



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

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

#### RF Exposure Evaluation

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified 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/cm <sup>2</sup> )	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 <sup>2</sup> )	<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 <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.

F = frequency in MHz

Formula:  $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where :

$P_d$  = power density in mW/cm<sup>2</sup>,

$P_{out}$  = output power to antenna in mW;

G = gain of antenna in linear scale,

$\pi$  = 3.14;

R = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. 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.



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Measurement Result:

TX frequency range: 433.92MHz

Operation Frequency: 433.92MHz

Type: Internal antenna

R=20cm

$EIRP = E - 104.7 + 20 \log D = 66.52 - 104.7 + 20 \log 3 = -28.64 \text{ dBm}$

Maximum Conducted Output Power: -28.64dBm

Frequency(MHz)	EIRP Power (dBm)	EIRP Power (mW)	Turn-up (dBm)	Max Turn-up (dBm)	Evaluation result (mW/cm <sup>2</sup> )	Power denslty Limits (mW/cm <sup>2</sup> )
433.92	-28.64	0.0013677	-28± 1	-27	0.0000004	0.28928

Conclusion: the max result :  $0.0000004 \leq 0.28928$  compliance with FCC's RF Exposure.

So a SAR test is not required