



## SAR Evaluation Report

**Application No.:** SZEM1901010010CR  
**Applicant:** Huawei Technologies Co., Ltd.  
**Address of Applicant:** Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, China.  
**Manufacturer:** Huawei Technologies Co., Ltd.  
**Address of Manufacturer:** Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, China.  
**Factory:** Tiinlab Acoustic Technology (Shenzhen) Co., Ltd.  
**Address of Factory:** Tianliao Building F14 East Block (New Materials Industrial Park), Xueyuan Road, Nanshan District, Shenzhen  
**Equipment Under Test (EUT):**  
**EUT Name:** Wireless Bluetooth Earphones  
**Model No.:** AM-H1CR, CM-H1CR ♣  
♣ Please refer to section 4.1 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade mark:** HUAWEI, HONOR  
**FCC ID:** QISAM-H1CR  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2018-12-23  
**Date of Test:** 2018-12-23 to 2018-12-26  
**Date of Issue:** 2019-01-03

<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

Keny Xu  
EMC Laboratory Manager



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

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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2019-01-03		Original

Authorized for issue by:				
				
		Powell Bao /Project Engineer		
				
		Eric Fu /Reviewer		



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## 4 General Information

### 4.1 General Description of EUT

Power Supply:	Powered by DC3.7V rechargeable battery and can be charged by charging base
Sample Type:	Portable production
<b>For BT:</b>	
Operation Frequency	2402MHz to 2480MHz
Bluetooth Version:	V4.2 Dual mode
Modulation Type:	GFSK, $\pi/4$ DQPSK, 8DPSK
Number of Channels:	79
Channel Spacing:	1MHz
Spectrum Spread Technology:	Frequency Hopping Spread Spectrum(FHSS)
Antenna Gain:	-0.76dBi
Antenna Type:	Chip Antenna
<b>For BLE:</b>	
Operation Frequency	2402MHz to 2480MHz
Bluetooth Version:	V4.2 Dual mode
Modulation Type	GFSK
Number of Channels	40
Channel Spacing	2MHz
Antenna Gain:	-0.76dBi
Antenna Type:	Chip Antenna

**Remark:**

Model No.:AM-H1CR, CM-H1CR

Only the model AM-H1CR was tested, since the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on brand names and model names.



## 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:

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

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

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

BT:

The Max. power (including tune-up tolerance) is	8.47	dBm on the middle channel	2.441	GHz (*)
8.47 dBm logarithmic terms convert to numeric result is nearly 7.03 mW				
According to the formula. calculate the test exclusion thresholds:				
$\text{General RF Exposure} = \frac{(\text{Max. Power of channel, including tune-up tolerance, mW}) * \sqrt{f(\text{GHz})}}{(\text{min. test separation distance, mm})}$				
$\text{General RF Exposure} = (7.03 \text{ mW} / 5 \text{ mm}) * \sqrt{2.441 \text{ GHz}} = 2.20$			(1)	
SAR requirement:				
$S = 3.0$			(2)	
$(1) < (2)$				
So the SAR report is not required.				
(*) Max. power refer to Report No.:SZEM190101001001				



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

Report No.: SZEM190101001003

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**BLE:**

The Max. power (including tune-up tolerance) is	2.20	dBm on the middle channel	2.44	GHz (*)
2.20 dBm logarithmic terms convert to numeric result is nearly	1.66	mW		
According to the formula. calculate the test exclusion thresholds:				
$General\ RF\ Exposure = \frac{(Max.\ Power\ of\ channel,\ including\ tune-up\ tolerance,\ mW) * \sqrt{f\ (GHz)}}{(min.\ test\ separation\ distance,\ mm)}$				
$General\ RF\ Exposure = (1.66\ mW / 5\ mm) \times \sqrt{2.44\ GHz} = 0.52$			(1)	
SAR requirement:				
$S = 3.0$			(2)	
$(1) < (2)$				
So the SAR report is not required.				
(*) Max. power refer to Report No.:SZEM190101001002				

- End of the Report -