

**FCC ID:2BTQU-N1****Portable device**

According to §15.247(e)(i) and §1.1307(b)(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 guidelines.

According to KDB447498 D01 General RF Exposure Guidance V06

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

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

- $f(\text{GHz})$  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

When the minimum test separation distance is  $< 5$  mm, a distance of 5 mm is applied to determine SAR test exclusion.

**BLE1M:**

| Modulation | Channel Freq. (GHz) | Conduct ed power (dBm) | Conducte d power (mW) | Tune-up power (dBm) | Max tune-up power (dBm) | Max tune-up power (mW) | Distance (mm) | Result calculatio n | SAR Exclusion threshold | SAR test exclusion |
|------------|---------------------|------------------------|-----------------------|---------------------|-------------------------|------------------------|---------------|---------------------|-------------------------|--------------------|
| GFSK       | 2.402               | 1.856                  | 1.53                  | 1±1                 | 2.00                    | 1.58                   | <5            | 0.49127             | 3.00                    | YES                |
|            | 2.441               | 3.181                  | 2.08                  | 3±1                 | 4.00                    | 2.51                   | <5            | 0.78490             | 3.00                    | YES                |
|            | 2.480               | 1.583                  | 1.44                  | 1±1                 | 2.00                    | 1.58                   | <5            | 0.49918             | 3.00                    | YES                |

**BLE2M:**

| Modulation | Channel Freq. (GHz) | Conduct ed power (dBm) | Conducte d power (mW) | Tune-up power (dBm) | Max tune-up power (dBm) | Max tune-up power (mW) | Distance (mm) | Result calculatio n | SAR Exclusion threshold | SAR test exclusion |
|------------|---------------------|------------------------|-----------------------|---------------------|-------------------------|------------------------|---------------|---------------------|-------------------------|--------------------|
| GFSK       | 2.402               | 0.079                  | 1.02                  | 0±1                 | 1.00                    | 1.26                   | <5            | 0.39023             | 3.00                    | YES                |
|            | 2.441               | 1.104                  | 1.29                  | 1±1                 | 2.00                    | 1.58                   | <5            | 0.49524             | 3.00                    | YES                |
|            | 2.480               | -0.248                 | 0.94                  | 0±1                 | 1.00                    | 1.26                   | <5            | 0.39651             | 3.00                    | YES                |

**2.4GWIFI:**

| Modulation    | Channel Freq. (GHz) | Conduct ed power (dBm) | Conducte d power (mW) | Tune-up power (dBm) | Max tune-up power (dBm) | Max tune-up power (mW) | Distance (mm) | Result calculatio n | SAR Exclusion threshold | SAR test exclusion |
|---------------|---------------------|------------------------|-----------------------|---------------------|-------------------------|------------------------|---------------|---------------------|-------------------------|--------------------|
| 802.11b       | 2.412               | 8.618                  | 7.27                  | 8±1                 | 9.00                    | 7.94                   | <5            | 2.46728             | 3.00                    | YES                |
|               | 2.437               | 7.967                  | 6.26                  | 7±1                 | 8.00                    | 6.31                   | <5            | 1.96996             | 3.00                    | YES                |
|               | 2.462               | 6.831                  | 4.82                  | 6±1                 | 7.00                    | 5.01                   | <5            | 1.57280             | 3.00                    | YES                |
| 802.11g       | 2.412               | 7.991                  | 6.30                  | 7±1                 | 8.00                    | 6.31                   | <5            | 1.95983             | 3.00                    | YES                |
|               | 2.437               | 7.779                  | 6.00                  | 7±1                 | 8.00                    | 6.31                   | <5            | 1.96996             | 3.00                    | YES                |
|               | 2.462               | 6.709                  | 4.69                  | 6±1                 | 7.00                    | 5.01                   | <5            | 1.57280             | 3.00                    | YES                |
| 802.11n(HT20) | 2.412               | 6.262                  | 4.23                  | 6±1                 | 7.00                    | 5.01                   | <5            | 1.55675             | 3.00                    | YES                |
|               | 2.437               | 6.19                   | 4.16                  | 6±1                 | 7.00                    | 5.01                   | <5            | 1.56480             | 3.00                    | YES                |
|               | 2.462               | 6.474                  | 4.44                  | 6±1                 | 7.00                    | 5.01                   | <5            | 1.57280             | 3.00                    | YES                |
| 802.11n(HT40) | 2.422               | 6.097                  | 4.07                  | 6±1                 | 7.00                    | 5.01                   | <5            | 1.55997             | 3.00                    | YES                |
|               | 2.437               | 5.997                  | 3.98                  | 5±1                 | 6.00                    | 3.98                   | <5            | 1.24296             | 3.00                    | YES                |
|               | 2.452               | 7.034                  | 5.05                  | 7±1                 | 8.00                    | 6.31                   | <5            | 1.97601             | 3.00                    | YES                |

**Conclusion:**

For the max result :  $2.46728 \leq \text{FCC Limit } 3.0$  for 1g