



Maximum Permissible Exposure Evaluation

FCC ID: 2A7G5-Z2

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)

EUT Specification

Product Name:	Wooboobox
Trade Mark:	/
Model/Type reference:	Z2 box
Listed Model(s):	DPL01 · CA01 · Z1 box · Z3 box · Z4 box · Z5 box · Z6 box · Z7 box · Z8 box · Z9 box
Frequency band (Operating)	WLAN: 2.412GHz ~ 2.462GHz
Device category	<input type="checkbox"/> Portable (<5mm separation) <input type="checkbox"/> Mobile (>20cm separation) <input checked="" type="checkbox"/> Fixed (>20cm separation) <input type="checkbox"/> Others ____
Exposure classification	<input type="checkbox"/> Occupational/Controlled exposure (S=5mW/cm ²) <input checked="" type="checkbox"/> General Population/Uncontrolled exposure (S=1mW/cm ²)
Antenna diversity	<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
Antenna gain (Max)	1.5dBi
Evaluation applied	<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 ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
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/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

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

P_d the limit of MPE 1mW/cm². 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

Only show the value of the worst antenna.

For 2.4G WIFI:

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
WLAN 802.11b	2462	1.5	16.56	17±1	18	0.19	1.000
WLAN 802.11g	2462	1.5	17.99	17±1	18	0.19	1.000
WLAN 802.11n(HT20)	2412	1.5	17.85	17±1	18	0.19	1.000

For BLE

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
BLE	2402	1.5	3.332	3±1	4	0.001	1.000
	2440	1.5	3.911	3±1	4	0.001	1.000
	2480	1.5	3.222	3±1	4	0.001	1.000

The WLAN and BT can transmit simultaneously

WLAN Power density at 20cm (mW/cm ²)	BT Power density at 20cm (mW/cm ²)	Total Power density at 20cm	Power density Limits
0.19	0.001	0.191	1

Note:

For a more detailed features description, Please refer to the RF Test Report.

So the transmitter complies with the RF exposure requirements and the SAR is not required.

*****THE END*****