

FCC RF EXPOSURE REQUIREMENTS

General Information

FCC ID: G9HFH58R19 5.8GHz (Base)

Device Category:

EUT: Base Unit: Mobile per Part 2.1091

EUT: Handset Unit: Portable per Part 2.1093

Environment: General Population/Uncontrolled Exposure

Operating Configurations and Exposure Conditions:

The EUT base unit is normally operated at least 20 cm away from the human body.

Maximum Permissible Exposure Calculation: Base Unit

The minimum separation distance, for compliance with the limit, is calculated as follows:

$E(V/m) = \frac{\sqrt{30 \times P \times G}}{d}$	$\text{Power density: } P_d(mW/cm^2) = \frac{E^2}{3770}$
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The limit for general population/uncontrolled exposure environment above 1500MHz is 1mW/cm2

Separation Distance	Antenna Gain (dBi)	
	Integral	
Time Division Source Based Average Power EIRP (mW)	(in)	(cm)
488.9 mW	0.0244	0.062

RF Exposure Calculations

1. The limit for general population/uncontrolled environment above 1500 MHz is 1.0 mW/cm².
2. The Field Strength $E \text{ V/M} = \sqrt{1.00 \times 3770} = 61.4$
3. The distance d to achieve the 1.0 mW/cm² power density is as follows

$$d = \frac{\sqrt{30 \times P \times G}}{E}$$

$$d = \frac{\sqrt{30 \times 0.4889 \text{ W} \times 1}}{61.4} = \frac{3.829}{61.4} = 0.062 \text{ cm}$$

RF Field Strength Calculations:

1. F.S. = 126.66 dB μ V/M
2. $F.S. = \text{antilog} \frac{126.66}{20} = \text{antilog} 6.333 = 2.1527 \text{ V/M}$
3. $ERP = \frac{(2.1527)^2 \times 9}{49.2} = 847 \text{ mW}$
4. $EIRP = 847 \times 1.64 = 1389 \text{ mW}$
5. Time Division Source Based Average Power
$$= 1389 \times \frac{0.880 \text{ ms (ontime} \times 4 \text{ slot)}}{10 \text{ ms}} = 1389 \times 0.352 = \underline{488.9 \text{ mW}}$$

Conclusion:

The device complies with the MPE requirements by providing a safe separation distance between the antenna, including any radiating structure, and any persons (human body excluding hands, wrists, ankles, and feet).

Proposed RF Exposure Safety Information to Include in User's Manual:**"RF Radiation Exposure**

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. This transmitter must not be co-located in conjunction with any other antenna or transmitter."