



Test Report: 2W06464

Applicant: Instantel Inc.
309 Legget Drive
Kanata, Ontario
K2K 3A3

**Equipment Under Test:
(EUT)** Portal Exciter

FCC ID: ISEPEX

In Accordance With: FCC Part 15, Subpart C, 15.209
Class II Permissive Change

Tested By: Nemko Canada Inc.
303 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

A handwritten signature in blue ink, appearing to read 'Glen Westwell', is positioned above the name 'Glen Westwell, Wireless Technologist'.

Glen Westwell, Wireless Technologist

Date: 13 September 2002

Total Number of Pages: 14

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EQUIPMENT:Portal Exciter 805A1801

Section 1. Summary Of Test Results

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, Subpart C for low power devices. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated Emissions were made on an open area test site. A description of the test facility is on file with the FCC.

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



TESTED BY: _____
Kevin Carr, EMC Specialist

DATE: 13 September 2002

Nemko Canada Inc., a testing laboratory, is accredited by the Standards Council of Canada. The tests included in this report are within the scope of this accreditation. The results apply only to the samples tested.

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This report applies only to the items tested.

EQUIPMENT:Portal Exciter 805A1801

Summary Of Test Data

Name Of Test	Para. No.	Result
Powerline Conducted Emissions	15.207(a)	Complied
Radiated Emissions	15.209	Complied

Class II Permissive Change:

The EUT was tested as a Class II Permissive Change, the output voltage has been increased from 100 volts P-P to 170 volts P-P. The occupied bandwidth and field strength requirements were verified to ensure compliance with Part 15.209. In addition the power supply has changed. It was tested to ensure compliance with Part 15.207(a). The original unit was Model No. Exciter, FCC ID:ISEPEX

Test Conditions:

Indoor	Temperature: 24°C Humidity: 34%
Outdoor	Temperature: 17°C Humidity: 31%

EQUIPMENT:Portal Exciter 805A1801

Section 2. General Equipment Specification

Manufacturer:	Instantel Inc.
Model No.:	805A1801 Rev. 11
Serial No.:	301851 0032
Date Received In Laboratory:	12 Sept. 2002
Nemko Identification No.:	1
Transmit Frequency (fixed)	312kHz
Type of Modulation:	On/Off Keying
Emission designator:	40k3POD
Occupied Bandwidth (99% BW):	40.3kHz
20 dB Bandwidth:	43.3kHz

Brief Product Description

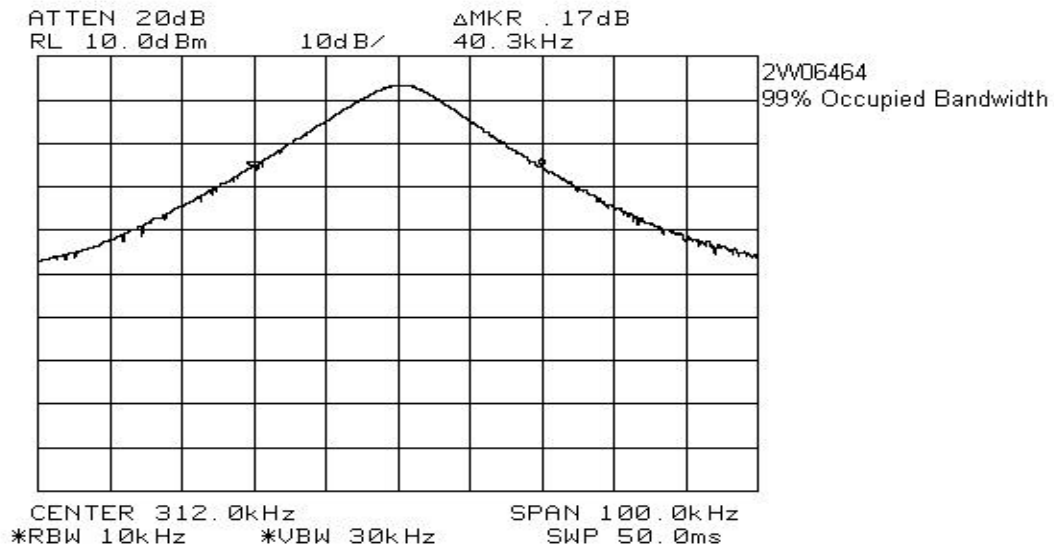
The Portal Exciter is part of the Infant Protection system to ensure infants in maternity wards are not abducted.

Theory of Operation:

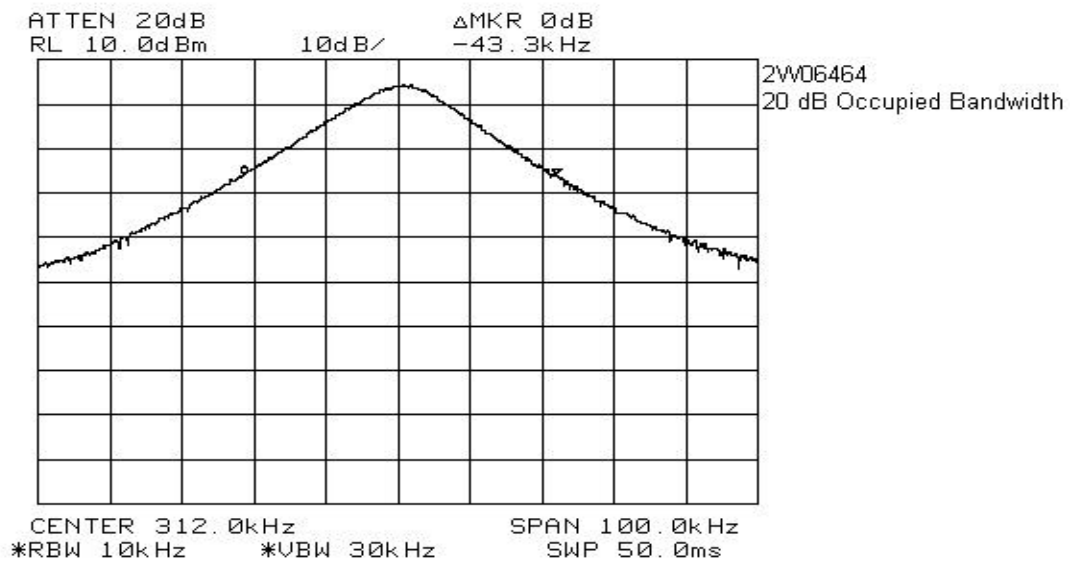
Operation of this transmitter is at 312KHz using on/off Keying. For further info see FCC ID: ISEPEX originally submitted to FCC June 1998 by KTL.

EQUIPMENT:Portal Exciter 805A1801

99% Occupied Bandwidth



20dB Occupied Bandwidth



*EQUIPMENT:Portal Exciter 805A1801***Section 3. Powerline Conducted Emissions****Para. No.: 15.207**

Test Performed By: Kevin Carr	Date of Test: 12 Sept. 2002
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Minimum Standard:

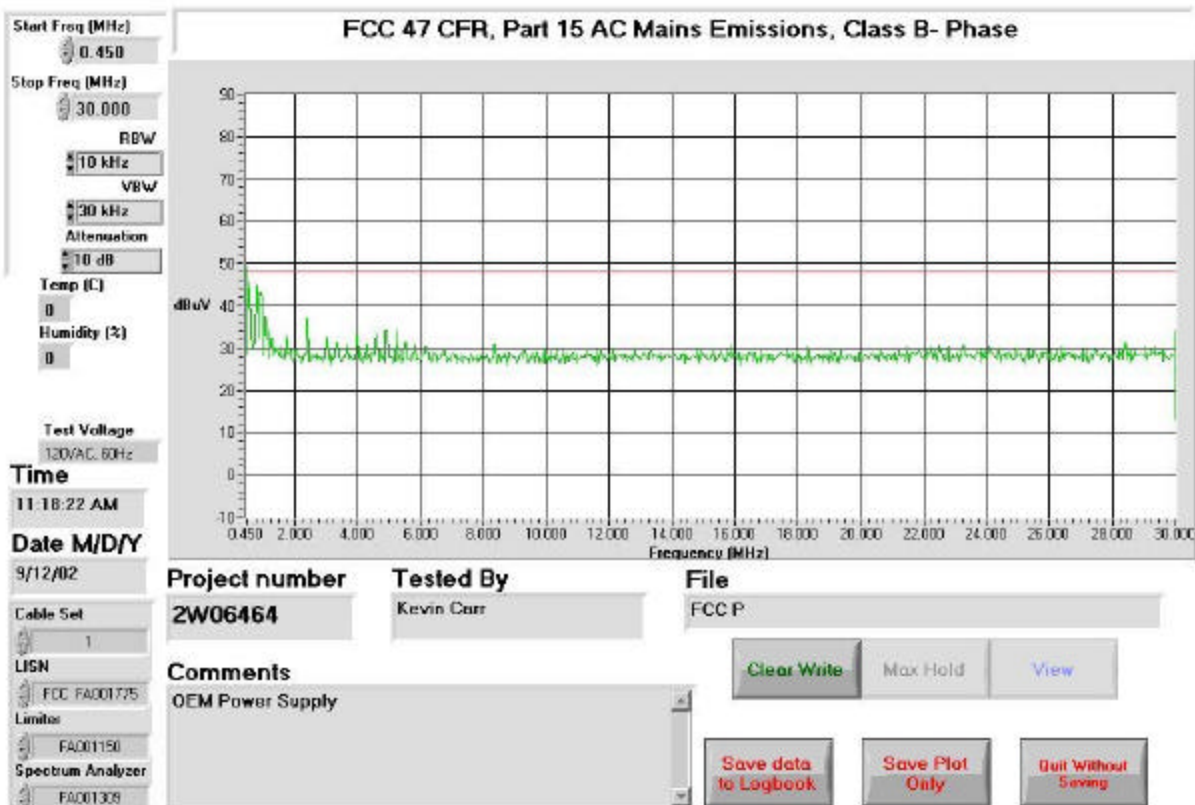
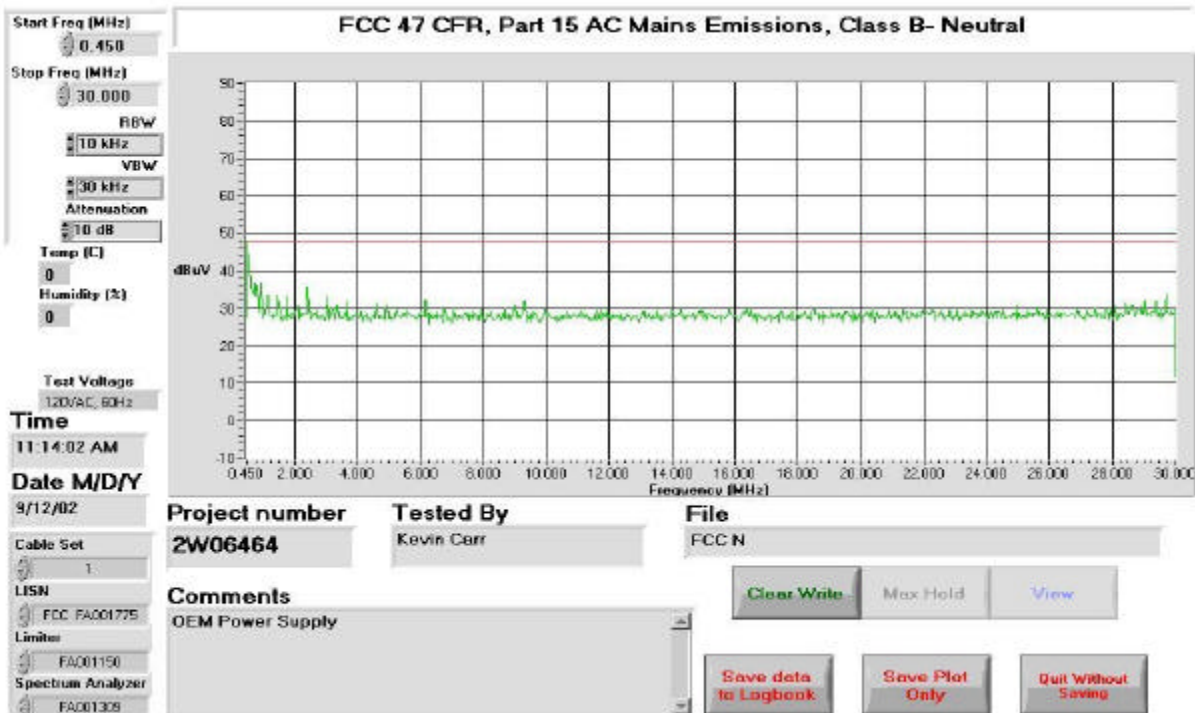
Frequency	Maximum Powerline Conducted RF Voltage	
(MHz)	(μ V)	(dB μ V)
0.45 - 30.0	250	48

Test Results: Complied.**Measurement Data:** See attached chart and graphs.**Test Data:**

Tested as per Table Top ☒				Tested as per Floor Standing ☐			
The top six emissions within 20 dB of the limit have been recorded/plotted. All plots data can be found at the back of this section.							
No.	Conductor	Frequency (MHz)	CISPR (dBµV)	Average (dBµV)	BB/NB	BB Corr. (dB)	Result (dBµV)
1.	P	0.48	36.0	2.3	BB	-13	23
2.	N	0.48	35.5	2.1	BB	-13	22.5
Notes:							

EQUIPMENT:Portal Exciter 805A1801

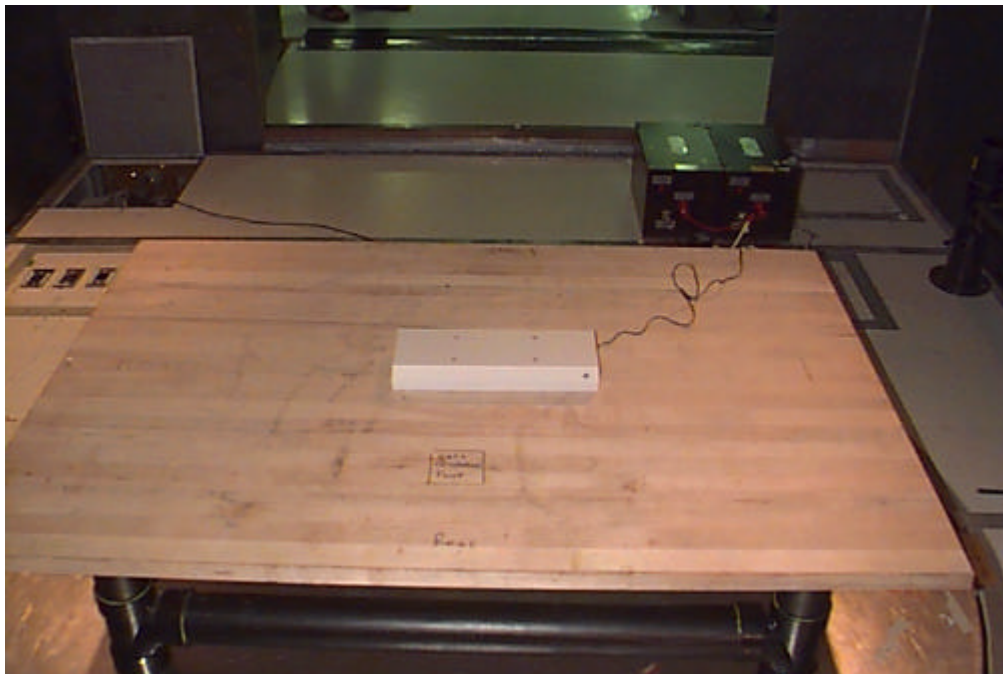
Conducted Emission Plots



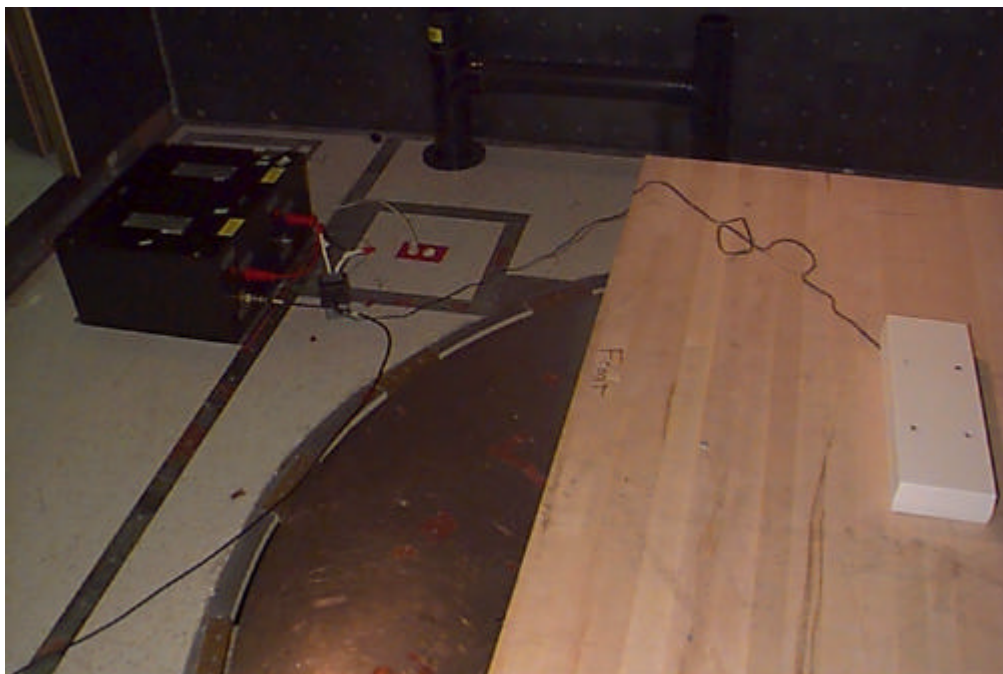
EQUIPMENT:Portal Exciter 805A1801

Photo, Test Set-up

Front



Side



EQUIPMENT:Portal Exciter 805A1801

Section 4. Radiated Emissions**Para. No.: 15.209****Test Performed By: Kevin Carr****Date of Test: 12 Sept. 2002****Minimum Standard:**

Fundamental (MHz)	Field Strength (μV/m)	Field Strength (dBμV)
0.009 - 0.490	2400/F(kHz) @ 300m	—
0.490 - 1.705	24000/F(kHz) @ 30m	—
1.705 - 30	30 @ 30m	—
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

15.31(f)

At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade).

Test Results: Complied.**Measurement Data:** See attached table.

EQUIPMENT:Portal Exciter 805A1801

Test Data: Fundamental

Test Distance (meters):			10		Receiver:		ESH3			Range:		A	
Detector:		Avg			RBW(kHz):		10		Environmental Factors:			None	
No.	Freq. (MHz)	Ant.	Pol (V/H)	Field Strength at 10 meters (dBμV/m)	Ant. Factor (dB)**	Amp. Gain (dB)* **	Dist. Corr. (dB)	Field Strength Extrapolated to 300m (dBμV/m)	Limit At 300 meters (dBuV/m)	Margin (dB)			
1	0.312	Active Loop		56.3				-2.8	17.7	20.5			

Notes:

B/C = Biconical, BL = Bilog, L/P = Log-Periodic, H = Horn, D/P = Dipole, E/D = EMCO Dipole

* Re-measured using dipole antenna.

** Includes cable loss when amplifier is not used.

*** Includes cable loss.

() Denotes failing emission level.

N.D. = Not Detected

All emissions measured were extrapolated using 40 dB/decade extrapolation factor.

Harmonics

Test Distance (meters):		3		Receiver:		ESH3			Range:		A	
Detector:		Avg		RBW(kHz):		10		Environmental Factors:		None		
No.	Freq. (MHz)	Ant.	Pol (V/H)	Field Strength at 10 meters (dBμV/m)	Ant. Factor (dB)**	Amp. Gain (dB)* **	Dist. Corr. (dB)	Field Strength Extrapolated to 30m (dBμV/m)	Limit At 30 meters (dBuV/m)	Margin (dB)		
1	0.624	Active Loop		41.6				1.6	31.7	30.1		
2	0.936	Active Loop		38.1				-1.9	28.2	30.1		

Notes:

B/C = Biconical, BL = Bilog, L/P = Log-Periodic, H = Horn, D/P = Dipole, E/D = EMCO Dipole

* Re-measured using dipole antenna.

** Includes cable loss when amplifier is not used.

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EQUIPMENT:Portal Exciter 805A1801

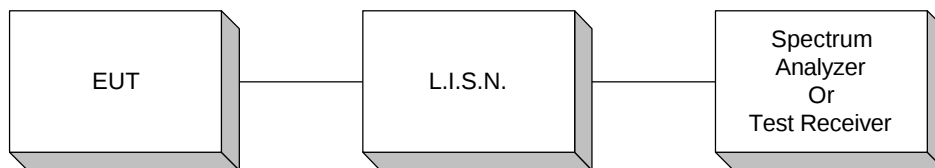
Photo, Test Set-up



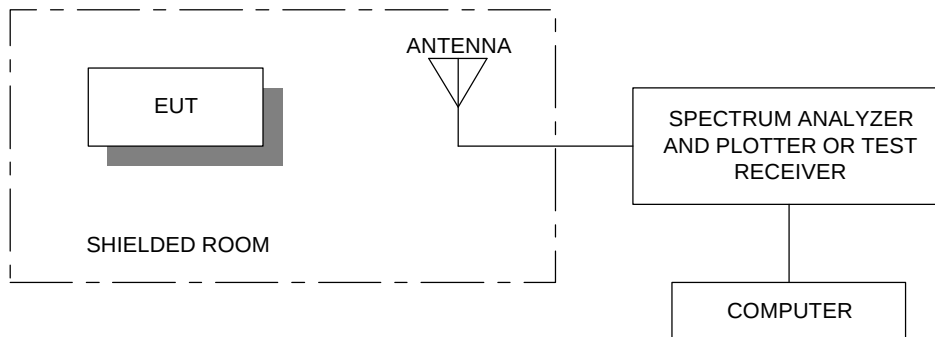
EQUIPMENT: Portal Exciter 805A1801

Section 5. Block Diagrams

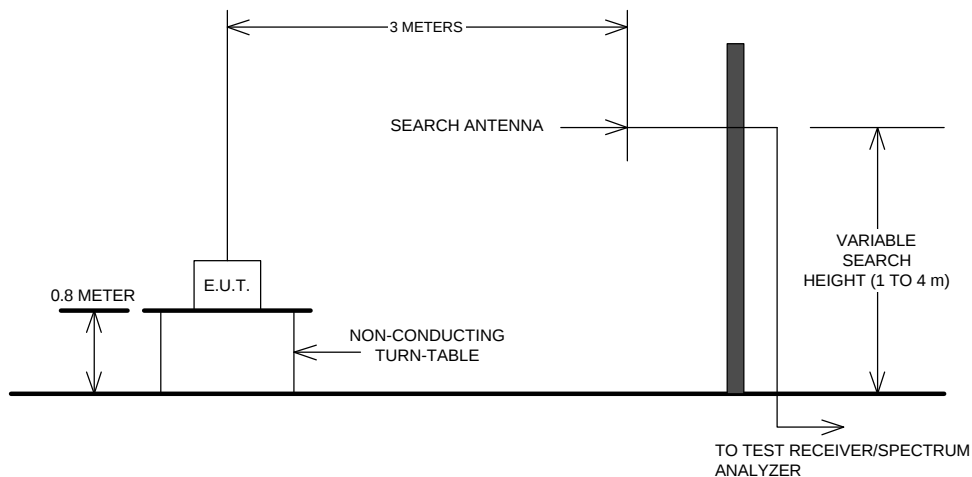
Conducted Emissions



Radiated Prescan



Test Site For Radiated Emissions



*EQUIPMENT:Portal Exciter 805A1801***Section 6. Test Equipment List****Equipment List - Conducted Emissions - Anechoic Chamber Shielded Room #3**

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	LISN	Tegam	95300-50	FA000986	Oct. 22/01	Oct. 22/02
1 Year	LISN	Tegam	95300-50	FA000987	Oct. 22/01	Oct. 22/02
1 Year	Receiver	Rohde & Schwarz	ESH3	FA000208	Mar. 07/02	Mar. 07/03
1 Year	Spectrum Analyzer	Hewlett-Packard	8566B	FA001432	Dec. 11/01	Dec. 11/02
1 Year	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001432	Dec. 11/01	Dec. 11/02
1 Year	Quasi-peak adapter	Hewlett-Packard	85650A	FA001433	Dec. 11/01	Dec. 11/02
1 Year	Transient Limiter	Hewlett-Packard	1194 7A	FA001150	Oct. 19/01	Oct. 19/02

Equipment List - Radiated Emissions -Ottawa

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Receiver	Rohde & Schwarz	ESH3	FA000872	Oct. 18.01	Oct. 18.02
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	July. 15/02	July. 15/03
1 Year	Active Loop Antenna	Rohde & Schwarz	HFH2-Z2	FA000631	May. 12/02	May. 12/03