Maximum Public Exposure to RF (MPE) CFR 15.247 (i), CFR 1.1310 (e)

The following is MPE results for the module with Neptune Technology Group, Pit Antenna Model: R900 (13586-000)

The maximum exposure level to the public from the RF power of the EUT shall not exceed a power density, **S** as per the respective limits in Table 1 below, at a distance, d, of 20 cm (Mobile condition) from the EUT.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	$*180/f^2$	30
30-300	27.5	0.073	0.2	30
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz * = Plane-wave equivalent power density

Therefore, for:

MPE for 902 MHz – 928 MHz

Limit: 0.61 mW/cm^2
Peak Power (Watts) = 0.998 W
Gain of Transmit Antenna = 1.2 dB_i = 1.3, numeric
d = Distance = 20 cm = 0.2 m

$S = (PG/ 4\pi d^2)$ = EIRP/4A = $0.998(1.3)/4*\pi*0.2*0.2$
$=1.2974/0.5030 = 2.5793$ W/m^2
$= (2.5793\ W/m^2)\ (1m^2/W)\ (0.1\ mW/cm^2)$
$= 0.2579\ mW/cm^2$

which is << less than $S = 0.61\ mW/cm^2$

RF Exposure Evaluation – IC

According to RSS-102, Table 4

At or above 300 MHz and below 6 GHz the Power Density (W/m^2) shall be less than $0.02619 \times f^{0.6834}$ (adjusted for tune up tolerance where applicable), where f= frequency in MHz

For 902-928 MHz Band:

Limit= $0.02619 \times 915^{0.6834} = 2.77$ (W/m^2)

Peak Power (Watts) = 0.998 W
Gain of Transmit Antenna = 1.2 dB_i = 1.3, numeric
d = Distance = 20 cm = 0.2 m

$S = (PG/ 4\pi d^2)$ = EIRP/4A = $0.998(1.3)/4*\pi*0.2*0.2$
$=1.2974/0.5030 = 2.5793$ W/m^2

which is less than $S = 2.77$ (W/m^2)