

Test Report

Verified code: 721828

Report No.: E202208182745-2

Customer: Blueiot (Beijing)Technology Co., Ltd.

Address: 10/F,Tower A,TusPark Innovation Plaza, Haidian District, Beijing, China

Sample Name: Blueiot RTLS Tag

Sample Model: BT1000-w

Receive Sample Date: Aug.30,2022

Test Date: Sep.06,2022 ~ Nov.03,2022

Reference Document: CFR 47, FCC Part 15 Subpart C
RADIO FREQUENCY DEVICES:Subpart C—Intentional Radiators

Test Result: Pass

Prepared by: *Wen. Wen*

Reviewed by: *Wu Haoting*

Approved by: *Xiao Liang*



GUANGZHOU GRG METROLOGY & TEST CO., LTD

Issued Date: 2022-11-17

GUANGZHOU GRG METROLOGY & TEST CO., LTD.

Address: No.163, Pingyun Road, West of Huangpu Avenue, Guangzhou, Guangdong, China
Tel: (+86) 400-602-0999 FAX: (+86) 020-38698685 Web: <http://www.grgtest.com>



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2. The sample information is provided by the client and responsible for its authenticity; The content of the report is only valid for the samples sent this time.
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4. If there is any objection concerning the report, please inform us within 15 days from the date of receiving the report.
5. Without the agreement of the laboratory, the client is not authorized to use the test results for unapproved propaganda.

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REPORT ISSUED HISTORY

Report Version	Report No.	Description	Compile Date
1.0	E202208182745-2	Original Issue	2022-11-03

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1. TEST RESULT SUMMARY

Technical Requirements		
FCC 47 CFR Part 15 Subpart C 15.247 ANSI C63.10-2013 KDB 558074 D01 15.247 measurement guidance v05r02		
Limit / Severity	Item	Result
§15.203	Antenna Requirement	Pass
§15.207(a)	Conducted Emission	Pass
§15.247(d) & 15.205 & 15.209	Radiated Spurious Emission	Pass
§15.247(b)(3)	Maximum Peak Output Power	Pass
§15.247(e)	Power Spectral Density	Pass
§15.247(a)(2)	6dB bandwidth	Pass
§15.247(d)	Conducted band edges and Spurious Emission	Pass
§15.247(d) & 15.205 & 15.209	Restricted bands of operation	Pass

Note: The EUT have two antennas. They are from the same BLE RF IC module divide to two antennas and they can not transmitting at the same time. The one is PCB printed antenna and the max gain of antenna 1 is 1.38dBi, the other is ceramic chip antenna and the max gain of antenna 2 is 5.05dBi. which accordance 15.203 is considered sufficient to comply with the provisions of this section.

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2. GENERAL DESCRIPTION OF EUT

2.1 APPLICANT

Name: Blueiot(Beijing) Technology Co., Ltd.
Address: 10/F,Tower A,TusPark Innovation Plaza, Haidian District, Beijing, China

2.2 MANUFACTURER

Name: Blueiot(Beijing) Technology Co., Ltd.
Address: 10/F,Tower A,TusPark Innovation Plaza, Haidian District, Beijing, China

2.3 FACTORY

Name: Blueiot(Beijing) Technology Co., Ltd.
Address: 10/F,Tower A,TusPark Innovation Plaza, Haidian District, Beijing, China

2.4 BASIC DESCRIPTION OF EQUIPMENT UNDER TEST

Equipment: Blueiot RTLS Tag

Model No.: BT1000-w

Adding Model: /

Trade Name: Blueiot

FCC ID: 2AZOM-BT1000W

Power supply: DC 3.7V power supplied by battery
DC 5V from Adapter
Model: FUXY 802530

Battery Specification: Normal Voltage:3.7Vdc
Rated Capacity: 600mAh 2.22Wh

Adapter: Model: GAT-0501000U
Input: AC 100-240V 0.4A 50/60Hz
Output: 5.0V --- 1000mA

Frequency Band: 2402-2480MHz

Maximum conducted
Peak output Power: BLE_1MHz:
PCB printed antenna 1: 4.43dBm
Ceramic Chip antenna 2: 4.09dBm

Modulation type: GFSK for 1Mbps

Channel space: 2MHz

Antenna
Specification: PCB printed antenna 1 with 1.38dBi gain (Max.), Ceramic Chip Antenna 2 with
5.05 dBi gain (Max.)

Temperature Range: -20℃~ 60℃

Hardware Version: V3.2.2

Software Version: V1020

Sample No: E202208182745-0001, E202208182745-0003

Note: /

2.5 CHANNEL LIST

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

* is the test frequency

2.6 TEST OPERATION MODE

Mode No.	Description of the modes
1	Bluetooth (BLE) fixed frequency transmitting

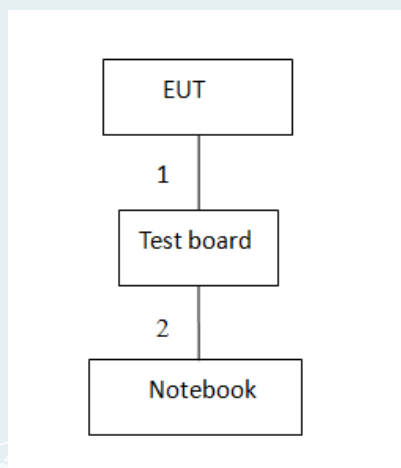
2.7 LOCAL SUPPORTIVE

Name of equipment	Manufacturer	Model	Serial number	Note
Notebook	LENOVO	TianYi 310-14ISK	MP18DLC6	/
Test board	/	/	/	/
Adapter	/	GAT-0501000U	/	EUT

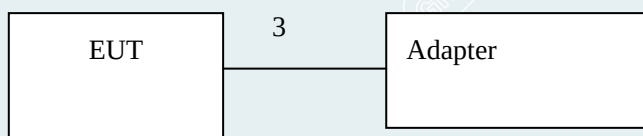
No.	Cable Type	Qty.	Shielded Type	Ferrite Core (Qty.)	Length	Note
1	DC cable	1	No	0	0.15m	/
2	USB extension cable	1	No	0	1m	/
3	USB cable	1	No	0	0.6m	EUT

2.8 CONFIGURATION OF SYSTEM UNDER TEST

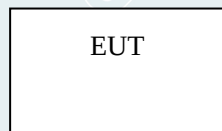
For 6dB bandwidth, Maximum Peak Output Power, Power Spectral Density ,Conducted band edges and Spurious Emission:



For Conducted Emission:



For Radiated Spurious Emission:



Test software:

Software version	Test level
nRF connect	3

2.9 DUTY CYCLE

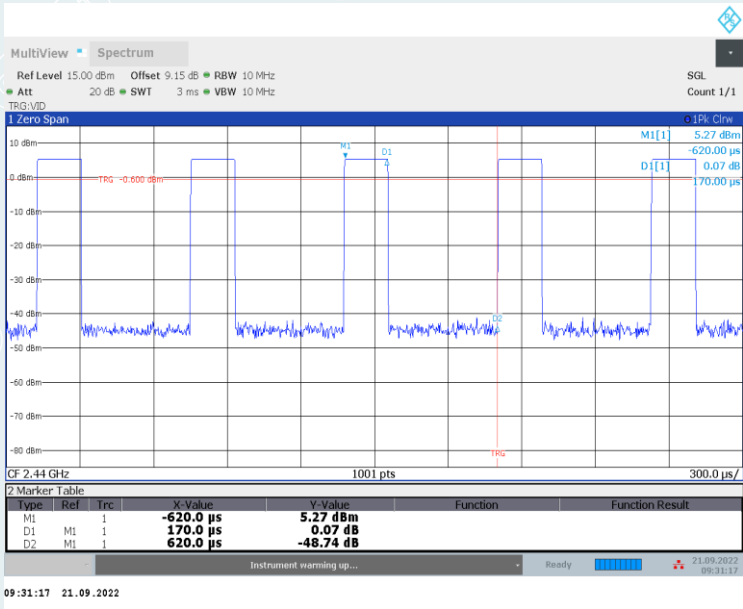
Environment: 25.8°C/60%RH/101.0kPa
Tested By: Qin Tingting

Voltage: DC 3.7V
Date: 2022-09-21

Antenna 1

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	DC [%]	T [s]
BLE_1M	Ant1	2440	0.17	0.62	27.42	0.00017

BLE_1M_2440 MHz



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Environment: 25.8°C/60%RH/101.0kPa

Voltage: DC 3.7V

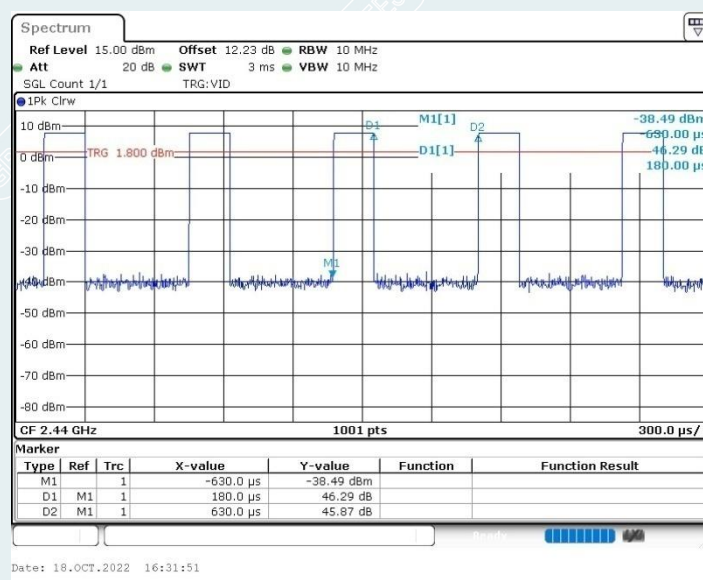
Tested By: Qin Tingting

Date: 2022-10-18

Antenna 2

Test Mode	Antenna	Frequency [MHz]	ON Time [ms]	Period [ms]	DC [%]	T [s]
BLE_1M	Ant1	2440	0.18	0.63	28.57	0.00018

BLE_1M_2440 MHz



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3. LABORATORY AND ACCREDITATIONS

3.1 LABORATORY

The tests & measurements refer to this report were performed by Shenzhen EMC Laboratory of Guangzhou GRG Metrology & Test Co., Ltd.

Add.: No.1301 Guangang Road Xinlan Community, Guanlan Street, Longhua District
Shenzhen, 518110, People's Republic of China

P.C.: 518110

Tel : 0755-61180008

Fax: 0755-61180008

3.2 ACCREDITATIONS

Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA A2LA(Certificate #2861.01)

The measuring facility of laboratories has been authorized or registered by the following approval agencies.

Canada ISED (Company Number: 24897, CAB identifier:CN0069)

USA FCC (Registration Number: 759402, Designation Number:CN1198)

Copies of granted accreditation certificates are available for downloading from our web site,
<http://www.grgtest.com>

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4. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

Measurement		Frequency	Uncertainty
Radiated Emission	Horizontal	9kHz~30MHz	5.1dB
		30MHz~200MHz	4.5dB
		200MHz~1000MHz	4.4dB
		1GHz~18GHz	5.6dB
		18GHz~26.5GHz	3.7dB
	Vertical	9kHz~30MHz	5.1dB
		30MHz~200MHz	4.4dB
		200MHz~1000MHz	4.5dB
		1GHz~18GHz	5.6dB
		18GHz~26.5GHz	3.7dB
Conduction Emission		150kHz~30MHz	3.40dB

Measurement	Uncertainty
RF frequency	6.0×10^{-6}
RF power conducted	0.8dB
Occupied channel bandwidth	0.4dB
Unwanted emission, conducted	0.7dB
Humidity	6%
Temperature	2°C

Note: This uncertainty represents an expanded uncertainty factor of $k=2$.

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5. LIST OF USED TEST EQUIPMENT AT GRGT

Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
Radiated Spurious Emission & Restricted bands of operation				
Test S/W	EZ	CCS-03A1		
Test Receiver	R&S	ESR7	102444	2023-09-02
Preamplifier	EMEC	EM330	I00426	2023-03-05
Bi-log Antenna	Schwarzbeck	VULB9160	VULB9160-3401	2022-10-27
Loop Antenna	TESEQ	HLA6121	52599	2023-04-02
Spectrum Analyzer	KEYSIGHT	N9010A	MY52221469	2023-06-29
Horn Antenna	Schwarzbeck	BBHA 9120D	02143	2023-07-27
Board-Band Horn Antenna	Schwarzbeck	BBHA 9170	BBHA 9170-497	2023-09-27
Amplifier	Tonscend	TAP01018048	AP20E8060075	2023-05-05
Amplifier	Tonscend	TAP184050	AP20E806071	2023-05-05
Test S/W	Tonscend	JS36-RE/2.5.1.5		
6dB Bandwidth & Conducted band edges and Spurious Emission & Power Spectral Density				
Spectrum Analyzer	R&S	FSW43	102072	2023-09-02
BT/WIFI System	Tonscend	JS1120-3		
Maximum Peak Output Power				
Pulse power sensor	Anritsu	MA2411B	1126150	2023-03-01
Power meter	Anritsu	ML2495A	1204003	2023-02-28
Conduction Emission				
EZ-EMC	EZ	CCS-3A1-CE	/	/
EMI Receiver	R&S	ESCI	100783	2023-08-28
LISN(EUT)	R&S	ENV216	101543	2023-09-13

Note: The calibration interval of the above test instruments is 12 months.

6. CONDUCTED EMISSION MEASUREMENT

6.1 LIMITS

Frequency range	Limits (dB μ V)	
	Quasi-peak	Average
150kHz~0.5MHz	66~56	56~46
0.5MHz~5MHz	56	46
5MHz~30MHz	60	50

NOTE: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases in line with the logarithm of the frequency in the range of 150kHz to 0.5MHz.

6.2 TEST PROCEDURES

Procedure of Preliminary Test

Test procedures follow ANSI C63.10:2013.

For measurement of the disturbance voltage the equipment under test (EUT) is connected to the power supply mains and any other extended network via one or more artificial network(s). An EUT, whether intended to be grounded or not, and which is to be used on a table is configured as follows:

– Either the bottom or the rear of the EUT shall be at a controlled distance of 40 cm from a reference ground plane. This ground plane is normally the wall or floor of a shielded room. It may also be a grounded metal plane of at least 2 m by 2 m. This is physically accomplished as follows:

- 1) place the EUT on a table of non-conducting material which is at least 80 cm high. Place the EUT so that it is 40 cm from the wall of the shielded room, or
- 2) place the EUT on a table of non-conducting material which is 40 cm high so that the bottom of the EUT is 40 cm above the ground plane;

– All other conductive surfaces of the EUT shall be at least 80 cm from the reference ground plane;

– The EUT are placed on the floor that one side of the housings is 40 cm from the vertical reference ground plane and other metallic parts;

– Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 cm to 40 cm long, hanging approximately in the middle between the ground plane and the table.

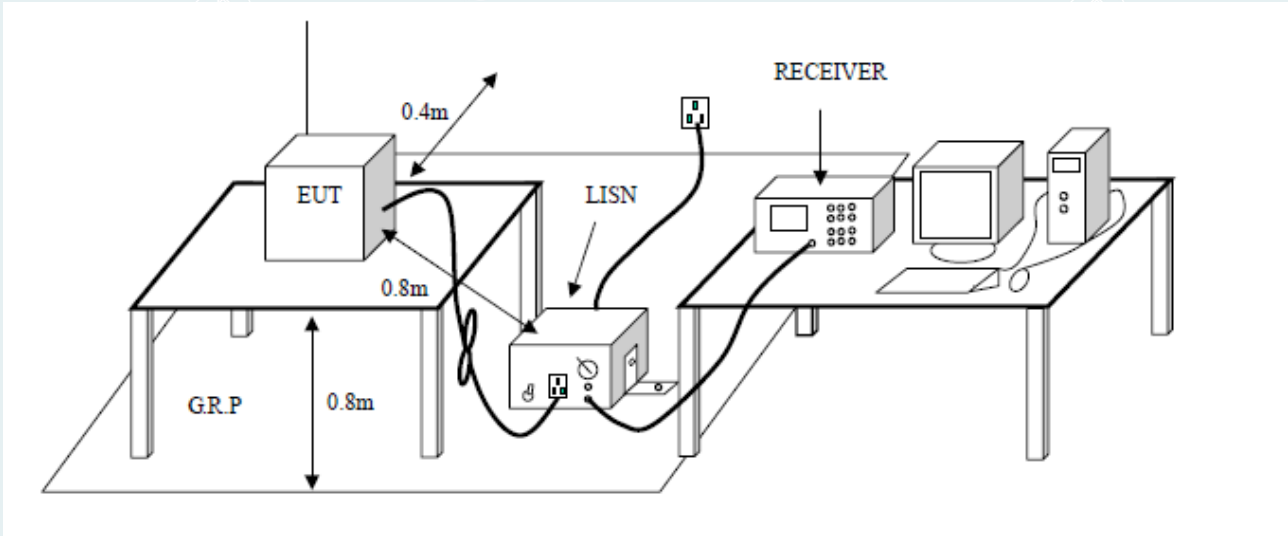
– I/O cables that are connected to a peripheral shall be bundled in the centre. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1 m.

The test mode(s) described in Item 2.6 were scanned during the preliminary test. After the preliminary scan, we found the test mode described in Item 2.6 producing the highest emission level. The EUT configuration and cable configuration of the above highest emission levels were recorded for reference of the final test.

Procedure of Final Test

EUT and support equipment were set up on the test bench as per the configuration with highest emission level in the preliminary test. A scan was taken on both power lines, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. The test data of the worst-case condition(s) was recorded.

6.3 TEST SETUP



6.4 DATA SAMPLE

Frequency (MHz)	QuasiPeak Reading (dBuV)	Average Reading (dBuV)	Correction Factor (dB)	QuasiPeak Result (dBuV)	Average Result (dBuV)	QuasiPeak Limit (dBuV)	Average Limit (dBuV)	QuasiPeak Margin (dB)	Average Margin (dB)	Remark (Pass/Fail)
X.XXXX	32.69	25.65	11.52	44.21	37.17	65.78	55.79	-21.57	-18.62	Pass

Factor = Insertion loss of LISN + Cable Loss
Result = Quasi-peak Reading/ Average Reading + Factor
Limit = Limit stated in standard
Margin = Result (dBuV) – Limit (dBuV)

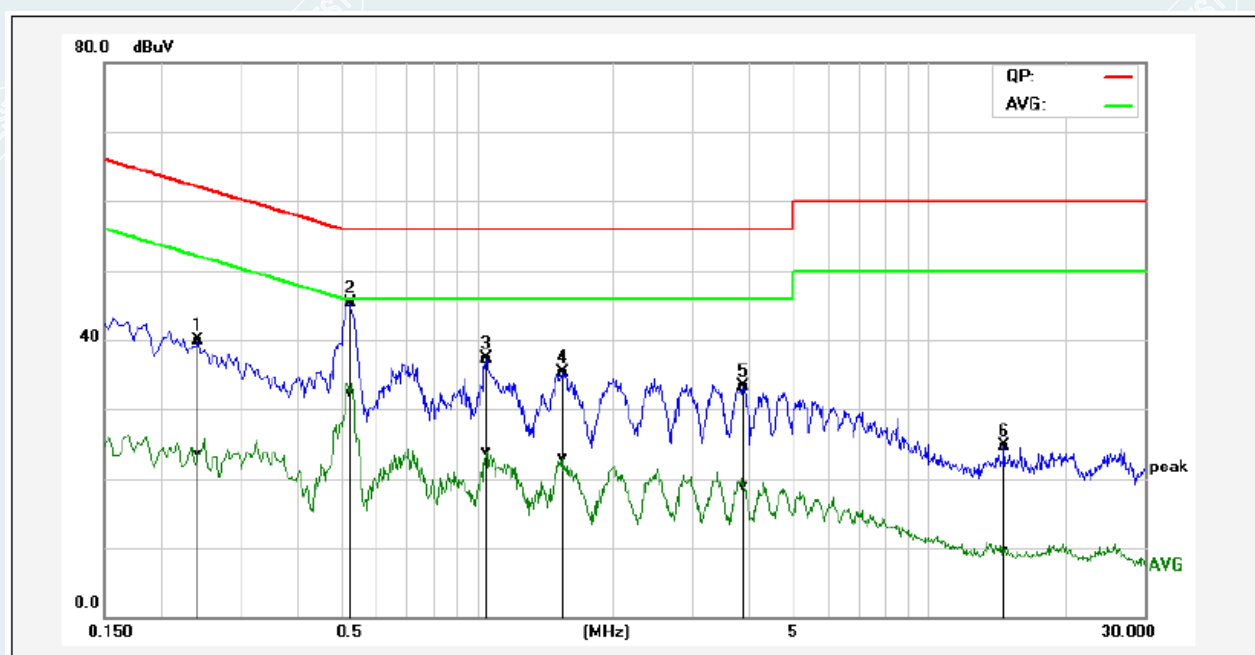
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6.5 TEST RESULTS

Antenna 1

Pre-test all test mode and recorded the worst case BLE 1M 2480MHz test results in the report.

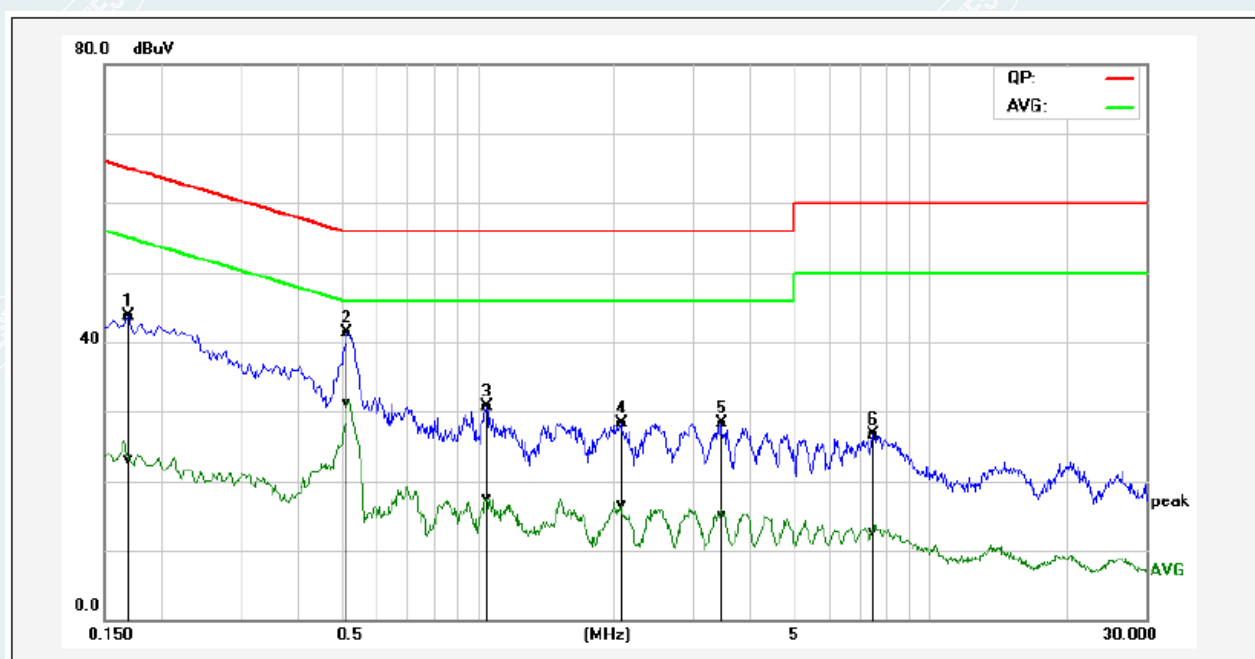
EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	24.6°C/47%RH/101.0kPa	Test Mode	BLE 1M 2480MHz
Tested By	Wang Xinyuan	Line	L
Tested Date	2022-09-06	Test Voltage	AC 120V/ 60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.2420	30.31	13.97	9.55	39.86	23.52	62.02	52.03	-22.16	-28.51	Pass
2*	0.5260	35.77	22.68	9.57	45.34	32.25	56.00	46.00	-10.66	-13.75	Pass
3	1.0540	27.76	14.40	9.59	37.35	23.99	56.00	46.00	-18.65	-22.01	Pass
4	1.5540	25.76	13.21	9.60	35.36	22.81	56.00	46.00	-20.64	-23.19	Pass
5	3.8860	23.56	9.21	9.65	33.21	18.86	56.00	46.00	-22.79	-27.14	Pass
6	14.7380	14.79	-0.40	9.84	24.63	9.44	60.00	50.00	-35.37	-40.56	Pass

REMARKS: L = Live Line

EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	24.6°C/47%RH/101.0kPa	Test Mode	BLE 1M 2480MHz
Tested By	Wang Xinyuan	Line	N
Tested Date	2022-09-06	Test Voltage	AC 120V/ 60Hz



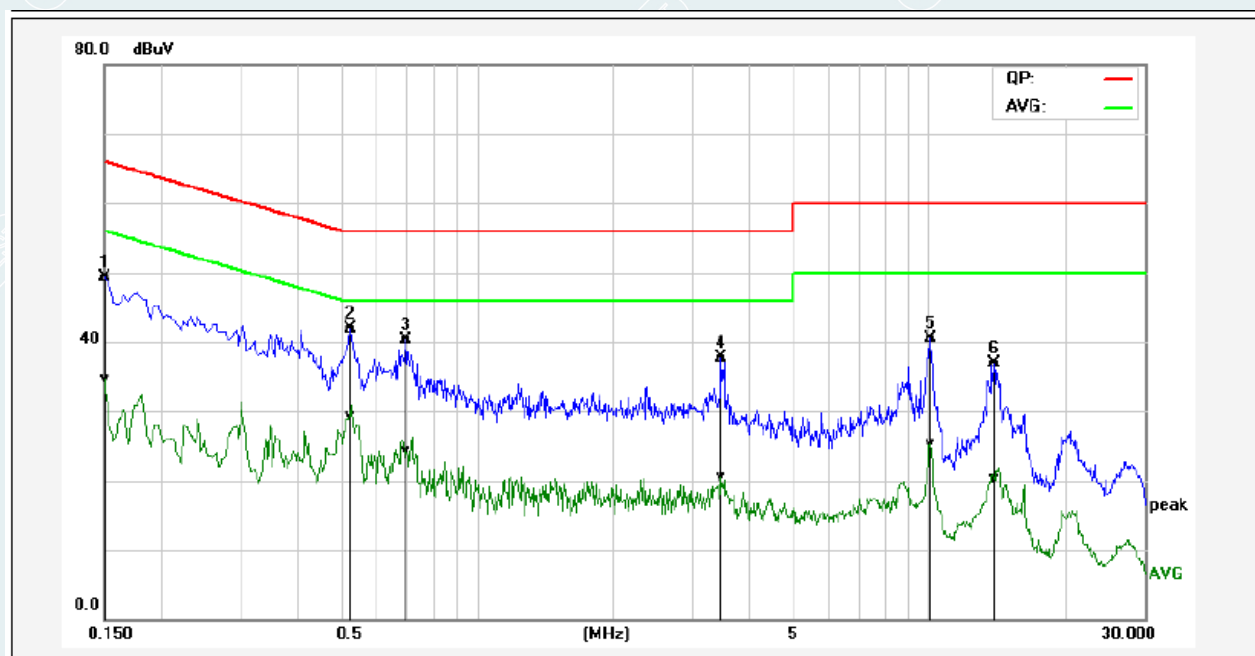
No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1700	34.11	13.50	9.53	43.64	23.03	64.96	54.96	-21.32	-31.93	Pass
2*	0.5180	31.66	21.39	9.70	41.36	31.09	56.00	46.00	-14.64	-14.91	Pass
3	1.0540	20.98	7.91	9.63	30.61	17.54	56.00	46.00	-25.39	-28.46	Pass
4	2.0860	18.71	6.94	9.60	28.31	16.54	56.00	46.00	-27.69	-29.46	Pass
5	3.4580	18.71	5.59	9.61	28.32	15.20	56.00	46.00	-27.68	-30.80	Pass
6	7.4940	16.91	2.93	9.73	26.64	12.66	60.00	50.00	-33.36	-37.34	Pass

REMARKS: N = Neutral Line.

Antenna 2

Pre-test all test mode and recorded the worst case BLE 1M 2480MHz test results in the report.

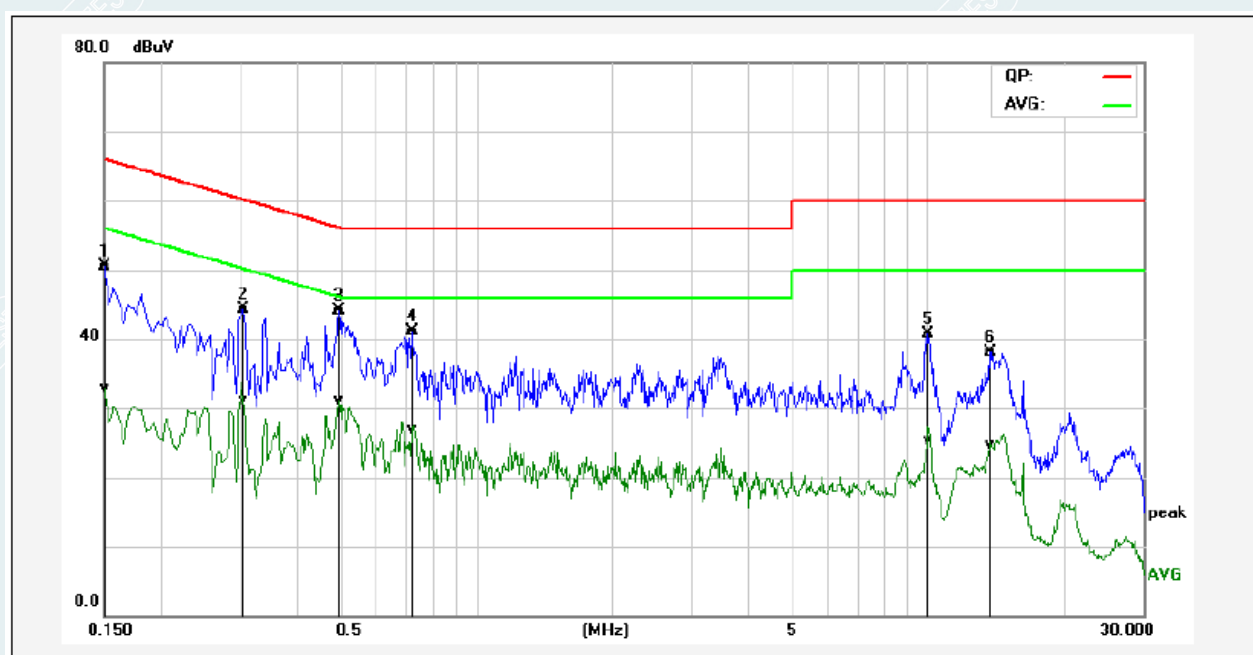
EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	22.5°C/45%RH/101.0kPa	Test Mode	BLE 1M 2480MHz
Tested By	Wang Xinyuan	Line	L
Tested Date	2022-11-03	Test Voltage	AC 120V/ 60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1500	39.63	25.06	9.61	49.24	34.67	65.99	56.00	-16.75	-21.33	Pass
2*	0.5260	32.21	19.76	9.60	41.81	29.36	56.00	46.00	-14.19	-16.64	Pass
3	0.6980	30.78	14.74	9.60	40.38	24.34	56.00	46.00	-15.62	-21.66	Pass
4	3.4900	27.98	10.83	9.64	37.62	20.47	56.00	46.00	-18.38	-25.53	Pass
5	10.0860	30.71	15.51	9.71	40.42	25.22	60.00	50.00	-19.58	-24.78	Pass
6	13.9380	27.21	10.49	9.74	36.95	20.23	60.00	50.00	-23.05	-29.77	Pass

REMARKS: L = Live Line

EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	22.5°C/45%RH/101.0kPa	Test Mode	BLE 1M 2480MHz
Tested By	Wang Xinyuan	Line	N
Tested Date	2022-11-03	Test Voltage	AC 120V/ 60Hz



No.	Frequency (MHz)	QuasiPeak reading (dBuV)	Average reading (dBuV)	Correction factor (dB)	QuasiPeak result (dBuV)	Average result (dBuV)	QuasiPeak limit (dBuV)	Average limit (dBuV)	QuasiPeak margin (dB)	Average margin (dB)	Remark
1	0.1500	40.97	23.28	9.60	50.57	32.88	65.99	56.00	-15.42	-23.12	Pass
2	0.3060	34.78	21.44	9.59	44.37	31.03	60.08	50.08	-15.71	-19.05	Pass
3*	0.4980	34.49	21.58	9.59	44.08	31.17	56.03	46.03	-11.95	-14.86	Pass
4	0.7220	31.55	17.23	9.59	41.14	26.82	56.00	46.00	-14.86	-19.18	Pass
5	10.0060	31.04	15.67	9.73	40.77	25.40	60.00	50.00	-19.23	-24.60	Pass
6	13.7140	28.39	14.87	9.78	38.17	24.65	60.00	50.00	-21.83	-25.35	Pass

REMARKS: N = Neutral Line.

7. RADIATED SPURIOUS EMISSIONS

7.1 LIMITS

In any 100kHz 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 20dB below that in the 100kHz 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 30dB instead of 20dB. Attenuation below the general limits specified in §15.209(a) is not required.

Frequency (MHz)	Quasi-peak($\mu\text{V/m}$)	Measurement distance(m)	Quasi-peak(dB $\mu\text{V/m}$)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

NOTE:

- (1) The emission limits for the ranges 9-90kHz and 110-490kHz are based on measurements employing a linear average detector.
- (2) The lower limit shall apply at the transition frequencies.
- (3) Above 18GHz test distance is 1m, so the Peak Limit=74+20*log(3/1)=83.54 (dB $\mu\text{V/m}$).
The Avg Limit=54+20*log(3/1)=63.54 (dB $\mu\text{V/m}$).

7.2 TEST PROCEDURES

1) Sequence of testing 9kHz to 30MHz

Setup:

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 0.8m height is used.
- If the EUT is a floor standing device, it is placed on the ground.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions.
- The measurement distance is 3meter.
- The EUT was set into operation.

Pre measurement:

- The turntable rotates from 0 °to 360 °.
- The antenna height is 1.0 meter.
- The antenna is polarized X,Y and Z.
- At each turntable position the analyzer sweeps with peak detection to find the maximum of all emissions

Final measurement:

- Identified emissions during the pre measurement the software maximizes by rotating the turntable position (0 °to 360 °) and by rotating the elevation axes (0 °to 360 °).

--- The final measurement will be done in the position (turntable and elevation) causing the highest emissions with QP detector.

--- The final levels, frequency, measuring time, bandwidth, turntable position, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

2) Sequence of testing 30MHz to 1GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a table with 0.8m height is used, which is placed on the ground plane.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 °to 360 °.

--- The antenna is polarized vertical and horizontal.

--- The antenna height changes from 1 to 4 meter.

--- At each turntable position, antenna polarization and height the analyzer sweeps three times in peak to find the maximum of all emissions.

Final measurement:

--- The final measurement will be performed with minimum the six highest peaks.

--- According to the maximum antenna and turntable positions of pre measurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter.

--- The final measurement will be done with QP detector with an EMI receiver.

--- The final levels, frequency, measuring time, bandwidth, antenna height, antenna polarization, turntable angle, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

3) Sequence of testing 1GHz to 18GHz

Setup:

--- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.

--- If the EUT is a tabletop system, a rotatable table with 1.5m height is used.

--- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.

--- Auxiliary equipment and cables were positioned to simulate normal operation conditions

--- The measurement distance is 3 meter.

--- The EUT was set into operation.

Pre measurement:

--- The turntable rotates from 0 °to 360 °.

- The antenna is polarized vertical and horizontal.
- The antenna height scan range is 1 meter to 4 meter.
- At each turntable position and antenna polarization the analyzer sweeps with peak detection to find the maximum of all emissions.

Final measurement:

- The final measurement will be performed with minimum the six highest peaks.
- According to the maximum antenna and turntable positions of pre measurement the software maximize the peaks by changing turntable rotates from 0 °to 360 °and antenna movement between 1 and 4 meter. This procedure is repeated for both antenna polarizations.
- The final measurement will be done in the position (turntable, EUT-table and antenna polarization) causing the highest emissions with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, turntable position, EUT-table position, antenna polarization, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement with marked maximum final measurements and the limit will be stored.

4) Sequence of testing above 18GHz**Setup:**

- The equipment was set up to simulate a typical usage like described in the user manual or described by manufacturer.
- If the EUT is a tabletop system, a rotatable table with 1.5 m height is used.
- If the EUT is a floor standing device, it is placed on the ground plane with insulation between both.
- Auxiliary equipment and cables were positioned to simulate normal operation conditions
- The measurement distance is 1 meter.
- The EUT was set into operation.

Pre measurement:

- The antenna is moved spherical over the EUT in different Polarisation of the antenna.

Final measurement:

- The final measurement will be performed at the position and antenna orientation for all detected emissions that were found during the pre measurements with Peak and Average detector.
- The final levels, frequency, measuring time, bandwidth, correction factor, margin to the limit and limit will be recorded. Also a plot with the graph of the pre measurement and the limit will be stored.

NOTE:

- (a).The frequency from 9kHz to 150kHz, Set RBW=300Hz(for Peak & AVG), VBW=300Hz(for Peak & AVG). The frequency from 150kHz to 30MHz, Set RBW=9kHz, VBW=9kHz, (for QP Detector).
- (b).The frequency from 30MHz to 1GHz, Set RBW=120kHz, VBW=300kHz, (for QP Detector).
- (c).The frequency above 1GHz, for Peak detector: Set RBW=1MHz,VBW=3MHz.
- (d). The frequency above 1GHz, for Avg detector: Set RBW=1MHz,if the EUT is configured to transmit with duty cycle $\geq 98\%$, set $VBW \leq RBW/100$ (i.e.,10kHz) but not less than 10 Hz. If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$, Where T is defined in section 2.9.

7.3 TEST SETUP

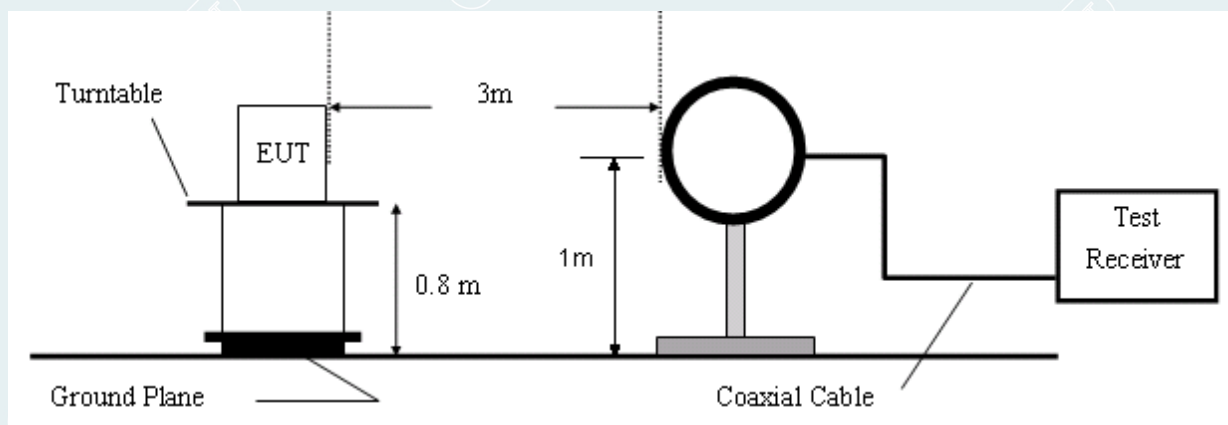


Figure 1. 9kHz to 30MHz radiated emissions test configuration

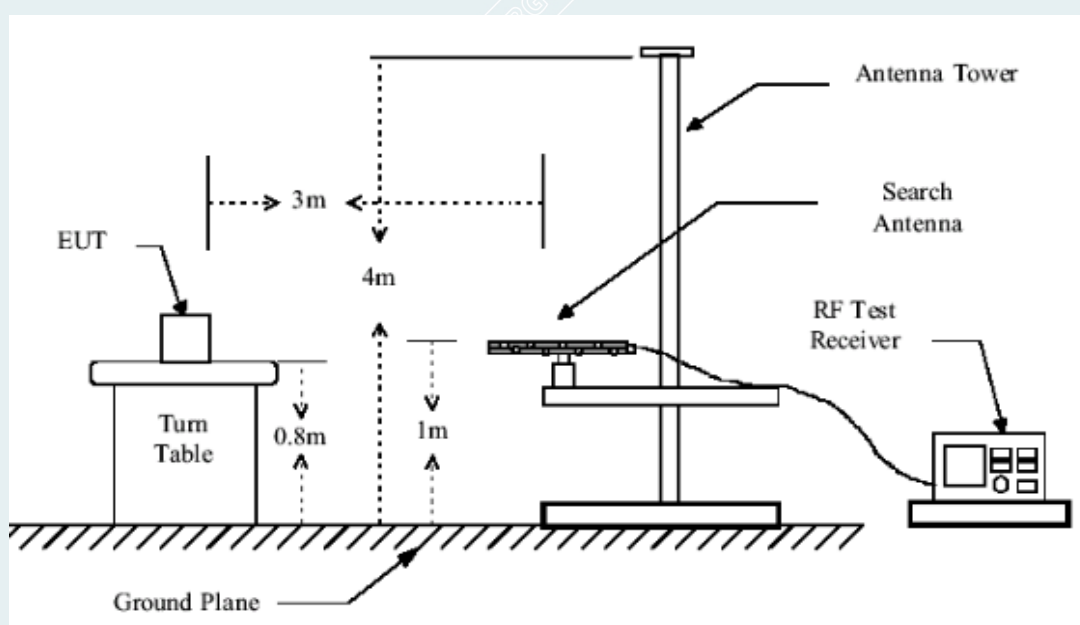


Figure 2. 30MHz to 1GHz radiated emissions test configuration

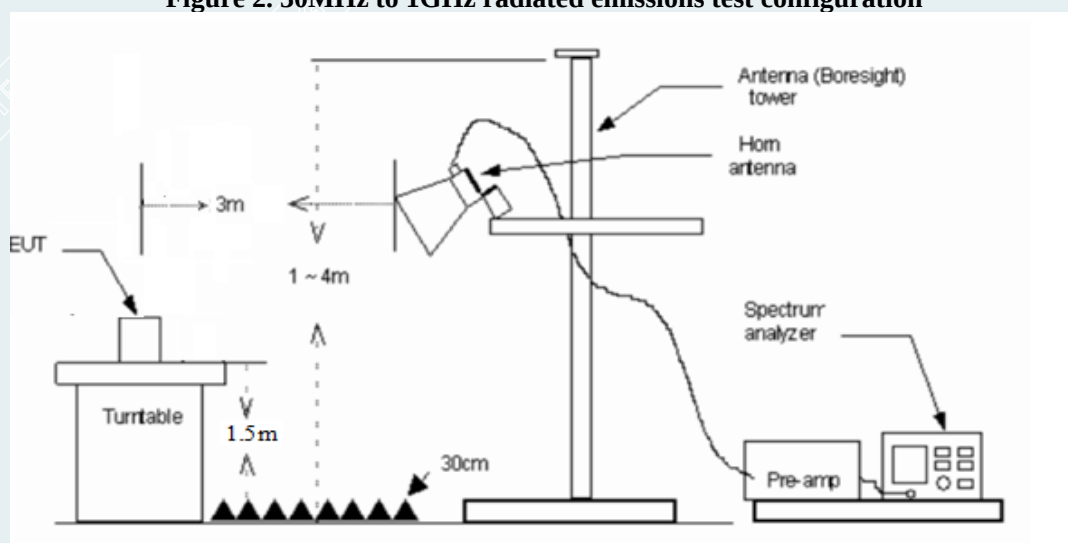


Figure 3. 1GHz to 18GHz radiated emissions test configuration

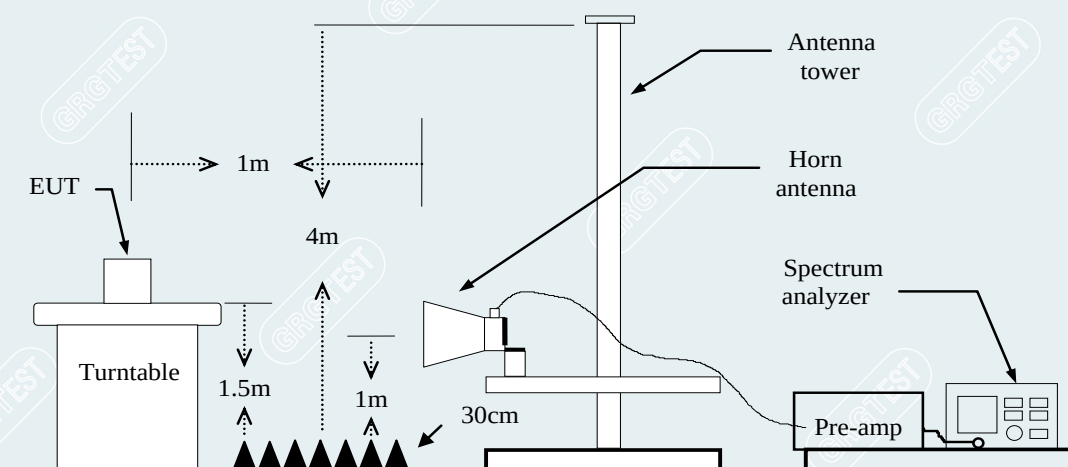


Figure 4. 18GHz to 26.5GHz radiated emissions test configuration

7.4 DATA SAMPLE

30MHz to 1GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	37.06	-15.48	21.58	40.00	-18.42	QP	Vertical

1GHz to 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	65.45	-11.12	54.33	74.00	-19.67	Peak	Vertical
xxx	xxx	63.00	-11.12	51.88	54.00	-2.12	AVG	Vertical

Above 18GHz

No.	Frequency (MHz)	Reading (dBuV/m)	Factor (dB)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Pole
xxx	xxx	68.86	57.66	-11.20	83.54	25.88	peak	Vertical
xxx	xxx	68.89	-11.20	57.69	63.54	5.85	AVG	Vertical

Frequency (MHz)

= Emission frequency in MHz

Ant.Pol. (H/V)

= Antenna polarization

Reading (dBuV)

= Uncorrected Analyzer / Receiver reading

Correction Factor (dB/m)

= Antenna factor + Cable loss – Amplifier gain

Result (dBuV/m)

= Reading (dBuV) + Correction Factor (dB/m)

Limit (dBuV/m)

= Limit stated in standard

Margin (dB)

= Remark Result (dBuV/m) – Limit (dBuV/m)

Peak

= Peak Reading

QP

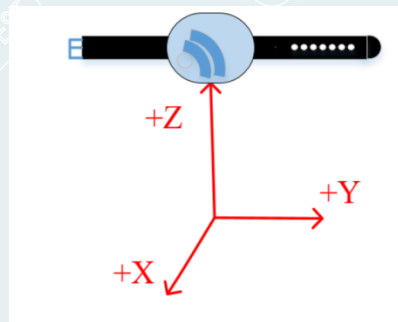
= Quasi-peak Reading

AVG

= Average Reading

7.5 TEST RESULTS

The test are under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown the Z position only.



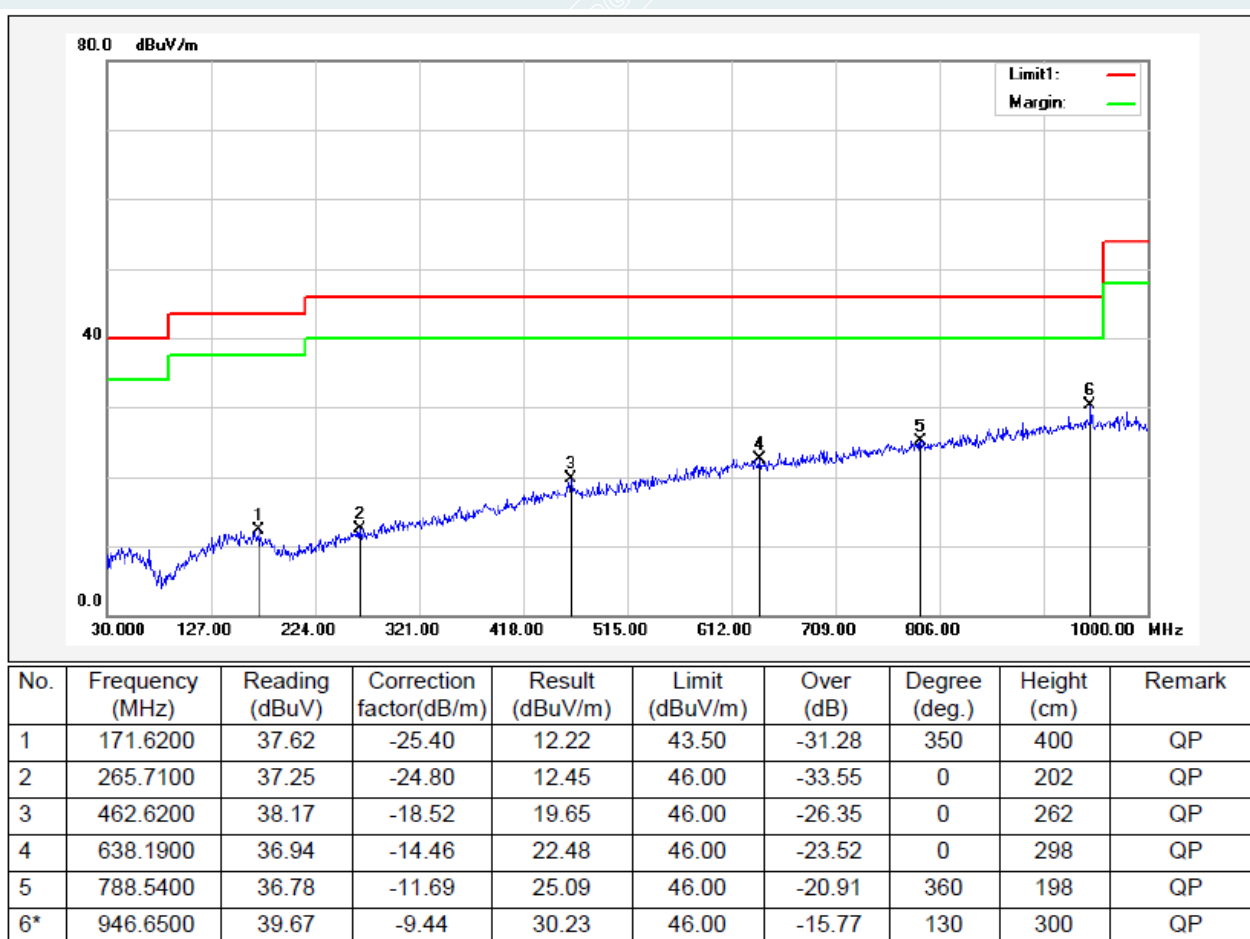
----- The following blanks -----

Below 1GHz

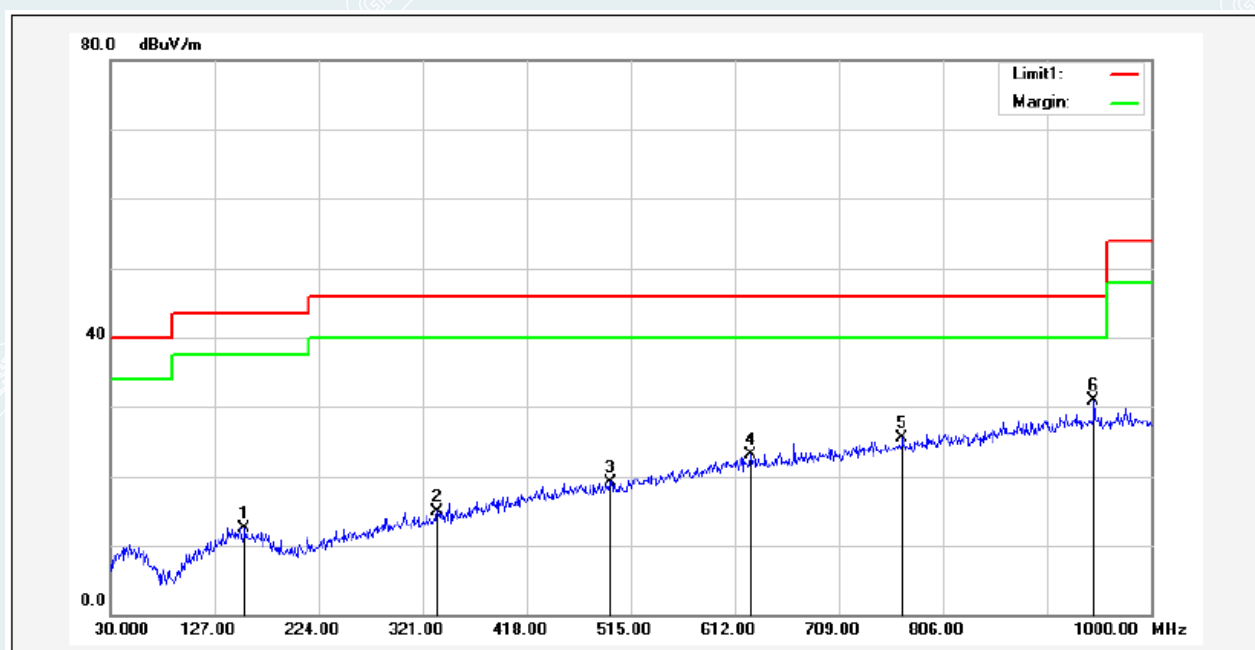
Pre-test all test mode and recorded the worst case BLE 1M 2480MHz test results in the report.

Antenna 1

EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	23.5°C/43%RH/101.0kPa	Test Voltage	DC 3.7V
Test Mode	TX/ BLE_1M (2480MHz)	Polarity	Vertical
Tested By	Tang Shenghui	Tested Date	2022-10-20



EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	23.5°C/43%RH/101.0kPa	Test Voltage	DC 3.7V
Test Mode	TX/ BLE_1M (2480MHz)	Polarity	Horizontal
Tested By	Tang Shenghui	Tested Date	2022-10-20



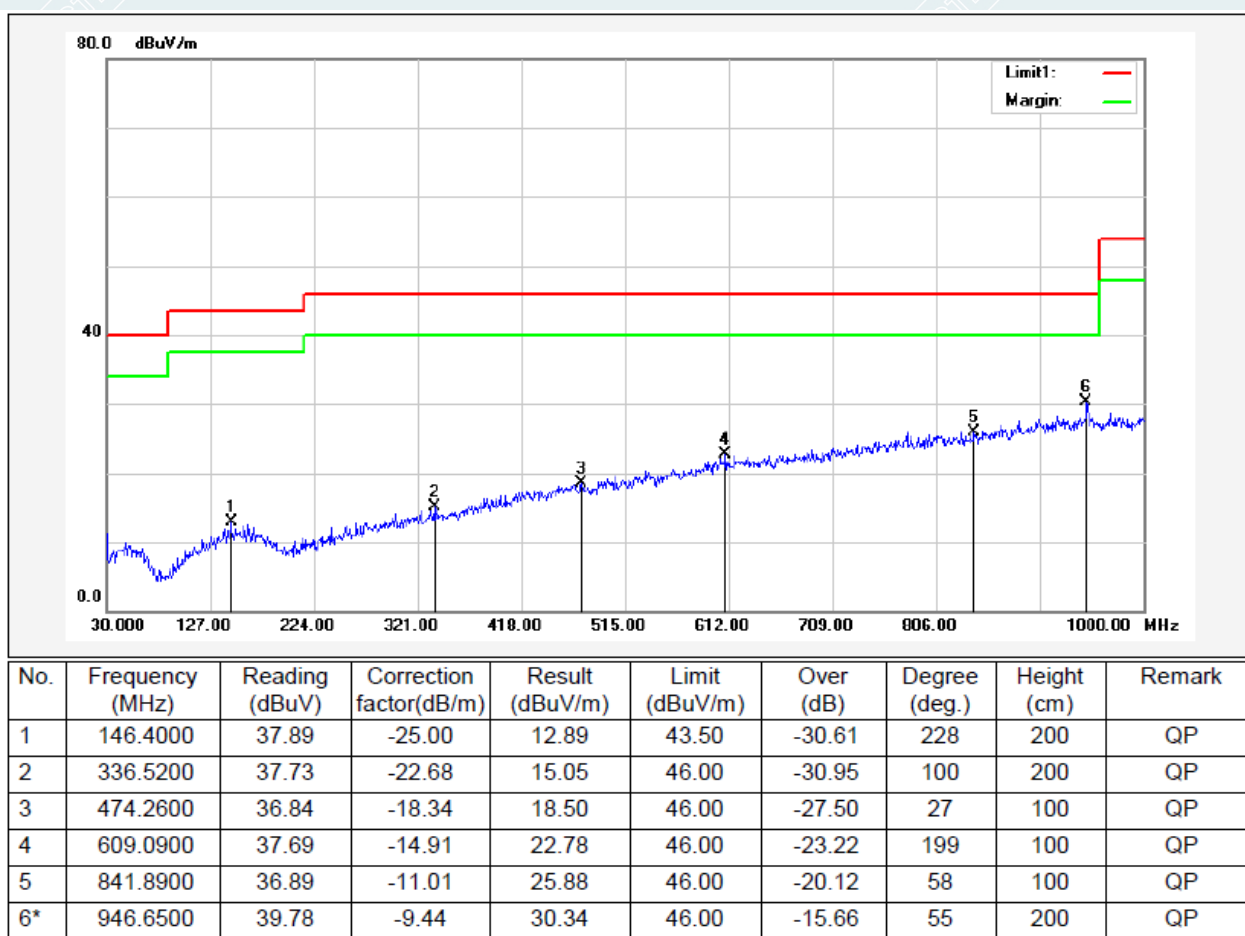
No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	155.1300	37.44	-24.90	12.54	43.50	-30.96	242	400	QP
2	334.5800	37.68	-22.72	14.96	46.00	-31.04	58	300	QP
3	495.6000	37.05	-17.98	19.07	46.00	-26.93	172	400	QP
4	626.5500	37.74	-14.64	23.10	46.00	-22.90	20	400	QP
5	768.1700	37.41	-11.99	25.42	46.00	-20.58	173	100	QP
6*	946.6500	40.37	-9.44	30.93	46.00	-15.07	37	100	QP

Remark:

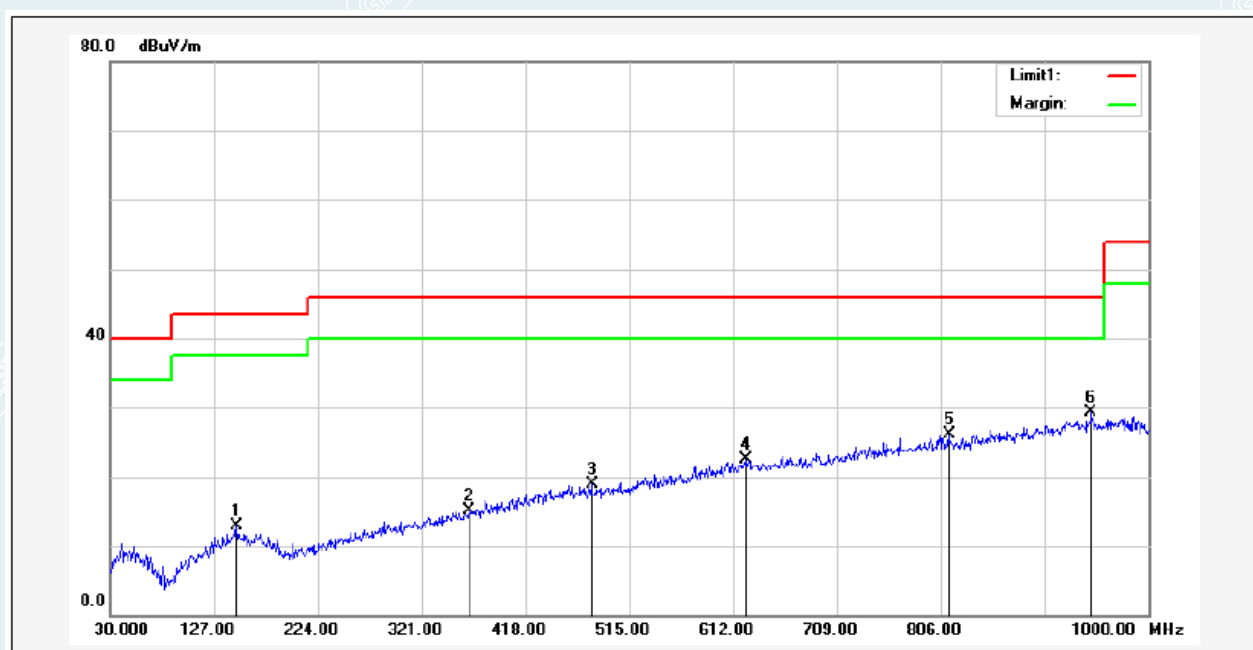
- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.

Antenna 2

EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	23.5°C/43%RH/101.0kPa	Test Voltage	DC 3.7V
Test Mode	TX/ BLE_1M (2480MHz)	Polarity	Vertical
Tested By	Tang Shenghui	Tested Date	2022-10-20



EUT Name	Blueiot RTLS Tag	Model	BT1000-w
Environmental Conditions	23.5°C/43%RH/101.0kPa	Test Voltage	DC 3.7V
Test Mode	TX/ BLE_1M (2480MHz)	Polarity	Horizontal
Tested By	Tang Shenghui	Tested Date	2022-10-20



No.	Frequency (MHz)	Reading (dBuV)	Correction factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Over (dB)	Degree (deg.)	Height (cm)	Remark
1	148.3400	37.77	-24.90	12.87	43.50	-30.63	345	200	QP
2	365.6200	36.81	-21.77	15.04	46.00	-30.96	88	300	QP
3	480.0800	37.23	-18.24	18.99	46.00	-27.01	153	400	QP
4	624.6100	37.15	-14.67	22.48	46.00	-23.52	360	149	QP
5	813.7600	37.45	-11.36	26.09	46.00	-19.91	8	400	QP
6*	946.6500	38.69	-9.44	29.25	46.00	-16.75	21	200	QP

Remark:

- 1 No emission found between lowest internal used/generated frequency to 30MHz.
- 2 Radiated emissions measured in frequency range from 9kHz to 1GHz were made with an instrument using Quasi-peak detector mode.
- 3 The IF bandwidth of Receiver between 30MHz to 1GHz was 120kHz.

1GHz-18GHz:

Antenna 1

Mode: TX/ BLE_1M

Lowest Frequency (2402MHz)

Environment: 24°C/50%RH/101.0kPa

Tested By: Zhang Zishan

Voltage: DC 3.7V

Date: 2022-09-22

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1253.0316	59.38	37.42	-21.96	74.00	36.58	200	253	Horizontal
2	2225.9032	58.34	40.07	-18.27	74.00	33.93	100	246	Horizontal
3	2845.9807	59.27	42.89	-16.38	74.00	31.11	200	302	Horizontal
4	3585.0585	57.14	41.03	-16.11	74.00	32.97	100	3	Horizontal
5	4803.1803	60.32	48.28	-12.04	74.00	25.72	100	272	Horizontal
6	7206.4206	63.26	59.33	-3.93	74.00	14.67	100	138	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4803.9488	-12.04	49.97	37.93	54.00	16.07	127	275.1	Horizontal
2	7205.3396	-3.93	46.17	42.24	54.00	11.76	108	124.2	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1383.0479	59.89	38.22	-21.67	74.00	35.78	100	135	Vertical
2	2136.1420	59.59	38.87	-20.72	74.00	35.13	200	36	Vertical
3	3333.0333	62.68	44.83	-17.85	74.00	29.17	100	32	Vertical
4	3984.0984	61.76	45.92	-15.84	74.00	28.08	100	322	Vertical
5	4656.1656	58.66	46.51	-12.15	74.00	27.49	200	311	Vertical
6	7204.9205	62.34	59.29	-3.05	74.00	14.71	200	179	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7205.9292	-3.05	45.63	42.58	54.00	11.42	157	172.6	Vertical

Mode: TX/ BLE_1M
 Middle Frequency (2440MHz)
 Environment: 24°C/50%RH/101.0kPa
 Tested By: Zhang Zishan

Voltage: DC 3.7V
 Date: 2022-09-22

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1251.7815	59.09	37.16	-21.93	74.00	36.84	100	313	Horizontal
2	2218.4023	59.07	40.90	-18.17	74.00	33.10	200	244	Horizontal
3	2842.9804	58.25	41.80	-16.45	74.00	32.20	200	166	Horizontal
4	3984.0984	61.26	45.12	-16.14	74.00	28.88	200	260	Horizontal
5	4879.6880	58.26	45.14	-13.12	74.00	28.86	100	261	Horizontal
6	7320.4320	65.92	62.80	-3.12	74.00	11.20	200	136	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	7319.7732	-3.12	51.00	47.88	54.00	6.12	125	133.5	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1087.7610	60.26	37.82	-22.44	74.00	36.18	200	175	Vertical
2	1425.0531	59.62	37.93	-21.69	74.00	36.07	200	95	Vertical
3	2054.3818	59.95	40.20	-19.75	74.00	33.80	200	313	Vertical
4	3993.0993	64.30	48.41	-15.89	74.00	25.59	200	324	Vertical
5	4656.1656	60.76	48.61	-12.15	74.00	25.39	200	304	Vertical
6	7318.9319	63.91	60.85	-3.06	74.00	13.15	100	156	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3988.2277	-15.89	47.21	31.32	54.00	22.68	200	158.3	Vertical
2	4658.6334	-12.15	45.25	33.10	54.00	20.90	200	321.3	Vertical
3	7319.2247	-3.06	47.77	44.71	54.00	9.29	100	139.3	Vertical

Mode: TX/ BLE_1M

Highest Frequency (2480MHz)

Environment: 24°C/50%RH/101.0kPa

Tested By: Zhang Zishan

Voltage: DC 3.7V

Date: 2022-09-22

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1252.5316	59.38	37.44	-21.94	74.00	36.56	200	284	Horizontal
2	2219.1524	59.29	41.11	-18.18	74.00	32.89	100	94	Horizontal
3	2967.9960	59.59	42.33	-17.26	74.00	31.67	200	344	Horizontal
4	3990.0990	60.36	44.18	-16.18	74.00	29.82	200	168	Horizontal
5	4960.6961	60.62	48.78	-11.84	74.00	25.22	100	302	Horizontal
6	7440.4440	66.75	63.21	-3.54	74.00	10.79	100	32	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4959.9520	-11.84	55.02	43.18	54.00	10.82	154	212.7	Horizontal
2	7439.4767	-3.54	56.07	52.53	54.00	1.47	121	313.1	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1380.5476	59.67	37.97	-21.70	74.00	36.03	100	17	Vertical
2	2048.8811	58.39	38.70	-19.69	74.00	35.30	200	306	Vertical
3	3324.0324	61.06	43.45	-17.61	74.00	30.55	100	34	Vertical
4	3988.5989	64.28	48.42	-15.86	74.00	25.58	100	45	Vertical
5	4959.1959	58.40	46.91	-11.49	74.00	27.09	200	105	Vertical
6	7440.4440	67.41	64.02	-3.39	74.00	9.98	200	74	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3995.7385	-15.86	46.92	31.06	54.00	22.94	162	63.3	Vertical
2	7439.4767	-3.39	56.01	52.62	54.00	1.38	178	86.6	Vertical

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3 Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4 Measurements above show only up to 6 maximum emissions noted, or would be lesser, with "N/A" remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

Antenna 2

Mode: TX/ BLE_1M

Lowest Frequency (2402MHz)

Environment: 24°C/50%RH/101.0kPa

Tested By: Zhang Zishan

Voltage: DC 3.7V

Date: 2022-10-25

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1164.5206	72.20	47.56	-24.64	74.00	26.44	100	114	Horizontal
2	1329.7912	69.80	46.73	-23.07	74.00	27.27	100	16	Horizontal
3	2654.9569	64.81	46.37	-18.44	74.00	27.63	100	65	Horizontal
4	2845.4807	63.09	46.70	-16.39	74.00	27.30	100	45	Horizontal
5	4803.9755	63.37	51.32	-12.05	74.00	22.68	100	301	Horizontal
6	7206.1508	60.44	56.51	-3.93	74.00	17.49	100	323	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4803.9755	-12.05	55.04	42.99	54.00	11.01	129	297.2	Horizontal
2	7206.0067	-3.93	48.13	44.20	54.00	9.80	108	328	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1329.0411	70.32	47.67	-22.65	74.00	26.33	200	115	Vertical
2	1663.5829	69.59	47.14	-22.45	74.00	26.86	100	207	Vertical
3	2663.2079	65.59	47.90	-17.69	74.00	26.10	100	84	Vertical
4	3988.2485	65.29	49.43	-15.86	74.00	24.57	100	115	Vertical
5	5983.4979	57.34	48.38	-8.96	74.00	25.62	100	203	Vertical
6	7204.2755	61.28	58.22	-3.06	74.00	15.78	100	93	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	3987.8497	-15.86	48.20	32.34	54.00	21.66	101	115.4	Vertical
2	5991.0371	-8.96	42.52	33.56	54.00	20.44	156	203.4	Vertical
3	7206.0045	-3.06	49.50	46.44	54.00	7.56	127	8.5	Vertical

Mode: TX/ BLE_1M
 Middle Frequency (2440MHz)
 Environment: 24°C/50%RH/101.0kPa
 Tested By: Zhang Zishan

Voltage: DC 3.7V
 Date: 2022-10-25

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1166.0208	71.79	47.18	-24.61	74.00	26.82	100	127	Horizontal
2	1331.0414	69.41	46.33	-23.08	74.00	27.67	100	117	Horizontal
3	1663.3329	69.13	46.01	-23.12	74.00	27.99	100	279	Horizontal
4	2658.7073	64.61	46.18	-18.43	74.00	27.82	100	107	Horizontal
5	4880.8601	61.63	48.49	-13.14	74.00	25.51	200	194	Horizontal
6	7318.6648	59.09	56.00	-3.09	74.00	18.00	100	282	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	4879.9815	-13.14	54.73	41.59	54.00	12.41	124	308.9	Horizontal
2	7319.8358	-3.09	49.02	45.93	54.00	8.07	100	48.2	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1166.7708	72.22	47.92	-24.30	74.00	26.08	100	167	Vertical
2	1333.2917	70.24	47.73	-22.51	74.00	26.27	200	136	Vertical
3	1661.8327	70.12	47.62	-22.50	74.00	26.38	200	199	Vertical
4	2662.2078	66.97	49.26	-17.71	74.00	24.74	100	96	Vertical
5	4646.4558	58.39	46.32	-12.07	74.00	27.68	100	292	Vertical
6	7320.5401	60.51	57.40	-3.11	74.00	16.60	200	82	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2656.8568	-17.71	49.73	32.02	54.00	21.98	119	93.5	Vertical
2	7319.9545	-3.11	48.94	45.83	54.00	8.17	124	86	Vertical

Mode: TX/ BLE_1M

Highest Frequency (2480MHz)

Environment: 24°C/50%RH/101.0kPa

Tested By: Zhang Zishan

Voltage: DC 3.7V

Date: 2022-10-25

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1162.7703	72.53	47.86	-24.67	74.00	26.14	100	133	Horizontal
2	1330.2913	68.16	45.09	-23.07	74.00	28.91	100	285	Horizontal
3	2658.7073	68.02	49.59	-18.43	74.00	24.41	200	296	Horizontal
4	2844.7306	64.37	47.96	-16.41	74.00	26.04	100	343	Horizontal
5	4959.62	66.10	54.28	-11.82	74.00	19.72	100	16	Horizontal
6	7438.6798	64.11	60.61	-3.50	74.00	13.39	100	137	Horizontal

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2659.2125	-18.43	49.69	31.26	54.00	22.74	137	14.3	Horizontal
2	4959.9176	-11.82	57.30	45.48	54.00	8.52	142	288.9	Horizontal
3	7439.9444	-3.50	52.01	48.51	54.00	5.49	100	133.6	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	1327.2909	69.63	46.93	-22.70	74.00	27.07	200	162	Vertical
2	1663.0829	70.42	47.97	-22.45	74.00	26.03	200	222	Vertical
3	2659.2074	69.30	51.56	-17.74	74.00	22.44	100	103	Vertical
4	4959.62	58.74	47.24	-11.50	74.00	26.76	200	96	Vertical
5	6639.83	56.56	49.68	-6.88	74.00	24.32	100	175	Vertical
6	7440.5551	61.13	57.74	-3.39	74.00	16.26	100	185	Vertical

AV Final Data List									
NO.	Freq. [MHz]	Factor [dB]	AV Reading [dBμV/m]	AV Value [dBμV/m]	AV Limit [dBμV/m]	AV Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2655.6972	-17.74	50.28	32.54	54.00	21.46	100	95.2	Vertical
2	6644.3451	-6.88	42.71	35.83	54.00	18.17	100	40	Vertical
3	7439.9599	-3.39	52.36	48.97	54.00	5.03	129	177	Vertical

Remark:

- 1 Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency.
- 2 Radiated emissions measured in frequency above 1000MHz were made with an instrument using peak/average detector mode.
- 3 Average test would be performed if the peak result were greater than the average limit or as required by the applicant.
- 4 Measurements above show only up to 6 maximum emissions noted, or would be lesser, with “ N/A ” remark, if no specific emissions from the EUT are recorded (ie: margin>20dB from the applicable limit) and considered that's already beyond the background noise floor.

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18GHz to 26.5GHz

According to C63.10, if the peak (or quasi-peak) measured value complies with the average limit, it is unnecessary to perform an average measurement, so AV emission value did not show in below table if the peak value complies with average limit.

Pre-test all test mode and recorded the worst case BLE 1M 2480MHz test results in the report.

Antenna 1

Mode: TX/ BLE_1M

Highest Frequency (2480MHz)

Environment: 24°C/50%RH/101.0kPa

Tested By: Zhang Zishan

Voltage: DC 3.7V

Date: 2022-09-22

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18443.2750	51.98	39.72	-12.26	83.54	43.82	150	341	Horizontal
2	18819.4000	51.63	39.71	-11.92	83.54	43.83	150	48	Horizontal
3	19494.3000	51.35	39.92	-11.43	83.54	43.62	150	243	Horizontal
4	20342.1750	50.70	40.01	-10.69	83.54	43.53	150	258	Horizontal
5	21298.0000	47.74	37.76	-9.98	83.54	45.78	150	64	Horizontal
6	23237.2750	42.63	33.92	-8.71	83.54	49.62	150	15	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18524.4500	52.12	40.02	-12.10	83.54	43.52	150	102	Vertical
2	19030.6250	52.11	40.34	-11.77	83.54	43.20	150	344	Vertical
3	20068.4750	50.50	39.61	-10.89	83.54	43.93	150	151	Vertical
4	21222.3500	50.07	40.13	-9.94	83.54	43.41	150	215	Vertical
5	22873.9000	44.65	35.96	-8.69	83.54	47.58	150	297	Vertical
6	24892.2250	40.29	32.98	-7.31	83.54	50.56	150	70	Vertical

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Antenna 2

Mode: TX/ BLE_1M
Highest Frequency (2480MHz)
Environment: 24°C/50%RH/101.0kPa
Tested By: Zhang Zishan

Voltage: DC 3.7V
Date: 2022-10-25

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18720.375	52.16	40.19	-11.97	83.54	43.35	100	341	Horizontal
2	19565.275	51.96	40.61	-11.35	83.54	42.93	100	179	Horizontal
3	20522.8	49.70	39.23	-10.47	83.54	44.31	100	212	Horizontal
4	21384.275	48.60	38.67	-9.93	83.54	44.87	100	244	Horizontal
5	22597.65	47.58	38.56	-9.02	83.54	44.98	100	292	Horizontal
6	23934.7	43.27	34.77	-8.50	83.54	48.77	100	82	Horizontal

Suspected Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Level [dBμV/m]	Factor [dB]	Limit [dBμV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	18379.95	53.01	40.76	-12.25	83.54	42.78	100	103	Vertical
2	19321.75	51.73	40.18	-11.55	83.54	43.36	100	5	Vertical
3	20313.275	51.76	41.14	-10.62	83.54	42.40	100	216	Vertical
4	21113.55	50.25	40.27	-9.98	83.54	43.27	100	230	Vertical
5	21961	48.02	38.35	-9.67	83.54	45.19	100	38	Vertical
6	22836.925	45.92	37.20	-8.72	83.54	46.34	100	298	Vertical

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8. 6dB BANDWIDTH

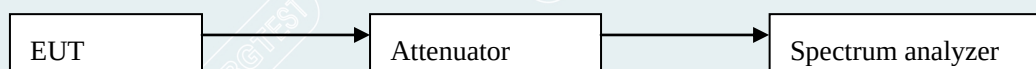
8.1 LIMITS

Systems using digital modulation techniques may operate in the 902–928MHz, 2400–2483.5MHz, and 5725–5850MHz bands. The minimum 6dB bandwidth shall be at least 500kHz.

8.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Set resolution bandwidth (RBW) = 100kHz. Set the video bandwidth (VBW) $\geq 3 \times$ RBW. Detector = Peak. Trace mode = max hold. Sweep = auto couple. Allow the trace to stabilize, record 6dB bandwidth value.
- 3) Repeat above procedures until all frequencies measured were complete.

8.3 TEST SETUP



8.4 TEST RESULTS

Environment: 25.8°C/60%RH/101.0kPa
 Tested By: Qin Tingting

Voltage: DC 3.7V
 Date: 2022-10-18

Antenna 1

BLE_1M

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Lowest	2402	704	≥ 500	PASS
Middle	2440	700		PASS
Highest	2480	700		PASS

Antenna 2

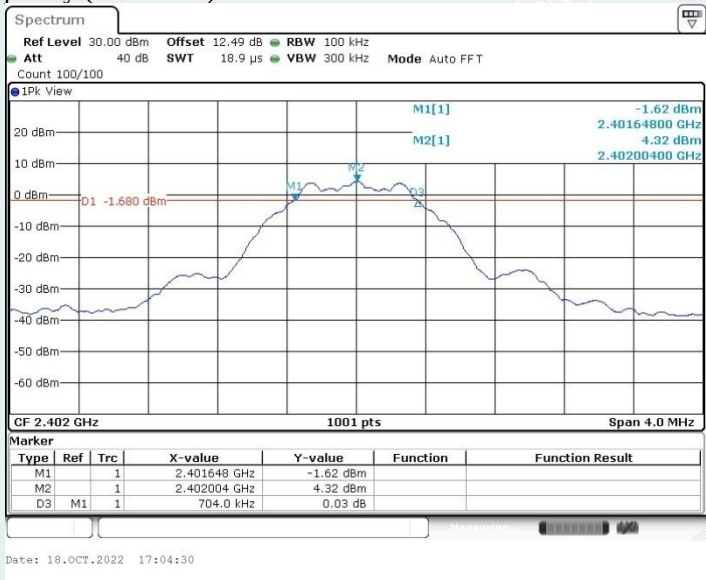
BLE_1M

Channel	Frequency (MHz)	Bandwidth (kHz)	Limit (kHz)	Test Result
Lowest	2402	692	≥ 500	PASS
Middle	2440	692		PASS
Highest	2480	684		PASS

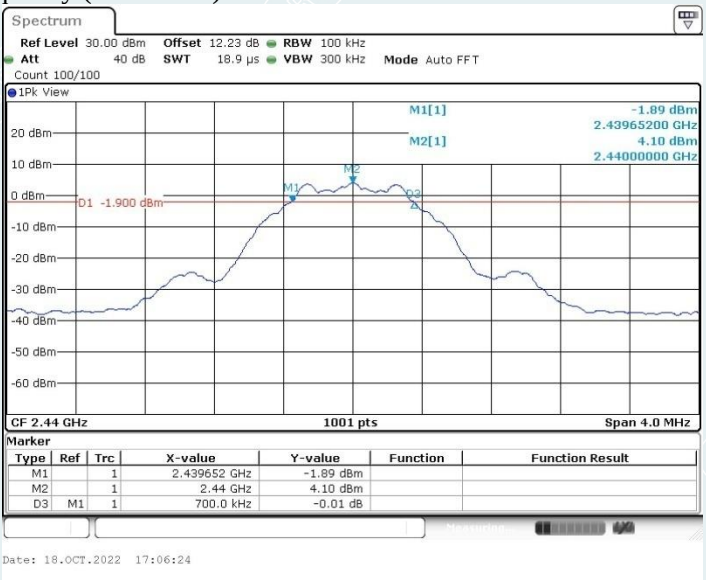
BLE_1M

Antenna 1

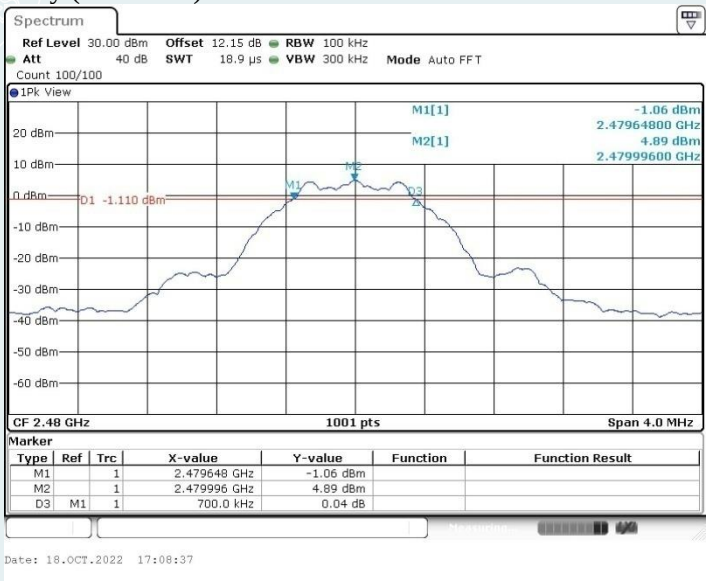
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



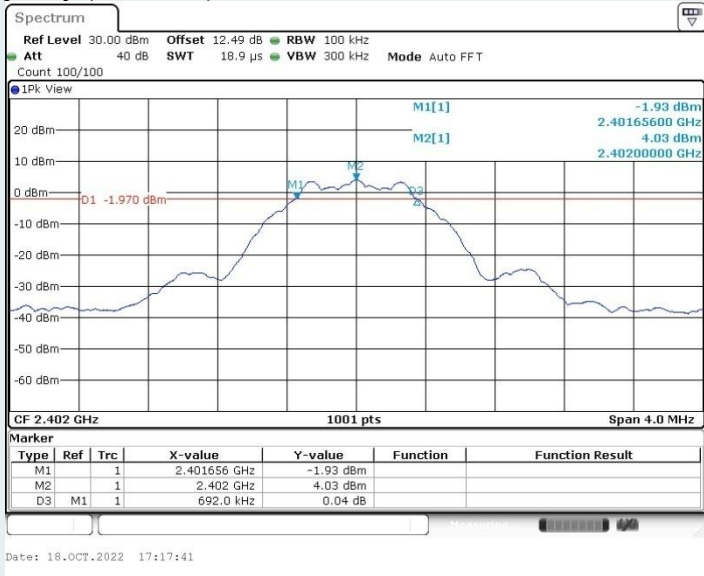
Highest Frequency (2480MHz)



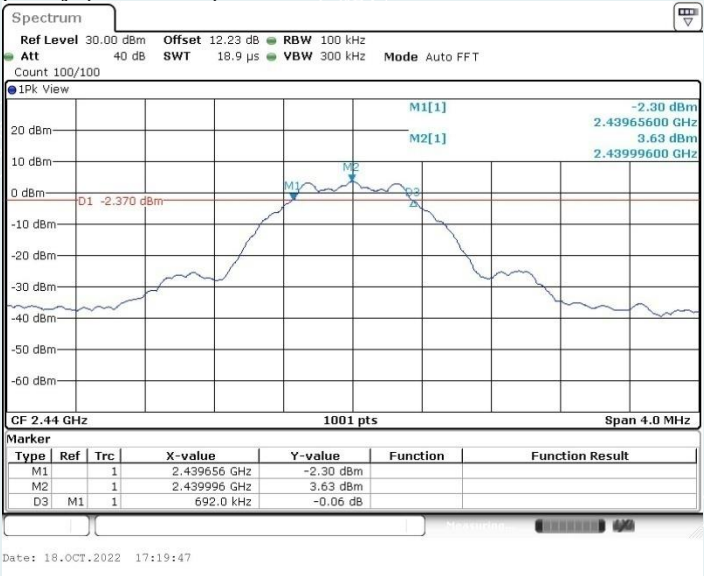
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Antenna 2

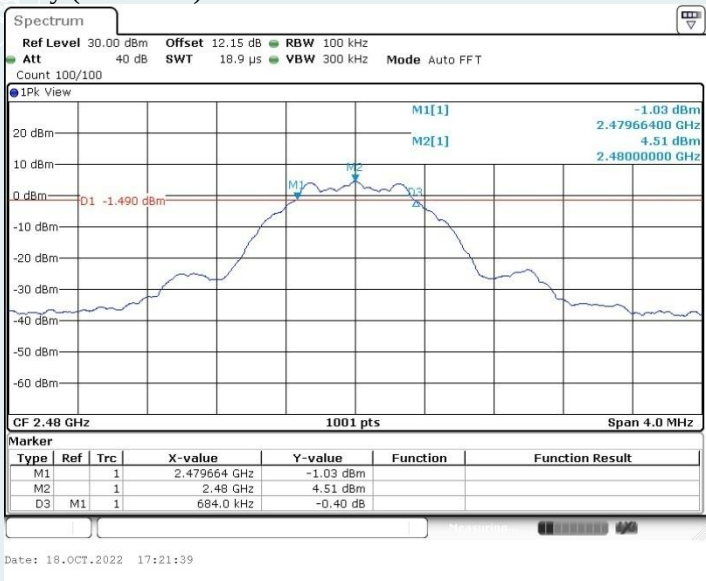
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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9. MAXIMUM PEAK OUTPUT POWER

9.1 LIMITS

The maximum Peak output power measurement is 1W

9.2 TEST PROCEDURES

- 1) RF output of EUT was connected to the broadband peak RF power meter by RF cable. The path loss was compensated to the results for each measurement.
- 2) Set to the maximum power setting and enable the EUT transmit continuously.
- 3) Measure the conducted output power and record the results in the test report.

9.3 TEST SETUP



9.4 TEST RESULTS

Environment: 25.8°C/60%RH/101.0kPa
Tested By: Qin Tingting

Voltage: DC 3.7V
Date: 2022-10-18

Antenna 1
BLE_1M

Channel	Frequency (MHz)	Maximum conducted peak output Power (dBm)	Maximum conducted Average output Power (dBm)	Peak power Limit	Result
Lowest	2402	3.47	-1.71	1W (30dBm)	Pass
Middle	2440	3.94	-1.24		Pass
Highest	2480	4.43	-0.97		Pass

Antenna 2
BLE_1M

Channel	Frequency (MHz)	Maximum conducted peak output Power (dBm)	Maximum conducted Average output Power (dBm)	Peak power Limit	Result
Lowest	2402	3.20	-1.93	1W (30dBm)	Pass
Middle	2440	3.59	-1.60		Pass
Highest	2480	4.09	-1.10		Pass

10. POWER SPECTRAL DENSITY

10.1 LIMITS

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

10.2 TEST PROCEDURES

- 1) Remove the antenna from the EUT, and then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 2) Position the EUT was set without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- 3) Set the analyzer span to 1.5 times the DTS bandwidth. Set the RBW to $3\text{ kHz} \leq \text{RBW} \leq 100\text{ kHz}$. 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 amplitude level within the RBW. If measured value exceeds requirement, then reduce RBW (but no less than 3kHz) and repeat.
- 4) Repeat above procedures until all frequencies measured were complete.

10.3 TEST SETUP



10.4 TEST RESULTS

Environment: 25.8°C/60%RH/101.0kPa
 Tested By: Qin Tingting

Voltage: DC 3.7V
 Date: 2022-10-18

Antenna 1

BLE_1M

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-12.92	8.00	PASS
Middle	2440	-13.07		PASS
Highest	2480	-12.17		PASS

Antenna 2

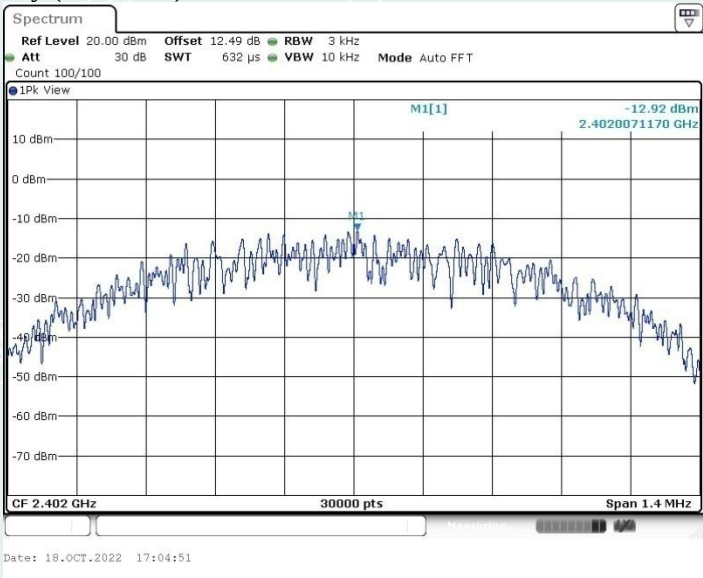
BLE_1M

Channel	Frequency (MHz)	PSD (dBm/3kHz)	Limit (dBm/3kHz)	Test Result
Lowest	2402	-13.29	8.00	PASS
Middle	2440	-13.61		PASS
Highest	2480	-12.81		PASS

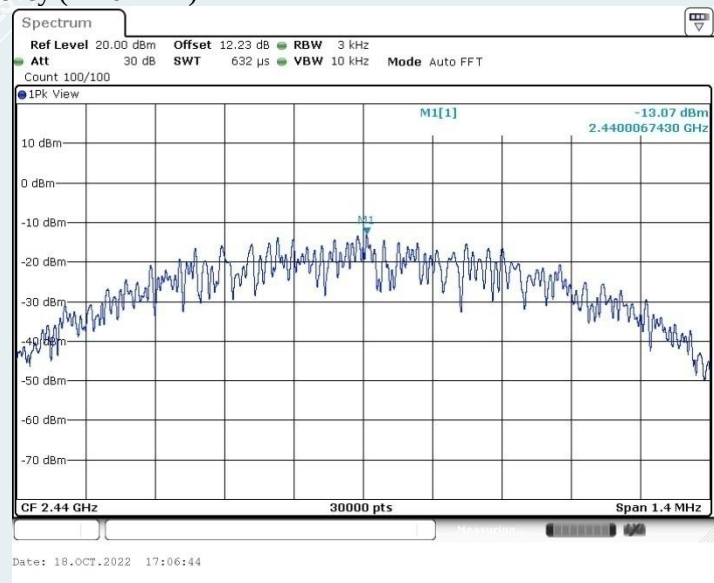
Antenna 1

BLE_1M

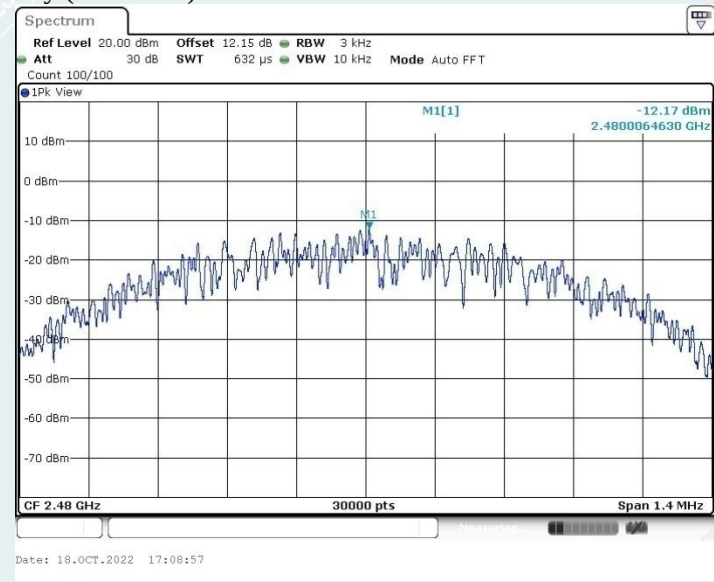
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



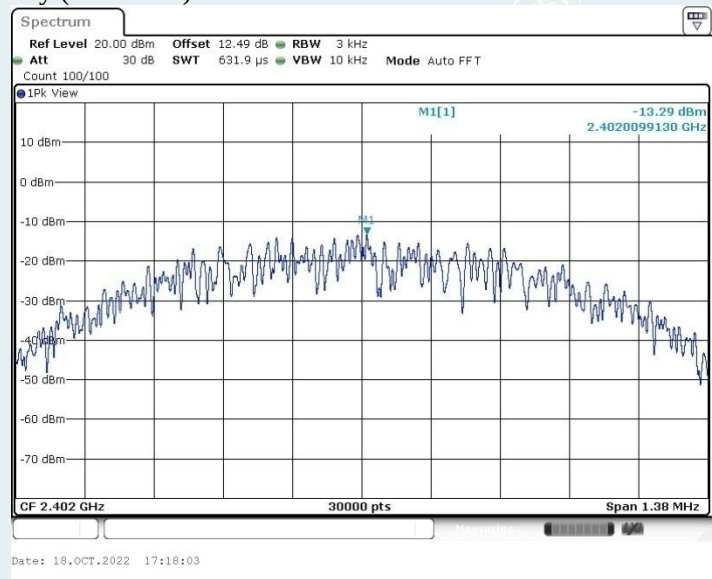
Highest Frequency (2480MHz)



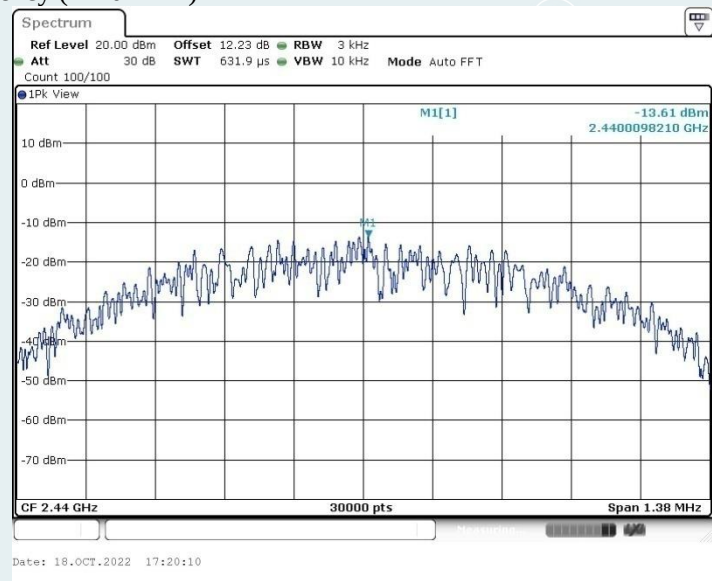
Antenna 2

BLE_1M

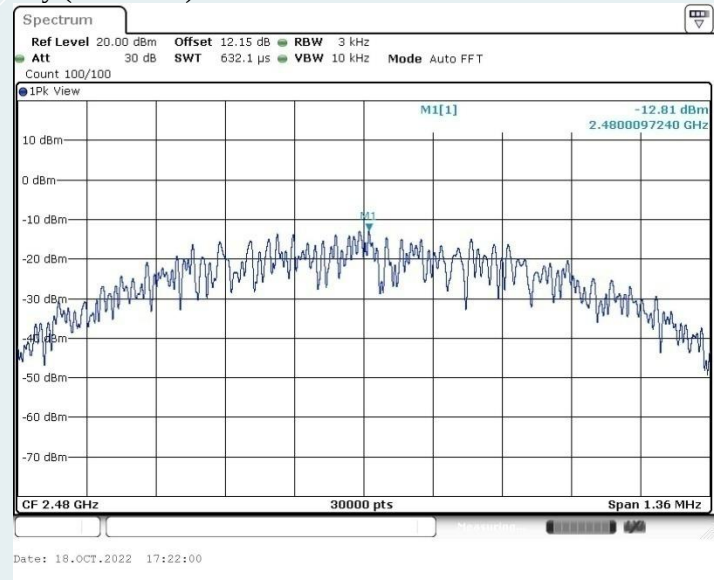
Lowest Frequency (2402MHz)



Middle Frequency (2440 MHz)



Highest Frequency (2480MHz)



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11. CONDUCTED BAND EDGES AND SPURIOUS EMISSIONS

11.1 LIMITS

In any 100kHz 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 20dB below that in the 100kHz 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 30dB instead of 20dB.

11.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 15.247 Measurement Guidance v05r02.

Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.

- 1) Remove the antenna from the EUT and then connect a low attenuation cable from the antenna port to the spectrum.
- 2) Set the spectrum analyzer: RBW =100kHz; VBW =300kHz, Frequency range = 30MHz to 26.5GHz; Sweep = auto; Detector Function = Peak. Trace = Max, hold.
- 3) Measure and record the results in the test report.
- 4) The RF fundamental frequency should be excluded against the limit line in the operating frequency band.

11.3 TEST SETUP



11.4 TEST RESULTS

Environment: 25.8°C/60%RH/101.0kPa
Tested By: Qin Tingting

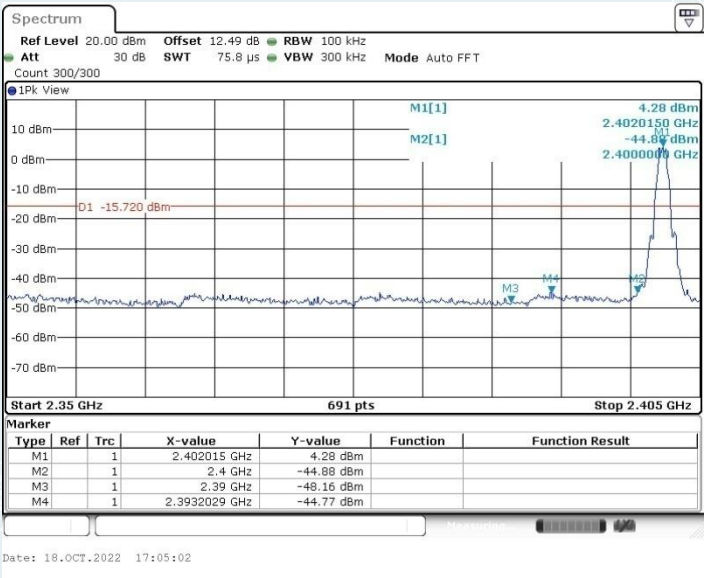
Voltage: DC 3.7V
Date: 2022-10-18

Antenna 1

Band edge measurements

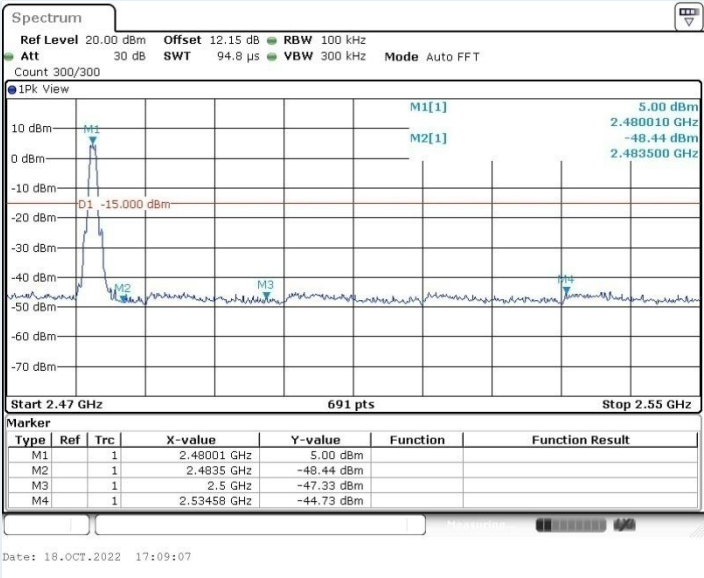
BLE_1M

Lowest Frequency (2402MHz)
2.35GHz-2.405GHz



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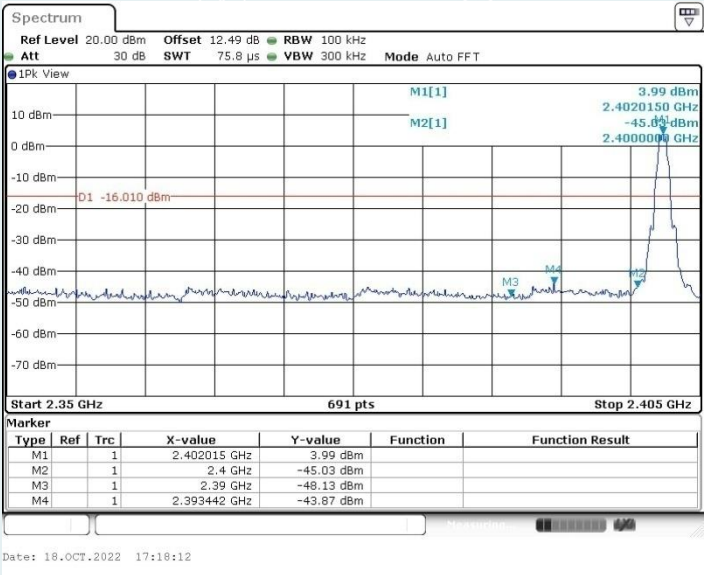
Highest Frequency (2480MHz)
2.47GHz-2.55GHz



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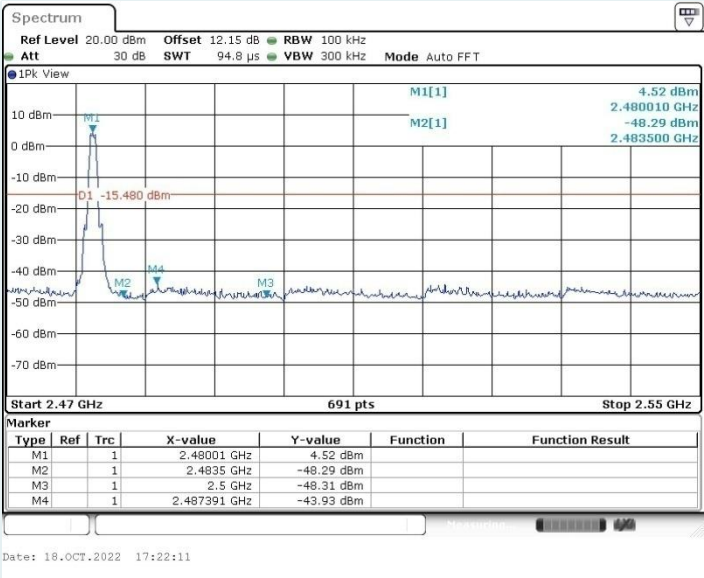
Antenna 2
Band edge measurements
BLE_1M

Lowest Frequency (2402MHz)
2.35GHz-2.405GHz



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Highest Frequency (2480MHz)
2.47GHz-2.55GHz



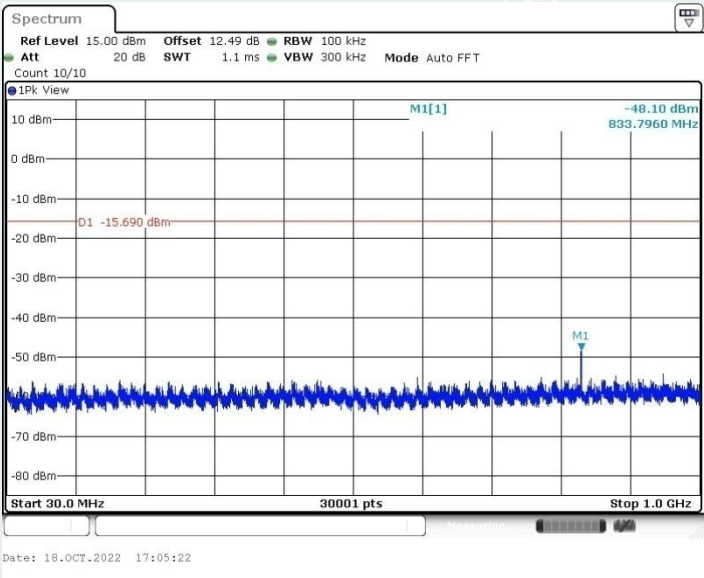
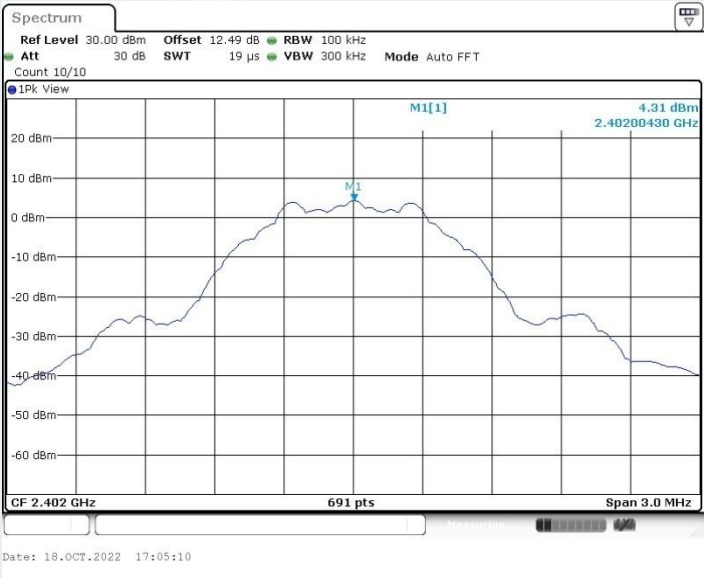
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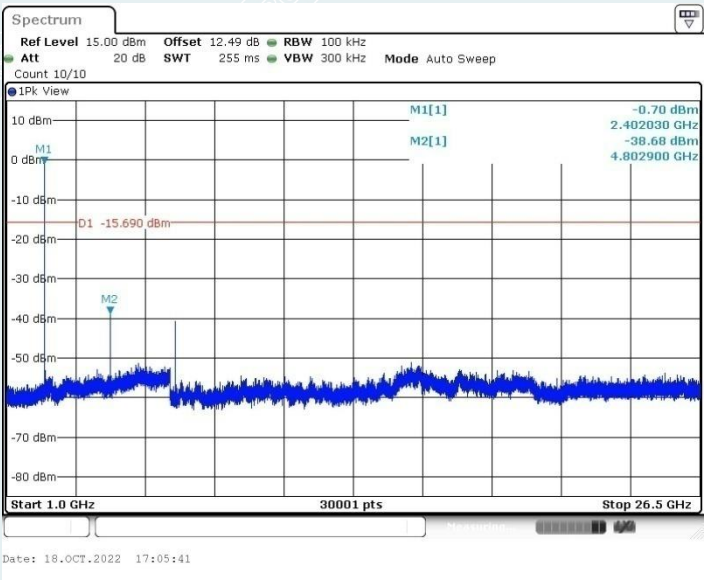
Conducted Spurious Emission

Antenna 1

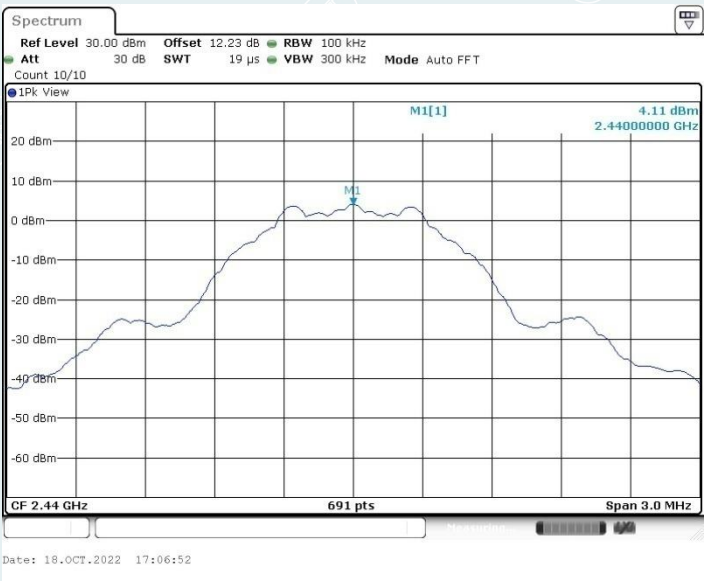
BLE_1M

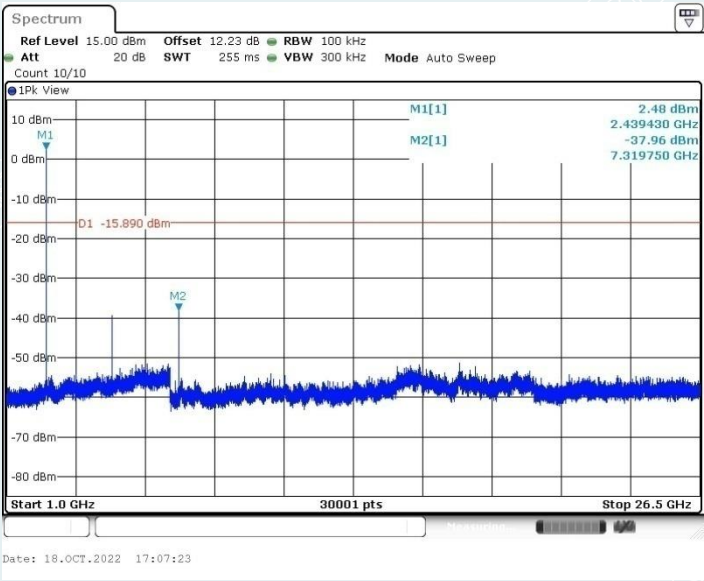
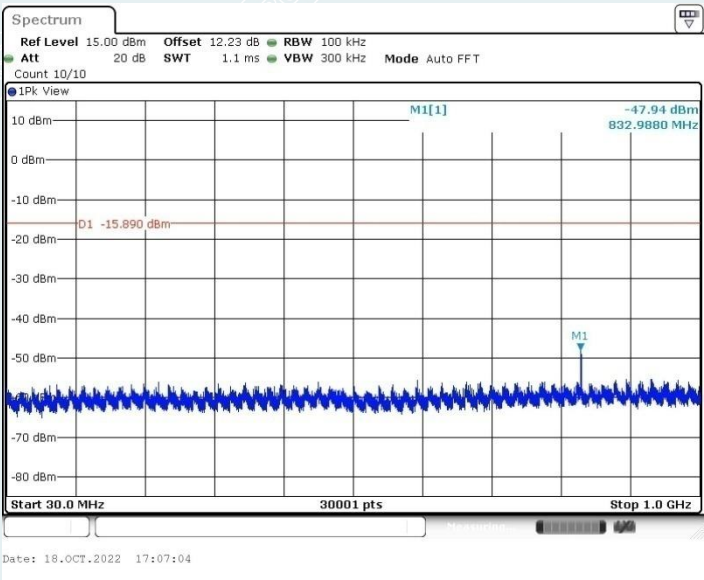
Lowest Frequency (2402MHz)



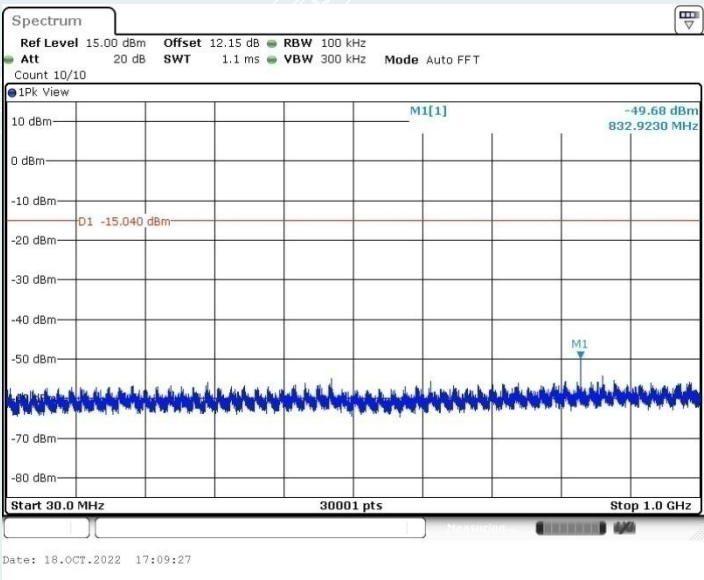


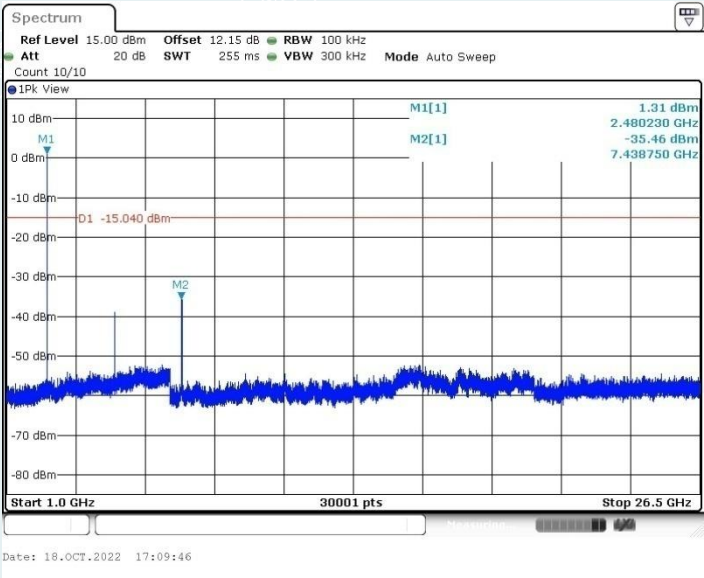
Middle Frequency (2440MHz)





Highest Frequency (2480MHz)



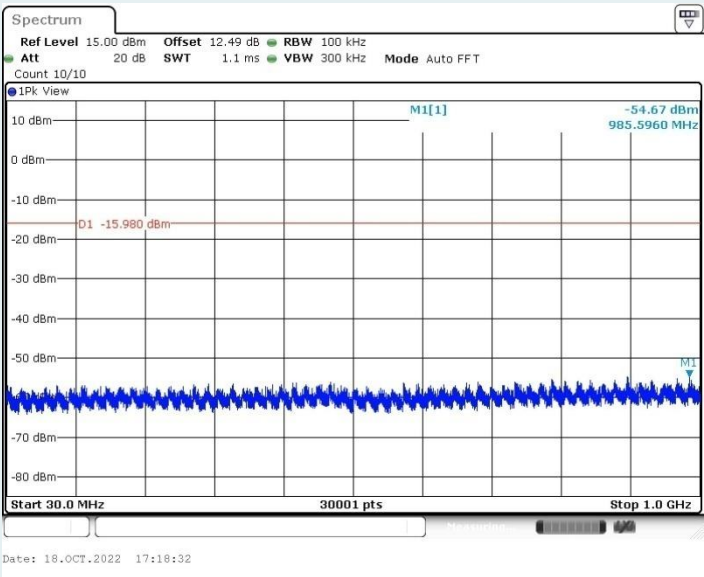
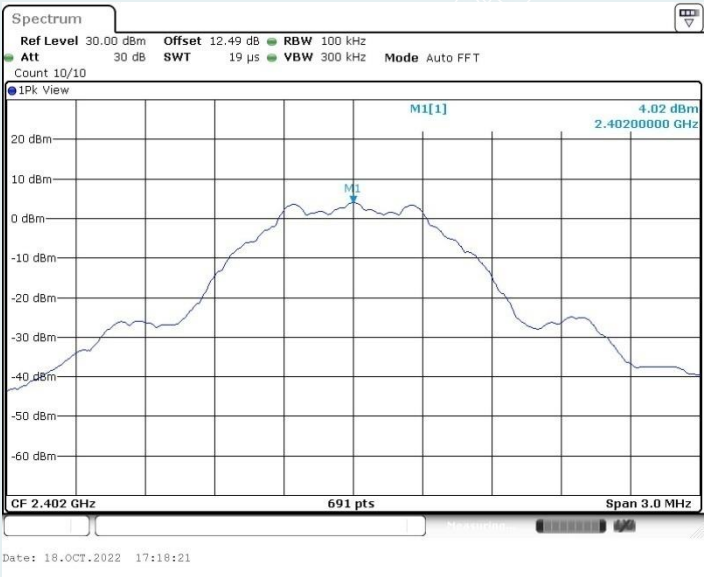


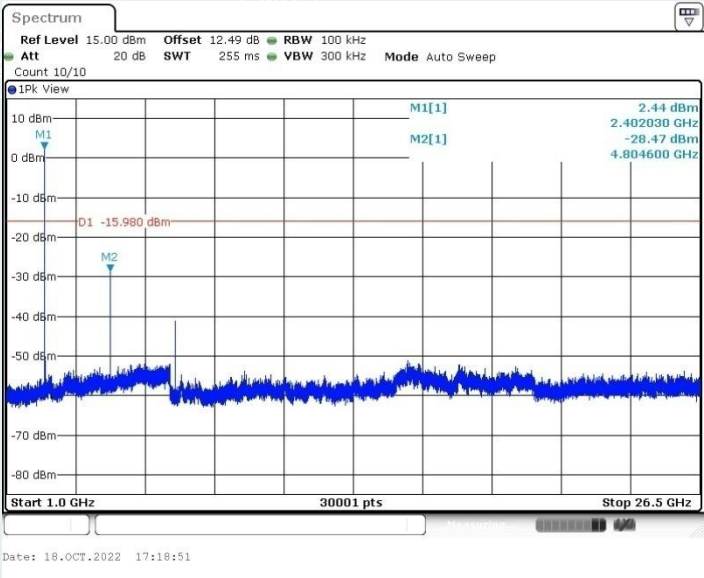
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Antenna 2

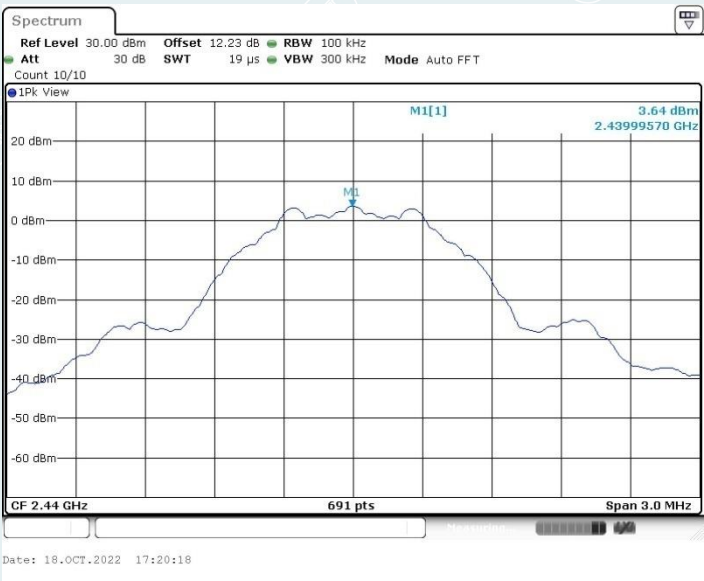
BLE_1M

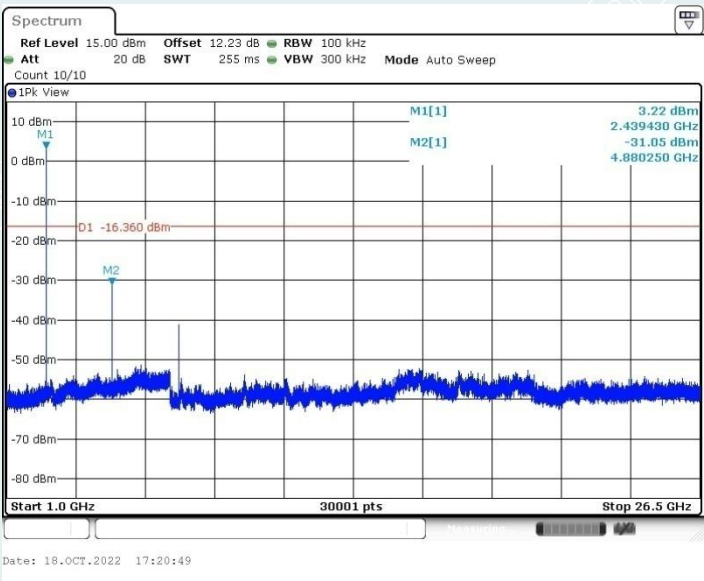
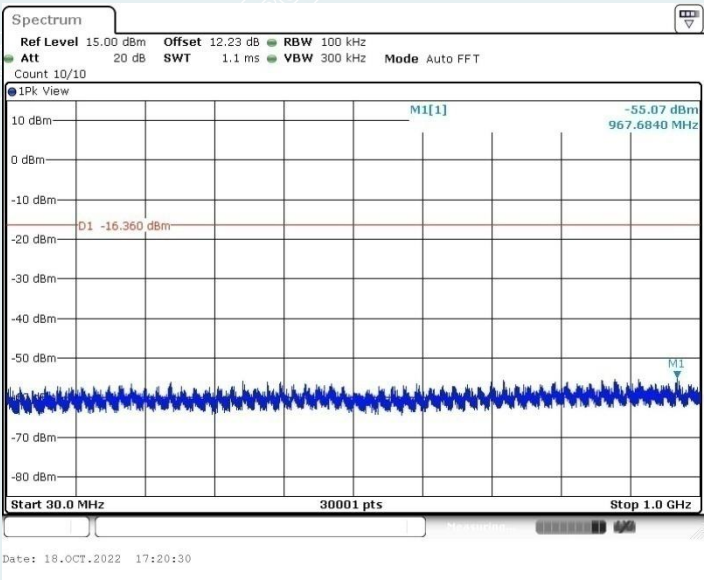
Lowest Frequency (2402MHz)



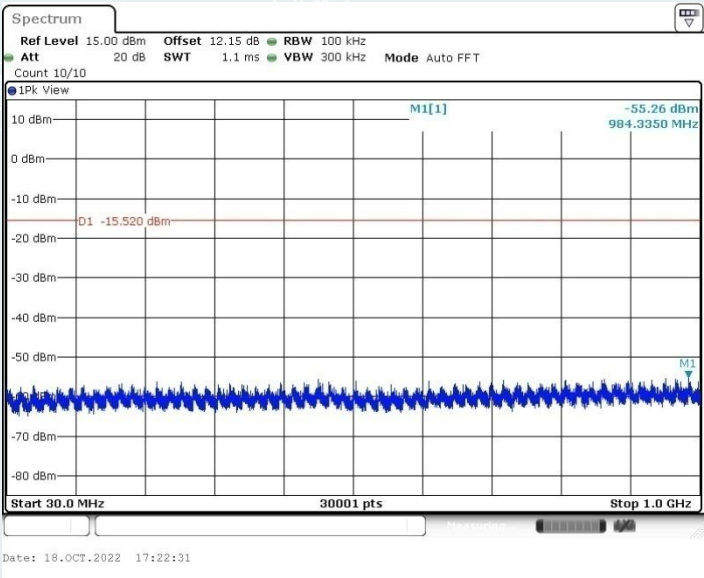
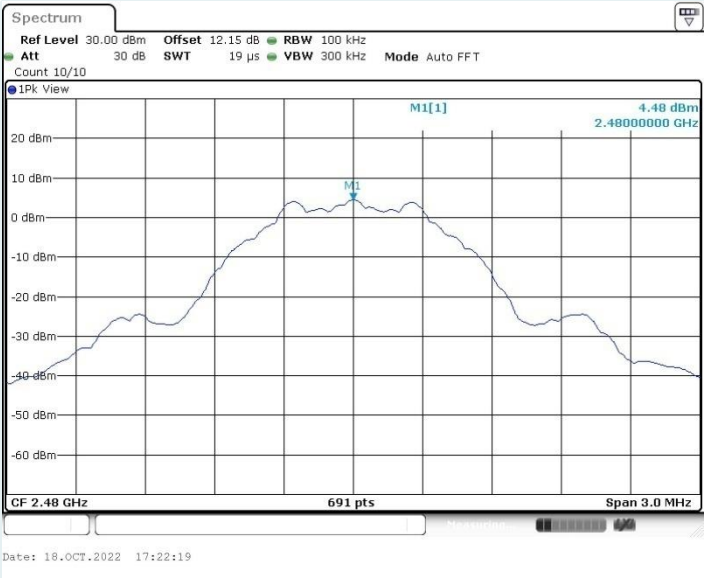


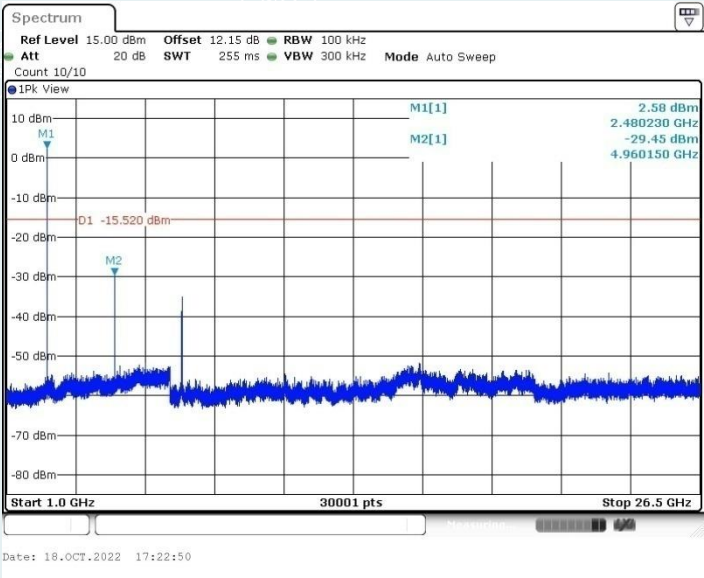
Middle Frequency (2440MHz)





Highest Frequency (2480MHz)





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12. RESTRICTED BANDS OF OPERATION

12.1 LIMITS

Section 15.247(d) 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)).

MHz	MHz	MHz	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	2655 - 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	
13.36 - 13.41			

Frequency (MHz)	Quasi-peak(μ V/m)	Measurement distance(m)	Quasi-peak(dB μ V/m)@distance 3m
0.009-0.490	2400/F(kHz)	300	128.5~93.8
0.490-1.705	24000/F(kHz)	30	73.8~63
1.705-30.0	30	30	69.5
30 ~ 88	100	3	40
88~216	150	3	43.5
216 ~ 960	200	3	46
Above 960	500	3	54

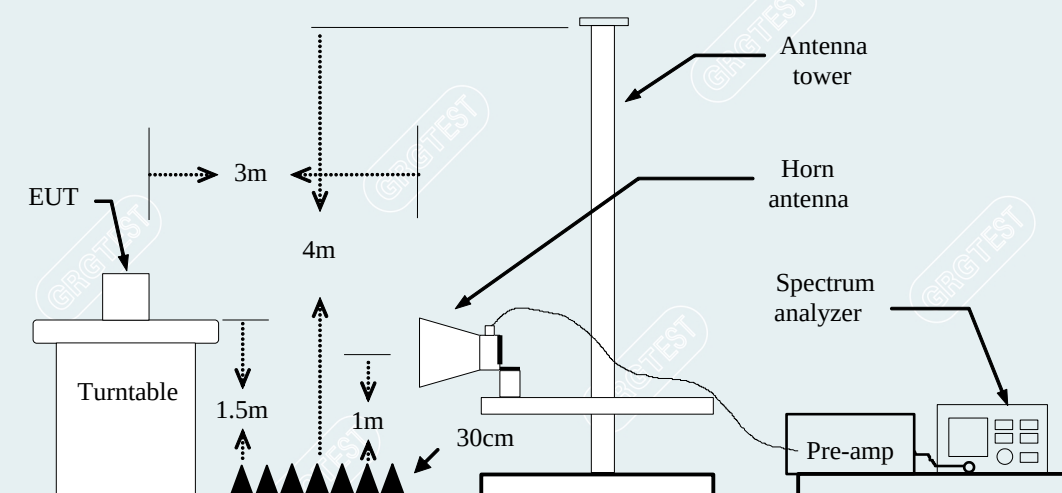
12.2 TEST PROCEDURES

Test procedures follow KDB 558074 D01 15.247 Meas Guidance v05r02.

- 1) The EUT is placed on a turntable, which is 1.5m above the ground plane.
- 2) The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
- 3) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emission.
- 4) Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
 - a) PEAK: RBW=1MHz / VBW=1MHz / Sweep=AUTO.
 - b) AVERAGE: RBW=1MHz / VBW=1/T / Sweep=AUTO.

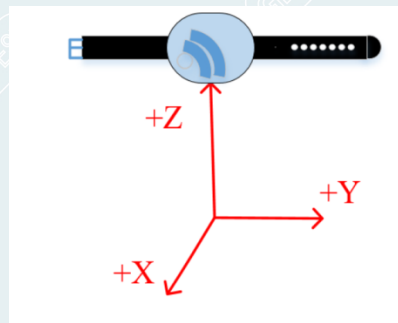
If the EUT is configured to transmit with duty cycle $\geq 98\%$, set $VBW \leq RBW/100$ (i.e., 10kHz) but not less than 10 Hz. If the EUT duty cycle is $< 98\%$, set $VBW \geq 1/T$, Where T is defined in section 2.9.
- 5) Repeat the procedures until all the PEAK and AVERAGE versus polarization are measured.

12.3 TEST SETUP



12.4 TEST RESULTS

The test are under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown the Z position only.



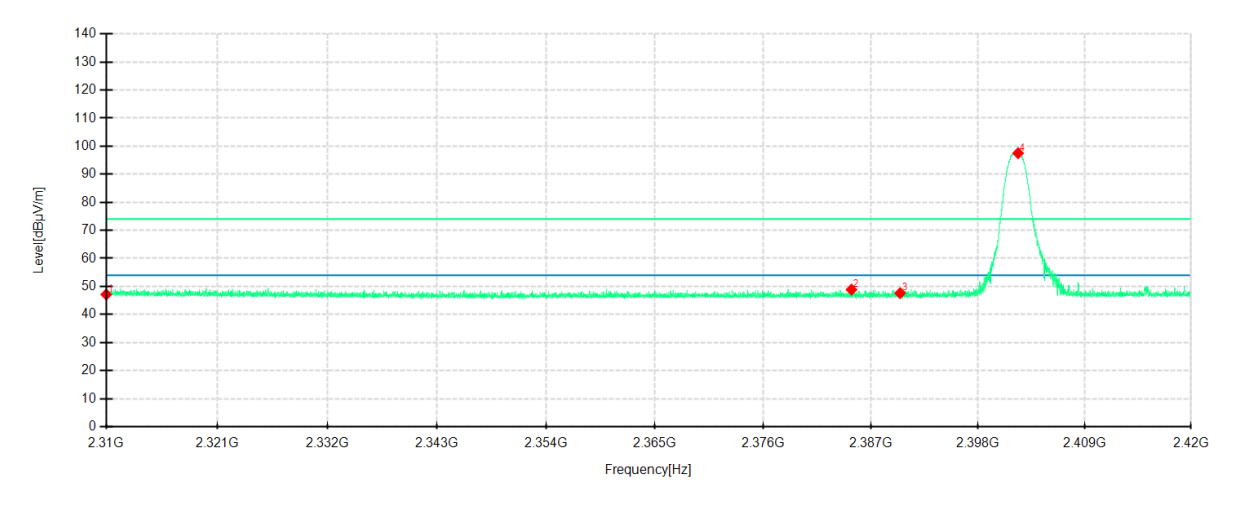
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Antenna 1

Equipment:	Blueiot RTLS Tag	Test Date	2022-09-22
Model No.:	BT1000-w	Test Engineer:	Zhang Qiang
Test Voltage:	DC 3.7V	Environmental:	25.0℃/51%RH/101.0kPa

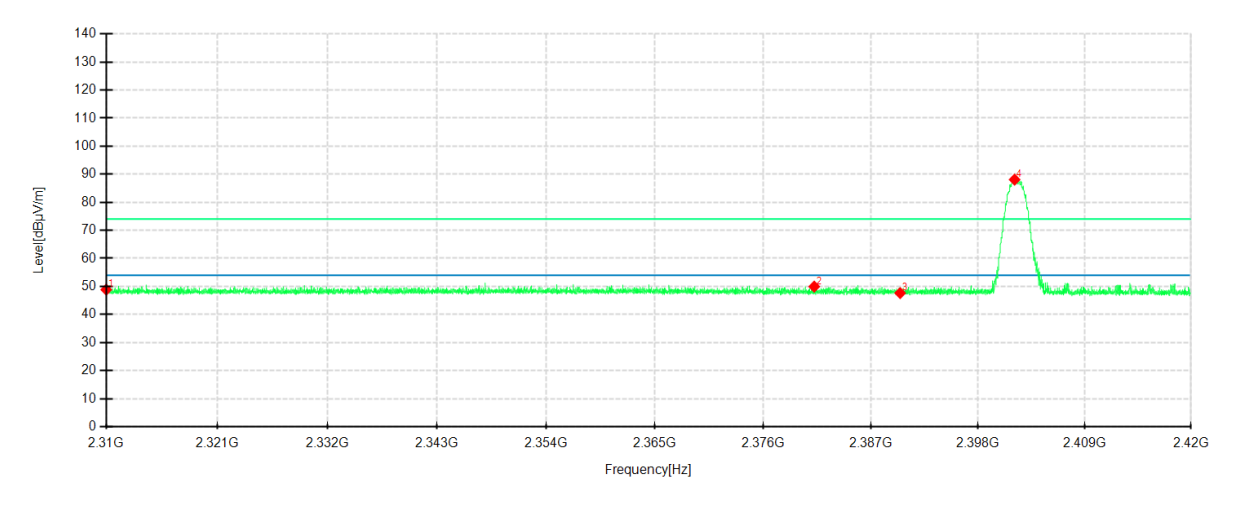
BLE 1M
Lowest Frequency
Frequency 2402MHz
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



No.	Frequency MHz	Reading dB μ V/m	Level dB μ V/m	Factor dB	Limit dB μ V/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.000	47.43	47.14	-0.29	74.00	26.86	200	187	Horizontal	/
2	2385.020	49.76	48.87	-0.89	74.00	25.13	200	94	Horizontal	/
3	2390.000	48.46	47.61	-0.85	74.00	26.39	200	156	Horizontal	/
4	2402.125	98.24	97.49	-0.75	74.00	-23.49	100	172	Horizontal	No limit
1	2310.000	48.57	48.86	0.29	74.00	25.14	200	173	Vertical	/
2	2381.214	49.59	49.94	0.35	74.00	24.06	100	187	Vertical	/
3	2390.000	47.34	47.63	0.29	74.00	26.37	200	173	Vertical	/
4	2401.762	87.87	88.08	0.21	74.00	-14.08	200	266	Vertical	No limit

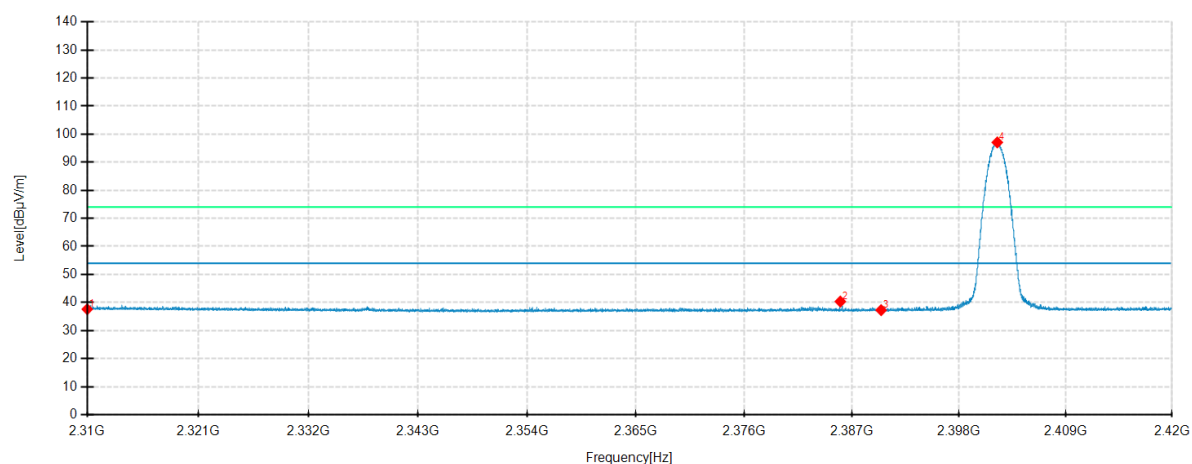
----- The following blanks -----

Lowest Frequency

Frequency 2402MHz

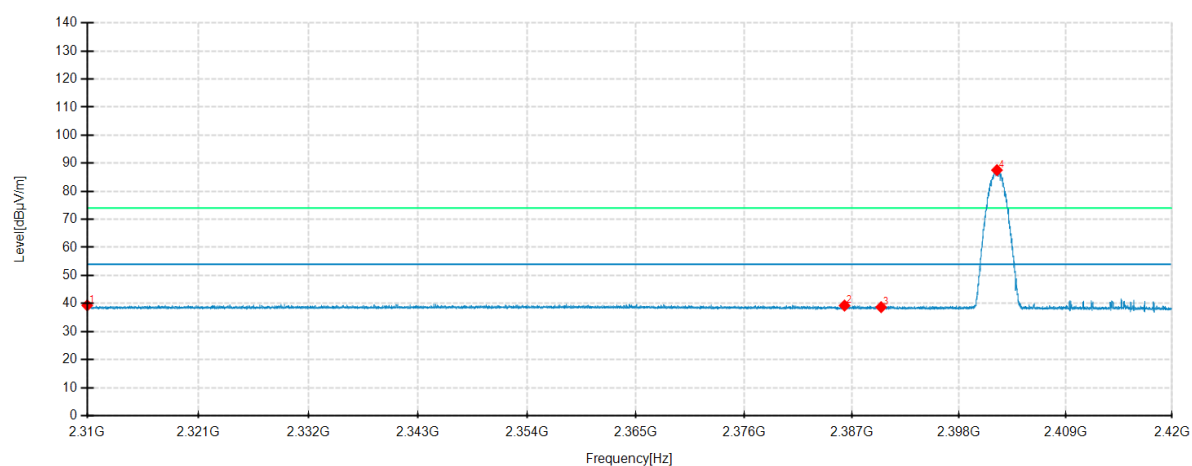
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



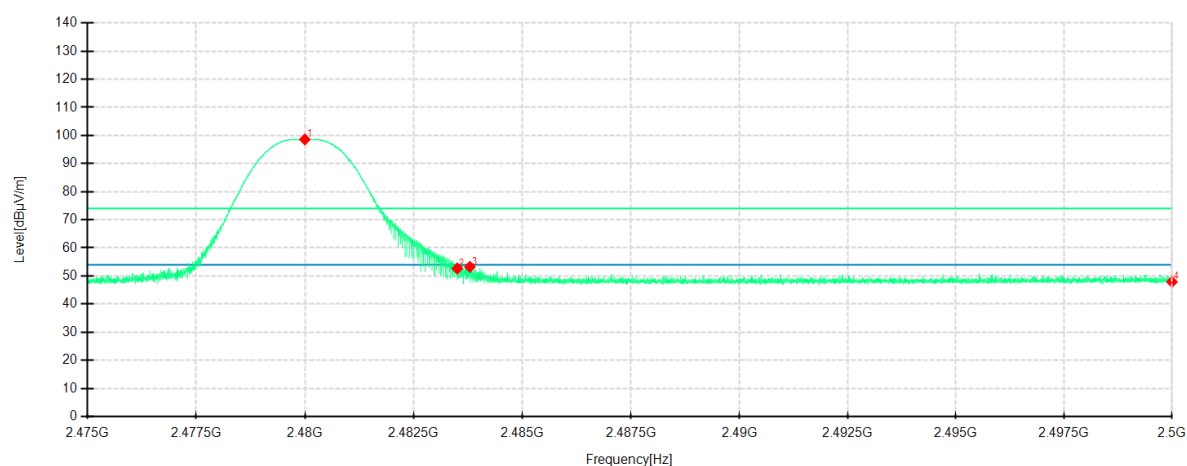
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310.000	37.90	37.61	-0.29	54.00	16.39	200	187	Horizontal	/
2	2385.823	41.21	40.33	-0.88	54.00	13.67	200	32	Horizontal	/
3	2390.000	38.11	37.26	-0.85	54.00	16.74	200	187	Horizontal	/
4	2401.938	97.82	97.07	-0.75	54.00	-43.07	100	173	Horizontal	No limit
1	2310.000	39.02	39.31	0.29	54.00	14.69	200	246	Vertical	/
2	2386.252	38.93	39.25	0.32	54.00	14.75	100	188	Vertical	/
3	2390.000	38.39	38.68	0.29	54.00	15.32	100	147	Vertical	/
4	2401.905	87.35	87.55	0.20	54.00	-33.55	200	266	Vertical	No limit

Highest Frequency

Frequency 2480MHz

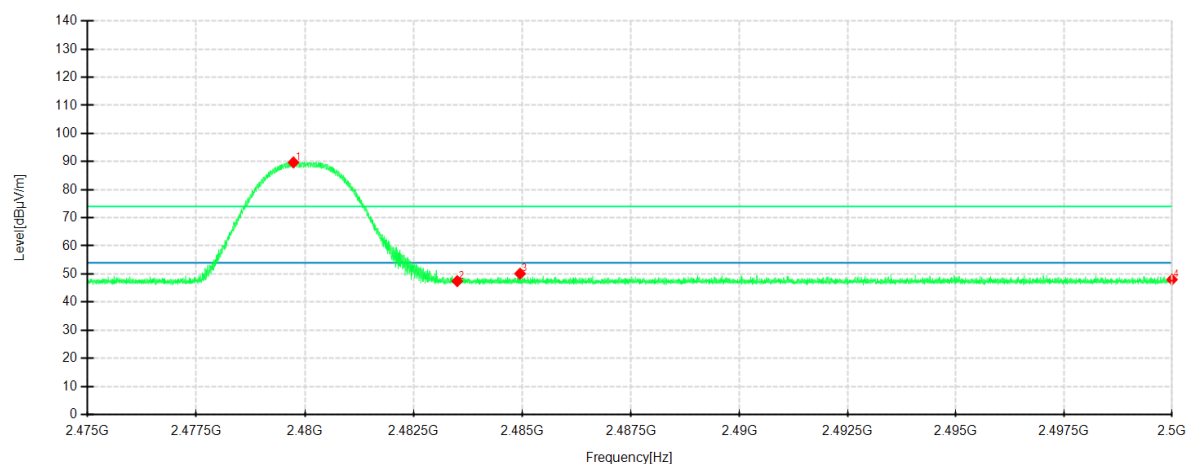
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



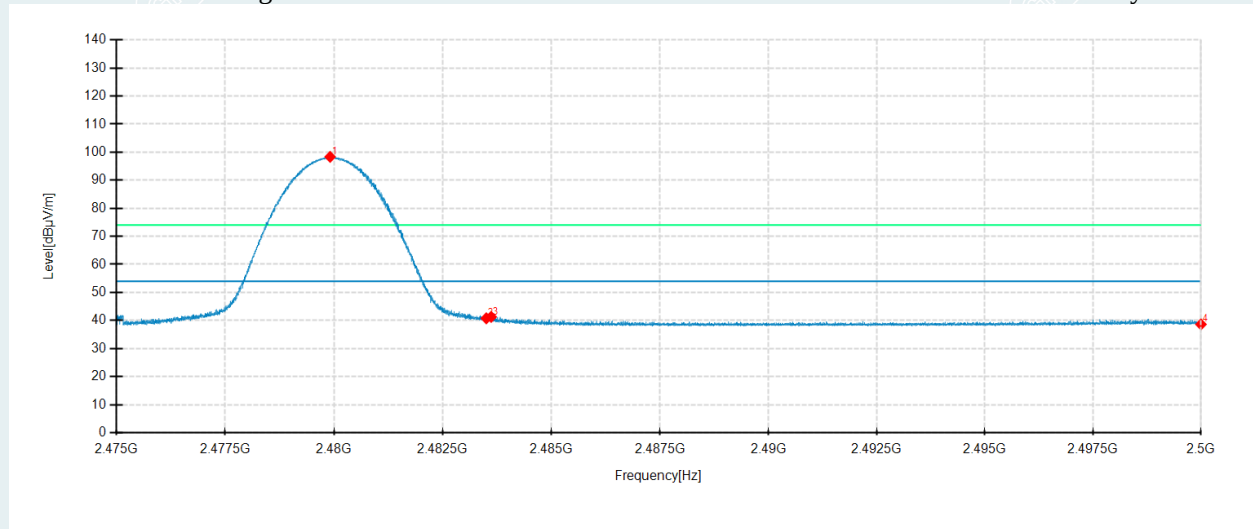
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBuV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.995	98.40	98.59	0.19	74.00	-24.59	100	173	Horizontal	No limit
2	2483.500	52.39	52.65	0.26	74.00	21.35	100	173	Horizontal	/
3	2483.790	52.98	53.24	0.26	74.00	20.76	200	62	Horizontal	/
4	2500.000	47.32	47.90	0.58	74.00	26.10	200	135	Horizontal	/
1	2479.733	90.08	89.69	-0.39	74.00	-15.69	200	215	Vertical	No limit
2	2483.500	47.83	47.45	-0.38	74.00	26.55	200	172	Vertical	/
3	2484.945	50.47	50.10	-0.37	74.00	23.90	100	147	Vertical	/
4	2500.000	48.33	48.01	-0.32	74.00	25.99	100	188	Vertical	/

Highest Frequency

Frequency 2480MHz

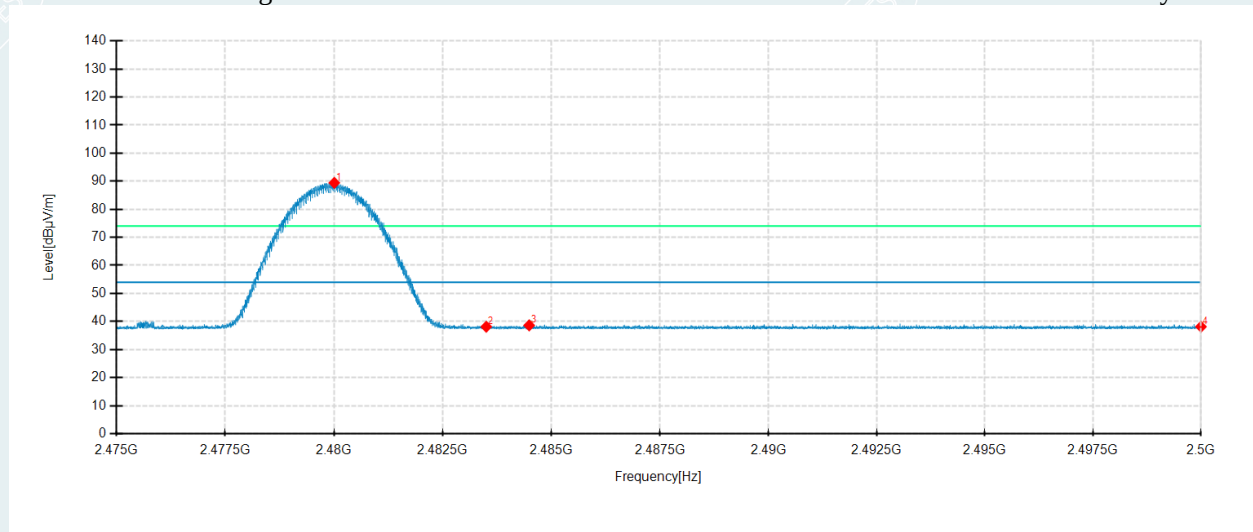
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.910	98.15	98.34	0.19	54.00	-44.34	100	171	Horizontal	No limit
2	2483.500	40.52	40.78	0.26	54.00	13.22	100	171	Horizontal	/
3	2483.613	41.02	41.28	0.26	54.00	12.72	100	171	Horizontal	/
4	2500.000	38.04	38.62	0.58	54.00	15.38	200	11	Horizontal	/
1	2480.005	89.81	89.42	-0.39	54.00	-35.42	200	213	Vertical	No limit
2	2483.500	38.51	38.13	-0.38	54.00	15.87	100	187	Vertical	/
3	2484.488	38.99	38.62	-0.37	54.00	15.38	200	172	Vertical	/
4	2500.000	38.46	38.14	-0.32	54.00	15.86	200	245	Vertical	/

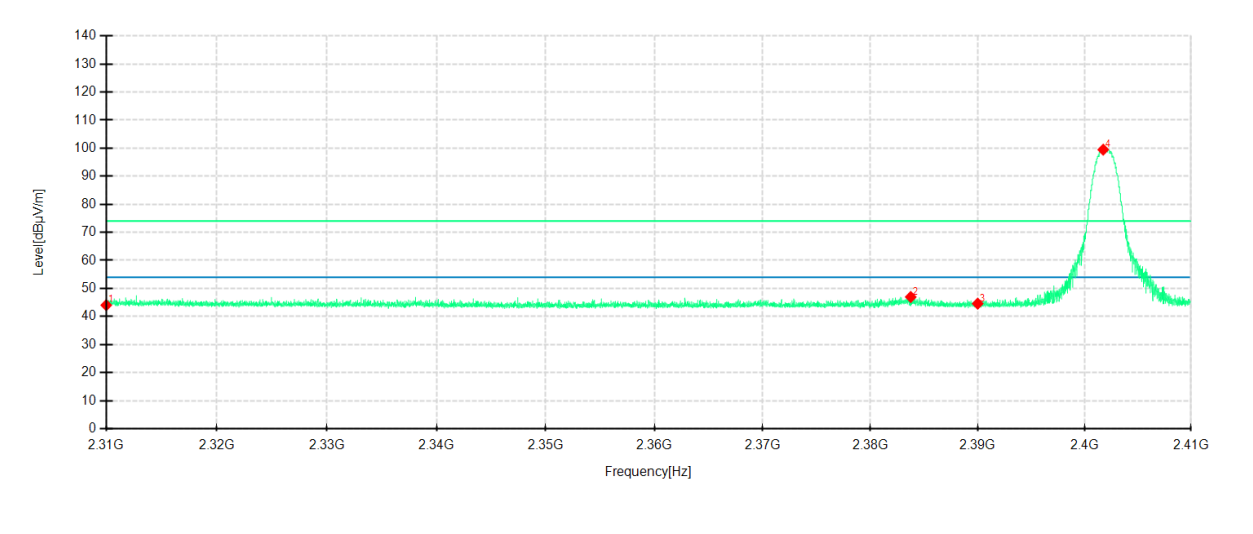
Remark: Max field strength in 3m distance. No any other emission which falls in restricted bands can be found.

Antenna 2

Equipment:	Blueiot RTLS Tag	Test Date	2022-10-25
Model No.:	BT1000-w	Test Engineer:	Zhang Qiang
Test Voltage:	DC 3.7V	Environmental:	25.0℃/51%RH/101.0kPa

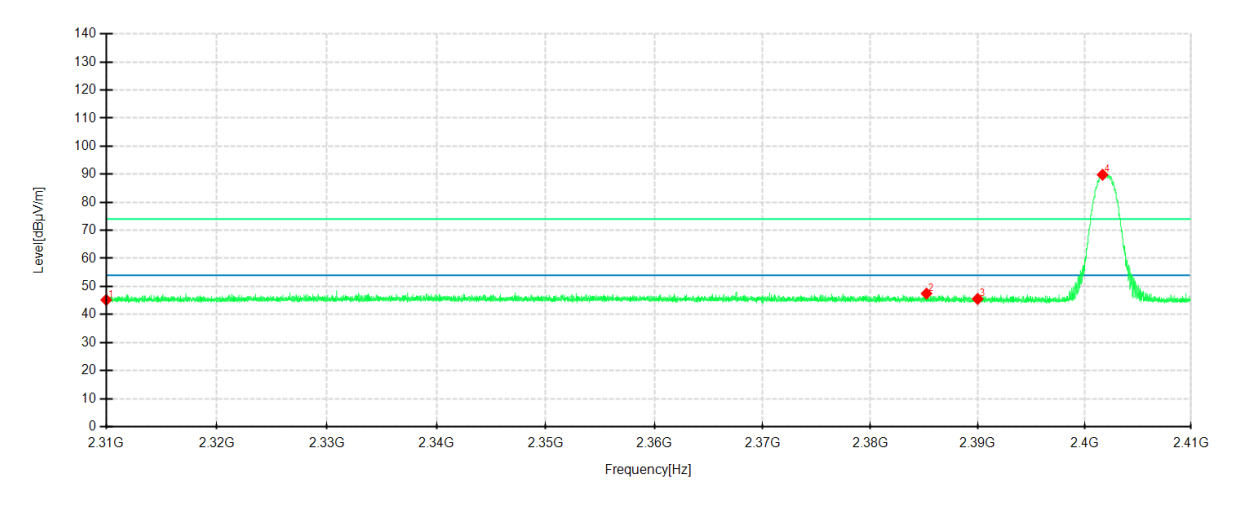
BLE 1M
Lowest Frequency
Frequency 2402MHz
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



No.	Frequency MHz	Reading dB μ V/m	Level dB μ V/m	Factor dB	Limit dB μ V/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310	44.31	44.02	-0.29	74.00	29.98	100	84	Horizontal	/
2	2383.7574	47.84	46.95	-0.89	74.00	27.05	100	138	Horizontal	/
3	2390	45.42	44.57	-0.85	74.00	29.43	100	188	Horizontal	/
4	2401.7492	100.23	99.47	-0.76	74.00	-25.47	100	188	Horizontal	No limit
1	2310	44.90	45.19	0.29	74.00	28.81	100	172	Vertical	/
2	2385.2275	47.14	47.46	0.32	74.00	26.54	200	188	Vertical	/
3	2390	45.25	45.54	0.29	74.00	28.46	200	158	Vertical	/
4	2401.6892	89.60	89.81	0.21	74.00	-15.81	200	188	Vertical	No limit

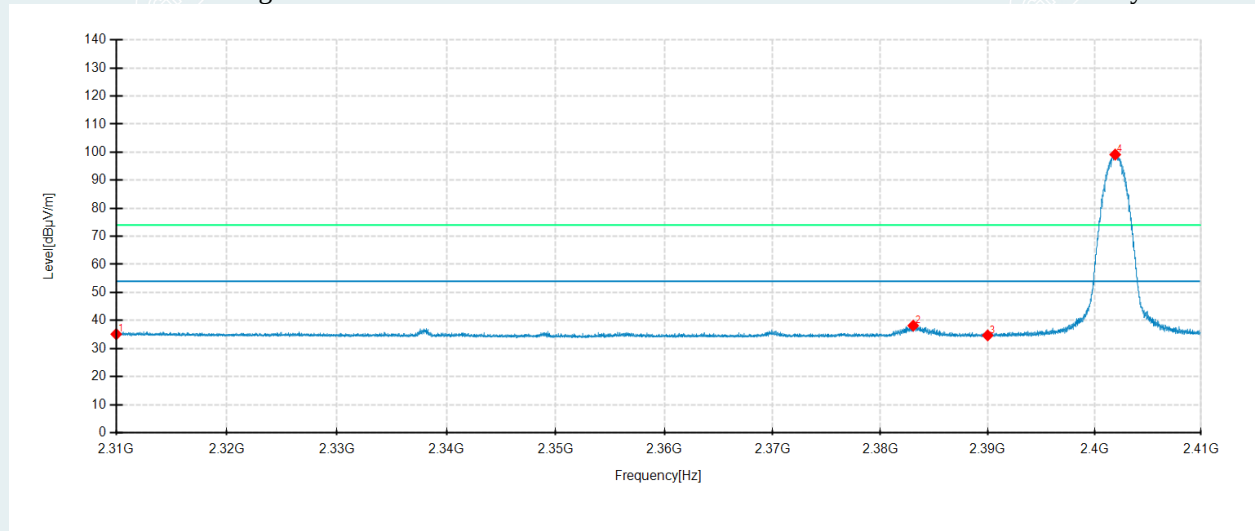
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Lowest Frequency

Frequency 2402MHz

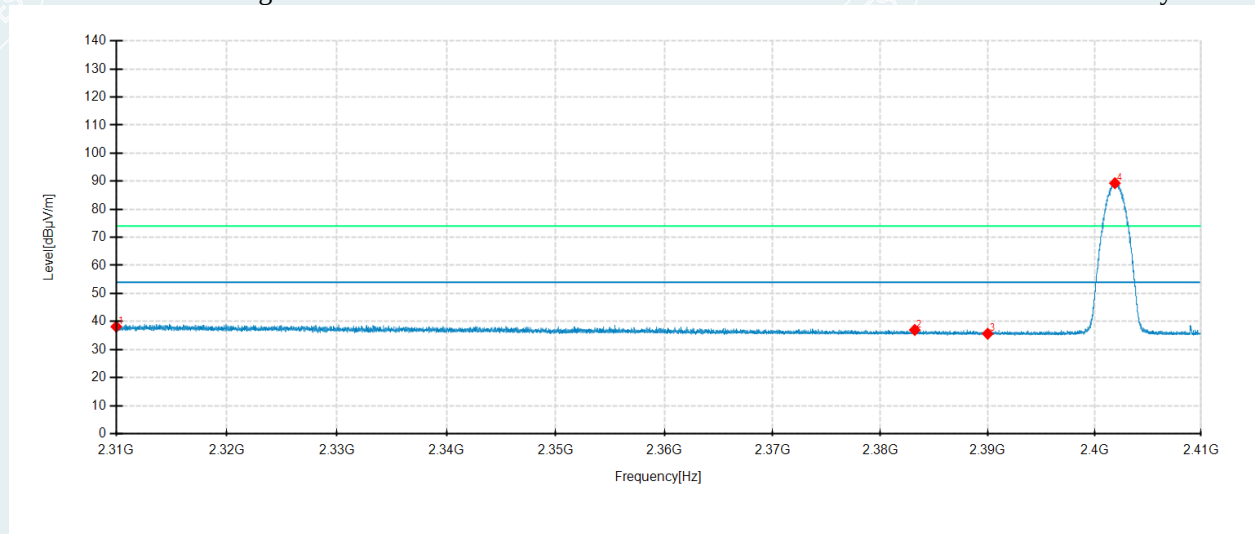
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

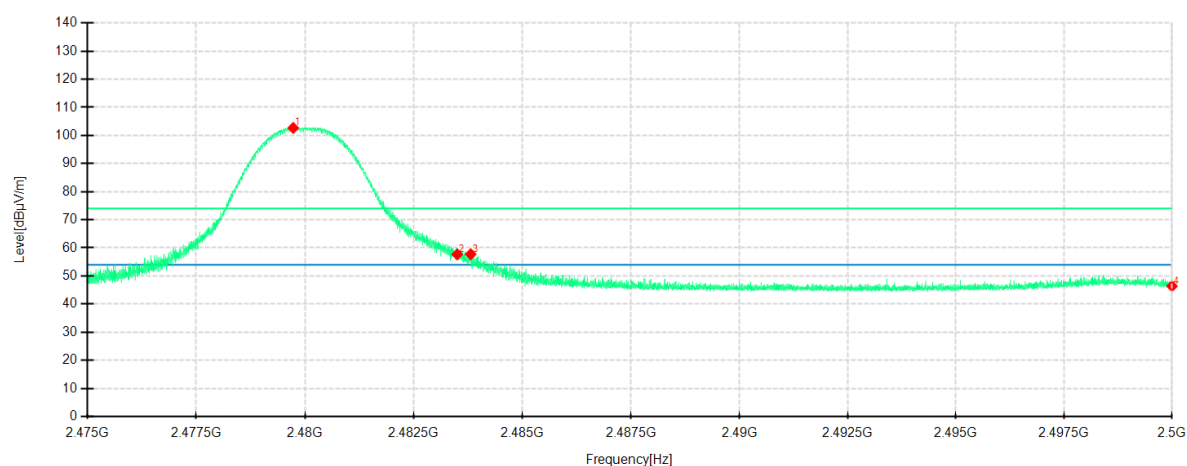
Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2310	35.42	35.13	-0.29	54.00	18.87	200	173	Horizontal	/
2	2383.0573	39.06	38.16	-0.90	54.00	15.84	100	188	Horizontal	/
3	2390	35.53	34.68	-0.85	54.00	19.32	100	188	Horizontal	/
4	2401.9392	99.90	99.15	-0.75	54.00	-45.15	100	188	Horizontal	No limit
1	2310	37.86	38.15	0.29	54.00	15.85	100	171	Vertical	/
2	2383.1973	36.64	36.98	0.34	54.00	17.02	100	171	Vertical	/
3	2390	35.34	35.63	0.29	54.00	18.37	100	171	Vertical	/
4	2401.9092	89.10	89.30	0.20	54.00	-35.30	200	187	Vertical	No limit

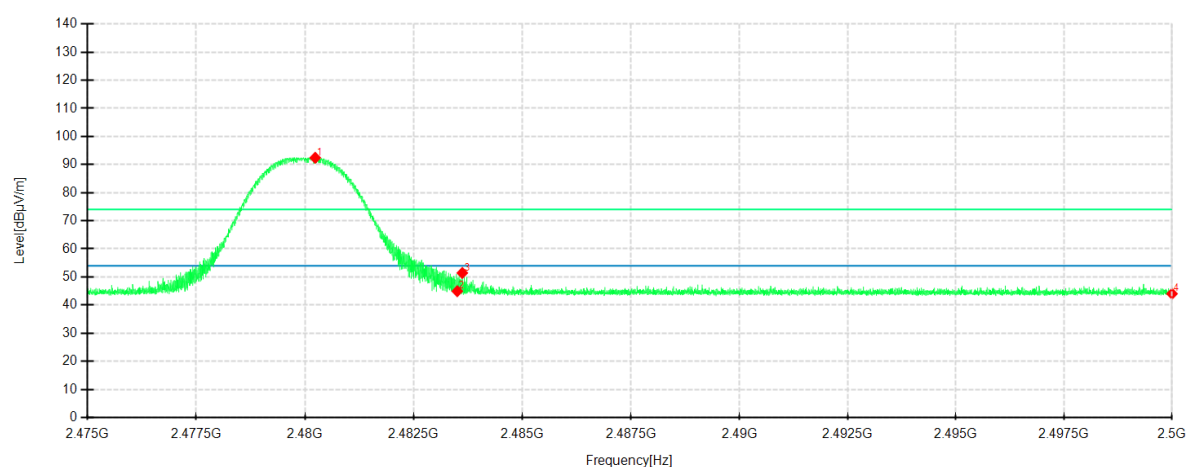
Highest Frequency
Frequency 2480MHz
Detector mode: Peak

Polarity: Horizontal



Detector mode: Peak

Polarity: Vertical



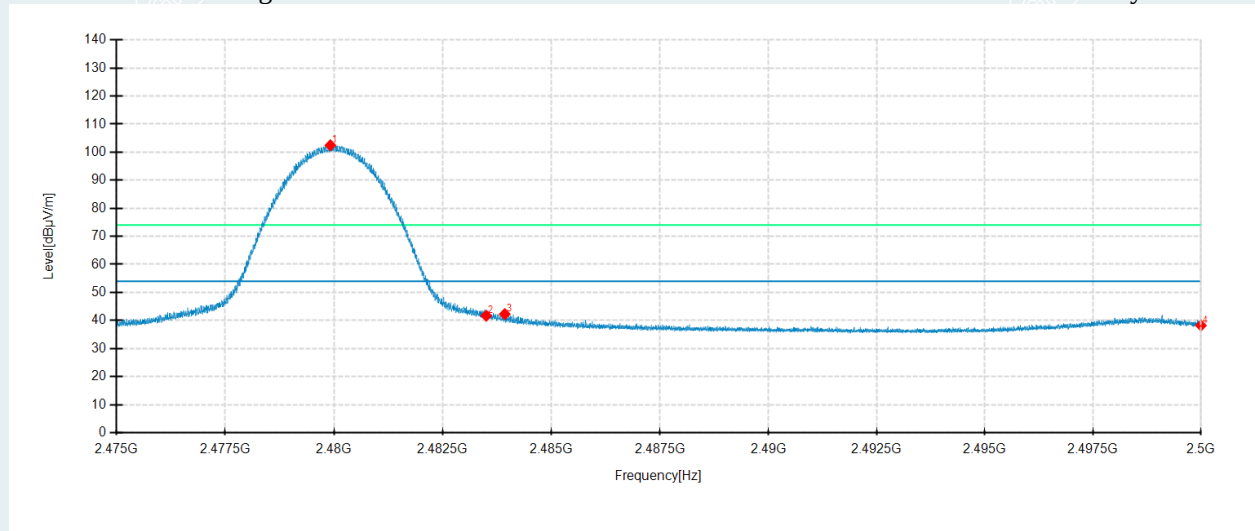
No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.728	102.48	102.67	0.19	74.00	-28.67	100	189	Horizontal	No limit
2	2483.5	57.44	57.70	0.26	74.00	16.30	100	103	Horizontal	/
3	2483.8084	57.48	57.74	0.26	74.00	16.26	100	189	Horizontal	/
4	2500	45.79	46.37	0.58	74.00	27.63	100	189	Horizontal	/
1	2480.233	92.79	92.40	-0.39	74.00	-18.40	200	188	Vertical	No limit
2	2483.5	45.32	44.94	-0.38	74.00	29.06	100	172	Vertical	/
3	2483.6159	51.80	51.42	-0.38	74.00	22.58	200	188	Vertical	/
4	2500	44.34	44.02	-0.32	74.00	29.98	100	172	Vertical	/

Highest Frequency

Frequency 2480MHz

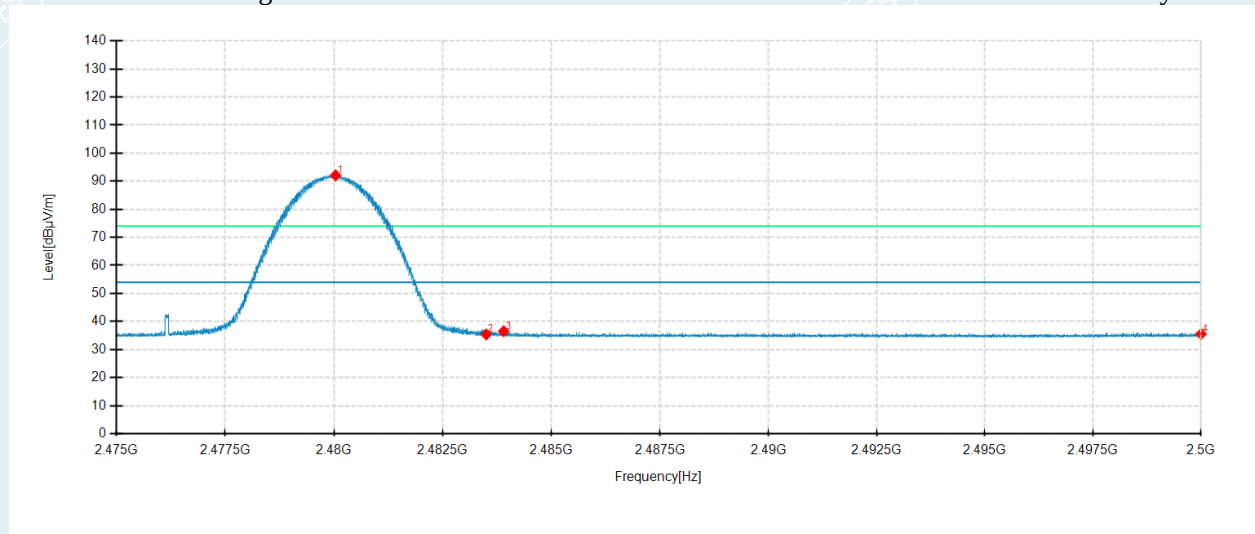
Detector mode: Average

Polarity: Horizontal



Detector mode: Average

Polarity: Vertical



No.	Frequency MHz	Reading dBμV/m	Level dBμV/m	Factor dB	Limit dBμV/m	Margin dB	Height cm	Angle °	Pole	Remark
1	2479.9155	102.27	102.46	0.19	54.00	-48.46	100	188	Horizontal	No limit
2	2483.5	41.43	41.69	0.26	54.00	12.31	100	188	Horizontal	/
3	2483.9259	42.00	42.27	0.27	54.00	11.73	100	188	Horizontal	/
4	2500	37.63	38.21	0.58	54.00	15.79	100	188	Horizontal	/
1	2480.0355	92.48	92.09	-0.39	54.00	-38.09	200	188	Vertical	No limit
2	2483.5	35.75	35.37	-0.38	54.00	18.63	200	144	Vertical	/
3	2483.9009	36.87	36.50	-0.37	54.00	17.50	200	188	Vertical	/
4	2500	35.85	35.53	-0.32	54.00	18.47	100	226	Vertical	/

Remark: Max field strength in 3m distance. No any other emission which falls in restricted bands can be found.

APPENDIX A. PHOTOGRAPH OF THE TEST CONNECTION DIAGRAM

Please refer to the attached document E202208182745-4-Test Photo.

APPENDIX B. PHOTOGRAPH OF THE EUT

Please refer to the attached document E202208182745-5-EUT Photo.

----- End of Report -----