Prüfbericht-Nr.: *Test report no.*:	**CN23WKV3 002**	**Auftrags-Nr.:** *Order no.*:	**168427672**	Seite 1 von 27 *Page 1 of 27*
Kunden-Referenz-Nr.: *Client reference no.*:	N/A	**Auftragsdatum:** *Order date:*	2023-05-22	
Auftraggeber: *Client*:	**SZ DJI TECHNOLOGY CO., LTD** Lobby of T2, DJI Sky City, No. 53 Xianyuan Road, Xili Community, Xili Street, Nanshan District, Shenzhen, China.			
Prüfgegenstand: *Test item*:	DJI Mini 4 Pro			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	MT4MFVD, MT4MFVDB (Trademark: DJI)			
Auftrags-Inhalt: *Order content*:	Test Report			
Prüfgrundlage: *Test specification*:	CFR47 FCC Part 15: Subpart C Section 15.247			
Wareneingangsdatum: *Date of sample receipt*:	2023-05-25	Please refer to Photo Document		
Prüfmuster-Nr.: *Test sample no:*	A003481038-013~014			
Prüfzeitraum: *Testing period*:	2023-05-31 - 2023-08-22			
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:	x Bell Hu Signed by: Bell Hu	**genehmigt von:** *authorized by*:	X Lin Lin Signed by: Lin Lin
Datum: *Date:* 2023-08-23		**Ausstellungsdatum:** *Issue date:* 2023-08-23	
Stellung / Position:	Sachverständige(r)/Expert	**Stellung** / Position:	Sachverständige(r)/Expert

Sonstiges / *Other*: FCC ID: SS3-MT4MFVD23
This report is for Bluetooth BLE, 2.4GHz SDR and 2.4GHz Wi-Fi.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* 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*

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system.* *Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the “Zero Guard Band Rule” and “Simple Acceptance” in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.

Test Summary

5.1.1 ANTENNA REQUIREMENT
RESULT: Pass

5.1.2 MAXIMUM CONDUCTED OUTPUT POWER
RESULT: Pass

5.1.3 CONDUCTED POWER SPECTRAL DENSITY
RESULT: Pass

5.1.4 6DB BANDWIDTH
RESULT: Pass

5.1.5 99% BANDWIDTH
RESULT: Pass

5.1.6 CONDUCTED SPURIOUS EMISSIONS MEASURED IN 100 KHZ BANDWIDTH
RESULT: Pass

5.1.7 RADIATED SPURIOUS EMISSION
RESULT: Pass

Contents

1 General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix A: Test Results of Bluetooth BLE

Appendix B: Test Results of 2.4GHz SDR

Appendix C: Test Results of 2.4GHz Wi-Fi

Appendix D: Photographs of Test Set-up

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.

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

FCC Registration No.: 694916

ISED Wireless Device Testing Laboratory: 25069

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Radio Spectrum Testing (SRD-Tonscend)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY60241175	2023-10-10
MXG X-Series RF Vector Signal Generator	Keysight	N5182B	MY61250137	2023-10-10
EXG X-Series Microwave Analog Signal Generator	Keysight	N5173B	MY61250141	2023-10-10
DC power supply	Keysight	E3642A	MY61276100	2023-10-10
Power Control Unit	Tonscend	JS0806-4ADC	N/A	2023-10-10
Automation Control Unit	Tonscend	JS0806-2	21C8060396	2023-10-10
Test Software	Tonscend	JS1120-3	N/A	N/A
Control PC	Lenovo	TianYi510S-071MB	YLX23JMF	N/A
Shielding Room 8#	Albatross	SR8	APC17151-SR8	2024-06-22
Unwanted Emission Testing (TS9975)				
Equipment	**Manufacturer**	**Model**	**Serial No.**	**Cal. until**
EMI Test Receiver	R&S	ESR 7	102021	2024-07-25
Signal Analyzer	R&S	FSV 40	101439	2024-07-25
System Controller Interface	R&S	SCI-100	S10010038	N/A
Filterbank	R&S	Wlan	100759	2024-07-25
OSP	R&S	OSP 120	102040	N/A
Pre-amplifier	R&S	SCU08F1	08320031	2024-07-25
Amplifier	R&S	SCU-18F	180070	2024-07-25
Amplifier	R&S	SCU40A	100475	2024-07-25
Trilog Broadband Antenna (30 MHz - 7 GHz)	Schwarzbeck	VULB 9162	193	2024-08-06
Double-Ridged Antenna (1 -18 GHz)	ETS-LINDGREN	3117	00218717	2024-08-06
Wideband Ridged Horn Antenna (18-40 GHz)	Steatite	QMS-00880	19067	2024-08-27
Active Loop Antenna	Schwarzbeck	FMZB 1513	302	2024-08-06
Test software	R&S	EMC32 (V10.60.10)	N/A	N/A
Control PC	Dell	OptiPlex 7050	36NV9P2	N/A

3m Semi-Anechoic Chamber	Albatross	SAC-3m	APC17151-SAC	2024-06-22

2.3 Traceability

All measurement equipment calibrations are traceable to NIM (National Institute of Metrology) or where calibration is performed in other countries, to equivalent nationally recognized standards organizations.

2.4 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 basics using in house standards or comparisons.

2.5 Measurement Uncertainty

The estimated combined standard uncertainty for radiated emissions and conducted emissions measurements as below table.

Table 2: Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	± 0.99 dB
Occupied Channel Bandwidth	± 2.08 %
RF power density, conducted	± 0.99 dB
Unwanted Emissions, conducted	± 0.89 dB
All emissions, radiated	± 4.17 dB

2.6 Location of Original Data

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

2.7 Status of Facility Used for Testing

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

3 General Product Information

3.1 Product Function and Intended Use

The EUT (**E**quipment **U**nder **T**est) is a DJI Mini 4 Pro. It supports Bluetooth, 2.4GHz SDR, 2.4GHz Wi-Fi, 5.2GHz SDR, 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.

According to the declaration of the applicant, the electrical circuit design and PCB layout are identical, only the model no. is different for market strategy.

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

3.2 Ratings and System Details

Table 3: Technical Specification of EUT

General Information of EUT	Value
Kind of Equipment	DJI Mini 4 Pro
Type Designation	MT4MFVD, MT4MFVDB
Trademark	DJI
Operating Voltage	AC 100-240V, 50/60Hz input via AC/DC Adapter or Battery operated (7.38V@3850mAh, 7.32V@2590mAh)
Testing Voltage	Fully charged battery
Operating 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/5MHz/10MHz/20MHz/40MHz/60MHz Bandwidth 3) 2.4GHz Wi-Fi: operating within 2400-2483.5MHz, supports 20MHz/40MHz Bandwidth and IEEE 802.11 b/g/n20/n40 4) 5.2GHz SDR: operating within 5170-5250MHz, supports 10MHz/20MHz/40MHz Bandwidth 5) 5.8GHz SDR: operating within 5725-5850MHz, supports 1.4MHz/3MHz/5MHz/10MHz/20MHz/40MHz/60MHz/80MHz Bandwidth 6) 5.8GHz Wi-Fi: operating within 5725-5850MHz, supports 20MHz/40MHz/80MHz Bandwidth and IEEE 802.11 a/n20/n40/ac20/ac40/ac80 7) GPS & BDS & Galileo & GLONASS (receiver): operating within 1559 to 1610 MHz
Adapter	Model: PD-30US Input: 100-240V, 50/60Hz, 0.8A Max Output: DC 3.3-11.0V/2.72A or 5.0V/3A or 9.0V/3A or 12V/2.5A or 15V/2A
Technical Specification of Bluetooth BLE	
Operating Frequency	2402-2480MHz

Type of Modulation	GFSK
Data Rate	1Mbps, 2Mbps
Channel Number	40 channels
Channel Separation	2MHz
Antenna Type	Integral Antenna (ANT1)
Antenna Gain	1.0 dBi (Provided by the Client)
The type of wideband data transmission equipment	DTS
Technical Specification of 2.4GHz SDR	
Operating Frequency	2403.5-2467.5MHz for 1.4MHz Bandwidth 2405.12-2469.12MHz for 1.4MHz Bandwidth (CA mode) 2405.5-2465.5MHz for 3MHz Bandwidth 2408.2-2468.2MHz for 3MHz Bandwidth (CA mode) 2404.5-2469.5MHz for 5MHz Bandwidth 2407.5-2467.5MHz for 10MHz Bandwidth 2412.5-2462.5MHz for 20MHz Bandwidth 2422.5-2452.5MHz for 40MHz Bandwidth 2432.5-2442.5MHz for 60MHz Bandwidth
Type of Modulation	OFDM (QPSK/16QAM/64QAM/256QAM/1024QAM/4096QAM)
Channel Number	33 channels for 1.4MHz Bandwidth 33 channels for 1.4MHz Bandwidth (CA mode) 21 channels for 3MHz Bandwidth 21 channels for 3MHz Bandwidth (CA mode) 14 channels for 5MHz Bandwidth 61 channels for 10MHz Bandwidth 51 channels for 20MHz Bandwidth 31 channels for 40MHz Bandwidth 11 channels for 60MHz Bandwidth
Channel Separation	2MHz for 1.4MHz Bandwidth 2MHz for 1.4MHz Bandwidth (CA mode) 3MHz for 3MHz Bandwidth 3MHz and 3MHz for 3MHz Bandwidth (CA mode) 5MHz for 5MHz Bandwidth 1MHz for 10MHz/20MHz/40MHz/60MHz Bandwidth
Antenna Type	Integral Antenna
Antenna Number	1Tx4Rx,1Tx2Rx for SISO mode (ANT0 or ANT1 or ANT2 or ANT3) 2Tx2Rx,2Tx4Rx for MIMO mode (ANT0+ANT1, or ANT0+ANT3, or ANT2+ANT1, or ANT2+ANT3)
Antenna Gain	1.0 dBi for ANT0/ANT1/ANT2/ANT3 (Provided by the Client)
The type of wideband data transmission equipment	DTS
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) OFDMA(BPSK/QPSK/16QAM/64QAM/256QAM)
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 Mbps for 802.11n(HT20)/(HT40)
Channel Number	11 channels for 802.11b/g/n(HT20)

	7 channels for 802.11n(HT40)
Channel Separation	5 MHz
Antenna Type	Integral Antenna (ANT1)
Antenna Gain	1.0 dBi (Provided by the Client)
The type of wideband data transmission equipment	DTS

Table 4: RF Channel and Frequency of Bluetooth BLE

RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
0	**2402**	10	2422	20	2442	30	2462
1	2404	11	2424	21	2444	31	2464
2	2406	12	2426	22	2446	32	2466
3	2408	13	2428	23	2448	33	2468
4	2410	14	2430	24	2450	34	2470
5	2412	15	2432	25	2452	35	2472
6	2414	16	2434	26	2454	36	2474
7	2416	17	2436	27	2456	37	2476
8	2418	18	2438	28	2458	38	2478
9	2420	**19**	**2440**	29	2460	**39**	**2480**

Table 5: RF Channel and Frequency of 2.4GHz SDR

2.4GHz 1.4MHz Bandwidth (2403.5MHz-2467.5MHz)			
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2403.5	18	2437.5
2	2405.5	19	2439.5
3	2407.5	20	2441.5
4	2409.5	21	2443.5
5	2411.5	22	2445.5
6	2413.5	23	2447.5
7	2415.5	24	2449.5
8	2417.5	25	2451.5
9	2419.5	26	2453.5
10	2421.5	27	2455.5
11	2423.5	28	2457.5
12	2425.5	29	2459.5
13	2427.5	30	2461.5
14	2429.5	31	2463.5
15	2431.5	32	2465.5
16	2433.5	33	2467.5
17	2435.5		

2.4GHz 1.4MHz Bandwidth (CA Mode) (2405.12MHz-2469.12MHz)			
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2405.12	18	2439.12
2	2407.12	19	2441.12
3	2409.12	20	2443.12
4	2411.12	21	2445.12
5	2413.12	22	2447.12
6	2415.12	23	2449.12
7	2417.12	24	2451.12
8	2419.12	25	2453.12
9	2421.12	26	2455.12
10	2423.12	27	2457.12
11	2425.12	28	2459.12
12	2427.12	29	2461.12
13	2429.12	30	2463.12
14	2431.12	31	2465.12
15	2433.12	32	2467.12
16	2435.12	33	2469.12
17	2437.12		

2.4GHz 3MHz Bandwidth (2405.5MHz-2465.5MHz)			
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2405.5	12	2438.5
2	2408.5	13	2441.5
3	2411.5	14	2444.5
4	2414.5	15	2447.5
5	2417.5	16	2450.5
6	2420.5	17	2453.5
7	2423.5	18	2456.5
8	2426.5	19	2459.5
9	2429.5	20	2462.5
10	2432.5	21	2465.5
11	2435.5		

2.4GHz 3MHz Bandwidth (CA Mode) (2408.2MHz-2468.2MHz)					
RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)	RF Channel	Frequency (MHz)
1	2408.2	8	2429.2	15	2450.2
2	2411.2	9	2432.2	16	2453.2
3	2414.2	10	2435.2	17	2456.2
4	2417.2	11	2438.2	18	2459.2

5	2420.2	12	2441.2	19	2462.2
6	2423.2	13	2444.2	20	2465.2
7	2426.2	14	2447.2	21	2468.2

2.4GHz 5MHz Bandwidth (2404.5MHz-2469.5MHz)			
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2404.5	8	2439.5
2	2409.5	9	2444.5
3	2414.5	10	2449.5
4	2419.5	11	2454.5
5	2424.5	12	2459.5
6	2429.5	13	2464.5
7	2434.5	14	2469.5

2.4GHz 10MHz Bandwidth (2407.5MHz-2467.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2407.5	22	2428.5	43	2449.5
2	2408.5	23	2429.5	44	2450.5
3	2409.5	24	2430.5	45	2451.5
4	2410.5	25	2431.5	46	2452.5
5	2411.5	26	2432.5	47	2453.5
6	2412.5	27	2433.5	48	2454.5
7	2413.5	28	2434.5	49	2455.5
8	2414.5	29	2435.5	50	2456.5
9	2415.5	30	2436.5	51	2457.5
10	2416.5	31	2437.5	52	2458.5
11	2417.5	32	2438.5	53	2459.5
12	2418.5	33	2439.5	54	2460.5
13	2419.5	34	2440.5	55	2461.5
14	2420.5	35	2441.5	56	2462.5
15	2421.5	36	2442.5	57	2463.5
16	2422.5	37	2443.5	58	2464.5
17	2423.5	38	2444.5	59	2465.5
18	2424.5	39	2445.5	60	2466.5
19	2425.5	40	2446.5	61	2467.5
20	2426.5	41	2447.5		
21	2427.5	42	2448.5		

2.4GHz 20MHz Bandwidth (2412.5MHz-2462.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2412.5	18	2429.5	35	2446.5
2	2413.5	19	2430.5	36	2447.5
3	2414.5	20	2431.5	37	2448.5
4	2415.5	21	2432.5	38	2449.5
5	2416.5	22	2433.5	39	2450.5
6	2417.5	23	2434.5	40	2451.5
7	2418.5	24	2435.5	41	2452.5
8	2419.5	25	2436.5	42	2453.5
9	2420.5	26	2437.5	43	2454.5
10	2421.5	27	2438.5	44	2455.5
11	2422.5	28	2439.5	45	2456.5
12	2423.5	29	2440.5	46	2457.5
13	2424.5	30	2441.5	47	2458.5
14	2425.5	31	2442.5	48	2459.5
15	2426.5	32	2443.5	49	2460.5
16	2427.5	33	2444.5	50	2461.5
17	2428.5	34	2445.5	51	2462.5

2.4GHz 40MHz Bandwidth (2422.5MHz-2452.5MHz)					
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2422.5	12	2433.5	23	2444.5
2	2423.5	13	2434.5	24	2445.5
3	2424.5	14	2435.5	25	2446.5
4	2425.5	15	2436.5	26	2447.5
5	2426.5	16	2437.5	27	2448.5
6	2427.5	17	2438.5	28	2449.5
7	2428.5	18	2439.5	29	2450.5
8	2429.5	19	2440.5	30	2451.5
9	2430.5	20	2441.5	31	2452.5
10	2431.5	21	2442.5		
11	2432.5	22	2443.5		

2.4GHz 60MHz Bandwidth (2432.5MHz-2442.5MHz)			
RF Channel	**Frequency (MHz)**	**RF Channel**	**Frequency (MHz)**
1	2432.5	7	2438.5
2	2433.5	8	2439.5
3	2434.5	9	2440.5
4	2435.5	10	2441.5

5	2436.5	11	2442.5
6	2437.5		

Table 6: RF Channel and Frequency of 2.4GHz Wi-Fi 802.11 b/g/n

RF Channel	802.11 b/g/n(HT20) (MHz)	802.11 n(HT40) (MHz)
01	2412	/
02	2417	
03	2422	2422
04	2427	2427
05	2432	2432
06	2437	2437
07	2442	2442
08	2447	2447
09	2452	2452
10	2457	/
11	2462	

3.3 Independent Operation Modes

The basic operation modes are:

A. On, Bluetooth BLE wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

B. On, 2.4GHz SDR wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

C. On, Wi-Fi 802.11 b/g/n wireless transmitting mode
   1) Low Channel
   2) Middle Channel
   3) High Channel

D. On, Normal Operation

E. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Application Form
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Radio Spectrum: The equipment under test (EUT) was configured at its highest power output in order to measure its highest possible radiation and conducted level. The test modes were adapted accordingly in reference to the instructions for use.

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5. All tests were performed according to the procedures in ANSI C63.10: 2013.

According to clause 3.1, all tests were performed on model MT4MFVD in this report.

4.3 Special Accessories and Auxiliary Equipment

Table 7: Auxiliary Equipment Used During Test

Description	Manufacturer	Model	S/N
Laptop	Lenovo	T480	PF-16A6N8
DJI RC	DJI	RC151	--

4.4 Countermeasures to Achieve EMC Compliance

The test sample which has been tested contained the noise suppression parts as described in the Technical Construction File (TCF).

No additional measures were employed to achieve compliance.

4.5 Test Setup Diagram

Diagram of Measurement Configuration for Radiation Test (Below 1GHz)

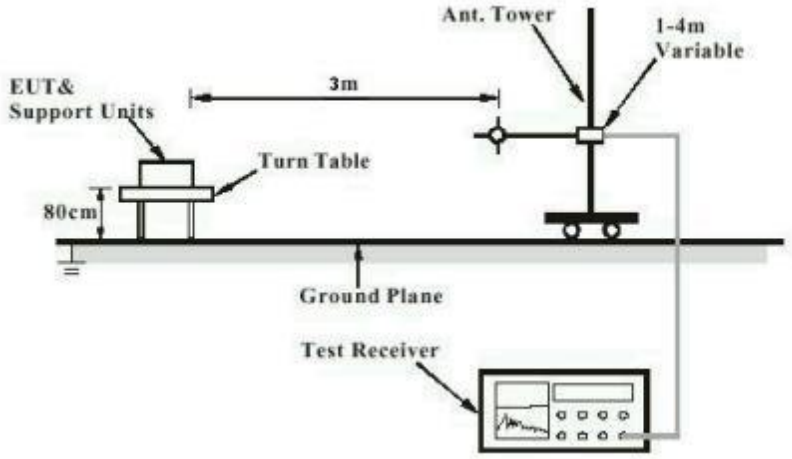


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

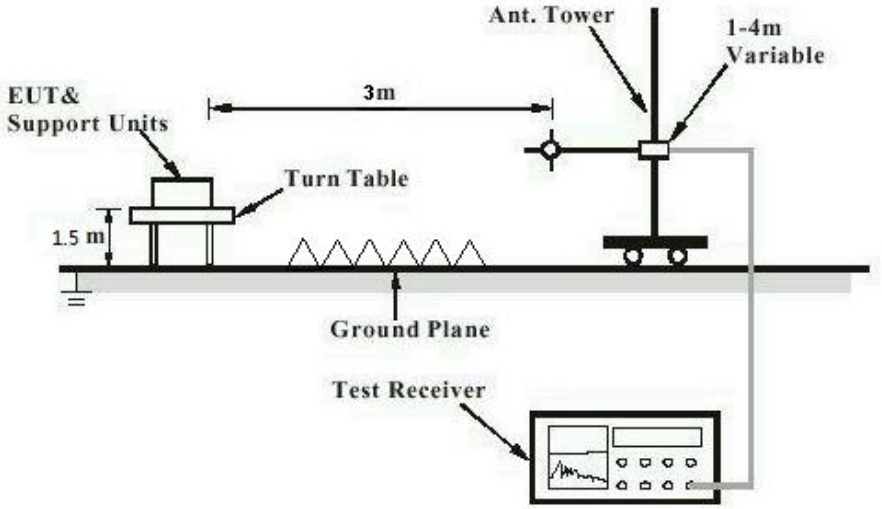
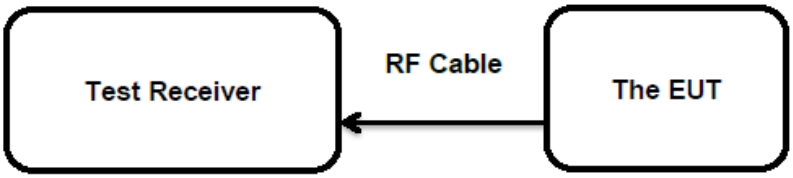


Diagram of Measurement Configuration for Conducted Transmitter Measurement



5 Test Results

5.1 Transmitter Requirement & Test Suites

5.1.1 Antenna Requirement

RESULT: **Pass**

Test Specification

Test standard : FCC Part 15.247(b)(4) and Part 15.203

The EUT has internal antennas, the maximum antenna gain is 1.0dBi for 2.4GHz SDR and 1.0dBi for 2.4GHz Wi-Fi & BLE, and the antenna connector is designed with permanent attachment and no consideration of replacement.

Therefore the EUT is considered sufficient to comply with the provision.

Refer to EUT Photo for further details.

5.1.2 Maximum Conducted Output Power

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(b)(3)
Basic standard	:	ANSI C63.10: 2013
Limits	:	1.0 Watts
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-06-14 to 2023-08-22
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For details refer to following test result.

Table 8: Test Result of Maximum Conducted Output Power, Bluetooth BLE

Test Mode	Data Rate	Test Channel (MHz)	Measured Peak Power		Limit (W)
			(dBm)	(W)	
Bluetooth BLE	1 Mbps	2402	5.77	0.0038	< 1.0
		2440	**6.59**	**0.0046**	
		2480	5.42	0.0035	
	2 Mbps	2402	5.79	0.0038	
		2440	6.45	0.0044	
		2480	5.24	0.0033	
Max. e.i.r.p.=6.59dBm+1.0dBi=7.59dBm, which is less than 36dBm=4W.					

Table 9: Test Result of Maximum Conducted Output Power, Wi-Fi 802.11 b/g/n

Test Mode	Data Rate	Test Channel (MHz)	Measured Average Power		Limit (W)
			(dBm)	(W)	
802.11b	1 Mbps	2412	12.17	0.0165	< 1.0
		2437	16.58	0.0455	
		2462	12.53	0.0179	
802.11g	6 Mbps	2412	15.83	0.0383	
		2437	20.44	0.1107	
		2462	16.66	0.0463	
802.11n (HT20)	MCS0	2412	16.15	0.0412	
		2437	**21.05**	**0.1274**	
		2462	16.61	0.0458	
802.11n (HT40)	MCS0	2422	17.74	0.0594	
		2437	18.64	0.0731	
		2452	14.11	0.0258	
Note: Max. e.i.r.p. =21.05dBm+1.0dBi=22.05dBm, which is less than 36dBm=4W.					

Table 10: Test Result of Maximum Conducted Output Power, 2.4GHz SDR

Worst case for SISO mode (ANT2)

Test Mode	Test Channel (MHz)	Measured Average Power		Limit (W)
		(dBm)	(W)	
1.4MHz BW	2403.5	14.58	0.0287	< 1.0
	2435.5	15.13	0.0326	
	2467.5	14.53	0.0284	
1.4MHz BW CA	2405.12	14.56	0.0286	
	2437.12	15.46	0.0352	
	2469.12	14.47	0.0280	
3MHz BW	2405.5	15.67	0.0369	
	2435.5	16.36	0.0433	
	2465.5	15.87	0.0386	
3MHz BW CA	2408.2	15.65	0.0367	
	2438.2	16.44	0.0441	
	2468.2	15.74	0.0375	
5MHz BW	2404.5	15.21	0.0332	
	2434.5	15.38	0.0345	
	2469.5	16.45	0.0442	
10MHz BW	2407.5	21.72	0.1486	
	2437.5	24.95	0.3126	
	2467.5	24.91	0.3097	
20MHz BW	2412.5	21.89	0.1545	
	2413.5	21.86	0.1535	
	2414.5	22.9	0.1950	
	2437.5	25.37	0.3443	
	2462.5	22.29	0.1694	
40MHz BW	2422.5	20.71	0.1178	
	2423.5	22.03	0.1596	
	2437.5	25.07	0.3214	
	2452.5	24.46	0.2793	
60MHz BW	2432.5	21.26	0.1337	
	2433.5	22.23	0.1671	
	2437.5	25.4	**0.3467**	
	2442.5	24.98	0.3148	
Note: Max. e.i.r.p. =25.4dBm+1.0dBi=26.4dBm, which is less than 36dBm=4W.				

Worst case for MIMO mode (ANT0+ANT3)

Test Mode	Test Channel (MHz)	Measured Average Power		Limit (W)
		(dBm)	(W)	
1.4MHz BW	2403.5	18.21	0.0662	< 1.0
	2435.5	18.56	0.0718	
	2467.5	18.61	0.0726	
1.4MHz BW CA	2405.12	18.09	0.0644	
	2437.12	18.25	0.0668	
	2469.12	18.17	0.0656	
3MHz BW	2405.5	18.76	0.0752	
	2435.5	18.48	0.0705	
	2465.5	18.23	0.0665	
3MHz BW CA	2408.2	18.28	0.0673	
	2438.2	18.58	0.0721	
	2468.2	18.19	0.0659	
5MHz BW	2404.5	18.31	0.0678	
	2434.5	18.54	0.0714	
	2469.5	18.76	0.0752	
10MHz BW	2407.5	23.84	0.2421	
	2408.5	24.43	0.2773	
	2409.5	25.87	0.3864	
	2437.5	28	0.6310	
	2467.5	27.54	0.5675	
20MHz BW	2412.5	24.44	0.2780	
	2413.5	25.78	0.3784	
	2437.5	28.12	0.6486	
	2462.5	28.03	0.6353	
40MHz BW	2422.5	23.59	0.2286	
	2423.5	23.39	0.2183	
	2424.5	23.47	0.2223	
	2425.5	23.93	0.2472	
	2426.5	24.55	0.2851	
	2427.5	24.63	0.2904	
	2428.5	24.47	0.2799	
	2429.5	24.53	0.2838	
	2430.5	24.23	0.2649	
	2431.5	24.41	0.2761	
	2432.5	25.04	0.3192	
	2433.5	25.19	0.3304	
	2434.5	26.02	0.3999	
	2437.5	28.5	0.7079	
	2452.5	27.95	0.6237	
60MHz BW	2432.5	24.36	0.2729	
	2433.5	24.85	0.3055	
	2434.5	25.1	0.3236	
	2435.5	24.9	0.3090	
	2436.5	24.88	0.3076	
	2437.5	**28.52**	**0.7112**	
	2442.5	27.74	0.5943	
Note: 1. Max. e.i.r.p. =28.52dBm+1.0dBi=29.52dBm, which is less than 36dBm=4W.				

The cable loss is taken into account in results, e.i.r.p.=P(Conducted power)+ G
Antenna gain(G) of Bluetooth BLE: 1.0dBi; Antenna gain(G) of 2.4GHz Wi-Fi: 1.0dBi
Antenna gain(G) of 2.4GHz SDR: 1.0dBi (uncorrelated antenna gain)

5.1.3 Conducted Power Spectral Density

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(e)
Basic standard	:	ANSI C63.10: 2013
Limits	:	< 8 dBm / 3kHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-06-14 to 2023-08-22
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A, B, C.

5.1.4 6dB Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)(2)
Basic standard	:	ANSI C63.10: 2013
Limits	:	> 500 KHz
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-06-14 to to 2023-08-22 2023-07-25
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A, B, C.

5.1.5 99% Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(a)
Basic standard	:	ANSI C63.10: 2013
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-06-14 to 2023-08-22
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix A, B, C.

5.1.6 Conducted Spurious Emissions Measured in 100 kHz Bandwidth

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d)
Basic standard	:	ANSI C63.10: 2013
Limits	:	20dB (below that in the 100kHz bandwidth within the band that contains the highest level of the desired power); In addition, radiated emissions which fall in the restricted bands, must also comply with the radiated emission limits specified in 15.209(a)
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	2023-06-14 to 2023-08-22
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	25 ℃
Relative humidity	:	45 %
Atmospheric pressure	:	101 kPa

Test results of 100kHz Bandwidth of Frequency Band Edge by Conducted method refer to test plots, and compliance is achieved as well.

For the measurement records, refer to the appendix A, B, C.

5.1.7 Radiated Spurious Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.247(d) & FCC Part 15.205
Basic standard	:	ANSI C63.10: 2013
Limits	:	Refer to 15.209(a) of FCC part 15.247(d)
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	2023-05-31 to 2023-07-27
Input voltage	:	Fully charged battery
Operation mode	:	A, B, C
Test channel	:	Low / Middle / High
Ambient temperature	:	Refer to test result
Relative humidity	:	Refer to test result
Atmospheric pressure	:	101 kPa

Remark:
Testing was carried out within frequency range 9kHz to the tenth harmonics. Only the worst case spurious emissions configuration of the each mode were reported.

For the measurement records, refer to the appendix A, B, C.

6 Photographs of the Test Set-Up

For photographs of the test set-up, refer to the appendix D.

7 List of Tables