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

# RF Exposure Evaluation Report

| | |
|---|---|
| **Report No.:** | CQASZ20210901614E-03 |
| **Applicant:** | Yibai Science & Technology (Shenzhen) Co., Ltd. |
| **Address of Applicant:** | No. 1112, Building 5A, Tusincere Technology Park.Huanggekeng Community Longcheng Street,Longgang District.Shenzhen,China |
| **Equipment Under Test (EUT):** | |
| **EUT Name:** | True Wireless Earphone |
| **Test Model No.:** | ZIP 20 |
| **Model No.:** | ZIP 20 |
| **Brand Name:** | YOBYBO |
| **FCC ID:** | 2AVYG-ZIP20P |
| **Standards:** | 47 CFR Part 1.1307<br>47 CFR Part 2.1093<br>KDB447498D01 General RF Exposure Guidance v06 |
| **Date of Receipt:** | 2021-09-13 |
| **Date of Test:** | 2021-09-13 to 2021-09-22 |
| **Date of Issue:** | 2021-10-13 |
| **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)***

# 1 Version

**Revision History Of Report**

| Report No. | Version | Description | Issue Date |
|---|---|---|---|
| CQASZ20210901614E-03 | Rev.01 | Initial report | 2021-10-13 |

# 2 Contents

# 3 General Information

## 3.1 Client Information

| | |
|---|---|
| Applicant: | Yibai Science & Technology (Shenzhen) Co., Ltd. |
| Address of Applicant: | No. 1112, Building 5A, Tusincere Technology Park.Huanggekeng Community Longcheng Street,Longgang District.Shenzhen,China |
| Manufacturer: | Yibai Science & Technology (Shenzhen) Co., Ltd. |
| Address of Manufacturer: | No. 1112, Building 5A, Tusincere Technology Park.Huanggekeng Community Longcheng Street,Longgang District.Shenzhen,China |
| Factory: | Yibai Science & Technology (Shenzhen) Co., Ltd. |
| Address of Factory: | No. 1112, Building 5A, Tusincere Technology Park.Huanggekeng Community Longcheng Street,Longgang District.Shenzhen,China |

## 3.2 General Description of EUT

| | |
|---|---|
| Product Name: | True Wireless Earphone |
| Model No.: | ZIP 20 |
| Test Model No | ZIP 20 |
| Trade Mark: | YOBYBO |
| EUT Supports Radios application: | Bluetooth mode<br>2402-2480MHz |
| Hardware Version: | ZIP20-V2.0 |
| Software Version: | ZIP20_JHX_V1.9 |
| Sample Type: | ☐ Mobile ☒ Portable ☐ Fix Location |
| EUT Power Supply: | Li-ion battery: DC 3.7V 450mAh, Charge by DC 5.0V |

## 3.3 General Description of BT

| | | |
|---|---|---|
| Operation Frequency: | 2402MHz~2480MHz | |
| Bluetooth Version: | V5.2 | |
| Modulation Technique: | Frequency Hopping Spread Spectrum(FHSS) | |
| Modulation Type: | GFSK, π/4DQPSK, 8DPSK | |
| Number of Channel: | 79 | |
| Transfer Rate: | 1Mbps/2Mbps/3Mbps | |
| Hopping Channel Type: | Adaptive Frequency Hopping systems | |
| Test Software of EUT: | Blue Test3 | |
| Antenna Type: | Ceramic antenna | |
| Antenna Gain: | BT | 2.25dBi |

## 3.4 General Description of BLE

| | | |
|---|---|---|
| Operation Frequency: | 2402MHz~2480MHz | |
| Bluetooth Version: | V5.2 | |
| Modulation Type: | GFSK | |
| Number of Channel: | 40 | |
| Transfer Rate: | 1Mbps and 2Mbps | |
| Test Software of EUT: | Blue Test3 | |
| Antenna Type: | Ceramic antenna | |
| Antenna Gain: | BLE | 2.25dBi |

# 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 ≤ 50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] · [√f(GHz)] ≤ 3.0 for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

f(GHz) is the RF channel transmit frequency in GHz
Power and distance are rounded to the nearest mW and mm before calculation[17]
The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 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) | 7.550 | 7.5±1 | 8.5 | 7.079 |
| Middle(2441MHz) | 6.760 | 6.5±1 | 7.5 | 5.623 |
| Highest(2480MHz) | 5.460 | 5.5±1 | 6.5 | 4.467 |
| π/4DQPSK mode | | | | |
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | 7.050 | 7.0±1 | 8.0 | 6.310 |
| Middle(2441MHz) | 6.260 | 6.5±1 | 7.5 | 5.623 |
| Highest(2480MHz) | 4.940 | 5.0±1 | 6.0 | 3.981 |
| 8DPSK mode | | | | |
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | 7.760 | 8.0±1 | 9.0 | 7.943 |
| Middle(2441MHz) | 7.010 | 7.0±1 | 8.0 | 6.310 |
| Highest(2480MHz) | 5.710 | 5.5±1 | 6.5 | 4.467 |

| Worst case: 8DPSK mode | | | | | | |
|---|---|---|---|---|---|---|
| Channel | Maximum Peak Conducted Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | | Calculated value | Exclusion threshold |
| | | | (dBm) | (mW) | | |
| Lowest (2402MHz) | 7.760 | 8.0±1 | 9.0 | 7.943 | 2.462 | 3.0 |
| Middle (2441MHz) | 7.010 | 7.0±1 | 8.0 | 6.310 | 1.972 | |
| Highest (2480MHz) | 5.710 | 5.5±1 | 6.5 | 4.467 | 1.407 | |
| Conclusion: the calculated value ≤3.0, SAR is exempted. | | | | | | |

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20210901614E-01

**2) For BLE**

**Measurement Data**

| GFSK(1Mps) mode | | | | |
|---|---|---|---|---|
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | 3.93 | 4.0±1 | 5.0 | 3.162 |
| Middle(2440MHz) | 3.02 | 3.0±1 | 4.0 | 2.511 |
| Highest(2480MHz) | 1.52 | 1.5±1 | 2.5 | 1.778 |
| GFSK(2Mps) mode | | | | |
| Test channel | Peak Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | |
| | | | (dBm) | (mW) |
| Lowest(2402MHz) | 4.04 | 4.0±1 | 5.0 | 3.162 |
| Middle(2440MHz) | -1.48 | -1.5±1 | -0.5 | 0.891 |
| Highest(2480MHz) | 1.8 | 2.0±1 | 3.0 | 1.995 |

| Worst case: GFSK(1Mps) mode | | | | | | |
|---|---|---|---|---|---|---|
| Channel | Maximum Peak Conducted Output Power (dBm) | Tune up tolerance (dBm) | Maximum tune-up Power | | Calculated value | Exclusion threshold |
| | | | (dBm) | (mW) | | |
| Lowest (2402MHz) | 3.93 | 4.0±1 | 5.0 | 3.162 | 0.980 | 3.0 |
| Middle (2440MHz) | 3.02 | 3.0±1 | 4.0 | 2.511 | 0.785 | |
| Highest (2480MHz) | 1.52 | 1.5±1 | 2.5 | 1.778 | 0.560 | |
| Conclusion: the calculated value ≤3.0, SAR is exempted. | | | | | | |

Remark: The Max Conducted Peak Output Power data refer to report Report No.: CQASZ20210901614E-02
BDR and BLE can not simultaneous transmitting at same time.