

MPE Calculation

RF feature(Worst Mode)	Frequency range (MHz)		Max Target Power (dBm)	ANT Gain (dBi)	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	Requirement (mW/cm ²)
802.11b	2 412.00	~ 2 462.00	15.50	0.21	15.71	37.240	0.007 5	1.000 0
802.11n(HT40)	5 180.00	~ 5 240.00	10.70	3.25	13.95	24.832	0.005 0	1.000 0
802.11n(HT40)	5 260.00	~ 5 320.00	12.50	2.17	14.67	29.309	0.005 9	1.000 0
802.11n(HT20)	5 500.00	~ 5 720.00	13.00	3.02	16.02	39.995	0.008 0	1.000 0
802.11n(HT20)	5 745.00	~ 5 825.00	13.00	3.21	16.21	41.784	0.008 4	1.000 0
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Note: Please refer to the operation description for Max tune-up power.

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 37.240 / (4 \times 20^2 \times \pi) \\
 &= 0.008 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna(20

▪ Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)		Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm ²)	Averaging time (minutes)
0.3	~ 1.34	614	1.63	*100	30
1.34	~ 30	824/f	2.19 / f	*180 / f ²	30
30	~ 300	27.5	0.073	0.2	30
300	~ 1,500			f / 1500	30
1,500	~ 100,000			1.0	30

Conclusion : The exposure condition of this device is compliant with FCC

MPE Calculation

RF feature(Worst Mode)	Frequency range (MHz)	Normal Target Power(dBm) ^{Note1}	Tolerance (dB)	ANT Gain (dBi) ^{Note2}	Maximum EIRP (dBm)	Maximum EIRP (mW)	Maximum power density (mW/cm ²)	Requirement (mW/cm ²)
NR Band n2(ANT1)	1850.00 ~ 1910.00	23.00	2.70	1.88	27.58	572.797	0.114 0	1.000 0
NR Band n5(ANT2)	824.00 ~ 849.00	23.00	2.70	-0.01	25.69	370.681	0.073 8	0.549 0
NR Band n12(ANT1)	699.00 ~ 716.00	23.00	2.70	-1.15	24.55	285.102	0.056 8	0.466 0
NR Band n66(ANT1)	1710.00 ~ 1780.00	23.00	2.70	0.18	25.88	387.258	0.077 1	1.000 0
NR Band n77(ANT2)	3450.00 ~ 3550.00	22.50	2.50	-1.13	23.87	243.782	0.048 5	1.000 0
NR Band n77(ANT2)	3700.00 ~ 3980.00	22.50	2.50	-2.36	22.64	183.654	0.036 6	1.000 0
Band14(ANT2)	788.00 ~ 798.00	23.00	2.70	-0.54	25.16	328.096	0.065 3	0.525 0
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Note1: Please refer to the operation description for Max tune-up power.

Note2: Path Loss : Loss from conducted point to antenna pad

The EUT will only be used with a separation of 20 centimeters or greater between the antenna and the body of the user.

The MPE sample calculation for this exposure is shown below.

$$\begin{aligned}
 S &= \text{EIRP} / (4 R^2 \pi) \\
 &= 572.797 / (4 \times 20^2 \times \pi) \\
 &= 0.114 \text{ mW/cm}^2
 \end{aligned}$$

- Note

S= Maximum power density(mW/cm²)

EIRP= Equivalent Isotropic Radiated Power(mW)

R= Distance to the center of the radiation of the antenna(20cm)

▪ Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric Field strength (V/m)	Magnetic field strength (A/m)	Power Density (mW/cm ²)	Averaging time (minutes)
0.3 ~ 1.34	614	1.63	*100	30
1.34 ~ 30	824/f	2.19 / f	*180 / f ²	30
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300 ~ 1,500			f / 1500	30
1,500 ~ 100,000			1.0	30

Conclusion : The exposure condition of this device is compliant with FCC

RF Exposure Compliance for simultaneous operations

- Worst case for simultaneous operations
- WLAN(5GHz) + NR Band(n2)

RF feature or mode	802.11n(HT20)	NR Band	-	-	-	-	-	Σ of MPE ratios
Band(Worst case)	5GHz	n2	-	-	-	-	-	
Power Density (mW/cm ²)	0.008 4	0.114 0	-	-	-	-	-	
Requirement (mW/cm ²)	1.000 0	1.000 0	-	-	-	-	-	
MPE ratio (Power Density/Requirement)	0.008 4	0.114 0	-	-	-	-	-	
Worst case(MPE ratio)	0.008 4	0.114 0	-	-	-	-	-	

- Requirement = Σ of MPE ratios ≤ 1

Conclusion : The exposure condition of this device is compliant with FCC rules.