

1. MAXIMUM PERMISSIBLE EXPOSURE (MPE)

1.1 Standard Applicable

According to § 1.1307(b)(1), system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

(a) Limits for Occupational / Controlled Exposure

Frequency range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm ²)	Averaging Times E ² , H ² or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	F/300	6
1500-100000	/	/	5	6

(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 ²)	Averaging Times E ² , H ² 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
1500-100000	/	/	1	30

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

1.2 MPE Calculation Method

$$S = (30 * P * G) / (377 * R^2)$$

S = power density (in appropriate units, e.g., mw/cm²)

P = power input to the antenna (in appropriate units, e.g., mw)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor is normally numeric gain.

R = distance to the center of radiation of the antenna (in appropriate units, e.g., cm)

1.3 MPE Calculation Result

Product Description: AsiaRF Co., Ltd.
 Model No.: AWUHN2408
 FCC ID: TKZAWUHN2408
 Device Category: Mobile Device
 Antenna-to-tissue separation: ≥ 20 cm

According to the KDB-447498, the following RF exposure evaluation shall to demonstrate RF exposure compliance.

Calculation result based on maximum output power mode:

Tx Freq.	Power	Power	Gain	Gain	Mobile	S	Limit	Result
MHz	dBm	mW	dBi	Num	cm	mW/cm ²	mW/cm ²	
802.11b								
2412	20.44	110.66	15.0	31.62	20.00	0.6962	1.0	PASS
2437	20.42	110.15	15.0	31.62	20.00	0.6930	1.0	PASS
2462	20.66	116.41	15.0	31.62	20.00	0.7324	1.0	PASS
802.11n (HT40)								
2422	17.45	55.59	15.0	31.62	20.00	0.3497	1.0	PASS
2437	17.25	53.09	15.0	31.62	20.00	0.3340	1.0	PASS
2452	17.61	57.68	15.0	31.62	20.00	0.3628	1.0	PASS

Therefore, the antenna of this device must be installed to provide a separation distance of at least 20 cm from all persons, to ensure satisfy the requirement of the RF Exposure.