



# RF EXPOSURE EVALUATION

|                     |   |                                                                                            |
|---------------------|---|--------------------------------------------------------------------------------------------|
| Product Name        | : | Mechanical Keyboard                                                                        |
| Model Name          | : | Neon75, NB-831, NB-981                                                                     |
| Bluetooth Version   | : | BT BDR and BLE                                                                             |
| Operating frequency | : | 2402-2480MHz                                                                               |
| Numbers of Channel  | : | 40 channels For DTS<br>79 channels for BDR                                                 |
| Antenna Type        | : | PCB Antenna                                                                                |
| Antenna Gain        | : | 1.58 dBi                                                                                   |
| Type of Modulation  | : | GFSK                                                                                       |
| Power supply        | : | Input:120mA/3.7V<br>Li-ion Battery : PL3070107<br>Rated Voltage: 3.7V<br>Capacity: 3000mAh |
| Hardware Version    | : | V02                                                                                        |
| Software Version    | : | V308                                                                                       |

**Model difference:**

Neon75, NB-831, NB-981 all models have the same RF module and Antenna, except for color of enclosure and model No. for trading purpose.



#### Standard Requirement

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 levels in excess of the Commission's guidelines. See KDB 447498 D01 General RF Exposure Guidance v06, section 4. 3. 1.

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

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

- $f(\text{GHz})$  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.

The test exclusions are applicable only when the minimum test separation distance is  $\leq 50\text{mm}$  and for transmission frequencies between 100MHz and 6GHz. When the minimum test separation distance is  $< 5\text{mm}$ , a distance of 5mm is applied to determine SAR test exclusion. Routine SAR evaluation refers to that specifically required by § 2.1093, using measurements or computer simulation. When routine SAR evaluation is not required, portable transmitters with output power greater than the applicable low threshold require SAR evaluation to quality for TCB approval.

| Channel (MHz) | Maximum output power (dBm) | Tune up tolerance (dBm) | Max Tune Up Power (mW) | Distance (mm) | Calculation results | Limit | Operating Mode |
|---------------|----------------------------|-------------------------|------------------------|---------------|---------------------|-------|----------------|
| 2480          | 3.67                       | $3.67 \pm 1$            | 2.930893               | 5             | 0.923115            | 3     | BDR            |
| 2402          | 2.83                       | $2.83 \pm 1$            | 2.415461               | 5             | 0.748715            | 3     | BLE            |

According to KDB 447498, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.

Signature

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