

FCC ID: 2A86P-SNXGA9

RF exposure evaluation

According to §15.247(i), §1.1307 (b) and KDB447498, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission's guidance.

The SAR-based exemption formula of §1.1307(b)(3)(i)(B), repeated here as Formula (B.2), applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold P_{th} (mW).

This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive). P_{th} is given by Formula (B.2).

$$P_{th} \text{ (mW)} = \begin{cases} ERP_{20 \text{ cm}} (d/20 \text{ cm})^x & d \leq 20 \text{ cm} \\ ERP_{20 \text{ cm}} & 20 \text{ cm} < d \leq 40 \text{ cm} \end{cases} \quad (\text{B.2})$$

where

$$x = -\log_{10} \left(\frac{60}{ERP_{20 \text{ cm}} \sqrt{f}} \right)$$

f is in GHz, d is the separation distance (cm), and $ERP_{20 \text{ cm}}$ is per Formula (B.1).

When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion. We use 5mm as separation distance to calculate

NFC

Main Power: $78.42 \text{ dB } \mu \text{V/m} = 78.42 - 95.20 = -16.78 \text{ dBm}$

Antenna Gain: 0 dBi

Conducted Transmit Power Max: $= -16.78 \text{ dBm} = 0.02 \text{ mW}$

EIRP $= -16.78 \text{ dBm}$

ERP $= -16.78 \text{ dBm}$

The maximum ERP power specified is $-16.78 \text{ dBm} = 0.02 \text{ mW}$

BT

Antenna Gain: 1.78 dBi

Conducted Transmit Power Max: $= -1.99 \text{ dBm} = 0.63 \text{ mW}$

EIRP $= -1.99 \text{ dBm} + 1.78 \text{ dBi} = -0.21 \text{ dBm}$

ERP $= -0.21 - 2.15 \text{ dB} = -2.36 \text{ dBm}$

The maximum ERP power specified is $-2.36 \text{ dBm} = 0.58 \text{ mW}$



The source- based time-averaging conducted output power
=0.58* Duty factor mW (where Duty Factor ≤ 1)
=0.58mW

The SAR Exclusion Threshold Level:

$$P_{th}(mW) = ERP_{20cm} * (d/20cm)^x \quad (X=)$$
$$= 2.72 \text{ mW}$$

Since the source-based time-averaging conducted output power is well below the SAR low threshold level, so the EUT is considered to comply with SAR requirement without testing.

$$-\log_{10}\left(\frac{60}{ERP_{20 \text{ cm}}\sqrt{f}}\right)$$