



**Compliance Testing, LLC**  
Previously Flom Test Lab  
EMI, EMC, RF Testing Experts Since 1963

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[info@ComplianceTesting.com](mailto:info@ComplianceTesting.com)

**Date:** November 20, 2009

Federal Communications Commission  
Via: Electronic Filing

**Attention:** Authorization & Evaluation Division

**Applicant:** Y Soft, s.r.o.

**Equipment:** Mifare Family Model Numbers  
YL01040 00C-YSoft SafeQ Terminal UltraLight Print and Copy  
YL01040 00P-YSoft SafeQ Terminal UltraLight Print Only  
YL01040 00R-YSoft SafeQ Terminal UltraLight Network Card Reader  
YL04040 001-YSoft SafeQ Terminal Professional

**FCC ID:** XUY0YX0X04000

**FCC Rules:** 15.225

Gentlemen:

On behalf of the Applicant, enclosed please find Application Form 731, Engineering Test Report and all pertinent documentation, the whole for approval of the referenced equipment as shown.

We trust the same is in order. Should you need any further information, kindly contact the writer who is authorized to act as agent.

Sincerely yours,

John Erhard: Engineering Manager

**List Of Exhibits**(FCC **Certification** (Transmitters) - Revised 9/28/98)**Applicant:** Y Soft, s.r.o.**FCC ID:** XUY0YX0X04000**By Applicant:**

1. Letter Of Authorization
2. Identification Drawings
  - Id Label
  - Location Info
  - Attestation Statement(S)
  - Location of Compliance Statement
3. Documentation: 2.1033(B)
  - (3) User Manual(S)
  - (4) Operational Description
  - (5) Block Diagram
  - (5) Schematic Diagram
  - (7) External Photographs
  - Internal Photographs
  - Parts List
  - Active Devices

**By Compliance Testing:**

- A. Testimonial & Statement of Certification
- B. Statement of Qualifications



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## Test Report

for

**FCC ID:** XUY0YX0X04000

**Model:** Mifare Family Model Numbers  
YL01040 00C-YSoft SafeQ Terminal UltraLight Print and Copy  
YL01040 00P-YSoft SafeQ Terminal UltraLight Print Only  
YL01040 00R-YSoft SafeQ Terminal UltraLight Network Card Reader  
YL04040 001-YSoft SafeQ Terminal Professional

to

**Federal Communications Commission**

Rule Part(s)15.225

**Date Of Report:** November 20, 2009

**On the Behalf of the Applicant:** Y Soft, s.r.o.  
Czech Technology Park  
Podnikatelska 2902/4  
612 00 Brno  
Czech Republic

**Attention of:** Martin Zikmund  
Ph: 011420 549 240 950  
E-mail: [Martin.Zikmund@ysoft.com](mailto:Martin.Zikmund@ysoft.com)

Supervised By:

John Erhard: Engineering Manager

## Test Report Revision History

Revision	Date	Revised By	Reason for revision
1.0	November 20, 2009	J. Erhard	Original Document

**The applicant has been cautioned as to the following:**

15.21 Information to User.

The users manual or instruction manual for an intentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

15.27(a) Special Accessories.

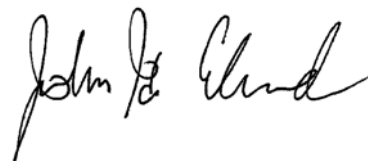
Equipment marketed to a consumer must be capable of complying with the necessary regulations in the configuration in which the equipment is marketed. Where special accessories, such as shielded cables and/or special connectors are required to enable an unintentional or intentional radiator to comply with the emission limits in this part, the equipment must be marketed with, i.e. shipped and sold with, those special accessories. However, in lieu of shipping or packaging the special accessories with the unintentional or intentional radiator, the responsible party may employ other methods of ensuring that the special accessories are provided to the consumer, without additional charge.

Information detailing any alternative method used to supply the special accessories for a grant of equipment authorization or retained in the verification records, as appropriate. The party responsible for the equipment, as detailed in § 2.909 of this chapter, shall ensure that these special accessories are provided with the equipment. The instruction manual for such devices shall include appropriate instructions on the first page of text concerned with the installation of the device that these special accessories must be used with the device. It is the responsibility of the user to use the needed special accessories supplied with the equipment.

## Testimonial And Statement Of Certification

**This is to certify that:**

1. **That** the application was prepared either by, or under the direct supervision of, the undersigned.
2. **That** the technical data supplied with the application was taken under my direction and supervision.
3. **That** the data was obtained on representative units, randomly selected.
4. **That**, to the best of my knowledge and belief, the facts set forth in the application and accompanying technical data are true and correct.




Certifying Engineer:

John Erhard: Engineering Manager

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Required information per ISO 17025-2005, paragraph 5.10.2:

- a) **Test Report**
- b) Laboratory: Compliance Testing  
(FCC: 31040/SIT) 3356 N. San Marcos Place, Suite 107  
(Canada: IC 2044A-1) Chandler, AZ 85225
- c) Report Number: d09b0027
- d) Client: Y Soft, s.r.o.
- e) Identification: Mifare Family Model Numbers  
YL01040 00C-YSoft SafeQ Terminal UltraLight Print and Copy  
YL01040 00P-YSoft SafeQ Terminal UltraLight Print Only  
YL01040 00R-YSoft SafeQ Terminal UltraLight Network Card Reader  
YL04040 001-YSoft SafeQ Terminal Professional  
Description: Mifare Family
- f) EUT Condition: Not required unless specified in individual tests.
- g) Report Date: November 20, 2009
- h, j, k): As indicated in individual tests.
- i) Sampling method: No sampling procedure used.
- l) Uncertainty: In accordance with Compliance Testing internal quality manual.
- m) Supervised by:
-   
John Erhard: Engineering Manager
- n) Results: The results presented in this report relate only to the item tested.
- o) Reproduction: This report must not be reproduced, except in full, without written permission from this laboratory.



## List Of General Information Required For Certification

In Accordance with FCC Rules and Regulations, Volume II, Part 2 and to 15.225

### Sub-Part 2.1033

(c)(1):

**Name and Address of Applicant:** Y Soft, s.r.o.

(c)(2): **FCC ID:** XUY0YX0X04000

**Model Number:** Mifare Family Model Numbers  
YL01040 00C-YSoft SafeQ Terminal UltraLight Print and Copy  
YL01040 00P-YSoft SafeQ Terminal UltraLight Print Only  
YL01040 00R-YSoft SafeQ Terminal UltraLight Network Card Reader  
YL04040 001-YSoft SafeQ Terminal Professional

(c)(3): **Instruction Manual(s):**

Please See Attached Exhibits

(c)(4): **Type of Emission:** ASK

(c)(5): **FREQUENCY RANGE, MHz** 13.56

(c)(6): **Power Rating, W:** 2.5 femto Watts  
 Switchable  Variable  N/A

(c)(7): **Maximum Power Rating, W:** 5 uW

15.203: **Antenna Requirement:**

- The antenna is permanently attached to the EUT
- The antenna uses a unique coupling
- The EUT must be professionally installed
- The antenna requirement does not apply

**Subpart 2.1033** (continued)

(c)(8): **Circuit Diagram/Circuit Description:**

Including description of circuitry & devices provided for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and limiting power.

Please See Attached Exhibits

(c)(9): **Label Information:**

Please See Attached Exhibits

(c)(10): **Photographs:**

Please See Attached Exhibits

(c)(11): **Digital Modulation Description:**

Attached Exhibits  
 N/A

(c)(12): **Test And Measurement Data:**

Follows

Sub-part  
2.1033(b):

### Test And Measurement Data

All tests and measurement data shown were performed in accordance with FCC Rules and Regulations, Volume II; Part 2 and the following individual Parts, 15.225.

### Standard Test Conditions and Engineering Practices

Except as noted herein, the following conditions and procedures were observed during the testing:

In accordance with ANSI C63.4-2009 unless otherwise indicated in the specific measurement results, the ambient temperature of the actual EUT was maintained within the range of 10° to 40°C (50° to 104 °F) unless the particular equipment requirements specify testing over a different temperature range. Also, unless otherwise indicated, the humidity levels were in the range of 10% to 90% relative humidity.

Measurement results, unless otherwise noted, are worst-case measurements.

### A2LA

"A2LA has accredited Compliance Testing in Chandler, AZ for technical competence in the field of Electrical testing. The accreditation covers the specific tests and types of tests listed on the agreed scope of accreditation. This laboratory meets the requirements of ISO 17025:2005 'General Requirements for the Competence of Testing and Calibration Laboratories' and any additional program requirements in the identified field of testing."

Please refer to [www.a2la.org](http://www.a2la.org) for current scope of accreditation.

Certificate number: 2152.01



FCC OATS Reg. #933597

IC Reg. # 2044A-1

### Test Results Summary

Specification	Test Name	Pass, Fail, N/A	Comments
15.225(a)	Fundamental Field Strength	Pass	
15.225(b)(c)(d)	Out of Band Spurious Emissions	Pass	
15.225(e)	Frequency Stability	Pass	
15.209	Radiated Emissions	Pass	
15.207	Conducted Powerline Emissions	Pass	
RSS-210	99% Occupied Bandwidth	Pass	

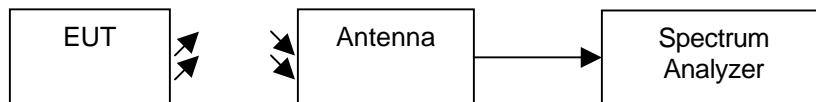
**Name of Test:** Field Strength  
**Specification:** 15.225(a)(b)(c)(d)  
**Test Equipment Utilized** i00033, i00326

**Engineer: J. Erhard**  
**Test Date: 11/20/2009**

### Test Procedure

The EUT was tested on an anechoic chamber at a distance of 1 meter from the receiving loop antenna. A spectrum analyzer was used to verify that the EUT met the requirements for Fundamental Field Strength. The antenna correction and distance correction factors were summed with the quasi-peak measurement to ensure accurate readings were obtained. The following table indicates the highest emission in each of the indicated bands.

### Test Setup



### Field Strength

Frequency Band (MHz)	Measured Frequency (MHz)	Monitored Level (dBuV/m)	Distance CF (dB)	Antenna CF (dB)	Corrected Measurement (dBuV/m)	Limit (dBuV/m)	Result
13.110_13.410	13.348	50.3	59.1	17.8	-26.6	40.51	Pass
13.410_13.553	13.552	49.49	59.1	17.8	-27.41	50.47	Pass
13.553_13.567	13.561	68.1	59.1	17.8	-8.8	84.00	Pass
13.567_13.710	13.568	55.11	59.1	17.8	-21.79	50.47	Pass
13.710_14.010	13.770	37.15	59.1	17.8	-39.75	40.51	Pass

\* Note. Cable correction factors are not included in this measurement as the low loss of the high quality TWINAX cable at low frequencies is practically non-existent.

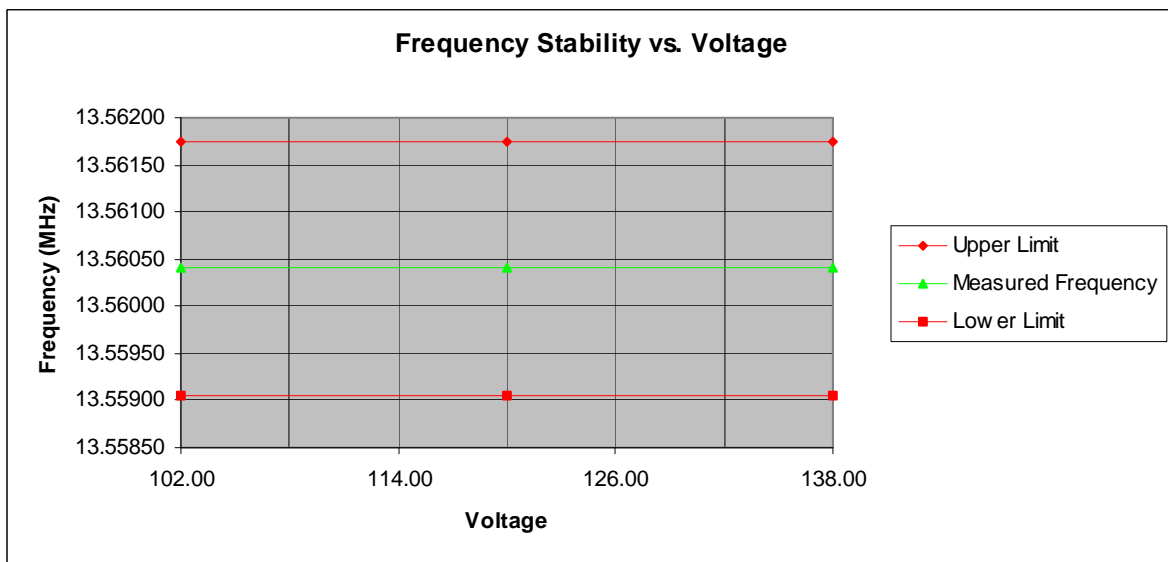
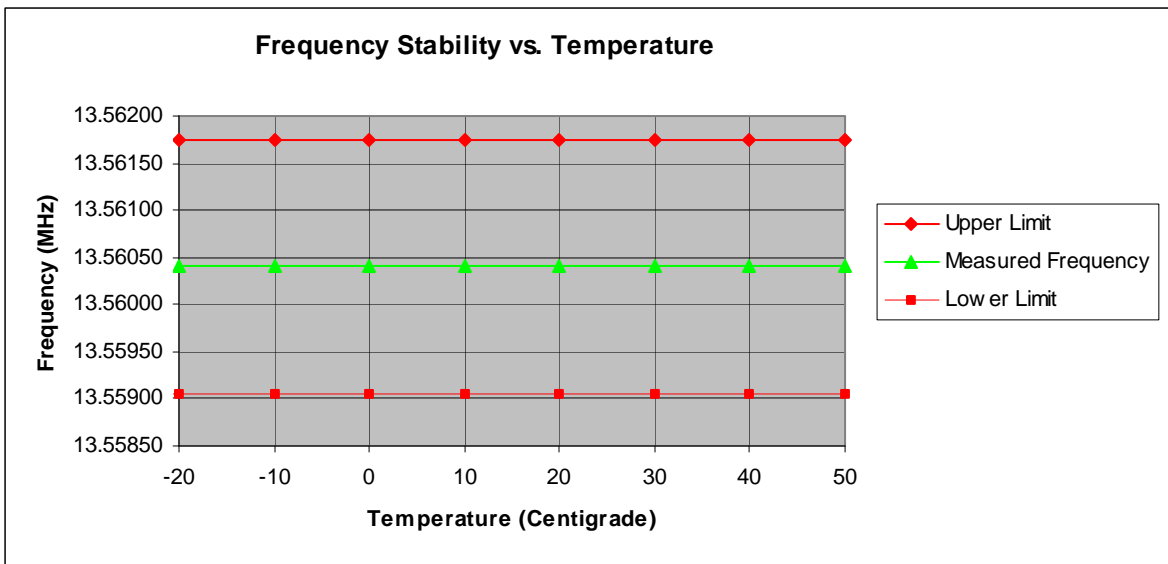
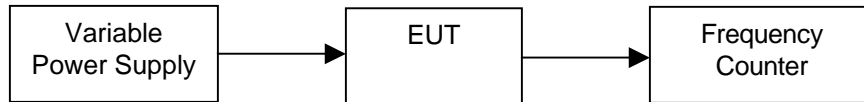
**Name of Test:** Frequency Stability  
**Specification:** 15.225(e)  
**Test Equipment Utilized:** i00019, i00027, i00108, i00320

**Engineer:** J. Erhard  
**Test Date:** 11/20/2009

**Test Procedure**

The EUT was placed in an environmental test chamber and a frequency counter was utilized to verify that the frequency stability met the requirement for frequency stability across the temperature range from -20°C to +50°C. A variable DC power supply was used to vary the voltage from 85% to 115% of the rated voltage.

**Test Setup**



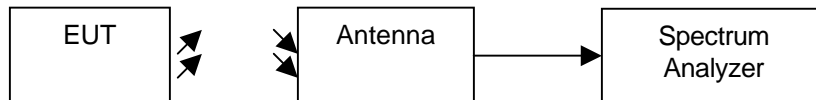
**Name of Test:** Radiated Emissions  
**Specification:** 15.209  
**Test Equipment Utilized** i00049, i00349

**Engineer: J. Erhard**  
**Test Date: 11/20/2009**

### Test Procedure

The EUT was tested on an Open Area Test Site (OATS) at a distance of 3 meters from the receiving antenna. A spectrum analyzer was used to verify that the UUT met the requirements for Radiated Emissions. The spectrum for each tuned frequency was examined beyond the 10<sup>th</sup> harmonic.

### Test Setup



### Radiated Emissions

Emission Freq (MHz)	Measured Value (dBuV/m)	Correction Factor (dB)	Corrected Value (dBuV/m)	Limit (dBuV/m)	Result
51.24	14.8	-1.1	13.7	40.0	Pass
200.00	19.8	1.3	21.1	40.0	Pass
224.99	19.6	2.0	21.6	47.0	Pass
445.00	14.1	9.1	23.2	47.0	Pass
667.45	14.1	12.9	27.0	47.0	Pass
827.00	14.1	16.2	30.3	47.0	Pass

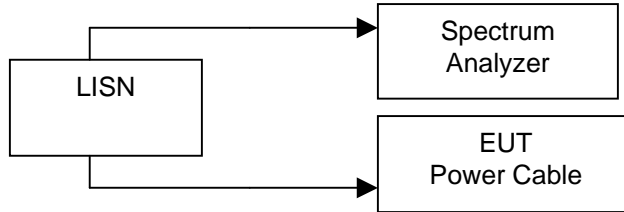
Name of Test: Powerline Conducted Emissions  
 Specification: 15.207  
 Test Equipment Utilized: i00033, i00270

Engineer: J. Erhard  
 Test Date: 11/20/2009

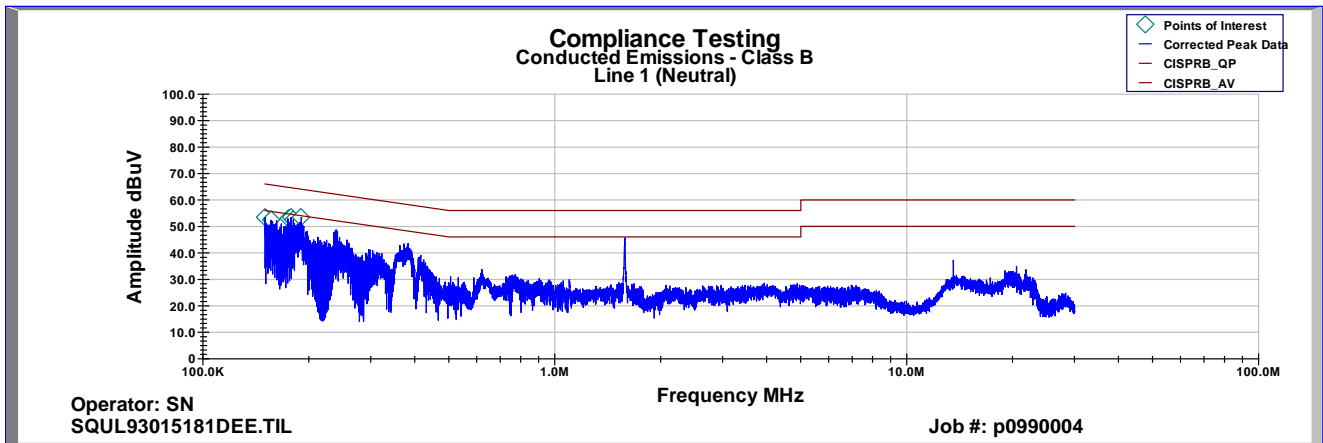
### Test Procedure

The EUT power cable connected to a LISN and the monitored output of the LISN was connected directly to a spectrum analyzer. The conducted emissions from 150 kHz to 30 MHz were monitored and compared to the specification limits. The average measurements were the worst-case and are recorded in the tables below.

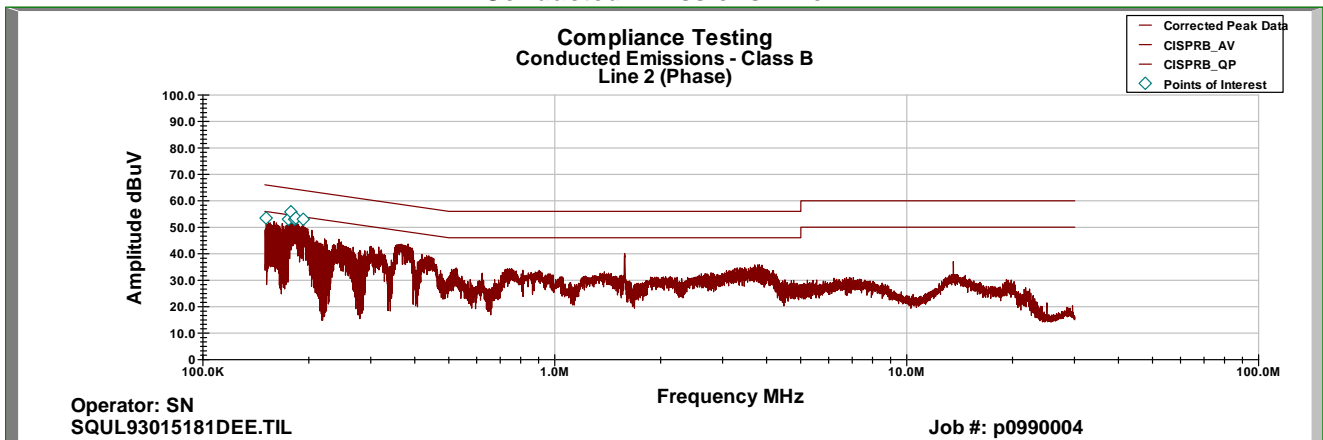
### Test Setup



### Conducted Emissions Line 1



### Conducted Emissions Line 2





### Line 1 Neutral AVG Detector

Frequency (kHz)	Measured Data (dBuV)	LISN Corr Fact (dB)	Cable Loss (dB)	Attenuator (dB)	Final L1 (dBuV)	Limit (dBuV)	AVG Margin (dB)
187.99 kHz	21.97	0.20	0.002	10.000	32.169	54.915	-22.746
180.18 kHz	22.58	0.20	0.004	10.000	32.787	55.138	-22.350
179.88 kHz	22.71	0.20	0.015	10.000	32.925	55.146	-22.221
176.20 kHz	18.94	0.20	0.018	10.000	29.161	55.251	-26.091
155.62 kHz	6.02	0.24	0.039	10.000	16.300	55.839	-39.540
153.91 kHz	5.46	0.26	0.038	10.000	15.759	55.888	-40.129

### Line 2 Phase AVG Detector

Frequency (kHz)	Measured Data (dBuV)	LISN Corr Fact (dB)	Cable Loss (dB)	Attenuator (dB)	Final L2 (dBuV)	Limit (dBuV)	AVG Margin (dB)
189.36 kHz	23.98	0.20	0.008	10.000	34.188	54.875	-20.688
185.53 kHz	24.59	0.20	0.002	10.000	34.796	54.985	-20.189
183.23 kHz	24.99	0.20	0.004	10.000	35.191	55.051	-19.859
174.93 kHz	18.12	0.20	0.019	10.000	28.342	55.288	-26.945
174.49 kHz	17.27	0.20	0.015	10.000	27.489	55.300	-27.812
150.34 kHz	6.93	0.30	0.038	10.000	17.265	55.990	-38.726

### Line 1 Neutral QP Detector

Frequency (kHz)	Measured Data (dBuV)	LISN Corr Fact (dB)	Cable Loss (dB)	Attenuator (dB)	Final L1 (dBuV)	Limit (dBuV)	QP Margin (dB)
187.99 kHz	36.660	0.200	0.002	10.000	46.862	64.915	-18.053
180.18 kHz	36.590	0.200	0.004	10.000	46.794	65.138	-18.344
179.88 kHz	37.190	0.200	0.015	10.000	47.405	65.146	-17.741
176.20 kHz	34.640	0.200	0.018	10.000	44.858	65.251	-20.394
155.62 kHz	33.470	0.244	0.039	10.000	43.753	65.839	-22.086
153.91 kHz	33.870	0.261	0.038	10.000	44.169	65.888	-21.719

### Line 2 Phase QP Detector

Frequency (kHz)	Measured Data (dBuV)	LISN Corr Fact (dB)	Cable Loss (dB)	Attenuator (dB)	Final L2 (dBuV)	Limit (dBuV)	QP Margin (dB)
189.36 kHz	36.71	0.20	0.008	10.000	46.918	64.875	-17.958
185.53 kHz	36.88	0.20	0.002	10.000	47.082	64.985	-17.903
183.23 kHz	37.26	0.20	0.004	10.000	47.464	65.051	-17.586
174.93 kHz	34.79	0.20	0.019	10.000	45.009	65.288	-20.279
174.49 kHz	35.23	0.20	0.015	10.000	45.445	65.300	-19.855
150.34 kHz	34.32	0.30	0.038	10.000	44.655	65.990	-21.336

All other results were greater than 20 dB below the limit.

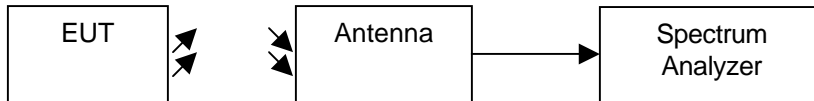
**Name of Test:** 99% Occupied Bandwidth  
**Specification:** RSS 210 Industry Canada Only  
**Test Equipment Utilized** i00033, i00326

**Engineer: J. Erhard**  
**Test Date: 11/20/2009**

**Test Procedure**

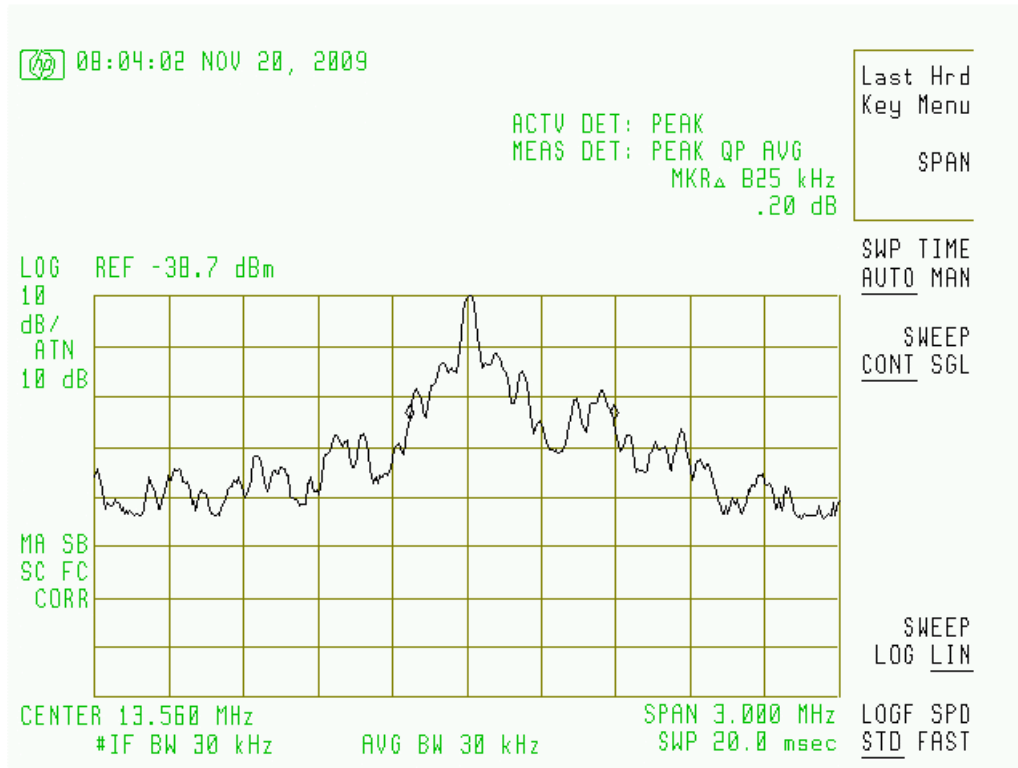
The EUT was tested on an anechoic chamber at a distance of 1 meter from the receiving loop antenna. A spectrum analyzer was used to measure the 99% occupied bandwidth.

**Test Setup**



**99% Bandwidth Summary**

Frequency MHz	Recorded Measurement	Result
13.56	825 kHz	Pass



### Test Equipment Utilized

Description	MFG	Model Number	CT Asset Number	Last Cal Date	Cal Due Date
Frequency Counter	HP	5334B	i00019	1/26/09	1/26/10
Temperature Chamber	Tenney	Tenney Jr	i00027	12/8/08	12/8/09
Spectrum Analyzer	HP	85462A	i00033	11/4/09	11/4/10
Spectrum Analyzer	HP	8566B	i00049	10/9/09	10/9/10
Bi-Log Antenna	Schaffner	CBL6111C	i00349	1/12/09	1/12/11
Active Loop Antenna	EMCO	6507	i00326	4/1/09	4/1/11
Variac	Powerstat	3PN126	i00108	NCR	NCR
DMM	Fluke	75 III	i00320	1/7/09	1/7/10
LISN	FCC	FCC-LISN-50-32-2-01	i00270	9/17/08	9/17/10

In addition to the above listed equipment standard RF connectors and cables were utilized in the testing of the described equipment. Prior to testing these components were tested to verify proper operation.

END OF TEST REPORT