FCC ID: MZR-YRD510

According to KDB 447498 D04 Interim General RF Exposure Guidance v01

1. MPE-Based Exemption

An alternative to the SAR-based exemption is provided in § 1.1307(b)(3)(i)(C), for a much wider frequency range, from 300 ㎑ to 100 ㎓, applicable for separation distances greater or equal to λ/2π, where λ is the free-space operating wavelength in meters. The MPE-based test exemption condition is in terms of ERP, defined as the product of the maximum antenna gain and the delivered maximum time-averaged power. For this case, a RF source is an RF exempt device if its ERP (watts) is no more than a frequency-dependent value, as detailed tabular form in Appendix B. These limits have been derived based on the basic specifications on Maximum Permissible Exposure (MPE) considered for the FCC rules in § 1.1310(e)(1).

Table 1 to 1.1307(b)(3)(i)(c) – Single RF Sources Subject to Routine Environmental Evaluation

RF Source Frequency (㎒)	Threshold ERP (watts)
0.3-1.34	$1\,920\ R^2$
1.34-30	$3\,450\ R^2/f^2$
30-300	$3.83\ R^2$
300-1 500	$0.012\,8\ R^2 f$
1 500-100 000	$19.2\ R^2$

2. RF Exposure Test Exemptions for Single Source

Mode	Frequency Range (㎒)	Minimum Separation Distance (㎝)	Maximum Average Target Power (dBm)	Maximum Tune up (dB)	Maximum Average Power (dBm)	Antenna Gain (dBi)	ERP		Pth	Ratio	Result
							(dBm)	(㎽)	(㎽)		
Bluetooth Low Energy of BLE part	2 402 ~ 2 480	20	0	2	2.00	3.28	3.13	2.06	768	0.003	Pass
Bluetooth Low Energy of MATTER part	2 402 ~ 2 480	20	7.00	2	9.00	3.37	10.22	10.52	768	0.014	Pass
Thread of MATTER part	2 405 ~ 2 480	20	20.00	2	22.00	3.37	23.22	209.89	768	0.273	Pass

Note ;

- Maximum average target power is the manufacturer's declared rated power.
- Maximum average power = Maximum average target power (dBm) + Maximum tune up (dB).
- ERP (dBm) = Maximum average power (dBm) + Antenna gain (dBi) -2.15
- The MATTER part and the BLE part can be operated simultaneously.

3. Simultaneous Transmission SAR Test Exemption with Respect to Multiple Exemption Criteria

Either SAR-based or MPE-based exemption may be considered for test exemption for fixed, mobile, or portable device exposure conditions; therefore, the contributions from each exemption in conjunction with the measured SAR (Evaluatedk term) shall be used to determine exemption for simultaneous transmission according to Formula (C.1) [repeated from § 1.1307(b)(3)(ii)(B)].

$$\sum_{i=1}^{a} \frac{P_i}{P_{th,i}} + \sum_{j=1}^{b} \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^{c} \frac{Evaluated_k}{Exposure\ Limit_k} \leq 1$$

Thread of MATTER part+ Bluetooth Low Energy of BLE part: 0.003 + 0.273 = 0.276 < 1

4. Conclusion: No SAR is required.