

MPE Calculations(WLAN: 802.11b)

- Frequency range : **2412** MHz ~ **2462** MHz
- Maximum RF output power : **20.51** dBm
- Maximum antenna peak gain : **1.01** dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|---|--|
| <ul style="list-style-type: none">▪ EIRP = P + G= 20.51 dBm + 1.01 dBi= 21.52 dBm | <ul style="list-style-type: none">- NoteP = Power input to the antenna(dBm)G = Power gain of the antenna(dBi) |
|---|--|

- Power density at the specific separation

| | |
|--|--|
| <ul style="list-style-type: none">▪ S = P G / (4 R² π)= 112.460 X 1.262 / (4 X 20² X π)= 0.02823 mW/cm² | <ul style="list-style-type: none">- NoteS = Maximum power dencity(mW/cm²)P = Power input to the antenna(mW)G = Numeric power gain of the antennaR = Distance to the center of the radiation of the antenna(20cm) |
|--|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power desity at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11g)

- Frequency range : 2412 MHz ~ 2642 MHz
- Maximum RF output power : 19.74 dBm
- Maximum antenna peak gain : 1.01 dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|--|--|
| <ul style="list-style-type: none">▪ $EIRP = P + G$ $= 19.74 \text{ dBm} + 1.01 \text{ dBi}$ $= 20.75 \text{ dBm}$ | <ul style="list-style-type: none">- Note P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi) |
|--|--|

- Power density at the specific separation

| | |
|---|--|
| <ul style="list-style-type: none">▪ $S = P G / (4 R^2 \pi)$ $= 94.189 \times 1.262 / (4 \times 20^2 \times \pi)$ $= 0.02364 \text{ mW/cm}^2$ | <ul style="list-style-type: none">- Note S = Maximum power density(mW/cm²) P = Power input to the antenna(mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna(20cm) |
|---|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power density at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11n HT20)

- Frequency range : **2412** MHz ~ **2642** MHz
- Maximum RF output power : **18.47** dBm
- Max. antenna 0 peak gain : **0.99** dBi
- Max antenna 1 peak gain : **1.01** dBi
- Aggregate antenna peak gain : **4.01** dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|---|--|
| <ul style="list-style-type: none"> ▪ EIRP = P + G <li style="padding-left: 20px;">= 18.47 dBm + 4.01 dBi <li style="padding-left: 20px;">= 22.48 dBm | <ul style="list-style-type: none"> - Note <li style="padding-left: 20px;">P = Power input to the antenna(dBm) <li style="padding-left: 20px;">G = Power gain of the antenna(dBi) |
|---|--|

- Power density at the specific separation

| | |
|---|--|
| <ul style="list-style-type: none"> ▪ S = P G / (4 R² π) <li style="padding-left: 20px;">= 70.307 X 2.518 / (4 X 20² X π) <li style="padding-left: 20px;">= 0.03522 mW/cm² | <ul style="list-style-type: none"> - Note <li style="padding-left: 20px;">S = Maximum power dencity(mW/cm²) <li style="padding-left: 20px;">P = Power input to the antenna(mW) <li style="padding-left: 20px;">G = Numeric power gain of the antenna <li style="padding-left: 20px;">R = Distance to the center of the radiation of the antenna(20cm) |
|---|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power desity at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11n HT40)

- Frequency range : 2422 MHz ~ 2452 MHz
- Maximum RF output power : 18.74 dBm
- Max. antenna 0 peak gain : 0.99 dBi
- Max. antenna 1 peak gain : 1.01 dBi
- Aggregate antenna peak gain : 4.01 dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|--|--|
| <ul style="list-style-type: none">▪ $EIRP = P + G$ $= 18.74 \text{ dBm} + 4.01 \text{ dBi}$ $= 22.75 \text{ dBm}$ | <ul style="list-style-type: none">- Note P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi) |
|--|--|

- Power density at the specific separation

| | |
|---|--|
| <ul style="list-style-type: none">▪ $S = P G / (4 R^2 \pi)$ $= 74.817 \times 2.518 / (4 \times 20^2 \times \pi)$ $= 0.03748 \text{ mW/cm}^2$ | <ul style="list-style-type: none">- Note S = Maximum power density(mW/cm²) P = Power input to the antenna(mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna(20cm) |
|---|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power density at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11a)

- Frequency range : 5745 MHz ~ 5825 MHz
- Maximum RF output power : 20.91 dBm
- Maximum antenna peak gain : 0.99 dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|--|---|
| $\begin{aligned} \text{EIRP} &= P + G \\ &= 20.91 \text{ dBm} + 0.99 \text{ dBi} \\ &= 21.9 \text{ dBm} \end{aligned}$ | <p>- Note</p> <p>P = Power input to the antenna(dBm)</p> <p>G = Power gain of the antenna(dBi)</p> |
|--|---|

- Power density at the specific separation

| | |
|--|---|
| $\begin{aligned} S &= P G / (4 R^2 \pi) \\ &= 123.310 \times 1.256 / (4 \times 20^2 \times \pi) \\ &= 0.03081 \text{ mW/cm}^2 \end{aligned}$ | <p>- Note</p> <p>S = Maximum power density(mW/cm²)</p> <p>P = Power input to the antenna(mW)</p> <p>G = Numeric power gain of the antenna</p> <p>R = Distance to the center of the radiation of the antenna(20cm)</p> |
|--|---|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power density at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11n HT20)

- Frequency range : **5745** MHz ~ **5825** MHz
- Maximum RF output power : **23.86** dBm
- Max. antenna 0 peak gain : **0.99** dBi
- Max. antenna 1 peak gain : **0.64** dBi
- Aggregate antenna peak gain : **3.83** dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|---|---|
| <p>▪ EIRP = P + G</p> <p>= 23.86 dBm + 3.83 dBi</p> <p>= 27.689 dBm</p> | <p>- Note</p> <p>P = Power input to the antenna(dBm)</p> <p>G = Power gain of the antenna(dBi)</p> |
|---|---|

- Power density at the specific separation

| | |
|---|---|
| <p>▪ S = $P G / (4 R^2 \pi)$</p> <p>= 243.220 X 2.415 / (4 X 20² X π)</p> <p>= 0.11685 mW/cm²</p> | <p>- Note</p> <p>S = Maximum power dencity(mW/cm²)</p> <p>P = Power input to the antenna(mW)</p> <p>G = Numeric power gain of the antenna</p> <p>R = Distance to the center of the radiation of the antenna(20cm)</p> |
|---|---|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power desity at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11n HT40)

- Frequency range : **5755** MHz ~ **5795** MHz
- Maximum RF output power : **23.83** dBm
- Max. antenna 0 peak gain : **0.99** dBi
- Max. antenna 1 peak gain : **0.64** dBi
- Aggregate antenna peak gain : **3.83** dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|--|--|
| <ul style="list-style-type: none"> ▪ EIRP = P + G <li style="padding-left: 20px;">= 23.83 dBm + 3.83 dBi <li style="padding-left: 20px;">= 27.659 dBm | <ul style="list-style-type: none"> - Note <li style="padding-left: 20px;">P = Power input to the antenna(dBm) <li style="padding-left: 20px;">G = Power gain of the antenna(dBi) |
|--|--|

- Power density at the specific separation

| | |
|--|--|
| <ul style="list-style-type: none"> ▪ S = P G / (4 R² π) <li style="padding-left: 20px;">= 241.546 X 2.415 / (4 X 20² X π) <li style="padding-left: 20px;">= 0.11604 mW/cm² | <ul style="list-style-type: none"> - Note <li style="padding-left: 20px;">S = Maximum power dencity(mW/cm²) <li style="padding-left: 20px;">P = Power input to the antenna(mW) <li style="padding-left: 20px;">G = Numeric power gain of the antenna <li style="padding-left: 20px;">R = Distance to the center of the radiation of the antenna(20cm) |
|--|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power desity at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11a)

- Frequency range : 5180 MHz ~ 5240 MHz
- Maximum RF output power : 13.53 dBm
- Maximum antenna peak gain : 0.56 dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|--|--|
| <ul style="list-style-type: none">▪ $EIRP = P + G$ $= 13.53 \text{ dBm} + 0.56 \text{ dBi}$ $= 14.09 \text{ dBm}$ | <ul style="list-style-type: none">- Note P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi) |
|--|--|

- Power density at the specific separation

| | |
|---|--|
| <ul style="list-style-type: none">▪ $S = P G / (4 R^2 \pi)$ $= 22.542 \times 1.138 / (4 \times 20^2 \times \pi)$ $= 0.00510 \text{ mW/cm}^2$ | <ul style="list-style-type: none">- Note S = Maximum power density(mW/cm²) P = Power input to the antenna(mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna(20cm) |
|---|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power density at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11n HT20)

- Frequency range : 5180 MHz ~ 5240 MHz
- Maximum RF output power : 12.19 dBm
- Max. antenna 0 peak gain : -0.8 dBi
- Max antenna 1 peak gain : 0.56 dBi
- Aggregate antenna peak gain : 2.94 dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|---|--|
| <ul style="list-style-type: none">▪ $EIRP = P + G$ $= 12.19 \text{ dBm} + 2.94 \text{ dBi}$ $= 15.133 \text{ dBm}$ | <ul style="list-style-type: none">- Note P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi) |
|---|--|

- Power density at the specific separation

| | |
|---|--|
| <ul style="list-style-type: none">▪ $S = P G / (4 R^2 \pi)$ $= 16.558 \times 1.969 / (4 \times 20^2 \times \pi)$ $= 0.00649 \text{ mW/cm}^2$ | <ul style="list-style-type: none">- Note S = Maximum power density(mW/cm²) P = Power input to the antenna(mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna(20cm) |
|---|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power density at 20cm does not exceed the 1.0mW/cm².

MPE Calculations(WLAN: 802.11n HT40)

- Frequency range : **5190** MHz ~ **5230** MHz
- Maximum RF output power : **14.68** dBm
- Max. antenna 0 peak gain : **-0.8** dBi
- Max. antenna 1 peak gain : **0.56** dBi
- Aggregate antenna peak gain : **2.94** dBi

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 calculation for this exposure is shown below.

The peak radiated output power (EIRP) is calculated as follows:

| | |
|--|--|
| <ul style="list-style-type: none"> ▪ EIRP = P + G = 14.68 dBm + 2.94 dBi = 17.623 dBm | <ul style="list-style-type: none"> - Note P = Power input to the antenna(dBm) G = Power gain of the antenna(dBi) |
|--|--|

- Power density at the specific separation

| | |
|---|--|
| <ul style="list-style-type: none"> ▪ S = P G / (4 R² π) = 29.376 X 1.969 / (4 X 20² X π) = 0.01151 mW/cm² | <ul style="list-style-type: none"> - Note S = Maximum power dencity(mW/cm²) P = Power input to the antenna(mW) G = Numeric power gain of the antenna R = Distance to the center of the radiation of the antenna(20cm) |
|---|--|

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

The maximum permissible exposure(MPE) of the general population/Uncontrolled for this device is 1.0 mW/cm².
The power desity at 20cm does not exceed the 1.0mW/cm².