

RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	Car Head Up Display
Model Name	HUD001
FCC ID	2ATZS-HUD001

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

$$P_t = -1.302 \text{ dBm} = 0.74 \text{ mW}$$

The value of the Maximum output power P_t is referred to the test report of the CFR47 §15.247.

The result for RF exposure evaluation $\text{SAR} = (0.74 \text{ mW} / 5 \text{ mm}) \cdot [\sqrt{2.402 \text{ GHz}}] = 0.23 < 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

$$\text{FM } P_t = -51.31 \text{ dBm} = 0.000007396 \text{ mW}$$

The value of the Maximum output power P_t is referred to the test report of the CFR39 §15.239

The result for RF exposure evaluation $\text{SAR} = (0.000007396 \text{ mW} / 5 \text{ mm}) \cdot [\sqrt{0.0881 \text{ GHz}}] = 0.00000044 < 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

Simultaneous transmission between Bluetooth and FM transmitter:

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

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

$$\text{SAR} = (0.23 + 0.00000044) / 7.5 = 0.031 \text{ W/kg} < 1.6 \text{ W/kg}$$

4. CONCLUSION

The SAR evaluation is not required.