



## Shenzhen Huaxia Testing Technology Co., Ltd

1F., Block A of Tongsheng Technology Building, Huahui Road, Dalang Street, Longhua District, Shenzhen, China

Telephone: +86-755-26648640  
Fax: +86-755-26648637  
Website: [www.cqa-cert.com](http://www.cqa-cert.com)

Report Template Version: V04  
Report Template Revision Date: 2018-07-06

# RF Exposure Evaluation Report

**Report No.:** CQASZ20210801401E-02  
**Applicant:** Dongguan Hele Electronics Co.,Ltd  
**Address of Applicant:** Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China  
**Equipment Under Test (EUT):**  
**EUT Name:** TWS Bluetooth headset  
**Model No.:** BH21Q17A  
**Brand Name:** N/A  
**FCC ID:** RDR-BH21Q17AL  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2021-08-19  
**Date of Test:** 2021-08-19 to 2021-08-30  
**Date of Issue:** 2021-09-13  
**Test Result:** PASS\*

\*In the configuration tested, the EUT complied with the standards specified above

**Tested By:**                     Lewis Zhou                      
( Lewis Zhou )

**Reviewed By:**                     Rock Huang                      
( Rock Huang )

**Approved By:**                     Jack ai                      
( Jack ai )



## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20210801401E-02	Rev.01	Initial report	2021-09-13

## 2 Contents

	Page
1 VERSION.....	2
2 CONTENTS.....	3
.....	3
3 GENERAL INFORMATION.....	4
3.1 CLIENT INFORMATION.....	4
3.2 GENERAL DESCRIPTION OF EUT.....	4
3.3 GENERAL DESCRIPTION OF BT.....	4
4 SAR EVALUATION.....	5
4.1 RF EXPOSURE COMPLIANCE REQUIREMENT.....	5
4.1.1 <i>Standard Requirement</i> .....	5
4.1.2 <i>Limits</i> .....	5
4.1.3 <i>EUT RF Exposure</i> .....	6

### 3 General Information

#### 3.1 Client Information

Applicant:	Dongguan Hele Electronics Co.,Ltd
Address of Applicant:	Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China
Manufacturer:	Dongguan Hele Electronics Co.,Ltd
Address of Manufacturer:	Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China
Factory:	Dongguan Hele Electronics Co.,Ltd
Address of Factory:	Dalingya Industrial Zone, Daojiao Town, Dongguan City, Guangdong, China

#### 3.2 General Description of EUT

Product Name:	TWS Bluetooth headset	
Model No.:	BH21Q17A	
Trade Mark:	N/A	
EUT Supports Radios application:	Bluetooth dual mode: 2402-2480MHz	
Hardware Version:	V5.1	
Software Version:	V5.1	
Power Supply:	Left ear:	lithium battery: DC 3.7V, 0.16Wh, Charge by DC 3.7V
	Right ear:	lithium battery: DC 3.7V, 0.16Wh, Charge by DC 3.7V
	The earphone box:	lithium battery: DC 3.7V 380mAh, Charge by DC 5.0V

#### 3.3 General Description of BT

Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	BT5.1
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Number of Channel:	79
Transfer Rate:	1Mbps/2Mbps
Hopping Channel Type:	Adaptive Frequency Hopping systems
Sample Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Test Software of EUT:	FCC Assist 1.0.2.2
Antenna Type:	Internal antenna
Antenna Gain:	1.81 dBi

## 4 SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 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.

#### 4.1.2 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

### 4.1.3 EUT RF Exposure

#### 1) For BT

#### Measurement Data

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-4.090	-4.0±1	-3.0	0.501
Middle(2441MHz)	-2.410	-2.0±1	-1	0.794
Highest(2480MHz)	-0.590	-0.5±1	0.5	1.122
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-3.310	-3.0±1	-2.0	0.630
Middle(2441MHz)	-1.620	-1.5±1	-0.5	0.891
Highest(2480MHz)	0.200	0±1	1.0	1.258

Worst case: π/4DQPSK mode						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	-3.310	-3.0±1	-2.0	0.630	0.196	3.0
Middle (2441MHz)	-1.620	-1.5±1	-0.5	0.891	0.278	
Highest (2480MHz)	0.200	0±1	1.0	1.258	0.397	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20210801401E-01