



RF Exposure Evaluation Report

Application No.: DNT2507250227R8033-10094
Applicant: Jubilee(Guangzhou)E-commerce Co., Ltd
Address of Applicant: No. 613-1, No. 6, Huibin Second Street Hengli Town, Nansha District, Guangzhou, China
EUT Description: MINI Doorbell
Model No.: X12
Additional Model(s): X16,X17
FCC ID: 2BMNV-X12
Power supply: Input:DC 5V;DC 3.7V from rechargeable lithium-ion battery
Trade Mark: N/A
Standards: 47 CFR Part 2.1091
Standards: FCC KDB 447498 D01 v06
Date of Receipt: 2025/7/25
Date of Test: 2025/7/26 to 2025/8/18
Date of Issue: 2025/8/19
Test Result: **PASS**

Prepared By: Wayne Lin (Testing Engineer)



Reviewed By: Pengils Chen (Project Engineer)

Approved By: Yiweise Chen (Manager)

Note: If there is any objection to the results in this report, please submit a written inquiry to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp, and is issued by the company in accordance with the requirements of the "Conditions of Issuance of Test Reports" printed in the attached page. Unless otherwise stated, the results presented in this report only apply to the samples tested this time. Partial reproduction of this report is not allowed unless approved by the company in writing.

Dongguan DN Testing Co., Ltd.

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**Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	August 19, 2025	Valid	Original Report



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1 General Information

1.1 Test Location

Company:	Dongguan DN Testing Co., Ltd
Address:	No. 1, West Fourth Street, South Xingfa Road, Wusha Liwu, Chang'an Town, Dongguan City, Guangdong P.R.China
Test engineer:	Wayne Lin

1.2 General Description of EUT

Manufacturer:	Guangzhou Hongde Jiazhi Technology Service Co., Ltd.
Address of Manufacturer:	No. 349, Xinlu, Nansha District, Guangzhou
EUT Description::	MINI Doorbell
Test Model No.:	X12
Additional Model(s):	X16,X17
Chip Type:	BK7252NQN481
Serial Number	PR2507250227R8033
Power Supply	Input DC 5V; DC 3.7V from rechargeable lithium-ion battery
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	BLE:2402MHz to 2480MHz; WIFI:2412-2462MHz
Sample Type:	<input type="checkbox"/> Portable Device, <input type="checkbox"/> Module, <input checked="" type="checkbox"/> Mobile Device
Antenna Type:	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated
Antenna Gain:	<input checked="" type="checkbox"/> Provided by applicant 3.85dBi

Remark:

*All models are just color and appearance differences, motherboard, PCB circuit board, chip, electronic components is all the same.

*Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information, DNT is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.



2 RF Exposure Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm ²)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f ²)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

F=frequency in MHz

*=Plane-wave equivalent power density

RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

$\pi = 3.1416$

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.



2.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

2.1.3 EUT RF Exposure Evaluation

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.0 / 2.0 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

This confirmed that the device comply with MPE limit.

Test Mode	Antenna	Freq(MHz)	Power [dBm]
BLE_1M	Ant1	2402	3.71
		2440	3.66
		2480	3.35
11B	Ant1	2412	17.28
		2437	15.12
		2462	13.57
11G	Ant1	2412	15.15
		2437	14.95
		2462	15.64
11N20SISO	Ant1	2412	16.25
		2437	16.24
		2462	14.60

The Worst Mode	Antenna	Peak output power (dBm)	Target power (dBm)	MAX Target power (dBm)	Antenna gain		Power Density (S) (mW/cm ²)	Limited of Power Density (S) (mW/cm ²)	Test Result	Distance (cm)
					(dBi)	(Linear)				
2.4G Band										
BLE 1M	Ant1	3.71	3±1	4	3.85	2.4266	0.0012	1	Complies	20
WIFI 11B	Ant1	17.28	17±1	18	3.85	2.4266	0.0305	1	Complies	20

The End Report