

**KTL Test Report:** 0R03335

**Applicant:** Infinition Inc.  
3630 Jean Talon  
Trois Rivières, Quebec  
G8Y 2G7

**Equipment Under Test:  
(E.U.T.)** 35 GHz Doppler Radar  
BR-3501 Land Mobile Location Station

**FCC ID:** PDGBR-3501

**In Accordance With:** **FCC Part 90**

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

**Authorized By:**  
  
G. Westwell, Technologist

**Date:**

**Total Number of Pages:** 14

*EQUIPMENT: 35 GHz Doppler Radar BR-3501 Land Mobile Location Station*  
*FCC ID: PDGBR-3501*

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## 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 90.



New Submission



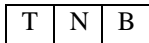
Production Unit



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: \_\_\_\_\_  
Russell Grant, Wireless Group Manager

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This report applies only to the items tested.

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**Summary Of Test Data**

<b>Name Of Test</b>	<b>Para. No.</b>	<b>Result</b>
RF Power Output	2.1046	Complies
Audio Frequency Response	2.1047	Not Applicable
Audio Low-Pass Filter Response	2.1047	Not Applicable
Modulation Limiting	2.1047	Not Applicable
Occupied Bandwidth	2.1049	Complies
Spurious Emissions at Antenna Terminals	2.1051	Complies
Field Strength of Spurious Emissions	2.1053	Complies
Frequency Stability	2.1055	Complies
Transient Frequency Behavior	——	Not Applicable

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## **Section 2.        General Equipment Specification**

<b>Manufacturer:</b>	Infinition Inc.
<b>Model No.:</b>	BR-3501
<b>Date Received In Laboratory:</b>	January 3, 2001
<b>KTL Identification No.:</b>	Item #1
<b>Equipment:</b>	Doppler Radar
<b>Frequency of Operation:</b>	35 GHz
<b>RF Power Output:</b>	20.6 dBm
<b>Emission Designator:</b>	N0N

EQUIPMENT: 35 GHz Doppler Radar BR-3501 Land Mobile Location Station  
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### Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Russell Grant	Date of Test: January 3, 2001
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Minimum Standard:  $\pm 1\text{dB}$

Test Results: Complies. The RF output power is 21.5dBm. This is within 1dB of the manufacturer's rating.

Measurement Data: Field Strength:  $96.3\text{dB}\mu\text{V} + 44.2\text{dB}$   
 $= 140.5\text{ dB}\mu\text{V/m}, 10.6\text{V/m @ } 3\text{m}$

EIRP:  $\frac{10.6^2 \times 9}{30} = 33.7\text{W}, 45.3\text{ dBm}$

Cable Loss: 6.2dB

EIRP:  $45.3\text{dBm} + 6.2\text{dB} = 51.5\text{dBm}$

Tx Antenna Gain: 30dBi

RF Output Power:  $51.5\text{dBm} - 30\text{dBi} = 21.5\text{dBm}$

Rated RF Output Power: 20.6dBm

$\frac{\text{Measured}}{\text{Rated}} = +0.9\text{dB}$

*EQUIPMENT: 35 GHz Doppler Radar BR-3501 Land Mobile Location Station*  
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## **Section 4.        Occupied Bandwidth**

**Para. No.: 2.1049**

<b>Test Performed By:</b> Russell Grant	<b>Date of Test:</b> January 3, 2001
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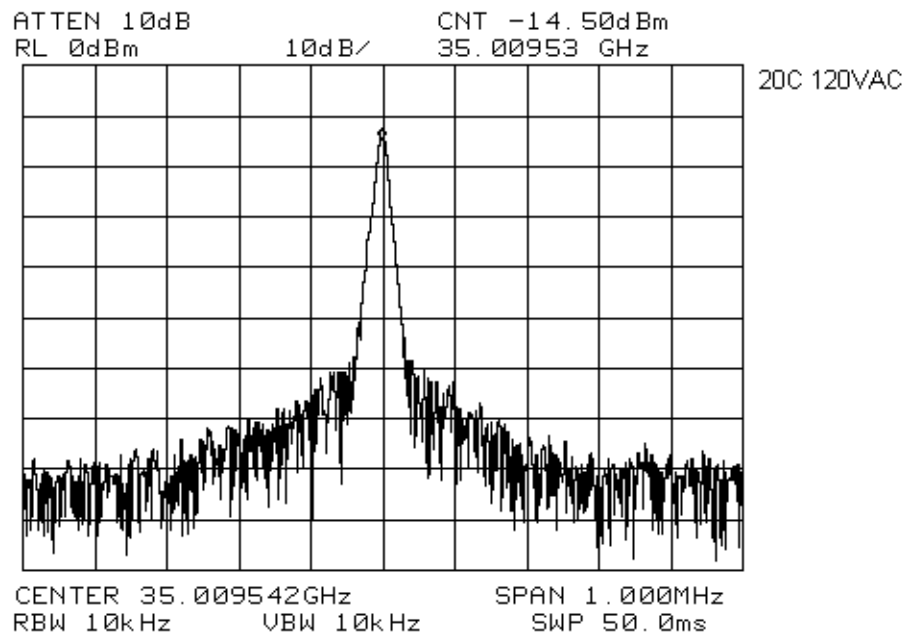
**Minimum Standard:**        N/A

**Test Results:**                Complies.

**Measurement Data:**        Unmodulated Carrier

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## **Section 5.        Spurious Emissions at Antenna Terminals**

**Para. No.: 2.1051**

<b>Test Performed By:</b> Russell Grant	<b>Date of Test:</b> January 3, 2001
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**Minimum Standard:**        -13dBm

**Test Results:**                Complies.

**Measurement Data:**        This equipment uses an integral antenna which does not readily lend itself for direct connection to a spectrum analyzer. Therefore, field strength measurements were made with the antenna attached. See measurement data for Field Strength of Spurious Emissions.

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## **Section 6.        Field Strength of Spurious Emissions**

**Para. No.: 2.1053**

<b>Test Performed By:</b> Russell Grant	<b>Date of Test:</b> January 3, 2001
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**Minimum Standard:**        -13dBm

**Test Results:**                Complies.

**Measurement Data:**        No emissions were detected within 20dB of the specification limit.

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## Section 7. Frequency Stability

Para. No.: 2.1055

<b>Test Performed By:</b> Russell Grant	<b>Date of Test:</b> January 3, 2001
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**Minimum Standard:** N/A

**Test Results:** Complies. The maximum frequency drift is 13.69MHz. This is 0.039% of the standard test frequency.

Standard Test Frequency: 35000MHz  
STV: 120VAC

**Measurement Data:**

Test Condition		Frequency Drift (MHz)
-30°C	STV	12.19
-20°C	STV	13.47
-10°C	STV	13.69
0°C	STV	13.17
+10°C	STV	11.51
+20°C	85% STV	9.30
+20°C	STV	9.53
+20°C	115 %STV	9.11
+30°C	STV	8.15
+40°C	STV	6.09
+50°C	STV	2.36

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**Section 8. Test Equipment List**

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	June 16/00	June 16/01
1 Year	Climate Chamber	Thermotron	SM-16C	15649-S	COU	COU
3 year	Harmonic Mixer	H.P.	50-75Ghz	FA001027	Mar. 9/00	Mar. 9/03
3 year	Harmonic Mixer	H.P.	75-110Ghz	FA001302	Oct. 13/98	Oct. 13/01
3 year	Diplexer	Olsen - OML	DPL.26 (H.P.)		Mar. 15/00	Mar 15/03
3 year	Mixer/Antenna 40-60Ghz	Olsen – OML	M19HWA (H.P.)		Mar. 15/00	Mar. 15/03
3 year	Mixer / Antenna 60-90Ghz	Olsen – OML	M12HWA (H.P.)		Mar. 15/00	Mar. 15/03
3 year	Mixer / Antenna 90-140Ghz	Olsen – OML	M08HWA (H.P.)		Mar. 15/00	Mar. 15/03
3 year	Mixer / Antenna 140-220Ghz	Olsen – OML	M05HWA (H.P.)		Mar. 15/00	Mar. 15/03

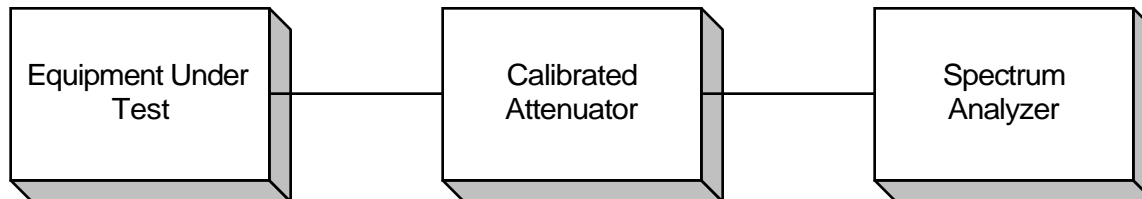
NA: Not Applicable  
NCR: No Cal Required  
COU: CAL On Use

*EQUIPMENT: 35 GHz Doppler Radar BR-3501 Land Mobile Location Station*  
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## Section 9. Test Diagrams

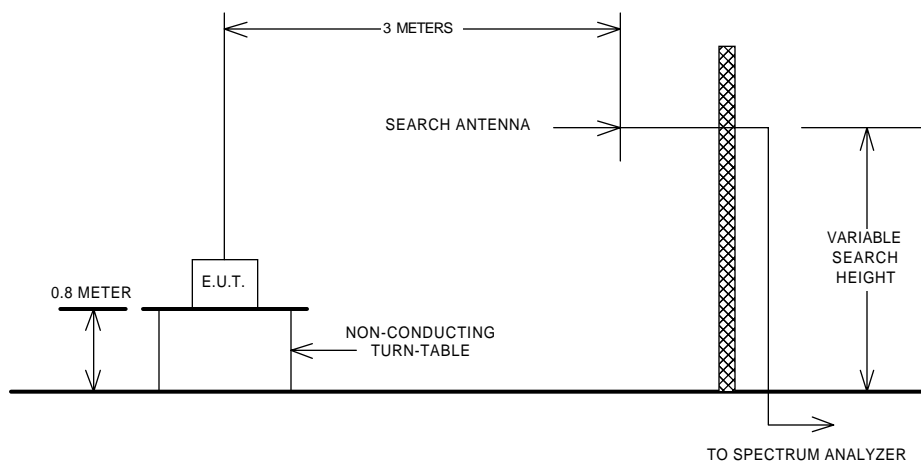
### Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



### Para. No. 2.1053 - Field Strength of Spurious Radiation

### Para. No. 2.1046 – RF Power Output

### Para. No. 2.1049 – Occupied Bandwidth



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**Para. No. 2.1055 - Frequency Stability**

