

# **FCC ID: 2AJNF-GW1**

## **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)

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.

$$\text{mW} = 10^{(dBm/10)}$$

## 11.2 Measurement Result

Operation Frequency: OSSS 902~928MHz  
Power density limited:  $902/1500=0.60\text{mW/cm}^2$   
Antenna Type: External Antenna  
Antenna gain: 1.0dBi,  
R=20cm  
 $\text{mW}=10^{(\text{dBm}/10)}$

Channe l Freq. (MHz)	modulation	conducted power (mW)	conducted power (dBm)	Tune-up power (dBm)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
903	0SSS	218.27	23.39	22.5±1	23.5	1.26	0.056118	0.60
915	0SSS	189.67	22.78	22.5±1	23.5	1.26	0.056118	0.60
927.5	0SSS	155.24	21.91	22.5±1	23.5	1.26	0.056118	0.60

### Conclusion:

According to MU739 Maximum Permissible Exposure (MPE) Estimation report, the max evaluation result is  $0.137\text{mW/cm}^2$ , Power density limited:  $824/1500=0.55\text{mW/cm}^2$

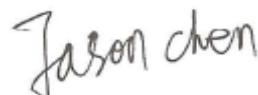
Both of OSSS 902-928MHz and 3G module can transmit simultaneously, the formula of calculated the MPE is:

$\text{CPD1} / \text{LPD1} + \text{CPD2} / \text{LPD2} \dots \text{etc.} < 0.55$

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is  $0.056118/0.60 + 0.137/0.55 = 0.342621$ , which is less than is less than "0.55", So No SAR is required.



Signature:

Date: 2016-9-23

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