



Test Report:

2W06152

Applicant:

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

**Equipment Under Test:
(EUT)**

Baby Tag

FCC ID:

ISEBTG

In Accordance With:

FCC Part 15, Subpart C, 15.231

Tested By:

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

A handwritten signature in blue ink, appearing to read 'Glen Westwell', is positioned above the 'Authorized By' field.

Authorized By:

Glen Westwell, Wireless Technologist

Date:

24 June 2002

Total Number of Pages:

18

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EQUIPMENT: *Baby Tag*

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 Part 15, Subpart C. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated emissions are 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: 24 June 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.

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Summary Of Test Data

Name of Test	Para. Number	Results
Transmission Requirements	15.231(a)	N/A
Radiated Emissions	15.231(b)	Complied
Occupied Bandwidth	15.231(c)	Complied
Frequency Tolerance	15.231(d)	N/A
Periodic Alternate Field Strength Requirements	15.231(e)	Complied
Powerline Conducted Emissions	15.207	N/A

Test Conditions:

Indoor Temperature: 22°C
 Humidity: 45%

Outdoor Temperature: 17°C
 Humidity: 55%

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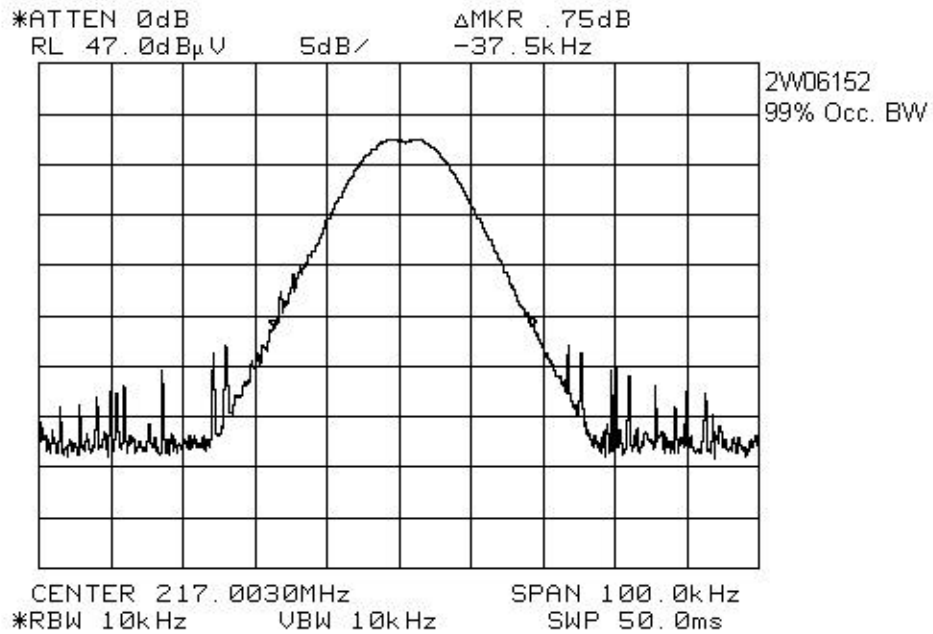
Section 2. Equipment Under Test

General Equipment Information

Manufacturer:	Instantel Inc.
Model No.:	806A2401
Serial No.:	None
Date Received In Laboratory:	20 June 2002
Nemko Identification No.:	1
Transmit Frequency (fixed)	217.003MHz
20 dB Bandwidth:	37.5kHz
Type of Modulation:	FSK
Emission designator:	37k5P0D
Occupied Bandwidth (99% BW):	37.5kHz

EQUIPMENT: Baby Tag

99% Occupied Band Width



Section 3. Transmission Requirements

Para. No.: 15.231(a)

Test Performed By: Kevin Carr	Date of Test: 20 June 2002
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Minimum Standard: 15.231(a) Continuous transmissions such as voice, video or data transmissions are not permitted.

15.231(a)(1) A manually operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds after being released.

15.231(a)(2) A transmitter activated automatically shall cease transmission within 5 seconds of activation.

15.231(a)(3) Periodic transmissions at regular pre-determined intervals are not permitted. However polling or supervisory transmissions to determine system integrity of transmitters used in security or safety applications are allowed if the periodic rate of transmission does not exceed one transmission of not more than one second duration per hour for each transmitter.

15.231(a)(4) Intentional radiators which are employed for radio control purposes during emergencies involving fire, security, and safety of life, when activated to signal an alarm, may operate during the pendency of the alarm.

Test Results: Not Compliant. EUT was tested to 15.231(e), Reduced Field Strengths.

Test Data: Compliance was determined by verification of technical specifications and a functional test on the equipment.

EQUIPMENT: Baby Tag

Rationale for Compliance with Transmission Requirements

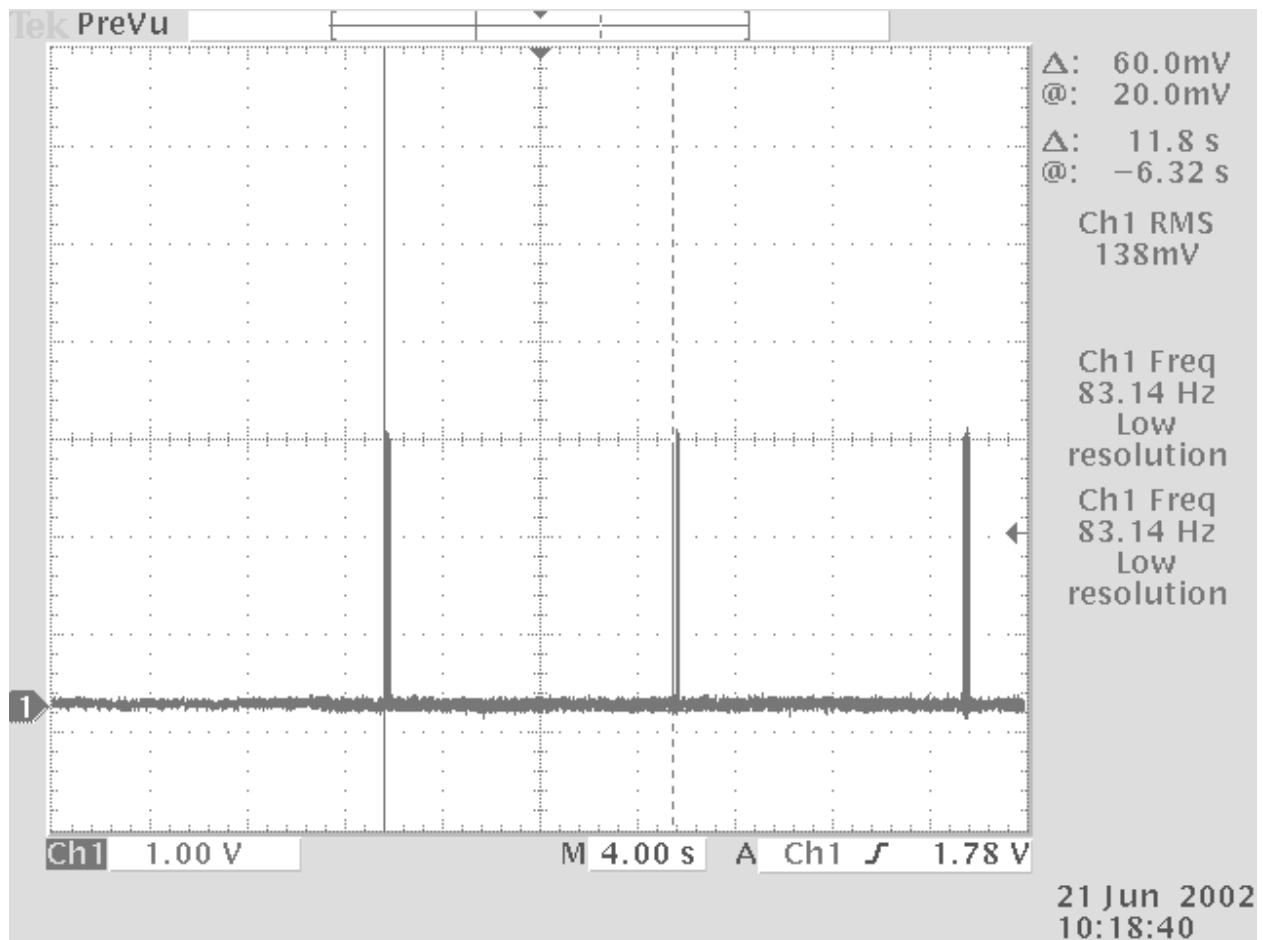
15.231(a)(1) : N/A, EUT is not manually operated

15.231(a)(2) : Complied to 15.231(e)

15.231(a)(3) : Complied, EUT is Polled

15.231(a)(4) : Complied. EUT transmits during the pendancy of the alarm.

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EQUIPMENT: *Baby Tag*

Section 4. Occupied Bandwidth

Para. No.: 15.231(c)

Test Performed By: Kevin Carr	Date of Test: 21 June 2002
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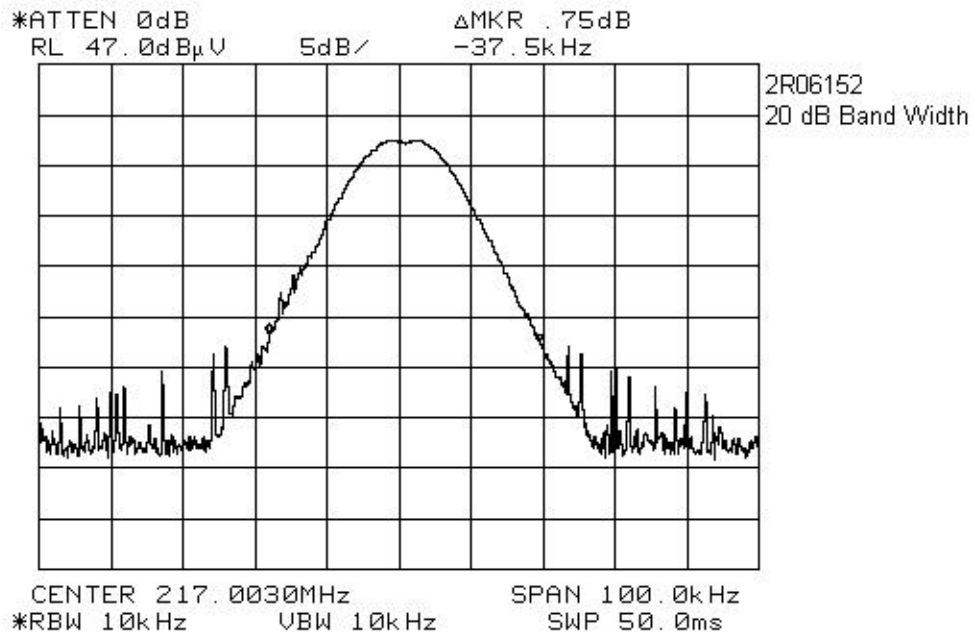
Minimum Standard: 15.231(c) The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900 MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.

Limit: 0.5425MHz

Test Results: Complied. 20dB BW was 0.0375MHz

Test Data: See attached graph.

EQUIPMENT: Baby Tag



EQUIPMENT: Baby Tag

Section 5. Periodic Alternate Field Strength Requirements**Para. No.: 15.231(e)****Test Performed By: Kevin Carr****Date of Test: 21 June 2002**

Minimum Standard: 15.231(e) Intentional radiators may operate at a periodic rate exceeding that specified in paragraph (a) of this section and may be employed for any type of operation, including operation prohibited in paragraph (a) of this section, provided the intentional radiator complies with the provisions of paragraphs (b) through (d) of this section, except the field strength table in paragraph (b) of this section is replaced by the following.

Fundamental Frequency (MHz)	Field Strength of Fundamental ($\mu\text{V/m}$ @ 3m)	Field Strength of Spurious Emissions ($\mu\text{V/m}$ @ 3m)
40.66 - 40.70	1,000	100
70 - 130	500	50
130 - 174	500 to 1,500	50 to 150
174 - 260	1,500	150
260-470	1,500 to 5,000	150 to 500
Above 470	5,000	500

In addition, devices operated under the provisions of this paragraph shall be provided with a means for automatically limiting operation so that the duration of each transmission shall not be greater than one second and the silent period between transmissions shall be at least 30 times the duration of the transmission but in no case less than 10 seconds.

Test Results: Complied. The EUT was verified for maximum amplitude in three orthogonal positions. Worst case has been reported.

Test Data: As per attached tabulated data.
Duty Cycle= $20\text{Log}\{(13.3+14.0)/100\}=-11.3\text{dB}$

EQUIPMENT: Baby Tag

Test Data - Radiated Emissions

Test Distance (meters) : 3		Range: A		Receiver: ESVP, HP8564E			RBW(kHz): 120, 1000		Detector: Peak, Peak	
No.	Freq. (MHz)	Ant.	Pol (V/H)	RCVD Signal (dBμV)	Ant. Factor (dB)**	Amp. Gain (dB)***	Duty Cycle Corr. (dB)	Field Strength (dBμV/ m)	Limit (dBμV/m)	Margin (dB)
1	217	E/D3	V	36.9	16.8		-11.3	42.4	63.5	21.1
2	217	E/D3	H	54.2	16.8		-11.3	59.7	63.5	3.8
3	434	L/P1	V	20.8	19.2		-11.3	28.7	43.5	14.8
4	434	L/P1	H	21.3	19.2		-11.3	29.2	43.5	14.3
5	651	L/P1	V	22.4	23.7		-11.3	34.8	43.5	8.7
6	651	L/P1	H	19.5	23.7		-11.3	31.9	43.5	11.6
7	868.012	L/P1	V	22.8	27.2		-11.3	38.7	43.5	4.8
8	868.012	L/P1	H	20.2	27.2		-11.3	36.1	43.5	7.4
9	1085.1	Hrn2	V	55.8	27.7	47.9	-11.3	24.3	54	29.7
10	1084.96	Hrn2	H	56.8	27.7	47.9	-11.3	25.3	54	28.7
11	1302.1	Hrn2	V	51.5	28.8	48.2	-11.3	20.8	54	33.2
12	1302	Hrn2	H	55.1	28.8	48.2	-11.3	24.4	54	29.6
13	1519.1	Hrn2	V	58.6	29.7	47.8	-11.3	29.2	54	24.8
14	1519	Hrn2	H	54.6	29.7	47.8	-11.3	25.2	54	28.8
15	1736.1	Hrn2	V	55.5	31.4	47.9	-11.3	27.7	54	26.3
16	1736.1	Hrn2	H	56.8	31.4	47.9	-11.3	29	54	25
17	2170.1	Hrn2	V	65.2	34	58.6	-11.3	29.3	54	24.7
18	2170.2	Hrn2	H	69.4	34	58.6	-11.3	33.5	54	20.5
19	72.336	B/C1	V	15.3	9.4			24.7	40	15.3
20	72.336	B/C1	H	18.4	9.4			27.8	40	12.2

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.

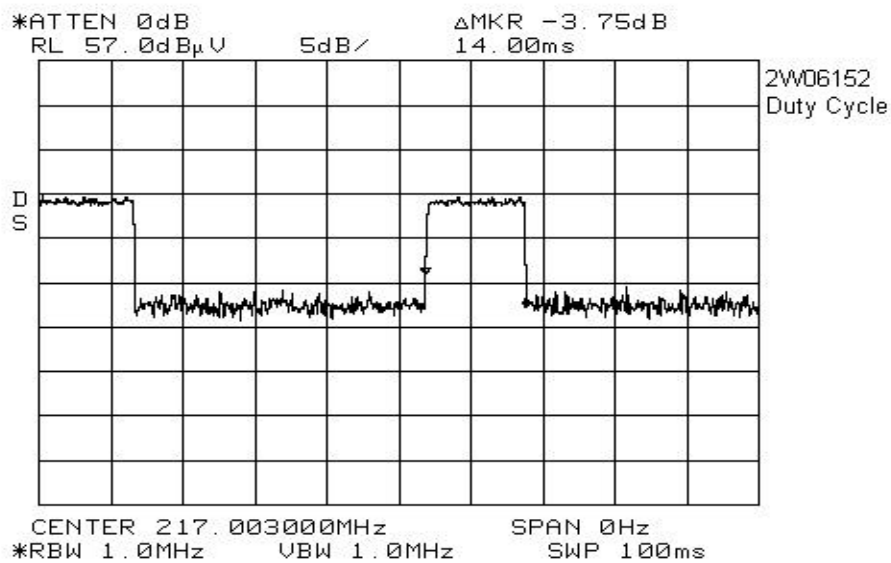
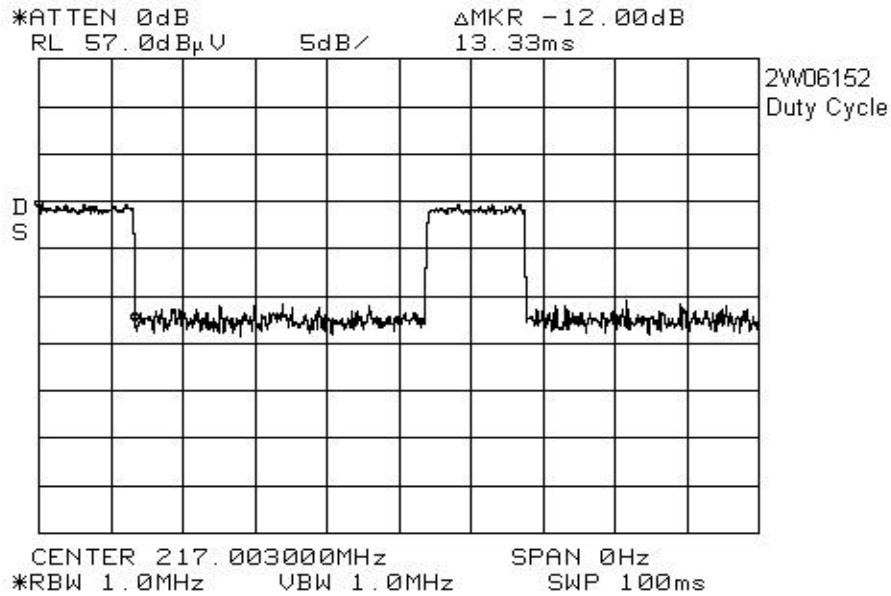
*** Includes cable loss.

() Denotes failing emission level.

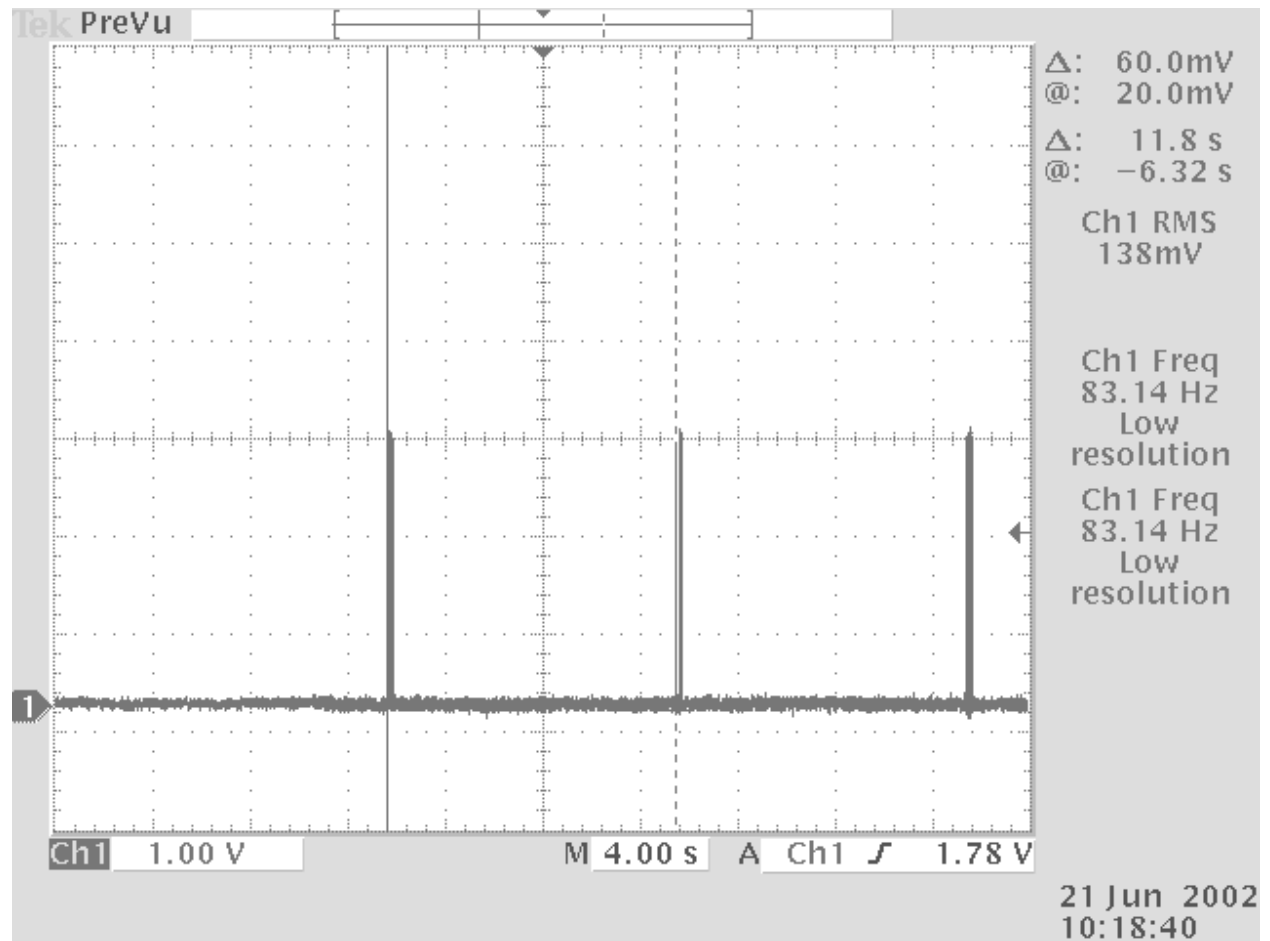
N.D. = Not Detected

EQUIPMENT: Baby Tag

Duty Cycle:

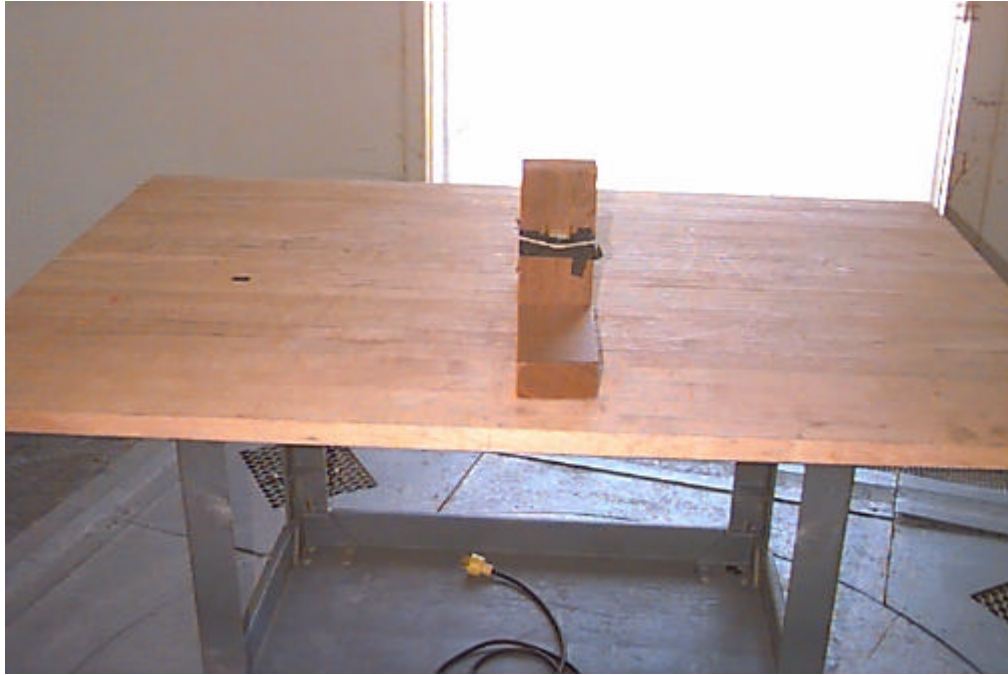


EQUIPMENT: Baby Tag



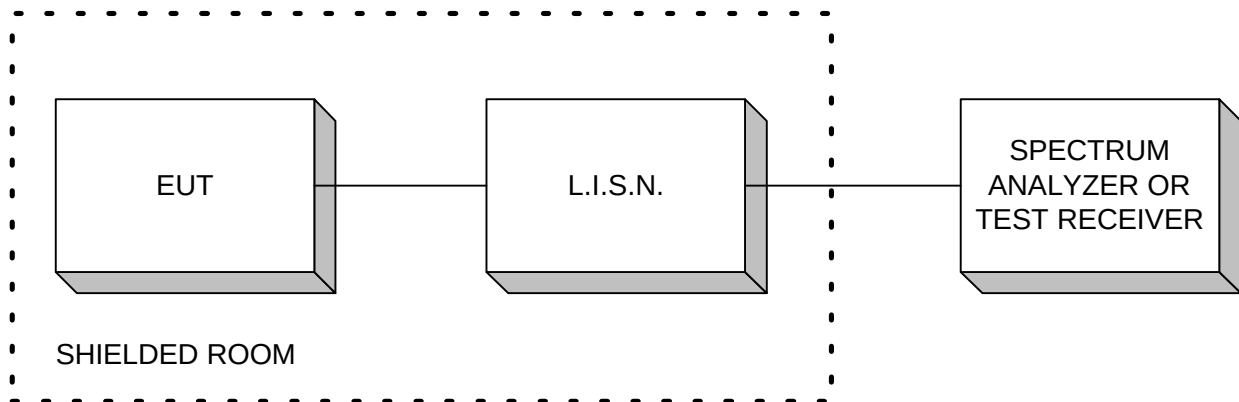
EQUIPMENT: Baby Tag

OATS, SET UP PHOTO

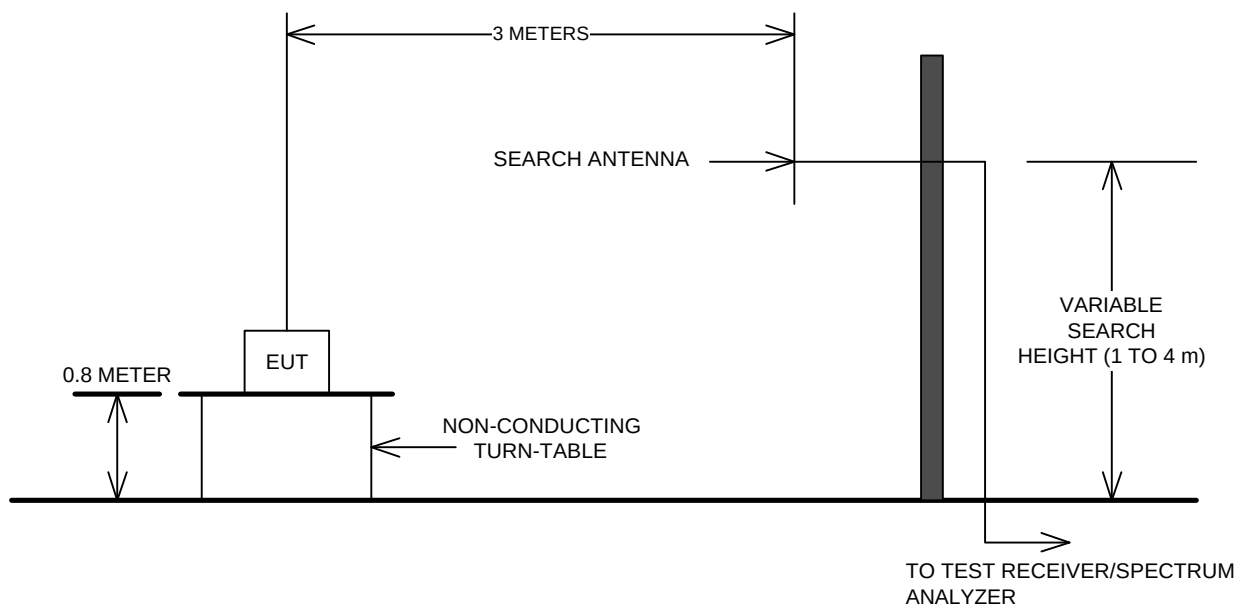


Section 6. Block Diagrams

Conducted Emissions



Outdoor Test Site For Radiated Emissions



The spectrum was searched up to the 10th harmonic of the fundamental frequency of operation.

EQUIPMENT: Baby Tag

Section 7. TEST EQUIPMENT LIST NEMKO CANADA - OTTAWA**Equipment List - Radiated Emissions**

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Receiver	Rohde & Schwarz	ESVP	FA000951	May. 02/02	May. 02/03
1 Year	Spectrum Analyzer	Hewlett-Packard	8564E	FA001367	Mar. 06/02	Mar. 06/03
1 Year	Dipole Antenna Set	EMCO #1	3121C	FA000814	May. 06/02	May. 06/03
1 Year	Biconical (1) Antenna	EMCO	3109	FA000805	Aug. 22/01	Aug. 22/02
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 01/01	Dec. 01/02
1 Year	Log Periodic Antenna #1	EMCO	LPA-25	FA000477	Aug. 28/01	Aug. 28/02
1 Year	1.0 – 2.0 GHz Amplifier	JCA	12-400	FA001498	June. 04/02	June. 04/03
1 Year	2.0 – 4.0 GHz Amplifier	JCA	24-600	FA001496	June. 04/02	June. 04/03

Note: N/A = Not Applicable
NCR = No Cal Required
COU = CAL On Use
OUT = Out For CAL/Repair