MPE CALCULATION
FCC ID: GU6-RS500GX / IC ID: 1502A-RS500GX

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: 902.75-927.25 MHz, 2402-2480 MHz, 2412 - 2462 MHz; 5180 - 5825MHz

Limits for General Population/Uncontrolled Exposure in the band of: 300-1500 MHz, 1500 - 100,000 MHz

Power Density Limit: 0.62 mW / cm^2 (300-1500 MHz), 1 mW / cm^2 (2402-2480 MHz, 2412 - 2462 MHz; 5180 - 5825MHz)

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

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Prediction distance 20cm

WLAN N radio (2412-2462MHz): Power = 22.38 dBm , antenna gain = 1.0 dBi , Power density = 0.0433 mW/cm^2

WLAN N radio (5180-5825MHz): Power = 22.97 dBm, antenna gain = 1.1 dBi,   Power density = 0.0508 mW/cm^2

UHF RFID (902.75-927.25MHz): Power = 19.85 dBm, Antenna gain= -12dBi, Power density=0.0012 mW/cm^2

RFID and WLAN radio can work simultaneously, so the total ratio of MPE is,

Total Ratio of WLAN radio 2.4GHz + RFID = $(P_{RFID}/0.62)+(P_{WLAN}/1)$ = 0.0433 /1 + 0.0012 /0.62 = 0.0452 < 1

Total Ratio of WLAN radio 5GHz + RFID = $(P_{RFID}/0.62)+(P_{WLAN}/1)$ = 0.0508 /1 + 0.0012 /0.62 = 0.0527 < 1

Maximum MPE is 0.0527, which is less than 1.

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

Completed By : David Zhang

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