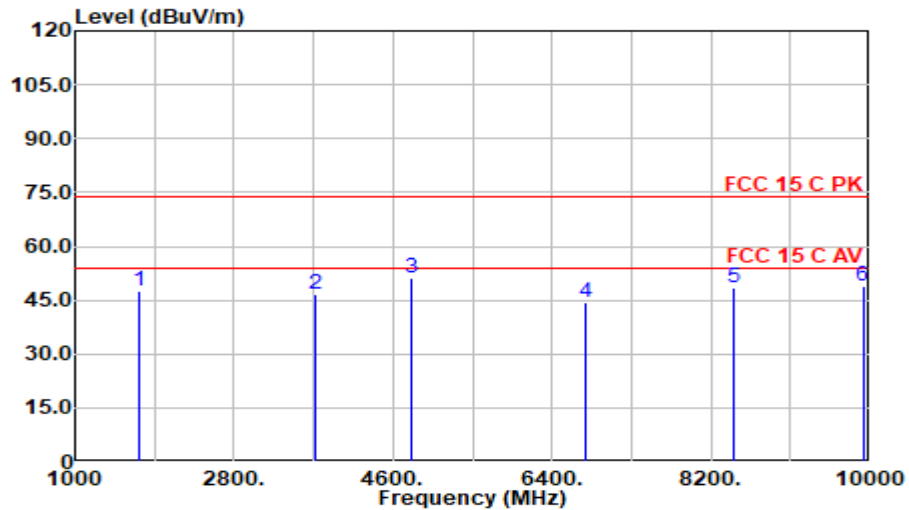


Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
1329.375	57.51	24.86	2.25	37.05	47.56	74.00	26.44	Peak
2925.250	47.82	29.00	3.21	35.48	44.54	74.00	29.46	Peak
4803.750	55.36	32.21	4.27	36.43	55.40	74.00	18.60	Peak
4803.750	51.64	32.21	4.27	36.43	51.68	54.00	2.32	Average
7205.000	47.16	35.52	5.34	36.99	51.04	74.00	22.96	Peak
8424.750	41.76	37.45	5.54	37.30	47.44	74.00	26.56	Peak
9778.375	41.65	37.41	6.15	37.06	48.15	74.00	25.85	Peak

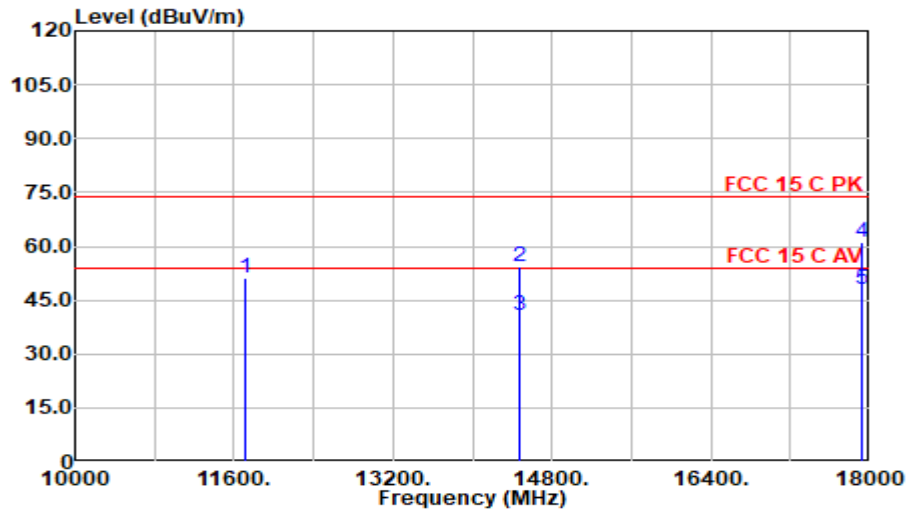
Mode: BLE CH2402MHz**Polarization at Horizontal**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
11238.250	42.96	38.00	6.96	36.78	51.14	74.00	22.86	Peak
14396.000	42.41	41.60	7.65	37.10	54.57	74.00	19.43	Peak
14396.000	29.24	41.60	7.65	37.10	41.39	54.00	12.61	Average
17876.750	42.71	45.85	9.46	36.22	61.80	74.00	12.20	Peak
17876.750	28.47	45.85	9.46	36.22	47.56	54.00	6.44	Average

Mode: BLE CH2402MHz

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
1728.875	55.90	25.72	2.55	36.83	47.34	74.00	26.66	Peak
3720.000	47.65	31.22	3.69	35.92	46.64	74.00	27.36	Peak
4803.750	51.08	32.21	4.27	36.43	51.13	74.00	22.87	Peak
6777.875	41.58	34.56	5.23	36.88	44.48	74.00	29.52	Peak
8465.125	42.76	37.47	5.54	37.30	48.47	74.00	25.53	Peak
9920.750	42.20	37.64	6.24	37.02	49.06	74.00	24.94	Peak

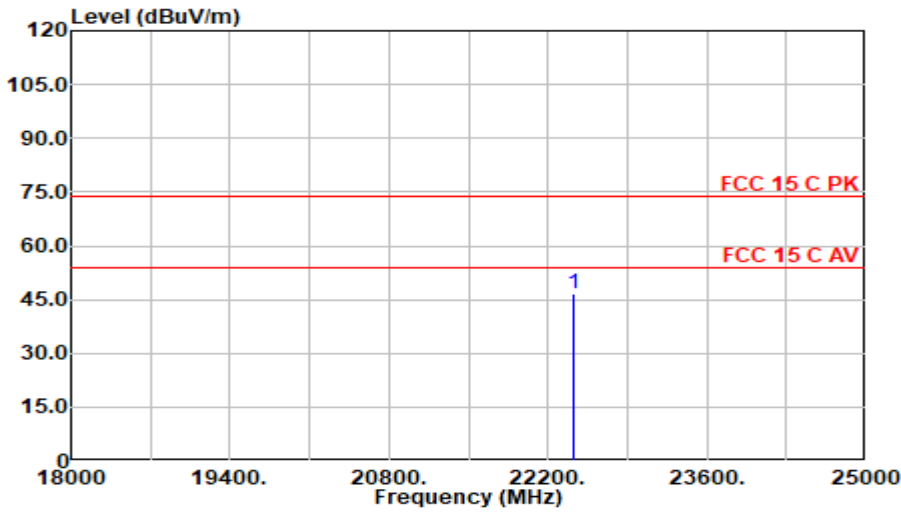
Mode: BLE CH2402MHz**Polarization at Vertical**

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
11710.000	41.88	38.89	7.19	36.73	51.23	74.00	22.77	Peak
14468.250	41.86	41.74	7.65	37.06	54.19	74.00	19.81	Peak
14468.250	28.39	41.74	7.65	37.06	40.71	54.00	13.29	Average
17919.250	42.02	45.94	9.48	36.22	61.22	74.00	12.78	Peak
17919.250	28.60	45.94	9.48	36.22	47.80	54.00	6.20	Average

Radiated Emission > 18GHz

Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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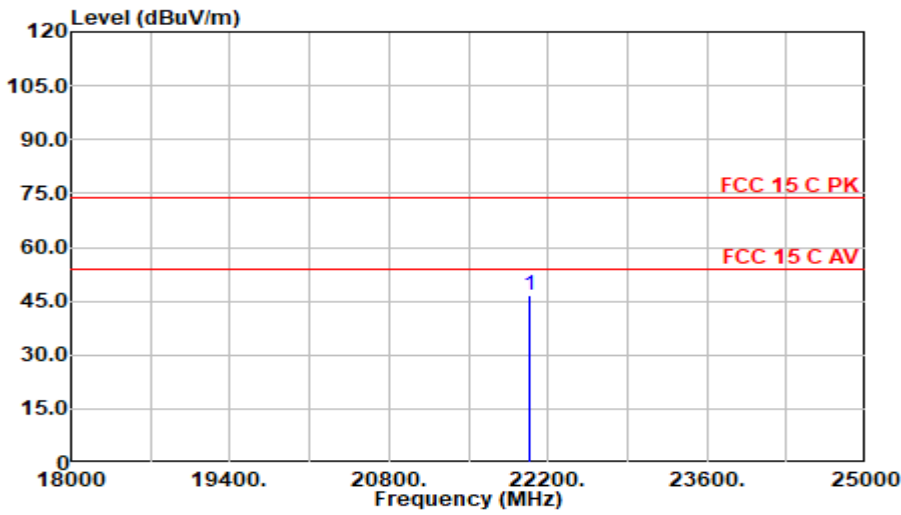
Mode: BLE CH2402MHz



Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
22431.000	47.15	45.15	8.37	53.91	46.75	74.00	27.25	Peak

Mode: BLE CH2402MHz

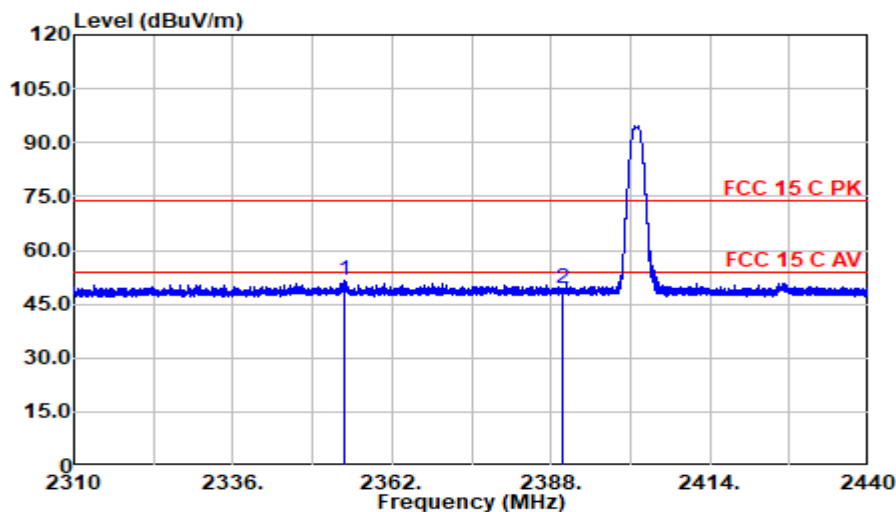


Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
22043.000	47.24	45.00	8.33	53.99	46.57	74.00	27.43	Peak

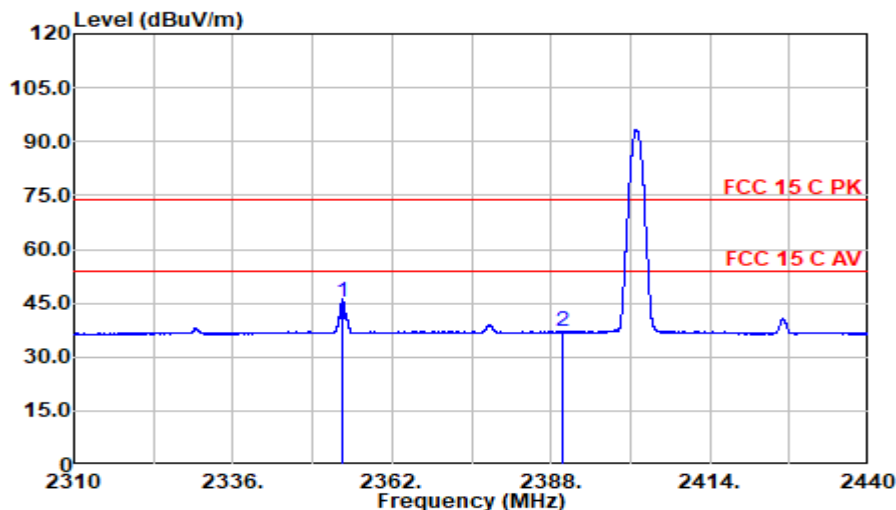
Band-Edge and Restricted bands:

Test Date:	2026.08.20	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BLE CH2402MHz

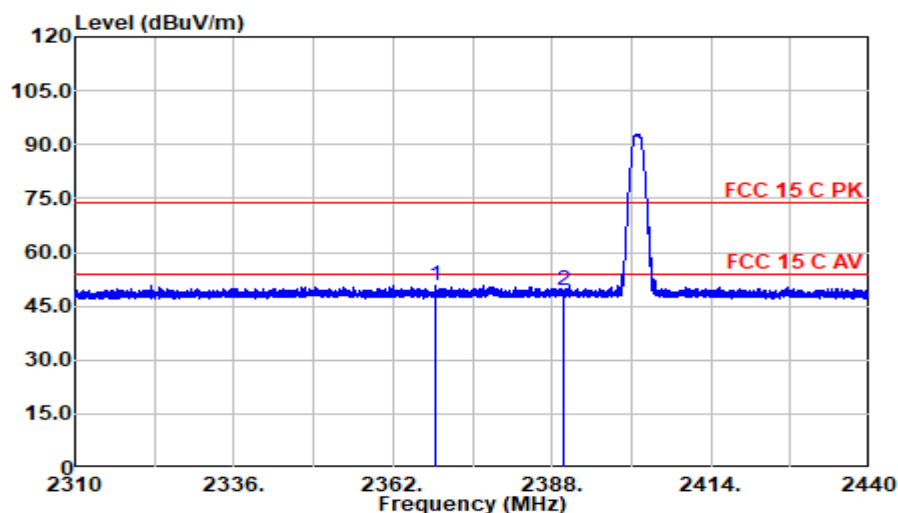
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2354.119	57.14	27.80	2.92	36.18	51.68	74.00	22.32	Peak
2390.000	54.84	27.80	2.94	36.13	49.45	74.00	24.55	Peak

Mode: BLE CH2402MHz

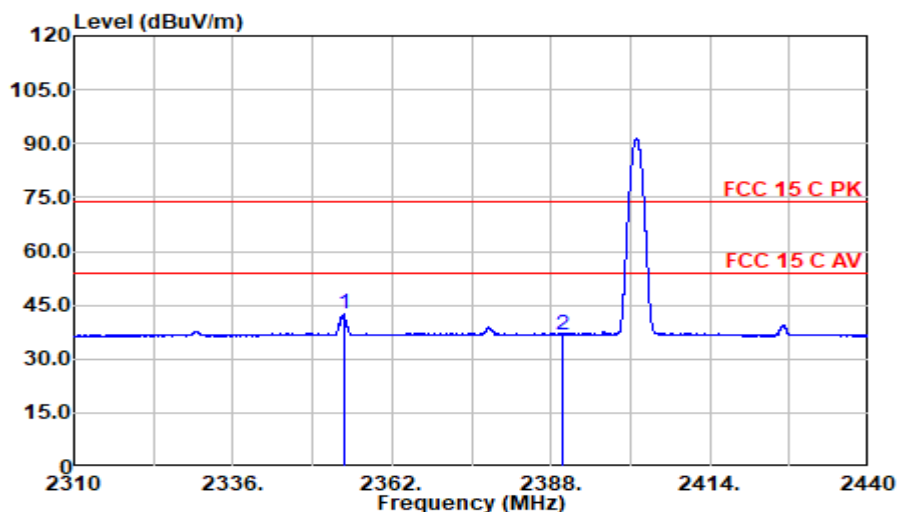
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2354.005	50.60	27.80	2.92	36.18	45.14	54.00	8.86	Average
2390.000	42.35	27.80	2.94	36.13	36.96	54.00	17.04	Average

Mode: BLE CH2402MHz

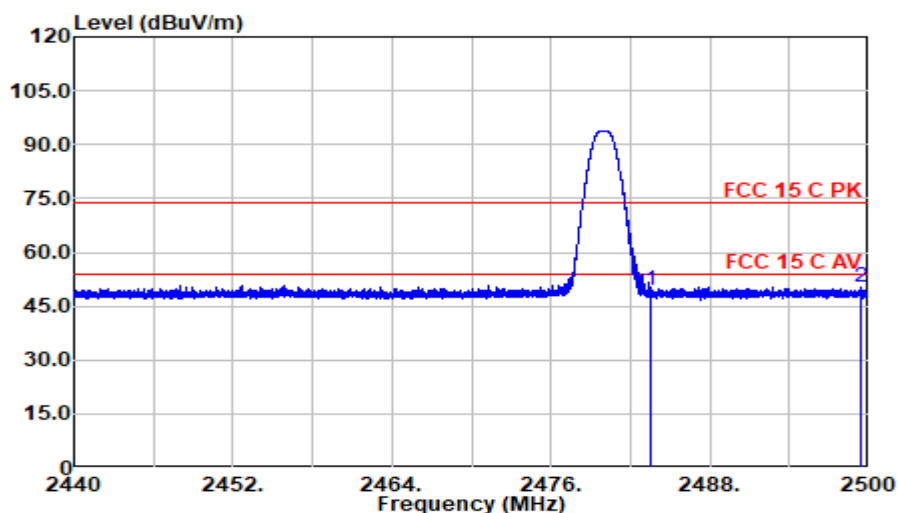
Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2369.036	56.19	27.80	2.92	36.16	50.76	74.00	23.24	Peak
2390.000	54.66	27.80	2.94	36.13	49.27	74.00	24.73	Peak

Mode: BLE CH2402MHz

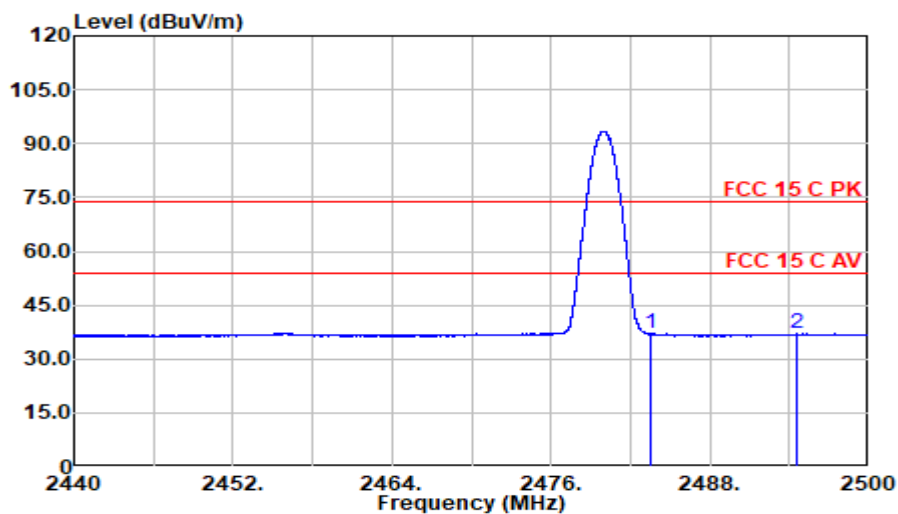
Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2354.086	47.99	27.80	2.92	36.18	42.53	54.00	11.47	Average
2390.000	42.28	27.80	2.94	36.13	36.89	54.00	17.11	Average

Mode: BLE CH2480MHz

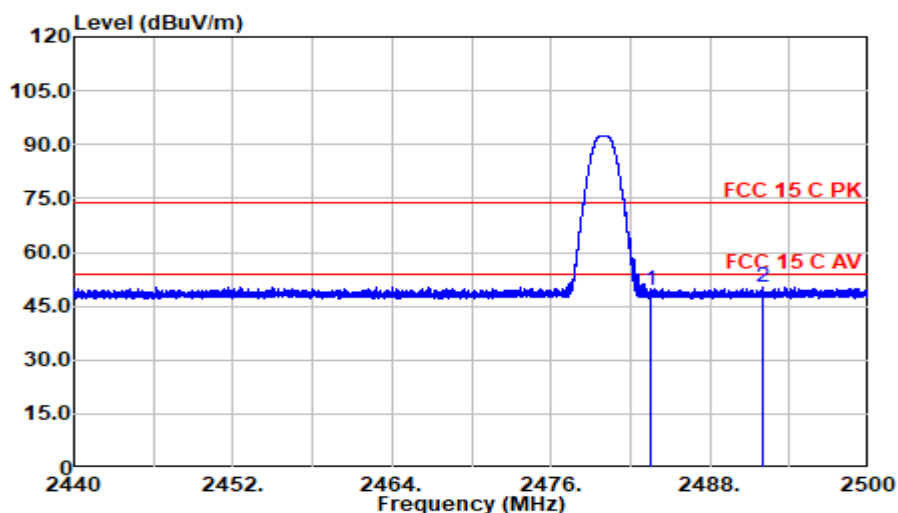
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	55.11	27.50	2.98	36.01	49.58	74.00	24.42	Peak
2499.452	55.76	27.50	2.99	35.99	50.26	74.00	23.74	Peak

Mode: BLE CH2480MHz

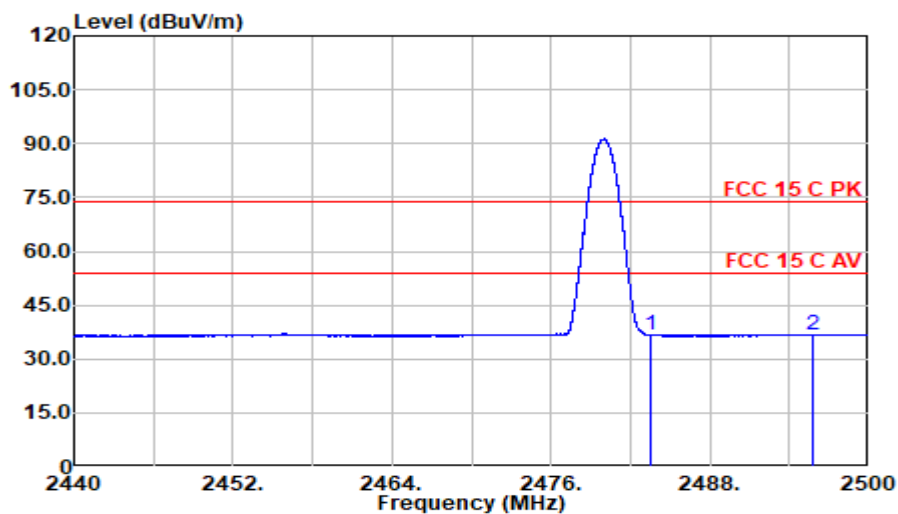
Polarization at Horizontal

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	42.44	27.50	2.98	36.01	36.92	54.00	17.08	Average
2494.525	42.50	27.50	2.99	35.99	37.00	54.00	17.00	Average

Mode: BLE CH2480MHz

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	55.07	27.50	2.98	36.01	49.54	74.00	24.46	Peak
2491.975	55.66	27.50	2.99	35.99	50.15	74.00	23.85	Peak

Mode: BLE CH2480MHz

Polarization at Vertical

Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
2483.500	42.38	27.50	2.98	36.01	36.85	54.00	17.15	Average
2495.702	42.34	27.50	2.99	35.99	36.84	54.00	17.16	Average

5 6 dB BANDWIDTH MEASUREMENT

5.1 Test Equipment

The following test equipment was used during the Emission Bandwidth measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2025.08.09	1 Year
2.	RF Cable	Mini-Circuits	FLC-3FT-SM SM+	22022838	2025.08.09	1 Year
3.	10 dB Attenuator	Mini-Circuits	BW-S10W2+	2123	2026.02.24	1 Year

5.2 Block Diagram of Test Setup



5.3 Specification Limits (§15.247(a)(2))

The minimum 6 dB bandwidth shall be at least 500 kHz.

5.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

5.5 Test Procedure

The transmitter output was connected to the spectrum analyzer. The bandwidth of the fundamental frequency was measure by spectrum analyzer with settings: RBW = 100kHz, VBW $\geq 3 \times$ RBW.

The 6 dB bandwidth is defined as the total spectrum the power of which is lower than peak power minus 6 dB .

The test procedure is defined in ANSI C63.10:2020 (the 11.8.2 Measurement Procedure “Option 2” was used).

5.6 Test Results

PASSED.

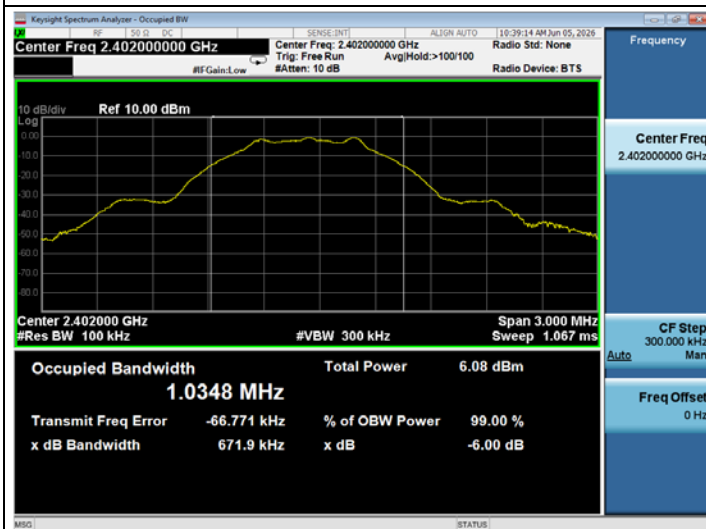
All the test results are attached in next pages.

(Test Date: 2026.06.05 Temperature: 23°C Humidity: 51 %)

Mode	Channel	Frequency (MHz)	6dB Bandwidth (kHz)	Limit
BLE	00	2402	671.9	500 kHz
	20	2442	670.6	500 kHz
	39	2480	667.1	500 kHz

BLE

CH2402



CH2442



CH2480



6 MAXIMUM PEAK OUTPUT POWER MEASUREMENT

6.1 Test Equipment

The Same as Section. 5.1.

6.2 Block Diagram of Test Setup

The Same as Section. 5.2.

6.3 Specification Limits ((§15.247(b)(3))

The Limits of maximum Peak Output Power for digital modulation in 2400-2483.5 MHz is: 1 Watt. (30 dBm)

6.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

6.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

The following procedure shall be used when an instrument with a resolution bandwidth that is greater than the DTS bandwidth is available to perform the measurement:

- a) $RBW \geq DTS \text{ Bandwidth}$.
- b) $VBW \geq [3 \times RBW]$.
- c) $Span \geq [3 \times RBW]$.
- d) Sweep time = auto.
- e) Detector = peak.
- f) Trace mode = max hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

The test procedure is defined in ANSI C63.10:2020 (11.9.1.1 Measurement Procedure “ $RBW \square DTS \text{ bandwidth}$ ” was used).

6.6 Test Results

PASSED.

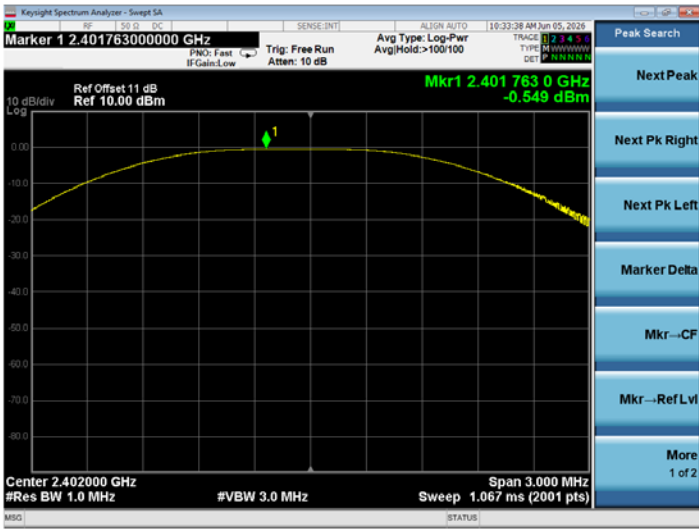
All the test results are listed below.

(Test Date: 2026.06.05 Temperature: 23°C Humidity: 51 %)

Mode	Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit
BLE	00	2402	-0.549	30 dBm
	20	2442	-0.391	30 dBm
	39	2480	-0.013	30 dBm

BLE

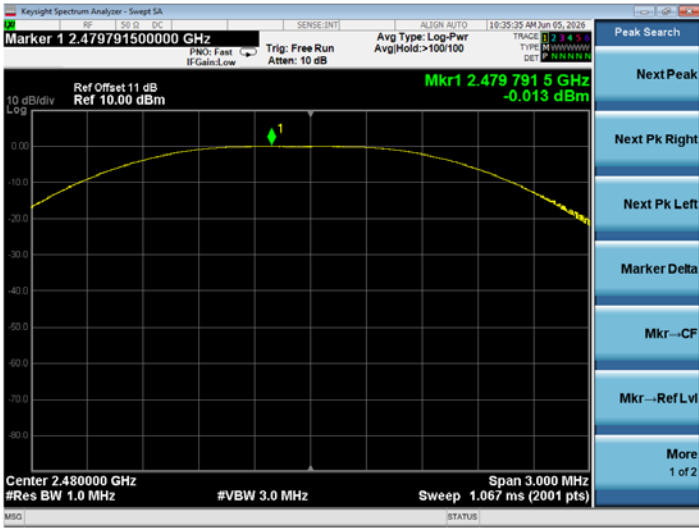
CH2402



CH2442



CH2480



7 EMISSION LIMITATIONS MEASUREMENT

7.1 Test Equipment

The Same as Section. 5.1.

7.2 Block Diagram of Test Setup

The Same as Section. 5.2.

7.3 Specification Limits (§15.247(d))

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

In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)). (※ This test result attaching to Section. 3.7)

7.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

7.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

Establish a reference level by using the following procedure:

- a) Set instrument center frequency to DTS channel center frequency.
- b) Set the span to ≥ 1.5 times the DTS bandwidth.
- c) Set the RBW = 100 kHz.
- d) Set the VBW $\geq [3 \times \text{RBW}]$.
- e) Detector = peak.
- f) Sweep time = auto couple.
- g) Trace mode = max hold.
- h) Allow trace to fully stabilize.
- i) Use the peak marker function to determine the maximum PSD level.

Note that the channel found to contain the maximum PSD level can be used to establish the reference level.

Establish an emission level by using the following procedure:

- a) Set the center frequency and span to encompass frequency range to be measured.
- b) Set the RBW = 100 kHz.
- c) Set the VBW $\geq [3 \times \text{RBW}]$.

- d) Detector = peak.
 - e) Sweep time = auto couple.
 - f) Trace mode = max hold.
 - g) Allow trace to fully stabilize.
 - h) Use the peak marker function to determine the maximum amplitude level.
- Ensure that the amplitude of all unwanted emissions outside of the authorized frequency band (excluding restricted frequency bands) is attenuated by at least the minimum requirements specified in 11.11. Report the three highest emissions relative to the limit.

Scan up through 10th harmonic.

The test procedure is defined in ANSI C63.10:2020 (11.11.2 Reference level measurement and 11.11.3 Emission level measurement was used).

7.6 Test Results

PASSED.

The test data was attached in the next pages.

(Test Date: 2026.06.05 Temperature: 23°C Humidity: 51 %)

Mode	Channel	Frequency (MHz)	Data Page
BLE	00	2402	P40
	20	2442	P41
	39	2480	P42

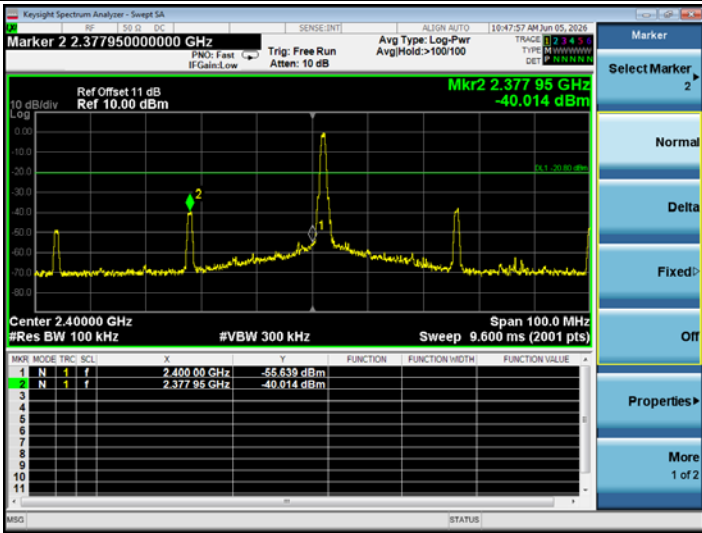
BLE

CH2402

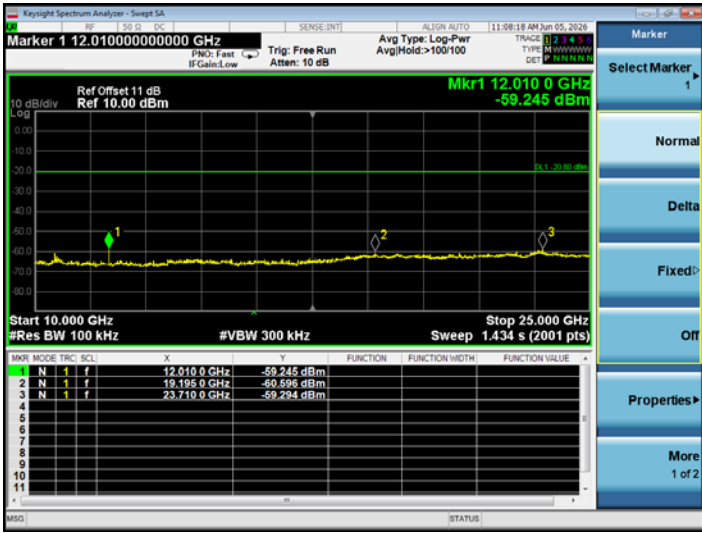
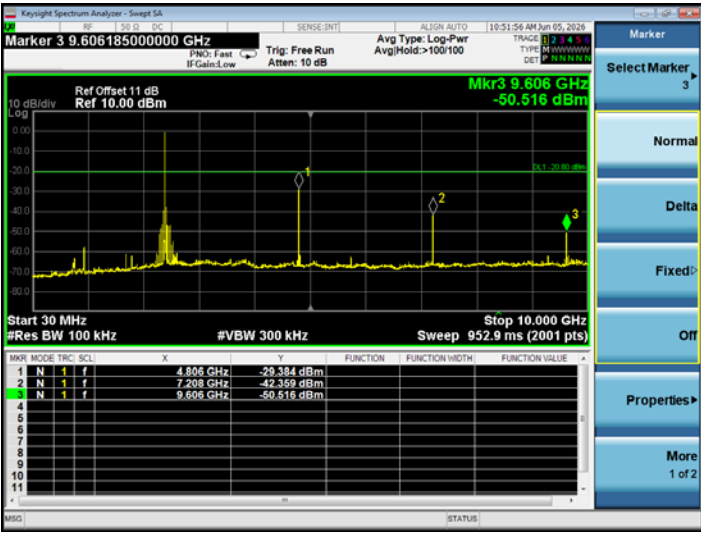
Reference Level



Lower Edge



Emission Level



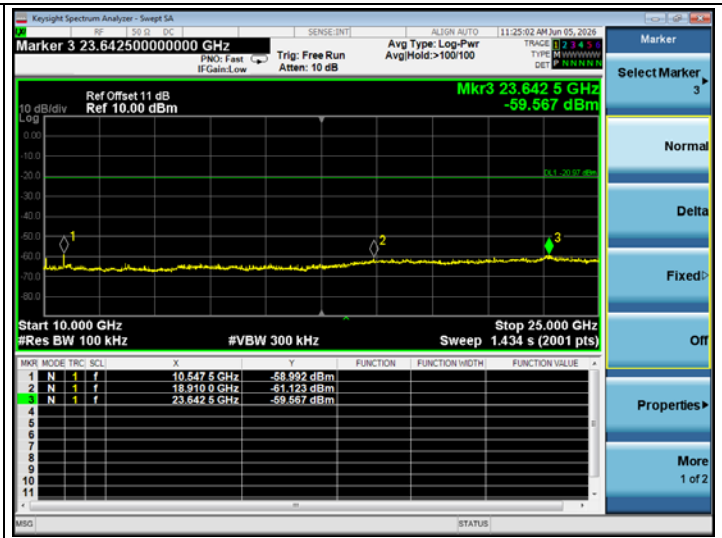
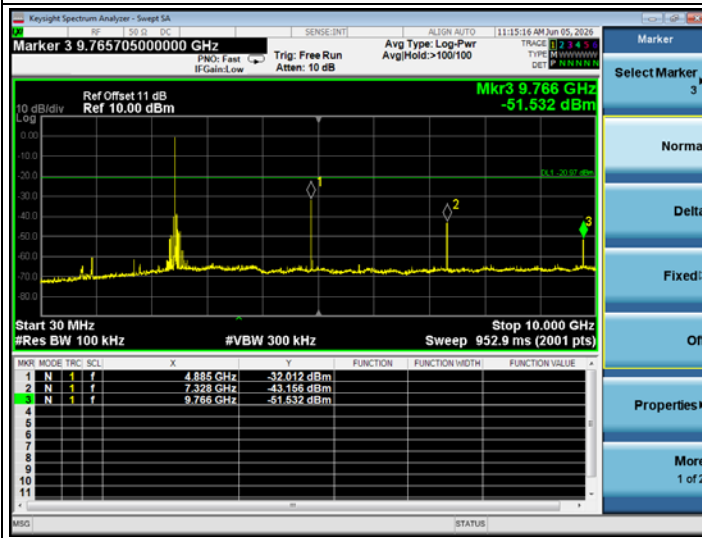
BLE

CH2442

Reference Level



Emission Level



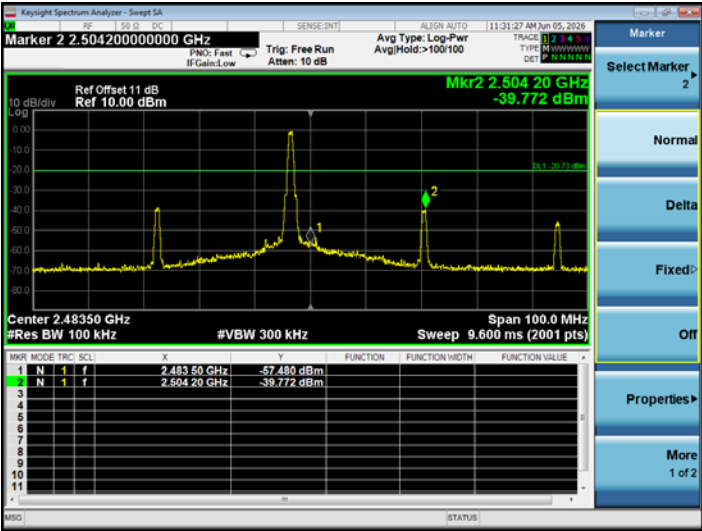
BLE

CH2480

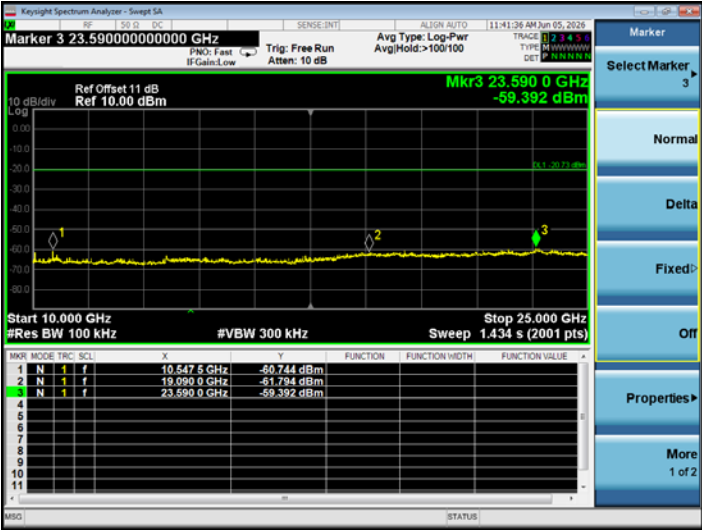
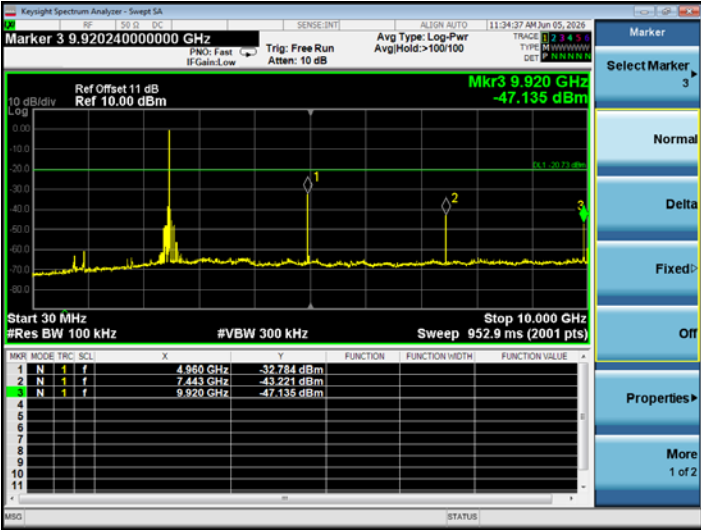
Reference Level



Higher Edge



Emission Level



8 POWER SPECTRAL DENSITY MEASUREMENT

8.1 Test Equipment

The Same as Section. 5.1.

8.2 Block Diagram of Test Setup

The Same as section 5.2.

8.3 Specification Limits (§15.247(e))

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band.

8.4 Operating Condition of EUT

The software as section 2.3 was used to enable the EUT to change the test mode one by one.

8.5 Test Procedure

The transmitter output was connected to the spectrum analyzer.

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

The test procedure is defined in ANSI C63.10:2020 (11.10.2 Measurement Procedure “Method PKPSD (peak PSD)” was used).

8.6 Test Results

PASSED.

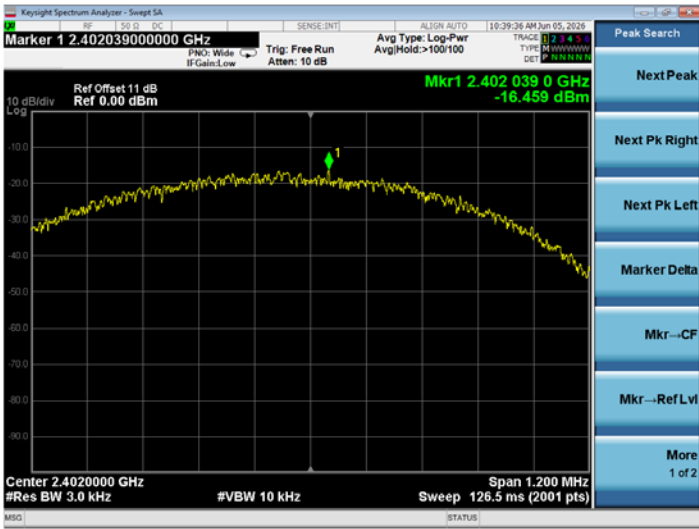
All the test results are attached in next pages.

(Test Date: 2026.06.05 Temperature: 23°C Humidity: 51 %)

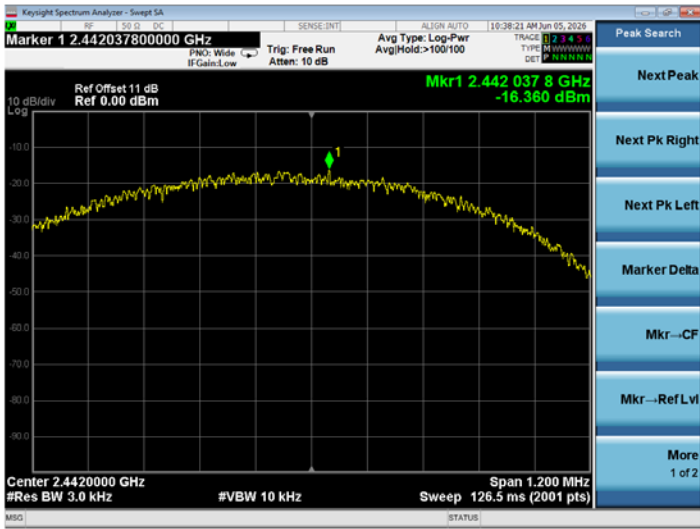
Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)
BLE	00	2402	-16.459	8
	20	2442	-16.36	8
	39	2480	-16.341	8

BLE

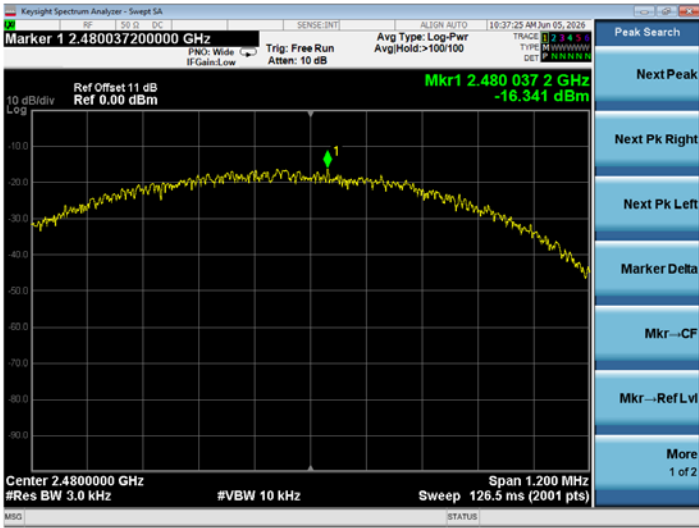
CH2402



CH2442



CH2480



9 ANTENNA REQUIREMENT

9.1 Specification Limits (§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.

9.2 Result

According to KDB 353028 D1, the following describes the three ways that can be used to demonstrate compliance to Section 15.203:

- a) Antenna permanently attached.
- b) Unique (non-standard) antenna connector.
- c) Professional installation.

For this product, the antenna is:

- ☒ Antenna permanently attached
- ☐ Unique (non-standard) antenna connector
- ☐ Professional installation
- ☐ not meet any of ways list above

that

- ☒ compliant
- ☐ not compliant

with the requirement of Section 15.203.

10 DEVIATION TO TEST SPECIFICATIONS

None.

11 MEASUREMENT UNCERTAINTY LIST

The measurement uncertainty was estimated for test on the EUT according to CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage of K=2.

The uncertainties value is not used in determining the PASS/FAIL results.

Test Items/Facilities	Frequency/Equipment/Unit	Uncertainty
Conducted Emission No.1 Shielded Room	9kHz~150kHz	±3.1 dB
	150kHz~30MHz	±2.6 dB
Conducted Emission No.3 Shielded Room	9kHz~150kHz	±3.1 dB
	150kHz~30MHz	±2.6 dB
Radiated Emission	30MHz~200MHz, Horizontal	±3.8 dB
	30MHz~200MHz, Vertical	±4.1 dB
	200MHz~1000MHz, Horizontal	±3.6 dB
	200MHz~1000MHz, Vertical	±5.1 dB
	1GHz~6GHz	±5.3 dB
	6GHz~18GHz	±5.3 dB
	18GHz~40GHz	±3.5 dB
Output Power Test	50MHz~18GHz	0.77 dB
Power Density Test	9kHz~6GHz	1.08 dB
RF Frequency Test	9kHz~40GHz	6×10^{-4}
Bandwidth Test	9kHz~6GHz	1.5×10^{-3}
RF Radiated Power Test	30MHz~1000MHz	3.06 dB
Conducted Output Power Test	50MHz~18GHz	0.83 dB
AC Voltage(<10kHz) Test	120V~230V	0.04 %
DC Power Test	0V~30V	0.4 %
Temperature	-40°C~+100°C	0.52 °C
Humidity	30%~95%	2.6 %

---END of REPORT---