SGS-CSTC Standards Technical Services Ltd.

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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 282399

FCC TEST REPORT

Application No. :	04.04.0826E
Applicant:	Edu-Science (HK) Ltd.
FCC ID:	Q6N035RF
Fundamental Carrier Frequency :	26.985 MHz, 27.015 MHz, 27.045 MHz, 27.075 MHz, 27.105 MHz, 27.135 MHz, 27.165 MHz, 27.195 MHz, 27.225 MHz♣
♣	Please refer to section 3.2 of this report which indicates which Fundamental Carrier Frequency was actually tested and which models are electrically identical.
Equipment Under Test (EUT):	
Name:	Wireless Ultralite
Model:	EL035RF
Standards:	FCC PART 15, SUBPART C : 2002
Date of Receipt:	16 & 24 April 2004
Date of Test:	22 to 30 April 2004
Date of Issue:	30 April 2004

Test Result :	**PASS ***

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

Authorized Signature:

Kent Hsu
Laboratory Manager
SGS-CSTC Co., Ltd.

2 Contents

3 General Information

3.1 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

3.2 Details of E.U.T.

Product Name:	Wireless Ultralite
Model:	EL035RF
Fundamental Carrier Frequency :	26.985 MHz, 27.015 MHz, 27.045 MHz, 27.075 MHz, 27.105 MHz, 27.135 MHz, 27.165 MHz, 27.195 MHz, 27.225 MHz
♣	Only test one product which fundamental carrier frequency is 26.985MHz. Since all the products were electrically identical only the fundamental carrier frequencies were different.
Power Supply:	9V DC (1 x 'ALKALINE (6LR61)' Size Battery)
Power Cord:	N/A-

3.3 Description of Support Units

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

3.4 Test Location

All tests were performed at:-

SGS-CSTC Standards Technical Services Ltd., Guangzhou Safety & 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

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3.5 Other Information Requested by the Customer

The EUT passed all tests after the modifications carried out by the applicant. Please refer to section 4 & 5 of this report for further details.

3.6 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: 2000611-0. Effective through February 2, 2003.

- **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-FINKO**

  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, SGS-CSTC is an authorized test laboratory for the DoC process.

4 Test Results

4.1 Test Instruments

Test Equipment	Manufacturer	Model No	Serial No.	Cal. Due Date
3m Semi- Anechoic Chamber	Frankonia	N/A	N/A	15-02-2005
EMI Test Receiver	Rohde & Schwarz	ESCS30	100085	04-11-2004
EMI Test Software	Rohde & Schwarz	ES-K1	N/A	N/A
Coaxial cable	SGS	N/A	N/A	04-12-2004
Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	17-01-2005
Horn Antenna	Rohde & Schwarz	HF906	100095	01-04-2005
Spectrum Analyzer	Rohde & Schwarz	FSP30	100324	22-12-2004
0.1-1300 MHz Pre-Amplifier	HP	8447D OPT 010	2944A06252	30-05-2004

4.2 E.U.T. Operation

Input voltage: 9V DC (1 x 'ALKALINE (6LR61)' Size Battery)

Operating Environment: (final test)
Temperature: 21.0 °C
Humidity: 57 % RH
Atmospheric Pressure: 1010 mbar

EUT Operation: Test the EUT in transmitting mode.

4.3 Test Procedure & Measurement Data

4.3.1 Radiated Emissions

Test Requirement: FCC Part15 C
Test Method: Based on FCC Part15 C Section 15.227
Test Date: 30 April 2004 (Final test)
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 used was ANSI Standard C63.4-2000. 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.

The following measurements were performed on the EUT on 30 April 2004:
Test the EUT in transmitting mode.
Intentional emission

Test Frequency (MHz)	Peak (dBμV/m)		Limits (dBμV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
26.985	**37.5**	**27.6**	100.0	**62.5**	**72.4**

Test Frequency (MHz)	Average (dBμV/m)		Limits (dBμV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
26.985	**31.3**	**23.5**	80.0	**48.7**	**56.5**

Other emissions

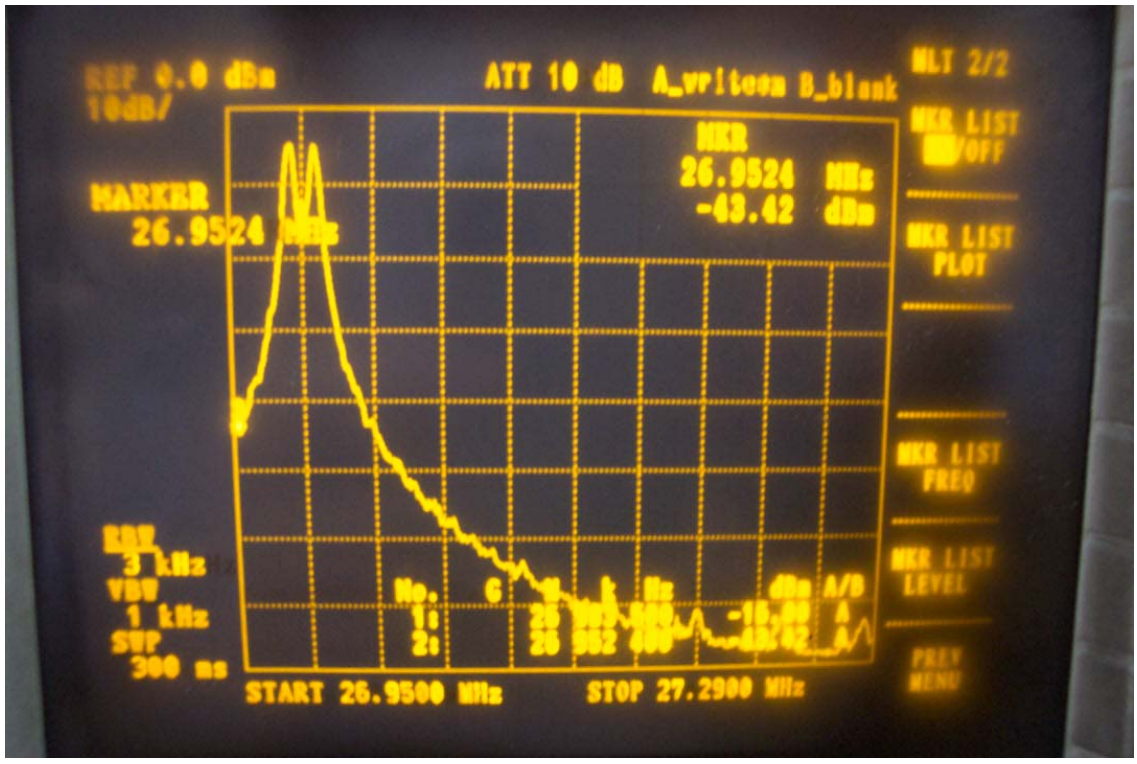
Test Frequency (MHz)	Quasi-Peak (dBμV/m)		Limits (dBμV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
2nd 53.972	28.6	20.1	40.0	11.4	19.9
3rd 80.958	24.3	19.2	40.0	15.7	20.8
4th 107.944	21.3	19.9	43.5	22.2	23.6
5th 134.930	32.3	21.3	43.5	11.2	22.2
6th 161.916	20.3	18.0	43.5	23.2	25.5
7th 188.902	27.3	18.9	43.5	16.2	24.6
8th 215.888	21.6	18.8	46.0	24.4	27.2
9th 242.874	21.4	18.3	46.0	24.6	27.7
10th 269.860	21.6	19.4	46.0	24.4	26.6

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

4.3.2 Occupied Bandwidth

Test Requirement:	FCC Part 15 C
Test Method:	Based on FCC Part15 C Section 15.227: Operation within the band 26.960 - 27.280 MHz
Test Date:	30 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 requirements.