

RF Exposure Evaluation Report

Applicant: SHENZHEN 3NOD DIGITAL TECHNOLOGY CO., LTD

Address of Applicant: WORKSHOP 15, ZHONGFU ROAD, TANGXIAYONG COMMUNITY, SONGGANG NEIGHBOURHOOD, BAOAN DISTRICT, SHENZHEN, CHINA

Equipment Under Test (EUT)

Product Name: onn.2.1 Soundbar (soundbar)

Model No.: 100071725

Trade mark: N/A

FCC ID: 2AA3H-S3237

Applicable standards: FCC CFR Title 47 Part 2 Subpart J Section 2.1091

Date of sample receipt: 15 Dec., 2021

Date of Test: 16 Dec., 2021 to 18 Jan., 2022

Date of report issue: 19 Jan., 2022

Test Result: PASS*

Authorized Signature:



Bruce Zhang
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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2 Version

Version No.	Date	Description
00	19 Jan., 2022	Original

Tested by: Mike.ou
Test Engineer

Date: 19 Jan., 2022

Reviewed by: Winner Zhang
Project Engineer

Date: 19 Jan., 2022

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4 General Information

4.1 Client Information

Applicant:	SHENZHEN 3NOD DIGITAL TECHNOLOGY CO., LTD
Address:	WORKSHOP 15, ZHONGFU ROAD, TANGXIAYONG COMMUNITY, SONGGANG NEIGHBOURHOOD, BAOAN DISTRICT, SHENZHEN, CHINA
Manufacturer/Factory:	Shenzhen 3nod Digital Technology Co., Ltd
Address:	401, ZONE 101A, WORKSHOP 15, ZHONGFU ROAD, TANGXIAYONG COMMUNITY, YANLUO STREET, BAOAN DISTRICT, SHENZHEN CITY, GUANGDONG PROVINCE, P.R.C.

4.2 General Description of E.U.T.

Product Name:	onn.2.1 Soundbar
Model No.:	100071725
Operation Frequency:	Bluetooth: 2402MHz~2480MHz
Modulation technology:	Bluetooth BDR: GFSK, $\pi/4$ -DQPSK, 8DPSK
Antenna Type:	Internal Antenna
Antenna gain:	BT: 0.5 dBi
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

4.3 Operating Modes

Operating mode	Detail description
BT mode	Keep the EUT in continuously transmitting in BT mode

4.4 Additions to, deviations, or exclusions from the method

No

4.5 Laboratory Facility

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

● **FCC - Designation No.: CN1211**

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

● **ISED – CAB identifier.: CN0021**

The 3m Semi-anechoic chamber and 10m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

● **CNAS - Registration No.: CNAS L15527**

JianYan Testing Group Shenzhen Co., Ltd. is accredited to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L15527.

● **A2LA - Registration No.: 4346.01**

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <https://portal.a2la.org/scopepdf/4346-01.pdf>

4.6 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China.

Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info-JYTee@lets.com, Website: <http://jyt.lets.com>

5 Technical Requirements Specification in FCC CFR Title 47 Part 2.1091

5.1 Limits

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 1.1307(b)

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

5.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

5.3 Result

Mode	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm ²)	Limits for General Population/ Uncontrolled Exposure (mW/cm ²)
Bluetooth-Module 1							
GFSK Mode	1.808	1.516	0.5	1.122	20.00	0.0004	1.0
Bluetooth-Module 2							
$\pi/4$ -DQPSK Mode	-2.564	0.554	0.5	1.122	20.00	0.0001	1.0

Simultaneous transmission

Module	Result (mW/cm ²)	Result Ratio	Total Ratio	Simultaneous Transmission Ratio Limit
Module 1	0.0004	0.0004	0.0005	1.0
Module 2	0.0001	0.0001		

Note: Just the worst case mode was shown in report.

5.4 Conclusion

The device is exempt from the SAR test and satisfies RF exposure evaluation.

-----End of report-----