



FCC Test Report

Report No: FCS202412401H01

Issued for

Applicant:	METASEE LLC
Address:	12 GREENWAY PLZ STE 1161A HOUSTON, TX 77046-1203
Product Name:	Robotic Pool Cleaner
Brand Name:	Fanttik
Model Name:	Aero X
Series Model:	N/A
FCC ID:	2BMPX-AEROX
Test Standard:	FCC 47CFR §2.1091
Issued By: Flux Compliance Service Laboratory Add: Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan Tel: 769-27280901 Fax:769-27280901 http://www.FCS-lab.com	

**TEST RESULT CERTIFICATION**

Applicant's Name..... : METASEE LLC
Address : 12 GREENWAY PLZ STE 1161A HOUSTON, TX 77046-1203
Manufacture's Name..... : Shenzhen BYD Electronic Technology Co., LTD
Address : No. 1 Yan 'an Road, Kwai Yong Community, Kwai Yong Street,
Dapeng New District, Shenzhen

Product Description

Product Name : Robotic Pool Cleaner
Brand Name : Fanttik
Model Name : Aero X
Series Model : N/A
Test Standards : FCC 47CFR §2.1091
447498 D01 Interim General RF Exposure Guidance v06

This device described above has been tested by Flux Compliance Service Laboratory, the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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Date of Test.....:

Date (s) of performance of tests.: Dec.14, 2024 ~ Dec.22, 2024

Date of Issue.....: Dec.22, 2024

Test Result: Pass

Tested by

:

Scott Shen

(Scott Shen)

Reviewed by

:

Duke Qian

(Duke Qian)

Approved by

:

Jack Wang

(Jack Wang)





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**Revision History**

Rev.	Issue Date	Contents
00	Dec.22, 2024	Initial Issue

1. GENERAL INFORMATION

1.1 GENERAL DESCRIPTION OF THE EUT

Product Name	Robotic Pool Cleaner	
Brand	Fanttik	
Model Number	Aero X	
Series Model(s)	N/A	
Model Difference	N/A	
Product Description	Operation Frequency:	BLE: 2402~2480 MHz 802.11b/g/n 20: 2412~2462 MHz 802.11n(40MHz):2422~2452MHz
	Modulation Type:	BLE: GFSK 2.4G WiFi: 802.11b(DSSS):CCK,DQPSK,DBPSK 802.11g(OFDM):BPSK,QPSK,16-QAM,64-QAM 802.11n(OFDM):BPSK,QPSK,16-QAM,64-QAM
	Antenna gain:	3.37 dBi
	Antenna Designation:	PCB antenna
Power Supply	Input: AC 120 -240V, 50/60Hz, 2.0A MAX Output: DC 22 V/2.9A	
Battery	Model: SH21700-5S4P Nominal Voltage: 18.5V Rated Capacity: 16000mAh/296.0 Wh Charging Limited Voltage: 21V	
Hardware version number	V1.0	
Software version number	V1.0	



1.2 TEST FACTORY

Company Name:	Flux Compliance Service Laboratory
Address:	Room 105 Floor Bao hao Technology Building 1 NO.15 Gong ye West Road Hi-Tech Industrial, Song shan lake Dongguan
Telephone:	+86-769-27280901
Fax:	+86-769-27280901
FCC Test Firm Registration Number: 514908 Designation number: CN0127 A2LA accreditation number: 5545.01 ISED Number: 25801 CAB ID : CN0097	



2. FCC 47CFR §2.1091 REQUIREMENT

2.1 TEST STANDARDS

According to §1.1307(b)(1), 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 of the Commission's guidelines.

According to §1.1310 and §2.1091 RF exposure requirement

KDB447498 D01v06: Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies

The limit for Maximum Permissible Exposure (MPE) specified in FCC 1.1310 is followed. The gain of the antennas used in the product is extracted from the Antenna data sheets provided and also the maximum total power input to the antenna is measured. Through the Friis transmission formula and the maximum gain of the antenna, we can calculate the distance, away from the product, where the limit of MPE is reached.

Although the Friis Transmission formula is far field assumption, the calculated result of that is an over-prediction for near field power density. It is taken as worst case to specify the safety range.

2.2 LIMIT

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environmental impact of the human exposure to radio-frequency (RF) radiation as specified in 1.1307 (b)

Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)
Limits for Occupational / controlled Exposures			
300 - 1500	--	--	F/300
1500 – 100000	--	--	5.0
Limits for General population / Uncontrolled Exposure			
300 - 1500	--	--	F/1500
1500 – 100000	--	--	1.0

F= Frequency in MHz

Friss Formula

Friss Transmission Formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm² aaa

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = Distance between observation point and the center of radiator in cm

If we know the maximum gain of the antenna and the total output power to the antenna, through calculation, we will know MPE value at distance 20cm.

Classification

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. Warning statement to the user for keeping at least 20cm or more separation distance from the antenna should be included in the User manual. So, this device is classified as Mobile device.



2.3 TEST RESULT

Turn up

Frequency	BLE		
(MHz)	2402	2440	2480
Target (dBm)	1	1	1
Tolerance \pm (dB)	1	1	1
Frequency	802.11b(Peak)		
(MHz)	2412	2437	2462
Target (dBm)	15	15	15
Tolerance \pm (dB)	1	1	1
Frequency	802.11g(Peak)		
(MHz)	2412	2437	2462
Target (dBm)	17	17	17
Tolerance \pm (dB)	1	1	1
Frequency	802.11n(HT20) (Peak)		
(MHz)	2412	2437	2462
Target (dBm)	17	17	17
Tolerance \pm (dB)	1	1	1
Frequency	802.11n(HT40) (Peak)		
(MHz)	2422	2437	2452
Target (dBm)	17	17	17
Tolerance \pm (dB)	1	1	1

Modulation Type	Output power		Antenna Gain (dBi)	Antenna Gain (linear)	MPE (mW/cm ²)	MPE Limits (mW/cm ²)
	dBm	mW				
BLE	2	1.58	3.37	2.173	0.00069	1
2.4G WLAN	18	63.10	3.37	2.173	0.02727	1

Note: BLE & 2.4G WLAN cannot transmit at the same time.

Results: PASS, no SAR test required.

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