

FCC ID: 2ARYQLIGHTOUCH

According to KDB 447498 D01 General RF Exposure Guidance

At 100 MHz to 6 GHz and for test separation distances ≤ 50 mm, the SAR test exclusion threshold is determined according to the following

$$\left[\frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \times \sqrt{f(\text{GHz})} \right] \leq 3.0$$

1. SAR test exclusion threshold

Frequency: 2 480 MHz (min. separation distances = 0 mm)

Calculation value: $1.125 \text{ (mW)} / 5 \text{ (mm)} \times \sqrt{2.480} = 0.354$
So, Calculation value ≤ 3.0

Remark;

$P_t = (E \times d)^2 / (30 \times g_t)$
 P_t = transmitter output power in watts
 g_t = numeric gain of the transmitting antenna
 E = electric field strength in V/m
 d = measurement distance in meters (m)

$$E_{\text{max}} = 95.74 \text{ dB}\mu\text{V} = 0.061 \text{ V/m}, d = 3 \text{ m}, g_t = 1$$
$$P_t = (E \times d)^2 / (30 \times g_t) = (0.061 \times 3)^2 / (30 \times 1) = 1.125 \text{ (mW)}$$

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

2. Conclusion: No SAR is required.

3. Simultaneous transmission

DC MOTOR BLOCK: the ratio is 0.581 / 10
LED BLOCK: the ratio is 1.040 / 10
LIGHT TOUCH BLOCK: the ratio is 1.125 / 10
MASTER BLOCK: the ratio is 0.635 / 10
PROXIMITY SENSOR BLOCK: the ratio is 0.811 / 10
SOUND BLOCK: the ratio is 0.811 / 10

Confirm the sum result of individual MPEs ratio is ≤ 1.0 ;
 $(0.581 / 10) + (1.040 / 10) + (1.125 / 10) + (0.635 / 10) + (0.811 / 10) + (0.811 / 10)$
 $= 0.500 \leq 1.0$

So this device meets the KDB447498 D01 v06 section 7.2 requirement of "Simultaneous transmission MPE test exclusion"