

# **FCC ID: WA5WH46D**

## **RF EXPOSURE EVALUATION**

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency(RF) Radiation as specified in §1.1307(b) § 2.1091(b)

KDB447498 D01 General RF Exposure Guidance v06

Limits for Maximum Permissible Exposure (MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm <sup>2</sup> )	Average Time
<b>(A) Limits for Occupational/Control Exposures</b>				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
<b>(B) Limits for General Population/Uncontrol Exposures</b>				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

$$11.1 \text{ Friis transmission formula: } P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$$

Where

Pd= Power density in mW/cm<sup>2</sup>

Pout=output power to antenna in mW

G= Numeric gain of the antenna relative to isotropic antenna

Pi=3.1416

R= distance between observation point and center of the radiator in cm(20cm)

Pd the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

mW=10^(dBm/10)

## 11.2 Measurement Result

Operation Frequency: 915MHz  
Antenna Type: Spring antenna  
Antenna gain: 2.15dBi,  
R=20cm  
mW=10^(dBm/10)

Transmit power

Frequency (MHz)	EIRP power (dBuV/m)	EIRP power (dBm)	EIRP power (mW)
915	89.91	-5.35	0.29

$$\text{EIRP} = E - 104.8 + 20\log(D)$$

Maximum Permissible Exposure:

Channel Freq. (MHz)	modulation	EIRP power (dBm)	EIRP power (mW)	Tune-up power (dBm)	Max tune-up power (dBm)	Evaluation result (mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
915	FSK	-5.35	0.29	-5±1	-4	0.00013	0.61

### Conclusion:

For the max result :  $0.00013 \leq 0.61$  for 1g SAR, No SAR is required.



Signature:

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