

AT4 wireless, S.A.U.
Parque Tecnológico de Andalucía
C/ Severo Ochoa 2 & 6
29590 Campanillas
Málaga, España

Date: August 10, 2015

RF exposure analysis for the equipment MIB GLOBAL ENTRY (FCC ID: T8GA475)

1. Introduction

The device **MIB GLOBAL ENTRY** (FCC ID: **T8GA475**) is an Infotainment System with Bluetooth designed for automotive usage and so that to be installed in and used in mobile exposure conditions.

2. MPE Exposure limits

According to § 1.1310 (d) (2) the limits for maximum permissible exposure (MPE), derived from whole-body SAR limits are the shown in the Table 1 titled: "Limits for Maximum Permissible Exposure (MPE) - (B) Limits for General Population/Uncontrolled Exposure".

Frequency range (MHz)	Power density (mW/cm ²)	Averaging time (minutes)
300-1500	f (MHz)/1500	30
1500-100000	1	30

As all the operating frequencies of this device are higher than 1500 MHz, the applicable maximum permissible exposure is: 1 mW/cm².

3. Compliance calculations:

Compliance with FCC maximum permissible exposure limits is demonstrated based on the following calculations:

Calculations to predict power density levels in the far-field of the antenna are made by use of the following equation:

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

where: S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW)

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

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Mode	Frequency Range (MHz)	CONDUCTED OUTPUT POWER (dBm)	CONDUCTED OUTPUT POWER (mW)	Antenna gain (dBi)	Antenna gain (numerical)	Evaluation distance (cm)	Power density (mW/cm ²)	FCC MPE limit (mW/cm ²)
Bluetooth	2402-2480	0,67	1,167	3	2,00	20	0,0005	1,0000

Sincerely,

P.A



By: **Mr. Simon Voegelé**
Title: **Regulatory Compliance Engineer**
Company: **Harman Becker Automotive Systems GmbH**
Telephone: **+49 7249 71 3667**
e-mail: **simon.voegelé@harman.com**