



## **TEST REPORT**

Report No. : AE006208-2 Date : 2004 June 08  
Applicant : High Champion Limited  
Room 1901, 19/F., Block A, Kailey Ind. Centre,  
12 Fung Yip Street, Chai Wan, Hong Kong.  
Buyer : Westminster Inc.

Sample Description : Three(3) submitted samples stated to be :  

<u>Item Name</u>	<u>Model No.</u>
Radio Control Toy – Turbo Twister	0980
Radio Control Toy – R/C EX-2 / Stunt Vehicle	0986
Radio Control Toy – R/C EX-1 / Stunt Vehicle	0987
Rating : 4 x 1.5 V AA size batteries	
No. of sample(s) : Five(5) pieces ***	

Date Received : 2004 April 22.

Test Period : 2004 April 22 – 2004 May 22.

Test Requested : FCC Part 15 Certification

Test Method : FCC Rules and Regulations Part 15 – Dec 2003  
ANSI C63.4 – 2001

Test Result : See attached sheet(s) from page 2 to 11.

Conclusion : The submitted sample was found to comply with requirement of FCC  
Part 15 Subpart B.

Remark : All three models are the same in circuitry and components; and therefore  
model 0980 was chosen to be the representative of the test sample.

*For and on behalf of*  
CMA Testing and Certification Laboratories

Authorized Signature :   
Danny Chui  
EMC Engineer - EL. Division

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FCC ID : OPMHC20026002R

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### **1 General Information**

#### **1.1 General Description**

The equipment under test (EUT) is a superregenerative receiver for Turbo Twister operating at 49.860 MHz which is controlled by a crystal. The EUT is powered by 6 V d.c. (AA size batteries). When it received a forward or backward signal, it will going forward or backward. When it received a left or right signal, it will turn left or right.

The brief circuit description is listed as follows :

- Q1, L1 and associated circuit act as superregenerative
- IC1 and associated circuit act as decoder
- Q2, Q3, Q6, Q7, Q10, Q11 and associated circuit act as M1 motor control
- Q4, Q5, Q8, Q9, Q12, Q13 and associated circuit act as M2 motor control

Models 0986 and 0987 are the same as model 0980 in circuitry and components. The difference in these three models are plastic bodies only.

#### **1.2 Related Submittal Grants**

This is a single application for certification of a receiver. The transmitter for this receiver is authorized by Certification procedure.



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### **1.3 Location of the test site**

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2001. An Open Area Testing Site is set up for investigation and located at :

Top of the Roof, Yan Hing Centre,  
9 – 13 Wong Chuk Yeung Street,  
Fo Tan, Shatin,  
New Territories,  
Hong Kong.

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2001. A double shielded room is located at :

Roof Floor, Yan Hing Centre,  
9 – 13 Wong Chuk Yeung Street,  
Fo Tan, Shatin,  
New Territories,  
Hong Kong.



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### **1.4 List of measuring equipment**

Equipment	Manufacturer	Model No.	Serial No.	Calibration Certification No.
EMI Test Receiver	R&S	ESCS30	100001	S21141
Broadband Antenna	Schaffner	CBL6113B	2718	AC1753
Signal Generator	IFR	2023B	202302/938	Nil
LISN	R&S	ESH3-Z5	100038	S21142
Pulse Limiter	R&S	ESH3-Z2	100001	20-73194
Biconical Antenna	R&S	HK116	837414/004	4000.7752.02



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### **2 Description of the radiated emission test**

#### **2.1 Test Procedure**

Radiated emissions measurements are investigated and taken pursuant to the procedures of ANSI C63.4 – 2001.

The equipment under test (EUT) was placed on a non-conductive turntable with dimensions of 1.5m x 1m and 0.8m high above the ground. 3m from the EUT, a broadband antenna mounting on the mast received the signal strength. The turntable was rotated to maximize the emission level. The antenna was then moving along the mast from 1m up to 4m until no more higher value was found. Both horizontal and vertical polarization of the antenna were placed and investigated.

A signal generator was used to radiate an unmodulated continuous wave (CW) signal to the EUT (superregenerative receiver) at its operating frequency in order to “cohere” the characteristic broadband emissions from the receiver.

#### **2.2 Test Result**

The emissions meeting the requirement of section 15.109 are based on measurements employing the CISPR quasip-peak detector.

It was found that the EUT meet the FCC requirement.



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### **2.3 Radiated Emission Measurement Data**

**Radiated emission  
pursuant to  
the requirement of FCC Part 15 subpart B**

Frequency (MHz)	Polarity (H/V)	Reading at 3m (dBμV/m)	Antenna and Cable factor (dB)	Field Strength (dBμV/m)	Limit at 3m (dBμV/m)	Margin (dB)
46.230	V	14.1	11.1	25.2	40.0	-14.8
49.130	V	13.7	11.1	24.8	40.0	-15.2
51.060	V	16.9	8.7	25.6	40.0	-14.4
52.750	V	14.3	8.7	23.0	40.0	-17.0
54.030	V	13.9	8.7	22.6	40.0	-17.4
90.780	V	12.8	10.0	22.8	43.5	-20.7
94.420	V	13.1	10.0	23.1	43.5	-20.4
134.375	V	10.1	13.1	23.2	43.5	-20.3
179.520	V	12.9	10.7	23.6	43.5	-19.9
229.985	V	13.9	10.1	24.0	46.0	-22.0



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### **3 Description of the Line-conducted Test**

#### **3.1 Test Procedure**

Conducted emissions measurements are investigated and also taken pursuant to the procedures of ANSI C63.4 – 2001. The EUT was setup as described in the procedures, and both lines were measured.

#### **3.2 Test Result**

No measurement is required as the EUT is a battery-operated product.

#### **3.3 Graph and Table of Conducted Emission Measurement Data**

Not Applicable





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### **4 Photograph**

#### **4.1 Photographs of the Test Setup for Radiated Emission and Conduction Emission**

For electronic filing, the photos are saved with filename TSup1.jpg to TSup2.jpg

#### **4.2 Photographs of the External and Internal Configurations of the EUT**

For electronic filing, the photos are saved with filename ExPho1.jpg to ExPho2.jpg and InPho1.jpg to InPho2.jpg.



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### **5 Supplementary document**

The following document were submitted by applicant, and for electronic filing, the document are saved with the following filenames:

Document	Filename
ID Label/Location	LabelSmp.jpg
Block Diagram	BlkDia.pdf
Schematic Diagram	Schem.pdf
Users Manual	UserMan.pdf
Operational Description	OpDes.pdf

#### **5.1 Bandwidth**

N.A.



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### **6 Appendices**

A1.	Photos of the set-up of Radiated Emissions	1 page
A2.	Photos of External Configurations	1 page
A3.	Photos of Internal Configurations	1 page
A4.	ID Label/Location	3 pages
A5.	Block Diagram	1 page
A6.	Schematics	1 page
A7.	User Manual	3 pages
A8.	Operation Description	1 page

\*\*\*\*\* End of Report \*\*\*\*\*