



DEKRA Testing and Certification, S.A.U.

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Date: 19/06/2017

RF exposure analysis for the equipment AIO NAC(FCC ID: ZFW-AIO)

The device AIO NAC (FCC ID: ZFW-AIO) is a car radio integrating Bluetooth and Wi-Fi transmitter-receivers. This device is to be used only for fixed and mobile applications.

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all the persons and must not be co-located or operating in conjunction with any other antenna or transmitter except as under the conditions described KDB 447498 D01 General RF Exposure Guidance.

MPE exposure limits

The table below is excerpted from Table 1B of 47 CFR 1.1310 titled Limits for Maximum Permissible Exposure (MPE), Limits for General Population/Uncontrolled Exposure:

Frequency Range (MHz)	Power density (mW/cm ²)	Averaging time (minutes)
1500 – 100,000	1	30

Compliance analysis

Using the equation $S = \frac{PG}{4\pi R^2}$ to calculate the exposure to electromagnetic fields

- 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)

compliance with FCC MPE limits is demonstrated following the calculations:

Frequency Band	Mode	Frequency Range (MHz)	Maximum conducted output power	Duty cycle (%)	Antenna gain (dBi)	Evaluation distance for compliance with MPE limits (cm)	$S = \frac{PG}{4\pi R^2}$ (mW/cm ²)	FCC MPE limit (mW/cm ²)
2402-2480.5 MHz	Bluetooth - GFSK	2402-2480 MHz	-4,29	100,0%	-1,85	20	0,00005	1,00
2402-2480.5 MHz	Bluetooth - Pi/4-DQPSK	2402-2480 MHz	-4,34	100,0%	-1,85	20	0,00005	1,00
2402-2480.5 MHz	Bluetooth - 8-DPSK	2402-2480 MHz	-4,34	100,0%	-1,85	20	0,00005	1,00
2402-2480.5 MHz	802,11 b	2412-2462 MHz	14,31	100,0%	-1,85	20	0,00351	1,00
2402-2480.5 MHz	802,11 g	2412-2462 MHz	14,11	100,0%	-1,85	20	0,00335	1,00
2402-2480.5 MHz	802,11 n20	2412-2462 MHz	13,87	100,0%	-1,85	20	0,00317	1,00
2402-2480.5 MHz	802,11 n40	2412-2462 MHz	11,99	100,0%	-1,85	20	0,00205	1,00



Yours sincerely,

P.A .

A handwritten signature in blue ink, appearing to read "Alain Sauve". The signature is stylized and written in a cursive-like font.

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