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Report No.: SZEM181000893204

Page: 1 of 8

# SAR Evaluation Report

**Application No.:** SZEM1810008932CR  
**Applicant:** D&M Holdings Inc.  
**Address of Applicant:** 2-1 Nissin-cho, Kawasaki-ku Kawasaki 210-8569, Japan  
**Manufacturer:** D&M Holdings Inc.  
**Address of Manufacturer:** 2-1 Nissin-cho, Kawasaki-ku Kawasaki 210-8569, Japan  
**Factory:** Dongguan Tai Sing Audio Technology Limited  
**Address of Factory:** Tai Sing Industrial Road, Bai Zhou Bian Village, Dong Cheng, Dongguan City, Guangdong Province 523113, P.R. China

**Equipment Under Test (EUT):**  
**EUT Name:** Bluetooth Headphones  
**Model No.:** AH-C820W  
**Trade mark:** DENON  
**FCC ID:** BV2-AH-C820W  
**Standards:** 47 CFR Part 1.1307  
 47 CFR Part 2.1093  
 KDB447498D01 General RF Exposure Guidance v06

**Date of Receipt:** 2018-10-12  
**Date of Test:** 2018-10-16 to 2018-10-19  
**Date of Issue:** 2018-11-05

<b>Test Result :</b>	<b>PASS*</b>
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\* In the configuration tested, the EUT complied with the standards specified above.



Keny Xu  
 EMC Laboratory Manager



The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

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## 2 Version

<i>Revision Record</i>				
<i>Version</i>	<i>Chapter</i>	<i>Date</i>	<i>Modifier</i>	<i>Remark</i>
01		2018-11-05		Original

<b>Authorized for issue by:</b>				
				
		<hr/>		
		<b>Vincent Chen /Project Engineer</b>		
				
		<hr/>		
		<b>Eric Fu /Reviewer</b>		



### 3 Contents

	Page
1 COVER PAGE .....	1
2 VERSION .....	2
3 CONTENTS .....	3
4 GENERAL INFORMATION .....	4
4.1 GENERAL DESCRIPTION OF EUT .....	4
4.2 TEST LOCATION .....	5
4.3 TEST FACILITY .....	5
4.4 DEVIATION FROM STANDARDS .....	6
4.5 ABNORMALITIES FROM STANDARD CONDITIONS .....	6
4.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....	6
5 SAR EVALUATION .....	7
5.1 RF EXPOSURE COMPLIANCE REQUIREMENT .....	7
5.1.1 <i>Standard Requirement</i> .....	7
5.1.2 <i>Limits</i> .....	7
5.1.3 <i>EUT RF Exposure</i> .....	7-8



## 4 General Information

### 4.1 General Description of EUT

Power supply:	Li-Ion Polymer Battery DC 3.7V (Charge by DC 5V USB port)
<b>For BT:</b>	
Frequency Range:	2402MHz to 2480MHz
Bluetooth Version:	BT 5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Antenna Type:	PCB Antenna
Antenna Gain:	-8.5dBi
<b>For BLE:</b>	
Frequency Range:	2402MHz to 2480MHz
Bluetooth Version:	BT 5.0
Modulation Type:	GFSK
Number of Channels:	40
Antenna Gain:	PCB Antenna
Antenna Type:	-8.5dBi



## 4.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China  
518057

Telephone: +86 (0) 755 2601 2053 Fax: +86 (0) 755 2671 0594

No tests were sub-contracted.

## 4.3 Test Facility

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

- **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

- **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

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

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.



#### **4.4 Deviation from Standards**

None.

#### **4.5 Abnormalities from Standard Conditions**

None.

#### **4.6 Other Information Requested by the Customer**

None.



## 5 SAR Evaluation

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 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.

#### 5.1.2 Limits

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

$$\left[ \frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})} \leq 3.0$$
 for 1-g SAR and  $\leq 7.5$  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 calculation<sup>17</sup>

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50$  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

#### 5.1.3 EUT RF Exposure

For BT

The Max. power (including tune-up tolerance) is	6.42	dBm on the highest channel	2.48	GHz (*)
6.42 dBm logarithmic terms convert to numeric result is nearly	4.39	mW		
According to the formula. calculate the test exclusion thresholds:				
$\text{General RF Exposure} = \frac{\text{(Max. Power of channel, including tune-up tolerance, mW)} \cdot \sqrt{f(\text{GHz})}}{\text{(min. test separation distance, mm)}}$				
General RF Exposure =	(4.39 mW / 5 mm)	$\times \sqrt{2.48 \text{ GHz}}$	=	1.38
SAR requirement:				(1)
$S = 3.0$				(2)
(1) < (2)				
So the SAR report is not required.				
(*) Max. power refer to Report No.:SZEM181000893202				



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**Shenzhen Branch**

Report No.: SZEM181000893204

Page: 8 of 8

For BLE:

The Max. power (including tune-up tolerance) is	8.01	dBm on the highest channel	2.48	GHz (*)
8.01 dBm logarithmic terms convert to numeric result is nearly	6.32	mW		
According to the formula. calculate the test exclusion thresholds:				
$General\ RF\ Exposure = \frac{(Max.\ Power\ of\ channel,\ including\ tune\ -up\ tolerance,\ mW) * \sqrt{f\ (GHz)}}{(min.\ test\ separation\ distance,\ mm)}$				
General RF Exposure =	(6.32 mW / 5 mm)	x	$\sqrt{2.48\ GHz}$	= 1.99 (1)
SAR requirement:				
S =	3.0			(2)
(1) <	(2)			
So the SAR report is not required.				
(*) Max. power refer to Report No.:	SZEM181000893203			

- End of the Report -