

4.5 Radio Frequency Exposure (Hazard) Information

Testing was carried out in accordance with the requirements of FCC Part 15.247(b)(5)

Spread spectrum transmitters operating in the 2400 - 2483.5 MHz band are required to be operated in a manner that ensures that the public is not exposed to RF energy levels in accordance with CFR 47, Section 1.1307(b)(1).

In accordance with this section and also section 2.1091 this device has been defined as a mobile device whereby a distance of 20 cm can normally be maintained between the user and the device.

In accordance with Section 1.1310, the Maximum Permissible Exposure (MPE) limit for the General Population/Uncontrolled Exposure of 1.0 has been applied, i.e 1mW/cm².

The maximum distance from the antenna at which the MPE is met or exceeded is calculated from the equation relating field strength in V/m, transmit power in watts, transmit antenna gain and separation distance in metres:

$$E, \text{ V/m} = (\sqrt{30 * P * G}) / d$$

$$\text{Power density, mW/m}^2 = E^2/3770$$

$$\begin{aligned} E \text{ for MPE: } &= E^2/3770 \\ E &= \sqrt{1*3770} \\ E &= 61.4 \text{ V/m} \end{aligned}$$

4.5.1 Rialto – LIFEBOOK 'E' Series

The maximum transmitter power measured = 14.3 dBm or 26.8 milliwatts.

$$\begin{aligned} d &= \sqrt{(30 * P * G) / E} \\ &= \sqrt{(30 * 0.0268) / 61.4} \\ &= 0.0146 \text{ metres or } 1.5 \text{ cm} \end{aligned}$$

Calculation show that this device with described antenna meets the MPE requirements for mobile devices falling below the 20 cm clearance required.

4.5.2 Ginger – LIFEBOOK 'S' Series

The maximum transmitter power measured = 14.7 dBm or 29.4milliwatts.

$$\begin{aligned} d &= \sqrt{(30 * P * G) / E} \\ &= \sqrt{(30 * 0.0294) / 61.4} \\ &= 0.0153 \text{ metres or } 1.5 \text{ cm} \end{aligned}$$

Calculation show that this device with described antenna meets the MPE requirements for mobile devices falling below the 20 cm clearance required.

Conclusion: Complies.



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