

Test Report No.:  
**WTS2002-0966-2**

# TEST REPORT

EUT	: EP R/C AIRPLANE
MODEL/TYPE	: Skyflyer
CLIENT	: Interactive Toy Concepts Limited
Classification of Test	: COMMISSION TEST

# Guangzhou Testing & Inspection Institute for Household Electrical Appliances

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# Guangzhou Testing & Inspection Institute for Household Electrical Appliances

GTIHEA

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<b>Client</b>		<b>name:</b> Interactive Toy Concepts Limited <b>address:</b> Unit 508, Tower B, New-Mandarin Plaza T.S.T. East, Kowloon, HongKong			
<b>Manufacturer</b>		<b>name:</b> Interactive Toy Concepts Limited <b>address:</b> Unit 508, Tower B, New-Mandarin Plaza T.S.T. East, Kowloon, HongKong			
<b>Equipment under Test</b>		<b>Name</b> : EP R/C AIRPLANE <b>model/ type</b> : SKYFLYER <b>trade mark</b> : Inter Active Toy <b>serial no.</b> : —			
Date of Receipt.		2002.04.19		Date of Testing	
				2002.05.12	
<b>Test Specification</b>			<b>Test Result</b>		
FCC PART 15 Subpart C			PASS		
<b>Evaluation of Test Result</b>		<p>This device is conformance with Part 15 of the FCC Rules and Regulations. Operation of this product is subject to the following conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p> <p style="text-align: right;"><b>Issue Date:</b></p>			
Tested by:		Reviewed by:		Approved by:	
<u>Chen Huawen</u> Name      Signature		<u>Wu Hong</u> Signature      Name		<u>Yang Chunrong</u> Name      Signature	
<b>Other Aspects:</b> The above mentioned illumination system is applicable to microscope.					
Abbreviations: OK,      Pass      = passed      Fail = failed      N/A= not applicable      EUT= equipment, sample(s) under					
This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of <b>GTIHEA</b> .					

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## 1. General Product Information

### 1.1 Product Function

Refer to Operating Instructions.

### 1.2 Ratings and System Details

	Transmitter	Receiver
Power supply	8×1.5VD.C.	4.8V D.C. NI-MH
Rated power	—	—
Frequency	27.145MHz	
Protection class	III	III
Power wire	NONE	NONE
Interconnecting wires	NONE	NONE
Alternative power levels	NONE	NONE
External RF connector	NONE	NONE

### 1.3 Independent Operation Modes

The basic operation modes are:

- A. Off
- B. On

### 1.4 Submitted Documents

Operating Instructions and Installation Manual  
Structural Parts  
Rating Label  
Wiring Diagram  
Construction Drawing  
Photographs of EUT  
Material Bill (Parts List)

## **2. Test Sites**

### **2.1 Test Facilities**

The tests and measurements refer to this report were performed by EMC testing Lab. of Guangzhou Testing & Inspection Institute for Household Electrical Appliances.

Add. : 204 Xingang West Road Guangzhou 510302 P.R. China  
Telephone : 86-20-84451692  
Fax : 86-20-84183160

The EMC testing laboratory has been recognized by China National Commission for Laboratory Assessment, and authorized by Nemko of Norway since 1997, and authorized by TÜV Rheinland of Germany since 1998, and registered by FCC since 2001.

### **2.2 Description of Non-standard Method and Deviations**

The testing and measurement method used in this report are all the standard method applied, no any non-standard method and deviations from the used standard were used.

### **2.3 List of Test and Measurement Instruments**

Refer to **Appendix A**.

### 3. Test Set-up and Operation Modes

#### 3.1 Principle of Configuration Selection

**Emission:** The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

#### 3.2 Physical Configuration for Testing

Refer to relative descriptions in this test report.

#### 3.3 Test Operation Mode and Test Software

Refer to **Test Setup** in clause 4 and clause 5.

#### 3.4 Special Accessories and Auxiliary Equipment

None.

#### 3.5 Countermeasures to Achieve EMC Compliance

None.

## 4. EMISSION Test Results

### 4.1 Emission in Radio Frequency Range

#### 4.1.1 Conducted emission (0.15MHz~30MHz)

**Remark:**

Not AC powered.

This measurement is not applicable.

**RESULT** : N/A

#### 4.1.2 Radiated emission (30MHz~1GHz)

**RESULT** : Pass

**Test Setup**

Test procedure : FCC PART 15, Subpart C  
Frequency range : 30 ~ 1000MHz  
Limits : FCC PART 15, Subpart C, Section 15.209 (for Transmitter)  
FCC PART 15, Subpart C, Section 15.227 (for Transmitter)  
FCC PART 15, Subpart B, Section 15.109, Class B (for Receiver)  
Test Site : 3m Anechoic Chamber  
Earthing : Applied

The EUT was placed on a wooden turntable, which could rotate from 0° to 360°, 0.8m

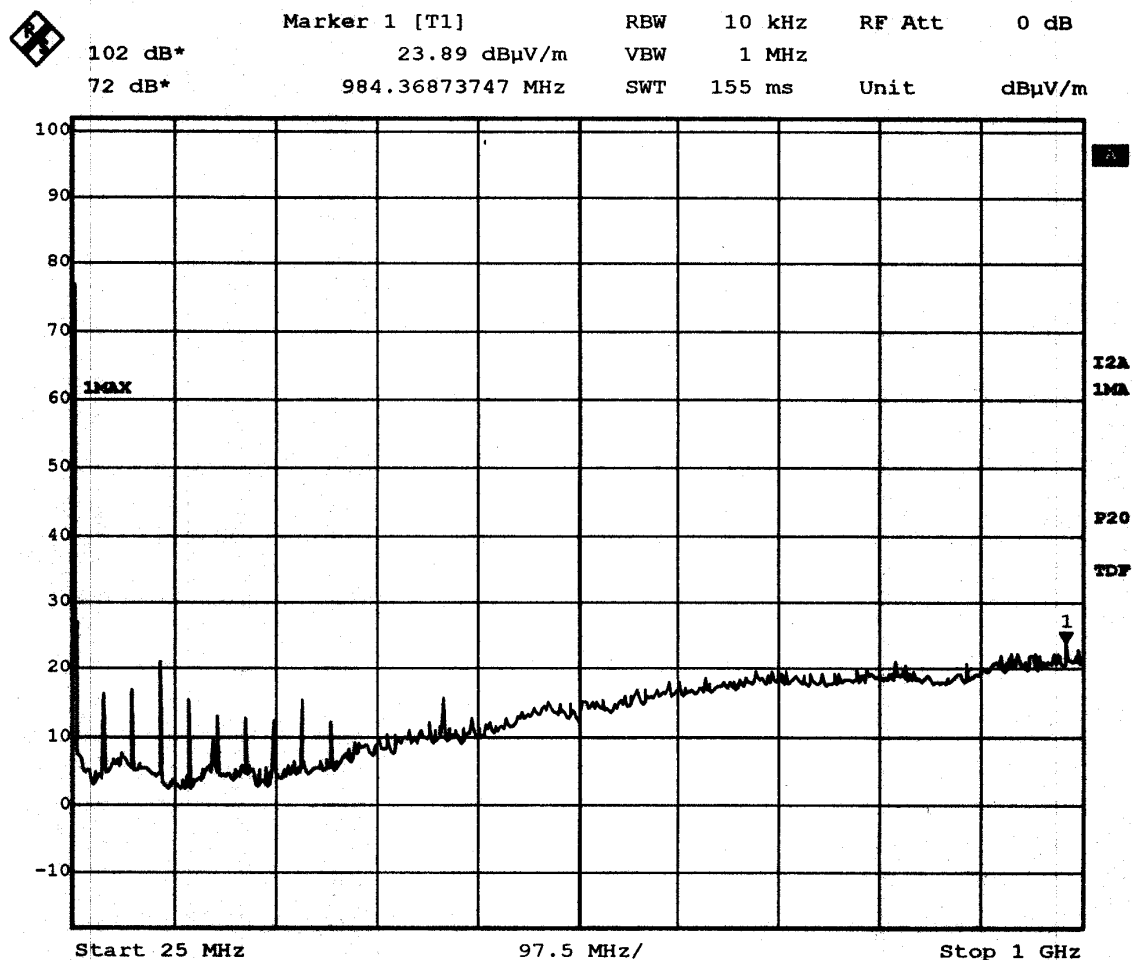
high above the ground, at a distance of 3m in anechoic chamber, from the receiving broadband antenna which was mounted on the antenna tower. The scan graphs were measured with the antenna at 1m high and the turn table at 0° but the final measurement results were measured with antenna moved up and down between 1m to 4m and the turn table rotated from 0° to 360° the maximum reading was recorded as final QP reading.

**Test Conditions: (Transmitter)**

Ambient Temperature : 25 ° / 25 ° (Before Test/After Test);  
Relative Humidity : 60 % / 60 % (Before Test/After Test);  
Power Supply : 12Vdc ;  
Operating Mode of the EUT : Transmitting.

Radiation Disturbance			
Freq. (MHz)	Antenna Polarity (V/H)	Result ( $\mu$ V/m)	Limits ( $\mu$ V/m)
27.1445	V	7943.3	10000
81.435	V	7.9	100
108.580	V	10.2	150
984.369	V	15.8	500
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/

**Scan Graph and Scan Settings (Vertical/Horizontal)**



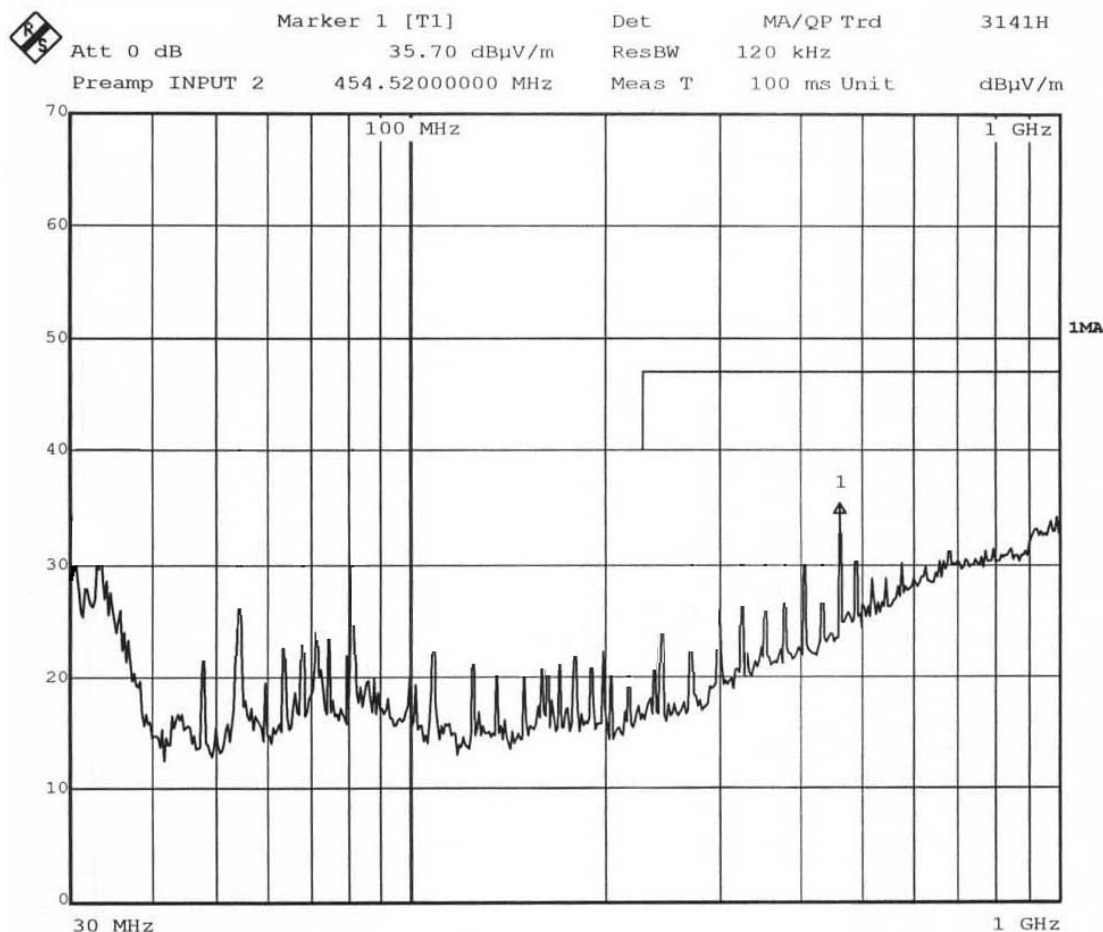


**Test Conditions: (Receiver)**

Ambient Temperature : 25 ° / 25 ° (Before Test/After Test);  
 Relative Humidity : 60 % / 60 % (Before Test/After Test);  
 Power Supply : 4.8Vdc ;  
 Operating Mode of the EUT : Receiving .

Radiation Disturbance					
Freq. (MHz)	Antenna Polarity (V/H)	Antenna Height (m)	Table Azimuth (°)	Result (μV/m)	Limits (μV/m)
30.28	V	1.2	0	21.9	100
54.28	V	1.3	0	12.6	100
454.52	V	1.1	0	40.7	200
/	/	/	/	/	/
/	/	/	/	/	/
/	/	/	/	/	/
/	/	/	/	/	/
/	/	/	/	/	/

**Scan Graph and Scan Settings (Vertical/Horizontal)**

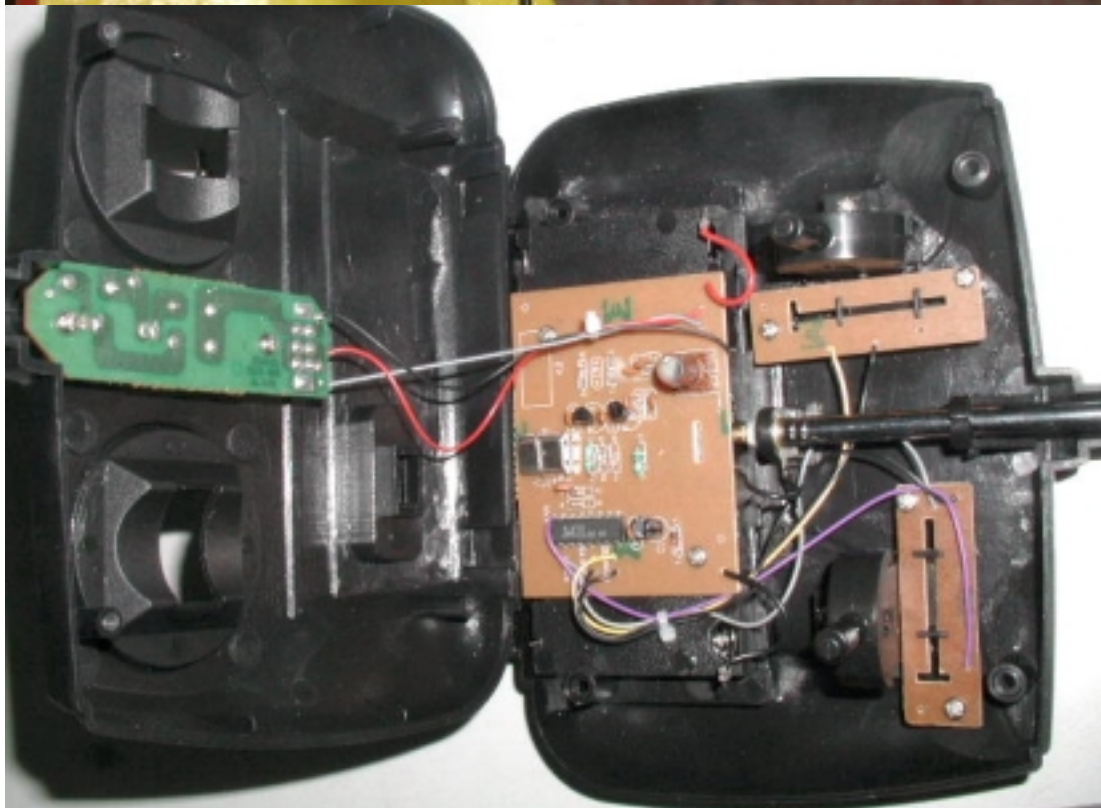
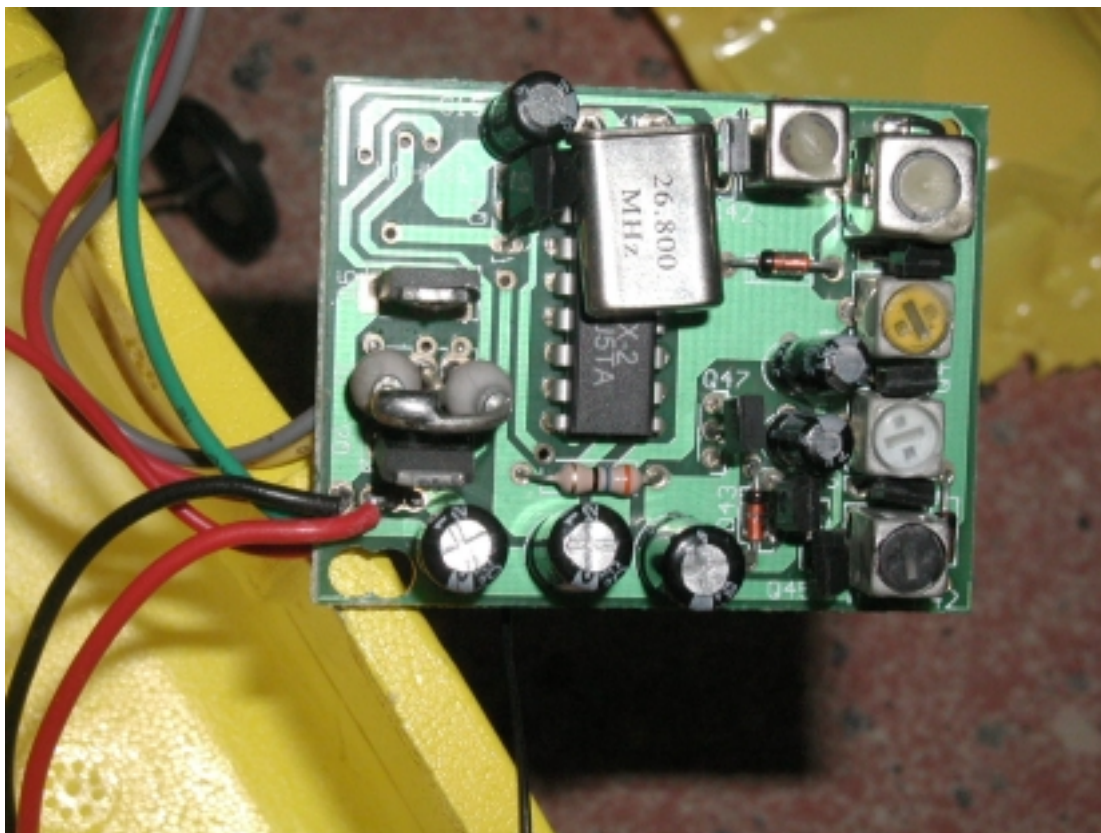


## 5. Photographs of the EUT

### 5.1 Outlook:



5.2 Structure of internal wires:





## 6. Photograph of the test setup



**Appendix A**

Test Equipment	Type/Model	Serial No.	Manufacturer
EMI Test Receiver	ESI26	834000/009	R & S
EMI Test Receiver	ESS	845420/003	R & S
LISN	ESH3-Z5	844982/020	R & S
LISN	ESH2-Z5	833332/008	R & S
Absorbing Clamp	MDS21	301315/017	R & S
Passive Probe	ESH2-Z3	299.7810.52	R & S
Discontinuous Interference Analyzer	DIA1512A	5112	Chase
Digital Real-time Oscilloscope	TDS680B	B020148	Tektronix
Large Loop Antenna	LLA6142	1029	Schaffner
Loop Antenna	6502	9906-3292	EMCO
Biconilog Antenna	3141	1178	EMCO
Waveguide Horn	3115	0002-6038	EMCO
Pre-amplifier	BLMA0118-OA	004776	BONN
Harmonic/Flicker/Voltage Dips Test System	Proflin 2000	6389	Schaffner
Universal Power Analyzer	PM3000A	AH13/9857	Voltech
AC Power Source	AMX360	0173/0395	Pacific Power
Reference Impedance	CCN2000	IN5196-003	Schaffner
Ac Switch Unit	888-0021	EK2396-001	Schaffner
ESD generator	Minizap-15/EC	9606419	KeyTek
Radiated EM Field Immunity Test System	CIS9942	/	Schaffner
RF Signal Generator	2023A	202302/94	Marconi
Amplifier	CBA9413A	9906	Schaffner
Antenna	CBL6140A	9906	Schaffner
EM-Field Monitor	FM5004	26438	AR
EM-Field Probe	FP5000	26923	AR
Power Meter	4232A	41001	Boonton
EFT/B generator	NSG2025	2016	Schaffner
Capacitive Coupling clamp	CDN126	395	Schaffner
Surge generator	NSG2050/2055	204	Schaffner
Data CDN	CDN117	140	Schaffner
Data CDN	CDN118	SL403-187	Schaffner
Conducted Immunity Test System	Proflin 4000	6414	Schaffner
RF Signal Generator	6060B	5110220	Gigatronix
Power Amplifier	75A250	20878	AR
Attenuator	8308-C60-N6DB	MFC70998	Lüthi
CDN	M5/32	803	Lüthi
CDN	M2/M3	535	Lüthi
EM Couple Clamp	EM101	3-5339	Lüthi
BEST plus (EFT/B, Surge, Power Frequency Magnetic Field, Voltage Dip Generator)	Best plus A	IR-3450	Schaffner
	Coil	INA712	Schaffner