

ISED RF Exposure Compliance for Simultaneous Operations

Configurations for Simultaneous Operations

- Configuration 1: BT/BLE + GSM/WCDMA/LTE
Configuration 2: WiFi 2.4 + GSM/WCDMA/LTE
Configuration 3: WiFi 5 + GSM/WCDMA/LTE

Power Density is calculated from Maximum Conducted Power and Antenna Gain at prediction distance
Maximum of Conducted and Radiated Output Power is used in the calculation. Therefore negative values for antenna gain have been replaced by 0 dBi.

RF Function	BT	BLE	WiFi 2.4	WiFi 5GHz	GSM850	GSM1900	WCDMA B2	WCDMA B4	WCDMA B5	LTE B2	LTE B4	LTE B5	LTE B7	LTE B12	LTE B13	LTE B25	LTE B26_1	LTE B26_2	LTE B38	LTE B41	Σ of MPE ratios	
Frequency (MHz)	2402	2402	2412	5180	824.2	1850.2	1852.4	1712.4	826.4	1850.7	1710.7	824.7	2502.5	699.7	779.5	1850.7	814.7	824.7	2572.5	2498.5		
Conducted Output Power (dBm)	7.00	2.00	16.00	12.50	25.81	22.81	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00	25.00		
Tune Up Tolerance (dB)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Output Power (W)	0.005	0.002	0.040	0.018	0.381	0.191	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316	0.316		
Antenna Gain (dBi)	4.40	4.40	4.40	4.50	0.00	3.50	3.50	3.50	0.00	3.50	3.50	0.00	2.00	0.00	0.00	3.50	0.00	0.00	2.00	2.00		
Antenna Gain (Numeric)	2.75	2.75	2.75	2.82	1.00	2.24	2.24	2.24	1.00	2.24	2.24	1.00	1.58	1.00	1.00	2.24	1.00	1.00	1.58	1.58		
Prediction Distance (cm)	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20		
Time Averaged Duty Cycle (%)	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100		
Calculated Power Density (W/m2)	0.027	0.009	0.218	0.100	0.758	0.851	1.408	1.408	0.629	1.408	1.408	0.629	0.997	0.629	0.629	1.408	0.629	0.629	0.997	0.997		
Requirement (W/m2)	5.35	5.35	5.35	9.05	2.58	4.48	4.48	4.25	2.58	4.48	4.25	2.58	5.50	2.30	2.48	4.48	2.56	2.58	5.61	5.50		
MPE ratio (PD/Req.)	0.005	0.002	0.041	0.011	0.294	0.190	0.314	0.331	0.244	0.314	0.331	0.244	0.181	0.274	0.254	0.314	0.246	0.244	0.178	0.181		
Configuration 1 (MPE Ratio)	0.005	0.002			0.294	0.190	0.314	0.331	0.244	0.314	0.331	0.244	0.181	0.274	0.254	0.314	0.246	0.244	0.178	0.181	0.337	
Configuration 2 (MPE Ratio)			0.355		0.294	0.190	0.314	0.331	0.244	0.314	0.331	0.244	0.181	0.274	0.254	0.314	0.246	0.244	0.178	0.181	0.687	
Configuration 3 (MPE Ratio)				0.011	0.294	0.190	0.314	0.331	0.244	0.314	0.331	0.244	0.181	0.274	0.254	0.314	0.246	0.244	0.178	0.181	0.342	
Maximum Power (W)	0.01	0.00	0.11	0.05	0.38	0.43	0.71	0.71	0.32	0.71	0.71	0.32	0.50	0.32	0.32	0.71	0.32	0.32	0.50	0.50	0.82	0.43
Exemption Limit (W)	2.68	2.68	2.68	4.53	1.29	2.24	2.24	2.12	1.29	2.24	2.12	1.29	2.75	1.15	1.24	2.24	1.28	1.29	2.80	2.75	2.12	1.15

Exemption Requirement: Maximum total power is below Exemption Limit
Exposure Requirement: Σ of MPE ratios ≤ 1
Limits for each Tx frequency are from RSS-102 Section 2.5.2.
The maximum value for GSM/WCDMA/LTE and BT/BLE is used in the above calculations.