



EMC-TRF-01 Rev 1.0

Report No.: GZCR210802082906 Page: 1 of 13 FCC ID: SS3-L2P2104

RF EXPOSURE EVALUATION REPORT

Application No.:	GZCR2108020829AT	
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, 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, Guangdong, China	
Equipment Under Test (EUT):	
EUT Name:	DJI Mavic 3 Cine, DJI Mavic 3	
Model No.:	L2P, L2A 🐥	
*	Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.	
EUT Name:	DJI Mavic 3 Cine, DJI Mavic 3	
Trade mark:	DJI	
Standard(s) :	47 CFR Part 1.1307	
	47 CFR Part 1.1310	
	47 CFR Part 2.1091	
Date of Receipt:	2021-08-13	
Date of Test:	2021-08-13 to 2021-08-28	
Date of Issue:	2021-09-01	
Test Result:	Pass*	

* In the configuration tested, the EUT complied with the standards specified above.

oke. Jun

Kobe Jian EMC Laboratory Manager



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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2021-09-01		Original

Authorized for issue by		
Tested By	CJ Vu	
	Curry Wu /Project Engineer	
Reviewed By	Ridey Lin	
	Ricky Liu/Reviewer	



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2 Test 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.

Declaration of EUT Family Grouping:

Model No.:	Product Description
L2P	DJI Mavic 3 Cine
L2A	DJI Mavic 3

Model No.:L2P, L2A

Only the model L2P was tested, since according to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, the difference between L2P and L2A is that the memory is different. L2P has one more SSD than L2A.



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General Information 4

4.1 Details of E.U.T.

Power supply:	Input:DC 15.4V
	DC 15.4V 5000mAh, 77Wh Lithium-ion rechargeable battery(to be charged
	from Type C port),
	Model: BWX260-5000-15.4
	Niddei: BWX200-3000-13.4
For BLE	
Operation Frequency:	2402MHz to 2480MHz
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Data Rate:	1Mbps, 2Mbps
Antenna Type:	PCB Antenna
Antenna Gain:	-2.5dBi
For 2.4GHz Wifi	
Operation Frequency:	802.11b/g/n/ax(HT20/HE20): 2412MHz to 2462MHz
Operation Frequency:	802.11n/ax(HT40/HEW40): 2422MHz to 2452MHz
	802.11b: DSSS (CCK, DQPSK, DBPSK)
Modulation Type:	802.11g/n: OFDM (64QAM, 16QAM, QPSK, BPSK)
	802.11ax: OFDM&OFDMA (256QAM, 64QAM, 16QAM, QPSK, BPSK)
Number of Channels:	802.11802.11b/g/n(HT20)/ax(HE20): 11
	802.11n(HT40)/ax(HEW40):7
Channel Spacing:	5MHz
Antenna Type:	PCB Antenna
Antenna Gain:	Antenna 1&2: -2.5dBi



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For 2.4GHz SRD		
	1.4MHz BW:2403.5MHz-2469.5MHz;	
	1.4MHz BW CA:2405.12MHz-2471.12MHz;	
	3MHz BW:2405.5MHz-2468.5MHz;	
Operation Frequency:	3MHz BW CA:2408.2MHz-2471.2MHz;	
	10MHz BW:2407.5MHz-2467.5MHz;	
	20MHz BW:2412.5MHz-2462.5MHz;	
	40MHz BW:2422.5MHz-2452.5MHz	
Modulation Type:	OFDM	
	1.4MHz BW:34;	
	1.4MHz BW CA:34;	
	3MHz BW:22;	
Number of Channels:	3MHz BW CA:22;	
	10MHz BW:61;	
	20MHz BW:51;	
	40MHz BW:31	
	1.4MHz BW:2MHz;	
	1.4MHz BW CA:2MHz;	
	3MHz BW:3MHz;	
Channel Spacing:	3MHz BW CA:3MHz;	
	10MHz BW:1MHz;	
	20MHz BW:1MHz;	
	40MHz BW:1MHz	
Antenna Type:	FPC Antenna	
Antenna Gain:	Antenna 1&4: 1.5dBi, Antenna 2&3: 2.0dBi	
Antenna Combination:	Antenna 1+Antenna 2, Antenna 1+Antenna 4, Antenna 2+Antenna 3, Antenna 3+Antenna 4	



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For 5.8GHz Wifi	
DFS Function:	Slaver without radar detection
TPC Function:	Not Support
Antenna Type:	PCB Antenna
Antenna Gain:	Antenna 1&2: 2.0dBi

Operation Frequency:	Band	Mode	Frequency Range(MHz)	Number of channels
		802.11a/n(HT20)/ac(VHT20)/ax(HEW20)	5745-5825	5
	UNII Band III	802.11n(HT40)/ac(VHT40)/ax(HEW40)	5755-5795	2
	Danu III	802.11ac(VHT80)/ax(HEW80)	5775	1
Modulation Type:	802.11a: OFDM (BPSK, QPSK, 16QAM, 64QAM)			
	802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM)			
	802.11ac: OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)			
	802.11ax: OFDM&OFDMA (BPSK, QPSK, 16QAM, 64QAM, 256QAM, 1024QAM)			
Channel Spacing:	802.11a/n(HT20)/ac(VHT20)/ax(HEW20): 20MHz			
	802.11n(HT40)/ac(VHT40)/ax(HEW40): 40MHz			
	802.11ac(VHT80)/ax(HEW80):80MHz			

For 5.8GHz SRD	
Operation Frequency:	1.4MHz BW:5728.5MHz-5846.5MHz;
	1.4MHz BW CA:5730.12MHz-5848.12MHz;
	3MHz BW:5727.5MHz-5844.5MHz;
	3MHz BW CA:5730.2MHz-5847.2MHz;
	10MHz BW:5730.5MHz-5844.5MHz;
	20MHz BW:5735.5MHz-5839.5MHz;
	40MHz BW:5745.5MHz-5829.5MHz
Moudulation Type:	OFDM
Number of Channels:	1.4MHz BW:60;
	1.4MHz BW CA:60;
	3MHz BW:40;
	3MHz BW CA:40;
	10MHz BW:115;
	20MHz BW:105;
	40MHz BW:85
Channel Spacing:	1.4MHz BW:2MHz;
	1.4MHz BW CA:2MHz;
	3MHz BW:3MHz;
	3MHz BW CA:3MHz;
	10MHz BW:1MHz;
	20MHz BW:1MHz;
	40MHz BW:1MHz



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Antenna Type:	FPC Antenna
Antenna Gain:	Antenna 1&4: 3.0dBi, Antenna 2&3: 2.5dBi
Antenna Combination:	Antenna 1+Antenna 2, Antenna 1+Antenna 4, Antenna 2+Antenna 3, Antenna 3+Antenna 4

Remark: BLE, WIFI and SDR function can not transmit Synchronously.

4.2 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory, 198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.



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4.3 Test Facility

The test 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 MAXIMUN	PERMISSIBLE EXPOSURE	(MPE)
----------------------------	----------------------	-------

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/f2)	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							

	-			
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

F= Frequency in MHz

Friis Formula

Friis transmission formula: $Pd = (Pout^{*}G)/(4^{*} Pi^{*} R 2)$

Where

Pd = power density in mW/cm2

Pout = 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

Pd id the limit of MPE, 1 mW/cm2. 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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EUT RF Exposure Evaluation 5.1.3

For BLE:

Antenna Gain: Antenna 1: - 2.5dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 0.56 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

Frequency (MHz)	Antenna	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
1	2480	5.98	3.96	0.0004	1.0	PASS

Note: Refer to report No. GZCR210802082901 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.

For 2.4GHz Wifi:

Antenna Gain: Antenna 1&2: -2.5dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 0.56 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

SISO:

Frequency (MHz)	Antenna	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2462	1	17.77	59.84	0.007	1.0	PASS

MIMO:

Frequency (MHz)	Antenna	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2462	1+2	20.11	102.57	0.011	1.0	PASS

Note: Refer to report No. GZCR210802082902 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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For 2.4GHz SRD:

Antenna Gain: Antenna 1&4: 1.5dBi, Antenna 2&3: 2.0dBi,

Antenna Gain: The maximum Gain measured in fully anechoic chamber are Antenna 1&4: 1.41, Antenna 2&3: 1.58 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

SISO:

Frequency (MHz)	Antenna	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2437.5	3	26.61	458.14	0.145	1.0	PASS

MIMO:

Frequency (MHz)	Antenna	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
2437.5	1+2	28.83	763.84	0.241	1.0	PASS

Note: Refer to report No. GZCR210802082904 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.

For 5.8GHz Wifi:

Antenna Gain: Antenna 1&2: 2.0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber are Antenna 1&2: 1.58 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

SISO:

Frequency (MHz)	Antenna	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
5745	1	16.48	44.46	0.014	1.0	PASS

MIMO:

Frequency (MHz)	Antenna	Max Conducted Peak Output Power (dBm)	Output Power to Antenna (mW)	Power Density at R = 20 cm (mW/cm ²)	Limit	Result
5795	1+2	19.11	81.47	0.026	1.0	PASS



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Note: Refer to report No. GZCR210802082903 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.

For 5.8GHz SRD:

Antenna Gain: Antenna 1&4: 3.0dBi, Antenna 2&3: 2.5dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber are Antenna 1&4: 2.0, Antenna 2&3: 1.78 in linear scale.

Output Power Into Antenna & RF Exposure Evaluation Distance:

SISO:

Frequency (MHz)	Antenna	Max Conducted Peak Output	Output Power to Antenna	Power Density at R = 20 cm	Limit	Result
(Power (dBm)	(mW)	(mW/cm ²)		
5844.5	4	25.42	348.34	0.138	1.0	PASS

MIMO:

Frequency	Antenna	Max Conducted	Output Power	Power Density	Limit	Result
(MHz)		Peak Output	to Antenna	at R = 20 cm		
		Power (dBm)	(mW)	(mW/cm²)		
5844.5	1+2	29.90	977.24	0.388	1.0	PASS

Note: Refer to report No. GZCR210802082905 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.

6 EUT Constructional Details (EUT Photos)

Refer to Appendix - external and internal photos for GZCR2108020829AT

- End of the Report -



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