

## 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: 2ABC5-WF1036T

### EUT Specification

<b>EUT</b>	<b>Wifi Digital Photo Frame</b>
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.24GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz <input type="checkbox"/> Others: 2.402GHz~2.480GHz (BLE)
<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>	15.28 dBm (0.0337W)
<b>Antenna gain (Max)</b>	1.5 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

### 2.4GHz WiFi:

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	14.70	14.70±1	15.70	1.5	0.0104	1
	2437	15.28	15.28±1	16.28	1.5	0.0119	1
	2462	15.20	15.20±1	16.20	1.5	0.0117	1
802.11g	2412	11.93	11.93±1	12.93	1.5	0.0055	1
	2437	12.47	12.47±1	13.47	1.5	0.0062	1
	2462	12.93	12.93±1	13.93	1.5	0.0069	1
802.11n (HT20)	2412	11.88	11.88±1	12.88	1.5	0.0055	1
	2437	12.36	12.36±1	13.36	1.5	0.0061	1
	2462	12.62	12.62±1	13.62	1.5	0.0065	1
802.11n (HT40)	2422	12.86	12.86±1	13.86	1.5	0.0068	1
	2437	12.78	12.78±1	13.78	1.5	0.0067	1
	2452	13.15	13.15±1	14.15	1.5	0.0073	1