MPE CALCULATION (FCC ID: W38-241083Z)

RF Exposure Requirements:	47 CFR §1.1307(b)
RF Radiation Exposure Limits:	47 CFR §1.1310
RF Radiation Exposure Guidelines:	FCC OST/OET Bulletin Number 65
EUT Frequency Band:	2412 - 2462 MHz(WIFI);2405-2480MHz(Zigbee)
Limits for General Population/Uncontrolled Exposure in the band of:	300-1500MHz; 1500 - 100,000 MHz
Power Density Limit:	0.549 mW / cm^2; 1 mW / cm^2;

Equation: $S = PG / 4\pi R^2$ or $R = \sqrt{PG / 4\pi S}$

Where, S = Power Density

P = Power Input to Antenna

G = Antenna Gain

R = distance to the center of radiated antenna

Prediction distance 20cm

1) , When not installing Modular Approved Radio Gobi3000

WLAN(2412-2462MHz): Power = 23.9 dBm , antenna gain = 2.5 dBi , Power density = 0.0869 mW/cm^2

Zigbee(2405-2480MHz): Power = 20.5 dBm, antenna gain = 2.5 dBi , Power density = 0.0398 mW/cm^2

Maximum simultaneous MPE is 0.0869 mW/cm^2+0.0398 mW/cm^2=0.127 x 100% = 12.7% which is less than 100% .

2) , When installing Modular approved Radio Gobi3000

(Below conducted RF power is from Gobi Radio FCC grant , FCC ID: QISGOBI3000 , IC ID : 6369A-GOBI3000)

WLAN(2412-2462MHz): Power = 23.9 dBm , antenna gain = 2.5 dBi , Power density = 0.0869 mW/cm^2

Zigbee(2405-2480MHz): Power = 20.5 dBm, antenna gain = 2.5 dBi , Power density = 0.0398 mW/cm^2

GSM 850/900: Power = 33.04 dBm,Max duty cycle=25%, antenna gain = 1.4 dBi , Power density = 0.138 mW/cm^2

GSM 1800/1900: Power = 30.79 dBm,Max duty cycle=25%, antenna gain = 1.8 dBi , Power density = 0.090 mW/cm^2

CDMA2000 (all bands): Power = 24.59 dBm , antenna gain = 1.8 dBi , Power density = 0.0867 mW/cm^2

UMTS (all bands): Power = 24.52 dBm , antenna gain = 1.8 dBi , Power density = 0.0853 mW/cm^2

Maximum simultaneous MPE is 0.0869 mW/cm^2+0.0398 mW/cm^2+ 0.138 mW/cm^2 / 0.549 =0.378 x 100% = 37.8% which is less than 100% .

The Above Result had shown that Device complied with MPE requirement for both cases.

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