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RF Exposure information

The Control Panel, model M25-9 are classified as a mobile device. The Control Panel includes transmitter operating according to FCC part 15 subpart C section 15.247 (FHSS) and WiFi / BT module approval under FCC ID: 2AC7Z-ESPWROOM32UE.

Wi-Fi and the SRD work together.

BT/BLE are not in use with this application

The FCC limit for power density for general population/uncontrolled exposure is f/1500 mW/cm^2 for 300 – 1500 MHz frequency range:

P = 918.5/1500 = 0.612 mW/cm^2

Limit for power density for general population/uncontrolled exposure is 1 mW/cm^2 for 1500 -100000 MHz frequency range.

P = 1 mW/cm^2

The power density **P (mW/cm^2) = P_T / 4π r^2**

P_T is the transmitted power, which is equal to the peak transmitter output power 18.81 dBm plus maximum antenna gain 0 dBi, the maximum equivalent isotropically radiated power EIRP is

P_T = 18.81 dBm + 0 dBi = 18.81 dBm = 76.03 mW.

The power density at 20 cm (minimum safe distance, required for mobile devices), calculated as follows:

Compliance with FCC limit: 76.03 mW / 4π (20 cm) ^{2} = 0.015 mW/cm^2 << 0.612 mW/cm^2

Maximum Wi-Fi conducted power given in FCC ID: 2AC7Z-ESP32WROOM32UE module grant is 261mW (24.17dBm).

The maximum equivalent isotropic radiated power EIRP is:

PT = 24.17dBm + 4dBi = 28.17 dBm = 656.14mW

The power density at 20 cm (minimum safe distance, required for mobile devices), calculated as follows:

656.14mW / 4π (20 cm)^2 **=** 0.13mW/cm^2 << 1mW/cm^2

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Assessment of RF hazard from SRD and WiFi wireless module

S1/limit + S2/limit ≤ 1, i.e
0.015/0.612 + 0.13/1 = 0.024 + 0.13 = 0.155 ≤ 1

The aggregate ratio of transmit power to the relevant power limits does not exceed 100% and meets the safety requirements.