



Report No.: TW2304091E

Applicant: TOPSAIL (HONG KONG) LIMITED

Product: Bluetooth Speaker

Model No.: 8812C

Trademark: N/A

Test Standards: FCC Part 15.249

Test result: It is herewith confirmed and found to comply with the requirements set up by ANSI C63.10 & FCC Part 15 Subpart C, Paragraph 15.249 regulations for the evaluation of electromagnetic compatibility

Approved By

*Terry Tang*

Terry Tang

Manager

Dated: April 25, 2023

**Results appearing herein relate only to the sample tested  
The technical reports is issued errors and omissions exempt and is subject to withdrawal at**

**SHENZHEN TIMEWAY TESTING LABORATORIES**

**Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West,  
Tong Le Village, Nanshan District, Shenzhen, China**

**Tel (755) 83448688, Fax (755) 83442996, E-Mail:info@timeway-lab.com**



## Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meet with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

### **CNAS-LAB Code: L2292**

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of testing Laboratories.

### **FCC-Registration No.: 744189**

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.: 744189.

### **Industry Canada (IC) —Registration No.:5205A**

The EMC Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 5205A.

### **A2LA (Certification Number:5013.01)**

The EMC Laboratory has been accredited by the American Association for Laboratory Accreditation (A2LA). Certification Number:5013.01

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## Test Report Conclusion

### Content

<b>1.0</b>	<b>General Details</b>	4
1.1	Test Lab Details	4
1.2	Applicant Details	4
1.3	Description of EUT	4
1.4	Submitted Sample	4
1.5	Test Duration	5
1.6	Test Uncertainty	5
1.7	Test By	5
<b>2.0</b>	<b>List of Measurement Equipment</b>	6
<b>3.0</b>	<b>Technical Details</b>	7
3.1	Summary of Test Results	7
3.2	Test Standards	7
<b>4.0</b>	<b>EUT Modification</b>	7
<b>5.0</b>	<b>Power Line Conducted Emission Test</b>	8
5.1	Schematics of the Test	8
5.2	Test Method and Test Procedure	8
5.3	Configuration of the EUT	8
5.4	EUT Operating Condition	9
5.5	Conducted Emission Limit	9
5.6	Test Result	9
<b>6.0</b>	<b>Radiated Emission test</b>	12
6.1	Test Method and Test Procedure	12
6.2	Configuration of the EUT	13
6.3	EUT Operation Condition	13
6.4	Radiated Emission Limit	13
6.5	Test Result	15
<b>7.0</b>	<b>Band Edge</b>	23
7.1	Test Method and Test Procedure	23
7.2	Radiated Test Setup	23
7.3	Configuration of the EUT	23
7.4	EUT Operating Condition	23
7.5	Band Edge Limit	23
7.6	Band Edge Test Result	24
<b>8.0</b>	<b>Antenna Requirement</b>	28
<b>9.0</b>	<b>20dB bandwidth measurement</b>	29
<b>10.0</b>	<b>FCC ID Label</b>	38
<b>11.0</b>	<b>Photo of Test Setup and EUT View</b>	39

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## 1.0 General Details

### 1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TESTING LABORATORIES.  
Address: Zone C, 1st Floor, Block B, Jun Xiang Da Building, Zhongshan Park Road West, Tong Le Village, Nanshan District, Shenzhen, China  
Telephone: (755) 83448688  
Fax: (755) 83442996  
Site on File with the Federal Communications Commission – United States  
Registration Number: 744189  
For 3m Anechoic Chamber

### 1.2 Applicant Details

Applicant: TOPSAIL (HONG KONG) LIMITED  
Address: Room 803, Chevalier House, 45-51 Chatham Road South, Tsim Sha Tsui, Kowloon, HongKong  
Telephone: --  
Fax: --

### 1.3 Description of EUT

Product:	Bluetooth Speaker
Manufacturer:	TOPSAIL (HONG KONG) LIMITED
Address:	Room 803, Chevalier House, 45-51 Chatham Road South, Tsim Sha Tsui, Kowloon, HongKong
Trademark:	N/A
Model Number:	8812C
Additional Model Name	N/A
Rating:	DC5V, 0.5A
Modulation Type:	GFSK, JI/4DQPSK, 8DPSK for Bluetooth
Operation Frequency:	2402-2480MHz
Channel Number:	79
Channel Separation:	1MHz
Hardware Version:	V1.0
Software Version:	V1.0
Serial No.:	2023040001
Antenna Designation	PCB antenna with gain 1.3dBi Max (Get from the antenna specification)

### 1.4 Submitted Sample: 1 Sample

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1.5 Test Duration

2023-04-10 to 2023-04-25

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB

Radiated Emissions below 1GHz Uncertainty =4.7dB

Radiated Emissions above 1GHz Uncertainty =6.0dB

Conducted Power Uncertainty =6.0dB

Occupied Channel Bandwidth Uncertainty =5%

Conducted Emissions Uncertainty =3.6dB

Note: The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

1.7 Test Engineer

A handwritten signature in black ink that reads "Andy Xing".

The sample tested by \_\_\_\_\_

Print Name: Andy Xing

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## 2.0 Test Equipment

Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17
LISN	R&S	EZH3-Z5	100253	2022-07-18	2023-07-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2022-07-18	2023-07-17
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17
Spectrum	R&S	FSIQ26	100292	2022-07-15	2023-07-14
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2024-07-17
Power meter	Anritsu	ML2487A	6K00003613	2022-07-18	2023-07-17
Power sensor	Anritsu	MA2491A	32263	2022-07-18	2023-07-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17
9*6*6 Anechoic	--	--	N/A	2022-07-26	2025-07-25
EMI Test Receiver	RS	ESVB	826156/011	2022-07-15	2023-07-14
EMI Test Receiver	RS	ESCS 30	834115/006	2022-07-15	2023-07-14
Spectrum	HP/Agilent	E4407B	MY50441392	2022-07-15	2023-07-14
Spectrum	RS	FSP	1164.4391.38	2022-07-15	2023-07-14
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA	--	2022-07-15	2023-07-14
RF Cable	Zhengdi	7m	--	2022-07-15	2023-07-14
Pre-Amplifier	Schwarebeck	BBV9743	#218	2022-07-15	2023-07-14
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2022-07-15	2023-07-14
LISN	SCHAFFNER	NNB42	00012	2022-08-18	2023-07-17
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17

## 2.2 Automation Test Software

### For Conducted Emission Test

Name	Version
EZ-EMC	Ver.EMC-CON 3A1.1

### For Radiated Emissions

Name	Version
EMI Test Software BL410-EV18.91	V18.905
EMI Test Software BL410-EV18.806 High Frequency	V18.06

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### 3.0 Technical Details

#### 3.1 Summary of test results

The EUT has been tested according to the following specifications:			
Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	Pass	Complies
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	Pass	Complies
FCC Part 15, Paragraph 15.209	Radiated Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	Pass	Complies

#### 3.2 Test Standards

FCC Part 15 Subpart C, Paragraph 15.249, ANSI C63.4 :2014 and ANSI C63.10 :2013

#### 4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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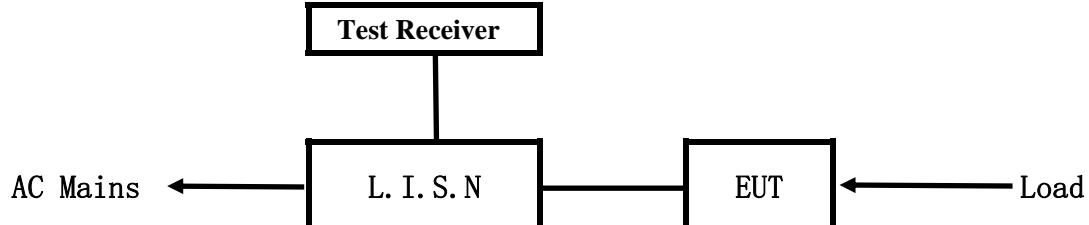
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## 5.0 Power Line Conducted Emission Test

### 5.1 Schematics of the test



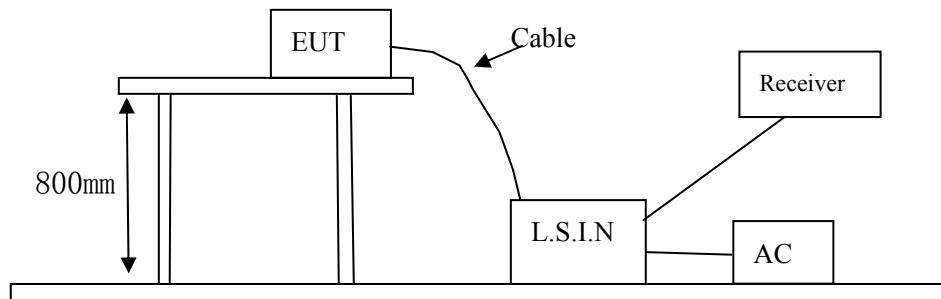
EUT: Equipment Under Test

### 5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.10-2013. The Frequency spectrum from 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.10-2013.

Test Voltage: 120V~, 60Hz

Block diagram of Test setup



### 5.3 Configuration of the EUT

The EUT was configured according to ANSI C63.10-2013. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

79 channels are provided to the EUT

#### A. EUT

Device	Manufacturer	Model	FCC ID
Bluetooth Speaker	TOPSAIL (HONG KONG) LIMITED	8812C	2ACCE-8812C

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B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	Rating
Power Supply	KEYU	KA23-0502000DEU	Input: 100-240V~, 50/60Hz, 0.35A; Output: DC5V, 2A

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.10-2013

A Setup the EUT and simulators as shown on follow  
B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency (MHz)	Limits (dB $\mu$ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0~56.0*	56.0~46.0*
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

Notes: 1. \*Decreasing linearly with logarithm of frequency.  
2. The tighter limit shall apply at the transition frequencies

5.6 Test Results:

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### A: Conducted Emission on Live Terminal (150kHz to 30MHz)

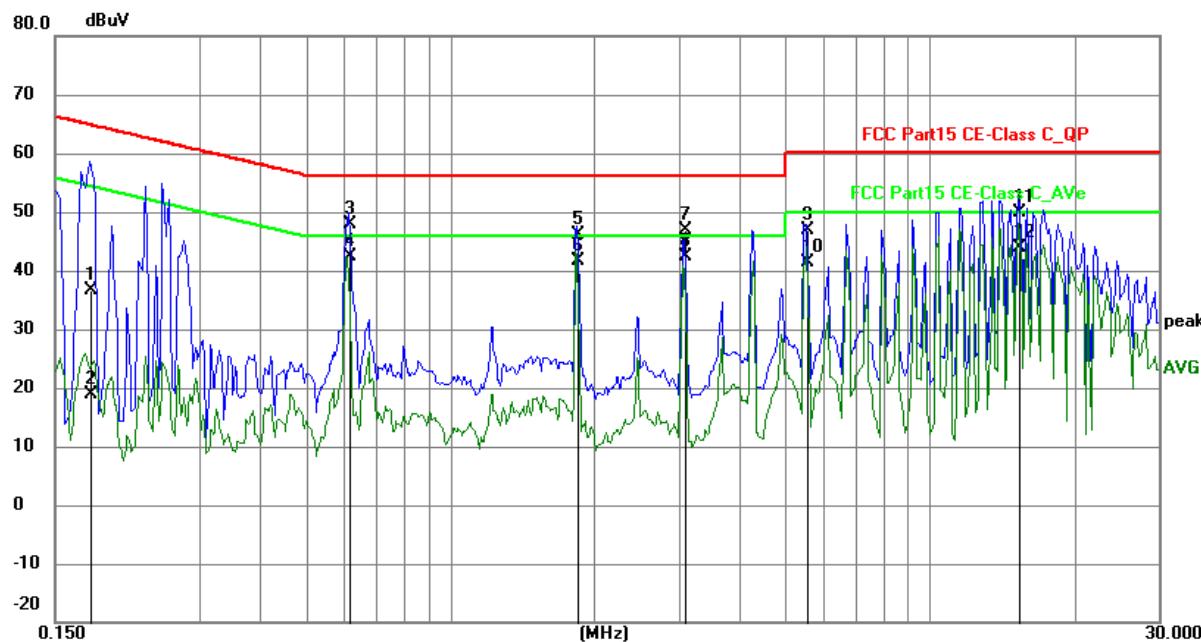
#### EUT Operating Environment

Temperature: 25°C      Humidity: 65%RH      Atmospheric Pressure: 101 kPa

#### EUT set Condition: Charging + Communication by BT

#### Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.1773	26.92	9.77	36.69	64.61	-27.92	QP	P
2	0.1773	9.01	9.77	18.78	54.61	-35.83	AVG	P
3	0.6141	38.00	9.78	47.78	56.00	-8.22	QP	P
4	0.6141	32.59	9.78	42.37	46.00	-3.63	AVG	P
5	1.8426	36.32	9.80	46.12	56.00	-9.88	QP	P
6	1.8426	31.83	9.80	41.63	46.00	-4.37	AVG	P
7	3.0741	36.99	9.85	46.84	56.00	-9.16	QP	P
8	3.0741	32.61	9.85	42.46	46.00	-3.54	AVG	P
9	5.5350	36.84	9.95	46.79	60.00	-13.21	QP	P
10	5.5350	31.53	9.95	41.48	50.00	-8.52	AVG	P
11	15.3708	39.41	10.40	49.81	60.00	-10.19	QP	P
12	15.3708	33.42	10.40	43.82	50.00	-6.18	AVG	P

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## B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

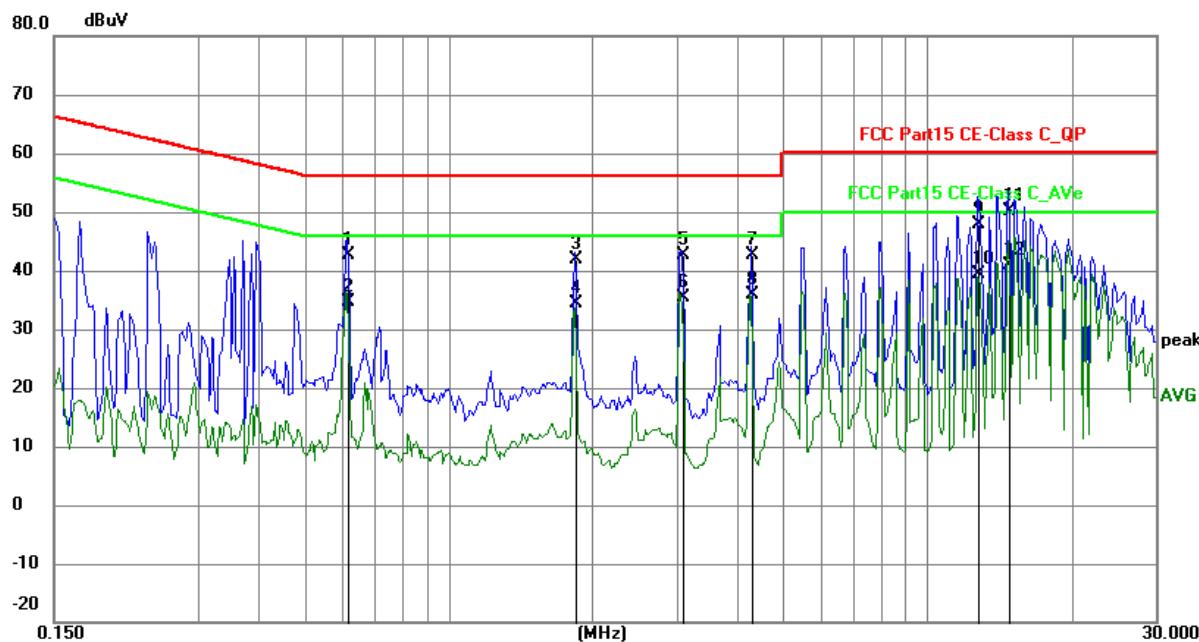
### EUT Operating Environment

Temperature: 25°C      Humidity: 65%RH      Atmospheric Pressure: 101 kPa

### EUT set Condition: Charging + Communication by BT

#### Results: Pass

Please refer to following diagram for individual



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F
1	0.6141	32.83	9.78	42.61	56.00	-13.39	QP	P
2	0.6141	24.83	9.78	34.61	46.00	-11.39	AVG	P
3	1.8426	32.09	9.80	41.89	56.00	-14.11	QP	P
4	1.8426	24.53	9.80	34.33	46.00	-11.67	AVG	P
5	3.0741	32.81	9.85	42.66	56.00	-13.34	QP	P
6	3.0741	25.57	9.85	35.42	46.00	-10.58	AVG	P
7	4.3026	32.78	9.90	42.68	56.00	-13.32	QP	P
8	4.3026	25.97	9.90	35.87	46.00	-10.13	AVG	P
9	12.7656	37.62	10.28	47.90	60.00	-12.10	QP	P
10	12.7656	29.05	10.28	39.33	50.00	-10.67	AVG	P
11	14.7546	39.88	10.37	50.25	60.00	-9.75	QP	P
12	14.7546	30.60	10.37	40.97	50.00	-9.03	AVG	P

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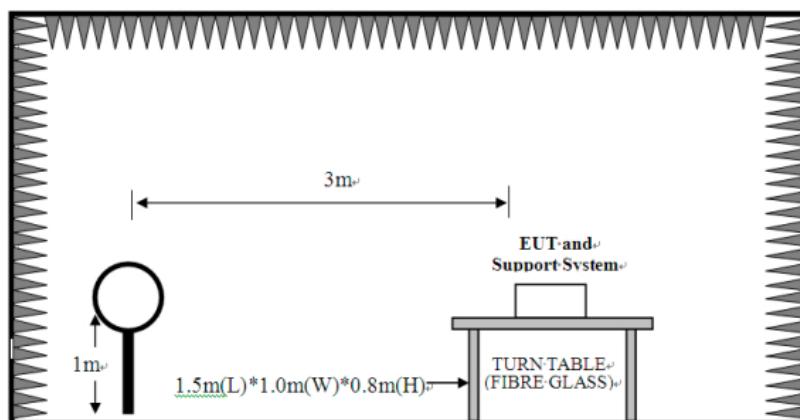
## 6 Radiated Emission Test

### 6.1 Test Method and test Procedure:

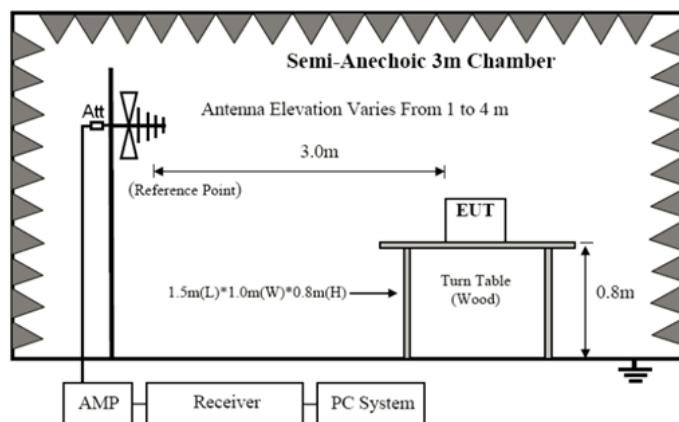
- (1) The EUT was tested according to ANSI C63.10-2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.10-2013.
- (3) The frequency spectrum from 30 MHz to 25 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz (Note: for Fundamental frequency radiated emission measurement, RBW=3MHz, VBW=10MHz). Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) The antenna polarization: Vertical polarization and Horizontal polarization.

#### Block diagram of Test setup

For radiated emissions from 9kHz to 30MHz



For radiated emissions from 30MHz to1GHz



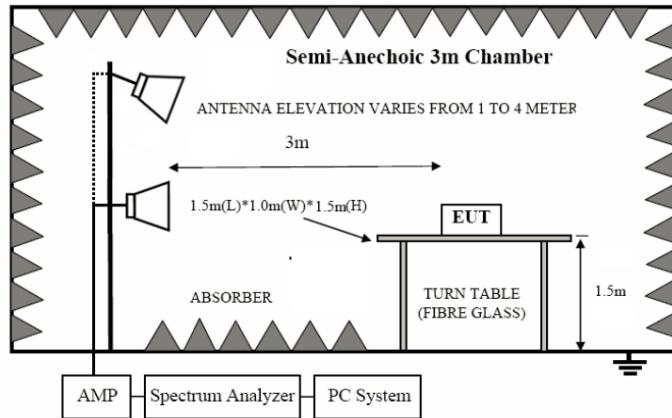
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For radiated emissions above 1GHz



#### 6.2 Configuration of the EUT

Same as section 5.3 of this report

#### 6.3 EUT Operating Condition

Same as section 5.4 of this report.

#### 6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

#### A FCC Part 15 Subpart C Paragraph 15.249(a) Limit

Fundamental Frequency (MHz)	Field Strength of Fundamental (3m)		Field Strength of Harmonics (3m)			
	<b>mV/m</b>	<b>dBuV/m</b>	<b>uV/m</b>	<b>dBuV/m</b>		
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

Note:

1. RF Field Strength (dBuV) =  $20 \log \text{RF Voltage (uV)}$
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. The emission limit in this paragraph is based on measurement instrumentation employing an average detector.

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**B. Frequencies in restricted band are complied to limit on Paragraph 15.209.**

Frequency Range (MHz)	Distance (m)	Field strength (dB $\mu$ V/m)
0.009-0.490	3	$20\log(2400/F(\text{kHz})) + 40\log(300/3)$
0.490-1.705	3	$20\log(24000/F(\text{kHz})) + 40\log(30/3)$
1.705-30	3	69.5
30-80	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

1. RF Voltage (dBuV) =  $20 \log \text{RF Voltage (uV)}$
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT
4. All scanning using PK detector. And the final emission level was get using QP detector for frequency range from 30-1000MHz. As to 1G-25G, the final emission level got using PK. For fundamental measurement, PK detector used.
5. The three modulation modes of GFSK, Pi/4D-QPSK and 8DPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.
6. This is a handheld device. The radiated emissions should be tested under 3-axes position (Lying, Side, and Stand). After pre-test. It was found that the worse radiated emission was get at the lying position.
7. Battery fully charged was used during the test.

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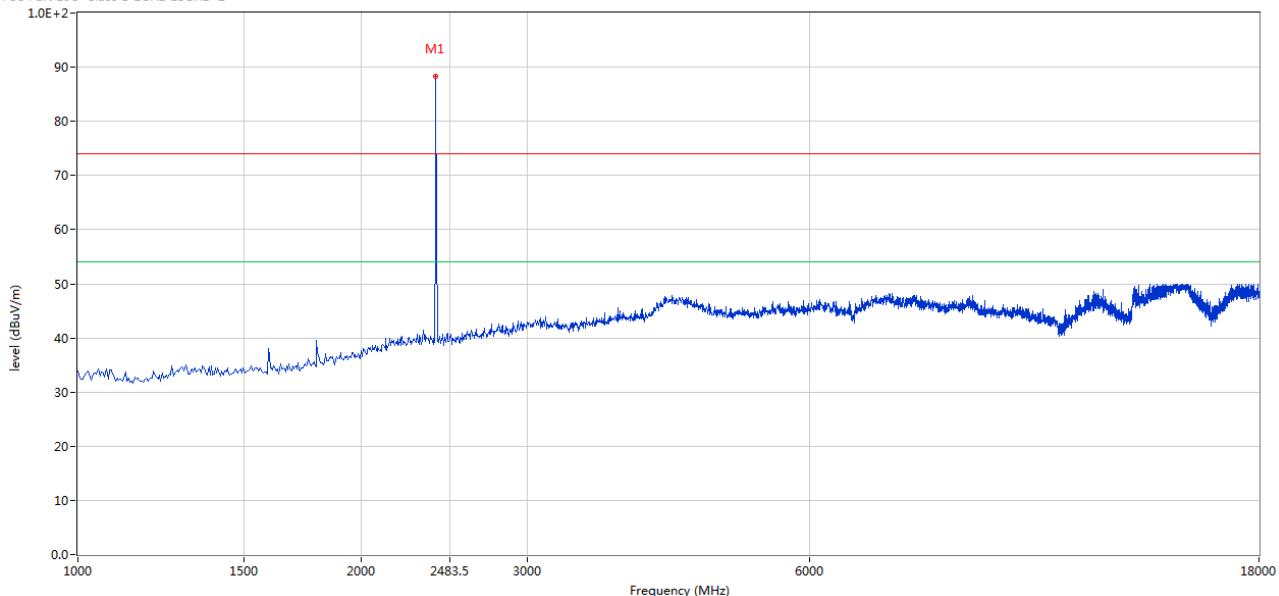
## 6.5 Test result

### A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2402MHz

#### Horizontal

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402	88.21	-3.57	114.0	-25.79	Peak	38.00	100	Horizontal	Pass

The report refers only to the sample tested and does not apply to the bulk.

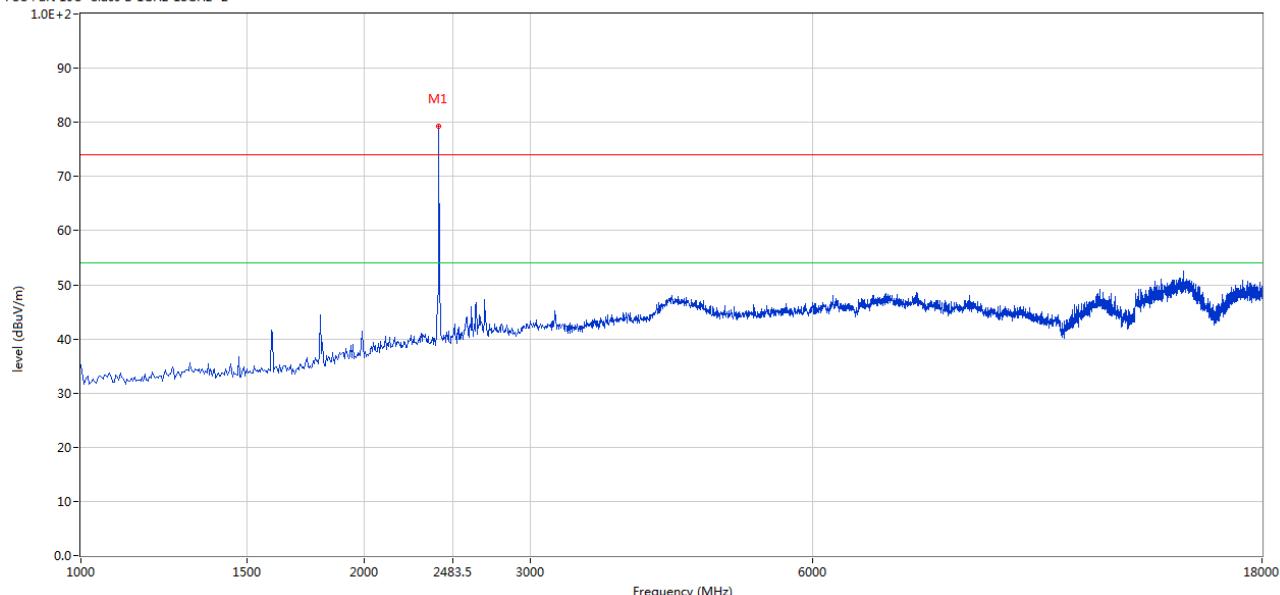
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## Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402	79.61	-3.57	114.0	-34.39	Peak	0.00	100	Vertical	Pass

The report refers only to the sample tested and does not apply to the bulk.

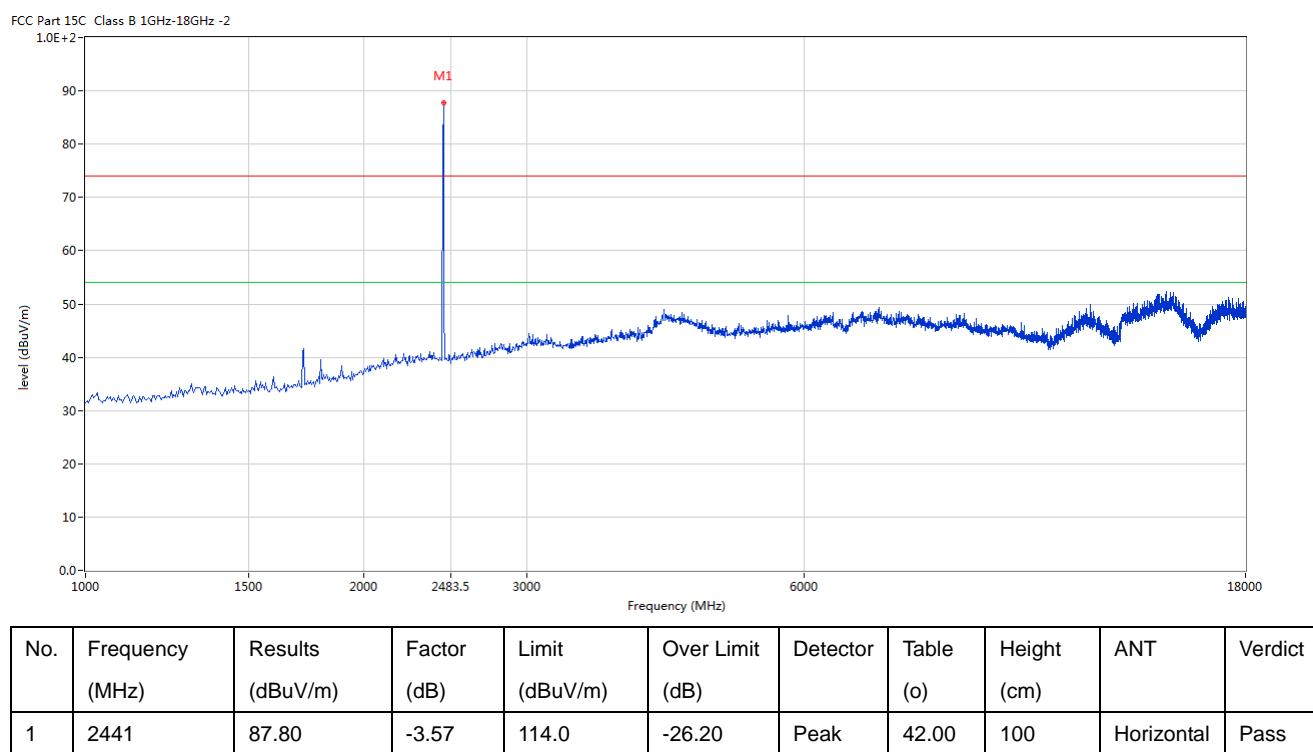
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Please refer to the following test plots for details: Middle Channel-2441MHz

### Horizontal



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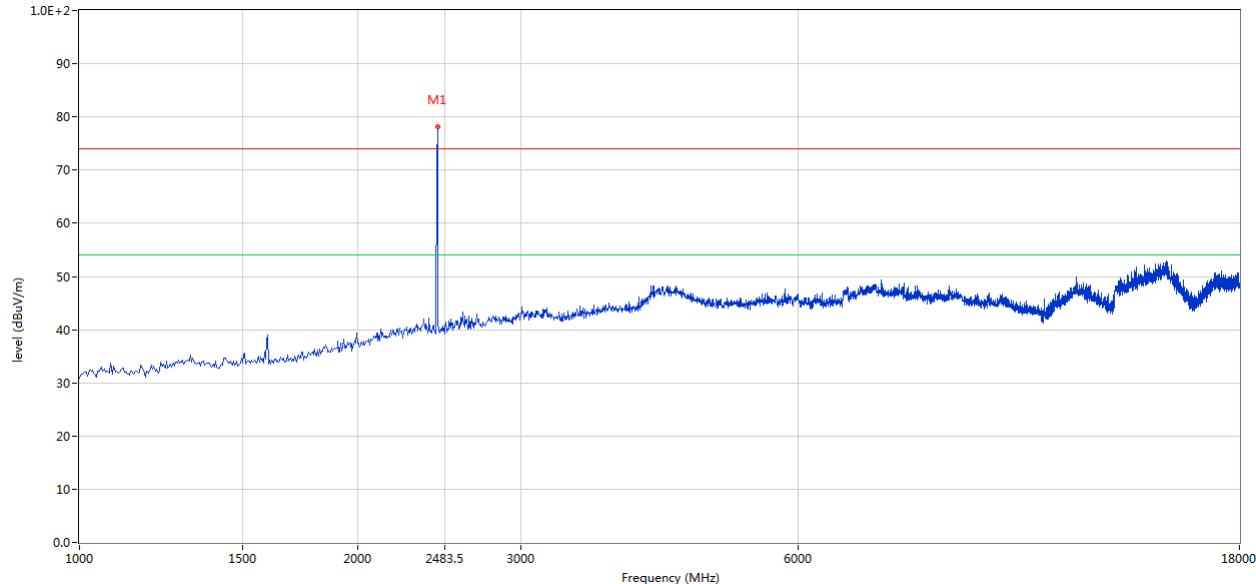
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## Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2441	78.19	-3.57	114.0	-35.81	Peak	16.00	100	Vertical	Pass

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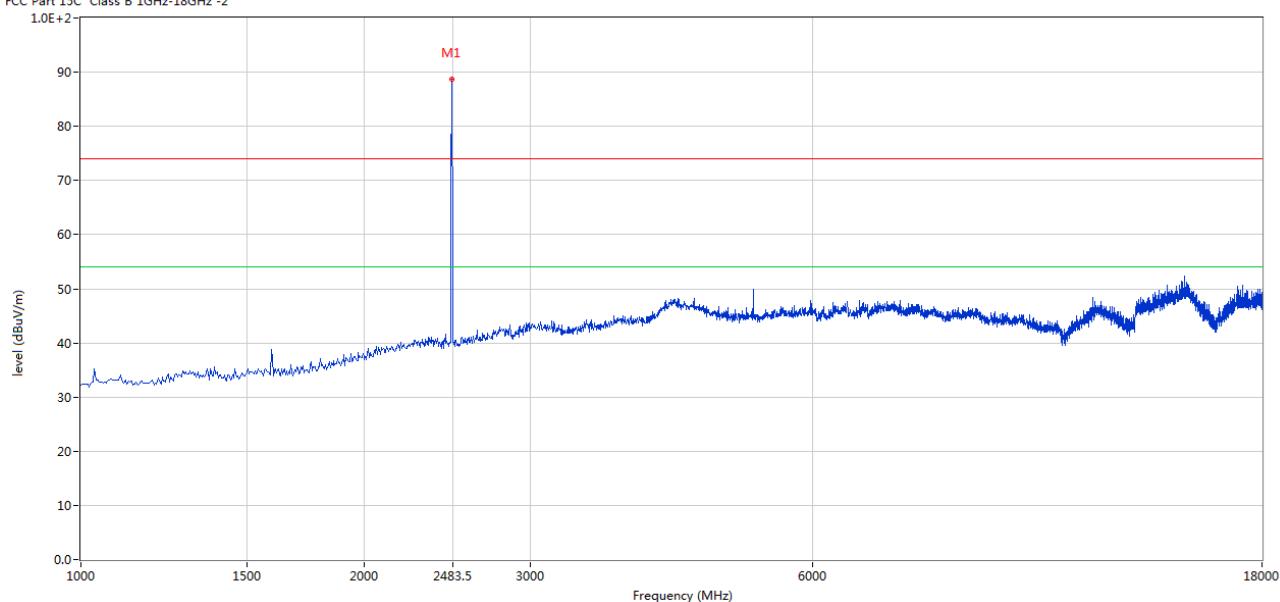
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Please refer to the following test plots for details: High Channel-2480MHz

### Horizontal

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	87.99	-3.57	114.0	-26.01	Peak	63.00	100	Horizontal	Pass

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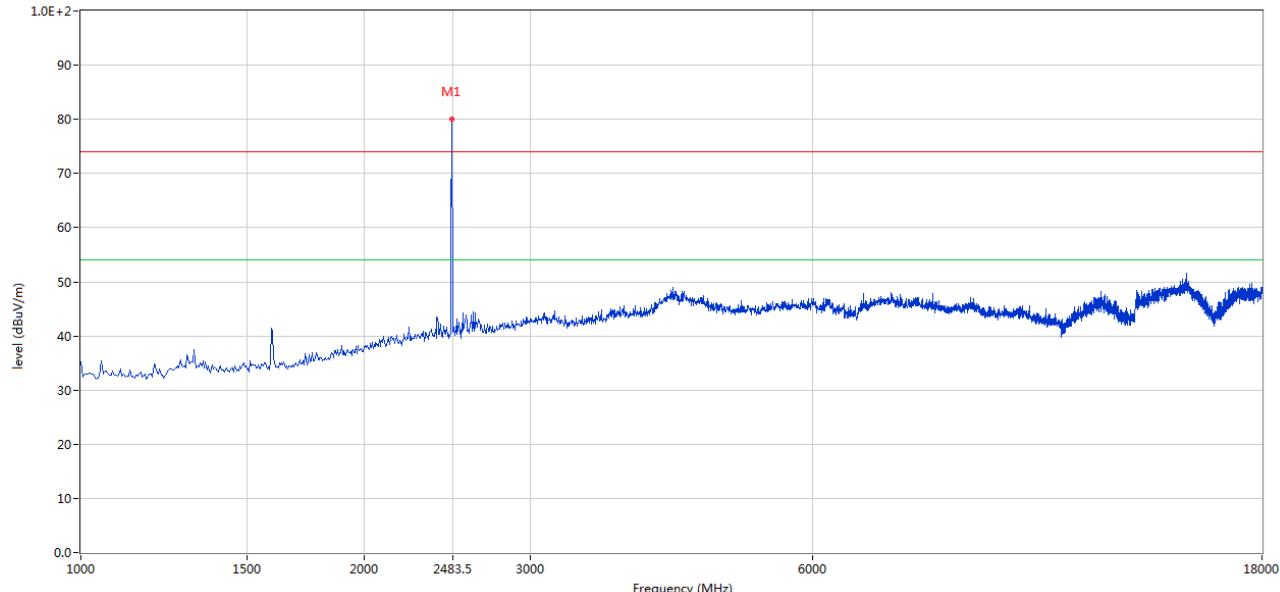
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## Vertical

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480	79.90	-3.57	114.0	-34.10	Peak	343.00	100	Vertical	Pass

Note:

- (1) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier
- (2) Margin=Emission-Limits
- (3) According to section 15.35(b), the peak limit is 20dB higher than the average limit
- (4) For test purpose, keep EUT continuous transmitting
- (5) For emission above 18GHz and Below 30MHz, It is only the floor noise and less than the limit for more than 20dB. No necessary to take down.
- (6) the measured PK value less than the AV limit.

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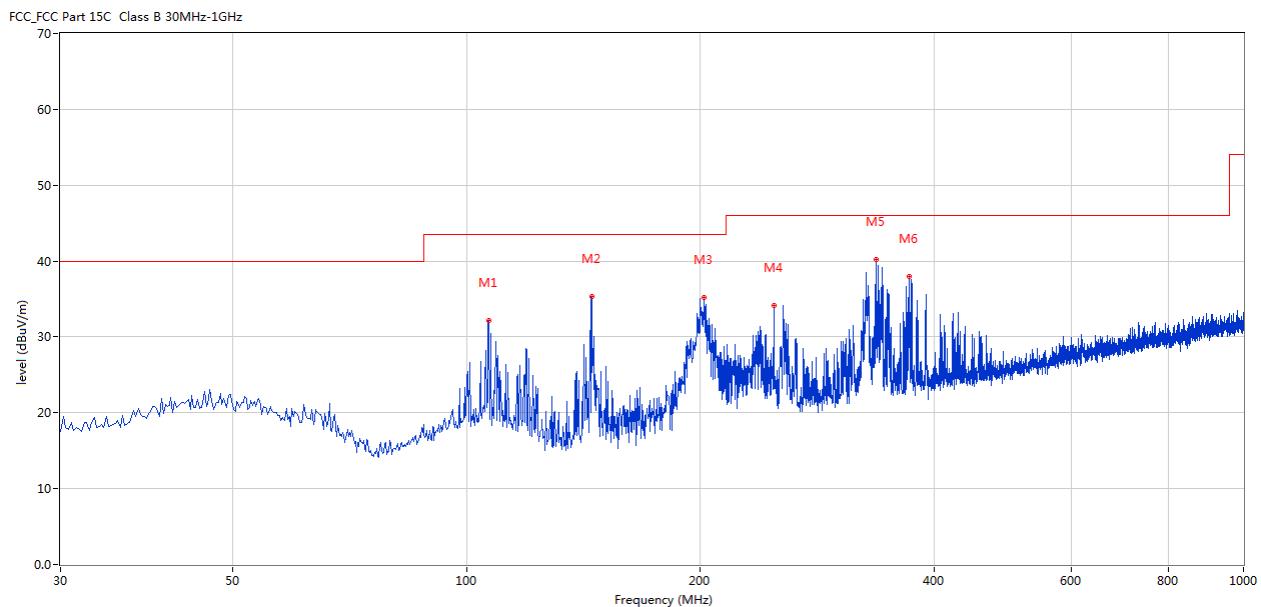
## B. General Radiated Emission Data

### Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	106.853	32.20	-13.38	43.5	-11.30	Peak	326.00	100	Horizontal	Pass
2	144.916	35.31	-17.22	43.5	-8.19	Peak	25.00	100	Horizontal	Pass
3	202.132	35.24	-13.40	43.5	-8.26	Peak	360.00	100	Horizontal	Pass
4	248.438	34.16	-12.19	46.0	-11.84	Peak	315.00	100	Horizontal	Pass
5	336.686	40.22	-9.88	46.0	-5.78	Peak	137.00	100	Horizontal	Pass
6	370.870	37.99	-9.53	46.0	-8.01	Peak	164.00	100	Horizontal	Pass

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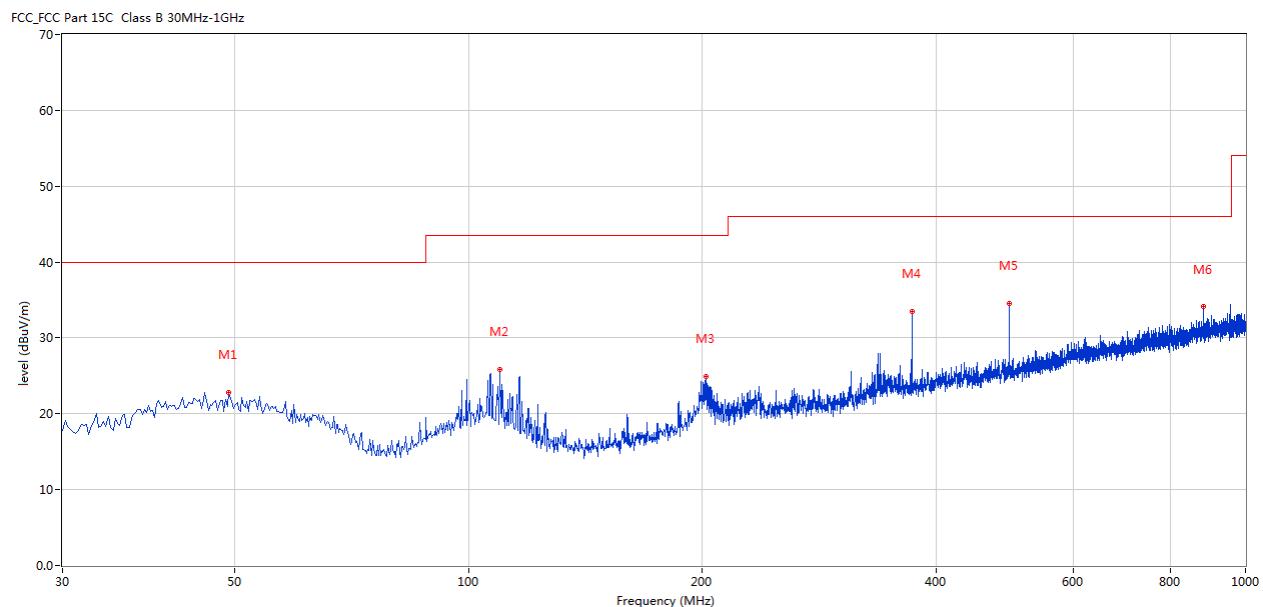


### Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

**Results: Pass**

Please refer to following diagram for individual



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	49.153	22.87	-11.24	40.0	-17.13	Peak	241.00	100	Vertical	Pass
2	109.763	25.79	-13.61	43.5	-17.71	Peak	65.00	100	Vertical	Pass
3	202.132	24.87	-13.40	43.5	-18.63	Peak	318.00	100	Vertical	Pass
4	372.567	33.55	-9.47	46.0	-12.45	Peak	21.00	100	Vertical	Pass
5	496.696	34.53	-7.13	46.0	-11.47	Peak	296.00	100	Vertical	Pass
6	883.144	34.08	-2.06	46.0	-11.92	Peak	87.00	100	Vertical	Pass

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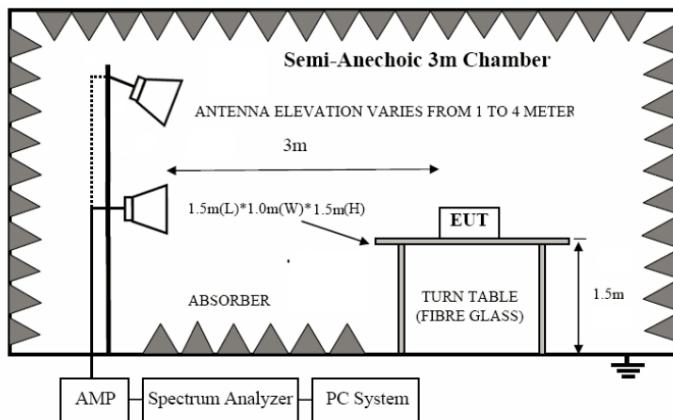


## 7. Band Edge

### 7.1 Test Method and test Procedure:

- (1) The EUT was tested according to ANSI C63.10–2013. The radiated test was performed at Timeway EMC Laboratory. This site is on file with the FCC laboratory division, Registration No. 744189
- (2) Set Spectrum as RBW=1MHz, VBW=3MHz and Peak detector used for PK value. RBW=1MHz, VBW=10Hz and Peak detector used for AV value.
- (3) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (4) The antenna polarization: Vertical polarization and Horizontal polarization.

### 7.2 Radiated Test Setup



For the actual test configuration, please refer to the related items – Photos of Testing

### 7.3 Configuration of the EUT

Same as section 5.3 of this report

### 7.4 EUT Operating Condition

Same as section 5.4 of this report.

### 7.5 Band Edge Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

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## 7.6 Test Result

Product:	Bluetooth Speaker		Polarity		Horizontal					
Mode	Keeping Transmitting		Test Voltage		DC3.7V					
Temperature	24 deg. C,		Humidity		56% RH					
Test Result:	Pass		--		--					
<p>FCC Part 15C Class B 1GHz-18GHz -2</p> <p>1.0E+2</p> <p>90</p> <p>80</p> <p>70</p> <p>60</p> <p>50</p> <p>40</p> <p>30</p> <p>20</p> <p>10</p> <p>0.0</p> <p>2350 2420</p> <p>Level (dBuV/m)</p> <p>Frequency (MHz)</p> <p>M3</p> <p>M2</p>										
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2402.049	87.78	-3.57	74.0	13.78	Peak	41.00	100	Horizontal	N/A
2	2400.020	72.32	-3.57	74.0	-1.68	Peak	31.00	100	Horizontal	Pass
2**	2400.020	46.80	-3.57	54.0	-7.20	AV	31.00	100	Horizontal	Pass
3	2389.908	45.78	-3.53	74.0	-28.22	Peak	1.00	100	Horizontal	Pass

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Product:	Bluetooth Speaker		Detector	Vertical
Mode	Keeping Transmitting		Test Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		--	--

FCC Part 15C Class B 1GHz-18GHz -2

Level (dBuV/m)

Frequency (MHz)

No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2401.350	79.14	-3.57	74.0	5.14	Peak	9.00	100	Vertical	N/A
2	2399.968	66.37	-3.57	74.0	-7.63	Peak	9.00	100	Vertical	Pass
2**	2399.968	47.37	-3.57	54.0	-6.63	AV	9.00	100	Vertical	Pass
3	2390.007	51.18	-3.53	74.0	-22.82	Peak	292.00	100	Vertical	Pass

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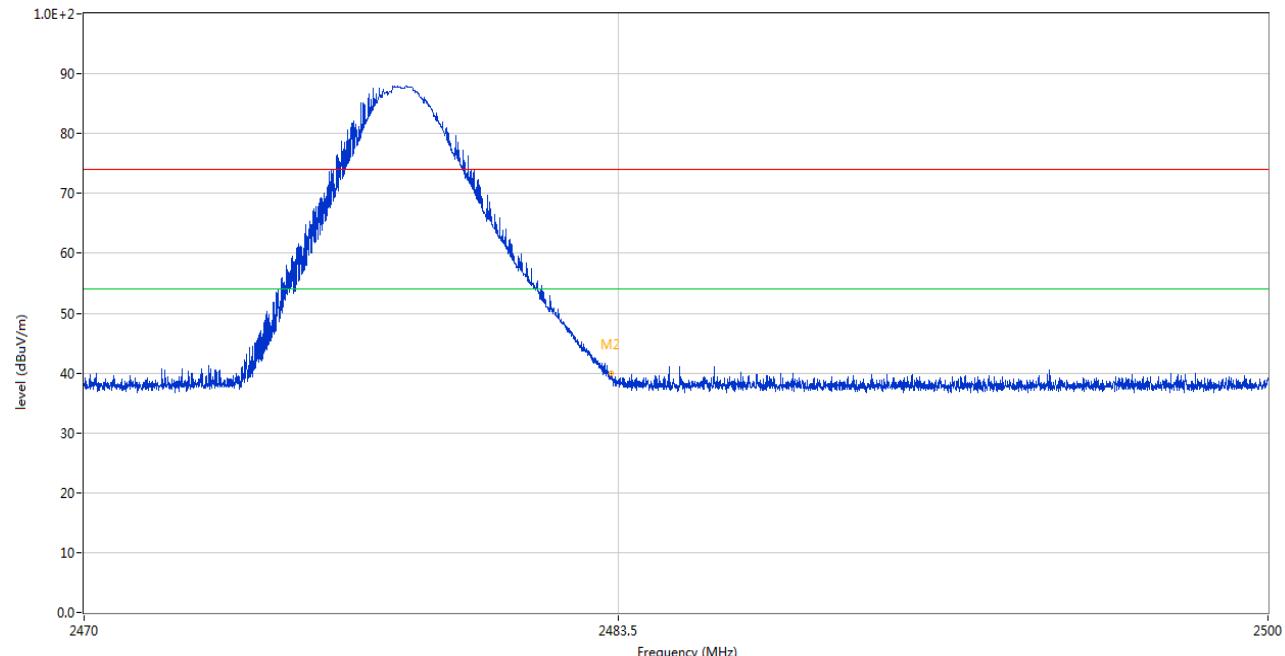
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Product:	Bluetooth Speaker	Polarity	Horizontal
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2480.120	87.80	-3.57	74.0	13.80	Peak	66.00	100	Horizontal	N/A
2	2483.302	39.85	-3.57	74.0	-34.15	Peak	132.00	100	Horizontal	Pass

The report refers only to the sample tested and does not apply to the bulk.

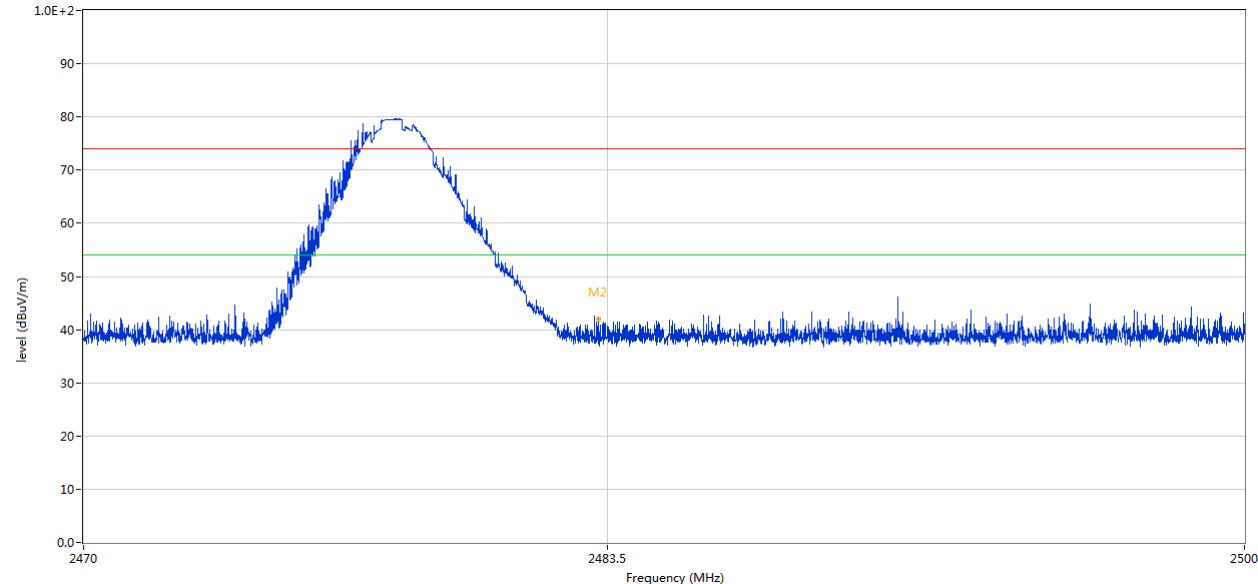
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Product:	Bluetooth Speaker	Detector	Vertical
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	--	--

FCC Part 15C Class B 1GHz-18GHz -2



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	2479.996	79.54	-3.57	74.0	5.54	Peak	14.00	100	Vertical	N/A
2	2483.249	42.02	-3.57	74.0	-31.98	Peak	265.00	100	Vertical	Pass

Note: 1. The PK emission level less than the AV limit. No necessary to record the AV emission level.

2. For Restricted band test, the three modulation modes of GFSK, Pi/4D-QPSK and 8DPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.

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## 8.0 Antenna Requirement

### Applicable Standard

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

This product has a PCB antenna. The antenna gain is 1.3dBi Max. It fulfills the requirement of this section.

Test Result: Pass

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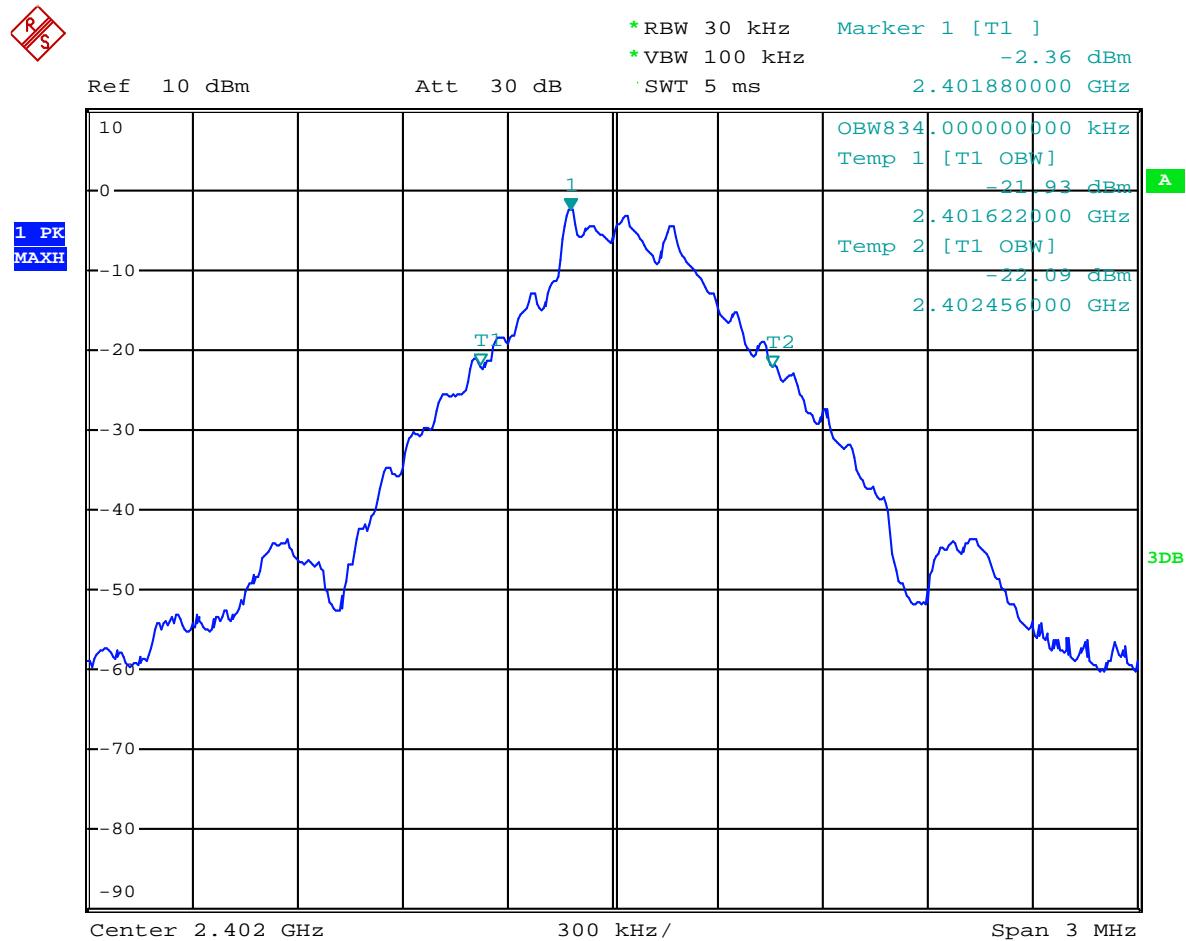
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## 9.0 20dB Bandwidth Measurement

### GFSK

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	834kHz	--	--



Date: 11.APR.2023 10:36:53

The report refers only to the sample tested and does not apply to the bulk.

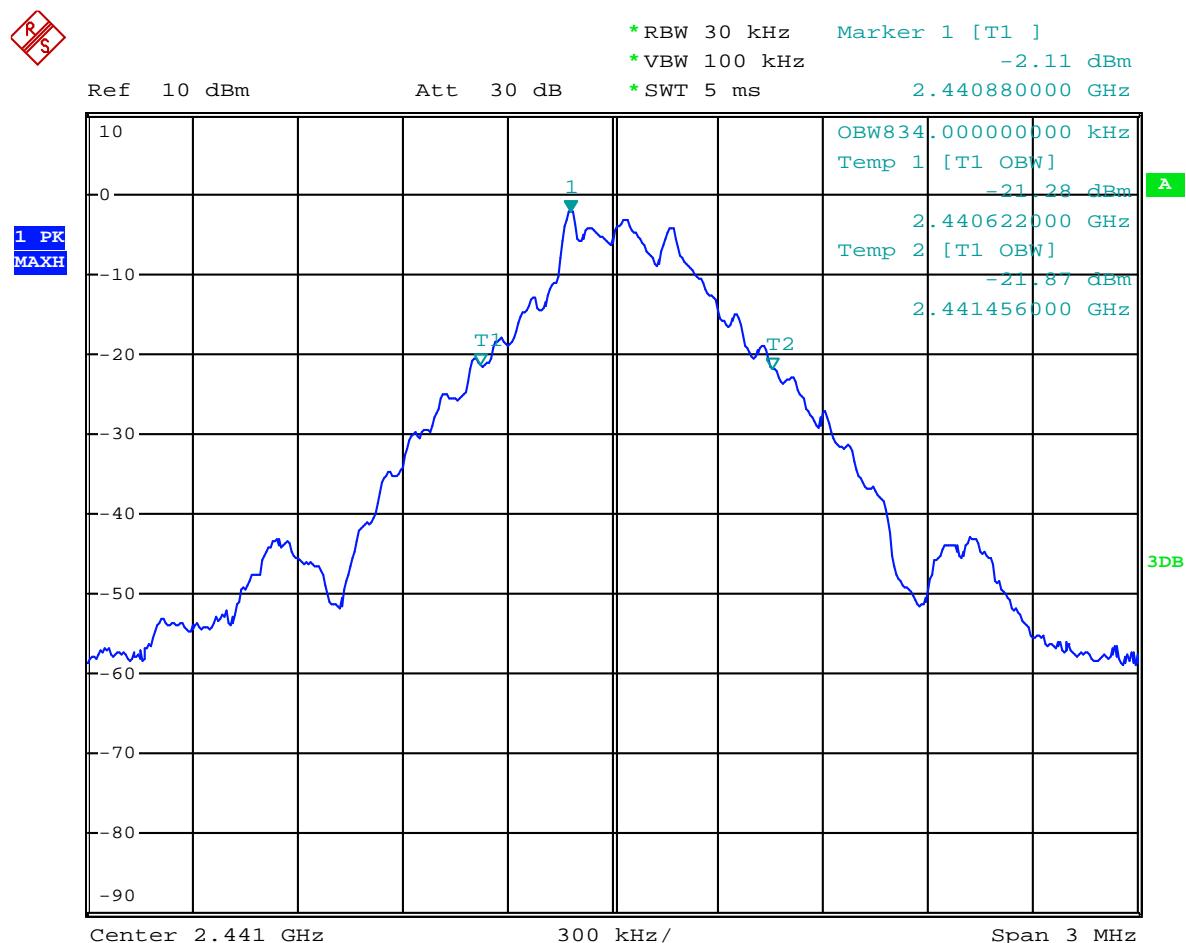
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### GFSK

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	834kHz	--	--



Date: 11.APR.2023 10:38:23

The report refers only to the sample tested and does not apply to the bulk.

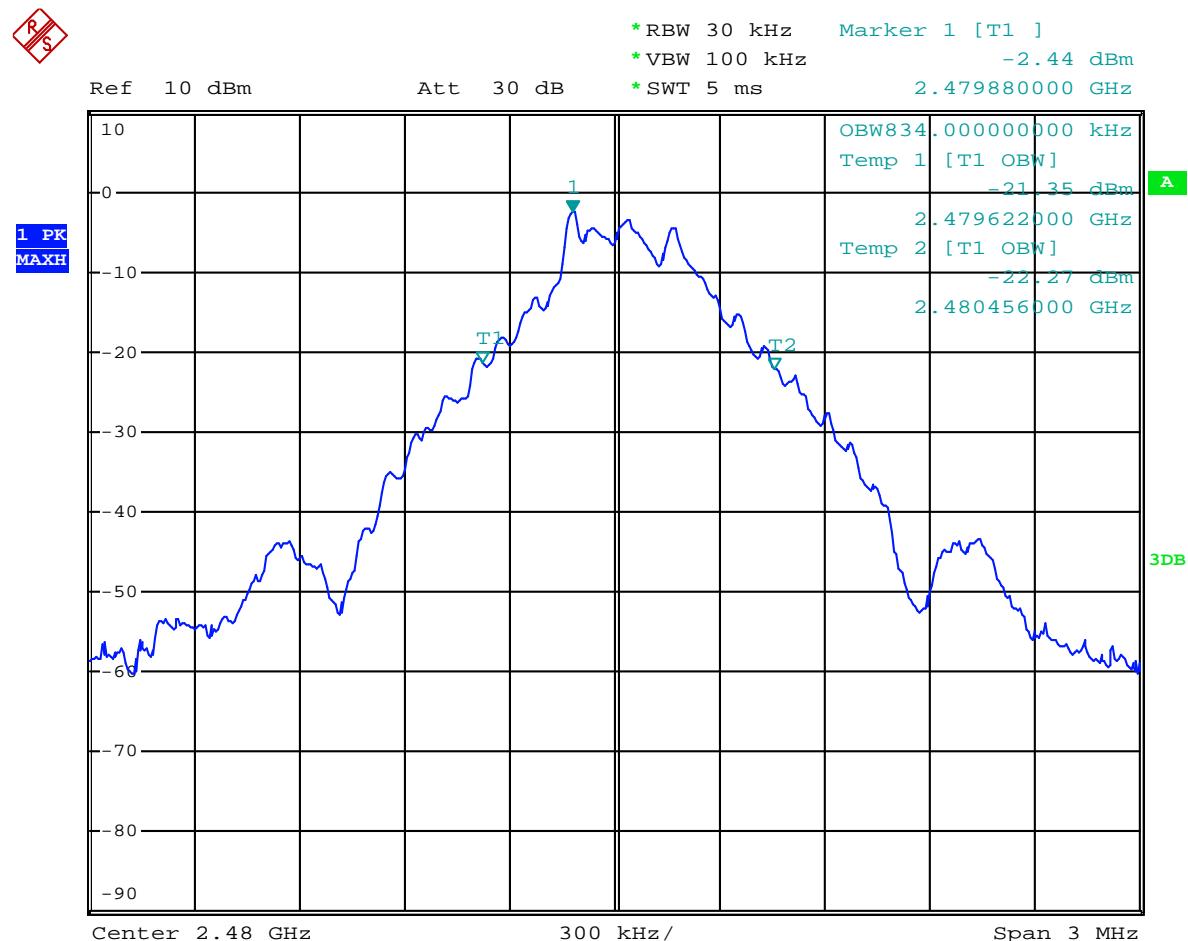
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**GFSK**

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	834kHz	--	--



Date: 11.APR.2023 10:39:24

The report refers only to the sample tested and does not apply to the bulk.

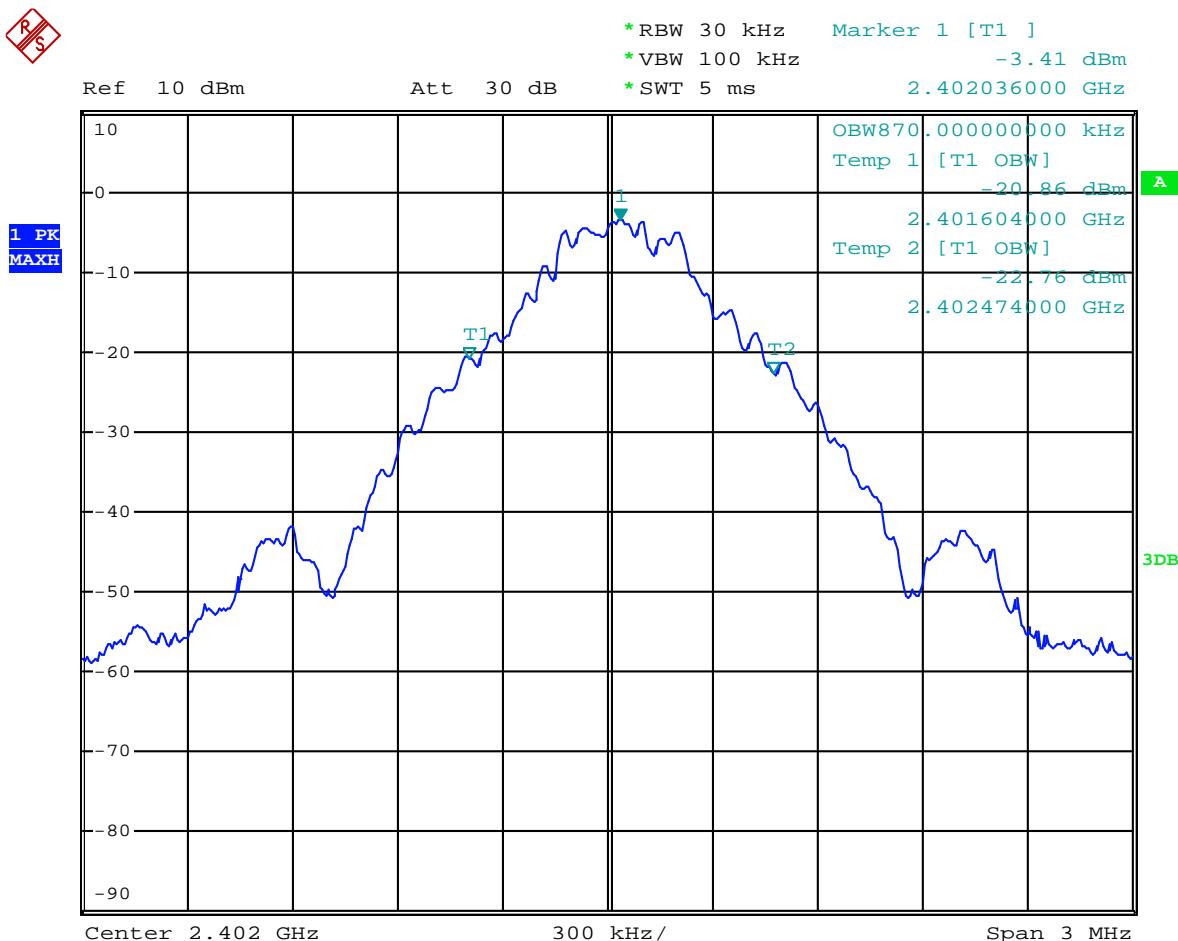
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Π/4DQPSK

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	870kHz	--	--



Date: 11.APR.2023 10:46:04

The report refers only to the sample tested and does not apply to the bulk.

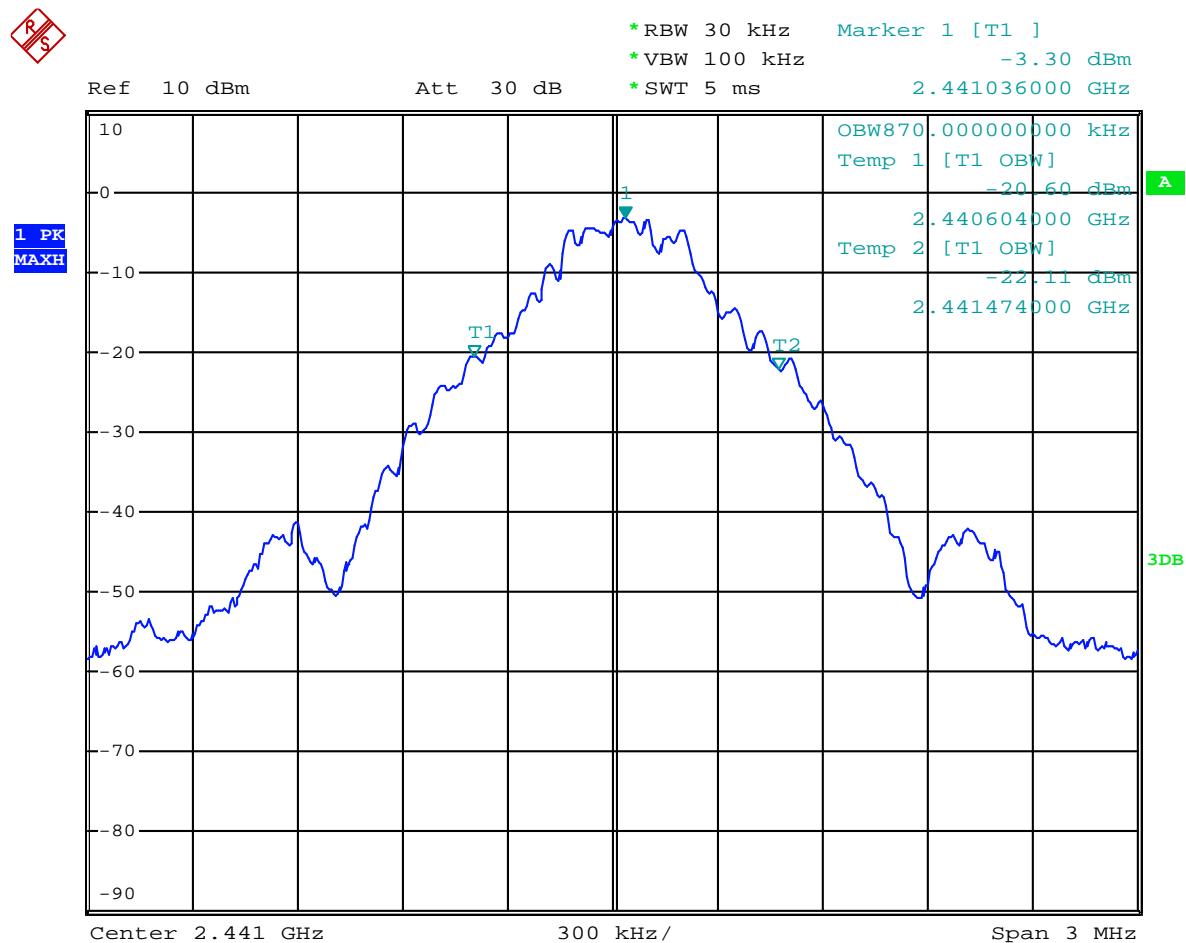
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Π/4DQPSK

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	870kHz	--	--



Date: 11.APR.2023 10:43:27

The report refers only to the sample tested and does not apply to the bulk.

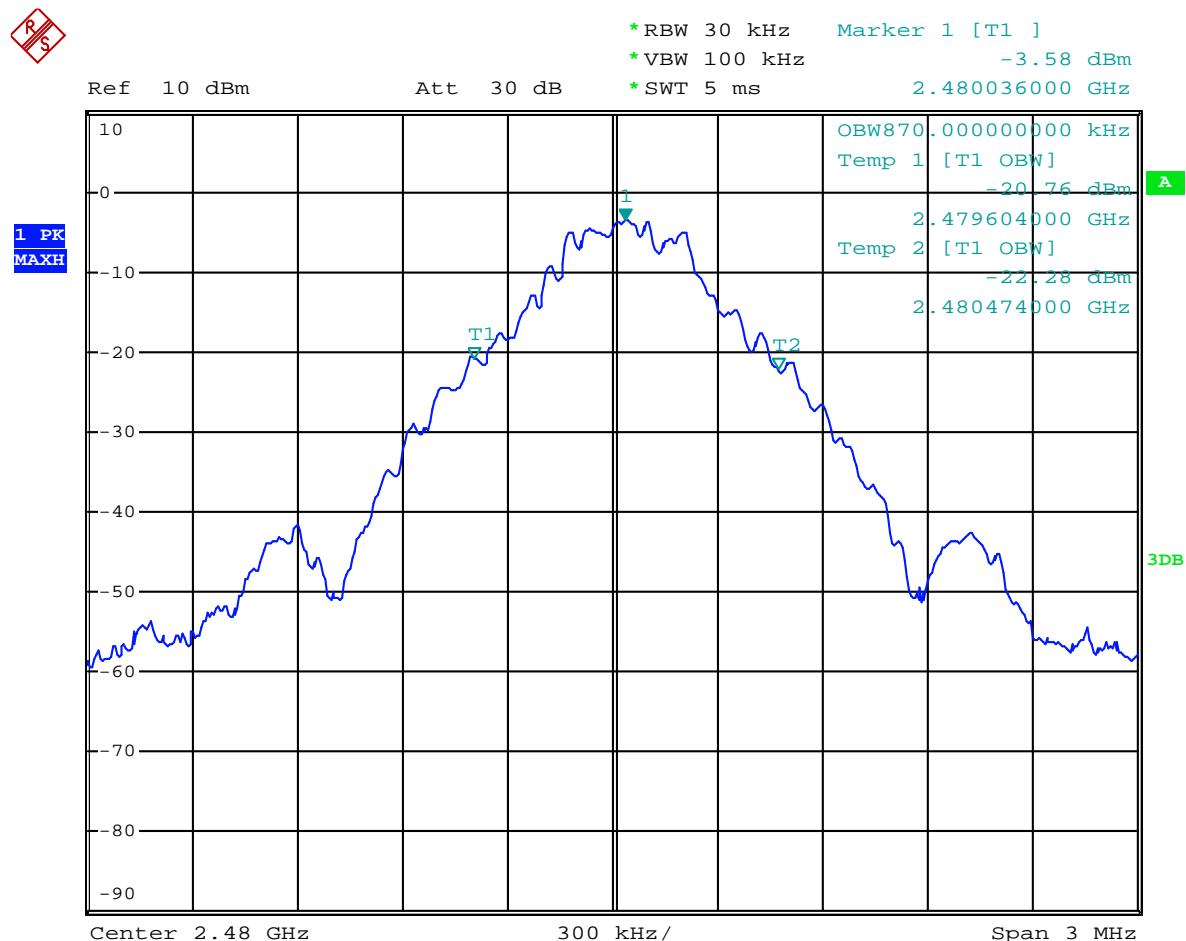
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Π/4DQPSK

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	870kHz	--	--



Date: 11.APR.2023 10:41:10

The report refers only to the sample tested and does not apply to the bulk.

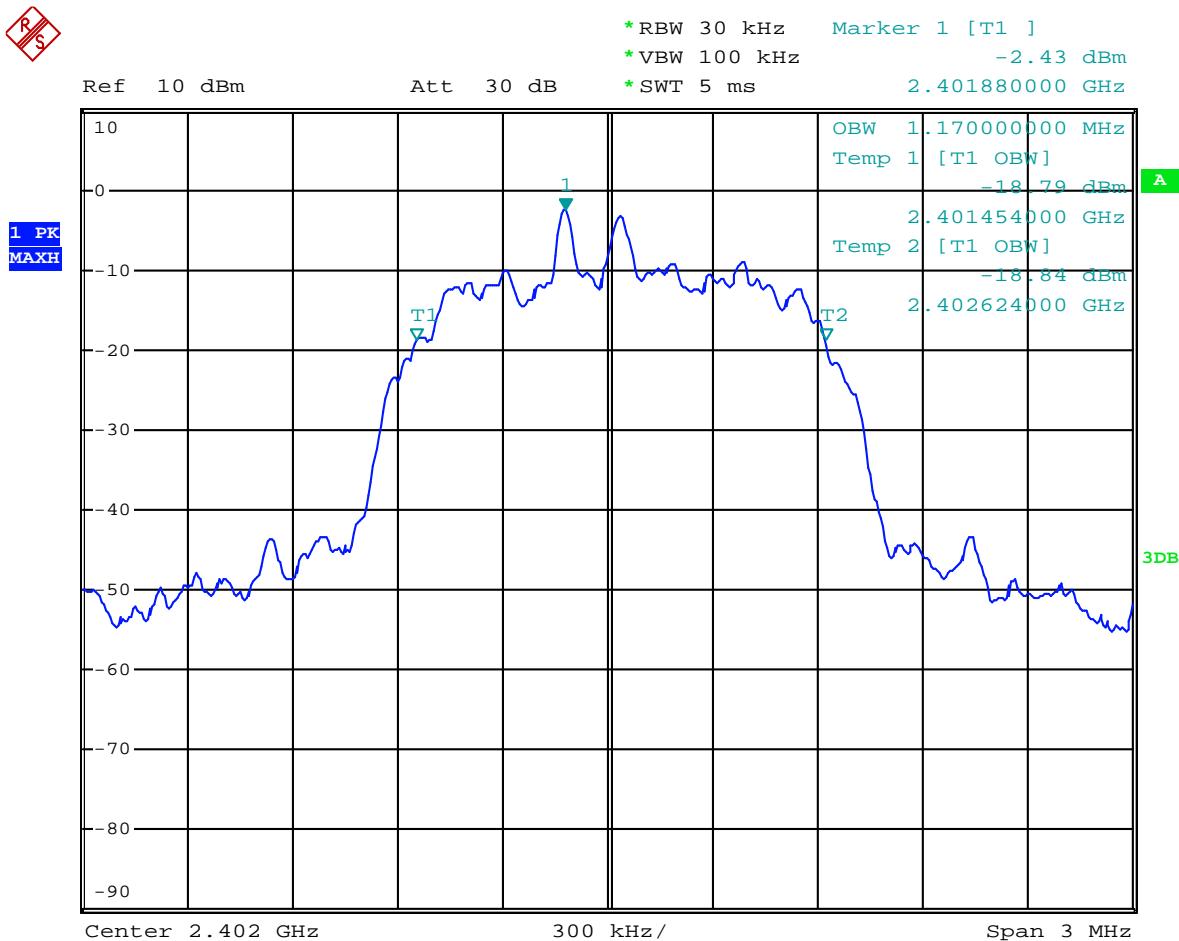
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### 8DPSK

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.170MHz	--	--



Date: 11.APR.2023 10:49:48

The report refers only to the sample tested and does not apply to the bulk.

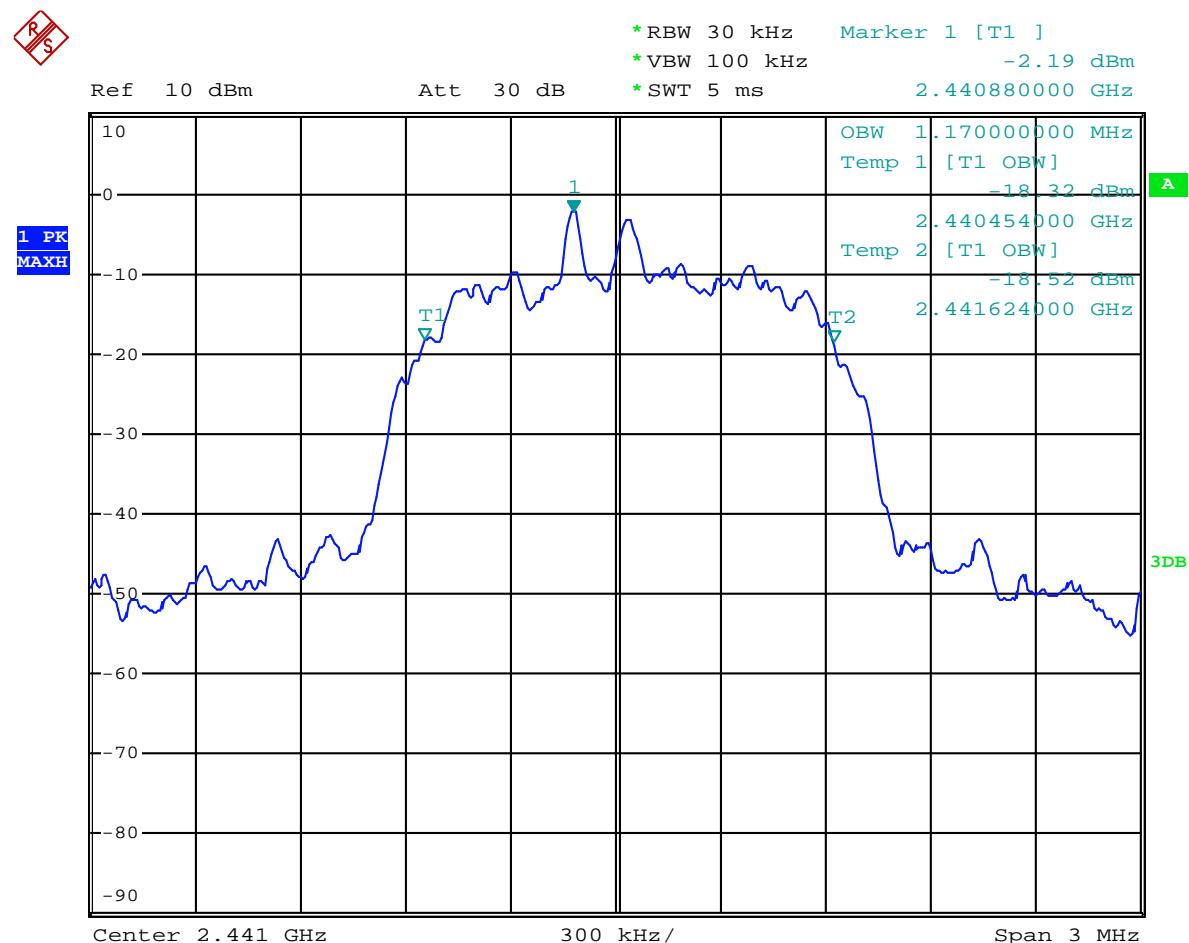
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**8DPSK**

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.170MHz	--	--



Date: 11.APR.2023 10:52:25

The report refers only to the sample tested and does not apply to the bulk.

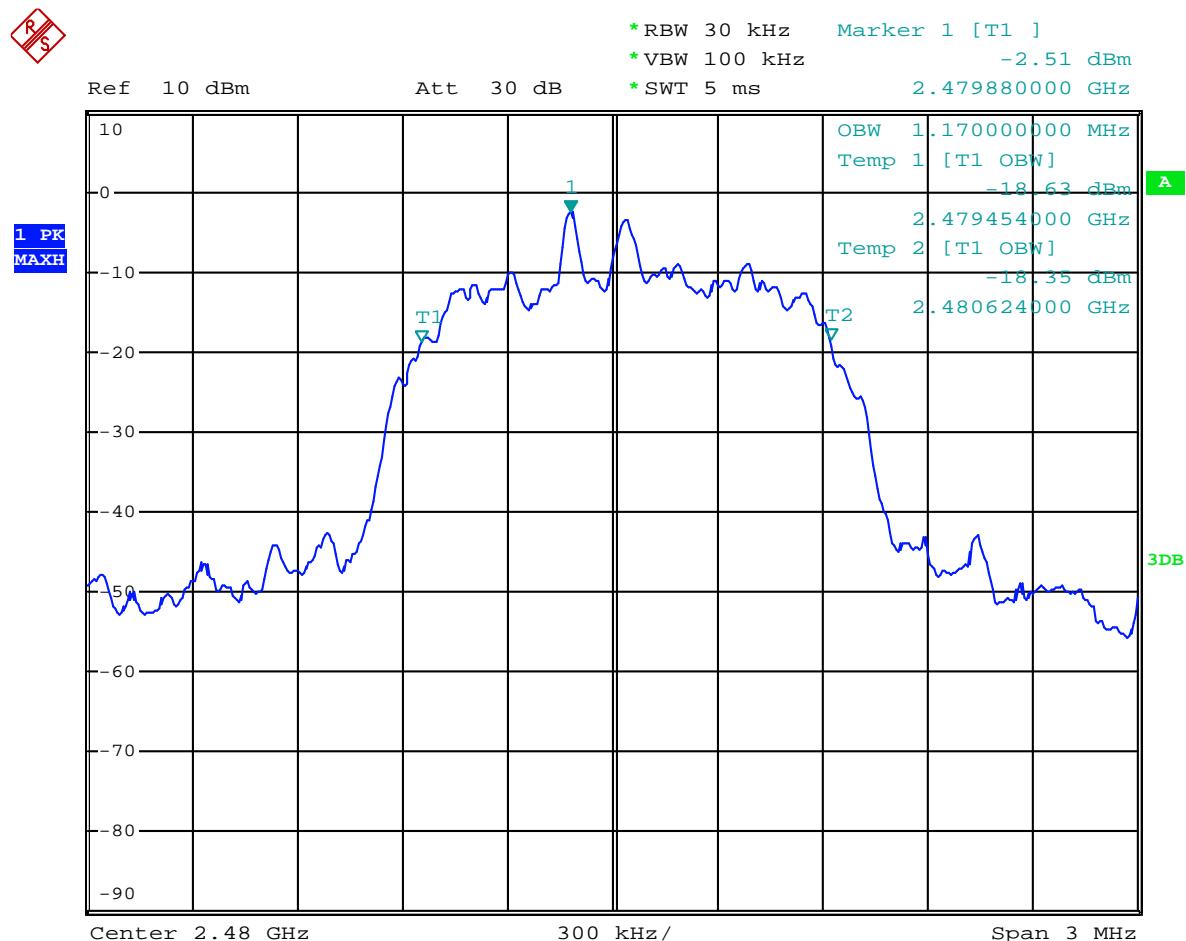
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**8DPSK**

Product:	Bluetooth Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting	Test Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.170MHz	--	--



Date: 11.APR.2023 10:54:05

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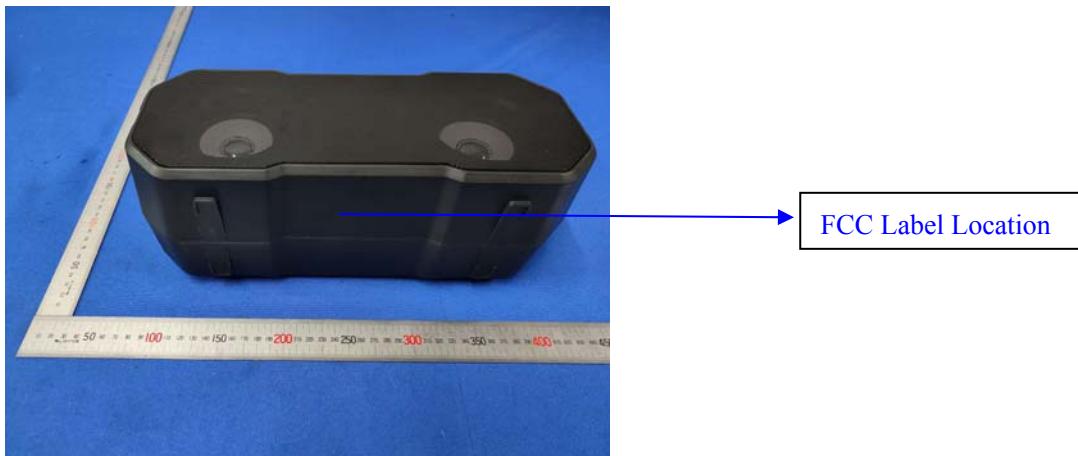
## 10.0 FCC ID Label

### FCC ID: 2ACCE-8812C

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and  
(2) this device must accept any interference received, including interference that may cause undesired operation

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



The report refers only to the sample tested and does not apply to the bulk.

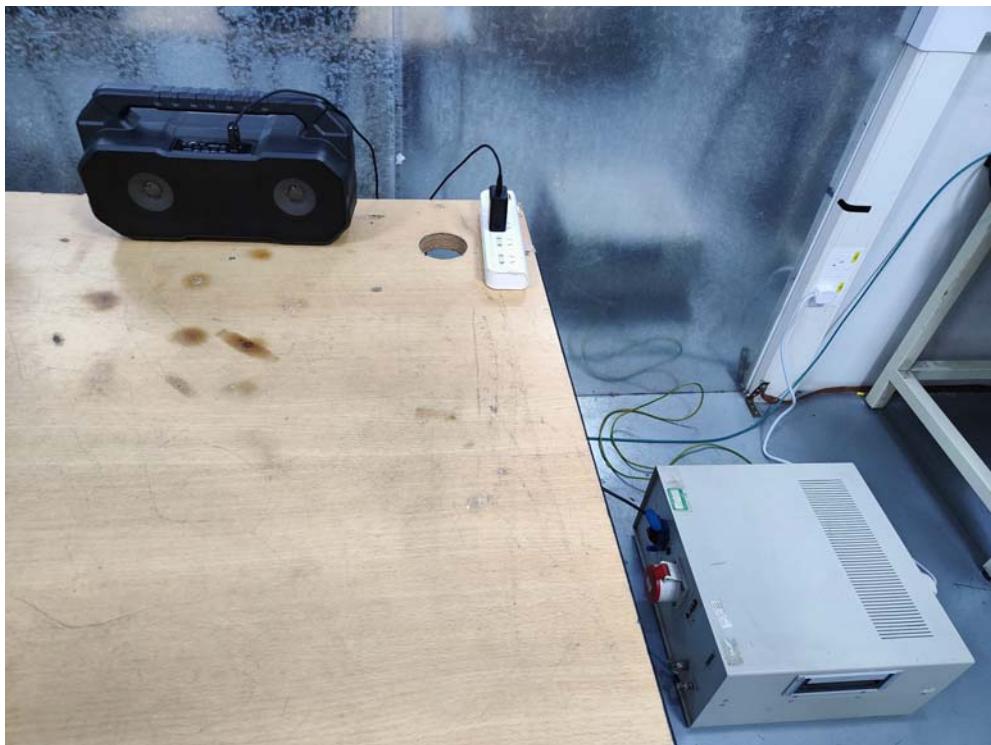
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**11.0** Photo of testing

**11.1** Conducted test View



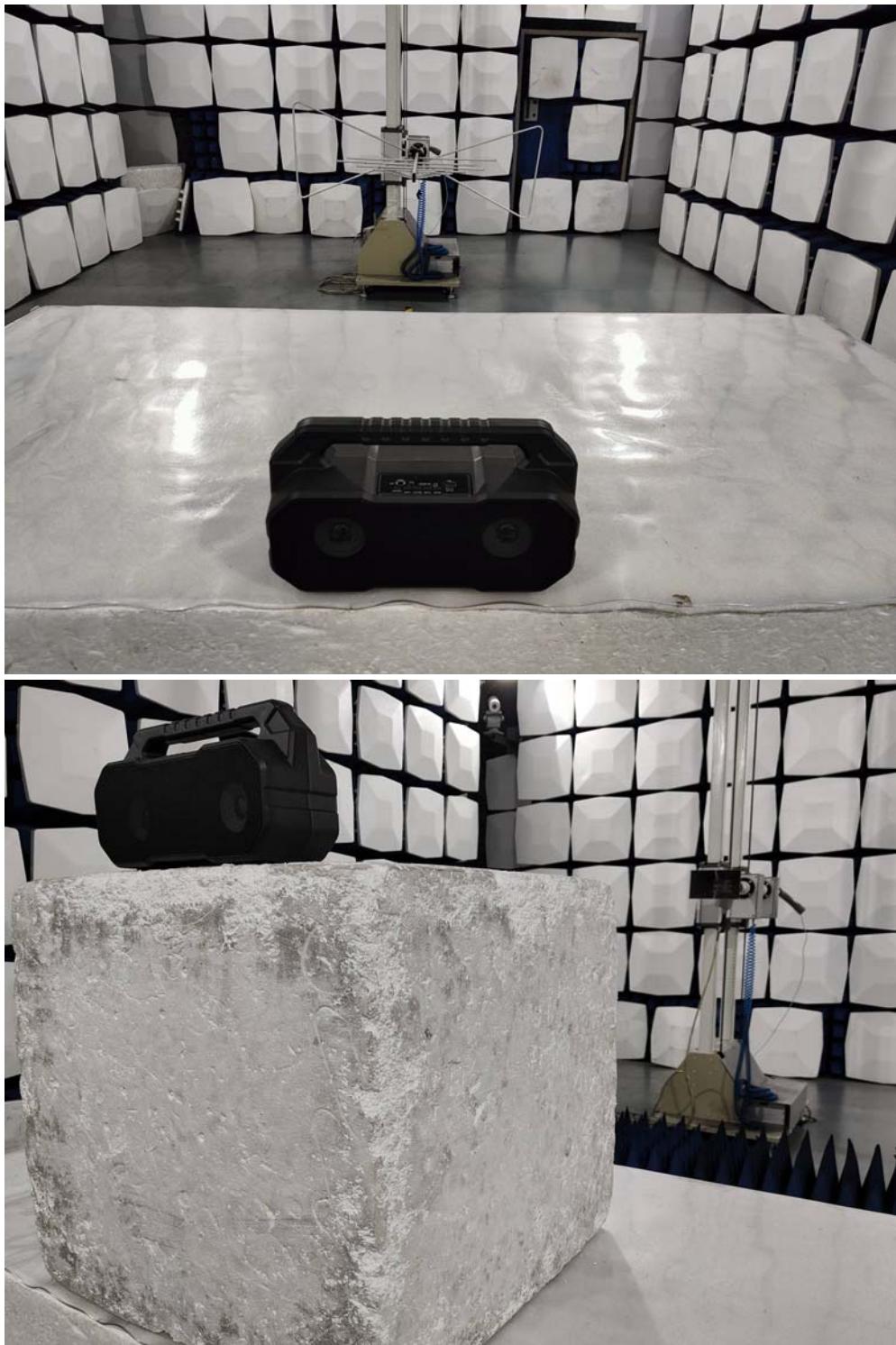
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Radiated emission test view



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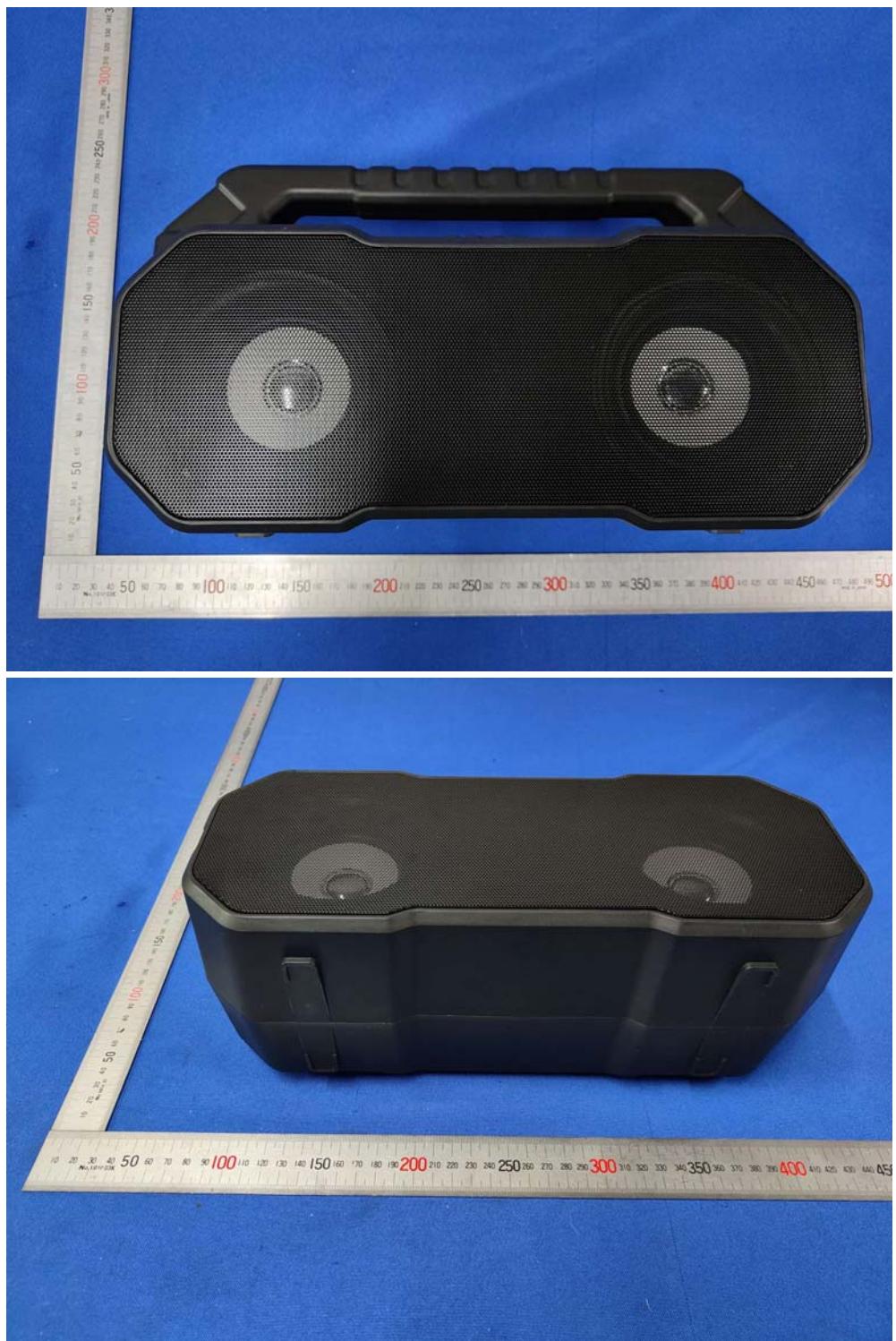
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## 11.2 Photographs – EUT

Outside View



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Outside View



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Outside View



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Inside View



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Inside View



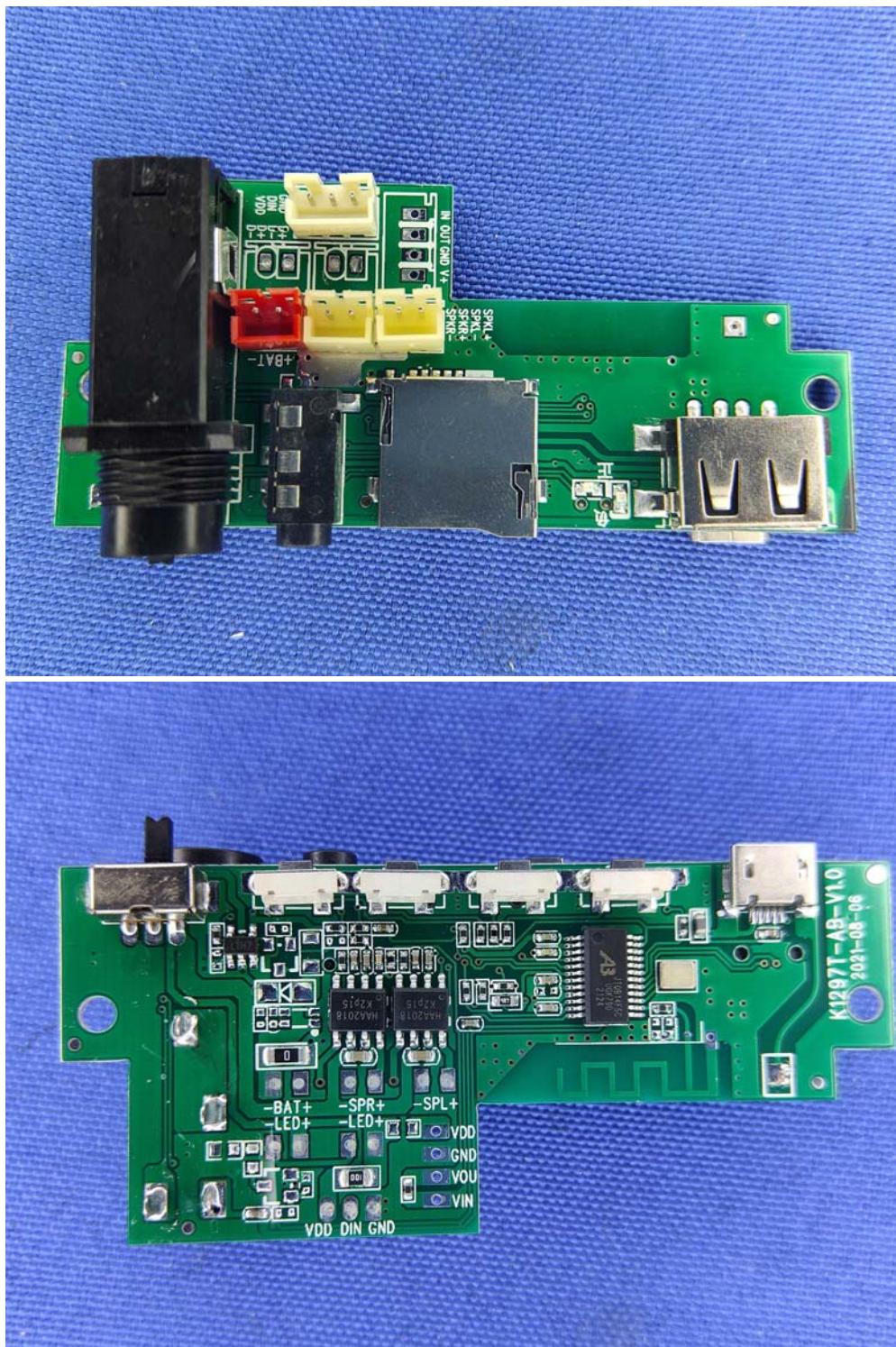
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Inside View



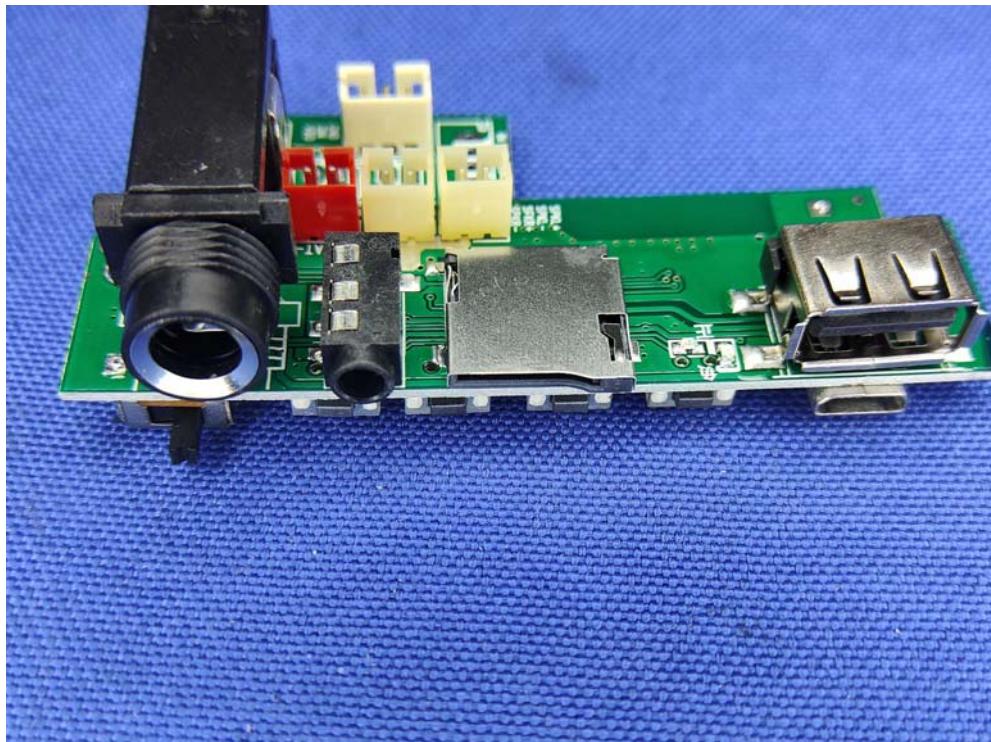
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Inside View



**--End of the report--**

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