

# RF Exposure Evaluation Result

FCC ID: 2AMYQ-STX5002019

## 1. Requirement

Systems operating under the provisions of FCC 47 CFR section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as mobile device whereby a distance of 0.2m normally can be maintained between the user and the device, and below RF Permissible Exposure limit shall comply with.

Limits for General Population/Uncontrolled Exposure

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; \*Plane-wave equivalent power density

## 2. Calculation Method

$$E(\text{V/m}) = \frac{\sqrt{30 \times P \times G}}{d} \quad \text{Power Density: } S(\text{mW/cm}^2) = \frac{E^2}{377}$$

**E** = Electric field (V/m)

**P** = Peak RF output power (mW)

**G** = EUT Antenna numeric gain (numeric)=

**d** = Separation distance between radiator and human body (m)

The formula can be changed to

We can change the formula to:

$$S = \frac{30 \times P \times G}{377 \times d^2} \quad \text{or, } d = \sqrt{\frac{30 \times P \times G}{377 \times S}}$$

From the peak EUT RF output power, the minimum mobile separation distance,  $d=0.2\text{m}$ , as well as the gain of the used antenna, the RF power density can be obtained.

### 3. Estimation Result

Mode	Frequency (MHz)	PK Output power (dBm)	Output power (mW)	Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm <sup>2</sup> )
11b	2412	14.06	25.46	<b>2</b>	<b>1.585</b>	0.0080
	2437	13.30	21.38	<b>2</b>	<b>1.585</b>	0.0067
	2462	13.52	22.49	<b>2</b>	<b>1.585</b>	0.0071
11g	2412	13.63	23.07	<b>2</b>	<b>1.585</b>	0.0073
	<b>2437</b>	14.09(Max)	<b>25.64</b>	<b>2</b>	<b>1.585</b>	<b>0.0081</b>
	2462	12.65	18.41	<b>2</b>	<b>1.585</b>	0.0058
11n HT20	2412	13.70	23.44	<b>2</b>	<b>1.585</b>	0.0074
	2437	13.99	25.06	<b>2</b>	<b>1.585</b>	0.0079
	2462	12.49	17.74	<b>2</b>	<b>1.585</b>	0.0056

Note: The estimation distance is 20cm

**Conclusion: PASS**