

RF Exposure Evaluation Report

Product	: Wireless Headphone
Trade mark	: boAt
Model/Type reference	: Rockerz 551ANC, NIRVANAA 551ANC Neo, NIRVANAA 551ANC Pro, NIRVANAA 553ANC, NIRVANAA 553ANC Neo, NIRVANAA 553ANC Pro, NIRVANAA 558ANC, NIRVANAA 558ANC Neo, NIRVANAA 558ANC Pro
Serial Number	: N/A
Report Number	: EED32P80677902
FCC ID	: 2BARQ-002ROCKERZ551
Date of Issue	: Jul. 08, 2023
Test Standards	: 47 CFR Part 1.1307 47 CFR Part 2.1093 KDB447498D01 General RF Exposure Guidance v06
Test result	: PASS

Prepared for:

Imagine Marketing Ltd.**E Wing, 2nd Floor, Corporate Avenue, AG Road, Opp. Satellite Gazebo
Andheri East, Mumbai, India**

Prepared by:

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1 Version

Version No.	Date	Description
00	Jul. 08, 2023	Original

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3 General Information

3.1 Client Information

Applicant:	Imagine Marketing Ltd.
Address of Applicant:	E Wing, 2nd Floor, Corporate Avenue, AG Road, Opp. Satellite Gazebo Andheri East, Mumbai, India
Manufacturer:	Shen Zhen Lighkeep Co., Limited
Address of Manufacturer:	No 19, Baotong South Road, Xikeng Community, Longgang Zone, Shenzhen City, Guangdong Province, China
Factory:	Shen Zhen Lighkeep Co., Limited
Address of Factory:	No 19, Baotong South Road, Xikeng Community, Longgang Zone, Shenzhen City, Guangdong Province, China

3.2 General Description of EUT

Product Name:	Wireless Headphone
Model No.(EUT):	Rockerz 551ANC, NIRVANAA 551ANC Neo, NIRVANAA 551ANC Pro, NIRVANAA 553ANC, NIRVANAA 553ANC Neo, NIRVANAA 553ANC Pro, NIRVANAA 558ANC, NIRVANAA 558ANC Neo, NIRVANAA 558ANC Pro
Test Model No.:	Rockerz 551ANC
Trade mark:	boAt
Product Type:	☐ Mobile ☒ Portable ☐ Fix Location
Power Supply:	Battery DC 3.7V
Test Voltage:	DC 3.7V
Sample Received Date:	May 11, 2023
Sample tested Date:	May 11, 2023 to Jun. 09, 2023
Remark:	Company Name and Address shown on Report, the sample(s) and sample information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified. Model No.: Rockerz 330ANC, Rockerz 330ANC Neo, Rockerz 330ANC 2.0, Rockerz 338ANC, Rockerz 338ANC 2.0, Rockerz 338ANC Neo, Rockerz 333ANC Only the model Rockerz 330ANC was tested, their electrical circuit design, layout, components used and internal wiring are identical, only the color of the appearance, Bluetooth pairing name, logo is different.

3.3 General Description of BT Classic

Operation Frequency:	2402MHz~2480MHz
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Antenna Type:	Chip Antenna
Antenna Gain:	3.59dBi

3.4 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax: +86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

3.5 Deviation from Standards

None.

3.6 Abnormalities from Standard Conditions

None.

3.7 Other Information Requested by the Customer

None.

4 SAR Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06
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.

Limits

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$$\left[\frac{(\text{max. power of channel, including tune-up tolerance, mW})}{(\text{min. test separation distance, mm})} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

4.1.2 EUT RF Exposure

Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.06	2±1	3.0	1.995
Middle(2441MHz)	3.07	3±1	4.0	2.512
Highest(2480MHz)	2.5	2±1	3.0	1.995
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.07	2±1	3.0	1.995
Middle(2441MHz)	2.97	2±1	3.0	1.995
Highest(2480MHz)	2.49	2±1	3.0	1.995
8DPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	2.03	2±1	3.0	1.995
Middle(2441MHz)	2.98	2±1	3.0	1.995
Highest(2480MHz)	2.45	2±1	3.0	1.995

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	2.06	2±1	3.0	1.995	0.628	3.0
Middle (2441MHz)	3.07	3±1	4.0	2.512	0.791	
Highest (2480MHz)	2.5	2±1	3.0	1.995	0.628	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: EED32P80677901.

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*** End of Report ***