

MPE CALCULATION

FCC ID: S9GR750

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|---|---|
| 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: 2.4GHz | 2402-2480MHz, 2412-2462MHz, 2405-2480MHz |
| EUT Frequency Band: 5 GHz | 5180- 5320MHz, 5500-5720MHz, 5745-5825MHz 5210-5290MHz, 5530-5610MHz, 5690-5775MHz |
| Limits for General Population/Uncontrolled Exposure in the band of: | 1500 - 100,000 MHz |
| Power Density Limit: | 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

EUT: R750 Access Point, Model No.: R750

Max Conducted Power for each Band:

| Type | Test mode | Freq (MHz) | CH | Conducted Power (dBm) |
|--------------|-----------|------------|-----|-----------------------|
| Output power | BLE | 2402 | Low | 19.81 |
| | Zigbee | 2405 | Low | 20.24 |

| Type | Test mode | Freq (MHz) | CH | Conducted Power (dBm) | | | | | |
|--------|------------|------------|-----|-----------------------|---------|---------|---------|----------------|-------|
| | | | | Chain 0 | Chain 1 | Chain 2 | Chain 3 | Combined Power | |
| | | | | V | H | V | H | V | H |
| Output | 802.11n-40 | 2437 | Mid | 21.22 | 20.76 | 20.19 | 20.28 | 23.75 | 23.54 |

| Type | Test mode | Freq (MHz) | CH | Conducted Power (dBm) | | | | | |
|--------|-------------|------------|------|-----------------------|---------|---------|---------|----------------|-------|
| | | | | Chain 0 | Chain 1 | Chain 2 | Chain 3 | Combined Power | |
| | | | | V | H | H | V | V | H |
| Output | 802.11ax-40 | 5230 | High | 22.89 | 23.55 | 21.84 | 23.68 | 26.31 | 25.79 |

| Type | CH Freq (MHz) | Conducted Power (dBm) | Antenna Gain (dBi) | Directional Gain (dBi) | Tune-Up Tolerance | Tolerance Max Power (dBm) | Measurement Distance (cm) | Calculated MPE (mW/cm ²) | MPE Limit (mW/cm ²) | Pass/Fail |
|-------------|---------------|-----------------------|--------------------|------------------------|-------------------|---------------------------|---------------------------|--------------------------------------|---------------------------------|-----------|
| 2.4 GHz BLE | 2402 | 19.81 | 2 | 2 | ±1dB | 20.81 | 20 | 0.038 | 1 | Pass |
| 2.4G Zigbee | 2405 | 20.24 | 2 | 2 | ±1dB | 21.24 | 20 | 0.042 | 1 | Pass |
| 2.4G WLAN | 2437 | 23.75 | 2 | 5 | ±1dB | 24.75 | 20 | 0.188 | 1 | Pass |
| 5 GHz WLAN | 5230 | 26.31 | 3 | 6 | ±1dB | 27.31 | 20 | 0.427 | 1 | Pass |

If 2.4GHz and 5GHz transmit simultaneously (BLE or Zigbee + 2.4G WLAN + 5G WLAN).

Max Total MPE= 0.042 + 0.188 + 0.427 = 0.657 mW/cm²

The Above Result had shown that the device complied with MPE requirement at a prediction distance of 20cm.

Deon

Completed By: Deon Dai

SIEMIC, Inc

775 Montague Expressway, Milpitas, CA 95035

Phone: (408) 526-1188

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