

RF EXPOSURE EVALUATION

1. PRODUCT INFORMATION

Product Description	USB WiFi Adapter
Test Model	EP-AC1689
Series Model	EP-AC1689GS, EP-AC1689GS-Pro, EP-AC1689S, EP-AC1689GS Pro, EP-1689GS, EP-1689S, EP-1689, EP-1689GS Pro, EH-AC1689, EH-AC1689S, EH-AC1689GS, EH-AC1689GS Pro, EH-1689GS, EH-1689S, EH-1689, EH-1689GS Pro, WT-AC1689, WT-AC1689S, WT-AC1689GS, WT-AC1689GS Pro, WT-1689GS, WT-1689S, WT-1689, WT-1689GS Pro, KW-AC1689, KW-AC1689S, KW-AC1689GS, KW-AC1689GS Pro, KW-1689GS, KW-1689S, KW-1689, KW-1689GS Pro
FCC ID	2AHRDEP-AC1689

2. EVALUATION METHOD

According to 447498 D01 General RF Exposure Guidance v06

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

2.4G WIFI of antenna 1:

$P_t=5.99\text{dBm}=3.97\text{mW}$

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 $\text{SAR}=(3.97\text{mW}/5\text{mm}) \cdot [\sqrt{2.462(\text{GHz})}]=1.25<3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

2.4G WIFI of antenna 2:

$P_t=6.24\text{dBm}=2.74\text{mW}$

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 $\text{SAR}=(2.74\text{mW}/5\text{mm}) \cdot [\sqrt{2.62(\text{GHz})}]=1.32<3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

2.4G WIFI of antenna 1+2:

$P_t=7.48\text{dBm}=5.60\text{mW}$

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 $\text{SAR}=(5.60\text{mW}/5\text{mm}) \cdot [\sqrt{2.462(\text{GHz})}]=1.76<3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

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5G WIFI of antenna 1:

Pt=4.07dBm=2.55mW

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

The result for RF exposure evaluation $SAR=(2.55mW /5mm) \cdot [\sqrt{5.6(GHz)}]= 1.21<3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

5G WIFI of antenna 2:

Pt=4.09dBm=2.74mW

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

The result for RF exposure evaluation $SAR=(2.56mW /5mm) \cdot [\sqrt{5.61(GHz)}]= 1.21<3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

5G WIFI of antenna 1+2:

Pt=7.04dBm=5.06mW

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

The result for RF exposure evaluation $SAR=(5.06mW /5mm) \cdot [\sqrt{5.61(GHz)}]= 2.40<3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR.

Note: The 2.4GHz WIFI and 5GHz band can not transmit simultaneously.

4. CONCLUSION

The SAR evaluation is not required.

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