# FCC RF EXPOSURE REPORT

VTECH ELECTRONICS LTD

Microphone 1
Model Number: 2477
Additional Model: 80-247700, 80-247703, 80-247704, 80-247705, 80-247707,
80-247722, 80-247723, 80-2477XX (XX=00~99)

Microphone 2
Model Number: 2478
Additional Model: 80-247800, 80-247803, 80-247804, 80-247805, 80-247807,
80-247822, 80-247823, 80-2478XX (XX=00~99)

FCC ID: G2R-2477

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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.

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

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

where

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

and $f$ is in GHz, $d$ is the separation distance (cm), and $ERP_{20cm}$ 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

**Model: 2477**

**For 2.4G SRD**
Field strength =66.9dBuV/m@3m
$P = \{ [10^{(66.9/20)}/10^6 *3]^2/30 \}*1000mW = 0.00146mW < 2.72mW$

1. Limited= $3060*(0.5/20)^{\wedge}(-\log_{10}(60/(3060*\sqrt{f}))$ (where f is in GHz);
2. We choose 2.480GHz to calculate limit as higher frequency will have lower limits.

**Model: 2478**

**For 2.4G SRD**
Field strength =69.63dBuV/m@3m
$P = \{ [10^{(69.63/20)}/10^6 *3]^2/30 \}*1000mW = 0.00274mW < 2.72mW$

3. Limited= $3060*(0.5/20)^{\wedge}(-\log_{10}(60/(3060*\sqrt{f}))$ (where f is in GHz);
4. We choose 2.480GHz to calculate limit as higher frequency will have lower limits.

**End of Test Report**