

RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	BLUETOOTH FM TRANSMITTER
Model Name	HY82
FCC ID	2AM87-HY82

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)

BT $P_t=0.28\text{mW}$

The result for RF exposure evaluation

$\text{SAR}=(0.28\text{mW} / 5\text{mm}) \cdot [\sqrt{2.48(\text{GHz})}]= 0.088 < 3.0$ for 1-g SAR

FM $P_t=0.0000092\text{mW}$

The result for RF exposure evaluation

$\text{SAR}=(0.0000092\text{mW} / 5\text{mm}) \cdot [\sqrt{0.1079(\text{GHz})}]= 0.0000006 < 3.0$ for 1-g 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.

$\text{SAR}=(0.088+0.0000006)/7.5=0.012\text{W/kg} < 1.6\text{W/kg}$

4. CONCLUSION

The SAR evaluation is not required.