Prüfbericht-Nr.: *Test report No.:*	**60390332 002**	**Auftrags-Nr.:** *Order No.:*	168269739	**Seite 1 von 13** *Page 1 of 13*
Kunden-Referenz-Nr.: *Client reference No.:*	N/A	**Auftragsdatum:** *Order date.:*	16.06.2019	
Auftraggeber: *Client:*	**SZ DJI Osmo Technology Co., Ltd.** 2F, Building 3, Binhai Mingzhu Industrial Park No. 291 Louming Road, Xinhu Street Guangming District, Shenzhen, China			
Prüfgegenstand: *Test item:*	DJI OM 4			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	OK100			
Auftrags-Inhalt: *Order content:*	Test Report			
Prüfgrundlage: *Test specification:*	CFR47 FCC Part 15B § 15.107 CFR47 FCC Part 15B § 15.109 ICES-003 Issue 6			

Wareneingangsdatum: *Date of receipt:*	20.06.2020	Please refer to photo documents
Prüfmuster-Nr.: *Test sample No.:*	A002848442-001	
Prüfzeitraum: *Testing period:*	22.06.2020 to 01.07.2020	
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:*			**kontrolliert von /** *reviewed by:*		
03.07.2020	Hardy Suo / Assistant Project Manager		03.07.2020	Sam Lin / Technical Certifier	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges / *Other:*

FCC ID: 2ANDR-OK1002005

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 = mangelhalt
	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 specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

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: Photographs of the Test Set-up

Appendix B: Test Results of test data

2 Test Sites

2.1 Test Facilities

TÜV Rheinland (Shenzhen) Co., Ltd.
362 Huanguan Road Middle Longhua District, Shenzhen 518110 People's Republic of China

FCC Registration No.: 694916

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Conducted Emission on AC Mains				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cali. until**
EMI Test Receiver	R&S	ESR3	102428	03.09.2020
Artificial Mains Network	R&S	ENV216	102333	19.08.2020
Artificial Mains Network	R&S	ENV432	101411	19.08.2020
Attenuator	R&S	ESH2Z31	100300	19.08.2020
EMC32 test software	R&S	EMC32(Ver.10.50.01)	N/A	N/A

Radiated Emission (3m chamber)				
Equipment	**Manufacturer**	**Model No.**	**Serial No.**	**Cali. until**
3m SAC	ETS	SAC3	CT001632-Q1362	23.08.2021
EMI Test Receiver	R&S	ESR7	102111	04.01.2021
Horn Antenna	R&S	HF907	102706	01.09.2020
Preamplifier	FIT	SCU-18F	180077	19.08.2020
Trilog-Broadband antenna	SCHWARZBECK	VULB9168	0945	12.09.2020
Switching Controller Interface	R&S	OSP 120	102039	N/A
EMC32 test software	R&S	EMC32(Ver.10.50.01)	N/A	N/A

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.

Parameter	Uncertainty
Conducted Emission, (9kHz to 150kHz)/(150kHz to 30MHz)	± 3.70 dB / ± 3.30 dB
Radiated Emission (3m SAC), 30MHz to 1000MHz	± 4.52 dB
Radiated Emission (3m SAC), above 1000MHz	± 4.37 dB

2.6 Location of Original Data

The original copies of all test data taken during actual testing were attached at Appendix A & B 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 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.

3 General Product Information

3.1 Product Function and Intended Use

The EUT is a gimbal that supports Bluetooth BLE protocols.

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

3.2 Ratings and System Details

Table 2: Technical Specification of EUT

Technical Specification	Value
Product Name	DJI OM 4
Model	OK100
FCC ID	2ANDR-OK1002005
Frequency Bandwidth	2400-2483.5MHz
Operating Frequency/Channels/Protocol	2402-2480MHz / 40 channels / Bluetooth BLE 5.0 (Date rate of BLE 5.0: 1Mbps and 2Mbps)
Channel Spacing	2MHz
Extreme Temperature Range	0 ~ +40 °C
Modulation	GFSK
Antenna Number	1
Antenna Type	Integral antenna
Antenna Gain	1.9dBi max
Operation Voltage	Powered by USB port 5.0Vdc or rechargeable battery 7.2Vdc

3.3 Independent Operation Modes

The basic operation modes are:

A. On, charging mode (charging to Battery and un-charging to mobile phone)

B. On, Standby mode

C. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to Circuit Diagram for further details.

3.5 Submitted Documents

- Block Diagram
- FCC/IC Label and Location Info
- Schematics
- User Manual

4 Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

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 C63.4: 2014.

4.3 Special Accessories and Auxiliary Equipment

Table 3: Auxiliary Equipment Used during Test

Description	Manufacturer	Model	S/N
AC/DC adapter	Samsung	ETA-U90CBC	S/N: -- Input: 100-240Vac, 50/60Hz, 0.35A Output: 5Vdc, 2.0A
Mobile Phone	Huawei	ALP-AL00	--

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)

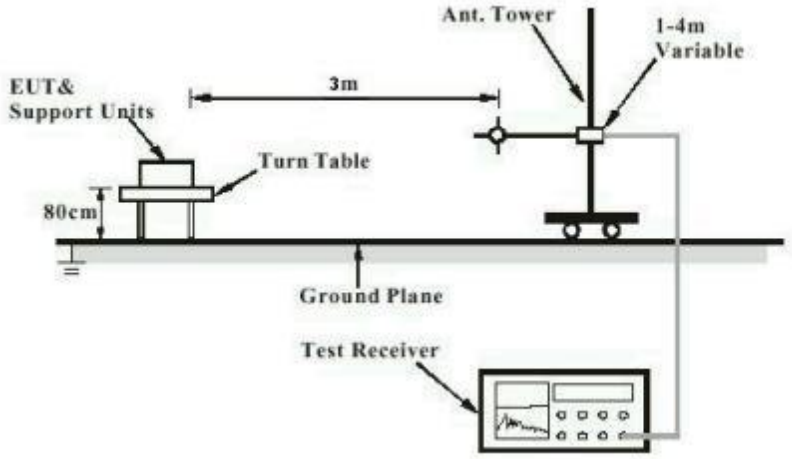


Diagram of Measurement Configuration for Radiation Test (Above 1GHz)

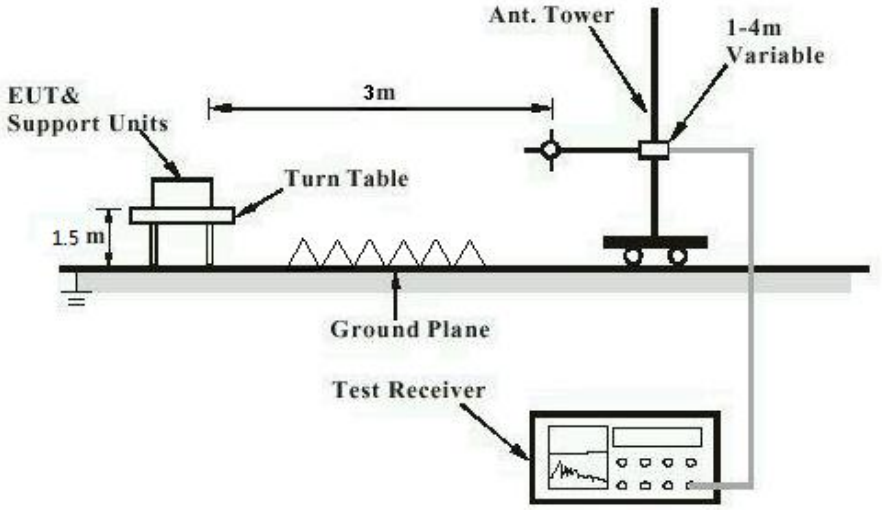
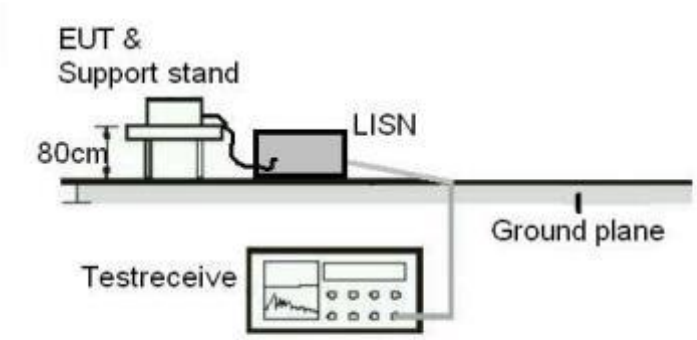


Diagram of Measurement Configuration for Mains Conduction Measurement



5 Test Results

5.1.1 Conducted Emission on AC Mains

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.107(a) ICES-003 Issue 6 section 5
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	0.15 – 30MHz
Limits	:	FCC Part 15.107a) ICES-003 Issue 6 section 6.1
Kind of test site	:	Shielded Room

Test Setup

Date of testing	:	Refer to test result
Input voltage	:	AC 120V/60Hz
Operation mode	:	A
Earthing	:	Not connected
Ambient temperature	:	22 ℃
Relative humidity	:	64 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

5.1.2 Radiated Emission

RESULT: **Pass**

Test Specification

Test standard	:	FCC Part 15.109(a) ICES-003 Issue 6 section 5
Basic standard	:	ANSI C63.4: 2014
Frequency range	:	30MHz – 12GHz
Classification	:	Class B
Limits	:	FCC Part 15.109(a) ICES-003 Issue 6 section 6.2
Kind of test site	:	3m Semi-anechoic Chamber

Test Setup

Date of testing	:	Refer to test result
Input voltage	:	AC 120V/60Hz / Power from Battery 7.2Vdc
Operation mode	:	A
Earthing	:	Not connected
Ambient temperature	:	24 ℃
Relative humidity	:	50 %
Atmospheric pressure	:	101 kPa

For the measurement records, refer to the appendix B.

6 Photographs of the Test Set-Up

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

7 List of Tables

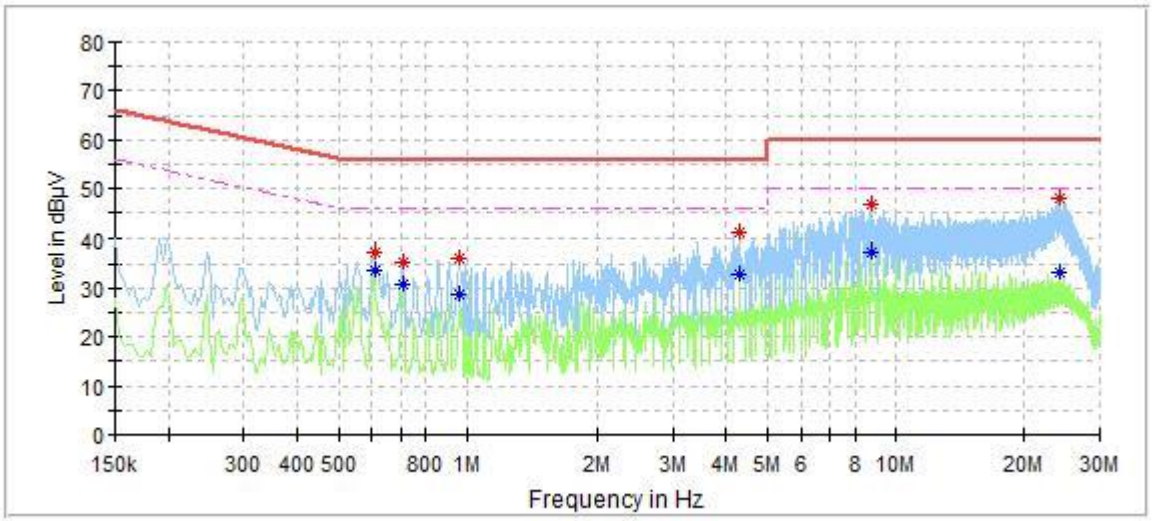
Appendix B: Test Results of FCC 15B and ICES-003

Appendix B.1: Test Plots of Conducted Emission on AC Mains

Remark: worst case is recorded in this report.

EUT Information

EUT Name:	DJI OM 4
Order No.:	168269739 330
Model:	OK100
Test Mode:	Transmission with charging mode (10% power for EUT and Phone)
Test Voltage:	AC 120V, 60Hz
Test By:	Shower.Dai
Review By:	Gary Chen
Remark:	

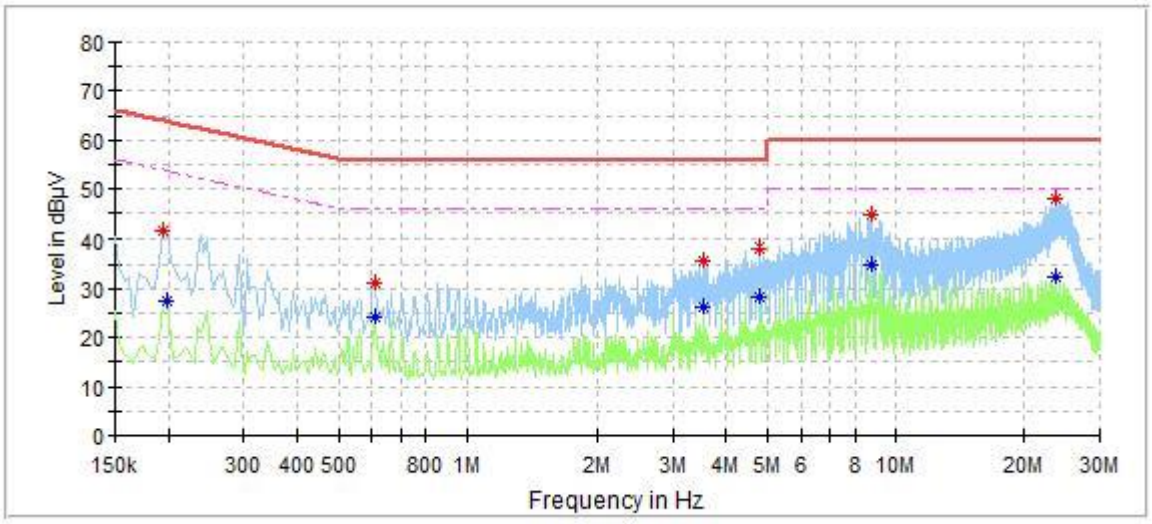


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.608000	37.37	---	56.00	18.63	L1	9.7
0.608000	---	33.82	46.00	12.18	L1	9.7
0.708000	---	30.96	46.00	15.04	L1	9.7
0.712000	35.09	---	56.00	20.91	L1	9.7
0.960000	36.26	---	56.00	19.74	L1	9.7
0.960000	---	28.78	46.00	17.22	L1	9.7
4.300000	41.00	---	56.00	15.00	L1	9.8
4.300000	---	32.85	46.00	13.15	L1	9.8
8.792000	46.57	---	60.00	13.43	L1	10.0
8.792000	---	37.34	50.00	12.66	L1	10.0
24.128000	48.18	---	60.00	11.82	L1	10.5
24.268000	---	33.12	50.00	16.88	L1	10.5

EUT Information

EUT Name:	DJI OM 4
Order No.:	168269739 330
Model:	OK100
Test Mode:	Transmission with charging mode (10% power for EUT and Phone)
Test Voltage:	AC 120V, 60Hz
Test By:	Shower.Dai
Review By:	Gary Chen
Remark:	



Critical_Freqs

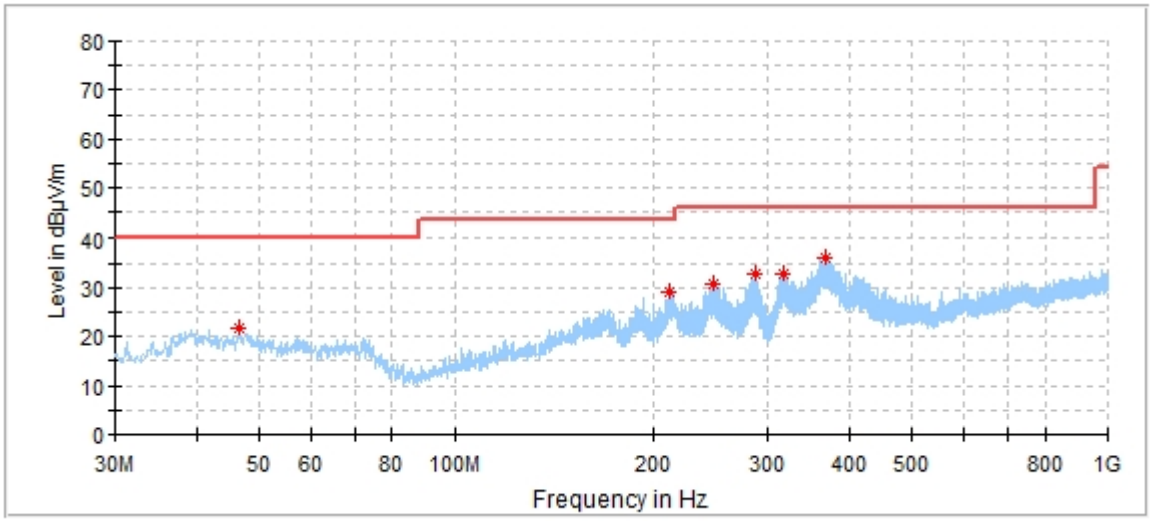
Frequency (MHz)	MaxPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Line	Corr. (dB)
0.194000	41.30	---	63.86	22.57	N	9.6
0.198000	---	27.42	53.69	26.27	N	9.6
0.608000	---	24.30	46.00	21.70	N	9.7
0.608000	31.10	---	56.00	24.90	N	9.7
3.528000	---	26.38	46.00	19.62	N	9.8
3.528000	35.89	---	56.00	20.11	N	9.8
4.816000	---	28.28	46.00	17.72	N	9.9
4.816000	38.22	---	56.00	17.78	N	9.9
8.724000	---	34.89	50.00	15.11	N	10.0
8.724000	44.56	---	60.00	15.44	N	10.0
23.704000	---	32.58	50.00	17.42	N	10.5
23.704000	47.90	---	60.00	12.10	N	10.5

Appendix B.2: Test Plots of Radiated Emission, Below 1GHz

Remark: worst case is recorded in this report.

EUT Information

EUT Name:	DJI OM 4
Model:	OK100
Order No:	168269739 330
Test Mode:	Transmission with charging mode (10% power for EUT and Phone)
Test Voltage:	AC 120V, 60HZ
Test By:	Shower.Dai
Review By:	Gary Chen
Remark:	3m Chamber

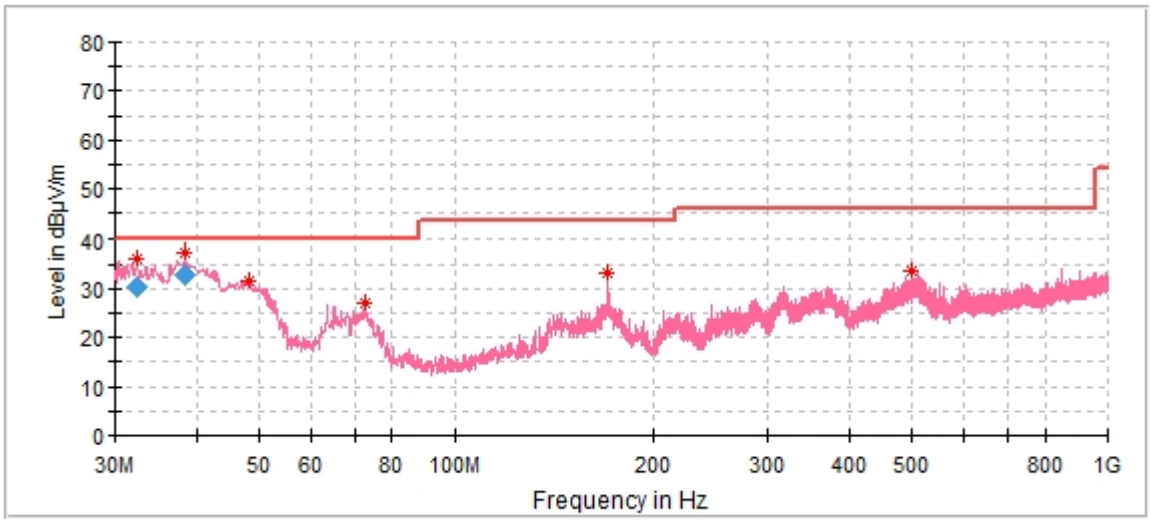


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
46.587000	21.91	40.00	18.09	100.0	H	147.0
212.554000	29.07	43.50	14.43	100.0	H	98.0
247.086000	30.94	46.00	15.06	100.0	H	286.0
287.923000	32.67	46.00	13.33	100.0	H	279.0
318.090000	32.99	46.00	13.01	100.0	H	171.0
367.754000	36.29	46.00	9.71	100.0	H	94.0

EUT Information

EUT Name:	DJI OM 4
Model:	OK100
Order No:	168269739 330
Test Mode:	Transmission with charging mode (10% power for EUT and Phone)
Test Voltage:	AC 120V, 60HZ
Test By:	Shower.Dai
Review By:	Gary Chen
Remark:	3m Chamber



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
32.445000	36.05	40.00	3.15	121.0	V	27.0
38.499000	37.33	40.00	4.21	105.0	V	203.0
48.236000	31.73	40.00	8.27	100.0	V	112.0
72.583000	27.20	40.00	12.80	200.0	V	313.0
170.650000	33.10	43.50	10.40	100.0	V	71.0
498.025000	33.72	46.00	12.28	100.0	V	108.0

Final_Result

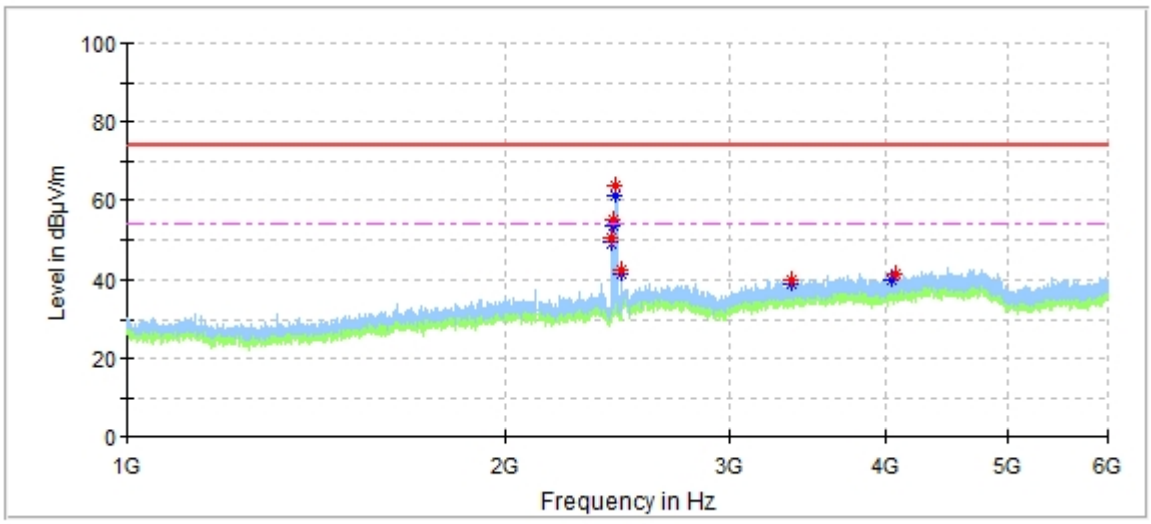
Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
32.445000	30.49	40.00	9.51	1000.0	120.000	121.0	V	27.0
38.499000	32.69	40.00	7.31	1000.0	120.000	105.0	V	203.0

Appendix B.3: Test Plots of Radiated Emission, Above 1GHz

Remark: worst case is recorded in this report.
Remark: no significant emissions found above 6GHz, hence did not recorded in this report.

EUT Information

EUT Name:	DJI OM 4
Model:	OK100
Order No:	168269739 330
Test Mode:	Transmission with charging mode (90% power for EUT and Phone)
Test Voltage:	AC 120V, 60HZ
Test By:	Shower.Dai
Review By:	Gary Chen
Remark:	3m Chamber

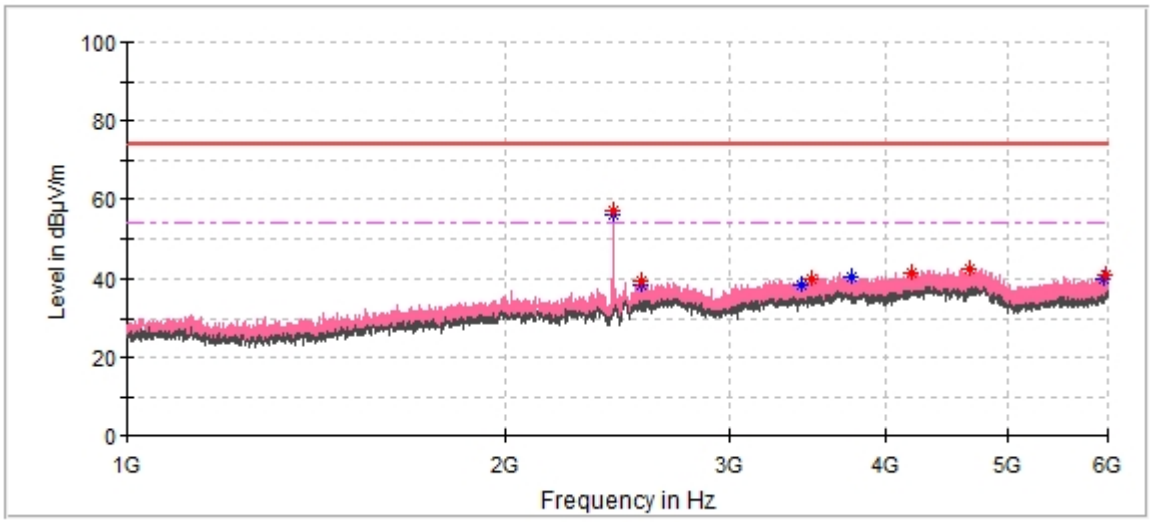


Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
2416.000000	---	49.10	---	---	100.0	H	231.0
2416.000000	50.11	---	---	---	100.0	H	231.0
2430.000000	---	53.28	---	---	100.0	H	182.0
2430.000000	55.08	---	---	---	100.0	H	182.0
2440.000000	63.45	---	---	---	100.0	H	53.0
2440.500000	---	61.04	---	---	100.0	H	53.0
2460.000000	42.60	---	---	---	100.0	H	136.0
2460.500000	---	41.35	---	---	100.0	H	136.0
3363.500000	---	39.12	54.00	14.88	100.0	H	209.0
3363.500000	40.11	---	74.00	33.89	100.0	H	209.0
4035.500000	---	40.07	54.00	13.93	100.0	H	186.0
4066.000000	41.58	---	74.00	32.42	100.0	H	264.0

EUT Information

EUT Name:	DJI OM 4
Model:	OK100
Order No:	168269739 330
Test Mode:	Transmission with charging mode (90% power for EUT and Phone)
Test Voltage:	AC 120V, 60HZ
Test By:	Shower.Dai
Review By:	Gary Chen
Remark:	3m Chamber



Critical_Freqs

Frequency (MHz)	MaxPeak (dBµV/m)	Average (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Height (cm)	Pol	Azimuth (deg)
2553.500000	39.30	---	74.00	34.70	100.0	V	15.0
2553.500000	---	38.58	54.00	15.42	100.0	V	15.0
3755.500000	---	40.42	54.00	13.58	100.0	V	51.0
4189.000000	41.51	---	74.00	32.49	100.0	V	92.0
4665.000000	---	42.34	54.00	11.66	100.0	V	138.0
4665.000000	42.78	---	74.00	31.22	100.0	V	138.0
5974.500000	41.20	---	74.00	32.80	100.0	V	190.0
2428.000000	56.83	---	---	---	100.0	V	204.0
2428.000000	---	56.03	---	---	100.0	V	204.0
5958.500000	---	39.76	54.00	14.24	100.0	V	237.0
3485.000000	40.12	---	74.00	33.88	100.0	V	246.0
3425.000000	---	38.48	54.00	15.52	100.0	V	317.0