

# Safety Human Exposure

## 1.1 Radio Frequency Exposure Compliance

### 1.1.1 Electromagnetic Fields

RESULT:

Pass

#### Test Specification

Test item	:	Wireless Keyboard
Identification / Type No.	:	THZ988, THZ989, THZ993
FCC ID	:	OXM000156
Test standard	:	CFR47 FCC Part 2: Section 2.1093 CFR47 FCC Part 1: Section 1.1310 FCC KDB Publication 447498 v06

#### ➤ Product Classification

This device defined as a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that the RF source's radiating structure(s) is/are within 20 centimeters of the body of the user.

Max 1.80 dBi for Bluetooth

#### ➤ Radio Frequency Exposure Limit

For FCC:

a) For 100 MHz to 6 GHz and *test separation distances*  $\leq$  50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following:

$$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f_{(\text{GHz})}}] \leq 3.0 \text{ for 1-g SAR, and } \leq 7.5 \text{ for 10-g extremity SAR,}^{30} \text{ where}$$

- $f_{(\text{GHz})}$  is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation<sup>31</sup>
- The result is rounded to one decimal place for comparison
- The values 3.0 and 7.5 are referred to as *numeric thresholds* in step b) below

The test exclusions are applicable only when the minimum *test separation distance* is  $\leq$  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 4.1 f) is applied to determine SAR test exclusion.

b) For 100 MHz to 6 GHz and *test separation distances*  $>$  50 mm, the 1-g and 10-g *SAR test exclusion thresholds* are determined by the following (also illustrated in Appendix B):<sup>32</sup>

- 1)  $\{[\text{Power allowed at numeric threshold for 50 mm in step a}]] + [(\text{test separation distance} - 50 \text{ mm}) \cdot (f_{(\text{MHz})}/150)]\} \text{ mW, for 100 MHz to 1500 MHz}$
- 2)  $\{[\text{Power allowed at numeric threshold for 50 mm in step a}]] + [(\text{test separation distance} - 50 \text{ mm}) \cdot 10]\} \text{ mW, for } > 1500 \text{ MHz and } \leq 6 \text{ GHz}$

c) For frequencies below 100 MHz, the following may be considered for SAR test exclusion (also illustrated in Appendix C):<sup>33</sup>

- 1) For *test separation distances*  $> 50$  mm and  $< 200$  mm, the power threshold at the corresponding test separation distance at 100 MHz in step b) is multiplied by  $[1 + \log(100/f_{(\text{MHz})})]$
- 2) For *test separation distances*  $\leq 50$  mm, the power threshold determined by the equation in c) 1) for 50 mm and 100 MHz is multiplied by  $\frac{1}{2}$
- 3) SAR measurement procedures are not established below 100 MHz.

**a) EUT RF Exposure Evaluation standalone operations**

FCC

Mode	Frequency [GHz]	*Measured RF Output Power [dBm]	Antenna Gain [dBi]	RF Output Power [mW]	EIRP [mW]	d [cm]	Limit- $P_{\text{th}}$ [mW]
BLE	2.480	-3.2	1.80	0.48	0.72	0.50	2.72

Note:

1. \*Bluetooth RF Output Power: Refer to CN24NH2P 001

➤ **Conclusion**

The maximum calculations result of above are meet the requirement of Radio Frequency Exposure limit.