

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 kHz to 100 GHz, applicable for separation distances greater or equal to $\lambda/2\pi$, 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 (MHz) | 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 (MHz) | Minimum Separation Distance (cm) | Maximum Average Target Power (dBm) | Maximum Tune up (dB) | Maximum Average Power (dBm) | Antenna Gain (dBi) | ERP | | Threshold ERP (mW) | Ratio | Result |
|----------------------|-----------------------|----------------------------------|------------------------------------|----------------------|-----------------------------|--------------------|-------|-------|--------------------|-------|--------|
| | | | | | | | (dBm) | (mW) | | | |
| Bluetooth Low energy | 2 402 ~ 2 480 | 20 | 4.5 | 2 | 6.50 | 1.72 | 6.07 | 4.05 | 768 | 0.005 | Pass |
| WLAN 2.4G | 2 412 ~ 2 462 | 20 | 17 | 2 | 19 | 1.70 | 18.55 | 71.61 | 768 | 0.093 | Pass |

Note ;

- Bluetooth Low Energy and WLAN 2.4G can't simultaneous transmission at the same time.
- ERP (dBm) = Maximum average output power (dBm) + Antenna gain (dBi) - 2.15 (dB).
- The ERP threshold as the "R must be at least $\lambda/2\pi$ " as per 1.1307 (b)(3)(i)(C) table 1
- Maximum average output power is the manufacturer's declared rated power

3. Conclusion: No SAR is required.