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Report No.: GELMO050100258RFR

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FCC ID: Q6N137ELC

FCC Test Report

Application No.: GELMO050100258RF
Applicant: EDU-SCIENCE (HK) LIMITED
FCC ID: Q6N137ELC

Equipment Under Test (EUT):

EUT Name: Wireless Ultralite

Item No.: EL137

Serial No.: Not supplied by client

Standards: FCC PART 15 SUBPART B:2004
28 January 2005

Date of Receipt: 1 to 2 February 2005

Date of Test: 4 February 2005

Date of Issue:

Test Result :	PASS*
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* 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.

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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

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2004	ANSI C63.4:2003	Class B	PASS



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4 General Information

4.1 Client Information

Applicant: EDU-SCIENCE (HK) LIMITED

Address of Applicant: Suite 701-703 Wing On Plaza TST East, Kowloon Hong Kong.

4.2 General Description of E.U.T.

EUT Name: Wireless Ultralite (Receiver Part)

Item No.: EL137

Serial No.: Not supplied by client

4.3 Details of E.U.T.

Power Supply: 9V DC (1 x '6F22' Size Battery) for Tx
Inside Rechargeable Battery for Rx

Power Cord: None.

Signal Cable: None.

4.4 Description of Support Units

The EUT was tested as an independent unit: a receiver for 49.860MHz radio controller.

4.5 Standards Applicable for Testing

The customer requested FCC tests for a Wireless Ultralite (Receiver).

The standard used was FCC PART 15, SUBPART B, CLASS B (2004)

4.6 Test Location

All tests were performed at: -

SGS-CSTC Standards Technical Services Co., 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

No tests were sub-contracted.



4.7 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 (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.

4.8 Deviation from Standards

None.

4.9 Abnormalities from Standard Conditions

None.



5 Equipments Used during Test

RE in Chamber						
Item	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	16-02-2004	15-02-2005
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	05-11-2003	04-11-2004
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	04-12-2004
5	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	18-01-2004	17-01-2005
6	Horn Antenna	Rohde & Schwarz	HF906	100095	02-04-2004	01-04-2005
7	Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	23-12-2003	22-12-2004
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	25-01-2005

General used equipment						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Temperature, Humidity & Barometer	OREGON/VAISAL A/ TESTO/ANDTEK	BA-888/ HM34C/605- H1/ HT-6290	EMC0001 to EMC0004	02-08-2004	01-08-2005
2	DMM	Fluke	73	70681569 or 70671122	10-09-2004	09-09-2005



6 Test Results

6.1 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	FCC Part15 B
Test Method:	ANSI C63.4
Test Date:	1 February 2005
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dB μ V/m between 30MHz & 88MHz 43.5 dB μ V/m between 88MHz & 216MHz 46.0 dB μ V/m between 216MHz & 960MHz 54.0 dB μ V/m above 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximised peak within 6dB of limit

6.1.1 E.U.T. Operation

Operating Environment:
Temperature: 24.0 °C Humidity: 56% RH Atmospheric Pressure: 1009 mbar
EUT Operation: Test the EUT in Receiving mode.

6.1.2 Measurement Data

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 quasi-peak measurements were performed on the EUT on 24 July 2003:



Vertical:

Frequency (MHz)	Transducer (dB)	Receiver QP Reading (dBμV)	Receiver QP Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna High(m)	Turntable Angle(°)
53.500	12.2	19.3	31.5	40.0	8.5	1.00	214
98.188	10.5	26.7	37.2	43.5	6.3	1.00	54
102.688	11.2	22.4	33.6	43.5	9.9	1.00	135
138.500	14.2	18.2	32.4	43.5	11.1	1.00	248
149.563	13.5	20.3	33.8	43.5	9.7	1.00	168
163.938	12.0	22.1	34.1	43.5	9.4	1.00	287

Horizontal:

Frequency (MHz)	Transducer (dB)	Receiver QP Reading (dBμV)	Receiver QP Level (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Antenna High(m)	Turntable Angle(°)
98.188	10.5	22.3	32.8	43.5	10.7	2.31	265
102.688	11.2	20.5	31.7	43.5	11.8	2.74	206
143.500	13.9	15.9	29.8	43.5	13.7	2.65	157
182.500	13.5	17.0	30.5	43.5	13.0	3.45	352
698.240	22.3	16.6	38.9	46.0	7.1	3.56	156
899.265	24.4	16.9	41.3	46.0	4.7	3.36	241

1. Transducer = Antenna Factor + Cable Loss.

2. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.