

# CENTRE OF TESTING SERVICE INTERNATIONAL

**OPERATE ACCORDING TO ISO/IEC 17025** 

# FCC ID/IC TEST REPORT

TEST REPORT NUMBER: CGZ3170427-00734-EFI



CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China





TEST REPORT For FCC ID/IC				
47 CFR PART 15 OCT, 2016; RSS-210 Issue 9				
Report Reference No				
Date of issue	09 May 2017			
Testing Laboratory Name	CENTRE OF TESTING SERVICE CO., LTD.			
Address	A101,No.65,Zhuji Highway,Tianhe District,Guangzhou, China			
Testing location/ procedure	Full application of Harmonised standards ■			
	Partial application of Harmonised standards $\square$			
	Other standard testing method $\square$			
Applicant's name	China Topwin Industry Co., Ltd.			
Address	····· A-G of 3/F, Block B,CENTRAL Building, Xixiang Road,BaoAn			
	District,Shenzhen,China 518000			
Test specification				
Standard	47 CFR PART 15 OCT, 2016; RSS-210 Issue 9; RSS-Gen Issue 4			
	ANSI C63.10:2013			
Test Report Form No	CTSEMC-1.0			
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD.			
Master TRF	Dated 2009-01			
CENTRE OF TESTING SERVICE	CO., LTD. All rights reserved.			
CENTRE OF TESTING SERVICE material. CENTRE OF TESTING	ed in whole or in part for non-commercial purposes as long as the ECO., LTD is acknowledged as copyright owner and source of the SERVICE CO., LTD takes no responsibility for and will not assume liability ader's interpretation of the reproduced material due to its placement and			
Test item description	: 2.4G drone			
Trade Mark	/			
Manufacturer	China Topwin Industry Co., Ltd.			
Model/Type reference	REH73004HW2			
Ratings	Battery 1.5V*3			
Operating Frequency	2415.0MHz ~2465.0MHz			
Result	Positive			

Supervised by:

Duke yang / Technique principal

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn

Compiled by:

Kate zhang / Fileadministrators

Approved by:

Vincent yao / Manager





# FCC ID/IC -- TEST REPORT

**Test Report No. :** CGZ3170427-00734-EFI 09 May 2017 Date of issue

Type / Model	REH73004HW2
EUT	2.4G drone
Applicant	China Topwin Industry Co., Ltd.
Address	A-G of 3/F, Block B,CENTRAL Building, Xixiang Road,BaoAn District,Shenzhen,China 518000
Telephone	+86-755-83660365
Fax	+86-755-83660251
Contact	David Zheng
Manufacturer	China Topwin Industry Co., Ltd.
Address	A-G of 3/F, Block B,CENTRAL Building, Xixiang Road,BaoAn District,Shenzhen,China 518000
Telephone	+86-755-83660365
Fax	+86-755-83660251
Contact	David Zheng
Factory	China Topwin Industry Co., Ltd.
Address	A-G of 3/F, Block B,CENTRAL Building, Xixiang Road,BaoAn District,Shenzhen,China 518000
Telephone	+86-755-83660365
Fax	+86-755-83660251
Contact	David Zheng

Test Result according to the standards on page 1: PASSED

The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Complaint line: +86-20-85533471

Fax: +86-20-38780406

E-mail: cts@cts-lab.com.cn



# **TABLE OF CONTENTS**

<u>Description</u>	Page
1.TEST STANDARDS	5
2.SUMMARY	5
2.1 GENERAL REMARKS	5
2.2 FINAL ASSESSMENT	
3.EQUIPMENT UNDER TEST	5
3.1 Power supply system utilised	5
3.2 SHORT DESCRIPTION OF THE EQUIPMENT UNDER TEST (EUT)	5
3.3 EUT OPERATION MODE	
3.4 EUT CONFIGURATION	
4.TEST ENVIRONMENT	7
4.1 Address of the test laboratory	7
4.2 TEST FACILITY	
4.3 Environmental conditions	7
4.4 DEFINITIONS OF SYMBOLS USED IN THIS TEST REPORT	
4.5 STATEMENT OF THE MEASUREMENT UNCERTAINTY	
4.6 MEASUREMENT UNCERTAINTY	8
5.SUMMARY OF STANDARDS AND RESULTS	8
5.1.Description of Standards and Results	8
6.POWER LINE CONDUCTED EMISSION TEST	9
6.1.Test Equipment	9
6.2. BLOCK DIAGRAM OF TEST SETUP	
6.3. POWER LINE CONDUCTED EMISSION TEST LIMITS	
6.4.Test Procedure	
6.5. POWER LINE CONDUCTED EMISSION TEST RESULTS	
7.RADIATED DISTURBANCE (ELECTRIC FIELD)	
7.1.Test Equipment	
7.2.BLOCK DIAGRAM OF TEST SETUP	10
7.3.RADIATED EMISSION LIMIT:	
7.4.Test Procedure	
7.5.RADIATED EMISSION TEST RESULTS	12
8.BAND EDGE COMPLIANCE TEST	20
8.1. Test Equipment	20
8.2. Test Information	20
Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.	

CENTRE OF TESTING SERVICE CO., LTD.

# FCC ID:2ACIF-REH73004HW2 IC:12070A-REH73004HW2 CENTRE OF TESTING SERVICE





8.3. TEST PROCEDURE	20
8.4. TEST RESULTS	20
9. 99% BANDWIDTH	25
9.1 TEST PROCEDURE	25
9.2. TEST EQUIPMENT	25
9.3. TEST RESULTS	25
10 ANTENNA REQUIREMENTS	28
10.1 STANDARD APPLICABLE	28
10.2 ANTENNA CONSTRUCTION AND DIRECTIONAL GAIN	28
11.DEVIATION TO TEST SPECIFICATIONS	20
II.DEVIATION TO TEST SPECIFICATIONS	

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.





### 1.TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 15 OCT, 2016
- RSS-210 Issue 9
- RSS-Gen Issue 4
- ANSI C63.10:2013

#### 2.SUMMARY

# 2.1 GENERAL REMARKS

Date of receipt of test sample	27 April 2017		
Testing commenced on	27 April~09 May 2017		
Testing concluded on	09 May 2017		

#### 2.2 FINAL ASSESSMENT

The FCC/IC requirements pertaining to the technical standards and tested operation modes are

- fulfilled.
- not fulfilled.

The equipment under test

- fulfils the FCC/IC requirements cited on page 1.
- does not fulfil the FCC/IC requirements cited on page 1.

# 3.EQUIPMENT UNDER TEST

# 3.1 Power supply system utilised

Power supply voltage : ■ Battery 1.5V\*3

# 3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

### 3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

- ☐ TX- Y position
- ☐ TX- Zposition
- TX- X position

Operation mode 1:TX-X Position Low (2415MHz) , TX-X Position Middle (2444MHz ), TX-X Position High (2465MHz)

Note:Operation mode 1 TX -X position of EUT is the radiated test worst case; so only these test results be recorded in the test report.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





# 3.4 EUT configuration

# 3.4.1. Description of configuration (EUT)

Description	:	2.4G drone
Model Number	:	REH73004HW2
Operation frequency	:	2415~ 2465 MHz ISM Band
Modulation Technology	:	GFSK Modulation
Antenna	:	Internal Fix antenna, met requirement of FCC 15.203; 2dBi

#### 3.4.2. Tested Supporting System Details

N/A

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





### 4.TEST ENVIRONMENT

### 4.1 Address of the test laboratory

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

### 4.2 Test facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

### IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on June 6, 2011.

### FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

#### 4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

# 4.4 Definitions of symbols used in this test report

- - The black square indicates that the listed condition, standard or equipment is applicable for this report.
- The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

#### 4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

**Report No.**: CGZ3170427-00734-EFI Page 7 of 28





# 4.6 Measurement Uncertainty

Test Item	Frequency Range Uncertainty		Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	nce 30MHz~300MHz ±1.38dB		(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

<sup>(1).</sup> This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

# 5. Summary of standards and results

# 5.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION				
Description of Test Item	Standard	Results		
Conducted Emission Test	FCC Part 15 § 15.207 RSS-Gen Issue 4§ 7.2.4 ANSI C63.10:2013	N/A		
Radiated Emission Test	RSS-Gen Issue 4§ 7.2 RSS-210 Issue 9 § B.10 FCC Part 15 C § 15.249 FCC Part 15 § 209 ANSI C63.10:2013	PASSED		
Receiver Spurious Emissions	RSS-Gen Issue 4§ 4.10 ANSI C63.10:2013	PASSED		
Band Edge Compliance Test	RSS-210 Issue 9 § 4.1 RSS-Gen Issue 4 § 8.10 FCC Part 15 C § 15.249 ANSI C63.10:2013	PASSED		
99% Bandwidth	RSS-Gen Issue 4 § 6.6 ANSI C63.10:2013	PASSED		
N/A is an abbreviation for Not Applicable.				

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Complaint line: +86-20-85533471

Fax: +86-20-38780406

E-mail: cts@cts-lab.com.cn





# 6. Power Line Conducted Emission Test

#### 6.1.Test Equipment

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2016/10
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2016/10
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2016/10
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2016/10
5	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2016/10

# 6.2. Block Diagram of Test Setup

EUT

(EUT: 2.4G drone)

#### 6.3. Power Line Conducted Emission Test Limits

Standard: RSS-Gen: 7.2.4, FCC Part 15: 15.207, ANSI C63.10:2013

		Maximum RF Line Voltage		
Frequency		Quasi-Peak Level	Average Level	
requeriey		dB(μV)	dB(μV)	
150kHz	~ 500kHz	66 ~ 56*	56 ~ 46*	
500kHz	~ 5MHz	56	46	
5MHz	~ 30MHz	60	50	

Notes: 1. \* Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

#### 6.4.Test Procedure

The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

# 6.5. Power Line Conducted Emission Test Results

N/A

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

See Reverse For Terms And Conditions of Service

Report No.: CGZ3170427-00734-EFI Page 9 of 28





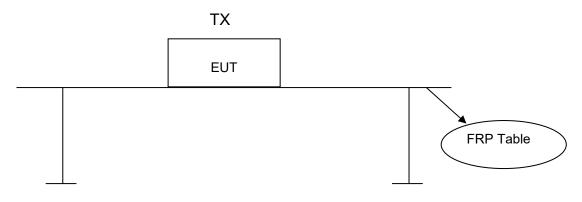
# 7. Radiated disturbance (electric field)

# 7.1.Test Equipment

Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2016/10
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2017/03
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2017/03
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2017/03
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2017/03
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2016/10

# 7.2.Block Diagram of Test Setup

# 7.2.1 Block Diagram of connection between EUT and simulators



(EUT: 2.4G drone)

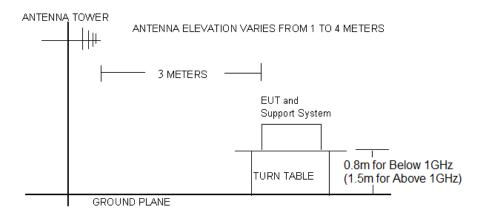
Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.





#### 7.2.2 Anechoic Chamber Setup Diagram



#### 7.3. Radiated Emission Limit:

Standard: FCC 15.249, FCC 15.209; RSS-Gen:7.2; RSS-210 B.10.

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (µV/m)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

FREQUENCY DISTANCE		FIELD STREN	FIELD STRENGTHS LIMIT		
	MHz		Meters	μV/m	dB(μV)/m
0.009	~	0.490	300	2400/F(kHz)	
0.490	~	1.705	30	24000/F(kHz)	
1.705	~	30	30	30	
30	~	88	3	100	40.0
88	~	216	3	150	43.5
216	~	960	3	200	46.0
960	~	1000	3	500	54.0
٨١	Above 1000		3	Other:74.0 dB(μV)/m (Peak)	
A	oove i	000	3	54.0 dB(μV)/n	

Remark:

- (1) Emission level  $dB\mu V = 20 \log Emission level \mu V/m$
- (2) The smaller limit shall apply at the cross point between two frequency bands.
- (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.





#### 7.4.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high (1.5m for above 1GHz) above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.10:2013 on radiated emission Test.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz and a Peak and Average detector with 2MHz RBW above 1GHz,

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz and a Peak detector with1MHz VBW above 1GHz, A average detector with 10Hz VBW above 1GHz

Pretest x, y, z position of EUT, final, select the worst case x position test and record the test results in the report.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on section 7.5

#### 7.5. Radiated Emission Test Results

#### PASSED.

The frequency range from 9KHz~30MHz,30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

Report No.: CGZ3170427-00734-EFI Page 12 of 28

# FCC ID:2ACIF-REH73004HW2 IC:12070A-REH73004HW2 CENTRE OF TESTING SERVICE





Test Mode: TX –X Position Mode Result: □ - passed Frequency range: 9KHz~30MHz □ - not passed

No.	Frequency (MHz)	Factor (dB)		Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
Rem	ark: The test re	sult readi	ng value is to l	ow, margin a	II > 20dB of t	he limit.	

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

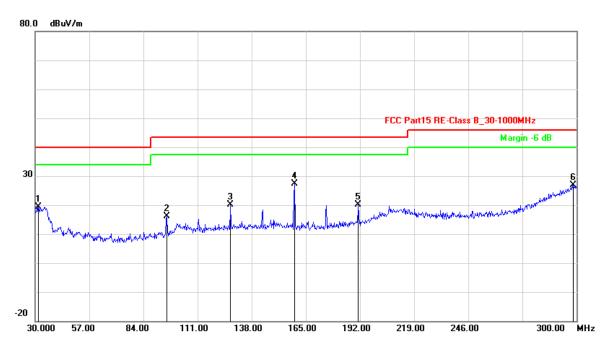
# FCC ID:2ACIF-REH73004HW2 IC:12070A-REH73004HW2 CENTRE OF TESTING SERVICE





Channel:	TX –X Position	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-1GHz		

EUT	2.4G drone
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	27 April~09 May 2017
Operator	Duke
MODEL NO	REH73004HW2



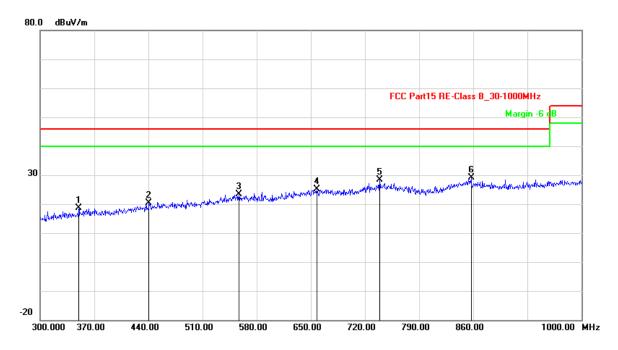
No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	31.6200	-15.38	34.79	19.41	40.00	-20.59	QP		
2	95.6099	-17.89	34.08	16.19	43.50	-27.31	QP		
3	127.4699	-15.69	35.90	20.21	43.50	-23.29	QP		
4	159.3300	-15.35	42.78	27.43	43.50	-16.07	QP		
5	191.1899	-13.60	33.63	20.03	43.50	-23.47	QP		
6	298.3799	-1.56	28.49	26.93	46.00	-19.07	QP		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	350.3999	-11.03	29.72	18.69	46.00	-27.31	QP			
2	440.6999	-8.60	29.03	20.43	46.00	-25.57	QP			
3	556.8999	-5.49	28.90	23.41	46.00	-22.59	QP			
4	657.7000	-3.17	28.26	25.09	46.00	-20.91	QP			
5	738.8999	-1.76	30.19	28.43	46.00	-17.57	QP			
6	857.2000	-0.32	29.48	29.16	46.00	-16.84	QP			
Remark	Remark: Other frequency mini margin all >6 dB of Limit									

# FCC ID:2ACIF-REH73004HW2 IC:12070A-REH73004HW2 CENTRE OF TESTING SERVICE





Channel:	TX –X Position Low CH	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2415.00	7.09	79.25	86.34	114.00	-27.66	Peak
2	2415.00	7.09	78.79	85.88	94.00	-8.12	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1661.323	2.76	39.38	42.14	74.00	-31.86	peak
2	1661.323	2.76	27.66	30.42	54.00	-23.58	AVG
3	5078.156	6.16	38.45	44.61	74.00	-29.39	peak
4	5078.156	6.16	26.46	32.62	54.00	-21.38	AVG
Remark	: Other frequen	cy mini ma	rgin all >20 dB	of Limit			

Channel:	TX –X Position Middle CH	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2444.00	7.26	77.50	84.76	114.00	-29.24	Peak
2	2444.00	7.26	76.96	84.22	94.00	-9.78	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3248.497	4.10	37.07	41.17	74.00	-32.83	peak		
2	3248.497	4.10	24.94	29.04	54.00	-24.96	AVG		
3	5673.347	7.92	38.03	45.95	74.00	-28.05	peak		
4	5673.347	7.92	25.62	33.54	54.00	-20.46	AVG		
Remark	Remark: Other frequency mini margin all >20 dB of Limit								

Channel:	TX –X Position High CH	Result:	■ - passed
Test point:	Horizontal		☐ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2465.00	7.38	76.48	83.86	114.00	-30.14	Peak
2	2465.00	7.38	76.11	83.49	94.00	-10.51	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1573.146	2.24	39.54	41.78	74.00	-32.22	peak		
2	1573.146	2.24	27.80	30.04	54.00	-23.96	AVG		
3	5012.024	5.97	37.34	43.31	74.00	-30.69	peak		
4	5012.024	5.97	25.68	31.65	54.00	-22.35	AVG		
Remark	Remark: Other frequency mini margin all >20 dB of Limit								

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

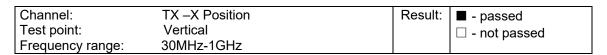
Tel: +86-20-85543113 (32 lines)

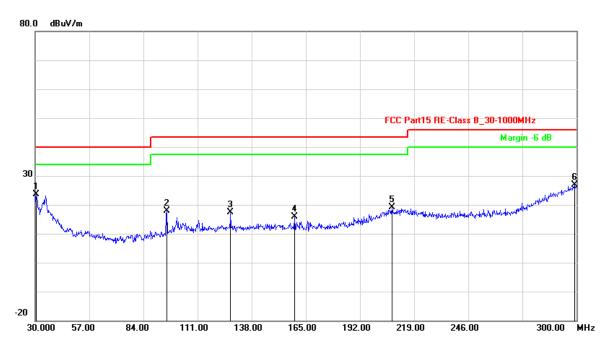
Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn





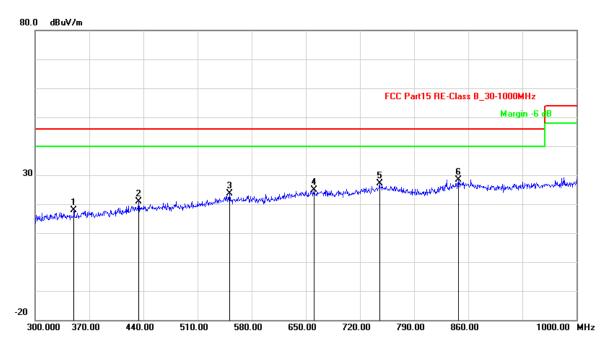




No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	30.5399	-15.24	38.80	23.56	40.00	-16.44	QP	
2	95.6099	-17.89	35.76	17.87	43.50	-25.63	QP	
3	127.4699	-15.69	33.00	17.31	43.50	-26.19	QP	
4	159.3300	-15.35	31.20	15.85	43.50	-27.65	QP	
5	207.9300	-10.02	29.26	19.24	43.50	-24.26	QP	
6	299.1899	-1.34	28.16	26.82	46.00	-19.18	QP	
Remark:	Remark: Other frequency mini margin all >6 dB of Limit							







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	350.3999	-11.03	28.81	17.78	46.00	-28.22	QP		
2	433.6999	-8.88	29.79	20.91	46.00	-25.09	QP		
3	551.2999	-5.50	29.22	23.72	46.00	-22.28	QP		
4	660.5000	-3.17	27.97	24.80	46.00	-21.20	QP		
5	745.2000	-1.51	28.68	27.17	46.00	-18.83	QP		
6	847.3999	-0.28	28.71	28.43	46.00	-17.57	QP		
Remark	Remark: Other frequency mini margin all >6 dB of Limit								

# FCC ID:2ACIF-REH73004HW2 IC:12070A-REH73004HW2 CENTRE OF TESTING SERVICE





Channel:	TX –X Position Low CH	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2415.00	7.09	80.15	87.24	114.00	-26.76	Peak
2	2415.00	7.09	79.66	86.75	94.00	-7.25	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3336.673	3.92	36.40	40.32	74.00	-33.68	peak		
2	3336.673	3.92	24.53	28.45	54.00	-25.55	AVG		
3	5563.126	7.59	38.46	46.05	74.00	-27.95	peak		
4	5563.126	7.59	25.95	33.54	54.00	-20.46	AVG		
Remark	Remark: Other frequency mini margin all >20 dB of Limit								

Channel:	TX –X Position Middle CH	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2444.00	7.26	78.81	86.07	114.00	-27.93	Peak
2	2444.00	7.26	78.38	85.64	94.00	-8.36	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3402.806	3.78	35.54	39.32	74.00	-34.68	peak		
2	3402.806	3.78	23.73	27.51	54.00	-26.49	AVG		
3	5695.391	7.98	39.40	47.38	74.00	-26.62	peak		
4	5695.391	7.98	27.44	35.42	54.00	-18.58	AVG		
Remark:	Remark: Other frequency mini margin all >20 dB of Limit								

Channel:	TX –X Position High CH	Result:	■ - passed
Test point:	Vertical		☐ - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2465.00	7.38	77.07	84.45	114.00	-29.55	Peak
2	2465.00	7.38	76.19	83.57	94.00	-10.43	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	3380.762	3.83	36.72	40.55	74.00	-33.45	peak
2	3380.762	3.83	24.58	28.41	54.00	-25.59	AVG
3	5695.391	7.98	39.31	47.29	74.00	-26.71	peak
4	5695.391	7.98	27.64	35.62	54.00	-18.38	AVG
Remark: Other frequency mini margin all >20 dB of Limit							

Note:Level=Reading+Factor. Margin= Level - Limit.

Copyright of this report is owned by Centre of Testing Service and may not be reproduced otner than in tuil except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

Complaint line: +86-20-85533471

E-mail: cts@cts-lab.com.cn





# 8. Band Edge Compliance test

### 8.1. Test Equipment

Band Edge Compliance test						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2016/10	
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2017/03	
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2017/03	

# 8.2. Test Information

EUT	2.4G drone
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	27 April~09 May 2017
Operator	Duke
MODEL NO	REH73004HW2

### 8.3. Test procedure

- 1. The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
- 2. Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.
- 3. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz; VBW=10KHz(1/On time) / Sweep=AUTO

#### 8.4. Test Results

#### PASSED.

The EUT operates at hopping-off test mode. The lowest and highest channels are tested to verify the band edge emissions.

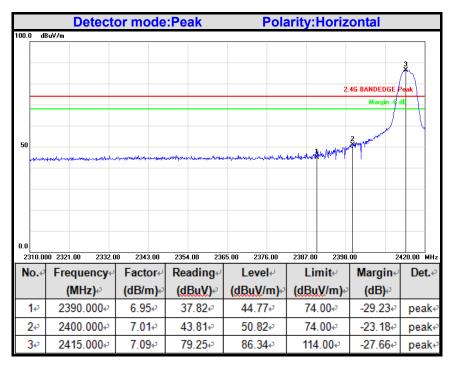
Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

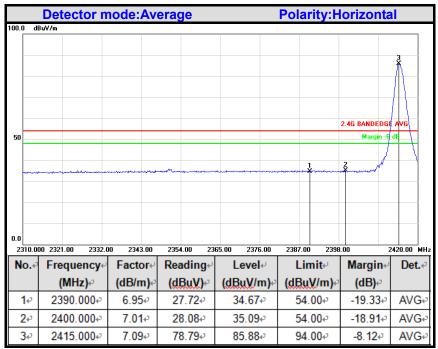
CENTRE OF TESTING SERVICE CO., LTD.





# **Band Edges (Low)**



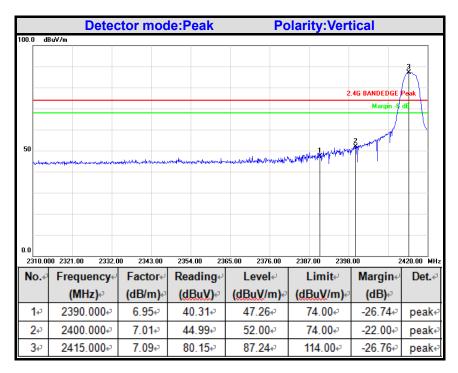


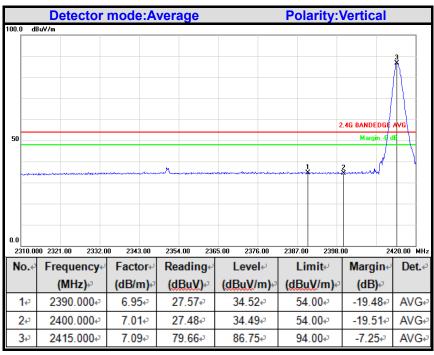
Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.







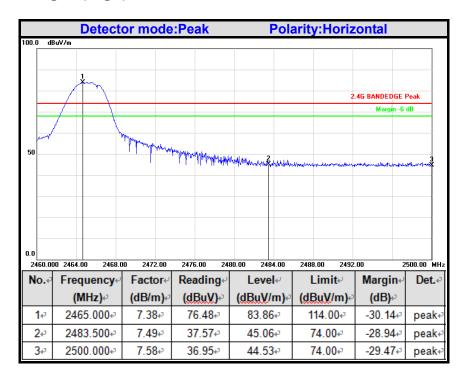


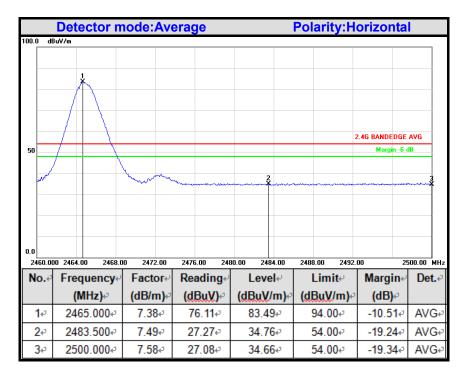
CENTRE OF TESTING SERVICE CO., LTD.





# **Band Edges (High)**





Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

CENTRE OF TESTING SERVICE CO., LTD.

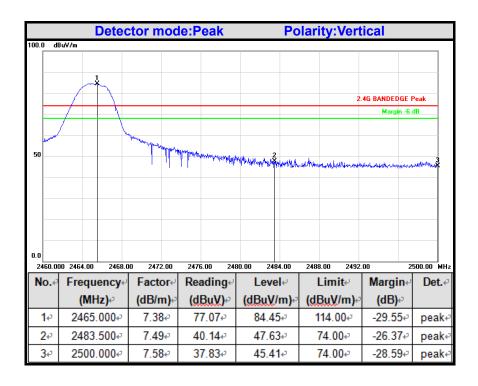
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

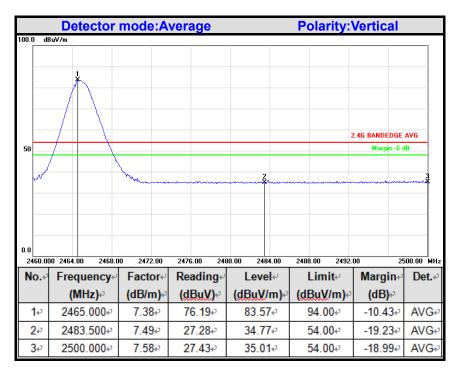
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









CENTRE OF TESTING SERVICE CO., LTD.





# 9. 99% bandwidth

# 9.1 Test procedure

According to RSS-Gen 4 6.6 The EUT output is connected to the spectrum analyzer.

The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual. The sweep time is coupled.

# 9.2. Test Equipment

Band Edge Compliance test						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	
1	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2017/03	
2	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2017/03	

#### 9.3. Test Results

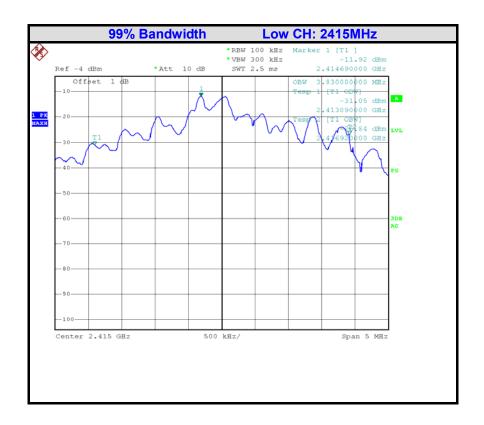
#### PASSED.

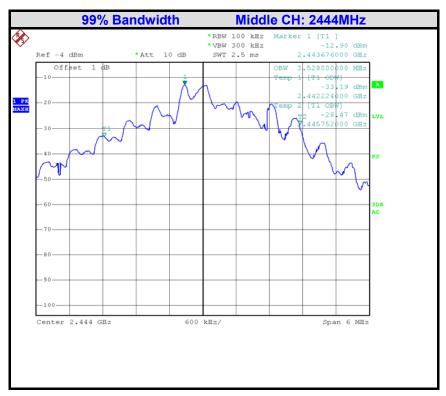
Channel	Frequency (MHz)	Bandwidth (MHz)
Low	2415	3.830
Middle	2444	3.528
High	2465	3.160

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.









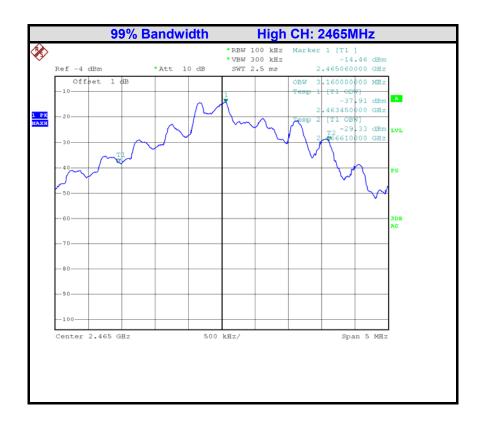
#### CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn









# 10 Antenna Requirements

# 10.1 Standard Applicable

The EUT is Internal Fix Antenna with 2dBi, according to FCC 47 CFR Section 15.203, 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.

# 10.2 Antenna Construction and Directional Gain

Antenna type: Internal Fix Antenna

Antenna Gain:2dBi

# 11. Deviation to test specifications

The following identical model(s):

**RVOH1200** 

Belong to the tested device:

Product description: **2.4G drone**Model name: **REH73004HW2** 

Copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approval of the issuing Company.

Report No.: CGZ3170427-00734-EFI