EUT Description:Tire pressure monitoring system sensor
Test type.:PAN-1515
Series model:PAN-1516,PAN-1517,PAN-1518,PAN-1519
PAN-1520,PAN-1521,PAN-1522,PAN-1523,PAN-1524
PAN-1525,PAN-1526
Equipment type: Mobile equipment
FCC ID:2BL54-PAN

Test procedures according to the technical standards: KDB 447498 D01 V06 andFCC 2.1091.

RF Exposure Evaluation
According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate theenvironrment impact of human exposure to radio frequency(RF) Radiation as specifed in§1.1307(6)

Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(0)Limits for Occupational/Controlled Exposure				
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
300-1,500			f/300	<6
1,500-100,000			5	<6
(d)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.

    F = frequency in MHz
Formula: $Pd = (Pout*G)/(4*\pi*r2)$
Where :
Pd = power density in mW/cm2,
Pout = output power to antenna in mW;
G = gain of antenna in linear scale,
π= 3.14;
R = distance between observation point and center of the radiator in cm
Pd id the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

Measurement Result:

TX frequency range: 433.92MHz

Operation Frequency: 433.92MHz

Type: PCB antenna

R=20cm

EIRP=E-104.7+20logD=65.19-104.7+20log3=-29.97dBm

Maximum Conducted Output Power: -29.97dBm

Frequency(MHz)	EIRP Power (dBm)	EIRP Power (mW)	Turn-up (dBm)	Max Turn-up (dBm)	Evaluation result (mW/cm2)	Power denslty Lmits (mW/cm2)
433.92	-29.97	0.001006	-29± 1	-28	0.0000003	0.28928

Conclusion: the max result : 0.0000003≤ 1.0 compliance with FCC's RF Exposure.

So a SAR test is not required