

RF Exposure report

The Equipment Under Test (EUT) is a AX3 operating at 917.00-922.20 MHz. The EUT is powered by rechargeable battery (DC 18V, 10050mAh) which can be charged by 1.8A/115V AC~1.0A/230V AC. For more detailed features description, please refer to the user's manual.

Type of Modulation: GFSK

Antenna Type: Integral Antenna

Antenna Gain: 0 dBi

The nominal radiated output power (e.i.r.p) specified: 12dBm
(Tolerance: +/- 3dB)

The nominal conducted output power specified: 12dBm (Tolerance: +/- 3dB)

The maximum conducted output power for the EUT is 12.78 dBm in the frequency 917.00MHz GFSK mode which is within the production variation.

The minimum conducted output power for the EUT is 12.70 dBm in the frequency 922.20MHz GFSK mode which is within the production variation.

According to FCC Part 2.1091, this unlicensed transmitting device is categorically excluded from routine environmental evaluation for RF exposure prior to equipment authorization or use,

For Maximum Permissible Exposure (MPE) evaluation of the product, the maximum power density at 20 cm from this transmitter shall be less than the General Population / Uncontrolled MPE limit in FCC Part 1.1310.

The maximum EIRP= 12+3=15 dBm=31.6mW

The source-based time averaged maximum radiated power = 31.6 mW x Duty Cycle = 31.6mW

From above data, the exposed power density at a distance (R) of 20cm from the center of radiation of the antenna can be calculated according to OET 65 as follow:

$$= PG/4\pi R^2$$

$$= EIRP/4\pi R^2 = 31.6/ 4\pi R^2$$

$$= 0.006 \text{ mW/cm}^2$$

The MPE limit is 0.6 mW/cm² for general population and uncontrolled exposure in the WiFi frequency range according to FCC Part 1.1310. As the measured power density at 20cm from the transmitter is lower than the MPE limit, the compliance to the MPE limit can be ensured by indicating the minimum 20cm separation between the transmitter's radiating structure and body of the user or nearby persons.

Transmitter Duty Cycle Calculation

The EUT transmit continuously during the test, the duty cycle is 100%.

The following RF exposure statement or similar sentence is proposed to be included in the user manual:

“FCC RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”