Exposure Evaluation

Equipment: Tire Pressure Measurement System
Model No.: TRS-SENSOR-DRY /B
TRS-SENSOR-DIA /B
FCC ID: RHC-TRS-S200
IC ID: 4719A-TRSS200

FCC RF Exposure Evaluation (MPE) as per FCC §1.1310

Part 1.1310 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)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f^2)	6
30–300	61.4	0.163	1.0	6
300–1500	.....	.....	f/300	6
1500–100,000	.....	.....	5	6
(B) 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
300–1500	.....	.....	f/1500	30
1500–100,000	.....	.....	1.0	30

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

NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

According to the above tables, at the frequency 916.48 MHz:
FCC limit: 916.48 /1500 = 0.61 (mW/cm^2)
RF Exposure Evaluation Distance Calculation

Frequency	Field Strength at 3 m	EIRP		Power Density Limit Allowed (S)	Safe Distance(d)
MHz	dBuV/m	dBm	mW	mW/cm^2	cm
916.48	90.2	-5.03	0.314	0.61	> 0.2

$d=\sqrt{}$ (EIRP/4πS)
Where:
d = Distance to the center of radiation of the antenna (cm) for the allowable Power Density
S = Allowable Power Density Limit (mW/cm2)
EIRP = Equivalent isotopically radiated power (mW)

Conclusion: The EUT is installed inside a tire, with a distance greater than 0.2 cm. Therefore, the EUT meets the requirements.

ISED RF Exposure Evaluation as per RSS-102 issue 6

RSS-102 issue 6 Section 6.6 Field reference level exposure exemption limits
Field reference level (FRL) exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm (i.e. mobile devices), except when the device operates as follows:
• below 20 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1 W (adjusted for tune-up tolerance)
• at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 4.49/f0.5 W (adjusted for tune-up tolerance), where f is in MHz
• at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance)
• at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 1.31×10−2f0.6834 W (adjusted for tune-up tolerance), where f is in MHz
• at or above 6 GHz and the source-based, time-averaged maximum EIRP of the device is equal to or less than 5 W (adjusted for tune-up tolerance)

At the frequency 916.48 MHz:
ISED exposure exemption limit: 0.0131 f^0.6834 = 1.39 W
The EUT EIRP: 0.314 mW (-5.03 dBm)

Conclusion: The EIRP of the EUT is 0.314 mW, which is less than 1390 mW. Therefore, the EUT meets the requirements of the exposure exemption limits.