



## SGS-CSTC Standards Technical Services Ltd.

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**FEDERAL COMMUNICATIONS COMMISSION**  
Registration number: 282399

Report No.: GLEMO050401035RFF  
Page: 1 of 13  
FCC ID: Q6N125EL

# FCC TEST REPORT

**Application No. :** GLEMO050401035RF  
**Applicant:** EDU-SCIENCE (HK) LTD.  
**FCC ID:** Q6N125EL  
**Fundamental Frequency :** 27.145MHz  
**Equipment Under Test (EUT):**  
Name: 1:18 Rock Crawler - Scorpion/Jeep  
Model No.: EL125  
**Standards:** FCC PART 15, SUBPART C : 2004 Section 15.227  
**Date of Receipt:** 25 April 2005  
**Date of Test:** 25 April 2005  
**Date of Issue:** 27 April 2005

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

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

Authorized Signature:

Kent Hsu  
Laboratory Manager

This report refers to the General Conditions for Inspection and Testing Services, printed overleaf  
This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the SGS PRODUCT CERTIFICATION MARK.. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.  
This report may only be reproduced and distributed in full. 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.



## **2 Test Summary**

| <b>Test</b>                             | <b>Test Requirement</b> | <b>Stanadard Paragraph</b> | <b>Result</b> |
|-----------------------------------------|-------------------------|----------------------------|---------------|
| Radiated Emission<br>(30MHz to 1000MHz) | FCC PART 15 :2004       | Section 15.227             | PASS          |
| Occupied Bandwidth                      | FCC PART 15 :2004       | Section 15.227             | PASS          |



### 3 Contents

|                                                                          | Page  |
|--------------------------------------------------------------------------|-------|
| 1 COVER PAGE .....                                                       | 1     |
| 2 TEST SUMMARY .....                                                     | 2     |
| 3 CONTENTS .....                                                         | 3     |
| 4 GENERAL INFORMATION .....                                              | 4     |
| 4.1 CLIENT INFORMATION .....                                             | 4     |
| 4.2 DETAILS OF E.U.T. ....                                               | 4     |
| 4.3 DESCRIPTION OF SUPPORT UNITS .....                                   | 4     |
| 4.4 TEST LOCATION .....                                                  | 4     |
| 4.5 OTHER INFORMATION REQUESTED BY THE CUSTOMER .....                    | 4     |
| 4.6 TEST FACILITY .....                                                  | 5     |
| 5 TEST RESULTS .....                                                     | 6     |
| 5.1 TEST INSTRUMENTS .....                                               | 6     |
| 5.2 E.U.T. OPERATION .....                                               | 6     |
| 5.3 TEST PROCEDURE & MEASUREMENT DATA .....                              | 6     |
| 5.3.1 <i>Radiated Emissions</i> .....                                    | 6     |
| 5.3.2 <i>Occupied Bandwidth</i> .....                                    | 9     |
| 5.3.3 <i>Photographs - Radiated Emission Test Setup in Chamber</i> ..... | 10    |
| 6 PHOTOGRAPHS - EUT CONSTRUCTIONAL DETAILS .....                         | 11-13 |



## **4 General Information**

### **4.1 Client Information**

Applicant Name: EDU-SCIENCE (HK) LTD.

Applicant Address: SUITE 701, 7/F, WING ON PLAZA 62 MODY ROAD, TST EAST, KLN, HONG KONG.

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

Name: 1:18 Rock Crawler - Scorpion/Jeep

SKU No.: EL125

Power Supply: 9V DC (1 x '6F 22' Size Battery)

Power Cord: N/A-

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

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

### **4.4 Test Location**

All tests were performed at:

SGS-CSTC Standards Technical Services Ltd., Guangzhou EMC Laboratory, 1/F, Building No. 1, Agriculture Machinery Materials Company Warehouse Ltd., Wushan Road Shipai, Tianhe District, Guangzhou, China. P.C. 510630.

Tel: +86 20 3848 1001

Fax: +86 20 3848 1006

### **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, 2005.
- **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 (11.5m x 4m x 4m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-1599 and C-1706 respectively.  
Date of Registration: February 28, 2003. Valid until May 30, 2005
- **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.: 282399**  
SGS-CSTC Standards Technical Services 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 282399, May 31, 2002. With the above and NVLAP's accreditation, SGS-CSTC is an authorised test laboratory for the DoC process.  
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.
- **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.: 5169.



## 5 Test Results

### 5.1 Test Instruments

| RE in Chamber |                            |                  |               |            |                      |                         |
|---------------|----------------------------|------------------|---------------|------------|----------------------|-------------------------|
| No:           | Test Equipment             | Manufacturer     | Model No.     | Serial No. | Cal. Date (dd-mm-yy) | Cal.Due date (dd-mm-yy) |
| 1             | 3m Semi- Anechoic Chamber  | Frankonia        | N/A           | N/A        | 31-01-2005           | 30-01-2006              |
| 2             | EMI Test Receiver          | Rohde & Schwarz  | ESCS30        | 100085     | 10-10-2004           | 09-10-2005              |
| 3             | EMI Test Software          | Rohde & Schwarz  | ES-K1         | N/A        | N/A                  | N/A                     |
| 4             | Coaxial cable              | SGS              | N/A           | N/A        | 05-12-2003           | 04-12-2005              |
| 5             | Bilog Type Antenna         | Schaffner -Chase | CBL6143       | 5070       | 17-01-2005           | 16-01-2006              |
| 6             | Horn Antenna               | Rohde & Schwarz  | HF906         | 100095     | 02-04-2004           | 01-04-2005              |
| 7             | Spectrum Analyzer          | Rohde & Schwarz  | FSP30         | 100324     | 29-10-2004           | 28-10-2005              |
| 8             | 0.1-1300 MHz Pre-Amplifier | HP               | 8447D OPT 010 | 2944A06252 | 31-05-2004           | 30-05-2005              |
| 9             | 1-26.5 GHz Pre-Amplifier   | Agilent          | 8449B         | 3008A01649 | 26-01-2004           | 25-01-2006              |

### 5.2 E.U.T. Operation

Input voltage: 9V DC (1 x '6F 22' Size Battery)

Operating Environment:

Temperature: 24.0 °C

Humidity: 53 % 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 15.227

**Test Method:** ANSI C63.4

**Test Date:** 20 April 2004

**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 dB $\mu$ V/m between 30MHz & 88MHz  
43.5 dB $\mu$ V/m between 88MHz & 216MHz  
46.0 dB $\mu$ V/m between 216MHz & 960MHz  
54.0 dB $\mu$ V/m above 960MHz

**Detector:** Peak Scan (120kHz resolution bandwidth)



Test Procedure: The procedure used was ANSI Standard C63.4-2003. The receive was scanned from 30MHz to 1000MHz. When an emission was found, the table was rotated 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 EUT on 20 April 2004:

Test the EUT in transmitting mode.

Intentional emission

| Test Frequency<br>(MHz) | Peak (dB $\mu$ V/m) |            | Limits<br>(dB $\mu$ V/m) | Margin (dB) |            |
|-------------------------|---------------------|------------|--------------------------|-------------|------------|
|                         | Vertical            | Horizontal |                          | Vertical    | Horizontal |
| 27.145                  | 73.6                | 67.8       | 100.0                    | 26.4        | 32.2       |

| Test Frequency<br>(MHz) | Average (dB $\mu$ V/m) |            | Limits<br>(dB $\mu$ V/m) | Margin (dB) |            |
|-------------------------|------------------------|------------|--------------------------|-------------|------------|
|                         | Vertical               | Horizontal |                          | Vertical    | Horizontal |
| 27.145                  | 68.3                   | 62.6       | 80.0                     | 11.7        | 17.4       |



## Other emissions

| Test Frequency<br>(MHz) | Quasi-Peak (dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin (dB) |
|-------------------------|---------------------------|--------------------------|-------------|
|                         | Vertical                  |                          | Vertical    |
| 54.290                  | 37.8                      | 40.0                     | 2.2         |
| 162.890                 | 38.2                      | 43.5                     | 5.3         |
| 190.032                 | 36.3                      | 43.5                     | 7.2         |
| 572.230                 | 38.6                      | 46.0                     | 7.4         |
| 597.270                 | 42.9                      | 46.0                     | 3.1         |

| Test Frequency<br>(MHz) | Quasi-Peak (dB $\mu$ V/m) | Limits<br>(dB $\mu$ V/m) | Margin (dB) |
|-------------------------|---------------------------|--------------------------|-------------|
|                         | Horizontal                |                          | Horizontal  |
| 135.740                 | 26.5                      | 43.5                     | 17.0        |
| 162.885                 | 34.5                      | 43.5                     | 9.0         |
| 190.030                 | 36.2                      | 43.5                     | 7.3         |
| 217.175                 | 26.3                      | 46.0                     | 19.7        |
| 244.320                 | 27.3                      | 46.0                     | 18.7        |

## 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 15.227

Test Method:

ANSI C63.4

Operation within the band 26.960 – 27.280 MHz

Test Date:

25 April 2004

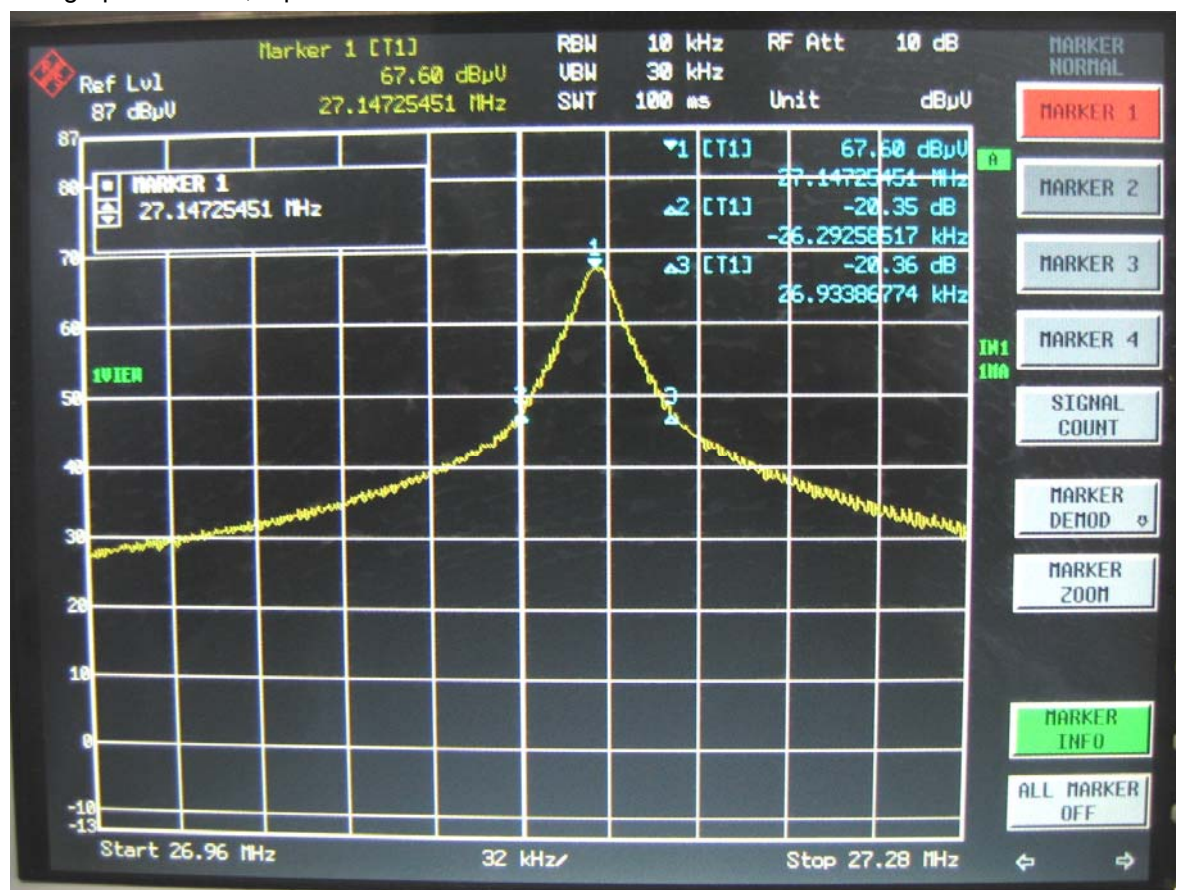
Requirements:

The field strength of any emissions which appear outside of this band 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 analyser 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.



The results: The unit does meet the FCC Part 15 C Section 15.227 requirements.