Standards Council of Canada
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Scope of Accreditation 75

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Laboratoire accrédité
Portée d'accréditation 75

TM

Test Report:	6W64837
Applicant:	VTECH Telecommunications Ltd. 23/F. Tai Ping Industrial Center, Block 1 57 Ting Kok Road Tai Po, N.T. Hong Kong, China
Apparatus:	ia5823 Handset
FCC ID:	EW780-5735-03
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. 303 River Road Ottawa, Ontario K1V 1H2
Authorized By:	Jin Xu, Wireless Specialist
Date:	April 26, 2006
Total Number of Pages:	23

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:	ia5823 Handset
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.

TABLE OF CONTENTS

Section 1 : Equipment Under Test

1.1 Product Identification

The Equipment Under Test was identified as follows:

ia5823 Handset

1.2 Samples Submitted for Assessment

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

Sample No.	Description	Serial No.
1	ia5823 Base	None
2	ia5823 Handset	None
3	Vtech single base charger	None
4	Power supply M/N U090015D12	None
5	Power supply M/N 280903OO3CO	None

The first samples were received on: April 10, 2006

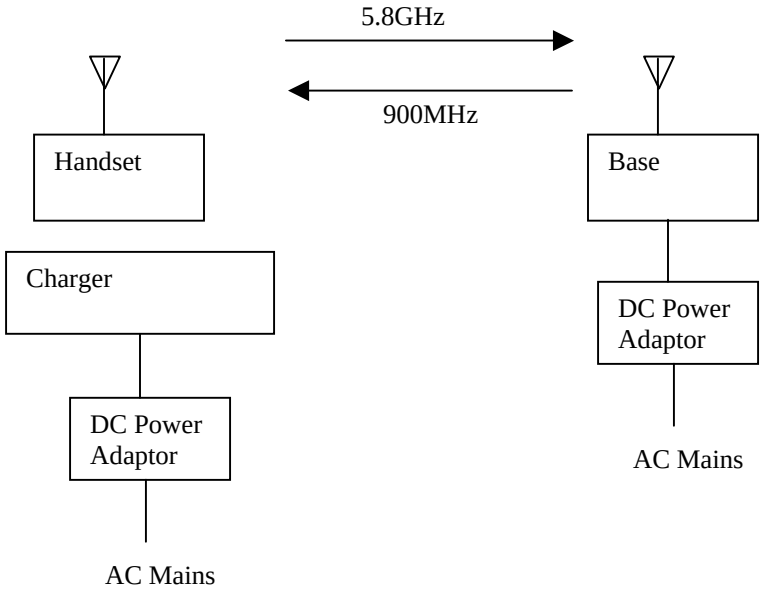
1.3 Theory of Operation

The ia5823 Handset is part of a ia5823 phone. The ia5823 Handset transmits to the Base in the 5.8GHz band and receives from the Base in the 900MHz band.

1.4 Technical Specifications of the EUT

Manufacturer:	Vtech (Dongguan) Electronics and Communications Ltd.
Operating Frequency:	Tx: 5863.8 to 5872.5MHz
	Rx: 912.75 to 917.10MHz
Emission Designator	F1D
Modulation:	Voice: FM with 30kHz nominal Deviation Data: FSK at 1000bps
Antenna Data:	Integral
Power Source:	3.6VDC battery

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 ^{o}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.
Spectrum Analyzer	Rohde & Schwarz	FSP	FA001920	March 17/07
LISN	EMCO	4825/2	FA001545	Jan. 30/07
Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	May 18/06
Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	May 18/06
International Power Supply	California Inst.	1001WP	FA000995	Jan. 11/07
Transient Limiter	Hewlett-Packard	1194 7A	FA001855	June 9/06
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
26 – 40.0 GHz Amplifier	NARDA	DBL-2640N610	FA001556	COU
Horn Antenna #2	EMCO	3115	FA000825	Dec. 16/06
Horn Antenna #1	EMCO	3115	FA000649	Jan. 12/07
18.0 – 40.0GHz Horn Antenna	EMCO	3116	FA001847	April 25/06
Biconical (1) Antenna	EMCO	3109	FA000805	April 22/06
Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 29/06

COU – Cal On Use

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
15.31(e)	Variation of power supply	N	
15.215(c)	20dB Bandwidth	Y	PASS
15.207(a)	Powerline Conducted Emissions	Y	PASS
15.209(a)	Radiated Emissions within Restricted Bands	Y	PASS
15.249(a)	Radiated emissions	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 15.215(c) 20dB Bandwidth

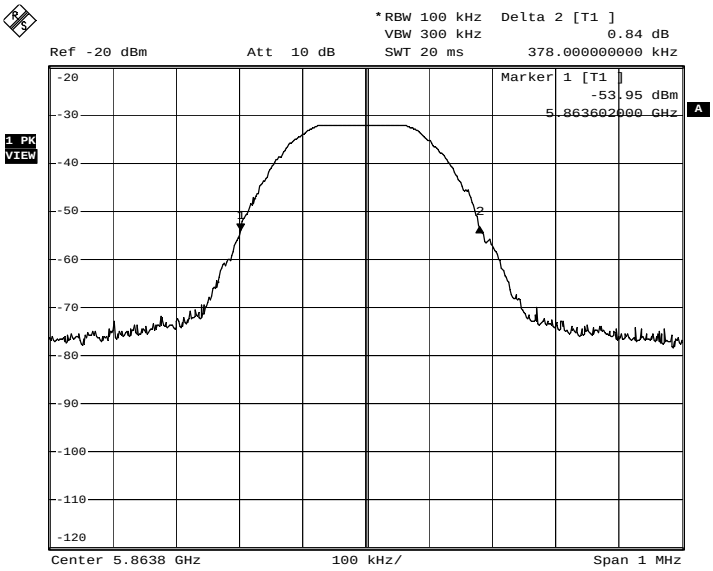
Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific 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 a 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:	2	**Temperature:**	21
Date:	April 12, 2006	**Humidity:**	11
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Wireless

Test Results: See Attached Plots.

20dB Bandwidth:



20dB Bandwdith

Date: 12.APR.2006 17:39:00

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:	2	**Temperature:**	22
Date:	April 12, 2006	**Humidity:**	30
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	Shielded Room

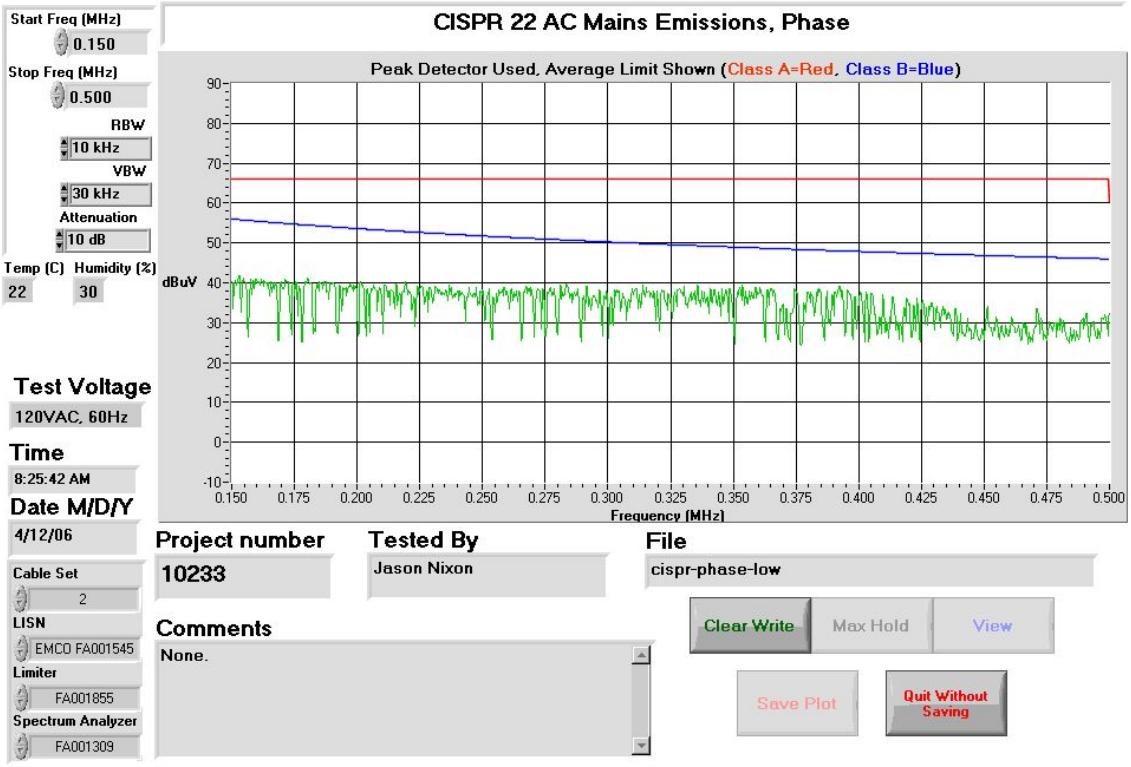
Test Results: See Attached Plots.

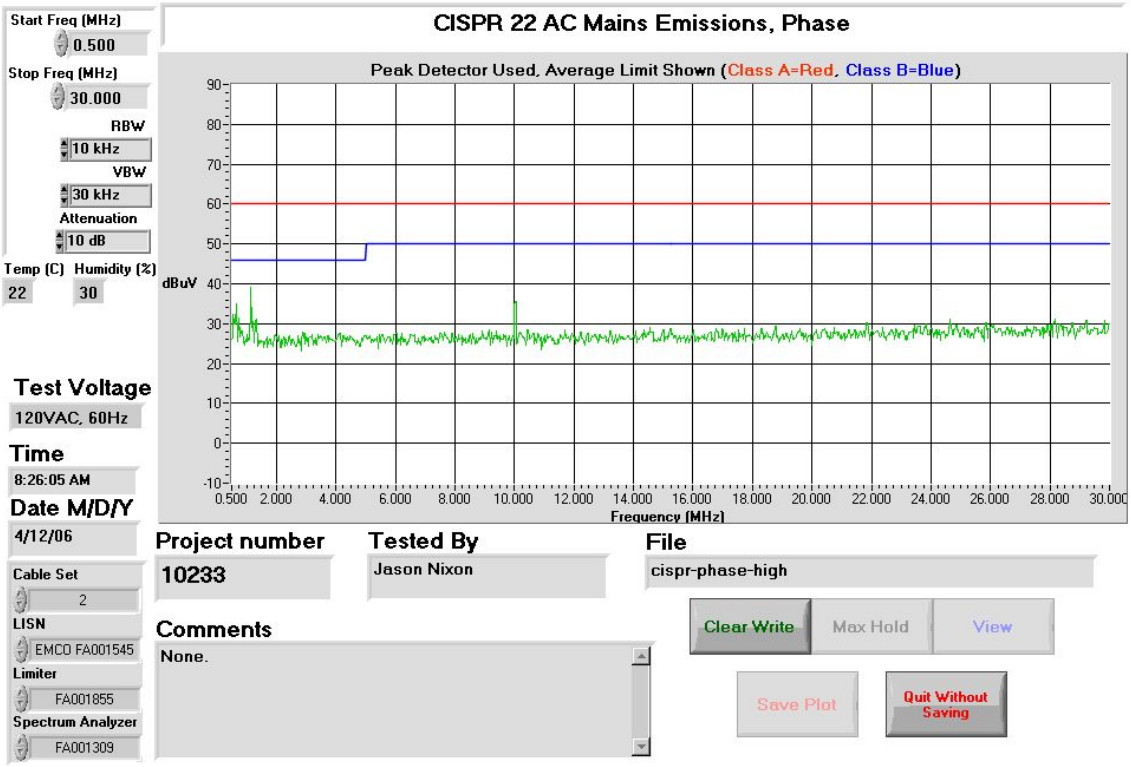
Additional Observations:

All plots were performed using a Peak detector and compared to the Average limit.

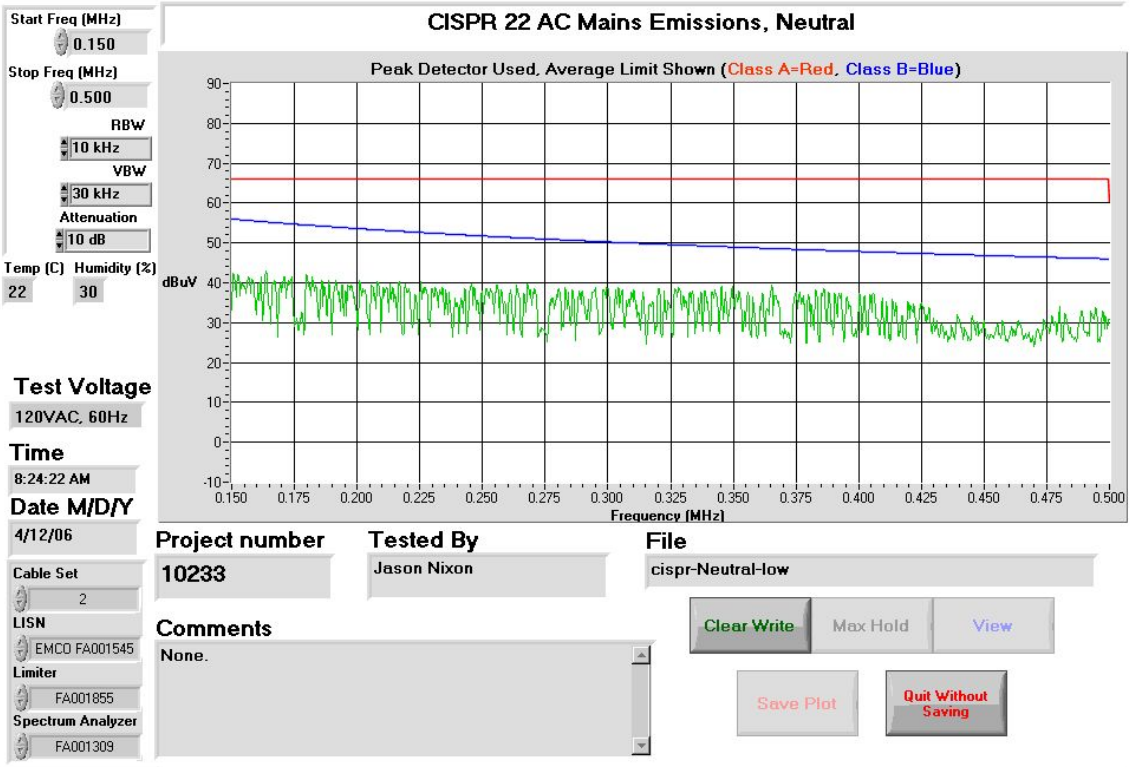
All plots include cable, transient limiter and LISN losses to show compliance.

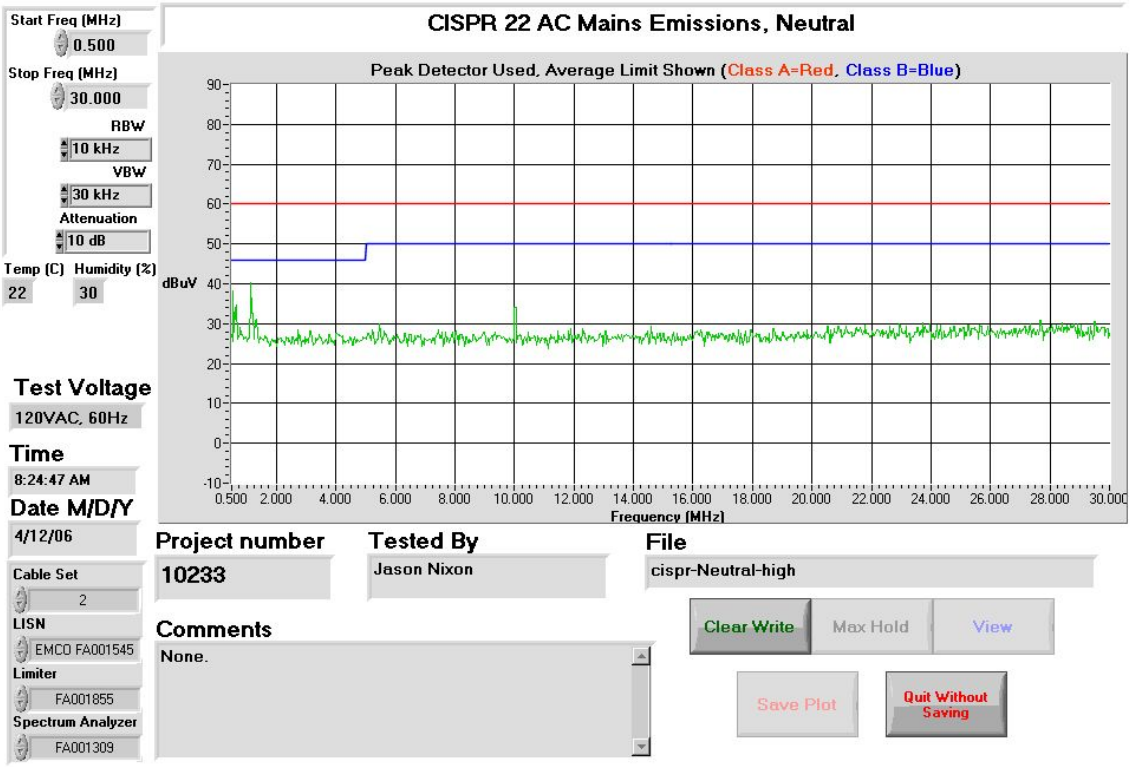
Phase Conductor – Charger



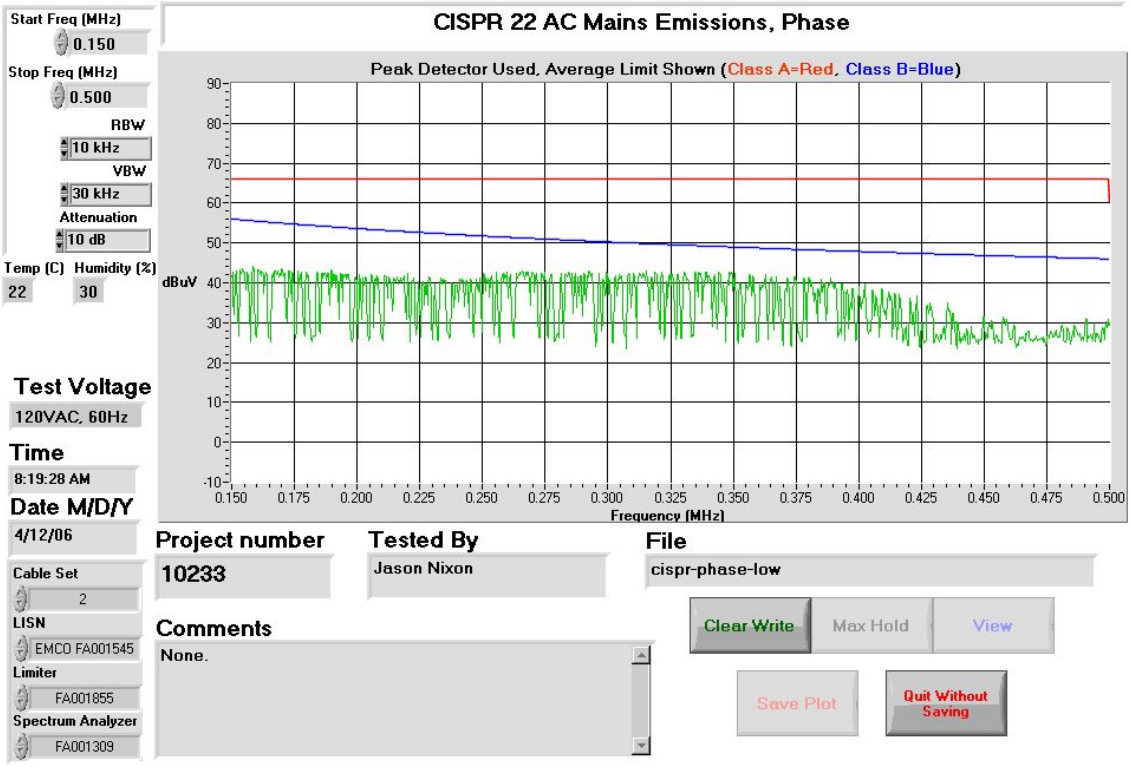


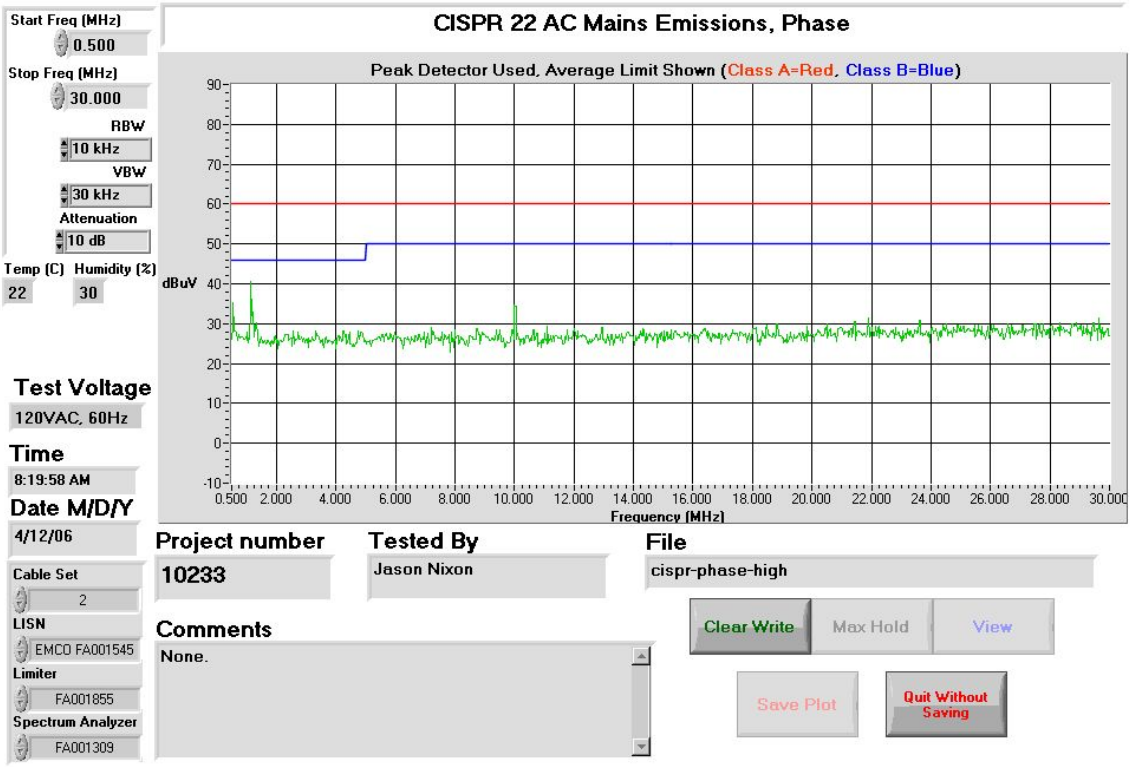
Neutral Conductor – Charger



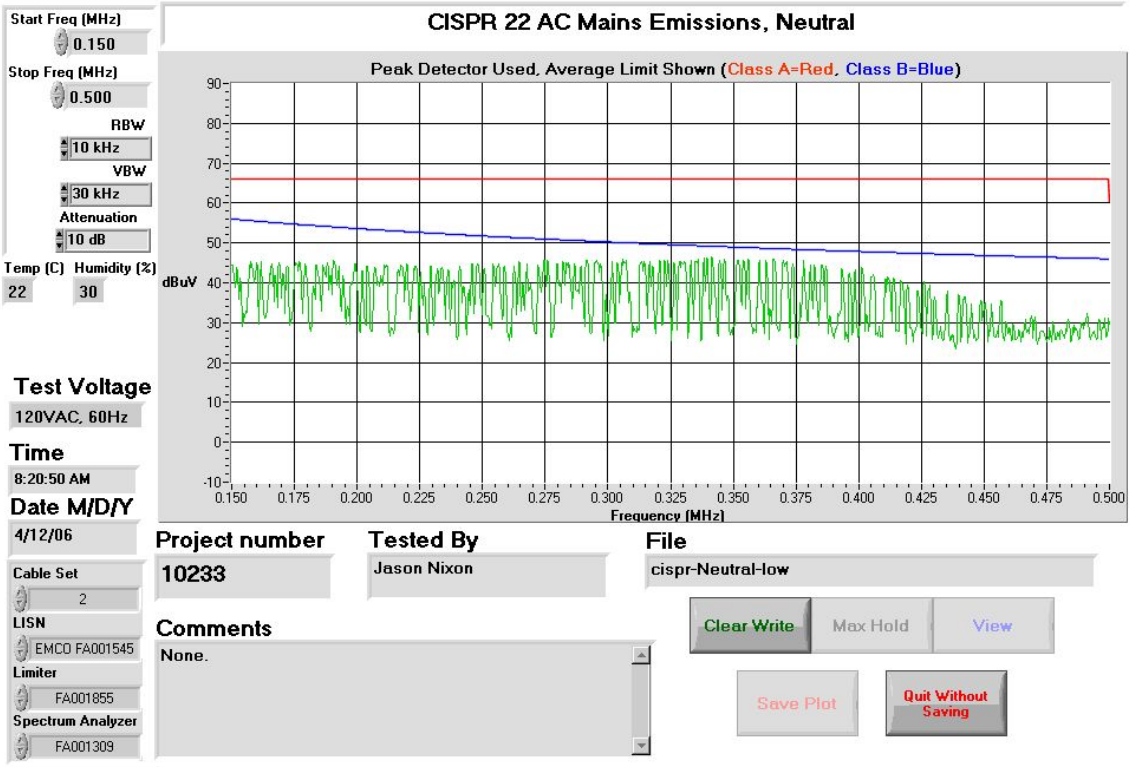


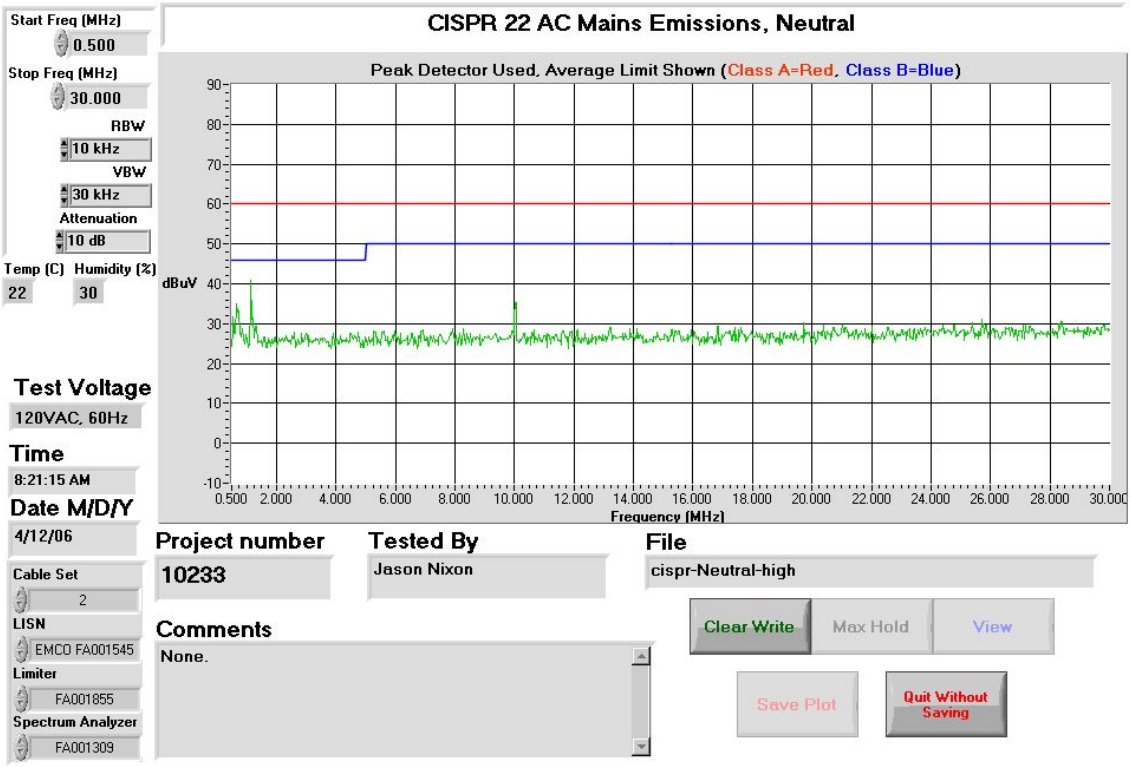
Phase Conductor – Base





Neutral Conductor – Base





Clause 15.249(a) Radiated emissions

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:	2	**Temperature:**	21
Date:	April 12, 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 40GHz.

The EUT was measured on three orthogonal axis. The EUT was tested with fully charged batteries.

Measurements were performed at 3m and at 1m. All measurements performed at 1m have been corrected to 3m.

Measurements were performed using a 1MHz RBW/VBW Peak detector and a 1MHz RBW/10Hz VBW Average Detector.

Level = RCVD Signal + Ant Factor + Amp Gain/Cable Loss + Distance Corr

Freq. (MHz)	Ant	Pol. V/H	RCVD Signal (dBµV)	Ant. Factor (dB)	Amp. Gain/ Cable Loss (dB)	Distance Corr. (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
CH00										
5863.8000	Horn1	V	43.8	34.6	9.7	N/A	88.2	94.0	5.8	Average
5863.8000	Horn1	H	46.8	34.7	9.7	N/A	91.3	94.0	2.7	Average
5863.8000	Horn1	V	48.8	34.6	9.7	N/A	93.2	114.0	20.8	Peak
5863.8000	Horn1	H	50.3	34.7	9.7	N/A	94.8	114.0	19.2	Peak
11727.600	Horn2	V	44.5	39.5	-36.3	9.5	38.2	54	15.8	Average
11727.600	Horn2	H	52.5	39.3	-36.3	9.5	46.0	54	8.0	Average
11727.600	Horn2	V	53.2	39.5	-36.3	9.5	46.8	74	27.2	Peak
11727.600	Horn2	H	56.5	39.3	-36.3	9.5	50.0	74	24.0	Peak
17591.400	Horn2	V	36.3	45.1	-34.7	9.5	37.3	54	16.7	Average
17591.400	Horn2	H	41.2	45.0	-34.7	9.5	42.0	54	12.0	Average
17591.400	Horn2	V	50.3	45.1	-34.7	9.5	51.2	74	22.8	Peak
17591.400	Horn2	H	51.0	45.0	-34.7	9.5	51.8	74	22.2	Peak
CH14										
5868.0000	Horn1	V	44.7	34.6	9.7	N/A	89.0	94.0	5.0	Average
5868.0000	Horn1	H	46.5	34.7	9.7	N/A	91.0	94.0	3.0	Average
5868.0000	Horn1	V	49.8	34.6	9.7	N/A	94.2	114.0	19.8	Peak
5868.0000	Horn1	H	50.8	34.7	9.7	N/A	95.3	114.0	18.7	Peak
11736.000	Horn2	V	45.5	39.5	-36.3	9.5	39.2	54	14.8	Average
11736.000	Horn2	H	51.7	39.3	-36.3	9.5	45.1	54	8.9	Average
11736.000	Horn2	V	53.5	39.5	-36.3	9.5	47.2	74	26.8	Peak
11736.000	Horn2	H	56.0	39.3	-36.3	9.5	49.5	74	24.5	Peak
17604.000	Horn2	V	36.7	45.1	-34.7	9.5	37.6	54	16.4	Average
17604.000	Horn2	H	42.2	45.0	-34.7	9.5	43.0	54	11.0	Average
17604.000	Horn2	V	49.8	45.1	-34.7	9.5	50.8	74	23.2	Peak
17604.000	Horn2	H	51.5	45.0	-34.7	9.5	52.4	74	21.6	Peak
CH29										
5872.5000	Horn1	V	44.3	34.6	9.7	N/A	88.7	94.0	5.3	Average
5872.5000	Horn1	H	46.5	34.7	9.7	N/A	91.0	94.0	3.0	Average
5872.5000	Horn1	V	48.7	34.6	9.7	N/A	93.0	114.0	21.0	Peak
5872.5000	Horn1	H	51.0	34.7	9.7	N/A	95.5	114.0	18.5	Peak
11745.000	Horn2	V	43.8	39.5	-36.3	9.5	37.5	54	16.5	Average
11745.000	Horn2	H	47.3	39.3	-36.3	9.5	40.8	54	13.2	Average
11745.000	Horn2	V	52.2	39.5	-36.3	9.5	45.8	74	28.2	Peak
11745.000	Horn2	H	53.3	39.3	-36.3	9.5	46.8	74	27.2	Peak
17617.500	Horn2	V	37.2	45.2	-34.7	9.5	38.2	54	15.8	Average
17617.500	Horn2	H	37.5	45.1	-34.7	9.5	38.4	54	15.6	Average
17617.500	Horn2	V	49.9	45.2	-34.7	9.5	50.9	74	23.1	Peak
17617.500	Horn2	H	49.3	45.1	-34.7	9.5	50.2	74	23.8	Peak

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.

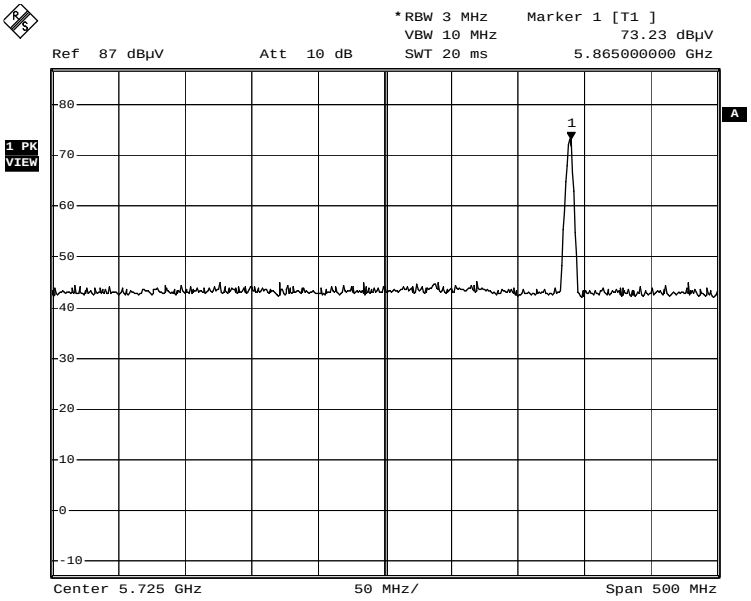
Test Conditions:

Sample Number:	2	**Temperature:**	12
Date:	April 17, 2006	**Humidity:**	47
Modification State:	0	**Tester:**	Jason Nixon
		Laboratory:	OATS

Test Results: See Attached Plots.

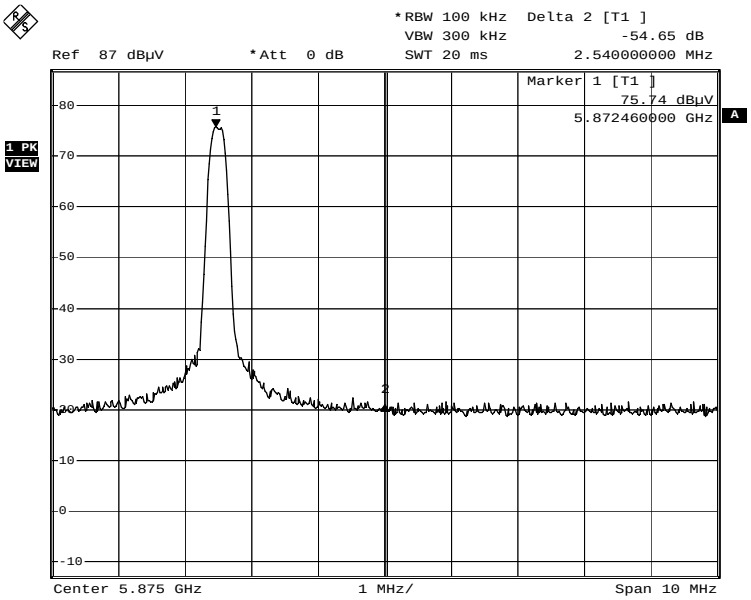
Additional Observations:

The Spectrum was searched from 30MHz to 5GHz.



Lower Bandedge

Date: 12.APR.2006 17:46:04



Upper Bandedge

Date: 26.APR.2006 20:37:30

Delta Marker method

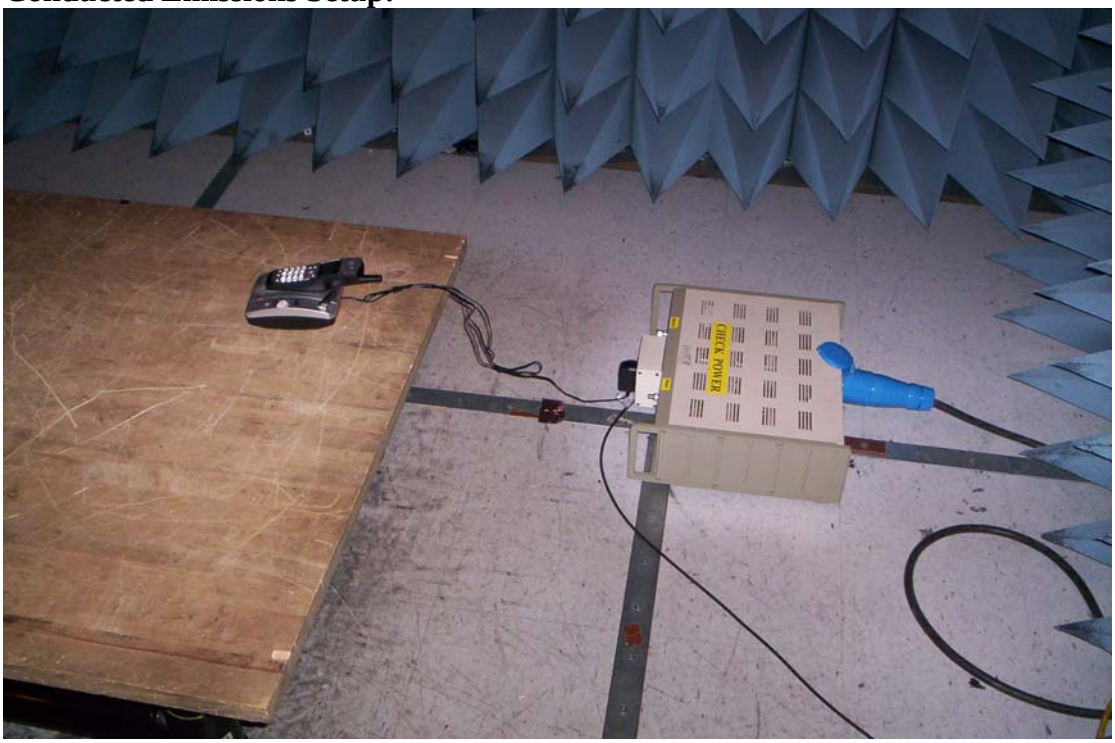
Delta marker = -54.65dB
Measurement @ high channel with 1MHz RBW = 91.0dBuV/m average, 95.5dBuV/m peak

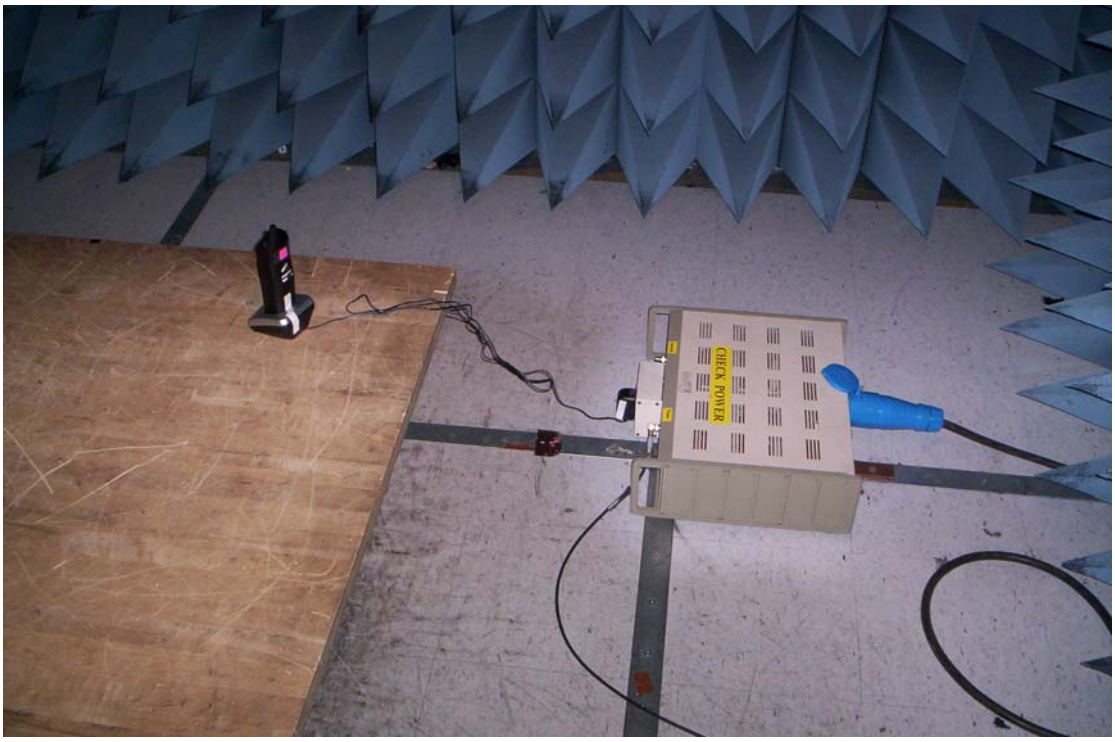
Delta Marker value at Upper Bandedge:

Average = 91.0 – 54.65 = 36.35dBuV/m
Peak = 95.5 – 54.65 = 40.85dBuV/m

Appendix B : Setup Photographs

Conducted Emissions Setup:

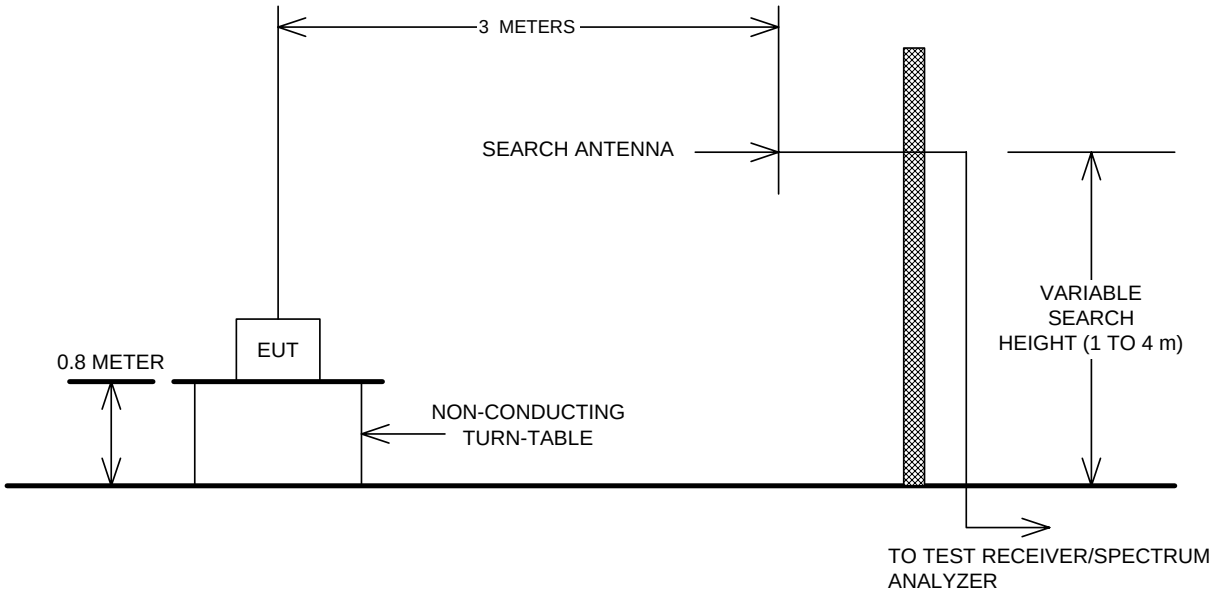




Spurious Emissions Setup:

Appendix C : Block Diagram of Test Setups

Test Site For Radiated Emissions



Conducted Emissions