SGS-CSTC Standards Technical Services Ltd.

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FEDERAL COMMUNICATIONS COMMISSION
Registration number: 282399

FCC TEST REPORT

Application No. : 03.09.1628EF-3

Applicant : STL INTERNATIONAL LTD

FCC ID : RF7WSR-1

Fundamental Frequency : 915 MHz

Equipment under Test (EUT):

Name : WIRELESS FLOORMAT

Model : WSR-1

Standards : FCC PART 15, SUBPART C : 2002

Date of Receipt : 10 September 2003

Date of Test : 12 to 18 September 2003

Date of Issue : 28 September 2003

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:	STL INTERNATIONAL LTD
Address of Applicant:	TUNG KONG INDUSTRIAL ZONE.LIU MEI VILLAGE,YUEN ZHOU,BOLOU,PRC

3.2 Details of E.U.T.

Product Name:	WIRELESS FLOORMAT
Model:	WSR-1
Power Supply:	120Vac / 60Hz (for AC/DC Adapter supplied)
	AC/DC Adapter: Input: 120Vac/60Hz; Output: 12Vdc, 200mA.
Power Cord:	1.6 m , 2 wires unshielding DC cable

3.3 Description of Support Units

The EUT was tested as an independent unit: a 915MHz radio transmitter.It also as a receiver been tested for another product (model: WR-2).

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

Fax: +86 20 3848 1006

3.5 Other Information Requested by the Customer

None.

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	Asset No.	Cal. Due Date
Temperature, Humidity & Barometer	Oregon Scientific	BA-888	EMC0003	25-07-2003
3m Semi- Anechoic Chamber	Frankonia	N/A	EMC0501	04-11-2003
EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	EMC0506	17-11-2003
Spectrum Analyzer	ROHDE & SCHWARZ	FSP 30	EMC0521	01-04-2004
Bilog Type Antenna	Schaffner Chase	CBL6143	EMC0519	01-12-2003
Horn Antenna	ROHDE & SCHWARZ	HF906	EMC0517	01-04-2004
Peramplifier	Agilent	8449B	EMC0520	30-06-2003
Coaxial cable	SGS	N/A	EMC0514	04-11-2003
Shielding Room	Frankonia	12 x 4 x 4 m^3	EMC0103	N/A
LISN	Schaffner Chase	MNZ050D11	1421	05-11-2003
EMI Test Receiver	Rohde& Schwarz	ESCS30	100086	17-11-2003
Coaxial Cable	SGS	2m	EMC0107	01-06-2004

4.2 E.U.T. Operation

Input voltage: 120Vac / 60Hz (for AC/DC Adapter supplied)

Operating Environment:

Temperature: 24.0 °C
Humidity: 52 % RH
Atmospheric Pressure: 1008 mbar

EUT Operation:

Test the EUT in transmitting mode.

4.3 Test Procedure & Measurement Data

4.3.1 Radiated Emissions

4.3.1.1 Test in transmitting mode

Test Requirement: FCC Part15 C
Test Method: Based on FCC Part15 C Section 15.249
Test Date: 15 September 2003
Measurement Distance: 3m (Semi-Anechoic Chamber)
Frequency range 30 MHz - 10,000 MHz for transmitting mode.
Test instrumentation resolution bandwidth 120 kHz (30 MHz - 1,000 MHz)
1 MHz (1000 MHz - 4,000 MHz)

Receive antenna scan height 1 m - 4 m, polarization Vertical/Horizontal

Requirements:

Fundamental Frequency MHz	Field Strength of Fundamental (dBuV/m @ 3m)	Field Strength of Harmonics and Spurious Emissions (dBuV/m @ 3m)
902 to 928	94.0	54.0
2400 to 2483.5	94.0	54.0
5725 to 5875	94.0	54.0
24000 to 24250	108.0	68.0

The fundamental frequency of the EUT is 915MHz

The limit for average field strength dBuv/m for the fundamental frequency= 94.0 dBuv/m.

No fundamental is allowed in the restricted bands.

The limit for average field strength dBuv/m for the harmonics and spurious frequencies = 54.0 dBuv/m. Spurious in the restricted bands must be less than 54.0 dBuv/m or 15.209.

Test Procedure: The procedure uesd was ANSI Standard C63.4-2000. The receive was scanned from 30MHz to 10GHz.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. For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. The worst case emissions were reported.

The field strength is calculated by adding the Antenna Factor, Cable Factor & Peramplifier .
The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Peramlifer Factor

The following test results were performed on the EUT on 12 September 2003:
1. Fundamental emission

Test Frequency (MHz)	Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
915.018	68.0	79.0	114.0	46.0	35.0

Test Frequency (MHz)	Average (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
915.018	66.8	78.2	94.0	27.2	15.8

2. Spurious Emissions

Test Frequency (MHz)	Peak (dBuV/m)		Limits (dBuV/m)	Margin (dB)	
	Vertical	Horizontal		Vertical	Horizontal
1830.036	57.8	59.2	74.0	16.2	14.8
2745.054	52.4	52.8	74.0	21.6	21.2
3660.072	32.8	34.0	74.0	41.2	40.0
4575.090	34.5	35.4	74.0	39.5	38.6
5490.108	35.8	36.2	74.0	38.2	37.8
6405.126	36.4	36.0	74.0	37.6	38.0
7320.144	37.8	36.3	74.0	36.2	37.7
8235.162	37.0	35.8	74.0	37.0	38.2

Remark: According to 15.249 (d) As shown in Section 15.35(b), for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation..

TEST RESULTS: The unit does meet the FCC requirements.

4.3.1.2 Test in receiving mode

Test Requirement: FCC Part15 B

Test Method: Based on FCC Part15 B

Test Date: 15 September 2003

Frequency Range: 30MHz to 1GHz

Measurement Distance: 3m

Class: Class B

Limit: 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 zbove 960MHz

Detector: Peak for pre-scan (120kHz resolution bandwidth)
Quasi-Peak if maximised peak within 6dB of limit

The following quasi-peak measurements were performed on the EUT:

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)	Limit dBuV/m)	Margin (dB)
45.850	Vertical	35.2	40.0	4.8
107.600	Vertical	31.8	43.5	11.7
176.945	Vertical	36.8	43.5	6.7
191.690	Vertical	39.0	43.5	4.5
250.672	Vertical	33.0	46.0	13.0
914.836	Vertical	36.7	46.0	9.3
107.600	Horizontal	36.2	43.5	7.3
162.200	Horizontal	30.8	43.5	12.7
191.690	Horizontal	34.2	43.5	9.3
221.182	Horizontal	32.7	46.0	13.3
368.638	Horizontal	31.8	46.0	14.2
914.836	Horizontal	43.2	46.0	2.8

The field strength is calculated by adding the Antenna Factor, Cable Factor & Peramplifier .
The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Peramlifer Factor

TEST RESULTS: The unit does meet the FCC requirements.

4.3.2 Conducted Emissions Mains Terminals, 150kHz to 30MHz

Test Requirement: FCC Part15 B

Test Method: ANSI C63.4

Test Date: 16 September 2003

Frequency Range: 150KHz to 30MHz

Class / Severity: Class B

Detector: Peak for pre-scan (9kHz Resolution Bandwidth)

Operating Environment:

Temperature: 24.0 °C Humidity: 52% RH Atmospheric Pressure: 1012 Mbar

EUT Operation: Test in receiveing mode.For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage.

4.3.3 Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

The following Quasi-Peak and Average measurements were performed on the EUT.:

Freq. MHz	Line	QP Level dBuV	Limit dBuV	Margin dB	AV Level dBuV	Limit dBuV	Margin dB
0.150	Live	4.6	66.0	61.4	-2.4	56.0	58.4
15.950	Live	10.9	60.0	49.1	10.4	50.0	39.6
19.939	Live	17.3	60.0	42.7	17.0	50.0	33.0
25.920	Live	17.7	60.0	42.3	17.4	50.0	32.6
27.916	Live	22.0	60.0	38.0	21.5	50.0	28.5
29.908	Live	19.0	60.0	41.0	18.6	50.0	31.4
0.150	Neutral	3.2	66.0	62.8	-3.0	56.0	59.0
15.950	Neutral	11.9	60.0	48.1	11.2	50.0	38.8
19.939	Neutral	19.6	60.0	40.4	19.0	50.0	31.0
25.920	Neutral	20.7	60.0	39.3	20.5	50.0	29.5
27.916	Neutral	24.3	60.0	35.7	23.8	50.0	26.2
29.908	Neutral	19.4	60.0	40.6	19.0	50.0	31.0

TEST RESULTS: The unit does meet the FCC requirements.

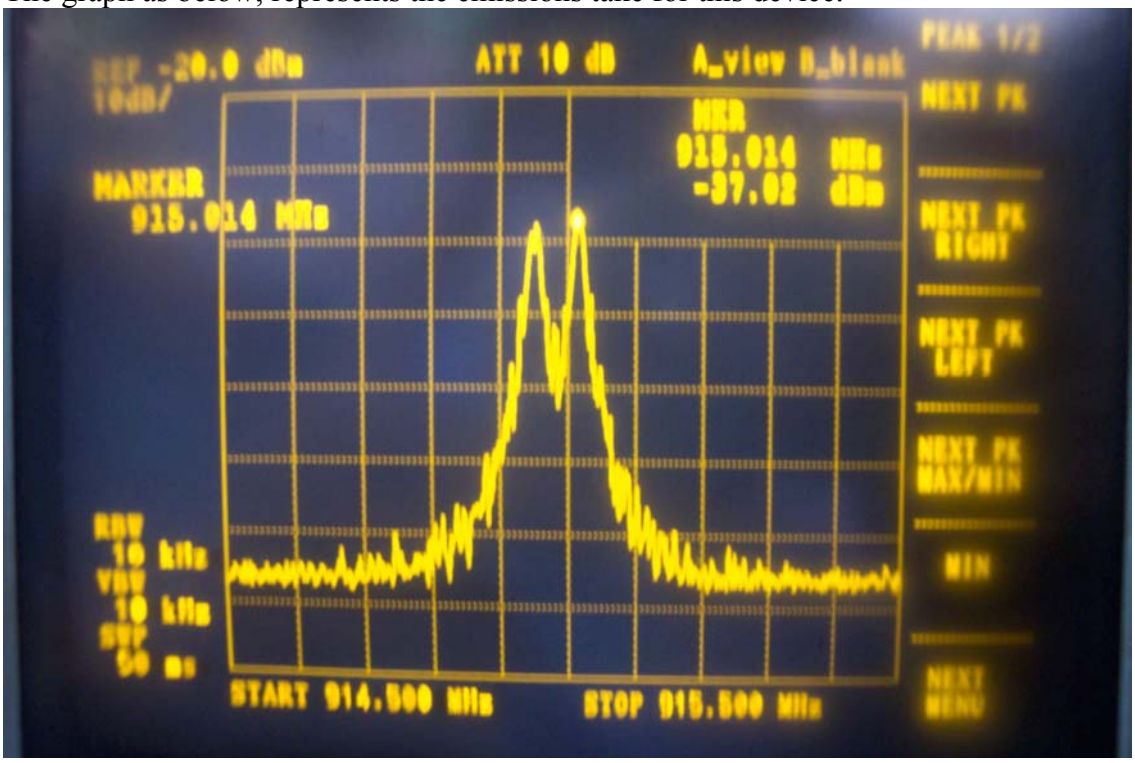
4.3.4 Occupied Bandwidth

Test Requirement: FCC Part15 C
Test Method: Based on FCC Part15 C Section 15.249:
Test Date: 13 September 2003

Requirements: 15.249 (c) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Method of measurement: A small sample of the transmitter output was fed into the Spectrum Analyzer and the attached plot was taken. The vertical is set to –10dB per division. The horizontal scale is set to 100KHz per division.

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



The results: The unit does meet the FCC requirements.