

## RF exposure evaluation

### § 2.1093 Radiofrequency radiation exposure evaluation: Portable Devices.

According to § 15.247(i) and § 1.1307b(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the commission’s guidance.

The 1-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$  for 1-g SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- When the minimum test separation distance is < 5 mm, a distance of 5 mm according is applied to determine SAR test exclusion.
- The result is rounded to one decimal place for comparison
- For EDR+BDR:

| Channel | Frequency (GHz) | Max. Power (dBm) | Tune up Power (dBm) | Max. Tune up Power (dBm) | Max. Tune up Power (mW) | Test distance (mm) | Result | exclusion thresholds for 1-g SAR |
|---------|-----------------|------------------|---------------------|--------------------------|-------------------------|--------------------|--------|----------------------------------|
| CH 00   | 2.402           | 8.80             | 8±1                 | 9                        | 7.94                    | 5                  | 2.46   | 3.0                              |

- For 2.4G WIFI:

| Channel | Frequency (GHz) | Max. Power (dBm) | Tune up Power (dBm) | Max. Tune up Power (dBm) | Max. Tune up Power (mW) | Test distance (mm) | Result | exclusion thresholds for 1-g SAR |
|---------|-----------------|------------------|---------------------|--------------------------|-------------------------|--------------------|--------|----------------------------------|
| CH 01   | 2.412           | 8.91             | 8±1                 | 9                        | 7.94                    | 5                  | 2.47   | 3.0                              |

- For 5G WIFI:

| Band        | Frequency (GHz) | Max. Power (dBm) | Tune up Power (dBm) | Max. Tune up Power (dBm) | Max. Tune up Power (mW) | Test distance (mm) | Result | exclusion thresholds for 1-g SAR |
|-------------|-----------------|------------------|---------------------|--------------------------|-------------------------|--------------------|--------|----------------------------------|
| UNII-Band 1 | 5.180           | 7.86             | 7±1                 | 8                        | 6.31                    | 5                  | 2.87   | 3.0                              |
| UNII-Band 3 | 5.785           | 6.63             | 6±1                 | 7                        | 5.01                    | 5                  | 2.41   | 3.0                              |

**Result:**

**Base on the calculation value, No SAR measurement is required.**