

MPE ESTIMATION

FCC ID: 2BFI9-DM1

1, According to §1.1310, Limit for General Population/ Uncontrolled Exposures

Frequency	Power density (mW/ cm ²)	Averaging time(minutes)
300MHz----1.5GHz	F/1500	30
1.5GHz---100GHz	1.0	30

Note: F= Frequency in MHz

433 TX:

EIRP(dBm)=86.49(dBuV/m)-95.2=-8.71(dBm)

2, Estimation Result

	Frequency (MHz)	Max PK Output power(dBm)	Tune Up Power(dBm)	Max Tune Up power(mW)	Antenna Gain(dBi)	Antenna Gain (numerical)	MPE (mW/cm ²)	Limit (mW/cm ²)	Ratios
2.4GWiFi	2437	14.89	14±1(15)	31.623	3.54	2.26	0.01422	1.0	0.01422
5.8GWiFi	5825	10.76	10±1(11)	12.589	3.99	2.51	0.00628	1.0	0.00628
433 TX	433.9054	-8.71	-9±1(-8)	0.158	2	1.58	0.00005	0.2893	0.00017

$$Pd = \frac{P_{out} * G}{4\pi r^2};$$

Note:

Note: The estimation distance is 20cm

Note:

PK Output power= conducted power in mW.

G=power gain of the antenna in the direction of interest relative to an isotropic radiator

R=distance to the center of radiation of the antenna in cm

Conducted power see the test report **HK2511136156-1E/2E/3E**, 2.4GWiFi antenna gain=3.54dBi, 5.8GWiFi antenna gain=3.99dBi, 433 antenna gain=2dBi.

Simultaneously MPE Ratios: 2.4GWiFi + 433 TX = 0.01422 + 0.00017 = 0.01439

2.4GWiFi and 5GWiFi cannot be transmitted at the same time

When the minimum test separation distance is >20 cm, a distance of 20 cm is applied to determine RF Exposure test exclusion. The test exclusion threshold is 0.01439 which is < 1.0, RF Exposure testing is not required.

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