Environmental evaluation and exposure limit according to FCC CFR 47part 1, §1.1307, §1.1310

The Remote Home Care Monitoring System unit is classified as a mobile device. The Home unit includes transmitter operating in 6000 – 8500 MHz according to FCC part 15 subpart F section 15.517 and Wi-Fi / BLE module approval under FCC ID: Z64-WL18SBMOD.
BLE band not in use in Remote Home Care Monitoring System (as indicated in Operational Description on Page 6).

The UWB device and the Wi-Fi module can work together.

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

The power density **$P\ (mW/cm^2) = P_T / 4\pi r^2$**, where

PT is the transmitted power, which is equal to the peak transmitter output power -11.84dBm plus maximum antenna gain 4dBi, the maximum equivalent isotropically radiated power EIRP is

$$PT = -11.84dBm + 13dBi^* = 1.16dBm = 1.306mW$$

-11.84 dBm is the EUT maximum output power with the tune up tolerance,
13 dBi – total antenna gain, which is equal to $G_{ANT} + 10 \log$ (4 Antenna arrays x 2 TX Antenna)

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

$$1.306mW / 4\pi\ (20\ cm)^2 = 0.0026mW/cm^2 << 1mW/cm^2$$

Maximum conducted power given in FCC ID: Z64-WL18SBMOD module grant for band 2412 – 2462 MHz is 243.8mW (23.87dBm).

Limit for power density is 1mW/cm2 for 1500 -100000 MHz for general population/uncontrolled exposure.

The gain of antennas used with the module are 3.2dBi.

The maximum equivalent isotropic radiated power EIRP is for band 26:

$$PT = 23.87dBm + 3.2dBi = 27.07\ dBm = 509.33mW$$

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

$$509.33\text{mW} / 4\pi\ (20\ \text{cm})^2 = 0.10137\text{mW/cm}^2 << 1\text{mW/cm}^2$$

Assessment of RF hazard from UWB and Wi-Fi wireless module

$$S1/\text{limit} + S2/\text{limit} \leq 1, \text{ i.e}$$
$$0.0026/1 + 0.10137/1 = 0.0026 + 0.10137 = 0.10397 \leq 1$$

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