



## 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.:** CQASZ20210801466E-02

**Applicant:** Shenzhen Maipinda Technology Co.,Ltd.

**Address of Applicant:** 7th Floor, Building B, Xinyuan, Yushan Industrial Park, Shiyan Str., Baoan Dist., Shenzhen, Guangdong CHINA 518000

**Equipment Under Test (EUT):**

**EUT Name:** Wireless Microphone

**Model No.:** M21, M22, M23, M24, M26

**Test Model No.:** M21

**Brand Name:** N/A

**FCC ID:** 2A243-MAIPINDA

**Standards:** 47 CFR Part 1.1307

47 CFR Part 1.1310

KDB447498D01 General RF Exposure Guidance v06

**Date of Receipt:** 2021-08-30

**Date of Test:** 2021-08-30 to 2021-09-09

**Date of Issue:** 2021-09-10

**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
CQASZ20210801466E-02	Rev.01	Initial report	2021-09-10

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### 3 General Information

#### 3.1 Client Information

Applicant:	Shenzhen Maipinda Technology Co.,Ltd.
Address of Applicant:	7th Floor, Building B, Xinyuan, Yushan Industrial Park, Shiyan Str., Baoan Dist., Shenzhen, Guangdong CHINA 518000
Manufacturer:	Shenzhen Maipinda Technology Co.,Ltd.
Address of Manufacturer:	7th Floor, Building B, Xinyuan, Yushan Industrial Park, Shiyan Str., Baoan Dist., Shenzhen, Guangdong CHINA 518000
Factory:	Shenzhen Maipinda Technology Co.,Ltd.
Address of Factory:	7th Floor, Building B, Xinyuan, Yushan Industrial Park, Shiyan Str., Baoan Dist., Shenzhen, Guangdong CHINA 518000

#### 3.2 General Description of EUT

Product Name:	Wireless Microphone
Model No.:	M21, M22, M23, M24, M26
Test Model No.:	M21
Trade Mark:	N/A
Hardware Version:	ac697n_adapter-v1.0.0
Software Version:	K8-V5
Frequency Range:	2402MHz ~ 2480MHz
Modulation Type:	GFSK
Number of Channels:	79 (declared by the client)
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:	Chip antenna
Antenna Gain:	3.5dbi
Power Supply:	lithium battery:DC3.6V, 70mAh, Charge by DC5.0V

## 4 RF Exposure 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:

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

$f(\text{GHz})$  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

## 4.2 EUT RF Exposure Evaluation

### 1) For 2.4G

$$\text{eirp} = \text{pt} \times \text{gt} = (E \times d)^2/30$$

where:

pt = transmitter output power in watts,

gt = numeric gain of the transmitting antenna (unitless),

E = electric field strength in V/m,  $-10^{((\text{dB}\mu\text{V}/\text{m})/20)/10^6}$ ,

d = measurement distance in meters (m)---3m,

So  $\text{pt} = (E \times d)^2/30 / \text{gt}$

The worst case (refer to report CQASZ20210801466E-01) is below:

Antenna polarization: Horizontal		
Frequency (MHz)	Level (dB $\mu$ V/m)	Polarization
2402	90.32	Peak
2402	87.90	Average

For 2402MHz wireless:

Field strength = 90.32dB $\mu$ V/m @3m

Ant. gain 3.5dBi; so Ant numeric gain=2.239

So  $\text{pt} = [10^{(90.32/20)/10^6} \times 3]^2/30 / 2.239 \times 1000\text{mW} = 0.144\text{mW}$

So  $(0.144\text{mW}/5\text{mm}) \times \sqrt{2.402\text{GHz}} = 0.045$ ,

$0.045 < 3.0$  for 1-g SAR

So the SAR report is not required.