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# FCC RF Exposure

| | | |
|---|---|---|
| **Applicant** | : | Aoyuanhongzhan(Dongguan) Microelectronics Co., LTD |
| **Address** | : | Room 102, Building 2, No. 1, Puxinhu Commercial Middle 4th Street, Tangxia Town, Dongguan City, Guangdong Province |
| **Product Name** | : | Wireless bluetooth headset |
| **Brand Mark** | : | N/A |
| **Model** | : | FD131 |
| **Series model** | : | M2, M3, M4, M5, M6, TH40, TH41, JS518, JS520, JS918, FD121, FD131, FD19, FD20, FD129, M25, M26, F206, JS519 |
| **FCC ID** | : | 2BNZI-FD131 |
| **Report Number** | : | BLA-EMC-202502-A0103 |
| **Date of Receipt** | : | Feb. 07, 2025 |
| **Date of Test** | : | Feb. 07, 2025 to Feb. 10, 2025 |
| **Test Standard** | : | 47 CFR Part 15, Part1.1307<br>47 CFR Part 15, Part2.1093<br>KDB447498D04 General RF Exposure Guidance v01 |
| **Test Result** | : | Pass |

**Compiled by:** Mark Chen **Review by:** Sweets **Approved by:** Blue Zheng

**Issued Date: Mar. 24, 2025**

**BlueAsia of Technical Services(Shenzhen) Co.,Ltd.**

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# Revise Record

| Version No. | Date | Description |
|---|---|---|
| 01 | Mar. 24, 2025 | Original |
| | | |
| | | |
| | | |

# 1 General information

## 1.1 General information

| | |
|---|---|
| Applicant | Aoyuanhongzhan(Dongguan) Microelectronics Co., LTD |
| Address | Room 102, Building 2, No. 1, Puxinhu Commercial Middle 4th Street, Tangxia Town, Dongguan City, Guangdong Province |
| Manufacturer | Aoyuanhongzhan(Dongguan) Microelectronics Co., LTD |
| Address | Room 102, Building 2, No. 1, Puxinhu Commercial Middle 4th Street, Tangxia Town, Dongguan City, Guangdong Province |
| Factory | N/A |
| Address | N/A |

## 1.2 General description of EUT

| | |
|---|---|
| Product name | Wireless bluetooth headset |
| Model no. | FD131 |
| Series model | M2, M3, M4, M5, M6, TH40, TH41, JS518, JS520, JS918, FD121, FD131, FD19, FD20, FD129, M25, M26, F206, JS519 |
| Differences of Series model | The above models are identical in PCB layout, internal structure and components. Only the model name is differents. |
| Operation Frequency | BT/BLE:2402MHz-2480MHz |
| Modulation Type | BLE:GFSK<br>BT:GFSK, π/4DQPSK |
| Number of Channels | BLE:40<br>BT:79 |
| Antenna Type: | Chip antenna |
| Product Type: | Portable |
| Antenna Gain: | 1.7dBi(Provided by customer) |
| Power supply: | Battery DC 3.7V |
| Test Voltage: | DC 3.7V |
| Hardware Version | N/A |
| Software Version | N/A |

# 2 RF Exposure Compliance Requirement

## 2.1 Standard Requirement

According to 447498 D04 Interim General RF Exposure Guidance v01

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.

## 2.2 Limits

$$P_{\text{th}}\ (\text{mW}) = \begin{cases} ERP_{20\ \text{cm}}(d/20\ \text{cm})^{x} & d \le 20\ \text{cm} \\ ERP_{20\ \text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases} \quad \text{(B.2)}$$

where

$$x = -\log_{10}\left(\frac{60}{ERP_{20\ \text{cm}}\sqrt{f}}\right)$$

and $f$ is in GHz, $d$ is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

Example values shown in Table B.2 are for illustration only.

Table B.2—Example Power Thresholds (mW)

| Frequency (MHz) | Distance (mm) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 |
| 300 | 39 | 65 | 88 | 110 | 129 | 148 | 166 | 184 | 201 | 217 |
| 450 | 22 | 44 | 67 | 89 | 112 | 135 | 158 | 180 | 203 | 226 |
| 835 | 9 | 25 | 44 | 66 | 90 | 116 | 145 | 175 | 207 | 240 |
| 1900 | 3 | 12 | 26 | 44 | 66 | 92 | 122 | 157 | 195 | 236 |
| 2450 | 3 | 10 | 22 | 38 | 59 | 83 | 111 | 143 | 179 | 219 |
| 3600 | 2 | 8 | 18 | 32 | 49 | 71 | 96 | 125 | 158 | 195 |
| 5800 | 1 | 6 | 14 | 25 | 40 | 58 | 80 | 106 | 136 | 169 |

$$P_{\text{th}}\ (\text{mW}) = ERP_{20\ \text{cm}}\ (\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases} \quad \text{(B.1)}$$

## 2.3 Result

EIRP = pt x gt = (E X 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,

d = measurement distance in meters (m)

Spot = (EXd)2/30 x gt

Separation distance= 0.5cm

Ant gain = 1.7dBi

For BLE 2M(Worst):

Max Output power =-4.549dBm @ 2402MHz

ERP = -4.549dBm+1.7dBi-2.15=-4.999dBm=0.316mW< 2.788 mW

For BT Classic(π/4DQPSK):

Max Output power =-3.816dBm @ 2402MHz

ERP = -3.816dBm+1.7dBi-2.15=-4.266dBm=0.374mW< 2.788 mW

Comply with RF exposure exemption limit.



**----END OF REPORT----**