

FCC §1.1307 (b) & §2.1091 – RF EXPOSURE

Applicable Standard

According to FCC §2.1091 and §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

According to KDB 447498 D04 Interim General RF Exposure Guidance v01, clause 2.1.2 – 1-mW test Exemption:

Per § 1.1307(b)(3)(i)(A), a single RF source is exempt RF device (from the requirement to show data demonstrating compliance to RF exposure limits, as previously mentioned) if the available maximum time-averaged power is no more than 1 mW, regardless of separation distance.

This exemption applies to all operating configurations and exposure conditions, for the frequency range 100 kHz to 100 GHz, regardless of fixed, mobile, or portable device exposure conditions. This is a standalone exemption, and it cannot be applied in conjunction with any other test exemption.

Test Result:

For worst case:

| Mode | Frequency | Maximum ERP | | 1-mW test Exemption |
|------|-----------|-------------|---------|---------------------|
| | (MHz) | (dBm) | (mW) | |
| NFC | 13.56 | -45.39 | 0.00003 | Yes |

Note 1: use the maximum E-field strength(51.96dBuV/m) for the RF exposure evaluation

Note 2: $E(\text{dBuV/m}) = \text{EIRP}(\text{dBm}) - 95.2$ for distance 3m
so the $\text{EIRP} = 51.96\text{dBuV/m} - 95.2 = -43.24\text{dBm}$

Note 3: $\text{EIRP}(\text{dBm}) = \text{ERP} + 2.15\text{dBi}$
so the $\text{ERP} = -43.24\text{dBm} - 2.15\text{dBi} = -45.39\text{dBm}$

Result: Compliant.