



**MDE\_ALPINE\_1206**

To Whom It May Concern:

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**Maximum Permissible Exposure - according to FCC -  
Bluetooth Car Radio – FCC-ID: A269ZUA139**

Dear Sirs,

please find our Maximum Permissible Exposure calculations for the Alpine Bluetooth Car Radio.

Best Regards

A handwritten signature in blue ink that reads 'Imad Hjije'.

Imad Hjije



**Maximum Permissible Exposure**

<i>Frequency range (MHz)</i>	<i>Power density (mW/cm<sup>2</sup>)</i>
400 - 1500	f/2000
1500 - 100000	1 mW/cm <sup>2</sup>

**Calculations 2.4 GHz band**

Maximum peak output power at antenna input terminal: 4.00 dBm

Prediction distance **R**: 20 cm  
Prediction frequency: 2402 MHz

MPE limit **S**: 1 mW/cm<sup>2</sup>

Equation  **$S = P * G / (4\pi R^2)$**

S = power density

P = power input to the antenna

G = power gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

Maximum permissible antenna gain: **-1.32 dBi**

power density reached value: **0.0004 mW/cm<sup>2</sup>**

**Prediction**

The maximum allowed MPE value of 1 mW/cm<sup>2</sup> will not be reached in a distance of 20 cm in case that an antenna with an antenna gain of -1.32 dBi would be used. This means that the power density levels in a distance of 20 cm are in accordance with the FCC regulations as long as the used antenna has a gain below -1.32 dBi.