FCC ID: WA2ST4280

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^2f
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 Output Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (㎽)	Threshold ERP (㎽)	Ratio	Result
Bluetooth Low energy	2 402 ~ 2 480	20	8.0	1.5	9.5	-0.06	7.29	5.358	768	0.007	Pass

Mode	Frequency Range (㎒)	Minimum Separation Distance (㎝)	Maximum Average Power (dBm)	Antenna Gain (dBi)	ERP (dBm)	ERP (㎽)	Threshold ERP (㎽)	Ratio	Result
LTE Band 2	1 850 ~ 1 910	20	21.5	2.21	21.56	143.219	768	0.186	Pass
LTE Band 66/4	1 710 ~ 1 780	20	21.5	0.71	20.06	101.391	768	0.132	Pass
LTE Band 5	824 ~ 849	20	21.5	-2.98	16.37	43.351	421.888	0.103	Pass
LTE Band 12	699 ~ 716	20	21.5	-2.50	16.85	48.417	357.888	0.135	Pass
LTE Band 13	777 ~ 787	20	21.5	-2.04	17.31	53.827	397.824	0.135	Pass
NB-IOT Band 2	1 850 ~ 1 910	20	21.5	2.21	21.56	143.219	768	0.186	Pass
NB-IOT Band 66/4	1 710 ~ 1 780	20	21.5	0.71	20.06	101.391	768	0.132	Pass
NB-IOT Band 85	698 ~ 716	20	21.5	-2.50	16.85	48.417	357.376	0.135	Pass

Note ;

- Bluetooth Low Energy and WWAN can't simultaneous transmission at the same time.
- ERP (dBm) = Maximum average power (dBm) + Antenna gain (dBi) -2.15
- Maximum average target power is the manufacturer's declared rated power.
- Maximum average output power = Maximum average target power (dBm) + Maximum tune up (dB).

3. Conclusion: No SAR is required.