

## RF Exposure Evaluation Report

**Product** : TWS EARPONES  
**Trade mark** : MINISO  
**Model/Type reference** : TS37  
**Serial Number** : N/A  
**Report Number** : EED32O81632403  
**FCC ID** : 2ART4TS37  
**Date of Issue** : Nov. 14, 2022  
: 47 CFR Part 1.1307  
: 47 CFR Part 2.1093  
**Test Standards** : KDB447498D01 General RF  
: Exposure Guidance v06  
**Test result** : PASS

Prepared for:

**Miniso Corporation**

**Room 2501, No. 486 Heye Square Kangwang Middle Road,  
Liwan District, GuangZhou, Guangdong, China**

Prepared by:

**Centre Testing International Group Co., Ltd.  
Hongwei Industrial Zone, Bao'an 70 District,  
Shenzhen, Guangdong, China**

**TEL: +86-755-3368 3668**

**FAX: +86-755-3368 3385**

Compiled by:

*mark.chen*

Reviewed by:

*Tom Chen*

Mark Chen

Tom Chen

Approved by:

*Aaron Ma*

Date:

Nov. 14, 2022

Aaron Ma

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## 1 Version

Version No.	Date	Description
00	Nov. 14, 2022	Original

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### 3 General Information

#### 3.1 Client Information

Applicant:	MINISO Corporation
Address of Applicant:	Room 2501, No. 486 Heye Square Kangwang Middle Road, Liwan District, Guangzhou, Guangdong, China
Manufacturer:	Shenzhen Roman Technology Co., Ltd.
Address of Manufacturer:	Suite 201, No.7 Building, 66 Tongli Road, Tongxin Community, Baolong, Longgang District, Shenzhen City
Factory:	Shenzhen Roman Technology Co., Ltd.
Address of Factory:	Suite 201, No.7 Building, 66 Tongli Road, Tongxin Community, Baolong, Longgang District, Shenzhen City

#### 3.2 General Description of EUT

Product Name:	TWS EARPHONES
Model No.(EUT):	TS37
Trade mark:	MINISO
Product Type:	<input type="checkbox"/> Mobile <input checked="" type="checkbox"/> Portable <input type="checkbox"/> Fix Location
Power Supply:	Battery DC 3.7V
Test Voltage:	DC 3.7V
Sample Received Date:	Oct. 17, 2022
Sample tested Date:	Oct. 17, 2022 to Nov. 04, 2022
Remark:	<p>Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.</p> <p>During the test, the data was showed in all modes, only the worst case left ear was recorded in the report.</p>

#### 3.3 General Description of BLE

Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Transfer Rate:	<input checked="" type="checkbox"/> 1Mbps <input checked="" type="checkbox"/> 2Mbps
Number of Channel:	40
Antenna Type:	Chip Antenna
Antenna Gain:	3.4dBi

#### 3.4 General Description of BT Classic

Operation Frequency:	2402MHz~2480MHz
Modulation Technique:	Frequency Hopping Spread Spectrum(FHSS)
Modulation Type:	GFSK, $\pi/4$ DQPSK
Number of Channel:	79
Hopping Channel Type:	Adaptive Frequency Hopping systems
Antenna Type:	Chip Antenna
Antenna Gain:	3.4dBi

### 3.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd

Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

FCC Designation No.: CN1164

### 3.6 Deviation from Standards

None.

### 3.7 Abnormalities from Standard Conditions

None.

### 3.8 Other Information Requested by the Customer

None.

## 4 SAR Evaluation

### 4.1 RF Exposure Compliance Requirement

#### 4.1.1 Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06  
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.

#### 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:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  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

## 4.1.2 EUT RF Exposure

### 1) For BLE

**Measurement Data:**

**The Ear L for 1M of data is worst, only the worst case is recorded in the report.**

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-1.72	2.0±1	3.0	1.995
Middle(2440MHz)	-1.83	2.0±1	3.0	1.995
Highest(2480MHz)	-2.19	2.0±1	3.0	1.995

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power		Calculated value	Exclusion threshold
			(dBm)	(mW)		
Lowest (2402MHz)	1.75	2.0±1	3.0	1.995	0.62	3.0
Middle (2440MHz)	1.8	2.0±1	3.0	1.995	0.62	
Highest (2480MHz)	1.88	2.0±1	3.0	1.995	0.62	

Conclusion: the calculated value  $\leq 3.0$ , SAR is exempted.

Remark: The Max Conducted Peak Output Power data refer to report Report No.: EED32O81632401.

## 2) For BT Classic

### Measurement Data

The Ear L of data is worst, only the worst case is recorded in the report.

GFSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	-0.4	0±1	1.0	1.259
Middle(2441MHz)	-0.32	0±1	1.0	1.259
Highest(2480MHz)	-0.64	0±1	1.0	1.259
π/4DQPSK mode				
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power	
			(dBm)	(mW)
Lowest(2402MHz)	0.32	0±1	1.0	1.259
Middle(2441MHz)	0.47	0±1	1.0	1.259
Highest(2480MHz)	0.2	0±1	1.0	1.259

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)	0.32	0±1	1.0	1.259	0.397	3.0
Middle (2441MHz)	0.47	0±1	1.0	1.259	0.397	
Highest (2480MHz)	0.2	0±1	1.0	1.259	0.397	
Conclusion: the calculated value ≤3.0, SAR is exempted.						

Remark: The Max Conducted Peak Output Power data refer to report Report No.: EED32O81632402.

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\*\*\* End of Report \*\*\*