

Prüfbericht-Nr.: <i>Test report no.:</i>	CN230Q2D 004	Auftrags-Nr.: <i>Order no.:</i>	168385896	Seite 1 von 11 <i>Page 1 of 11</i>
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	N/A	Auftragsdatum: <i>Order date:</i>	2022-08-10	
Auftraggeber: <i>Client:</i>	SZ DJI TECHNOLOGY CO., LTD. Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China			
Prüfgegenstand: <i>Test item:</i>	DJI Mini 3 Pro			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	MT3M3VD, MT3M3VDB, MT3M3VZ			
Auftrags-Inhalt: <i>Order content:</i>	FCC and IC approval			
Prüfgrundlage: <i>Test specification:</i>	47 CFR FCC Part 2.1091 RSS-102 Issue 5			
Wareneingangsdatum: <i>Date of sample receipt:</i>	2023-02-25	Please refer to Photo Document		
Prüfmuster-Nr.: <i>Test sample no.:</i>	A003420984-005~008			
Prüfzeitraum: <i>Testing period:</i>	2023-03-07 - 2023-03-22			
Ort der Prüfung: <i>Place of testing:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	<u>X Breeze Jiang</u>	genehmigt von: <i>authorized by:</i>	<u>X Lin Lin</u>	
Datum: <i>Date:</i> 2023-05-08	Signed by: Breeze Jiang	Ausstellungsdatum: <i>Issue date:</i> 2023-05-08	Signed by: Lin Lin	
Stellung / Position:	Sachverständige(r)/Expert	Stellung / Position:	Sachverständige(r)/Expert	
Sonstiges / <i>Other:</i>	FCC ID: SS3-MT3M3VZ, IC: 11805A-MT3M3VZ, HVIN: MT3M3VZ			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* Legend:	P(ass) = passed a.m. test specification(s)	F(ail) = failed a.m. test specification(s)	N/A = not applicable	N/T = not tested
<p>Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i></p>				

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Test Report No.:

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TEST SUMMARY

3.1.1 RF EXPOSURE COMPLIANCE

RESULT: Pass

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1. TEST SITES

1.1 TEST FACILITIES

TÜV Rheinland (Shenzhen) Co., Ltd.

Address: No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, P.R. China

FCC Registration No.: 694916

ISED Wireless Device Testing Laboratory: 25069

A2LA certification number: 5162.01

1.2 Traceability

All measurement equipment calibrations are traceable to NIST or where calibration is performed outside the United States, to equivalent nationally recognized standards organizations.

1.3 Calibration

Equipment requiring calibration is calibrated periodically by the manufacturer or according to manufacturer's specifications. Additionally all equipment is verified for proper performance on a regular basis using in house standards or comparisons.

1.4 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendixes of this report and delivered to the applicant. A copy has been retained in the TÜV Rheinland (Shenzhen) file for certification follow-up purposes.

1.5 Status of Facility Used for Testing

The TÜV Rheinland (Shenzhen) Co., Ltd. facility located at No. 362 Huanguan Road Middle, Longhua District, Shenzhen 518110, P.R. China is listed on the US Federal Communications Commission list of facilities approved to perform measurements.

2. GENERAL PRODUCT INFORMATION

2.1 GENERAL DESCRIPTION

The EUT (Equipment Under Test) is a DJI Mini 3 PRO. It supports Bluetooth, 2.4GHz SDR, 2.4GHz Wi-Fi, 5.8GHz Wi-Fi, 5.8GHz SDR and GNSS functions.

*remark: SDR means specific defined radio, and cannot changes radio specification via software/firmware by end-users.

When the product in charging, the wireless function will be disabled.

All models covered in this report are identical to each other except for model name, and the WiFi chip of MT3M3VZ is different from other models.

For details refer to the User Manual, Technical Description and Circuit Diagram.

2.2 RATING AND SYSTEM DETAILS

Table 1: Rating of EUT

General Information of EUT	Value
Kind of Equipment	DJI Mini 3 PRO
Type Designation	MT3M3VD, MT3M3VDB, MT3M3VZ
Operating Voltage	AC 100-240V, 50/60Hz input via AC/DC adapter or Battery operated (7.38V)
Testing Voltage	Fully charged battery
Extreme Temperature Range	-10°C ~ 40 °C
Radiofrequency operating mode	1) Bluetooth: operating within 2400-2483.5MHz, Bluetooth BLE, 1Mbps&2Mbps 2) 2.4GHz SDR: operating within 2400-2483.5MHz, supports 1.4MHz/3MHz/10MHz/20MHz/40MHz Bandwidth 3) 2.4GHz Wi-Fi: operating within 2400-2483.5MHz, supports 20MHz/40MHz Bandwidth and IEEE 802.11 b/g/n20/n40 4) 5.8GHz SDR: operating within 5725-5850MHz, supports 1.4MHz/3MHz/10MHz/20MHz/40MHz Bandwidth 5) 5.8GHz Wi-Fi: operating within 5725-5850MHz, supports 20MHz/40MHz/80MHz Bandwidth and IEEE 802.11 a/n20/n40/ac20/ac40/ac80

Table 2: Technical Specification of EUT

Technical Specification of Bluetooth	
Operating Frequency	2402-2480MHz
Type of Modulation	GFSK
Data Rate	1Mbps, 2Mbps
Channel Number	40 channels for Bluetooth BLE
Channel Separation	1MHz and 2MHz
Antenna Type	Integral Antenna
Antenna Number	1Tx1Rx

Antenna Gain	2.0 dBi
Technical Specification of 2.4GHz SDR	
Operating Frequency	2403.5MHz-2469.5MHz for 1.4MHz Bandwidth 2405.12MHz-2471.12MHz for 1.4MHz Bandwidth (CA mode) 2405.5MHz-2468.5MHz for 3MHz Bandwidth 2408.2MHz-2471.2MHz for 3MHz Bandwidth (CA mode) 2407.5-2467.5MHz for 10MHz Bandwidth 2412.5-2462.5MHz for 20MHz Bandwidth 2422.5-2452.5MHz for 40MHz Bandwidth
Type of Modulation	OFDM (QPSK, 16QAM, 64QAM)
Channel Number	34 channels for 1.4MHz Bandwidth 34 channels for 1.4MHz Bandwidth (CA mode) 22 channels for 3MHz Bandwidth 22 channels for 3MHz Bandwidth (CA mode) 61 channels for 10MHz Bandwidth 51 channels for 20MHz Bandwidth 31 channels for 40MHz Bandwidth
Channel Separation	2MHz for 1.4MHz Bandwidth 2MHz for 1.4MHz Bandwidth (CA mode) 3MHz for 3MHz Bandwidth 3MHz for 3MHz Bandwidth (CA mode) 1MHz for 10MHz Bandwidth 1MHz for 20MHz Bandwidth 1MHz for 40MHz Bandwidth
Antenna system	The SDR mode employing 4 integral antennas, only 1TX2RX mode supported.
Antenna Gain	Ant 3: 2.0 dBi Max
Technical Specification of 2.4GHz Wi-Fi	
Operating Frequency	2412 - 2462MHz for 802.11b/g/n(HT20) 2422 - 2452MHz for 802.11n(HT40)
Type of Modulation	DSSS(DBPSK/DQPSK/CCK) OFDM(BPSK/QPSK/16QAM/64QAM)
Data Rate	1/2/5.5/11 Mbps for 802.11b 6/9/12/18/24/36/48/54 Mbps for 802.11g MCS0 ~ MCS7 for 802.11n
Channel Number	11 channels for 802.11b/g/n(HT20) 7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	Integral Antenna
Antenna Number	1Tx1Rx
Antenna Gain	2.0 dBi
Technical Specification of 5.8GHz SDR	
Operating Frequency	5728.5-5846.5MHz for 1.4MHz Bandwidth 5730.12-5848.12MHz for 1.4MHz Bandwidth (CA mode) 5727.5-5844.5MHz for 3MHz Bandwidth 5730.2-5847.2MHz for 3MHz Bandwidth (CA mode) 5730.5-5844.5MHz for 10MHz Bandwidth 5735.5-5839.5MHz for 20MHz Bandwidth 5745.5-5829.5MHz for 40MHz Bandwidth
Type of Modulation	OFDM (QPSK, 16QAM, 64QAM)

Channel Number	60 channels for 1.4MHz Bandwidth 60 channels for 1.4MHz Bandwidth (CA mode) 40 channels for 3MHz Bandwidth 40 channels for 3MHz Bandwidth (CA mode) 115 channels for 10MHz Bandwidth 105 channels for 20MHz Bandwidth 85 channels for 40MHz Bandwidth
Channel Separation	2MHz for 1.4MHz Bandwidth 2MHz for 1.4MHz Bandwidth (CA mode) 3MHz for 3MHz Bandwidth 3MHz for 3MHz Bandwidth (CA mode) 1MHz for 10MHz Bandwidth 1MHz for 20MHz Bandwidth 1MHz for 40MHz Bandwidth
Antenna System	The SDR mode employing 4 integral antennas, only 1TX2RX mode supported.
Antenna Gain	Ant 2: 3.5 dBi Max
Technical Specification of 5.8GHz Wi-Fi	
Operating Frequency	5745–5825MHz for 802.11 a/n20/n40/ac20/ac40/ac80
Type of Modulation	OFDM(BPSK/QPSK/16QAM/64QAM/256QAM)
Data Rate	6/9/12/18/24/36/48/54 Mbps for 802.11a MCS 0 ~ MCS 7 for 802.11 n20/n40 VHT-MCS 0 ~ VHT-MCS 8 for 802.11 ac20 VHT-MCS 0 ~ VHT-MCS 9 for 802.11 ac40 VHT-MCS 0 ~ VHT-MCS 9 for 802.11 ac80
Channel Number	5 channels for 802.11a/n20/ac20 2 channels for 802.11n40/ac40 1 channels for 802.11ac80
Channel Separation	20MHz, 40MHz, 80MHz
Antenna Type	Integral Antenna
Antenna Number	1Tx1Rx
Antenna Gain	3.5dBi

3. Test Results

3.1 Transmitter Requirements & Test Suites

3.1.1 RF Exposure Compliance

RESULT:**Pass**

Test standard	:	RSS-102 Issue 5 FCC Part 1.1091
Limit	:	Table 1 of 47 CFR FCC Part 1.1310 Section 2.5.2 of RSS-102 Issue 5
Kind of test site	:	Shielded room

This device is mobile device, and the applicant declares that the minimum separation distance is greater than 20cm. Therefore MPE measurement or computational modelling should be used to determine compliance.

MPE Calculation is based on the conducted power, and considering maximum power and Antenna gain. The following formula is used to MPE evaluation.

$$Pd = \frac{P_{out} * G}{4R^2\pi}$$

Where

P_d = power density in mW/cm² or W/m²

P_{out} = output power to antenna in mW or W

G_{num} = Antenna gain in numeric

π = 3.14159

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

3.1.1.1 FCC Part 1.1310, Part 2.1091

According to ANSI/IEEE C95.1-1992, the criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio frequency (RF) radiation as specified in §1.1310.

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

Table 3: Test Results of RF Exposure Calculations for FCC, Stand-alone mode

Operating Mode	Max. EIRP incl. tune-up (dBm)	Distance (cm)	MPE (mW/cm ²)	Limit (mW/cm ²)	Verdict
BLE	5.82	20	0.0008	1.0	Pass
2.4GHz Wi-Fi	23.65	20	0.0461	1.0	Pass
2.4GHz SDR	23.92	20	0.0491	1.0	Pass
5.8GHz Wi-Fi	18.03	20	0.0126	1.0	Pass
5.8GHz SDR	25.39	20	0.0689	1.0	Pass

Note: Simultaneous transmissions not supported when in normal use.

Table 4: Test Results of RF Exposure Calculations for FCC, Simultaneous mode

Co-location Mode	Sum of the MPE ratios	Limit	Verdict
2.4GHz Wi-Fi+5.8GHz SDR	0.0461/1+0.0689/1<1.0	1.0	Pass
5.8GHz Wi-Fi 2.4GHz SDR	0.0126/1+0.0491/1<1.0	1.0	Pass

3.1.1.2 RSS-102 Exemption Limits for Routine Evaluation – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and/or bystander and the device's radiating element is greater than 20 cm, except when the device operates as follows:

- below 20 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 1 W (adjusted for tune-up tolerance);
- at or above 20 MHz and below 48 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $4.49/f^{0.5}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 48 MHz and below 300 MHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 0.6 W (adjusted for tune-up tolerance);
- at or above 300 MHz and below 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than $1.31 \times 10^{-2} f^{0.6834}$ W (adjusted for tune-up tolerance), where f is in MHz;
- at or above 6 GHz and the source-based, time-averaged maximum e.i.r.p. of the device is equal to or less than 5 W (adjusted for tune-up tolerance).

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the e.i.r.p. was derived.

Table 5: Test Results of RF Exposure Calculations for ISED

Operating Mode	Max. EIRP incl. tune-up (dBm)	Distance (cm)	Maximum EIRP (W)	Threshold power (W)	Verdict
Bluetooth	5.82	20	0.0038	2.68	Pass
2.4G Wi-Fi	23.65	20	0.2317	2.70	Pass
2.4GHz SDR	23.92	20	0.2466	2.71	Pass
5.8G Wi-Fi	18.03	20	0.0635	4.90	Pass
5.8GHz SDR	25.39	20	0.3459	4.85	Pass

Note: The maximum EIRP much lower than the threshold power in section 2.5.2, thus compliant.

Table 6: Test Results of RF Exposure Calculations for ISED, Simultaneous mode

Co-location Mode	Sum of the ratios	Limit	Verdict
2.4GHz Wi-Fi+5.8GHz SDR	$0.2317/2.70+0.3459/4.85 < 1.0$	1.0	Pass
5.8GHz Wi-Fi 2.4GHz SDR	$0.0635/4.90+0.2466/2.71 < 1.0$	1.0	Pass

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