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: Z7C-DS7310

EUT Specification

EUT	Room Display					
Frequency band (Operating)	⊠ WLAN: 2.412GHz ~ 2.462GHz					
	⊠ WLAN: 5.18GHz ~ 5.24GHz					
	⊠ WLAN: 5.745GHz ~ 5.825GHz					
	☑ Others: Bluetooth BLE: 2402-2480MHz					
Device category	☐ Portable (<20cm separation)					
	⊠ Mobile (>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)	BLE: <u>1.8</u> dBi					
	WiFi 2.4G: <u>1.8</u> dBi					
	WiFi 5.2G: 2.2 dBi					
	WiFi 5.8G: 2.2 dBi					
Evaluation applied	⊠ MPE Evaluation					
	☐ SAR Evaluation					

Limits for Maximum Permissible Exposure(MPE)

Frequency	Electric Field	Magnetic Field	Power	Average						
Range(MHz)	Strength(V/m)	Strength(A/m)	Density(mW/cm ²)	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							
1500-100000			1	30						

Friis transmission formula: Pd=(Pout*G)\(4*pi*R2)

Where

Pd= Power density in mW/cm²

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/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.

Max Measurement Result

Operating Mode	Measured Power	tolera	nce	Max. Tune up Power	Gain	Power density at 20cm	Power density Limits (mW/cm2)
	(dBm)	(dBr	n)	(dBm)	(dBi)	(mW/ cm2)	,
BLE	3.45	3.45	±1	4.45	1.8	0.0008	1
WIFI 2.4G	16.79	16.79	±1	17.79	1.8	0.0181	1
WIFI 5.2G	13.43	13.43	±1	14.43	2.2	0.0056	1
WIFI 5.8G	15.08	15.08	±1	16.08	2.2	0.0063	1

Result: No Standalone SAR test is required.