



Report No.: SZEM190801763003 Page: 1 of 7

SAR Evaluation Report

Application No.:	SZEM1908017630CR	
Applicant:	Harman International Industries, Incorporated	
Address of Applicant:	8500 Balboa Blvd, Northridge, CA 91329, United States	
Manufacturer:	Harman International Industries, Incorporated	
Address of Manufacturer:	8500 Balboa Blvd, Northridge, CA 91329, United States	
Factory:	Minami Acoustics Limited	
Address of Factory:	No.13. Maonan Road, Torch Development District, Zhongshan, Guangdong, China	
Equipment Under Test (EUT):		
EUT Name:	Bluetooth headset	
Model No.:	TUNE500BTM	
Trade mark:	JBL	
FCC ID:	APITUNE500BTM	
Standards:	47 CFR Part 1.1307	
	47 CFR Part 2.1093	
	KDB447498D01 General RF Exposure Guidance v06	
Date of Receipt:	2019-08-19	
Date of Test:	2019-08-24 to 2019-08-28	
Date of Issue:	2019-09-04	
Test Result :	PASS*	

In the configuration tested, the EUT complied with the standards specified above.

Keny. Ku

Keny Xu EMC Laboratory Manager



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2 Version

	Revision Record			
Version	Chapter	Date	Modifier	Remark
01		2019-09-04		Original

Authorized for issue by:		
	Bonson Wong	
	Benson Wang /Project Engineer	
	Evic Fu	
	Eric Fu /Reviewer	



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4 General Information

4.1 General Description of EUT

Power supply:	Rechargeable battery: 3.7V 300mAh (Charged by adapter)
Cable:	USB cable: 22.1 cm unshielded
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V4.1 Classic
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, π/4DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Antenna Type:	Integral Antenna
Antenna Gain:	0.92dBi



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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.



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4.4 Deviation from Standards

None.

4.5 Abnormalities from Standard Conditions

None.

4.6 Other Information Requested by the Customer

None.



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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:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · $[\sqrt{f}(GHz)] \le 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(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 \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

The normal conducted output power is 2dBm (tolerance: +/- 2dB).

The Max. power (including tune-up tolerance) is 4 dBm on the highest channel 2.48 GHz (*) 4.00 dBm logarithmic terms convert to numeric result is nearly 2.51 mW According to the formula. calculate the test exclusion thresholds:

[(max.power of channel, including tune-up tolerance, mW)/(min.test separation distance, mm)]. [Vf(GHz)]

General RF Exposure = (2.51 mW / 5 mm) x $\sqrt{2.48}$ GHz = 0.79	(1)
SAR requirement:	
<i>S</i> = 3.0	(2)
(1) < (2)	
Co the CAD report is not required	

So the SAR report is not required.

- End of the Report -



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