

RF Exposure Exclusion Evaluation

FCC ID: PQRFXE3000-US

Product Description: IEEE802.11n/a/b/g Wireless LAN Access Point Board

Model No: FXE3000-US

The standalone RF exposure exclusion shall be refer to FCC § 1.1307 (b)(3)(i)(B) exemption which device determined the distance from antenna to user/bystander. The formula is

$$P_{th} \text{ (mW)} = ERP_{20cm} (d / 20)^X \quad \text{for distance } d \leq 20\text{cm}$$

$$P_{th} \text{ (mW)} = ERP_{20cm} \quad \text{for distance } 20\text{cm} < d \leq 40\text{cm}$$

where

$$X = -\log_{10} \left(\frac{60}{ERP_{20cm} \sqrt{f}} \right)$$

$$ERP_{20cm} \text{ (mW)} \quad \begin{matrix} 0.3 \text{ GHz} \leq f < 1.5 \text{ GHz: } 2040f \\ 1.5 \text{ GHz} \leq f \leq 6 \text{ GHz: } 3060 \end{matrix}$$

F = GHz

P_{th} (mW) = available maximum time-average power(matched conducted) or effective radiated power, whichever is greater.

D = the separation distance (cm)

Pursuant to KDB 447498 D04 Interim General RF Exposure Guidance v01 exemption assessment as below:

1. Single RF Source:

Mode	Max Output Power (dBm)	Tune-up factor	Tune-up max power (dBm)	Tune-up max power (mW)
WIFI 2.4G	28.2	1.071	28.5	707.95
WIFI 5G	23.5	1.12	24	251.19

Mode	F(MHz)	D=0.2m	P_{th} (mW)	Tune-up max power (mW)	PASS/Fail
WIFI 2.4G	2457	0.2	3060	707.95	PASS
WIFI 5G	5795	0.2	3060	251.19	PASS

Note: D=0.2m is min separation distance.

2. Multiple RF sources:

Multiple RF sources are exempt of formula:

$$\sum_{i=1}^a \frac{P_i}{P_{th,i}} + \sum_{j=1}^b \frac{ERP_j}{ERP_{th,j}} + \sum_{k=1}^c \frac{Evaluated_k}{Exposure Limit_k} \leq 1$$

The sum of the ratios of the above terms shall be less than 1 to compliance to determine simultaneous transmission exposure.

Simultaneously transmission calculation table:

Mode	F(MHz)	D=0.2m	Threshold P_{th} (mW)	EUT of P_{th} (mW)	Ratio	Sum to the ratios	Limit	PASS/Fail
WIFI 2.4G	2457	0.2	3060	707.95	0.23	0.46	1	PASS
WIFI 5G	5795	0.2	3060	251.19	0.08			

3. Conclusion:

The EUT's available maximum time-average power is compliant FCC RF exposure requirement.

Sincerely Yours,



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