RF EXPOSURE EVALUATION

EUT Specification

EUT	Bluetooth Hi-Res Receiver
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	-0.06 dBm (0.986 mW) for EDR,
	0.26 dBm (1.062mW) for BLE
Antenna gain	3.5 dBi
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: 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/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

Channel	Gain	Channel Frequency (MHz)	Max Output power (dBm)	Tolerance	Max Tune-UP power (mW)	Power density at 20cm (mW/ cm^2)	Power density Limits (mW/cm^2)
BDR+EDR: GFSK							
Low	3.5	2402	-3.17	± 0.5	0.541	0.000215	1
Middle	3.5	2441	-2.17	± 0.5	0.681	0.000270	1
High	3.5	2480	-0.70	± 0.5	0.955	0.000379	1
BDR+EDR:π/4-DQPSK							
Low	3.5	2402	-2.55	± 0.5	0.624	0.000248	1
Middle	3.5	2441	-1.59	± 0.5	0.778	0.000309	1
High	3.5	2480	-0.18	± 0.5	1.076	0.000427	1
BDR+EDR:8DPSK							
Low	3.5	2402	-2.42	± 0.5	0.643	0.000255	1
Middle	3.5	2441	-1.49	± 0.5	0.796	0.000316	1
High	3.5	2480	-0.06	± 0.5	1.107	0.000439	1
BLE: GFSK							
Low	3.5	2402	-2.28	± 0.5	0.664	0.000263	1
Middle	3.5	2440	-1.28	± 0.5	0.836	0.000332	1
High	3.5	2480	0.26	± 0.5	1.191	0.000473	1

According to the test result of power density at separation distance 20cm, compliance with RF Exposure requirement.