RF Exposure Evaluation

LIMIT

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)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500	-	-	f/300	6
1500–100,000	-	-	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f2)	30
30–300	27.5	0.073	0.2	30
300–1500	-	-	f/1500	30
1500–100,000	-	-	1.0	30

Note: f = frequency in MHz, * = Plane-wave equivalent power density

EVALUATION METHOD

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

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

Function	Frequency (MHz)	Measurement power (dBm)	Tune-up power (dBm)
Bluetooth-EDR	2402~2480	8.96	9.00
Bluetooth-BLE	2402~2480	1.88	2.00

Type	Maximum tune-up power(dBm)	Antenna gain (dBi)	Power Density (mW/cm2)	Limit (mW/cm2)	Result
2402MHz~2480MHz For Bluetooth-EDR	9.00	0.3	0.000106	1.0000	Pass
2402MHz~2480MHz For Bluetooth-BLE	2.00	0.3	0.000021	1.0000	Pass

Note:

1) The exposure evaluation safety distance is 80cm.