

RF Exposure Evaluation

Applicable Standard

47 CFR § 1.1307(b)(3)(i)(A), 47 CFR §2.1091 Evaluation

The 125 kHz unit is a magnetic-field near-field loop transmitter. The SAR- exclusion formulas in KDB 447498 D01 v06 Section 4.3.1 apply only for frequencies ≥ 100 MHz and are not applicable to 125 kHz.

Per 47 CFR § 1.1307(b)(3)(i)(A), single RF sources with time- averaged maximum available transmit power ≤ 1 mW are exempt from standalone SAR testing regardless of separation distance.

Conclusion:

$$E = \text{EIRP} - 20\log D + 104.8$$

where:

E = electric field strength in dB μ V/m,

EIRP = equivalent isotropic radiated power in dBm

D = specified measurement distance in meters.

125kHz Maximum field strength (dB μ V/m@3m)(E) :71.39dB μ V/m,

EIRP=E-104.8+20logD=**71.39**-104.8+20log3=**-23.87**dBm

$$P(\text{mW}) = 10^{\frac{P(\text{dBm})}{10}}$$

Maximum EIRP(mW)(P):0.004102mW

The measured time- averaged maximum available power of this 125 kHz transmitter is 0.004102mW, which is well below the 1 mW threshold. Far-field EIRP is not used for RF exposure assessment for this near-field loop device.

Conclusion

No standalone SAR measurement is required for this 125 kHz transmitter to meet FCC RF exposure

Signature:



Date: 2026-08-10

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