

RF EXPOSURE EVALUATION

EUT Specification

EUT	Pod Live
Frequency band (Operating)	☐ WLAN: 2.412GHz ~ 2.462GHz ☐ WLAN: 5.18GHz ~ 5.32GHz / 5.50GHz ~ 5.70GHz ☐ WLAN: 5.745GHz ~ 5825GHz ☒ 824MHz ~ 849MHz ☒ 1850MHz ~ 1910MHz ☒ 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 GSM: 29.01dBm(796mW) For BLE: -0.38dBm(0.92mW)
Antenna gain	For GSM: 0dBi; For BLE: 0dBi (declaration by manufacturer)
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: $P_d = (P_{out} * G) / (4 * \pi * R^2)$

Where

P_d = Power density in mW/cm^2

P_{out} = 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

P_d 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

Channel	Channel Frequency (MHz)	Max Output power (dBm)	Tune up power (dBm)	Max Tune-UP power (mW)	Gain	Power density at 20cm (mW/cm^2)	Power density Limits (mW/cm^2)
Test Mode: BLE							
Low	2402	-1.98	-1 ± 1	1	0	$1.99e-4$	1
Middle	2442	-1.04	-1 ± 1	1	0	$1.99e-4$	1
High	2480	-0.38	-1 ± 1	1	0	$1.99e-4$	1
Test Mode: Cellular Band Part 22H							
GSM							
128	824.2	28.68	32 ± 1	1995.26	0	0.397	0.549
189	836.4	28.43	32 ± 1	1995.26	0	0.397	0.549
251	848.8	28.52	32 ± 1	1995.26	0	0.397	0.549
Test Mode: Cellular Band Part 22H							
GPRS							
128	824.2	29.01	32 ± 1	1995.26	0	0.397	0.549
189	836.4	28.37	32 ± 1	1995.26	0	0.397	0.549
251	848.8	28.46	32 ± 1	1995.26	0	0.397	0.549
Test Mode: Cellular Band Part 24H							
GSM							
512	1850.2	24.42	29 ± 1	1000	0	0.199	1
661	1880.0	24.61	29 ± 1	1000	0	0.199	1
810	1909.8	22.58	29 ± 1	1000	0	0.199	1
Test Mode: Cellular Band Part 24H							
GPRS							
512	1850.2	24.60	29 ± 1	1000	0	0.199	1
661	1880.0	24.47	29 ± 1	1000	0	0.199	1
810	1909.8	22.13	29 ± 1	1000	0	0.199	1