

RF Exposure Evaluation Report

Report Reference No...... : **MTEB24090235-H**

FCC ID..... : **2BHAO-6273LM**

Compiled by

(position+printed name+signature)..: File administrators Alisa Luo

Supervised by

(position+printed name+signature)..: Test Engineer Sunny Deng

Approved by

(position+printed name+signature)..: Manager Yvette Zhou

Date of issue..... : **August.29,2024**

Representative Laboratory Name.: **Shenzhen Most Technology Service Co., Ltd.**

Address..... : No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park,
Nanshan, Shenzhen, Guangdong, China.

Applicant's name..... : **NINGBO LONGMARCH IMPORT&EXPORT CO.,LTD**

Address..... : ROOM 1505, 15TH FLOOR, BUILDING 3, YUNHUI CENTER, NO.
299 TONGJI ROAD, JIANGBEI DISTRICT, NINGBO, CHINA

Test specification/ Standard..... : **47 CFR Part 1.1307;47 CFR Part 1.1310**
KDB447498D01 General RF Exposure Guidance v06

TRF Originator..... : Shenzhen Most Technology Service Co., Ltd.

Shenzhen Most Technology Service Co., Ltd. All rights reserved.

This publication may be reproduced in whole or in part for non-commercial purposes as long as the Shenzhen Most Technology Service Co., Ltd. is acknowledged as copyright owner and source of the material. Shenzhen Most Technology Service Co., Ltd. takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

Test item description..... : EchoDome Speaker

Trade Mark..... : BELL+HOWELL

Model/Type reference..... : 6273LM

Listed Models : N/A

Modulation Type..... : GFSK

GFSK, π /4DQPSK, 8DPSK

Operation Frequency..... : 2402MHz to 2480MHz

Hardware Version..... : JH-SP-LY V3.11

Software Version..... : JH-SP-LY V3.0 9A58

Rating..... : DC 5V by USB Port
DC 3.7V by Battery

Result..... : **PASS**

TEST REPORT

Equipment under Test : EchoDome Speaker

Model /Type : 6273LM

Listed Models : N/A

Remark : N/A

Applicant : NINGBO LONGMARCH IMPORT&EXPORT CO.,LTD

Address : ROOM 1505, 15TH FLOOR, BUILDING 3, YUNHUI CENTER,
NO. 299 TONGJI ROAD, JIANGBEI DISTRICT, NINGBO,
CHINA

Manufacturer : YUYAO SHENGPU PLASTIC CO., LTD

Address : NO. 5 HUNNAN VILLAGE, LINNAN VILLAGE,LINSHAN TOWN,
YUYAO CITY,NINGBO,CHINA

Test Result:	PASS
--------------	------

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2024.09.19	Initial Issue	Alisa Luo

2. SAR Evaluation

2.1 RF Exposure Compliance Requirement

2.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

2.1.2 Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

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

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

π = 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.

2.1.3 EUT RF Exposure

BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	0.943	0.943 ± 1	1.943
Middle(2440MHz)	0.821	0.821 ± 1	1.821
Highest(2480MHz)	0.175	0.175 ± 1	1.175

Worst case: GFSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Middle(2402MHz)	1.943	1.56	-0.58	0.00027	1.0	Pass

Note: 1) Refer to report MTEB24090235-R1 for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (1.56 \cdot 0.87) / (4 \cdot 3.1416 \cdot 20^2) = 0.00027$

Note: 3) EUT's Bluetooth module is more than 20cm away from the human body.

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	-1.296	-1.296 ± 1	-0.296
Middle(2441MHz)	-1.364	-1.364 ± 1	-0.364
Highest(2480MHz)	-1.692	-1.692 ± 1	-0.692

$\pi/4$ DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	-0.442	-0.442 ± 1	0.558
Middle(2441MHz)	-0.507	-0.507 ± 1	0.493
Highest(2480MHz)	-0.831	-0.831 ± 1	0.169

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	0.052	0.052 ± 1	1.052
Middle(2441MHz)	-0.023	-0.023 ± 1	0.977
Highest(2480MHz)	-0.363	-0.363 ± 1	0.637

Worst case: 8DPSK						
Channel	Maximum tune-up Power (dBm)	Maximum tune-up Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
Middle(2402MHz)	1.052	1.27	-0.58	0.00022	1.0	Pass

Note: 1) Refer to report MTEB24090235-R for EUT test Max Conducted average Output Power value.

Note: 2) $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2) = (1.27 \cdot 0.87) / (4 \cdot 3.1416 \cdot 20^2) = 0.00022$

Note: 3) EUT's Bluetooth module is more than 20cm away from the human body.

.....**THE END OF REPORT**.....