



RF MEASUREMENT REPORT

FCC ID: 2BAHBINTSHMDV20EC25
Applicant: Intangles Lab Private Limited
Product: System Health Monitoring Device
Model No.: INT-SHMD-V2.0I-EC25AF; INT-SHMD-V2.0E-EC25AF
FCC Classification: Digital Transmission System (DTS)
FCC Rule Part(s): Part 15 Subpart C (Section 15.247)
Result: Complies
Received Date: 2023-05-08
Test Date: 2023-05-15 ~ 2023-05-16

Reviewed By:

Sunny Sun

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 C63.10-2013. 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
2304RSU037-U4	V01	Initial Report	2023-05-22	Valid

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1. General Information

1.1. Applicant

Intangles Lab Private Limited

Orville Business Port, 9th Floor, Terminal 2 Airport Road, Viman Nagar, Pune, Maharashtra – 411014

1.2. Manufacturer

Intangles Lab Private Limited

Orville Business Port, 9th Floor, Terminal 2 Airport Road, Viman Nagar, Pune, Maharashtra – 411014

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 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: L3261-190725 FCC: 291082, TW3261 ISED: TW3261

1.4. Product Information

Product Name	System Health Monitoring Device
Model No.	INT-SHMD-V2.0I-EC25AF; INT-SHMD-V2.0E-EC25AF
Brand Name	INTANGLES
WLAN Specification	802.11 b/g/n
Bluetooth Specification	V5.2
GNSS Specification	GPS/GLONASS/BDS/Galileo/SBAS
3GPP Specification	WCDMA Band II/IV/V LTE Band 2/4/5/12/13/14/66/71
Operating Temperature	-40 ~ 85°C
Supply Voltage	8 ~ 32Vdc
Integrated Modular Information	
Cellular Modular Information	Model Number: EC25-AF FCC ID: XMR201808EC25AF
Wi-Fi & BT Modular Information	Model Number: FC41D FCC ID: XMR20211108FC41D
GNSS Modular Information	Model Number: LC86G Brand Name: QUECTEL
Remark:	
- The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer. - This device is based on the certification modular to assess the radiated spurious emission, radiated band edge. - The model "INT-SHMD-V2.0I-EC25AF" is the internal cellular antenna unit, the model "INT-SHMD-V2.0E-EC25AF" is the external cellular antenna unit, all the other circuits are the same.	

1.5. Radio Specification under Test

Bluetooth Frequency	2402 ~ 2480MHz
Channel Number	40
Type of modulation	GFSK
Data Rate	1Mbps
Antenna Type	PCB
Antenna Gain	-1.8dBi

1.6. Working Frequencies

Channel	Frequency	Channel	Frequency	Channel	Frequency
00	2402 MHz	01	2404 MHz	02	2406 MHz
03	2408 MHz	04	2410 MHz	05	2412 MHz
06	2414 MHz	07	2416 MHz	08	2418 MHz
09	2420 MHz	10	2422 MHz	11	2424 MHz
12	2426 MHz	13	2428 MHz	14	2430 MHz
15	2432 MHz	16	2434 MHz	17	2436 MHz
18	2438 MHz	19	2440 MHz	20	2442 MHz
21	2444 MHz	22	2446 MHz	23	2448 MHz
24	2450 MHz	25	2452 MHz	26	2454 MHz
27	2456 MHz	28	2458 MHz	29	2460 MHz
30	2462 MHz	31	2464 MHz	32	2466 MHz
33	2468 MHz	34	2470 MHz	35	2472 MHz
36	2474 MHz	37	2476 MHz	38	2478 MHz
39	2480 MHz	--	--	--	--

2. Test Configuration

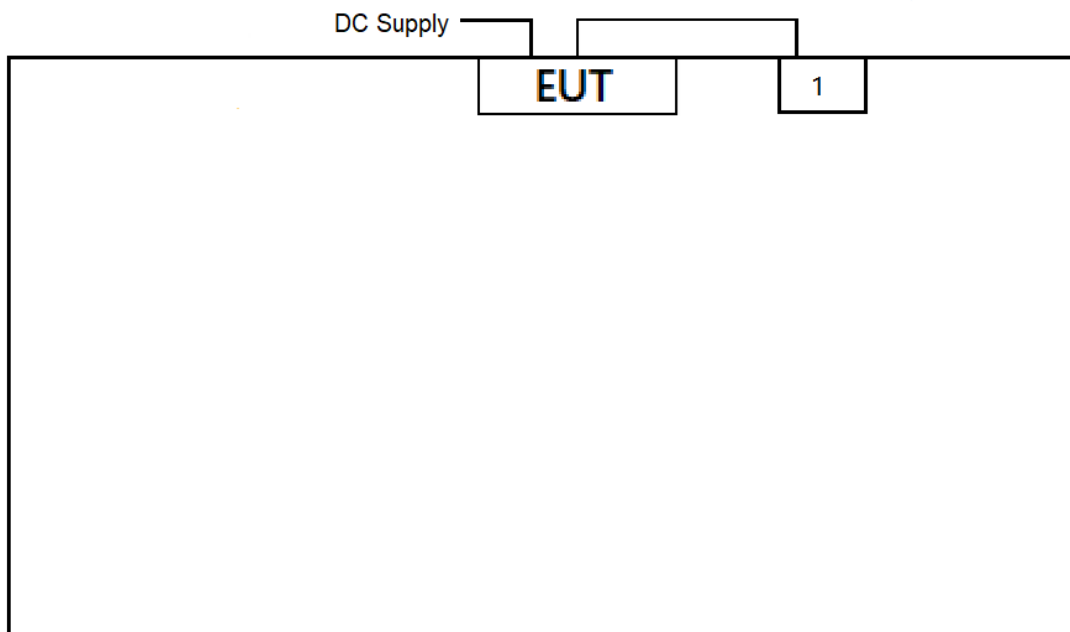
2.1. Test Mode

Mode 1: Transmit by BLE-1Mbps

2.1. Test System Connection Diagram

The device was tested per the guidance ANSI C63.10: 2013 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted testing.

Connection Diagram



Product	Manufacturer	Model No.
1 Notebook (for RF Test)	Lenovo	E495

2.2. Test Software

The test utility software used during testing was “Wi-Fi Test Tool” and the version was “1.6.5”.

2.3. Applied Standards

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

- FCC Part 15.247
- KDB 558074 D01v05r02
- ANSI C63.10-2013

2.4. Test Environment Condition

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

3. Antenna Requirements

Excerpt from §15.203 of the FCC Rules/Regulations:

“An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.”

- The antenna of the device is **permanently attached**.
- There are no provisions for connection to an external antenna.

Conclusion:

The unit complies with the requirement of §15.203.

4. Measuring Instrument

Instrument	Manufacturer	Model No.	Asset No.	Cali. Interval	Cali. Due Date	Test Site
Anechoic Chamber	RIKEN	SIP-AC1	MRTSUE06554	1 year	2023-12-22	SIP-AC1
Preamplifier	EMCI	EMC051845SE	MRTSUE06600	1 year	2023-11-07	SIP-AC1
Horn Antenna	R&S	HF907	MRTSUE06610	1 year	2023-07-13	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06616	1 year	2023-11-01	SIP-AC1
Thermohygrometer	testo	608-H1	MRTSUE06620	1 year	2023-11-27	SIP-AC1
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06645	1 year	2023-07-30	SIP-AC1
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2023-12-28	SIP-AC1/SIP-AC2 /SIP-AC3
Preamplifier	EMCI	EMC184045SE	MRTSUE06602	1 year	2023-10-10	SIP-AC1/SIP-AC2 /SIP-AC3
Preamplifier	EMCI	EMC001330	MRTSUE06643	1 year	2024-01-12	SIP-AC1/SIP-AC2 /SIP-AC3
Loop Antenna	Schwarzbeck	FMZB 1519 B	MRTSUE06937	1 year	2024-02-26	SIP-AC1/SIP-AC2 /SIP-AC3
Signal Analyzer	Keysight	N9010B	MRTSUE07028	1 year	2023-11-25	SIP-AC1/SIP-AC2 /SIP-AC3
Test loop antenna	MRT	d-2m	MRTSUE11131	N/A	N/A	SIP-AC1/SIP-AC2 /SIP-AC3
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06599	1 year	2023-10-13	SIP-AC1/SIP-AC3
Preamplifier	EMCI	EMC051845SE	MRTSUE06601	1 year	2023-11-22	SIP-AC2
Thermohygrometer	testo	608-H1	MRTSUE06623	1 year	2023-11-27	SIP-AC2
Thermohygrometer	testo	608-H1	MRTSUE06624	1 year	2023-11-27	SIP-AC2
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06647	1 year	2023-07-13	SIP-AC2
Anechoic Chamber	RIKEN	SIP-AC2	MRTSUE06781	1 year	2023-12-22	SIP-AC2
Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06648	1 year	2023-10-22	SIP-AC2
Horn Antenna	R&S	HF907	MRTSUE06611	1 year	2023-07-30	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06619	1 year	2023-11-01	SIP-AC3
Thermohygrometer	testo	608-H1	MRTSUE06622	1 year	2023-11-27	SIP-AC3
Preamplifier	EMCI	EMC012645SE	MRTSUE06642	1 year	2024-01-12	SIP-AC3
TRILOG Antenna	Schwarzbeck	VULB 9168	MRTSUE06646	1 year	2023-08-16	SIP-AC3
Anechoic Chamber	RIKEN	SIP-AC3	MRTSUE06782	1 year	2023-12-22	SIP-AC3

Software	Version	Function
EMI V3	V 3.0.0	EMI Test Software
Controller_MF 7802BS	1.02	RE Antenna & Turntable

5. Decision Rules and Measurement Uncertainty

5.1. 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.)

5.2. 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 $k = 2$.

AC Conducted Emission Measurement
Measurement Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Disturbance
Measurement Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): Horizontal: 30MHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~40GHz: 6.40dB Vertical: 30MHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~40GHz: 6.40dB

6. Test Result

6.1. Summary

FCC Section(s)	Test Description	Test Condition	Verdict
15.205 15.209	General Field Strength (Restricted Bands and Radiated Emission)	Radiated	Pass

Notes:

1. The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
2. All modes of operation and data rates were investigated. For radiated emission test, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

6.2. Radiated Spurious Emission Measurement

6.2.1. Test Limit

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 [uV/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

6.2.2. 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)

6.2.3. 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

Peak Measurements above 1GHz

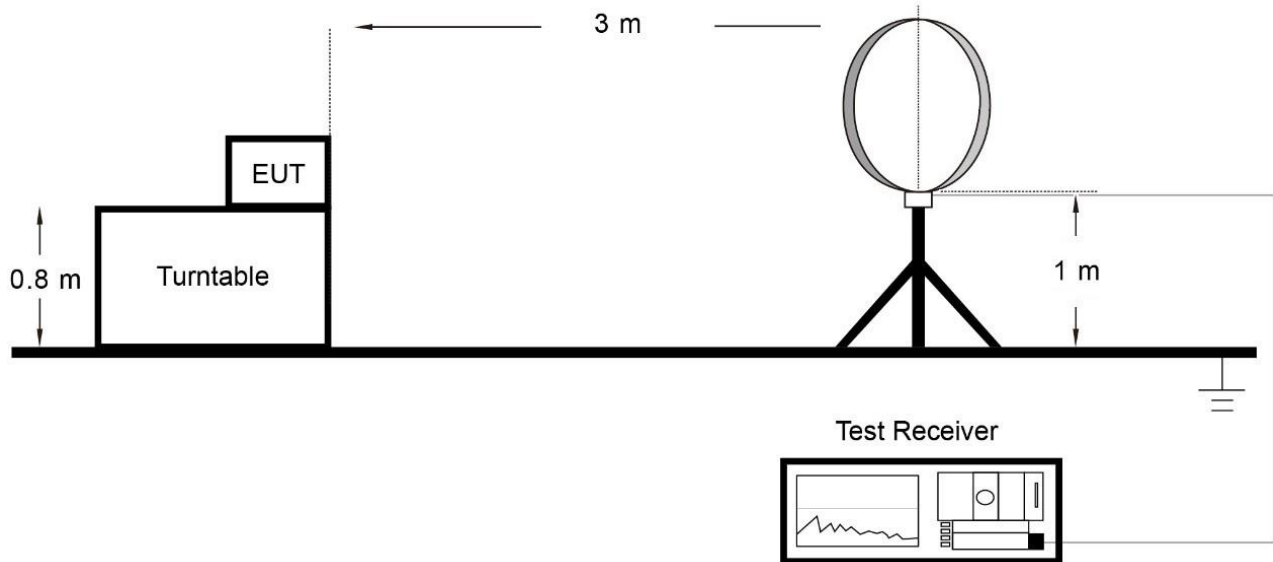
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Measurements above 1GHz (Method VB)

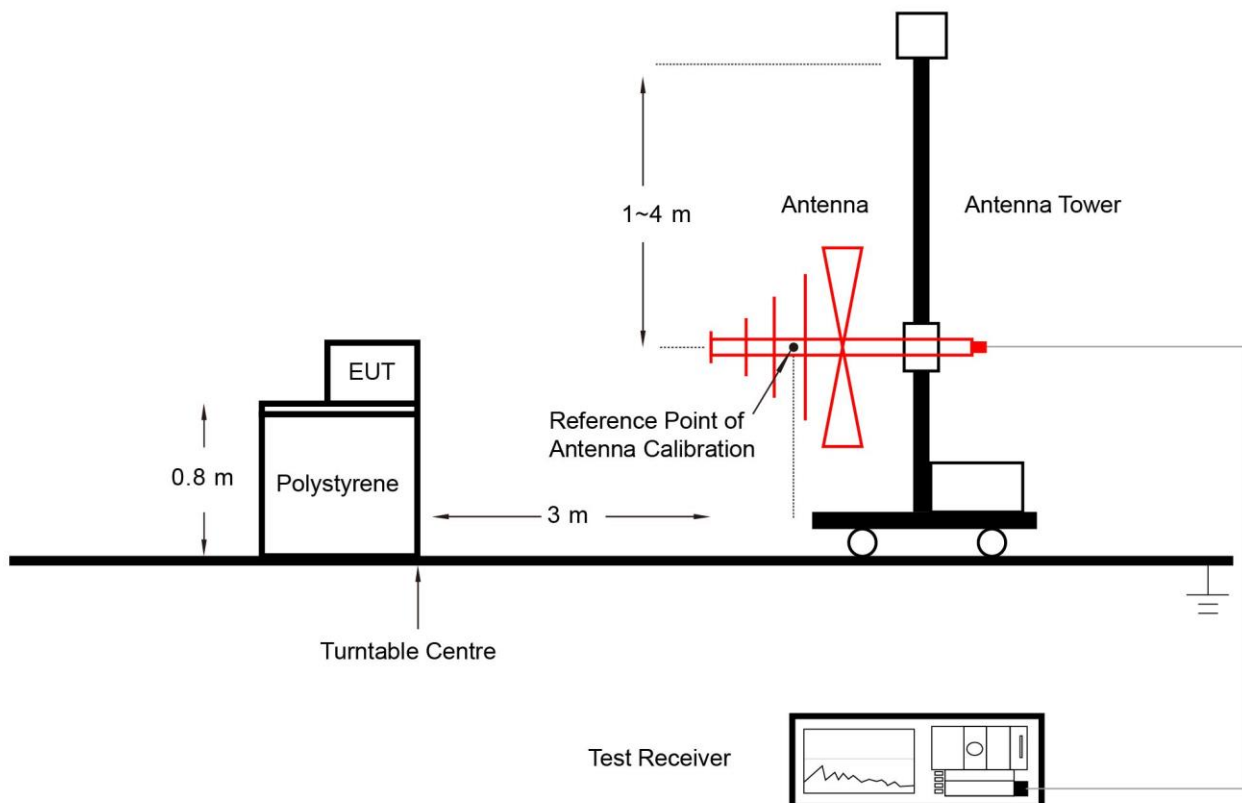
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW; If the EUT is configured to transmit with duty cycle $\geq 98\%$, set VBW = 10 Hz.
If the EUT duty cycle is $< 98\%$, set VBW $\geq 1/T$. T is the minimum transmission duration.
4.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

6.2.4. Test Setup

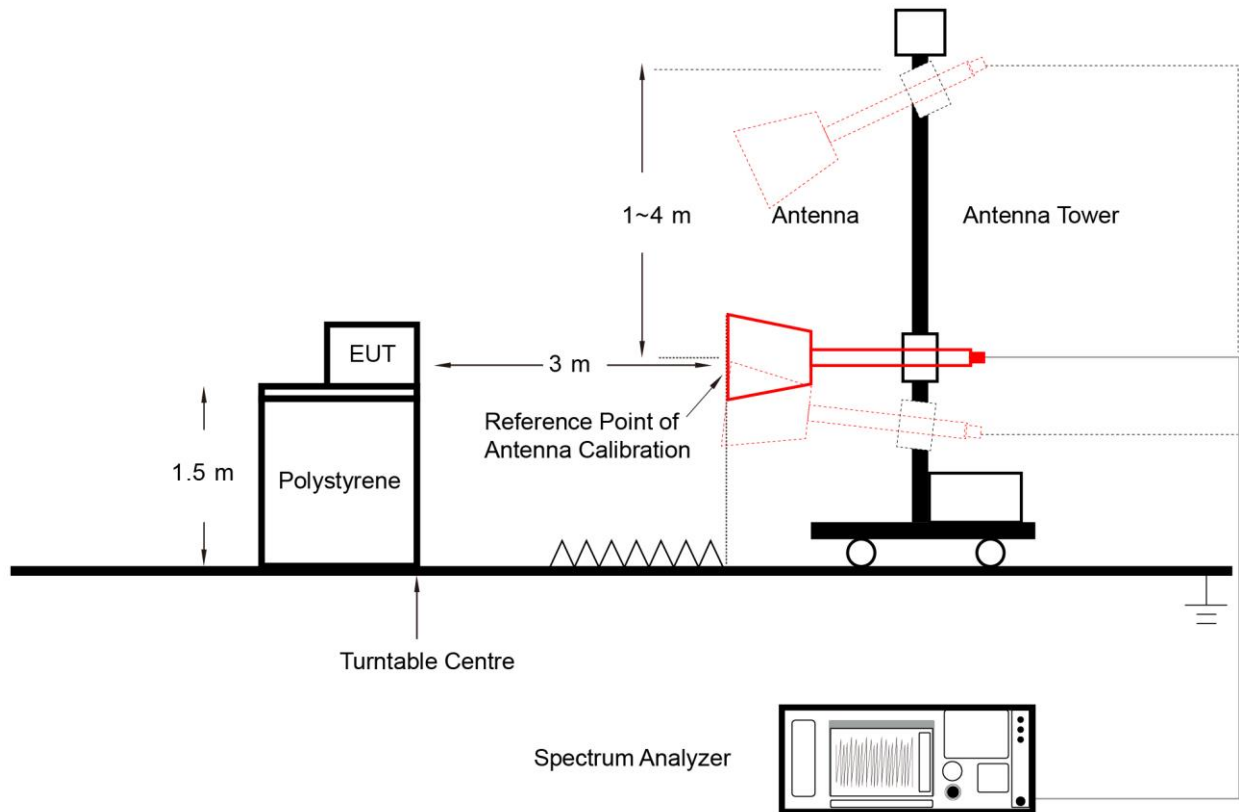
Below 30MHz Test Setup:



Below 1GHz Test Setup:



Above 1GHz Test Setup:



6.2.5. Test Result

Refer to Appendix A.1.

6.3. Radiated Restricted Band Edge Measurement

6.3.1. Test Limit

For 15.205 requirement:

Radiated emissions which fall in the restricted bands, as defined in Section 15.205(a) of FCC part 15, must also comply with the radiated emission limits specified in Section 15.209(a).

Frequency (MHz)	Frequency (MHz)	Frequency (MHz)	Frequency (GHz)
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
¹ 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	(²)
13.36 - 13.41	--	--	--

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

FCC Part 15 Subpart C Paragraph 15.209		
Frequency [MHz]	Field Strength [uV/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

6.3.2. Test Procedure

ANSI C63.10-2013 Section 6.3 & 6.6 & 11.13

6.3.3. Test Setting

Peak Field Strength Measurements

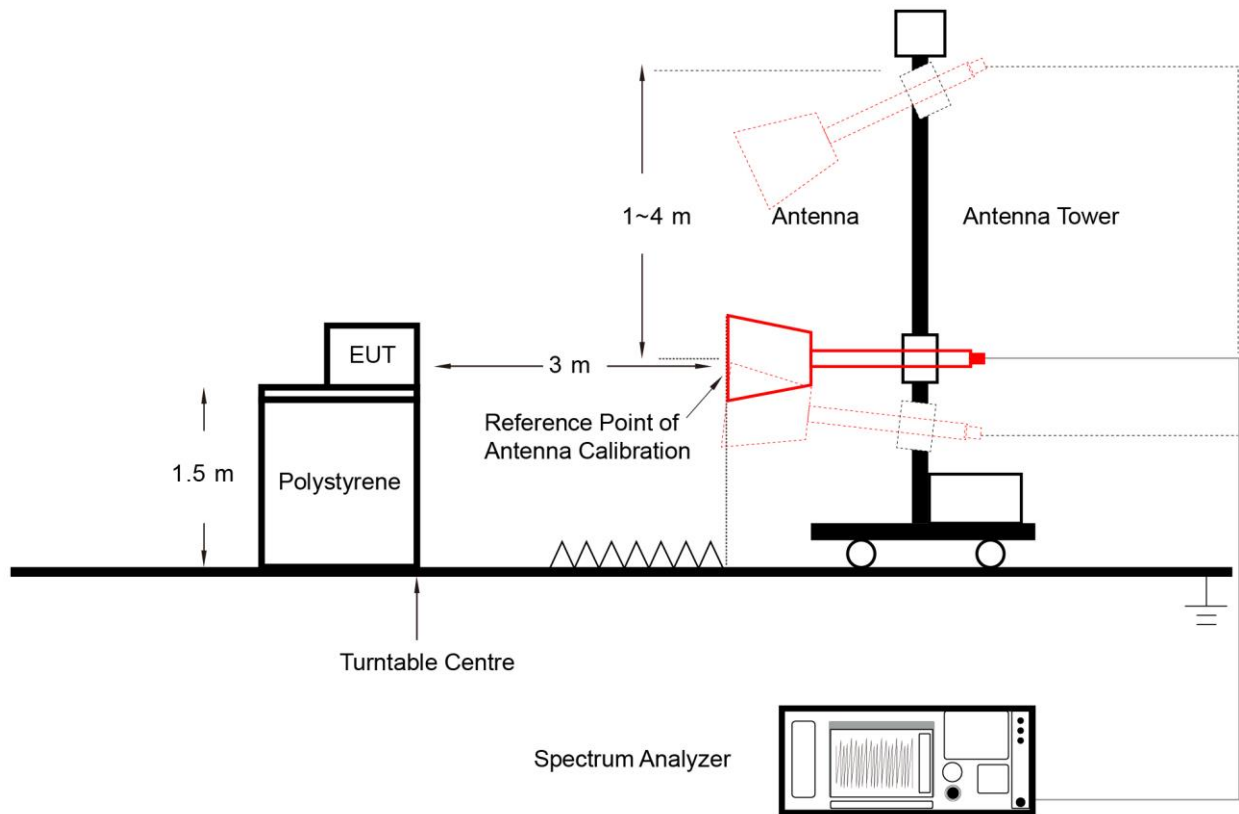
1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW = 3MHz
4. Detector = peak
5. Sweep time = auto couple
6. Trace mode = max hold
7. Trace was allowed to stabilize

Average Field Strength Measurements

1. Analyzer center frequency was set to the frequency of the radiated spurious emission of interest
2. RBW = 1MHz
3. VBW $\geq 1/T$
4. As an alternative, the instrument may be set to linear detector mode. Ensure that video filtering is applied in linear voltage domain (rather than in a log or dB domain). Some instruments require linear display mode in order to accomplish this. Others have a setting for Average-VBW Type, which can be set to "Voltage" regardless of the display mode
5. Detector = Peak

6. Sweep time = auto
7. Trace mode = max hold
8. Allow max hold to run for at least 50 times (1/duty cycle) traces

6.3.4. Test Setup



6.3.5. Test Result

Refer to Appendix A.2.

6.4. AC Conducted Emissions Measurement

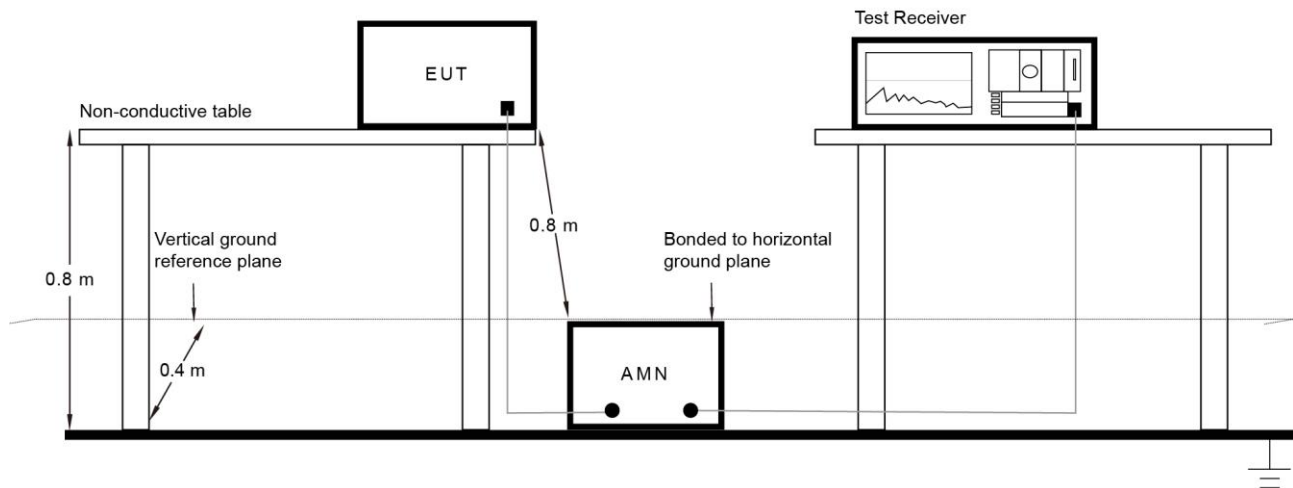
6.4.1. Test Limit

FCC Part 15 Subpart C Paragraph 15.207 Limits		
Frequency (MHz)	QP (dBuV)	AV (dBuV)
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 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 0.15MHz to 0.5MHz.

6.4.2. Test Setup



6.4.3. Test Result

This device is powered by DC power supply.

Appendix A - Test Result

A.1 Radiated Spurious Emission Test Result

Test Site	SIP-AC2	Test Engineer	Mero Zhou
Test Date	2023-05-16	Test Mode:	BLE-1Mbps
Remark:	1. Average measurement was not performed if peak level lower than average limit. 2. Other frequency was 20dB below limit line within 1-18GHz, there is not show in the report.		

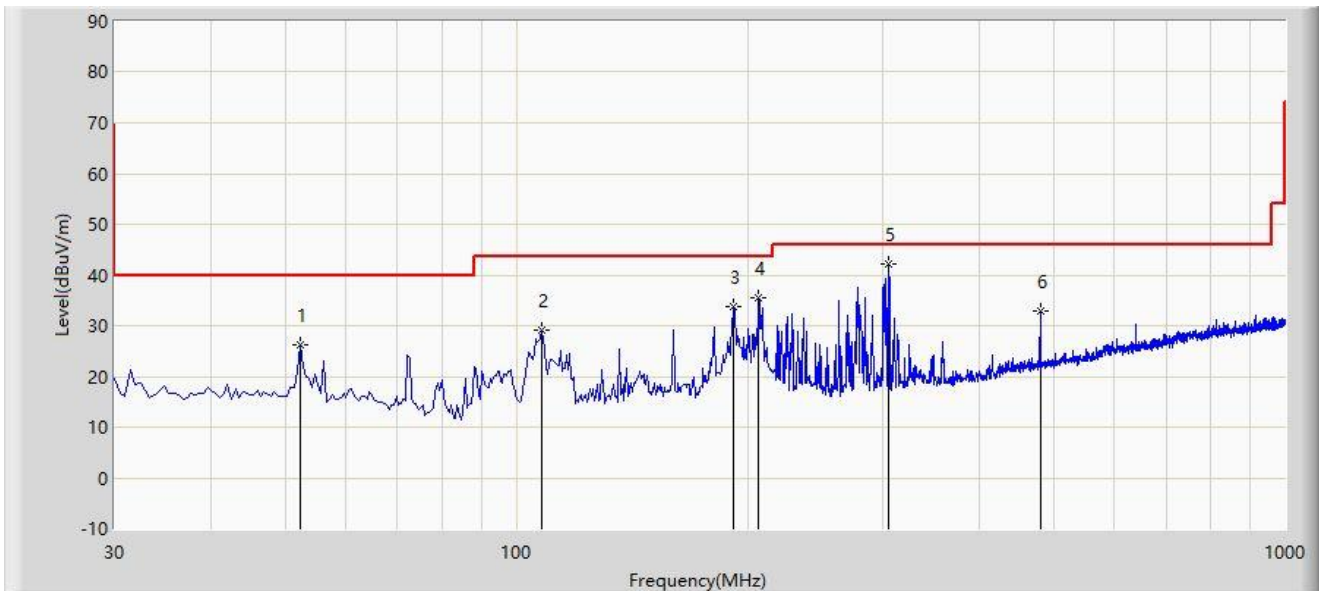
Test Channel	Frequency (MHz)	Reading Level (dBμV)	Factor (dB/m)	Measure Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detect or	Polarization
00	8284.5	47.6	-5.6	42.0	74.0	-32.0	Peak	Horizontal
	10962.0	47.6	-4.4	43.2	74.0	-30.8	Peak	Horizontal
	15526.5	44.0	1.8	45.8	74.0	-28.2	Peak	Horizontal
	8284.5	47.5	-5.6	41.9	74.0	-32.1	Peak	Vertical
	10979.0	47.1	-4.3	42.8	74.0	-31.2	Peak	Vertical
	15654.0	42.2	1.8	44.0	74.0	-30.0	Peak	Vertical
19	5020.5	44.5	-5.2	39.3	74.0	-34.7	Peak	Horizontal
	11557.0	41.4	7.7	49.1	74.0	-24.9	Peak	Horizontal
	18000.0	37.8	20.4	58.2	74.0	-15.8	Peak	Horizontal
	18000.0	25.1	20.4	45.5	54.0	-8.5	AV	Horizontal
	4850.5	44.6	-5.9	38.7	74.0	-35.3	Peak	Vertical
	10800.5	41.9	7.2	49.1	74.0	-24.9	Peak	Vertical
	18000.0	37.8	20.4	58.2	74.0	-15.8	Peak	Vertical
	18000.0	25.1	20.4	45.5	54.0	-8.5	AV	Vertical
39	8361.0	48.0	-5.5	42.5	74.0	-31.5	Peak	Horizontal
	12305.0	46.7	-3.4	43.3	74.0	-30.7	Peak	Horizontal
	16113.0	44.3	3.4	47.7	74.0	-26.3	Peak	Horizontal
	8454.5	48.3	-6.0	42.3	74.0	-31.7	Peak	Vertical
	11514.5	46.8	-3.8	43.0	74.0	-31.0	Peak	Vertical
	15807.0	44.0	3.0	47.0	74.0	-27.0	Peak	Vertical

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

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB)

The Result of Radiated Emission below 1GHz:

Site: SIP-AC3	Test Date: 2023-05-16
Limit: FCC_Part15.209_RSE(3m)	Engineer: Fusco Pan
Probe: VULB 9168_00997_25-2000MHz	Polarity: Horizontal
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		52.310	26.274	8.496	-13.726	40.000	17.778	PK
2		108.085	29.011	14.386	-14.489	43.500	14.625	PK
3		191.505	33.760	18.506	-9.740	43.500	15.254	PK
4		206.540	35.566	20.624	-7.934	43.500	14.942	PK
5	*	305.480	42.083	23.517	-3.917	46.000	18.566	PK
6		480.080	32.855	10.120	-13.145	46.000	22.735	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

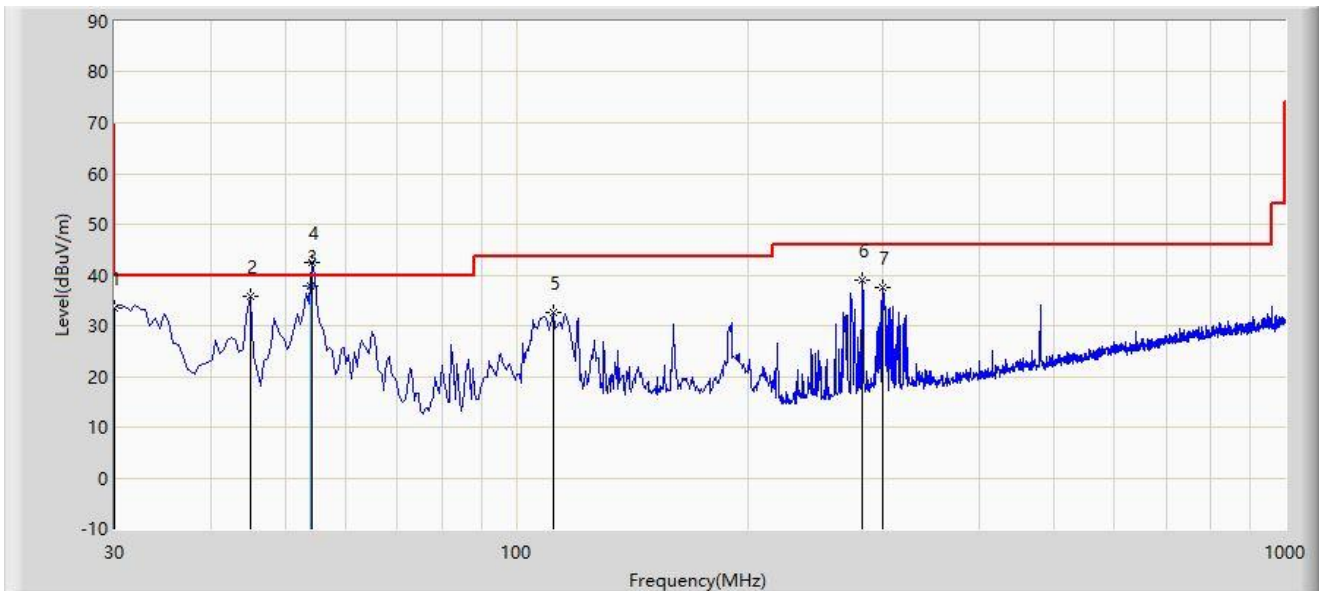
Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

Site: SIP-AC3	Test Date: 2023-05-16
Limit: FCC_Part15.209_RSE(3m)	Engineer: Fusco Pan
Probe: VULB 9168_00997_25-2000MHz	Polarity: Vertical
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB/m)	Type
1		30.000	33.548	17.357	-6.452	40.000	16.191	PK
2		45.035	35.744	17.735	-4.256	40.000	18.008	PK
3		54.032	37.770	20.100	-2.230	40.000	17.670	QP
4	*	54.250	42.497	24.842	2.497	40.000	17.655	PK
5		111.965	32.616	17.585	-10.884	43.500	15.030	PK
6		282.200	39.080	21.031	-6.920	46.000	18.049	PK
7		300.145	37.562	19.154	-8.438	46.000	18.408	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBuV/m) = Reading Level (dBuV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

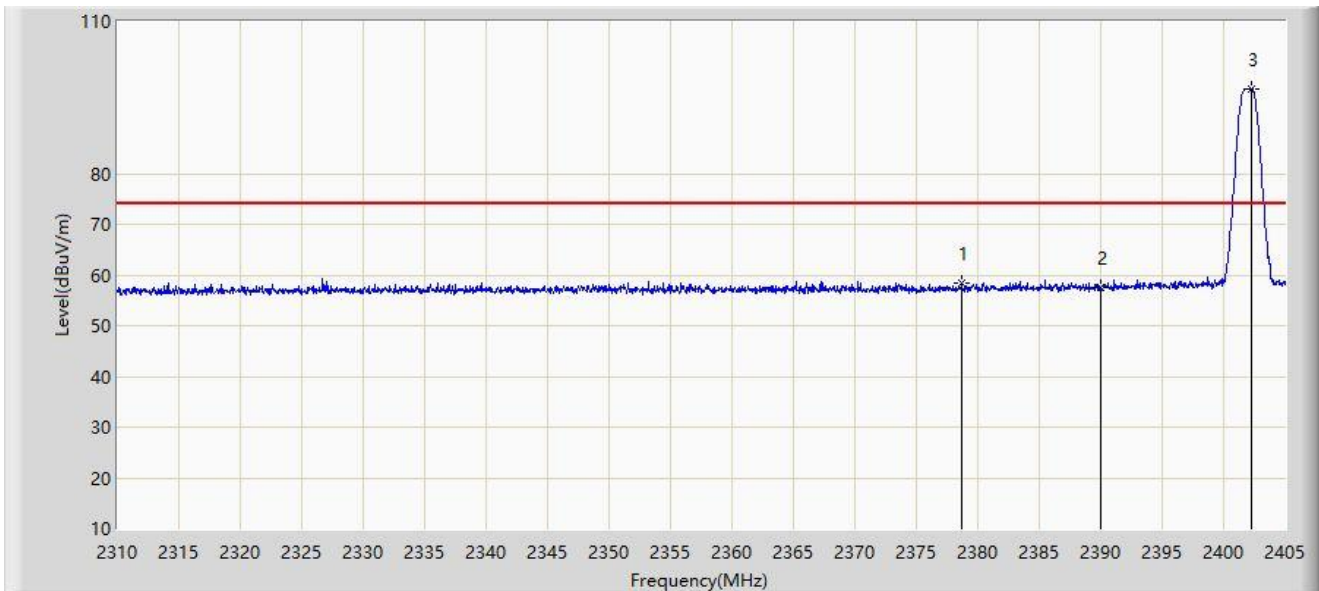
Note 4: Quasi-Peak measurement was not performed when peak measure level was lower than the quasi-peak limit.

Note 5: The amplitude of radiated emissions (frequency range from 9kHz to 30MHz and 18GHz to 25GHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

A.2 Radiated Restricted Band Edge Test Result

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Horizontal
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2402MHz	



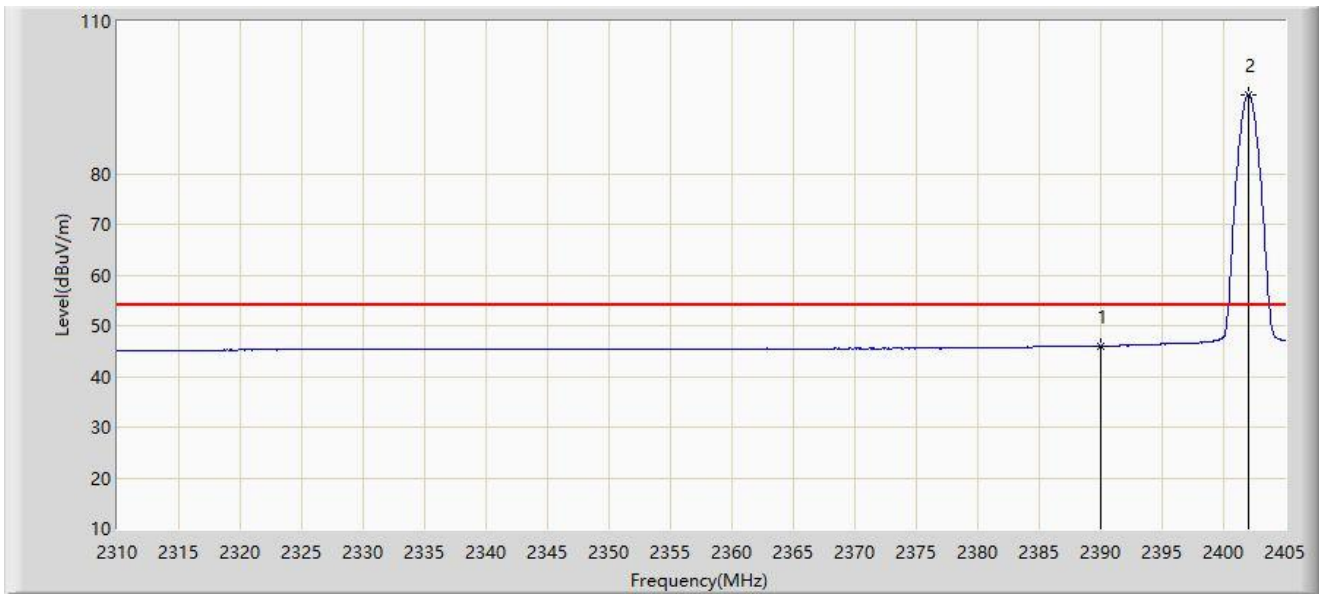
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2378.685	58.323	27.048	-15.677	74.000	31.275	PK
2		2390.000	57.421	25.909	-16.579	74.000	31.512	PK
3		2402.245	96.802	65.187	N/A	N/A	31.615	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Horizontal
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2402MHz	



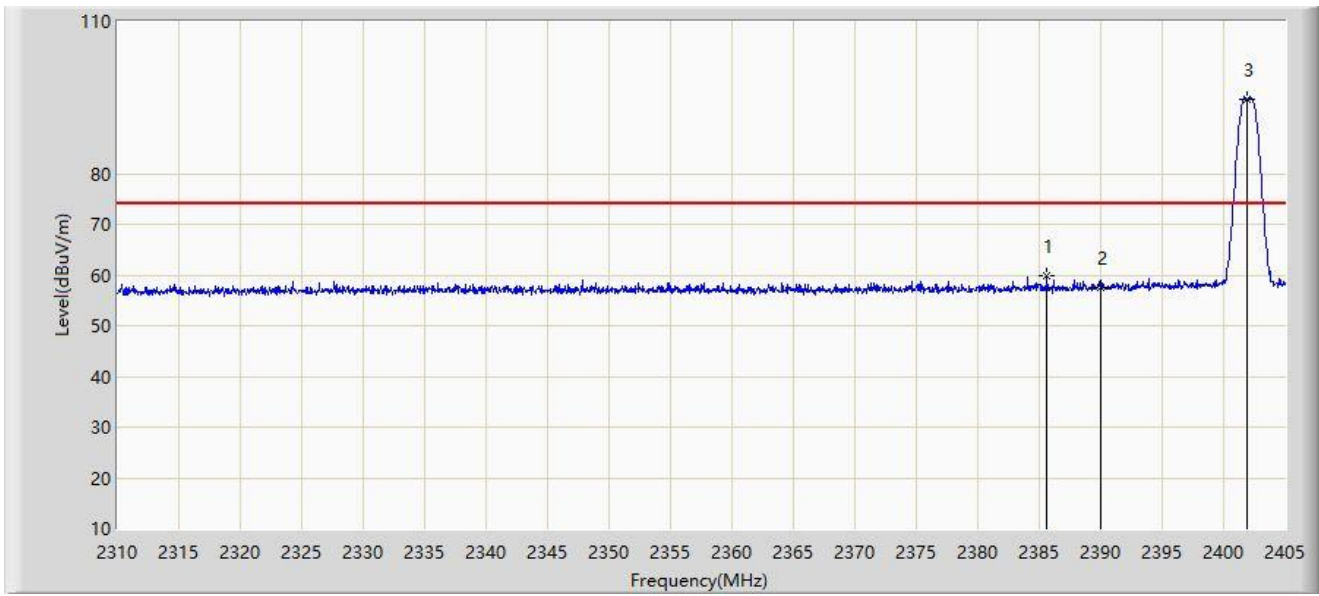
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2390.000	45.968	14.456	-8.032	54.000	31.512	AV
2		2402.008	95.546	63.932	N/A	N/A	31.614	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Vertical
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2402MHz	



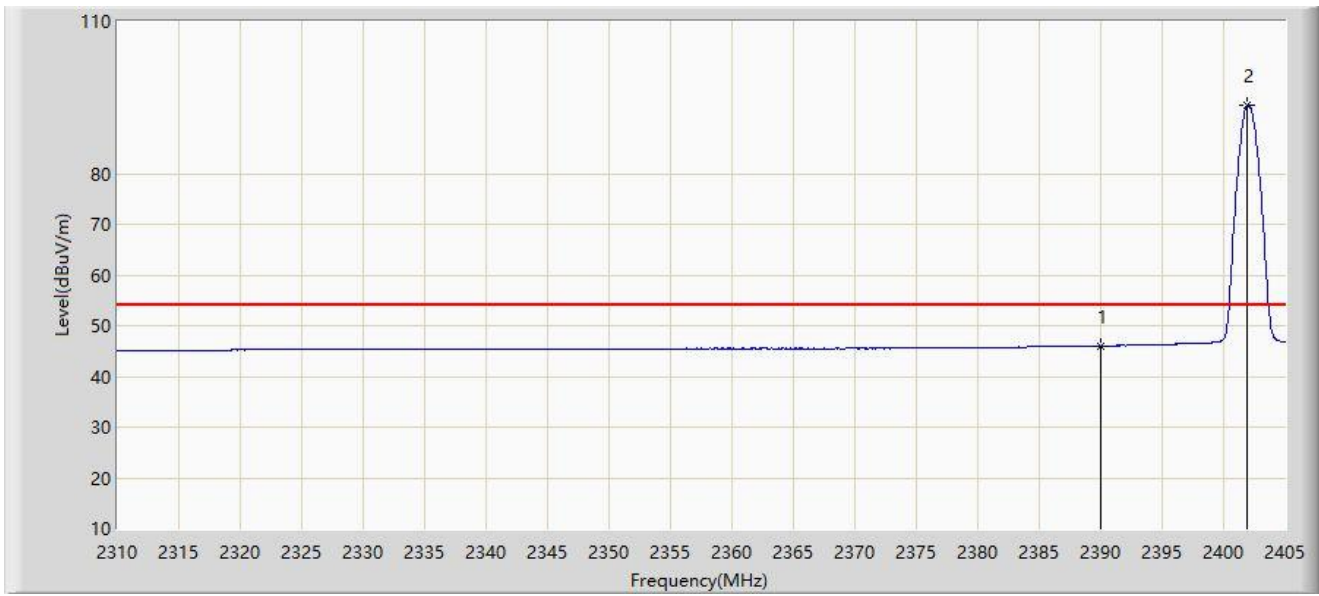
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2385.620	59.890	28.470	-14.110	74.000	31.421	PK
2		2390.000	57.546	26.034	-16.454	74.000	31.512	PK
3		2401.865	94.751	63.137	N/A	N/A	31.614	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Vertical
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2402MHz	



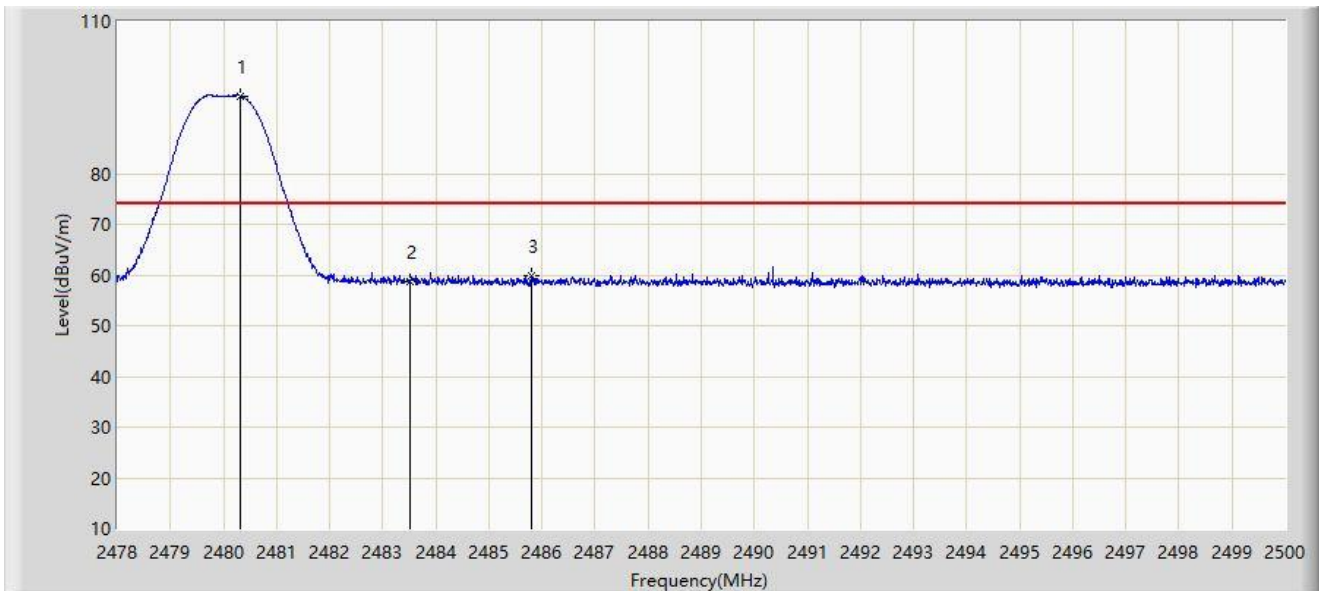
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1	*	2390.000	45.987	14.475	-8.013	54.000	31.512	AV
2		2401.913	93.440	61.826	N/A	N/A	31.614	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Horizontal
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2480MHz	



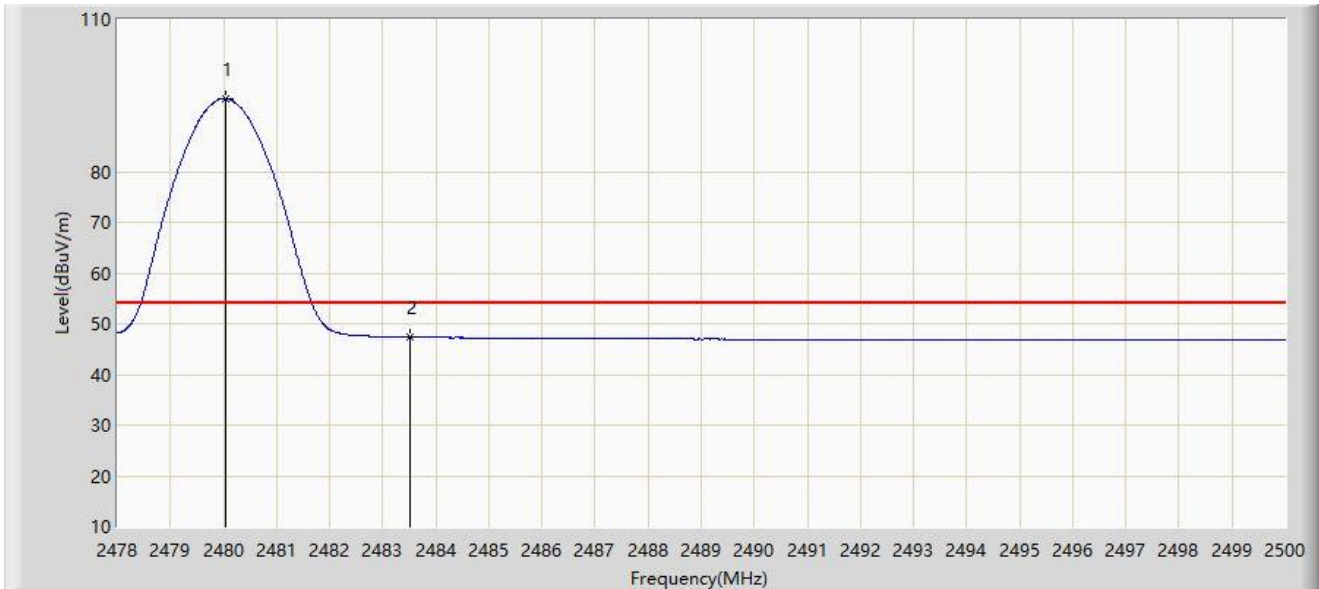
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.310	95.353	63.408	N/A	N/A	31.946	PK
2		2483.500	58.741	26.789	-15.259	74.000	31.952	PK
3	*	2485.810	59.937	27.981	-14.063	74.000	31.956	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Horizontal
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2480MHz	



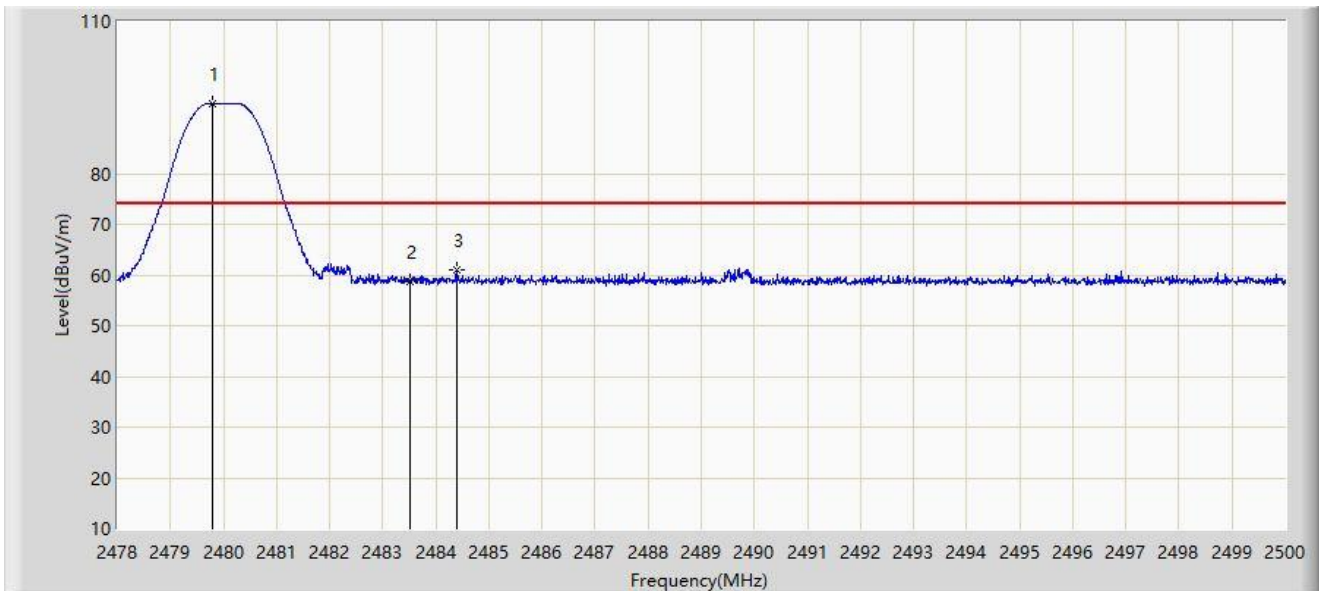
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.046	94.349	62.404	N/A	N/A	31.944	AV
2	*	2483.500	47.356	15.404	-6.644	54.000	31.952	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Vertical
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2480MHz	



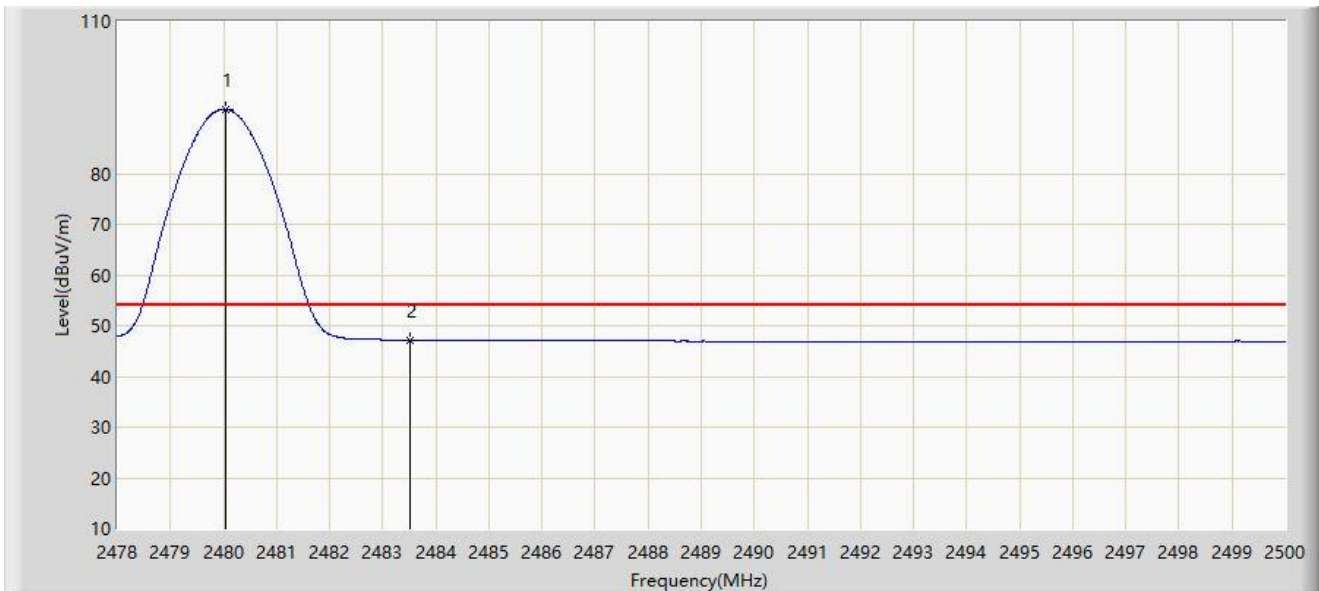
No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2479.804	93.880	61.936	N/A	N/A	31.944	PK
2		2483.500	58.799	26.847	-15.201	74.000	31.952	PK
3	*	2484.391	61.119	29.166	-12.881	74.000	31.953	PK

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Site: SIP-AC1	Test Date: 2023-05-15
Limit: FCC_2.4G_RE(3m)	Engineer: Arvin Ding
Probe: HF907_102862_1-18GHz	Polarity: Vertical
EUT: System Health Monitoring Device	Power: DC 8V
Test Mode: Transmit by BLE 1M at 2480MHz	



No	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB/m)	Type
1		2480.046	92.642	60.697	N/A	N/A	31.944	AV
2	*	2483.500	47.159	15.207	-6.841	54.000	31.952	AV

Note 1: " * ", means this data is the worst emission level.

Note 2: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m).

Note 3: Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Appendix B - Test Setup Photograph

Refer to “2304RSU037-UT” file.

Appendix C - EUT Photograph

Refer to “2304RSU037-UE” file.

The End
