



Test Report: 6W64885

Applicant: Angelcare
550 Chemin du Golf, Suite 202
Nun's Island, Quebec
H3E 1A8

Apparatus: AC301 Movement & Sound Monitor

FCC ID: N7TAC301

In Accordance With: FCC Part 15 Subpart C, 15.249
Operation in the 902-928MHz, 2400 - 2483.5 MHz,
5725-5850MHz and 24.0-24.25 GHz

Tested By: Nemko Canada Inc.
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Ottawa, Ontario
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Authorized By: 
Jin Xu, Wireless Specialist

Date: July 13, 2006

Total Number of Pages: 20

Report Summary

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15, Subpart C. 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:	AC301 Movement & Sound Monitor
Specification:	FCC Part 15 Subpart C, 15.249
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.

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Section 1 : Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:

AC301 Movement and Sound Monitor – Nursery Unit

1.2 Samples Submitted for Assessment

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

Sample No.	Description	Serial No.
5	Angelcare Class 2 power supply M/N DC0750150	
8	Angelcare nursery unit (B1) MN AC301R	
9	Angelcare nursery unit (B2) MN AC301R	

The first samples were received on: April 12, 2006

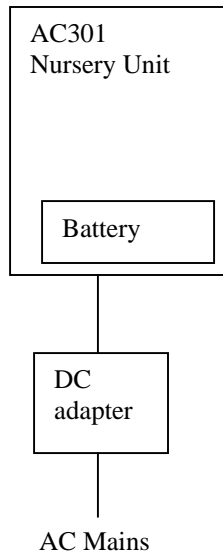
1.3 Theory of Operation

The EUT is a baby monitor system, which consists of a nursery unit, which transmits the sounds to the parent unit, which receives them.

1.4 Technical Specifications of the EUT

Manufacturer:	Artcom
Operating Frequency:	2400.2 – 2404MHz
Emission Designator	F1D
Modulation:	FM
Antenna Data:	Integral
Power Source:	4 x ‘AA’ batteries or 120VAC adapter

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 C, 15.249

Operation in the 902-928MHz, 2400 - 2483.5 MHz, 5725-5850MHz
and 24.0-24.25 GHz bands

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.	Next Cal.
LISN	EMCO	4825/2	FA001545	Jan. 30/07
Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 16/07
Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 16/07
Transient Limiter	Hewlett-Packard	1194 7A	FA000975	May 18/07
Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	Sept. 15/06
Horn Antenna #1	EMCO	3115	FA000649	Jan. 12/07
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 29/06
Biconical (2) Antenna	EMCO	3109	FA000904	Aug. 26/06
1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	July 14/06
2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	July 14/06
4.0 – 8.0 GHz Amplifier	JCA	48-600	FA001497	July 14/06
5.0 – 18.0 GHz Amplifier	NARDA	DWT-186N23U40	FA001409	COU
18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU
18.0 – 40.0GHz Horn Antenna	EMCO	3116	FA001847	May 3/07

COU – Calibrate on Use

NCR – No Calibration Required

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.

3.5 Additional Observations

There were no additional observations made during this assessment.

Section 4 : Results Summary

This section contains the following:

FCC Part 15 Subpart C : 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
15.207(a)	Powerline Conducted Emissions	Y	PASS
15.209(a)	Radiated Emissions within Restricted Bands	Y	PASS
15.215(c)	20dB Bandwidth	Y	PASS
15.249(a)	Radiated emissions not in Restricted Bands	Y	PASS
15.249(b)	Fixed Point-to-Point operation in the 24.0-24.25 GHz Band	N	
15.249(d)	Spurious emissions (except Harmonics)	Y	PASS

Notes:

Appendix A : Test Results

Clause 15.207(a) Powerline 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:

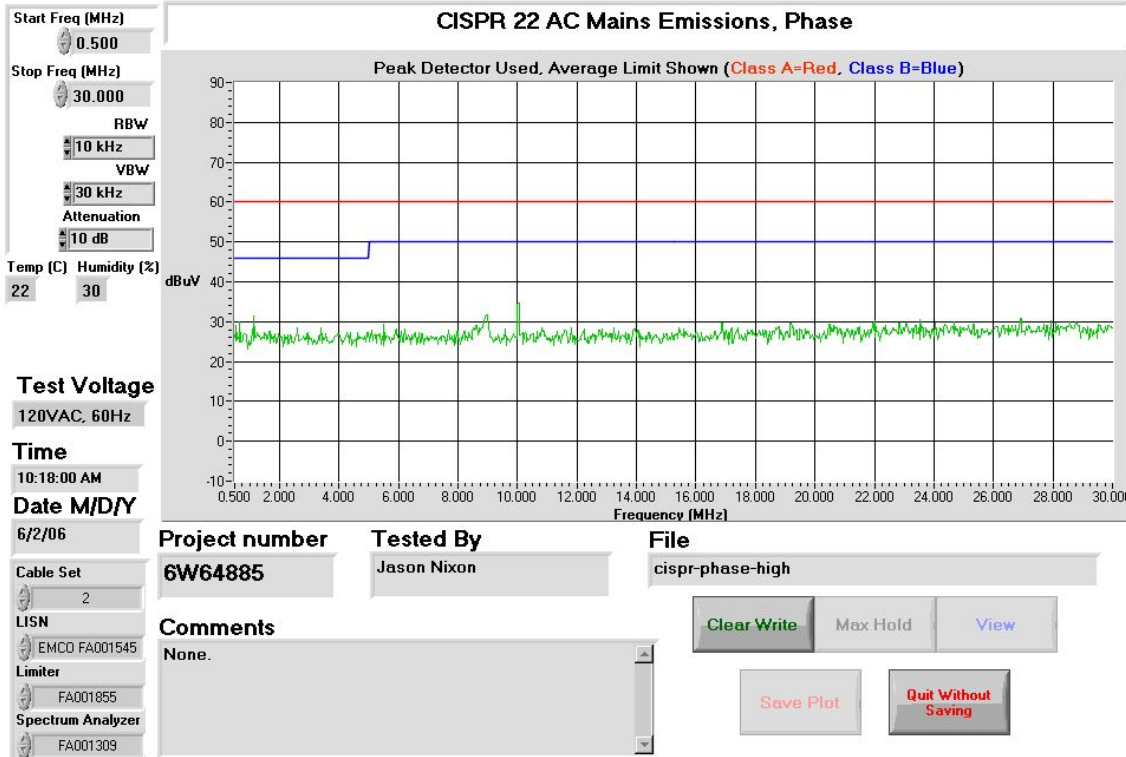
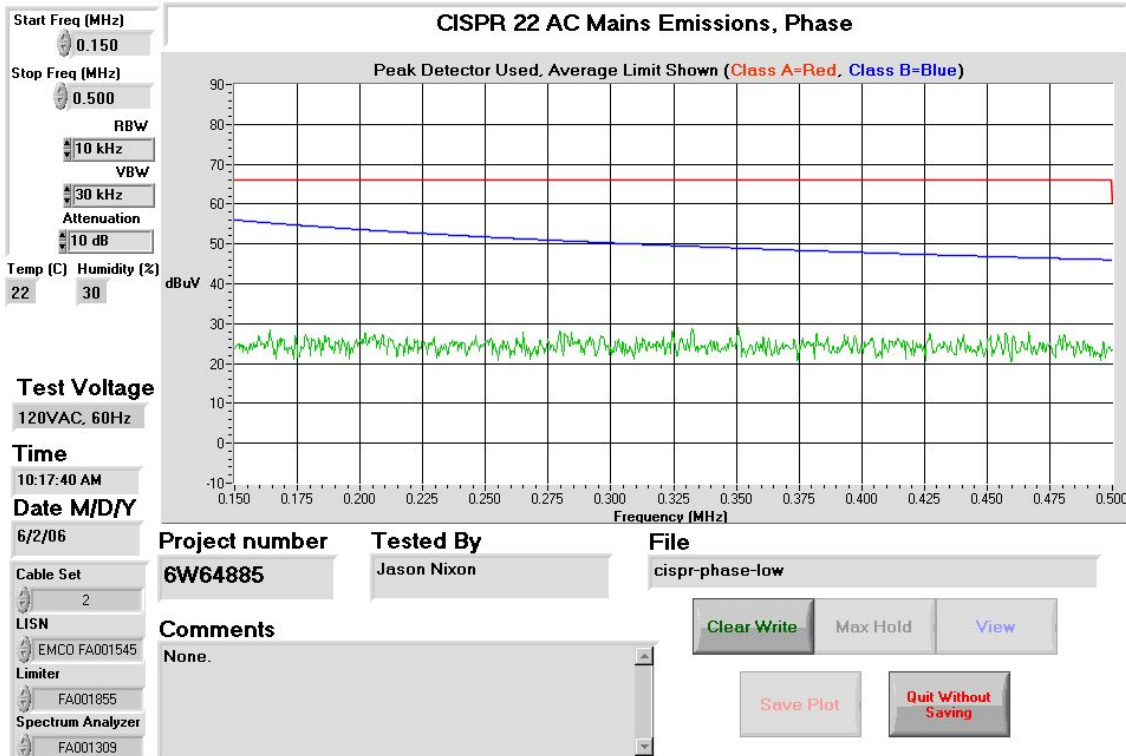
Sample Number:	9	Temperature (°C):	22
Date:	June 2, 2006	Humidity (%):	30
Modification State:	0	Tester:	Jason Nixon
		Laboratory:	Shielded Room

Test Results: See Attached Plots.

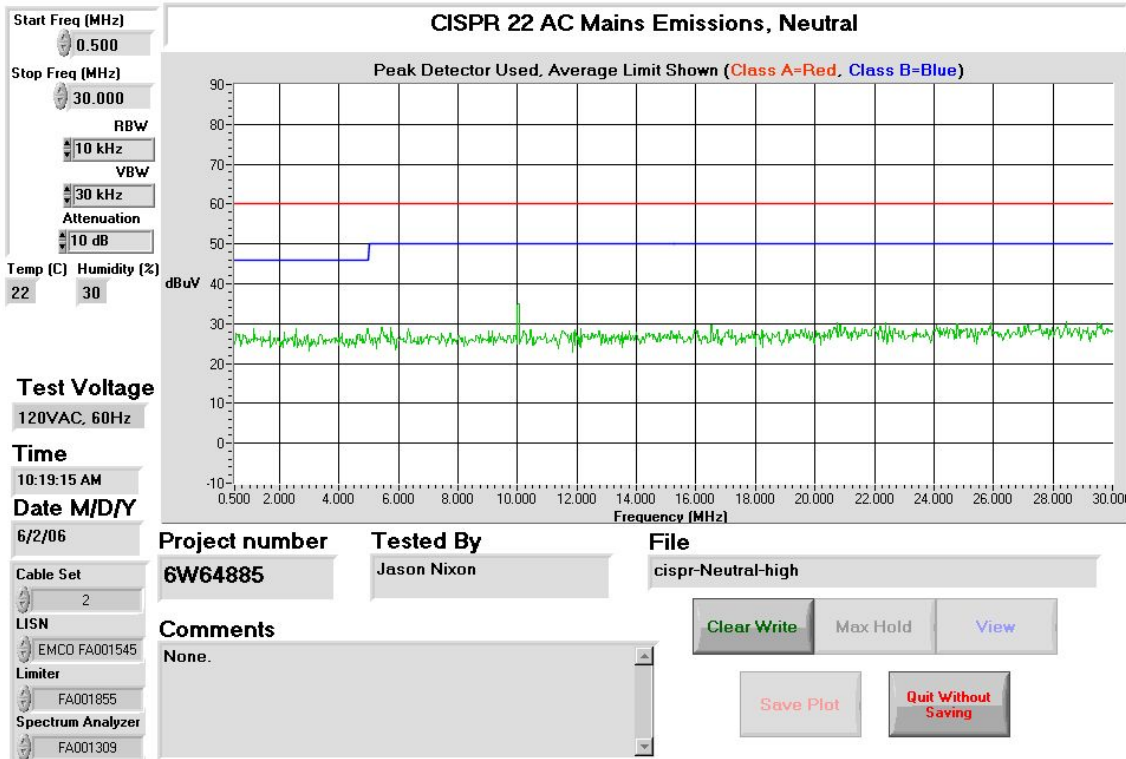
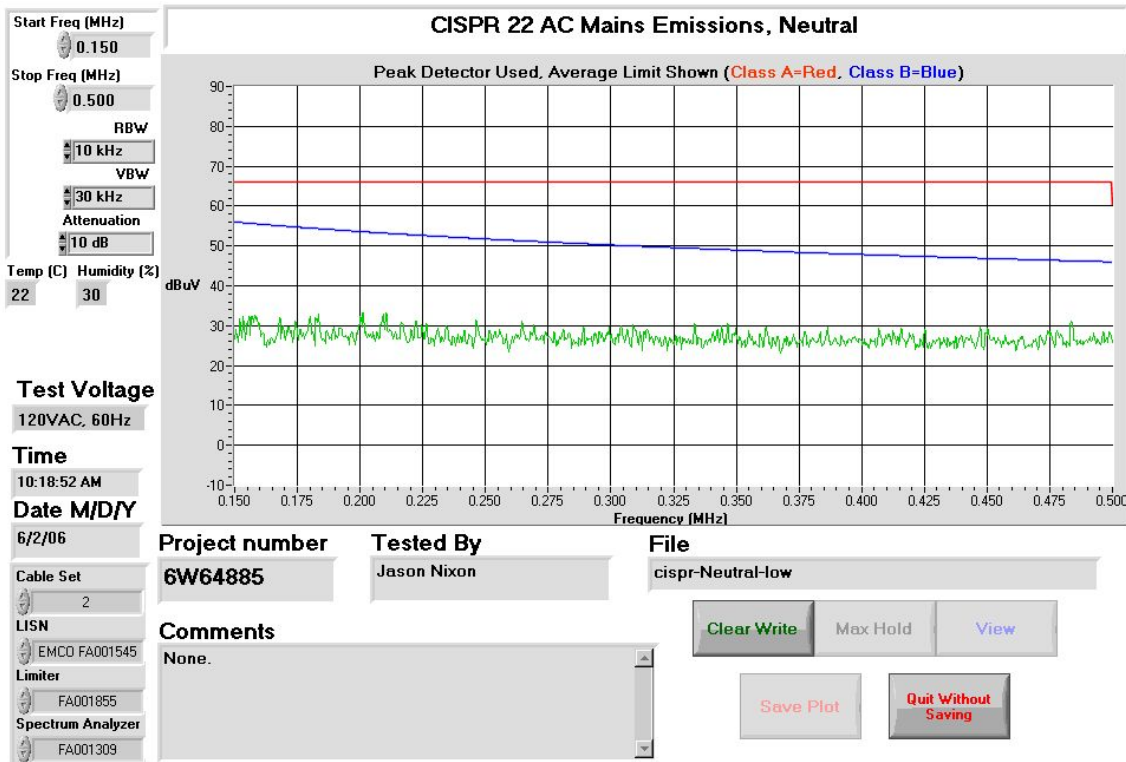
Additional Observations:

All plots were performed using a Peak detector and have been corrected for the LISN, cable and transient limiter losses to show compliance with the Average limit.

Phase Conductor



Neutral Conductor



Clause 15.209(a) Radiated Emissions within Restricted Bands

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 (microvoltmeter)	Measurement Distance (meters)
0.009-0.490	2400/F (kHz)	300
0.490-1.705	24000/F (kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

Test Conditions:

Sample Number:	9	Temperature (°C):	26
Date:	May 29, 2006	Humidity (%):	33
Modification State:	0	Tester:	Jason Nixon
		Laboratory:	OATS

Test Results:

No emissions were detected within 20dB below the limit.

Additional Observations:

The Spectrum was searched from 30MHz to 25GHz.

These results apply to emissions found in the Restricted bands defined in FCC Part 15 Subpart C, 15.205.

The EUT was measured on three orthogonal axis.

Clause 15.215(c) 20dB Bandwidth

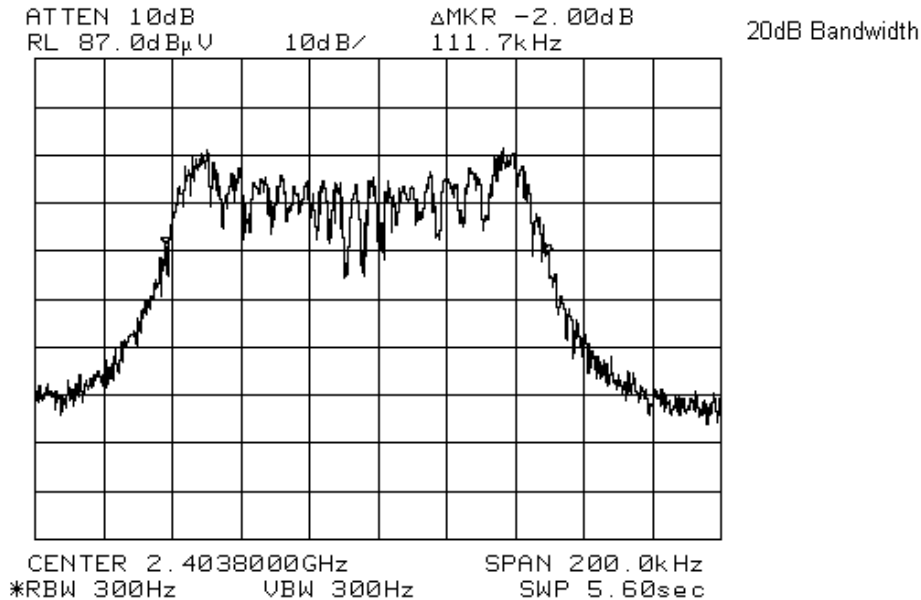
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated. The requirement to contain the designated bandwidth of the emission within the specified frequency band includes the effects from frequency sweeping, frequency hopping and other modulation techniques that may be employed as well as the frequency stability of the transmitter over expected variations in temperature and supply voltage. If the frequency stability is not specified in the regulations, it is recommended that the fundamental emission be kept within at least the central 80% of the permitted band in order to minimize the possibility of out-of-band operation.

Test Conditions:

Sample Number:	9	Temperature (°C):	22
Date:	June 2, 2006	Humidity (%):	30
Modification State:	0	Tester:	Jason Nixon
		Laboratory:	Wireless

Test Results: See Attached Plot.

20dB Bandwidth:



Clause 15.249(a) Radiated emissions not in Restricted Bands

Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency	Field Strength of Fundamental (millivolts/meter)	Field Strength of Harmonics (microvolts/meter)
902-928 MHz	50	500
2400-2483.5 MHz	50	500
5725-5875 MHz	50	500
24.0-24.25 GHz	250	2500

Test Conditions:

Sample Number:	9	Temperature (°C):	26
Date:	May 29, 2006	Humidity (%):	33
Modification State:	0	Tester:	Jason Nixon
		Laboratory:	OATS

Test Results: See attached Table

Additional Observations:

The Spectrum was searched from 30MHz to 25GHz.

The EUT was measured on three orthogonal axis. The supply voltage was varied by +/-15% and no variation in field strength was observed.

All measurements were performed at 3m with a Peak detector with a 1MHz RBW/VBW.

Freq. (MHz)	Ant	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain (dB)	Cable Loss (dB)	Level (dBµV)	Limit (dBµV)	Margin (dB)
2400.2000	Horn1	V	55.8	28.8	N/A	4.9	89.5	94.0	4.5
2400.2000	Horn1	H	55.8	28.8	N/A	4.9	89.5	94.0	4.5
2402.4000	Horn1	V	56.5	28.8	N/A	4.9	90.2	94.0	3.8
2402.4000	Horn1	H	55.8	28.8	N/A	4.9	89.5	94.0	4.5
2403.8000	Horn1	V	56.2	28.8	N/A	4.9	89.9	94.0	4.1
2403.8000	Horn1	H	57.0	28.8	N/A	4.9	90.7	94.0	3.3

Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole

Clause 15.249(d) Spurious emissions (except Harmonics)

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 §15.209, whichever is the lesser attenuation.

Test Conditions:

Sample Number:	9	Temperature (°C):	25
Date:	June 5, 2006	Humidity (%):	44
Modification State:	0	Tester:	Jason Nixon
		Laboratory:	OATS

Test Results:

Freq. (MHz)	Ant	Pol. V/H	RCVD Signal (dBμV)	Ant. Factor/ (dB)	Amp. Gain (dB)	Cable Loss (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)
1200.1330	Horn1	V	64.5	25.0	48.3	3.2	44.4	54.0	9.6
1200.1330	Horn1	H	58.0	25.0	48.3	3.2	37.9	54.0	16.1

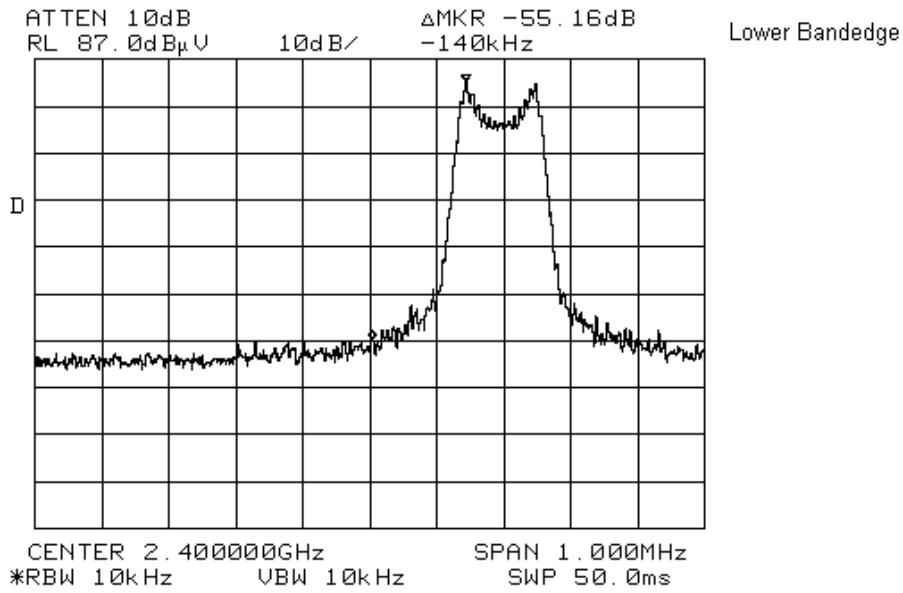
Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole
 Note 2: Positive Peak detector used

Additional Observations:

The spectrum was searched from 30MHz to 25GHz.

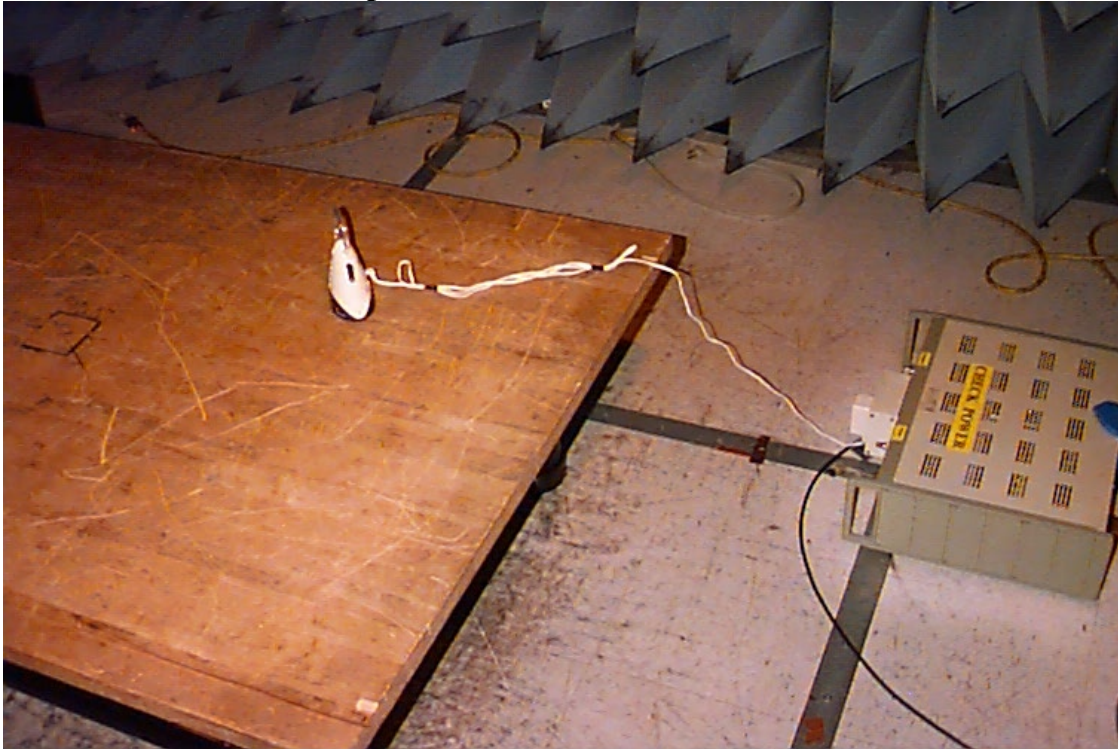
All measurements were performed at 3m using a Peak detector with 100KHz RBW/VBW below 1GHz and a 1MHz RBW/VBW above 1GHz.

Lower Bandedge



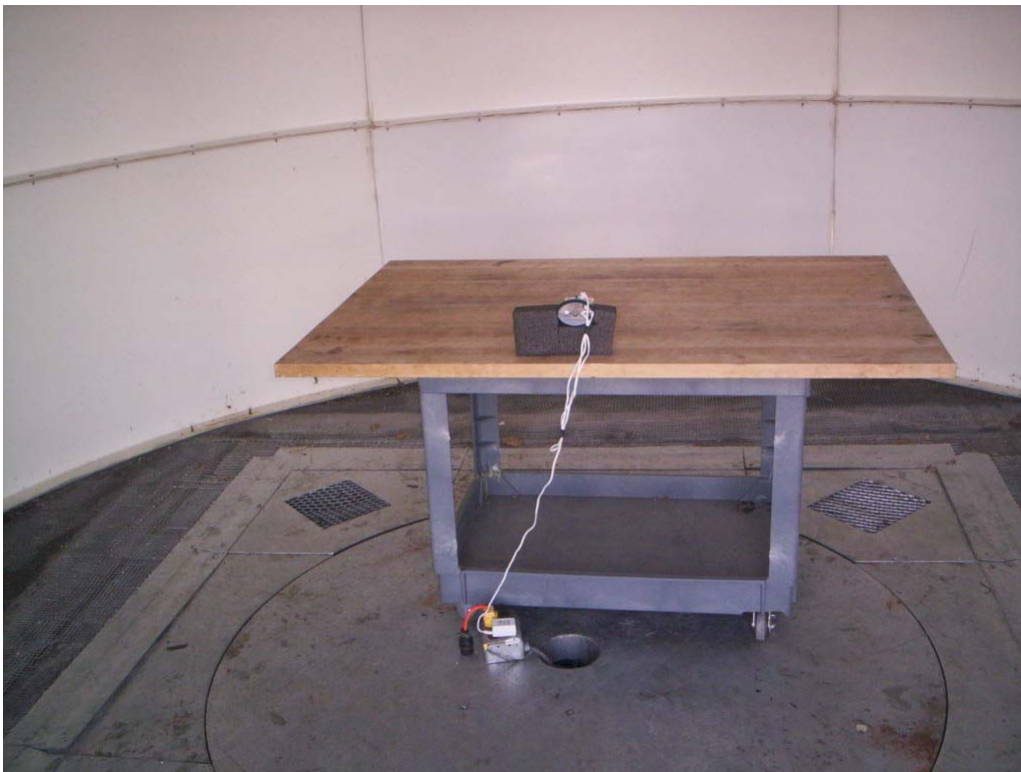
Appendix B : Setup Photographs

Conducted Emissions Setup:



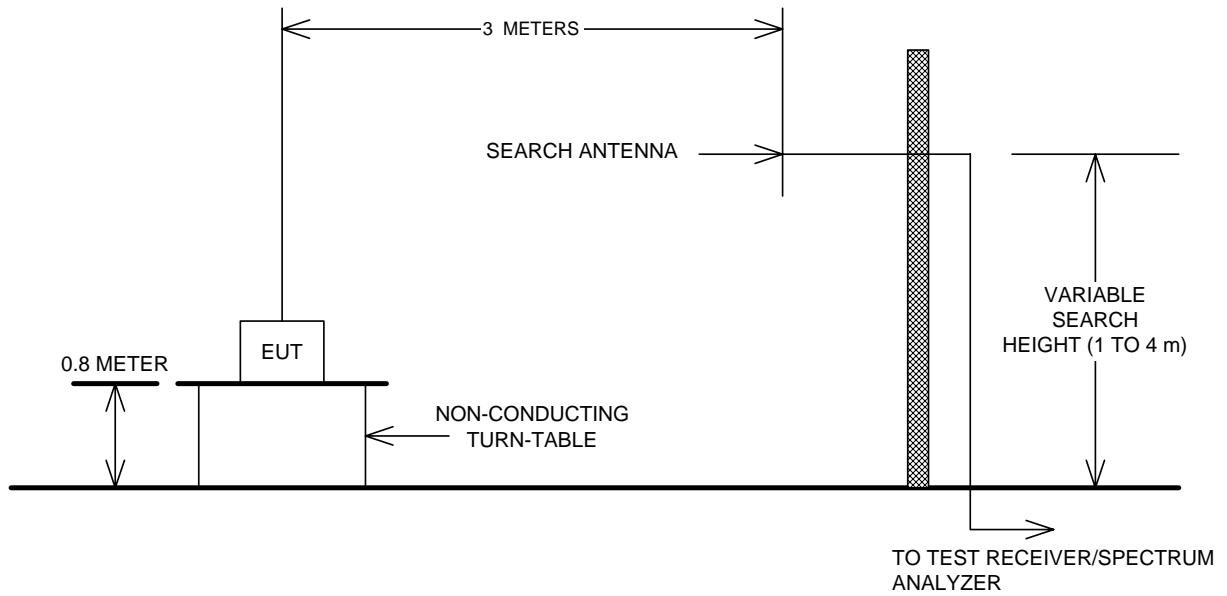
Spurious Emissions Setup:





Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions



Conducted Emissions

