

TEST REPORT  
On behalf of  
TRISPORT AG

Product Name:	HOI CROSS PRO	HOI TOUR+
Model No.:	CT1063-400US, CT1063-900US	EM1060-400US, EM1060-900US

FCC ID: 2BB2MCT1063-400US

Prepared For: TRISPORT AG  
Boesch 67 CH-6331 Huenenberg

Prepared By: Audix Technology (Shanghai) Co., Ltd.  
3F, Building 34, No. 680 Guiping Rd.,  
Caohejing, Hi-Tech Park,  
Shanghai 200233, China

Tel: +86-21-64955500



Report No. : ACI-F24095  
Date of Test : 2024.01.09-03.18  
Date of Report : 2024.09.04

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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APPENDIX I PHOTOGRAPHS OF TEST

APPENDIX II PHOTOGRAPHS OF EUT

# TEST REPORT

Applicant : TRISPORT AG  
 EUT Description : HOI CROSS PRO, HOI TOUR+  
 (A) Model No. : Refer to Sec.2.1  
 (B) Power Supply : AC 120V/60Hz  
 (C) Test Voltage : AC 120V/60Hz

### Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART C  
 AND ANSI C63.10-2013*

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.

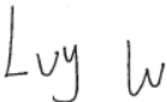
The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report also shows that the EUT (M/N: Refer to Sec2.1), which was tested is technically compliance with the FCC limits.

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.

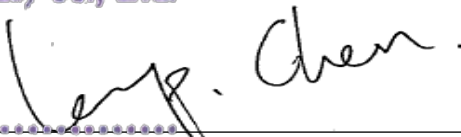
*The test results for EUT's BREDR/WIFI (2.4G)/WIFI (5G)/DFS function are contained in No.ACI-F24096, ACI-F24097, ACI-F24098, ACI-F24099 report.*

Date of Test : 2024.01.09-03.18 Date of Report : 2024.09.04

Producer :   
 JAREY LU / Deputy Assistant Manager

Review :   
 LVY LV / Deputy Assistant Manager

 For and on behalf of  
 Audix Technology (Shanghai) Co., Ltd.

Signatory :   
 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
<b>EMISSION</b>			
Conducted Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.207
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.209(a) 15.205(a)(c)
6 dB Bandwidth Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.247(a)(2)
Maximum Peak Output Power Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.247(b)(3)
Emission Limitations Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.247(d)
Band Edge Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.247(d)
Power Spectral Density Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	Pass	15.247(e)
Antenna Requirement	FCC RULES AND REGULATIONS PART 15 SUBPART C AND ANSI C63.10:2013	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

Product Name	HOI CROSS PRO	HOI TOUR+
Model Number	CT1063-400US, CT1063-900US	EM1060-400US, EM1060-900US

Note#1 : The difference between Models as below:

Model	CT1063-400US	CT1063-900US
Difference	Just the color is different.	

Model	EM1060-400US	EM1060-900US
Difference	Just the color is different.	

Model	CT1063-400US, CT1063-900US	EM1060-400US, EM1060-900US
Difference	The electronic part are all the same except the mechanical structures were different	

Note#2 : According the difference as above, we selected Model CT1063-400US for main test and model EM1060-400US, for differential test in current report.

Test Model : CT1063-400US, EM1060-400US

Note#3 : The EUT shipped with RF module that listed ad below:

Module	Radio Technology	Condition	Modular or not
WLT5283M	BLE	In use	N/A
ICT-M	BLE	In use	Single Modular
	Wifi2.4G	In use	
SKI.WB668BS.3	BLE	No use	N/A
	BREDR	In use	
	WIFI2.4G	In use	
	WIFI5G	In use	
GEM3NFC	NFC	In use	Single Modular
Note: The EUT shipped with two Single Modular. The first one is "ICT-M", which the FCC ID is "2AC7Z-ESPS3WROOM1". And the second one is "GEM3NFC", which the FCC ID is "XRH-NPE109".			

Note#4 : According to the information as above, we test module "WLT5283M" and "SKI.WB668BS.3" to report.

Radio Tech. in : Listed as below:  
current report

Item	WLT5283M
Radio Technology	BLE
Chanel Frequency	2402MHz-2480MHz
Modulation	GFSK
Data Rate	1Mbps

Antenna Info. : Antenna Type: PCB Antenna  
Antenna Gain: 3 dBi

Applicant : TRISPORT AG  
Boesch 67 CH-6331 Huenenberg

Manufacturer : Same as Applicant.

## 2.2 EUT Specifications Assessed in Current Report

Mode	Modulation	Data Rate(Mbps)
BLE	GFSK	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

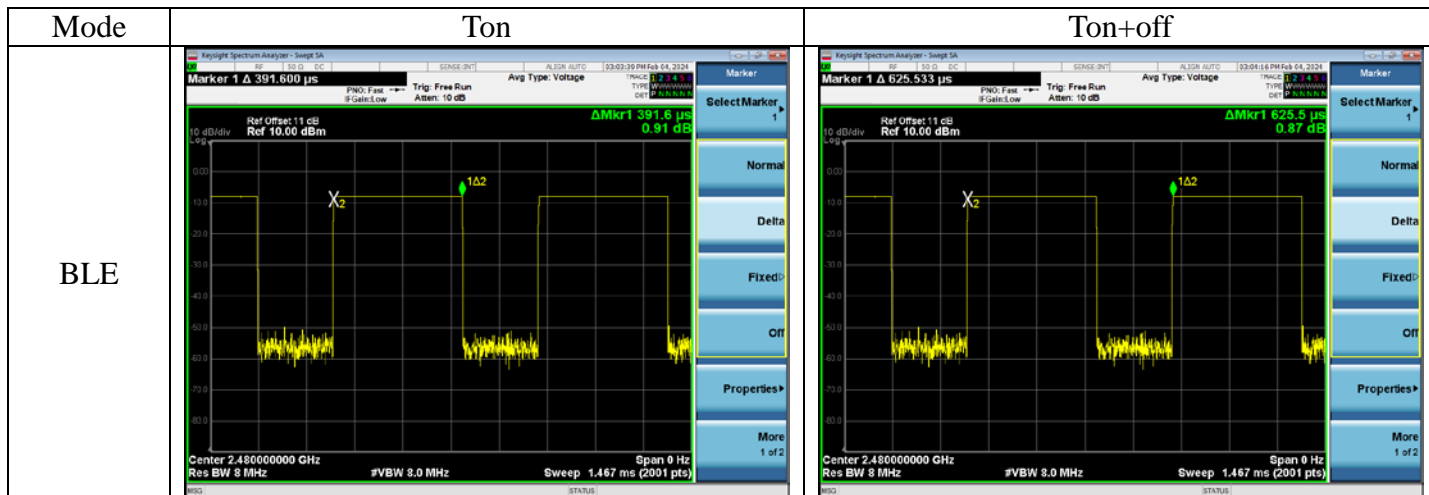
## 2.3 Test Information

The test software “nRF Connect for Desktop.exe” was used to control EUT work in TX mode, Power Setting and select test channel.

Mode	data rate (Mbps)	Power Setting	Test Channel		Frequency (MHz)
BLE	1	-4	Low:	00	2402
		-4	Middle:	20	2442
		-4	High:	39	2480

## 2.4 Duty Cycle Check

Mode	Transmission Duration (ms)	Transmission Period (ms)	Duty Cycle (%)
BLE	0.3916	0.6255	62.61





## 2.5 Sample Description

Test Item	Model Number	Sample Number	Date of received
Conducted Emission	CT1063-400US	E20231017179-03/03	2023.10.17
	EM1060-400US	E20231017180-01/01	2023.10.17
Radiated Emission	CT1063-400US	E20231017179-03/03	2023.10.17
	EM1060-400US	E20231017180-01/01	2023.10.17
Conducted RF Test	CT1063-400US	E20231017179a-03/03	2023.10.17

## 2.6 Supported equipment

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

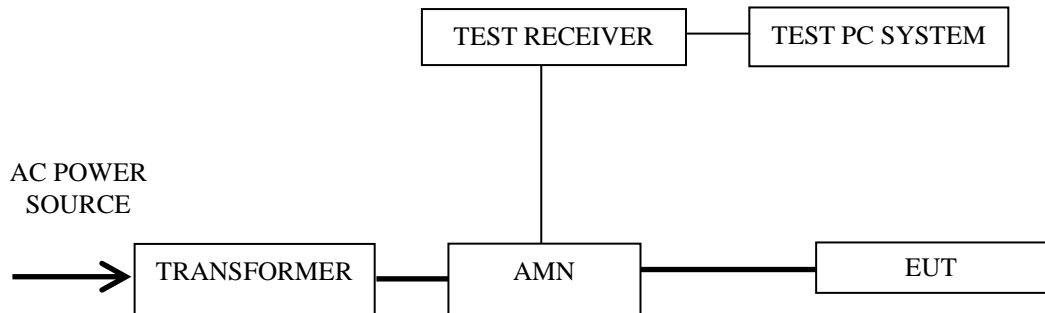
#### 3.1 Test Equipment

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	2024.02.22	1 Year
2.	Artificial Mains Network (AMN)	R&S	ESH2-Z5	843890/011	2024.02.22	1 Year
3.	Fixed Attenuator	SHYL	TTS-1	001	2024.02.22	1 Year
4.	50Ω Coaxial Switch	ANRITSU	MP59B	6200655086	2024.02.22	1 Year
5.	Coaxial Cable	HANWEI	RG223/U	KJ09052	2024.02.22	1 Year
6.	Software	Audix	e3	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( $\mu$ 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 insulating support, which is 0.1 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  $\Omega$  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: 2013 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:

(Test Model: CT1063-400US)

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

(Test Model: EM1060-400US)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402MHz	P15-16

NOTE 1 – Emission Level = Read Level + AMN Factor + Aux Factor + Cable Loss  
 Margin = Limits - Emission Level

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

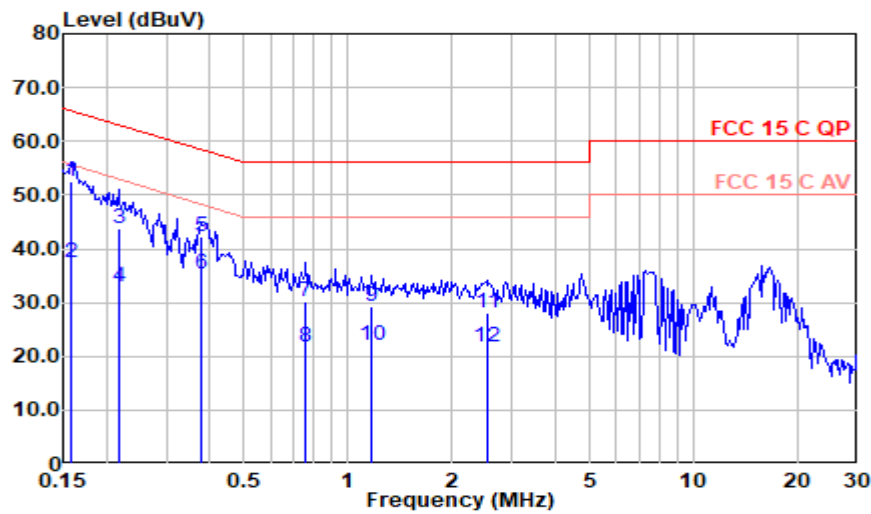
NOTE 3 – The emission levels which not reported are too low against the official limit.

### Worst case emission

Test Date:	2024.01.09	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BLE CH2402MHz

Model: CT1063-400US

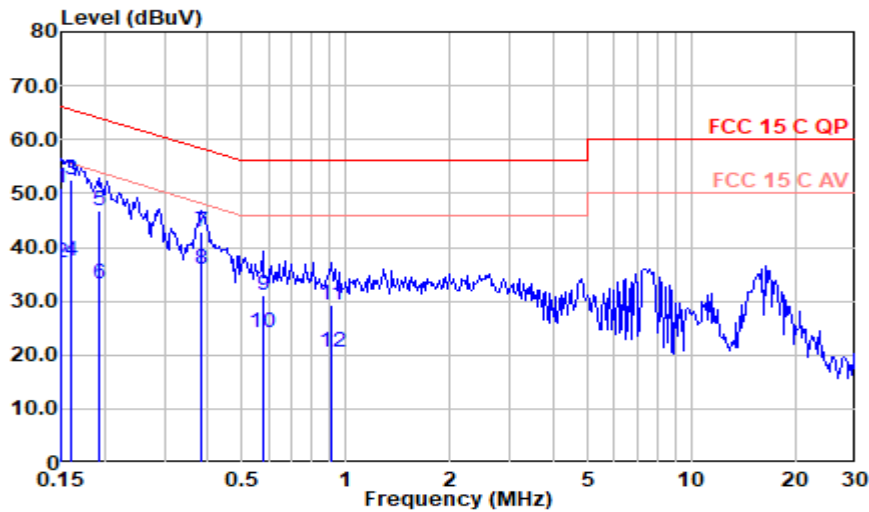


#### Polarization at Line

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
0.158	42.63	0.20	9.49	0.10	52.42	65.59	13.16	QP
0.158	27.79	0.20	9.49	0.10	37.58	55.59	18.01	Average
0.217	34.00	0.20	9.49	0.10	43.79	62.95	19.15	QP
0.217	23.03	0.20	9.49	0.10	32.82	52.95	20.12	Average
0.378	32.34	0.20	9.49	0.10	42.13	58.32	16.19	QP
0.378	25.47	0.20	9.49	0.10	35.26	48.32	13.07	Average
0.758	20.43	0.20	9.49	0.10	30.22	56.00	25.78	QP
0.758	11.85	0.20	9.49	0.10	21.64	46.00	24.36	Average
1.174	19.29	0.29	9.49	0.10	29.17	56.00	26.83	QP
1.174	12.12	0.29	9.49	0.10	22.00	46.00	24.00	Average
2.524	18.16	0.30	9.49	0.10	28.05	56.00	27.95	QP
2.524	11.84	0.30	9.49	0.10	21.73	46.00	24.27	Average

Mode: BLE CH2402MHz

Model: CT1063-400US

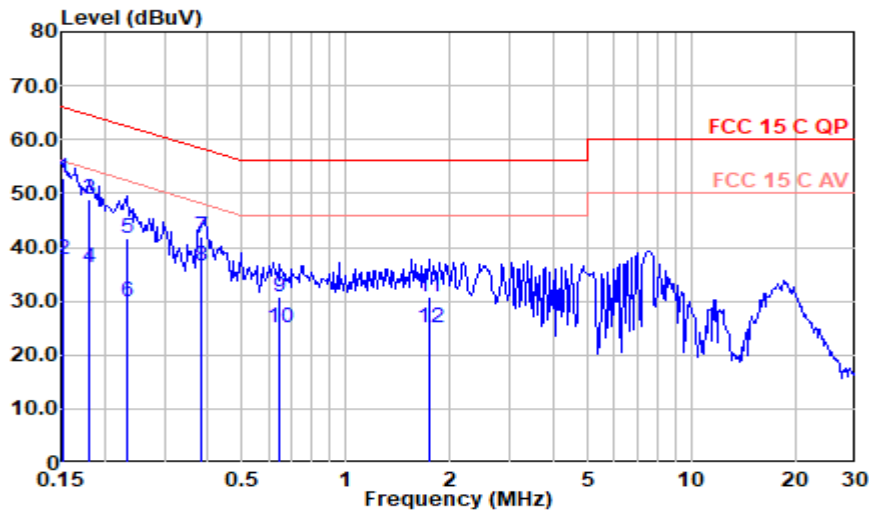


Polarization at Neutral

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
0.150	41.37	0.20	9.49	0.00	51.06	65.98	14.92	QP
0.150	27.43	0.20	9.49	0.00	37.12	55.98	18.86	Average
0.161	42.74	0.20	9.49	0.00	52.43	65.42	12.99	QP
0.161	27.83	0.20	9.49	0.00	37.52	55.42	17.91	Average
0.192	37.14	0.20	9.49	0.00	46.83	63.94	17.11	QP
0.192	23.52	0.20	9.49	0.00	33.21	53.94	20.73	Average
0.382	33.26	0.20	9.49	0.00	42.95	58.24	15.29	QP
0.382	26.34	0.20	9.49	0.00	36.03	48.24	12.21	Average
0.574	21.43	0.20	9.49	0.02	31.14	56.00	24.86	QP
0.574	14.51	0.20	9.49	0.02	24.22	46.00	21.78	Average
0.907	19.39	0.20	9.49	0.09	29.16	56.00	26.84	QP
0.907	10.78	0.20	9.49	0.09	20.55	46.00	25.45	Average

Mode: BLE CH2402MHz

Model: EM1060-400US

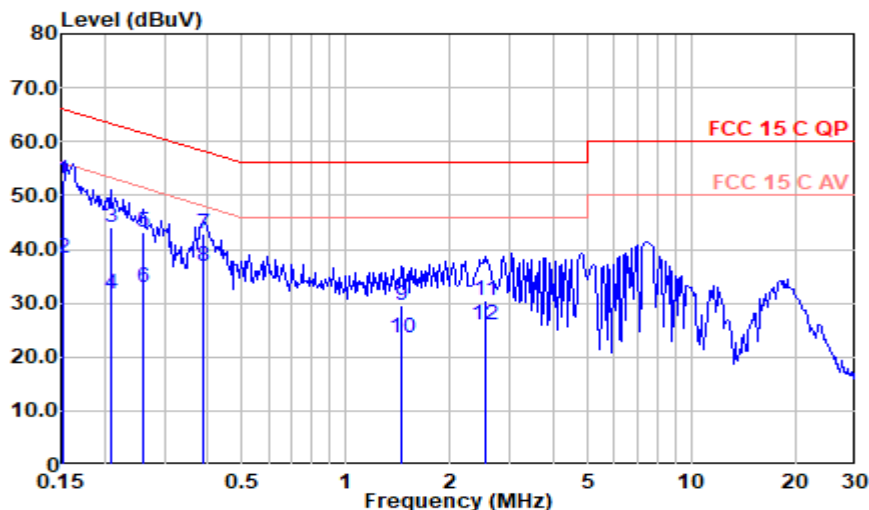


Polarization at Line

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	43.13	0.20	9.49	0.00	52.82	65.92	13.09	QP
0.151	28.19	0.20	9.49	0.00	37.88	55.92	18.04	Average
0.181	39.26	0.20	9.49	0.00	48.95	64.43	15.48	QP
0.181	26.58	0.20	9.49	0.00	36.27	54.43	18.16	Average
0.232	32.12	0.20	9.49	0.00	41.81	62.37	20.56	QP
0.232	20.11	0.20	9.49	0.00	29.80	52.37	22.56	Average
0.382	32.17	0.20	9.49	0.00	41.86	58.24	16.38	QP
0.382	26.74	0.20	9.49	0.00	36.43	48.24	11.81	Average
0.647	21.04	0.20	9.49	0.04	30.77	56.00	25.23	QP
0.647	15.26	0.20	9.49	0.04	24.99	46.00	21.01	Average
1.748	20.93	0.30	9.49	0.10	30.82	56.00	25.18	QP
1.748	15.06	0.30	9.49	0.10	24.95	46.00	21.05	Average

Mode: BLE CH2402MHz

Model: EM1060-400US



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	43.23	0.20	9.49	0.00	52.92	65.92	13.00	QP
0.151	28.72	0.20	9.49	0.00	38.41	55.92	17.51	Average
0.208	34.43	0.20	9.49	0.00	44.12	63.28	19.16	QP
0.208	22.04	0.20	9.49	0.00	31.73	53.28	21.55	Average
0.259	33.62	0.20	9.49	0.00	43.31	61.46	18.15	QP
0.259	23.26	0.20	9.49	0.00	32.95	51.46	18.51	Average
0.386	33.12	0.20	9.49	0.00	42.81	58.16	15.35	QP
0.386	27.27	0.20	9.49	0.00	36.96	48.16	11.19	Average
1.447	19.94	0.20	9.49	0.10	29.73	56.00	26.27	QP
1.447	13.83	0.20	9.49	0.10	23.62	46.00	22.38	Average
2.524	20.73	0.20	9.49	0.10	30.52	56.00	25.48	QP
2.524	16.13	0.20	9.49	0.10	25.92	46.00	20.08	Average



## 4 RADIATED EMISSION TEST

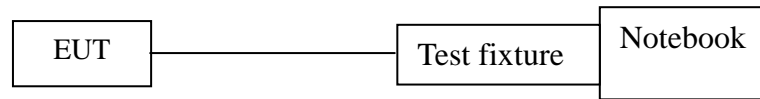
### 4.1 Test Equipment

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

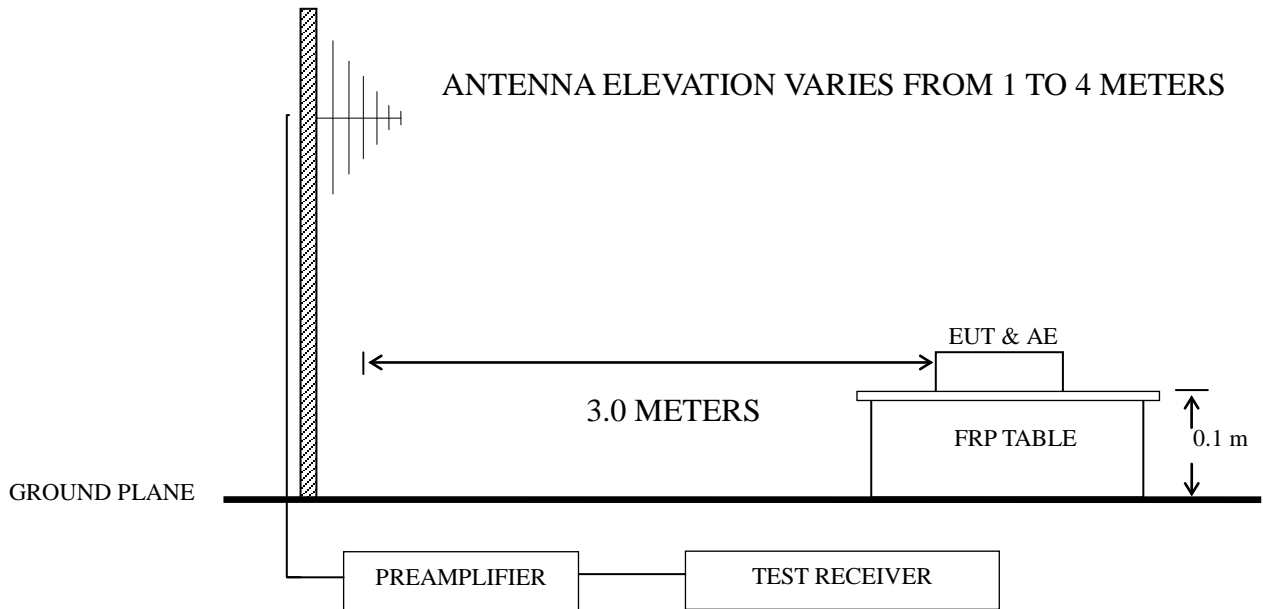
Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Preamplifier	Agilent	8447D	2944A10548	2024.02.22	1 Year
2.	Preamplifier	HP	8449B	3008A00864	2024.02.22	1 Year
3.	EXA Signal Analyzer	Agilent	N9010A	MY52221182	2023.08.09	1 Year
4.	Test Receiver	R&S	ESCI	101303	2024.02.22	1 Year
5.	Bilog Antenna+6dB Attenuator	Schwarzbeck	VULB 9168+EMCI-N-6-06	707+AT-N0637	2023.08.09	1 Year
6.	Horn Antenna	EMCO	3115	96074878	2023.08.02	1 Year
7.	Horn Antenna	EMCO	3116	00062643	2023.01.30	2 Year
8.	Cavity Band Rejection Filter	Microwave	WT-A3882-R10	WT200312-1-1	2024.02.22	1 Year
9.	Coaxial Switch	Anritsu	MP59B	6200655086	2024.02.22	1 Year
10.	Coaxial Cable	SCHAFFNER	RG 212U-MIL C 17+N1K50-E W0630-N1K50-15m-1	RE-10m-001/ RE-15m-002	2024.02.22	1 Year
11.	Software	Audix	e3	v9.210616	--	--

## 4.2 Block Diagram of Test Setup

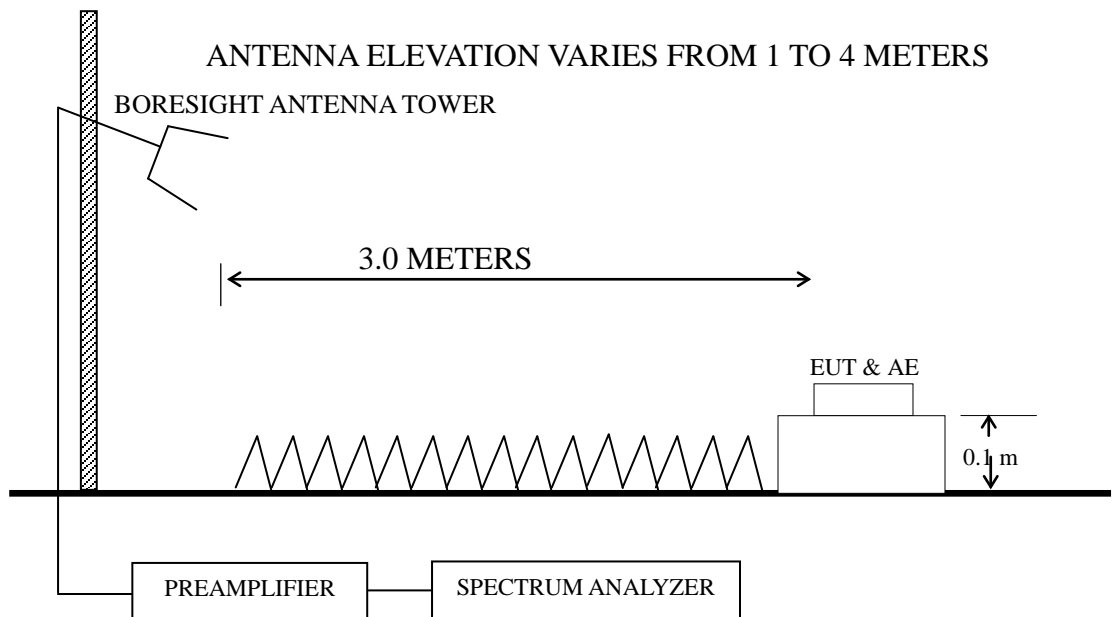
### 4.2.1 EUT & Peripherals



### 4.2.2 Below 1GHz



### 4.2.3 Above 1GHz



### 4.3 Radiated Emission Limit (§15.209)

Frequency (MHz)	Distance (m)	Field strength limits ( $\mu\text{V/m}$ )	
		( $\mu\text{V/m}$ )	dB( $\mu\text{V/m}$ )
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 ( $\mu\text{V/m}$ ) = 20 log Emission Level ( $\mu\text{V/m}$ )  
 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 below or equal to 1GHz and Average value detector above 1GHz.  
 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.

4.5.3 Connect the EUT and the TTL terminal of Test Fixture through three HCI cables of EUT, as follows (VCC to DC3V3, TX to RXD, 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, and then test.

4.5.5 Repeat step 3.5.3 and 3.5.4, 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 0.1m high insulating support on a turntable. 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: 2013 requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESCI was set at 120 kHz from 30MHz to 1000MHz.

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

The frequency range from 30 MHz to 25 GHz (Up to 10<sup>th</sup> harmonics from fundamental frequency) was checked.

All the test results are listed in Sec.3.7.

## 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):

(Test Model: CT1063-400US)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402MHz	P22-23

(Test Model: EM1060-400US)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402MHz	P24-25

Frequency range: above 1GHz:

(Test Model: CT1063-400US)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402 MHz	P26-27
2.			20	2442 MHz	P28-29
3.			39	2480 MHz	P30-31

(Test Model: EM1060-400US)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402 MHz	P32-33

Band-Edge and Restricted bands:

(Test Model: CT1063-400US)

No.	Operation	Mode	Channel	Frequency	Data Page
1.	Transmitting	BLE	00	2402 MHz	P34-35
2.			39	2480 MHz	P36-37

NOTE 1 – Emission Level = Read Level + Antenna Factor + Cable Loss - Preamp Factor  
Margin = Limits - Emission Level.

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 Standing direction, for this direction was the maximum emission direction during the test. The data of Side & Lying direction are not a normal use and 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.

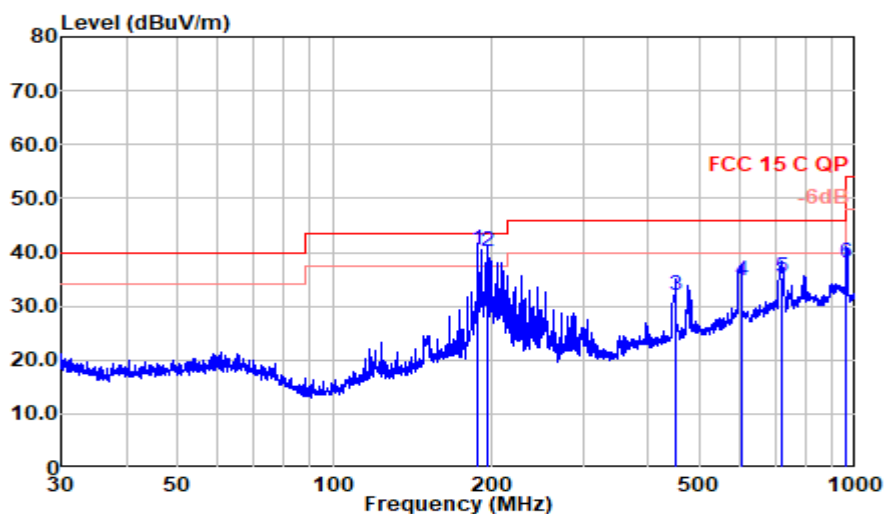
NOTE 7 – The frequency range 2310-2390MHz & 2483.5-2500MHz were tested for Restricted bands.

### Radiated emission < 1GHz

Test Date:	2024.03.03	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BLE CH2402MHz

Model: CT1063-400US

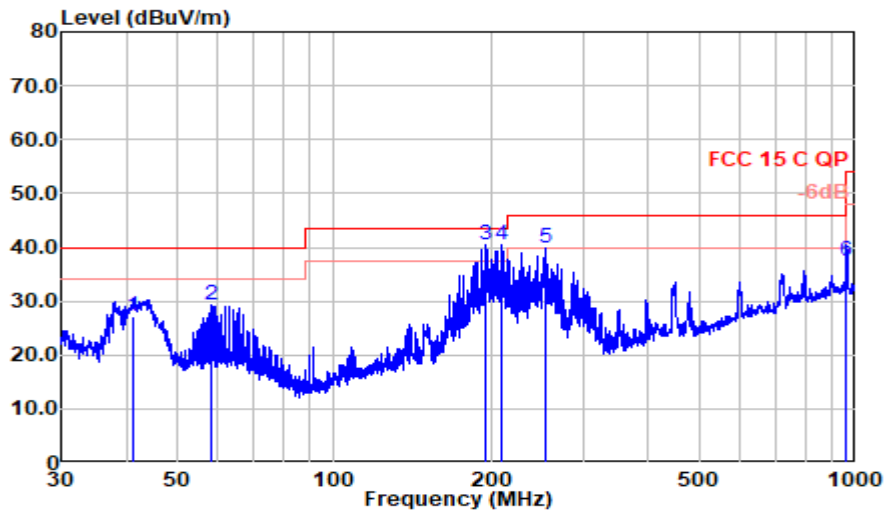


Polarization at Horizontal

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
189.074	51.45	16.89	1.55	29.30	40.59	43.50	2.91	QP
197.546	51.70	16.20	1.59	29.30	40.19	43.50	3.31	QP
451.927	36.04	22.94	2.35	29.31	32.02	46.00	13.98	QP
602.482	35.12	25.65	2.83	28.99	34.61	46.00	11.39	QP
724.261	33.76	26.90	2.95	28.40	35.21	46.00	10.79	QP
960.477	32.64	29.51	3.37	27.34	38.18	54.00	15.82	QP

Mode: BLE CH2402MHz

Model: CT1063-400US

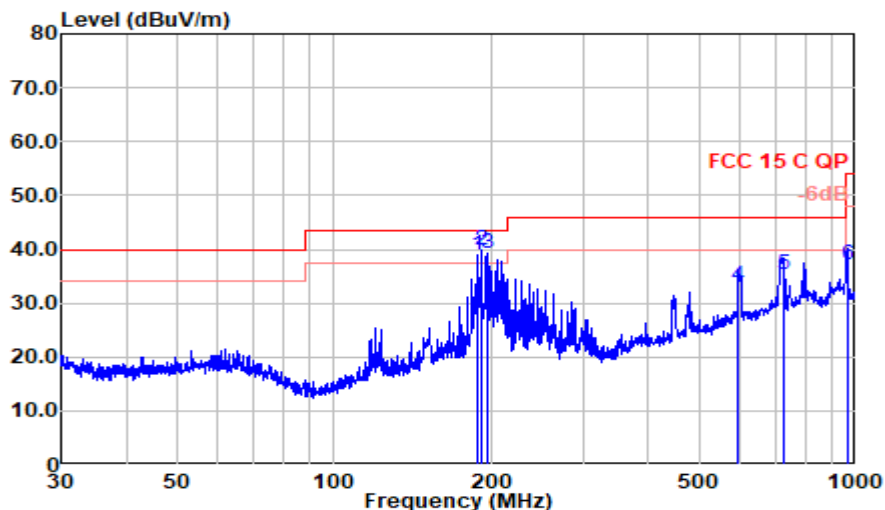


Polarization at Vertical

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
41.349	37.01	19.44	0.70	29.90	27.25	40.00	12.75	QP
57.999	38.61	19.60	0.83	29.87	29.17	40.00	10.83	QP
194.653	51.83	16.40	1.57	29.30	40.50	43.50	3.00	QP
208.946	52.05	15.90	1.61	29.25	40.31	43.50	3.19	QP
254.728	49.49	17.79	1.74	29.13	39.90	46.00	6.10	QP
960.477	32.00	29.51	3.37	27.34	37.54	54.00	16.46	QP

Mode: BLE CH2402MHz

Model: EM1060-400US



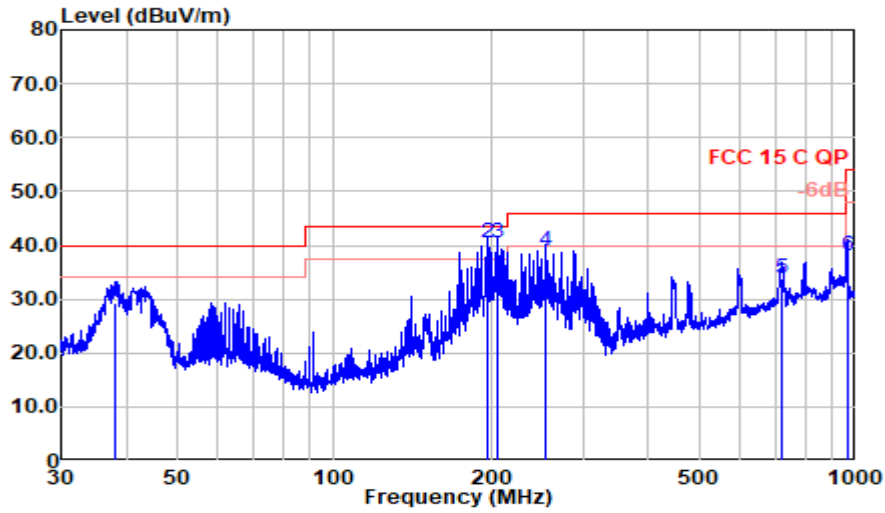
Polarization at Horizontal

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
188.743	49.76	16.95	1.55	29.30	38.95	43.50	4.55	QP
192.082	50.86	16.59	1.56	29.30	39.71	43.50	3.79	QP
197.546	50.75	16.20	1.59	29.30	39.24	43.50	4.26	QP
595.133	34.24	25.31	2.81	29.02	33.34	46.00	12.66	QP
726.805	33.82	27.01	2.96	28.39	35.40	46.00	10.60	QP
962.162	31.67	29.54	3.37	27.33	37.26	54.00	16.74	QP



Mode: BLE CH2402MHz

Model: EM1060-400US



Polarization at Vertical

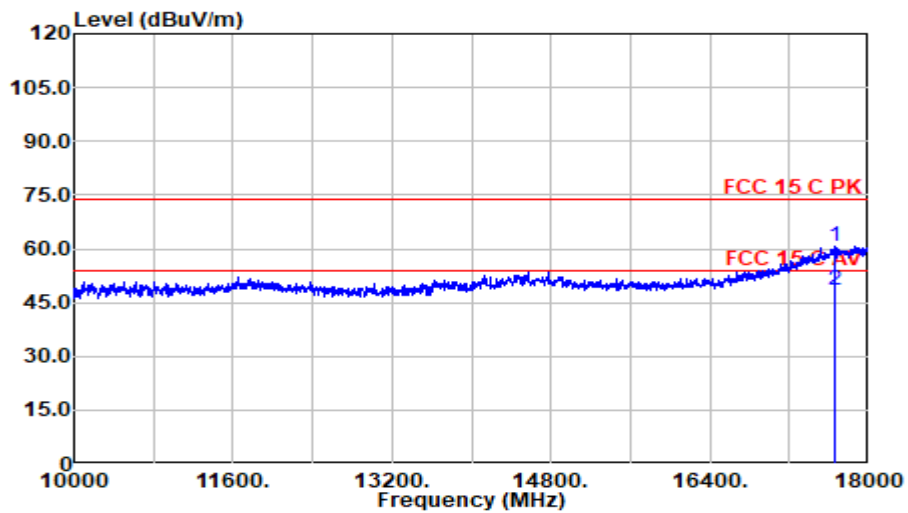
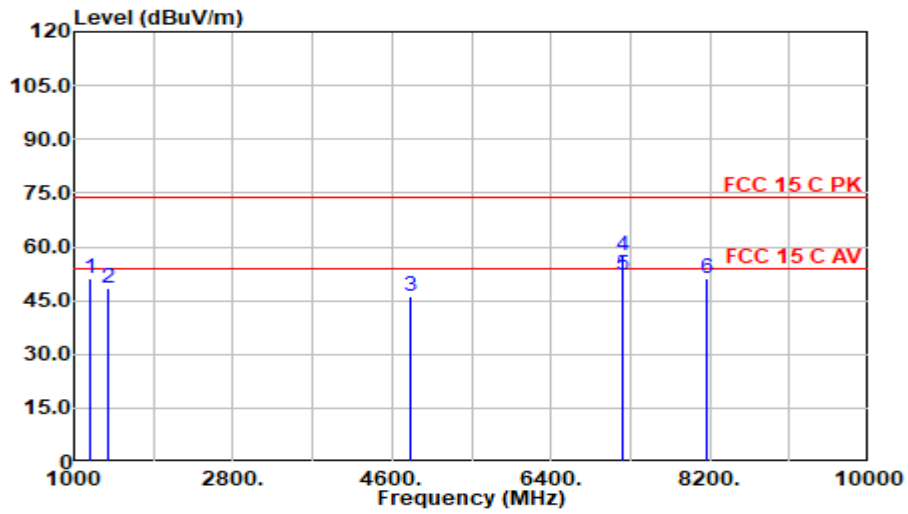
Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
38.012	39.11	19.40	0.67	29.90	29.29	40.00	10.71	QP
197.546	51.99	16.20	1.59	29.30	40.48	43.50	3.02	QP
206.036	52.18	15.90	1.61	29.27	40.42	43.50	3.08	QP
254.728	48.68	17.79	1.74	29.13	39.09	46.00	6.91	QP
721.726	32.51	26.90	2.95	28.41	33.95	46.00	12.05	QP
962.162	32.43	29.54	3.37	27.33	38.02	54.00	15.98	QP

### Radiated Emission > 1GHz

Test Date:	2024.03.18	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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Mode: BLE CH2402MHz

Model: CT1063-400US

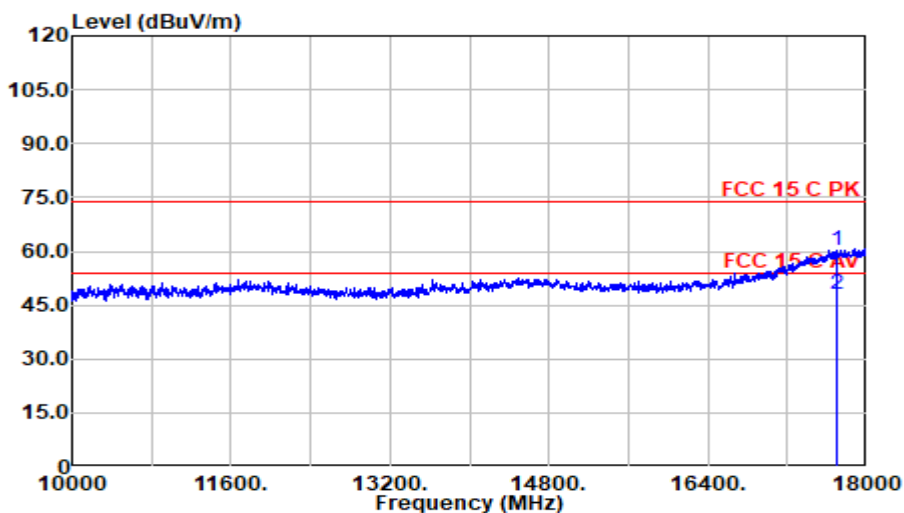
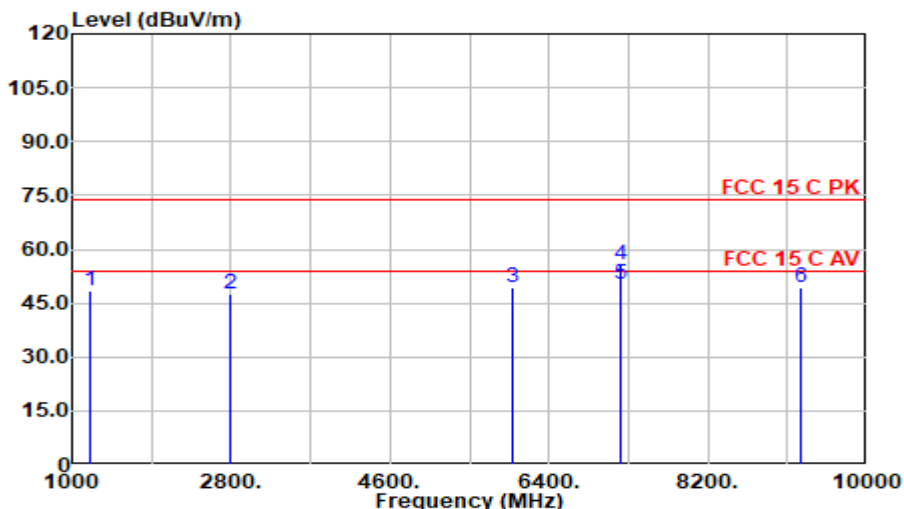


#### Polarization at Horizontal

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
1191.250	58.67	25.03	3.88	36.50	51.09	74.00	22.91	Peak
1395.250	54.82	26.01	4.23	36.50	48.56	74.00	25.44	Peak
4803.750	40.48	32.92	7.62	34.67	46.35	74.00	27.65	Peak
7205.000	46.52	36.15	9.48	34.66	57.49	74.00	16.51	Peak
7205.000	41.25	36.15	9.48	34.66	52.22	54.00	1.78	Average
8165.500	38.12	37.56	10.37	34.87	51.18	74.00	22.82	Peak
17664.250	30.35	46.69	15.80	32.30	60.53	74.00	13.47	Peak
17664.250	18.23	46.69	15.80	32.30	48.42	54.00	5.58	Average

Mode: BLE CH2402MHz

Model: CT1063-400US

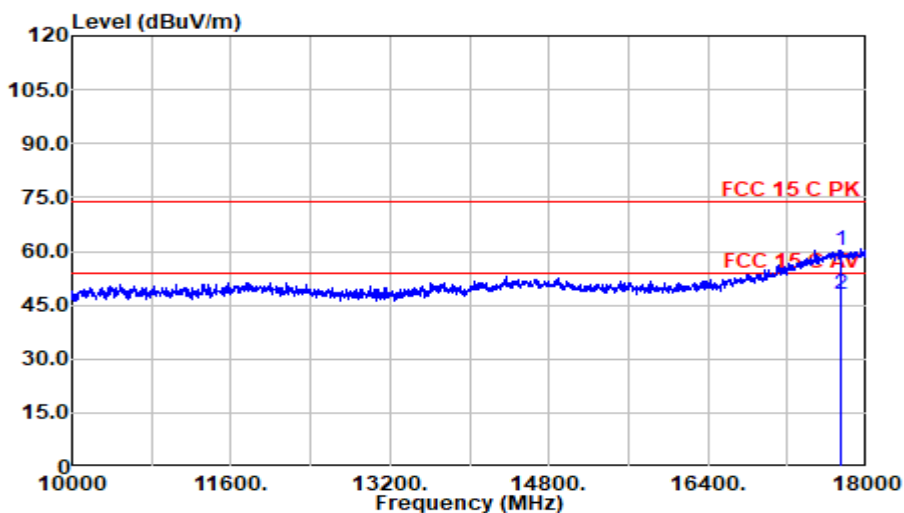
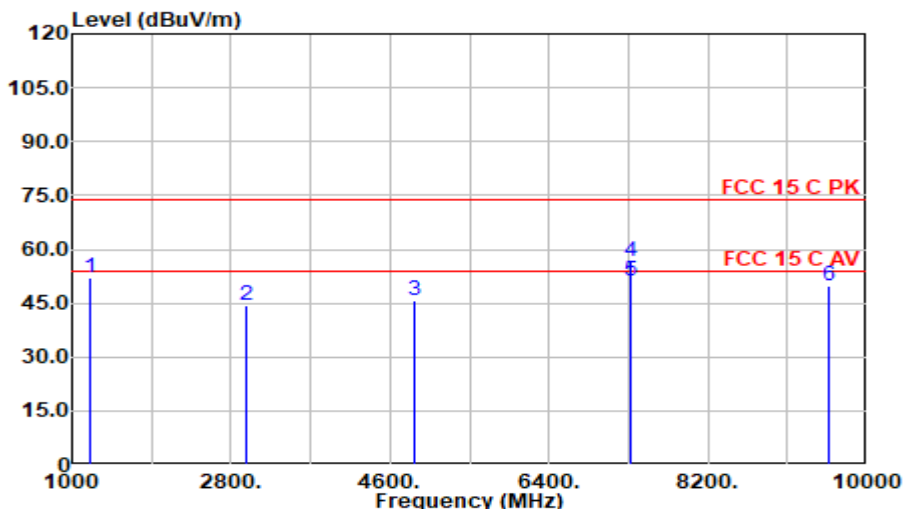


Polarization at Vertical

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
1199.750	55.91	25.10	3.90	36.50	48.41	74.00	25.59	Peak
2789.250	48.32	29.10	5.72	35.60	47.53	74.00	26.47	Peak
5998.000	41.31	34.20	8.42	34.60	49.33	74.00	24.67	Peak
7205.000	44.52	36.15	9.48	34.66	55.49	74.00	18.51	Peak
7205.000	39.25	36.15	9.48	34.66	50.22	54.00	3.78	Average
9249.250	35.07	38.20	10.84	34.67	49.44	74.00	24.56	Peak
17706.750	29.81	46.91	15.86	32.29	60.30	74.00	13.70	Peak
17706.750	17.58	46.91	15.86	32.29	48.07	54.00	5.93	Average

Mode: BLE CH2442MHz

Model: CT1063-400US

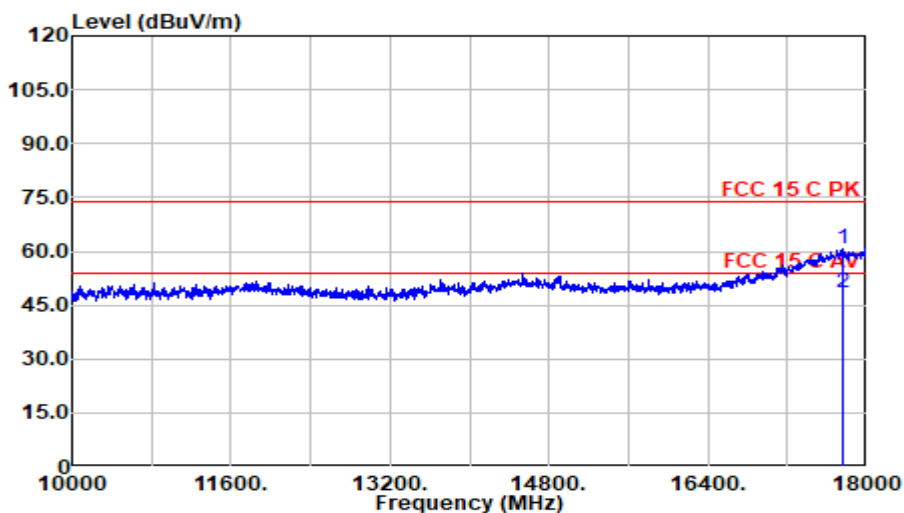
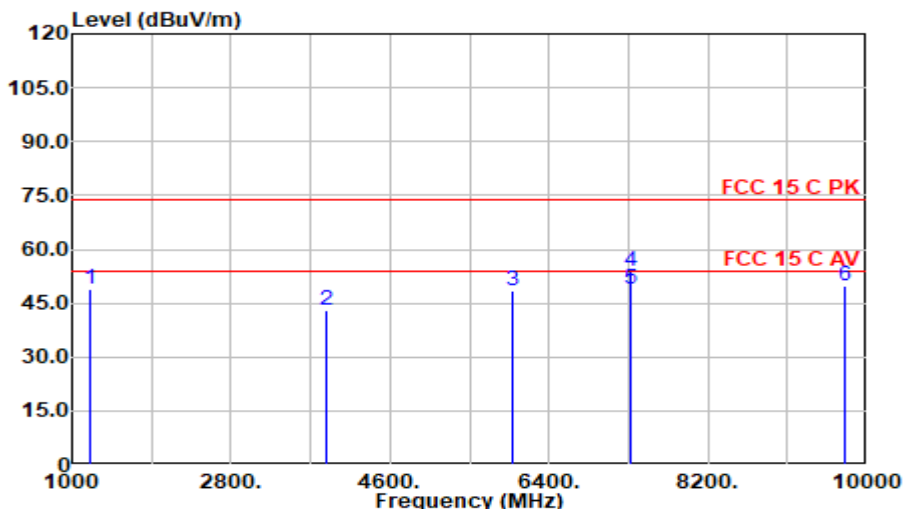


Polarization at Horizontal

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
1195.500	59.57	25.06	3.89	36.50	52.02	74.00	21.98	Peak
2972.000	43.99	29.93	5.85	35.43	44.35	74.00	29.65	Peak
4884.500	39.44	33.41	7.70	34.64	45.90	74.00	28.10	Peak
7328.250	45.13	36.77	9.61	34.70	56.81	74.00	17.19	Peak
7328.250	39.51	36.77	9.61	34.70	51.19	54.00	2.81	Average
9563.750	34.95	38.20	11.10	34.64	49.61	74.00	24.39	Peak
17740.750	29.59	46.98	15.91	32.28	60.20	74.00	13.80	Peak
17740.750	17.26	46.98	15.91	32.28	47.87	54.00	6.13	Average

Mode: BLE CH2442MHz

Model: CT1063-400US

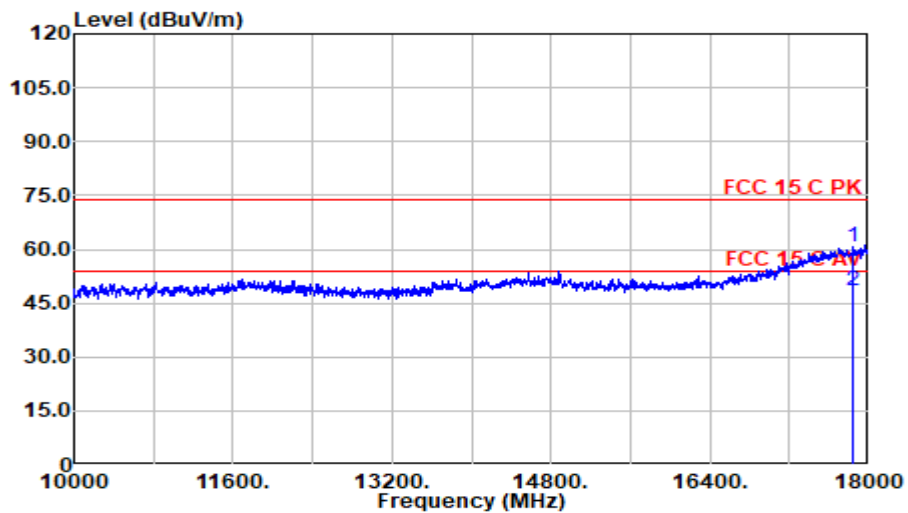
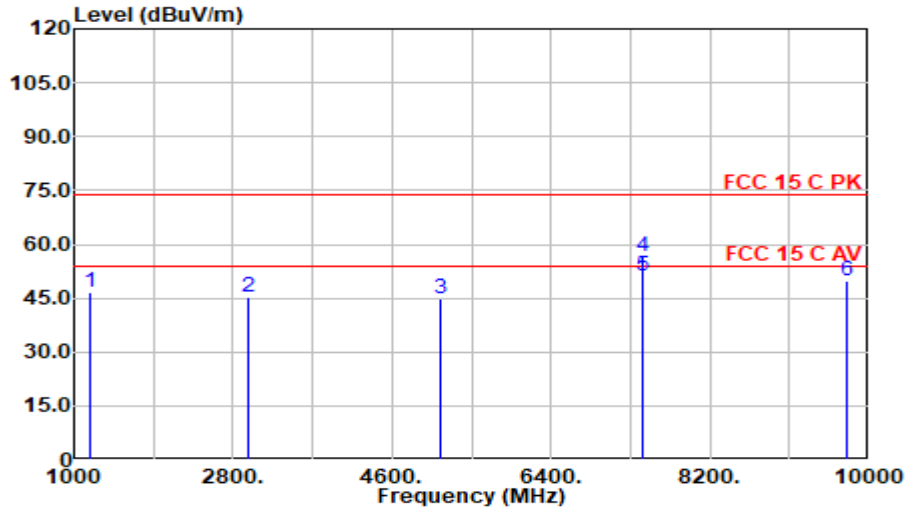


Polarization at Vertical

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
1195.500	56.43	25.06	3.89	36.50	48.88	74.00	25.12	Peak
3877.250	38.85	32.61	6.65	35.04	43.07	74.00	30.93	Peak
5998.000	40.53	34.20	8.42	34.60	48.55	74.00	25.45	Peak
7328.250	42.41	36.77	9.61	34.70	54.09	74.00	19.91	Peak
7328.250	37.24	36.77	9.61	34.70	48.92	54.00	5.08	Average
9746.500	35.22	38.10	11.25	34.62	49.94	74.00	24.06	Peak
17753.500	29.83	47.01	15.93	32.27	60.49	74.00	13.51	Peak
17753.500	17.58	47.01	15.93	32.27	48.25	54.00	5.75	Average

Mode: BLE CH2480MHz

Model: CT1063-400US

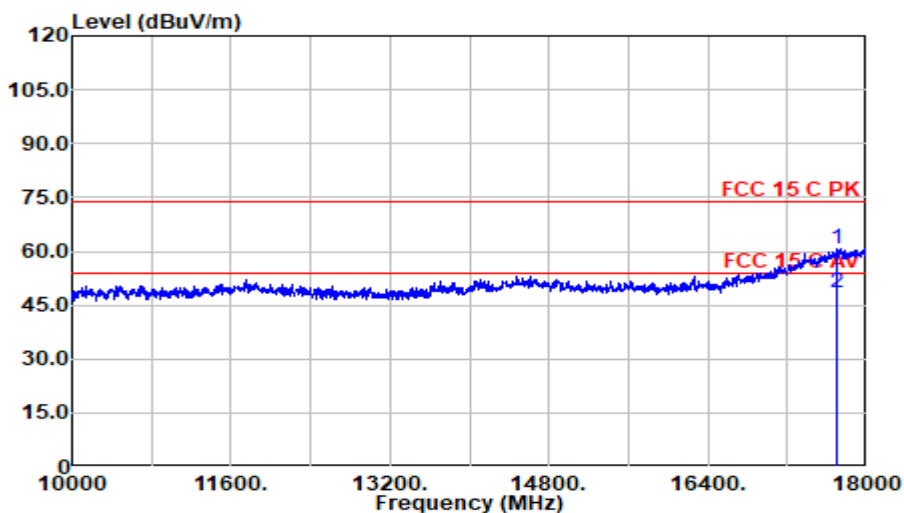
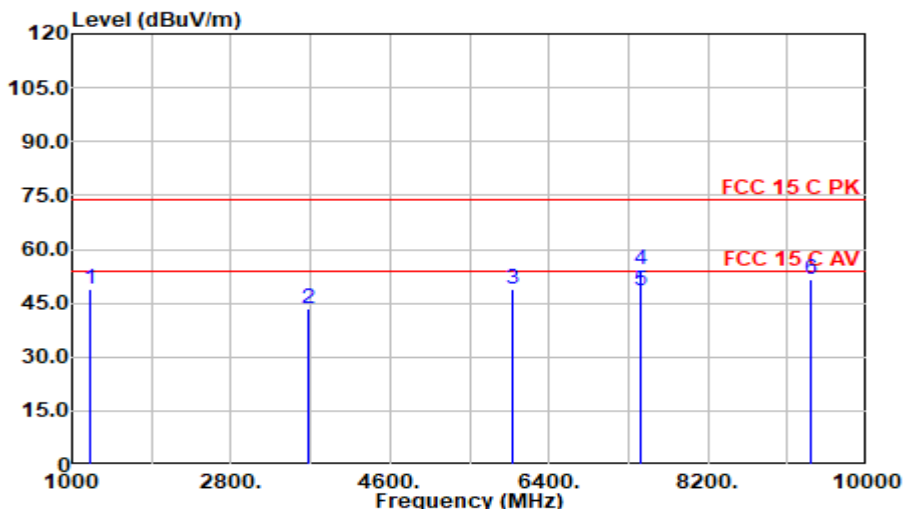


Polarization at Horizontal

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
1191.250	54.43	25.03	3.88	36.50	46.84	74.00	27.16	Peak
2967.750	45.02	29.91	5.85	35.43	45.34	74.00	28.66	Peak
5156.500	37.68	33.99	7.91	34.60	44.98	74.00	29.02	Peak
7438.750	44.73	36.90	9.73	34.74	56.63	74.00	17.37	Peak
7438.750	39.37	36.90	9.73	34.74	51.27	54.00	2.73	Average
9755.000	34.92	38.10	11.26	34.62	49.65	74.00	24.35	Peak
17834.250	29.96	47.13	16.05	32.25	60.90	74.00	13.10	Peak
17834.250	17.50	47.13	16.05	32.25	48.43	54.00	5.57	Average

Mode: BLE CH2480MHz

Model: CT1063-400US

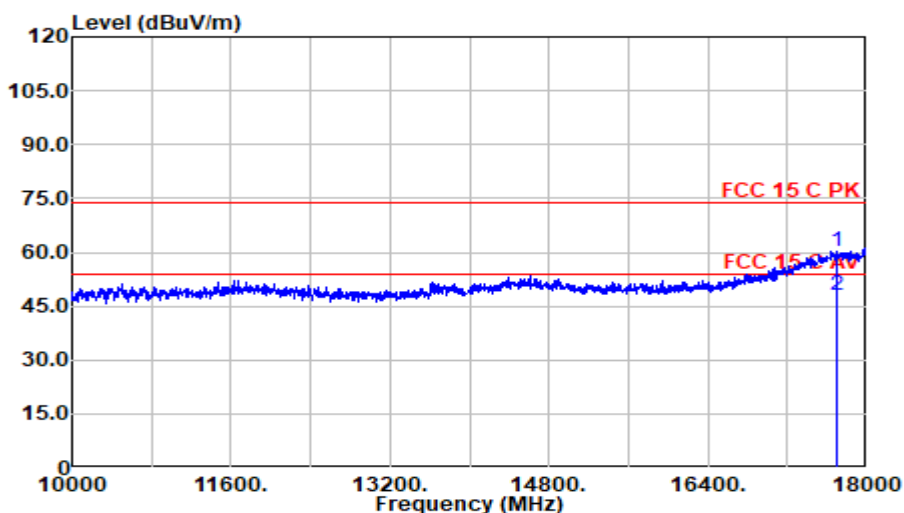
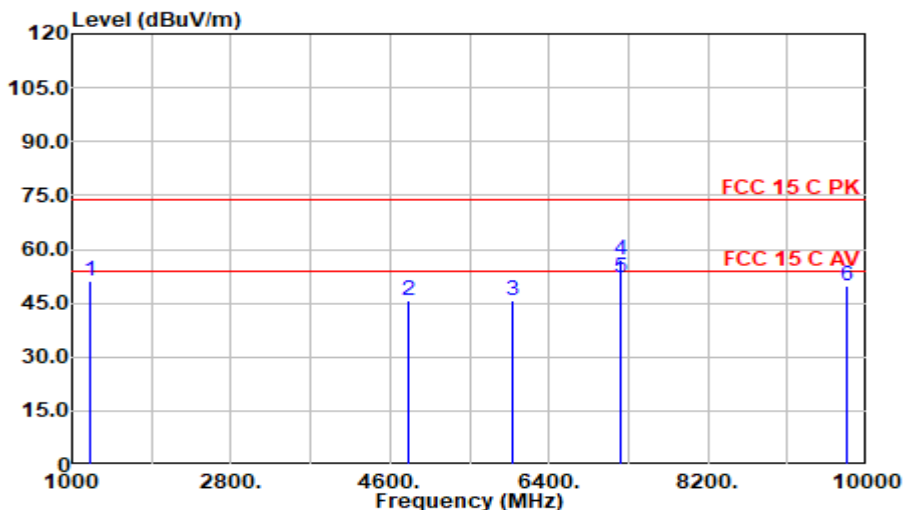


Polarization at Vertical

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
1195.500	56.63	25.06	3.89	36.50	49.08	74.00	24.92	Peak
3669.000	40.58	31.71	6.49	35.12	43.66	74.00	30.34	Peak
5998.000	40.68	34.20	8.42	34.60	48.70	74.00	25.30	Peak
7443.000	42.28	36.90	9.74	34.74	54.18	74.00	19.82	Peak
7443.000	36.73	36.90	9.74	34.74	48.63	54.00	5.37	Average
9359.750	37.23	38.04	10.94	34.66	51.54	74.00	22.46	Peak
17706.750	30.13	46.91	15.86	32.29	60.62	74.00	13.38	Peak
17706.750	17.91	46.91	15.86	32.29	48.40	54.00	5.60	Average

Mode: BLE CH2402MHz

Model: EM1060-400US



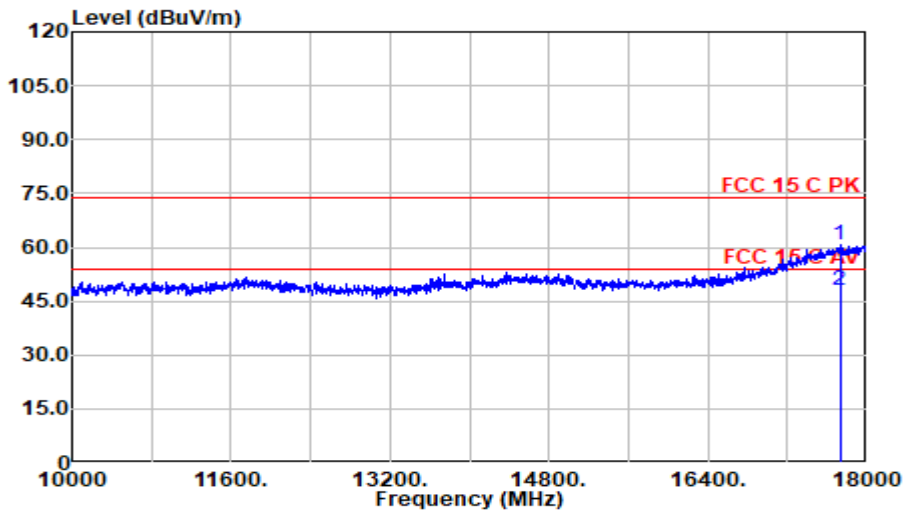
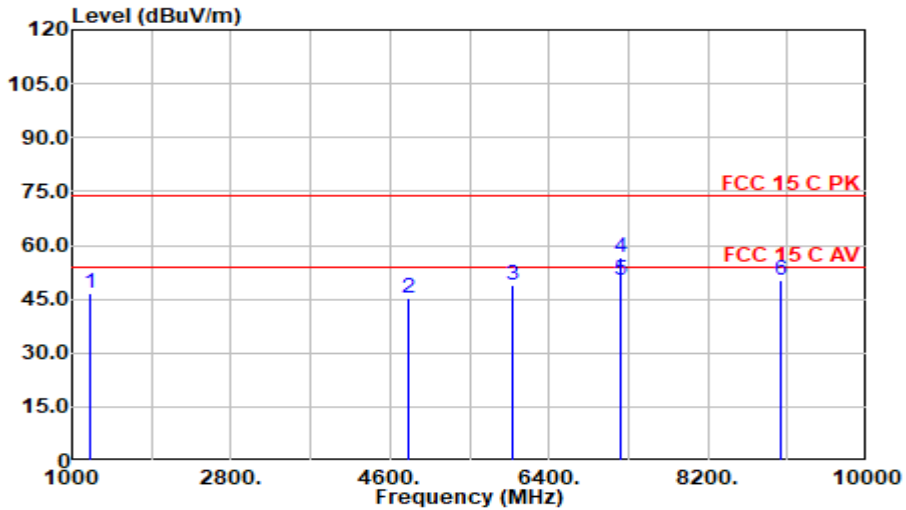
Polarization at Horizontal

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
1199.750	58.87	25.10	3.90	36.50	51.36	74.00	22.64	Peak
4803.750	39.82	32.92	7.62	34.67	45.69	74.00	28.31	Peak
5998.000	37.61	34.20	8.42	34.60	45.62	74.00	28.38	Peak
7205.000	46.30	36.15	9.48	34.66	57.27	74.00	16.73	Peak
7205.000	41.03	36.15	9.48	34.66	51.99	54.00	2.01	Average
9767.750	35.04	38.10	11.27	34.62	49.79	74.00	24.21	Peak
17706.750	29.65	46.91	15.86	32.29	60.14	74.00	13.86	Peak
17706.750	17.36	46.91	15.86	32.29	47.85	54.00	6.15	Average



Mode: BLE CH2402MHz

Model: EM1060-400US



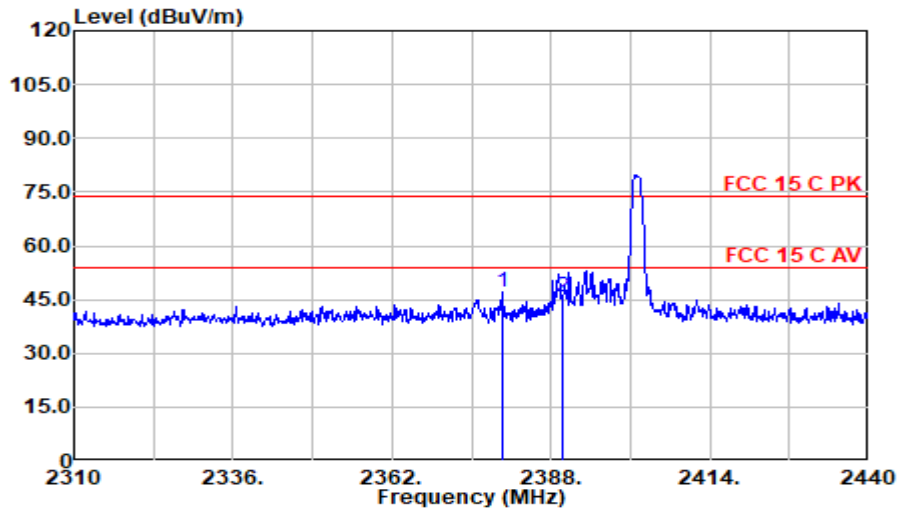
Polarization at Vertical

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
1199.750	54.18	25.10	3.90	36.50	46.68	74.00	27.32	Peak
4803.750	39.34	32.92	7.62	34.67	45.21	74.00	28.79	Peak
5998.000	41.06	34.20	8.42	34.60	49.08	74.00	24.92	Peak
7205.000	45.44	36.15	9.48	34.66	56.41	74.00	17.59	Peak
7205.000	39.34	36.15	9.48	34.66	50.31	54.00	3.69	Average
9015.500	36.24	38.23	10.64	34.70	50.42	74.00	23.58	Peak
17728.000	30.06	46.96	15.89	32.28	60.62	74.00	13.38	Peak
17728.000	17.51	46.96	15.89	32.28	48.07	54.00	5.93	Average

**Band-Edge and Restricted bands:**

Test Date:	2024.03.18	Temp./Hum.:	22°C/51%RH	Test By:	Jarey
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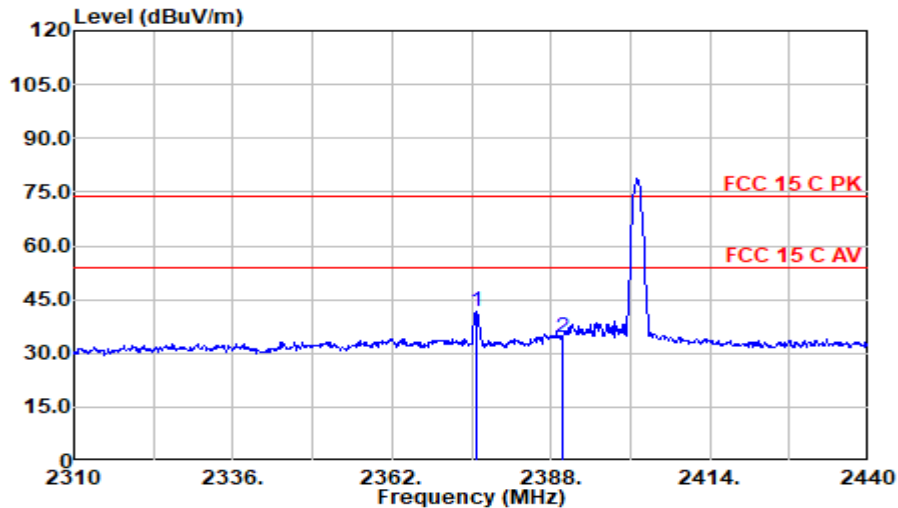
**Mode: BLE CH2402MHz**



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
2379.940	49.09	28.52	5.38	36.03	46.96	74.00	27.04	Peak
2390.000	47.75	28.56	5.39	36.02	45.68	74.00	28.32	Peak

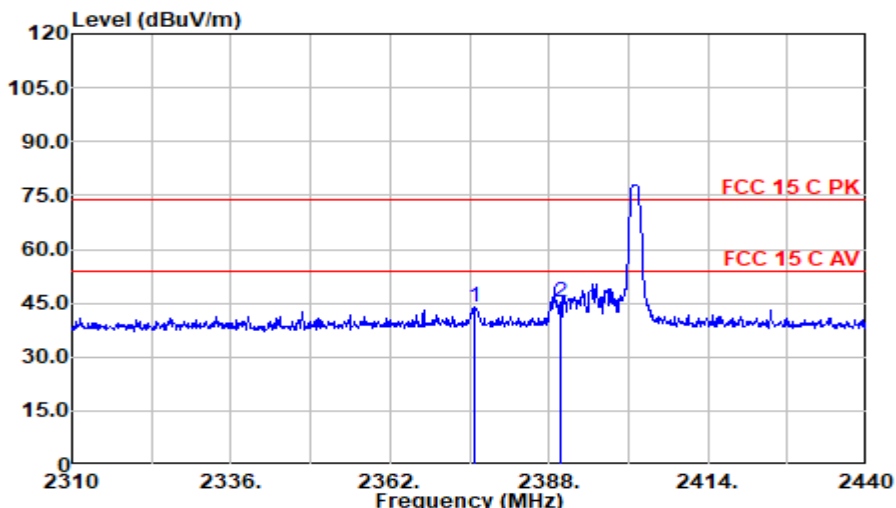
**Mode: BLE CH2402MHz**



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
2375.780	43.61	28.50	5.38	36.03	41.45	54.00	12.55	Average
2390.000	36.60	28.56	5.39	36.02	34.53	54.00	19.47	Average

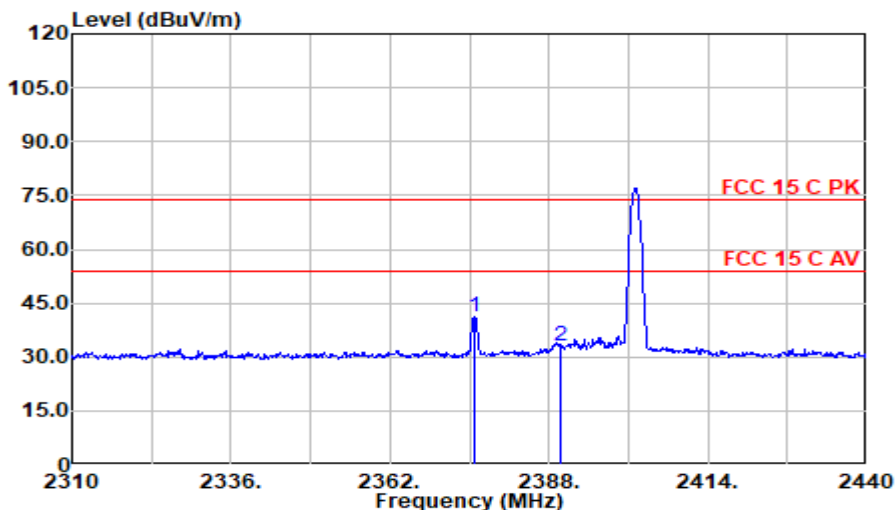
**Mode: BLE CH2402MHz**



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
2375.910	46.26	28.50	5.38	36.03	44.11	74.00	29.89	Peak
2390.000	47.35	28.56	5.39	36.02	45.28	74.00	28.72	Peak

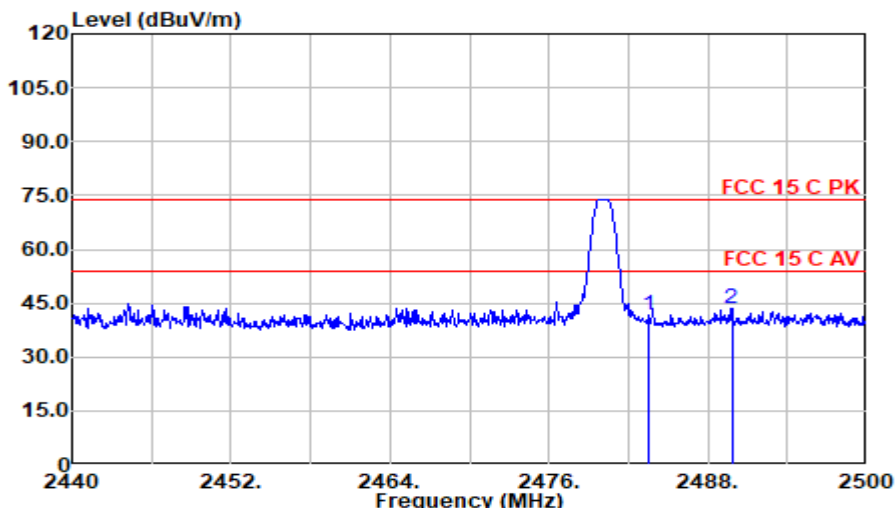
**Mode: BLE CH2402MHz**



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
2375.910	43.19	28.50	5.38	36.03	41.04	54.00	12.96	Average
2390.000	35.03	28.56	5.39	36.02	32.97	54.00	21.03	Average

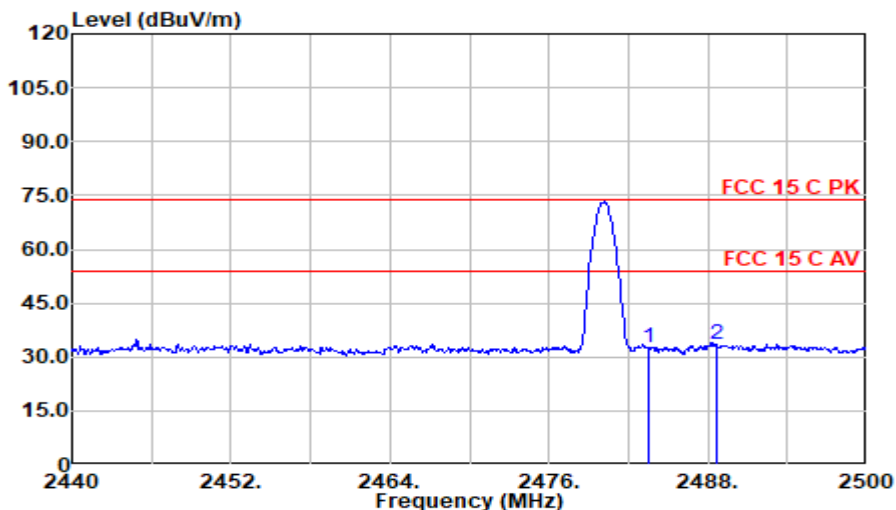
**Mode: BLE CH2480MHz**



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
2483.500	43.69	28.63	5.47	35.91	41.88	74.00	32.12	Peak
2489.800	45.33	28.66	5.47	35.91	43.56	74.00	30.44	Peak

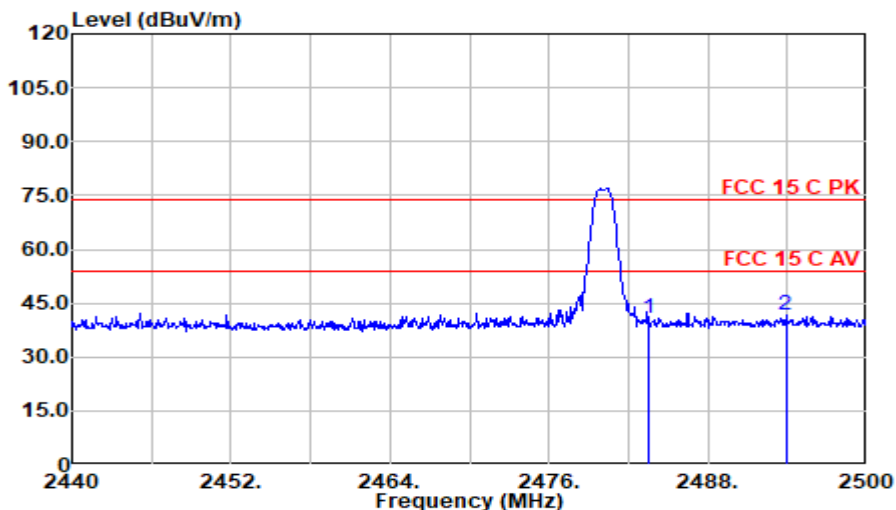
**Mode: BLE CH2480MHz**



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
2483.500	34.34	28.63	5.47	35.91	32.53	54.00	21.47	Average
2488.600	35.44	28.65	5.47	35.91	33.66	54.00	20.34	Average

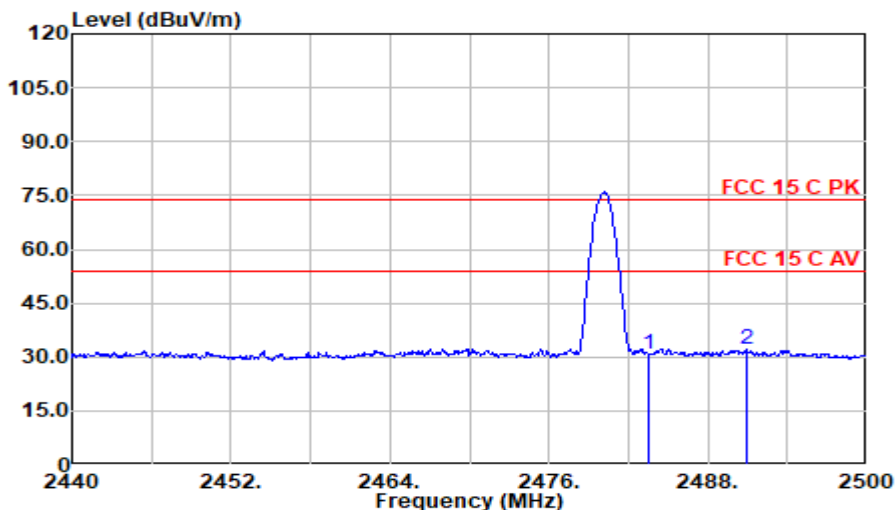
**Mode: BLE CH2480MHz**



Polarization at Vertical

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
2483.500	42.37	28.63	5.47	35.91	40.56	74.00	33.44	Peak
2493.880	43.46	28.68	5.48	35.90	41.72	74.00	32.28	Peak

**Mode: BLE CH2480MHz**



Polarization at Vertical

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
2483.500	32.74	28.63	5.47	35.91	30.93	54.00	23.07	Average
2491.000	33.74	28.66	5.48	35.90	31.97	54.00	22.03	Average

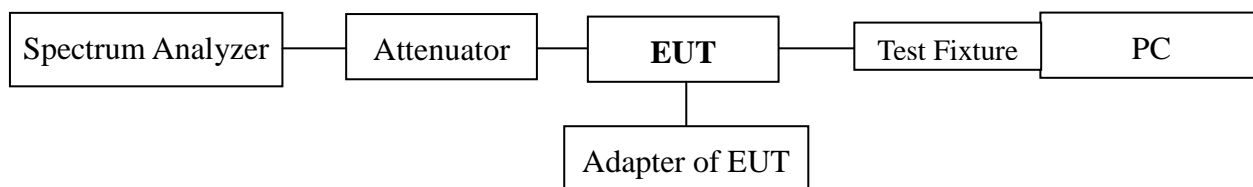
## 5 6 dB BANDWIDTH MEASUREMENT

### 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	2023.08.09	1 Year
2.	RF Cable	Mini-Circuits	FLC-3FT-SM SM+	22022838	2023.08.09	1 Year
3.	10 dB Attenuator	Mini-Circuits	BW-S10W2+	001	2023.08.09	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 ≥ 3 × 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 C63.10-2013 (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: 2024.02.04 Temperature: 23°C Humidity: 51 %)

Mode	Channel	Frequency (MHz)	6dB Bandwidth (kHz)	Limit (kHz)
BLE	00	2402	<b>699</b>	500
	20	2442	<b>701.9</b>	500
	39	2480	<b>709.9</b>	500

BLE

CH2402



CH2442



CH2480





## 6 MAXIMUM PEAK OUTPUT POWER MEASUREMENT

### 6.1 Test Equipment

The following test equipment was used during the maximum peak output power measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2023.08.09	1 Year
2.	RF Cable	Mini-Circuits	FLC-3FT-SM SM+	22022838	2023.08.09	1 Year
3.	10 dB Attenuator	Mini-Circuits	BW-S10W2+	001	2023.08.09	1 Year

### 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)  $RBW \geq DTS$  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 C63.10-2013 ( 11.9.1.1 Measurement Procedure “  $RBW \geq DTS$  bandwidth” was used).

### 6.6 Test Results

**PASSED.**

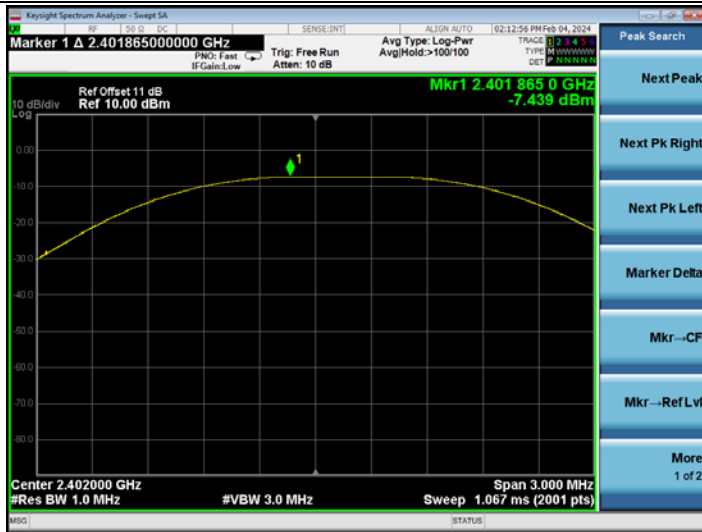
All the test results are listed below.

(Test Date: 2024.02.04 Temperature: 23°C Humidity: 51 %)

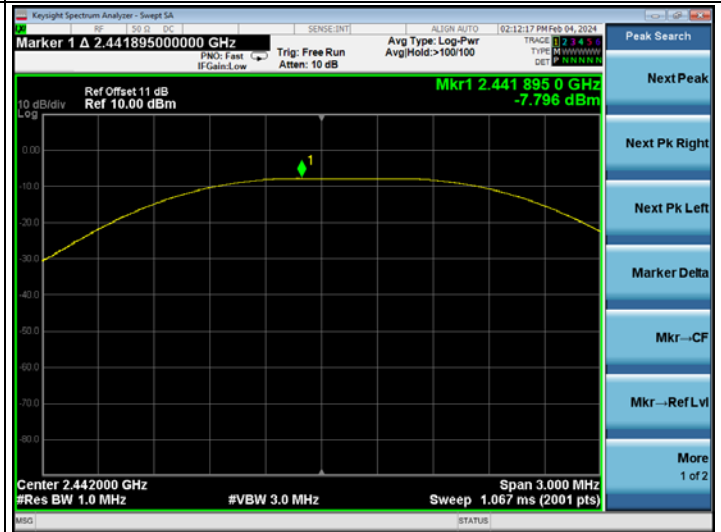
Mode	Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
BLE	00	2402	<b>-7.439</b>	30
	20	2442	<b>-7.796</b>	30
	39	2480	<b>-8.12</b>	30

BLE

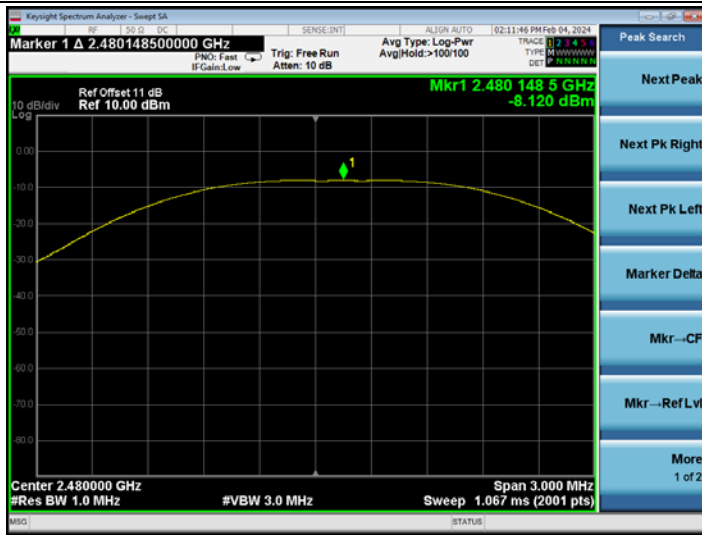
CH2402



CH2442



CH2480



## 7 EMISSION LIMITATIONS MEASUREMENT

### 7.1 Test Equipment

The following test equipment was used during the emission limitations test:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2023.08.09	1 Year
2.	RF Cable	Mini-Circuits	FLC-3FT-SM SM+	22022838	2023.08.09	1 Year
3.	10 dB Attenuator	Mini-Circuits	BW-S10W2+	001	2023.08.09	1 Year

### 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:

- Set instrument center frequency to DTS channel center frequency.
- Set the span to  $\geq 1.5$  times the DTS bandwidth.
- Set the RBW = 100 kHz.
- Set the VBW  $\geq [3 \times \text{RBW}]$ .
- Detector = peak.
- Sweep time = auto couple.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- 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 10<sup>th</sup> harmonic.

The test procedure is defined in ANSI C63.10-2013 (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.

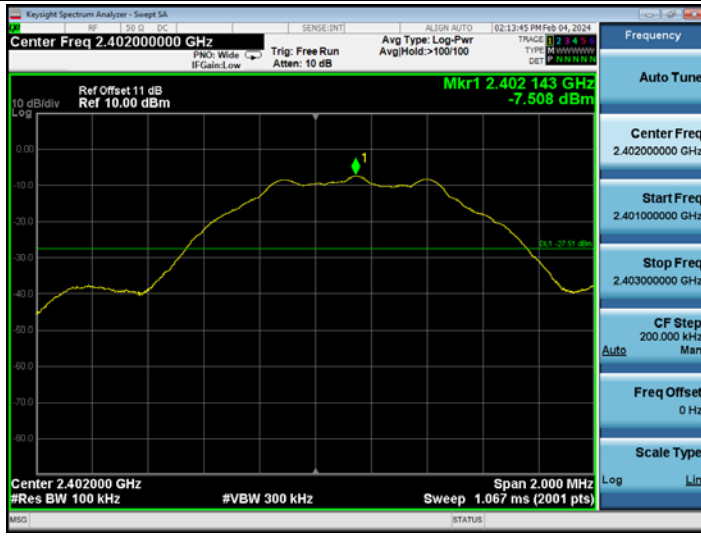
(Test Date: 2024.02.04 Temperature: 23°C Humidity: 51 %)

Mode	Channel	Frequency (MHz)	Data Page
BLE	00	2402	P47
	20	2442	P48
	39	2480	P49

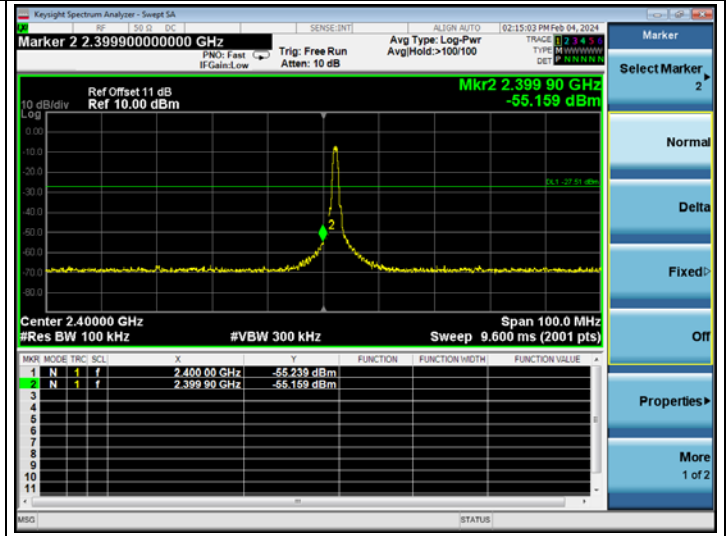
BLE

CH2402

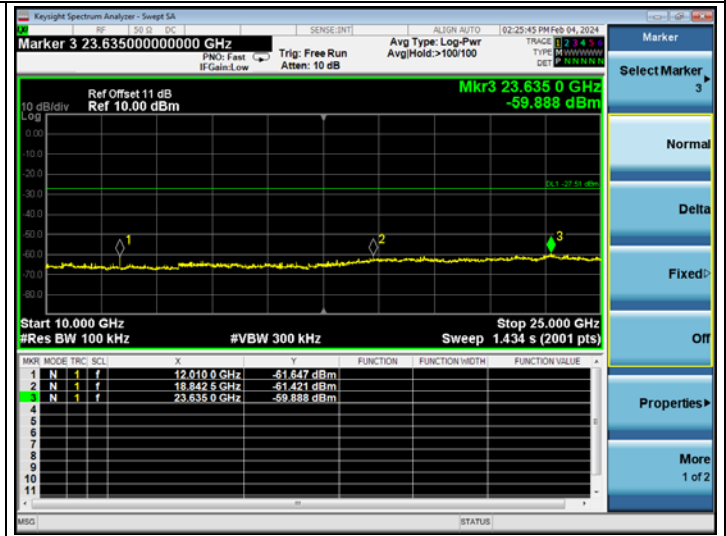
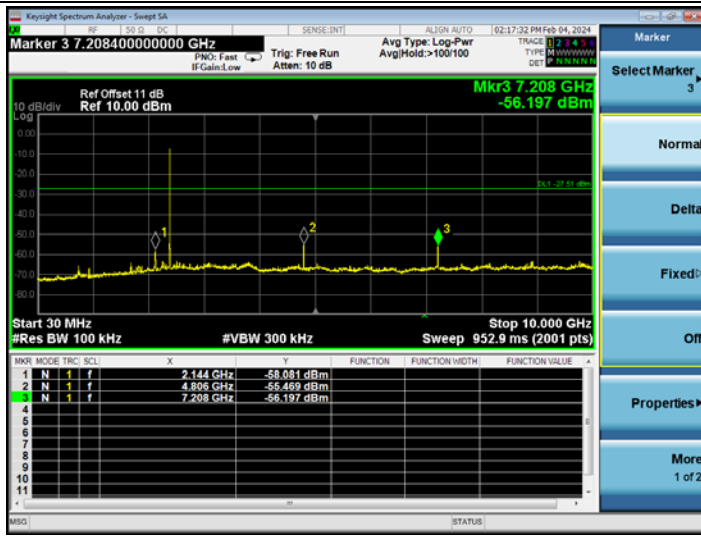
Reference Level



Lower Edge



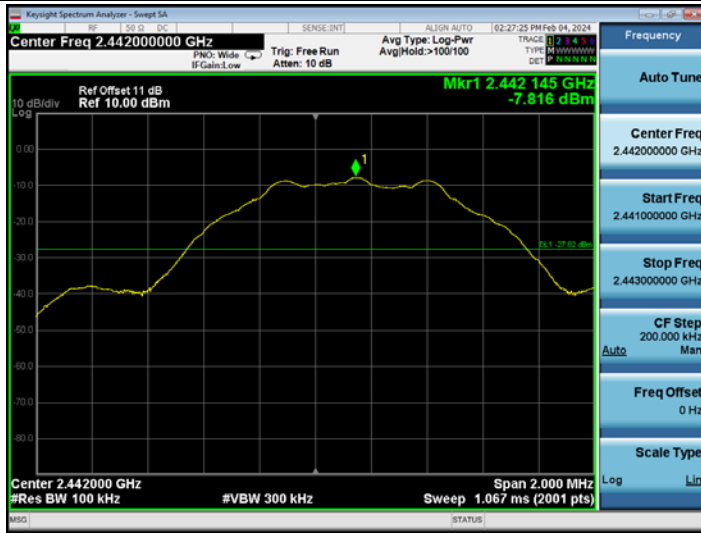
Emission Level



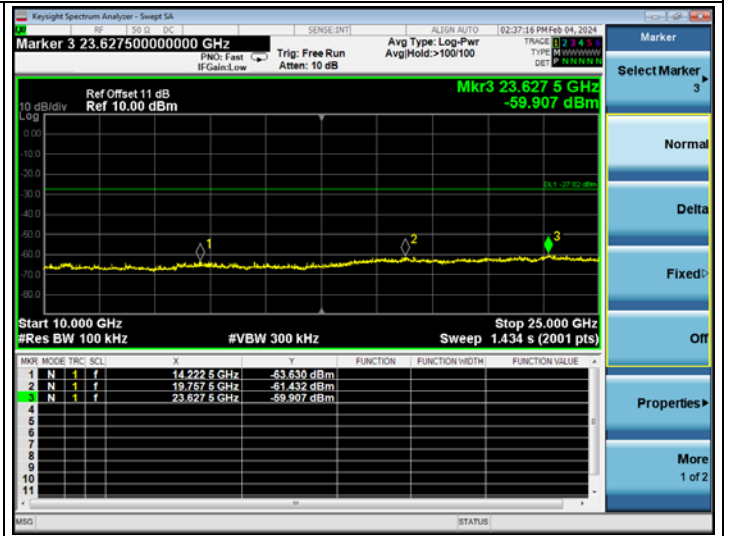
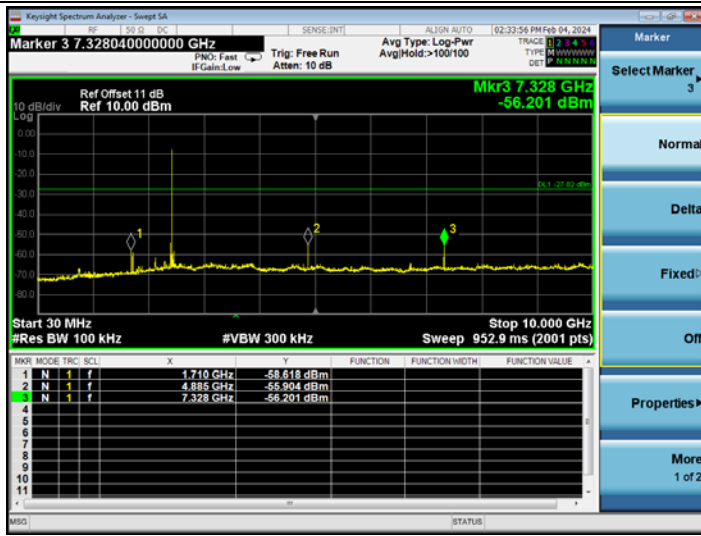
BLE

CH2442

Reference Level



Emission Level





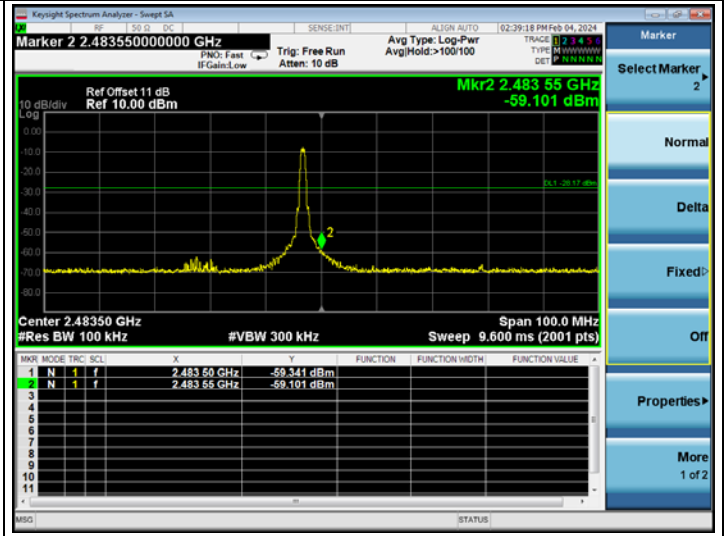
BLE

CH2480

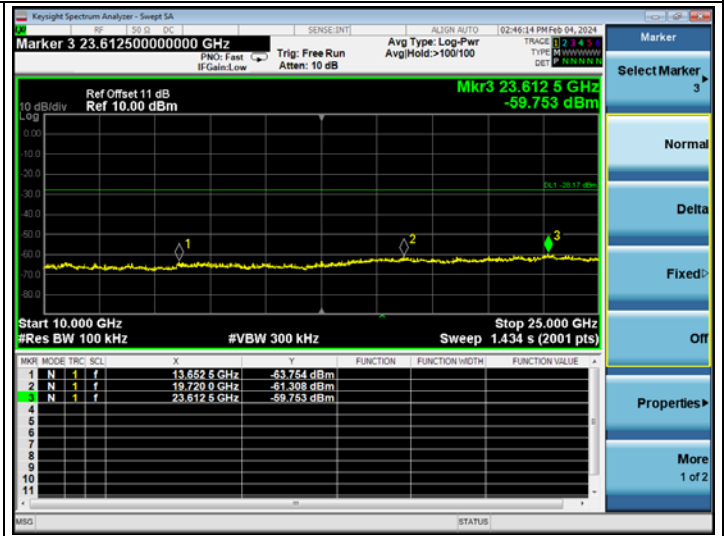
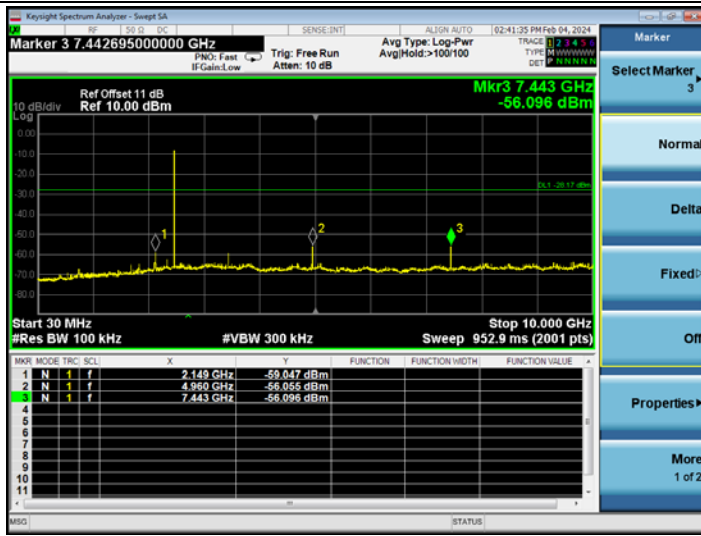
Reference Level



Higher Edge



Emission Level



## 8 POWER SPECTRAL DENSITY MEASUREMENT

### 8.1 Test Equipment

The following test equipment was used during the power spectral density measurement:

Item	Type	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Interval
1.	Spectrum Analyzer	Agilent	N9010A	MY52221182	2023.08.09	1 Year
2.	RF Cable	Mini-Circuits	FLC-3FT-SM SM+	22022838	2023.08.09	1 Year
3.	10 dB Attenuator	Mini-Circuits	BW-S10W2+	001	2023.08.09	1 Year

### 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 C63.10-2013 ( 11.10.2 Measurement Procedure “Method PKPSD (peak PSD)” was used).

### 8.6 Test Results

**PASSED.**

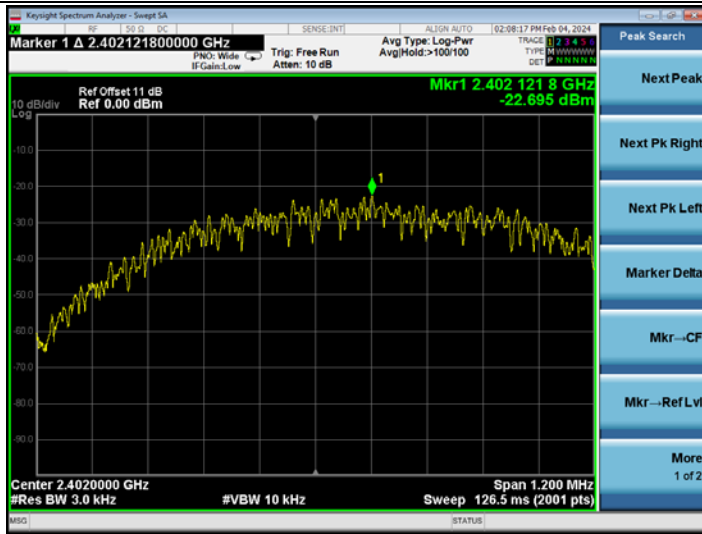
All the test results are attached in next pages.

(Test Date: 2024.02.04 Temperature: 23°C Humidity: 51 %)

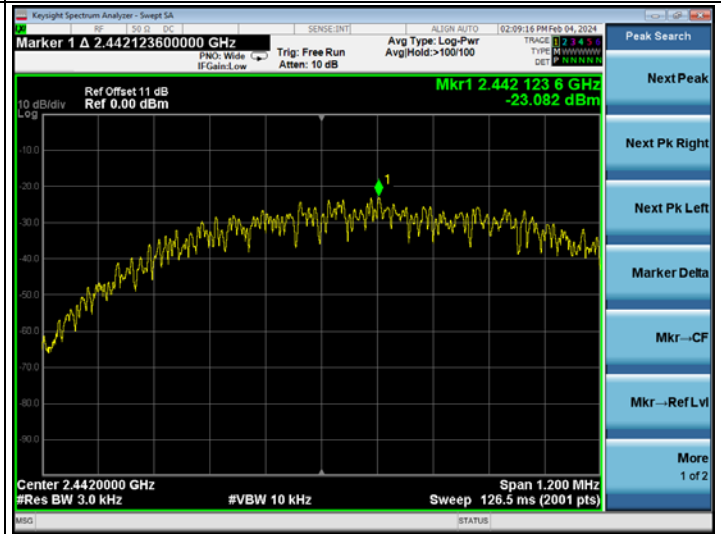
Mode	Channel	Frequency (MHz)	Power Spectral Density (dBm)	Limit (dBm)
BLE	00	2402	<b>-22.695</b>	8
	20	2442	<b>-23.082</b>	8
	39	2480	<b>-23.461</b>	8

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	$6 \times 10^{-4}$
Bandwidth Test	9kHz~6GHz	$1.5 \times 10^{-3}$
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 %