



EN300 328 RF TEST REPORT

Applicant	:	Harman International Industries, Inc.
Address of Applicant	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Manufacturer	:	Harman International Industries, Inc.
Address of Manufacturer	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Equipment under Test	:	Portable Bluetooth Speaker
Model No.	:	TUNER 3
Test Standard(s)	:	EN 300 328 V2.2.2 (2019-07)
Report No.	:	DDT-RE25030538-1E03
Issue Date	:	2025/03/31
Issued By	:	Guangdong Dongdian Testing Service Co., Ltd. Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808

REPORT

Table of Contents

1.	Summary of Test Results	6
2.	General Test Information.....	7
2.1.	Description of EUT	7
2.2.	Accessories of EUT	8
2.3.	Block diagram of EUT configuration for test	8
2.4.	Decision of final test mode	8
2.5.	Deviations of test standard	9
2.6.	Test environment conditions	9
2.7.	Test laboratory	10
2.8.	Measurement uncertainty	11
3.	Equipment Used During Conductive Test	12
4.	RF Output Power.....	13
4.1.	Block diagram of test setup	13
4.2.	Limits.....	13
4.3.	Test procedure	13
4.4.	Test result	14
4.5.	Test graphs	15
5.	Power Spectral Density	21
5.1.	Block diagram of test setup	21
5.2.	Limits.....	21
5.3.	Test procedure	21
5.4.	Test result	22
5.5.	Test graphs	23
6.	Occupied Channel Bandwidth	25
6.1.	Block diagram of test setup	25
6.2.	Limits.....	25
6.3.	Test procedure	25
6.4.	Test result	26
6.5.	Test graphs	27
7.	Transmitter Unwanted Emissions in The Out-of-band Domain.....	29
7.1.	Block diagram of test setup	29
7.2.	Limits.....	29
7.3.	Test procedure	29
7.4.	Test result	30
7.5.	Test graphs	31
8.	Receiver Blocking.....	34

8.1.	Block diagram of test setup	34
8.2.	Limits	34
8.3.	Test procedure	37
8.4.	Test result	38
8.5.	Test graphs	39
9.	Transmitter unwanted emissions in the spurious domain	41
9.1.	Test equipment	41
9.2.	Block diagram of test setup	42
9.3.	Limits	42
9.4.	Assistant equipment used for test	43
9.5.	Test procedure	43
9.6.	Test result	43
9.7.	Test data	44
10.	Receiver spurious emissions	60
10.1.	Test equipment	60
10.2.	Block diagram of test setup	61
10.3.	Limits	61
10.4.	Assistant equipment used for test	61
10.5.	Test procedure	62
10.6.	Test result	62
10.7.	Test data	63
11.	Test Setup Photograph	79
12.	Photos of the EUT	81

Test Report Declare

Applicant	:	Harman International Industries, Inc.
Address of Applicant	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES
Equipment under Test	:	Portable Bluetooth Speaker
Model No.	:	TUNER 3
Manufacturer	:	Harman International Industries, Inc.
Address of Manufacturer	:	8500 Balboa Boulevard, Northridge, CA 91329, UNITED STATES


Test Standard Used:

EN 300 328 V2.2.2 (2019-07)

We Declare:

The equipment described above is tested by Guangdong Dongdian Testing Service Co., Ltd. and in the configuration tested the equipment complied with the standards specified above. The test results are contained in this test report and Guangdong Dongdian Testing Service Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these tests.

Report No.:	DDT-RE25030538-1E03		
Date of Receipt:	2025/03/17	Date of Test:	2025/03/17 - 2025/03/31

Created: Chen Ziqin	Reviewed: Ella Gong	Approved: Damon Hu
		
2025/03/31	2025/03/31	2025/03/31

Note: This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of Guangdong Dongdian Testing Service Co., Ltd.

Revision History

Version	Revision Content	Issue Date	Approved
---	Initial issue	2025/03/31	Damon Hu

1. Summary of Test Results

No.	Test Parameter	Clause No.	Condition	Result
1	RF output power	4.3.1.2 or 4.3.2.2	Apply all equipment	Pass
2	Power Spectral Density	4.3.2.3	Only for equipment using wide band modulations other than FHSS	Pass
3	Duty Cycle, Tx-Sequence, Tx-gap	4.3.1.3 or 4.3.2.4	Only for non-adaptive equipment	N/A
4	Accumulated Transmit time, Frequency Occupation & Hopping Sequence	4.3.1.4	Only for FHSS equipment	N/A
5	Hopping Frequency Separation	4.3.1.5	Only for FHSS	N/A
6	Medium Utilisation	4.3.1.6 or 4.3.2.5	Only for non-adaptive equipment	N/A
7	Adaptive	4.3.1.7 or 4.3.2.6	Only for adaptive equipment	N/A
8	Occupied Channel Bandwidth	4.3.1.8 or 4.3.2.7	Apply all equipment	Pass
9	Transmitter unwanted emissions in the OOB domain	4.3.1.9 or 4.3.2.8	Apply all equipment	Pass
10	Transmitter unwanted emissions in the spurious domain	4.3.1.10 or 4.3.2.9	Apply all equipment	Pass
11	Receiver spurious emissions	4.3.1.11 or 4.3.2.10	Apply all equipment	Pass
12	Receiver Blocking	4.3.1.12 or 4.3.2.11	Apply all equipment	Pass
13	Geo-location capability	4.3.1.13 or 4.3.2.12	Only for equipment with geo-location capability	N/A

Note: N/A is an abbreviation for Not Applicable, and means this item is not applicable for this device or no need to test according to standard.

2. General Test Information

2.1. Description of EUT

EUT Name	: Portable Bluetooth Speaker
Model Number	: TUNER 3
Difference of model number	: /
EUT Function Description	: Please reference user manual of this device
Power Supply	: Input: 5V DC, 1.35A (via USB-C port) Internal battery: 3.6V, 2500mAh, 9.0Wh
Hardware Version	: VerE
Software Version	: v0.3.3.2
Antenna Type	: FPC Antenna
Max Antenna Gain(dBi)	: 1.21

Radio Specification	: Bluetooth LE
Operation Frequency	: 2402 MHz to 2480 MHz
Modulation	: GFSK

Bluetooth LE 1Mbps Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	14	2430	28	2458
1	2404	15	2432	29	2460
2	2406	16	2434	30	2462
3	2408	17	2436	31	2464
4	2410	18	2438	32	2466
5	2412	19	2440	33	2468
6	2414	20	2442	34	2470
7	2416	21	2444	35	2472
8	2418	22	2446	36	2474
9	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454		
13	2428	27	2456		

Bluetooth LE 2Mbps Channel information					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	14	2430	28	2458
1	2404	15	2432	29	2460
2	2406	16	2434	30	2462
3	2408	17	2436	31	2464

4	2410	18	2438	32	2466
5	2412	19	2440	33	2468
6	2414	20	2442	34	2470
7	2416	21	2444	35	2472
8	2418	22	2446	36	2474
9	2420	23	2448	37	2476
10	2422	24	2450	38	2478
11	2424	25	2452	39	2480
12	2426	26	2454	/	
13	2428	27	2456	/	

The channels denoted with the grey background are excluded, because they are primary advertising channel only for the Bluetooth LE 1Mbps according to the Bluetooth Core Specification.

Note: The above EUT information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications or User's Manual. The above Antenna information is declared by manufacturer and for more detailed features description please refer to the manufacturer's specifications, the laboratory shall not be held responsible.

“☑” means to be chosen or applicable; “☐” means don't to be chosen or not applicable; This note applies to entire report.

2.2. Accessories of EUT

Accessories	Manufacturer	Model number	Description
/	/	/	/

2.3. Block diagram of EUT configuration for test



2.4. Decision of final test mode

According pre-test, the worst test modes were reported as below:

Test software: FCCTestTool.exe

The test software was used to control EUT work in Continuous Tx mode and Rx mode, and select test channel, wireless mode as below table.

The pathloss of external cable: 0.5dB (According to the manufacturer's claims)

Tested mode, Tx Power Setting, Channel, and Frequency			
Mode	Setting Tx Power	Channel	Frequency (MHz)

GFSK_1M Tx mode	Default	CH0	2402
	Default	CH19	2440
	Default	CH39	2480
GFSK_2M Tx mode	Default	CH1	2404
	Default	CH19	2440
	Default	CH38	2478
GFSK_1M Rx mode	/	CH0	2402
	/	CH19	2440
	/	CH39	2480
GFSK_2M Rx mode	/	CH1	2404
	/	CH19	2440
	/	CH38	2478

2.5. Deviations of test standard

No deviation.

2.6. Test environment conditions

During the measurement the environmental conditions were within the listed ranges:

/	Normal Conditions	Extreme Conditions
Temperature range	15 °C to 35 °C	0 °C to +45 °C
Humidity range	20% to 75%	N/A
Pressure range	86-106 kPa	N/A
Power supply	NV: DC 3.6V	N/A

Note 1: The Extreme temperature range and extreme voltages are declared by the manufacturer.
 Note 2: NTNV: Normal Temperature Normal Voltage, LTNV: Low Temperature Normal Voltage, HTNV: High Temperature Normal Voltage.

Note: The specific temperature and humidity information of each test item refers to the temperature and humidity record in the corresponding test data.

2.7. Test laboratory

Guangdong Dongdian Testing Service Co., Ltd.

Add.: Unit 2, Building 1, No. 17, Zongbu 2nd Road, Songshan Lake Park, Dongguan, Guangdong, China, 523808.

Tel.: +86-0769-38826678, <http://www.dgddt.com>, Email: ddt@dgddt.com.

CNAS Accreditation No. L6451; A2LA Accreditation Number: 3870.01

FCC Designation Number: CN1182, Test Firm Registration Number: 540522

Innovation, Science and Economic Development Canada Site Registration Number: 10288A

Conformity Assessment Body identifier: CN0048

VCCI facility registration number: C-20087, T-20088, R-20123, R-20240, G-20118

2.8. Measurement uncertainty

Test Item	Uncertainty
Bandwidth	1.1%
Peak Output Power (Conducted) (Spectrum analyzer)	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Peak Output Power (Conducted) (Power Sensor)	0.74 dB
Power Spectral Density	0.74 dB (10 MHz ≤ f < 3.6 GHz);
	1.38 dB (3.6 GHz ≤ f < 8 GHz)
Frequencies Stability	6.7 x 10 ⁻⁸ (Antenna couple method)
	5.5 x 10 ⁻⁸ (Conducted method)
Conducted spurious emissions	0.86 dB (10 MHz ≤ f < 3.6 GHz);
	1.40 dB (3.6 GHz ≤ f < 8 GHz)
	1.66 dB (8 GHz ≤ f < 26.5 GHz)
Uncertainty for radio frequency (RBW < 20 kHz)	3x10 ⁻⁸
Temperature	0.4 °C
Humidity	2 %
Uncertainty for Radiation Emission test (9 kHz – 30 MHz)	3.44 dB
Uncertainty for Radiation Emission test (30 MHz - 1 GHz)	4.70 dB (Antenna Polarize: V)
	4.84 dB (Antenna Polarize: H)
Uncertainty for Radiation Emission test (1 GHz - 40 GHz)	4.10 dB (1 - 6 GHz)
	4.40 dB (6 GHz - 18 GHz)
	3.54 dB (18 GHz - 26 GHz)
	4.30 dB (26 GHz - 40 GHz)
Uncertainty for Power line conduction emission test	3.34dB (150KHz-30MHz)
	3.72dB (9KHz-150KHz)

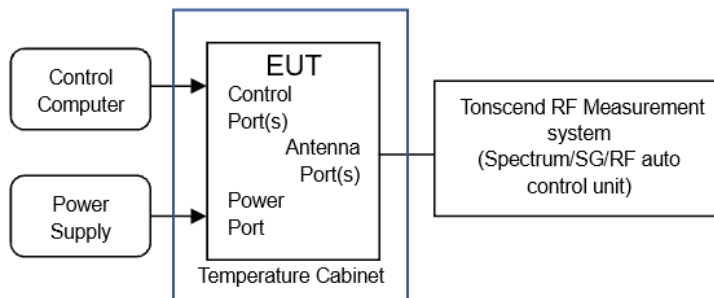
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3. Equipment Used During Conductive Test

Equipment	Manufacturer	Model No.	Serial Number	Due Date
<input checked="" type="checkbox"/> RF Connected Test (RF Measurement System 1#)				
SIGNAL ANALYZER	R&S	FSQ26	101272	2025/03/31
Wideband Radio Communication Tester	R&S	CMW500	120259	2025/07/08
MXG Vector Signal Generator	KEYSIGHT	N5182B	MY59100192	2025/03/31
MXG Vector Signal Generator	Agilent	N5182A	MY19060405	2025/03/31
RF Control Unit	Tonsend	JS0806-2	158060010	2025/03/31
TEMP&HUMI Programmable Chamber	ZHIXIANG	ZXGDJS-150L	ZX170110-A	2025/04/22
Test Software	Tonscend	JS1120-3	Ver.3.2.22	N/A

4. RF Output Power

4.1. Block diagram of test setup



4.2. Limits

The maximum RF output power for adaptive Frequency Hopping equipment shall be equal to or less than 20 dBm.

The maximum RF output power for this equipment shall be equal to or less than the value declared by the manufacturer. This declared value shall be equal to or less than 20 dBm.

This limit shall apply for any combination of power level and intended antenna assembly.

4.3. Test procedure

- (1) The test according to EN 300 328 V2.2.2 Clause 5.4.2.2.1.
- (2) Connect EUT's antenna output to power sensor by RF cable, the path loss was compensated to the results.
- (3) For adaptive equipment, the measurement duration shall be long enough to ensure a minimum number of bursts (at least 10) is captured.
- (4) The measurement shall be repeated for the equipment being configured to operate at the lowest, the middle, and the highest frequency of the stated frequency range. These frequencies shall be recorded.
- (5) The measurements for RF output power shall be performed at both normal environmental conditions and at the extremes of the operating temperature range.

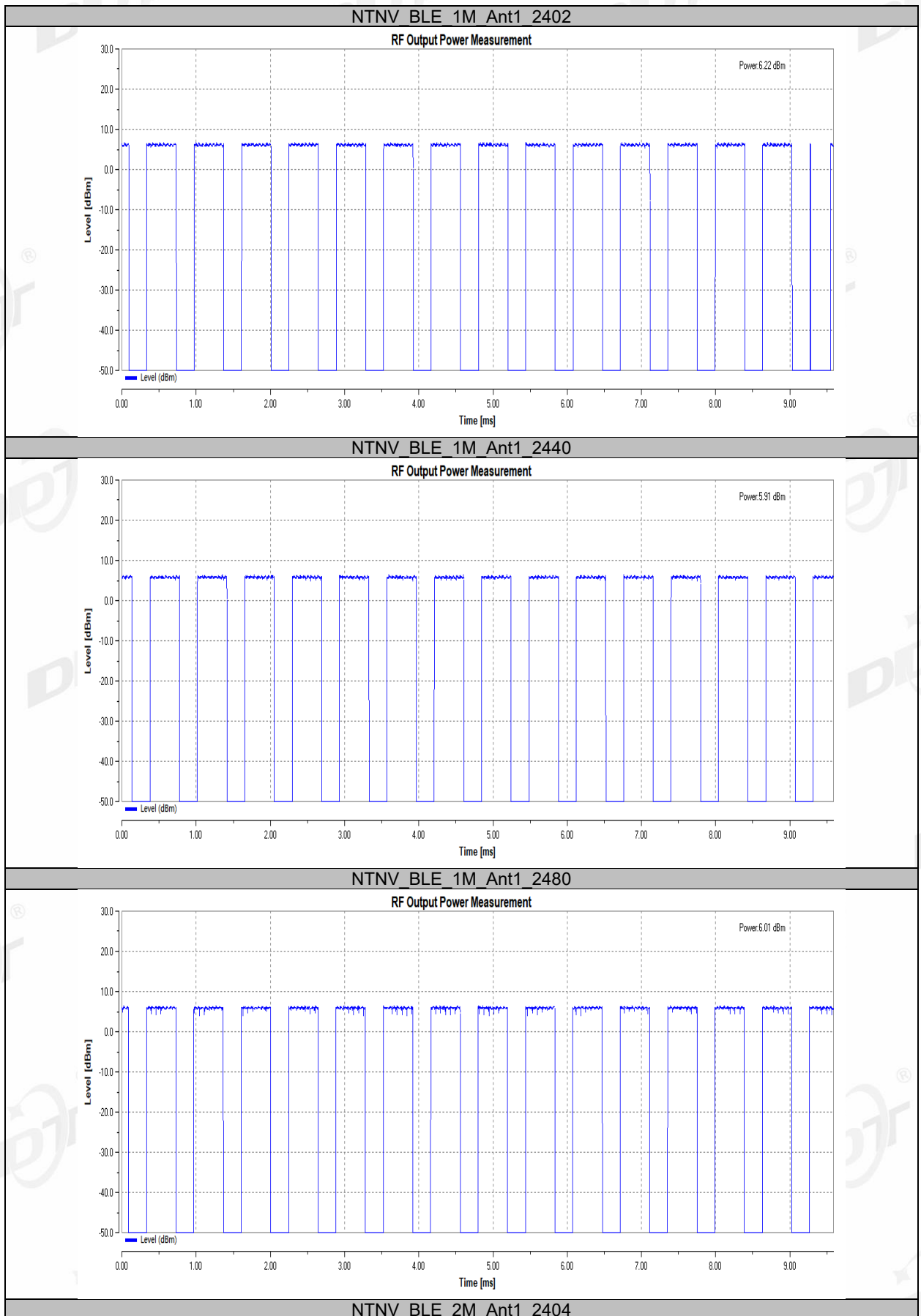
4.4. Test result

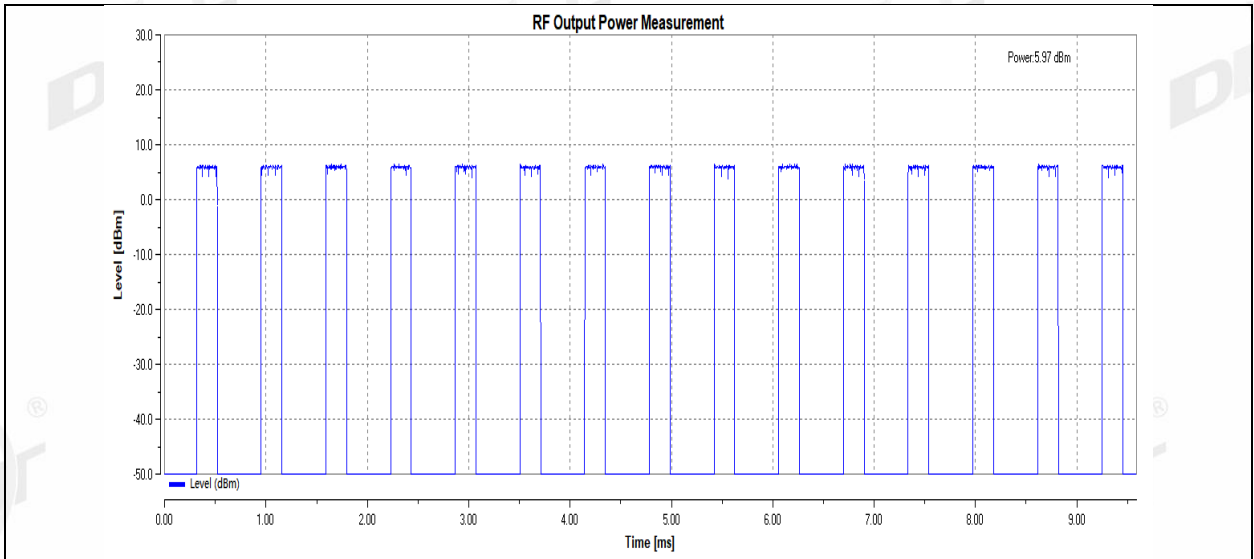
Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 1#
Ambient Condition:	24.3°C,36.2%RH	Test Date:	2025.03.18-2025.03.18
Test Power Supply:	DC5V	Sample Number:	S25030538-006

Test Condition	Test Mode	Antenna	Frequency [MHz]	Burst Power [dBm]	EIRP [dBm]	EIRP Limit [dBm]	Verdict
NTNV	BLE_1M	Ant1	2402	6.22	7.43	20	PASS
			2440	5.91	7.12	20	PASS
			2480	6.01	7.22	20	PASS
	BLE_2M	Ant1	2404	5.97	7.18	20	PASS
			2440	5.85	7.06	20	PASS
			2478	5.99	7.20	20	PASS
LTVN	BLE_1M	Ant1	2402	6.01	7.22	20	PASS
			2440	5.91	7.12	20	PASS
			2480	6.21	7.42	20	PASS
	BLE_2M	Ant1	2404	5.99	7.20	20	PASS
			2440	5.93	7.14	20	PASS
			2478	5.94	7.15	20	PASS
HTNV	BLE_1M	Ant1	2402	6.01	7.22	20	PASS
			2440	5.93	7.14	20	PASS
			2480	6.13	7.34	20	PASS
	BLE_2M	Ant1	2404	5.96	7.17	20	PASS
			2440	5.84	7.05	20	PASS
			2478	5.92	7.13	20	PASS

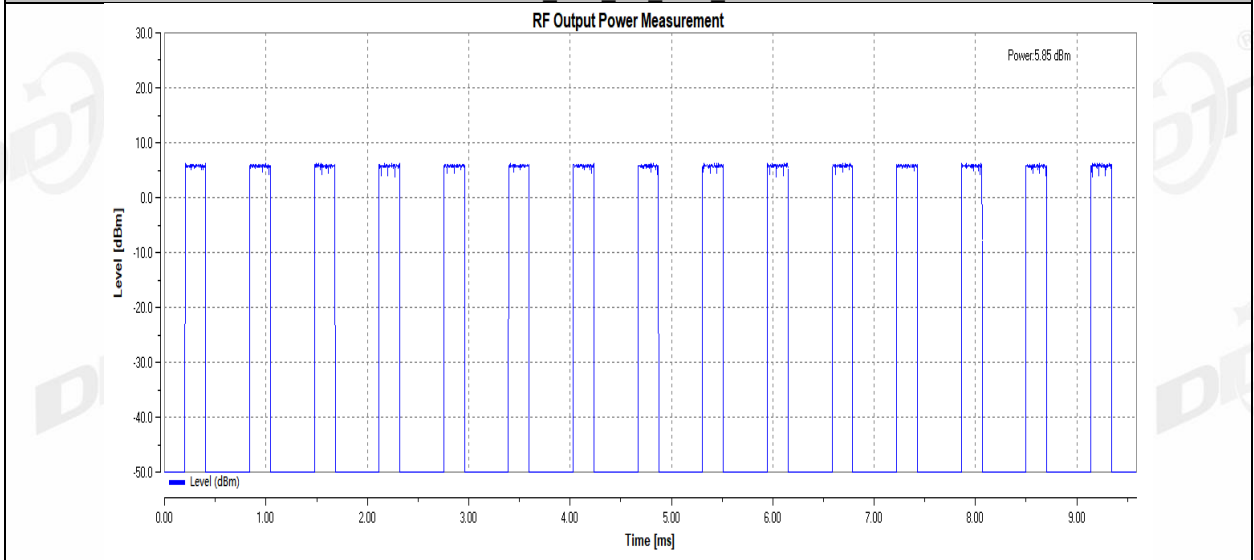
Note: EIRP = Measured Highest Pburst Values + Antenna Gain

4.5. Test graphs

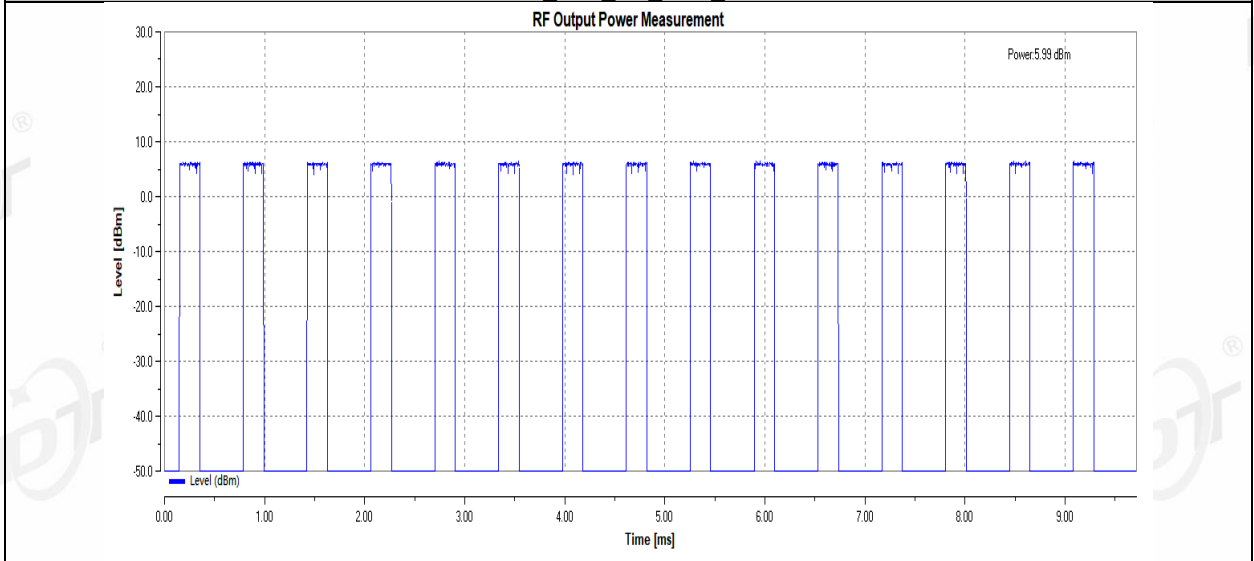




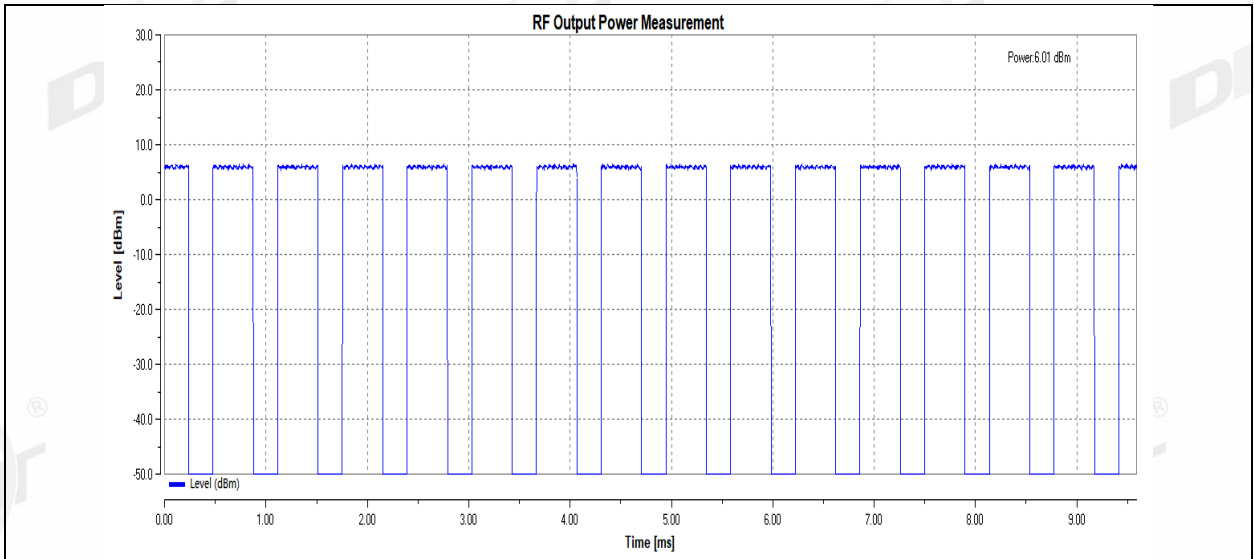
NTNV BLE 2M Ant1_2440



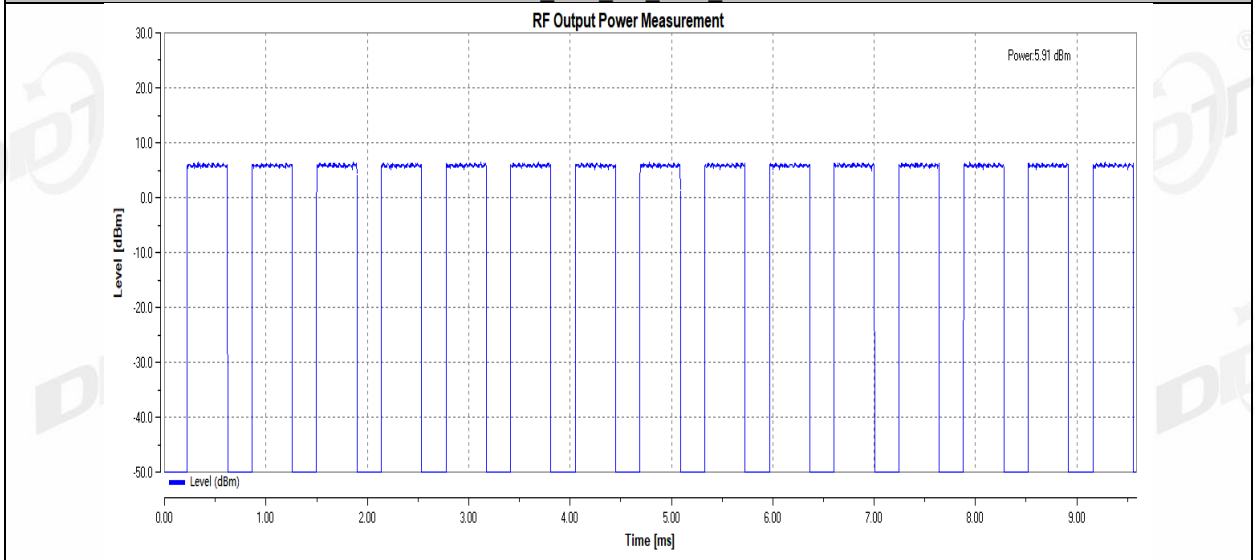
NTNV BLE 2M Ant1_2478



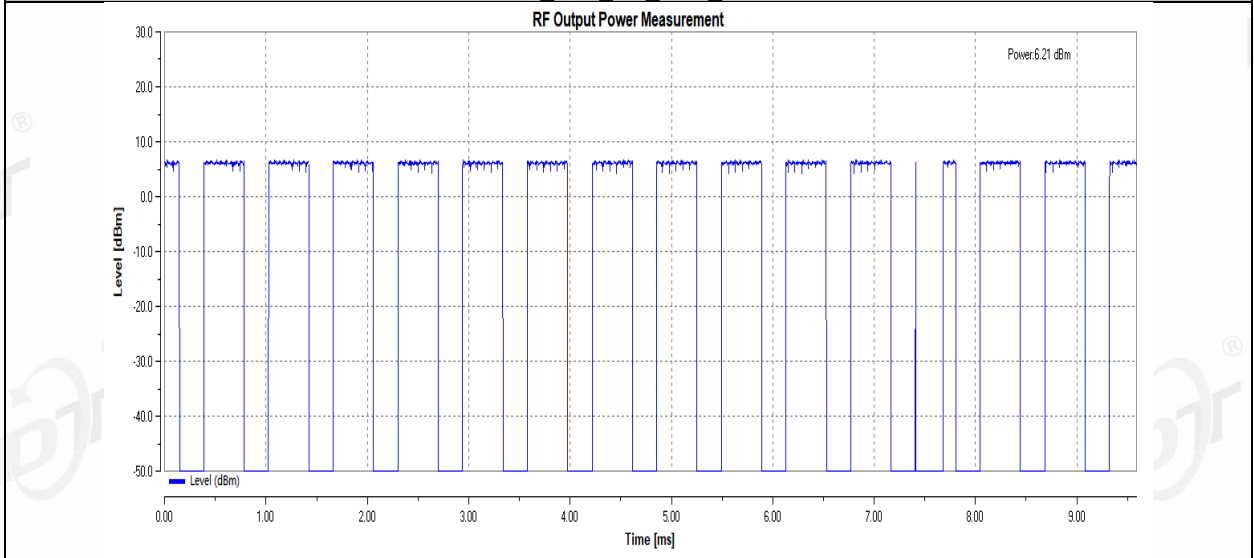
LTVN BLE 1M Ant1_2402



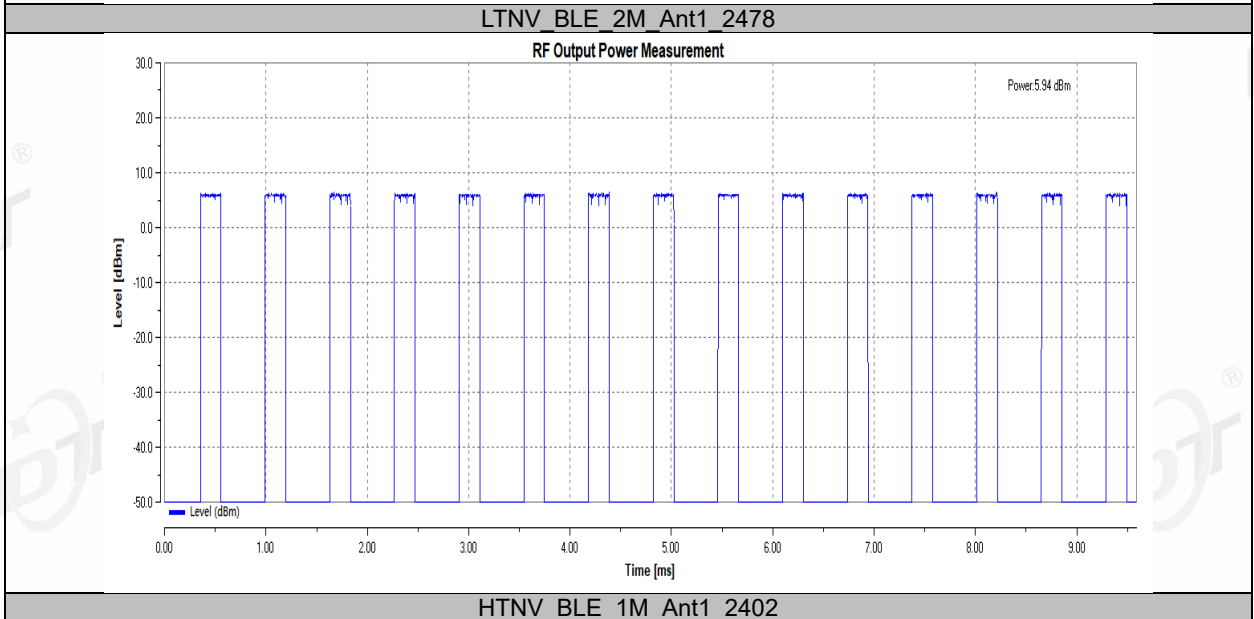
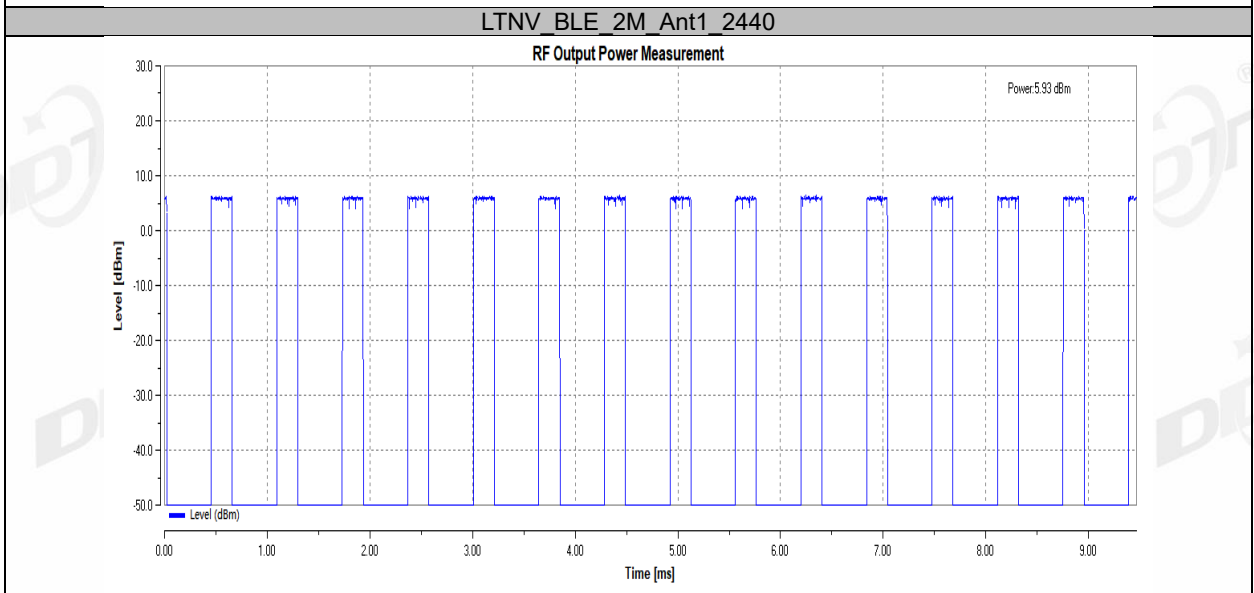
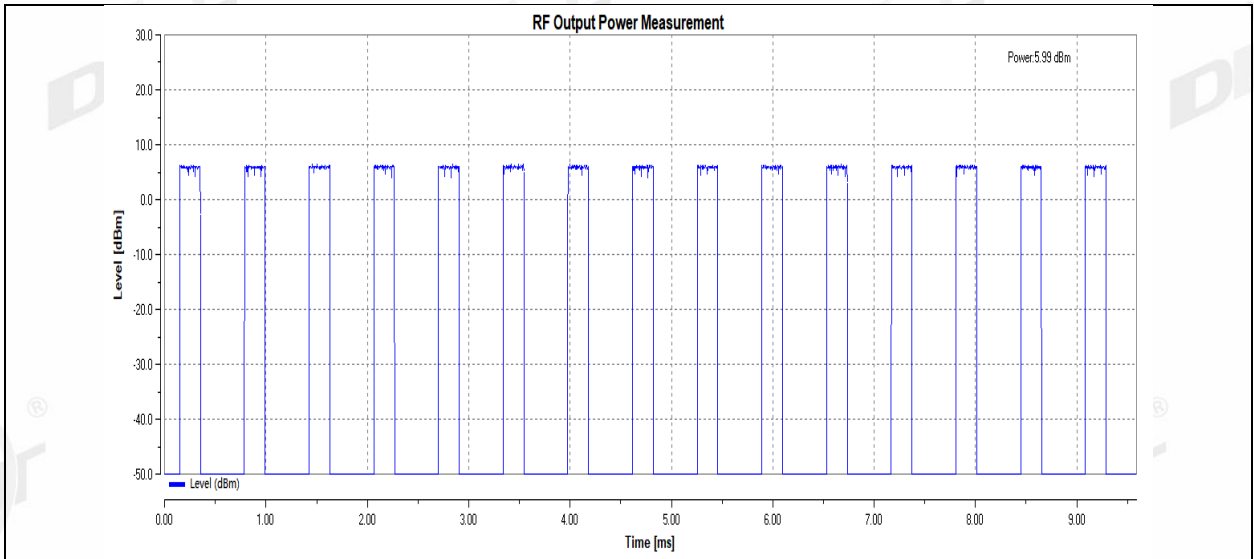
LTNV BLE 1M Ant1_2440

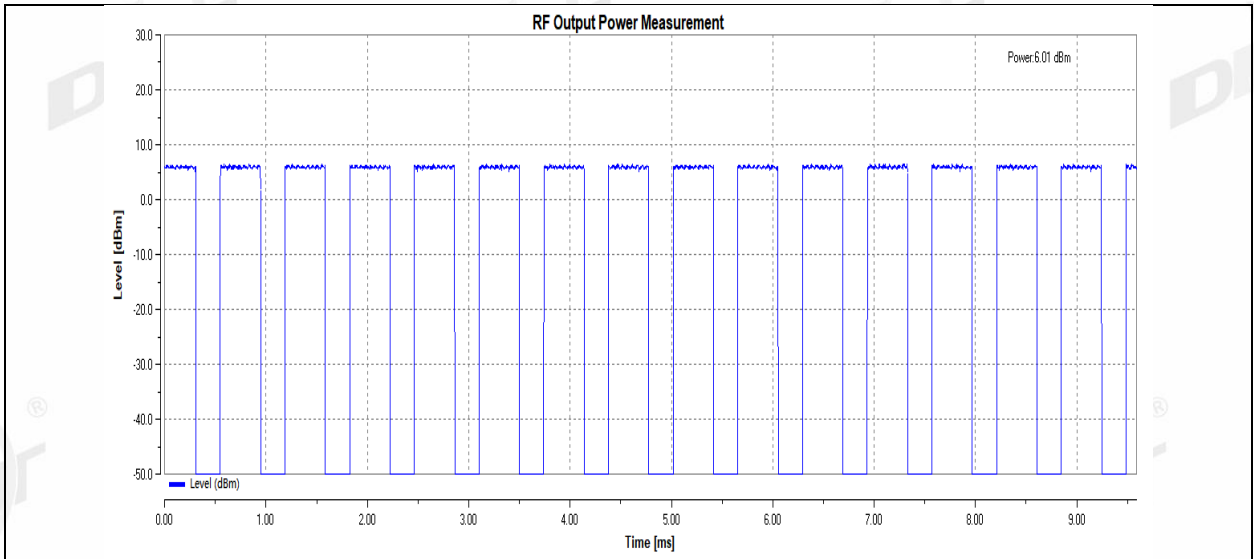


LTNV BLE 1M Ant1_2480

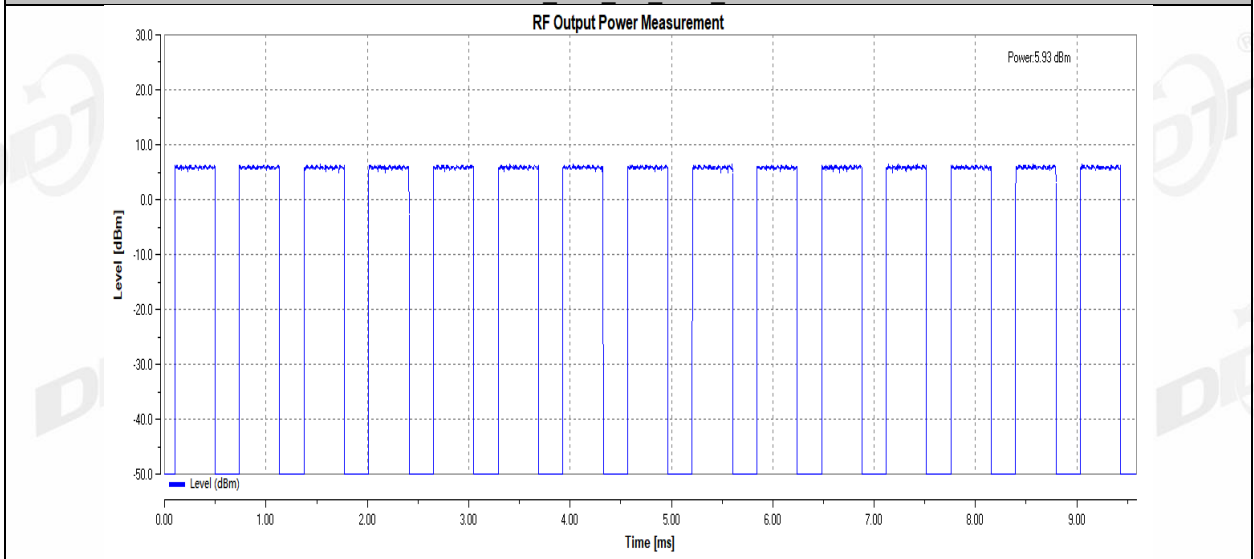


LTNV BLE 2M Ant1_2404

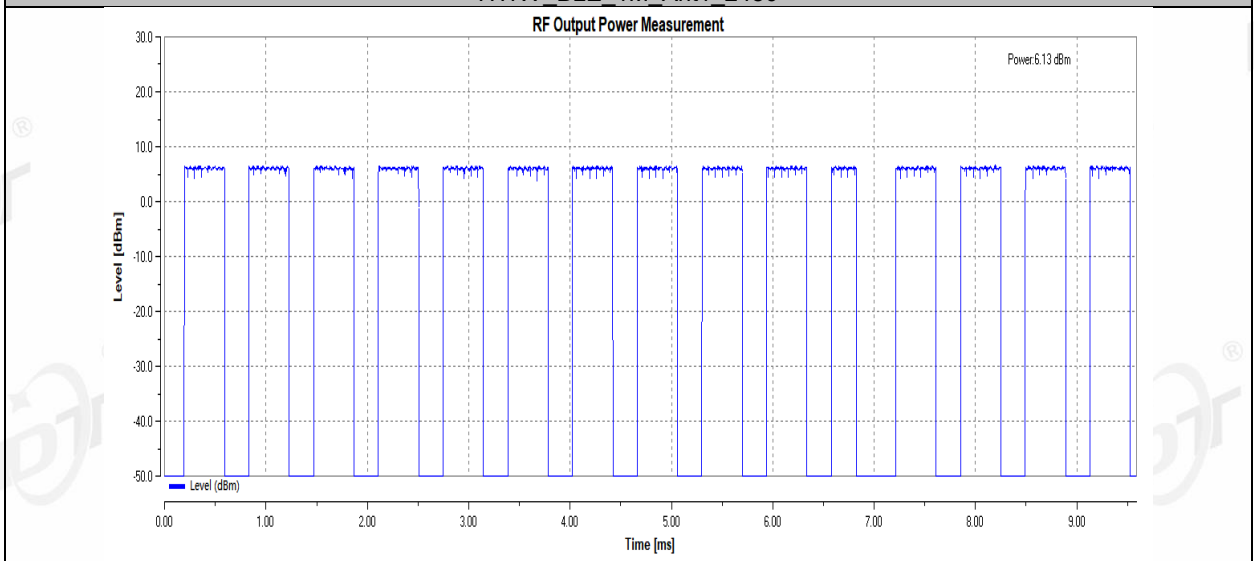




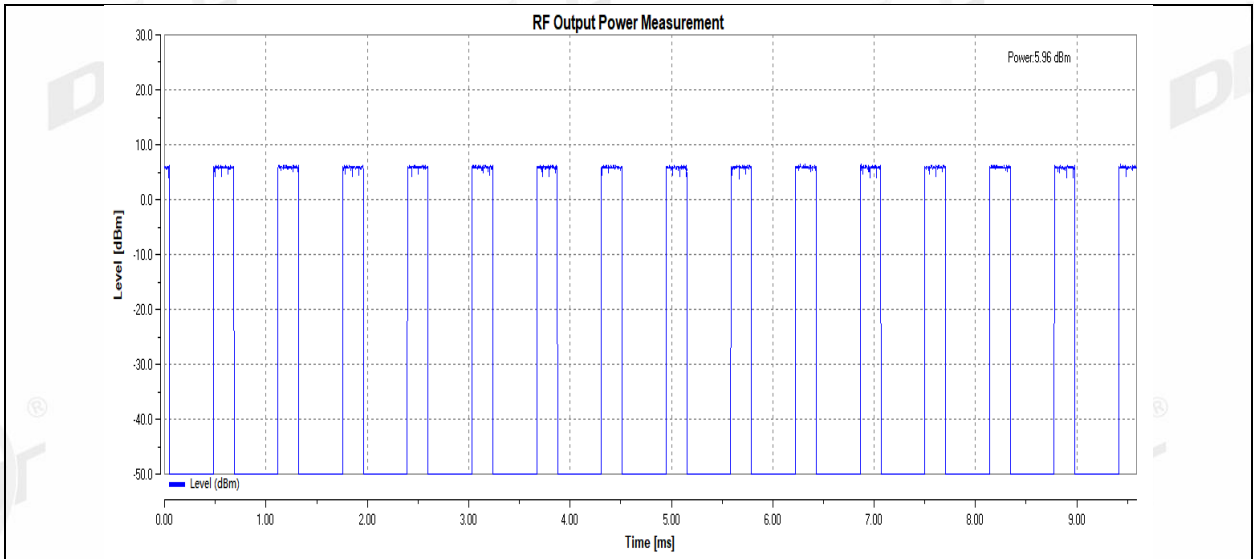
HTNV BLE 1M Ant1_2440



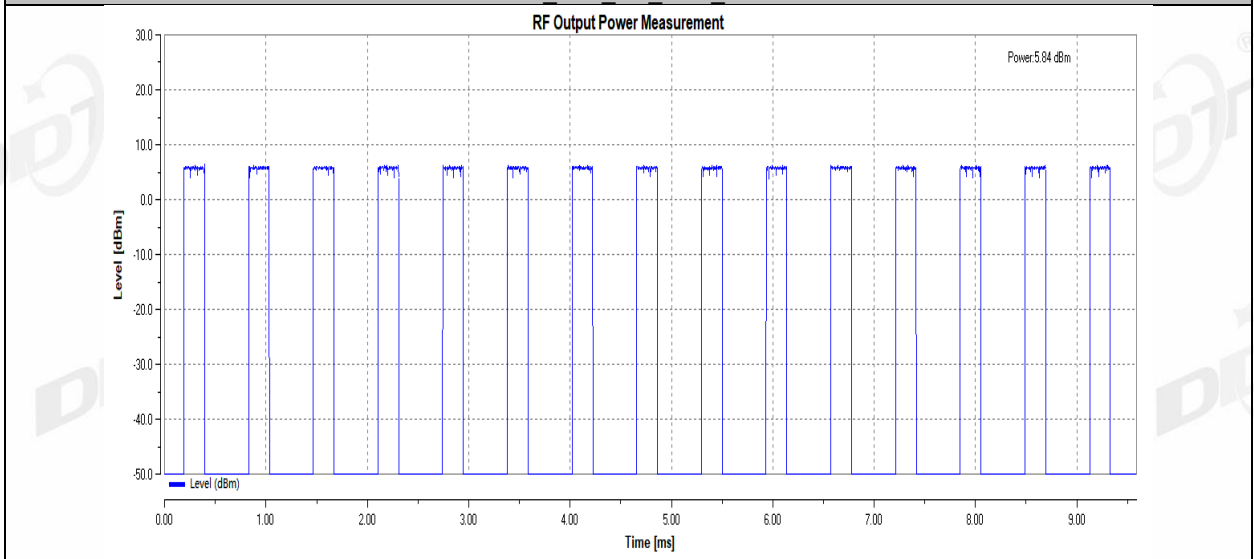
HTNV BLE 1M Ant1_2480



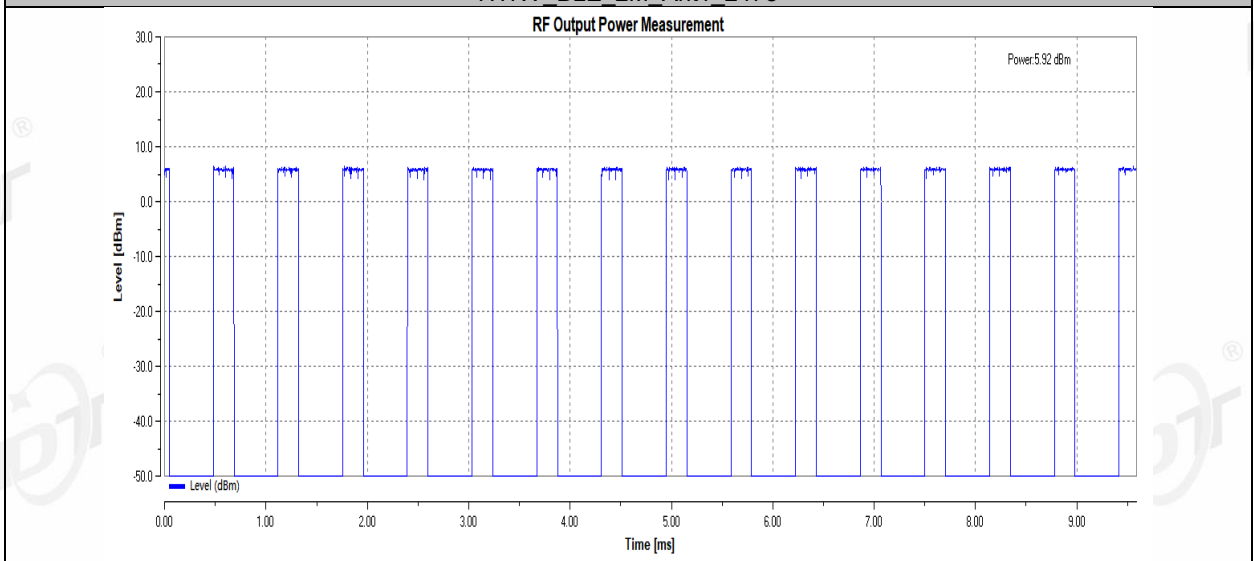
HTNV BLE 2M Ant1_2404



HTNV BLE 2M Ant1_2440

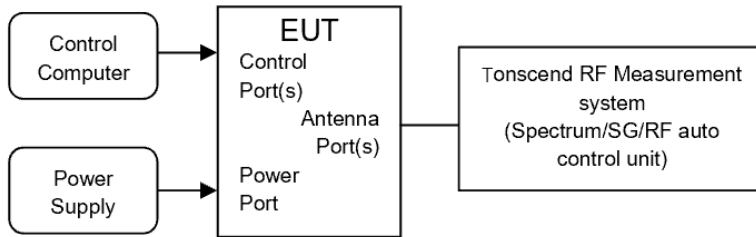


HTNV BLE 2M Ant1_2478



5. Power Spectral Density

5.1. Block diagram of test setup



5.2. Limits

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 10 dBm per MHz band during any time interval of continuous transmission.

5.3. Test procedure

- (1) The test according to EN 300 328 V2.2.2 Clause 5.4.3.2.1.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
- (3) The measurement shall be repeated for the equipment being configured to operate at the lowest, the middle, and the highest frequency of the stated frequency range. These frequencies shall be recorded.
- (4) Set the spectrum analyzer as follows:

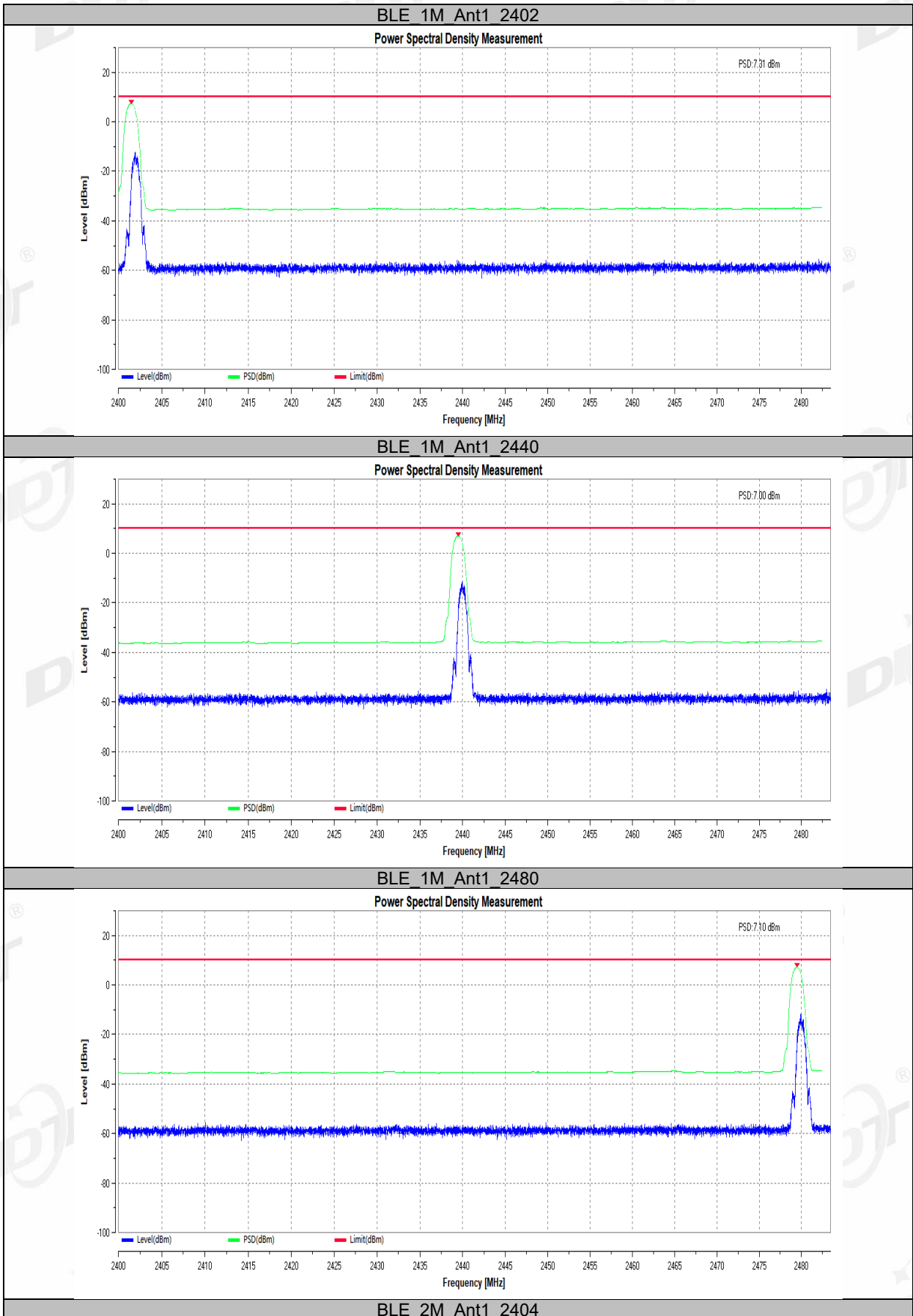
Start Frequency:	2 400 MHz
Stop Frequency:	2 483,5 MHz
RBW:	10 kHz
VBW:	30 kHz
Detector Mode:	RMS
Sweep Points:	> 8 350
Sweep time:	10 s
Trace mode	Max hold

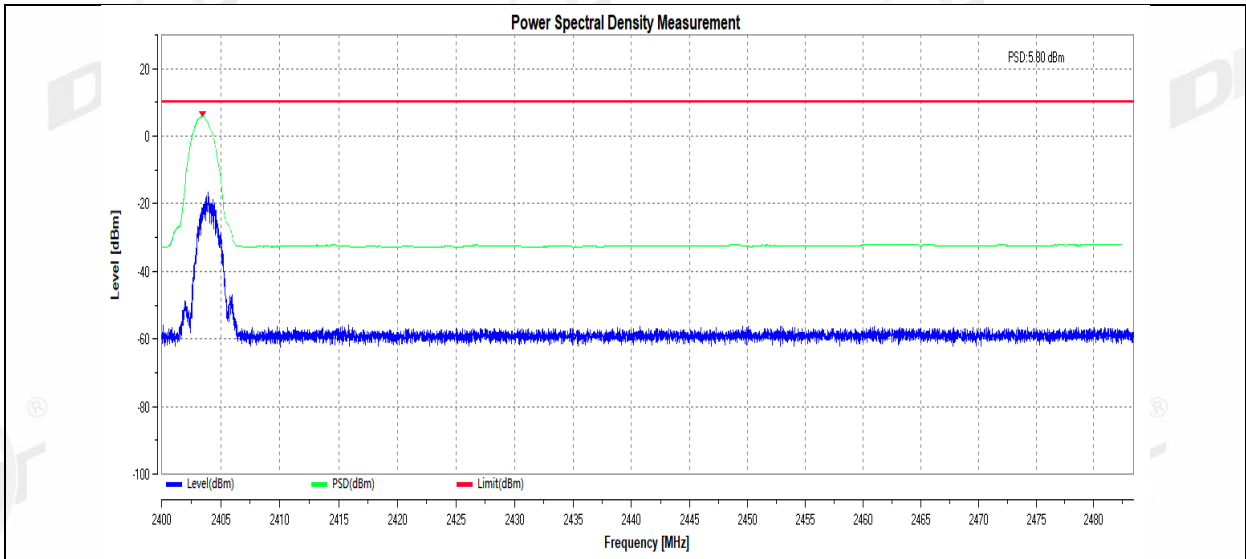
5.4. Test result

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 1#
Ambient Condition:	24.3°C,36.2%RH	Test Date:	2025.03.18-2025.03.18
Test Power Supply:	DC5V	Sample Number:	S25030538-006

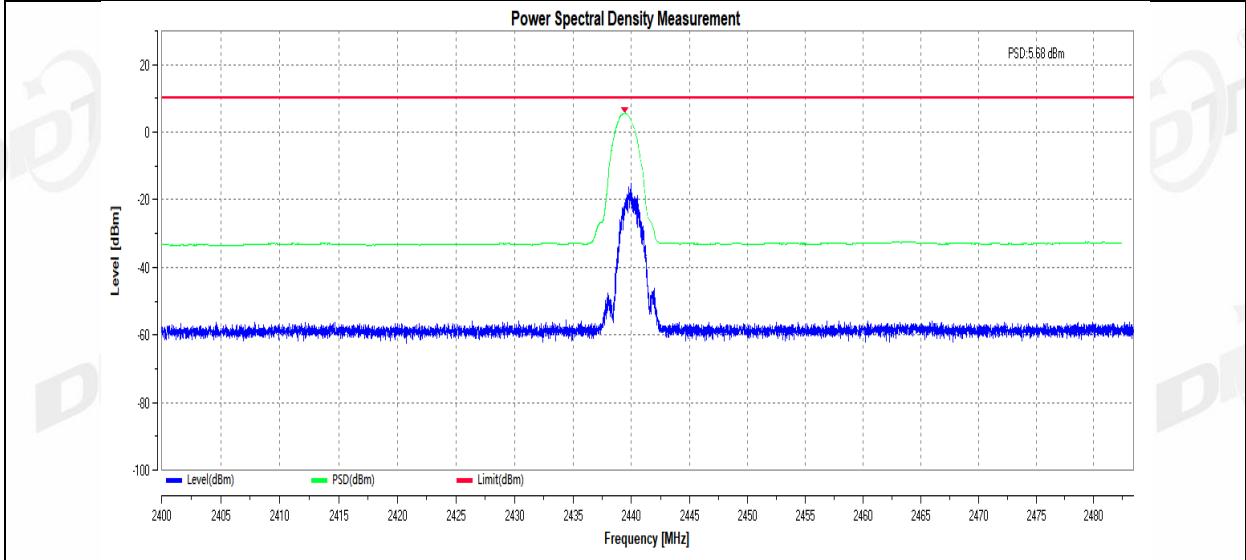
Test Mode	Antenna	Frequency [MHz]	EIRP PSD [dBm/MHz]	Limit [dBm/MHz]	Verdict
BLE_1M	Ant1	2402	7.31	10	PASS
		2440	7.00	10	PASS
		2480	7.10	10	PASS
BLE_2M	Ant1	2404	5.80	10	PASS
		2440	5.68	10	PASS
		2478	5.82	10	PASS

5.5. Test graphs

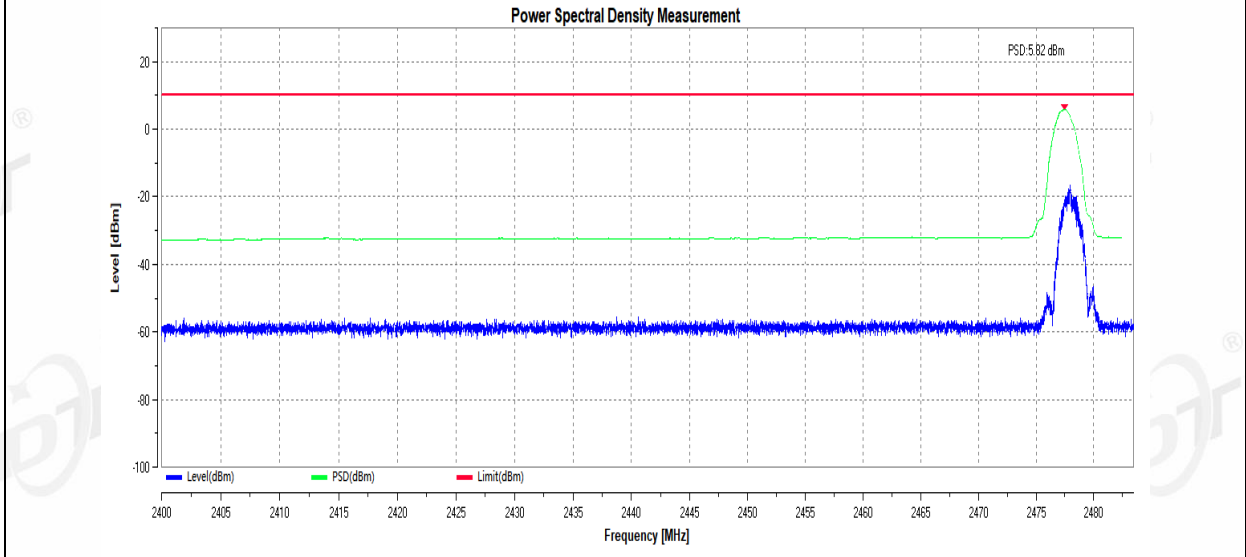




BLE_2M_Ant1_2440

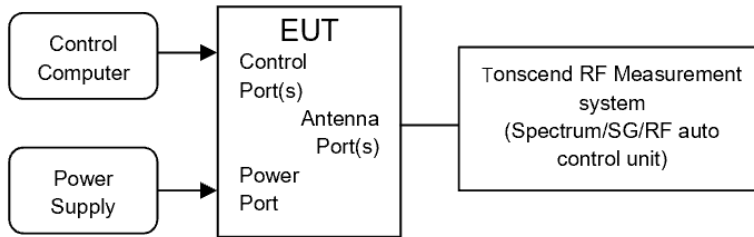


BLE_2M_Ant1_2478



6. Occupied Channel Bandwidth

6.1. Block diagram of test setup



6.2. Limits

The Occupied Channel Bandwidth for each hopping frequency shall fall completely within the band 2400 MHz to 2483.5 MHz for this device.

6.3. Test procedure

- (1) The test according to EN 300 328 V2.2.2 Clause 5.4.7.2.1.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
- (3) The measurement shall be performed only on the lowest and the highest frequency within the stated frequency range.
- (4) Set the spectrum analyzer as follows:

Centre Frequency:	The centre frequency of the channel under test
Frequency Span:	2 xNominal Channel Bandwidth
RBW:	~ 1 % of the span without going below 1 %
VBW:	3 x RBW
Detector Mode:	RMS
Sweep time:	1 s
Trace Mode:	Max Hold

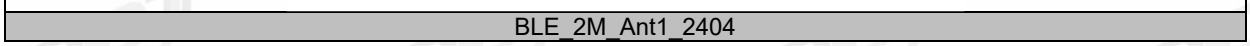
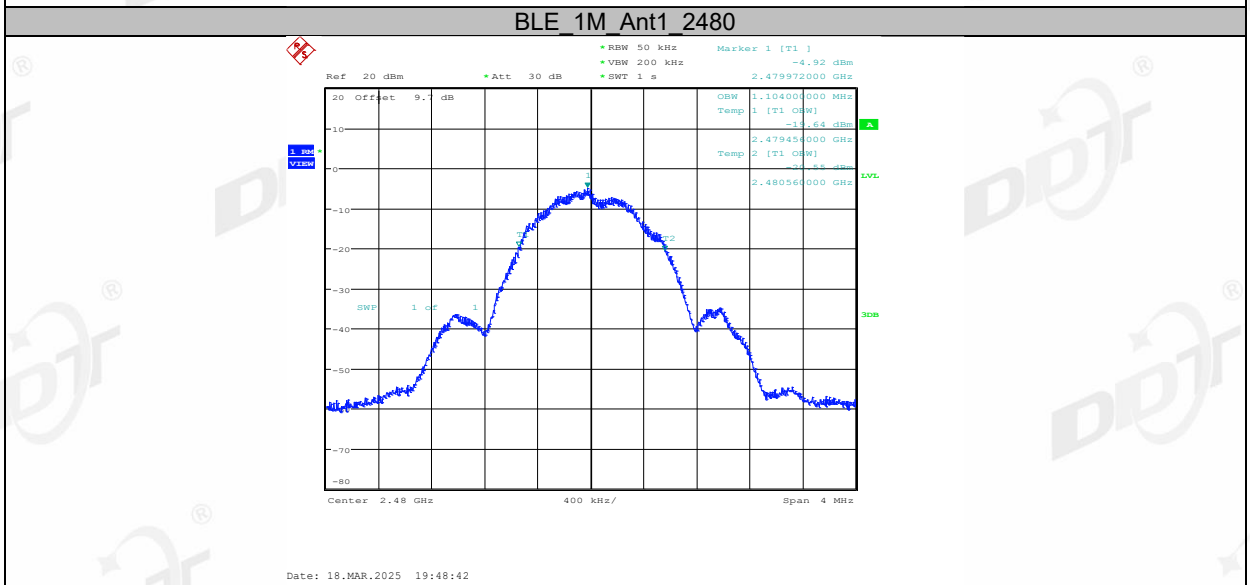
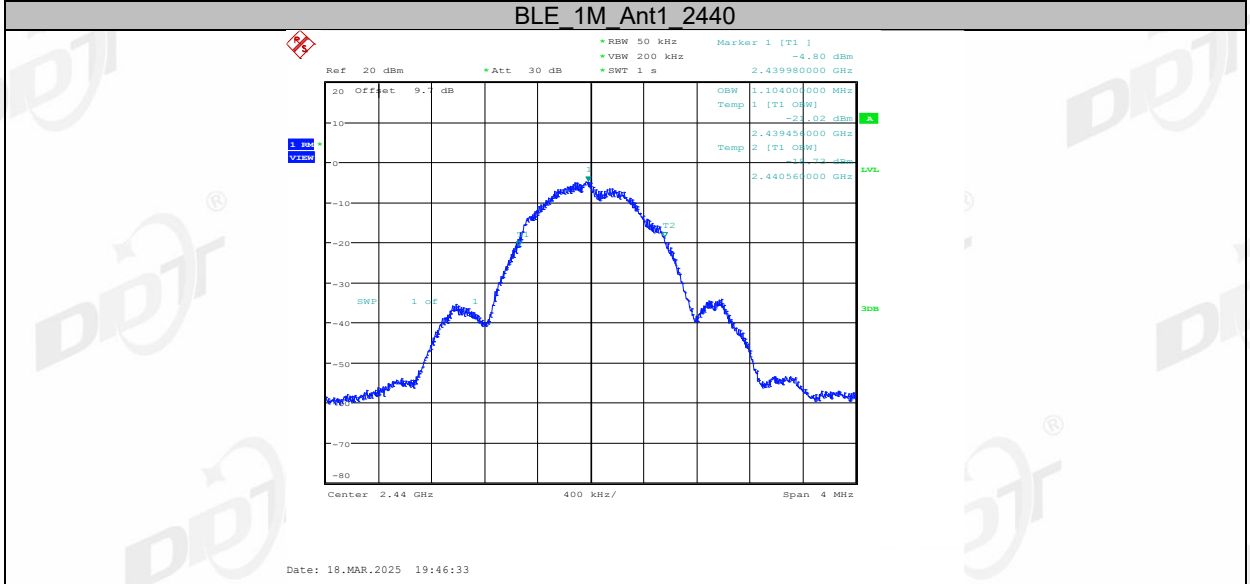
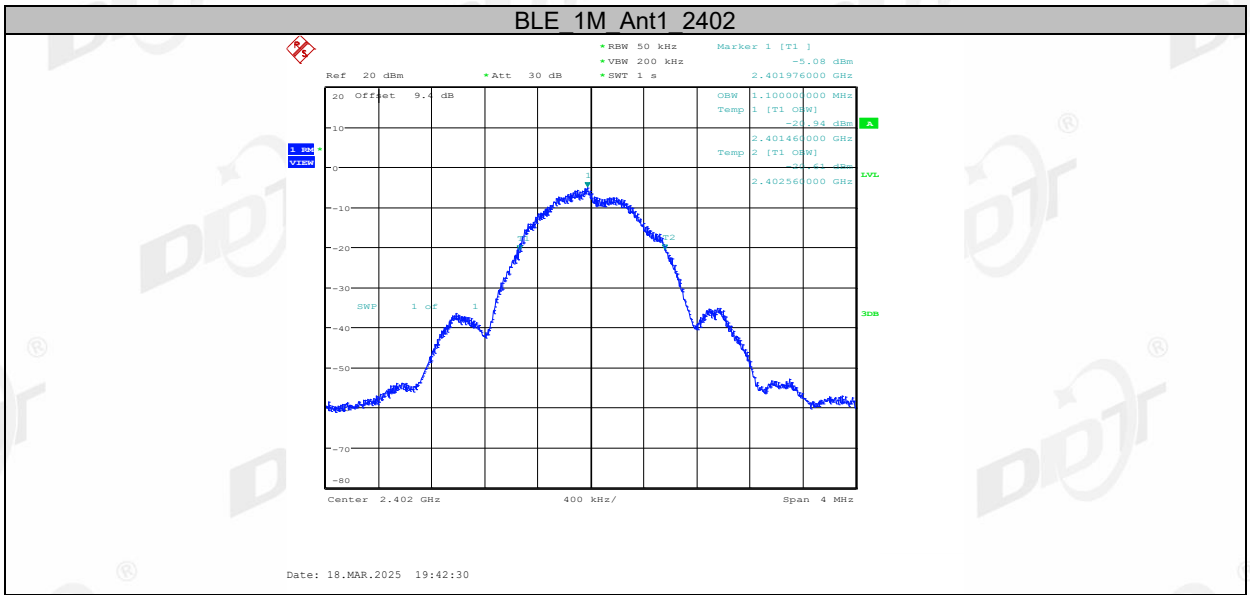
When the trace has completed, Use the 99% bandwidth function of the spectrum analyzer to measure the Occupied channel bandwidth of the EUT.

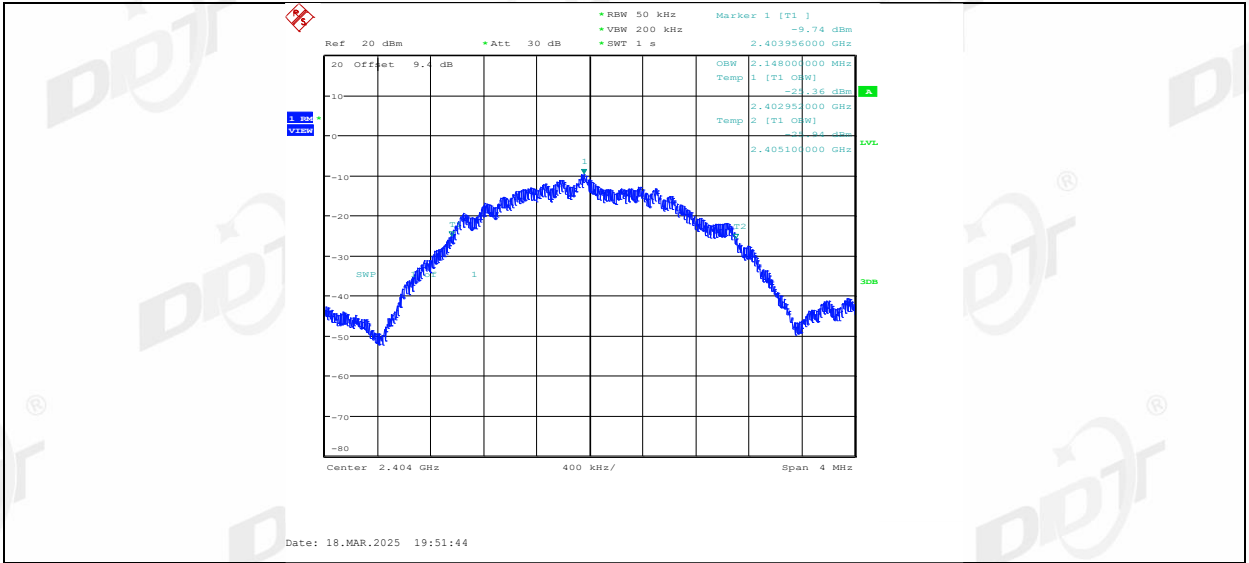
6.4. Test result

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 1#
Ambient Condition:	24.3°C,36.2%RH	Test Date:	2025.03.18-2025.03.18
Test Power Supply:	DC5V	Sample Number:	S25030538-006

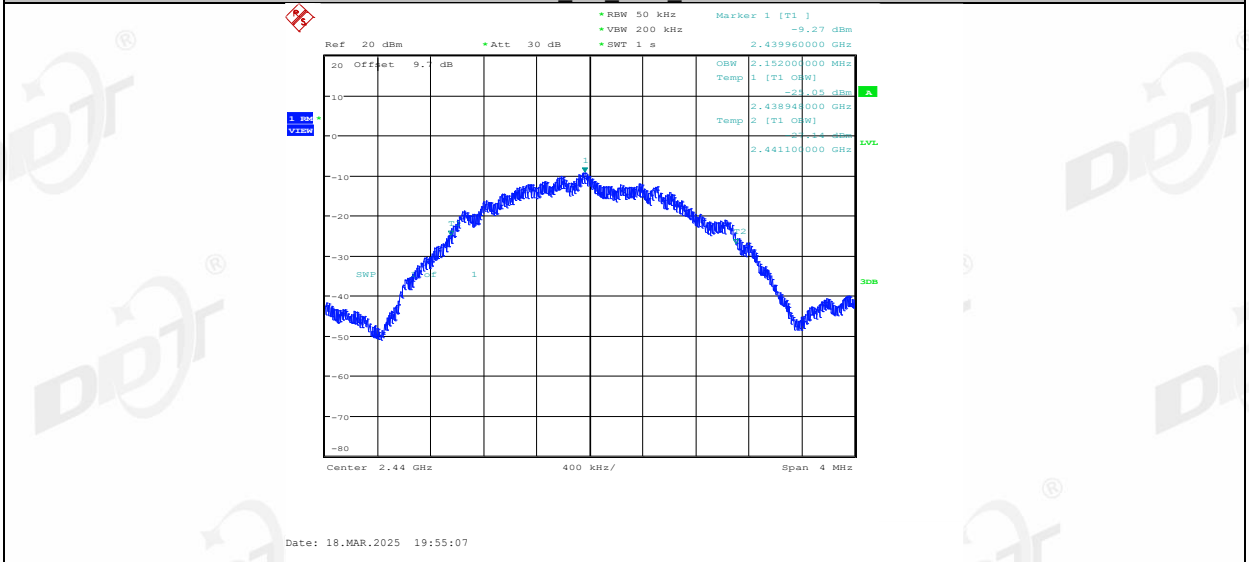
Test Mode	Antenna	Frequency [MHz]	OCB[MHz]	FL[MHz]	FH[MHz]	Limit [MHz]	Verdict
BLE_1M	Ant1	2402	1.1	2401.4600	2402.5600	2400 to 2483.5	PASS
		2440	1.104	2439.4560	2440.5600	2400 to 2483.5	PASS
		2480	1.104	2479.4560	2480.5600	2400 to 2483.5	PASS
BLE_2M	Ant1	2404	2.148	2402.9520	2405.1000	2400 to 2483.5	PASS
		2440	2.152	2438.9480	2441.1000	2400 to 2483.5	PASS
		2478	2.152	2476.9480	2479.1000	2400 to 2483.5	PASS

6.5. Test graphs

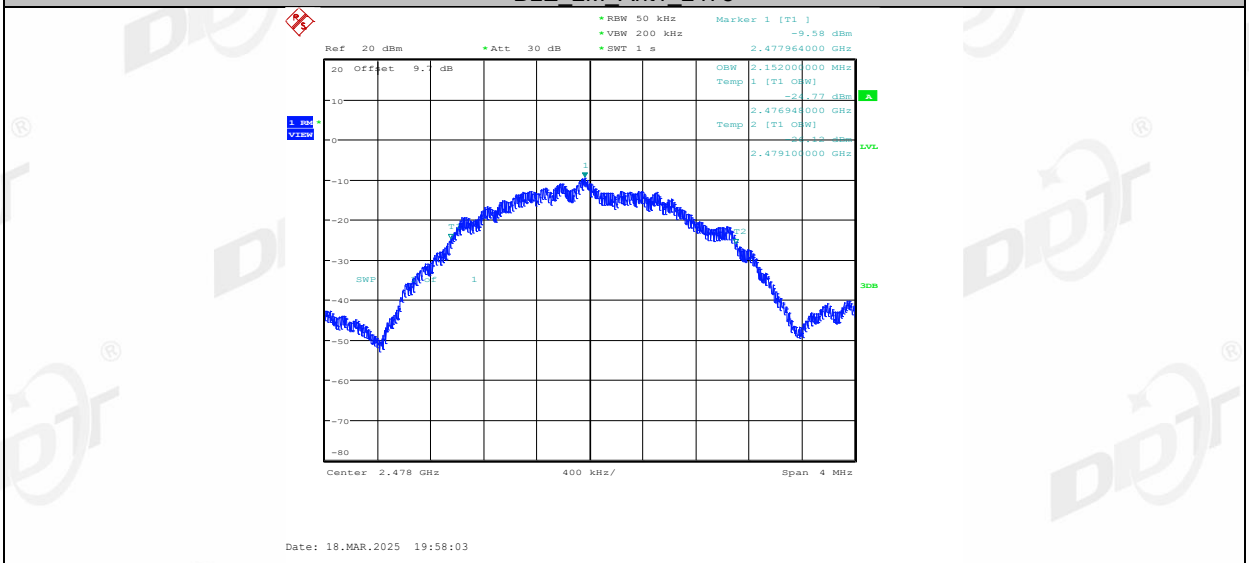




BLE_2M Ant1 2440

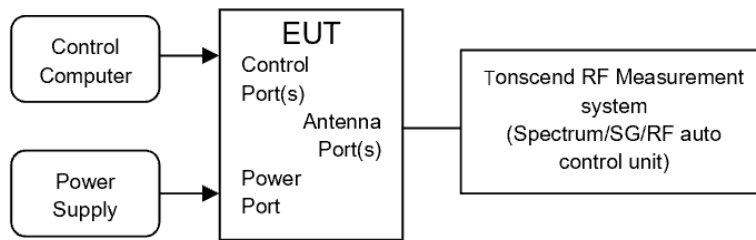


BLE_2M Ant1 2478



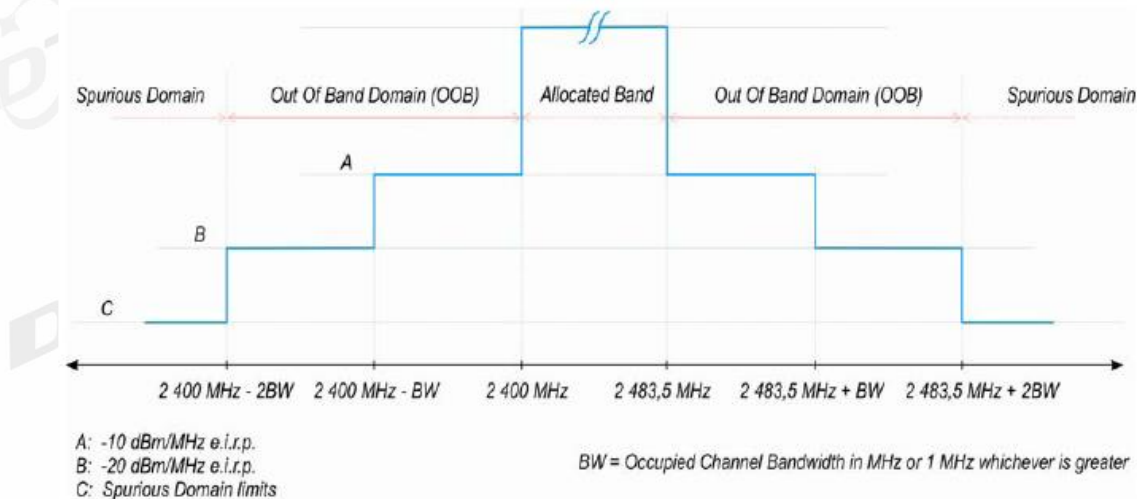
7. Transmitter Unwanted Emissions in The Out-of-band Domain

7.1. Block diagram of test setup



7.2. Limits

The transmitter unwanted emissions in the out-of-band domain but outside the allocated band, shall not exceed the values provided by the mask below:



7.3. Test procedure

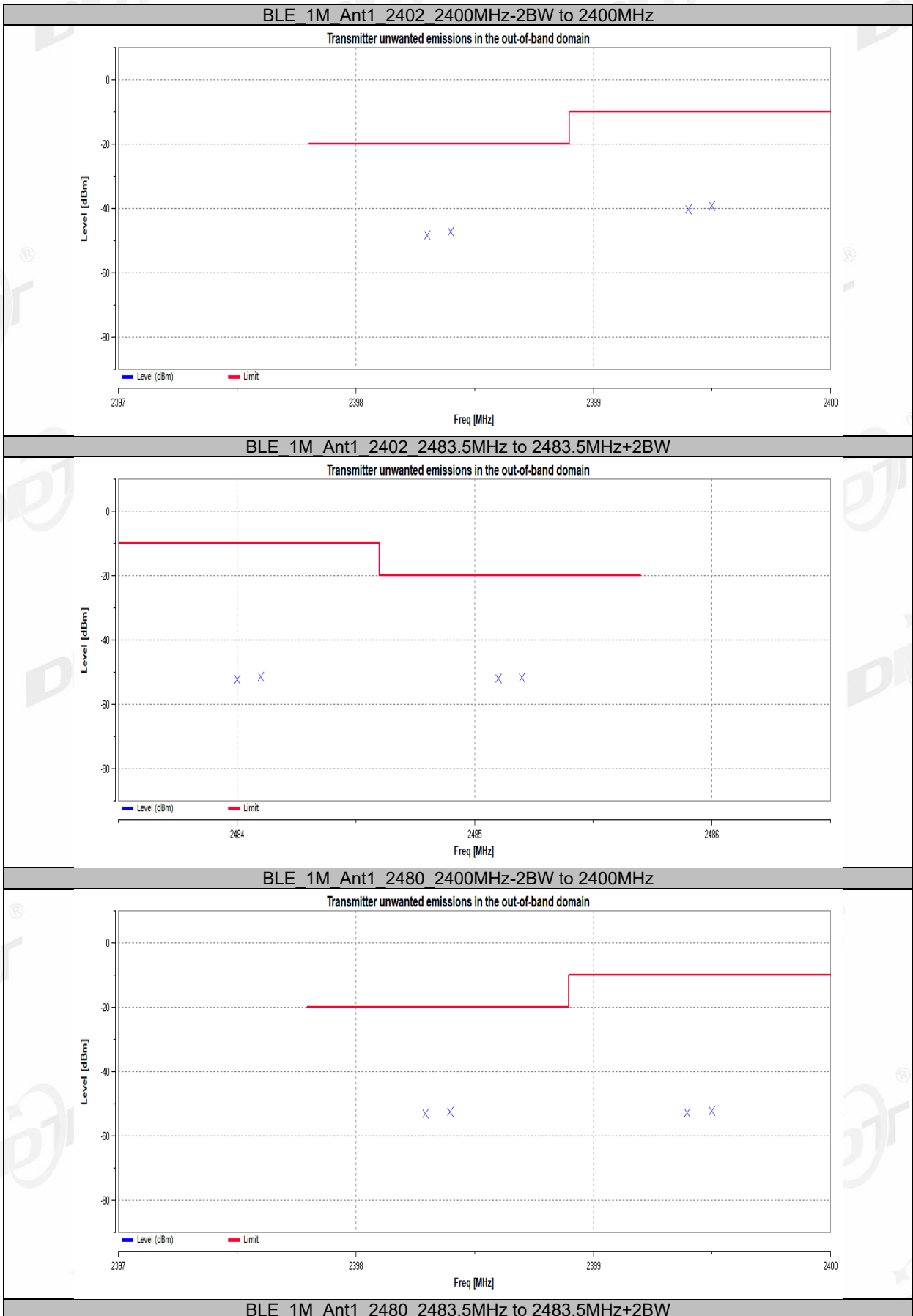
- (1) The test according to EN 300 328 V2.2.2 Clause 5.4.8.2.1.
- (2) Connect EUT's antenna output to spectrum analyzer by RF cable, the path loss was compensated to the results.
- (3) For non-FHSS equipment, the measurement shall be performed at the lowest and the highest channel on which the equipment can operate. These operating channels shall be recorded.

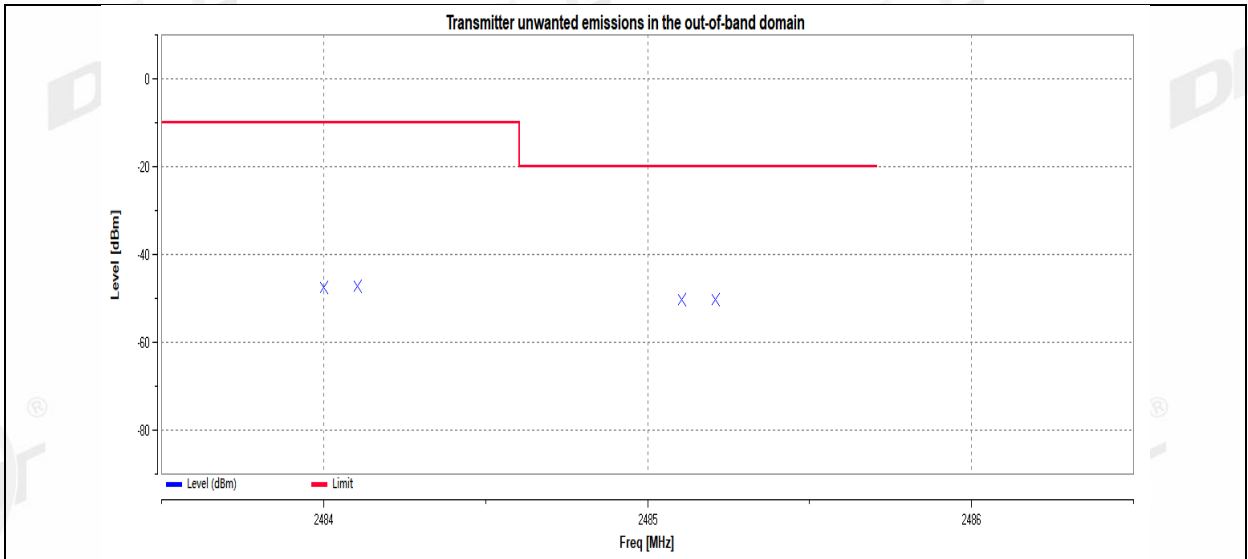
7.4. Test result

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 1#
Ambient Condition:	24.3°C,36.2%RH	Test Date:	2025.03.18-2025.03.18
Test Power Supply:	DC5V	Sample Number:	S25030538-006

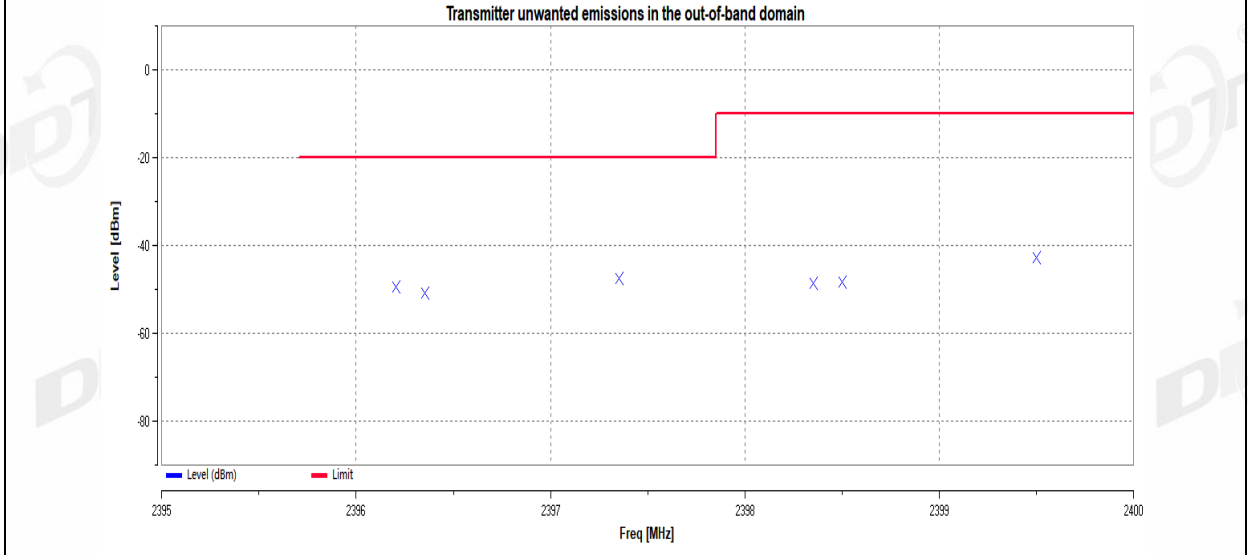
Test Mode	Antenna	Frequency[MHz]	Freq. [MHz]	Level[dBm]	Limit[dBm]	Verdict
BLE_1M	Ant1	2402	2398.3	-48.30	-20.00	PASS
			2398.4	-47.32	-20.00	PASS
			2399.4	-40.30	-10.00	PASS
			2399.5	-39.10	-10.00	PASS
			2484	-52.35	-10.00	PASS
			2484.1	-51.48	-10.00	PASS
			2485.1	-52.08	-20.00	PASS
		2480	2485.2	-51.70	-20.00	PASS
			2398.292	-52.92	-20.00	PASS
			2398.396	-52.41	-20.00	PASS
			2399.396	-52.71	-10.00	PASS
			2399.5	-52.26	-10.00	PASS
			2484	-47.38	-10.00	PASS
			2484.104	-47.11	-10.00	PASS
BLE_2M	Ant1	2404	2485.104	-50.33	-20.00	PASS
			2485.208	-50.40	-20.00	PASS
			2396.204	-49.50	-20.00	PASS
			2396.352	-50.76	-20.00	PASS
			2397.352	-47.55	-20.00	PASS
			2398.352	-48.64	-10.00	PASS
			2398.5	-48.32	-10.00	PASS
			2399.5	-42.66	-10.00	PASS
			2484	-51.96	-10.00	PASS
			2485	-51.83	-10.00	PASS
		2478	2485.148	-51.93	-10.00	PASS
			2486.148	-51.73	-20.00	PASS
			2487.148	-51.73	-20.00	PASS
			2487.296	-51.61	-20.00	PASS
			2396.196	-52.69	-20.00	PASS
			2396.348	-53.30	-20.00	PASS
			2397.348	-53.19	-20.00	PASS
			2398.348	-53.25	-10.00	PASS
			2398.5	-52.88	-10.00	PASS
			2399.5	-52.51	-10.00	PASS
2485	2484	-48.14	-10.00	PASS		
	2485	-49.49	-10.00	PASS		
	2485.152	-48.78	-10.00	PASS		
	2486.152	-49.92	-20.00	PASS		
	2487.152	-49.71	-20.00	PASS		
	2487.304	-50.23	-20.00	PASS		

7.5. Test graphs

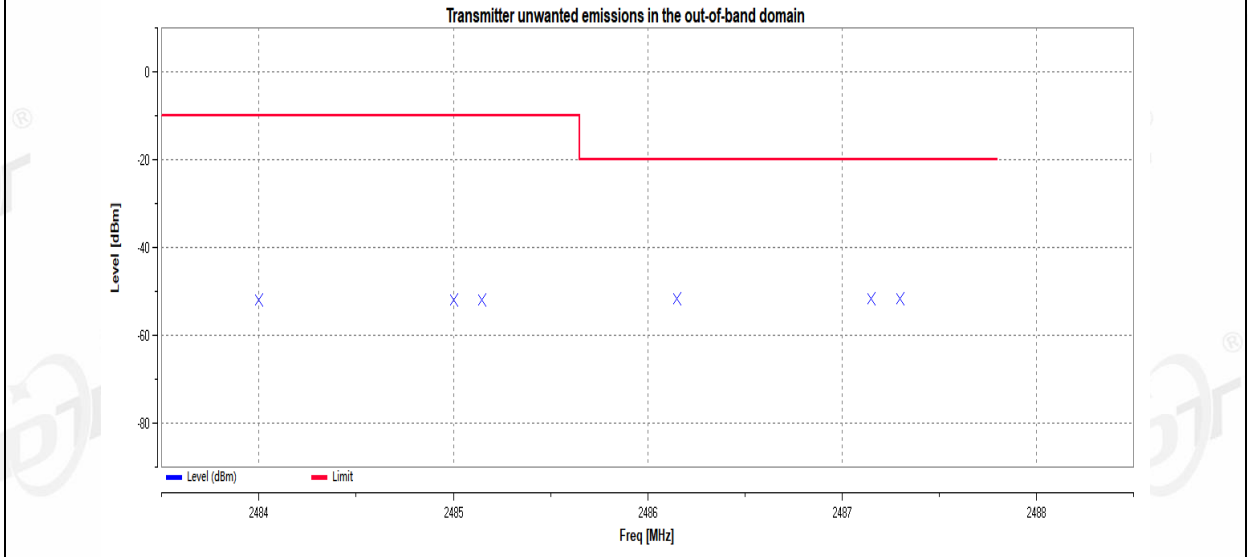




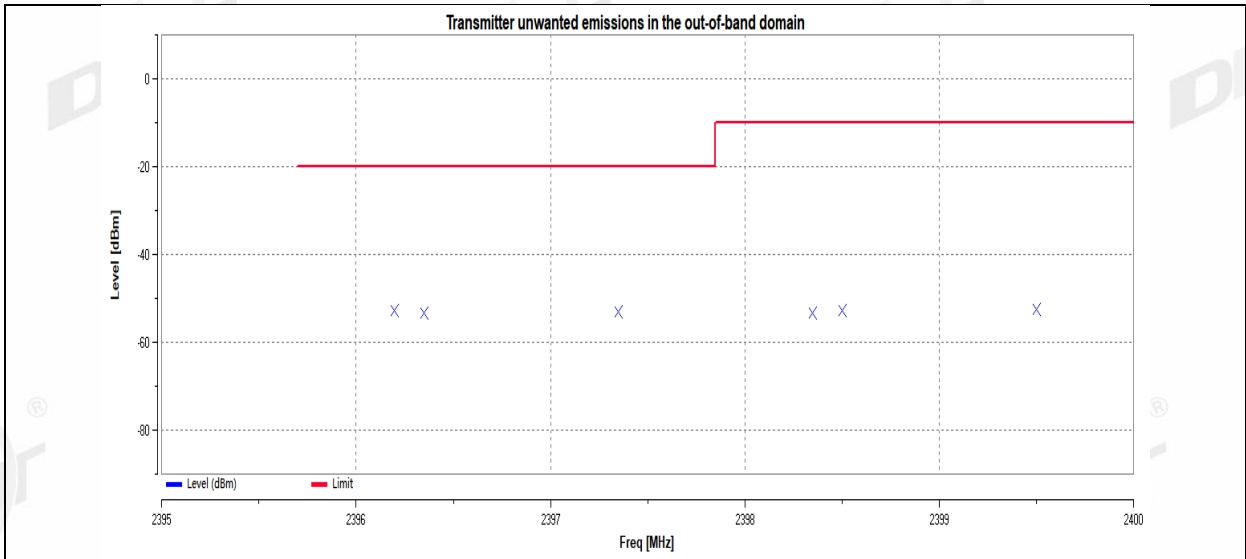
BLE_2M_Ant1_2404_2400MHz-2BW to 2400MHz



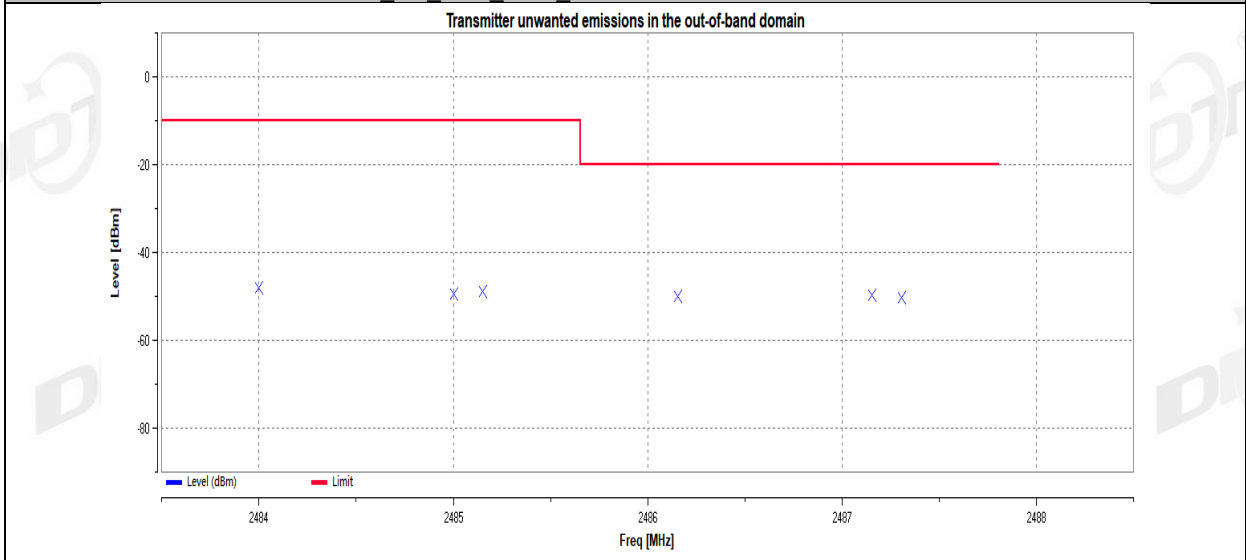
BLE_2M_Ant1_2404_2483.5MHz to 2483.5MHz+2BW



BLE_2M_Ant1_2478_2400MHz-2BW to 2400MHz

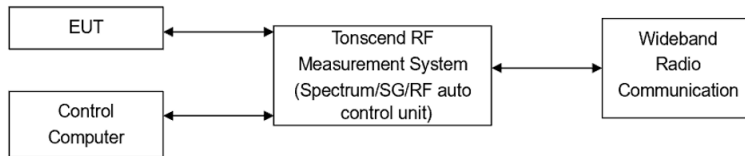


BLE 2M_Ant1_2478_2483.5MHz to 2483.5MHz+2BW



8. Receiver Blocking

8.1. Block diagram of test setup



8.2. Limits

This EUT belongs to:

Receiver category 1

The following equipment shall be categorized as receiver category 1 equipment:

- Adaptive equipment with a maximum RF output power greater than 10 dBm e.i.r.p.

NOTE: Non-adaptive equipment is categorized as receiver category 2 or receiver category 3.

Receiver category 2

The following equipment shall be categorized as receiver category 2 equipment:

- non-adaptive equipment with a Medium Utilization (MU) factor greater than 1 % and less than or equal to 10 % (irrespective of the maximum RF output power); or
- equipment (adaptive or non-adaptive) with a maximum RF output power greater than 0 dBm e.i.r.p. and less than or equal to 10 dBm e.i.r.p.

Receiver category 3

The following equipment shall be categorized as receiver category 3 equipment:

- non-adaptive equipment with a maximum Medium Utilization (MU) factor of 1 % (irrespective of the maximum RF output power); or
- equipment (adaptive or non-adaptive) with a maximum RF output power of 0 dBm e.i.r.p.

Table 14: Receiver Blocking parameters for Receiver Category 1 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 4)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 4)	Type of blocking signal
$(-133 \text{ dBm} + 10 \times \log_{10}(\text{OCBW}))$ or -68 dBm whichever is less (see note 2)	2380 2504		
$(-139 \text{ dBm} + 10 \times \log_{10}(\text{OCBW}))$ or -74 dBm whichever is less (see note 3)	2300 2330 2360 2524 2584 2674	-34	CW

NOTE 1: OCBW is in Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to $P_{\min} + 26 \text{ dB}$ where P_{\min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative test may be performed using a wanted signal up to $P_{\min} + 20 \text{ dB}$ where P_{\min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 4: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Table 15: Receiver Blocking parameters receiver Category 2 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
$(-139 \text{ dBm} + 10 \times \log_{10}(\text{OCBW}) + 10 \text{ dB})$ or $(-74 \text{ dBm} + 10 \text{ dB})$ whichever is less (see note 2)	2380 2504 2300 2584	-34	CW

NOTE 1: OCBW is in Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to $P_{\min} + 30 \text{ dB}$ where P_{\min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Table 16: Receiver Blocking parameters receiver Category 3 equipment

Wanted signal mean power from companion device (dBm) (see notes 1 and 3)	Blocking signal frequency (MHz)	Blocking signal power (dBm) (see note 3)	Type of blocking signal
$(-139 \text{ dBm} + 10 \times \log_{10}(\text{OCBW}) + 20 \text{ dB})$ or $(-74 \text{ dBm} + 20 \text{ dB})$ whichever is less (see note 2)	2380 2504 2300 2584	-34	CW

NOTE 1: OCBW is in Hz.

NOTE 2: In case of radiated measurements using a companion device and the level of the wanted signal from the companion device cannot be determined, a relative the test may be performed using a wanted signal up to $P_{\text{min}} + 30 \text{ dB}$ where P_{min} is the minimum level of wanted signal required to meet the minimum performance criteria as defined in clause 4.3.1.12.3 in the absence of any blocking signal.

NOTE 3: The level specified is the level at the UUT receiver input assuming a 0 dBi antenna assembly gain. In case of conducted measurements, this level has to be corrected for the (in-band) antenna assembly gain (G). In case of radiated measurements, this level is equivalent to a power flux density (PFD) in front of the UUT antenna with the UUT being configured/positioned as recorded in clause 5.4.3.2.2.

Performance Criteria:

The minimum performance criterion shall be a PER less than or equal to 10 %.

8.3. Test procedure

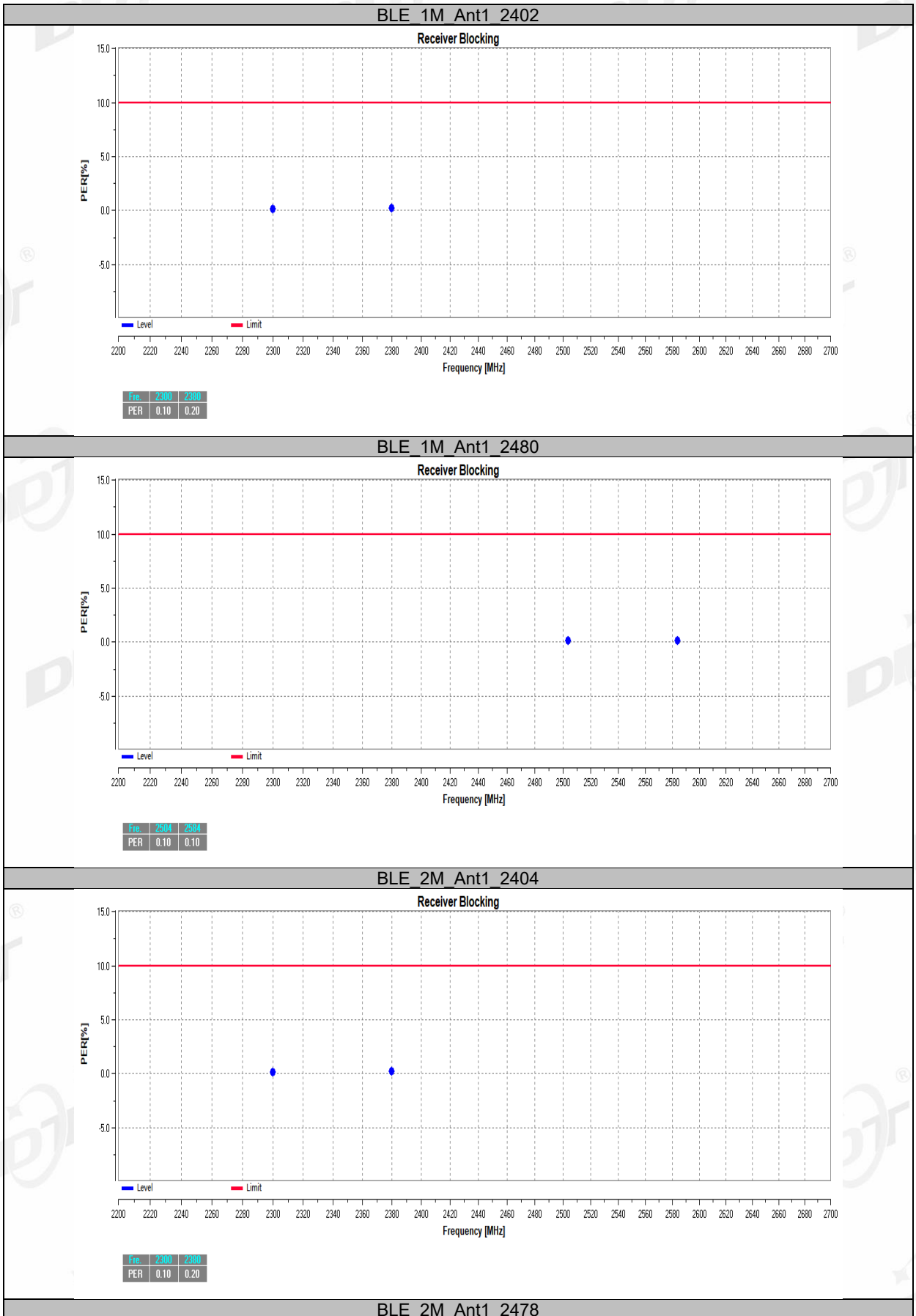
Refer to EN 300 328 V2.2.2 clause 5.4.11.2.1

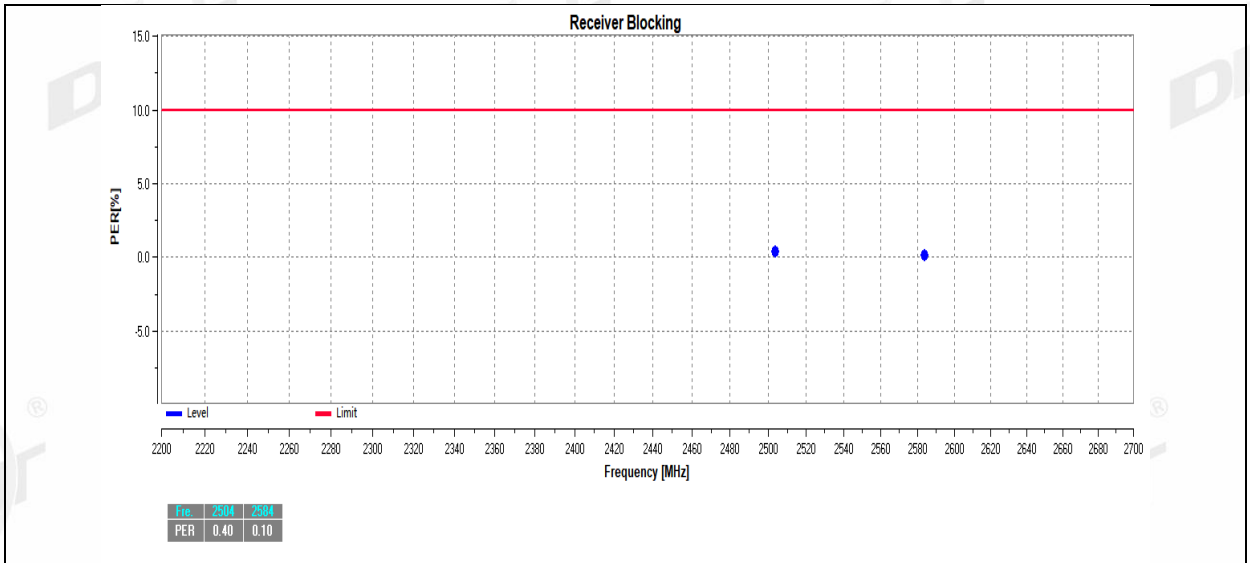
8.4. Test result

Test Engineer:	Zora Zhang	Test Site:	RF Measurement System 1#
Ambient Condition:	24.3°C,36.2%RH	Test Date:	2025.03.18-2025.03.18
Test Power Supply:	DC5V	Sample Number:	S25030538-006

TestMode	Antenna	Frequency[MHz]	Pmin [dBm]	Wanted signal [dBm]	Freq. [MHz]	CW [dBm]	PER [%]	Limit [%]	Verdict
BLE_1M	Ant1	2402	---	-67.38	2300	-32.79	0.10	≤10	PASS
			---	-67.38	2380	-32.79	0.20	≤10	PASS
		2480	---	-67.36	2504	-32.79	0.10	≤10	PASS
			---	-67.36	2584	-32.79	0.10	≤10	PASS
BLE_2M	Ant1	2404	---	-64.47	2300	-32.79	0.10	≤10	PASS
			---	-64.47	2380	-32.79	0.20	≤10	PASS
		2478	---	-64.46	2504	-32.79	0.40	≤10	PASS
			---	-64.46	2584	-32.79	0.10	≤10	PASS

8.5. Test graphs



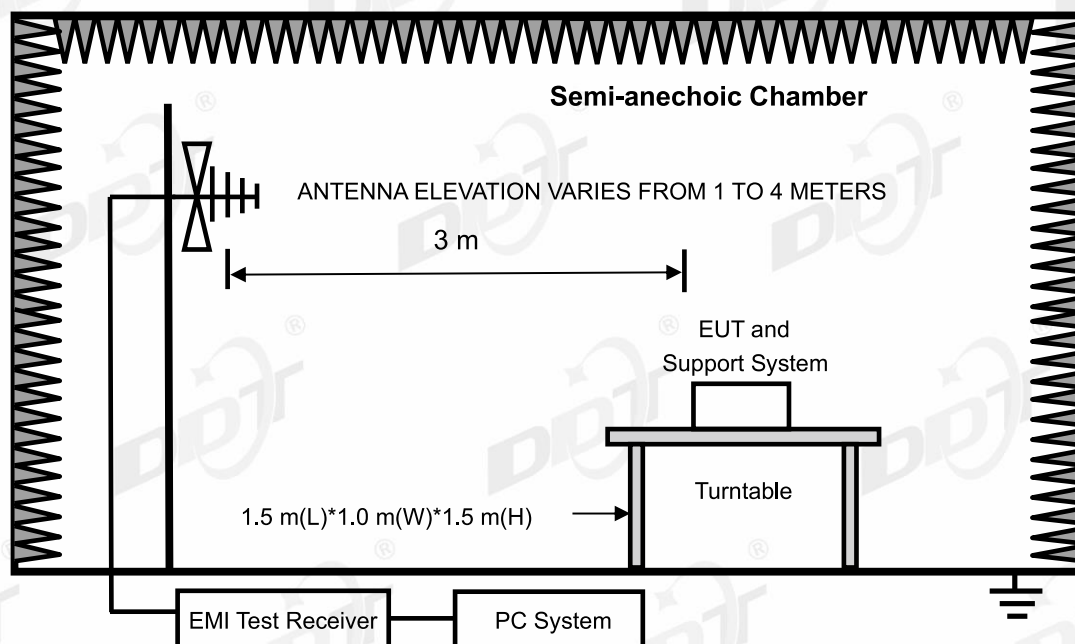
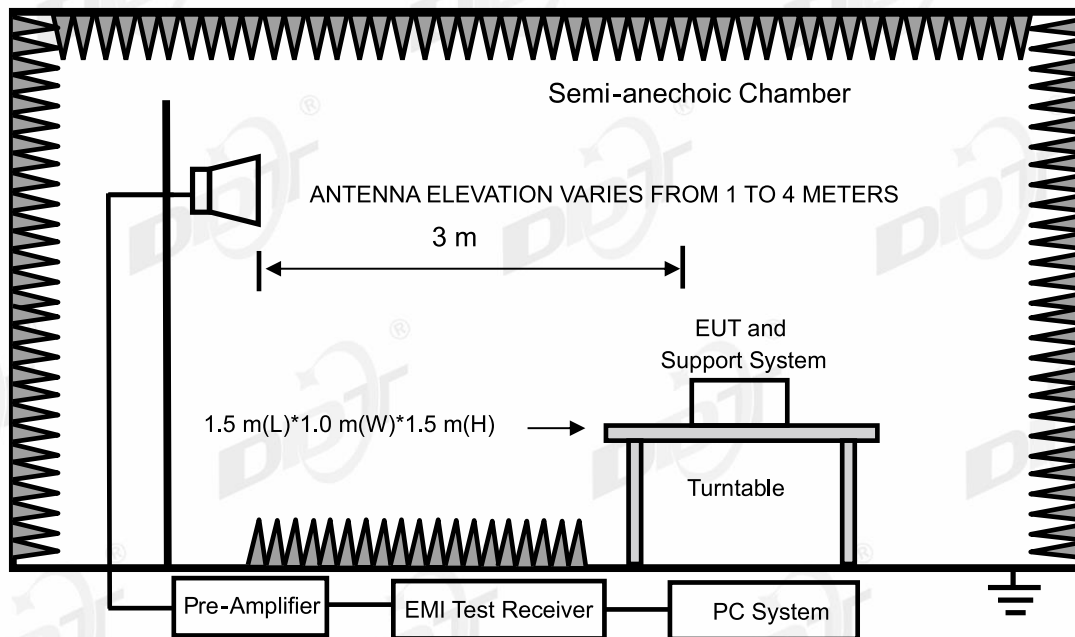


9. Transmitter unwanted emissions in the spurious domain

9.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2025/04/22
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2025/04/26
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	2025/03/31
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2025/03/31
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2025/03/31
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2025/03/31
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2025/03/31
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2025/03/31
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2025/09/11
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2025/03/31
Hochgewinn-Hornantenne	SCHWARZBEC K	BBHA 9120 D	DDT-ZC02129	2025/09/18
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2025/04/22
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2025/04/22
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2025/07/11
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2025/03/31
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2025/08/25

9.2. Block diagram of test setup



9.3. Limits

Frequency Range	Maximum power, e.r.p (≤ 1 GHz); e.i.r.p (> 1 GHz)	Bandwidth
30MHz to 47MHz	-36 dBm	100kHz
47MHz to 74MHz	-54 dBm	100kHz
74MHz to 87.5MHz	-36 dBm	100kHz
87.5MHz to 118MHz	-54 dBm	100kHz
118MHz to 174MHz	-36 dBm	100kHz
174MHz to 230MHz	-54 dBm	100kHz
230MHz to 470MHz	-36 dBm	100kHz
470 MHz to 694 MHz	-54 dBm	100kHz
694 MHz to 1 GHz	-36 dBm	100kHz

1GHz to 12.75GHz	-30 dBm	1MHz
------------------	---------	------

9.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other
/	/	/	/	/

9.5. Test procedure

(1) EUT was placed on a non-metallic table, 1.5m above the ground plane inside a semi-anechoic chamber.

(2) Test antenna was located 3m from the EUT on an adjustable mast, and the antenna used as below table.

Test frequency range	Test antenna used
30MHz-1GHz	Trilog Broadband Antenna
1GHz-12.75GHz	Double Ridged Horn Antenna

(3) Set EUT work in fixed channel transmitting mode.

(4) All the emissions from 30MHz to 12.75GHz at 3m distance was measured and recorded with receive antenna in both vertical and horizontal and varied from 1 m to 4 m. in height above the reference ground plane, and rotating the turntable obtain the maximum signal strength., the test spectrum analyser was set as below

Frequency band	RBW	VBW	Detector mode
30MHz-1GHz	100kHz	300kHz	Peak
1GHz-12.75GHz	1MHz	3MHz	Peak

Note: For harmonic emissions test an appropriate high pass filter was inserted in the input port of AMP.

(5) A correction values from a verified site calibration was used to calculate the spurious emissions of EUT.

(6) Scan with all mode, the worst case is recorded in this report.

9.6. Test result

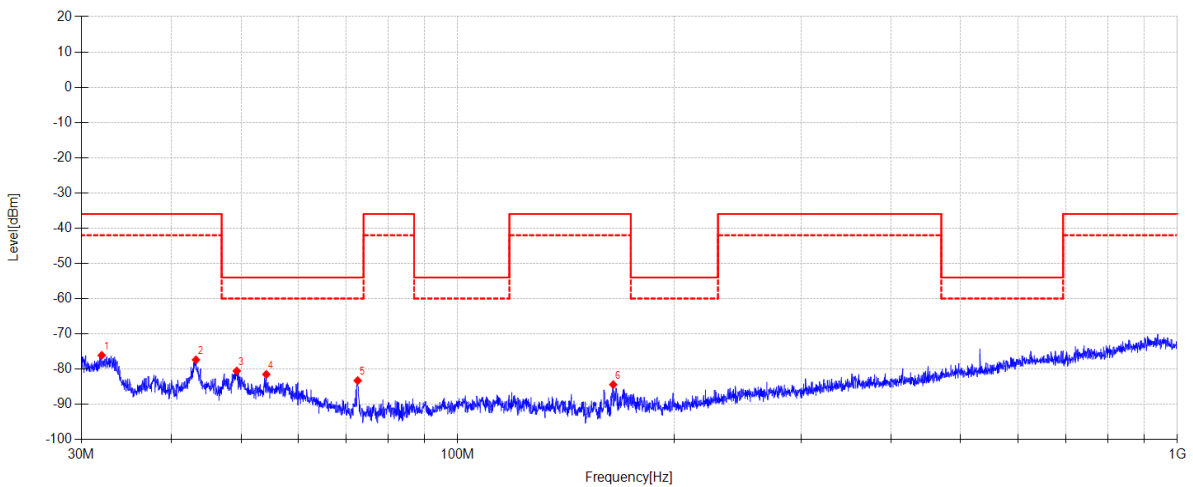
PASS. (See below detailed test result)

9.7. Test data

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\1
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	32.021	36.66	-112.75	-76.09	-36.00	40.09	PK	Horizontal	ERP
2	43.289	33.50	-110.87	-77.37	-36.00	41.37	PK	Horizontal	ERP
3	49.320	29.56	-110.10	-80.54	-54.00	26.54	PK	Horizontal	ERP
4	54.217	29.56	-111.06	-81.50	-54.00	27.50	PK	Horizontal	ERP
5	72.630	34.21	-117.48	-83.27	-54.00	29.27	PK	Horizontal	ERP
6	164.505	32.97	-117.36	-84.39	-36.00	48.39	PK	Horizontal	ERP

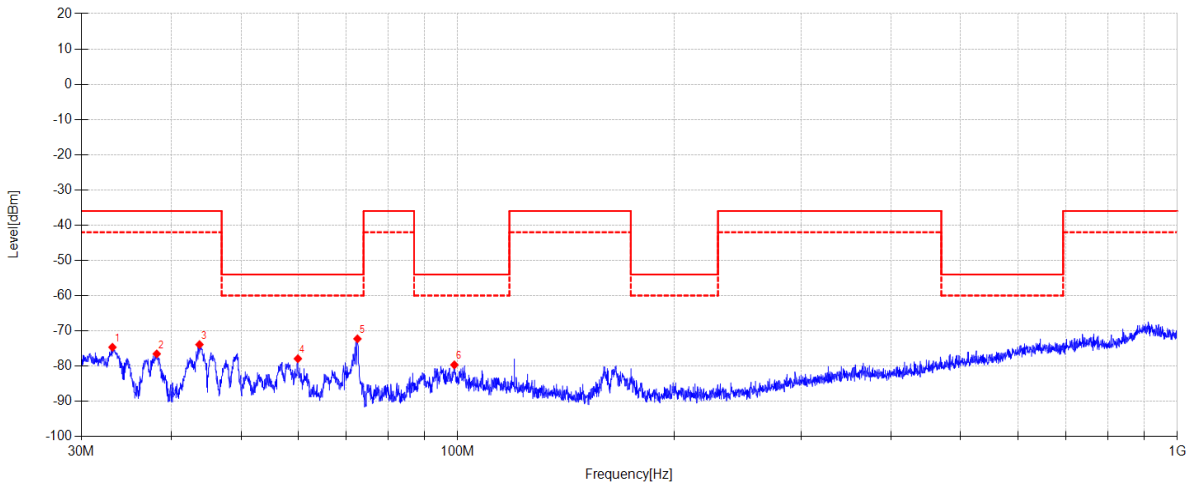
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE12
Memo: Sample Numble:S25030538-002

Test Graph



Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.141	41.72	-116.37	-74.65	-36.00	38.65	PK	Vertical	ERP
2	38.183	39.37	-115.89	-76.52	-36.00	40.52	PK	Vertical	ERP
3	43.778	41.50	-115.38	-73.88	-36.00	37.88	PK	Vertical	ERP
4	59.977	36.85	-114.74	-77.89	-54.00	23.89	PK	Vertical	ERP
5	72.579	45.16	-117.42	-72.26	-54.00	18.26	PK	Vertical	ERP
6	98.948	30.65	-110.30	-79.65	-54.00	25.65	PK	Vertical	ERP

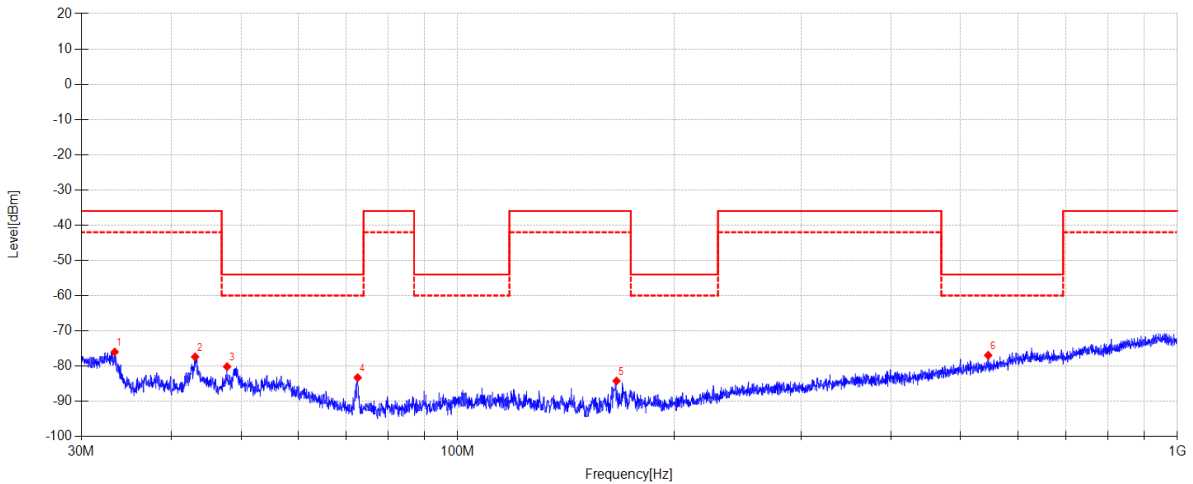
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin GuoYaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE13
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.374	36.51	-112.50	-75.99	-36.00	39.99	PK	Horizontal	ERP
2	43.168	33.52	-110.89	-77.37	-36.00	41.37	PK	Horizontal	ERP
3	47.822	30.14	-110.29	-80.15	-54.00	26.15	PK	Horizontal	ERP
4	72.630	34.21	-117.48	-83.27	-54.00	29.27	PK	Horizontal	ERP
5	166.244	33.05	-117.26	-84.21	-36.00	48.21	PK	Horizontal	ERP
6	546.014	28.97	-105.91	-76.94	-54.00	22.94	PK	Horizontal	ERP

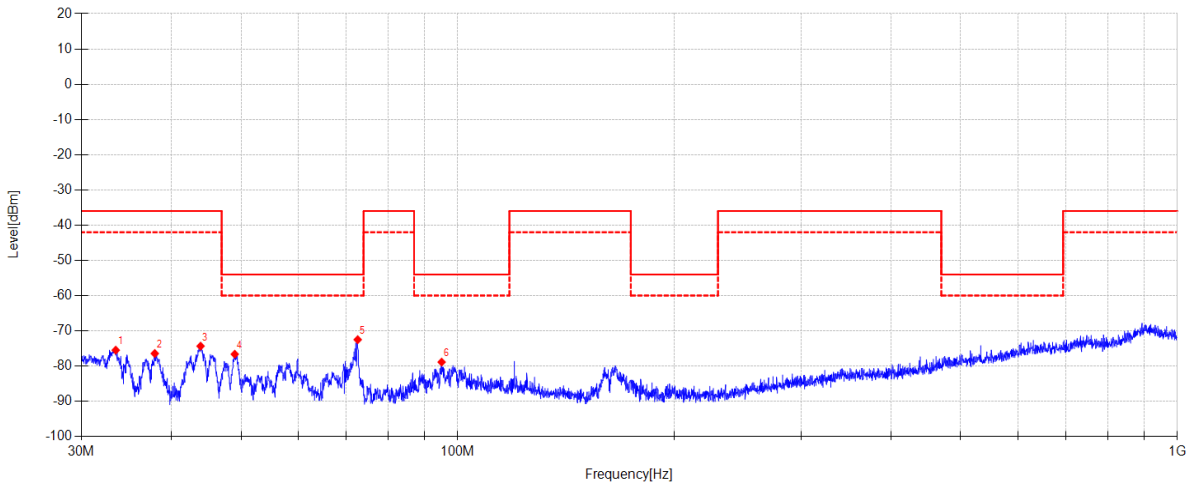
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE14
Memo: Sample Numble:S25030538-002

Test Graph



Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.491	40.87	-116.34	-75.47	-36.00	39.47	PK	Vertical	ERP
2	37.943	39.49	-115.91	-76.42	-36.00	40.42	PK	Vertical	ERP
3	43.932	41.03	-115.36	-74.33	-36.00	38.33	PK	Vertical	ERP
4	49.010	38.30	-114.91	-76.61	-54.00	22.61	PK	Vertical	ERP
5	72.630	44.91	-117.41	-72.50	-54.00	18.50	PK	Vertical	ERP
6	95.004	32.17	-111.03	-78.86	-54.00	24.86	PK	Vertical	ERP

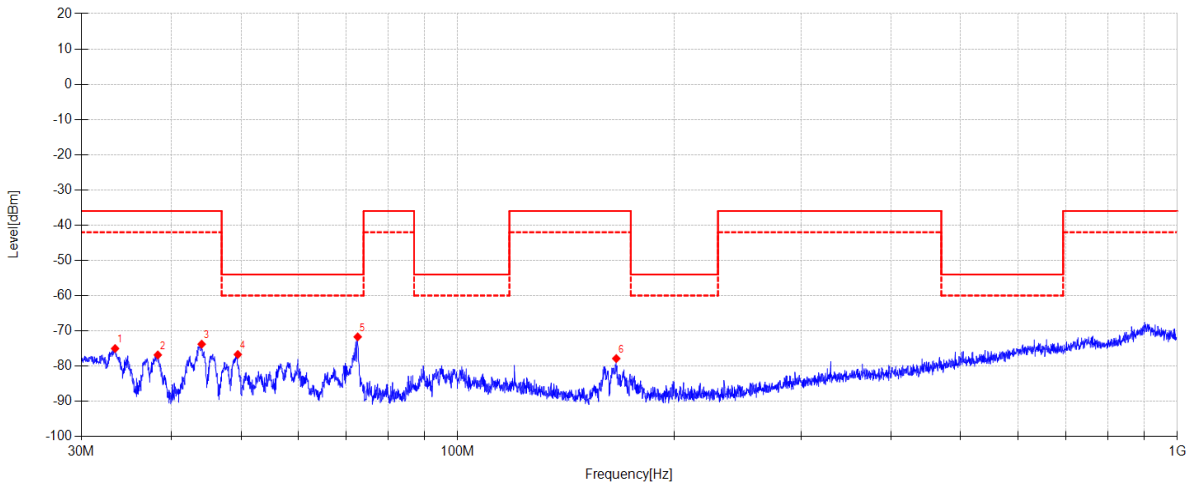
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE2M 2404MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\6
Memo: Sample Numble:S25030538-002

Test Graph



Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.421	41.34	-116.35	-75.01	-36.00	39.01	PK	Vertical	ERP
2	38.317	39.04	-115.87	-76.83	-36.00	40.83	PK	Vertical	ERP
3	44.086	41.58	-115.35	-73.77	-36.00	37.77	PK	Vertical	ERP
4	49.493	38.16	-114.86	-76.70	-54.00	22.70	PK	Vertical	ERP
5	72.630	45.71	-117.41	-71.70	-54.00	17.70	PK	Vertical	ERP
6	166.128	35.76	-113.61	-77.85	-36.00	41.85	PK	Vertical	ERP

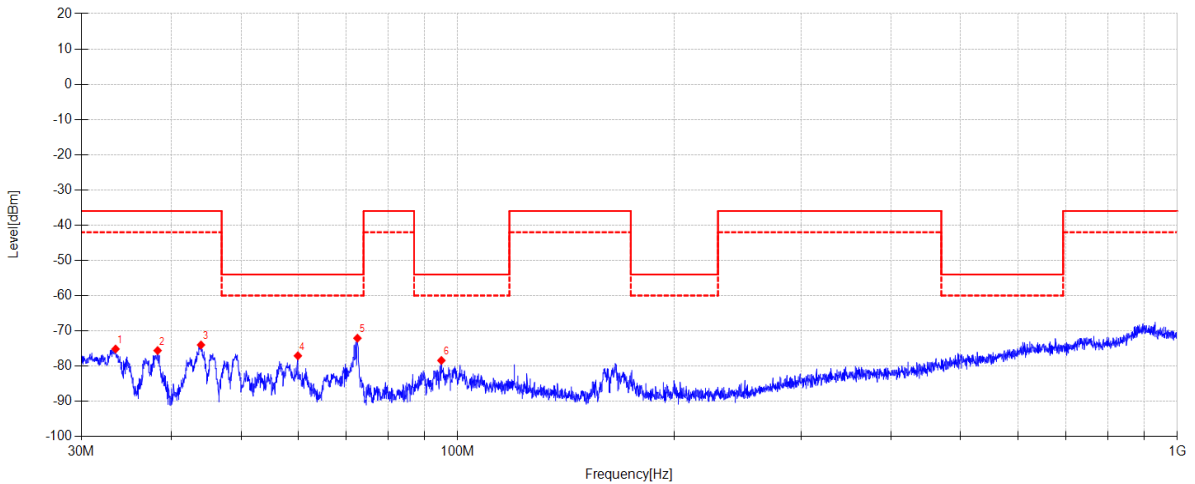
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE2M 2478MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE18
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.468	41.19	-116.34	-75.15	-36.00	39.15	PK	Vertical	ERP
2	38.291	40.29	-115.88	-75.59	-36.00	39.59	PK	Vertical	ERP
3	43.993	41.37	-115.36	-73.99	-36.00	37.99	PK	Vertical	ERP
4	59.977	37.67	-114.74	-77.07	-54.00	23.07	PK	Vertical	ERP
5	72.579	45.34	-117.42	-72.08	-54.00	18.08	PK	Vertical	ERP
6	94.938	32.65	-111.05	-78.40	-54.00	24.40	PK	Vertical	ERP

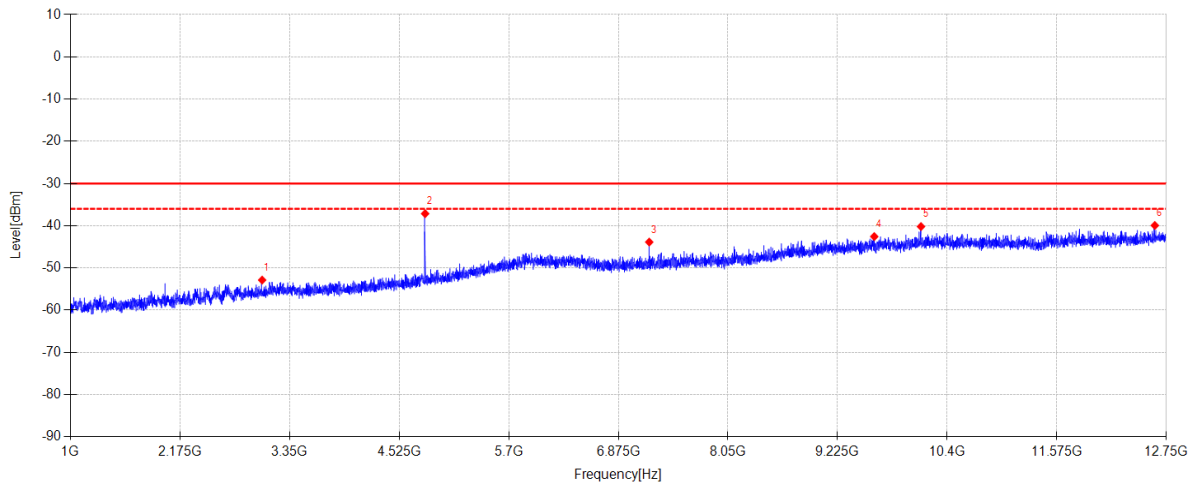
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\1
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	3056.250	49.09	-101.96	-52.87	-30.00	22.87	PK	Horizontal	EIRP
2	4803.475	61.17	-98.31	-37.14	-30.00	7.14	PK	Horizontal	EIRP
3	7206.350	50.63	-94.50	-43.87	-30.00	13.87	PK	Horizontal	EIRP
4	9618.625	45.95	-88.52	-42.57	-30.00	12.57	PK	Horizontal	EIRP
5	10119.175	47.81	-88.01	-40.20	-30.00	10.20	PK	Horizontal	EIRP
6	12626.625	47.98	-87.92	-39.94	-30.00	9.94	PK	Horizontal	EIRP

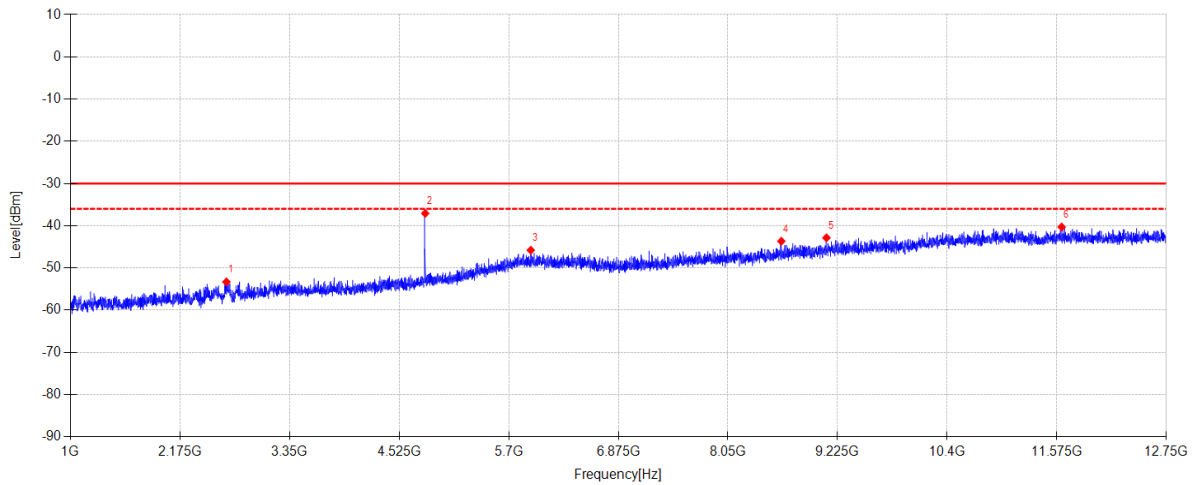
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\2
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	2673.200	49.08	-102.38	-53.30	-30.00	23.30	PK	Vertical	EIRP
2	4804.650	61.63	-98.71	-37.08	-30.00	7.08	PK	Vertical	EIRP
3	5936.175	48.02	-93.82	-45.80	-30.00	15.80	PK	Vertical	EIRP
4	8622.225	47.02	-90.69	-43.67	-30.00	13.67	PK	Vertical	EIRP
5	9106.325	46.71	-89.57	-42.86	-30.00	12.86	PK	Vertical	EIRP
6	11627.875	46.81	-87.11	-40.30	-30.00	10.30	PK	Vertical	EIRP

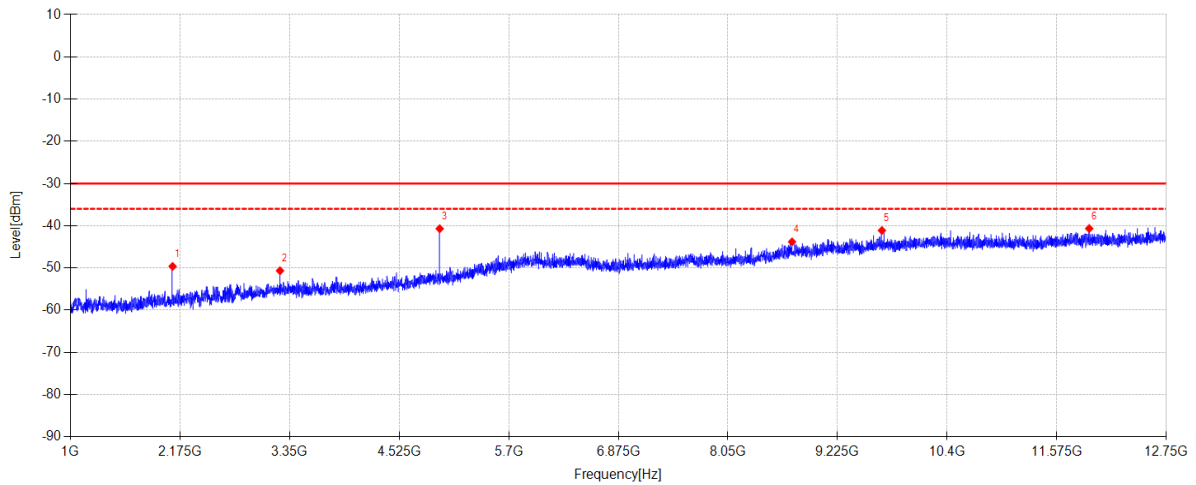
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\3
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	2096.275	53.68	-103.31	-49.63	-30.00	19.63	PK	Horizontal	EIRP
2	3247.775	51.02	-101.69	-50.67	-30.00	20.67	PK	Horizontal	EIRP
3	4959.750	57.14	-97.85	-40.71	-30.00	10.71	PK	Horizontal	EIRP
4	8737.375	46.43	-90.25	-43.82	-30.00	13.82	PK	Horizontal	EIRP
5	9700.875	47.29	-88.41	-41.12	-30.00	11.12	PK	Horizontal	EIRP
6	11922.800	47.23	-87.90	-40.67	-30.00	10.67	PK	Horizontal	EIRP

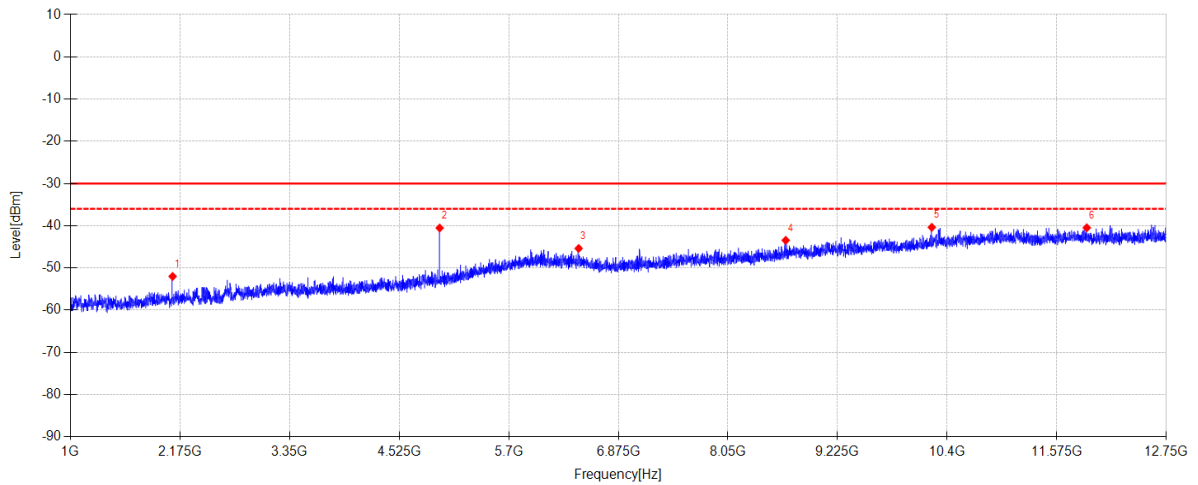
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\4
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	2096.275	51.05	-103.06	-52.01	-30.00	22.01	PK	Vertical	EIRP
2	4959.750	57.79	-98.33	-40.54	-30.00	10.54	PK	Vertical	EIRP
3	6449.650	48.86	-94.24	-45.38	-30.00	15.38	PK	Vertical	EIRP
4	8669.225	47.11	-90.57	-43.46	-30.00	13.46	PK	Vertical	EIRP
5	10235.500	47.70	-88.08	-40.38	-30.00	10.38	PK	Vertical	EIRP
6	11896.950	46.80	-87.28	-40.48	-30.00	10.48	PK	Vertical	EIRP

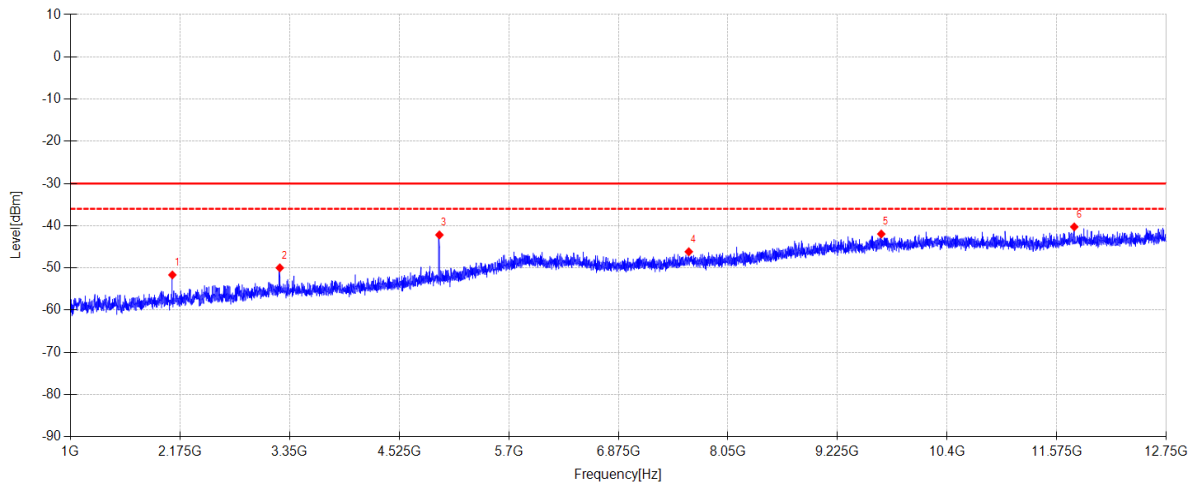
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE2M 2478MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\5
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	2093.925	51.66	-103.31	-51.65	-30.00	21.65	PK	Horizontal	EIRP
2	3245.425	51.71	-101.69	-49.98	-30.00	19.98	PK	Horizontal	EIRP
3	4956.225	55.68	-97.86	-42.18	-30.00	12.18	PK	Horizontal	EIRP
4	7630.525	47.41	-93.57	-46.16	-30.00	16.16	PK	Horizontal	EIRP
5	9693.825	46.46	-88.42	-41.96	-30.00	11.96	PK	Horizontal	EIRP
6	11763.000	47.65	-87.93	-40.28	-30.00	10.28	PK	Horizontal	EIRP

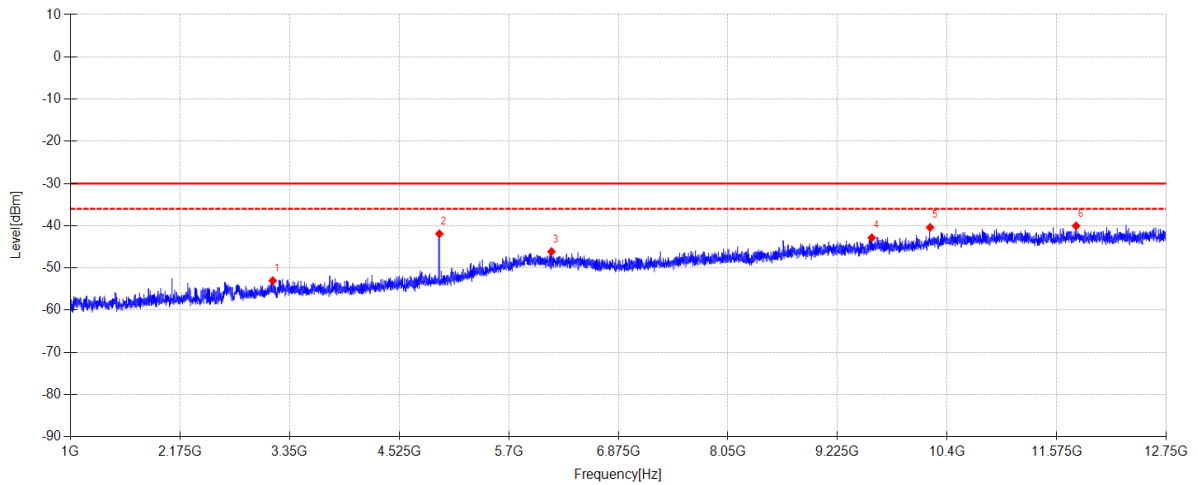
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE2M 2478MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\6
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	3170.225	48.76	-101.76	-53.00	-30.00	23.00	PK	Vertical	EIRP
2	4956.225	56.42	-98.34	-41.92	-30.00	11.92	PK	Vertical	EIRP
3	6158.250	47.64	-93.77	-46.13	-30.00	16.13	PK	Vertical	EIRP
4	9591.600	46.14	-88.98	-42.84	-30.00	12.84	PK	Vertical	EIRP
5	10216.700	47.71	-88.11	-40.40	-30.00	10.40	PK	Vertical	EIRP
6	11781.800	47.18	-87.21	-40.03	-30.00	10.03	PK	Vertical	EIRP

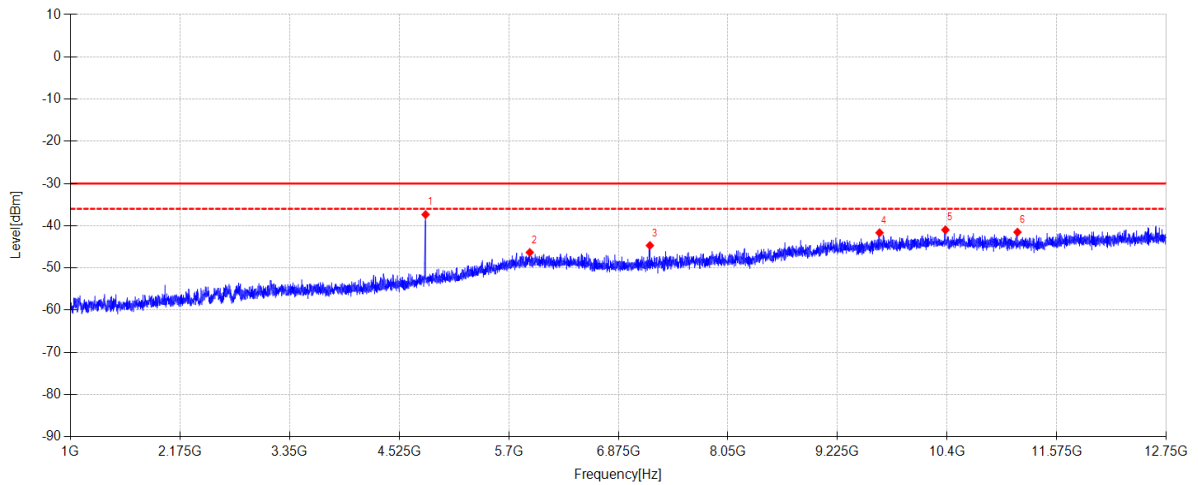
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE2M 2404MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\7
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4808.175	60.95	-98.30	-37.35	-30.00	7.35	PK	Horizontal	EIRP
2	5925.600	47.54	-93.86	-46.32	-30.00	16.32	PK	Horizontal	EIRP
3	7213.400	49.82	-94.50	-44.68	-30.00	14.68	PK	Horizontal	EIRP
4	9675.025	46.77	-88.44	-41.67	-30.00	11.67	PK	Horizontal	EIRP
5	10381.200	47.04	-88.03	-40.99	-30.00	10.99	PK	Horizontal	EIRP
6	11154.350	46.52	-88.04	-41.52	-30.00	11.52	PK	Horizontal	EIRP

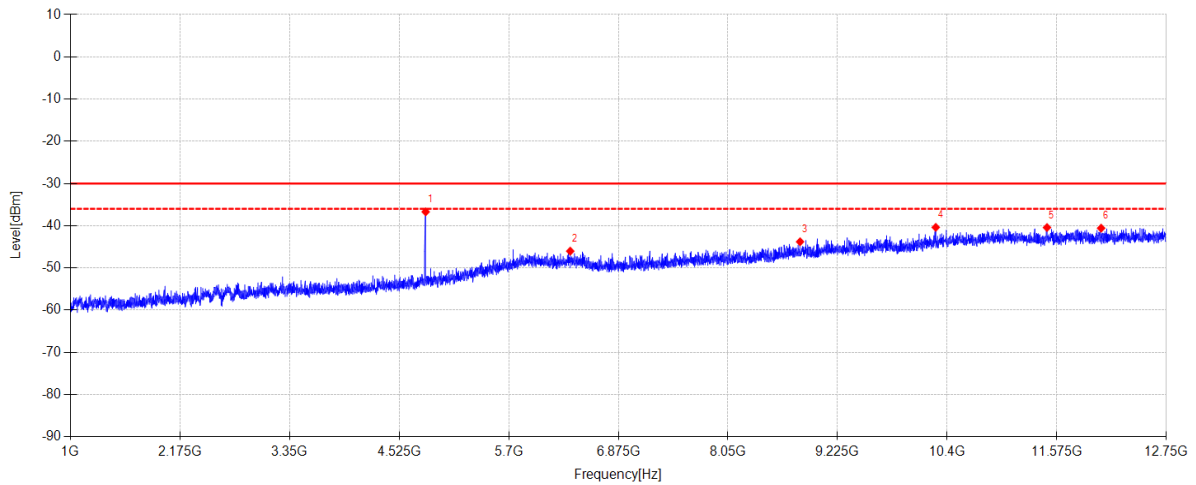
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: TX BLE2M 2404MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\8
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4809.350	61.98	-98.69	-36.71	-30.00	6.71	PK	Vertical	EIRP
2	6359.175	48.08	-94.10	-46.02	-30.00	16.02	PK	Vertical	EIRP
3	8823.150	46.37	-90.17	-43.80	-30.00	13.80	PK	Vertical	EIRP
4	10277.800	47.62	-88.00	-40.38	-30.00	10.38	PK	Vertical	EIRP
5	11470.425	46.59	-87.01	-40.42	-30.00	10.42	PK	Vertical	EIRP
6	12050.875	46.79	-87.37	-40.58	-30.00	10.58	PK	Vertical	EIRP

Note:

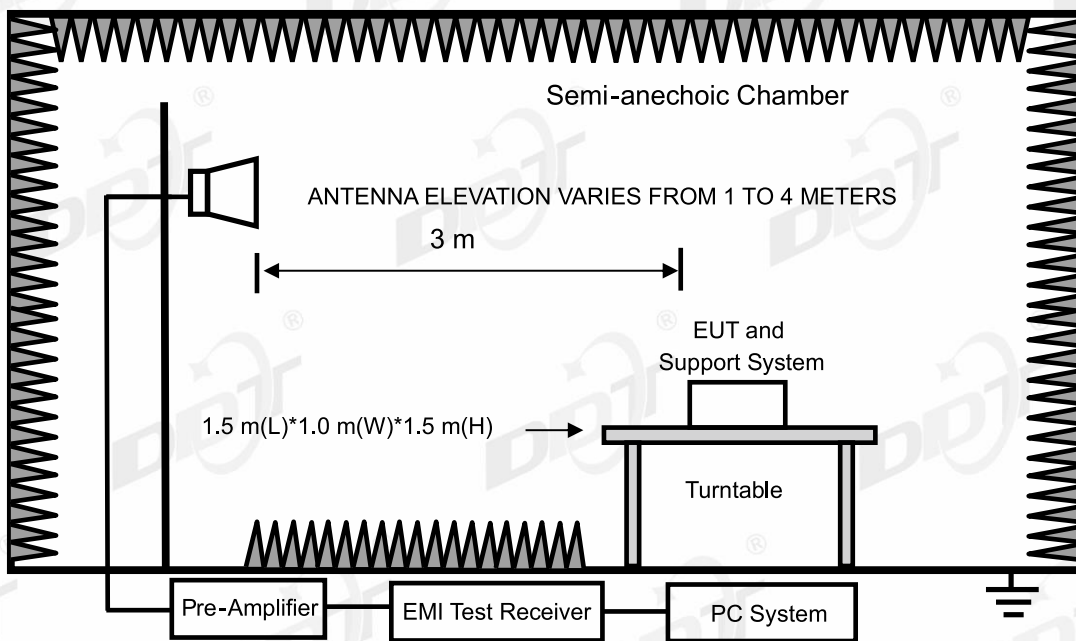
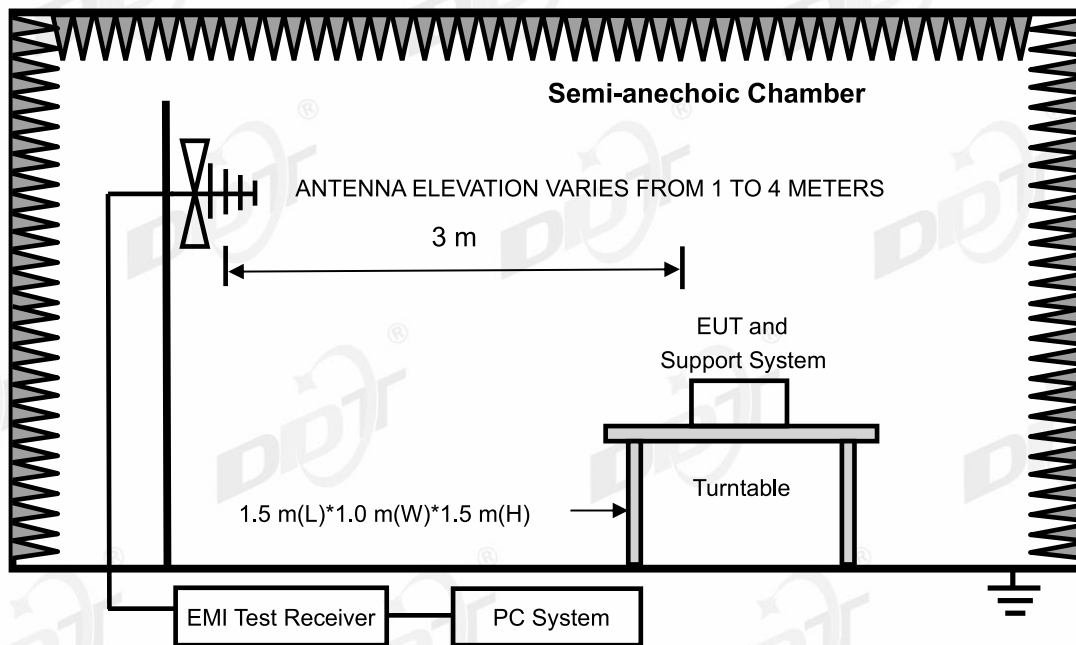
1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

10. Receiver spurious emissions

10.1. Test equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal Due To
High pass filter	Micro-Tronics	HPM50108	DDT-ZC00560	2025/04/22
High Pass filter	Xi'an Xingbo	XBLBQ-GTA67	DDT-ZC02179	2025/04/22
RF Cable	N/A	W13.02 AP1-X2	DDT-ZC04023	2025/03/31
RF cable	Zhongke Junchuang	JCT26S-NJ-NJ-1.5M	DDT-ZC02762	2025/03/31
Active Loop Antenna	Schwarzbeck	FMZB1519	DDT-ZC00524	2025/09/11
RF cable	Yuhu Technology	JCTB810-NJ-NJ-9M	DDT-ZC02538	2025/03/31
PSA Series Spectrum Analyzer	Agilent	E4447A	DDT-ZC00517	2025/03/31
RF cable	Yuhu Technology	ZT26S-SMAJ-SMAJ-1M	DDT-ZC02037	2025/03/31
Trilog Broadband Antenna	Schwarzbeck	VULB 9163	DDT-ZC02050	2025/07/11
Micro-Tronics filters	REBES	BRM50716	DDT-ZC03240	/
Pre-amplifier	COM-POWER	PAM-118A	DDT-ZC01293	2025/08/25
EMI TEST RECEIVER	R&S	ESU26	DDT-ZC01909	2025/03/31
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	DDT-ZC00506	2025/04/26
Pre-amplifier	COM-POWER	PAM-840A	DDT-ZC01693	2025/03/31
RF Cable	N/A	W24.02 HL-562	DDT-ZC04022	2025/03/31
High pass filter	Micro-Tronics	HPM50102	DDT-ZC00561	2025/04/22
Micro-Tronics filters	REBES	BRM50702	DDT-ZC03242	/
Hochgewinn-Hornantenne	SCHWARZBEC K	BBHA 9120 D	DDT-ZC02129	2025/09/18

10.2. Block diagram of test setup



10.3. Limits

The spurious emissions of the receiver shall not exceed the values given in below table.

Frequency range	Maximum power	Bandwidth
30 MHz to 1 GHz	-57 dBm	100 kHz
1 GHz to 12,75 GHz	-47 dBm	1 MHz

10.4. Assistant equipment used for test

Assistant equipment	Manufacturer	Model number	Description	other

/	/	/	/	/
---	---	---	---	---

10.5. Test procedure

Refer to EN 300 328 V2.2.2 Clause 5.4.10.2

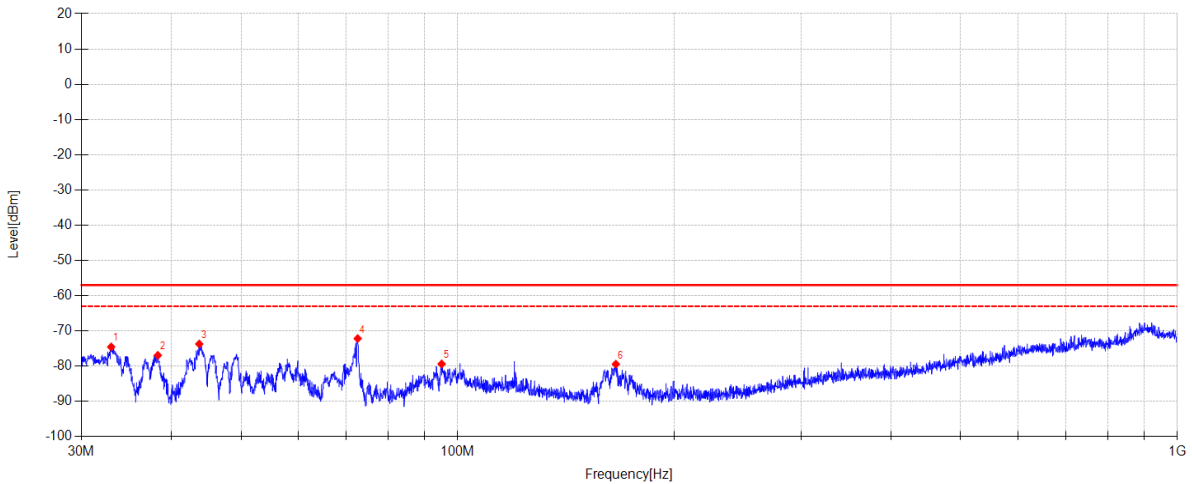
10.6. Test result

PASS. (See below detailed test result)

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE2M 2478MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\10
Memo: Sample Numble:S25030538-002

Test Graph



Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.002	41.84	-116.39	-74.55	-57.00	17.55	PK	Vertical	ERP
2	38.317	38.94	-115.87	-76.93	-57.00	19.93	PK	Vertical	ERP
3	43.747	41.67	-115.38	-73.71	-57.00	16.71	PK	Vertical	ERP
4	72.630	45.24	-117.41	-72.17	-57.00	15.17	PK	Vertical	ERP
5	95.004	31.64	-111.03	-79.39	-57.00	22.39	PK	Vertical	ERP
6	165.895	34.16	-113.61	-79.45	-57.00	22.45	PK	Vertical	ERP

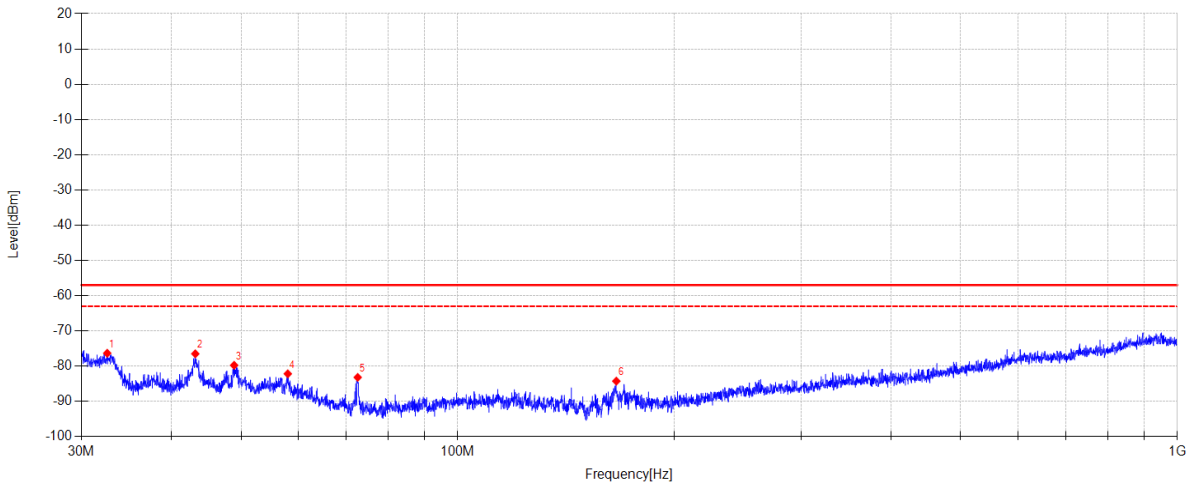
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE2M 2404MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\11
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	32.588	36.29	-112.64	-76.35	-57.00	19.35	PK	Horizontal	ERP
2	43.199	34.38	-110.88	-76.50	-57.00	19.50	PK	Horizontal	ERP
3	48.907	30.39	-110.16	-79.77	-57.00	22.77	PK	Horizontal	ERP
4	58.073	29.82	-112.00	-82.18	-57.00	25.18	PK	Horizontal	ERP
5	72.630	34.29	-117.48	-83.19	-57.00	26.19	PK	Horizontal	ERP
6	166.128	33.01	-117.27	-84.26	-57.00	27.26	PK	Horizontal	ERP

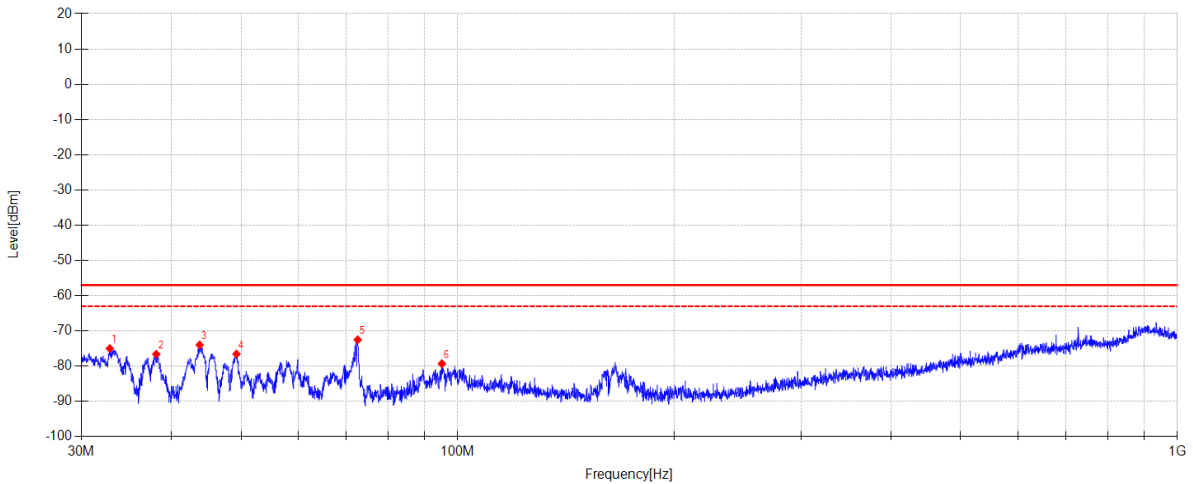
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE2M 2404MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\12
Memo: Sample Numble:S25030538-002

Test Graph



Data List

NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	32.863	41.39	-116.40	-75.01	-57.00	18.01	PK	Vertical	ERP
2	38.130	39.28	-115.89	-76.61	-57.00	19.61	PK	Vertical	ERP
3	43.809	41.39	-115.37	-73.98	-57.00	16.98	PK	Vertical	ERP
4	49.285	38.33	-114.88	-76.55	-57.00	19.55	PK	Vertical	ERP
5	72.630	44.89	-117.41	-72.52	-57.00	15.52	PK	Vertical	ERP
6	95.071	31.71	-111.02	-79.31	-57.00	22.31	PK	Vertical	ERP

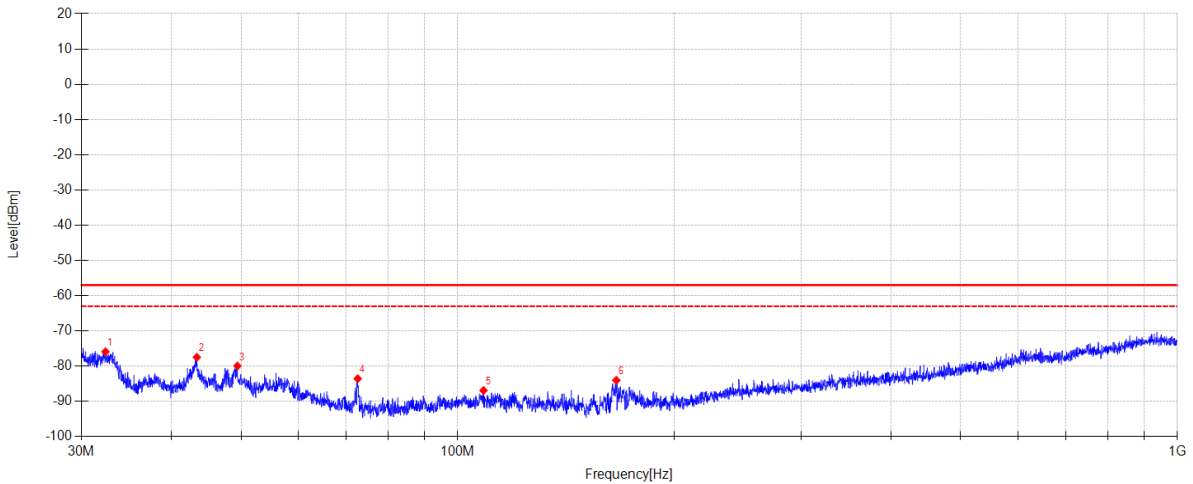
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\13
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	32.405	36.76	-112.68	-75.92	-57.00	18.92	PK	Horizontal	ERP
2	43.411	33.38	-110.86	-77.48	-57.00	20.48	PK	Horizontal	ERP
3	49.424	30.14	-110.09	-79.95	-57.00	22.95	PK	Horizontal	ERP
4	72.630	33.91	-117.48	-83.57	-57.00	26.57	PK	Horizontal	ERP
5	108.619	28.71	-115.62	-86.91	-57.00	29.91	PK	Horizontal	ERP
6	166.128	33.25	-117.27	-84.02	-57.00	27.02	PK	Horizontal	ERP

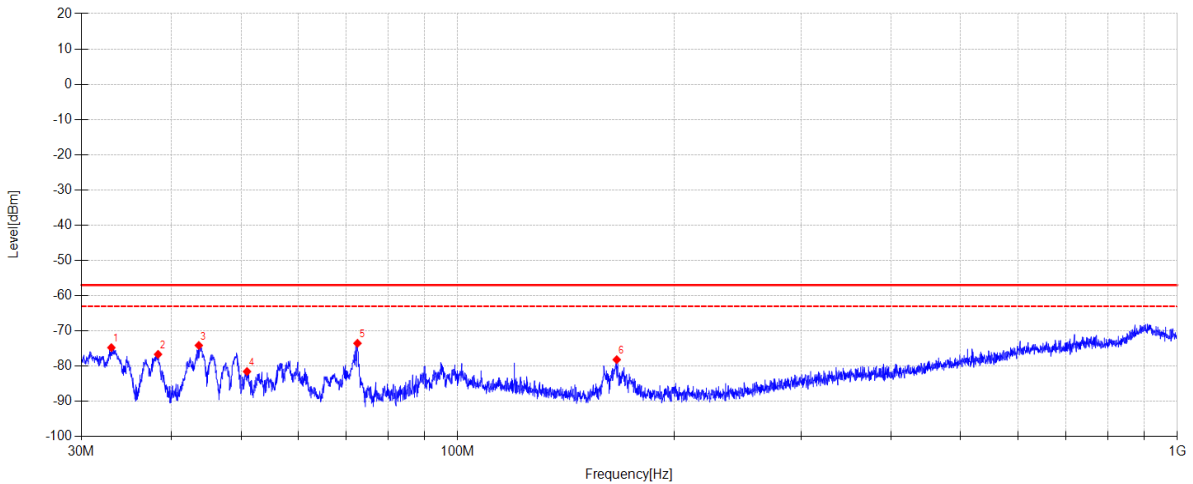
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin GuoYaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\14
Memo: Sample Numble:S25030538-002

Test Graph



Data List

NO.	Freq. [MHz]	Reading [dB μ V/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.025	41.63	-116.38	-74.75	-57.00	17.75	PK	Vertical	ERP
2	38.344	39.21	-115.87	-76.66	-57.00	19.66	PK	Vertical	ERP
3	43.686	41.25	-115.38	-74.13	-57.00	17.13	PK	Vertical	ERP
4	50.972	33.27	-114.81	-81.54	-57.00	24.54	PK	Vertical	ERP
5	72.579	43.89	-117.42	-73.53	-57.00	16.53	PK	Vertical	ERP
6	166.361	35.44	-113.61	-78.17	-57.00	21.17	PK	Vertical	ERP

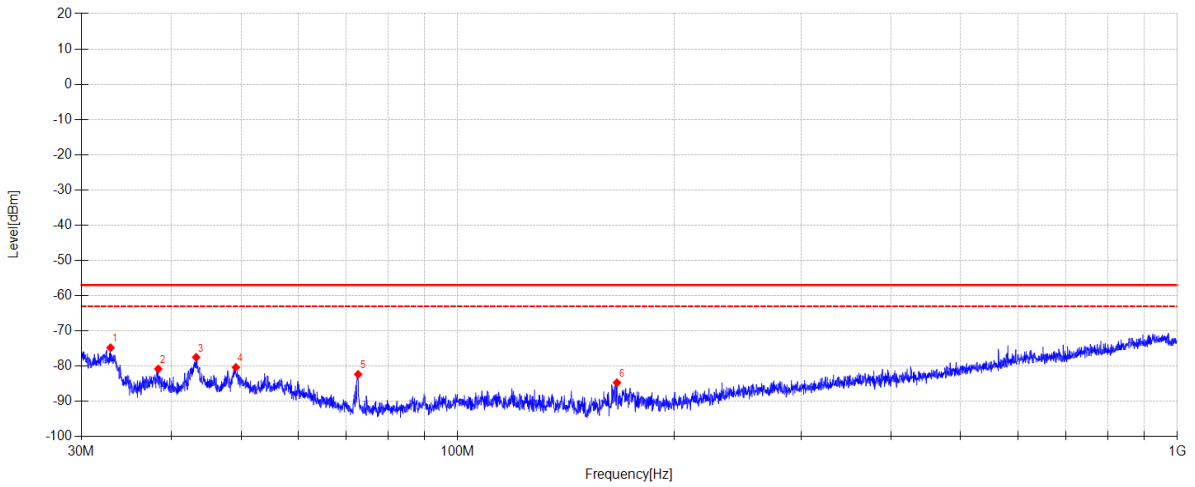
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\15
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	32.932	37.79	-112.58	-74.79	-57.00	17.79	PK	Horizontal	ERP
2	38.371	30.79	-111.59	-80.80	-57.00	23.80	PK	Horizontal	ERP
3	43.320	33.37	-110.87	-77.50	-57.00	20.50	PK	Horizontal	ERP
4	49.182	29.77	-110.12	-80.35	-57.00	23.35	PK	Horizontal	ERP
5	72.732	35.13	-117.48	-82.35	-57.00	25.35	PK	Horizontal	ERP
6	166.477	32.54	-117.25	-84.71	-57.00	27.71	PK	Horizontal	ERP

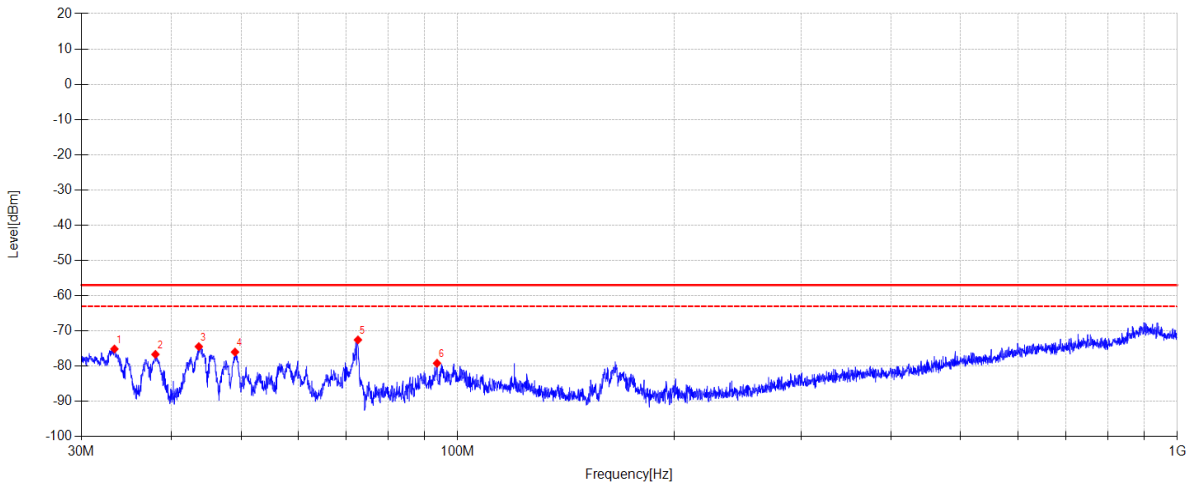
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-25 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.1°C;Humi:47.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\0325 CE Below 1G BLE\16
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	33.351	41.22	-116.36	-75.14	-57.00	18.14	PK	Vertical	ERP
2	38.023	39.23	-115.90	-76.67	-57.00	19.67	PK	Vertical	ERP
3	43.686	40.92	-115.38	-74.46	-57.00	17.46	PK	Vertical	ERP
4	49.044	38.90	-114.91	-76.01	-57.00	19.01	PK	Vertical	ERP
5	72.681	44.85	-117.41	-72.56	-57.00	15.56	PK	Vertical	ERP
6	93.616	32.10	-111.29	-79.19	-57.00	22.19	PK	Vertical	ERP

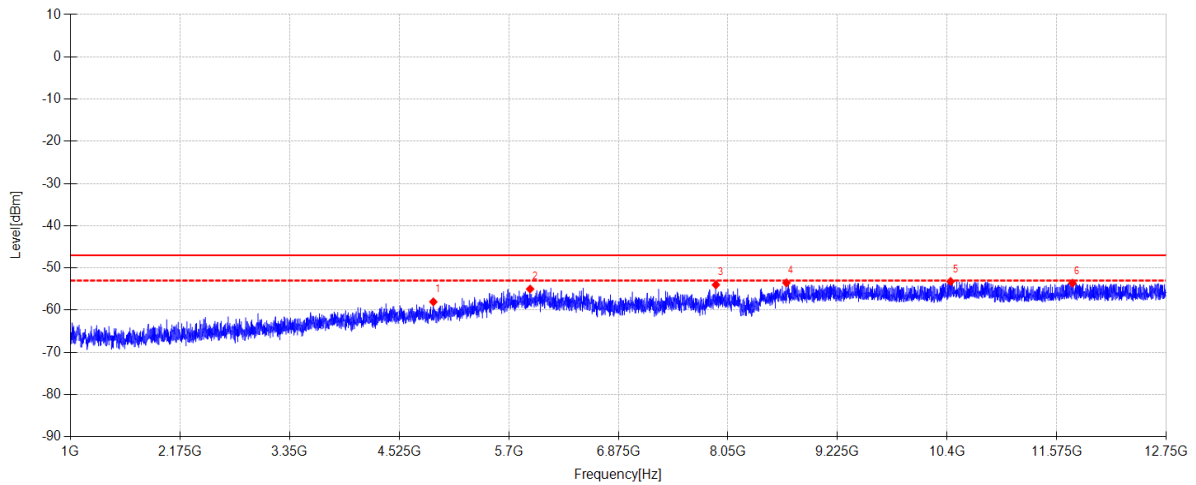
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 100 kHz, VBW: 300 kHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE2M 2404MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\9
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4891.600	40.50	-98.53	-58.03	-47.00	11.03	PK	Horizontal	EIRP
2	5929.125	39.20	-94.20	-55.00	-47.00	8.00	PK	Horizontal	EIRP
3	7920.750	39.30	-93.29	-53.99	-47.00	6.99	PK	Horizontal	EIRP
4	8677.450	37.24	-90.77	-53.53	-47.00	6.53	PK	Horizontal	EIRP
5	10437.600	35.49	-88.69	-53.20	-47.00	6.20	PK	Horizontal	EIRP
6	11743.025	35.09	-88.70	-53.61	-47.00	6.61	PK	Horizontal	EIRP

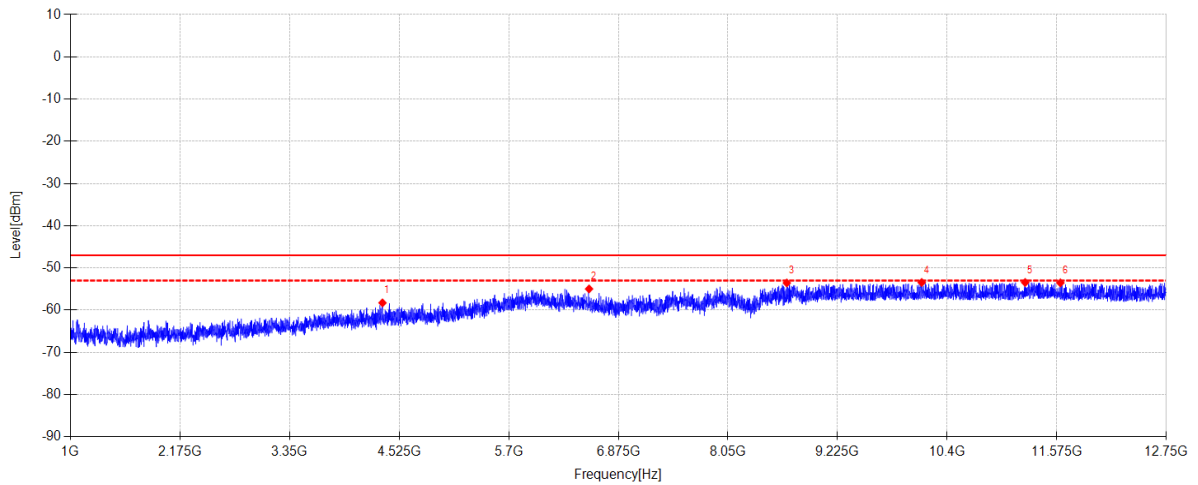
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE2M 2404MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\10
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dB μ V/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4346.400	42.03	-100.30	-58.27	-47.00	11.27	PK	Vertical	EIRP
2	6561.275	39.90	-94.87	-54.97	-47.00	7.97	PK	Vertical	EIRP
3	8680.975	37.31	-90.86	-53.55	-47.00	6.55	PK	Vertical	EIRP
4	10127.400	35.42	-88.86	-53.44	-47.00	6.44	PK	Vertical	EIRP
5	11236.600	34.19	-87.63	-53.44	-47.00	6.44	PK	Vertical	EIRP
6	11613.775	34.34	-87.87	-53.53	-47.00	6.53	PK	Vertical	EIRP

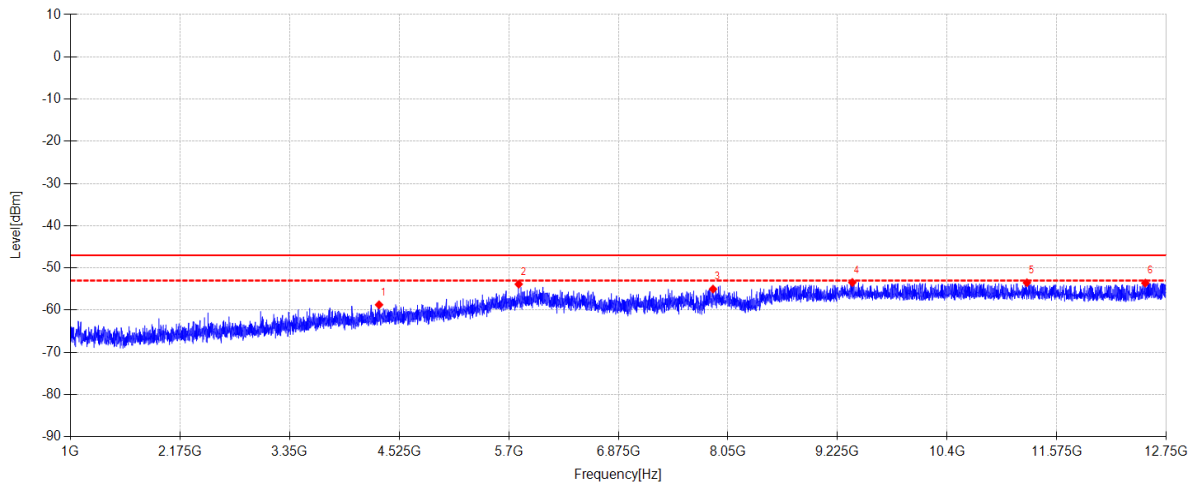
Note:

- Level = Reading + Factor.
- Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE2M 2478MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\11
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4309.975	41.50	-100.23	-58.73	-47.00	11.73	PK	Horizontal	EIRP
2	5806.925	40.89	-94.73	-53.84	-47.00	6.84	PK	Horizontal	EIRP
3	7890.200	38.36	-93.37	-55.01	-47.00	8.01	PK	Horizontal	EIRP
4	9383.625	35.81	-89.25	-53.44	-47.00	6.44	PK	Horizontal	EIRP
5	11255.400	35.29	-88.79	-53.50	-47.00	6.50	PK	Horizontal	EIRP
6	12524.400	35.15	-88.74	-53.59	-47.00	6.59	PK	Horizontal	EIRP

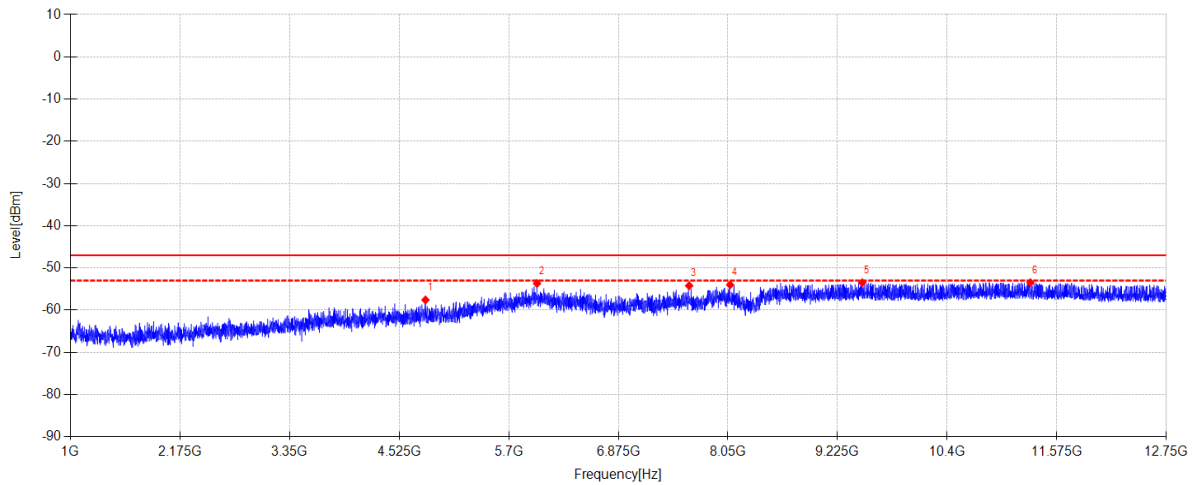
Note:

- Level = Reading + Factor.
- Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE2M 2478MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\12
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4807.000	41.62	-99.19	-57.57	-47.00	10.57	PK	Vertical	EIRP
2	6003.150	40.19	-93.86	-53.67	-47.00	6.67	PK	Vertical	EIRP
3	7634.050	39.57	-93.78	-54.21	-47.00	7.21	PK	Vertical	EIRP
4	8073.500	38.51	-92.50	-53.99	-47.00	6.99	PK	Vertical	EIRP
5	9489.375	36.05	-89.54	-53.49	-47.00	6.49	PK	Vertical	EIRP
6	11293.000	34.18	-87.66	-53.48	-47.00	6.48	PK	Vertical	EIRP

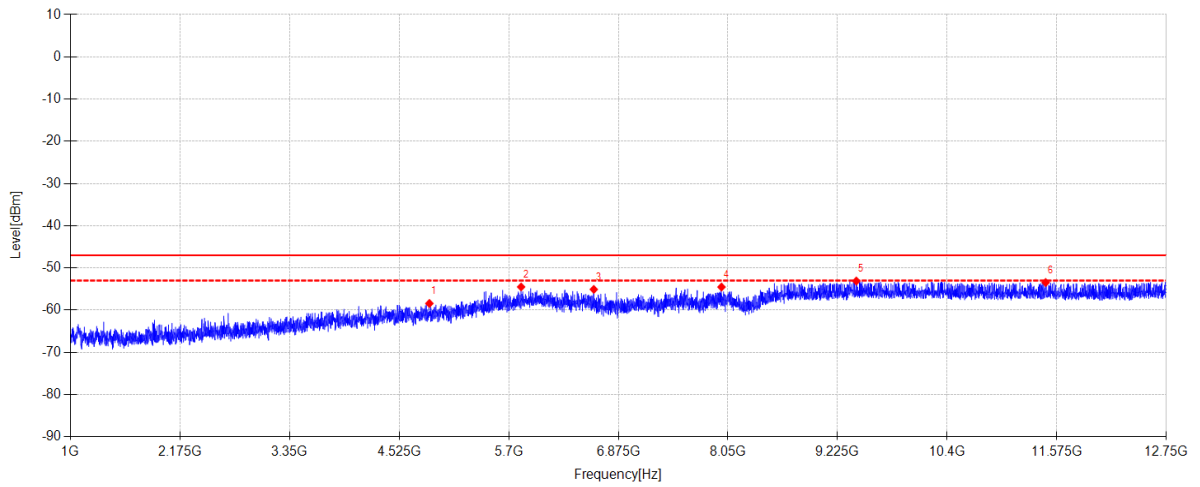
Note:

- Level = Reading + Factor.
- Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
- Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\13
Memo: Sample Numbler:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4849.300	40.24	-98.65	-58.41	-47.00	11.41	PK	Horizontal	EIRP
2	5832.775	40.11	-94.61	-54.50	-47.00	7.50	PK	Horizontal	EIRP
3	6611.800	39.79	-94.87	-55.08	-47.00	8.08	PK	Horizontal	EIRP
4	7980.675	38.64	-93.16	-54.52	-47.00	7.52	PK	Horizontal	EIRP
5	9425.925	36.09	-89.19	-53.10	-47.00	6.10	PK	Horizontal	EIRP
6	11456.325	35.30	-88.75	-53.45	-47.00	6.45	PK	Horizontal	EIRP

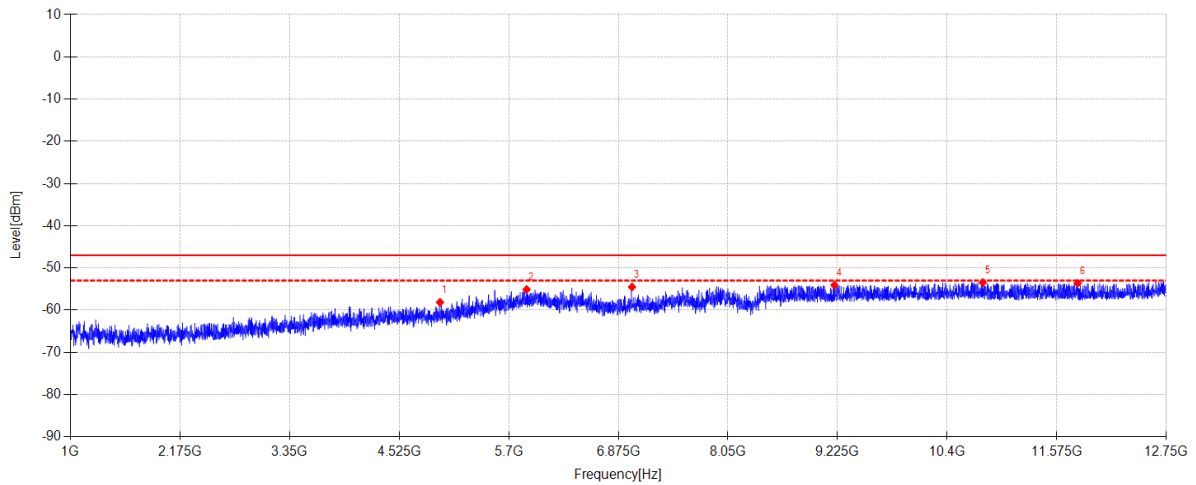
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2480MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\14
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4963.275	40.65	-98.79	-58.14	-47.00	11.14	PK	Vertical	EIRP
2	5891.525	39.28	-94.38	-55.10	-47.00	8.10	PK	Vertical	EIRP
3	7021.875	41.07	-95.58	-54.51	-47.00	7.51	PK	Vertical	EIRP
4	9192.100	35.74	-89.82	-54.08	-47.00	7.08	PK	Vertical	EIRP
5	10781.875	34.36	-87.82	-53.46	-47.00	6.46	PK	Vertical	EIRP
6	11799.425	34.35	-87.99	-53.64	-47.00	6.64	PK	Vertical	EIRP

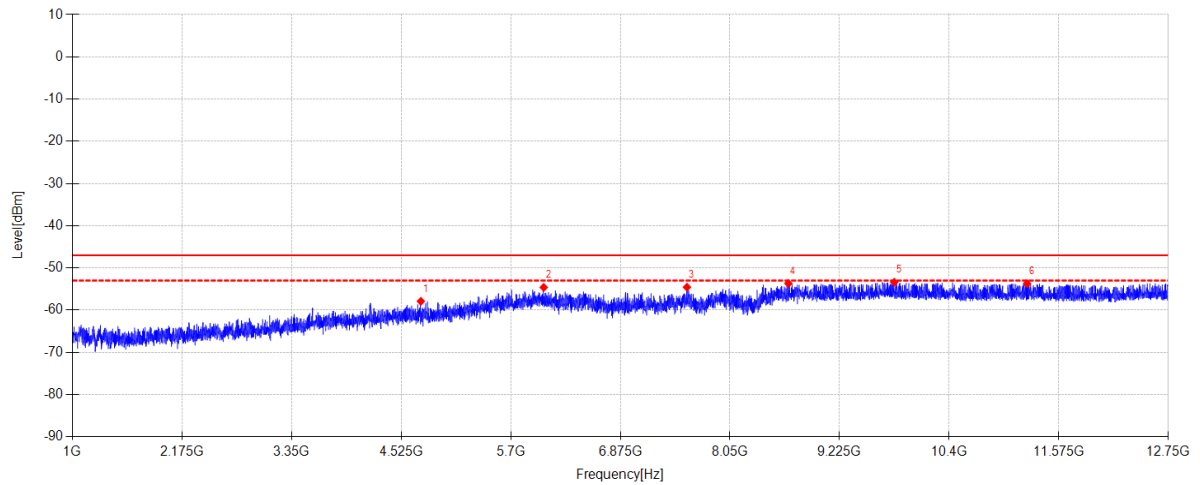
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\15
Memo: Sample Numble:S25030538-002

Test Graph



Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	4736.500	41.07	-98.97	-57.90	-47.00	10.90	PK	Horizontal	EIRP
2	6053.675	39.38	-93.99	-54.61	-47.00	7.61	PK	Horizontal	EIRP
3	7589.400	39.53	-94.09	-54.56	-47.00	7.56	PK	Horizontal	EIRP
4	8676.275	37.10	-90.78	-53.68	-47.00	6.68	PK	Horizontal	EIRP
5	9811.325	35.40	-88.78	-53.38	-47.00	6.38	PK	Horizontal	EIRP
6	11235.425	35.08	-88.80	-53.72	-47.00	6.72	PK	Horizontal	EIRP

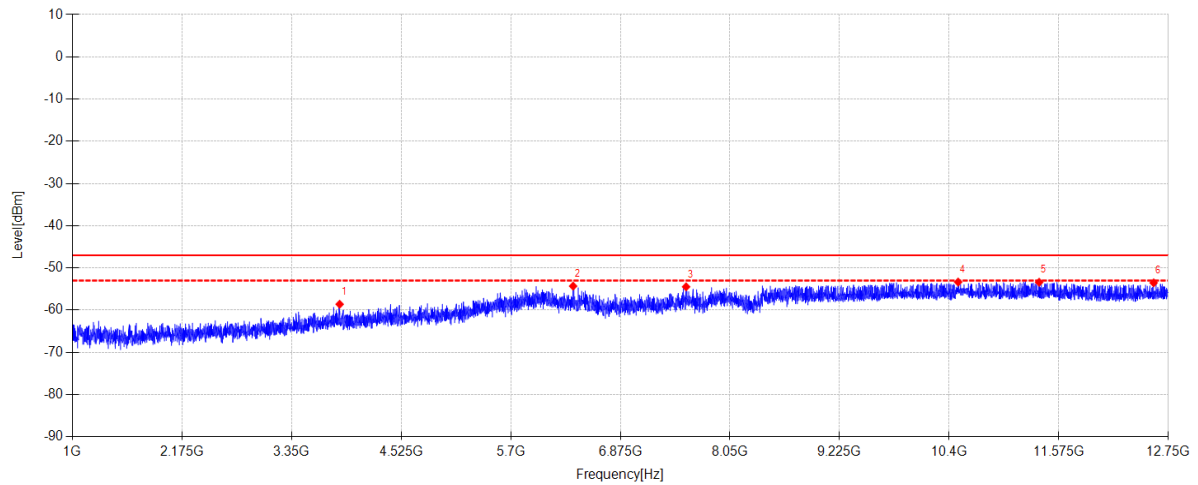
Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

TR-4-E-009 Radiated Emission Test Result

Test Date: 2025-03-19 **Tested By:** Lin Guoyaun
EUT: Bluetooth Speaker **Model Number:** TUNER 3
Test Mode: RX BLE1M 2402MHz Mode **Power Supply:** Battery
Condition: Temp:23.9°C;Humi:50.4% **Test Site:** DDT 3# Chamber
File Path: d:\ts\2025 report date\Q25030538-1E\CE Above 1G BLE\16
Memo: Sample Numble:S25030538-002

Test Graph

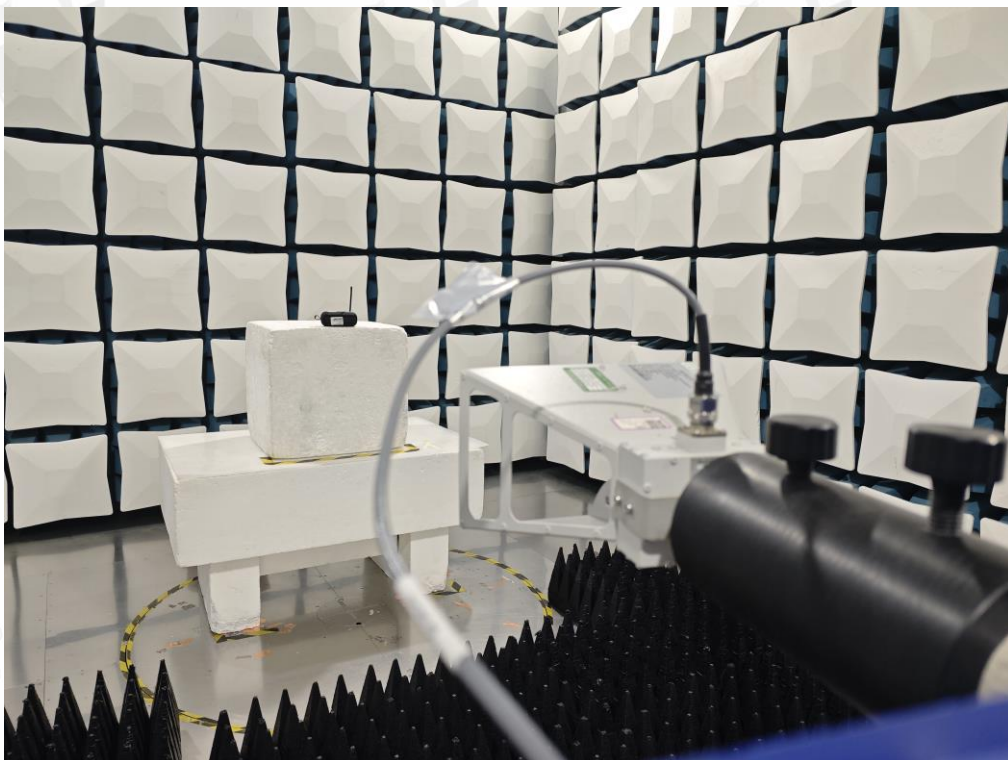


Data List									
NO.	Freq. [MHz]	Reading [dBμV/m]	Factor [dB]	Level [dBm]	Limit [dBm]	Margin [dB]	Detector	Polarity	Type
1	3865.825	42.84	-101.44	-58.60	-47.00	11.60	PK	Vertical	EIRP
2	6368.575	40.22	-94.52	-54.30	-47.00	7.30	PK	Vertical	EIRP
3	7580.000	39.47	-93.94	-54.47	-47.00	7.47	PK	Vertical	EIRP
4	10496.350	34.93	-88.27	-53.34	-47.00	6.34	PK	Vertical	EIRP
5	11364.675	34.31	-87.70	-53.39	-47.00	6.39	PK	Vertical	EIRP
6	12592.550	34.90	-88.42	-53.52	-47.00	6.52	PK	Vertical	EIRP

Note:

1. Level = Reading + Factor.
2. Factor = Antenna Factor + Cable Loss + Filter Factor - Preamp Gain + Site Loss Factor - 107.
3. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.

11. Test Setup Photograph





12. Photos of the EUT

Please refer to DDT-Q25030538-2E appendix I

-----End Report-----