CTC Laboratories, Inc.

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Maximum Permissible Exposure Evaluation

FCC ID: PADWF141

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:	ELEMNT BOLTV2
Trade Mark:	N/A
Model/Type reference:	WFCC5
Listed Model(s):	N/A
Frequency band (Operating)	☐BT: 2.402GHz ~ 2.480GHz ☒BLE: 2.402GHz ~ 2.480GHz ☒WLAN: 2.412GHz ~ 2.462GHz ☐RLAN: 5.150GHz ~ 5.250GHz ☐RLAN: 5.250GHz ~ 5.350GHz ☐RLAN: 5.725GHz ~ 5.850GHz ☐Others
Device category	☐Portable (<5mm separation) ☐Mobile (>20cm separation) ☒Fixed (>20cm separation) ☐Others ___
Exposure classification	☐Occupational/Controlled exposure (S=5mW/cm2) ☒General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☒Single antenna ☐Multiple antennas ☐Tx diversity ☐Rx diversity ☐Tx/Rx diversity
Antenna gain (Max)	3.24dBi for BLE 0.11dBi for WIFI
Evaluation applied	☒MPE Evaluation ☐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: Pd=(Pout*G)\(4*pi*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

BLE							
Type	Channel frequency (MHz)	Max. Measured Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
GFSK	2402	1.01	1.0±1	2.0	3.24	0.00066	1
	2440	0.62	0.5±1	1.5	3.24	0.00059	1
	2480	0.30	0.5±1	1.5	3.24	0.00059	1

2.4G WIFI							
Type	Channel frequency (MHz)	Max. Measured Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Antenna Gain (dBi)	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
802.11 b	2412	16.87	17±1	18	0.11	0.01287	1
802.11 g	2462	19.29	19±1	20	0.11	0.02041	1
802.11 n20	2462	18.40	18±1	18	0.11	0.01287	1
802.11 n40	2437	17.28	17±1	18	0.11	0.01287	1

The WLAN or Bluetooth can transmit simultaneously

WLAN Power density at 20cm (mW/cm^2)	BT Power density at 20cm (mW/cm^2)	Total Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
0.02041	0.00066	0.02107	1

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

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