



Test Report: 5W39806.2

Applicant: Hortau Inc.
840 Sainte-Therese, Suite 300
Quebec, Quebec
G1N 1S7

Apparatus: Signum (M/N: SIG04182)

FCC ID: S4TSIG04182

In Accordance With: FCC Part 15 Subpart B, 15.107 and 15.109
Unintentional Radiators

Tested By: Nemko Canada Inc.
303 River Road
Ottawa, Ontario
K1V 1H2

Authorized By:

A handwritten signature in blue ink, appearing to read 'Sim Jagpal'.

Sim Jagpal, Resource Manager

Date: 8 April 2005

Total Number of Pages: 15

Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart B. Radiated tests were conducted in accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. A description of the test facility is on file with the FCC.

The assessment summary is as follows:

Apparatus Assessed:	Signum (M/N: SIG04182)
Specification:	FCC Part 15 Subpart B, 15.107 and 15.109
Compliance Status:	Complies
Exclusions:	None
Non-compliances:	None
Report Release History:	Original Release

Author: Jason Nixon, Telecom Specialist

Note that the results contained in this report relate only to the items tested and were obtained in the period between the date of initial receipt of samples and the date of issue of the report.

This test report has been completed in accordance with the requirements of ISO/IEC 17025.

Nemko Canada Inc. authorizes the applicant to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. Nemko Canada Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

TABLE OF CONTENTS

Report Summary.....	2
Section 1 : Equipment Under Test.....	4
1.1 Product Identification	4
1.2 Samples Submitted for Assessment.....	4
1.3 Theory of Operation	4
1.4 Technical Specifications of the EUT	5
1.5 Block Diagram of the EUT.....	5
Section 2 : Test Conditions.....	6
2.1 Specifications	6
2.2 Deviations From Laboratory Test Procedures	6
2.3 Test Environment	6
2.4 Test Equipment.....	6
Section 3 : Observations	7
3.1 Modifications Performed During Assessment	7
3.2 Record Of Technical Judgements	7
3.3 EUT Parameters Affecting Compliance	7
3.4 Test Deleted.....	7
Section 4 : Results Summary	8
4.1 FCC Part 15 Subpart C : Test Results	9
Appendix A : Test Results.....	10
Appendix B : Setup Photographs	14
Appendix C : Block Diagram of Test Setups.....	15

Section 1 : Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:

Signum (M/N: SIG04182)

1.2 Samples Submitted for Assessment

The following samples of the apparatus have been submitted for type assessment:

Sample No.	Description	Serial No.
3	RF RECEIVER V2	2508001
Containing	ANTENNA	_____
	DB9F CABLE	_____
	DAVECO AD-119-12 CLASS 2 TRANSFORMER M/N D41-12-500	_____

The first samples were received on: February 22, 2005

1.3 Theory of Operation

The Signum is used to receive signals from the Hortau Hortimetre-P and Hortimetre-M.

1.4 Technical Specifications of the EUT

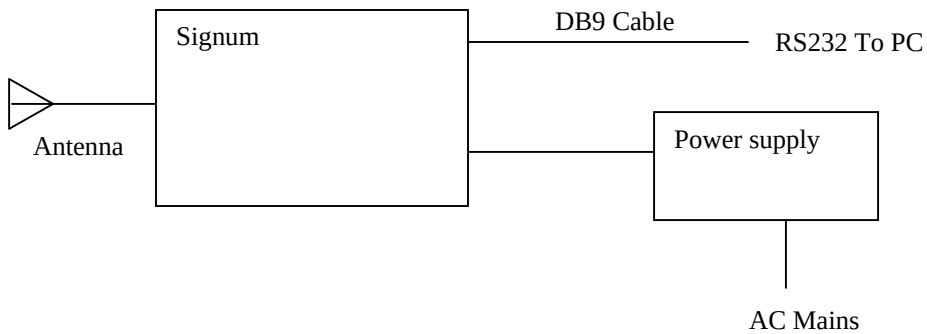
Manufacturer: Hortau Inc.

Receive Frequency: 418Mhz (fixed)

Antenna Data: Antenna Factor ANT-418-CW-QW

Power Range: 12Vdc from power supply

1.5 Block Diagram of the EUT



Section 2 : Test Conditions

2.1 Specifications

The apparatus was assessed against the following specifications:

FCC Part 15 Subpart B, 15.107 and 15.109
Unintentional Radiators

2.2 Deviations From Laboratory Test Procedures

No deviations were made from laboratory test procedures.

2.3 Test Environment

All tests were performed under the following environmental conditions:

Temperature range	:	15 – 30 °C
Humidity range	:	20 - 75 %
Pressure range	:	86 - 106 kPa
Power supply range	:	+/- 5% of rated voltages

2.4 Test Equipment

Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Hewlett-Packard	8564E	FA001367	June 28/04	June 28/05
Receiver	Rohde & Schwarz	ESVS-30	FA001437	July 26/04	July 26/05
Biconical (1) Antenna	EMCO	3109	FA000805	April 23/04	April 23/05
Horn Antenna #1	EMCO	3115	FA000649	Dec. 22/04	Dec. 22/05
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 26/04	Aug. 26/05
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June 18/04	June 18/05

Section 3 : Observations

3.1 Modifications Performed During Assessment

No modifications were performed during assessment.

3.2 Record Of Technical Judgements

No technical judgements were made during the assessment.

3.3 EUT Parameters Affecting Compliance

The user of the apparatus could not alter parameters that would affect compliance.

3.4 Test Deleted

No Tests were deleted from this assessment.

Section 4 : Results Summary

This section contains the following:

FCC Part 15 Subpart B : Test Results

The column headed 'Required' indicates whether the associated clauses were invoked for the apparatus under test. The following abbreviations are used:

- N No : not applicable / not relevant.
- Y Yes : Mandatory i.e. the apparatus shall conform to these tests.
- N/T Not Tested, mandatory but not assessed. (See section 3.4 Test deleted)

The results contained in this section are representative of the operation of the apparatus as originally submitted.

4.1 FCC Part 15 Subpart C : Test Results

Part 15	Test Description	Required	Result
15.107(a) 15.109(a)	Conducted Emissions for Class B Radiated Emissions for Class B	Y Y	Pass Pass

Notes:

Appendix A : Test Results

Criteria: Clause 15.107(a) Conducted Emissions

Frequency of Conducted limit (dBmV)		
Emission (MHz)	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
* Decreases with the logarithm of the frequency.		

Test Conditions:

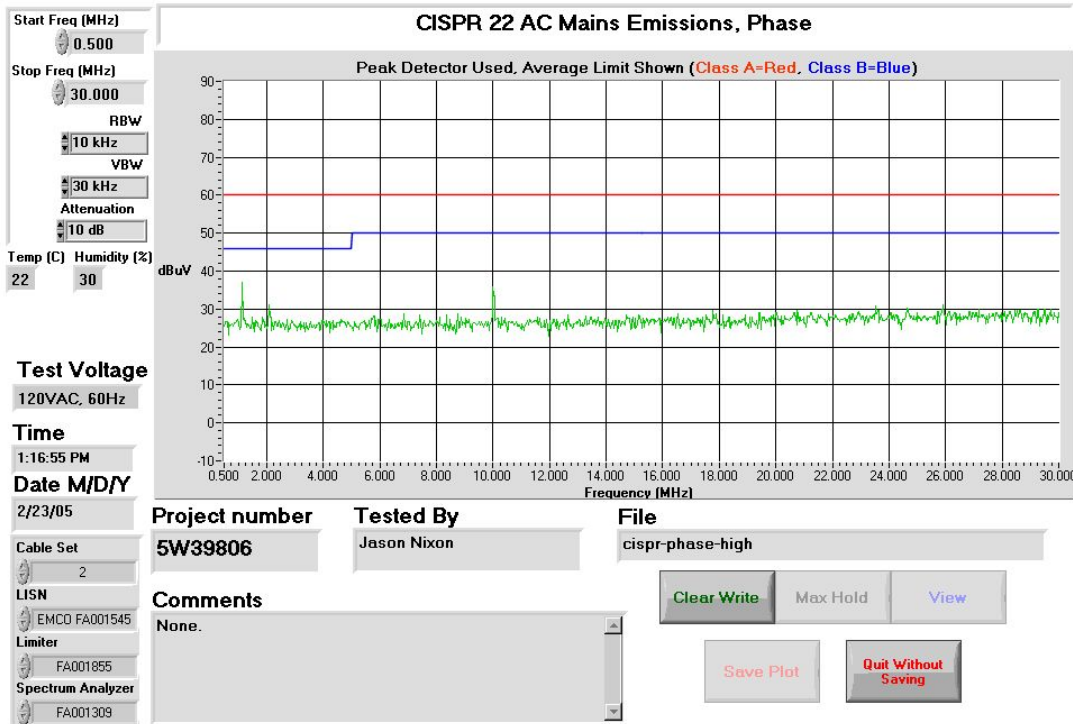
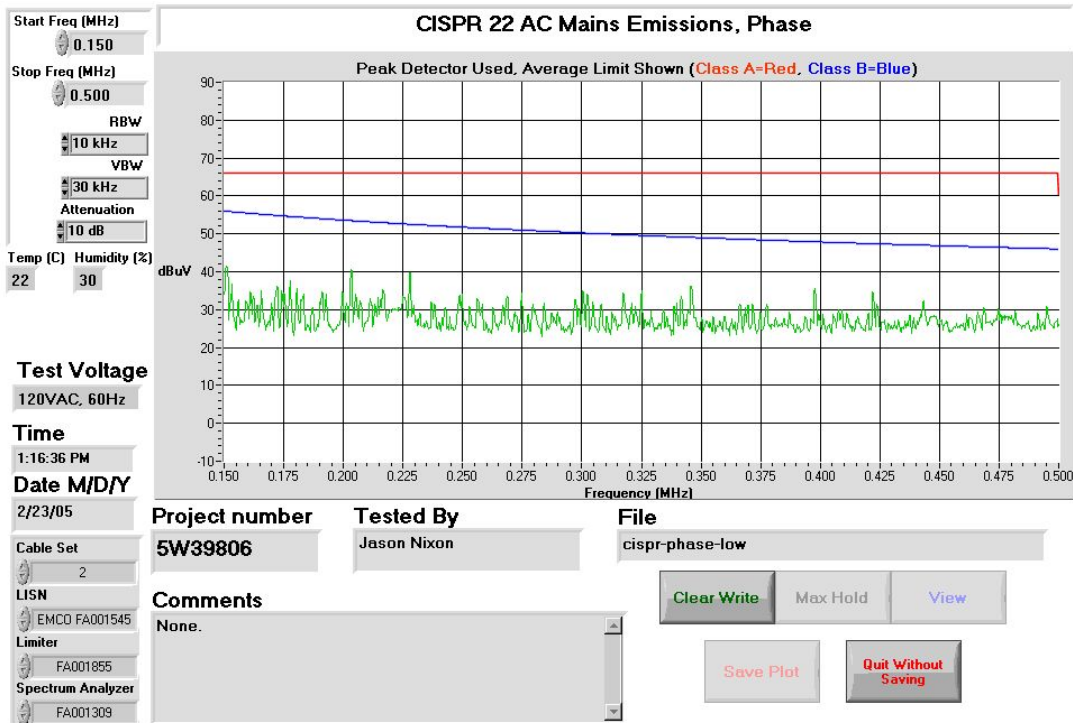
Sample Number:	3	Temperature:	22
Date:	February 23, 2005	Humidity:	30
Modification State:	0	Tester:	Jason Nixon
		Laboratory:	Shielded Room

Test Results: See Attached Plots.

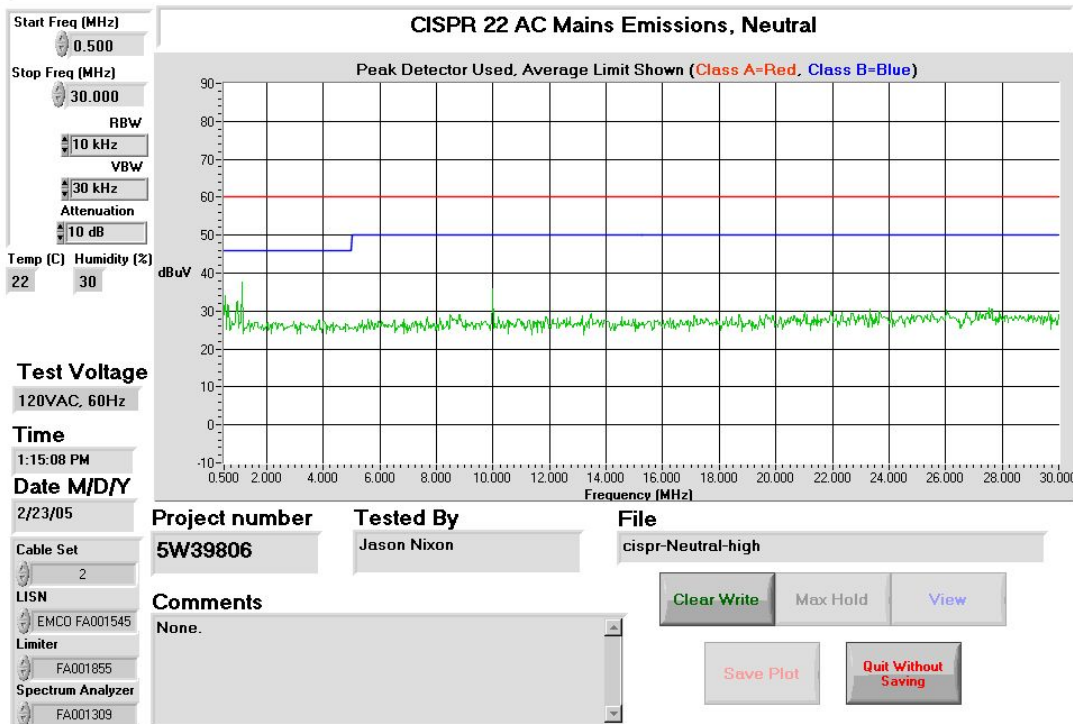
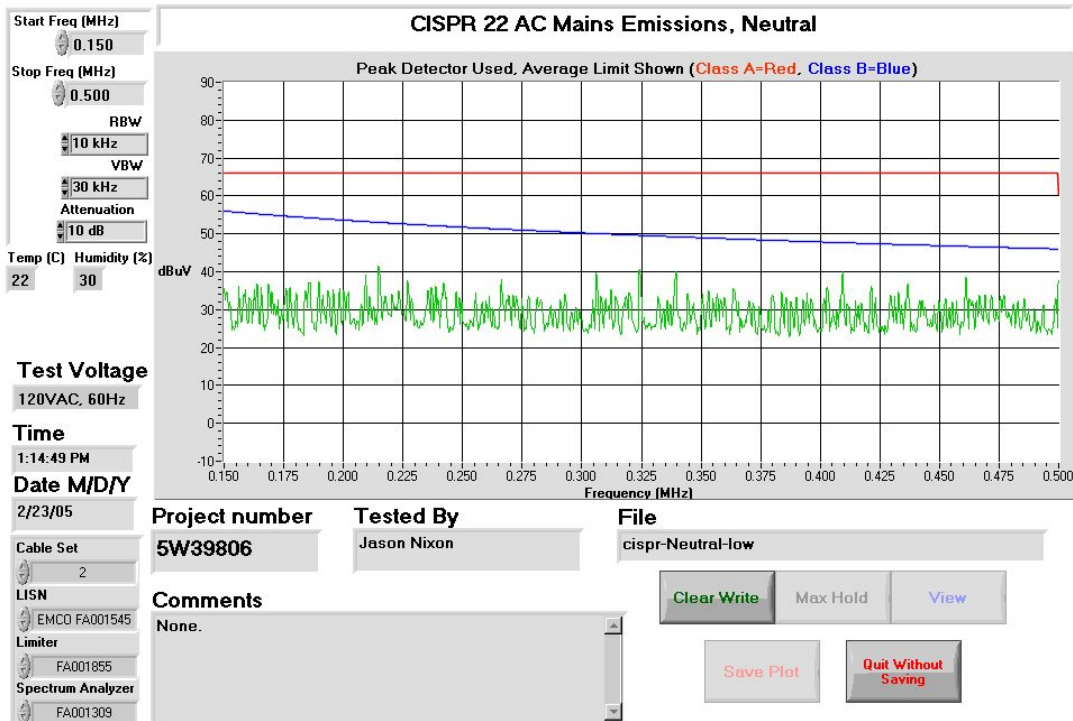
Additional Observations:

Emissions in the graphs are measured using a Peak detector and compared to the Average limit.

Phase



Neutral



Criteria: Clause 15.109(a) Radiated Emissions

Except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency of Emission (MHz)	Field Strength (microvoltsmeter)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Test Conditions:

Sample Number:	3	Temperature:	10
Date:	February 24, 2005	Humidity:	55
Modification State:	0	Tester:	Jason Nixon
		Laboratory:	OATS

Test Results:

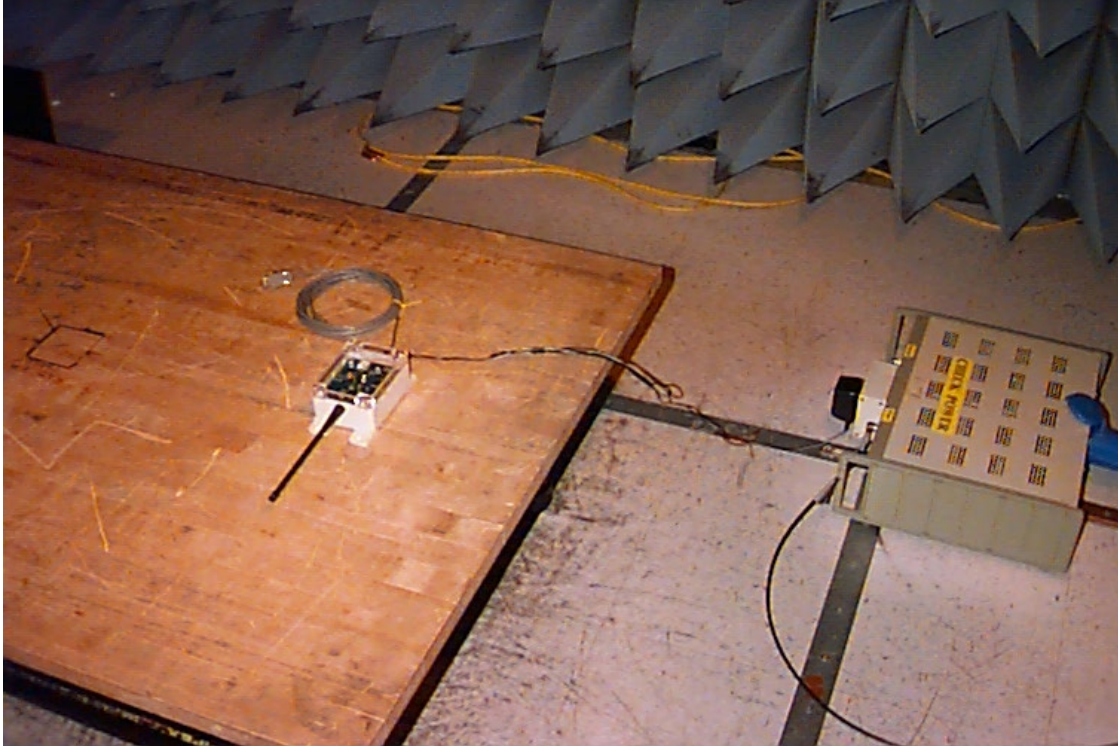
The Spectrum was searched from 30MHz to 2GHz and there were no emissions detected within 20dB below the limit.

Additional Observations:

None.

Appendix B : Setup Photographs

Conducted Emissions Setup:

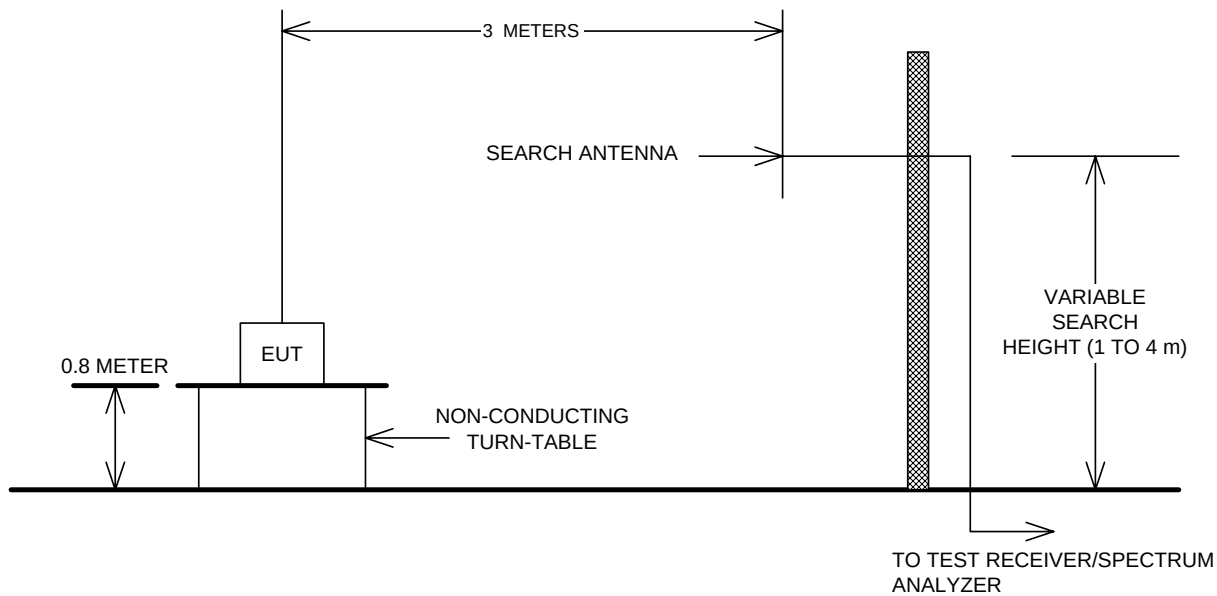


Spurious Emissions Setup:



Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions



Conducted Emissions

