

## Radiofrequency radiation exposure evaluation: mobile devices

RESULT :

Pass

### Test Specification

Test item : Degrii Zima Pro Cordless Robotic Pool Cleaner  
 Identification / Type No. : Zima Pro  
 FCC ID : 2A82N-DCRPCFBP  
 IC : 29487-DCRPCFBP  
 Test standard : CFR47 FCC Part 2: Section 2.1091  
 CFR47 FCC Part 1: Section 1.1310  
 FCC KDB Publication 447498 D04  
 RSS-102 Issue 5 March 2015

### ➤ FCC requirements

**FCC requirement:** Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 20cm normally can be maintained between the user and the device.

### MPE Calculation Method according to KDB 447498 D04

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES  
SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source Frequency			Minimum Distance			Threshold ERP
$f_L$ MHz		$f_H$ MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	—	1.34	159 m	—	35.6 m	$1,920 R^2$
1.34	—	30	35.6 m	—	1.6 m	$3,450 R^2/f^2$
30	—	300	1.6 m	—	159 mm	$3.83 R^2$
300	—	1,500	159 mm	—	31.8 mm	$0.0128 R^2f$
1,500	—	100,000	31.8 mm	—	0.5 mm	$19.2 R^2$

Subscripts L and H are low and high;  $\lambda$  is wavelength.  
 From § 1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.

### a) EUT RF Exposure Evaluation operations, Worst Case mode

Test Mode	Measured Power (dBm)	Antenna Gain (dBi)	Measured e.i.r.p (dBm)	Minimum Separation Distances (cm)	Limit (mW)
2.4GHz band Wi-Fi	17.65	4.6	22.25	20	768

➤ **IC requirements:** The EUT shall comply with the requirement of RSS-102 section 4 Exposure Limits.

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz<sup>6</sup> and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $4.49/f^{0.5}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than  $1.31 \times 10^{-2} f^{0.6834}$  W (adjusted for tune-up tolerance), where  $f$  is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

**a) EUT RF Exposure Evaluation standalone operations, Worst Case mode**

Test Mode	Maximum e.i.r.p (dBm)	Maximum e.i.r.p (W)	Limit (W)
2.4GHz band Wi-Fi	22.25	0.168	2.68

**“RF Radiation Exposure Statement Caution: This Transmitter must be installed to provide a separation distance of at least 20 cm from all persons.”**