

US Tech Test Report:  
 FCC ID:  
 IC:  
 Test Report Number:  
 Issue Date:  
 Customer:  
 Model:

FCC Part 15 Class II Permissive Change  
 P2SR900CE  
 4171B-R900CE  
 23-0195  
 October 17, 2023  
 Neptune Technology Group, Inc.  
 R900

## MPE/SAR exclusion/RF Exposure Evaluation

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

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 5 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 <sup>2</sup> )	Averaging time (minutes)
<b>Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*100	30
1.34-30	824/f	2.19/f	*180/f <sup>2</sup>	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

### MPE for 902 MHz – 928 MHz:

Limit: 0.61 mW/cm<sup>2</sup>

Peak Power (dBm) = 18.32 dBm

Peak Power (Watts) = 0.068 W

Gain of Transmit Antenna = +6.0 dBi = 3.98 numeric

d = Distance = 20 cm = 0.2 m

$$\begin{aligned}
 S &= (PG / 4\pi d^2) = \text{EIRP} / 4A = 0.068(3.98) / 4 * \pi * 0.2 * 0.2 \\
 &= 0.2706 / 0.5030 = 0.5380 \text{ W/m}^2 \\
 &= (0.5380 \text{ W/m}^2) (1\text{m}^2/\text{W}) (0.1 \text{ mW/cm}^2) \\
 &= 0.05380 \text{ mW/cm}^2
 \end{aligned}$$

which is << less than S = 0.61 mW/cm<sup>2</sup>

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## 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) = 0.068 W

Gain of Transmit Antenna = +6.0 dBi = 3.98 numeric

d= Distance = 20 cm = 0.2 m

$$S = (PG/4\pi d^2) = EIRP/4A = 0.068(3.98)/4*\pi*0.2*0.2 \\ = 0.2706/0.5030 = 0.5380 W/m^2$$

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

All calculations performed by:

Test Engineer: Gabriel Medina

Date: October 17, 2023

Signature: 