STATEMENT ON EXPOSURE TO ELECTROMAGNETIC FIELDS

EQUIPMENT

Type of equipment:	Remote terminal unit with Wi-Fi connectivity
Brand name:	Creowave
Type / Model:	R7-001, R7-002
Manufacturer:	Creowave Oy
By request of:	Creowave Oy

STANDARD

47 CFR §2.1091, 47 CFR §1.1307, 47 CFR §1.1310
RSS-102 Issue 5

CALCULATIONS

Power density calculation is as follows:

$$S = \frac{EIRP}{4\pi \times r^2}$$

Manufacturer's installation guide states that minimum distance between antennas and user is 50 cm.

Highest Measured output power for ZigBee is 19.18 dBm.
Antenna Gain 5 dBi
S = (261,8 mW) / (4π*50cm^2) = 0.0083 mW / cm^2
For three ZigBee transmitter simultaneous operation S = 0.025 mW / cm^2

Conducted output power for Wi-Fi is
2412 – 2462 MHz 19.27dBm
5180 – 5220 MHz 14.43dBm
5745 – 5825 MHz 18.07dBm

Antenna Gain 5 dBi @ 2.4 GHz 8 dBi @ 5.8 GHz

S (2437 MHz) = (267 mW) / (4π*50cm^2) = 0.00825 mW / cm^2
S (5200 MHz) = (175 mW) / (4π*50cm^2) = 0.00557 mW / cm^2
S (5745 MHz) = (406 mW) / (4π*50cm^2) = 0.01292 mW / cm^2

Highest combined power density value for EUT is (0.0129 + 0.025) mW / cm^2= 0.037 mW / cm^2 = 0.37 W / m^2

Limit for General Population/Uncontrolled Exposure according to §1.1310 for power density between 1500 – 100 000 MHz is 1mW / cm^2 and f/1500 mW / cm^2 between 300 – 1500 MHz.

The strictest requirement 1 mW / cm^2 is fulfilled without testing.

RSS-102 Table field strength limit for general public environment is 0.02619 $f^{0.6834}$ W / m^2 between 300 -6000 MHz. = 5.366 W/m^2 at 2412 MHz and 9.047 W/m^2 at 5.18 GHz and 9.71 W/m^2 at 5.745 GHz.

Requirements are fulfilled without testing.

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