

RF EXPOSURE EVALUATION

EUT Specification

EUT	MOTORIZED TREADMILL
Frequency band (Operating)	☐ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐ WLAN: 5.745GHz ~ 5825GHz ☒ Others(Bluetooth: 2.402GHz ~ 2.480GHz)
Device category	☐ Portable (<20cm separation) ☒ Mobile (>20cm separation) ☐ Others ____
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Max. output power	For BT music chip: 1.22dBm(0.88mW); For BT APP chip: -1.958dBm(0.64mW)
Antenna gain	For BT music chip: -0.58dBi; For BT APP chip: -0.58dBi
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)
300-1500	--	--	F/1500
1500-100000	--	--	1

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

For BT Music

Channel	Channel Frequency (MHz)	Max Output power (dBm)	Max Output power (mW)	Power density at 20cm (mW/ cm ²)	Power density Limits (mW/cm ²)
Test mode: GFSK					
Low	2402	-2.651	0.54	0.00009	1
Middle	2441	-3.848	0.41	0.00007	1
High	2480	-3.702	0.43	0.00007	1
Test mode: $\pi/4$ -DQPSK					
Low	2402	-1.958	0.64	0.00011	1
Middle	2441	-3.214	0.48	0.00008	1
High	2480	-3.061	0.49	0.00009	1

For BT APP

Channel	Channel Frequency (MHz)	Max Output power (dBm)	Max Output power (mW)	Power density at 20cm (mW/ cm ²)	Power density Limits (mW/cm ²)
Test mode: GFSK					
Low	2402	-0.216	0.95	0.00017	1
Middle	2441	-1.106	0.78	0.00014	1
High	2480	0.139	1.03	0.00018	1
Test mode: $\pi/4$ -DQPSK					
Low	2402	0.464	1.11	0.00019	1
Middle	2441	-0.369	0.92	0.00016	1
High	2480	0.880	1.22	0.00021	1

When Bluetooth Music and Bluetooth APP work together:

Ratio BT Music	Ratio BT APP	Ratio Total	Ratio Limits
0.00011	0.00021	0.00032	1

According to KDB447498 D01 V06, Compliance with RF Exposure requirement.