

KTL Test Report: 0R02509

Applicant: Instantel Inc.
362 Terry Fox Drive
Kanata, Ontario
K2K 2P5

**Equipment Under Test:
(E.U.T.)** Dual LAR

FCC ID: ISEDLAR

In Accordance With: **FCC Part 15, Subpart B**
Radio Receivers

Tested By: KTL Ottawa Inc.
3325 River Road, R.R. 5
Ottawa, Ontario K1V 1H2

Authorized By:

R. Grant, Wireless Group Manager

Date:

Total Number of Pages: 10

EQUIPMENT: Dual LAR
FCC ID: ISEDLAR

Table Of Contents

Section 1. Summary of Test Results..... 3

Section 2. General Equipment Specification 5

Section 3. Radiated Emissions..... 6

Section 4. Block Diagrams..... 9

Section 5. Test Equipment List 10

EQUIPMENT: Dual LAR
FCC ID: ISEDLAR

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 B. Measurement procedure ANSI C63.4-1992 was used for all tests. Radiated Emissions were measured on an open area test site.



New Submission



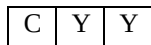
Production Unit



Class II Permissive Change



Pre-Production Unit



Equipment Code

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: 100351-0

TESTED BY: _____ DATE: _____
Kevin Carr, Technologist

KTL Ottawa Inc. authorizes the above named company to reproduce this report provided it is reproduced in its entirety and for use by the company's employees only.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. KTL Ottawa Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

This report applies only to the items tested.

EQUIPMENT: Dual LAR
FCC ID: ISEDLAR

Summary Of Test Data

Name Of Test	Para. No.	Results
Antenna Conducted Emissions	15.111	Not Applicable
Radiated Emissions	15.109	Complies
Powerline Conducted Emissions	15.107	Not Applicable

Footnotes For N/A's: This equipment does not interface the public utility network.

Test Conditions:

Indoor Temperature: 24 °C
 Humidity: 30 %

Outdoor Temperature: 24 °C
 Humidity: 30 %

EQUIPMENT: Dual LAR
FCC ID: ISEDLAR

Section 2. General Equipment Specification

Manufacturer:	Instantel
Model No.:	Dual LAR
Serial No.:	None
Date Received In Laboratory:	May 17, 2000
KTL Identification No.:	Item #6, 11 & 12
Frequency Range:	Rx 217.003, Lo 262 MHz
Number of Channels:	1
Operating Frequency(ies) of Sample:	262.0 MHz
Crystal Frequency(ies):	12.8 MHz, 45.545 MHz, 8 MHz, 5 MHz
Primary Power Requirement:	10-30 Vdc
Bandwidth and Emission Designator:	Not Applicable
Intermediate Frequency(ies):	45 MHz, 455 kHz

EQUIPMENT: Dual LAR
FCC ID: ISEDLAR

Section 3. Radiated Emissions

Para. No.: 15.109(a)

Test Performed By: Kevin Carr	Date of Test: May 23, 2000
--------------------------------------	-----------------------------------

Minimum Standard:

Frequency(MHz)	Field Strength (dB μ V/m @ 3m)
30 - 88	40.0
88 - 216	43.5
216 - 960	46.0
Above 960	54.0

Test Results: Complies. The worst-case emission level is 44.0 dB μ V/m @ 3m at 262 MHz. This is 2.0dB below the specification limit.

Measurement Data: See attached table.

For super-regenerative receivers the receiver is cohered using a signal generator and dipole antenna.

Handheld equipment and equipment not designed to be mounted in any fixed orientation, the E.U.T. is tested in three orthogonal axis to obtain worst case results.

EQUIPMENT: Dual LAR

FCC ID: ISEDLAR

Test Data - Radiated Emissions

Test Distance (meters) : 3		Range: A Tower		Receiver: ESVP		RBW(kHz): 120		Detector: Q-Peak	
Freq. (MHz)	Ant. *	Pol. (V/H)	RCVD Signal (dBμV/m)	Ant. Factor (dB)**	Amp. Gain (dB)***	Dist. Corr. (dB)	Field Strength (dBμV/m)	Limit (dBμV/m)	Margin (dB)
190.0	B/C1	V	22.1	15.4			37.5	43.5	6.0
190.0	B/C1	H	20.8	15.4			36.2	43.5	7.3
219.9	B/C1	V	10.6	18.4			29.0	46.0	17.0
219.9	B/C1	H	18.0	18.3			36.3	46.0	9.7
220.0	B/C1	V	20.8	18.4			39.2	46.0	6.8
220.0	B/C1	H	23.6	18.4			42.0	46.0	4.0
262.0	B/C1	V	18.3	20.5			38.8	46.0	7.2
262.0	B/C1	H	24.4	20.5			44.9	46.0	1.1*
204.0	B/C1	V	17.0	16.9			33.9	43.5	9.6
204.0	B/C1	H	18.2	16.9			35.1	43.5	8.4
135.0	B/C1	V	15.0	14.4			29.4	43.5	14.1
135.0	B/C1	H	17.8	14.4			32.2	43.5	11.3
140.0	B/C1	V	21.6	14.7			36.3	43.5	7.2
140.0	B/C1	H	17.2	14.7			31.9	43.5	11.6
138.0	B/C1	V	15.4	14.5			29.9	43.5	13.6
138.0	B/C1	H	13.6	14.5			28.1	43.5	15.4
136.0	B/C1	V	18.1	14.4			32.5	43.5	11.0
136.0	B/C1	H	11.7	14.4			26.1	43.5	17.4
524.0	L/P	V	6.7	22.9			29.6	46.0	16.4
524.0	L/P	H	7.7	22.9			30.6	46.0	15.4
786.0	L/P	V	8.6	27.6			36.2	46.0	9.8
786.0	L/P	H	10.2	27.6			37.8	46.0	8.2
1048.0	Hrn2	V	16.3	27.8			44.1	54.0	9.9
1048.0	Hrn2	H	10.0	27.8			37.8	54.0	16.2
1310.0	Hrn2	V	16.5	29.4			45.9	54.0	8.1
1310.0	Hrn2	H	13.2	29.4			42.6	54.0	11.4
262.0	E/D3	V	20.3	20.6			40.9	46.0	5.1
262.0	E/D3	H	23.4	20.6			44.0	46.0	2.0

Notes:

B/C = Biconical, B/L = Biconilog, L/P = Log-Periodic, H = Horn, D/P = Dipole

* Re-Measured Using Dipole Antenna. () Denotes Failing Emission Level.

(1) 120 kHz, Q-Peak,

(2) 10 kHz, Peak,

(3) 100 kHz RGW, 300 kHz VBW, Peak,

(4) 300 kHz RBW, 1 MHz VBW, Peak,

(5) 1 MHz RBW, 3 MHz VBW, Peak,

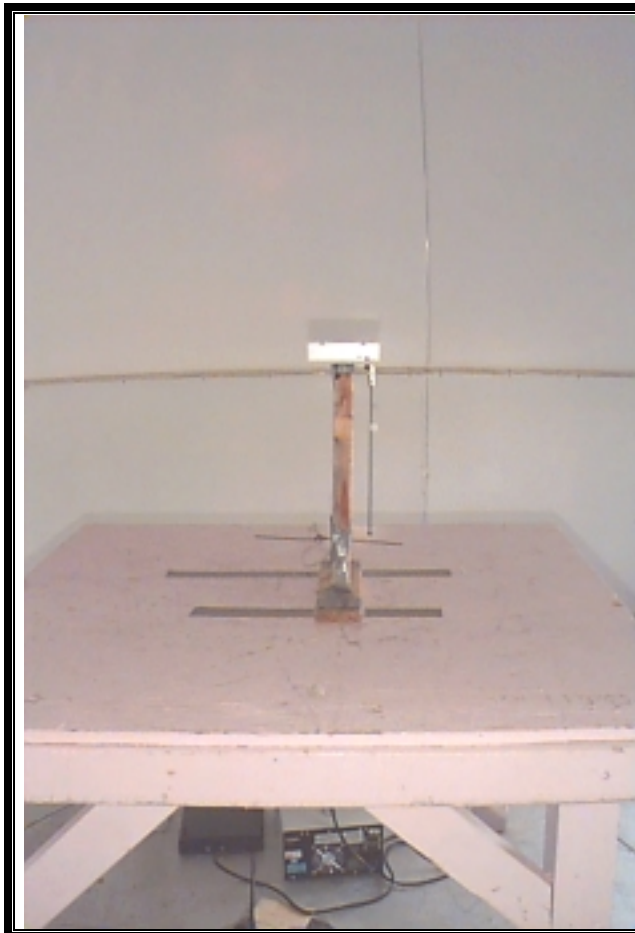
(6) 1 MHz RBW, 10 Hz VBW, Peak

N.D. = Not Detected

EQUIPMENT: Dual LAR
FCC ID: ISEDLAR

Radiated Photographs

Front View



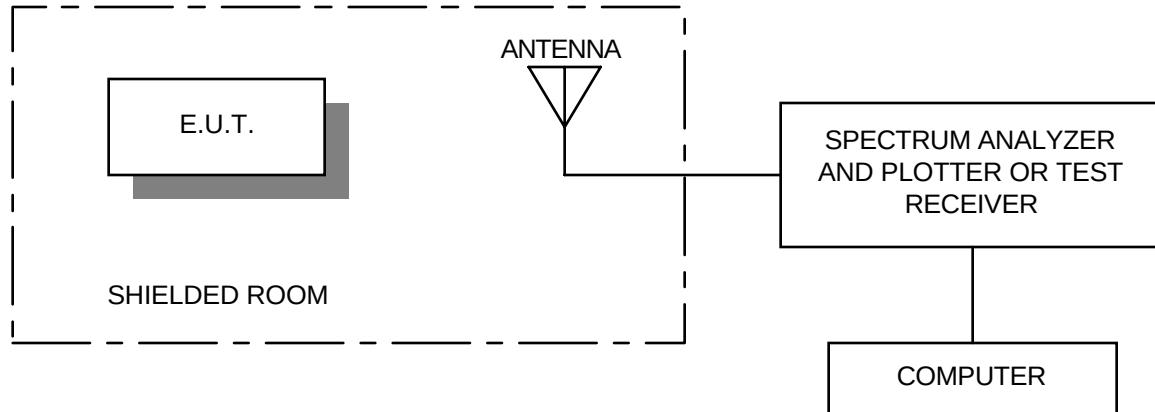
Rear View



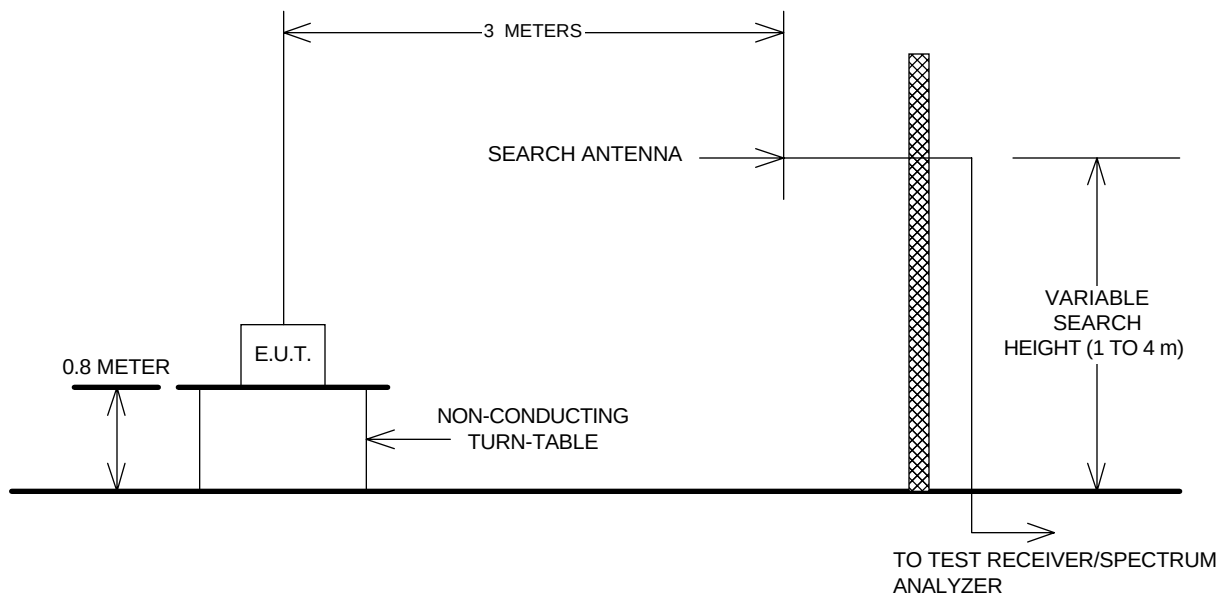
EQUIPMENT: Dual LAR
FCC ID: ISEDLAR

Section 4. Block Diagrams

Radiated Prescan



Outdoor Test Site For Radiated Emissions



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

*EQUIPMENT: Dual LAR**FCC ID: ISEDLAR*

Section 5. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	3846A01407	May 31/99	May 31/00
1 Year	Receiver	Rohde & Schwarz	ESVP	892661/014	April 5/00	April 5/01
1 Year	Horn Antenna	EMCO #2	3115	4336	Nov. 11/99	Nov. 11/00
1 Year	Dipole Antenna Set	EMCO #2	3121C	FA001349	June 5/00	June 5/01
1 Year	Biconical (1) Antenna	EMCO	3109	9204-2708	Aug. 4/99	Aug. 4/00
1 Year	DC Power Supply	G.W.		FA001337	April 20/00	April 20/01

NA: Not Applicable
NCR: No Cal Required
COU: CAL On Use