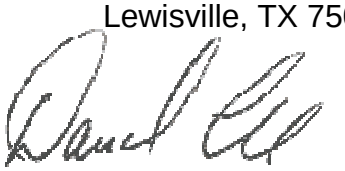
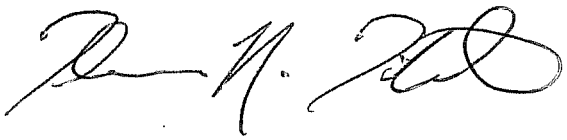
Nemko Test Report:	11673RUS1
Applicant:	Sirit Technologies 1321 Valwood Parkway, Suite 620 Carrollton, TX 75006 USA
Equipment Under Test: (E.U.T.)	Infinity 110
FCC Identifier:	M4ZIN110
In Accordance With:	**FCC Part 15, Subpart C, Paragraph 15.225 and RSS-210, Issue 7** Operation in the band 13.110 – 14.010 MHz
Tested By:	Nemko USA, Inc. 802 N. Kealy Lewisville, TX 75057



TESTED BY: _____ **DATE:** **16 July, 2009**

David Light, Senior Wireless Engineer



APPROVED BY: _____ **DATE:** **21 July, 2008**

Tom Tidwell, Telecom Direct

Total Number of Pages: 20

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Section 1. Summary Of Test Results

Manufacturer: Sirit Technologies

Model No.: Infinity 110

Serial No.: None

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15.225 and IC RSS-210 for operation in the band 13.110 to 14.010 MHz. All tests were conducted using measurement procedure ANSI C63.4-2003. Amplitude measurements were made in a semi-anechoic chamber. Details of the chamber are on file with the FCC and Industry Canada.

☒	New Submission	☒	Production Unit
☐	Class II Permissive Change	☐	Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.
See " Summary of Test Data".

NVLAP®
LAB CODE: 100426-0

Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Powerline Conducted Emissions	FCC 15.207/RSS-Gen 7.2.2	Complies
Radiated Emissions	FCC 15.225(a)/ RSS-210 A2.6	Complies
Frequency Tolerance	FCC 15.225(e)/RSS-210 A2.6	Complies
Occupied Bandwidth	Not Specified	NA
Receiver Spurious Emissions	RSS-Gen 7.2.3	Complies

Footnotes For N/A's:

Section 2. General Equipment Specification

Frequency Range:	13.56 MHz Single Channel
Operating Frequency(ies) of Sample:	13.56 MHz Single Channel
Modulation:	AM

	Yes	No
Integral Antenna	☐	☒

Section 3. Powerline Conducted Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: FCC 15.207/RSS-GEN 7.2.2
TESTED BY: Art Ruvalcaba	DATE: 17 July 2009

Test Results: Complies.

Measurement Data: See attached table.

Requirement:

Frequency range (MHz)	Conducted limit (dBµV)	
	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.

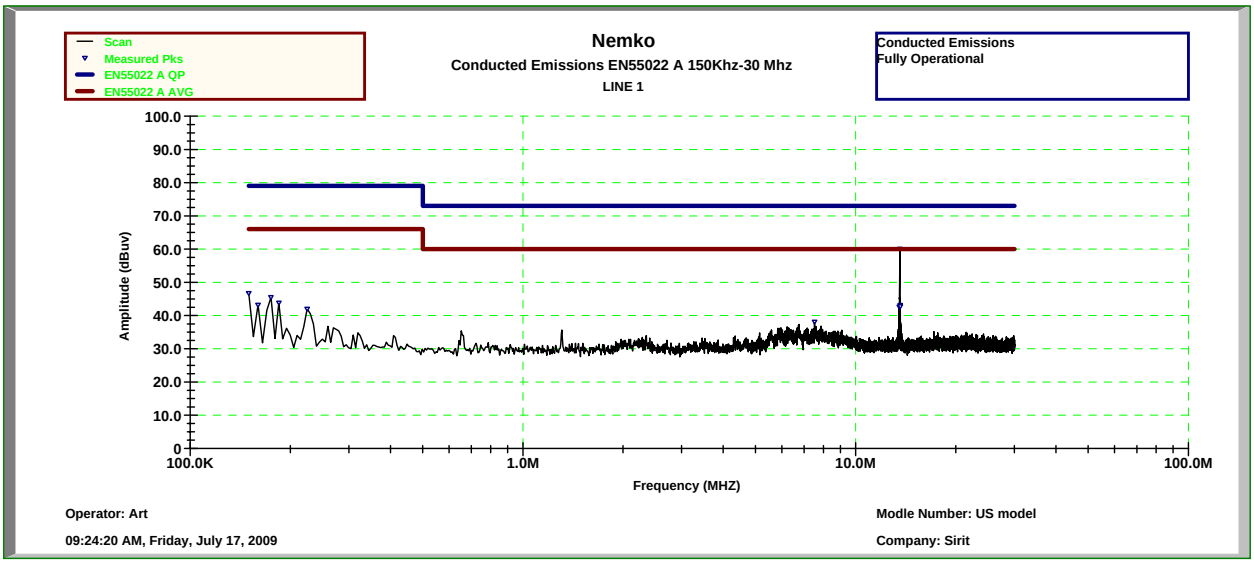
Measurement Uncertainty: +/-1.7 dB

Temperature: 23 °C

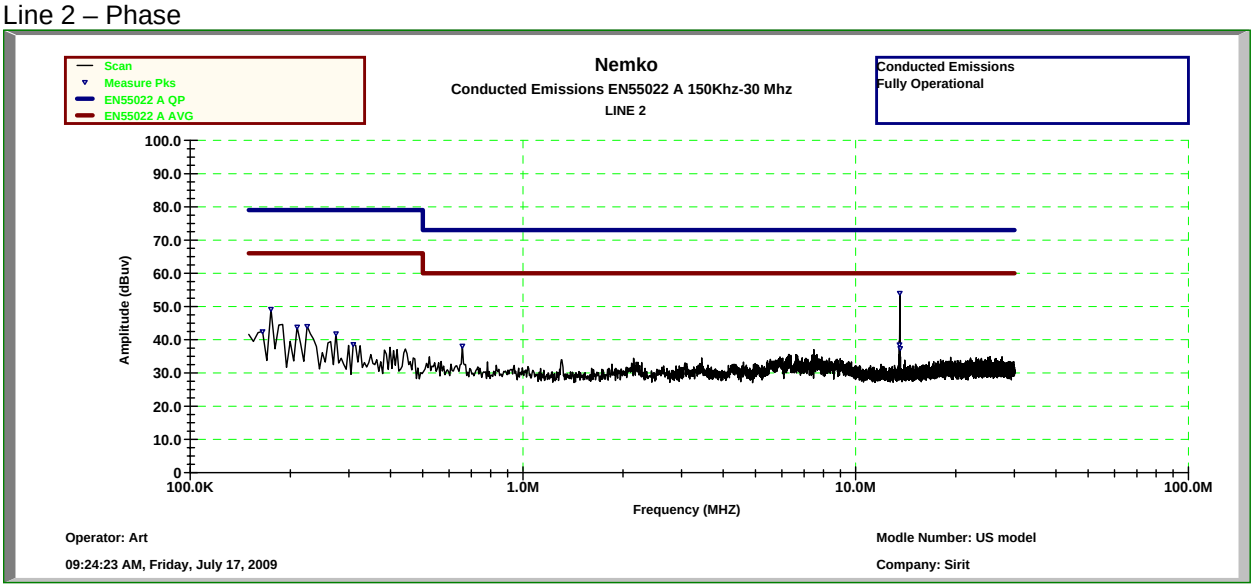
Relative Humidity: 27 %

Test Data – Powerline Conducted Emissions

Line 1 - Neutral



Line 2 – Phase



NOTE: The peak measured emission levels meet the average limit. The peak emission on the neutral conductor is 60.04 dBuV (peak) at 13.56 MHz.

Section 3. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: FCC 15.225(a)/RSS-210 A2.6
TESTED BY: David Light	DATE: 01 April 2008

Test Results: Complies. The worst case emission was 30.7 dBµV/m at 40 MHz. This is 9.3 dB below the specification limit of 40 dBµV/m.

Measurement Data: See attached table.

Requirement: 15.848 millivolts/m (84 dBµV/m) at 30 m, within the band13.553-13.567 MHz

Notes:

☐ For handheld devices, the EUT was tested on three orthogonal axis'

☒ The device was tested from 30 MHz to the tenth harmonic of the highest fundamental frequency per 15.33

☐ The device was tested on three channels per 15.31(l).

☐ No emissions were detected within 20 dB of the specification limit therefore none are reported per 15.31(o).

Equipment Used: 1733-1484-1485-1464-1763-1762-1025-

Measurement Uncertainty: +/-3.6 dB

Temperature: 22 °C

Relative Humidity: 35 %

Test Data - Radiated Emissions

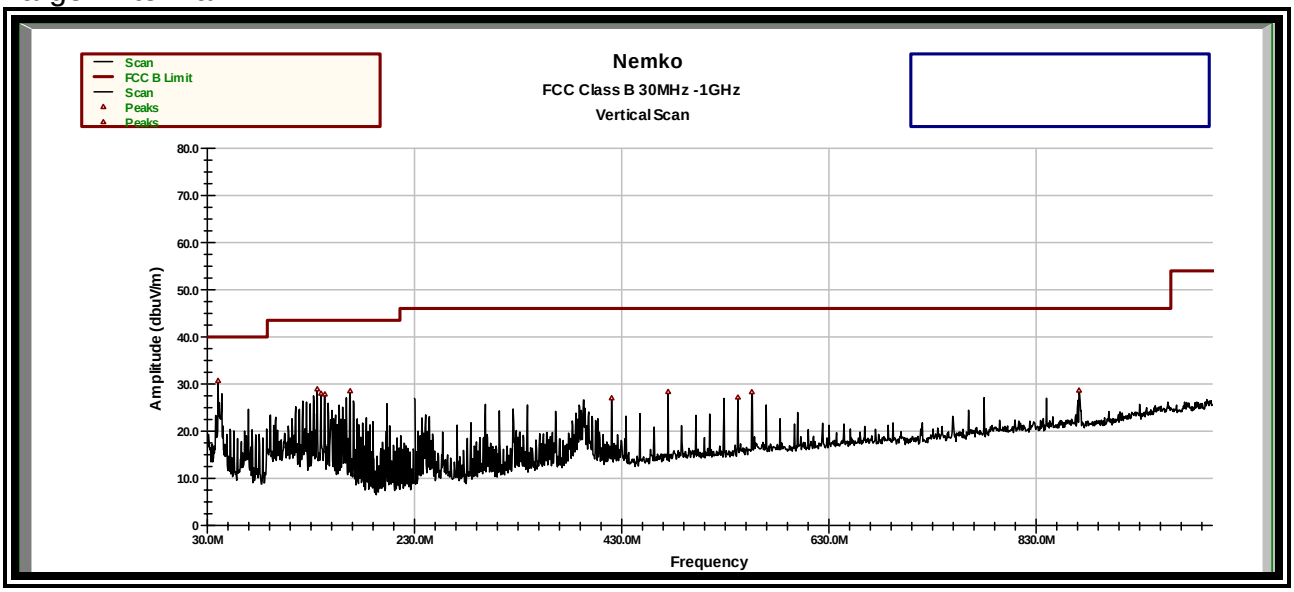
Measurements below 30 MHz

Meas. Freq. (MHz)	Ant. Pol. (H/V)	Atten. (dB)	Meter Reading (dBuV)	Antenna Factor (dB)	Path Loss (dB)	RF Gain (dB)	Corrected Reading (dBuV/m)	Spec. limit (dBuV/m)	CR/SL Diff. (dB)	Pass Fail Unc.	Comment
											Small Antenna
13.56	Loop	0	44.2	16	1.0	0.0	61.2	124.0	-62.8	Pass	Carrier
27.12	Loop	0	16	15.1	1.0	0.0	32.1	69.5	-37.4	Pass	Noise floor
											Large Antenna
13.56	Loop	0	63	16	1.0	0.0	80.0	124.0	-44.0	Pass	Carrier
27.12	Loop	0	16	15.1	1.0	0.0	32.1	69.5	-37.4	Pass	Noise floor

Measurements were made at 3 meters

Measurements Above 30 MHz

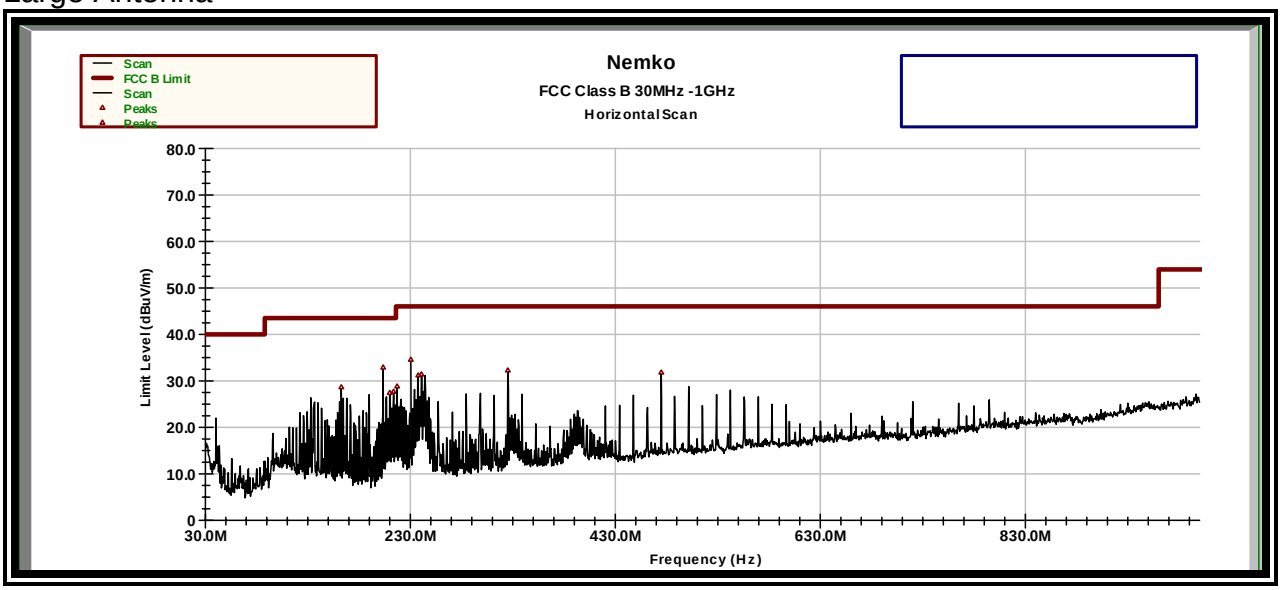
Large Antenna



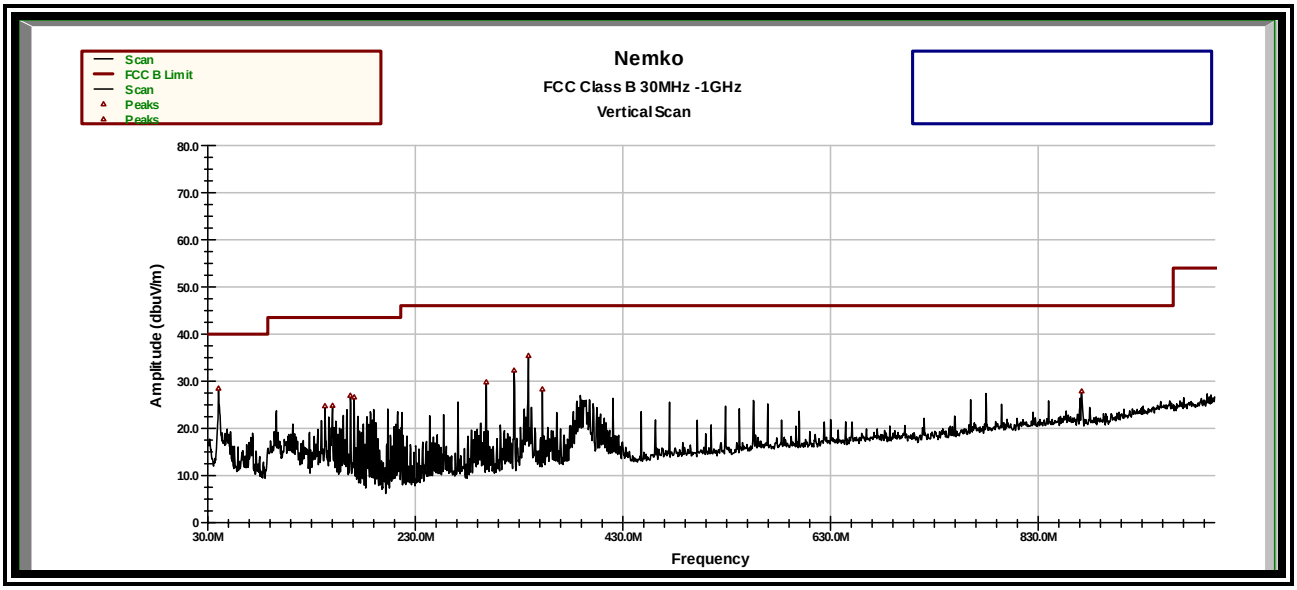
Test Data - Radiated Emissions

Measurements Above 30 MHz (continued)

Large Antenna



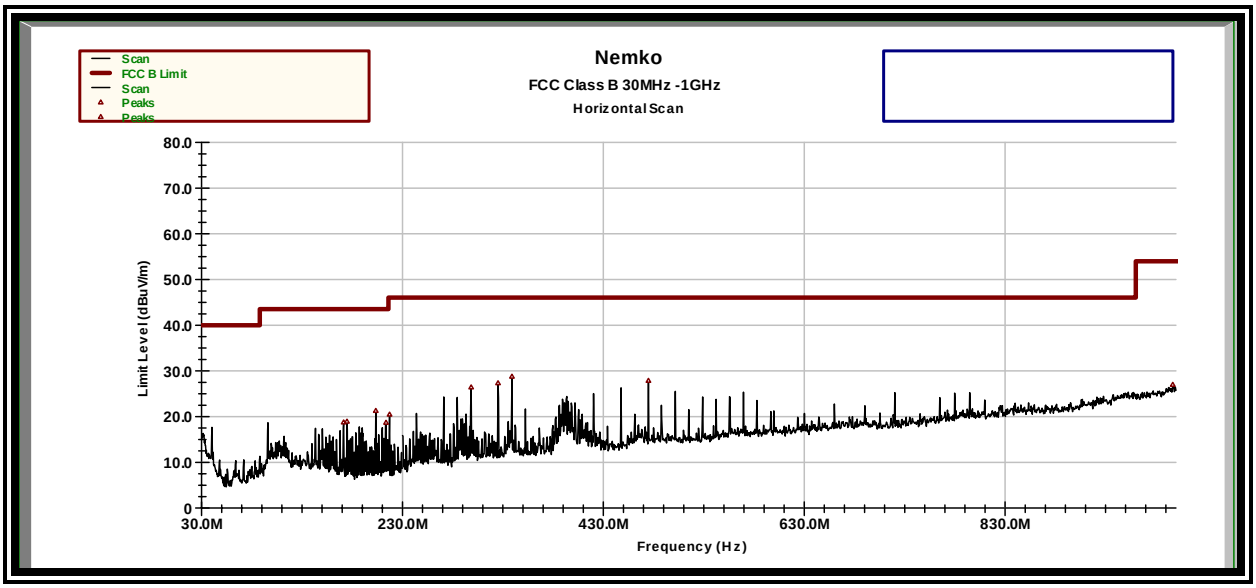
Small Antenna



Test Data - Radiated Emissions

Measurements Above 30 MHz (continued)

Small Antenna



Section 4. Frequency Tolerance

NAME OF TEST: Occupied Bandwidth	PARA. NO.: FCC 15.25(e)/RSS-210 A2.6
TESTED BY: David Light	DATE: 10 April 2008

Minimum Standard: +/-0.01%

Test Results: Complies

Measurement Data: See attached data

Method of Measurement:

A spectrum analyzer was used to measure the frequency tolerance of the EUT. The RBW was set to 300 Hz with the VBW equal to or greater than the RBW.

Temp (^{O}C)	Measured Frequency (MHz)		Test Voltage	Freqeuncy Error (Hz)	Limit (+/-Hz)	Error (ppm)	Comment
20	13.560200		6 Vdc	200	1356.0	14.7	
20	13.560200		6.9 Vdc	200	1356.0	14.7	
20	13.560200		5.1 Vdc	200	1356.0	14.7	
50	13.559800		6 Vdc	-200	1356.0	-14.7	
-20	13.560300		6 Vdc	300	1356.0	22.1	
Notes:							

Section 5. Occupied Bandwidth

NAME OF TEST: Occupied Bandwidth	PARA. NO.: N/A
TESTED BY: David Light	DATE: 10 April 2008

Minimum Standard: Not specified.

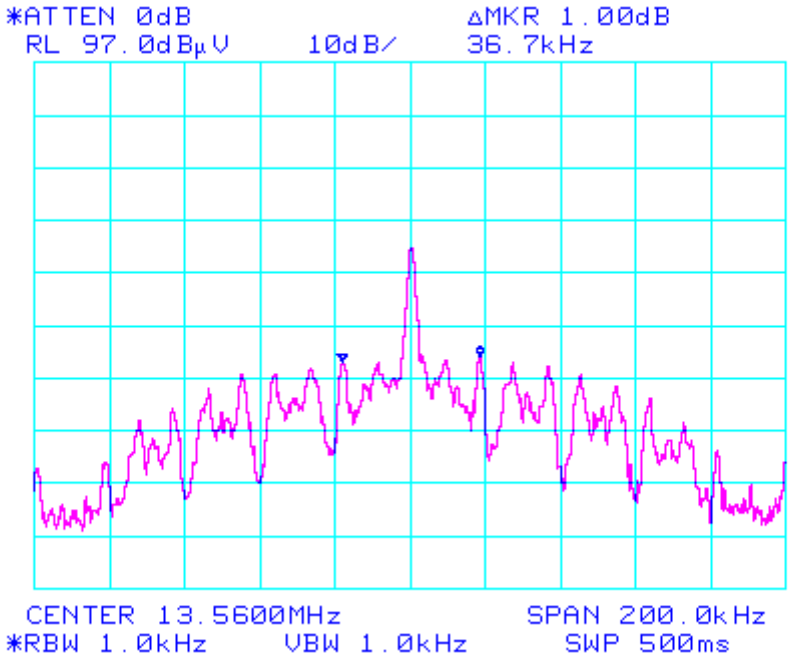
Test Results: The 99% power occupied bandwidth is 36.7 kHz

Measurement Data: See attached graph(s).

Method of Measurement:

A spectrum analyzer was used to measure the 99% power occupied bandwidth of the fundamental emission. This value is used as the bandwidth for the emission designator.

Test Data – 99% Occupied Bandwidth



Section 6. Receiver Spurious Emissions

NAME OF TEST: Receiver Spurious Emissions	PARA. NO.: RSS-Gen 7.2.3
TESTED BY: Scott Oates	DATE: 10 April 2008

Minimum Standard:

Spurious Frequency (MHz)	Field Strength (microvolt/m at 3 metres)
30-88	100
88-216	150
216-960	200
Above 960	500

Test Results: Complies. The worst case spurious emission was 25.4 dBuV/m at 41.2 MHz. This is 14.6 dB below the 3 meter specification limit.

Measurement Data: See attached graph(s).

Test Equipment:

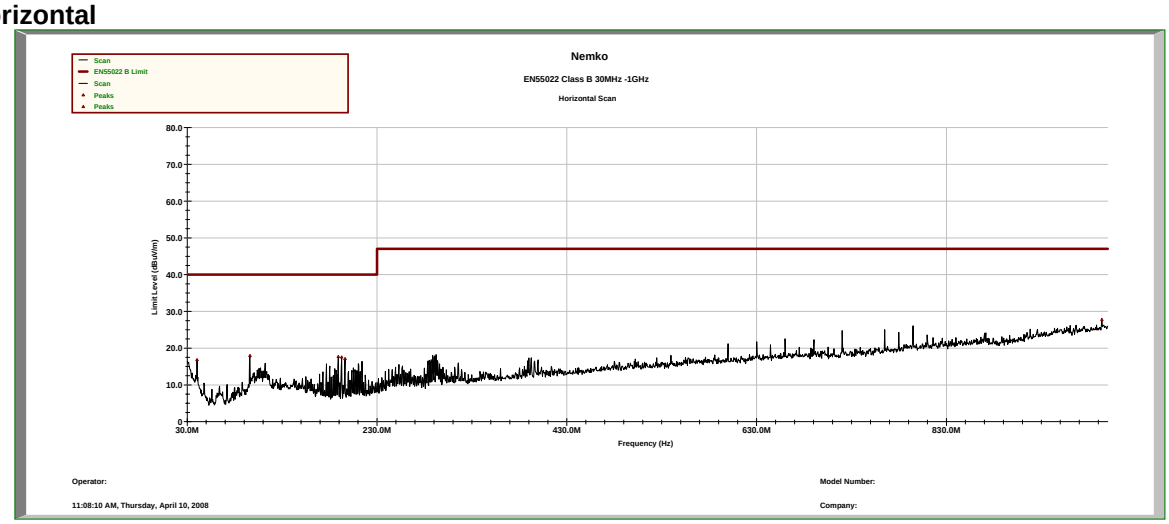
Asset Number	Description	Manufacturer	Model Number	Serial Number	Last Cal	Cal Due
1763	Antenna bilog	Schaffner	CBL6111-D	22926	9/21/07	9/21/08
1762	Cable Assy, 3m Chamber	Nemko	Chamber	N/A	8/15/07	8/15/08
1025	PREAMP, 25dB	Nemko	LNA25	399	12/6/07	12/6/08
1	3m Chamber	Nemko	1	1	8/15/07	8/15/08
1659	Spectrum Analyzer	Rohde & Schwarz	FSP	100037	1/24/07	1/24/09

RBW/VBW = 100 kHz

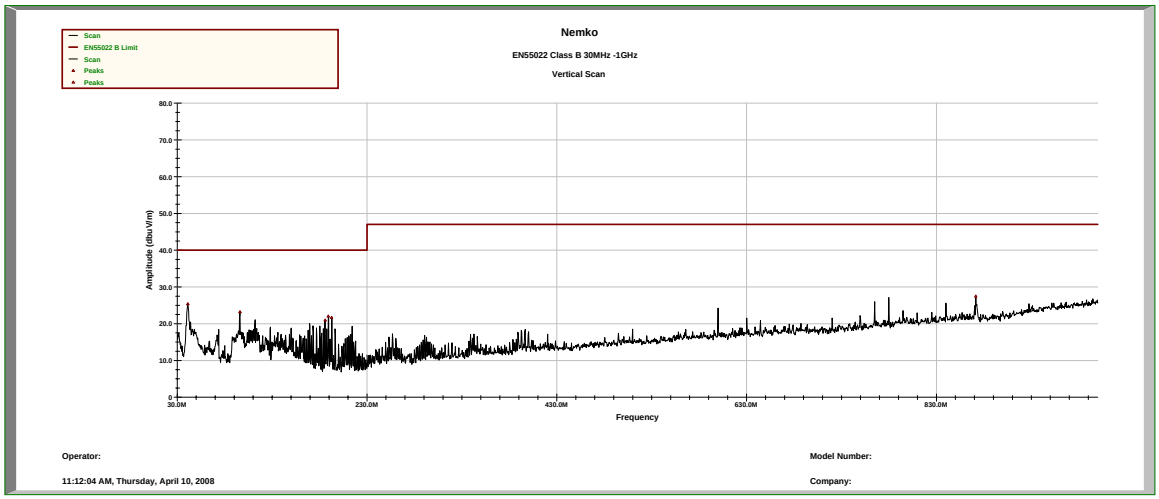
The spectrum was searched from 30 MHz to 1000 MHz.

Test Data – Receiver Spurious Emissions

Horizontal



Vertical



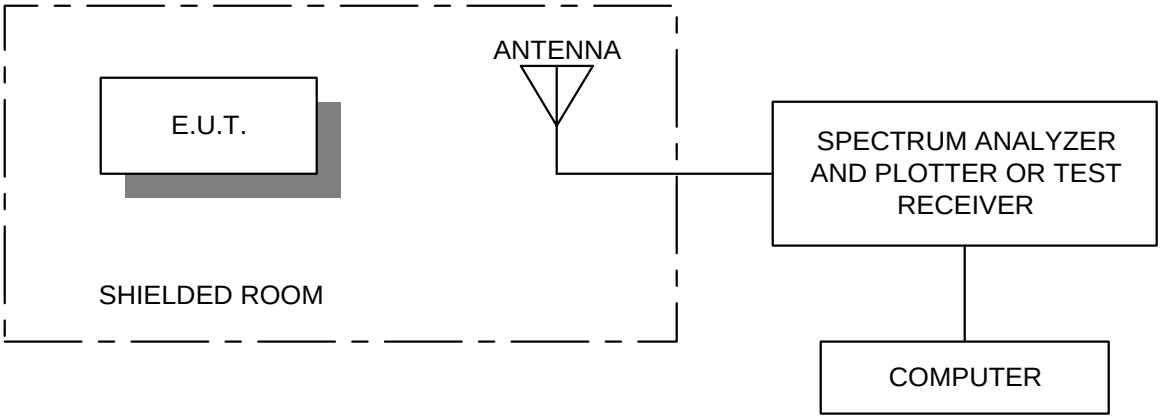
Section 7. Test Equipment List

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1733	Active Loop	EMCO 6507	45939	05/04/07	05/03/08
1484	Cable	Storm PR90-010-072	N/A	05/02/07	05/01/08
1485	Cable	Storm PR90-010-216	N/A	05/02/07	05/01/08
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	01/24/07	01/24/09
1763	Bilog Antenna	Schaffner CBL 6111D	22926	09/21/07	09/20/08
1762	Cable	Nemko USA, Inc. None	None	12/07/07	12/07/08
1025	PREAMP, 25dB	Nemko USA, Inc. LNA25	399	12/07/07	12/06/08
1258	LISN	EMCO 1205	-	7/22/08	7/22/09
1076	Spectrum Analyzer	HP 8566B	-	6/1/09	6/1/10
1283	Spectrum Analyzer Display	HP 8566B	-	6/1/09	6/1/10
1284	QPk Adapter	HP	-	6/3/09	6/3/10

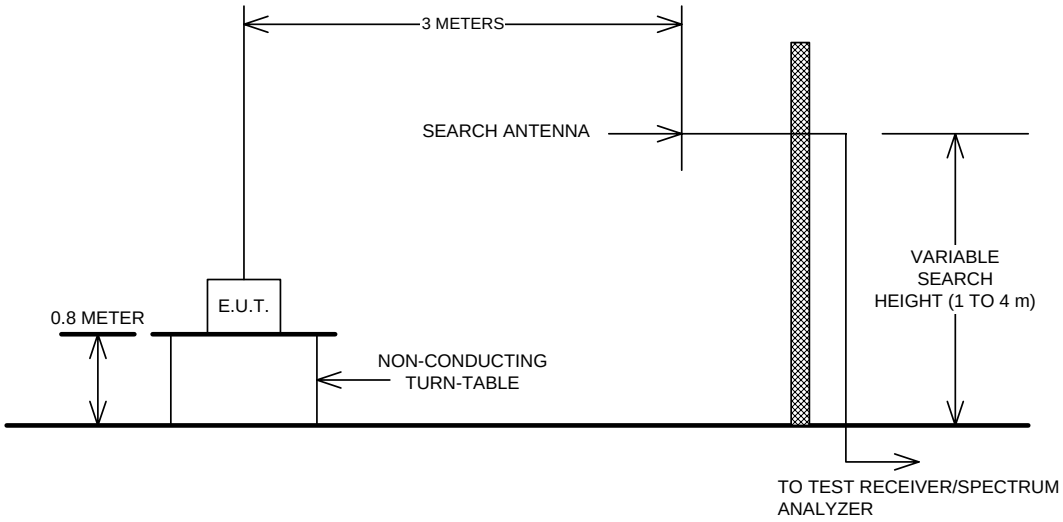
ANNEX A

TEST DIAGRAMS

Radiated Prescan



Test Site For Radiated Emissions



ANNEX B

TEST DETAILS

NAME OF TEST: Radiated Emissions PARA. NO.: 15.209

Minimum Standard: §15.207 Radiated limits. (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009-0.490	2400F (kHz)	300
0.490-1.705	24000F (kHz)	30
1.705-30.0	30	30
30-88	100[1]	3
88-216	150[2]	3
216-960	200[3]	3
Above 960	500	3

(b) In the emission table above, the tighter limit applies at the band edges.

(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other sections within this part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.

(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

(e) The provisions in §§15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

(f) In accordance with §15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in §15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in §15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest

fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in §15.109 that are applicable to the incorporated digital device.

(g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.