

RF Exposure (MPE)

FCC ID: 2AXKD-1EHM44NN

The WWAN Module is integrated inside Telematics Control Unit that is fixed installed inside transportation vehicles. The 4-in-1 antenna is installed to assure a min separation distance of 20 cm to any human body during normal operating conditions. The Limits of Uncontrolled Exposure apply.

TABLE 1 TO §1.1310(e)(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)
(i) 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
(ii) 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

The power density is calculated as follows:

$$S = \frac{EIRP}{4\pi R^2} = \frac{P * G}{4\pi R^2}$$

Frequency MHz	Conducted Output Power P in mW	Antenna Gain G	Distance R in cm	Calculated Power Density S in mW/cm ²	Power Density Limit mW/cm ²
826.4	270	1.58	20	0.085	0.55
1852.4	290	3.98	20	0.233	1.23

Considering simultaneous transmission with the 2.4 GHz WLAN of the host device (FCC ID: 2AXKD-HINOTCU) having a maximum conducted output power of 19.7 dBm and antenna gain of 4 dBi, the total power density has been calculated as follows.

$$S_{Sum} = \sqrt{S_{cellular}^2 + S_{wlan}^2}$$

Power Density S _{cellular} mW/cm ²	Power Density S _{WLAN} mW/cm ²	Total Power Density S _{Sum} mW/cm ²
0.085	0.0185	0.1035
0.233	0.0185	0.2515