

# FCC REPORT

**Applicant:** Shenzhen VanTop Technology & Innovation Co., Ltd.

**Address of Applicant:** 502, 5th Flr. BLDG 4, MinQi Technology Park, No. 65 Lishan Road, Taoyuan Street, Nanshan District, Shenzhen, China

Equipment Under Test (EUT)

Product Name: Drone

Model No.: A15H, A15, A15R, VK300, VK310, VK330, VK900, VK910, SP700

FCC ID: 2AQ3AA15H

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249

**Date of sample receipt:** 09 May, 2019

**Date of Test:** 10 May, to 13 Jun., 2019

**Date of report issued:** 14 Jun., 2019

**Test Result:** PASS\*

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Bruce Zhang  
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the CCIS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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## 2 Version

Version No.	Date	Description
00	14 Jun., 2019	Original

Prepared By:

*Yao Wu*

**Project Engineer**

Date:

14 Jun., 2019

Check By:

*Wimer Zhang*

**Reviewer**

Date:

14 Jun., 2019

## 3 Contents

Page

1	COVER PAGE.....	1
2	VERSION .....	2
3	CONTENTS .....	3
4	TEST SUMMARY.....	4
5	GENERAL INFORMATION.....	5
5.1	CLIENT INFORMATION.....	5
5.2	GENERAL DESCRIPTION OF E.U.T.....	5
5.3	TEST MODE .....	6
5.4	DESCRIPTION OF SUPPORT UNITS.....	6
5.5	LABORATORY FACILITY .....	6
5.6	LABORATORY LOCATION.....	6
5.7	TEST INSTRUMENTS LIST.....	7
6	TEST RESULTS AND MEASUREMENT DATA.....	8
6.1	ANTENNA REQUIREMENT:.....	8
6.2	CONDUCTED EMISSION .....	9
6.3	RADIATED EMISSION .....	10
6.3.1	Field Strength Of The Fundamental Signal.....	12
6.3.2	Spurious Emissions .....	13
6.3.3	Band Edge.....	16
6.4	OCCUPY BANDWIDTH .....	21
7	TEST SETUP PHOTO .....	23
8	EUT CONSTRUCTIONAL DETAILS .....	24

## 4 Test Summary

Test Item	Section in CFR 47	Result
	FCC	
Antenna requirement	15.203	N/A
Conducted Emission	15.207	Pass
Field strength of the fundamental signal	15.249 (a)(d)	Pass
Spurious emissions	15.249 (d)/15.209 15.205	Pass
20dB Occupy Bandwidth	15.215	Pass
99% Occupy Bandwidth	N/A	Pass
Frequency stability	/	Pass

*Pass: The EUT comply with the essential requirements in the standard.*

## 5 General Information

### 5.1 Client Information

Applicant:	Shenzhen VanTop Technology & Innovation Co., Ltd.
Address of Applicant:	502, 5th Flr. BLDG 4, MinQi Technology Park, No. 65 Lishan Road, Taoyuan Street, Nanshan District, Shenzhen, China
Manufacturer:	Shenzhen VanTop Technology & Innovation Co., Ltd.
Address:	502, 5th Flr. BLDG 4, MinQi Technology Park, No. 65 Lishan Road, Taoyuan Street, Nanshan District, Shenzhen, China

### 5.2 General Description of E.U.T.

Product Name:	Drone
Model No.:	A15H, A15, A15R, VK300, VK310, VK330, VK900, VK910, SP700
Operation Frequency:	2405MHz~2470MHz
Channel numbers:	16
Hardware version:	REV0.1
Software version:	REV0.1
Modulation type:	GFSK
Antenna Type:	Integral antenna
Antenna gain:	1.3 dBi
Power supply:	Drone: Rechargeable Li-ion Battery DC3.7V-800mAh Remote: DC 4.5V (3 * "AAA" batteries)
Test Sample Condition:	The test samples were provided in good working order with no visible defects.
Remark:	Model No.: A15H, A15, A15R, VK300, VK310, VK330, VK900, VK910 were identical inside, the electrical circuit design, layout, components used and internal wiring, with only difference being model name and color.

#### Operation Frequency each of channel

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2405MHz	5	2420MHz	9	2445MHz	13	2461MHz
2	2409MHz	6	2425MHz	10	2449MHz	14	2465MHz
3	2412MHz	7	2433MHz	11	2453MHz	15	2468MHz
4	2417MHz	8	2439MHz	12	2457MHz	16	2470MHz

**Note:**

*In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test. Channel No. 1, 9 & 16 were selected as Lowest, Middle and Highest channel.*

### 5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation.		
Remark:	Only the Remote has transceiver, the Drone has only receiver. So test the Remote(new battery is used during all test)		
<b>Pre-Test Mode:</b> (highest channel=2470MHz)			
CCIS has verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:			
Axis	X	Y	Z
Field Strength(dBuV/m)	68.66	66.37	67.23.
<b>Final Test Mode:</b>			
According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup”: Z axis (see the test setup photo)			

### 5.4 Description of Support Units

N/A
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### 5.5 Laboratory Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> <li>● <b>FCC - Registration No.: 727551</b> Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been accredited as a testing laboratory by FCC (Federal Communications Commission). The Registration No. is 727551.</li> <li>● <b>IC - Registration No.: 10106A-1</b> The 3m Semi-anechoic chamber of Shenzhen Zhongjian Nanfang Testing Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.</li> <li>● <b>CNAS - Registration No.: CNAS L6048</b> Shenzhen Zhongjian Nanfang Testing Co., Ltd. is accredited to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration laboratories for the competence of testing. The Registration No. is CNAS L6048.</li> <li>● <b>A2LA - Registration No.: 4346.01</b> This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <a href="https://portal.a2la.org/scopepdf/4346-01.pdf">https://portal.a2la.org/scopepdf/4346-01.pdf</a></li> </ul>
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### 5.6 Laboratory Location

<p>Shenzhen Zhongjian Nanfang Testing Co., Ltd. Address: No. B-C, 1/F., Building 2, Laodong No.2 Industrial Park, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info@ccis-cb.com, Website: http://www.ccis-cb.com</p>
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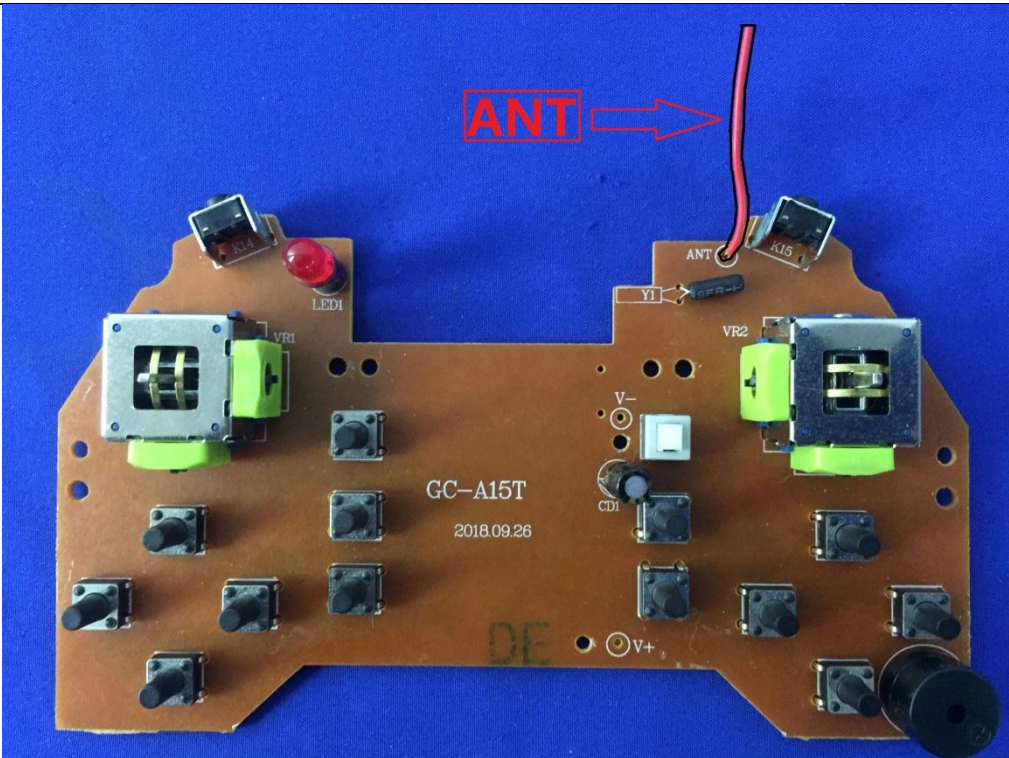
## 5.7 Test Instruments list

Radiated Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
3m SAC	SAEMC	9m*6m*6m	966	07-22-2017	07-21-2020
BiConiLog Antenna	SCHWARZBECK	VULB9163	497	03-18-2019	03-17-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	916	03-18-2019	03-17-2020
Horn Antenna	SCHWARZBECK	BBHA9120D	1805	06-22-2017	06-21-2020
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170582	11-21-2018	11-20-2019
Loop Antenna	SCHWARZBECK	FMZB 1519 B	00044	03-18-2019	03-17-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		
Pre-amplifier	HP	8447D	2944A09358	03-18-2019	03-17-2020
Pre-amplifier	CD	PAP-1G18	11804	03-18-2019	03-17-2020
Spectrum analyzer	Rohde & Schwarz	FSP30	101454	03-18-2019	03-17-2020
Spectrum analyzer	Rohde & Schwarz	FSP40	100363	11-21-2018	11-20-2019
EMI Test Receiver	Rohde & Schwarz	ESRP7	101070	03-18-2019	03-17-2020
Simulated Station	Anritsu	MT8820C	6201026545	03-18-2019	03-17-2020
Cable	ZDECL	Z108-NJ-NJ-81	1608458	03-18-2019	03-17-2020
Cable	MICRO-COAX	MFR64639	K10742-5	03-18-2019	03-17-2020
Cable	SUHNER	SUCOFLEX100	58193/4PE	03-18-2019	03-17-2020

Conducted Emission:					
Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (mm-dd-yy)	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	101189	03-18-2019	03-17-2020
Pulse Limiter	SCHWARZBECK	OSRAM 2306	9731	03-18-2019	03-17-2020
LISN	CHASE	MN2050D	1447	03-18-2019	03-17-2020
LISN	Rohde & Schwarz	ESH3-Z5	8438621/010	07-21-2018	07-20-2019
Cable	HP	10503A	N/A	03-18-2019	03-17-2020
EMI Test Software	AUDIX	E3	Version: 6.110919b		

## 6 Test results and Measurement Data

### 6.1 Antenna requirement:

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<p>15.203 requirement:  <i>An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i></p>	
<b>E.U.T Antenna:</b>	
<p>The antenna is Integral antenna which cannot detachable . The best case gain of the antenna is 1.3 dBi.</p>	
	

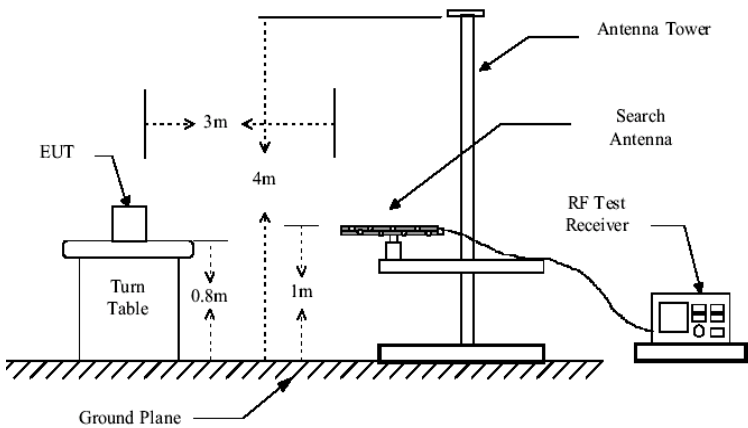
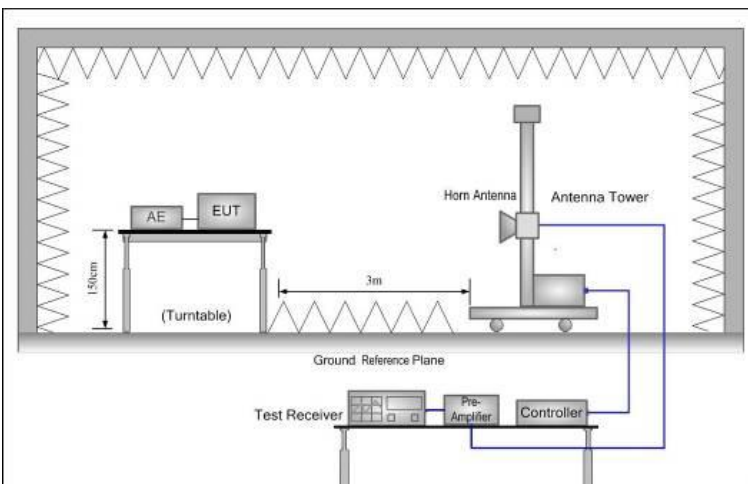


## 6.2 Conducted Emission

Test Requirement:	FCC Part 15 C Section 15.207		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150 kHz to 30 MHz		
Class / Severity:	Class B		
Receiver setup:	RBW=9kHz, VBW=30kHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
* Decreases with the logarithm of the frequency.			
Test procedure	<ol style="list-style-type: none"> <li>1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.), which provides a 50ohm/50uH coupling impedance for the measuring equipment.</li> <li>2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.</li> </ol>		
Test setup:	<p>Reference Plane</p> <p>40cm</p> <p>80cm</p> <p>LISN</p> <p>AUX Equipment</p> <p>E.U.T</p> <p>Test table/Insulation plane</p> <p>LISN</p> <p>Filter</p> <p>AC power</p> <p>EMI Receiver</p> <p>Remark  E.U.T: Equipment Under Test  LISN: Line Impedance Stabilization Network  Test table height=0.8m</p>		
Test Instruments:	Refer to section 5.8 for details		
Test mode:	Refer to section 5.3 for details		
Test results:	The power supply of the EUT(Remote) is by the DC 4.5V(3 * "AAA" batteries), so not need to be tested.		

## 6.3 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.249 and 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	30MHz to 25000MHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
RMS		1MHz	3MHz	Average Value	
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark	
	2400-2483.5MHz	94.00		Average Value	
		114.00		Peak Value	
Limit: (Spurious Emissions)	Frequency	Limit (dBuV/m @3m)		Remark	
	30MHz-88MHz	40.00		Quasi-peak Value	
	88MHz-216MHz	43.50		Quasi-peak Value	
	216MHz-960MHz	46.00		Quasi-peak Value	
	960MHz-1GHz	54.00		Quasi-peak Value	
	Above 1GHz	54.00		Average Value	
74.00		Peak Value			
Limit: (outside of the specified frequency band)	Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.				
Test Procedure:	<ol style="list-style-type: none"> <li>The EUT was placed on the top of a rotating table 0.8m(below 1GHz)/1.5m(above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ol>				

<p>Test setup:</p>	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
<p>Test Instruments:</p>	<p>Refer to section 5.7</p>
<p>Test mode:</p>	<p>Refer to section 5.3</p>
<p>Test results:</p>	<p>Passed</p>

### 6.3.1 Field Strength Of The Fundamental Signal

Peak value							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2405	33.06	27.12	4.71	64.89	114.00	-49.11	Vertical
	31.14	27.12	4.71	62.97	114.00	-51.03	Horizontal
2445	36.54	27.24	4.75	68.53	114.00	-45.47	Vertical
	32.13	27.24	4.75	64.15	114.00	-49.88	Horizontal
2470	36.56	27.31	4.79	68.66	114.00	-45.34	Vertical
	31.17	27.31	4.79	63.27	114.00	-50.73	Horizontal
Average value							
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2405	31.48	27.12	4.71	63.31	94.00	-30.69	Vertical
	29.69	27.12	4.71	61.52	94.00	-32.48	Horizontal
2445	34.51	27.24	4.75	66.55	94.00	-27.50	Vertical
	30.62	27.24	4.75	62.61	94.00	-31.39	Horizontal
2470	34.18	27.31	4.79	66.28	94.00	-27.72	Vertical
	29.85	27.31	4.79	61.95	94.00	-32.05	Horizontal

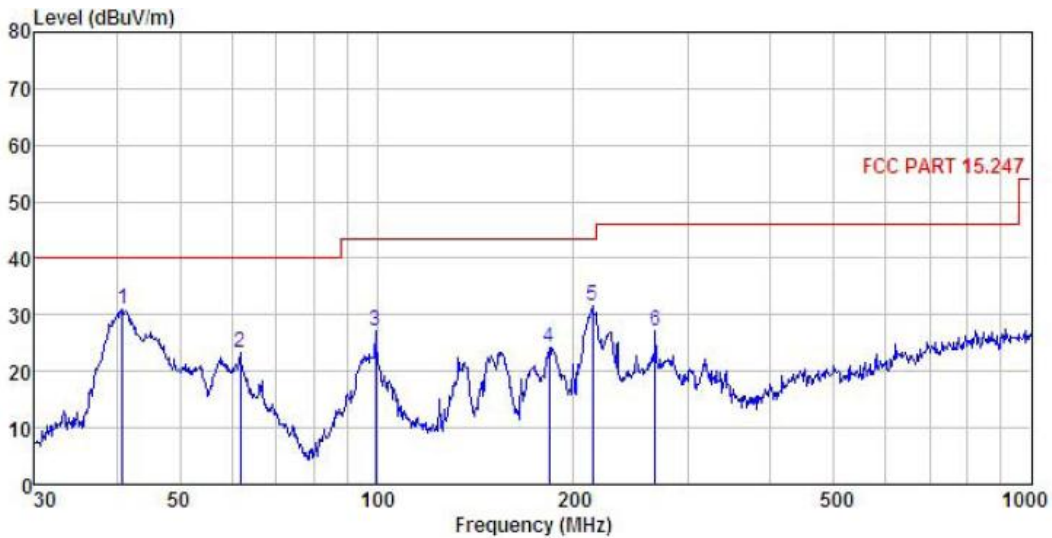
NOTE: Field strength of the fundamental signal test, RBW >20dB BW, VBW>=3XRBW.

## 6.3.2 Spurious Emissions

Measurement Data (worst case):

Below 1GHz:

Product Name:	Drone	Product Model:	A15H
Test By:	Yaro Wu	Test mode:	2.4G Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Vertical
Test Voltage:	DC 4.5V	Environment:	Temp: 24°C Humi: 57%

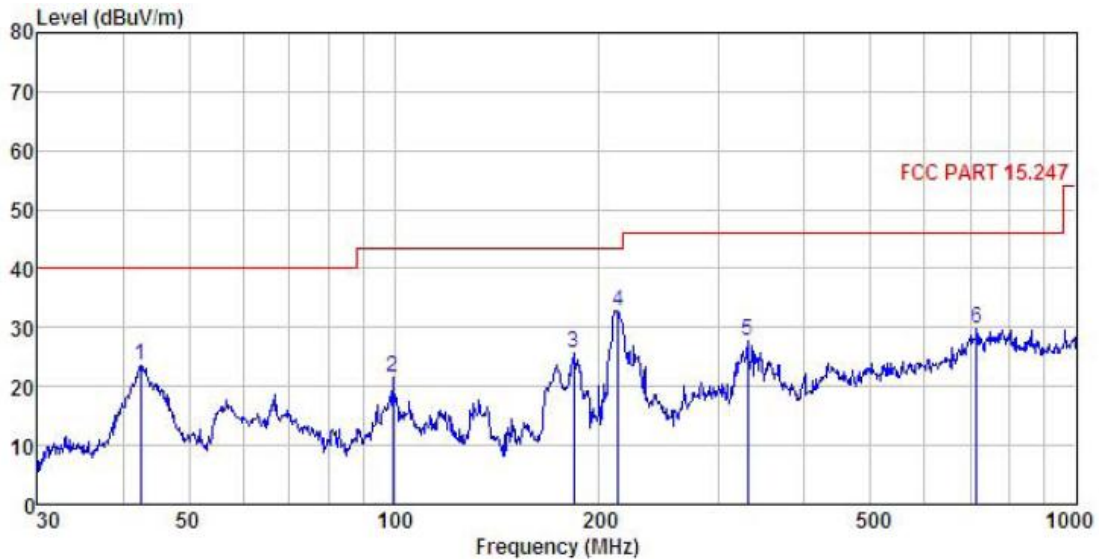


	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	40.845	47.27	12.39	1.22	29.89	30.99	40.00	-9.01	QP
2	61.778	41.03	10.74	1.38	29.77	23.38	40.00	-16.62	QP
3	99.528	42.43	12.41	1.95	29.53	27.26	43.50	-16.24	QP
4	183.201	40.45	10.08	2.75	28.95	24.33	43.50	-19.17	QP
5	213.763	46.29	11.23	2.85	28.74	31.63	43.50	-11.87	QP
6	266.609	39.69	13.01	2.85	28.51	27.04	46.00	-18.96	QP

Remark:

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product Name:	Drone	Product Model:	A15H
Test By:	Yaro Wu	Test mode:	2.4G Tx mode
Test Frequency:	30 MHz ~ 1 GHz	Polarization:	Horizontal
Test Voltage:	DC 4.5V	Environment:	Temp: 24°C Humi: 57%



	Read Freq	Antenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	42.451	39.95	12.35	1.25	29.88	23.67	40.00	-16.33	QP
2	99.528	36.76	12.41	1.95	29.53	21.59	43.50	-21.91	QP
3	183.201	41.73	10.08	2.75	28.95	25.61	43.50	-17.89	QP
4	213.015	47.50	11.19	2.85	28.75	32.79	43.50	-10.71	QP
5	330.195	39.03	14.22	3.04	28.52	27.77	46.00	-18.23	QP
6	714.173	33.72	20.46	4.23	28.61	29.80	46.00	-16.20	QP

**Remark:**

- Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor.
- The emission levels of other frequencies are very lower than the limit and not show in test report.

**Above 1GHz**

Test channel: Lowest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4810.00	50.36	31.63	6.82	41.83	46.98	74.00	-27.02	Vertical
4810.00	52.18	31.63	6.82	41.83	48.80	74.00	-25.20	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4810.00	45.27	31.63	6.82	41.83	41.89	54.00	-12.11	Vertical
4810.00	46.52	31.63	6.82	41.83	43.14	54.00	-10.86	Horizontal
Test channel: Middle channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4890.00	51.47	31.73	6.87	41.85	48.22	74.00	-25.78	Vertical
4890.00	53.29	31.73	6.87	41.85	50.04	74.00	-23.96	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4890.00	46.22	31.73	6.87	41.85	42.97	54.00	-11.03	Vertical
4890.00	48.71	31.73	6.87	41.85	45.46	54.00	-8.54	Horizontal
Test channel: Highest channel								
Detector: Peak Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4940.00	51.75	31.82	6.90	41.85	48.62	74.00	-25.38	Vertical
4940.00	54.61	31.82	6.90	41.85	51.48	74.00	-22.52	Horizontal
Detector: Average Value								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
4940.00	46.72	31.82	6.90	41.85	43.59	54.00	-10.41	Vertical
4940.00	48.13	31.82	6.90	41.85	45.00	54.00	-9.00	Horizontal
<i>Remark:</i>								
1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.								
2. The emission levels of other frequencies are very lower than the limit and not show in test report.								

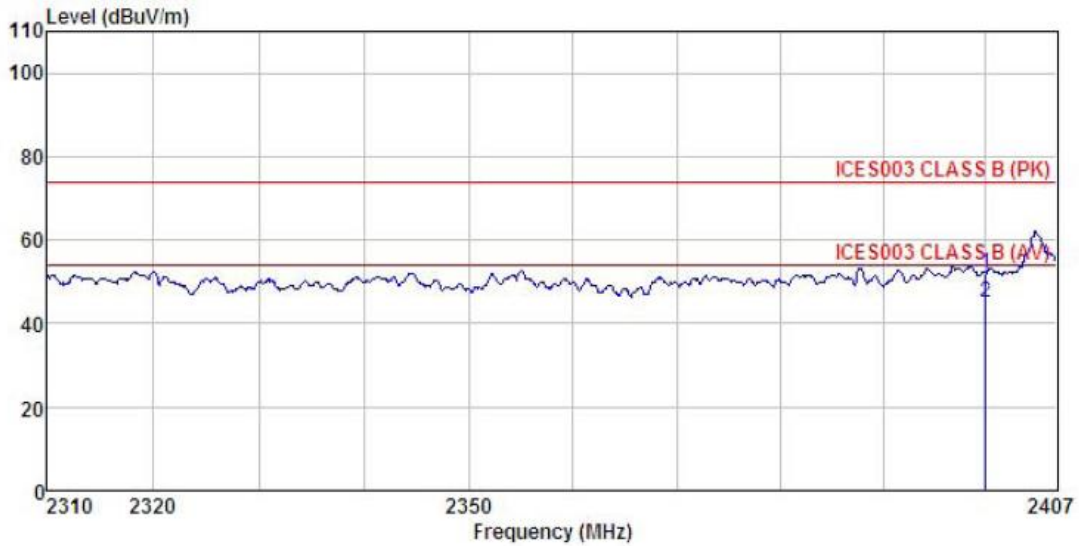
## 6.3.3 Band Edge

### Radiated Emission Method

Test Requirement:	FCC Part 15 C Section 15.205 and 15.209				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	2.3GHz to 2.5GHz				
Test Distance:	3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Remark
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
		RMS	1MHz	3MHz	Average Value
Limit:	Frequency	Limit (dBuV/m @3m)		Remark	
	Above 1GHz	54.00		Average Value	
		74.00		Peak Value	
Test Procedure:	<p>7. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>8. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</p> <p>9. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</p> <p>10. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</p> <p>11. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>12. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</p>				
Test setup:					
Test Instruments:	Refer to section 5.7 for details				
Test mode:	Refer to section 5.3 for details				
Test results:	Passed				



<b>Product Name:</b>	Drone	<b>Product Model:</b>	A15H
<b>Test By:</b>	Yaro Wu	<b>Test mode:</b>	2.4G-Tx mode
<b>Test Channel:</b>	Lowest channel	<b>Polarization:</b>	Vertical
<b>Test Voltage:</b>	DC 4.5V	<b>Environment:</b>	Temp: 24°C Humi: 57%

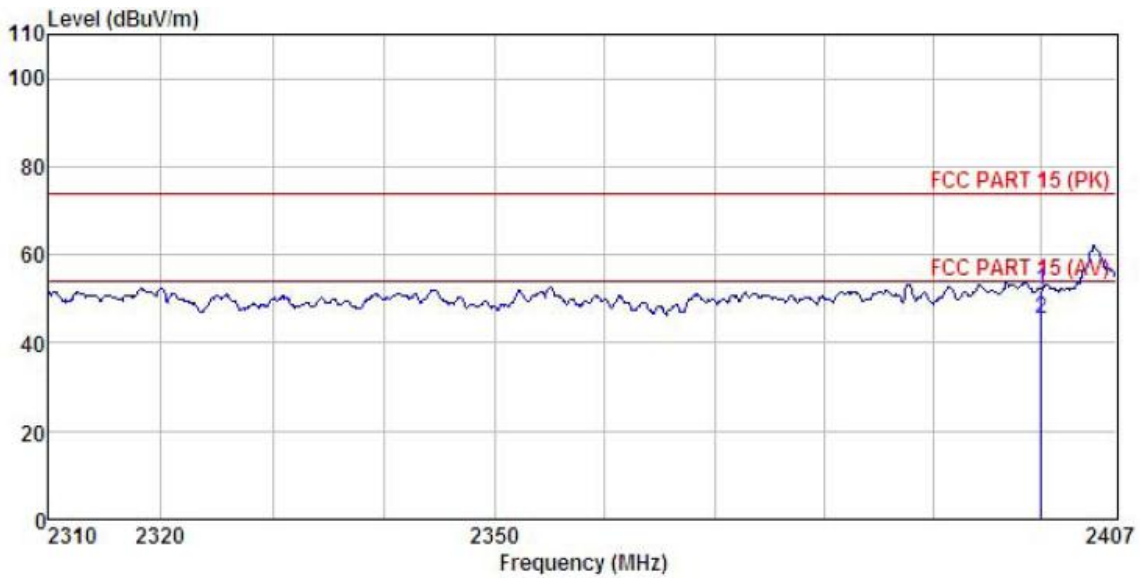


	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2400.000	20.30	27.11	4.70	0.00	52.11	74.00	-21.89	Peak
2	2400.000	13.11	27.11	4.70	0.00	44.92	54.00	-9.08	Average

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

<b>Product Name:</b>	Drone	<b>Product Model:</b>	A15H
<b>Test By:</b>	Yaro Wu	<b>Test mode:</b>	2.4G-Tx mode
<b>Test Channel:</b>	Lowest channel	<b>Polarization:</b>	Horizontal
<b>Test Voltage:</b>	DC 4.5V	<b>Environment:</b>	Temp: 24°C      Huni: 57%

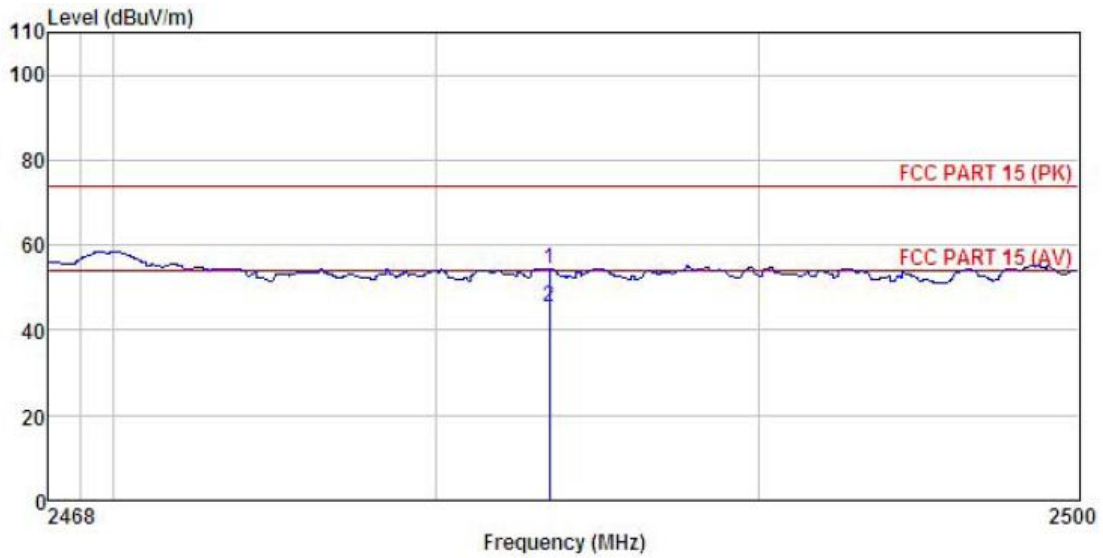


	Read	Antenna	Cable	Preamp	Limit	Over		
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark	
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2400.000	20.30	27.11	4.70	0.00	52.11	74.00	-21.89 Peak
2	2400.000	13.51	27.11	4.70	0.00	45.32	54.00	-8.68 Average

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

<b>Product Name:</b>	Drone	<b>Product Model:</b>	A15H
<b>Test By:</b>	Yaro Wu	<b>Test mode:</b>	2.4G-Tx mode
<b>Test Channel:</b>	Highest channel	<b>Polarization:</b>	Vertical
<b>Test Voltage:</b>	DC 4.5V	<b>Environment:</b>	Temp: 24°C Humi: 57%

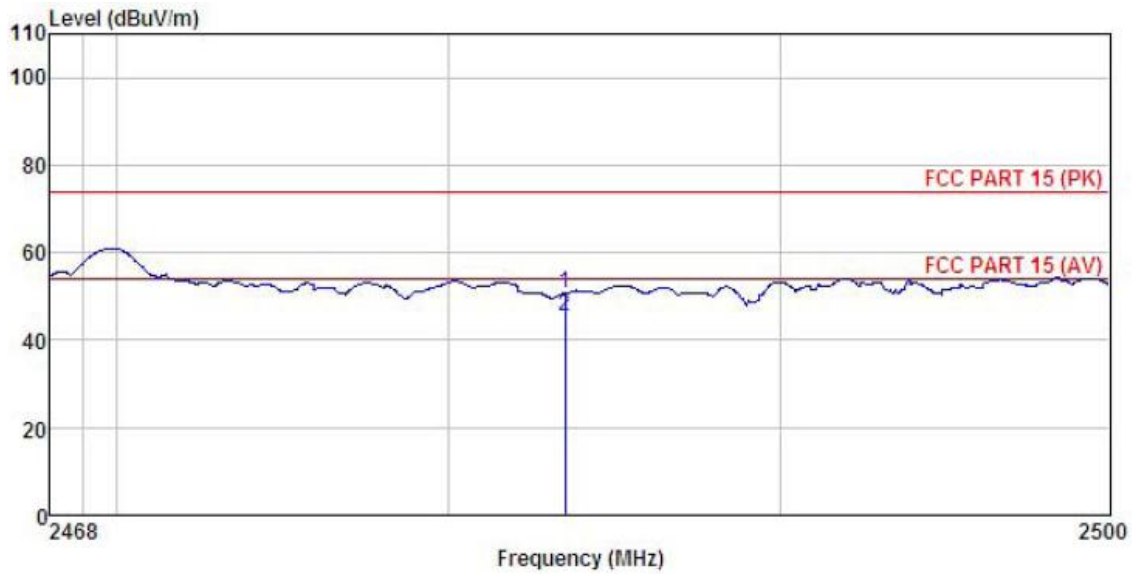


	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	22.13	27.36	4.81	0.00	54.30	74.00	-19.70	Peak
2	2483.500	13.47	27.36	4.81	0.00	45.64	54.00	-8.36	Average

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

<b>Product Name:</b>	Drone	<b>Product Model:</b>	A15H
<b>Test By:</b>	Yaro Wu	<b>Test mode:</b>	2.4G-Tx mode
<b>Test Channel:</b>	Highest channel	<b>Polarization:</b>	Horizontal
<b>Test Voltage:</b>	DC 4.5V	<b>Environment:</b>	Temp: 24°C      Humi: 57%

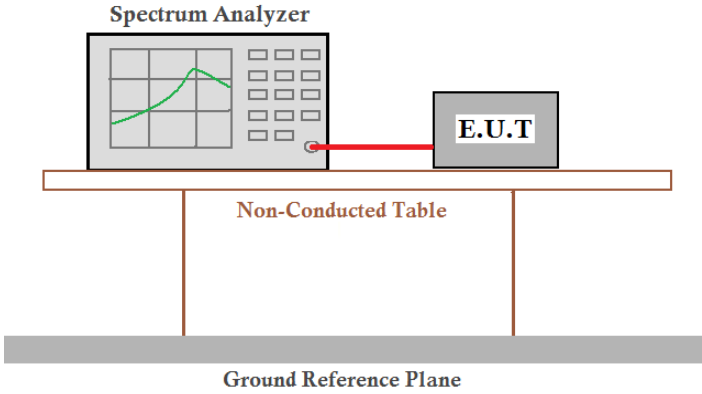


	Read Freq	Antenna Level	Antenna Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2483.500	18.53	27.35	4.81	0.00	50.69	74.00	-23.31	Peak
2	2483.500	13.25	27.35	4.81	0.00	45.41	54.00	-8.59	Average

**Remark:**

1. Final Level = Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor.
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

## 6.4 Occupy Bandwidth

Test Requirement:	FCC Part 15 C Section 15.215
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=30 kHz, VBW=100 kHz, detector=Peak
Limit:	N/A
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T. (Equipment Under Test) via a red cable. Both are placed on a Non-Conducted Table, which is supported by a Ground Reference Plane.</p>
Test Instruments:	Refer to section 5.7 for details
Test mode:	Transmitting mode
Test results:	Pass

### Measurement Data:

20dB Occupy Bandwidth (MHz)		
Lowest channel	Middle channel	Highest Highest
1.116	1.110	1.116
99% Occupy Bandwidth (MHz)		
Lowest channel	Middle channel	Highest Highest
1.062	1.056	1.056

Test plot as follows:

