

## 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: WQ8BATS-BT508

### EUT Specification

<b>EUT</b>	<b>Night Light For Kids</b>
<b>Frequency band (Operating)</b>	<input type="checkbox"/> WLAN: 2.412GHz ~ 2.462GHz <input type="checkbox"/> WLAN: 5.18GHz ~ 5.24GHz <input type="checkbox"/> WLAN: 5.745GHz ~ 5.825GHz <input checked="" type="checkbox"/> Others: 2.402GHz~2.480GHz BDR+EDR
<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>	BT: 2.050 dBm (0.0016W)
<b>Antenna gain (Max)</b>	0.6 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: $Pd=(Pout \cdot G) \cdot \frac{1}{4 \cdot \pi \cdot R^2}$

Where

$Pd$ = Power density in  $mW/cm^2$

$Pout$ =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

$Pd$  the limit of MPE,  $1mW/cm^2$ . 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

BDR+EDR:

Operating Mode	Channel Frequency	Measured Power	Tune up tolerance	Max. Tune up Power	Antenna Gain	Power density at 20cm	Power density Limits
	(MHz)	(dBm)	(dBm)	(dBm)	(dBi)	( $mW/cm^2$ )	( $mW/cm^2$ )
BDR	2402	1.818	$1.818 \pm 1$	2.818	0.6	0.0004	1
	2441	1.731	$1.731 \pm 1$	2.731	0.6	0.0004	1
	2480	2.019	$2.019 \pm 1$	3.019	0.6	0.0005	1
EDR	2402	1.884	$1.884 \pm 1$	2.884	0.6	0.0004	1
	2441	1.740	$1.740 \pm 1$	2.740	0.6	0.0004	1
	2480	2.050	$2.050 \pm 1$	3.050	0.6	0.0005	1