

## 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)

FCC ID: 2AMV5-SK509WN

### EUT Specification

<b>EUT</b>	2-outlet outdoor wifi smart plug
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5825GHz <input type="checkbox"/> Others:
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation) <input type="checkbox"/> Others ____
<b>Exposure classification</b>	<input type="checkbox"/> Occupational/Controlled exposure (S = 5mW/cm <sup>2</sup> ) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm <sup>2</sup> )
<b>Antenna diversity</b>	<input checked="" type="checkbox"/> Single antenna <input type="checkbox"/> Multiple antennas <input type="checkbox"/> Tx diversity <input type="checkbox"/> Rx diversity <input type="checkbox"/> Tx/Rx diversity
<b>Max. output power</b>	19.19 dBm (0.083W)
<b>Antenna gain (Max)</b>	0.5 dBi
<b>Evaluation applied</b>	<input checked="" type="checkbox"/> MPE Evaluation <input type="checkbox"/> SAR Evaluation

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>				
<b>300-1500</b>	--	--	<b>F/300</b>	<b>6</b>
<b>1500-100000</b>	--	--	<b>5</b>	<b>6</b>
<b>(B) Limits for General Population/Uncontrol Exposures</b>				
<b>300-1500</b>	--	--	<b>F/1500</b>	<b>6</b>
<b>1500-100000</b>	--	--	<b>1</b>	<b>30</b>

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

Where

$P_d$  = Power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in Mw

$G$  = gain of antenna in linear scale

$\pi$  = 3.1416

$R$  = distance between observation point and center of the radiator in 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.

## Measurement Result

Operating Mode	Channel Frequency	Measured Power	Tune up tolerance	Max. Tune up Power	Antenna Gain	Power density at 20cm	Power density Limits (mW/cm <sup>2</sup> )
	(MHz)	(dBm)	(dBm)	(dBm)	(dBi)	(mW/ cm <sup>2</sup> )	
802.11b	2412	16.40	16.40 ±1	17.4	0.5	0.0123	1
	2437	16.42	16.42 ±1	17.42	0.5	0.0123	1
	2462	16.88	16.88 ±1	17.88	0.5	0.0137	1
802.11g	2412	18.32	18.32 ±1	19.32	0.5	0.0191	1
	2437	18.50	18.50 ±1	19.5	0.5	0.0199	1
	2462	19.19	19.19 ±1	20.19	0.5	0.0233	1
802.11n(20)	2412	16.78	16.78 ±1	17.78	0.5	0.0134	1
	2437	16.72	16.72 ±1	17.72	0.5	0.0132	1
	2462	17.43	17.43 ±1	18.43	0.5	0.0155	1
802.11n (HT40)	2422	16.39	16.39 ±1	17.39	0.5	0.0122	1
	2437	15.96	15.96 ±1	16.96	0.5	0.0111	1
	2452	16.02	16.02 ±1	17.02	0.5	0.0112	1