

## CENTRE OF TESTING SERVICE INTERNATIONAL

**OPERATE ACCORDING TO ISO/IEC 17025** 

# FCC ID TEST REPORT

TEST REPORT NUMBER: CGZ2140718-0031-EF



CENTRE OF TESTING SERVICE CO., LTD.

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

## **CENTRE OF TESTING SERVICE**





TEST REPORT For FCC ID						
	47 CFR PART 15 OCT, 2013					
Report Reference No	•					
Date of issue	. 20 August 2014					
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	LIAN SHENG TOYS FACTORY					
Address	CHENGHAI DISTRICT,SHANTOU CITY,GUANGDONG PROVINCE,CHINA					
Test specification						
Standard	47 CFR PART 15 OCT, 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 C	O., LTD. All rights reserved.					
CENTRE OF TESTING SERVICE C material. CENTRE OF TESTING SE	in whole or in part for non-commercial purposes as long as the O., LTD is acknowledged as copyright owner and source of the RVICE CO., LTD takes no responsibility for and will not assume liability er's interpretation of the reproduced material due to its placement and					
Test item description	: Remote Control Aircraft (8+)					
Trade Mark						
Manufacturer						
Model/Type reference	LS-125					
Ratings	Battery 1.5V*4					
Operating Frequency						
Result	Positive					

1

Compiled by:

Supervised by:

Approved by:

Kate zhang / Fileadministrators

Duke yang / Technique principal

Vincent yao / Manager

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





20 August 2014

## FCCID-TEST REPORT

Test Report No. :	CGZ2140718-0031-EF	20 August 2014 Date of issue			
Type / Model	LS-125				
EUT	Remote Control Aircraft (8+)				
Applicant	LIAN SHENG TOYS FACTORY				
Address	CHENGHAI DISTRICT, SHANTOU CITY, G PROVINCE, CHINA	GUANGDONG			
Telephone	+86-0754-85355678				
Fax	+86-0754-83255889				
Contact	Du Shizhao				
Manufacturer	/				
Address	/				
Telephone	/				
Fax	/				
Contact	/				
Factory	/				
Address	/				
Telephone					
Fax	/				
1 =	1				

#### **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) Fax: +86-20-38780406 Complaint line: +86-20-85533471 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	5
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	5
3.4 EUT CONFIGURATION	6
4.TEST ENVIRONMENT	7
4.1 Address of the test laboratory	
4.2 TEST FACILITY	
4.3 Environmental conditions	
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	9
7.RADIATED DISTURBANCE (ELECTRIC FIELD)	10
7.1.Test Equipment	
7.2.BLOCK DIAGRAM OF TEST SETUP	
7.3.RADIATED EMISSION LIMIT:	
7.4.Test Procedure	
7.5.RADIATED EMISSION TEST RESULTS	12
8.BAND EDGE COMPLIANCE TEST	22
8.1. TEST EQUIPMENT	
8.2. TEST INFORMATION	
8.3. TEST PROCEDURE	
copyright of this report is owned by Centre of Testing Service and may not be reproduced other than in full except with the written approva	a or 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** 





8.4.	. Test Results	2
o DEV	/IATION TO TEST SPECIFICATIONS	2

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**





## 1.TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 15 OCT, 2013
- ANSI C63.4-2009

## 2.SUMMARY

## 2.1 GENERAL REMARKS

Date of receipt of test sample	21 July 2014
Testing commenced on	15 August 2014
Testing concluded on	20 August 2014

## 2.2 FINAL ASSESSMENT

The F	-CC	requirements	pertaining to	o the	technical	standards a	and tested	l operation	modes	are

- fulfilled.
- $\Box$  **not** fulfilled.

The equipment under test

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

## 3.EQUIPMENT UNDER TEST

## 3.1 Power supply system utilised

Power supply voltage : ■ Battery 1.5V\*4

## 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:

- □ Standby
- ☐ TX- Y position
- ☐ TX- Zposition
- TX- X position

Operation mode 1:TX-X Position Low (2405MHz) , TX-X Position Middle (2445MHz ),

TX-X Position High (2475MHz)

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

## **CENTRE OF TESTING SERVICE**





## 3.4 EUT configuration

## 3.4.1. Description of configuration (EUT)

Description	•	Remote Control Aircraft (8+)
Model Number	:	LS-125
Operation frequency	:	2405~ 2475 MHz ISM Band
Modulation Technology	:	GFSK
Antenna	:	External antenna, met requirement of FCC 15.203

## 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

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ2140718-0031-EF Page 6 of 27





## 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 May 22, 2014.

## 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.:** CGZ2140718-0031-EF Page 7 of 27

## **CENTRE OF TESTING SERVICE**





## 4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±2.51dB	(1)
Power disturbance	30MHz~300MHz	±2.06dB	(1)
	30MHz~200MHz	±3.70dB	(1)
Dadiation emission (2m)	200MHz ~ 1000MHz	±3.87dB	(1)
Radiation emission (3m)	1GHz~5GHz	±5.34dB	(1)
	5GHz~18GHz	±5.35dB	(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 ANSI C63.4-2009	N/A	
Radiated Emission Test	FCC Part 15 C: 15.249 FCC Part 15 : 109 ANSI C63.4-2009	PASSED	
Band Edge Compliance Test	FCC Part 15 C: 15.249 ANSI C63.4-2009	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.

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.:** CGZ2140718-0031-EF Page 8 of 27





## 6. Power Line Conducted Emission Test

## **6.1.Test Equipment**

Cond	ucted disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Validity	Cal. Period
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2014/11/04	1 Year
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2014/11/04	1 Year
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z6	100140	2014/11/04	1 Year
4	Pulse Limiter	ROHDE & SCHWARZ	ESHS-Z2	100301	2014/11/04	1 Year
5	EMI Test Software	Farad	EZ-EMC	N/A	N/A	/

## 6.2. Block Diagram of Test Setup

EUT

(EUT: Remote Control Aircraft (8+))

## 6.3. Power Line Conducted Emission Test Limits

Standard: RSS-Gen: 7.2.4, FCC Part 15: 15.207, ANSI C63.4-2009

	Maximum RF Line Voltage		
Frequency	Quasi-Peak Level	Average Level	
1.04000	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.

#### 6.4.Test Procedure

The XBOX 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

Not Applicable.

Note: The EUT power supply by battery.

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.:** CGZ2140718-0031-EF Page 9 of 27

<sup>2.</sup> The lower limit shall apply at the transition frequencies.





## 7. Radiated disturbance (electric field)

## 7.1.Test Equipment

Radiate	ed Emission(Electric fi	eld)				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Validity	Cal. Period
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03/24	1 Year
2	EMI Test Receiver	ROHDE & SCHWARZ	ESVS 10	842885/001	2014/11/04	1 Year
3	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2015/03/29	1 Year
4	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2015/03/29	1 Year
5	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2015/03/29	1 Year
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2015/03/29	1 Year
7	Pre-Amplifier	EMC	EMC330	980113	2015/03/24	1 Year
8	Pre-Amplifier	EMC	EMC012645	980114	2015/03/24	1 Year
9	EMI Test Software	Farad	EZ-EMC	N/A	N/A	/

## 7.2.Block Diagram of Test Setup

## 7.2.1 Block Diagram of connection between EUT and simulators

EUT

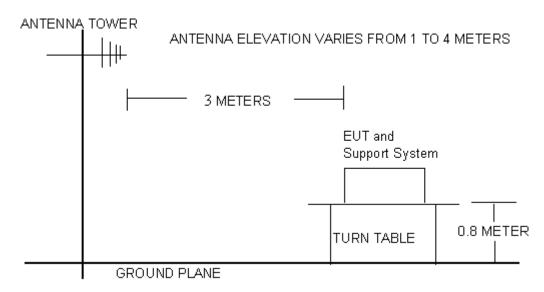
(EUT: Remote Control Aircraft (8+))

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.





## 7.2.2 Anechoic Chamber Setup Diagram



## 7.3. Radiated Emission Limit:

## Standard: FCC 15.249, FCC 15.209.

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

FRE	QUEN	CY	DISTANCE	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	oove 1	000	3	Other:74.0 dB(μV)/m (Peak)		
At	ove II	000	3	54.0 dB(μV)/m (Average)		

Remark:

- (1) Emission level  $dB\mu V = 20 log Emission level <math>\mu V/m$
- (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.

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.: CGZ2140718-0031-EF

#### **CENTRE OF TESTING SERVICE**





## 7.4.Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high 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 C63.4-2009on 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.

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.: CGZ2140718-0031-EF Page 12 of 27







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

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
Rem	Remark: The test result reading value is to low, margin all > 10dB of the 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) 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.:** CGZ2140718-0031-EF Page 13 of 27

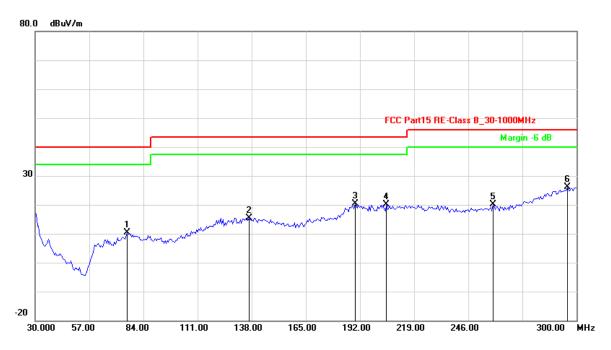






Channel:	TX –X Position	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-1GHz		

EUT	Remote Control Aircraft (8+)			
Test Condition	Ambient Temperature: 25°C Humidity: 43%			
Test distance	3 Meter			
Test Date:	15 August 2014			
Operator	Duke			
MODEL NO	LS-125			



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	75.9920	-21.44	31.88	10.44	40.00	-29.56	QP	
2	136.5932	-16.61	32.06	15.45	43.50	-28.05	QP	
3	189.6192	-12.14	32.43	20.29	43.50	-23.21	QP	
4	205.3106	-12.34	32.58	20.24	43.50	-23.26	QP	
5	258.3367	-12.64	32.69	20.05	46.00	-25.95	QP	
6	295.6713	-6.21	32.31	26.10	46.00	-19.90	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.

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

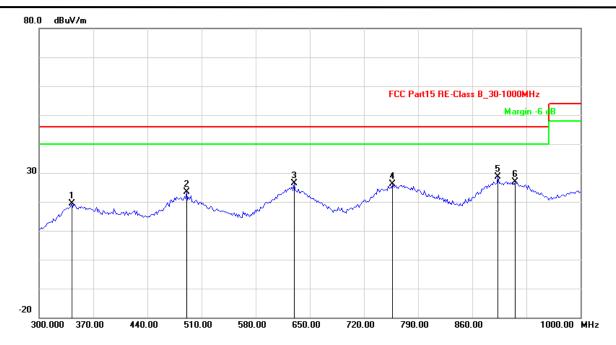
See Reverse For Terms And Conditions of Service

Report No.: CGZ2140718-0031-EF

## **CENTRE OF TESTING SERVICE**







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	342.0842	-13.19	32.49	19.30	46.00	-26.70	QP	
2	490.7816	-9.95	33.28	23.33	46.00	-22.67	QP	
3	629.6593	-7.33	33.66	26.33	46.00	-19.67	QP	
4	757.3146	-5.72	31.86	26.14	46.00	-19.86	QP	
5	893.3868	-4.25	32.83	28.58	46.00	-17.42	QP	
6	915.8317	-4.39	31.31	26.92	46.00	-19.08	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.

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







Channel:	TX –X Position Low CH	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	1GHz-18GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2405.00	2.85	60.68	63.53	114.00	-50.47	Peak
2	2405.00	2.85	57.62	60.47	94.00	-33.53	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1947.896	-1.17	46.85	45.68	74.00	-28.32	peak	
2	1947.896	-1.17	32.14	30.97	54.00	-23.03	AVG	
3	5871.743	14.97	31.89	46.86	74.00	-27.14	peak	
4	5871.743	14.97	15.84	30.81	54.00	-23.19	AVG	
5	8737.475	21.27	29.89	51.16	74.00	-22.84	peak	
6	8737.475	21.27	13.21	34.48	54.00	-19.52	AVG	
Remark:	Remark: Other frequency mini margin all >6 dB of Limit							

Channel:	TX –X Position Middle CH	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	1GHz-18GHz		

	No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
	1	2445.00	3.25	59.99	63.24	114.00	-50.76	Peak
ſ	14	2445.00	3.25	56.90	60.15	94.00	-33.85	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1947.896	-1.17	51.83	50.66	74.00	-23.34	peak
2	1947.896	-1.17	35.60	34.43	54.00	-19.57	AVG
3	6092.184	15.60	32.39	47.99	74.00	-26.01	peak
4	6092.184	15.60	18.32	33.92	54.00	-20.08	AVG
5	8142.285	19.59	29.99	49.58	74.00	-24.42	peak
6	8142.285	19.59	14.90	34.49	54.00	-19.51	AVG
Remark	: Other frequen	ncv mini ma	rgin 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.

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.:** CGZ2140718-0031-EF Page 16 of 27







Channel:	TX –X Position High CH	Result:	■ - passed
Test point:	Horizontal		☐ - not passed
Frequency range:	1GHz-18GHz		,

	No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
Γ	1	2475.00	3.56	59.67	63.23	114.00	-50.77	Peak
Γ	2	2475.00	3.56	56.43	59.99	94.00	-34.01	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1947.896	-1.17	49.38	48.21	74.00	-25.79	peak	
2	1947.896	-1.17	35.79	34.62	54.00	-19.38	AVG	
3	6995.992	17.79	34.50	52.29	74.00	-21.71	peak	
4	6995.992	17.79	19.95	37.74	54.00	-16.26	AVG	
5	10545.090	24.86	30.13	54.99	74.00	-19.01	peak	
6	10545.090	24.86	15.21	40.07	54.00	-13.93	AVG	
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.

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

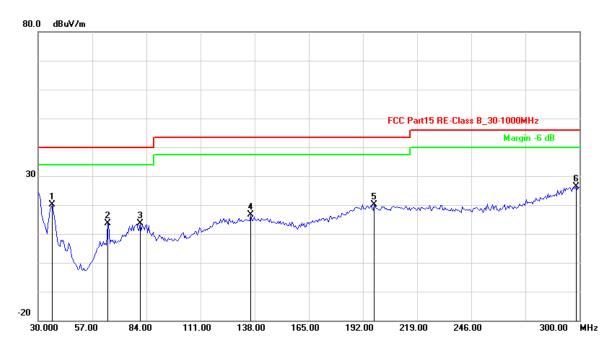
**Report No.:** CGZ2140718-0031-EF Page 17 of 27







Channel:TX –X PositionResult:■ - passedTest point:Vertical□ - not passedFrequency range:30MHz-1GHz



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	37.0341	-24.22	44.27	20.05	40.00	-19.95	QP
2	64.6293	-23.85	37.49	13.64	40.00	-26.36	QP
3	80.8617	-21.60	35.11	13.51	40.00	-26.49	QP
4	136.0521	-16.65	33.24	16.59	43.50	-26.91	QP
5	197.7355	-12.51	32.73	20.22	43.50	-23.28	QP
6	298.3768	-5.81	32.12	26.31	46.00	-19.69	QP
Remark	Other frequen	icy mini ma	rgin 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.

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

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

Complaint line: +86-20-85533471

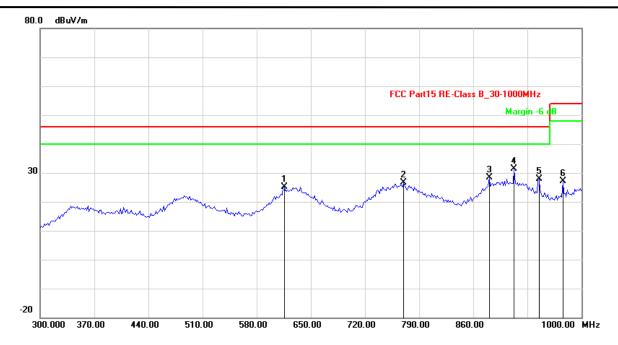
E-mail: cts@cts-lab.com.cn

Report No.: CGZ2140718-0031-EF

## **CENTRE OF TESTING SERVICE**







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	615.6313	-7.92	33.01	25.09	46.00	-20.91	QP
2	769.9399	-5.72	32.24	26.52	46.00	-19.48	QP
3	880.7615	-4.91	33.41	28.50	46.00	-17.50	QP
4	913.0261	-4.31	35.73	31.42	46.00	-14.58	QP
5	945.2906	-7.80	35.77	27.97	46.00	-18.03	QP
6	976.1523	-9.02	36.19	27.17	54.00	-26.83	QP
Remark	Other frequen	cy mini ma	rgin 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.

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







Channel:	TX –X Position Low CH	Result:	■ - passed
Test point:	Vertical		□ - not passed
Frequency range:	1GHz-18GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2405.00	2.85	74.98	77.83	114.00	-36.17	Peak
2	2405.00	2.85	71.64	74.49	94.00	-19.51	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.			
1	1947.896	-1.17	52.33	51.16	74.00	-22.84	peak			
2	1947.896	-1.17	37.83	36.66	54.00	-17.34	AVG			
3	3314.629	7.61	40.26	47.87	74.00	-26.13	peak			
4	3314.629	7.61	24.91	32.52	54.00	-21.48	AVG			
5	7745.491	18.84	29.08	47.92	74.00	-26.08	peak			
6	7745.491	18.84	15.03	33.87	54.00	-20.13	AVG			
Remark:	Remark: Other frequency mini margin all >6 dB of Limit									

Channel:	TX –X Position Middle CH	Result:	■ - passed
Test point:	Vertical		☐ - not passed
Frequency range:	1GHz-18GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2445.00	3.25	74.29	77.54	114.00	-36.46	Peak
2	2445.00	3.25	71.06	74.31	94.00	-19.69	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1749.499	-1.27	53.87	52.60	74.00	-21.40	peak		
2	1749.499	-1.27	36.82	35.55	54.00	-18.45	AVG		
3	1947.896	-1.17	55.85	54.68	74.00	-19.32	peak		
4	1947.896	-1.17	38.08	36.91	54.00	-17.09	AVG		
5	9464.930	22.94	29.34	52.28	74.00	-21.72	peak		
6	9464.930	22.94	12.78	35.72	54.00	-18.28	AVG		
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.

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.:** CGZ2140718-0031-EF Page 20 of 27







Channel:TX –X Position High CHResult:■ - passedTest point:Vertical□ - not passedFrequency range:1GHz-18GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2475.00	3.56	66.60	70.16	114.00	-43.84	Peak
2	2475.00	3.56	63.36	66.92	94.00	-27.08	AVG

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1947.896	-1.17	49.39	48.22	74.00	-25.78	peak	
2	1947.896	-1.17	35.82	34.65	54.00	-19.35	AVG	
3	3821.643	9.24	37.80	47.04	74.00	-26.96	peak	
4	3821.643	9.24	22.87	32.11	54.00	-21.89	AVG	
5	10589.178	24.93	29.27	54.20	74.00	-19.80	peak	
6	10589.178	24.93	15.89	40.82	54.00	-13.18	AVG	
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.

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.:** CGZ2140718-0031-EF Page 21 of 27





## 8. Band Edge Compliance test

## 8.1. Test Equipment

Radiate	Radiated Emission(Electric field)								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Validity	Cal. Period			
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2015/03/24	1 Year			
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2015/03/29	1 Year			
3	Pre-Amplifier	EMC	EMC330	980113	2015/03/24	1 Year			
4	Pre-Amplifier	EMC	EMC012645	980114	2015/03/24	1 Year			
5	EMI Test Software	Farad	EZ-EMC	N/A	N/A	/			

## 8.2. Test Information

EUT	Remote Control Aircraft (8+)	
Test Condition	ion Ambient Temperature: 25°C Humidity: 43%	
Test distance	3 Meter	
Test Date:	15 August 2014	
Operator	Duke	
MODEL NO	LS-125	

## 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=1/on time(1KHz) / 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.

Test Mode	Channel	Test Result Highest Emission (dBuv/m)			
	Marked Frequency	Horizontal		Vertical	
		Peak	Average	Peak	Average
Low Channel	2390MHz	29.02	18.17	40.17	19.10
	2400MHz	39.32	18.58	51.42	25.02
High Channel	2483.5MHz	30.27	17.98	34.27	18.38
	2500MHz	29.43	17.92	28.39	18.03

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

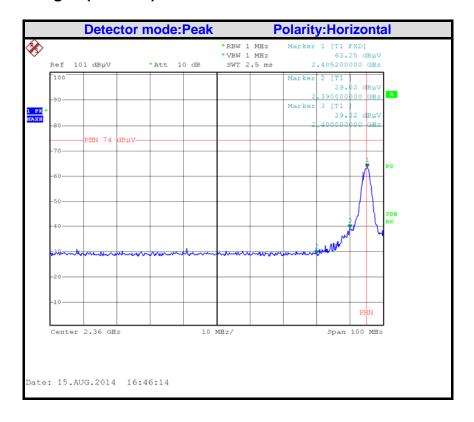
See Reverse For Terms And Conditions of Service

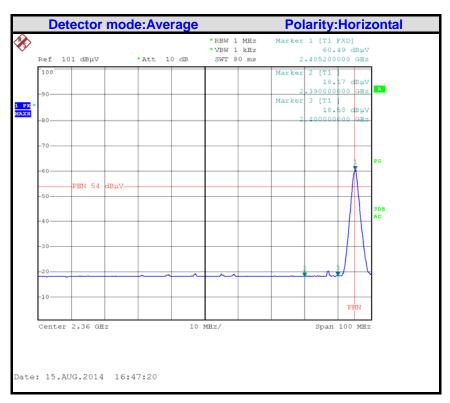
**Report No.:** CGZ2140718-0031-EF Page 22 of 27





## **Band Edges (CH-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.

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

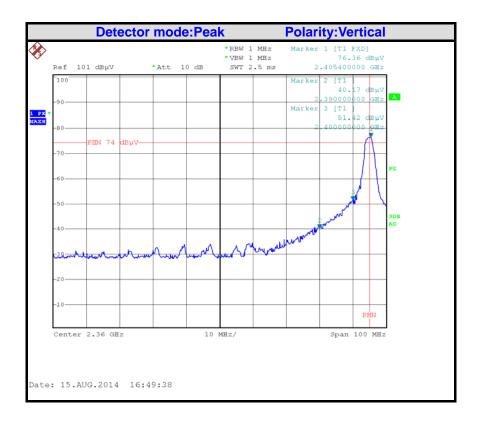
Tel: +86-20-85543113 (32 lines)

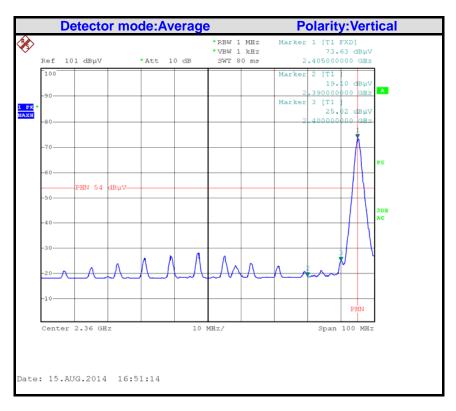
Complaint line: +86-20-85533471

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









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

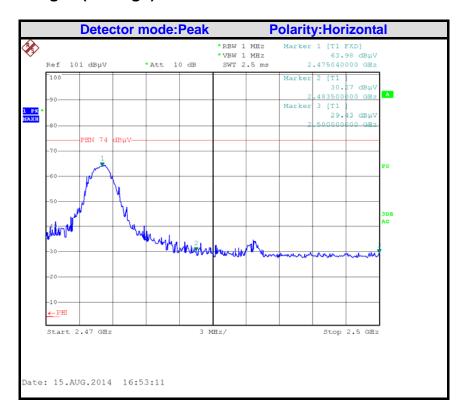
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

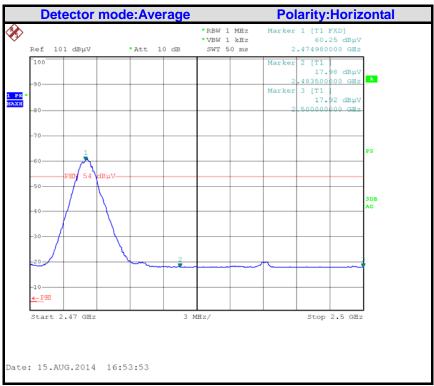
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





## **Band Edges (CH-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.

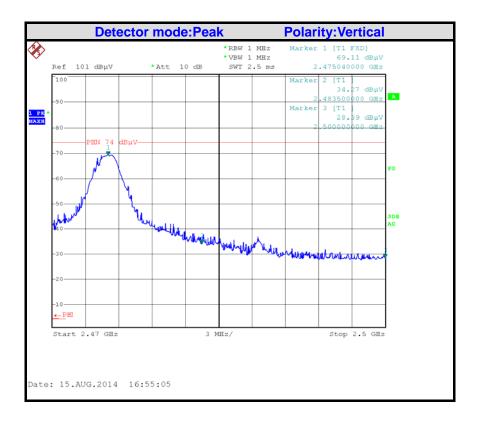
A101, No.65, Zhuji Highway,Tianhe District, Guangzhou, China

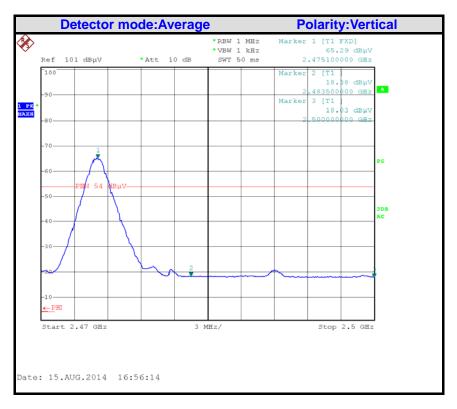
Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

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









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





## 9. Deviation to test specifications

The following identical model(s):

LS-111,	LS-123,	LS-124,	LS-126,	LS-127,	LS-128,
LS-129,	LS-208,	LS-209,	LS-210,	LS-211,	LS-212,
LS-213,	LS214,	LS215,	LS216,	LS-417,	LS-418,
LS-222A,	LS-222B,	LS-222C,	LS333-1,	LS333-2,	LS333-3,
LS555-2.	LS555-3.	LS777-1.	LS777-2.	LS777-3	·

Belong to the tested device:

Product description: Remote Control Aircraft (8+)
Model name: LS-125

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

See Reverse For Terms And Conditions of Service

**Report No.:** CGZ2140718-0031-EF Page 27 of 27