

FCC PART 15 B TEST REPORT

For

SZ DJI TECHNOLOGY CO., LTD

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Nanshan, Shenzhen, Guangdong, China

FCC ID: SS3-WM334R1801

Report Type:	Product Name:
Original Report	Phantom 4 RTK
Report Number:	RDG180118003-00A
Report Date:	2018-03-07
Reviewed By:	Jerry Zhang EMC Manager
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

EUT Name:		Phantom 4 RTK
EUT Model:		WM334R
Rated Input Voltage:		DC15.2V from adapter
Adapter Information	Model:	PH4C100
	Input:	AC100-240V 1.4A
	Output:	DC17.5V
The Highest Operating Frequency:		5846.5 MHz
External Dimension:		29cm(L)*29cm(W)*21cm(H)
Serial Number:		180118003
EUT Received Date:		18.01.18

Objective

This test report is prepared on behalf of *SZ DJI TECHNOLOGY CO., LTD* In accordance with Part 2, Subpart J, and Part 15-Subparts A and B of the Federal Communications Commission's rules.

The objective of the manufacturer is to determine the compliance of EUT with FCC Part 15 B Class A.

Related Submittal(s)/Grant(s)

FCC Part 15C DTS and Part 15E NII submissions with FCC ID: SS3-WM334R1801.

Part of system submissions with FCC ID: SS3-GL300N1801.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Dongguan).

Measurement Uncertainty

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~26.5GHz: 5.23 dB
Temperature	±1℃
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industry Area, Tangxia, Dongguan, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062D.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in typical use condition:

Mode: Operating

In this mode, the device controlled by remoter and the video transmitted from the EUT to the remoter.

EUT Exercise Software

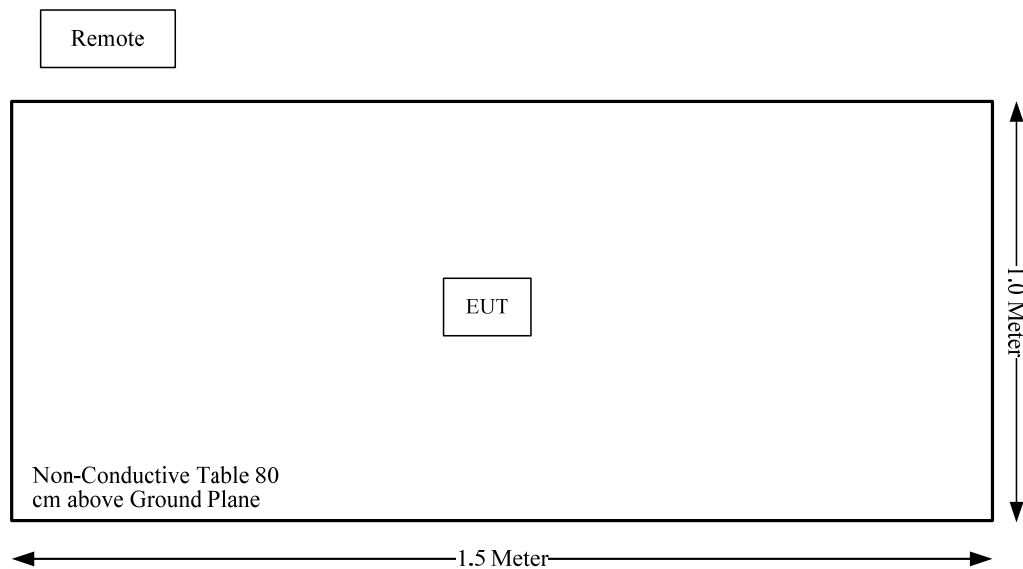
No software was used during test.

Equipment Modifications

No modification was made to the EUT tested.

Configuration of Test Setup

Operating mode:



Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	L.I.S.N	ESH2-Z5	892107/021	2017-09-25	2018-09-25
R&S	EMI Test Receiver	ESCI	100035	2017-8-4	2018-8-4
Sunol Sciences	Antenna	JB3	A060611-3	2017-7-21	2019-7-21
HP	Amplifier	8447F	2443A01912	2017-9-5	2018-9-5
N/A	Coaxial Cable	C-NJNJ-50	C-0400-02	2017-9-5	2018-9-5
N/A	Coaxial Cable	C-NJNJ-50	C-0075-02	2017-9-5	2018-9-5
N/A	Coaxial Cable	C-NJNJ-50	C-2200-01	2017-9-5	2018-9-5
R&S	Spectrum Analyzer	FSEM	831259/019	2017-7-18	2018-7-18
TDK RF	Horn Antenna	HRN-0118	130 084	2016-1-5	2019-1-4
N/A	Coaxial Cable	C-2.4J2.4J-50	C-0700-01	2017-6-27	2018-6-27
Mini	Pre-amplifier	ZVA-183-S+	5969001149	2017-9-5	2018-9-5
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-02 1304	2017-6-16	2020-6-15
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-01 1302	2016-11-18	2019-11-18
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2017-6-27	2018-6-27
R&S	Spectrum Analyzer	FSP 38	100478	2017-12-08	2018-12-8
Chengdu OuLi	Bandrejector Filter	5725-5850	005	2017-9-5	2018-9-5
arad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Environmental Conditions

Temperature:	24~ 27oC
Relative Humidity:	30~65 %
ATM Pressure:	100~101 kPa
Tester:	Vern Shen, Blake Yang, Alex You
Test Date:	2018.1.26-2018.2.25

SUMARY OF TEST RESULTS

FCC Part 15B

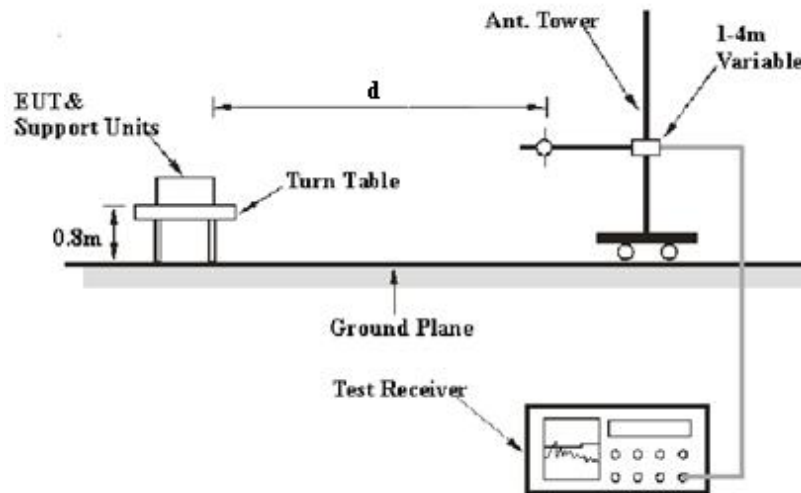
Clause	Description of Test	Test Result
FCC§15.107	Conducted emissions	Not Applicable
§15.109	Radiated emissions	Compliance

Not Applicable: the device was powered by battery.

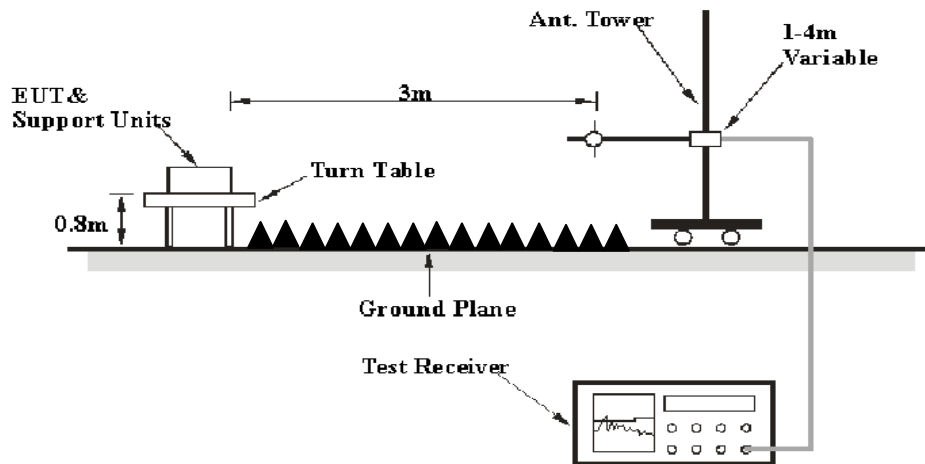
FCC §15.109 - RADIATED SPURIOUS EMISSIONS

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission Below 1GHz tests were performed in the 10 meters chamber test site, above 1GHz tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class A limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 40 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	10 Hz	/	AVG

Test Procedure

During the radiated emissions, the adapter of laptop was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

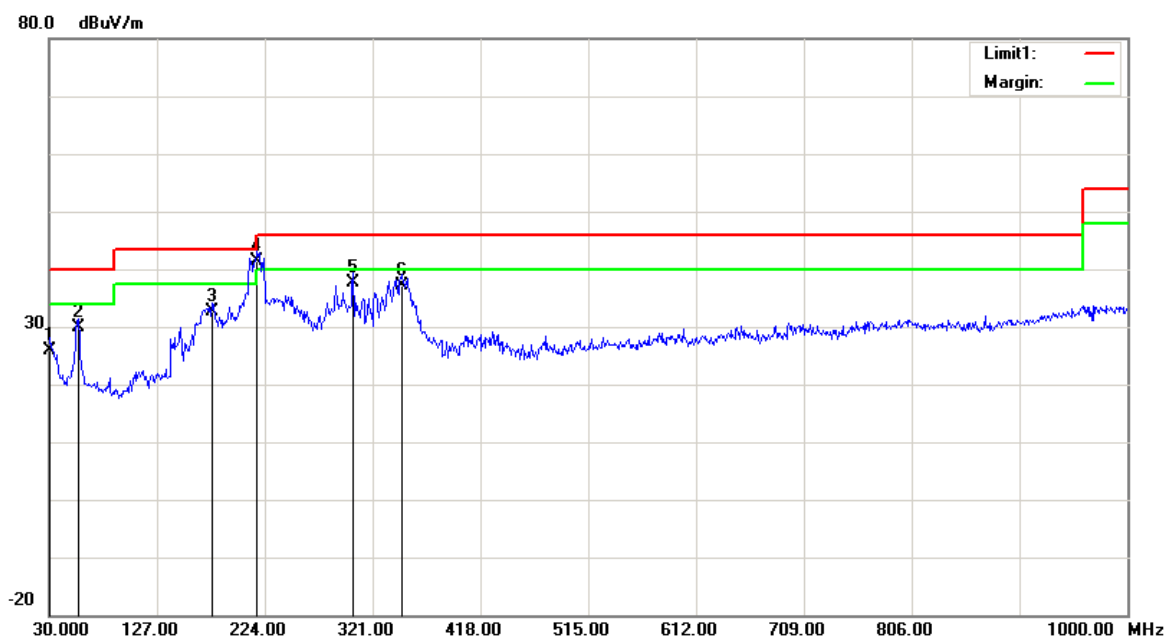
$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Data

Please refer to following table and plots:

Condition: FCC Class B 3M Radiation
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

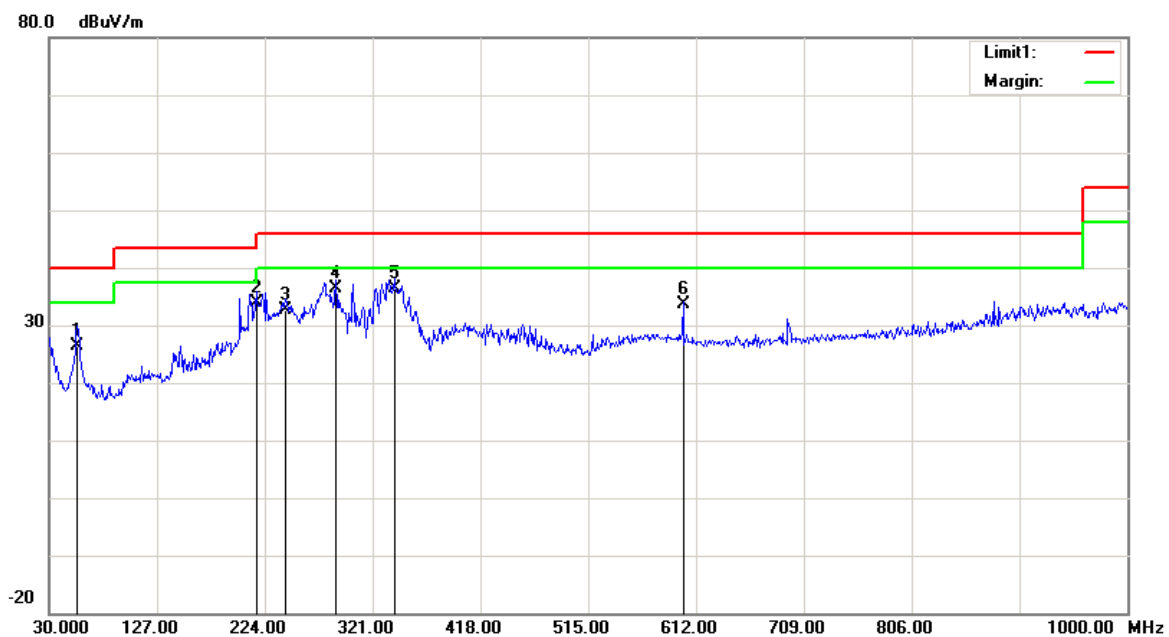
Polarization: Horizontal
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	30.9700	25.55	QP	0.35	25.90	40.00	14.10
2	56.1900	42.26	QP	-12.46	29.80	40.00	10.20
3	176.4700	40.33	QP	-7.73	32.60	43.50	10.90
4	217.2100	48.31	QP	-7.01	41.30	46.00	4.70
5	303.5400	42.03	QP	-4.43	37.60	46.00	8.40
6	347.1900	40.44	peak	-3.24	37.20	46.00	8.80

Condition: FCC Class B 3M Radiation
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

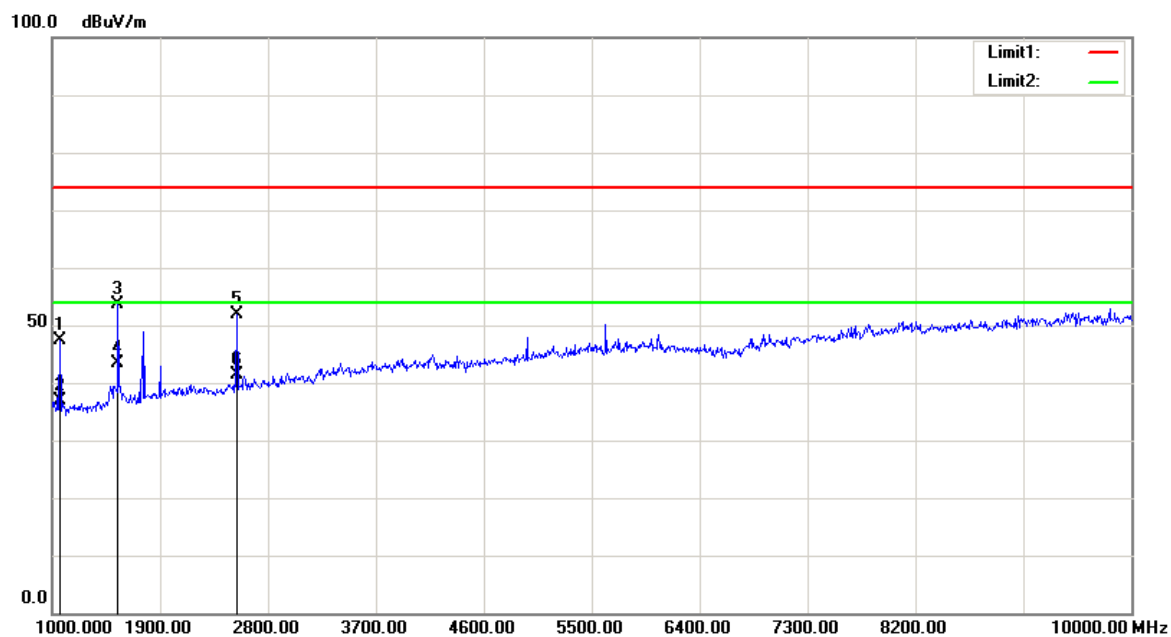
Polarization: Vertical
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	55.2200	38.72	QP	-12.42	26.30	40.00	13.70
2	216.2400	40.97	QP	-7.07	33.90	46.00	12.10
3	242.4300	38.87	QP	-6.27	32.60	46.00	13.40
4	288.0200	40.22	QP	-3.92	36.30	46.00	9.70
5	340.4000	40.02	QP	-3.52	36.50	46.00	9.50
6	600.3600	33.50	QP	0.20	33.70	46.00	12.30

Condition: FCC Part 15 Class B
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

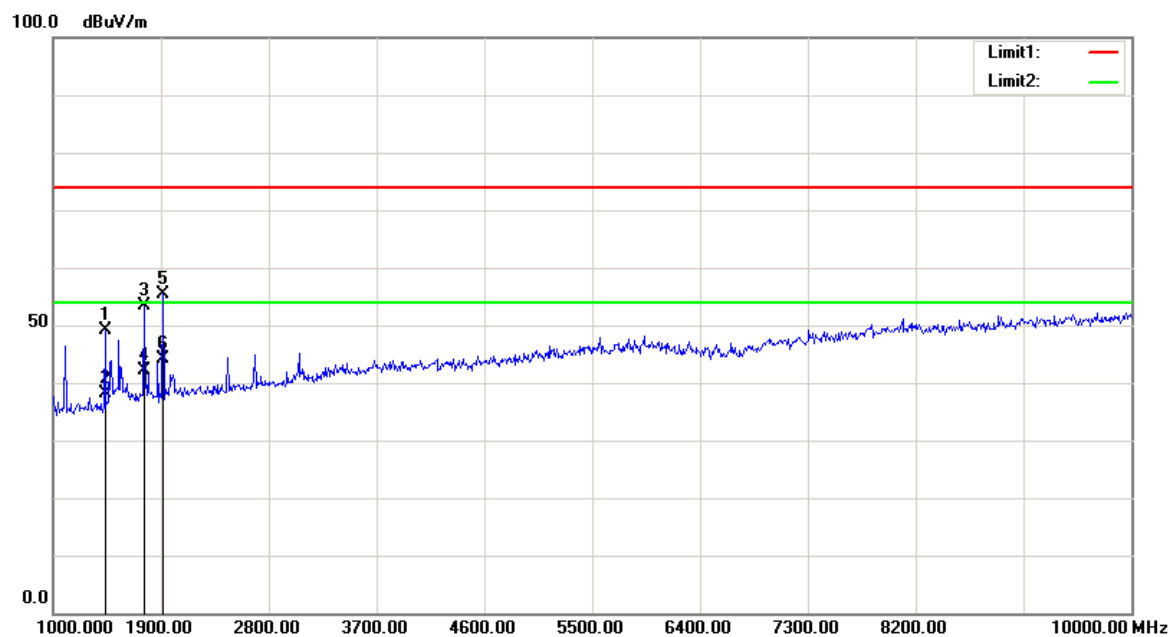
Polarization: Horizontal
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	1067.500	57.84	peak	-10.44	47.40	74.00	26.60
2	1067.500	47.36	AVG	-10.44	36.92	54.00	17.08
3	1549.000	62.57	peak	-8.92	53.65	74.00	20.35
4	1549.000	52.34	AVG	-8.92	43.42	54.00	10.58
5	2543.500	57.93	peak	-6.05	51.88	74.00	22.12
6	2543.500	47.54	AVG	-6.05	41.49	54.00	12.51

Condition: FCC Part 15 Class B
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

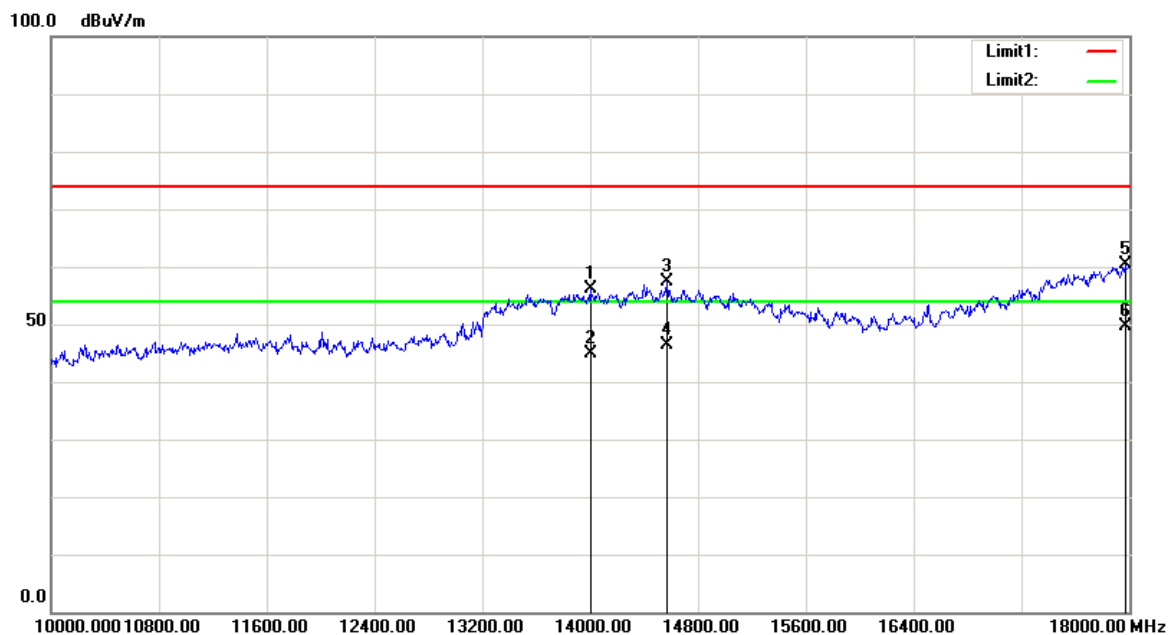
Polarization: Vertical
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	1432.000	58.44	peak	-9.40	49.04	74.00	24.96
2	1432.000	47.53	AVG	-9.40	38.13	54.00	15.87
3	1760.500	61.46	peak	-8.05	53.41	74.00	20.59
4	1760.500	50.28	AVG	-8.05	42.23	54.00	11.77
5	1922.500	62.82	peak	-7.46	55.36	74.00	18.64
6	1922.500	51.64	AVG	-7.46	44.18	54.00	9.82

Condition: FCC Part 15 Class B
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

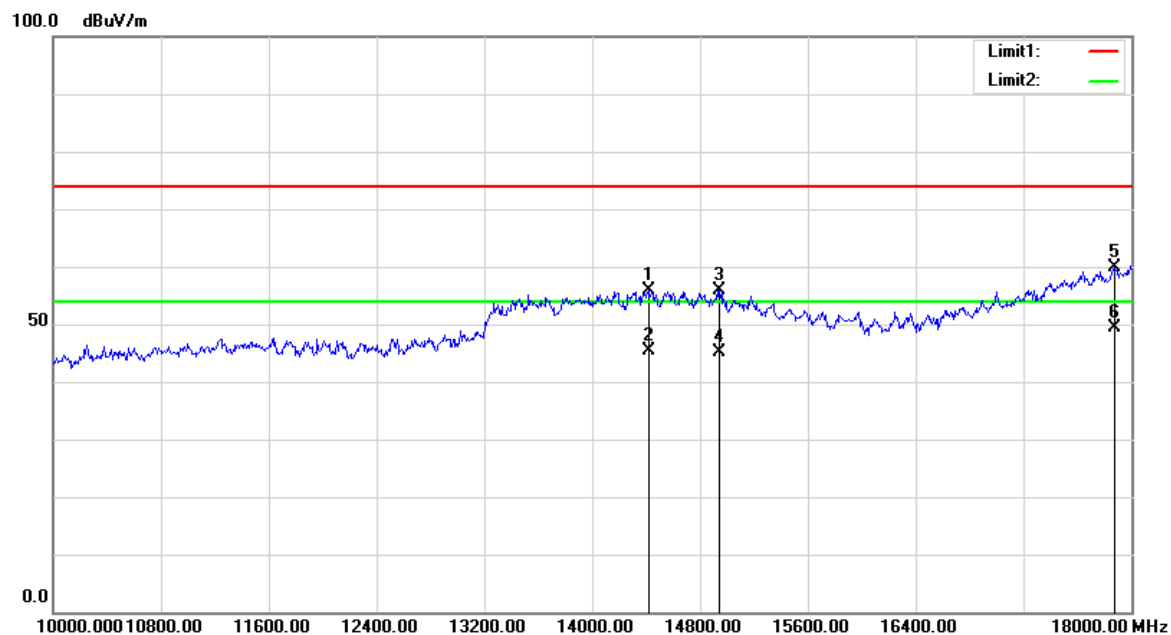
Polarization: Horizontal
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	14000.000	46.75	peak	9.34	56.09	74.00	17.91
2	14000.000	35.42	AVG	9.34	44.76	54.00	9.24
3	14568.000	47.09	peak	10.25	57.34	74.00	16.66
4	14568.000	36.24	AVG	10.25	46.49	54.00	7.51
5	17968.000	43.39	peak	16.92	60.31	74.00	13.69
6	17968.000	32.64	AVG	16.92	49.56	54.00	4.44

Condition: FCC Part 15 Class B
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

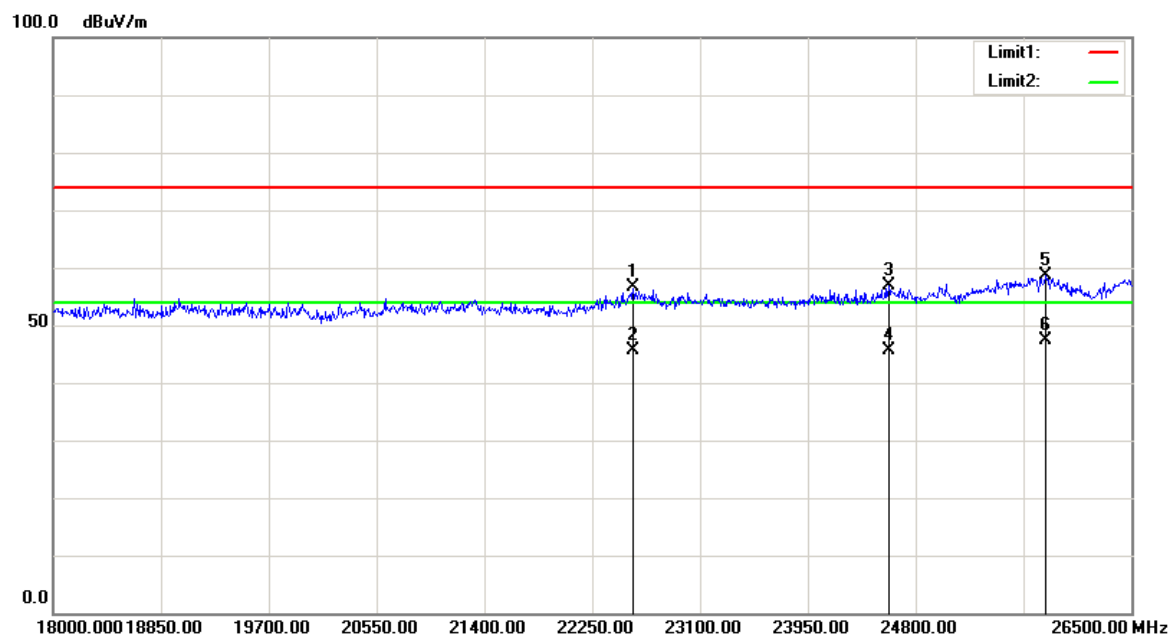
Polarization: Vertical
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	14424.000	45.74	peak	10.16	55.90	74.00	18.10
2	14424.000	35.26	AVG	10.16	45.42	54.00	8.58
3	14944.000	45.90	peak	9.94	55.84	74.00	18.16
4	14944.000	35.18	AVG	9.94	45.12	54.00	8.88
5	17872.000	43.58	peak	16.22	59.80	74.00	14.20
6	17872.000	33.24	AVG	16.22	49.46	54.00	4.54

Condition: FCC Part 15 Class B
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

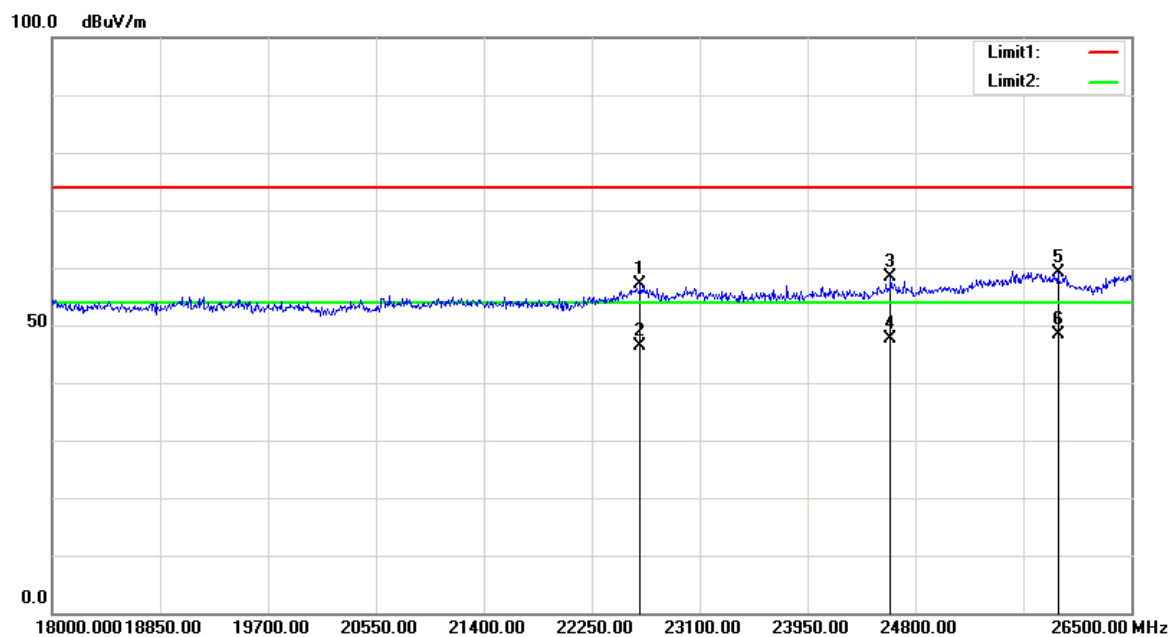
Polarization: Horizontal
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	22577.250	56.54	peak	0.00	56.54	74.00	17.46
2	22577.250	45.62	AVG	0.00	45.62	54.00	8.38
3	24587.500	56.79	peak	0.00	56.79	74.00	17.21
4	24587.500	45.68	AVG	0.00	45.68	54.00	8.32
5	25832.750	58.71	peak	0.00	58.71	74.00	15.29
6	25832.750	47.45	AVG	0.00	47.45	54.00	6.55

Condition: FCC Part 15 Class B
EUT: Phantom 4 RTK
Model: WM334R
Test Mode: Operating
Note:

Polarization: Vertical
Power: DC 15.2V
Distance: 3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	22636.750	57.02	peak	0.00	57.02	74.00	16.98
2	22636.750	46.31	AVG	0.00	46.31	54.00	7.69
3	24608.750	58.45	peak	0.00	58.45	74.00	15.55
4	24608.750	47.68	AVG	0.00	47.68	54.00	6.32
5	25922.000	59.18	peak	0.00	59.18	74.00	14.82
6	25922.000	48.36	AVG	0.00	48.36	54.00	5.64

Condition:

EUT:

Model:

Test Mode:

Note:

FCC Part 15 Class B

Phantom 4 RTK

WM334R

Operating

Polarization:

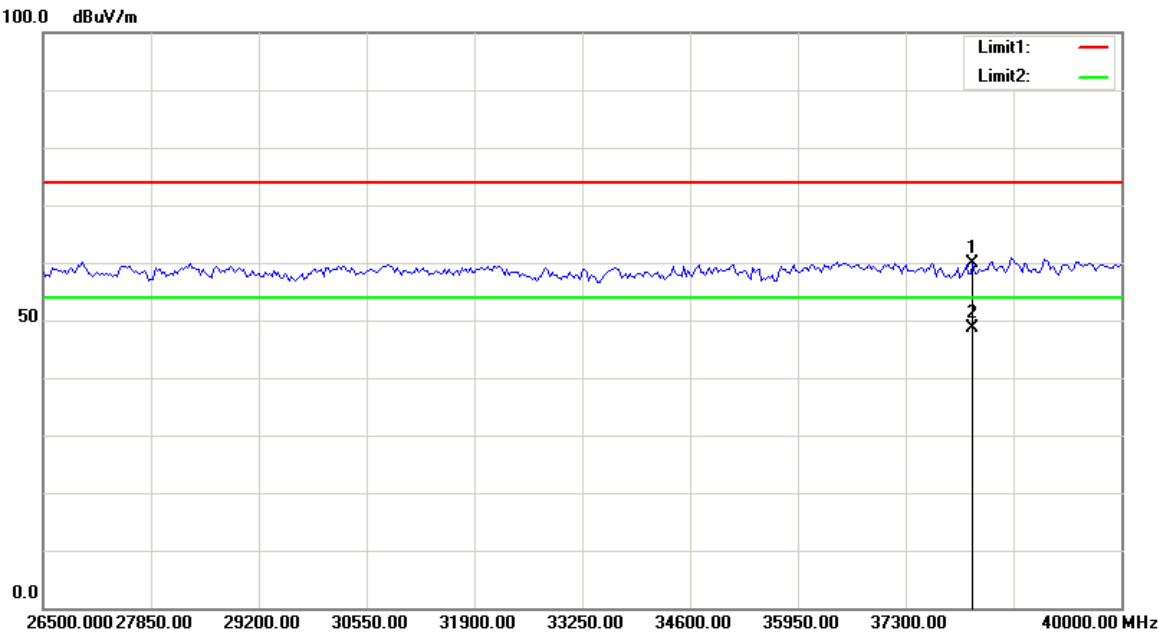
Power:

Distance:

Horizontal

DC 15.2V

3m



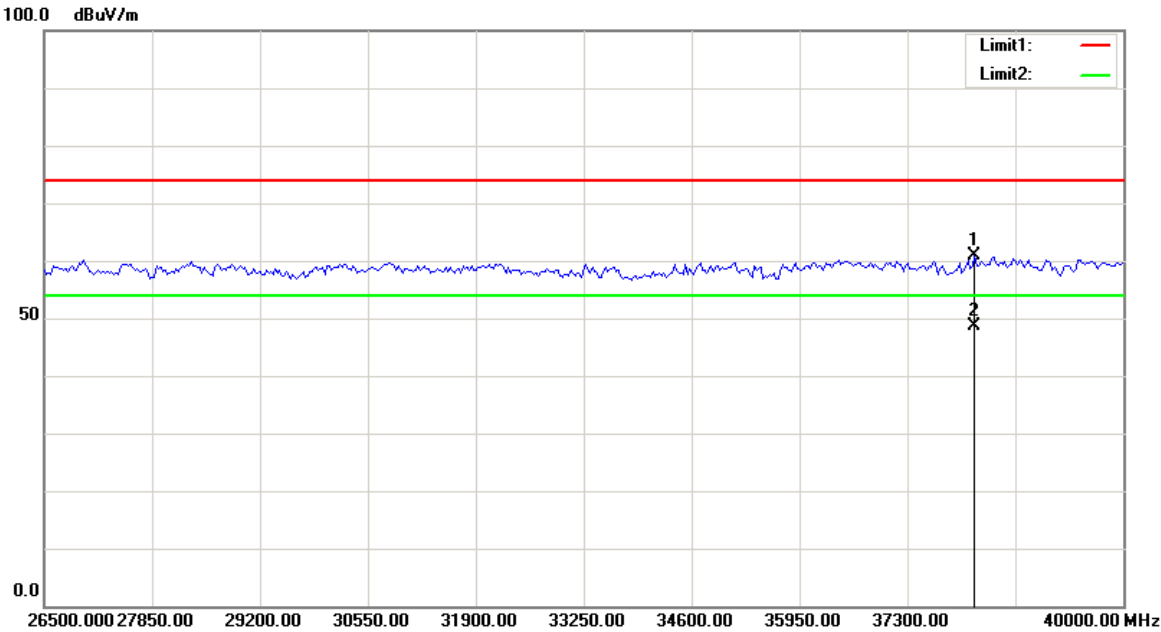
No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	38137.000	59.93	peak	0.00	59.93	74.00	14.07
2	38137.000	48.65	AVG	0.00	48.65	54.00	5.35

Condition:
EUT:
Model:
Test Mode:
Note:

FCC Part 15 Class B
Phantom 4 RTK
WM334R
Operating

Polarization:
Power:
Distance:

Vertical
DC 15.2V
3m



No.	Frequency (MHz)	Reading (dBμV)	Detector	Corrected (dB/m)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)
1	38137.000	60.98	peak	0.00	60.98	74.00	13.02
2	38137.000	48.63	AVG	0.00	48.63	54.00	5.37

END OF REPORT