

Applicant: LEADER PREMIUMS LIMITED

Product: EcoSound FSC Bamboo/Recycled Aluminum Wireless Speaker

Model No.: ESP-ES24

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

Dated: July 22, 2024

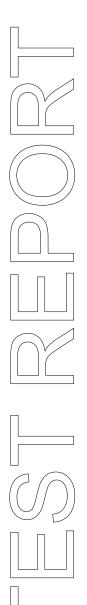
Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to

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



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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: 2024-07-22



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....

Date: 2024-07-22



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: EcoSound FSC Bamboo/Recycled Aluminum Wireless Speaker

Manufacturer: LEADER PREMIUMS LIMITED

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

CHINA

Trademark: N/A

Model Number: ESP-ES24

Additional Model Name N/A

Rating: Input: 5Vdc, 300mA

Battery: DC3.7V, 300mAh Li-ion battery

Serial No.: ESPES24241331001

Hardware Version: 0110OK Software Version: 0110OK

Operation Frequency: 2402-2480 MHzModulation 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

The EUT has been	ı tested accordii	ng to the followir	g specifications:
			P phonerona.

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

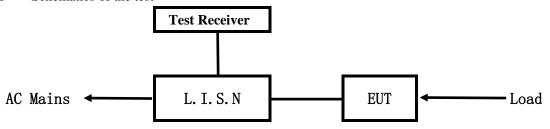
No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

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5.0 Power Line Conducted Emission Test

5.1 Schematics of the test

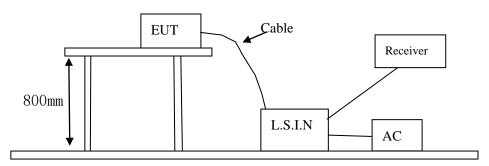


EUT: Equipment Under Test

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
EcoSound FSC	I EADED DDEMIUMC		
Bamboo/Recycled	LEADER PREMIUMS LIMITED	ESP-ES24	2APYY-ES24
Aluminum Wireless Speaker	LIMITED		

B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
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N/A		
1 1/1 1		

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 (d	lB μV)
(MHz)	Quasi-peak Level	Aver ge Level
$0.15 \sim 0.50$	66.0~56.0*	56.0~46.0*
$0.50 \sim 5.00$	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)

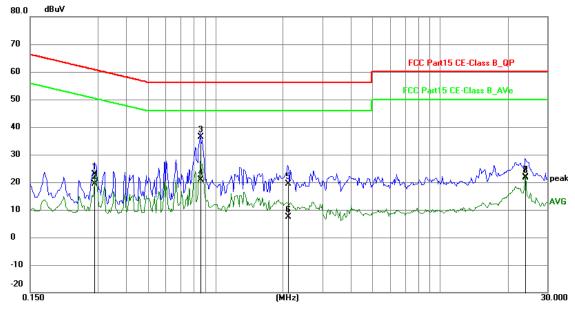
EUT Operating Environment

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	0.2904	13.18	9.76	22.94	60.51	-37.57	QP	Р
2	0.2904	9.50	9.76	19.26	50.51	-31.25	AVG	Р
3	0.8598	26.49	9.79	36.28	56.00	-19.72	QP	Р
4	0.8598	11.13	9.79	20.92	46.00	-25.08	AVG	Р
5	2.1078	9.60	9.80	19.40	56.00	-36.60	QP	Р
6	2.1078	-2.31	9.80	7.49	46.00	-38.51	AVG	Р
7	23.9859	10.93	10.93	21.86	60.00	-38.14	QP	Р
8	23.9859	10.60	10.93	21.53	50.00	-28.47	AVG	Р

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

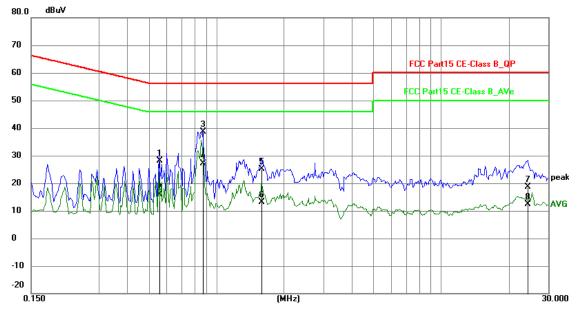
EUT Operating Environment

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	0.5556	18.41	9.77	28.18	56.00	-27.82	QP	Р
2	0.5556	6.16	9.77	15.93	46.00	-30.07	AVG	Р
3	0.8676	28.95	9.79	38.74	56.00	-17.26	QP	Р
4	0.8676	17.37	9.79	27.16	46.00	-18.84	AVG	Р
5	1.5930	15.22	9.80	25.02	56.00	-30.98	QP	Р
6	1.5930	3.30	9.80	13.10	46.00	-32.90	AVG	Р
7	24.2706	7.66	10.94	18.60	60.00	-41.40	QP	Р
8	24.2706	1.42	10.94	12.36	50.00	-37.64	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:

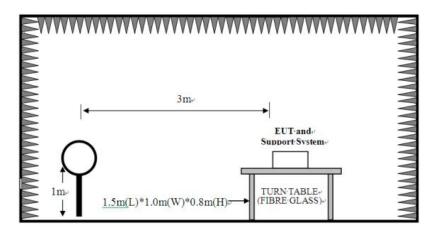
Frequency	Detector	RBW	VBW	Value
9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak
150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
ADOVE IGHZ	Peak	1MHz	10Hz	Average

(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

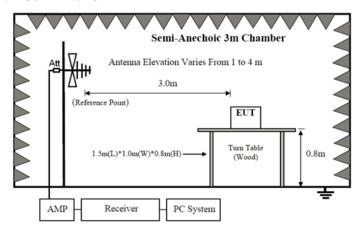
For radiated emissions from 9kHz to 30MHz



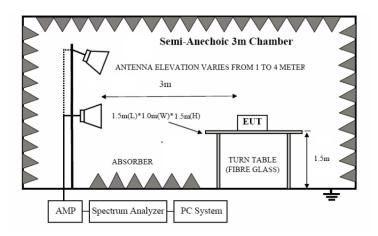
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For radiated emissions from 30MHz to1GHz



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	Field Stre	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 and 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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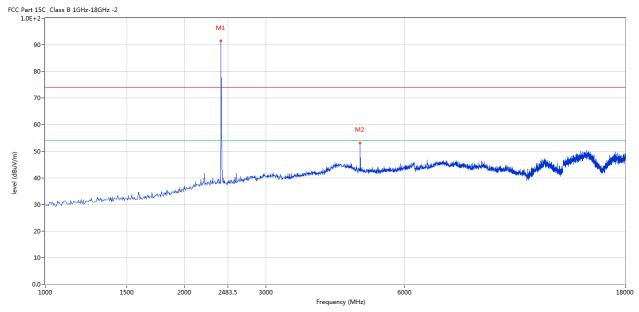
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6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

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

Horizontal



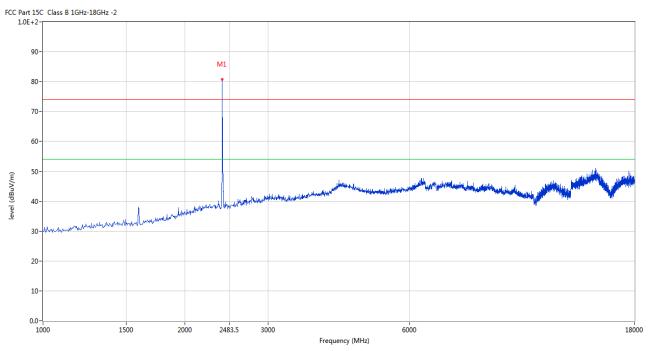
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2402	91.44	-3.57	114.0	-22.56	Peak	257.00	100	Horizontal	Pass
2	4802.799	53.17	3.12	74.0	-20.83	Peak	272.00	100	Horizontal	Pass

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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	80.88	-3.57	114.0	-33.12	Peak	125.00	100	Vertical	Pass

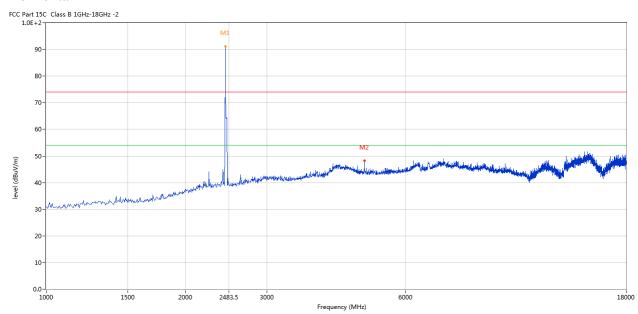
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Please refer to the following test plots for details: Middle Channel-2441MHz

Horizontal



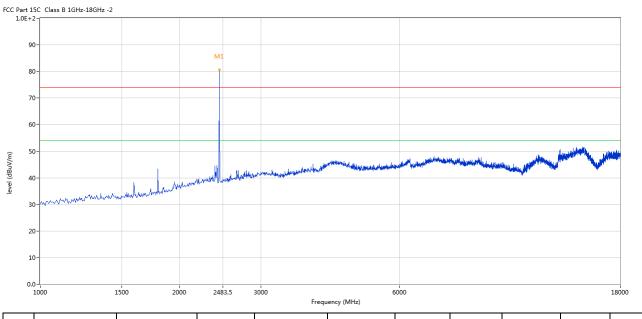
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2441	91.15	-3.57	114.0	-22.85	Peak	257.00	100	Horizontal	Pass
2	4883.529	48.28	3.20	74.0	-25.72	Peak	251.00	100	Horizontal	Pass

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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	80.55	-3.57	114.0	-33.45	Peak	350.00	100	Vertical	Pass

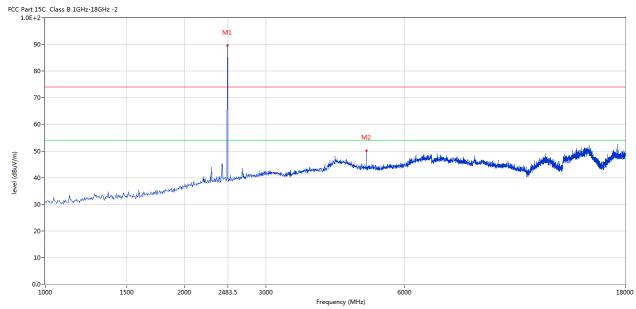
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Please refer to the following test plots for details: High Channel-2480MHz

Horizontal



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2480	89.56	-3.57	114.0	-24.35	Peak	269.00	100	Horizontal	Pass
2	4960.010	50.14	3.36	74.0	-23.86	Peak	254.00	100	Horizontal	Pass

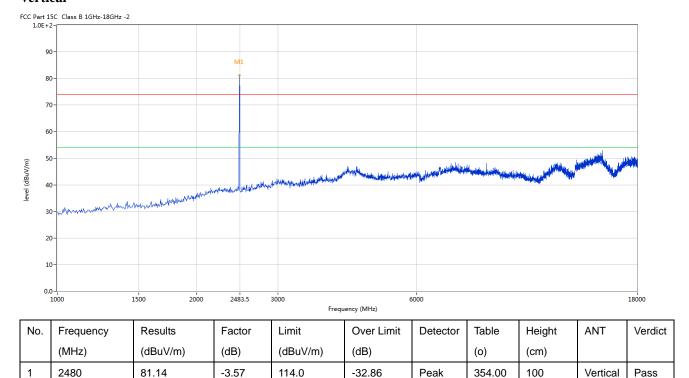
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Vertical



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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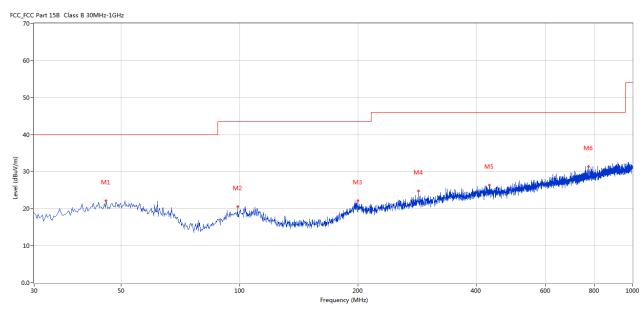


B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

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	45.759	22.18	-11.40	40.0	17.82	Peak	104.00	100	Horizontal	Pass
2	98.853	20.62	-13.68	43.5	22.88	Peak	147.00	100	Horizontal	Pass
3	200.192	22.17	-13.44	43.5	21.33	Peak	315.00	100	Horizontal	Pass
4	285.289	24.81	-11.32	46.0	21.19	Peak	247.00	100	Horizontal	Pass
5	432.207	26.40	-8.11	46.0	19.60	Peak	205.00	100	Horizontal	Pass
6	772.107	31.38	-3.21	46.0	14.62	Peak	100.00	100	Horizontal	Pass

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Date: 2024-07-22

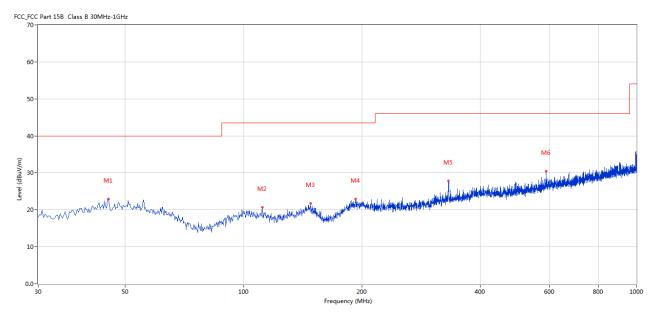


Radiated Emission In Vertical (30MHz----1000MHz)

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	45.274	22.96	-11.40	40.0	17.04	Peak	139.00	100	Vertical	Pass
2	111.702	20.73	-13.76	43.5	22.77	Peak	107.00	100	Vertical	Pass
3	148.068	21.78	-17.18	43.5	21.72	Peak	262.00	100	Vertical	Pass
4	192.677	22.95	-13.97	43.5	20.55	Peak	221.00	100	Vertical	Pass
5	332.564	27.88	-10.09	46.0	18.12	Peak	282.00	100	Vertical	Pass
6	589.308	30.49	-5.15	46.0	15.51	Peak	31.00	100	Vertical	Pass

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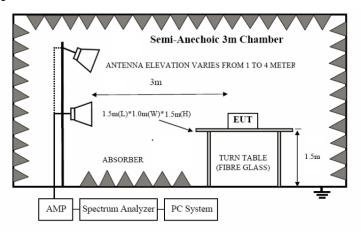


7. Band Edge

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

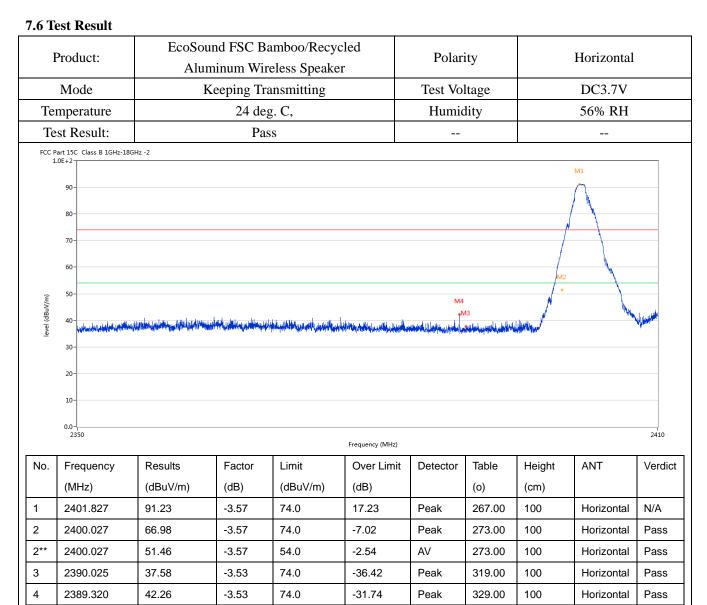
Same as section 5.4 of this report.

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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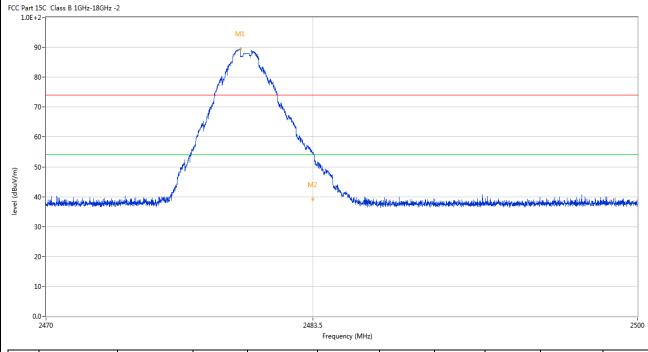
J 	Product:			amboo/Recyc eless Speaker		Detect	or		Vertical	
	Mode	K	eeping Tra	nsmitting		Test Vol	tage]	DC3.7V	
Te	mperature		24 deg	g. C,		Humid	ity	4	56% RH	
Te	est Result:		Pas	s						
FCC Par	t 15C Class B 1GHz-18GHz	-2					•			
level (dBuV/m)	30-	policinario operation for the plant for the operated fair the oper	erip, deglera i del tiple (to deciple de	Albert of the second discount of the second d	akel kin da kiha da kin din quangga sikasi	ms den visikalisis den seringa		14 M2	M1	urithannet d
	10-									
	0.0-	Γ-			Frequency (MHz)					
No.	10- 0.0- 2350	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	²⁴¹ Verdi
No.	o.o	(dBuV/m)	(dB)	Limit (dBuV/m)	Over Limit (dB)		(0)	(cm)		Verdi
No.	10- 0.0- 2350 Frequency (MHz) 2402.397	(dBuV/m) 80.57	(dB) -3.57	Limit (dBuV/m) 74.0	Over Limit (dB) 6.57	Peak	(o) 345.00	(cm)	Vertical	Verdi N/A
No. 1 2	Frequency (MHz) 2402.397 2400.027	(dBuV/m) 80.57 54.84	(dB) -3.57 -3.57	Limit (dBuV/m) 74.0 74.0	Over Limit (dB) 6.57 -19.16	Peak Peak	(o) 345.00 350.00	(cm) 100 100	Vertical Vertical	Verdi N/A Pass
No.	Frequency (MHz) 2402.397 2400.027	(dBuV/m) 80.57 54.84 39.83	(dB) -3.57 -3.57 -3.57	Limit (dBuV/m) 74.0 74.0 54.0	Over Limit (dB) 6.57 -19.16 -14.17	Peak	(o) 345.00	(cm)	Vertical	Verdi N/A Pass Pass
No. 1 2	Frequency (MHz) 2402.397 2400.027	(dBuV/m) 80.57 54.84	(dB) -3.57 -3.57	Limit (dBuV/m) 74.0 74.0	Over Limit (dB) 6.57 -19.16	Peak Peak	(o) 345.00 350.00	(cm) 100 100	Vertical Vertical	Verdi N/A Pass

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Product:	EcoSound FSC Bamboo/Recycled Aluminum Wireless 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	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1	2479.815	89.37	-3.57	74.0	15.37	Peak	256.00	100	Horizontal	N/A
2	2483.500	54.23	-3.57	74.0	-19.77	Peak	256.00	100	Horizontal	Pass
2**	2483.500	39.21	-3.57	54.0	-14.79	AV	256.00	100	Horizontal	Pass

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]	Product:			amboo/Recy reless Speake		Detec	tor		Vertical	
	Mode]	Keeping Tr	ansmitting		Test Vo	ltage		DC3.7V	
Te	mperature		24 de	g. C,		Humio	lity		56% RH	
Te	est Result:		Pa	SS						
	rt 15C Class B 1GHz-18GF	lz -2								
	90-									
	30		N	И1						
	80-									
	70-									
	60-		$ \int$							
			1.1	1 🔍						
				M2						
(m//m)	50-		/	M2						
evel (dBuV/m)	40-	ribilitario de la manaria d		M2	Market and the second s	ىرىيى ئىلىدىدىدىدىدىدىدىدىدىدىدىدىدىدىدىدىدىدى	idan kadalan da	den techen terbelang di indonesia	otar ayl qoʻqotarili siddhan il Plifthiradh	havatasi ilijudirik
level (dBuV/m)	40-	the second second		M2	Mary and Mary and the state of	خاس ماد المالية المالي	ida endiplombrakoj, kaj aj	والبرودة والمتارمة في المتاركة والمتاركة والمتاركة والمتاركة والمتاركة والمتاركة والمتاركة والمتاركة والمتاركة	المعادرا فيداره وما المعادرة المالية في المعادرة المالية المعادرة المالية المالية المالية المالية المالية الم	toward Market
level (dBuV/m)	30-	orthodoxia de anticolor de la constantina della		M2	And the second s	على معاملة المعاملة	الزار الشابات أو معادمتني و تجومها	البراد أو المالية	-ar _{ad} aha <i>ni</i> kathadhadhilikhada	destructives, sefericity,
level (dBuV/m)	30- 20-	ribidische description of		M2	Management of the second secon	والمستعددة	iikassi pilakala kalenda kalend	denside merkinget följbenskort	المعتمية والمعتمدة والمعتمد والمعتمدة والمعتمدة والمعتمدة والمعتمدة والمعتمدة والمعتمد	derestas Africhel.
level (dBuV/m)	30-	ettimissi kanadas kiristoona k		M2	Management of the second secon	على منابعة المنابعة	الامانشارة أواسلوما المانية والمانية والمانية والمانية والمانية والمانية والمانية والمانية والمانية والمانية و	lankish wakani dilikundow	المعجرا بالمدمون عاقد في المراجعة والمراجعة والمراجع والمراجعة والمراجعة والمراجعة والمراجعة وال	day area popular
level (dBuV/m)	30- 20-	sibilationies te materix in processor d'		M2		वी _{रम} ाककार्गिक के दूर वर्ष	identi filikologia kantani kan	dynode w biwed if the glad	non jų karadis Markijos kiris kar	
level (dBuV/m)	30- 10-	nthindus de manages, in secondo d		M2 2483.		على المستركة	ita sandarinda mbeninga jing maj	lanista variata pilika yeke	Auro, I placentino (C. Millione).	
No.	30- 10-	Results	Factor	2483.	.5	Detector	Table	Height	ANT	2500
	30 - 20 - 2470		Factor (dB)	1	.5 Frequency (MHz)					2500
	30- 20- 10- 2470	Results		Limit	.5 Frequency (MHz)		Table	Height		2500

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 and Pi/4D-QPSK were tested. And only the worst case was recorded in the test report. GFSK was the worst case.

Date: 2024-07-22



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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

Date: 2024-07-22



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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:		nd FSC Bambo ninum Wireless	=	d	Te	est Mode:		Keep tran	smitting	
Mode	K	eeping Transm	nitting		Te	st Voltage		DC3	.7V	
Temperature		24 deg. C,			F	Iumidity		56%	RH	
Test Result:		Pass			I	Detector		PF	ζ	
OdB Bandwidth		787kHz								
Ref Lvl 10 dBm	Mar) ndB BW	xer 1 [T1 n 20, 877.755513	.00 dB	RI VI SV		30 k 100 k 8.5 m	Ηz	F Att	20 dB	n
10						▼1	[T1]	-3 2.40188	.58 dBm 277 GHz	Z
0			M	^\		ndB BW V Ti	8' . [T1]	20 77.75551	.00 dB 102 kHz	
-20		,	N		1	√ ▼T2	[T1]	2.40159	419 GHz	1
1MAX		للتن المتحدد ا				The same of the sa		2.40247	194 GHz	1M
-40						V	9			
-50	My	P ^f						My		
-60 A Military	<i>[</i>						ţ		Mission	
-70									Sales .	
-80										
-90 Center 2.4	02 GHz		300	kHz/				Spa	n 3 MHz	l

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GFSK										
Product:		Sound FS Aluminum		o/Recycled Speaker	1	Test Mode	»:	Keep tra	ansmitting	
Mode		Keepin	g Transmi	tting		Test Voltag	ge	DC	23.7V	
Temperature		2	4 deg. C,			Humidity	,	569	% RH	
Test Result:			Pass			Detector]	PK	
20dB Bandwidth		:	884kHz							
Ref Lvl		Marker ndB BW 883		.00 dB	RB VB SW	W 100	kHz	RF Att Jnit	20 dB	L
0				<u>.</u>		V1	В	2.44087 2.476753	.03 dBm 675 GHz	A
-10				M	$^{\prime}$	VI	'l [T1]	-23 2.44059	.23 dBm	
-20			M			Mass.	22 [T1]	2.44147	.10 dBm	1MA
-30			J prod			,	4			
-50		V						M		
-60 Mary Mary	w.							1	With week	
-70										
-80										
-90 Center 2	2.441 G	Ηz		300	kHz/			Spa	an 3 MHz	
Date: 1	4.JUL.2	:024 15	:04:17							

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GFSK		a 170	<u> </u>		. 1					
Product:		Sound FS Aluminum		o/Recycled Speaker	1	Test Mode:	Keep transmitting DC3.7V			
Mode		Keepin	g Transmi	tting	Т	est Voltage				
Temperature		2	4 deg. C,			Humidity	56% RH			
Test Result:		Pass			Detector		I	PK		
20dB Bandwidth		:	890kHz							
Ref Lvl		Marker ndB	20.	.00 dB	RBW VBW	30 ki 100 ki	Ηz	F Att	20 dB	
10 dBm		BW 889	779559	912 kHz	SWT	8.5 ms	s Uı	nit	dBm	1
						▼1	[T1]	-3 2.47987	.26 dBm 074 GHz	A
0				M	^ <i>/</i>	ndH BW V T1	88 [T1]	20 9.77955	.00 dB 912 kHz .61 dBm	
-10				Λ	1	V 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	[T1]	2.47958		
-20			NA.			W.S.		2.48047	796 GHz	1M
-30		1	mark .			4	A. C.			
-40	\wedge	4						m		
-50	~						VN	J	warder of	
-60									A 1012T	
-70										
-80										
-90 Center 2	.48 GH:	z		300	kHz/			Spa	n 3 MHz	l
			:06:31					*		

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I/4DQPSK	EcoSound F	SC Bambo	oo/Recycle	d						
Product:		m Wireless		u	Te	est Mode:		Keep tran	smitting	
Mode	Keepi	ing Transm	itting		Te	st Voltage		DC3	.7V	
Temperature 24 deg. C, Test Result: Pass					I	Humidity		56%	RH	
]	Detector		Pk	<u> </u>	
20dB Bandwidth		1.232MHz								
Ref Lvl		1 [T1 n			BW	30 k		7 Att	20 dB	
10 dBm	ndB BW	.20. 1.232464	00 dB		BW VT	100 k 8.5 m	Hz s Uı	nit	dBm	a
10						V 1	[T1]	_ =	.53 dBm	1
						v ±		2.40187	675 GHz	Z
0			1			ndE		20	.00 dB	1
			Λ	\wedge		BW ▽ ⊤i		1.23246	493 MHz	
-10		and	V	<u></u> √~	_/	مركس _	[++]	2.40140	782 GHz	
			4			$\varphi_{\mathbb{T}} \vee$	[T1]	-23	.71 dBm	l.
-20 1MAX		7					4	2.40264	028 GHz	11
- 30										
-50							, L		_	
June 1	V								my	
-60										
-70										
-80										
-00										
-90 Center 2.4	0.2 GHz		300	kHz/				Sna	n 3 MHz]
ate: 14.5	02 G112		300	12114/				spa	II J MHZ	

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Л/4DQPSK	Fco	Sound FS	C Bamboo	o/Recycled	1						
Product:			Wireless		ı	Г	est Mode:		Keep tra	nsmitting	
Mode		Keepin	g Transmi	tting		T	est Voltage	;	DC	3.7V	
Temperature		2	4 deg. C,				Humidity		56%	6 RH	
Test Result:			Pass				Detector		F	PK	
20dB Bandwidth		1.	.232MHz								
Ref Lvl		ndB		00 dB	7	RBW 7BW		Ηz	F Att	20 dB	
10 dBm		BW 1	L.232464	93 MHz		WT	8.5 m	s U:	nit	dBm	n •
							▼1		-3	.01 dBm	A
0				1			ndE		2.44088	277 GHz	
-10					\wedge		BW ▼Ti		1.23246	493 MHz	1
			M		7		Λγ ^Λ	[T1]	2.44040	782 GHz	ı
-20 1MAX			Jan					N S	2.44164	028 GHz	1M
-30											-
-50	1							7	ww	Lang.	
-60										W	
-70											
-80											
-90 Center 2	.441 GF	ı z		300	kHz/				Spa	n 3 MHz	I
		024 15	02.22						*		

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Report No.: TWN2407721-01E



Л/4DQPSK						1					
Product:		nd FSC ninum W		/Recycled Speaker	l	Т	est Mode:		Keep tra	nsmitting	
Mode	K	eeping 7	Transmit	tting		T	est Voltage	;	DC	3.7V	
Temperature			deg. C,				Humidity		56%	6 RH	
Test Result:		P	Pass				Detector		F	PΚ	
20dB Bandwidth		1.22	26MHz								
F	Mar	ker 1	[T1 n	dB]	R	BW	30 k	Hz Rl	F Att	20 dB	
Ref Lvl	ndE			00 dB		BW		Ηz			
10 dBm	BW	1.2	226452	91 MHz	S	WT	8.5 m	s Uı	nit	dBm	ı
							▼1	[T1]	-2	.94 dBm	A
									2.47987	675 GHz	
0				X	_		ndl	b	20 1.22645	.00 dB	
1.0				<i>[</i>]	\cap		BW V T3		-22	291 MHz .89 dBm	
-10			M	\ <u>\</u>	- CO	V	Why		2.47941	383 GHz	
							AT	[T1]	-23	.23 dBm	
-20 1MAX			¥					<u> </u>	2.48064	028 GHz	1M
-30		Á						<u> </u>			
-40											
-50 <u>Ā</u>	$\sqrt{\omega}$							- V	mar	ş	
Wall										2	
-60											
-70											
-80											
-90 Center 2	48 GH7			300	kHz/				Sna	n 3 MHz	
Date: 14		11.5	59.43	300	/				Spa	J PiliZ	
	.001.2024	T4.0	,,,,								

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Date: 2024-07-22

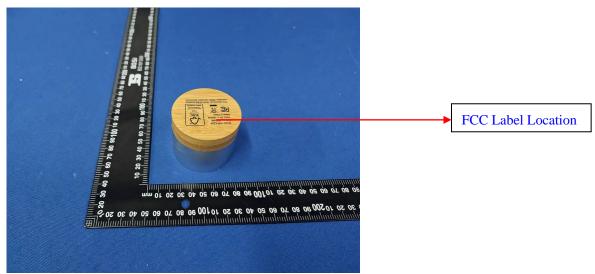


10.0 FCC ID Label

FCC ID: 2APYY-ES24

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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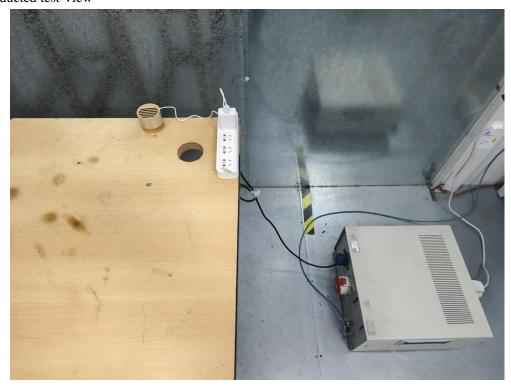
Report No.: TWN2407721-01E

Date: 2024-07-22



11.0 Photo of testing

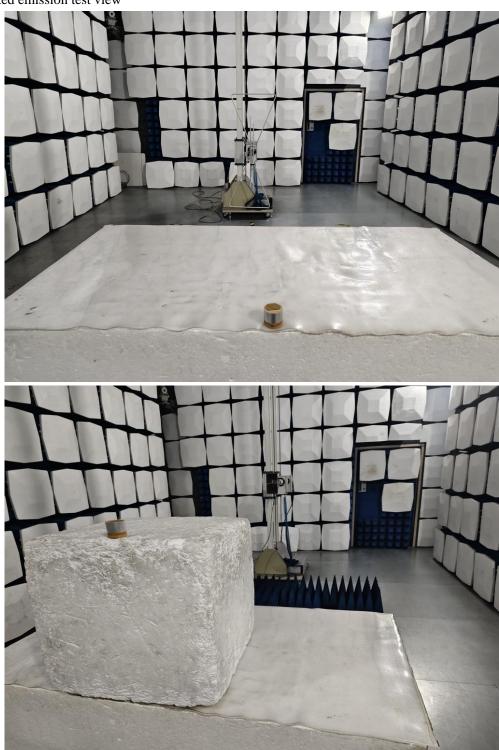
11.1 Conducted test View



Date: 2024-07-22



Radiated emission test view



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

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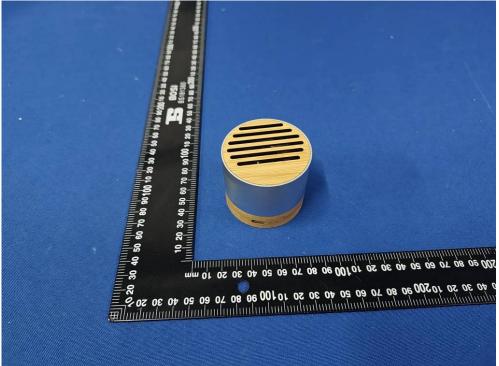
Date: 2024-07-22



11.2 Photographs – EUT

Outside View





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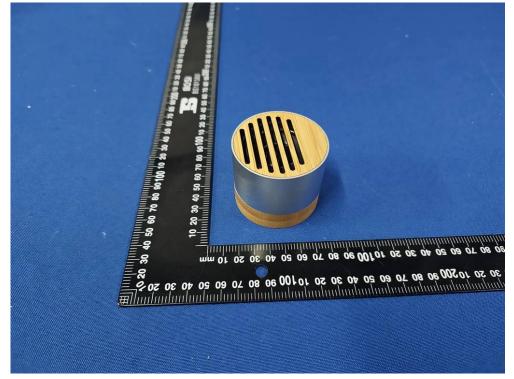
Report No.: TWN2407721-01E

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Outside View





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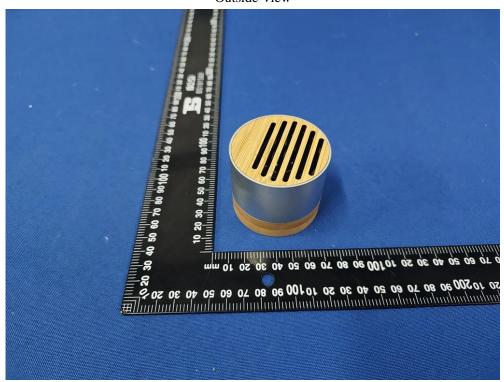
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Outside View





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Outside View



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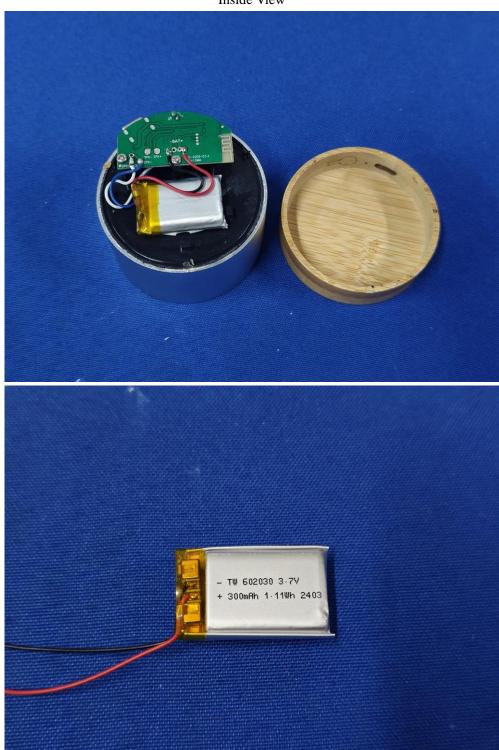
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Inside View



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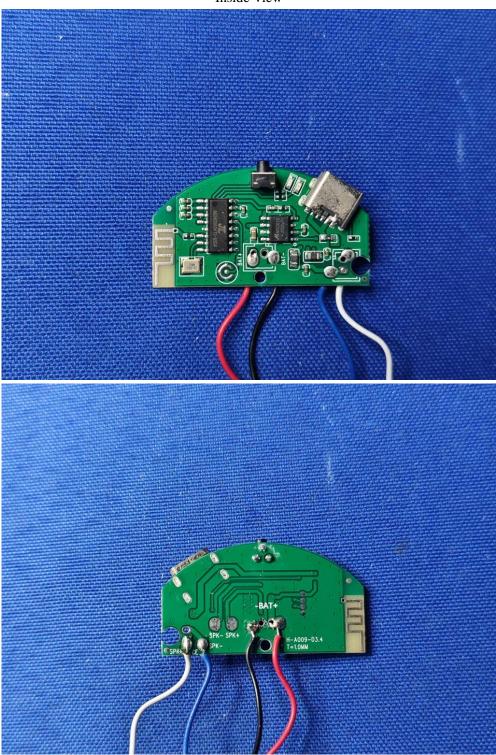
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Inside View



-- End of the report--

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