

# Appendix IV RF Exposure evaluation

**FCC ID: 2BU2K-HL160G**

According to KDB 447498 D01 General RF Exposure Guidance v06 and 47CRF part 2.1093.

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq 50$  mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$$
$$f(\text{GHz}) \text{ is the RF channel transmit frequency in GHz}$$

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison.

**BLE:**

Worse case output power is as below: [2402MHz: 0.64dBm]

Maximum output power is 0.64dBm (1.16mW).

$(1.16\text{mW} / 5\text{mm}) \cdot [\sqrt{2.402(\text{GHz})}] = 0.36 < 3.0$  for 1-g SAR

**2.4G WiFi:**

Worse case output power is as below: [2412MHz: 9.47dBm]

Maximum output power is 9.47dBm (8.85mW).

$(8.85\text{mW} / 5\text{mm}) \cdot [\sqrt{2.412(\text{GHz})}] = 2.75 < 3.0$  for 1-g SAR

**5G WiFi:**

Worse case output power is as below: [5180MHz: 7.74dBm]

Maximum output power is 7.74dBm (5.94mW).

$(5.94\text{mW} / 5\text{mm}) \cdot [\sqrt{5.180(\text{GHz})}] = 2.70 < 3.0$  for 1-g SAR

**5.8G WiFi:**

Worse case output power is as below: [5745MHz: 7.67dBm]

Maximum output power is 7.67dBm (5.85mW).

$(5.85\text{mW} / 5\text{mm}) \cdot [\sqrt{5.745(\text{GHz})}] = 2.80 < 3.0$  for 1-g SAR

Operate simultaneously

BLE:  $(1.16\text{mW} / 5\text{mm}) \cdot [\sqrt{2.402(\text{GHz})} / 7.5] = 0.048 \text{ w/kg}$

2.4GWIFI:  $(8.85\text{mW} / 5\text{mm}) \cdot [\sqrt{2.412(\text{GHz})} / 7.5] = 0.367 \text{ w/kg}$

5.2GWIFI:  $(5.94\text{mW} / 5\text{mm}) \cdot [\sqrt{5.180(\text{GHz})} / 7.5] = 0.361 \text{ w/kg}$

5.8GWIFI:  $(5.85\text{mW} / 5\text{mm}) \cdot [\sqrt{5.745(\text{GHz})} / 7.5] = 0.374 \text{ w/kg}$

If BLE and 2.4G WIFI operate simultaneously, then  $0.048 + 0.367 = 0.415 < 1.6 \text{ w/kg}$

If BLE and 5.2G WIFI operate simultaneously, then  $0.048 + 0.361 = 0.409 < 1.6 \text{ w/kg}$

If BLE and 5.8G WIFI operate simultaneously, then  $0.048 + 0.374 = 0.422 < 1.6 \text{ w/kg}$

Then SAR evaluation is not required.