



Report No.: TW2104214E File reference No.: 2021-04-26

Applicant: TECHNOFASHION INC.

Product: Bluetooth Speaker

Model No.: NTSP01

Brand Name: Nautica

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

Jack Chung

Jack Chung

Manager

Dated: April 26, 2021

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:

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 17025:2005 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

Date: 2021-04-26



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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: TECHNOFASHION INC.

Address: 26, Park Street Ste#2340, Montclair, NJ, USA, 07042

Telephone: +1 (347) 510-2340

Fax: --

1.3 Description of EUT

Product: Bluetooth Speaker

Manufacturer: TECHNOFASHION INC.

Address: 26, Park Street Ste#2340, Montclair, NJ, USA, 07042

Brand Name: Nautica
Model Number: NTSP01
Additional Model Name N/A

Hardware Version: HF-6507-5230-V1.0 Software Version: AC692x_SDK_V2.6.1

Serial No.: NTSP01202103

Rating: DC5V, 500mA, 2.5W, built-in DC3.7V, 1200mAh Li-ion battery

Modulation Type: GFSK, Pi/4D-QPSK, 8DPSK (Bluetooth)

Operation Frequency: 2402-2480MHz

Channel Separate: 1MHz
Channel Number: 79

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

provided by the applicant)

1.4 Submitted Sample: 1 Sample

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1.5 Test Duration

2021-04-16 to 2021-04-26

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

Terry Tang

The sample tested by

Print Name: Terry Tang

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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	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100294	2020-06-23	2021-06-22
LISN	R&S	EZH3-Z5	100253	2020-06-23	2021-06-22
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2020-06-23	2021-06-22
Loop Antenna	EMCO	6507	00078608	2018-06-25	2021-06-24
Spectrum	R&S	FSIQ26	100292	2020-06-23	2021-06-22
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2020-06-23	2021-06-22
Horn Antenna	R&S	BBHA 9120D	9120D-631	2018-07-09	2021-07-08
Power meter	Anritsu	ML2487A	6K00003613	2020-06-23	2021-06-22
Power sensor	Anritsu	MA2491A	32263	2020-06-23	2021-06-22
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2018-07-04	2021-07-03
9*6*6 Anechoic			N/A	2020-07-06	2021-07-05
EMI Test Receiver	RS	ESVB	826156/011	2020-06-23	2021-06-22
EMI Test Receiver	RS	ESH3	860904/006	2020-06-23	2021-06-22
Spectrum	HP/Agilent	ESA-L1500A	US37451154	2020-06-23	2021-06-22
Spectrum	HP/Agilent	E4407B	MY50441392	2020-06-23	2021-06-22
Spectrum	RS	FSP	1164.4391.38	2021-01-16	2022-01-15
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA		2020-06-23	2021-06-22
RF Cable	Zhengdi	7m		2020-06-23	2021-06-22
RF Switch	EM	EMSW18	060391	2020-06-23	2021-06-22
Pre-Amplifier	Schwarebeck	BBV9743	#218	2020-06-23	2021-06-22
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2020-06-23	2021-06-22
LISN	SCHAFFNER	NNB42	00012	2021-01-06	2022-01-05

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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Technical Details 3.0

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 15.207	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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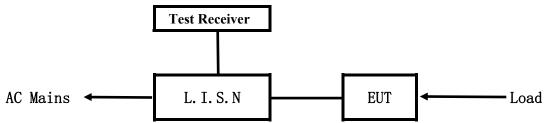
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5. Power Line Conducted Emission Test

5.1 Schematics of the test

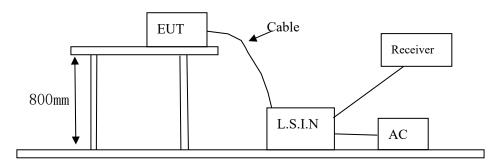


EUT: Equipment Under Test

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.

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.

One channels are provided to the EUT

A. EUT

Device	Manufacturer	Model	FCC ID
Bluetooth Speaker	TECHNOFASHION INC.	NTSP01	2AZBO-N00010

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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	Limits (d	lB μV)
(MHz)	Quasi-peak Level	Average Lev 1
$0.15 \sim 0.50$	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:

Pass

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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

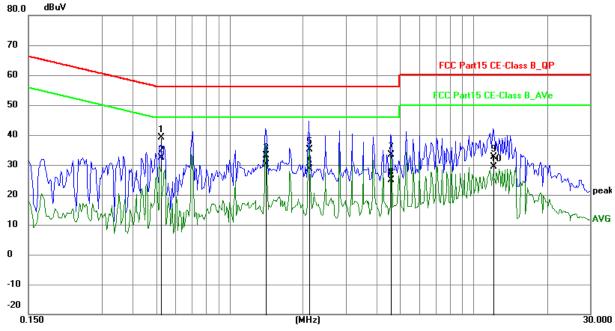
EUT set Condition: Charging and Communication by BT

Model: NTSP01

Equipment Level: Class B

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	0.5243	29.34	9.77	39.11	56.00	-16.89	QP	Р
2	0.5243	22.63	9.77	32.40	46.00	-13.60	AVG	Ρ
3	1.4097	23.38	9.79	33.17	56.00	-22.83	QP	Р
4	1.4097	20.34	9.79	30.13	46.00	-15.87	AVG	Р
5	2.1195	25.42	9.81	35.23	56.00	-20.77	QP	Р
6	2.1195	18.85	9.81	28.66	46.00	-17.34	AVG	Р
7	4.5951	23.40	9.91	33.31	56.00	-22.69	QP	Р
8	4.5951	14.88	9.91	24.79	46.00	-21.21	AVG	Р
9	12.0401	22.41	10.25	32.66	60.00	-27.34	QP	Р
10	12.0401	19.24	10.25	29.49	50.00	-20.51	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

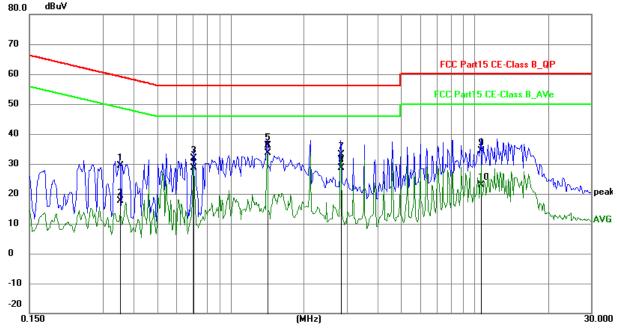
EUT set Condition: Charging and Communication by BT

Model: NTSP01

Equipment Level: Class B

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	0.3528	19.69	9.76	29.45	58.90	-29.45	QP	Р
2	0.3528	7.88	9.76	17.64	48.90	-31.26	AVG	Р
3	0.7077	22.07	9.78	31.85	56.00	-24.15	QP	Р
4	0.7077	18.75	9.78	28.53	46.00	-17.47	AVG	Р
5	1.4175	26.44	9.79	36.23	56.00	-19.77	QP	Р
6	1.4175	23.74	9.79	33.53	46.00	-12.47	AVG	Р
7	2.8332	23.18	9.84	33.02	56.00	-22.98	QP	Р
8	2.8332	18.77	9.84	28.61	46.00	-17.39	AVG	Р
9	10.6401	24.17	10.19	34.36	60.00	-25.64	QP	Р
10	10.6401	12.71	10.19	22.90	50.00	-27.10	AVG	Р

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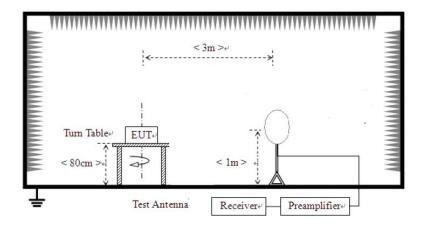


6 Radiated Emission Test

- 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 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

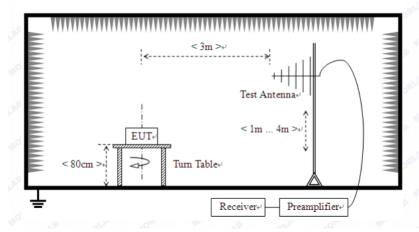
For radiated emissions from 9kHz to 30MHz



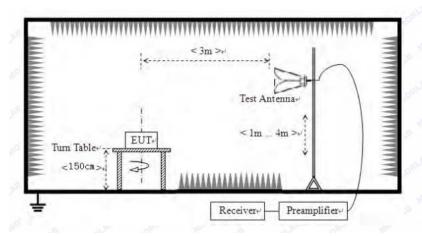
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For radiated emissions from 30MHz to1GHz



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.

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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

Ī	Fundamental Frequency	Field Strength of Fundamental (3m)			Field S	trength of Harmo	onics (3m)
	(MHz)	mV/m	dBuV/m		uV/m	dBu	V/m
Ī	2400-2483.5	50	94 (Average)	114 (Peak)	500	54 (Average)	74 (Peak)

Note:

- 1. RF Field Strength (dBuV) = 20 log 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.

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

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	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 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. This is a handhold 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.
- 5. 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.
- 6. Battery full charged during tests.
- 7. 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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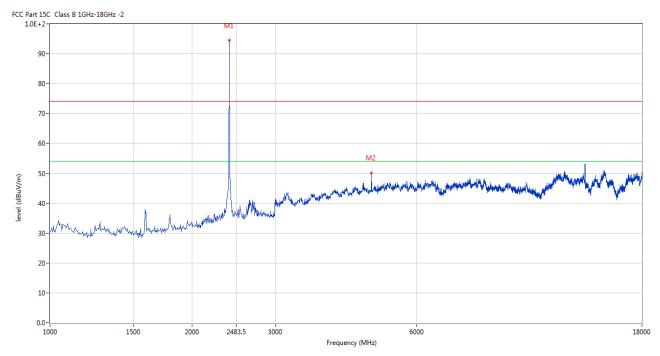


6.5 Test result

A Fundamental & Harmonics Radiated Emission Data

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

Horizontal



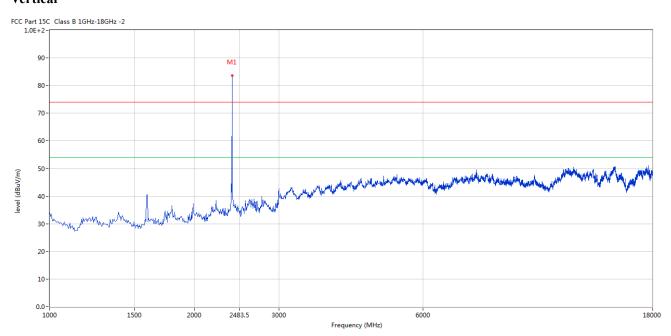
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2402.500	94.52	-3.57	114.0	-19.48	Peak	329.00	100	Horizontal	Pass
1*	2402.500	83.79	-3.57	94.0	-10.21	AV	329.00	100	Horizontal	Pass
2	4803.750	50.16	3.13	74.0	-23.84	Peak	132.00	100	Horizontal	Pass

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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2402.500	83.69	-3.57	114.0	-30.31	Peak	165.00	100	Vertical	Pass

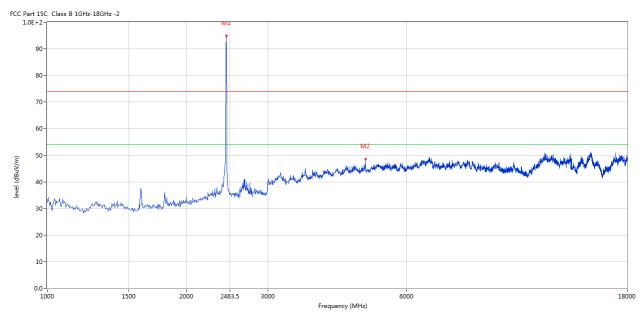
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Please refer to the following test plots for details: High Channel-2441MHz

Horizontal



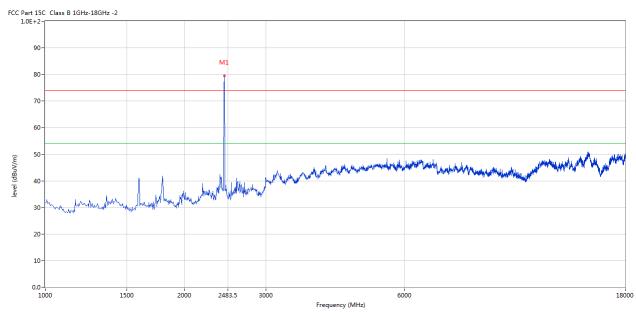
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2441.750	94.84	-3.57	114.0	-19.16	Peak	143.00	100	Horizontal	Pass
1*	2441.750	83.49	-3.57	94.0	-10.51	AV	143.00	100	Horizontal	Pass
2	4881.250	48.68	3.20	74.0	-25.32	Peak	134.00	100	Horizontal	Pass

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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2441.750	79.53	-3.57	114.0	-34.47	Peak	316.00	100	Vertical	Pass

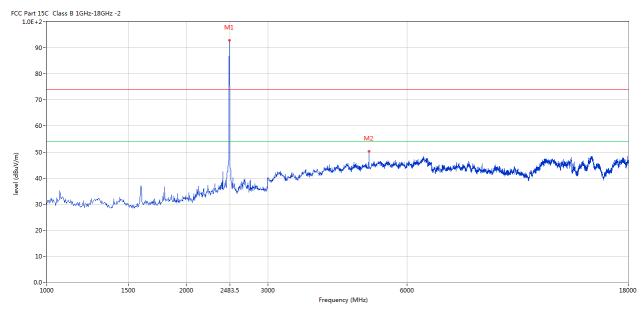
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Please refer to the following test plots for details: High Channel-2480MHz

Horizontal



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2479.750	92.81	-3.57	114.0	-21.19	Peak	160.00	100	Horizontal	Pass
2	4961.000	50.37	3.36	74.0	-23.63	Peak	155.00	100	Horizontal	Pass

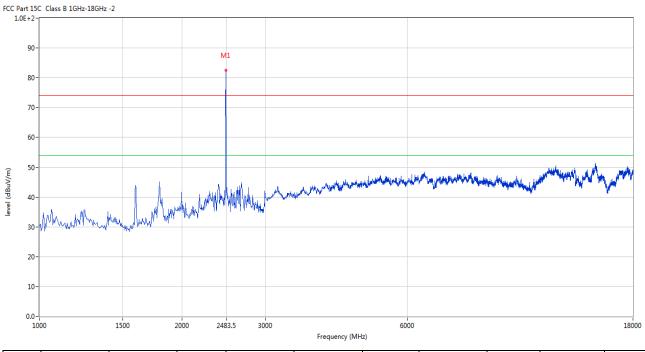
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Vertical



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2479.750	82.56	-3.57	114.0	-31.44	Peak	142.00	100	Vertical	Pass

Note: (2) Emission Level = Reading Level + Antenna Factor + Cable Loss-Amplifier

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

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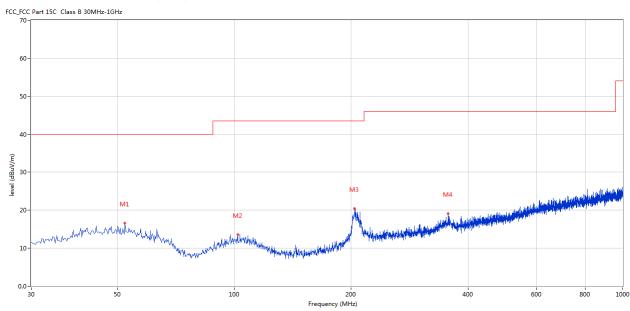


B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	52.304	16.67	-11.45	40.0	-23.33	Peak	44.00	100	Horizontal	Pass
2	102.004	13.64	-13.42	43.5	-29.86	Peak	328.00	100	Horizontal	Pass
3	204.071	20.39	-13.51	43.5	-23.11	Peak	250.00	100	Horizontal	Pass
4	355.354	19.10	-9.44	46.0	-26.90	Peak	93.00	100	Horizontal	Pass

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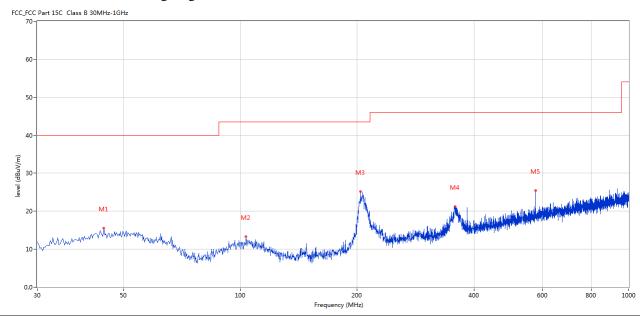


Radiated Emission In Vertical (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

Results: Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	44.546	15.56	-11.44	40.0	-24.44	Peak	342.00	100	Vertical	Pass
2	103.459	13.31	-13.36	43.5	-30.19	Peak	337.00	100	Vertical	Pass
3	204.071	25.14	-13.51	43.5	-18.36	Peak	360.00	100	Vertical	Pass
4	357.051	21.27	-9.50	46.0	-24.73	Peak	322.00	100	Vertical	Pass
5	575.974	24.90	-5.83	46.0	-21.10	Peak	312.00	100	Vertical	Pass

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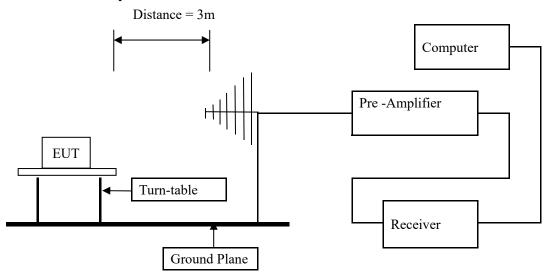


7. Band Edge

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.

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

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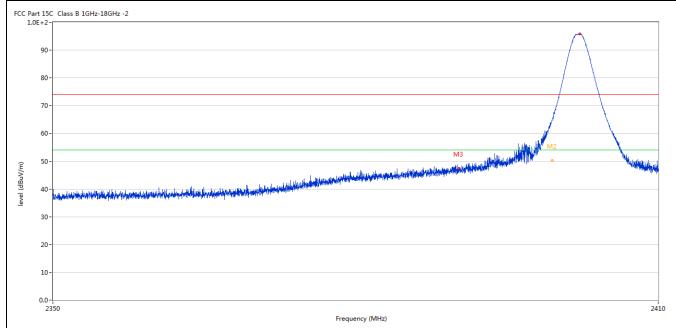
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7.6 Test Result

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



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
2	2399.740	63.31	-3.57	74.0	-10.69	Peak	134.00	100	Horizontal	Pass
2**	2399.740	50.59	-3.57	54.0	-3.41	AV	134.00	100	Horizontal	Pass
3	2390.080	47.54	-3.53	74.0	-26.46	Peak	321.00	100	Horizontal	Pass

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Pro	oduct:		Blueto	ooth Speake	r	Polari	ty	7	Vertical	
N.	Mode		Keeping	g Transmitti	ng	Test Vol	tage	I	DC3.7V	
Temp	perature		24	l deg. C,		Humid	ity	5	6% RH	
Test	Result:			Pass						
Part 15C (Class B 1GHz-18GHz	-2								
90- 80- 70-								/	M1	
-	had layer be desperably as single	aki dertekinidikterinidake	Not and appear I will be	Alderston Address	administratival subsequence to a constructival subsequence to	n sakan berkeja di Arab		M2		Marka Argania da
50 - 40 - 30 -		ndi daga kalanda kaland	i lay anitogras di salla d	Alestrafest, valleurild.						2410
50- 40- 30- 20- 10- 2350			, , , , , , , , , , , , , , , , , , , ,		Frequency (MH:	z)		A STATE OF THE STA		2410
50- 40- 30- 20- 10- 0.0- 2350	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)			Table (o)		ANT	2410
30- 20- 10- 235c	Frequency	Results	Factor	Limit	Frequency (MH:	z)		Height		
50- 40- 30- 20- 10- 2350	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Frequency (MH: Over Limit (dB)	z) Detector	Table (o)	Height (cm)	ANT	2410 Verdic

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F	Product:		Blueto	ooth Speake	r	Polari	ty		Horizontal	
	Mode		Keeping	g Transmitti	ng	Test Vol	tage		DC3.7V	
Ter	mperature		24	4 deg. C,		Humid	lity		56% RH	
Te	st Result:			Pass						
CC Part 15	5C Class B 1GHz-18GHz	-2								
90)-									
80)-		$-\!$							
70)-									
60)-	The second state of the se	<u>/</u>							
		AND THE PROPERTY OF THE PARTY O			M2					
		HARLAND CONTRACTOR			M2	Hallage Balland Markey	h belleher to till be ingeliged f	New delicase established	e did no serve de la serve de la constitución de la	in pilo, ikali balapaktur.
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(dgn//m) 40 30		HAND BELLEVIEW			M2	iilahapidi taabida ka	industry of the literal section of the litera	the state of the s	radion o service land facility and facility	to pile alah bahapitan
[evel (dBu//m)		AND WHITE PROPERTY OF THE PARTY			M2	in belle primit description to the second	in belief of the Hilly de Long of the Life	the state of the s	religion de la productiva de la constitución de la constitución de la constitución de la constitución de la co	ny pro-skelled pale o
eve (qBn/\m) 40 30		political distribution of the second			M2	ii balaga idi Lawa Mata, kan	indulative of the little to compare the child	som delegen storegick	voltor o standiscopi policos (literaj	topic dell'objetop
(m)		ANT THE REAL PROPERTY OF THE PARTY OF THE PA			2483.5 Frequency (MH:			a month of the property of the second of the	valen o service installing spelices blishing	2500
(m)		Results	Factor	Limit	2483.5		Table (o)	Height	ANT	
(W/nngp) A40 30 20 10	D- 		Factor (dB)	Limit (dBuV/m)	2483.5 Frequency (MH:	z)				2500
300 200 100 0.0.0 2	Frequency	Results			2483.5 Frequency (MH:	z)		Height		2500

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	Product:		Blueto	ooth Speake	r	Polarit	y	7	Vertical		
	Mode		Keeping	g Transmitti	ng	Test Volt	age	DC3.7V			
Τ	Temperature		24	l deg. C,		Humidi	ity	5	56% RH		
	Test Result:			Pass							
	ort 15C Class B 1GHz-18GHz DE+2-	: -2					•				
	90-										
	80-										
	70-										
	60-		-/-	$\overline{}$							
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					Mar.						
level (dBu∖	40-	Adjust the land of			Mark Mark Mark Mark Mark Mark Mark Mark			k dan laith i bibiligh ann an d-		A COLUMN TO A PORT OF THE PARTY	
level (dBu\	30-	a the said of the			Marinda de la filia						
level (dBu∖		a thirty of the last and the state of the st			The state of the s	adian sulpana bilah pengeba		d dan tally isological colory desp	Trey material at 14 day of 14 day	of the property	
level (dBuV/m)	30-	alteral Medicina to the lateral and the latera			The state of the s	alia sul matal kali aliman ka		h han jarth tällöhigkooli kirj liitta	a takan da	data hiddad	
level (dBu\	20-	Altore Marie de la companya della companya de la companya della co				adian surpensibility areasy.	A STATE OF THE STA	k Hann purity (Milliagensk pierfelder)	Alaba dadadida (Alaba)		
level (dBu\	20-	Alice II. Add to the Alice III. The second s			2483.5 Frequency (MH:		edwardt della della	ik kana pathi para kana kana kika p	Araba da da da da bara	2500	
No No	30 - 20 - 10 - 0.0 - 2470	Results	Factor	Limit	2483.5		Table (o)	Height	ANT		
	30- 20- 10- 0.0- 2470		Factor (dB)	Limit (dBuV/m)	2483.5 Frequency (MH:	2)				2500	

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

- 2. This is a handhold 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.
- 3. 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 -0.58Bi Max. It fulfills the requirement of this section. Test Result: Pass

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SK Modulation							
Product:	Bluetooth S ₁	peaker	Test	Mode:	Keep transmitting		
Mode	Keeping Trans	smitting	Test	Voltage		DC3	.7V
Cemperature	24 deg.	C,	Hu	midity		56%	RH
Γest Result:	Pass		De	tector		Pk	
lB Bandwidth	775.55kl	Hz					
	Marker 1 [T1	ndB]	RBW	30 kH	z RI	Att	20 dB
Ref Lvl			VBW	100 kH	z		
10 dBm	BW 775.5511	0220 kHz	SWT	8.5 ms	Ur	nit	dBm
10				v ₁	T1]	– 0	.99 dBm
						2.40199	699 GHz
0				ndB		20	.00 dB
		$ / \sim / \sim $		BW	77	5.55110	220 kHz
10			M	∇_{T}	[T1]	-21	.10 dBm
		\mathcal{N}	٧,	_{T2} $\triangledown_{\mathrm{T2}}$	F		824 GHz
20	T	<u> </u>	7/3	7	[T1]	-20 2.40239	.48 dBm
1MAX 30						2.10235	:
40				\	لر		
50	~ /					M	
60	\mathcal{V}'				٧/	J.	Mymaly
							V
70							
80							
90							
Center 2.40	2 GHz	300 kHz	/			Spa	n 3 MHz

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GFSK Modulat	tion									
Product:		Bluet	ooth Speal	ker		Test Mode	:	Keep tra	ansmitting	
Mode		Keepin	g Transmi	tting		Test Voltag	e	DC3.7V		
Temperature		2	4 deg. C,			Humidity		56%	% RH	
Test Result:			Pass			Detector]	PK	
20dB Bandwidth		78	31.56kHz							
₩.		Marker	1 [T1 n	ndB]	RB	W 30 }	KHZ R	F Att	20 dB	
Ref Lvl		ndB		00 dB	VB					
10 dBm		BW 781	.563126	25 kHz	SW	T 8.5 m	ns U	nit	dBm	Į.
10						v ₁	[T1]	-1	.47 dBm	A
				1				2.44099	699 GHz	
0				۸۵ /		ndl		20	.00 dB	
					\mathcal{M}	$oldsymbol{ abla}_{ ext{T}}$	78 1 [T1]	1.56312	625 kHz	
-10					· W			2.44061		
			m1/	/ V		$\bigvee_{\mathbb{T}^2} \nabla_{\mathbb{T}}$	2 [T1]	-21	.69 dBm	
-20			NA TAN			V		2.44139	980 GHz	1.00
1MAX			لهمر			~~				1MA
-30		\	Ĵ				\			
-40	\wedge							m		
-50 J	how _m	W					\ \frac{1}{\frac{1}{2}}	T.	Walden .	
-60										
-70										
-80										
-90 Center 2	.441 GI	Hz		300	kHz/			Spa	ın 3 MHz	
Date: 21	.APR.2	021 07	:19:28							

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Product:		Bluet	ooth Speal	ker		Т	est Mode:		Keep tra	nsmitting	
Mode			g Transmi			Te	est Voltage		DC3.7V		
Temperature			4 deg. C,	<u>~</u>			Humidity			% RH	
Test Result:			Pass				Detector	PK			
0dB Bandwidth	781.56kHz										
(E)	Marker 1 [T1 ndB]					BW	30 kH	z RI	7 Att	20 dB	
Ref Lvl		ndB	20.	00 dB	V	BW	100 kH	z			
10 dBm		BW 781	.563126	25 kHz	S	WT	8.5 ms	Uı	nit	dBm	
10							▼ 1 [T1]	-2	.15 dBm	
				-					2.47999	699 GHz	A
0				0			ndB		20	.00 dB	
					Λ		BW ▼ _T 1	78	1.56312	625 kHz	
-10				- 	1	7		[T1]	2.47961	.60 dBm 824 GHz	
			_ /	\mathcal{N}		V	$ abla_{\mathrm{T2}}$	[T1]	-22	.52 dBm	
-20			Ţ \				\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		2.48039	980 GHz	
1MAX							4				1M2
-30			/				$\overline{}$				
		\ ^{\(\)}					M	lη			
-40	\sim							1	~		
-50	۱۸ / ۱ ۸ مر	\						$\overline{}$	The same of the sa	miller	
-60										~~~~~	
-70											
-80											
-90 Center 2	48 CH-	7.		300	kHz/				Sna	n 3 MHz	
Date: 21	. 10 GH2	_		300	/				ъра	.11112	

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Product:		Bluet	ooth Speal	ker		Т	est Mode:		Keep tra	nsmitting	
Mode		Keepin	g Transmi	tting		Te	est Voltage	;	DC3.7V 56% RH		
Temperature		2	4 deg. C,]	Humidity				
Test Result:	Pass 1.214MHz Marker 1 [T1 ndB] R					Detector			F	PK	
0dB Bandwidth											
(A)						RBW	30 k	Hz Rl	F Att	20 dB	
Ref Lvl		ndB	20.	00 dB	V	/BW	100 k	Hz			
10 dBm		BW 1	L.214428	886 MHz	S	SWT	8.5 m	s Uı	nit	dBm	
10							\mathbf{v}_1	[T1]	-1	.03 dBm	
									2.40200	301 GHz	A
0				Λ. /			ndE	3	20	.00 dB	
				/ /			BW		1.21442	886 MHz	
-10			MM	MY	-p~		$A_{\gamma} \frac{\nabla_{T_1}}{\Delta}$	[T1]	-20 2.40137	.99 dBm 776 GHz	
								(T1)	-21	776 GHz .28 dBm	
-20		7	₩				\mathcal{T}	1	2.40259	218 GHz	
-30								h			1M2
- 30											
-40	M	/W						J.M.	<i>w</i> ↑ .		
-50	W/ /							٧	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	My Value	
-60											
-70											
-80											
-90											
Center 2.	.402 GI	Hz		300	kHz/				Spa	n 3 MHz	

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Product:		Blue	tooth Speal	ker		Γ	est Mode:		Keep transmitting		
Mode			ng Transmi			T	est Voltage		DC3.7V 56% RH PK		
Temperature			24 deg. C,			1	Humidity				
Test Result:			Pass			_	Detector				
0dB Bandwidth		1.214MHz									
/s de	Marker 1 [T1 ndB]					RBW	30 kI	Iz RI	7 Att	20 dB	
Ref Lvl		ndB	20.	00 dB	7	/BW	100 kH	łz			
10 dBm		BW	1.214428	886 MHz	5	SWT	8.5 ms	s Ur	nit	dBm	ı
10							v ₁	[T1]	-1	.49 dBm	
									2.44100	301 GHz	A
0				Λ			ndB		20	.00 dB	
				$ \ \ \ $	\		$ ho$ BW $ ho_{ m T1}$		1.21442	886 MHz	
-10			MM	W >	- ~~		Ay 1	[T1]	2.44037	.42 dBm 776 GHz	i
							\\\\\\\\\\\\\	[T1]	-21	.71 dBm	
-20		Y	~				<u> </u>	2	2.44159	218 GHz	
1MAX		7						4			1M2
-30								 			
-40	ΜΛ	M						W	M		
-50 h									Vally	huy	
-60										445	
-70											
-80											
-90											
Center 2	.441 GI	Hz		300	kHz/	′			Spa	n 3 MHz	

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Product:		Bluetooth Speaker						Keep transmitting			
Mode			g Transmi			Т	est Voltage			3.7V	
Temperature			4 deg. C,	-			Humidity	56% RH			
Test Result:			Pass			Detector			PK		
)dB Bandwidth	1.214MHz										
Ŕ	Marker 1 [T1 ndB]					BW	30 kH:	z RI	7 Att	20 dB	
Ref Lvl		ndB		00 dB	V	BW	100 kH:				
10 dBm		BW I	1.214428	886 MHz	S	WT	8.5 ms	Uı	nit	dBm	
10							V 1 [T1]	-2	.23 dBm	A
0				1					2.47999	699 GHz	
Ŭ				^ /			ndB BW		20 1.21442	.00 dB 886 MHz	
1.0							∇_{T1}	[T1]	-22	886 MHz	
-10			W	~	ω	\sim	m_		2.47937	776 GHz	
		T					4	[T1]	-22	.53 dBm	
-20 1MAX							1	\	2.48059	218 GHz	1M2
-30											
-40	ΛΛ <i>!</i>	M							~		
-50								1	r \n	WWW.	
-60											
-70											
-80											
-90 Center 2	.48 GHz	z		300	kHz/				Spa	n 3 MHz	

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Product: Bluetooth Speaker Test Mode: Keep transmitting	8QPSK Modul	lation											
Temperature Test Result: Pass Detector PK 20dB Bandwidth 1.208MHz Ref Lv1 ndB	Product:		Bluet	ooth Speal	ker		Т	est Mode:		Keep tra	ansmitting		
Test Result: Pass	Mode		Keepin	g Transmi	tting		T	est Voltage		DC3.7V			
20dB Bandwidth	Temperature		2	4 deg. C,			Humidity			56% RH			
Marker 1 [T1 nd8]	Test Result:	Pass						Detector]	PK		
Ref Lvl ndB 20.00 dB VBW 100 kHz 10 dBm BW 1.20841683 MHz SWT 8.5 ms Unit dBm 10	20dB Bandwidth		1.208MHz										
10 dBm BW 1.20841683 MHz SWT 8.5 ms Unit dBm 10 dBm BW 1.20841683 MHz SWT 8.5 ms Unit dBm 2.40208 301 GHz 2.40208 301 GHz 2.40208 301 GHz 2.40208 301 GHz 2.4028 383 MHz 2.40138 377 GHz 2.4025 218 GHz 1MA 30 LT1 -2.37 dBm 2.4025 218 GHz 1MA 30 LT1 -2.37 dBm 30 LT1 -2.3	Ŕ		Marker	1 [T1 n	ndB]	R	BW	30 k	Hz R	F Att	20 dB		
10 V1 (T1) -C,99 dBm 2.4020 301 GHz 1.20841683 MHz -T, (T1) -2,07 dBm 2.40138 377 GHz -20,137 dBm -21,02 dBm -21,03 dBm -21,03 dBm -22,137 dBm -23,137 dBm -24,025 218 GHz 1MAX -30 -40 -50 -60 -70 -80 Center 2.402 GHz 300 kHz/ Span 3 MHz	•												
1 (T1)			BW 1	1.208416	83 MHz	S	WT	8.5 m	ıs Uı	nit	dBm	i	
2.40200301 GHS 20.00 dB BW 1.20841683 MHz -21.07 dBm 2.4018377 GHS -22.37 dBm 2.40253218 GHZ IMAX -30 -40 -60 -70 -80 Center 2.402 GHz 300 kHz/ Span 3 MHz								v ₁	[T1]	- (0.99 dBm	Α	
-10 -10 -10 -10 -10 -10 -10 -10 -10 -10					3	ţ				2.40200	301 GHz		
-10					\land				3	20			
2.40138 377 GHz -20 1MAX -30 2.40259 218 GHz 1MA -50 -60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz	1.0					\ 			[T1]				
-20 1MAX -30 -40 -50 -60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz	-10			\w\	~ ~	1	<u></u>	\sim		2.40138			
1MAX -30 -40 -50 -60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz			T					$\triangle J$	[T1]	-21	1.37 dBm		
-30 -40 -50 -60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz								-	\	2.40259	9218 GHz	1 MA	
-40 -50 -60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz									٦				
-50 -60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz	-30												
-50 -60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz			- /										
-60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz	-40		<u></u>						$\overline{}$				
-60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz		\wedge	\ \M\						W	\wedge			
-60 -70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz	II / VA /	~~								/* \	Many		
-70 -80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz	Verlightly										hand		
-80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz	-60										•		
-80 -90 Center 2.402 GHz 300 kHz/ Span 3 MHz													
-90 Center 2.402 GHz 300 kHz/ Span 3 MHz	-70												
-90 Center 2.402 GHz 300 kHz/ Span 3 MHz													
Center 2.402 GHz 300 kHz/ Span 3 MHz	-80												
Center 2.402 GHz 300 kHz/ Span 3 MHz													
	-90												
Date: 21.APR.2021 07:17:18	Center 2	.402 G	Hz		300	kHz/				Spa	an 3 MHz		
	Date: 21	l.APR.2	021 07	:17:18									

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Product:		Bluet	ooth Speal	ker		Γ	est Mode:		Keep tra	nsmitting	
Mode			g Transmi			T	est Voltage		DC	3.7V	
Temperature			4 deg. C,			_	Humidity		56% RH PK		
Test Result:			Pass				Detector				
OdB Bandwidth		1.214MHz									
	Marker 1 [T1 ndB]					RBW	30 k	Hz RI	7 Att	20 dB	
Ref Lvl		ndB	20.	00 dB	7	/BW	100 k	Hz			
10 dBm		BW 3	1.214428	886 MHz	S	SWT	8.5 m	s Ur	nit	dBm	ı
10							lacksquare1	[T1]	-1	.47 dBm	A
				1					2.44100	301 GHz	
0				^ /	\		ndE		20	.00 dB	
1.0				$ \ \ / \setminus / $	/ ^		BW ∇_{T1}	[T1]	1.21442 -21	886 MHz .40 dBm	
-10			W	~ \		V	m		2.44037	776 GHz	
		T	\downarrow					[T1]	-21	.85 dBm	
-20 1MAX							·	4	2.44159	218 GHz	1M2
-30											
-40	. ~								λ.		
-50 	<i>~</i> √√									m much	
-60											
-70											
-80											
-90 Center 2	.441 G	Hz		300	kHz/	/			Spa	n 3 MHz	

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8QPSK Modu	lation										
Product:		Bluet	ooth Speal	ker		Т	est Mode:		Keep tra	ansmitting	
Mode		Keepin	g Transmi	tting		T	est Voltage		DC3.7V		
Temperature		2	4 deg. C,			Humidity			56% RH		
Test Result:		Pass]	PK	
20dB Bandwidth	1.214MHz										
F		Marker	1 [T1 r	ndB]	R	BW	30 k	Hz Rl	F Att	20 dB	
Ref Lvl		ndB		00 dB		BW	100 k			_	
10 dBm		BW 1	L.214428	886 MHz	S	WT	8.5 m	is Ui	nit	dBm	
							\blacktriangledown_1	[T1]	-2	.14 dBm	A
0				1					2.47999	699 GHz	
				^ /			ndE BW	8	1.21442	0.00 dB	
1.0				$ \ \ \ $	\ .		Bw ∇ _T 1	[T1]	-22	886 MHz	
-10			MM		\mathcal{M}	7	Mys		2.47937	776 GHz	
		m:					$\wedge^{\mathcal{I}_{3}}$	[T1]	-22	3.43 dBm	
-20		7	•				ŧ	\	2.48059	218 GHz	1MA
								٦			
-30											
		/						\			
-40											
	\ A	$\wedge \vee$						//	\wedge		
-50	100	'						• /	V \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Mai	
-50 Myny h	1.0								~ V	Mark	
-60										VIII	
-70											
-80											
-90											
Center 2	2.48 GH:	z		300	kHz/				Spa	an 3 MHz	
Date: 2	1.APR.2	021 07	:08:32								

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Date: 2021-04-26

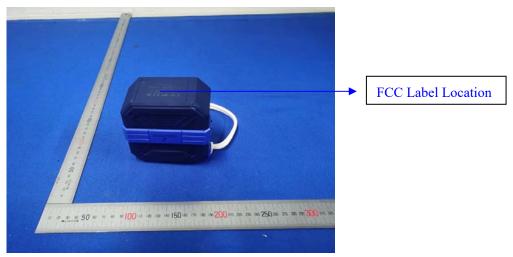


10.0 FCC ID Label

FCC ID: 2AZBO-N00010

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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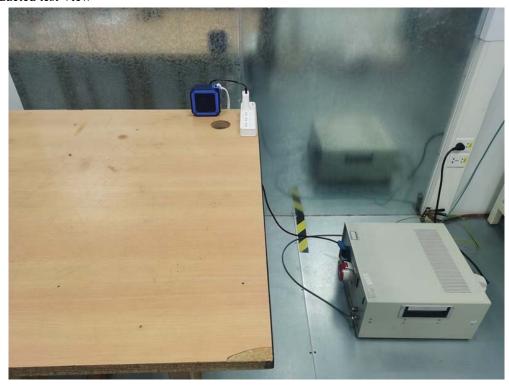
Report No.: TW2104214E

Date: 2021-04-26



11.0 Photo of testing

11.1 Conducted test View--



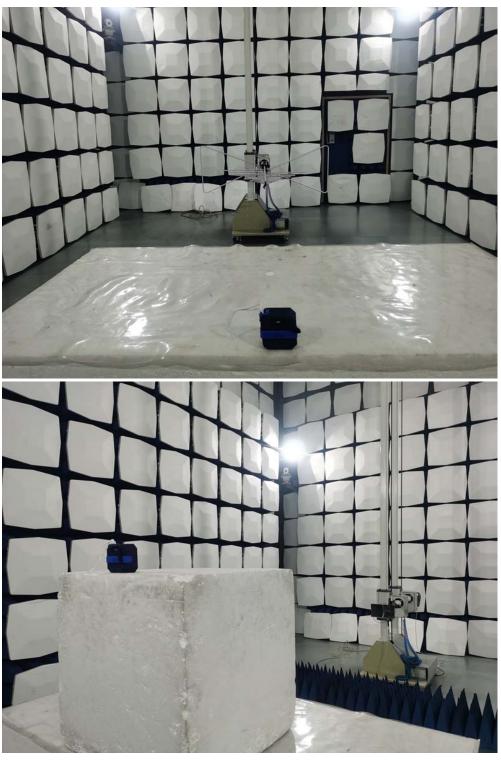
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Radiated emission test view



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

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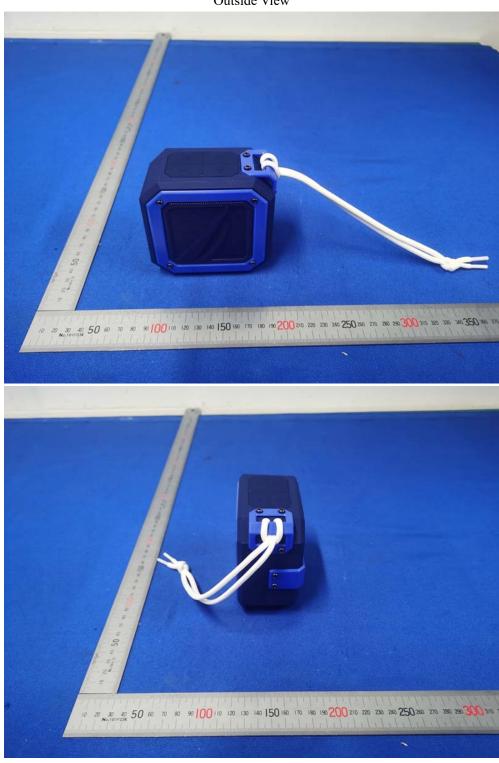
In the event of the improper use of the report. The SHENZHEN TIMEWAY TESTING LABORATORIES. reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

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11.2 Photographs – EUT

Outside View



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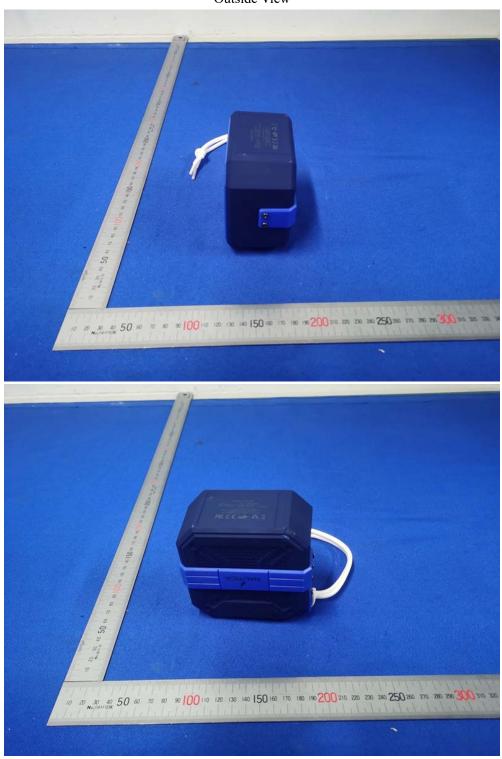
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Photographs - EUT

Outside View



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Inside view



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Report No.: TW2104214E

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-- End of the report--

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