SGS-CSTC Standards Technical Services Ltd.

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**FEDERAL COMMUNICATIONS COMMISSION**
Registration number: 556682



# *TEST REPORT*

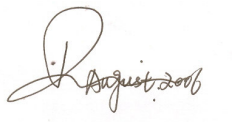
**Application No.** : SZEMO060801729RF(SGS SZ NO.: SZTYR060802135/EL)
**Applicant** : GUANG DONG AULDEY TOY INDUSTRY LTD.
**FCC ID** : TWDAD228149
**Fundamental Frequency** : 49.860MHz
**Equipment under Test (EUT):**

EUT Name : Benz, HONDA & TOYOTA
Item No. : LC228610, LC296620 & LC296630 ♣
♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.
Labelled Age Grading : OVER 8 YEARS
Country of Origin : CHINA
**Standards** : FCC PART 15, SUBPART C : 2006
Section 15.235
**Date of Receipt** : 02 August 2006
**Date of Test** : 08 to 24 August 2006
**Date of Issue** : 28 August 2006

| **Test Result :** | **PASS *** |
|---|---|

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Lo
Laboratory Manager

## 2 Test Summary

| Test | Test Requirement | Stanadard Paragraph | Result |
|---|---|---|---|
| Radiated Emission (30MHz to 1000MHz) | FCC PART 15 :2006 | Section 15.235 | PASS * |
| Occupied Bandwidth | FCC PART 15 :2006 | Section 15.235 | PASS |

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

RF: In this whole report RF means Radiated Frequency.

EUT Name: Benz, HONDA & TOYOTA

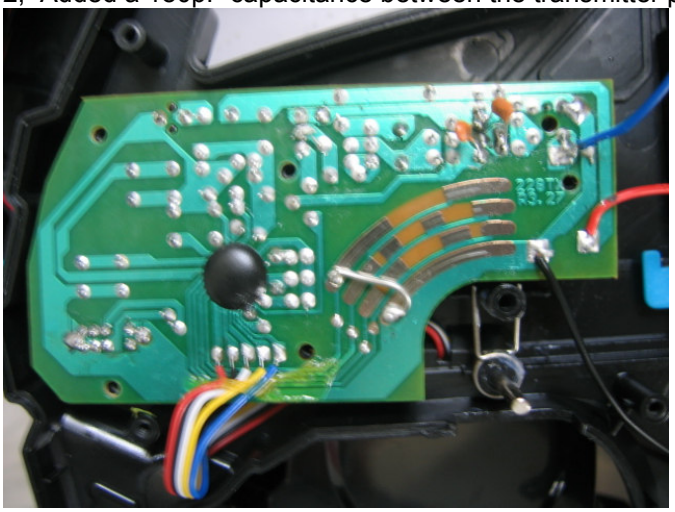
Item No.: LC228610, LC296620 & LC296630

Only the item LC228610 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above items, with only difference being the outer decoration.

* The EUT passed the RE test after modifications specified below.

1, Added a 1000pF capacitance between the 'B' pole of the Q3 and the earth.

2, Added a 180pF capacitance between the transmitter pole and the earth detailed in the picture below.



# 3 Contents

# 4 General Information

## 4.1 Client Information

Applicant: GUANG DONG AULDEY TOY INDUSTRY LTD.

Address of Applicant: Auldey Ind. Area, Wenguan Rd.(Central), Chenghai, Shantou, Guangdong, China

## 4.2 Details of E.U.T.

Product Name: Benz, HONDA & TOYOTA

Item No: LC228610, LC296620 & LC296630 ♣

♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

Power Supply: 9.0V DC (1*9.0V '6F22' Size Battery) for Tx

9.6V DC (Rechargeable Battery) for Rx.

Power Cord: N/A-

## 4.3 Description of Support Units

The EUT was tested as an independent unit: 49MHz radio transmitter.

## 4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory, No.198 Kezhu Road, Science Town Economic& Technology Development District Guangzhou, China 510663

Tel: +86 20 8215 5555 Fax: +86 20 8207 5059

## 4.5 Other Information Requested by the Customer

None.

## 4.6 Test Facility

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

- **NVLAP – Lab Code: 200611-0**
  SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is recognized under the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0. Effective through December 31, 2004.
- **ACA**
  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our NVLAP accreditation.
- **VCCI**
  The 3m Semi-anechoic chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197 and C-2383 respectively.
  Date of Registration: September 29, 2005. Valid until September 28, 2008.
- **SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO**
  Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.
- **CNAL – LAB Code: L0141**
  SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAL/AC01:2002 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of Testing Laboratories.
- **FCC – Registration No.: 556682**
  SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen 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 556682, Aug. 04, 2005
- **Industry Canada (IC)**
  The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 6002.

# 5 Test Results

## 5.1 Test Instruments

| Item | Test Equipment | Manufacturer | Model No. | Serial No. | Cal.Date (dd-mm-yy) | Cal.Due date (dd-mm-yy) |
|---|---|---|---|---|---|---|
| 1 | 3m Semi-Anechoic Chamber | ETS-LINDGREN | N/A | SEL0017 | 28-04-2005 | 27-04-2007 |
| 2 | EMI Test Receiver | Rohde & Schwarz | ESIB26 | 100249 | 22-09-2005 | 21-09-2006 |
| 3 | EMI Test software | AUDIX | E3 | SEL0050 | N/A | N/A |
| 4 | Coaxial cable | SGS | N/A | SEL0028 | 20-05-2006 | 19-05-2007 |
| 5 | Coaxial cable | SGS | N/A | SEL0027 | 20-05-2006 | 19-05-2007 |
| 6 | BiConiLog Antenna | ETS-LINDGREN | 3142C | 00042673 | 10-01-2006 | 09-01-2007 |
| 7 | BiConiLog Antenna | ETS-LINDGREN | 3142C | 00042670 | 10-01-2006 | 09-01-2007 |
| 8 | EMI Test Receiver | Rohde & Schwarz | ESCI | 100119 | 03-03-2006 | 02-03-2007 |
| 9 | Loop Antenna | Emco | 6502 | 00042963 | 30-05-2006 | 29-05-2007 |

## 5.2 E.U.T. Operation

Input voltage: 9V DC (1*9.0V '6F22' Size Battery) for the transmitter.

Operating Environment:

Temperature: 26.0 °C

Humidity: 58 % RH

Atmospheric Pressure: 1003 mbar

EUT Operation:

Test the EUT in transmitting mode.

## 5.3 Test Procedure & Measurement Data

### 5.3.1 Radiated Emissions

Test Requirement: FCC Part15 C Section 15.235

Test Method: ANSI C63.4

Test Date: 08 August 2006（Initial Test）

22 August 2006 (Test after Modifications)

Measurement Distance: 3m (Semi-Anechoic Chamber)

Requirements: Carrier frequency will not exceed 80dBuV/m AT 3m.

Out of band emissions shall not exceed:

40.0 dBμV/m between 30MHz & 88MHz

43.5 dBμV/m between 88MHz & 216MHz

46.0 dBμV/m between 216MHz & 960MHz

54.0 dBμV/m above 960MHz

Detector: Peak Scan (120kHz resolution bandwidth)

Test Procedure: The procedure uesd was ANSI Standard C63.4-2003. The receive was scanned from 30MHz to 1000MHz.When an emission was found,the table was roated to produce the maximum signal strength. An initial pre-scan was performed for in peak detection mode using the receiver. The EUT was measured for both the Horizontal and Vertical polarities and performed a pre-test three orthogonal planes.The worst case emissions were reported.

An initial pre-scan was performed in the 3m chamber using the spectrum analyser in peak detection mode. The EUT was measured by Bilog antenna with 2 orthogonal polarities and peak emissions from the EUT were detected within 6dB of the class B limit line.

The following measurements were performed on the modified modified EUT on 21 March 2006:
Test the EUT in transmitting mode.

Intentional emission

| Test Frequency (MHz) | Peak (dBμV/m) | | Limits (dBμV/m) | Margin (dB) | |
|---|---|---|---|---|---|
| | Vertical | Horizontal | | Vertical | Horizontal |
| 49.860 | 63.4 | 42.3 | 100.0 | 36.6 | 47.7 |

| Test Frequency (MHz) | Average (dBμV/m) | | Limits (dBμV/m) | Margin (dB) | |
|---|---|---|---|---|---|
| | Vertical | Horizontal | | Vertical | Horizontal |
| 49.860 | 58.2 | 37.1 | 80.0 | 21.8 | 42.9 |

Other emissions

Horizontal

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|---|---|---|---|---|---|---|---|
| 78.500 | 1.05 | 7.59 | 28.00 | 41.98 | 22.62 | 40.00 | -17.38 |
| 126.030 | 1.27 | 7.77 | 27.63 | 41.66 | 23.07 | 43.50 | -20.43 |
| 148.340 | 1.31 | 8.86 | 27.47 | 41.93 | 24.63 | 43.50 | -18.87 |
| 249.220 | 1.67 | 12.27 | 26.92 | 46.85 | 33.87 | 46.00 | -12.13 |
| 397.630 | 2.19 | 16.27 | 27.39 | 42.40 | 33.47 | 46.00 | -12.53 |

Vertical

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamp Factor (dB) | Read Level (dBuV) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|---|---|---|---|---|---|---|---|
| 96.930 | 1.17 | 8.98 | 27.90 | 44.22 | 26.47 | 43.50 | -17.03 |
| 198.780 | 1.40 | 10.19 | 27.16 | 50.62 | 35.05 | 43.50 | -8.45 |
| 248.250 | 1.67 | 12.24 | 26.92 | 39.19 | 26.18 | 46.00 | -19.82 |
| 297.720 | 1.89 | 13.81 | 26.73 | 44.32 | 33.29 | 46.00 | -12.71 |
| 397.630 | 2.19 | 16.27 | 27.39 | 48.99 | 40.06 | 46.00 | -5.94 |

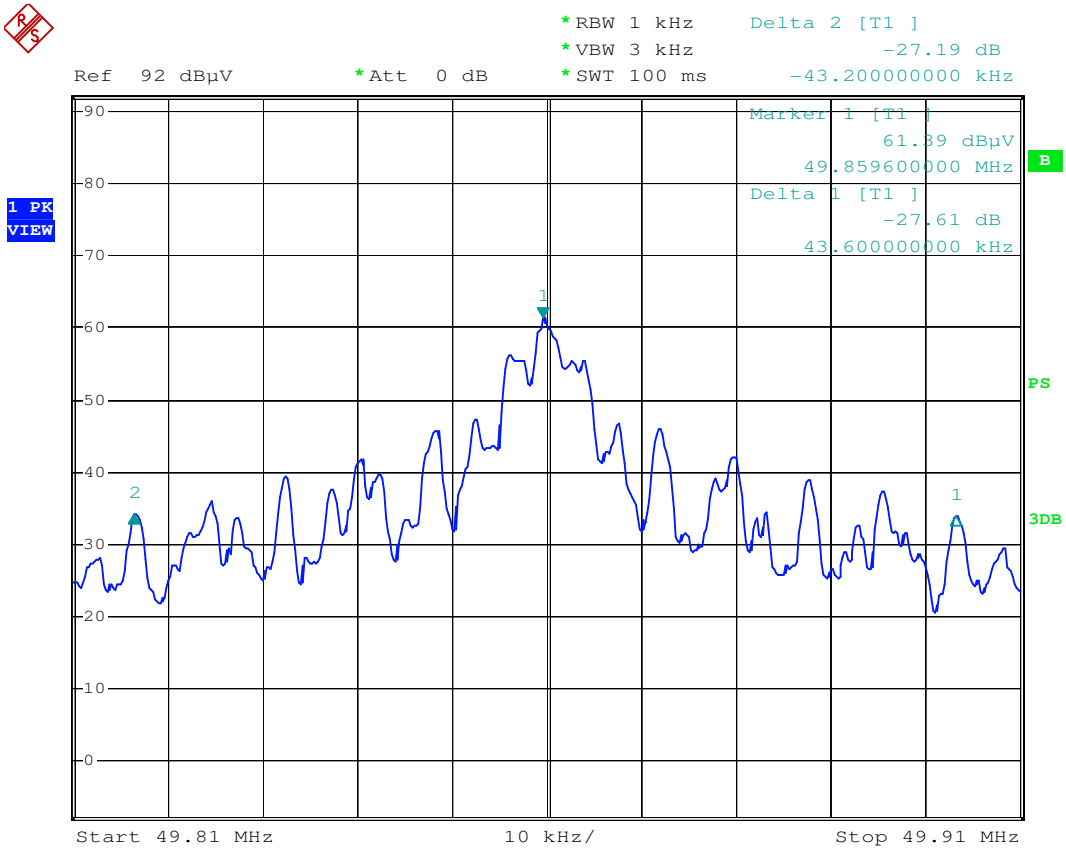
Remark:
According to 15.35 (b) When average radiated emission measurements are specified in the regulations, including emission measurements below 1000 MHz, there is also a imit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit for the frequency being investigated unless a different peak emission limit is otherwise specified in the rules, e.g., see Section 15.255.

**Test Results: The unit does meet the FCC Part 15 C Section 15.235 requirements.**

## 5.3.2 Occupied Bandwidth

| | |
|---|---|
| Test Requirement: | FCC Part15 C Section 15.235 |
| Test Method: | ANSI C63.4 |
| | Operation within the band 49.82 – 49.90 MHz |
| Test Date: | 24 August 2006 |
| Requirements: | The field strength of any emissions appearing between the band edges and up to 10 kHz above and below the band edges shall be attenuated at least 26 dB below the level of the unmodulated carrier or to the general limits in Section 15.209, whichever permits the higher emission levels. The field strength of any emissions removed by more than 10 kHz from the band edges shall not exceed the general radiated emission limits in Section 15.209. |
| Method of measurement: | The useful radiated emission from the EUT was detected by the spectrum analyer with peak detector. The vertical Scale is set to –10dB per division. The horizontal scale is set to 5KHz per division. |

The graph as below, represents the emissions take for this device.

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Date: 24.AUG.2006 17:46:36

**The results: The unit does meet the FCC Part 15 C Section 15.235 requirements.**