

Certification Exhibit

FCC ID: R7PEG1R1S2

FCC Rule Part: 15.247
IC Radio Standards Specification: RSS-210

ACS Report Number: 10-0207.W06

Manufacturer: Cellnet Technology Inc.
Model: Gridstream RF Enhanced Integrated Focus AX

RF Exposure

General Information:

Applicant: Cellnet Technology Inc.
 ACS Project: 10-0207
 Device Category: Mobile
 Environment: General Population/Uncontrolled Exposure
 Simultaneous Transmission: Yes

Technical Information 900 MHz Radio

Antenna Type: Inverted F PCB Antenna
 Antenna Gain: 3.0dBi
 Transmitter Conducted Power: 27.48dBm, 560mW
 Maximum System EIRP: 30.48dBm, 1116.9mW

Technical Information 2.4GHz Zigbee Radio

Antenna Type: Inverted F PCB Antenna
 Antenna Gain: 5dBi
 Transmitter Conducted Power: 21.68dBm, 147mW
 Maximum System EIRP: 22.74dBm, 466mW

MPE Calculation

The Power Density (mW/cm²) is calculated as follows:

$$S = \frac{PG}{4\pi R^2}$$

Where:

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

MPE Calculator for Mobile Equipment Limits for General Population/Uncontrolled Exposure*							
Transmit Frequency (MHz)	Radio Power (dBm)	Power Density Limit (mW/Cm2)	Radio Power (mW)	Antenna Gain (dBi)	Antenna Gain (mW eq.)	Distance (cm)	Power Density (mW/cm^2)
915	27.48	0.61	559.76	3	1.995	20	0.222
2440	21.68	1.00	147.23	5	3.162	20	0.093

Summation of Power Densities – Simultaneous Transmissions

This device contains multiple transmitters which can operate simultaneously and therefore the maximum RF exposure is determined by the summation of power densities. The 900 MHz and 2.4GHz Zigbee radios can operate simultaneously there it is appropriate to include both of those power density values in the summation of power densities.

The maximum power density is calculated by a summation of power densities for each simultaneous transmission combination as follows:

900MHz LAN: 0.222 (mW/cm²)
 2.4GHz Zigbee: 0.093 (mW/cm²)
TOTAL: **0.315 (mW/cm²)**

Installation Guidelines

The installation manual should contain text similar to the following advising how to install the equipment to maintain compliance with the FCC RF exposure requirements:

RF Exposure

In accordance with FCC requirements of human exposure to radio frequency fields, the radiating element shall be installed such that a minimum separation distance of 20 centimeters will be maintained.

Conclusion

This device complies with the MPE requirements by providing adequate separation between the device, any radiating structure and the general population.