

ISED RF Exposure Compliance for Simultaneous Operations

Configurations for Simultaneous Operations

Configuration 1: BT/BLE + WCDMA/LTE

Configuration 2: WiFi 2.4 + WCDMA/LTE

Configuration 3: WiFi 5 + 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. Negative values for antenna gain have been set to 0 dBi.

| RF Function                     | BT    | BLE   | WiFi 2.4 | WiFi 5GHz | 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      | 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     | 25.00    | 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    |                 |      |
| Output Power (W)                | 0.005 | 0.002 | 0.040    | 0.018     | 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)              | 2.70  | 2.70  | 2.70     | 2.00      | 3.30     | 3.30     | 2.60     | 3.30   | 3.30   | 2.60   | 2.00   | 2.60    | 2.60    | 3.30    | 2.60      | 2.60      | 2.00    | 2.00    |                 |      |
| Antenna Gain (Numeric)          | 1.86  | 1.86  | 1.86     | 1.58      | 2.14     | 2.14     | 1.82     | 2.14   | 2.14   | 1.82   | 1.58   | 1.82    | 1.82    | 2.14    | 1.82      | 1.82      | 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      |                 |      |
| Time Averaged Duty Cycle (%)    | 100   | 100   | 100      | 100       | 100      | 100      | 100      | 100    | 100    | 100    | 100    | 100     | 100     | 100     | 100       | 100       | 100     | 100     |                 |      |
| Calculated Power Density (W/m2) | 0.02  | 0.01  | 0.15     | 0.06      | 1.35     | 1.35     | 1.14     | 1.35   | 1.35   | 1.14   | 1.00   | 1.14    | 1.14    | 1.35    | 1.14      | 1.14      | 1.00    | 1.00    |                 |      |
| Limit (W/m2)                    | 5.35  | 5.35  | 5.35     | 9.05      | 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.)             | 0.00  | 0.00  | 0.03     | 0.01      | 0.30     | 0.32     | 0.44     | 0.30   | 0.32   | 0.44   | 0.18   | 0.50    | 0.46    | 0.30    | 0.45      | 0.44      | 0.18    | 0.18    |                 |      |
| Configuration 1 (MPE Ratio)     | 0.00  | 0.00  |          |           | 0.30     | 0.32     | 0.44     | 0.30   | 0.32   | 0.44   | 0.18   | 0.50    | 0.46    | 0.30    | 0.45      | 0.44      | 0.18    | 0.18    | 0.50            |      |
| Configuration 2 (MPE Ratio)     |       |       | 0.33     |           | 0.30     | 0.32     | 0.44     | 0.30   | 0.32   | 0.44   | 0.18   | 0.50    | 0.46    | 0.30    | 0.45      | 0.44      | 0.18    | 0.18    | 0.83            |      |
| Configuration 3 (MPE Ratio)     |       |       |          | 0.01      | 0.30     | 0.32     | 0.44     | 0.30   | 0.32   | 0.44   | 0.18   | 0.50    | 0.46    | 0.30    | 0.45      | 0.44      | 0.18    | 0.18    | 0.50            |      |
| Maximum Power (W)               | 0.01  | 0.00  | 0.07     | 0.03      | 0.68     | 0.68     | 0.58     | 0.68   | 0.68   | 0.58   | 0.50   | 0.58    | 0.58    | 0.68    | 0.58      | 0.58      | 0.50    | 0.50    | 0.65            | 0.75 |
| Exemption Limit (W)             | 2.68  | 2.68  | 2.68     | 4.53      | 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    | 1.15            | 2.12 |

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