



RF Co-location Report

FCC ID: 2ALGLM2000
Applicant: CASSIA NETWORKS INC.
Product: Cassia Bluetooth Gateway
Model No.: M2000
Brand Name: CASSIA
FCC Rule Part(s): Part 2, 22 (H), 24 (E), 27, 90 (S)
Part 15 Subpart C (Section 15.247)
Result: Complies
Received Date: 2024-08-07
Test Date: 2024-10-22

Reviewed By:

Denise Zhou

Approved By:

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2408RSU011-U4	V01	Initial Report	2024-11-21	Valid

CONTENTS

Description	Page
1. General Information	4
1.1. Applicant	4
1.2. Manufacturer.....	4
1.3. Testing Facility	4
1.4. Product Information	5
2. Test Configuration	6
2.1. Test Mode	6
2.2. Test System Connection Diagram	6
2.3. Applied Standards	7
2.4. Test Environment Condition.....	7
3. Measuring Instrument	8
4. Decision Rules and Measurement Uncertainty	9
4.1. Decision Rules.....	9
4.2. Measurement Uncertainty	9
5. Radiated Spurious Emissions Measurement (Co-location)	10
5.1. Test Limit.....	10
5.2. Test Procedure	10
5.3. Test Setting	11
5.4. Test Setup.....	13
5.5. Test Result	14
Appendix A - Test Setup Photograph	32
Appendix B - EUT Photograph	33

1. General Information

1.1. Applicant

CASSIA NETWORKS INC.

97 E. Brokaw Road, Suite 130, San Jose, CA 95112

1.2. Manufacturer

CASSIA NETWORKS INC.

97 E. Brokaw Road, Suite 130, San Jose, CA 95112

1.3. Testing Facility

☒	Test Site – MRT Suzhou Laboratory Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China Laboratory Location (Suzhou - Wujiang) Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, People's Republic of China Laboratory Accreditations A2LA: 3628.01 CNAS: L10551 FCC: CN1166 ISED: CN0001 VCCI: ☐ R-20025 ☐ G-20034 ☐ C-20020 ☐ T-20020 ☐ R-20141 ☐ G-20134 ☐ C-20103 ☐ T-20104
☐	Test Site – MRT Shenzhen Laboratory Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China Laboratory Accreditations A2LA: 3628.02 CNAS: L10551 FCC: CN1284 ISED: CN0105
☐	Test Site – MRT Taiwan Laboratory Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) Laboratory Accreditations TAF: 3261 FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product Name	Cassia Bluetooth Gateway
Model No.	M2000
EUT Identification No.	20240923Sample#01
Wi-Fi Specification	802.11b/g/n
Bluetooth Specification	V5.1, BLE only
3GPP Specification	LTE-M1: Band 2, 4, 5, 12, 13, 25, 26, 66, 85 NB-IoT: Band 2, 4, 5, 12, 13, 25, 66, 71, 85
GNSS Specification	GPS, GLONASS, QZSS
Antenna Information	Refer to Section 1.5
Power Type	By AC/DC Adapter
Accessory	
Adapter	Model No.: 6A-121WP05 Input Power: 100 - 240V ~ 50/60Hz, 0.6A Output Power: 5V = 2.0A, 10W
Integrated Module Information	
Wi-Fi Module	Module Name: Wi-Fi & Bluetooth Internet of Things Module Model No: ESP32-WROVER-E Brand Name: ESPRESSIF
Cellular Module	Module Name: LTE Cat M1 & Cat NB2 Module Model No: BG95-M6 Brand Name: Quectel
Note:	
- The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer. - The Wi-Fi and Cellular module used in this device is certified. Therefore, the co-location spurious test is evaluated	

2. Test Configuration

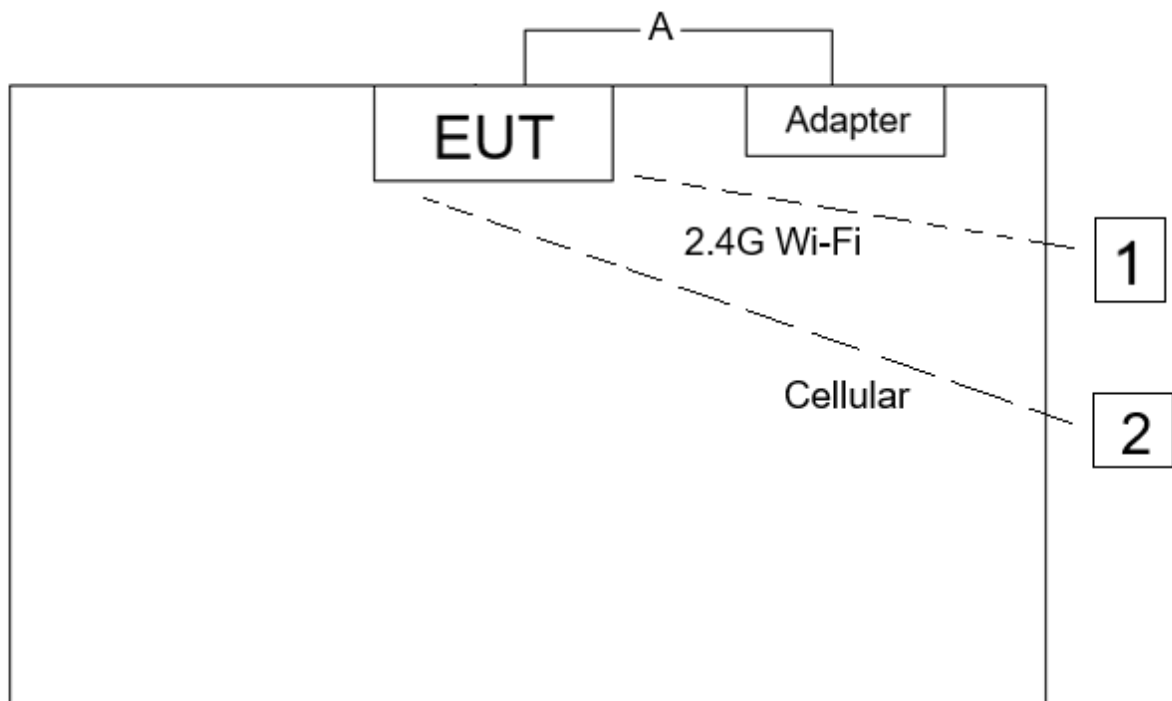
2.1. Test Mode

Test Mode 1: Powered by an adapter + Bluetooth scan + Connected with PC via 2.4G Wi-Fi + Cat M1 Band 2 traffic connected

Test Mode 2: Powered by an adapter + Bluetooth scan + Connected with PC via 2.4G Wi-Fi + NB-IoT Band 2 traffic connected

2.2. Test System Connection Diagram

Connection Diagram



No.	Cable Type	Cable Spec.	Length
A	Power Cable	Non-Shielded	1.0m
No.	Product	Manufacturer	Model No.
1	PC	Lenovo	E495
2	Radio Communication Analyzer	Anritsu	MT8821C

2.3. Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- FCC Part 15 Subpart C §15.247
- FCC Part 22 Subpart H
- FCC Part 24 Subpart E
- FCC Part 27 Subpart M
- KDB 558074 D01v05r02
- ANSI C63.10-2013
- ANSI C63.26:2015
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems

2.4. Test Environment Condition

Ambient Temperature	15 ~ 35°C
Relative Humidity	20% ~ 75%RH

3. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Preamplifier	Schwarzbeck	BBV 9721	MRTSUE06121	1 year	2025-06-06	SIP-AC3
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2025-07-07	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06619	1 year	2025-10-16	SIP-AC3
Preamplifier	EMCI	EMC012645SE	MRTSUE06642	1 year	2025-01-11	SIP-AC3
Signal Analyzer	Keysight	N9010B	MRTSUE06559	1 year	2025-05-08	SIP-AC3
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06646	1 year	2025-07-29	SIP-AC3
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2024-12-21	SIP-AC3
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2025-10-08	SIP-AC3
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06599	1 year	2025-09-08	SIP-AC3
Loop Antenna	Schwarzbeck	FMZB 1519 B	MRTSUE06937	1 year	2025-01-27	SIP-AC3

Software	Version	Function
e3	230711	RE & CE
Controller_MF 7802BS	1.02	RE Antenna & Turntable

4. Decision Rules and Measurement Uncertainty

4.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

Radiated Emission Measurement	
Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$):	
Coaxial:	9kHz~30MHz: 2.35dB
Coplanar:	9kHz~30MHz: 2.37dB
Horizontal:	30MHz~200MHz: 4.02dB
	200MHz~1GHz: 4.43dB
	1GHz~40GHz: 4.97dB
Vertical:	30MHz~200MHz: 4.21dB
	200MHz~1GHz: 5.49dB
	1GHz~40GHz: 4.78dB

5. Radiated Spurious Emissions Measurement (Co-location)

5.1. Test Limit

For 15.247(d) requirement

All out of band emissions appearing in a restricted band as specified in Section 15.205 of the Title 47 CFR must not exceed the limits shown in Table per Section 15.209.

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [μV/m]	Measured Distance [Meters]
0.009 - 0.490	2400/F (kHz)	300
0.490 - 1.705	24000/F (kHz)	30
1.705 - 30	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

For 22/24/27 requirement

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

$E \text{ (dBμV/m)} = \text{EIRP (dBm)} - 20 \log D + 104.8$; where D is the measurement distance in meters. The emission limit equal to 82.3dBμV/m.

5.2. Test Procedure

ANSI C63.10 - 2013 - Section 11.11 & 11.12

ANSI C63.10 - 2013 - Section 6.3 (General Requirements)

ANSI C63.10 - 2013 - Section 6.4 (Standard test method below 30MHz)

ANSI C63.10 - 2013 - Section 6.5 (Standard test method above 30MHz to 1GHz)

ANSI C63.10 - 2013 - Section 6.6 (Standard test method above 1GHz)

ANSI C63.26 - 2015 - Section 5.2.7 & 5.5

5.3. Test Setting

Table 1 - RBW as a function of frequency

Frequency	RBW
9 ~ 150 kHz	200 ~ 300 Hz
0.15 ~ 30 MHz	9 ~ 10 kHz
30 ~ 1000 MHz	100 ~ 120 kHz
> 1000MHz	1MHz

Quasi-Peak Measurements below 1GHz

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. Span was set greater than 1MHz
3. RBW = as specified in Table 1
4. Detector = CISPR quasi-peak
5. Sweep time = auto couple
6. Trace was allowed to stabilize

1. RBW = 1MHz
2. VBW $\geq 3 \times \text{RBW}$
3. Sweep time $\geq 10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})$
4. Detector = Peak
5. Trace mode = max hold
6. The trace was allowed to stabilize

Peak Measurements above 1GHz

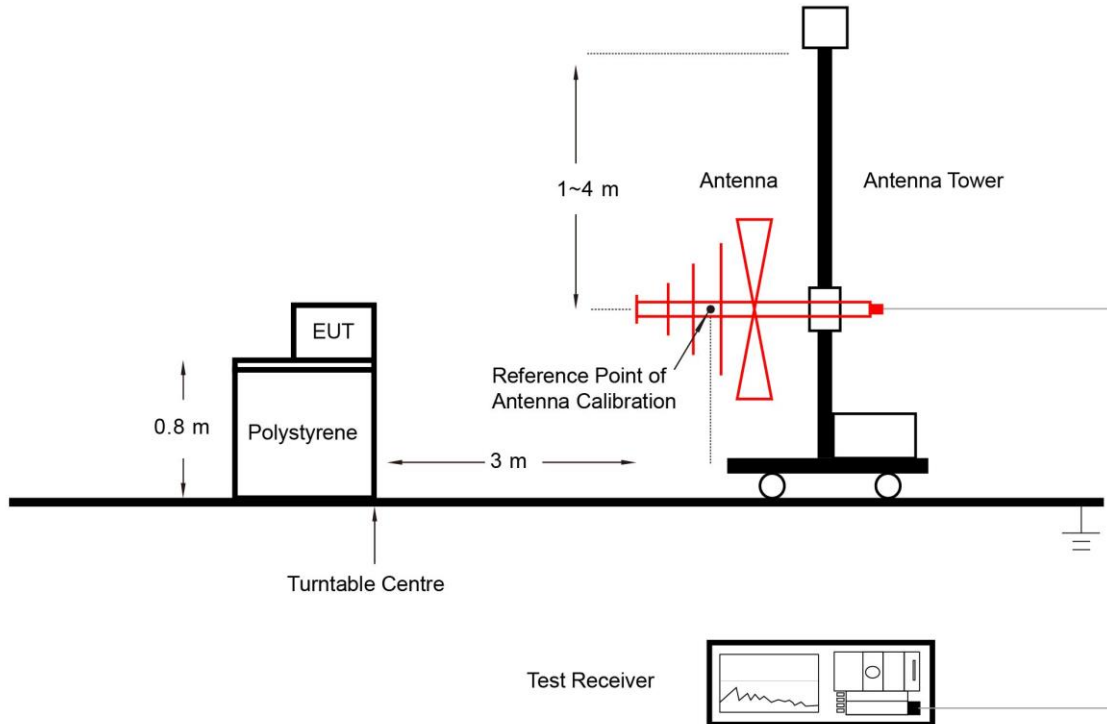
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

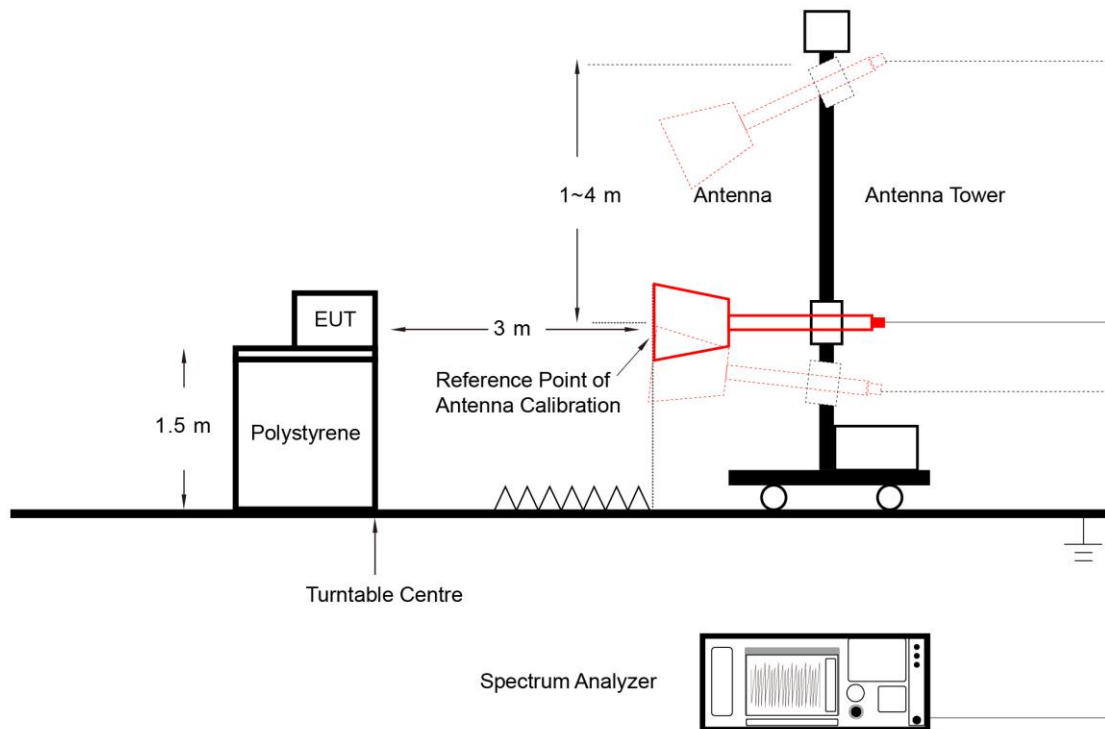
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4. Detector = Peak
5. Sweep time = auto
6. Trace mode = max hold
7. Trace was allowed to stabilize

5.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.5. Test Result

Test Site	SIP-AC3	Test Engineer	Justin Guo
Test Date	2024-10-22	Test Mode	Mode 1

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
4874.300	57.6	-6.1	51.5	74.0	-22.5	Peak	Horizontal
10312.600	47.4	2.1	49.5	74.0	-24.5	Peak	Horizontal
13999.900	47.0	4.0	51.0	74.0	-23.0	Peak	Horizontal
4864.100	55.1	-6.2	48.9	74.0	-25.1	Peak	Vertical
10360.200	47.7	1.0	48.7	74.0	-25.3	Peak	Vertical
14117.200	47.7	3.8	51.5	74.0	-22.5	Peak	Vertical

Note1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note2: The peak-detection value will always be equal to or greater than average-detection value. In a result, the peak-detection value measured by spectrum analyzer shall represent the worst-case results.

Test Site	SIP-AC3	Test Engineer	Justin Guo
Test Date	2024-10-22	Test Mode	Mode 2

Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector	Polarization
3699.600	57.4	-7.4	50.0	74.0	-24.0	Peak	Horizontal
4874.300	58.5	-6.1	52.4	74.0	-21.6	Peak	Horizontal
10768.200	47.9	1.3	49.2	74.0	-24.8	Peak	Horizontal
3699.600	59.6	-7.4	52.2	74.0	-21.8	Peak	Vertical
7400.500	54.2	-4.2	50.0	74.0	-24.0	Peak	Vertical
11055.500	48.3	1.2	49.5	74.0	-24.5	Peak	Vertical

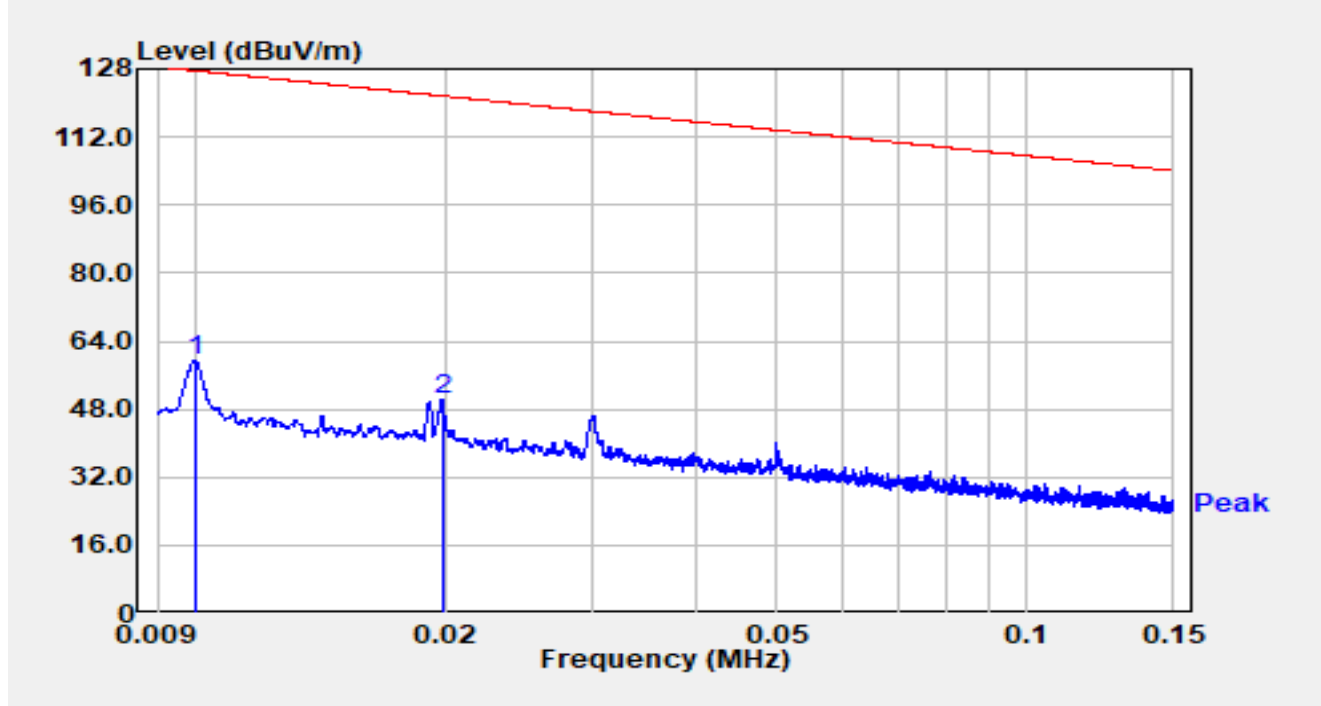
Note1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note2: The peak-detection value will always be equal to or greater than average-detection value. In a result, the peak-detection value measured by spectrum analyzer shall represent the worst-case results.

The Result of Radiated Emission 9kHz ~ 30Hz:

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coaxial
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

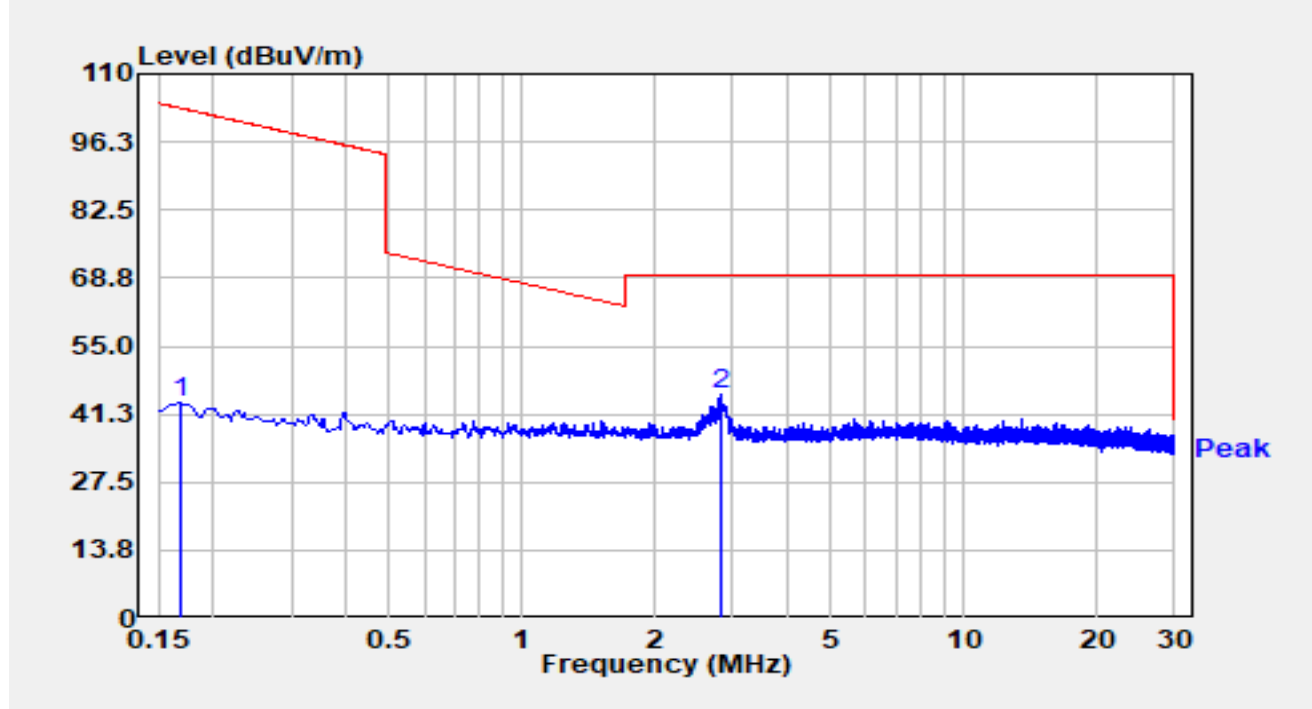


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	0.010	39.14	20.35	59.50	-68.10	127.60	Peak
2		0.020	29.90	20.40	50.30	-71.36	121.66	Peak

Notes:

- " * ", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coaxial
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

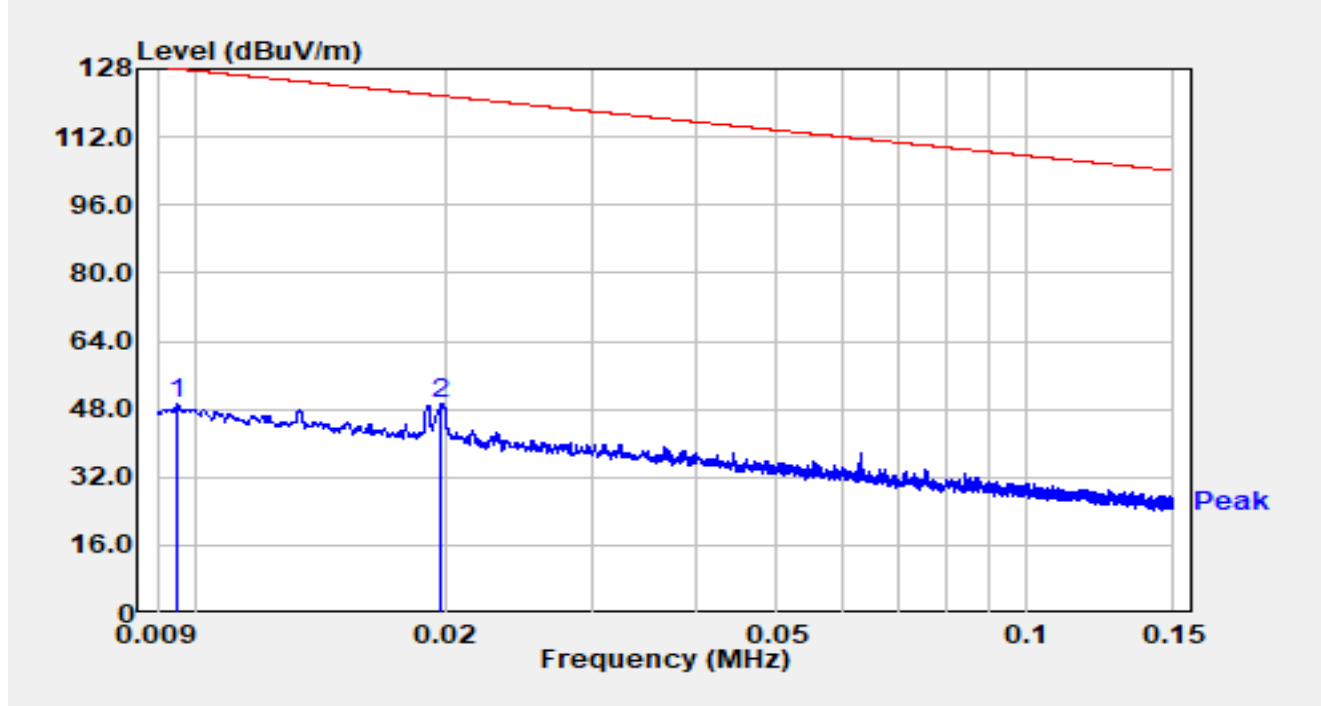


No	Mark	Frequency (MHz)	Reading (dBUV)	C.F (dB/m)	Measurement (dBUV/m)	Margin (dB)	Limit (dBUV/m)	Detector
1		0.168	23.22	20.25	43.47	-59.63	103.10	Peak
2	*	2.804	25.13	20.19	45.32	-24.18	69.50	Peak

Notes:

- "*", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBUV/m) = Reading(dBUV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coplanar
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

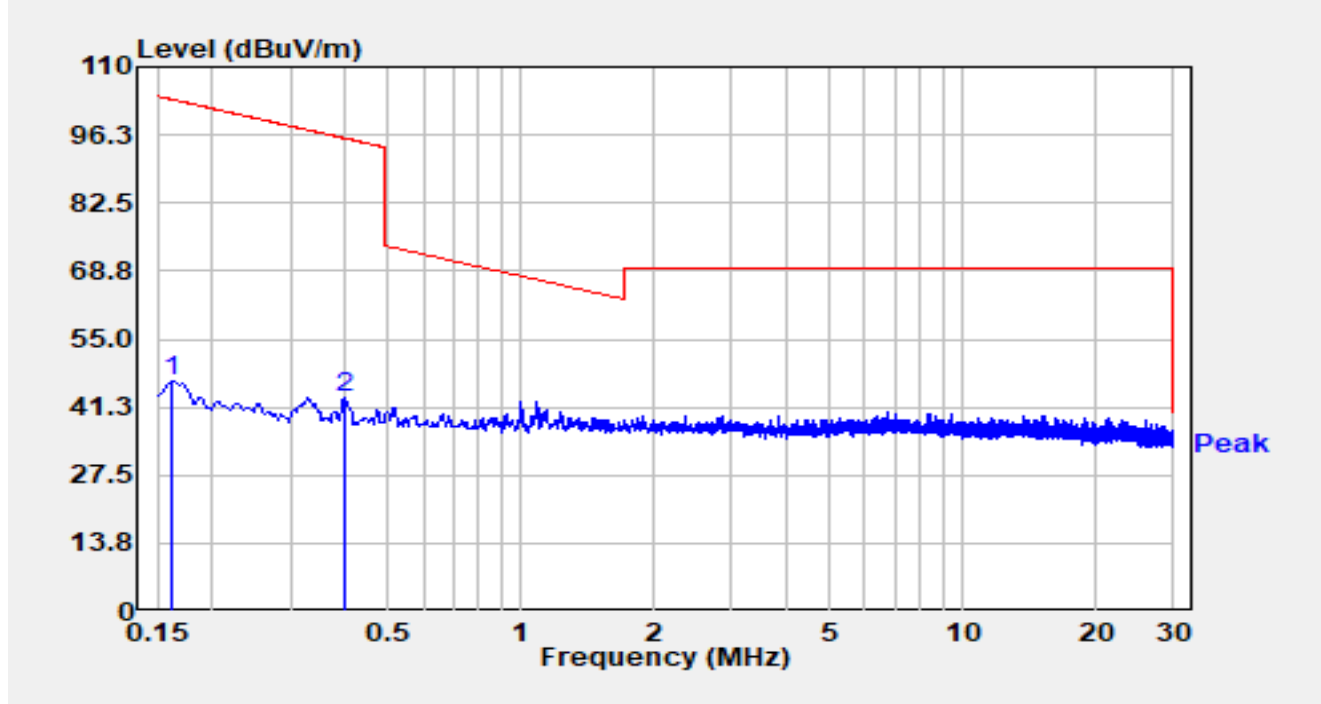


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	0.010	28.79	20.35	49.14	-78.87	128.01	Peak
2	*	0.020	28.68	20.40	49.07	-72.60	121.67	Peak

Notes:

- "*", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coplanar
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

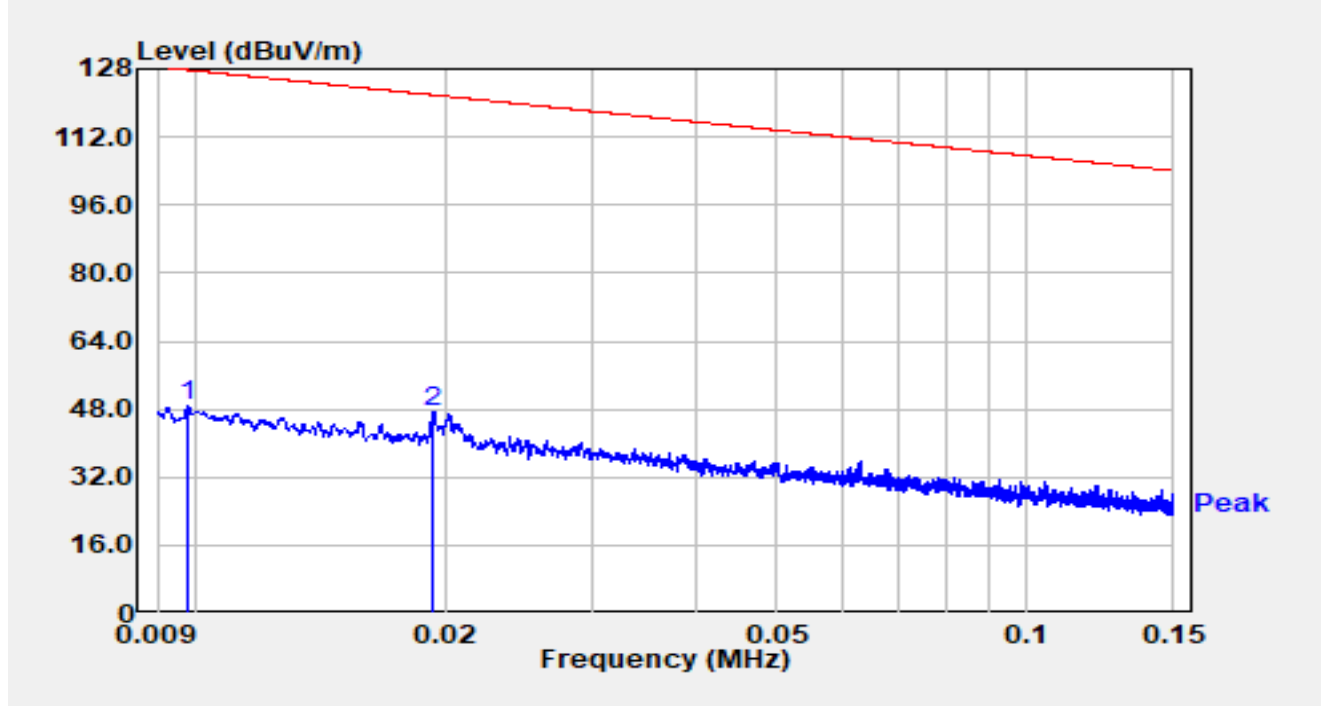


No	Mark	Frequency (MHz)	Reading (dBUV)	C.F (dB/m)	Measurement (dBUV/m)	Margin (dB)	Limit (dBUV/m)	Detector
1	*	0.162	26.27	20.25	46.52	-56.89	103.41	Peak
2	*	0.401	23.00	20.14	43.14	-52.40	95.55	Peak

Notes:

- " * ", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBUV/m) = Reading(dBUV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coaxial
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		

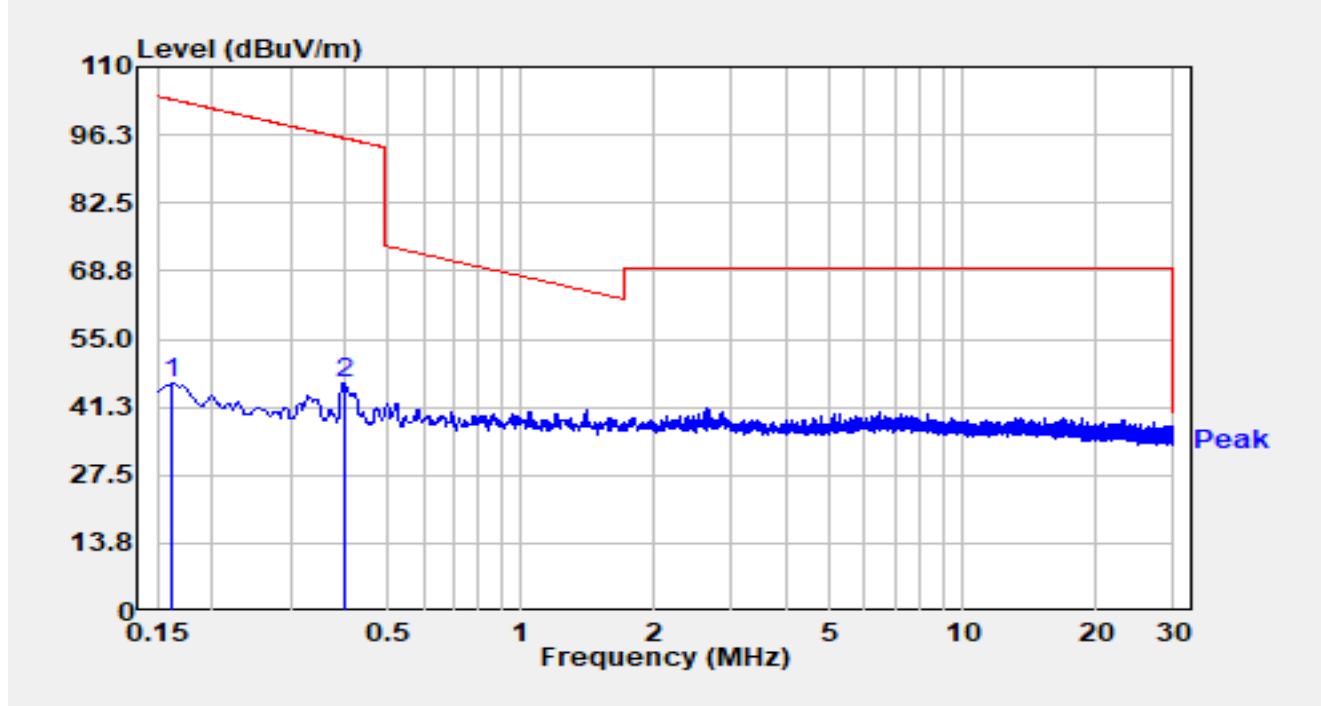


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	0.010	28.21	20.35	48.56	-79.19	127.76	Peak
2	*	0.019	26.85	20.39	47.24	-74.61	121.86	Peak

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coaxial
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		

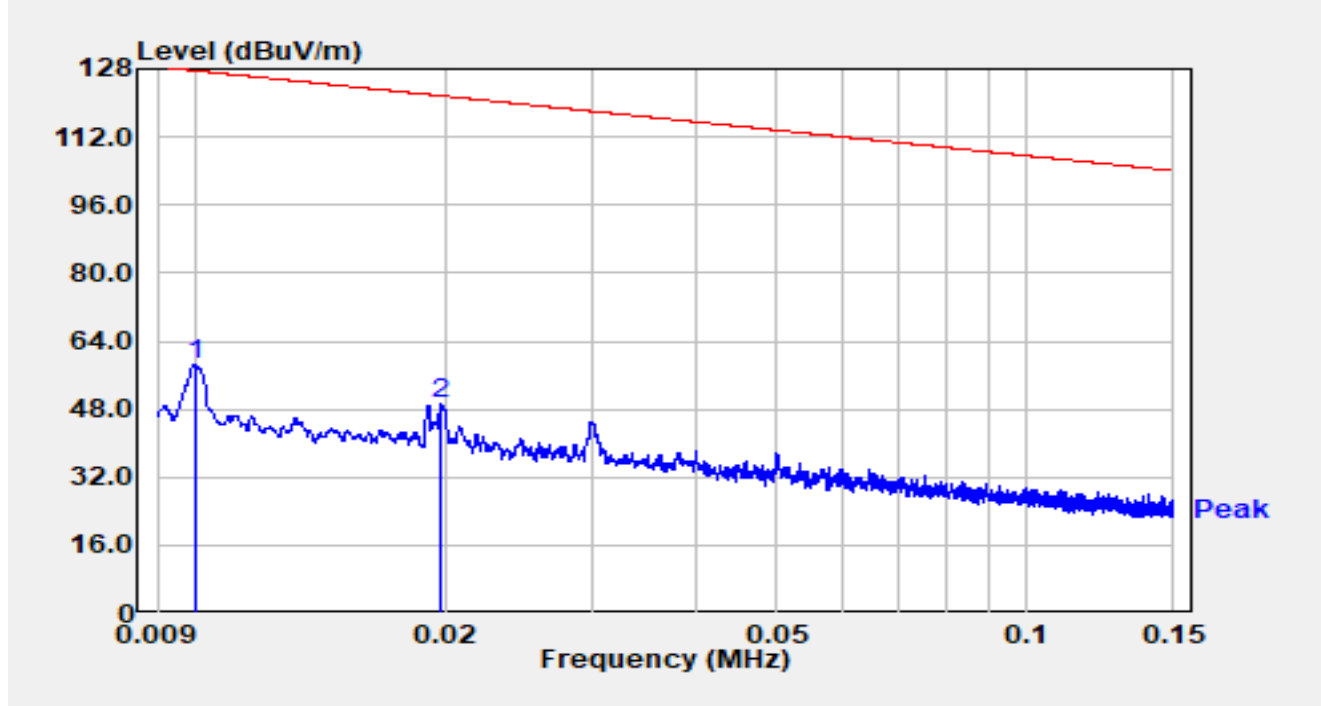


No	Mark	Frequency (MHz)	Reading (dBUV)	C.F (dB/m)	Measurement (dBUV/m)	Margin (dB)	Limit (dBUV/m)	Detector
1		0.162	25.76	20.25	46.01	-57.40	103.41	Peak
2	*	0.398	25.97	20.14	46.11	-49.50	95.61	Peak

Notes:

- " * ", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBUV/m) = Reading(dBUV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coplanar
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		

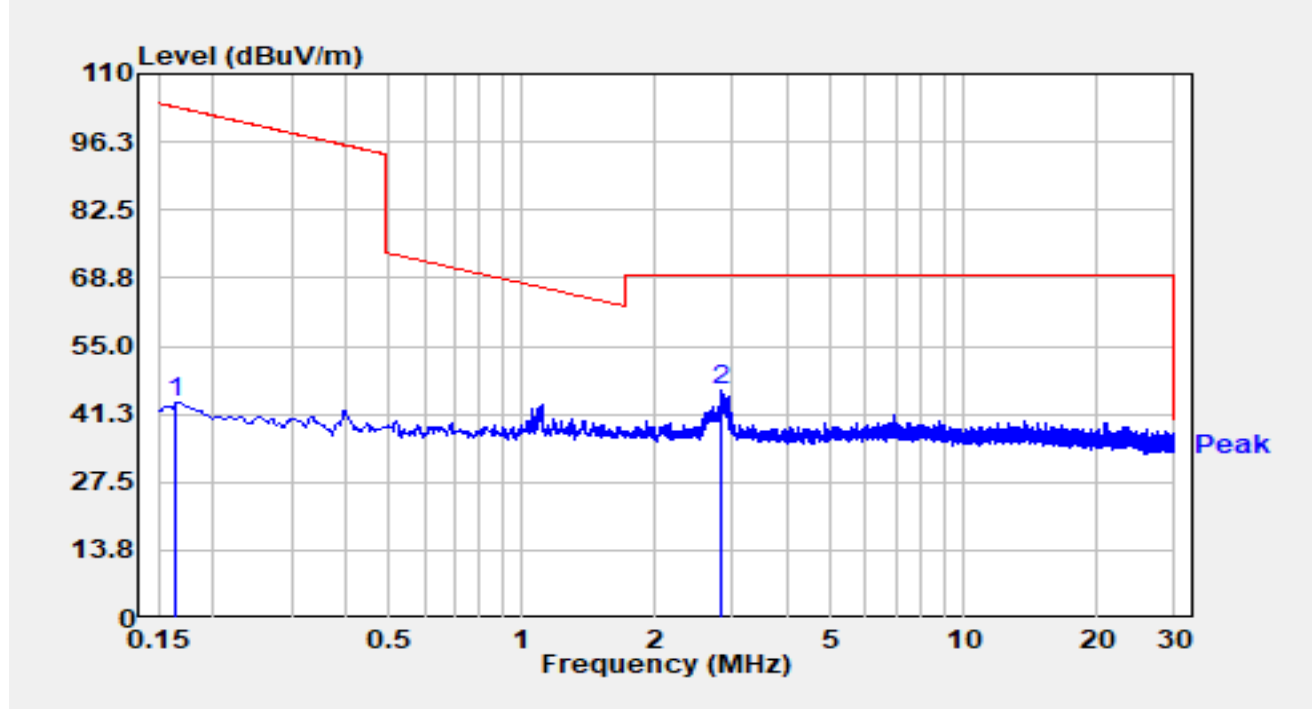


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	0.010	38.17	20.35	58.53	-69.07	127.60	Peak
2		0.020	28.68	20.40	49.08	-72.60	121.68	Peak

Notes:

- "*", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	FMZB 1519-60 D_9kHz-40MHz	Polarity	Coplanar
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		



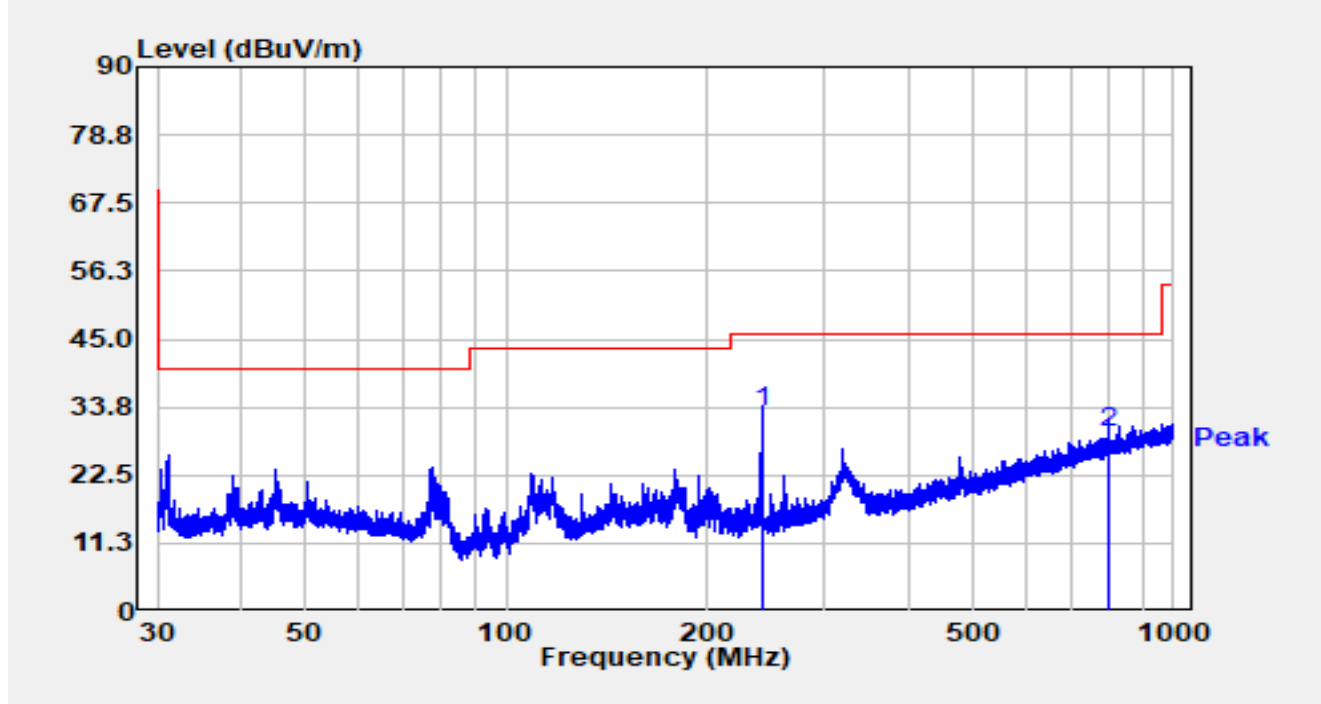
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		0.165	23.20	20.25	43.45	-59.80	103.25	Peak
2	*	2.825	25.77	20.18	45.95	-23.55	69.50	Peak

Notes:

- " * ", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

The Result of Radiated Emission 30MHz ~ 1GHz:

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	VULB 9168_00997_25-2000MHz	Polarity	Horizontal
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

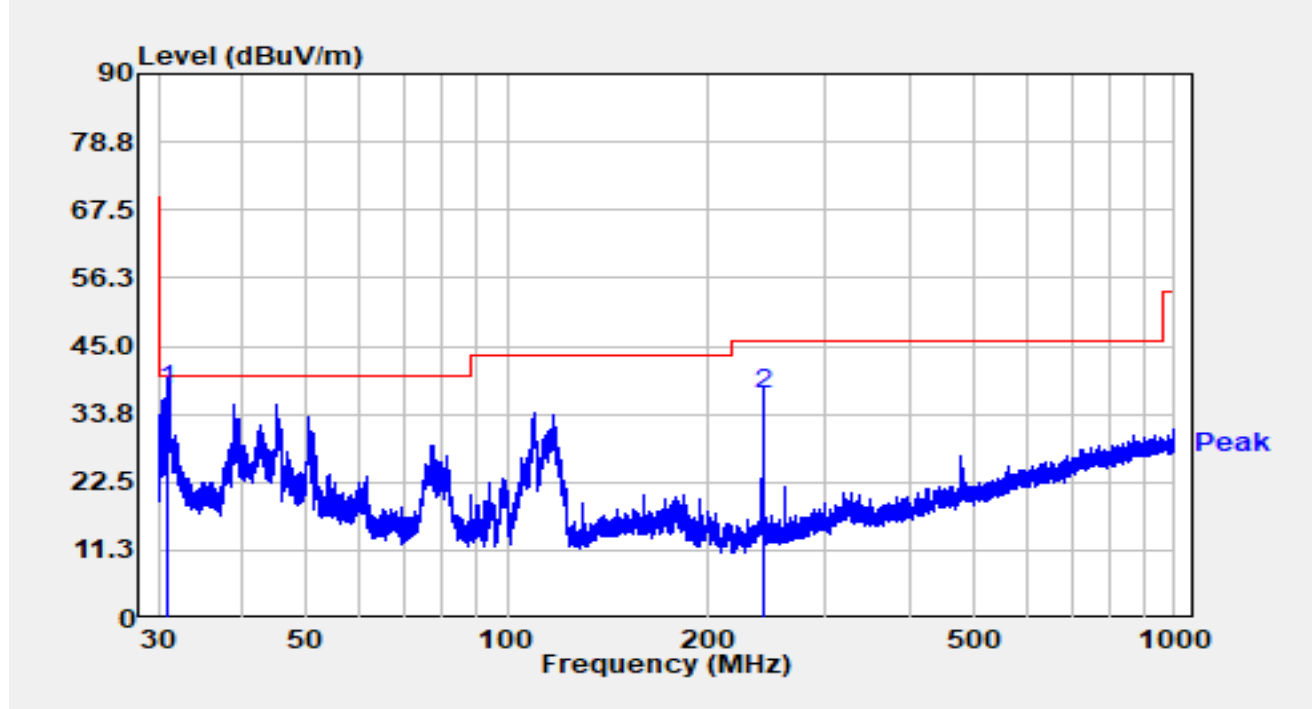


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	241.676	16.31	16.61	32.92	-13.08	46.00	QP
2		800.101	1.40	28.22	29.62	-16.38	46.00	QP

Notes:

1. " * ", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	VULB 9168_00997_25-2000MHz	Polarity	Vertical
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

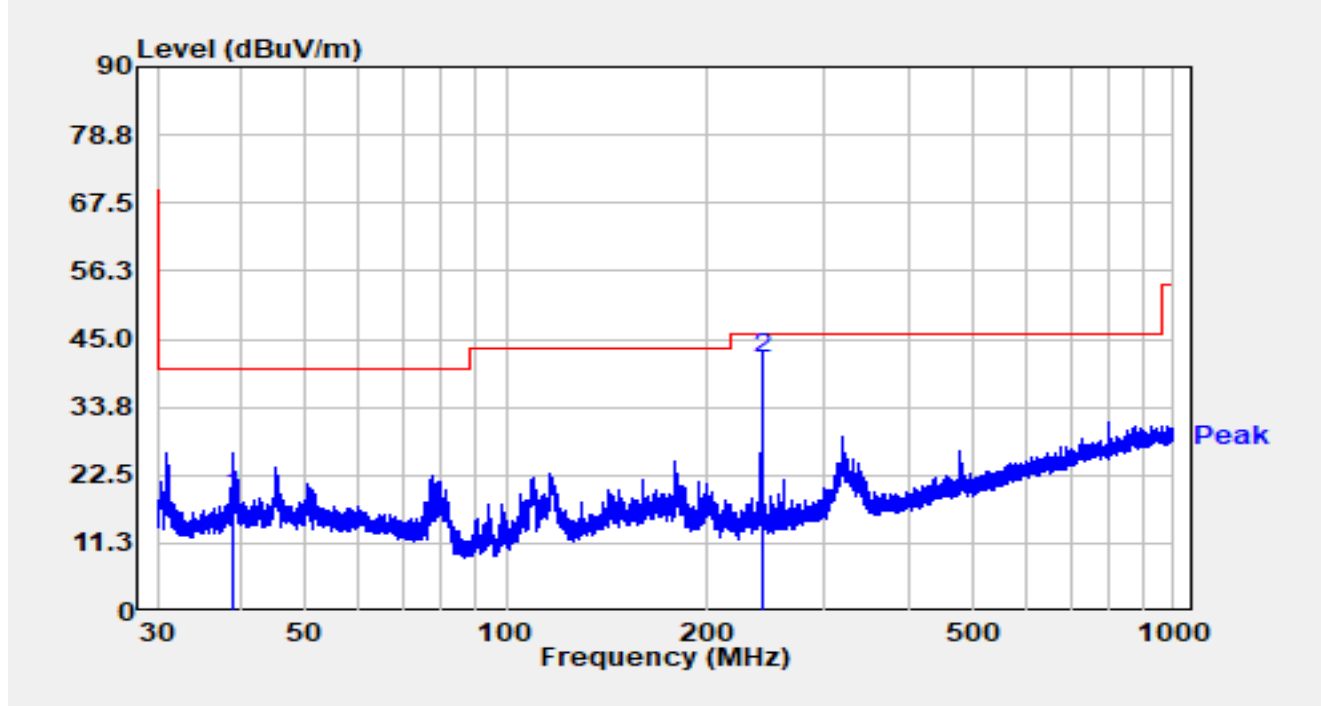


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	31.049	20.76	16.95	37.71	-2.29	40.00	QP
2		241.676	20.57	16.61	37.18	-8.82	46.00	QP

Notes:

- "*", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	VULB 9168_00997_25-2000MHz	Polarity	Horizontal
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		

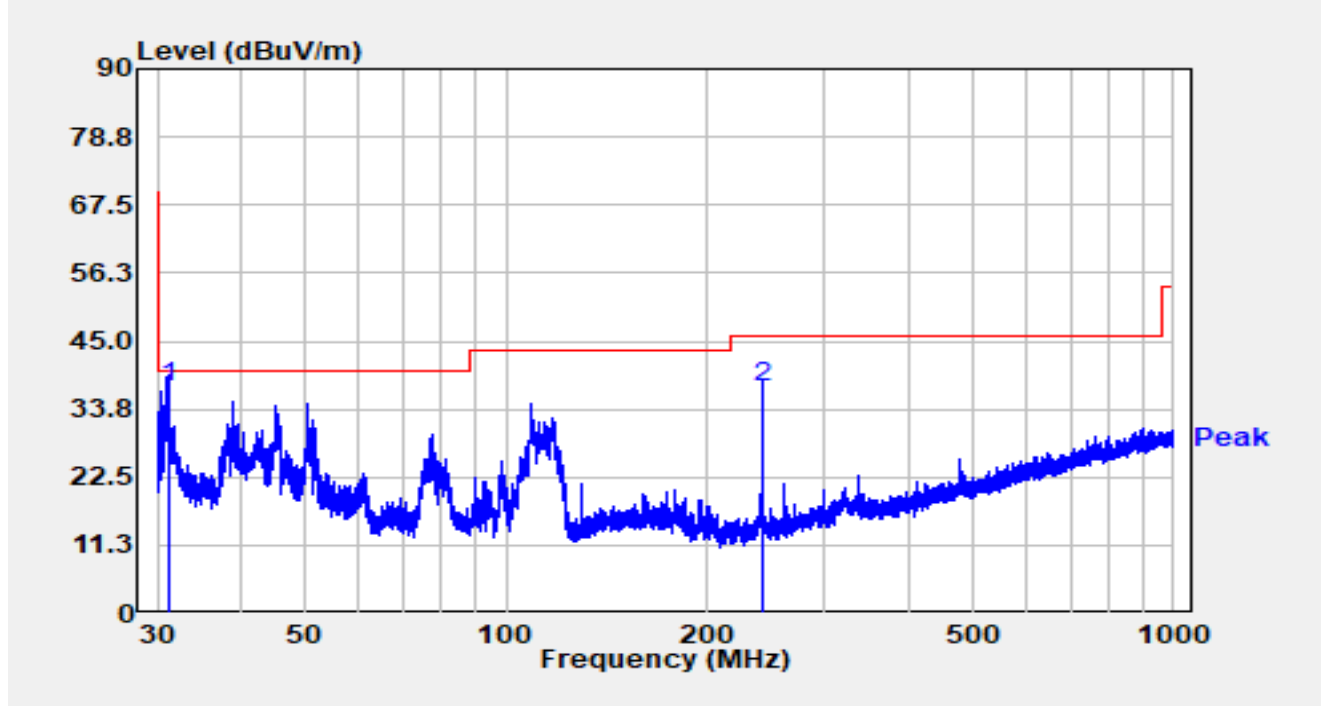


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		38.970	1.30	17.83	19.13	-20.87	40.00	QP
2	*	241.676	25.30	16.61	41.91	-4.09	46.00	QP

Notes:

- " * ", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	VULB 9168_00997_25-2000MHz	Polarity	Vertical
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		



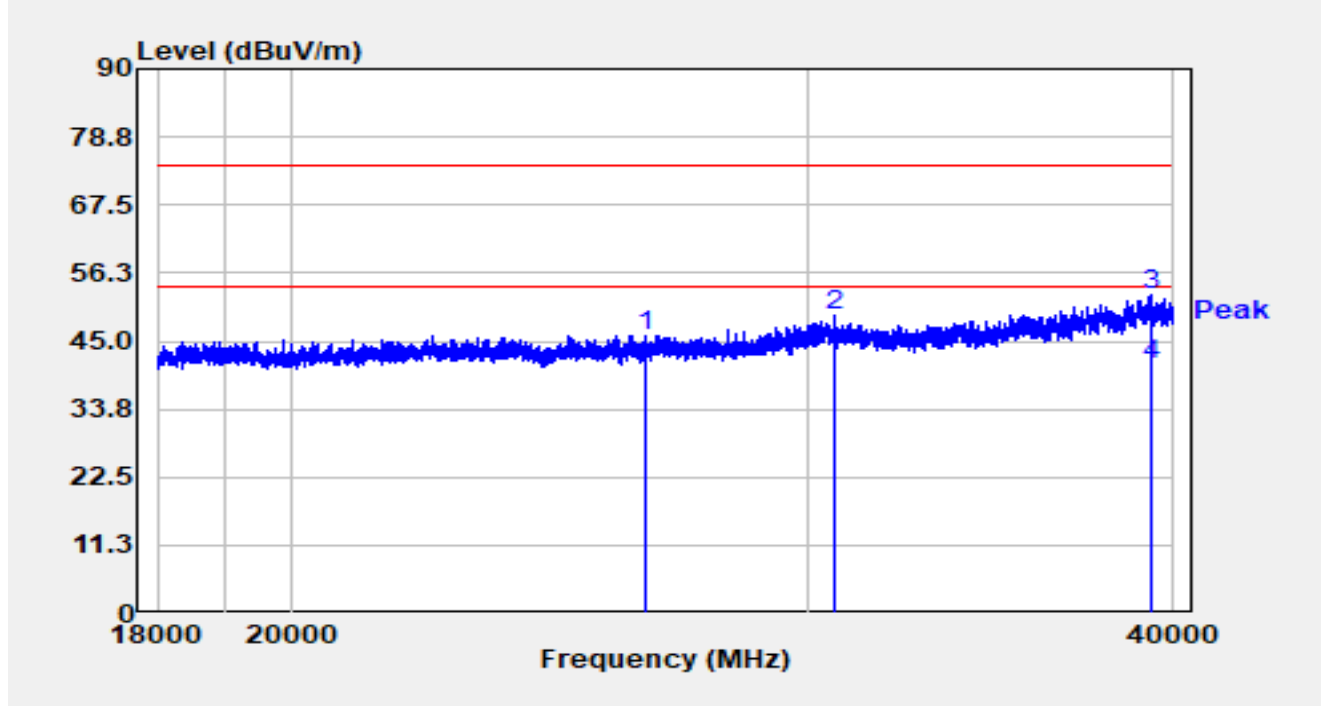
No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1	*	31.158	20.39	16.95	37.34	-2.66	40.00	QP
2		241.676	20.60	16.61	37.21	-8.79	46.00	QP

Notes:

- "*", means this data is the worst emission level.
- C.F (dB/m) = Antenna Factor (dB/m)+ Cable Loss (dB).
- Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

The Result of Radiated Emission 18GHz ~ 40GHz:

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	BBHA 9170_00934_18-40GHz	Polarity	Horizontal
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

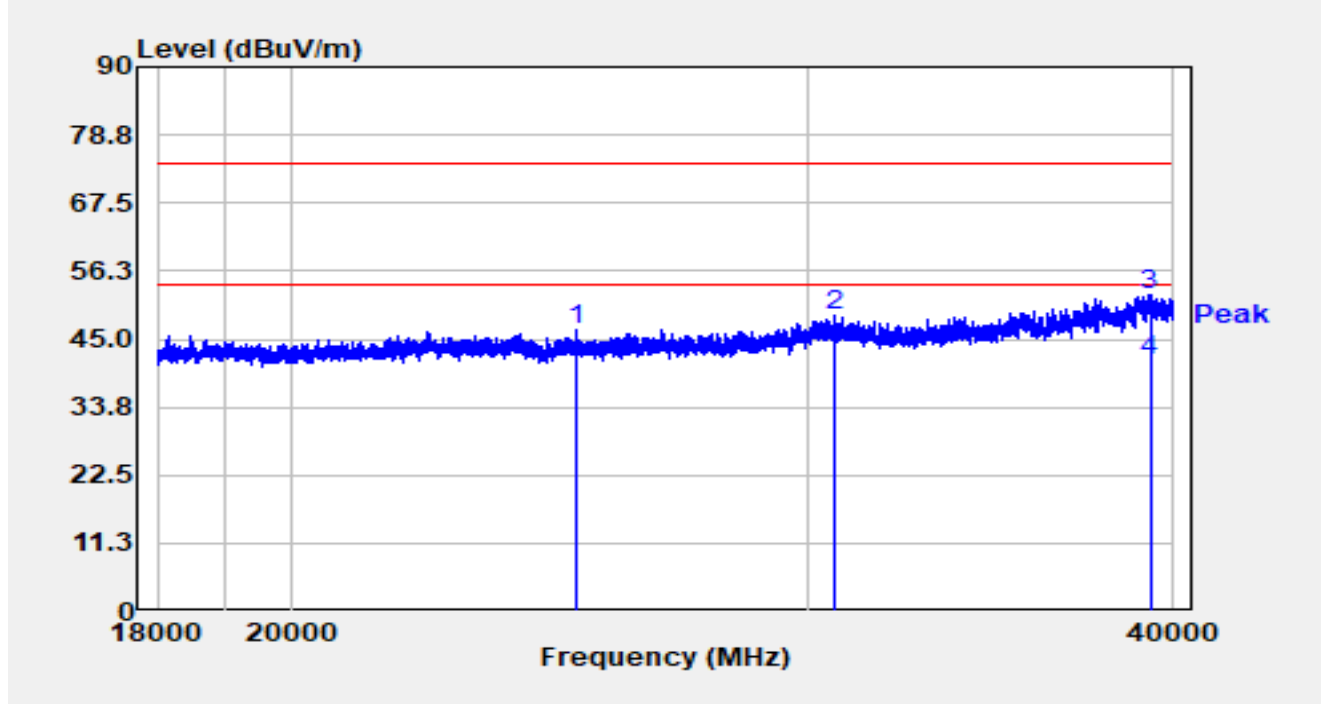


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		26432.600	54.84	-8.94	45.90	-28.10	74.00	Peak
2		30645.600	57.46	-8.37	49.09	-24.91	74.00	Peak
3	*	39285.000	52.65	0.07	52.72	-21.28	74.00	Peak
4	*	39285.000	41.19	0.07	41.26	-12.74	54.00	Average

Notes:

1. " *", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - AMP (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	BBHA 9170_00934_18-40GHz	Polarity	Vertical
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 1		

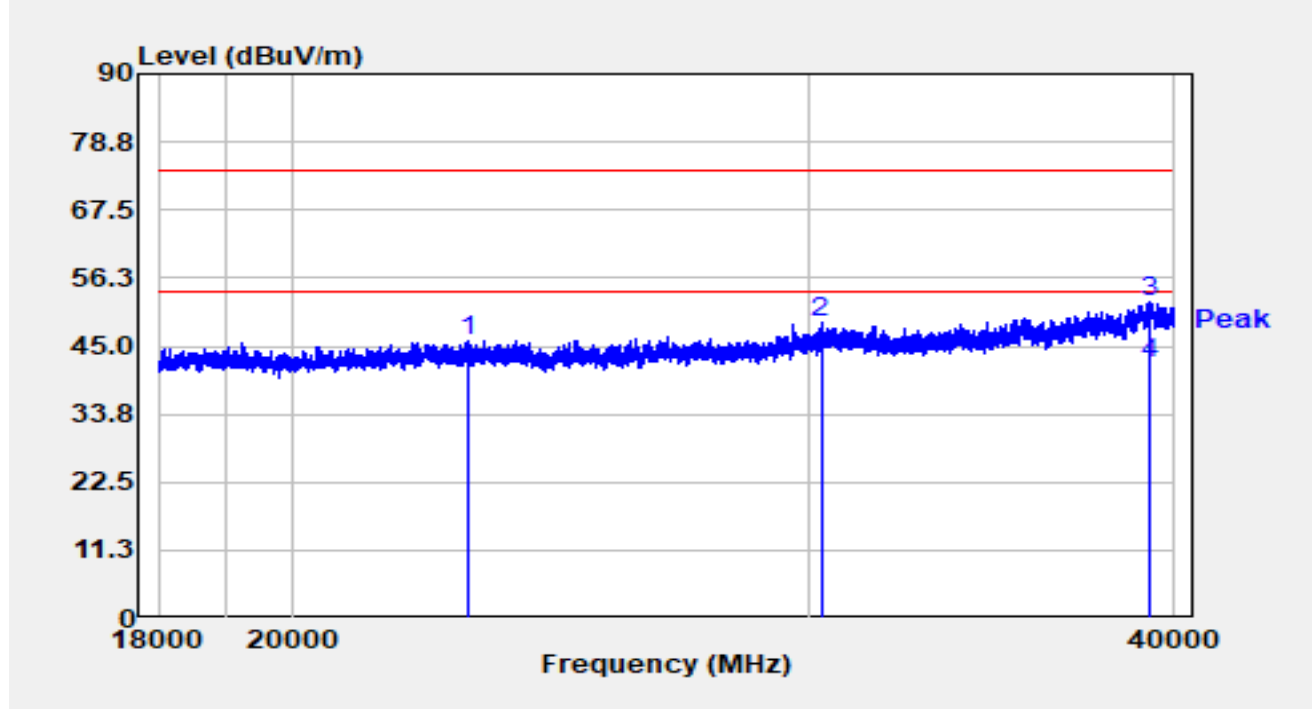


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		25002.600	55.15	-8.52	46.63	-27.37	74.00	Peak
2		30650.000	57.18	-8.32	48.85	-25.15	74.00	Peak
3	*	39267.400	52.18	0.20	52.38	-21.62	74.00	Peak
4	*	39267.400	41.35	0.20	41.55	-12.45	54.00	Average

Notes:

1. " *", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - AMP (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	BBHA 9170_00934_18-40GHz	Polarity	Horizontal
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		

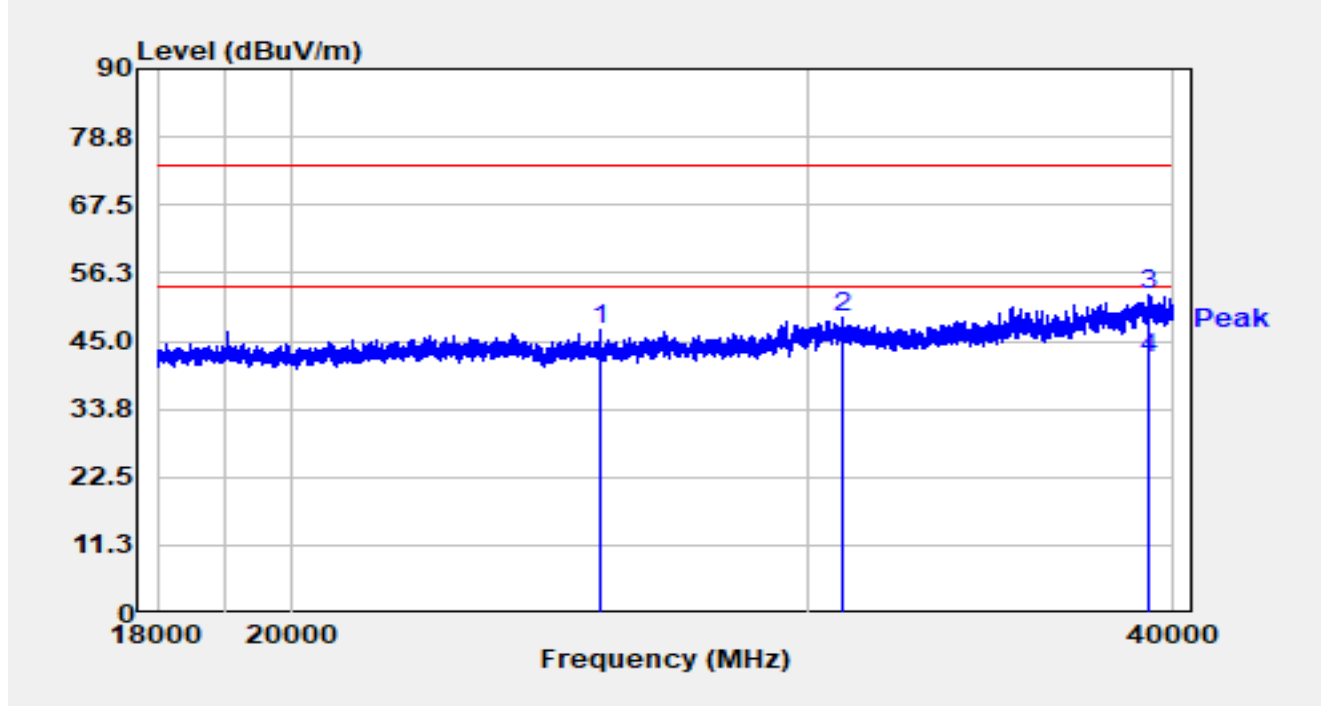


No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		22983.000	54.84	-8.87	45.97	-28.03	74.00	Peak
2		30295.800	57.47	-8.72	48.75	-25.25	74.00	Peak
3	*	39254.200	51.57	0.82	52.40	-21.60	74.00	Peak
4	*	39254.200	41.26	0.82	42.08	-11.92	54.00	Average

Notes:

1. " *", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - AMP (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Site	SIP-AC3	Test Date	2024-10-22
Test Engineer	Mero Zhou	Temp./Humidity	24.3°C /65.2%
Factor	BBHA 9170_00934_18-40GHz	Polarity	Vertical
EUT	Cassia Bluetooth Gateway	Test Voltage	AC 120V/60Hz
Test Mode	Mode 2		



No	Mark	Frequency (MHz)	Reading (dBμV)	C.F (dB/m)	Measurement (dBμV/m)	Margin (dB)	Limit (dBμV/m)	Detector
1		25480.000	55.57	-8.59	46.98	-27.02	74.00	Peak
2		30861.200	57.85	-8.84	49.01	-24.99	74.00	Peak
3	*	39256.400	52.06	0.72	52.78	-21.22	74.00	Peak
4	*	39256.400	41.27	0.72	41.99	-12.01	54.00	Average

Notes:

1. " *", means this data is the worst emission level.
2. C.F (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - AMP (dB).
3. Measurement(dBμV/m) = Reading(dBμV) + C.F (dB/m).

Appendix A - Test Setup Photograph

Refer to “2408RSU011-UT” file.

Appendix B - EUT Photograph

Refer to "2408RSU011-UE" file.

_____ The End _____