

## 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: 2BBH5-SYZ-R2000

### EUT Specification

<b>EUT</b>	portable power station
<b>Frequency band (Operating)</b>	<input checked="" type="checkbox"/> BLE: 2.402GHz ~ 2.480GHz
<b>Device category</b>	<input type="checkbox"/> Portable (<20cm separation) <input checked="" type="checkbox"/> Mobile (>20cm separation)
<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 (peak power)</b>	Bluetooth LE: -2.82dBm, Bluetooth 2LE: -2.82dBm
<b>Antenna gain (Max)</b>	3.08dBi
<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>				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
<b>(B) Limits for General Population/Uncontrol Exposures</b>				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

**Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$**

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 = 20cm

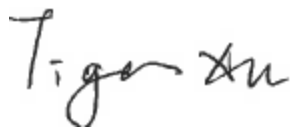
At the limit of MPE, 1mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, we will know the distance where the MPE limit is reached.

### Measurement Result

Mode	Max Measured Power (dBm)	Tune up Power (dBm)	Max tune up power(dBm)	Power Density(mW/cm <sup>2</sup> )	Limit (mW/cm <sup>2</sup> )
BLE 1Mbps	-2.82	-3±1	-2	0.000255	1
BLE 2Mbps	-2.82	-3±1	-2	0.000255	1

The Product unsupported at the same time to Transmitting. According to KDB 447498, and no simultaneous SAR measurement is required.

Signature:



Tiger Xu

Date: 2023-06-19