



RF Exposure Evaluation Report

Application No.:	DNT2507150260R7506-10997
Applicant:	Guangzhou Nashinal Microelectronics Technology Co.,Ltd
Address of Applicant:	NO.4 huancunzhongroad,xiaotang village,jianggao town,baiyun district,Guangzhou,China.
EUT Description:	Outdoor Speakers
Model No.:	HD-1016
FCC ID:	2BQUD-HD1016
Power supply	Input:DC 15.0V== 3.0A; DC 11.1V From Rechargeable Lithium Battery
Trade Mark:	/
Standards:	47 CFR Part 2.1091
Date of Receipt:	FCC KDB 447498 D01 v06
Date of Test:	2025/7/15
Date of Issue:	2025/7/16 to 2025/9/2
Date of Issue:	2025/9/3
Test Result:	PASS

Prepared By: Wayne Lin (Testing Engineer)



Reviewed By: Pengils Chen (Project Engineer)

Approved By: Yense 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.

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**Report Revise Record**

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Sep.3, 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 Nashinal Microelectronics Technology Co.,Ltd
Address of Manufacturer:	NO.4 huancunzhongroad,xiaotang village,jianggao town,baiyun district,Guangzhou,China.
EUT Description::	Outdoor Speakers
Test Model No.:	HD-1016
Additional Model(s):	/
Serial Number	PR2507150260R7506
Power Supply	Input:DC 15.0V== 3.0A; DC 11.1V From Rechargeable Lithium Battery
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.0
Operation Frequency:	BT/BLE:2402-2480MHz; WIFI:2412-2462MHz
Type of Modulation:	BT:GFSK,π/4-DQPSK,8-DPSK BLE:GFSK; WIFI:DSSS,OFDM
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 BT:0dBi; WIFI:1.46dBi;

Remark:

*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.



1.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

Lab A:

- FCC, USA

Designation Number: CN1348

- **A2LA (Certificate No. 7050.01)**

DONGGUAN DN TESTING CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 7050.01.

- **Innovation, Science and Economic Development Canada**

DONGGUAN DN TESTING CO., LTD. EMC Laboratory has been recognized by ISED as an accredited testing laboratory. CAB identifier is CN0149.

IC#: 30755.

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: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = power density in mW/cm^2

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/cm^2 . 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]
DH5	Ant1	2402	3.84
		2441	2.98
		2480	-1.04
2DH5	Ant1	2402	3.87
		2441	2.97
		2480	-1.08
3DH5	Ant1	2402	3.20
		2441	3.06
		2480	-0.90
BLE	Ant1	2402	3.94
		2440	2.85
		2480	0.46
11B	Ant 2	2412	16.92
		2437	17.81
		2462	16.61
11G	Ant 2	2412	17.52
		2437	13.75
		2462	12.99
11N20SISO	Ant 2	2412	13.30
		2437	13.01
		2462	12.99
11N40SISO	Ant 2	2422	14.51
		2437	13.99
		2452	13.61

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)				
BLE	Ant1	3.94	3±1	4	0	1.000	0.0005	1	Complies	20
802.11b	Ant 2	17.81	17±1	18	1.46	1.400	0.0176	1	Complies	20

BT+WIFI

Power Density (S) (mW/cm ²) BT	Power Density (S) (mW/cm ²) WIFI	Total Radio	Limit	Result
0.0005	0.0176	0.0181	1	Complies

The End Report