

RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	2.4G Dongle
Model Number	HW086-1
FCC ID	2AC9LHW086-1

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)

According to the report AGC01680161003FE05,

$$E_{\text{max}} = 88.93 \text{ dBuV/m} = 0.028 \text{ V/m}, d = 3 \text{ m}, g_t = 1$$

$$P_t = (E \times d)^2 / (30 \times g_t) = 0.24 \text{ mW}$$

The result for RF exposure evaluation

$$\text{SAR} = (0.24 \text{ mW} / 5 \text{ mm}) \cdot [\sqrt{2.47(\text{GHz})}] = 0.0754 < 3.0 \text{ for 1-g SAR}$$

4. CONCLUSION

The SAR evaluation is not required.