

# ***FCC TEST REPORT***

**FCC ID NO.** : QE8610XXRX49

**Applicant** : Interactive Toy Concepts (HK) Ltd.  
7/F.,Eu Yan San Tower,11-15 Chatham Road South, TST, Kowloon,  
Hong Kong

**Equipment Under Test (EUT) :**

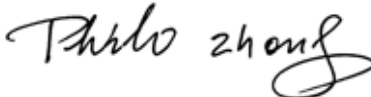
**Product Name** : R/C Helicopter

**Model No.** : 61081/45031

**Standards** : FCC Part 15 SUBPART B

**Date of Test** : June 12, 2006

**Test Engineer** : Tiger Su

**Reviewed By** : 

PERPARED BY:

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## 2 Test Summary

| Test                                    | Test Requirement                | Test Method      | Class / Severity | Result |
|-----------------------------------------|---------------------------------|------------------|------------------|--------|
| Radiated Emission<br>(30MHz to 1GHz)    | FCC PART 15,<br>SUBPART B: 2003 | ANSI C63.4: 2003 | Class B          | PASS   |
| Conducted Emission<br>(150KHz to 30MHz) | FCC PART 15,<br>SUBPART B: 2003 | ANSI C63.4: 2003 | Class B          | N/A    |

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## **4 General Information**

### **4.1 Client Information**

Applicant: Interactive Toy Concepts (HK) Ltd.  
Address of Applicant: 7/F., Eu Yan San Tower, 11-15 Chatham Road South,  
TST, Kowloon, Hong Kong

### **4.2 General Description of E.U.T.**

Product Name: R/C Helicopter  
Model No.: 61081/45031

### **4.3 Details of E.U.T.**

Power Supply: RX: 3.7 VDC Battery

### **4.4 Description of Support Units**

Compliance test was performed test in ON mode .

The customer requested FCC tests for a R/C Helicopter.

The standard used was FCC Part 15.107 & Part 15.109, SUBPART B, CLASS B (2003)

#### 4.5 Test Facility

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

- **FCC – Registration No.: 759357**

Solid Industrial (Shenzhen) 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 759357, November 04, 2003.

#### 4.6 Test Location

All Emissions tests were performed at:-

Solid Industrial (Shenzhen) Co., Ltd. at 333 Bulong Highway Buji Longgang, Shenzhen, Guangdong, China.

Its' **VCCI – Registration No.: 2153..**

## 5 Equipment Used during Test

| Equipment                        | Brand Name | Model     | Cal. Int Months | Last Cal. Date |
|----------------------------------|------------|-----------|-----------------|----------------|
| <b>3m Anechoic chamber</b>       |            |           |                 |                |
| EMC Analyzer                     | Agilent    | E7402A    | 12              | 2005-08        |
| EMI Test Receiver                | R&S        | ESS       | 12              | 2005-08        |
| Pre Amplifier                    | Anritsu    | MH648A    | 12              | 2005-08        |
| Bilog Antenna                    | SCHAFFNER  | CBL6111C  | 12              | 2005-08        |
| LOOP Antenna                     | R&S        | 6108      | 12              | 2005-08        |
| AM/FM Stereo<br>Signal Generator | Panasonic  | VP-8122A  | 12              | 2005-08        |
| Signal Generator                 | R&S        | SMG       | 12              | 2005-08        |
| RF Selector                      | TOYO       | NS4901A   | -               | -              |
| Turn Disc                        | HD         | DS4150S   | -               | -              |
| Antenna Mast                     | HD         | MA2400    | -               | -              |
| <b>EMI Shielded Room</b>         |            |           |                 |                |
| Spectrum analyzer                | ADVANTEST  | R3261C    | 12              | 2005-08        |
| EMI Test Receiver                | R&S        | ESS       | 12              | 2005-08        |
| Pre Amplifier                    | Anritsu    | MH648A    | 12              | 2005-08        |
| LISN                             | Kyoritsu   | KNW-403D  | 12              | 2005-08        |
| Absorbing Clamp                  | R&S        | MDS-21    | 12              | 2005-08        |
| Absorbing Clamp                  | Kyoritsu   | KT-20     | 12              | -              |
| Distortion Meter                 | MEGURO     | MAK-6578A | 12              | 2005-09        |
| AM/FM Stereo<br>Signal Generator | Panasonic  | VP-8122A  | 12              | 2005-08        |
| Oscilloscope                     | LEADER     | LS1020    | 12              | 2004-09        |
| Function Generator               | National   | VP-7422A  | 12              | 2005-08        |
| Signal Generator                 | R&S        | SMG       | 12              | 2005-08        |
| RF Selector                      | TOYO       | NS4000    | -               | -              |
| Remote Controller                | TOYO       | MAC       | -               | -              |

## 5.1 Conduction Emissions, 0.15MHz to 30MHz

|                   |                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | FCC Part 15.107                                                                                                              |
| Test Method:      | ANSI C63.4: 2003                                                                                                             |
| Test Date:        | June 12, 2006                                                                                                                |
| Frequency Range:  | 150kHz to 30MHz                                                                                                              |
| Class/Severity:   | Class B                                                                                                                      |
| Limit:            | 66-56 dB $\mu$ V/m between 0.15MHz & 0.5MHz<br>56 dB $\mu$ V/m between 0.5MHz & 5MHz<br>60 dB $\mu$ V/m between 5MHz & 30MHz |
| Detector:         | Peak for pre-scan (9kHz Resolution Bandwidth)<br>Quasi-Peak & Average if maximised peak within 6dB of Average Limit          |

### 5.1.1 E.U.T. Operation

#### Operating Environment:

|                       |           |
|-----------------------|-----------|
| Temperature:          | 24.0 °C   |
| Humidity:             | 52 % RH   |
| Atmospheric Pressure: | 1012 mbar |

#### EUT Operation :

Compliance test was performed test in ON mode.

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

### 5.1.2 Measurement Data

Owing to the DC operation of EUT, this test is not performed.

## 5.2 Radiated Emissions, 30MHz to 1GHz

|                       |                                                                                                                                                                    |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement:     | FCC Part 15.109                                                                                                                                                    |
| Test Method:          | ANSI C63.4: 2003                                                                                                                                                   |
| Test Date:            | June 12, 2006                                                                                                                                                      |
| Frequency Range:      | 30MHz to 1GHz                                                                                                                                                      |
| Measurement Distance: | 3m                                                                                                                                                                 |
| Class:                | Class B                                                                                                                                                            |
| Limit:                | 40.0 dB $\mu$ V/m between 30MHz & 88MHz<br>43.5 dB $\mu$ V/m between 88MHz & 216MHz<br>46.0 dB $\mu$ V/m between 216MHz & 960MHz<br>54.0 dB $\mu$ V/m above 960MHz |
| Detector:             | Peak for pre-scan (120kHz resolution bandwidth)<br>Quasi-Peak if maximised peak within 6dB of limit                                                                |

### 5.2.1 E.U.T. Operation

|                        |           |
|------------------------|-----------|
| Operating Environment: |           |
| Temperature:           | 24.0 °C   |
| Humidity:              | 52 % RH   |
| Atmospheric Pressure:  | 1012 mbar |

#### EUT Operation :

Compliance test was performed test in ON mode.

### 5.2.2 EUT Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4: 2003, The specification used in this report was the FCC Part 15.109 Class B limits.

5.2.3 Spectrum Analyzer Setup

According to FCC Part 15.109 Class B Rules, the system was tested to 1000 MHz.

|                                    |          |
|------------------------------------|----------|
| Start Frequency .....              | 30 MHz   |
| Stop Frequency .....               | 1000 MHz |
| Sweep Speed                        | Auto     |
| IF Bandwidth .....                 | 1 MHz    |
| Video Bandwidth .....              | 1 MHz    |
| Quasi-Peak Adapter Bandwidth ..... | 120 kHz  |
| Quasi-Peak Adapter Mode .....      | Normal   |
| Resolution Bandwidth .....         | 1MHz     |

5.2.4 Test procedure

For the radiated emissions test, since the EUT does have not a power source, there was no connection to AC outlets.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dBμV of specification limits), and are distinguished with a "Qp" in the data table.

The EUT was under normal mode during the final qualification test and the configuration was used to represent the worst case results.

ANSI STANDARD C63.4-2003 12.1.1.1 SUPERREGENERATIVE RECEIVER: A signal Generator was set to the unit under test operating frequency. An un- Modulated continuous wave (CW) signal was radiated at the super-regenerative receiver operating frequency to cohere the characteristic broadband emissions from the receiver.

5.2.5 Summary of Test Results

According to the data in section 5.2.6, the EUT complied with the FCC Part 15.109 Class B standards.

The test results: PASS.

**5.2.6 Radiated Emissions Test Data**

| Frequency<br>(MHz) | Antenna<br>Polarization | Emission<br>Level<br>(dBuV/m) | FCC 15<br>Subpart B<br>Limit<br>(dBuV/m) | Margin<br>(dB) | Antenna<br>Height<br>(m) | Turntable<br>Angle<br>(°) |
|--------------------|-------------------------|-------------------------------|------------------------------------------|----------------|--------------------------|---------------------------|
| 118.780            | Horizontal              | 28.2                          | 43.5                                     | 15.3           | 1.2                      | 38                        |
| 299.56             | Horizontal              | 33.1                          | 46.0                                     | 12.9           | 1.5                      | 113                       |
| 594.34             | Horizontal              | 39.9                          | 46.0                                     | 6.1            | 1.8                      | 279                       |
| 289.800            | Vertical                | 37.3                          | 46.0                                     | 8.7            | 1.5                      | 90                        |
| 556.500            | Vertical                | 38.4                          | 46.0                                     | 7.6            | 1.8                      | 127                       |
| 595.175            | Vertical                | 38.0                          | 46.0                                     | 8.0            | 1.5                      | 60                        |

### **5.3 Photographs - Test Setup**

#### **5.3.1 Radiated Emissions Test Setup**



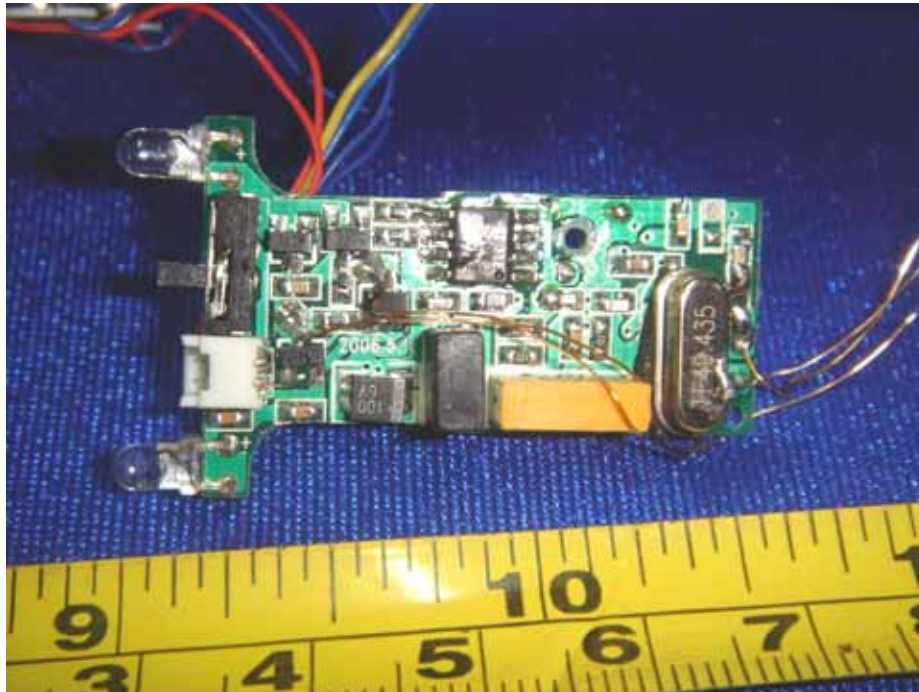
### 5.3.2 EUT - Front View



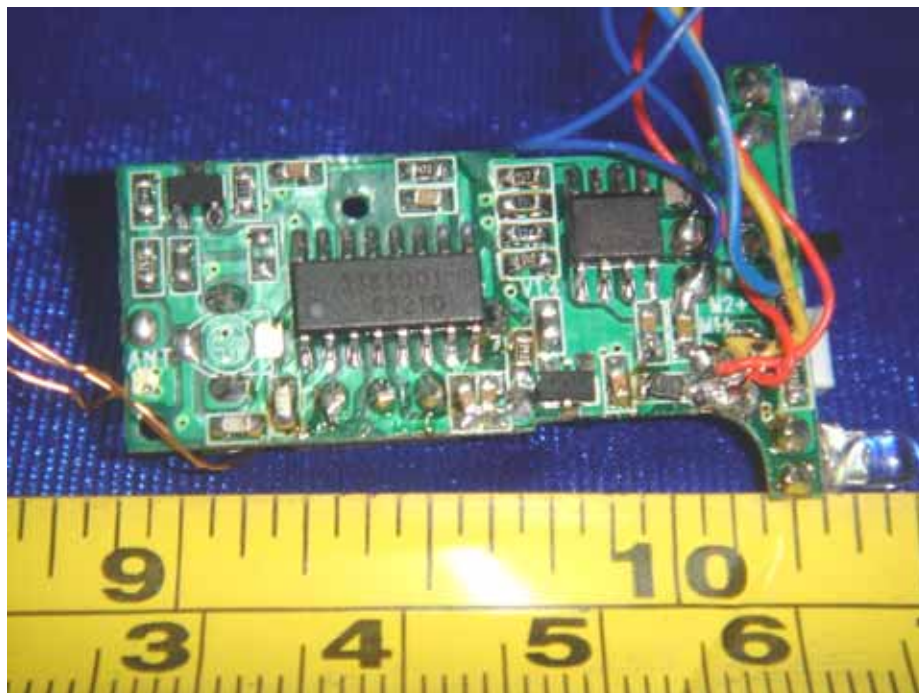
### 5.3.3 EUT - Back View



#### 5.3.4 PCB - Front View



#### 5.3.5 PCB - Back View



## 6 FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two 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.

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT  
EUT Top View/ proposed FCC Mark Location

