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**FEDERAL COMMUNICATIONS COMMISSION**  
Registration number: 556682

Report No.: SZEMO080501823ETF  
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FCC ID: VVAAD296700

# TEST REPORT

**Application No. :** SZEMO080501823ETF(SGS SZ NO.: SZTYR080501681/ EL)  
**Applicant:** GUANGDONG ALPHA ANIMATION AND CULTURE CO., LTD.  
(Former Name: GUANG DONG AULDEY TOY INDUSTRY CO., LTD.)  
**Manufacturer:** AULDEY  
**FCC ID:** VVAAD296700  
**Fundamental Frequency :** 27.145MHz  
**Equipment Under Test (EUT):**  
EUT Name: CITROEN C4 Audi A4 DTM  
Item No.: LC296700 LC296710♣  
♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.  
Labelled Age Grading: AGE 6+  
Country of Origin: CHINA  
**Standards:** FCC PART 15, SUBPART C : 2007  
Section 15.227  
**Date of Receipt:** 09 May 2008  
**Date of Test:** 09 to 20 May 2008  
**Date of Issue:** 21 May 2008

|                      |               |
|----------------------|---------------|
| <b>Test Result :</b> | <b>PASS *</b> |
|----------------------|---------------|

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

Authorized Signature:

Robinson Lo  
Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

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## 2 Test Summary

| Test                                    | Test Requirement  | Standard Paragraph | Result |
|-----------------------------------------|-------------------|--------------------|--------|
| Radiated Emission<br>(30MHz to 1000MHz) | FCC PART 15 :2007 | Section 15.227     | PASS*  |
| Occupied Bandwidth                      | FCC PART 15 :2007 | Section 15.215     | 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.

\* The EUT passed the RE test after retest.

Remark:

This report was an additional report copied from the report SZEMO071002832RFF, just changing the Item No., Photos and EUT Name. Since the electrical circuit design, layout, components used and internal wiring for the Items "LC296680, LC296690, LC296720, LC296740, LC296660, LC296670" in the report SZEMO071002832RFF were exactly the same as the Items "LC296700 LC296710" in this report.



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## **4 General Information**

### **4.1 Client Information**

Applicant Name: GUANGDONG ALPHA ANIMATION AND CULTURE CO., LTD.  
(Former Name: GUANG DONG AULDEY TOY INDUSTRY CO., LTD.)

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

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

EUT Name: CITROEN C4 Audi A4 DTM  
Item No.: LC296700 LC296710  
Power Supply: 3.0V DC (2 \* 1.5V 'AA' Size Batteries) for Tx.  
3.0V DC (2 \* 1.5V 'AA' Size Batteries) for Rx.  
Power Cord: N/A-

### **4.3 Description of Support Units**

The EUT was tested as an independent unit: 27MHz 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.



## 5 Test Results

### 5.1 Test Instruments

| R&TTE RE in Chamber |                                |                 |           |               |                     |                         |
|---------------------|--------------------------------|-----------------|-----------|---------------|---------------------|-------------------------|
| Item                | Test Equipment                 | Manufacturer    | Model No. | Inventory No. | Cal.Date (dd-mm-yy) | Cal.Due date (dd-mm-yy) |
| 1                   | 3m Semi-Anechoic Chamber       | ETS-LINDGREN    | N/A       | SEL0017       | 16-06-2007          | 15-06-2009              |
| 2                   | EMI Test Receiver              | Rohde & Schwarz | ESIB26    | SEL0023       | 14-12-2006          | 13-12-2007              |
| 3                   | EMI Test software              | AUDIX           | E3        | SEL0050       | N/A                 | N/A                     |
| 4                   | Coaxial cable                  | SGS             | N/A       | SEL0028       | 01-06-2007          | 31-05-2008              |
| 5                   | Coaxial cable                  | SGS             | N/A       | SEL0027       | 20-10-2007          | 19-10-2008              |
| 6                   | BiConiLog Antenna (26-3000MHz) | ETS-LINDGREN    | 3142C     | SEL0015       | 03-04-2007          | 02-04-2008              |
| 7                   | EMI Test Receiver              | Rohde & Schwarz | ESCI      | SEL0022       | 27-06-2007          | 26-06-2008              |
| 8                   | Active Loop Antenna            | Beijing Daze    | ZN30900A  | SEL0097       | 15-06-2007          | 14-06-2008              |

### 5.2 E.U.T. Operation

|                        |                                        |
|------------------------|----------------------------------------|
| Input voltage:         | 3.0V DC (2 * 1.5V 'AA' Size Batteries) |
| Operating Environment: |                                        |
| Temperature:           | 26.0 °C                                |
| Humidity:              | 51% RH                                 |
| Atmospheric Pressure:  | 1004mbar                               |
| EUT Operation:         | Test the EUT in transmitting mode.     |

### 5.3 Test Procedure & Measurement Data

#### 5.3.1 Radiated Emissions

|                              |                                                                                                                                                                                                                                            |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Test Requirement:</b>     | FCC Part15 C Section 15.227                                                                                                                                                                                                                |
| <b>Test Method:</b>          | ANSI C63.4-2003                                                                                                                                                                                                                            |
| <b>Test Date:</b>            | 16 October 2007(Initial Test)<br>08 November 2007(Retest)                                                                                                                                                                                  |
| <b>Measurement Distance:</b> | 3m (Semi-Anechoic Chamber)                                                                                                                                                                                                                 |
| <b>Requirements:</b>         | Carrier frequency will not exceed 80dBuV/m AT 3m.<br>Out of band emissions shall not exceed:<br>40.0 dBuV/m between 30MHz & 88MHz<br>43.5 dBuV/m between 88MHz & 216MHz<br>46.0 dBuV/m between 216MHz & 960MHz<br>54.0 dBuV/m above 960MHz |
| <b>Detector:</b>             | 9kHz to 30MHz RBW=9KHz VBW=30KHz<br>30MHz to 1000MHz RBW=120KHz VBW=300KHz                                                                                                                                                                 |

**Procedure:**

1. The EUT is placed on a turntable, which is 0.8m above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. Repeat above procedures until the measurements for all frequencies are complete.

7 27.145MHz Mode. For testing performed with the loop antenna, testing was performed in accordance to ANSI C63.4-2003 section 8.2.1. The The center of the loop was positioned 1 m above the ground and positioned with its plane vertical at the specied distance from the EUT. During testing the loop was rotated about its vertical axis for maximum response at each azimuth and also investigated with the loop positioned in the horizontal plane.

**Horizontal.**

| Test Frequency<br>(MHz) | Peak (dB $\mu$ V/m) |       |       | Limits<br>(dB $\mu$ V/m) | Margin (dB) |       |       |
|-------------------------|---------------------|-------|-------|--------------------------|-------------|-------|-------|
|                         | X                   | Y     | Z     |                          | X           | Y     | Z     |
| 27.145                  | 60.85               | 50.78 | 53.64 | 100.0                    | 39.15       | 49.22 | 46.36 |

| Test Frequency<br>(MHz) | Average (dB $\mu$ V/m) |       |       | Limits<br>(dB $\mu$ V/m) | Margin (dB) |       |       |
|-------------------------|------------------------|-------|-------|--------------------------|-------------|-------|-------|
|                         | X                      | Y     | Z     |                          | X           | Y     | Z     |
| 27.145                  | 55.55                  | 46.28 | 50.16 | 80.0                     | 24.45       | 33.72 | 29.84 |

**Vertical.**

| Test Frequency<br>(MHz) | Peak (dB $\mu$ V/m) |       |       | Limits<br>(dB $\mu$ V/m) | Margin (dB) |       |       |
|-------------------------|---------------------|-------|-------|--------------------------|-------------|-------|-------|
|                         | X                   | Y     | Z     |                          | X           | Y     | Z     |
| 27.145                  | 74.35               | 68.27 | 70.03 | 100.0                    | 25.65       | 31.73 | 29.97 |

| Test Frequency<br>(MHz) | Average (dB $\mu$ V/m) |       |       | Limits<br>(dB $\mu$ V/m) | Margin (dB) |       |       |
|-------------------------|------------------------|-------|-------|--------------------------|-------------|-------|-------|
|                         | X                      | Y     | Z     |                          | X           | Y     | Z     |
| 27.145                  | 69.35                  | 59.94 | 63.67 | 80.0                     | 10.65       | 20.06 | 16.33 |

Y: EUT as per photograph in application document(setup).

X: As Y, but rotate EUT by 90° clockwise.

Z: As X, but rotate EUT by 90° vertically.

**Horizontal.**

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamplifier Factor (dB) | Read Level (dBuV) | Peak Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|-----------------|-----------------|-----------------------|--------------------------|-------------------|---------------------|---------------------|-----------------|
| 78.625          | 1.06            | 7.61                  | 28.00                    | 38.72             | 19.39               | 40.00               | -20.61          |
| 105.925         | 1.22            | 8.81                  | 27.82                    | 38.32             | 20.53               | 43.50               | -22.97          |
| 133.225         | 1.29            | 7.84                  | 27.58                    | 38.46             | 20.01               | 43.50               | -23.49          |
| 160.525         | 1.34            | 9.59                  | 27.38                    | 37.03             | 20.58               | 43.50               | -22.92          |
| 215.125         | 1.49            | 10.97                 | 27.07                    | 35.19             | 20.58               | 43.50               | -22.92          |
| 242.425         | 1.64            | 12.07                 | 26.95                    | 37.13             | 23.89               | 46.00               | -22.11          |
| 650.950         | 2.81            | 20.68                 | 27.44                    | 31.36             | 27.41               | 46.00               | -18.59          |
| 678.250         | 2.86            | 21.44                 | 27.35                    | 30.85             | 27.80               | 46.00               | -18.20          |

**Vertical.**

| Frequency (MHz) | Cable Loss (dB) | Antenna Factor (dB/m) | Preamplifier Factor (dB) | Read Level (dBuV) | Peak Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) |
|-----------------|-----------------|-----------------------|--------------------------|-------------------|---------------------|---------------------|-----------------|
| 54.250          | 0.80            | 7.92                  | 28.08                    | 50.50             | 31.14               | 40.00               | -8.86           |
| 78.625          | 1.06            | 7.61                  | 28.00                    | 43.23             | 23.90               | 40.00               | -16.10          |
| 105.925         | 1.22            | 8.81                  | 27.82                    | 44.54             | 26.75               | 43.50               | -16.75          |
| 160.525         | 1.34            | 9.59                  | 27.38                    | 46.20             | 29.75               | 43.50               | -13.75          |
| 187.825         | 1.38            | 10.06                 | 27.22                    | 42.34             | 26.56               | 43.50               | -16.94          |
| 215.125         | 1.49            | 10.97                 | 27.07                    | 50.91             | 36.30               | 43.50               | -7.20           |
| 242.425         | 1.64            | 12.07                 | 26.95                    | 53.66             | 40.42               | 46.00               | -5.58           |

**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 limit 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 15.227 requirements.**



### 5.3.2 Occupied Bandwidth

Test Requirement: FCC Part 15 C Section 15.215 (C) and Section 15.227.

Test Method: ANSI C63.4

Operation within the band 26.960 – 27.280 MHz .

Test Date: 16 October 2007

Detector: Peak

#### **26.960–27.280MHz Mode.**

Requirements: Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the 20 dB bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If a frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Method of measurement: The useful radiated emission from the EUT was detected by the spectrum analyser with peak detector. The vertical Scale is set to 10dB per division. The horizontal scale is set to 42KHz per division.

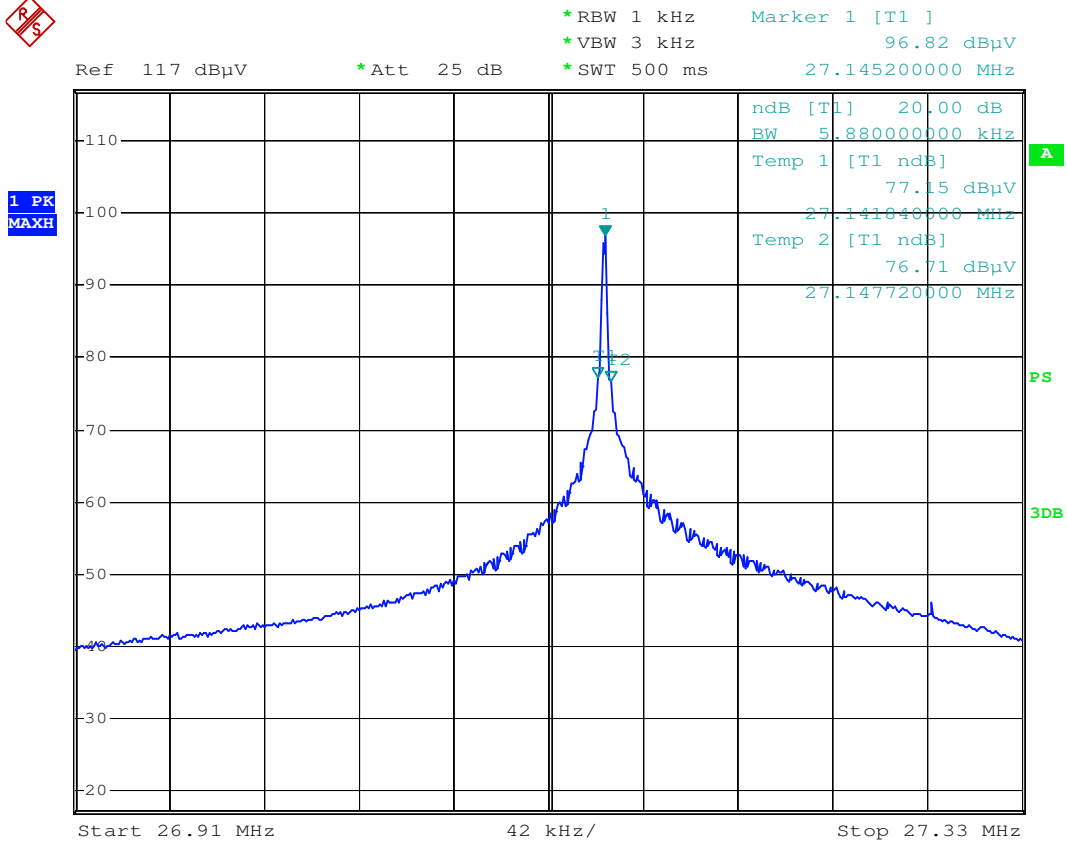




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N

Date: 16.OCT.2007 10:07:11

**The results: The unit does meet the FCC Part 15 C Section 15.215 requirements**