



## RF EXPOSURE EVALUATION REPORT

**Application No.:** GZCR2206000734AT  
**Applicant:** SZ DJI TECHNOLOGY CO., LTD  
**Address of Applicant:** 14th floor, West Wing, Skyworth Semiconductor Design Building NO.18  
Gaoxin South 4th Ave, Nanshan District, Shenzhen 518057, Guangdong,  
China  
**Manufacturer:** SZ DJI TECHNOLOGY CO., LTD  
**Address of Manufacturer:** 14th floor, West Wing, Skyworth Semiconductor Design Building NO.18  
Gaoxin South 4th Ave, Nanshan District, Shenzhen 518057, Guangdong,  
China  
**Equipment Under Test (EUT):**  
**EUT Name:** RoboMaster Youth Tournament Base 01  
**Model No.:** RMYTBA01  
**Trade Mark:** DJI  
**Standard(s) :** 47 CFR Part 1.1307  
47 CFR Part 1.1310  
47 CFR Part 2.1091  
**Date of Receipt:** 2022-06-08  
**Date of Evaluation:** 2022-06-09 to 2022-06-14  
**Date of Issue:** 2022-06-15

<b>Evaluation Result:</b>	<b>Pass*</b>
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\* In the configuration evaluated, the EUT complied with the standards specified above.

Kobe Jian  
EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-06-15		Original

Authorized for issue by				
				
		Curry Wu/Project Engineer		
				
		Ricky Liu/Reviewer		

## 2 Evaluation Summary

**Note:**

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.



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## 4 General Information

### 4.1 Details of E.U.T.

Power supply: Input: 100-240V~ 50-60Hz 0.7A  
Output: 12.0V/2A 24.0W  
Adapter model: MX24W1-1202000T

#### For 2.4G:

Operation Frequency: 802.11b/g/n(HT20): 2412MHz to 2462MHz  
802.11n(HT40): 2422MHz to 2452MHz  
Modulation Type: 802.11b: DSSS (CCK, DQPSK, DBPSK)  
802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)  
Number of Channels: 802.11b/g/n(HT20):11;802.11n(HT40):7  
Channel Spacing: 5MHz  
Antenna Type: PCB Antenna  
Antenna Gain: ANT0&ANT1: 4.5dBi declared by applicant

#### For 5G:

Operation Frequency (20MHz): U-NII-1: 5180-5240MHz; U-NII-3: 5745-5825MHz  
Operation Frequency (40MHz): U-NII-1: 5190-5230MHz; U-NII-3: 5755-5795MHz  
Modulation Type: 802.11a: OFDM (64QAM, 16QAM, QPSK, BPSK)  
802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)  
802.11a/n(HT20): 20MHz;  
Channel Spacing: 802.11n(HT40): 40MHz  
DFS Function: Without DFS function  
TPC Function: Without TPC function  
Antenna Type: PCB Antenna  
Antenna Gain: ANT0&ANT1: 4dBi declared by applicant



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## 4.2 Evaluating Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,  
198 Kezhu Road, Sciencetech Park, Guangzhou Economic & Technology Development District,  
Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

## 4.3 Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **ACMA**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **FCC Recognized Accredited Test Firm(Registration No.: 486818)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

- **ISED (Registration No.: 4620B, CAB identifier: CN0052)**

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

- **VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)**

The 10m Semi-anechoic chamber, 966 Anechoic Chamber and Shielded Room of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-12460, C-12584, G-20107 and T-11179 respectively.

- **CBTL (Lab Code: TL129)**

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

## 4.4 Deviation from Standards

None

## 4.5 Abnormalities from Standard Conditions

None



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## 5 Radio Spectrum Technical Requirement

### 5.1 RF Exposure Compliance Requirement

#### 5.1.1 Limits

According to FCC Part1.1310: 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 part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
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>(B) Limits for General Population/Uncontrolled Exposure</b>				
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

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

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

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

#### 5.1.2 Test Procedure

Software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.



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**5.1.3 EUT RF Exposure Evaluation****For 2.4G Wi-Fi:**

Antenna Gain: Antenna:4.5dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.82 in linear scale.

Output Power Into Antenna &amp; RF Exposure Evaluation Distance:

Frequency (MHz)	Mode	TX Type	EIRP (dBm)	EIRP (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
2437	802.11n (HT20)	MIMO	28.33	680.77	0.1355	1.0	PASS

Note: Refer to report No. GZCR220600073401 for EUT test Max Conducted Output Power value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.

**For 5G Wi-Fi:**

Antenna Gain: Antenna : 4dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber are Antenna 2.51 in linear scale.

Output Power Into Antenna &amp; RF Exposure Evaluation Distance:

Frequency (MHz)	Mode	TX Type	EIRP (dBm)	EIRP (mW)	Power Density at R = 20 cm (mW/cm <sup>2</sup> )	Limit	Result
5795	802.11n (HT40)	MIMO	29.77	948.42	0.1885	1.0	PASS

Note: Refer to report No. GZCR220600073402 for EUT test Max Conducted Peak Output Power value.

The distance r (4th column) calculated from the Fries transmission formula is far greater than 20 cm separation requirement.



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## 6 EUT Constructional Details (EUT Photos)

Refer to appendix - external and internal photos for GZCR2206000734AT

- End of the Report -