



FCC RF EXPOSURE REPORT

Zhuhai Quin Technology Co., Ltd.

Portable Label Maker

Model Number: P15

Addition Model: P15 PRO, P15 Pro, P15 SE, P15 Plus, P05, P05 PRO, P05 Pro, P05 SE, P05 Plus, P16, P16 PRO, P16 Pro, P16 SE, P16 Plus, P18, P18 PRO, P18 Pro, P18 SE, P18 Plus

FCC ID: 2ASRB-P15

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| Date of Test: | Jun. 25, 2024 ~ Aug. 27, 2024 |
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1. Applicable Standards

FCC Part 2(Section 2.1093)

FCC KDB 447498 D04 Interim General RF Exposure Guidance v01

2. Exposure Evaluation of Portable or Mobile Devices

Human exposure to RF emissions from portable devices (47 CFR §2.1093), as defined by the FCC, must be evaluated with respect to the FCC-adopted limits for SAR. Evaluation of mobile devices, as defined by the FCC, may also be performed with respect to SAR limits, but in such cases it is usually simpler and more cost-effective to evaluate compliance with respect to field strength or power density limits. For certain devices that are designed to be used in both mobile and portable configurations similar to those described in 47 CFR §2.1091(d)(4), such as certain desktop phones and wireless modem modules, compliance for mobile configurations is also satisfied when the same device is evaluated for SAR compliance in portable configurations.

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

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

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). The 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 |

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 300 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.

3. Evaluation Results

| Mode | Frequency (MHz) | Peak output Power (dBm) | Antenna Gain (dBi) | effective radiated power (dBm) | Target power (dBm) | Max. Target power (mW) | SAR Test Exemption Limit (mW) |
|-----------|-----------------|-------------------------|--------------------|--------------------------------|--------------------|------------------------|-------------------------------|
| GFSK | 2402 | 2.7 | -0.58 | -0.03 | 2±1 | 1.995 | 2.72 |
| | 2441 | 2.67 | -0.58 | -0.06 | 2±1 | 1.995 | 2.72 |
| | 2480 | 2.9 | -0.58 | 0.17 | 2±1 | 1.995 | 2.72 |
| π/4-DQPSK | 2402 | 3.41 | -0.58 | 0.68 | 3±1 | 2.512 | 2.72 |
| | 2441 | 3.35 | -0.58 | 0.62 | 3±1 | 2.512 | 2.72 |
| | 2480 | 3.58 | -0.58 | 0.85 | 3±1 | 2.512 | 2.72 |
| BLE 1M | 2402 | 2.56 | -0.58 | -0.17 | 2±1 | 1.995 | 2.72 |
| | 2440 | 2.55 | -0.58 | -0.18 | 2±1 | 1.995 | 2.72 |
| | 2480 | 2.77 | -0.58 | 0.04 | 2±1 | 1.995 | 2.72 |
| BLE 2M | 2402 | 2.62 | -0.58 | -0.11 | 2±1 | 1.995 | 2.72 |
| | 2440 | 2.68 | -0.58 | -0.05 | 2±1 | 1.995 | 2.72 |
| | 2480 | 2.89 | -0.58 | 0.16 | 2±1 | 1.995 | 2.72 |

Note:

- Limited= $3060 \cdot (0.5/20)^x$, $x = -\log(60/(3060 \cdot \sqrt{f}))$.
- We choose $f=2.48\text{GHz}$ (Highest frequency operate at bluetooth) to calculate MPE limit as higher frequency will have lower MPE limits.
- SAR Test Exclusion Thresholds is 2.72mW for separation distance 5mm. Therefore, SAR test is not required.

End of Test Report