# 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: | Data transmission Module |
| Model No.: | MA58R |
| Trade mark: | AUTEL ROBOTICS |
| **FCC ID:** | 2AGNTM58A |
| **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 28 Oct., 2021 |
| **Date of report issue:** | 28 Oct., 2021 |
| **Test Result:** | PASS* |

Authorized Signature:

Bruce Zhang
Laboratory Manager

## 2 Version

| Version No. | Date | Description |
|---|---|---|
| *00* | *28 Oct., 2021* | *Original* |
| | | |
| | | |
| | | |
| | | |

***Tested by:*** Mike.ou ***Date:*** *28 Oct., 2021*

***Test Engineer***

***Reviewed by:*** Winner Zhang ***Date:*** *28 Oct., 2021*

***Project Engineer***

# 3 Contents

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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: | Data transmission Module |
| Model No.: | MA58R |
| Operation Frequency: | 5.8GHz: 5729.68 MHz - 5770.68 MHz |
| Modulation technology: | GFSK |
| Antenna Type: | External Antenna |
| Antenna gain: | ANT 1: 0.2 dBi (declare by Applicant)<br>ANT 2: -0.1 dBi (declare by Applicant)<br>ANT 3: -0.1 dBi (declare by Applicant) |
| Test Sample Condition: | The test samples were provided in good working order with no visible defects. |

## 4.3 Operating Modes

| Operating mode | Detail description |
|---|---|
| 5GHz mode | Keep the EUT in continuously transmitting in 5GHz mode |

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

No

## 4.5 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC - Designation No.: CN1211**

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.

- **ISED – CAB identifier.: CN0021**

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.

- **A2LA - Registration No.: 4346.01**

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: https://portal.a2la.org/scopepdf/4346-01.pdf

## 4.6 Laboratory Location

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: http://www.ccis-cb.com

# 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 ($mW/cm^2$) | 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 | *($900/f^2$) | 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 | *($180/f^2$) | 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 ($mW/cm^2$) | Limits for General Population/ Uncontrolled Exposure ($mW/cm^2$) |
|---|---|---|---|---|---|---|---|
| 5.8G Wi-Fi | | | | | | | |
| 5745 | 21.05 | 127.35 | 0.2 | 1.05 | 20.00 | 0.027 | 1.0 |

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

## 5.4 Conclusion

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

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