

Prüfbericht-Nr.: Test report no.:	CN224PNQ 004	Auftrags-Nr.: Order no.:	168371699	Seite 1 von 10 Page 1 of 10
Kunden-Referenz-Nr.: Client reference no.:	N/A	Auftragsdatum: Order date:	2022-05-11	
Auftraggeber: Client:	SZ DJI TECHNOLOGY CO., LTD. 14th Floor, West Wing, Skyworth Semiconductor Design Building No.18 Gaoxin South 4th Ave Nanshan District, Shenzhen, P.R. China			
Prüfgegenstand: Test item:	INSPIRE 3			
Bezeichnung / Typ-Nr.: Identification / Type no.:	T740 (Trademark: DJI)			
Auftrags-Inhalt: Order content:	Test Report			
Prüfgrundlage: Test specification:	FCC Part 2: Section 2.1091			
Wareneingangsdatum: Date of sample receipt:	2022-05-19	Please refer to photo documents		
Prüfmuster-Nr.: Test sample no:	A003258804-005~008 A003330976-003~006			
Prüfzeitraum: Testing period:	2022-05-19 to 2022-09-19			
Ort der Prüfung: Place of testing:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüflaboratorium: Testing laboratory:	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: Test result*:	Pass			
geprüft von: tested by:	genehmigt von: authorized by:			
Datum: Date:	Ausstellungsdatum: Issue date:			
Stellung / Position:	Assistant Project Manager	Stellung / Position:	Reviewer	
Sonstiges / Other:	FCC ID: SS3-T7402206			
Zustand des Prüfgegenstandes bei Anlieferung: Condition of the test item at delivery:		Prüfmuster vollständig und unbeschädigt Test item complete and undamaged		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft P(ass) = entspricht o.g. Prüfgrundlage(n) F(ail) = entspricht nicht o.g. Prüfgrundlage(n) N/A = nicht anwendbar N/T = nicht getestet * Legend: 1 = very good 2 = good 3 = satisfactory 4 = sufficient 5 = poor P(ass) = passed a.m. test specification(s) F(ail) = failed a.m. test specification(s) N/A = not applicable N/T = not tested				
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. This test report only relates to the a. m. 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.				

TEST SUMMARY

3.1.1 RF EXPOSURE COMPLIANCE

RESULT: Pass

CONTENTS

1.	TEST SITES.....	4
1.1	TEST FACILITIES	4
1.2	TRACEABILITY	4
1.3	CALIBRATION.....	4
1.4	LOCATION OF ORIGINAL DATA	4
1.5	STATUS OF FACILITY USED FOR TESTING	4
2.	GENERAL PRODUCT INFORMATION	5
2.1	GENERAL DESCRIPTION	5
2.2	RATING AND SYSTEM DETAILS	5
3.	TEST RESULTS	8
3.1	TRANSMITTER REQUIREMENTS & TEST SUITES	8
3.1.1	<i>RF Exposure Compliance.....</i>	8
3.1.1.1	Radio Frequency Exposure Limit	8
3.1.1.2	Radio Frequency Exposure Calculation Formula.....	9
3.1.1.3	Simultaneous transmission MPE.....	9
3.1.1.4	Conclusion	9
4.	LIST OF TABLES	10

1. TEST SITES

1.1 TEST FACILITIES

TÜV Rheinland (Shenzhen) Co., Ltd.

362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Registration No.: 694916

ISED wireless device testing laboratory: 25069

A2LA Certificate 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. Test facility located at 362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of 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 an Aircraft. It supports 2.4GHz SDR, 5.2GHz SDR, 5.8GHz SDR, GNSS and ADS-B functions.

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

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

2.2 RATING AND SYSTEM DETAILS

Table 1: General Information of EUT

General Information of EUT	Value
Kind of Equipment	INSPIRE 3
Type Designation	T740
Trademark	DJI
Operating Temperature Range:	-20 °C ~ 40 °C
Operating Voltage	Battery operated (DC 23.1V@4280mAh, Li-ion battery)
Testing Voltage	Fully charged battery
Radiofrequency operating mode	1) 2.4GHz SDR: operating within 2400-2483.5MHz, supports 1.4MHz/3MHz/10MHz/20MHz/40MHz Bandwidth 2) 5.2GHz SDR: operating within 5150-5250MHz, supports 10MHz/20MHz/40MHz Bandwidth 3) 5.8GHz SDR: operating within 5725-5850MHz, supports 1.4MHz/3MHz/10MHz/20MHz/40MHz Bandwidth 4) GPS & BDS & Galileo & Glonass (receiver): operating within 1559-1610MHz 5) ADS-B (receiver): operating at 978MHz and 1090MHz

Table 2: Technical Specification of EUT

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 Type	FPC Antennas
Antenna Number	1Tx1Rx for SISO mode (ANT0 or ANT1 or ANT2 or ANT3) 2TxTRx for MIMO mode (ANT0+ANT1 or ANT0+ANT3 or ANT2+ANT1 or ANT2+ANT3), Un-correlated signals.
Antenna Gain	Max 2.0dBi for 2.4GHz Band, Max 2.5dBi for 5.8GHz Band.
The type of wideband data transmission equipment	Non-FHSS
Technical Specification of 2.4GHz SDR	
Operating Frequency	2403.5-2469.5MHz for 1.4MHz Bandwidth 2405.12-2471.12MHz for 1.4MHz Bandwidth (CA mode) 2405.5-2468.5MHz for 3MHz Bandwidth 2408.2-2471.2MHz 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 Type	FPC Antennas
Antenna Number	1Tx1Rx for SISO mode (ANT0 or ANT1 or ANT2 or ANT3) 2TxTRx for MIMO mode (ANT0+ANT1 or ANT0+ANT3 or ANT2+ANT1 or ANT2+ANT3), Un-correlated signals.
Antenna Gain	Max 2.0dBi for 2.4GHz Band, Max 2.5dBi for 5.8GHz Band.
The type of wideband data transmission equipment	Non-FHSS
Technical Specification of 5.2GHz SDR	
Operating Frequency	5157-5245MHz for 10MHz Bandwidth 5161-5240MHz for 20MHz Bandwidth

	5170-5230MHz for 40MHz Bandwidth
Type of Modulation	OFDM (QPSK, 16QAM, 64QAM)
Channel Number	9 channels for 10MHz Bandwidth 12 channels for 20MHz Bandwidth 22 channels for 40MHz Bandwidth
Channel Separation	10MHz, 20MHz, 40MHz
Antenna Type	Integral Antennas
Antenna Number	1Tx1Rx for SISO mode (ANT0 or ANT1 or ANT2 or ANT3) 2Tx2Rx for MIMO mode (ANT0+ANT1 or ANT0+ANT3 or ANT2+ANT1 or ANT2+ANT3)
Antenna Gain	2.0dBi
The type of wideband data transmission equipment	DTS

3. Test Results

3.1 Transmitter Requirements & Test Suites

3.1.1 RF Exposure Compliance

RESULT:

Pass

Test standard : FCC Part 1.1091
Limit : Table 1 of 47 CFR FCC Part 1.1310
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 Radio Frequency Exposure Limit

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

3.1.1.2 Radio Frequency Exposure Calculation Formula

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

Operating Mode	Max. EIRP incl. tune-up (dBm)	Distance (cm)	MPE P_d (mW/cm ²)	Limit (mW/cm ²)	Verdict
2.4GHz SDR	29.38	20	0.173	1.0	Pass
5.8GHz SDR	30.59	20	0.228	1.0	Pass
5.2GHz SDR	20.98	20	0.025	1.0	Pass

Note: 2.4G SDR, 5.2G SDR and 5.8GHz SDR RF Output Power: Refer to test report CN224PNQ 002 & CN224PNQ 003 & CN224PNQ 009.

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

Co-location Mode	Sum of the MPE ratios	Limit	Verdict
2.4GHz SDR +5.8GHz SDR	$0.173/1+0.228/1<1.0$	1.0	Pass
2.4GHz SDR +5.2GHz SDR	$0.173/1+0.025/1<1.0$	1.0	Pass

3.1.1.3 Simultaneous transmission MPE

Not applicable.

3.1.1.4 Conclusion

Therefore the maximum calculations result of above are meet the requirement of Radio Frequency Exposure (MPE) limit.

4. List of Tables

Table 1: General Information of EUT	5
Table 2: Technical Specification of EUT	5
Table 3: Test Results of RF Exposure Calculations for FCC, stand-alone mode.....	9
Table 4: Test Results of RF Exposure Calculations for FCC, Simultaneous mode.....	9