

TEST REPORT

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| Report Number. : | 90677-25-72-25-PP003 | |
| Date of issue..... : | July. 24, 2025 | |
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| Factory's name : | Guangdong Quanjia Group Co., Ltd. | |
| Address..... : | Floor 8, Building A, No. 2, Liheyoke Innovation Base, Zhenlong Town, Huiyang District, Huizhou City | |
| Standard(s) : | §15.247(i), §2.1093 | |
| Test item description : | Tri-mode mechanical keyboard | |
| Trade Mark : | K KAVLORN | |
| Model/Type reference : | KL-67A/KL-67B/KL-67C/KL-67D/KL-67E | |
| FCC ID : | 2BQVO-KL65-68 | |
| Date of receipt of test item..... : | July. 15, 2025 | |
| Date (s) of performance of test: | July. 16, 2025 to July. 23, 2025 | |
| Summary of Test Results : | Pass | |
| The Summary of Test Results based on a technical opinion belongs to the standard(s). | | |
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Modified History

| Report No. | Revision Date | Summary |
|----------------------|----------------|-----------------|
| 90677-25-72-25-PP003 | July. 24, 2025 | Original Report |
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1. EUT Specification

| Characteristics | Description |
|--------------------------------|---|
| Product: | Tri-mode mechanical keyboard |
| Model Number: | KL-67A/KL-67B/KL-67C/KL-67D/KL-67E (All modules are based on the same design principle and PCB. The different models are just to distinguish the colors, Here we choose KL-67A as the test EUT)) |
| Device Type: | Bluetooth V5.2 |
| Data Rate: | DTS: 1Mbps for GFSK modulation |
| Modulation: | DTS: GFSK |
| Operating Frequency Range(s) : | 2402-2480MHz |
| Number of Channels: | BLE: 40 channels 2.4G:32 channels |
| Transmit Power Max: | BLE: -9.18 dBm 2.4G: 93.10dBuV/m@3m |
| Antenna Gain: | 0.11 dBi |
| Power supply: | Input: DC 5V Battery Capacity: 3.7V 3000mAh |
| Evaluation applied: | <input type="checkbox"/> MPE Evaluation <input checked="" type="checkbox"/> SAR Evaluation |

2. Test Requirement:

RF EXPOSURE EVALUATION

According to §15.247(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.

The 1-g and 10-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 and ≤ 7.5 for 10-g extremity SAR,²⁴ where

- $f_{(\text{GHz})}$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation²⁵
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum *test separation distance* is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum *test separation distance* is < 5 mm, a distance of 5 mm according to 5) in section 4.1 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 qualify for TCB approval. One antenna is available for the EUT. The minimum separation distance is 5mm.

3. Measurement Result

| Transmit Frequency (MHz) | Mode | Measured Power (dBm) | Tune up Power (dBm) | Max tune up power(dBm) | Calculation Result | 1-g SAR |
|--------------------------|------|----------------------|---------------------|------------------------|--------------------|---------|
| 2402 | BLE | -9.18 | ±1 | -8.18 | 0.0471321 | 3 |
| 2440 | BLE | -9.65 | ±1 | -8.65 | 0.0426309 | 3 |
| 2480 | BLE | -9.47 | ±1 | -8.47 | 0.0447977 | 3 |

| Transmit Frequency (MHz) | Mode | Field strength (dBuV/m) | Power (dBm) | Tune up Power (dBm) | Max tune up power(dBm) | Calculation Result | 1-g SAR |
|--------------------------|------|-------------------------|-------------|---------------------|------------------------|--------------------|---------|
| 2411 | GFSK | 92.46 | -2.70 | ±1 | -1.70 | 0.2095639 | 3 |
| 2443 | GFSK | 91.69 | -3.47 | ±1 | -2.47 | 0.1768988 | 3 |
| 2473 | GFSK | 93.10 | -2.06 | ±1 | -1.06 | 0.2467492 | 3 |

$$\text{Power} = E_{\text{Meas}} + 20 \log(d_{\text{Meas}}) - 104.7$$

Where

Power is the equivalent isotropically radiated power, in dBm

E_{Meas} is the field strength of the emission at the measurement distance, in dBuV/m

d_{Meas} is the measurement distance, in m. $d_{\text{Meas}} = 3\text{m}$

The two modes cannot work at the same time.

According to KDB 447498 D01 General RF Exposure Guidance v06, no stand-alone required for BT antenna, and no simultaneous SAR measurement is required.

*** End of Report ***

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