

ZODIAC POOL CARE SPOT CHECK REPORT

SCOPE OF WORK

EMC TESTING – POOL CLEANER – MPP CORDLESS

REPORT NUMBER

200041170UDI-EMCc

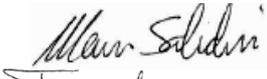
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PAGES

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TEST REPORT ETSI 300 328 / ETSI 301 893 Radio Spectrum Matters	
Report Reference No.	200041170UDI-EMCc
Compiled by (+ signature)	Mauro Sabidussi 
Approved by (+ signature).....	Felice Manarin 
Date of issue	October 01, 2024
Total number of pages	17
Testing Laboratory	Intertek Italia S.p.A.
Address.....	Via Principe di Udine, 114 I - 33030 Campofornido (UD)
Applicant's name	ZODIAC POOL CARE EUROPE SAS
Address.....	ZA LA BALME, BP42 31450 BELBERAUD - FRANCE
Test specification:	
Standards.....	ETSI EN 300 328 v2.2.2
Test procedure	
Non-standard test method.....	N/A
Test item description	Automatic pool cleaner
Trade Mark	Zodiac or Polaris or AquaProducts or AstralPool or Fluidra or Baracuda
Manufacturer	Zodiac Pool Care Europe
Model/Type reference	EAXYZZ
Ratings	Power supply: 100-240 V; 50/60 Hz; 1,5 A Robot: 29,4 V _{DC}
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1.0 Program details

TESTING LOCATION:	
Testing Laboratory:	Intertek Italia S.p.A.
Testing location/ address:	EMC Lab Via Principe di Udine, 114 I - 33030 Campofornido (UD)

Test item description :	Automatic pool cleaner
Trade Mark	Zodiac or Polaris or AquaProducts or AstralPool or Fluidra or Baracuda
Manufacturer :	Zodiac Pool Care Europe
Model/Type reference :	EAXYZZ
Ratings :	Power supply: 100-240 V; 50/60 Hz; 1,5 A Robot: 29,4 V _{DC}
Test item identification	UDI2408011218-002
Protection class :	Class II
Possible test case verdicts:	
- test case does not apply to the test object .:	N/A
- test object does meet the requirement	P (Pass)
- test object doesn't meet the requirement .:	F (Fail)
Statement of the measurement uncertainty:	
The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.	
Testing	
Date of receipt of test item.....:	August 01, 2024
Date (s) of performance of tests.....:	September 09, 2024
General remarks:	
The test results presented in this report relate only to the object tested.	
The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.	
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.	
Throughout this report a comma is used as the decimal separator.	

General product information:

Test results can be extended to all models coded as described below:

EAXYZZ

where

E=ETL,

A=MPP Cordless Series,

Y= any digit from 1 thru 9 to indicate country in which product is to be marketed: 1 =EU, 2 =CH, 3 =UK, 4 =RSA, 5 =AUS, 6 =Japan, 7 =US

ZZ = any two digit number, e.g. 01, 02, 03 to indicate version of product; may be followed by a single letter A thru Z used for marketing purposes.

List of Attachments (including a total number of pages in each attachment):

1.1 Equipment description

The equipment under test is an appliance used to clean the walls and the free water surface of swimming pools. It is composed of two parts: a battery operating robot and a power supply.

The robot is controlled via a selector on the robot rear or via Wi-Fi or Bluetooth connection.



1.2 Equipment marking plate

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective certification bodies that own these marks.



1.3 Equipment used during test:

USE*	PRODUCT TYPE	MANUFACTURER	MODEL	COMMENTS
EUT	Pool cleaner robot	Zodiac Pool Care Europe	EAXYZZ	Intertek id: UDI2408011218-002
Note: * Use = EUT - Equipment Under Test, AE - Auxiliary/Associated Equipment, or SIM - Simulator (Not Subjected to Test)				

1.4 Input / Output ports:

PORT #	NAME	TYPE*	CABLE MAX. >3M	CABLE SHIELDED	COMMENTS
0	Enclosure	N/E	—	—	None
1	Battery charger input	AC	No	No	
2	Battery charger output	DC	No	No	
3	Robot	DC	No	No	Supplied by rechargeable batteries
*Note: AC = AC Power Port DC = DC Power Port N/E = Non-Electrical I/O = Signal Input or Output Port (Not Involved in Process Control) TP = Telecommunication Ports					

1.5 EUT Internal Operating Frequencies:

FREQUENCY	DESCRIPTION
< 108 MHz	Highest frequency on control PCB

1.6 Power Interface:

MODE #	VOLTAGE (V)	CURRENT (A)	POWER (W)	FREQUENCY (DC/AC-Hz)	PHASES (#)	COMMENTS
Rated	100 – 240	1	---	AC-50/60	1	
Rated	29,4	---	---	DC	-	
1	25,4	---	---	DC	-	Battery operating

1.7 EUT Operation Modes:

MODE #	DESCRIPTION
1	Wi-Fi in continuous transmission mode
2	Bluetooth in continuous transmission mode

1.8 EUT Configuration Modes:

MODE #	DESCRIPTION
1	Radio board connected to an adapter board and the adapter board to a PC

1.9 EUT Technical documentation

DOCUMENT	REFERENCE

1.10 Result Summary

ETSI 300 328			
CLAUSE	REQUIREMENT – TEST	RESULT	VERDICT
4.3.2.2	Transmitter output power		P
4.3.2.9	Transmitter unwanted emissions in the spurious domain		P

1.11 Test Results – RF output power

1.11	TEST: EMISSION – RF OUTPUT POWER		VERDICT
			P
Laboratory Parameters:		Required prior to the test	During the test
Ambient Temperature		10 to 40 °C	25 °C
Relative Humidity		10 to 90 %	49 %
Equipment mode		Power interface mode	1
		EUT configurations mode	1
		Operation mode	1, 2

1.11.1 Test Equipment Used

DESCRIPTION	MANUFACTURER	MODEL	IDENTIFIER	CALIBRATION DATE	CALIBRATION DUE
EMI Receiver	Rohde & Schwarz	ESR26	2203	Aug 20, 2024	Aug 20, 2025
Digital Multimeter	Fluke	177	1187	Dec 06, 2023	Dec 06, 2024
Double-Ridge Waveguide Horn Antennas	ETS Lindgren	3117	2243	Dec 06, 2023	Dec 06, 2024
Horn Antenna (freq. 1.0-12.4 GHz)	AEL - Cobham	H-1479	2025	Jul 03, 2024	Jul 03, 2025
Signal Generator	Rohde & Schwarz	SMB100A	2239	Feb 27, 2024	Feb 27, 2025
Thermo-hygrograph	PCE Group	PCE-HT110	1786	Feb 01, 2024	Feb 01, 2025
Thermo-hygrograph	Delta Ohm	HD35EDL14bNTV.E	1600-10	Apr 23, 2024	Apr 23, 2025

1.11.2 Photo of the test setup



1.11.3 Measurement tables / Graphical representation for Emission – RF output power

Wi-Fi

TABULATED RESULTS FOR RF OUTPUT POWER				
Frequency (MHz)	Channel	Measured power (dBm)	Limit (dBm)	Margin (dBm) ¹
2412	1	9,78	20	10,22
2442	6	7,95	20	12,05
2484	14	5,68	20	14,32

Note: ¹Margin = Limit – Level
 Results above refer to the worst Wi-Fi RF Output Power results

Bluetooth

TABULATED RESULTS FOR RF OUTPUT POWER				
Frequency (MHz)	Channel	Measured power (dBm)	Limit (dBm)	Margin (dBm) ¹
2404	0	8,78	20,00	11,22
2436	34	9,61	20,00	10.39
2480	78	9,56	20,00	10.44

Note: ¹Margin = Limit – Level
 Results above refer to the worst Bluetooth RF Output Power results

1.12 Test Results –TRANSMITTER SPURIOUS EMISSIONS

1.12	TEST: TRANSMITTER SPURIOUS EMISSIONS					VERDICT
						P
Laboratory Parameters:		Required prior to the test		During the test		
Ambient Temperature		10 to 40 °C		25 °C		
Relative Humidity		10 to 90 %		49 %		
Fully configured sample scanned over the following frequency range		Frequency range on each side of line		Measurement Point		
		30 MHz – 12,75 GHz		Enclosure		
Equipment mode		Power interface mode		1		
		EUT configurations mode		1		
		Operation mode		1		
Limits EN 300 328			Limits EN 301 893			
Frequency (MHz)	Limit (dBm)		Frequency (MHz)	Limit (dBm)		
	Erp/eirp	Results		Erp/eirp	Results	
30 to 47 ¹	-36	P	30 to 47 ¹	-36	P	
47 to 74 ¹	-54	P	47 to 74 ¹	-54	P	
74 to 87,5 ¹	-36	P	74 to 87,5 ¹	-36	P	
87,5 to 118 ¹	-54	P	87,5 to 118 ¹	-54	P	
118 to 174 ¹	-36	P	118 to 174 ¹	-36	P	
174 to 230 ¹	-54	P	174 to 230 ¹	-54	P	
230 to 470 ¹	-36	P	230 to 470 ¹	-36	P	
470 to 862 ¹	-54	P	470 to 862 ¹	-54	P	
862 to 1000 ¹	-36	P	862 to 1000 ¹	-36	P	
1000 to 12750 ¹	-30	P	1000 to 5150 ¹	-30	P	
---	---	---	5350 to 5470 ¹	-30	P	
---	---	---	5725 to 26000 ¹	-30	P	
Supplementary information:						
¹ At transitional frequencies the lower limit applies.						

1.12.1 Test Equipment Used

DESCRIPTION	MANUFACTURER	MODEL	IDENTIFIER	CALIBRATION DATE	CALIBRATION DUE
EMI Receiver	Rohde & Schwarz	ESR26	2203	Aug 20, 2024	Aug 20, 2025
Digital Multimeter	Fluke	177	1187	Dec 06, 2023	Dec 06, 2024
Double-Ridge Waveguide Horn Antennas	ETS Lindgren	3117	2243	Dec 06, 2023	Dec 06, 2024
Bilog antenna	Chase	CBL6111B	2027	Sep 27, 2023	Sep 27, 2024
Signal Generator	Rohde & Schwarz	SMB100A	2239	Feb 27, 2024	Feb 27, 2025
Thermo-hygrograph	PCE Group	PCE-HT110	1786	Feb 01, 2024	Feb 01, 2025
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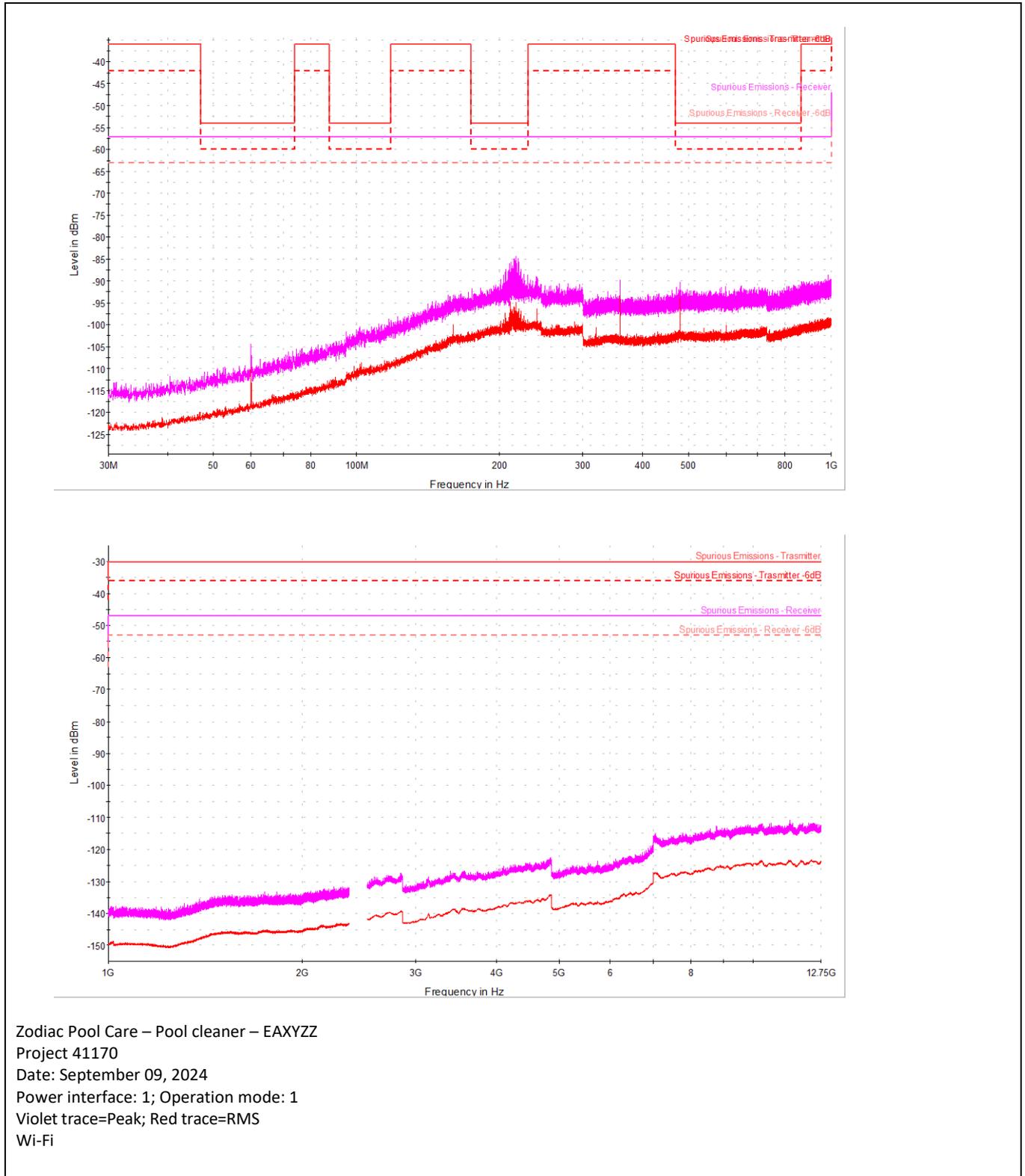
1.12.2 Photo of the test setup



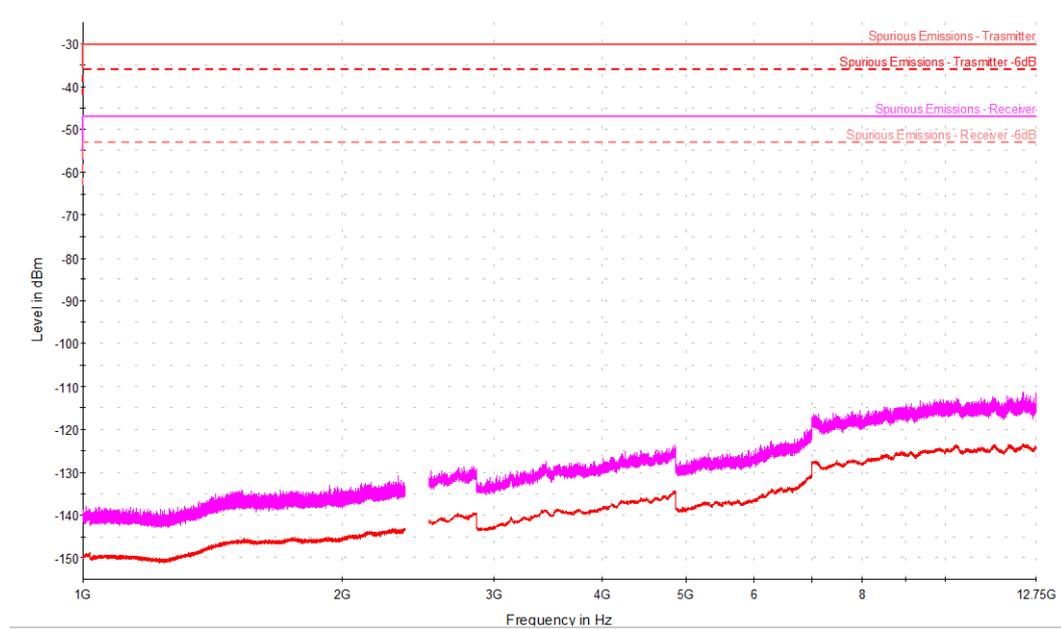
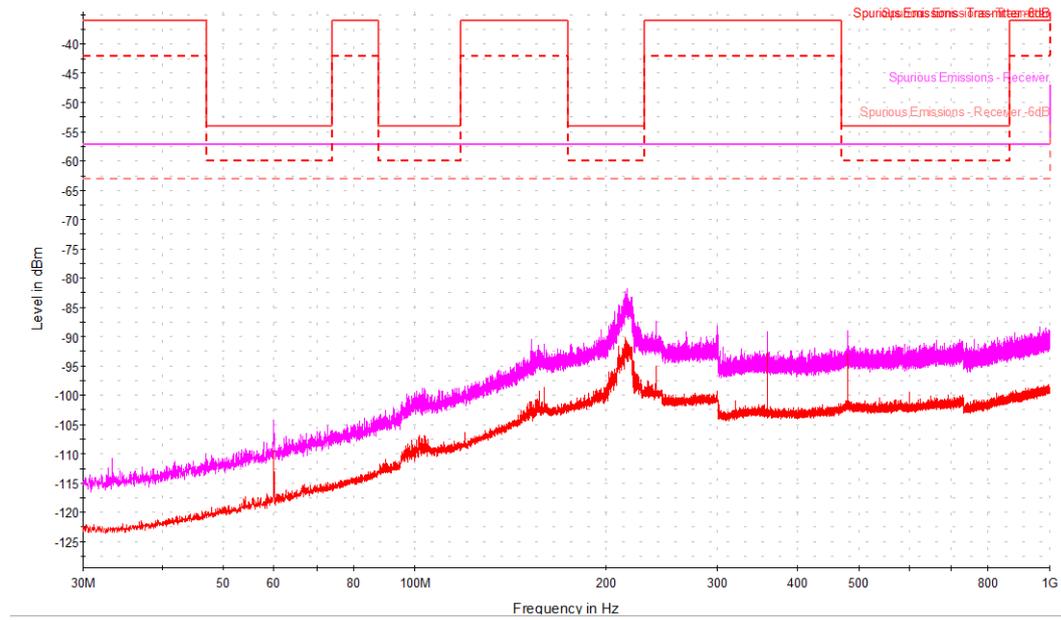
1.12.3 Measurement tables / Graphical representation for transmitter spurious emissions

All measured points are 6 dB below the limit; no substitution antenna method required.

Graphics below represent the worst case between Wi-Fi and Bluetooth



Zodiac Pool Care – Pool cleaner – EAXYZZ
 Project 41170
 Date: September 09, 2024
 Power interface: 1; Operation mode: 1
 Violet trace=Peak; Red trace=RMS
 Wi-Fi



Zodiac Pool Care – Pool cleaner – EAXYZZ
Project 41170
Date: September 09, 2024
Power interface: 1; Operation mode: 1
Violet trace=Peak; Red trace=RMS
Wi-Fi