



## 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)

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# RF Exposure Evaluation Report

**Report No.:** CQASZ20201200037EX-02  
**Applicant:** Shenzhen Joining Free Technology Co.,LTD  
**Address of Applicant:** 16F,Block C,Qifengda Building, Taohuayuan Technology Park, Furong Road, Songgang,Baoan District, Shenzhen, China,518105  
**Equipment Under Test (EUT):**  
**EUT Name:** True Wireless Stereo Earphone  
**Model No.:** JEP101, JEP101-XXXXX  
**Test Model No.:** JEP101  
**Brand Name:** N/A  
**FCC ID:** 2AR4Q-JEP101  
**Standards:** 47 CFR Part 1.1307  
47 CFR Part 2.1093  
KDB447498D01 General RF Exposure Guidance v06  
**Date of Receipt:** 2020-11-23  
**Date of Test:** 2020-11-23 to 2020-12-02  
**Date of Issue:** 2020-12-14  
**Test Result:** **PASS\***

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

**Tested By:**

*Jun Li*

(Jun Li)

**Reviewed By:**

*Sheek Luo*

(Sheek Luo)

**Approved By:**

*Jack Ai*

(Jack Ai)



## 1 Version

### Revision History Of Report

Report No.	Version	Description	Issue Date
CQASZ20201200037EX-02	Rev.01	Initial report	2020-12-14

## 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
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:	Shenzhen Joining Free Technology Co.,LTD
Address of Applicant:	16F,Block C,Qifengda Building, Taohuayuan Technology Park, Furong Road, Songgang,Baoan District, Shenzhen, China,518105
Manufacturer:	Shenzhen Joining Free Technology Co.,LTD
Address of Manufacturer:	16F,Block C,Qifengda Building, Taohuayuan Technology Park, Furong Road, Songgang,Baoan District, Shenzhen, China,518105

#### 3.2 General Description of EUT

Product Name:	True Wireless Stereo Earphone
Test Model No.:	JEP101
Trade Mark:	N/A
Hardware Version:	V1.0
Software Version:	V1.6
Operation Frequency:	2402MHz~2480MHz
Bluetooth Version:	V5.0
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Transfer Rate:	1Mbps
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Antenna Type:	PCB antenna
Antenna Gain:	0dBi
EUT Power Supply:	DC 3.7V from battery

Note:

All model: JEP101, JEP101-XXXXX

Only the model JEP101 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being model name.

## 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:

$$\left[ \frac{\text{max. power of channel, including tune-up tolerance, mW}}{(\text{min. test separation distance, mm}) \cdot \sqrt{f(\text{GHz})}} \right] \leq 3.0$$
 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)	2.266	1±1	2	1.585
Middle(2441MHz)	2.638	1.5±1	2.5	1.778
Highest(2480MHz)	2.675	1.5±1	2.5	1.778
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	3.050	2±1	3	1.995
Middle(2441MHz)	3.337	2±1	3	1.995
Highest(2480MHz)	3.376	2±1	3	1.995

Worst case: π/4DQPSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune- up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	3.050	2±1	3	1.995	0.618	3.0
Middle (2441MHz)	3.337	2±1	3	1.995	0.623	
Highest (2480MHz)	3.376	2±1	3	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.: CQASZ20201200037EX-01