CMA Testing and Certification Laboratories
廠商會檢定中心

# TEST REPORT

Report No. : AE005949-2 Date : 2004 July 12

Applicant : Team Caliber, Inc.
4606 Roush Place,
Concord North Caroline,
28027 United States

Sample Description : One(1) submitted sample stated to be 1:18 Remote Control Nascar Monte Carlo Series
Rating : 6 V rechargeable battery
No. of sample(s) : Two(2) sets ***

Date Received : 2004 April 19.

Test Period : 2004 April 19 – 2004 June 28

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 construction; and therefore model 1:18 Remote Control Nascar Monte Carlo series 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



FCC ID : RIO-18-TR093-49-R

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## 1 General Information

### 1.1 General Description

The equipment under test (EUT) is a superregenerative receiver for 1:18 Remote Control Nascar Monte Carlo Version operating at 49.860 MHz which is controlled by a LRC circuit. The EUT is powered by 6 V rechargeable battery. When the EUT received a forward or backward signal, it will go forward or backward. When the EUT received a turn left or right signal, it will turn left or right.

The brief circuit description is listed as follows :
- Q1 and associated circuit act as RF Amp.
- PT8A978 and associated circuit act as decoder.
- R9 and associated circuit act as oscillator for decoder.
- Q8 ~ Q13 and associated circuit act as motor control circuit for motor A.
- Q2~ Q7, Q14 and associated circuit act as motor control circuit for motor B.
- Q15 and associated circuit act as power supply.

The models 1:18 Remote Control Nascar Dodge series and 1:18 Remote Control Ford Taurus series, are the same model with 1:18 Remote Control Nascar Monte Carlo series in hardware aspect.

### 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 qusai-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) |
|---|---|---|---|---|---|---|
| 50.769 | V | 24.8 | 8.7 | 33.5 | 40.0 | -6.5 |
| 51.014 | V | 21.4 | 8.7 | 30.1 | 40.0 | -9.9 |
| 51.244 | V | 17.7 | 8.7 | 26.4 | 40.0 | -13.6 |
| 53.336 | V | 14.5 | 8.7 | 23.2 | 40.0 | -16.8 |
| 53.564 | H | 14.1 | 8.7 | 22.8 | 40.0 | -17.2 |
| 101.094 | H | 11.3 | 11.8 | 23.1 | 43.5 | -20.4 |
| 101.325 | H | 11.6 | 11.8 | 23.4 | 43.5 | -20.1 |
| 148.654 | H | 11.6 | 12.4 | 24.0 | 43.5 | -19.5 |
| 153.959 | H | 12.5 | 11.8 | 24.3 | 43.5 | -19.2 |
| 200.364 | H | 14.5 | 10.1 | 24.6 | 43.5 | -18.9 |



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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..

### 5.2 The duty cycle is simply the on-time divided by the period :

N.A.



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## 6 Appendices

| | | |
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| 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 | 1 page |
| A5. | Block Diagram | 1 page |
| A6. | Schematics | 1 page |
| A7. | User Manual | 4 pages |
| A8. | Operation Description | 1 page |

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



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