

# FCC ID : 2AJGA-CH18A

## 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 Friis transmission formula: $P_d = \frac{P_{out} \cdot G}{4 \cdot \pi \cdot R^2}$

Where

$P_d$  = Power density in mW/cm<sup>2</sup>,  $P_{out}$  = 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 ( $R = 20$ cm)

$P_d$  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.

## 11.2 Measurement Result

### Tune up Power

Mode	2.4G WLAN	5.2G WLAN	5.3G WLAN	5.6G WLAN	5.8G WLAN
802.11b	20±1	N/A	N/A	N/A	N/A
802.11g	23±1	N/A	N/A	N/A	N/A
802.11a	N/A	15.5±1	14.0±1	15.5±1	15±1
802.11n HT20/ac VHT20	24±1	15.5±1	14.0±1	15.5±1	15±1
802.11n HT40	24±1	15.5±1	14.0±1	15.5±1	15±1
802.11ac VHT80	N/A	11±1	11±1	11±1	11±1

The power test data see the RF report

2.4G WIFI Antenna Gain: 3.04dBi, 5G WIFI Antenna Gain: 4.09dBi

Channel Freq. (MHz)	Max tune-up power (dBm)	Antenna Gain Numeric	Evaluation result (mW/cm <sup>2</sup> )	Power density Limits (mW/cm <sup>2</sup> )
2.4G WIFI	25	2.014	0.1267	1
5G WIFI	16.5	2.564	0.0228	1

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