

Report No.: TW2303152E

Applicant: Shenzhen Zhongnuoneng Technology Co., Ltd

Product: DOORLELL

Model No.: ZNNF90, F90, F90A, F90B, F90C

Trademark: OWNZNN

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

Term lang

Terry Tang

Manager

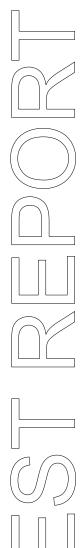
Dated: April 06, 2023

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

## SHENZHEN TIMEWAY TESTING LABORATORIES

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

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



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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 17025:2017 General Requirements) for the Competence of testing Laboratories.

## FCC-Registration No.: 744189

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

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

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

## A2LA (Certification Number: 5013.01)

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

CAB identifier: CN0033

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# Test Report Conclusion

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

10.0

11.0

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FCC ID Label....

Photo of Test Setup and EUT View....

Date: 2023-04-06



#### 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: Shenzhen Zhongnuoneng Technology Co., Ltd

Address: No. 47, 1st Floor, Qingshuihe Commercial Street, Caopu West Community, Qingshuihe Street,

Luohu District, Shenzhen

Telephone: --Fax: --

## 1.3 Description of EUT

Product: DOORLELL

Manufacturer: Shenzhen Zhongnuoneng Technology Co., Ltd

Address: No. 47, 1st Floor, Qingshuihe Commercial Street, Caopu West Community,

Qingshuihe Street, Luohu District, Shenzhen

Trademark: OWNZNN Model Number: ZNNF90

Additional Model Name F90, F90A, F90B, F90C

Rating: DC5V, 1A

Battery DC3.7V, 1000mAh Li-ion battery

Power Supply: Model: JB-003-01

Input: 100-240V~, 50/60Hz, 0.2A Max; Output: DC5V, 1000mA

Modulation Type: GFSK

Operation Frequency: 2404-2480MHz

Channel Number: 77
Channel Separation: 1MHz

Hardware Version: SHM-001-V1.2
Software Version: F-6900C\_P30\_V1.0
Serial No.: ZNNF90007629

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Antenna Designation FPC antenna with gain 4.39dBi Max (Get from the antenna specification)

1.4 Submitted Sample: 2 Samples

1.5 Test Duration

2023-03-10 to 2023-04-06

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	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17
LISN	R&S	EZH3-Z5	100253	2022-07-18	2023-07-17
Impuls-Begrenzer	R&S	ESH3-Z2	100281	2022-07-18	2023-07-17
Loop Antenna	EMCO	6507	00078608	2022-07-18	2025-07-17
Spectrum	R&S	FSIQ26	100292	2022-07-15	2023-07-14
Horn Antenna	A-INFO	LB-180400-KF	J211060660	2022-07-18	2025-07-17
Horn Antenna	R&S	BBHA 9120D	9120D-631	2022-07-18	2024-07-17
Power meter	Anritsu	ML2487A	6K00003613	2022-07-18	2023-07-17
Power sensor	Anritsu	MA2491A	32263	2022-07-18	2023-07-17
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2022-07-18	2025-07-17
9*6*6 Anechoic			N/A	2022-07-26	2025-07-25
EMI Test Receiver	RS	ESVB	826156/011	2022-07-15	2023-07-14
EMI Test Receiver	RS	ESCS 30	834115/006	2022-07-15	2023-07-14
Spectrum	HP/Agilent	E4407B	MY50441392	2022-07-15	2023-07-14
Spectrum	RS	FSP	1164.4391.38	2022-07-15	2023-07-14
RF Cable	Zhengdi	ZT26-NJ-NJ-8M/FA		2022-07-15	2023-07-14
RF Cable	Zhengdi	7m		2022-07-15	2023-07-14
Pre-Amplifier	Schwarebeck	BBV9743	#218	2022-07-15	2023-07-14
Pre-Amplifier	HP/Agilent	8449B	3008A00160	2022-07-15	2023-07-14
LISN	SCHAFFNER	NNB42	00012	2022-08-18	2023-07-17
ESPI Test Receiver	R&S	ESPI 3	100379	2022-07-15	2023-07-14
LISN	R&S	EZH3-Z5	100294	2022-07-18	2023-07-17

## 2.2 Automation Test Software

#### For Conducted Emission Test

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

## For Radiated Emissions

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

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#### 3.0 Technical Details

## 3.1 Summary of test results

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Notes
FCC Part 15, Paragraph 15.203	Antenna Requirement	Pass	Complies
FCC Part 15, Paragraph 15.207	Conducted Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(a) & 15.249(b) Limit	Field Strength of Fundamental	Pass	Complies
FCC Part 15, Paragraph 15.209	Radiated Emission Test	Pass	Complies
FCC Part 15 Subpart C Paragraph 15.249(d) Limit	Band Edge Test	Pass	Complies

#### 3.2 Test Standards

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

#### 4.0 EUT Modification

No modification by SHENZHEN TIMEWAY TESTING LABORATORIES

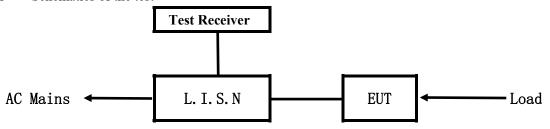
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#### 5. Power Line Conducted Emission Test

#### 5.1 Schematics of the test

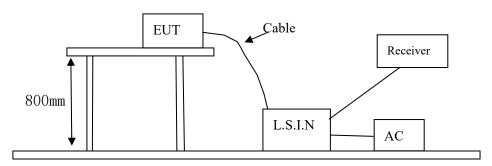


**EUT: Equipment Under Test** 

## 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.

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.

77 channels are provided to the EUT

#### A. EUT

Device	Manufacturer	Model	FCC ID
DOORLELL	Shenzhen Zhongnuoneng	ZNNF90, F90, F90A,	2 A C.S.D. ZNINIE00
DOOKLELL	Technology Co., Ltd	F90B, F90C	2AS5R-ZNNF90

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#### B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

#### C. Peripherals

Device	Manufacturer	Model	Rating
N/A			

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*		
$0.50 \sim 5.00$	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)

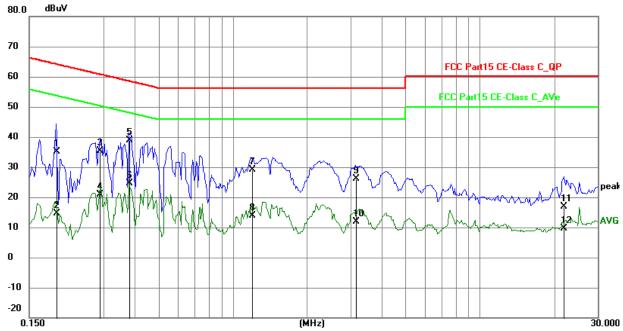
## **EUT Operating Environment**

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Charging and Keep Transmitting** 

**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	0.1929	25.39	9.75	35.14	63.91	-28.77	QP	Р
2	0.1929	5.00	9.75	14.75	53.91	-39.16	AVG	Р
3	0.2904	25.54	9.76	35.30	60.51	-25.21	QP	Р
4	0.2904	11.15	9.76	20.91	50.51	-29.60	AVG	Р
5	0.3800	29.16	9.76	38.92	58.28	-19.36	QP	Р
6	0.3800	14.98	9.76	24.74	48.28	-23.54	AVG	Р
7	1.2030	19.27	9.79	29.06	56.00	-26.94	QP	Р
8	1.2030	4.04	9.79	13.83	46.00	-32.17	AVG	Р
9	3.1521	16.30	9.85	26.15	56.00	-29.85	QP	Р
10	3.1521	2.08	9.85	11.93	46.00	-34.07	AVG	Р
11	21.8838	6.03	10.80	16.83	60.00	-43.17	QP	Р
12	21.8838	-1.06	10.80	9.74	50.00	-40.26	AVG	Р

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

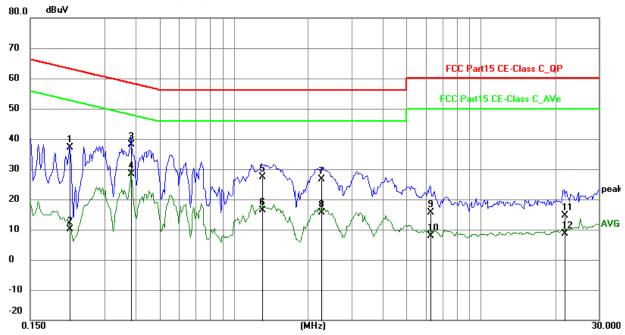
## **EUT Operating Environment**

Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 kPa

**EUT set Condition: Charging and Keep Transmitting** 

**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	0.2163	27.47	9.75	37.22	62.96	-25.74	QP	Р
2	0.2163	0.49	9.75	10.24	52.96	-42.72	AVG	Р
3	0.3840	28.35	9.76	38.11	58.19	-20.08	QP	Р
4	0.3840	18.61	9.76	28.37	48.19	-19.82	AVG	Ч
5	1.2966	17.64	9.79	27.43	56.00	-28.57	QP	Р
6	1.2966	6.52	9.79	16.31	46.00	-29.69	AVG	Р
7	2.2599	16.92	9.81	26.73	56.00	-29.27	QP	Р
8	2.2599	5.84	9.81	15.65	46.00	-30.35	AVG	Р
9	6.2331	5.66	9.98	15.64	60.00	-44.36	QP	Л
10	6.2331	-2.05	9.98	7.93	50.00	-42.07	AVG	Л
11	21.7746	3.75	10.79	14.54	60.00	-45.46	QP	Р
12	21.7746	-2.24	10.79	8.55	50.00	-41.45	AVG	Р

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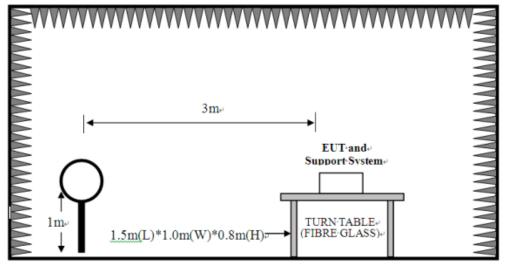


#### **6** Radiated Emission Test

- 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

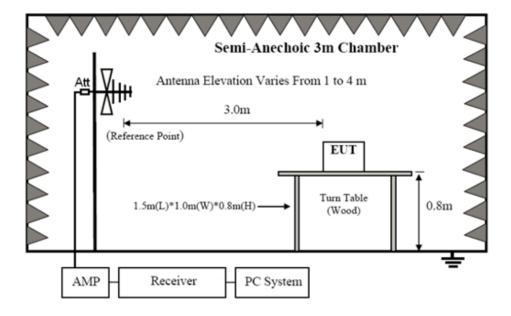


For radiated emissions from 30MHz to1GHz

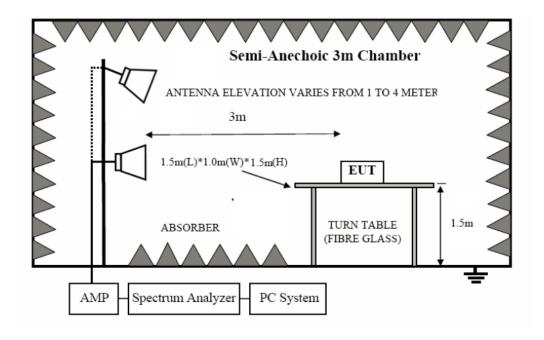
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For radiated emissions above 1GHz



- 6.2 Configuration of the EUT
  Same as section 5.3 of this report
- 6.3 EUT Operating Condition

  Same as section 5.4 of this report.

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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

Fundamental Frequency	Field Strength of Fundamental (3m)			Field S	trength of Harmo	nics (3m)
(MHz)	mV/m	dBuV/m		uV/m	dBu	V/m
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 $\mu$ 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 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. For radiated emissions from 9kHz to 30MHz, the emission level is much less than the limit for more than 20dB. No necessary to take down the record.
- 6. Battery full charged during tests.

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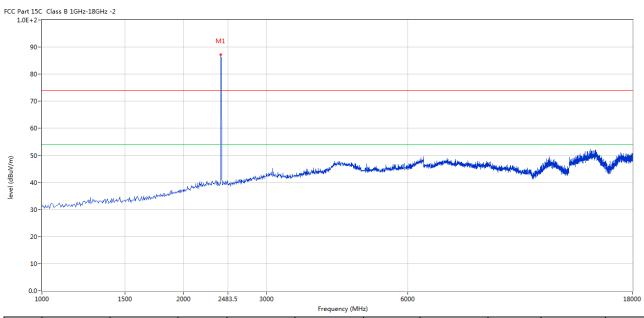


## 6.5 Test result

## A Fundamental & Harmonics Radiated Emission Data

Please refer to the following test plots for details: Low Channel-2404MHz

#### Horizontal



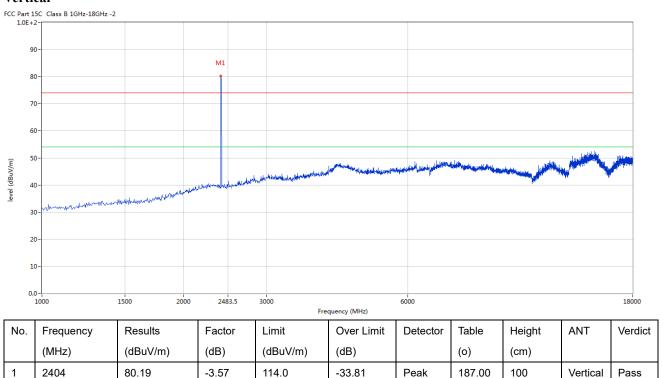
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table (o)	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)			(cm)		
1	2404	87.33	-3.57	114.0	-26.67	Peak	286.00	100	Horizontal	Pass

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## Vertical



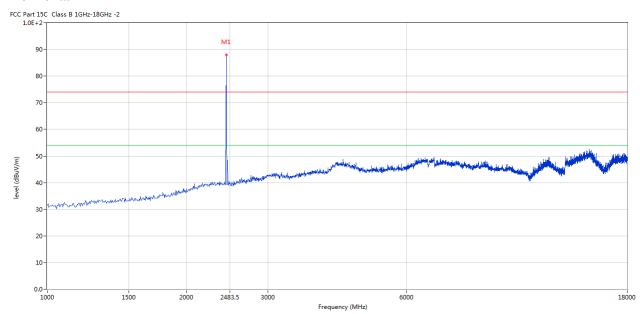
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Please refer to the following test plots for details: Middle Channel-2440MHz

#### Horizontal



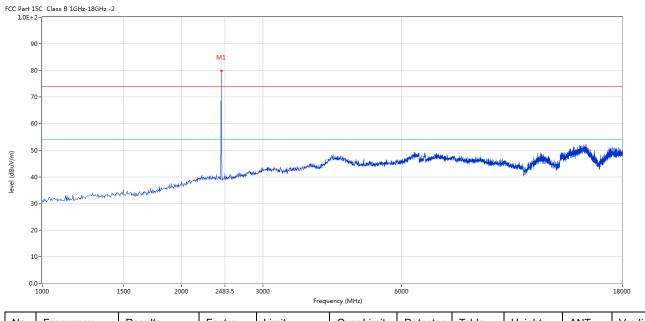
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2440	87.98	-3.57	114.0	-26.02	Peak	231.00	100	Horizontal	Pass

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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	2440	79.93	-3.57	114.0	-34.07	Peak	234.00	100	Vertical	Pass

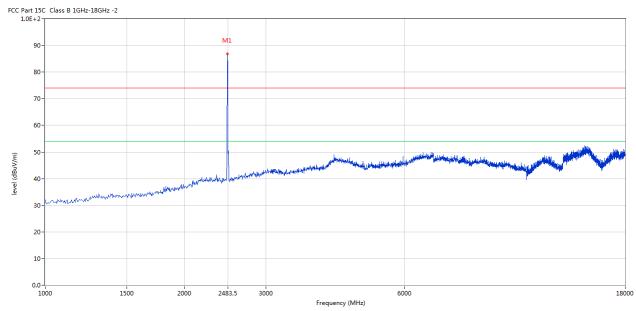
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Please refer to the following test plots for details: High Channel-2480MHz

#### Horizontal



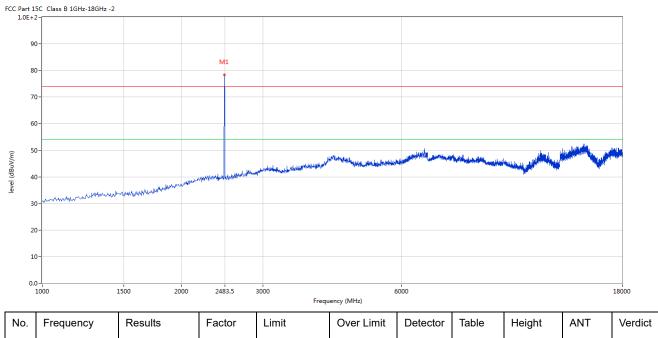
Ī	No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
		(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
	1	2480	86.86	-3.57	114.0	-27.14	Peak	238.00	100	Horizontal	Pass

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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	78.29	-3.57	114.0	-35.71	Peak	237.00	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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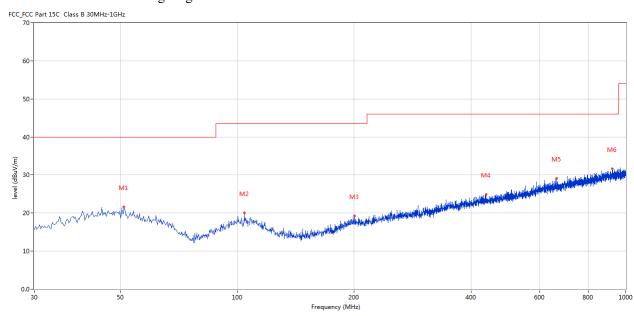


# B. General Radiated Emission Data Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Tx transmitting

**Results:** Pass

Please refer to following diagram for individual



No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(0)	(cm)		
1	51.092	21.62	-11.41	40.0	-18.38	Peak	4.00	200	Horizontal	Pass
2	104.429	20.02	-13.28	43.5	-23.48	Peak	261.00	100	Horizontal	Pass
3	200.192	19.20	-13.44	43.5	-24.30	Peak	223.00	100	Horizontal	Pass
4	437.056	24.94	-8.03	46.0	-21.06	Peak	336.00	100	Horizontal	Pass
5	664.221	29.10	-4.37	46.0	-16.90	Peak	360.00	200	Horizontal	Pass
6	922.419	31.64	-1.76	46.0	-14.36	Peak	279.00	200	Horizontal	Pass

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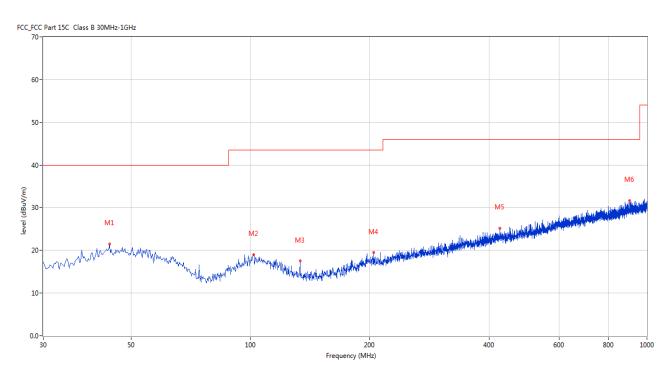


## Radiated Emission In Vertical (30MHz----1000MHz)

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	44.061	21.45	-11.47	40.0	-18.55	Peak	210.00	200	Vertical	Pass
2	101.762	18.99	-13.43	43.5	-24.51	Peak	360.00	200	Vertical	Pass
3	133.279	17.47	-16.99	43.5	-26.03	Peak	360.00	200	Vertical	Pass
4	204.556	19.45	-13.55	43.5	-24.05	Peak	302.00	100	Vertical	Pass
5	425.661	25.22	-8.21	46.0	-20.78	Peak	360.00	200	Vertical	Pass
6	903.024	31.70	-1.87	46.0	-14.30	Peak	344.00	100	Vertical	Pass

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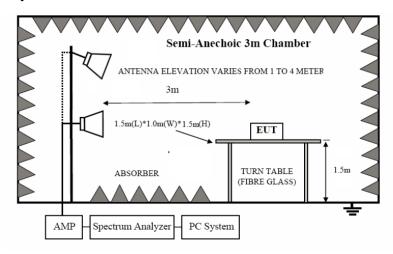


### 7. Band Edge

#### 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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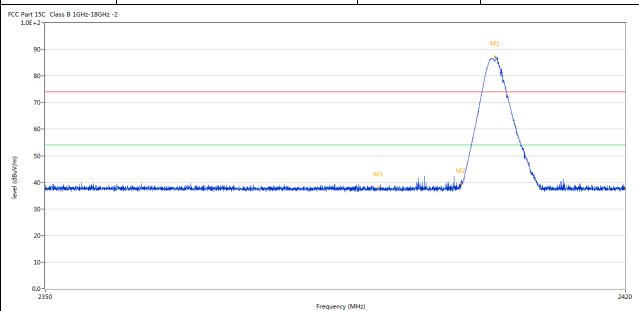
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#### 7.6 Test Result

Product:	DOORLELL	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	2404.114	87.27	-3.57	74.0	13.27	Peak	261.00	100	Horizontal	N/A
2	2400.000	39.43	-3.57	74.0	-34.57	Peak	265.76	100	Horizontal	Pass
3	2390.000	38.09	-3.53	74.0	-35.91	Peak	160.59	100	Horizontal	Pass

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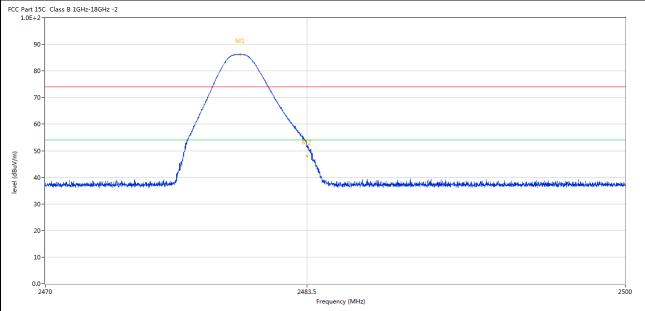
]	Product:	]	DOORLE	LL	Ι	Detector		V	ertical	
	Mode	Кеер	oing Trans	mitting	Tes	st Voltage		D	C3.7V	
Te	mperature		24 deg. (	Ξ,	Н	Iumidity		56	5% RH	
Te	est Result:		Pass							
CC Part 1	15C Class B 1GHz-18GHz -2 2-r						•			
9	10-						M1			
8	30-						<i>/</i> ^	<b>.</b>		
7	70-									
6	in-							\[\]		
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(w/\n	60-							- ₹		
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3	00-									
2	20-									
1	.0-									
	.0- 2350									2420
	1	T			quency (MHz)	Τ		T	1	<del></del>
No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdic
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
4	0400 747	00.07	0.57	74.0	0.07	Daale	452.00	400	\ / - mt: 1	NI/A

No.	Frequency	Results	Factor	Limit	Over Limit	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dB)		(o)	(cm)		
1	2403.747	80.07	-3.57	74.0	6.07	Peak	153.00	100	Vertical	N/A
2	2400.000	37.32	-3.57	74.0	-36.68	Peak	207.59	100	Vertical	Pass
3	2390.000	37.07	-3.53	74.0	-36.93	Peak	282.82	100	Vertical	Pass

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DOORLELL	Polarity	Horizontal
Keeping Transmitting	Test Voltage	DC3.7V
24 deg. C,	Humidity	56% RH
Pass		
	Keeping Transmitting 24 deg. C,	Keeping Transmitting Test Voltage  24 deg. C, Humidity



No.	Frequency	Results	Factor	Limit	Over	Detector	Table	Height	ANT	Verdict
	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	Limit (dB)		(o)	(cm)		
1	2480.047	86.22	-3.57	74.0	12.22	Peak	239.00	100	Horizontal	N/A
2	2483.500	53.09	-3.57	74.0	-20.91	Peak	236.86	100	Horizontal	Pass
2**	2483.500	48.05	-3.57	54.0	-5.95	AV	236.86	100	Horizontal	Pass

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	Product: DOORLELL  Mode Keeping Transmitting				Detector			Vertical		
					Test Voltage Humidity			DC3.7V 56% RH		
Te	mperature 24 deg. C,									
Τe	est Result:	Pass								
C Part 1 1.0E+	.5C Class B 1GHz-18GHz 2-r	-2					•			
0										
9	0									
8	0-									
7	0-		-/-							
6	0-		_/							
5	0-		/	M2						
		/	/	<b>\</b>						
4	0-	/			\					
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3 2 1 0.		Results	Factor	2483.	.5	Detector	Table	Height	ANT	2500
3 2 1 0.	0-0-0-2470		Factor (dB)	ı	.5 Frequency (MHz)					
3 2 1 0.	o- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0- 0-	Results		Limit	.5 Frequency (MHz) Over Limit		Table	Height		2500

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

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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 FPC antenna. The antenna gain is 4.39dBi Max. It fulfills the requirement of this section. Test Result: Pass

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Product:	DOORLE	Test Mod	le: Keep t	ransmitting	
Mode	Keeping Tran	smitting	Test Volta		C3.7V
Temperature	24 deg.		Humidit		5% RH
Test Result:	Pass		Detecto		PK
dB Bandwidth	1.208M	Hz			
<u> </u>	Marker 1 [T1	ndB]	RBW 100	kHz RF Att	20 dB
Ref Lvl	ndB 2	0.00 dB	VBW 300	kHz	
10 dBm	BW 1.2084	1683 MHz	SWT 5	ms Unit	dBm
10			•	'1 [T1]	-2.58 dBm
				2.403	75050 GHz
0		Ż	_	ndB	20.00 dB
			\/	.	41683 MHz
-10			W.		38377 GHz
	\rightarrow		V	T2 [T1] -	-22.46 dBm
-20	7			2.404	
1MAX					11
(*)	Munum			money	
40					V
50					Mune
-60					
70					
-80					
-90					
Center 2.40	4 GHz	300 kHz	/	S	pan 3 MHz

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Product:	DC	OORLELL	Test Mode:	Keep tra	ansmitting
Mode	Keepin	g Transmitting	Test Voltage	e DO	C3.7V
Temperature	24	4 deg. C,	Humidity	569	% RH
Test Result:		Pass	Detector		PK
20dB Bandwidth	1.	232MHz			
Ref Lvl	Marker ndB	1 [T1 ndB] 20.00 dB	RBW 100 k VBW 300 k		20 dB
10 dBm		23246493 MHz	SWT 5 m		dBm
10					
			<b>▼</b> 1	[T1] -2 2.44022	2.86 dBm 2545 GHz
0			ndF	3 20	0.00 dB
			BW ▼ <sub>T</sub> :	1.23246	
-10			T.	[ [T1] -22 2.43935	.91 dBm /174 GHz
		prod	V <sub>T</sub>	2.1333 2 [T1] -23	3.17 dBm
-20	y y		7	2.44060	1421 GHz
1MAX					1MA
-30				Marring	
-40	/				
-50				\	
M/V/V					Mulley
-60					
-70					
-80					
-90					
Center 2	.44 GHz	300	kHz/	Spa	an 3 MHz
Date: 21	.MAR.2023 14	:59:12			

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Product:	DOORLELL		Test Mode:	Keep transmitting					
Mode	Keeping Transmit	Test Voltage	DC:	3.7V					
Temperature	24 deg. C,		Humidity	56% RH PK 					
Test Result:	Pass		Detector						
20dB Bandwidth	1.226MHz								
R.A.	Marker 1 [T1 ne	dB] R	.BW 100 kHz	RF Att	20 dB				
Ref Lvl			BW 300 kHz		_				
10 dBm	BW 1.226452	91 MHz S	WT 5 ms	Unit	dBm				
			<b>▼</b> 1 [3	г1] –2	.59 dBm				
			1	2.48024	950 GHz				
0		, and and	ndB	20	.00 dB				
			BW ∇ <sub>TT</sub> 1	1.22645	291 MHz .46 dBm				
-10					.46 dBm 377 GHz				
			X <sub>T2</sub>	[T1] -22	.74 dBm				
-20	7/7		12	2.48061	022 GHz				
1MAX					1MA				
-30				<del>\                                    </del>					
4.0	June 1			human					
-40	<i>/</i>			V					
-50 -50					W. M. M.				
					4.4				
-60									
-70									
-80									
-90									
Center 2	.48 GHz	300 kHz/		Spa	n 3 MHz				
Date: 21	Date: 21.MAR.2023 15:20:12								

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#### 10.0 FCC ID Label

#### FCC ID: 2AS5R-ZNNF90

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and

(2) this device must accept any interference received, including interference that may cause undesired operation

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

#### Mark Location:



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#### 11.0 Photo of testing

#### 11.1 Conducted test View--



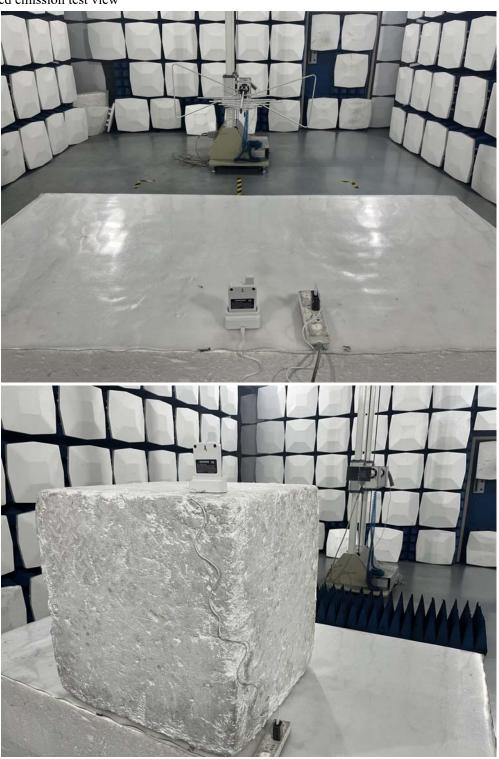
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### Radiated emission test view



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11.2 Outside View





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Outside View





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Inside View



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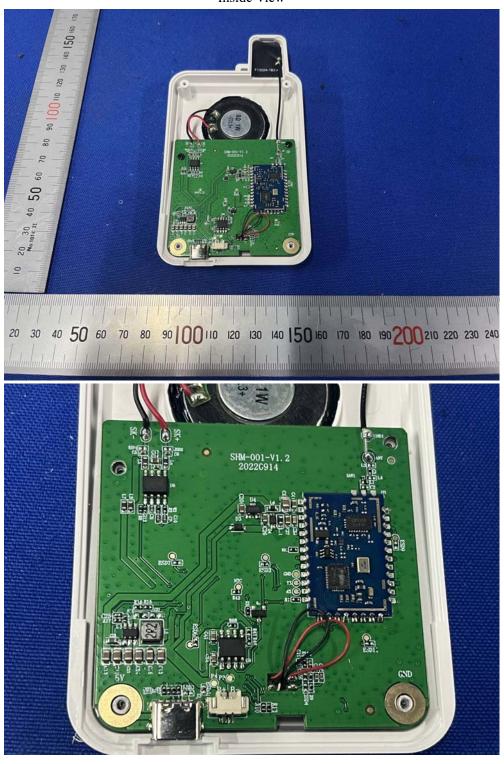
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Inside View



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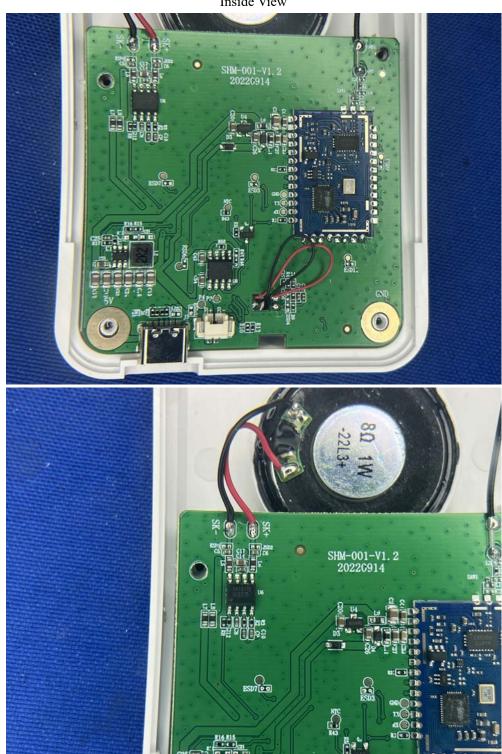
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Inside View



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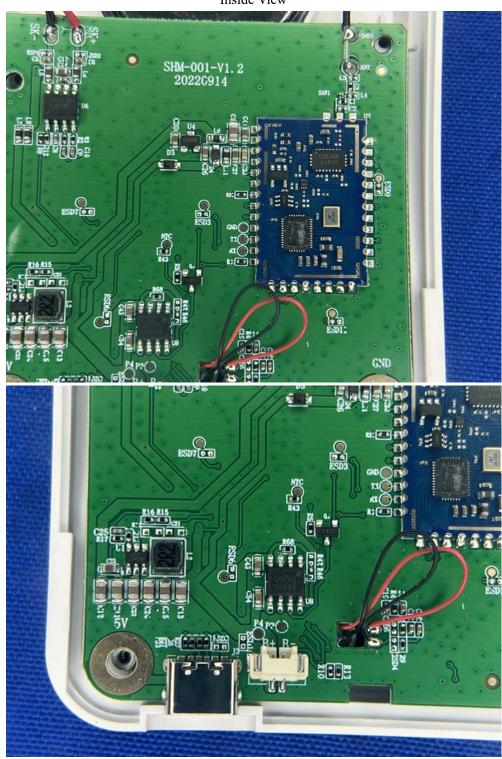
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Inside View



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

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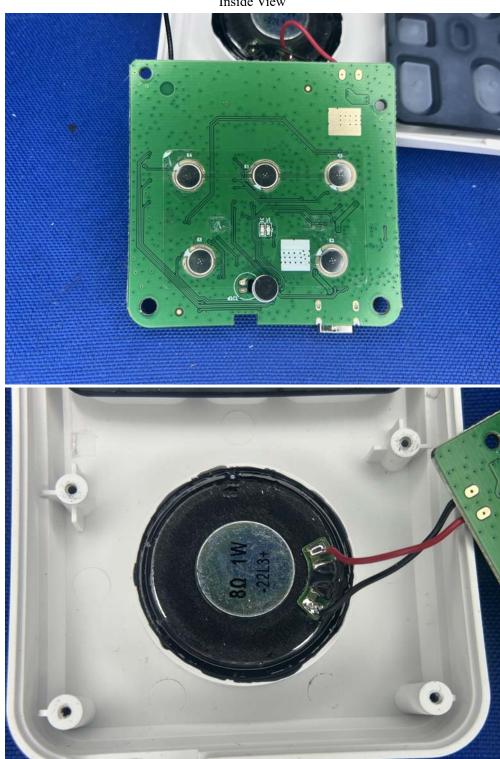
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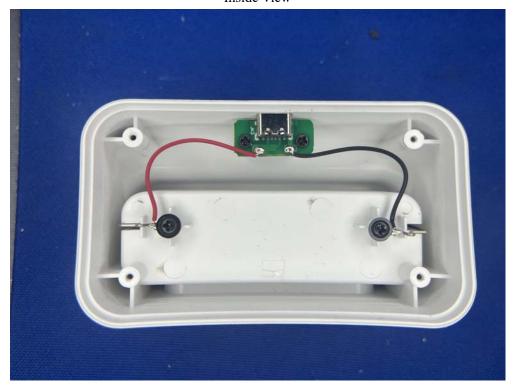
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Inside View



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