FCC RF EXPOSURE REPORT

Zhuhai Quin Technology Co., Ltd.

Portable Label Maker

Model Number: LM1600

Addition Model: LM1600 PRO, LM1600PRO, QY-LM1600, QY-LM1600 PRO, QY-LM1600PRO, LM1600 Plus, QY-LM1600 Plus, QY-LM1600 Pro Max, LM1600 Pro Max, AM-LM1600 PRO, AM-LM1600PRO, AM-LM1600 Plus, AM-LM1600 Pro Max

FCC ID: 2ASRB-LM1600

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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.

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

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

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).
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	2.14	-0.58	-0.59	2±1	1.995	2.72
	2441	2.11	-0.58	-0.62	2±1	1.995	2.72
	2480	2.3	-0.58	-0.43	2±1	1.995	2.72
π/4-DQPSK	2402	2.91	-0.58	0.18	2±1	1.995	2.72
	2441	2.99	-0.58	0.26	2±1	1.995	2.72
	2480	3.07	-0.58	0.34	3±1	2.512	2.72
BLE 1M	2402	1.95	-0.58	-0.78	1±1	1.585	2.72
	2440	2.03	-0.58	-0.7	2±1	1.995	2.72
	2480	2.08	-0.58	-0.65	2±1	1.995	2.72
BLE 2M	2402	2.14	-0.58	-0.59	2±1	1.995	2.72
	2440	2.17	-0.58	-0.56	2±1	1.995	2.72
	2480	2.28	-0.58	-0.45	2±1	1.995	2.72

Note:
1. Limited=3060*(0.5/20)^x, x=-log(60/(3060*√f)).
2. We choose f=2.48GHz (Highest frequency operate at bluetooth) to calculate MPE limit as higher frequency will have lower MPE limits.
3. SAR Test Exclusion Thresholds is 2.72mW for separation distance 5mm. Therefore, SAR test is not required.

End of Test Report