

RF Exposure

FCC §1.1310

Performance Criterion (Limits): $f_{\text{MHz}}/1500 \text{ mW/cm}^2$
At 908.4 MHz, the limit is 0.6056 mW/cm^2
At 916 MHz, the limit is 0.6107 mW/cm^2

Evaluation Results: Complies

Details: The maximum permissible exposure (MPE) is predicted by using the following equation:

$$S = \text{EIRP}/4\pi R^2$$

where: S = power density (in appropriate units, e.g. mW/cm^2)
EIRP = $(\text{Exd})^2/30$ transmitter output power in watts
E = electric field strength in V/m
d = measurement distance in m
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For: E = 92.76 dBuV/m (from Intertek test report 104271913LAX-001) = 43451 uV/m = 0.04345 V/m,
d = 3 m,

$$\text{EIRP} = (0.04345 \times 3)^2/30 = 0.0005664 \text{ W} = 0.5664 \text{ mW}$$

For: EIRP = 0.5664 mW and R = 20 cm

$$S = 0.5664 / (4 \times \pi \times 20^2) = \mathbf{0.0001 \text{ mW/cm}^2}$$

ISED RSS-102 Issue 5 §2.5.2

Performance Criterion (Exemption Limits): $1.31 \times 10^{-2} f^{0.6834} \text{ W}$ ($300 \text{ MHz} \leq f < 6 \text{ GHz}$), f is in MHz.
At 908.4 MHz, $1.31 \times 10^{-2} f^{0.6834} \text{ W} = 1.37 \text{ W}$
At 916 MHz, $1.31 \times 10^{-2} f^{0.6834} \text{ W} = 1.39 \text{ W}$

Evaluation Results: Complies

Details: Since the worst-case e.i.r.p. (at 916 MHz) is 0.0005664 W, which is much lower than the exemption limit of 1.39 W, RF exposure evaluation is exempted.