

RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	Mymanu CLIK+ Smart Bluetooth Wireless Earbuds
Model Name	CLIK+
FCC ID	2API9-CLIK

2. EVALUATION METHOD

According to 447498 D01 General RF Exposure Guidance v05

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.

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

3. CALCULATION

According to the follow transmitter output power (P_t) formula :

$$P_t = (E \times d)^2 / (30 \times g_t)$$

P_t =transmitter output power in watts

g_t =numeric gain of the transmitting antenna (unitless)

E =electric field strength in V/m

d =measurement distance in meters (m)

For BT

According to the above test data,

$$P_t = 4.88 \text{ dBm} = 3.08 \text{ mW}$$

The result is rounded to one decimal place for comparison

Worse case is as below: [2480MHz -3.0mW output power]

$$(3.08 \text{ mW} / 5 \text{ mm}) \cdot [\sqrt{2.480(\text{GHz})}] = 0.97 < 3.0 \text{ for 1-g SAR}$$

For 10.579MHz

$$E = 45.82 \text{ dBuV/m(Peak)@3m}$$

$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{meters}]) + 104.77$, where E = field strength and d = distance at which field strength limit is specified in the rules

$$P = 45.82 - 95.2 = -49.38 \text{ dBm}$$

$$P_t = 0.000012 \text{ mW}$$

The result for RF exposure evaluation

$$\text{SAR} = 3 \times 0.000012 / 474 = 0.000000076 < 3.0 \text{ for 1-g SAR}$$

Simultaneous transmission between Bluetooth and 10.579MHz transmitter

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 1.6 \text{ W/kg}$, for test separation distances ≤ 50 mm;

where $x = 7.5$ for 1-g SAR and $x = 18.75$ for 10-g SAR.

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4. CONCLUSION

The SAR evaluation is not required.

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