

Applicant: LEADER PREMIUMS LIMITED

Product: Speaker

Model No.: AE0029

Trademark: N/A

Test Standards: FCC Part 15.249

It is herewith confirmed and found to comply with the Test result:

requirements set up by ANSI C63.10 & FCC Part 15 Subpart C, 15.249 regulations for the evaluation

electromagnetic compatibility

Approved By

Terry Tang

Manager

withdrawal at

Dated: October 31, 2024

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

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

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Special Statement:

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

CAB identifier: CN0033

Date: 2024-10-31



Test Report Conclusion

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

11.0

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Photo of Test Setup and EUT View....

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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 Sates

Registration Number: 744189 For 3m Anechoic Chamber

1.2 Applicant Details

Applicant: LEADER PREMIUMS LIMITED

Address: ROOM 901, HENGFU MANSION, NO.858, FUMINGROAD, NINGBO, CHINA

1.3 Description of EUT

Product: Speaker

Manufacturer: LEADER PREMIUMS LIMITED

Address: ROOM 901, HENGFU MANSION, NO.858, FUMINGROAD, NINGBO,

CHINA

Trademark: N/A
Model Number: AE0029
Additional Model Name N/A

Rating: DC5V, 3W

Battery: DC3.7V, 200mAh Li-ion battery

Serial No.: N/A Hardware Version: V1.3 Software Version: V1.3

Operation Frequency: 2402-2480MHz Modulation Type: GFSK, JI/4DQPSK

Number of Channels: 79 Channel Separation: 1MHz

Antenna Designation PCB antenna with gain -0.58dBi maximum (Get from the antenna specification)

1.4 Submitted Sample: 2 Samples

1.5 Test Duration

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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

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	2024-07-12	2025-07-11		
LISN	R&S	EZH3-Z5	100294	2024-07-12	2025-07-11		
LISN	R&S	EZH3-Z5	100253	2024-07-12	2025-07-11		
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2024-07-12	2025-07-11		
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17		
Spectrum	R&S	FSIQ26	100292	2024-07-12	2025-07-11		
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	2025-07-17		
Power meter	Anritsu	ML2487A	6K00003613	2024-07-12	2025-07-11		
Power sensor	Anritsu	MA2491A	32263	2024-07-12	2025-07-11		
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	2024-07-12	2025-07-11		
EMI Test Receiver	RS	ESCS 30	834115/006	2024-07-12	2025-07-11		
Spectrum	HP/Agilent	E4407B	MY50441392	2024-07-12	2025-07-11		
Spectrum	RS	FSP	1164.4391.38	2024-07-12	2025-07-11		
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA		2024-07-12	2025-07-11		
RF Cable	Zhengdi	7m		2024-07-12	2025-07-11		
Pre-Amplifier	Schwarebeck	BBV9743	#218	2024-07-12	2025-07-11		
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2024-07-12	2025-07-11		
LISN	SCHAFFNER	NNB42	00012	2024-07-12	2025-07-11		
ESPI Test Receiver	R&S	ESPI 3	100379	2024-07-12	2025-07-11		
LISN	R&S	EZH3-Z5	100294	2024-07-12	2025-07-11		

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

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The EUT has b	been testea	according to	o tne tou	owing spe	ecifications:

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
FCC Part 15.215(c)	20dB bandwidth	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

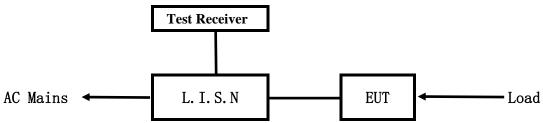
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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5.0 Power Line Conducted Emission Test

5.1 Schematics of the test

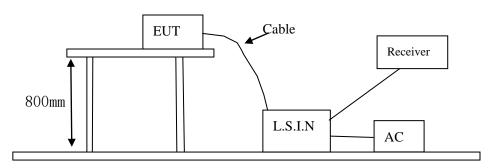


EUT: Equipment Under Test

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
Cmaalran	LEADER PREMIUMS	A E0020	2ADVV AE0020
Speaker	LIMITED	AE0029	2APYY-AE0029

B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

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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	Limits (dB μ V)				
(MHz)	Quasi-peak Level	Average Level			
$0.15 \sim 0.50$	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)

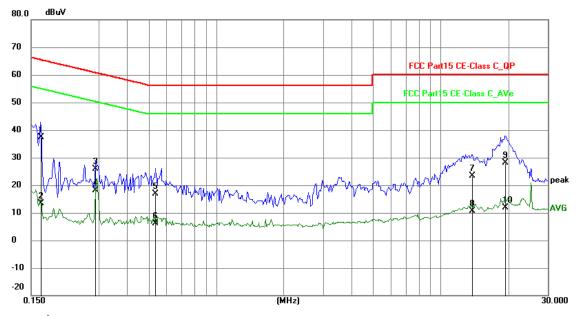
EUT Operating Environment

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

EUT set Condition: 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	0.1655	27.52	9.77	37.29	65.18	-27.89	QP	Р
2	0.1655	3.64	9.77	13.41	55.18	-41.77	AVG	Р
3	0.2904	16.19	9.76	25.95	60.51	-34.56	QP	Р
4	0.2904	8.29	9.76	18.05	50.51	-32.46	AVG	Р
5	0.5361	7.18	9.77	16.95	56.00	-39.05	QP	Р
6	0.5361	-3.57	9.77	6.20	46.00	-39.80	AVG	Р
7	13.8381	13.13	10.33	23.46	60.00	-36.54	QP	Р
8	13.8381	0.33	10.33	10.66	50.00	-39.34	AVG	Р
9	19.4151	17.59	10.64	28.23	60.00	-31.77	QP	Р
10	19.4151	1.27	10.64	11.91	50.00	-38.09	AVG	Р

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

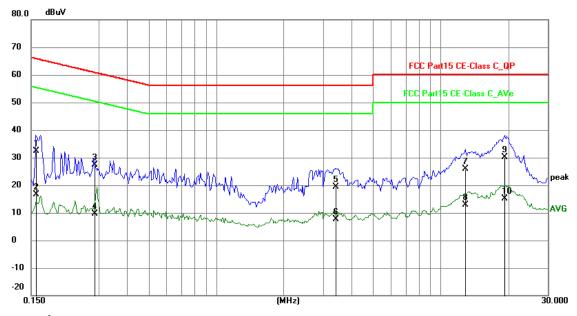
EUT Operating Environment

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

EUT set Condition: 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	0.1578	22.48	9.78	32.26	65.58	-33.32	QP	Р
2	0.1578	6.89	9.78	16.67	55.58	-38.91	AVG	Р
3	0.2865	17.50	9.76	27.26	60.63	-33.37	QP	Р
4	0.2865	-0.21	9.76	9.55	50.63	-41.08	AVG	Р
5	3.4134	9.40	9.86	19.26	56.00	-36.74	QP	Р
6	3.4134	-2.15	9.86	7.71	46.00	-38.29	AVG	Р
7	12.8826	15.54	10.29	25.83	60.00	-34.17	QP	Р
8	12.8826	2.64	10.29	12.93	50.00	-37.07	AVG	Р
9	19.2747	19.40	10.64	30.04	60.00	-29.96	QP	Р
10	19.2747	4.60	10.64	15.24	50.00	-34.76	AVG	Р

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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 9kHz to 25 GHz was investigated. The frequency spectrum is set as follows:

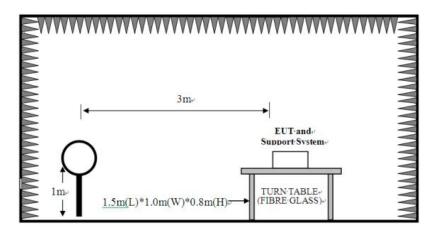
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
ADOVE IGHZ	Peak	1MHz	10Hz	Average

(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

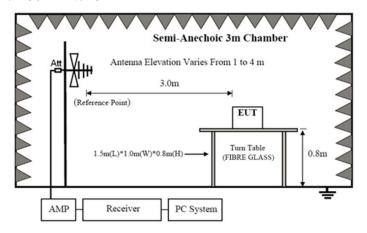
For radiated emissions from 9kHz to 30MHz



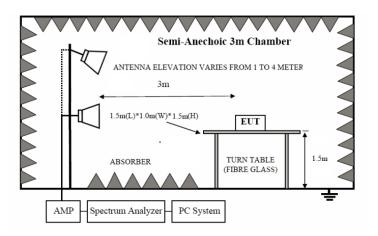
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For radiated emissions from 30MHz to1GHz



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	ength of Fundamental (3m)	Field S	trength of Harmonics (3m)	
(MHz)	mV/m	dBuV/m	uV/m	dBuV/m

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2400 2402 7	~~	0.4.4.4	444 (75 4)		- 4 / 4	= 4 (D 1)
2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)
2100 2103.5	50) i (riverage)	III (I can)	500	3 (Tiverage)	/ I (I call)

Note: 1. RF Field Strength $(dBuV) = 20 \log RF \text{ Voltage } (uV)$

- 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.

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

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
0.009-0.490	3	20log(2400/F(kHz)) +40log (300/3)
0.490-1.705	3	20log(24000/F(kHz)) +40log (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 $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 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 two modulation modes of GFSK, Pi/4D-QPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.
- 6. Battery was fully charged during test

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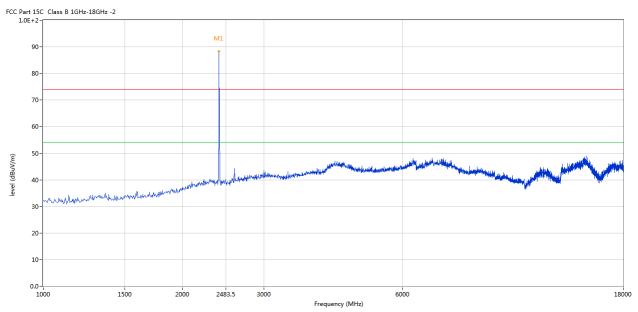
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6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

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

Horizontal



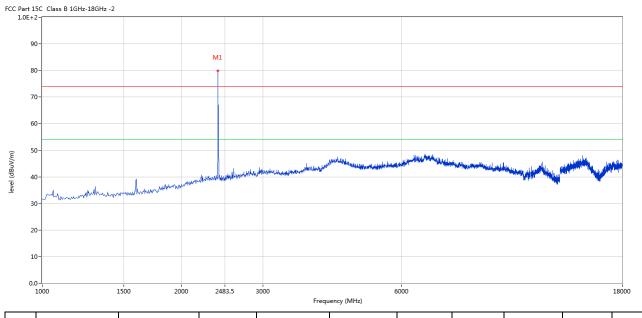
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	88.41	-3.57	114.0	-25.59	Peak	125.00	100	Horizontal	Pass

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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	79.90	-3.57	114.0	-34.10	Peak	205.00	100	Vertical	Pass

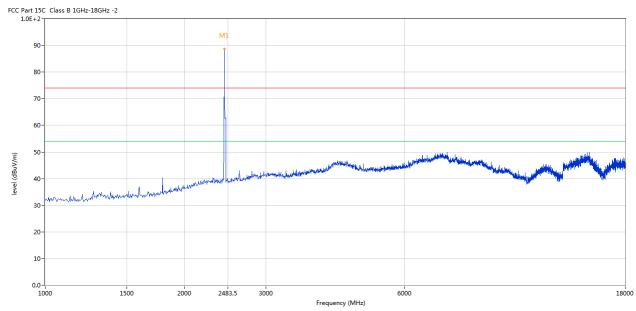
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Please refer to the following test plots for details: Middle Channel-2441MHz

Horizontal



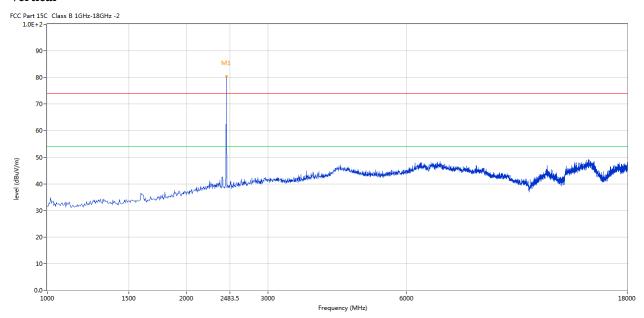
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	88.65	-3.57	114.0	-25.35	Peak	123.00	100	Horizontal	Pass

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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	80.38	-3.57	114.0	-33.62	Peak	0.00	100	Vertical	Pass

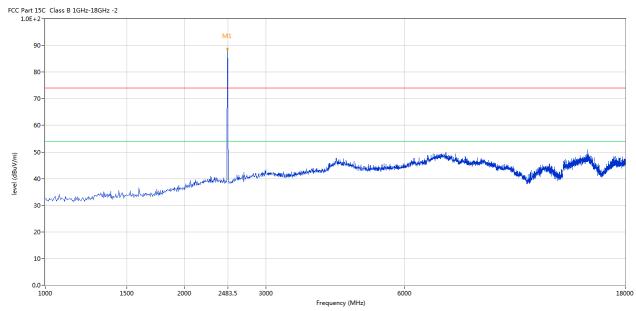
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Please refer to the following test plots for details: High Channel-2480MHz

Horizontal



Ī	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
	1	2480	88.76	-3.57	114.0	-25.24	Peak	300.00	100	Horizontal	Pass

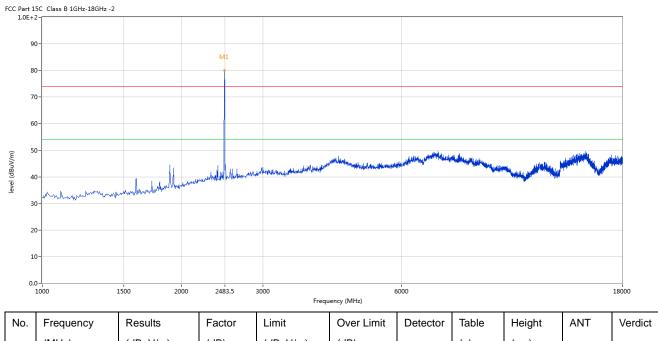
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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	80.11	-3.57	114.0	-33.89	Peak	231.00	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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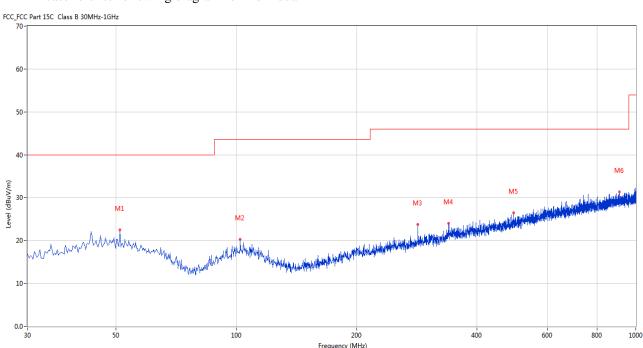


B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Margin	Detector	Table	Height	Antenna	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(Degree)	(cm)		
1	51.092	22.49	-11.41	40.0	17.51	Peak	341.00	100	Horizontal	Pass
2	102.247	20.25	-13.42	43.5	23.25	Peak	280.00	100	Horizontal	Pass
3	284.561	23.78	-11.33	46.0	22.22	Peak	287.00	100	Horizontal	Pass
4	340.322	24.02	-9.79	46.0	21.98	Peak	240.00	100	Horizontal	Pass
5	494.514	26.46	-7.12	46.0	19.54	Peak	127.00	100	Horizontal	Pass
6	909.570	31.37	-1.75	46.0	14.63	Peak	127.00	100	Horizontal	Pass

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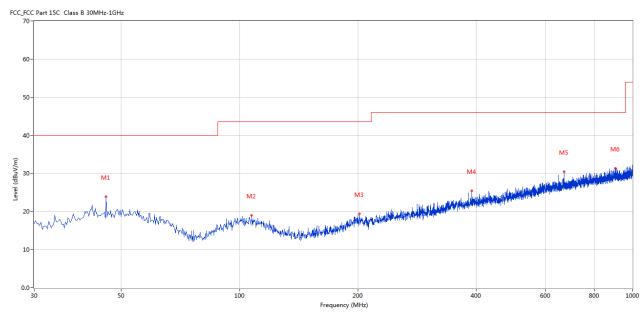


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Margin	Detector	Table	Height	Antenna	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(Degree)	(cm)		
1	45.759	23.94	-11.40	40.0	16.06	Peak	291.00	100	Vertical	Pass
2	107.338	19.01	-13.39	43.5	24.49	Peak	253.00	100	Vertical	Pass
3	201.890	19.42	-13.41	43.5	24.08	Peak	12.00	100	Vertical	Pass
4	389.780	25.41	-8.89	46.0	20.59	Peak	265.00	100	Vertical	Pass
5	669.070	30.43	-4.42	46.0	15.57	Peak	270.00	100	Vertical	Pass
6	903.509	31.35	-1.80	46.0	14.65	Peak	167.00	100	Vertical	Pass

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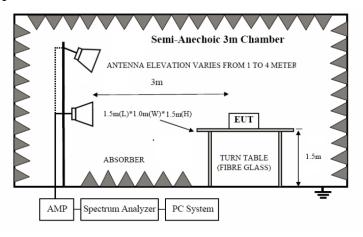


7. Band Edge

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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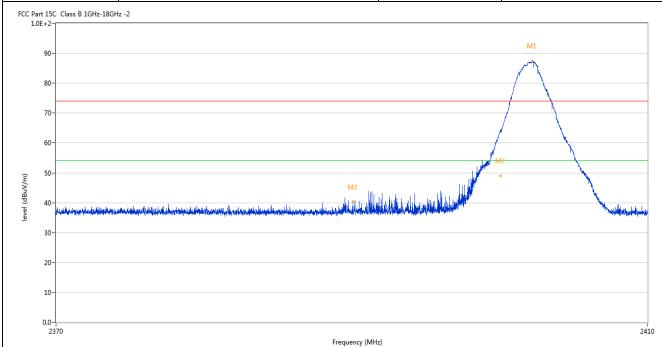
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7.6 Test Result

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



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402.162	87.39	-3.57	74.0	13.39	Peak	295.00	100	Horizontal	N/A
2	2400.000	64.28	-3.57	74.0	-9.72	Peak	295.00	100	Horizontal	Pass
2**	2400.000	48.92	-3.57	54.0	-5.08	AV	295.00	100	Horizontal	Pass
3	2390.000	40.34	-3.53	74.0	-33.66	Peak	241.50	100	Horizontal	Pass

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]	Product:		Spea	ker		Detect	or		Vertical	
	Mode	I	Keeping Tra	ansmitting		Test Vol	tage		DC3.7V	
Te	mperature		24 de	g. C,		Humid	ity		56% RH	
Te	est Result:		Pas	SS						
	t 15C Class B 1GHz-18GH E+2-	lz -2			•		<u>'</u>			
	90-									
								M1		
	80-							/ Troop		
	70-									
	60-						/			
									\	
level (dBuV/m)		A STATE OF THE STA	المتعدلة الإربار أرفي المتعدد		M3	TPM WARRING WAR	M2		No. of the last	
level (dBuV/m)		on the state of th		the the same of the short	M3	menteral de l'and	M2		A STATE OF THE STA	ng di di nasida di
level (dBuV/m)	30-	mandalasta debelaka da seperak	ribert farfyright betreen	un (i.e., ha i) une de la dire.	M3	rreadaile region de Louis	M2 °			ndd dei de
	30-	المحامد فالمعامل المعامل والمعتبدة في مسيد	sandadishketeni	Hand Spin, John W. Land Belleville, Joseph	M3	menjaderak dikulasi	M2		Market Ma	addina di Laga
	30 - 20 -	And the second s			Frequency (MHz)	rmanahan bilan	M2		Market Market	And I to the comment
	30 -	Results	Factor		dittleb different met and the state of the s	Detector	Table	Height	ANT	241
	40- 30- 20- 10- 0.0- 2370				Frequency (MHz)	Detector	HANDER OF THE PROPERTY OF THE	Height (cm)	19000	241
No.	30 - 20 - 10 - 2370 Frequency	Results	Factor	Limit	Frequency (MHz) Over Limit	Detector Peak	Table	_	19000	241
No.	40- 30- 20- 10- 0.0- 2370 Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MHz) Over Limit (dB)		Table (o)	(cm)	ANT	Verdi
(w/\htext{\mu/\ngp}) anal	40- 30- 20- 10- 2370 Frequency (MHz) 2402.102	Results (dBuV/m) 79.16	Factor (dB) -3.57	Limit (dBuV/m) 74.0	Frequency (MHz) Over Limit (dB) 5.16	Peak	Table (o) 10.00	(cm)	ANT Vertical	²⁴¹

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I	Product:		Sp	eaker		P	olarity		Horizont	al
	Mode			Transmitting			t Voltage		DC3.7\	7
Te	mperature			deg. C,			ımidity		56% RF	I
Te	st Result:]	Pass						
Part 1	5C Class B 1GHz-18GHz	-2				1		'		
			MI							
90	0-		A/~	`\						
80	0-									
70	0-			1						
60	J-		y de la companya del companya de la companya del companya de la co	M2						
50	0-	All property		•	<u> </u>					
41		Walter Street Bridge Bridge			Marith adalam	والمراجعة والمراجعة والمراجعة	hilas da Halima da Ha	والمراجع والمشجور والمراجع مداما	eridel and let in a second contact between order	الا مناسطان الحد
30					AMERICA CONTROL OF	diginagi mila na diguran na nagiti sandinini pada	And the last section of th	teritiras (m. 1900), ministras per el con-	ali de mandre de la constante	tha dem and and
20	0-									
10	0-									
0.0	0-									
	2470			2483.	5 Frequency (MHz)					2500
	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verd
lo.		1	(15)	(dBuV/m)	Limit (dB)		(o)	(cm)		
10.	(MHz)	(dBuV/m)	(dB)	(ubu v/III)	Limit (GD)		` '	(-)		
No.	(MHz) 2479.965	(dBuV/m) 86.91	-3.57	74.0	12.91	Peak	294.00	100	Horizontal	N/A

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I	Product:		Spea	lker		Detect	or		Vertical	
	Mode	k	Keeping Tra	ansmitting		Test Vol	tage		DC3.7V	
Te	mperature		24 de	g. C,		Humid	ity		56% RH	
Te	est Result:		Pas	ss						
	rt 15C Class B 1GHz-18GH	z -2			•					
	90-		М	11						
	80-									
	70-									
	60-		_/							
				X						
uV/m)	50-			M2						
rel (dBuV/m)	50-	adada waxaa kalika aa qabada waxaa ahaa ka k		M ₂		Maridana bandahasasa				
level (dBuV/m)	40-	iddaydd llagar a barba		M2						N. of AMPANA
level (dBuV/m)	50-	الماسية المتعادية والمتعادية والمتعادلة والم		M2		de de la constitución de la cons		grand de la company		
level (dBuV/m)	40-	والماس المعارضة والمعارضة		M2		والمنطقة والمنافرة وا		promise de la companya de la company	itanipadhaphiphitha	
level (dBuV/m)	50- 40- 30-	edilarekskapitakingerishiri		M2		de demonstrative		green the state of a least	terdiyedi yer delb	
	30- 20-	المراجع المراج		M2		da da anterior	dhi hidh da da bandh	Arrowski observation de les	itseinedturer det de	N-140-AVA
	30- 20-	nd the week of the second se		M2 2483.5			dich de de la conte		itseine Haner Arth	2500
	30- 10- 10-	Results	Factor		5	Detector	Table		ANT	2500
	30 - 20 - 2470	and the second s	Factor (dB)		; Frequency (MHz)			Height (cm)		2500
	30- 20- 10- 2470	Results		Limit	Frequency (MHz) Over Limit		Table	Height		

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

2. The two modulation modes of GFSK, Pi/4D-QPSK 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 with gain -0.58dBi maximum. It fulfills the requirement of this section.

Test Result: Pass

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9.0 20dB Bandwidth Measurement

Test Configuration



Test Procedure

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 30kHz RBW and 100kHz VBW.

The 20dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 20dB.

Limit

N/A

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Test Result

Product:		Speaker	r Test M		Iode:	Ke	ep transmi	tting
Mode	Keel	oing Transmi	tting	Test Vo	oltage	DC3.7V		
Temperature		24 deg. C,		Hum	idity	56% RH		
Test Result:		Pass		Dete	ctor		PK	
20dB Bandwidth		846kHz			-			
Ref 10 dE	3m 🚽	Att 20 di	* VBW	30 kHz 100 kHz 5 ms		-0 2.4018680	.58 dBm	
10					ndB [_	.00 dB	
_0			1		BW 84	6.0000000 1 [T1 nd]		A
L PK			MA			-20	.67 dBm	
AAXH 10					Temp :	2.4016160	000 GHz	
		T7-/N		N _{T2}		-20 2.4024620	.50 dBm	
20		5						
30		në.			J.			
40	1					7	3	BDB
50						1	Marin	
60								
70								
80								
-90								

Date: 29.OCT.2024 09:45:33

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Product:		Speaker		Test	Mode:		Keep trans	smitting
Mode	Kee	ping Transmitting	5	Test '	Voltage		DC3.	7V
Temperature		24 deg. C,	Hun	nidity	56% RH		RH	
Test Result:		Pass		Det	ector		PK	
dB Bandwidth		888kHz						
Ref 10 dF	Bm ·	*Att 20 dB	*RBW 30 *VBW 10 SWT 5	0 kHz	2 ndB [T	. 4408740 1] 20	.81 dBm 000 GHz .00 dB	A
рк хн		h	1		2 Temp 2	.4405740	.52 dBm	
20		T1		T2	2	.441462	000 GHz	
30	لمر			~	4			
40					7	m	:	3DB
60 00	,					<i>J</i>	war.	
70								
80								
-90								
Center 2.4	I 441 GHz	300	kHz/			Spa	n 3 MHz	

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

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Product:		Speaker		Test	Mode:		Keep transm	itting
Mode	Keep	oing Transmittir	ng	Test '	Voltage		DC3.7V	7
Temperature		24 deg. C,		Humidity		56% RH		I
Test Result:		Pass		Det	tector		PK	
20dB Bandwidth		882kHz						
Ref 10 d	Bm *	Att 20 dB	*RBW 30 *VBW 10 SWT 5	0 kHz		1 [T1] -1	.14 dBm	
10		1			ndB [T BW 882 Temp 1	1] 20 .0000000 [T1 nd]	.00 dB 000 kHz	ı
PK10		\mathcal{N}	M		2	-21 .479574	.58 dBm	
20		II.	Y	T2	2	-21 .4804560	.27 dBm	
30		\mathcal{N}		S. C.				
40					7			
50	M					~~/~	3DE	3
-60	'						raran	
70								
80								
-90				_				
Center 2.	48 GHz	30	0 kHz/			Spa	n 3 MHz	

Date: 29.OCT.2024 09:28:09

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Product:	Speaker	Test Mode:	Keep transmitting
Mode	Keeping Transmitting		DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK
20dB Bandwidth	1.260MHz		
% >			er 1 [T1]
Ref 10 dF	Bm *Att 20 dB	*VBW 100 kHz SWT 5 ms	-0.50 dBm 2.401868000 GHz
10		ndB	[T1] 20.00 dB
	1	BW	1.260000000 MHz 1 [T1 ndB]
	The state of the s	↑ Temp	1 [T1 ndB] A -20.50 dBm
1 PK MAXH 10		ha and	2.401400000 GHz
			-20.20 dBm
20	12	T2	2.402660000 GHz
	f'		
30			
40	MA		000
-5 gr A	√ *		JDB 3DB
60			
-70			
80			
-90			
Center 2.	402 GHz 300	kHz/	Span 3 MHz

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Product:	Sp	eaker	Test Mode:	Keep transmitting
Mode	Keeping 7	Transmitting	Test Voltage	DC3.7V
Temperature	24 0	leg. C,	Humidity	56% RH
Test Result:	F	Pass	Detector	PK
OdB Bandwidth	1.26	60MHz		
Ref 10 d:	Bm *Att		30 kHz Marker 1 100 kHz 5 ms 2.4	-0.69 dBm 140862000 GHz
		1		260000000 MHz
L PK		I A A		-20.66 dBm -40400000 GHz
10			Temp 2	-20.51 dBm 441660000 GHz
-30	ſ			
-40			<u></u>	
450 AV			\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	3DB
-60				
70				
80				
-90				
Center 2.	441 GHz	300 kHz/		Span 3 MHz

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Product:		Speaker		Test	Mode:		Keep tran	smitting
Mode	Keep	ing Transmitting	,	Test V	Voltage	DC3.7V		
Temperature		24 deg. C,		Hun	nidity	56% RH		RH
Test Result:		Pass		Det	ector		Pk	
20dB Bandwidth		1.254MHz						
Ref 10 d	3m *.	Att 20 dB	*RBW 30 *VBW 10 SWT 5	0 kHz		1 [T1 -1	.15 dBm	
10					ndB [T		.00 dB	
0		1			BW 1 Temp 1	.254000 [T1 nd]		A
PK		A	Λ			-21	.01 dBm	
MAXH 10			Im	Λ	2 Temo 2	.479400	000 GHz	
						-21	.00 dBm	
20	17	<i>p</i> 4			T2 2	.480654	000 GHz	
30					7			
					Į,			
40	MM				bag	M	_	3DB
50							\sim	
60								
70								
80								
-90								
Center 2.	18 GHz	300	kHz/			Spa	n 3 MHz	

Date: 29.OCT.2024 09:23:54

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10.0 FCC ID Label

FCC ID: 2APYY-AE0029

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:



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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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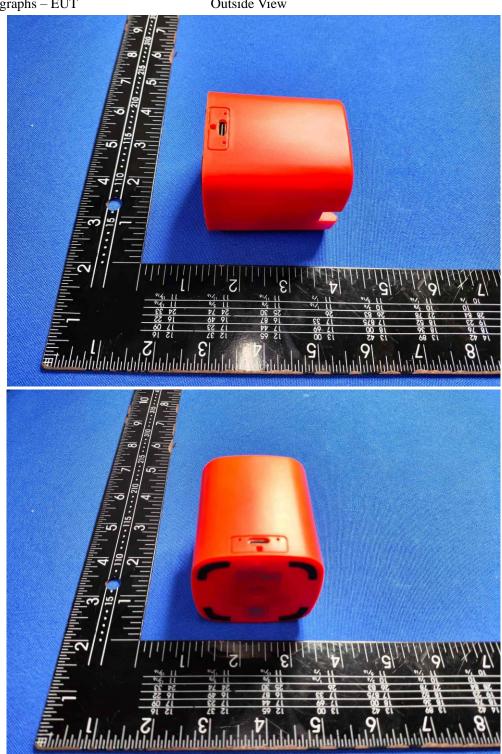
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11.2 Photographs - EUT

Outside View



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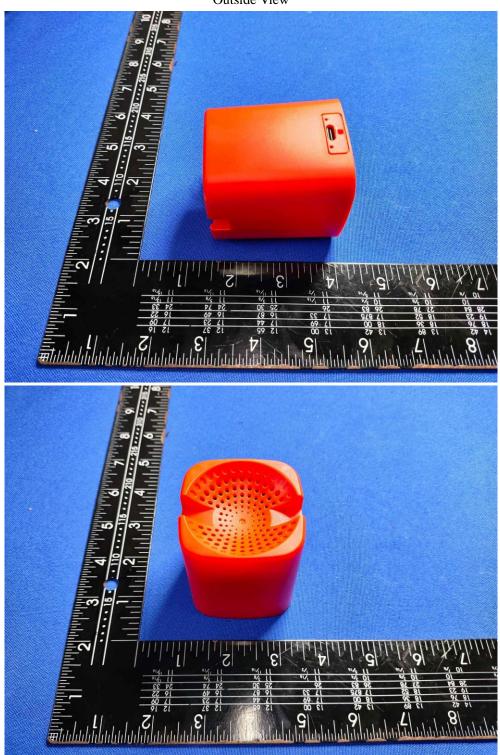
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Outside View



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Outside View



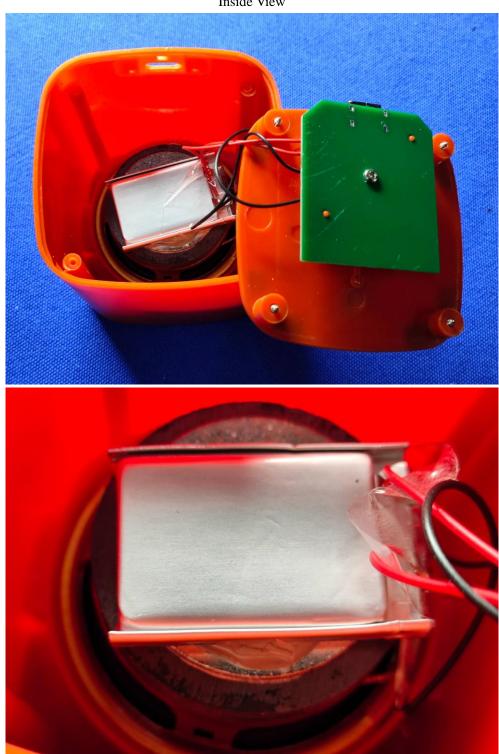
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Inside View



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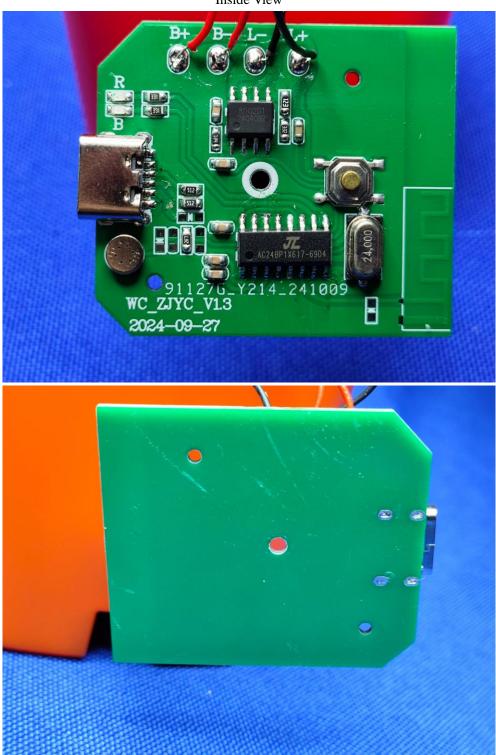
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Inside View



-- End of the report--

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

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