

## 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  $\leq 50$  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  $\leq 7.5$  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:

Pt=5.99dBm=3.97mW

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

2.4G WIFI of antenna 2:

Pt=6.24dBm=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  $\text{SAR} = (2.74\text{mW} / 5\text{mm}) \cdot [\sqrt{2.62(\text{GHz})}] = 1.32 < 3.0$  for 1-g SAR and  $\leq 7.5$  for 10-g extremity SAR.

2.4G WIFI of antenna 1+2:

Pt=7.48dBm=5.60mW

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