

# RF Exposure Evaluation Report


**Applicant:** Autel Robotics Co., Ltd.

**Address of Applicant:** 9th Floor, Bldg. B1, Zhiyuan, 1001 Xueyuan Rd., Xili, Nanshan, Shenzhen 518055, China

**Equipment Under Test (EUT)**

Product Name: DragonFish Base Station

Model No.: DFMS-2

Trade mark: 

**FCC ID:** 2AGNTDFMS2TBG

**Applicable standards:** FCC CFR Title 47 Part 2 Subpart J Section 2.1091

**Date of sample receipt:** 13 Oct., 2021

**Date of Test:** 14 Oct., to 04 Nov., 2021

**Date of report issue:** 04 Nov., 2021

**Test Result:** PASS\*

Authorized Signature:



Bruce Zhang  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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## 2 Version

Version No.	Date	Description
00	04 Nov., 2021	Original

Tested by: Mike.ou  
Test Engineer

Date: 04 Nov., 2021

Reviewed by: Winner Zhang  
Project Engineer

Date: 04 Nov., 2021

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## 4 General Information

### 4.1 Client Information

Applicant:	Autel Robotics Co., Ltd.
Address:	9th Floor, Bldg. B1, Zhiyuan, 1001 Xueyuan Rd., Xili, Nanshan, Shenzhen 518055, China
Manufacturer/Factory:	Autel Robotics Co., Ltd.
Address:	9th Floor, Bldg. B1, Zhiyuan, 1001 Xueyuan Rd., Xili, Nanshan, Shenzhen 518055, China

### 4.2 General Description of E.U.T.

Product Name:	DragonFish Base Station
Model No.:	DFMS-2
Operation Frequency:	<p>904.0MHz~926.0MHz: 23 for 1.4MHz Bandwidth 13 for 10 MHz Bandwidth 3 for 20 MHz Bandwidth</p> <p>2403.5MHz~2475.5MHz: 71 for 1.4MHz Bandwidth 65 for 10 MHz Bandwidth 51 for 20 MHz Bandwidth</p> <p>5154MHz-5246MHz: 93 for 1.4MHz Bandwidth 87 for 10 MHz Bandwidth 67 for 20 MHz Bandwidth</p> <p>5728.0MHz~5847.0MHz 120 for 1.4MHz Bandwidth 110 for 10 MHz Bandwidth 102 for 20 MHz Bandwidth</p> <p>WiFi: 5725MHz-5825MHz</p>
Modulation technology:	QPSK and 16QAM
Antenna Type:	WiFi: Internal Antenna, Other : External Antenna
Antenna gain:	<p>WiFi:</p> <p>ANT 1: 3.3 dBi(declare by Applicant) ANT 2: 4.4 dBi(declare by Applicant) Other :</p> <p>904.0MHz~926.0MHz: 4.54 dBi(declare by Applicant) 2403.5MHz~2475.5MHz: 5.56 dBi(declare by Applicant) 5154MHz-5246MHz: 4.03 dBi(declare by Applicant) 5728.0MHz~5847.0MHz: 5.35 dBi(declare by Applicant)</p>
Test Sample Condition:	The test samples were provided in good working order with no visible defects.

### 4.3 Operating Modes

Operating mode	Detail description
900MHz mode	Keep the EUT in continuously transmitting in 900MHz mode
2.4GHz mode	Keep the EUT in continuously transmitting in 2.4GHz mode
5.2GHz mode	Keep the EUT in continuously transmitting in 5.2GHz mode
5.8GHz mode	Keep the EUT in continuously transmitting in 5.8GHz mode
5.8G Wi-Fi Mode	Keep the EUT in continuously transmitting in 5.8GHz Wi-Fi mode

### 4.4 Additions to, deviations, or exclusions from the method

No
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### 4.5 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Designation No.: CN1211</b> JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.</li> <li>● <b>ISED – CAB identifier.: CN0021</b> The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.</li> <li>● <b>A2LA - Registration No.: 4346.01</b> This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a></li> </ul>
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### 4.6 Laboratory Location

<p>JianYan Testing Group Shenzhen Co., Ltd. Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China. Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info-JYTee@lets.com, Website: <a href="http://www.ccis-cb.com">http://www.ccis-cb.com</a></p>
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## 5 Technical Requirements Specification in FCC CFR Title 47 Part 2.1091

### 5.1 Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

### 5.2 Test Procedure

Equation from page 18 of OET Bulletin 65, Edition 97-01

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

Where:

S = power density

P = power input to the antenna

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

R = distance to the centre of radiation of the antenna

### 5.3 Result

Frequency (MHz)	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm <sup>2</sup> )	Limits for General Population/ Uncontrolled Exposure (mW/cm <sup>2</sup> )
900MHz							
904	29.886	974.09	4.54	2.84	30	0.24	0.60
2.4GHz							
2403.5	23.031	200.96	5.56	3.59	30	0.06	1.0
5.2GHz							
5233	23.297	213.65	4.03	2.52	30	0.05	1.0
5.8GHz							
5738	23.813	240.60	5.35	3.43	30	0.07	1.0
5.8GHz-Wi-Fi							
5825	22.806	190.81	4.40	2.75	30	0.05	1.0

#### Simultaneous Transmission Evaluation:

Simultaneous Transmission Mode	Band	Result (mW/cm <sup>2</sup> )	Result Ratio	Total Ratio	Simultaneous Transmission Ratio Limit
900MHz& 5.8GHz Wi-Fi	900MHz	0.24	0.40	0.45	1.0
	5.8GHz Wi-Fi	0.05	0.05		
2.4GHz& 5.8GHz Wi-Fi	2.4GHz	0.06	0.06	0.11	
	5.8GHz Wi-Fi	0.05	0.05		
5.2GHz& 5.8GHz Wi-Fi	5.2GHz	0.05	0.05	0.10	
	5.8GHz Wi-Fi	0.05	0.05		
5.8GHz& 5.8GHz Wi-Fi	5.8GHz	0.07	0.07	0.12	
	5.8GHz Wi-Fi	0.05	0.05		

Note: Just the worst case mode was shown in report.

### 5.4 Conclusion

The device is exempt from the test and satisfies RF exposure evaluation.

-----End of report-----