Standards Council of Canada
Accredited Laboratory
Scope of Accreditation 75

Conseil canadien des normes
Laboratoire accrédité
Portée d'accréditation 75

TM

Test Report:	4W26642, Issue 2
Applicant:	Infinition Inc. 3630 Jean Talon Trois-Rivières, QC Canada G8Y 2G7
Equipment Under Test: (EUT)	BR-1022, Radar
FCC ID:	PDGBR-1022
In Accordance With:	**FCC Part 90**
Tested By:	Nemko Canada Inc. 303 River Road, R.R. 5 Ottawa, Ontario K1V 1H2
Authorized By:	Glen Westwell, Wireless Technologist
Date:	October 7, 2004
Total Number of Pages:	21

Table of Contents

Section 1. Summary of Test Results 3

Section 2. General Equipment Specification 5

Section 3. RF Power Output 8

Section 4. Occupied Bandwidth 9

Section 5. Spurious Emissions at Antenna Terminals 11

Section 6. Field Strength of Spurious Emissions 16

Section 7. Frequency Stability 18

Section 8. Test Equipment List 19

Section 9. Test Diagrams 20

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".

TESTED BY: _____ DATE: October 7, 2004
Kevin Carr, EMC/EMI/Wireless Specialist

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
Audio Frequency Response	2.1047	NA(1)
Audio Low-Pass Filter Response	2.1047	NA(1)
Modulation Limiting	2.1047	NA(2)
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	——	NA(3)

Footnotes For N/A's: NA(1) - The EUT contains no audio circuitry
NA(2) – The EUT has no modulation capability
NA(3) – The EUT is not a PTT device, nor does it transmit in the applicable frequency band

Indoor Temperature: 22°C
Humidity: 48%

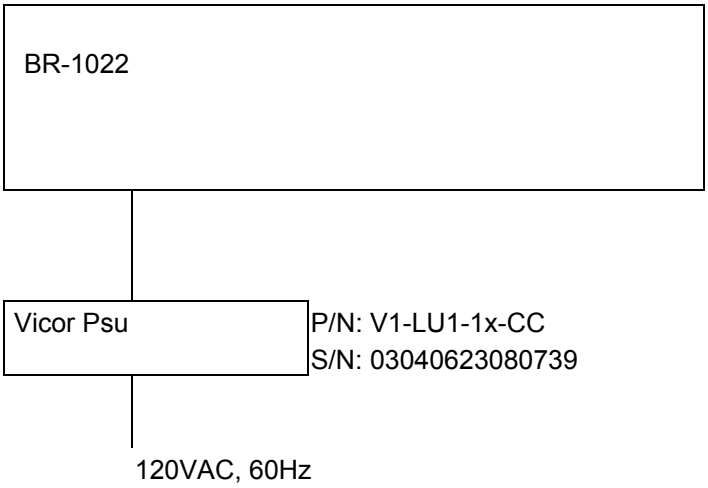
Outdoor Temperature: 27°C
Humidity: 75%

.

Section 2. General Equipment Specification

Manufacturer:	Infinition Inc.
Model No.:	BR1022
Serial No.:	BR1022-04-166-001
Date Received In Laboratory:	28 July 2004
Nemko Identification No.:	1
Supply Voltage Input:	120VAC, 60Hz
Frequency Range of EUT:	10.450 – 10.540GHz
Emission Designator:	N0N
Type(s) of Modulation:	None
RF Power Output (rated):	High power: 33dBm Low power: 20dBm
Power Output Adjustment Capability:	High/Low Toggle Switch

Set-up


BR-1022
Vicor Psu
P/N: V1-LU1-1x-CC
S/N: 03040623080739
120VAC, 60Hz

Engineering Considerations

Product Modification	
To achieve compliance the following change(s) were made during compliance testing: None	
Details	Performed by: Client or Nemko
Details	Performed by: Client or Nemko
Justification	
None/Comments	
Deviations	
The following deviations from, additions to, or exclusions from the test specification have been made: None	
Details	

Test Report Revision History	
Issue #	Details of changes made to test report
-	Original Report Issued
1	Updated freq. Range, pg. 5 Detailed freq search range, pg. 16 Added this table to the report

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Kevin Carr	**Date of Test: 28 July 2004**

Minimum Standard: +/- 1.0 dB

Test Results: Complies

Measurement Data: See chart

Power Setting	Rated	Measured	Delta
High	33.0	33.0	0.0
Low	20.0	20.0	0.0

The O/P was measured using a broadband power meter with a thermocouple head.

Section 4. Occupied Bandwidth

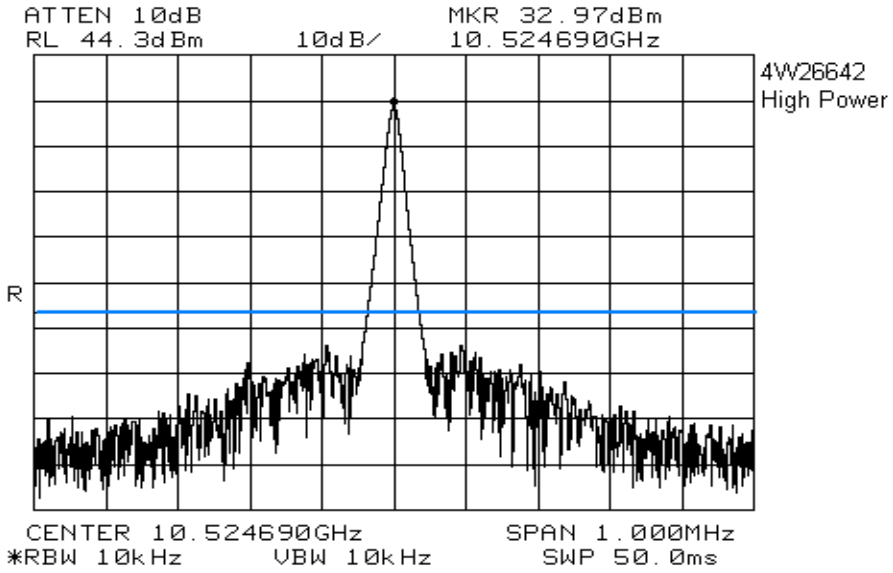
Para. No.: 2.1049

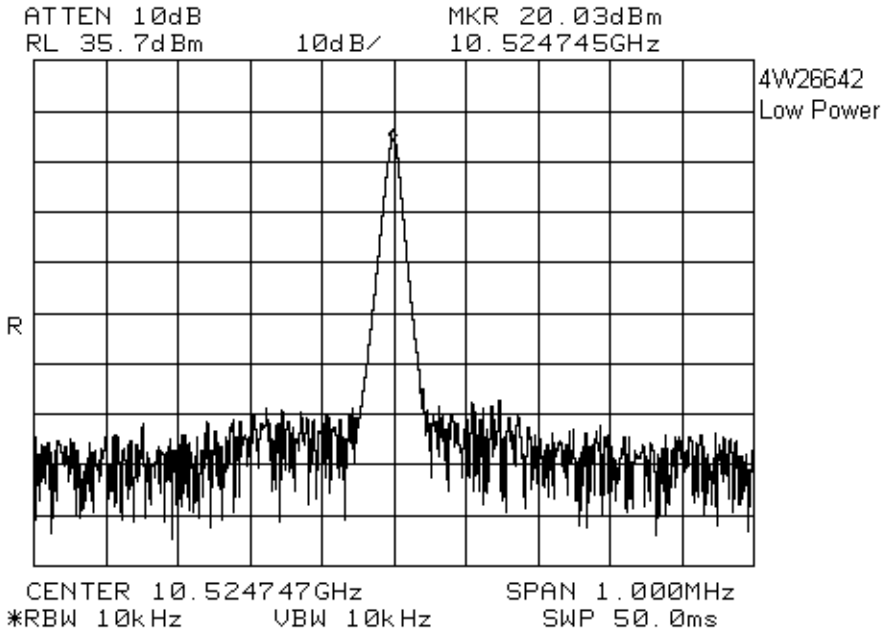
Test Performed By: Kevin Carr	**Date of Test: 29 July 2004**

Minimum Standard: N/A

Test Results: Complies

Measurement Data: Unmodulated Carrier


ATTEN 10dB
RL 44.3dBm
10dB/
MKR 32.97dBm
10.524690GHz
4W26642
High Power
R
CENTER 10.524690GHz
SPAN 1.000MHz
*RBW 10kHz
VBW 10kHz
SWP 50.0ms


ATTEN 10dB
RL 35.7dBm
10dB/
MKR 20.03dBm
10.524745GHz
4W26642
Low Power
R
CENTER 10.524747GHz
SPAN 1.000MHz
*RBW 10kHz
VBW 10kHz
SWP 50.0ms

Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

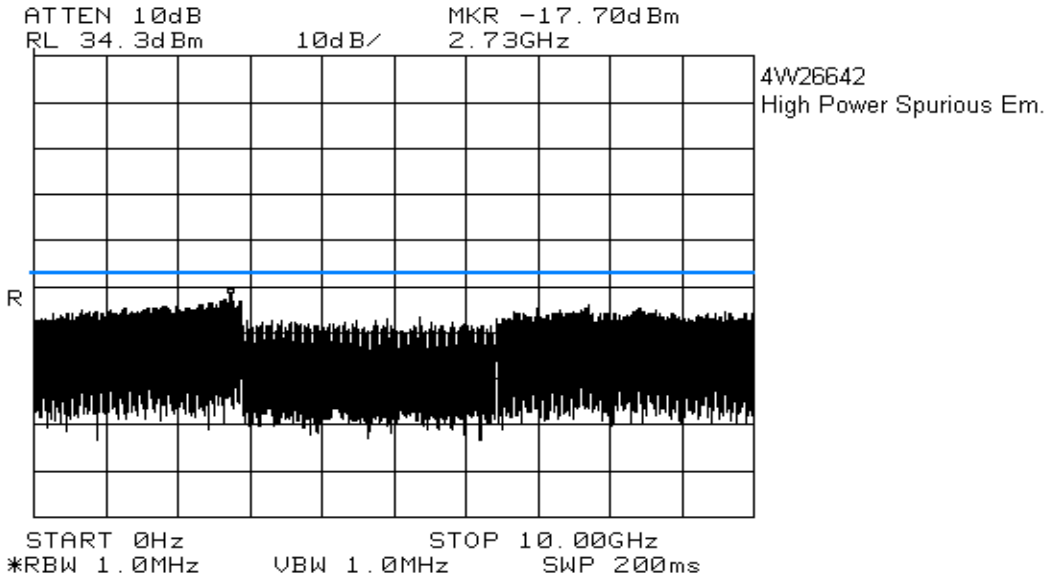
Test Performed By: Kevin Carr	**Date of Test: 28 July 2004**

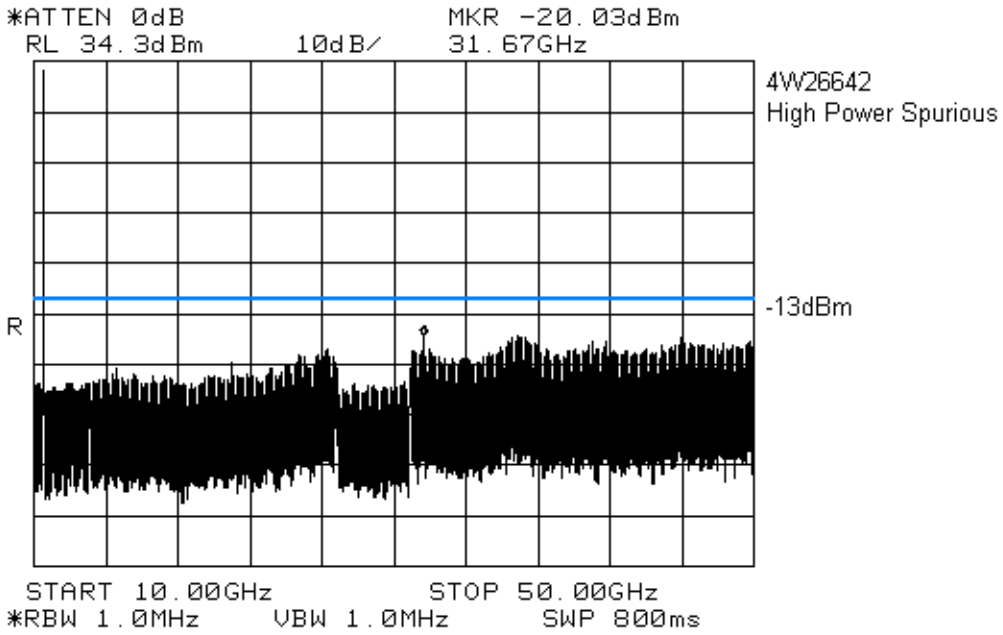
Minimum Standard: -13dBm

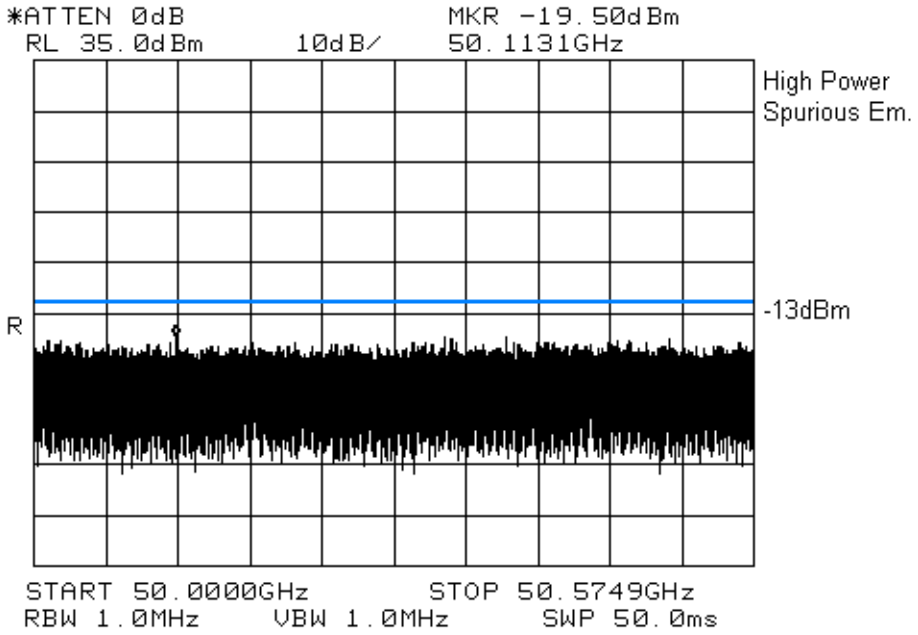
Test Results: Complies

Measurement Data: See Plots

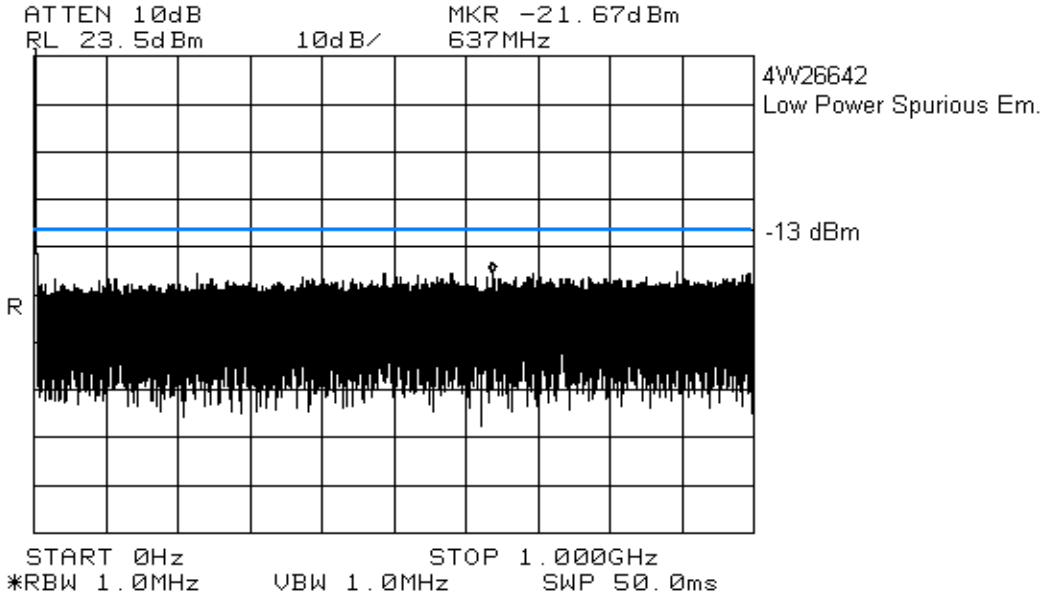
High Power

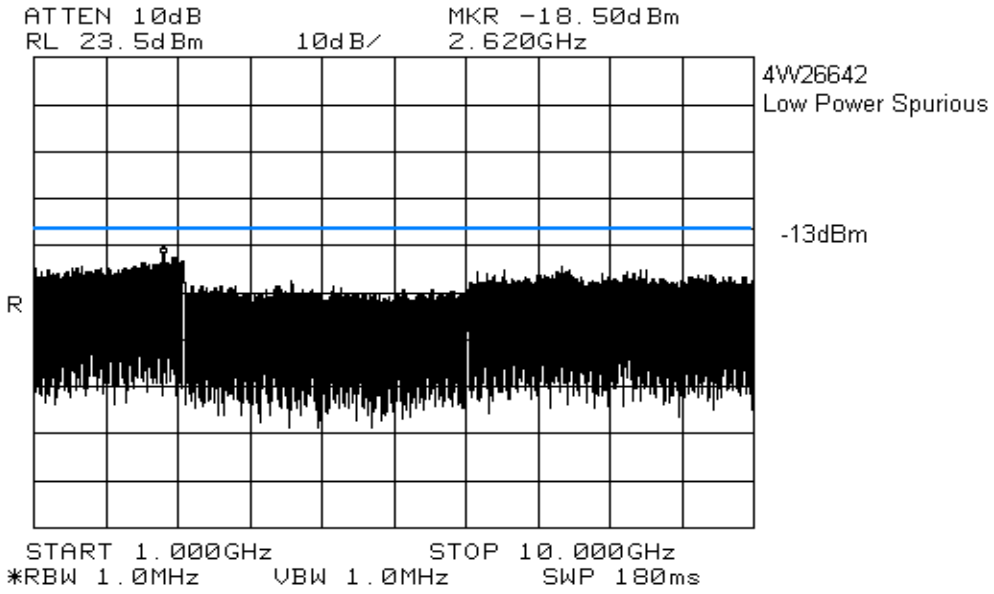

ATTEN 10dB
RL 34.3dBm
10dB/
MKR -17.70dBm
2.73GHz
4W26642
High Power Spurious Em.
R
START 0Hz
STOP 10.00GHz
*RBW 1.0MHz
VBW 1.0MHz
SWP 200ms

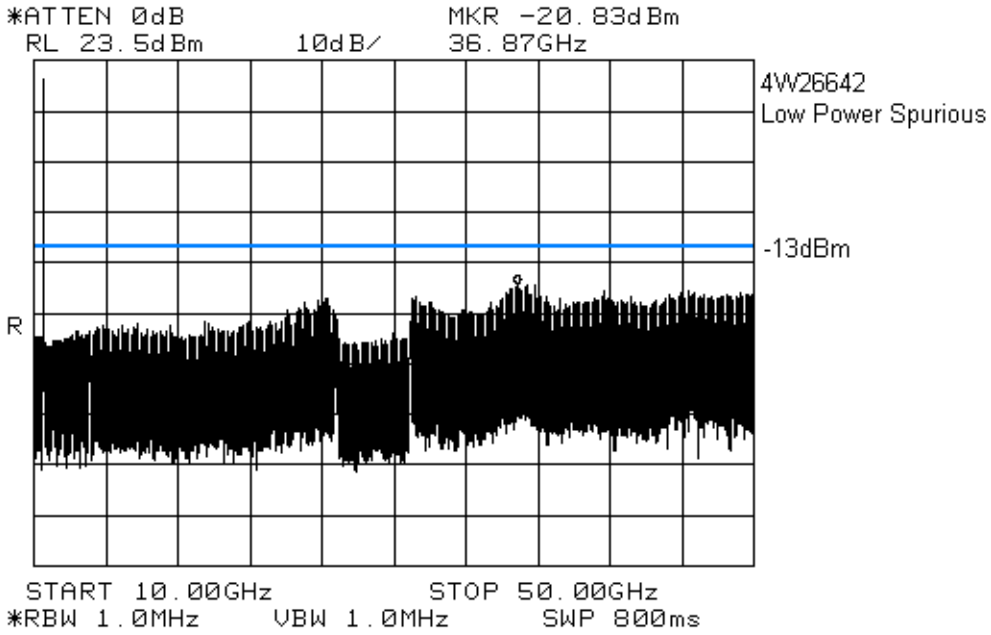

*ATTEN 0dB
RL 34.3dBm
10dB/
MKR -20.03dBm
31.67GHz
4W26642
High Power Spurious
-13dBm
R
START 10.00GHz
STOP 50.00GHz
*RBW 1.0MHz
VBW 1.0MHz
SWP 800ms

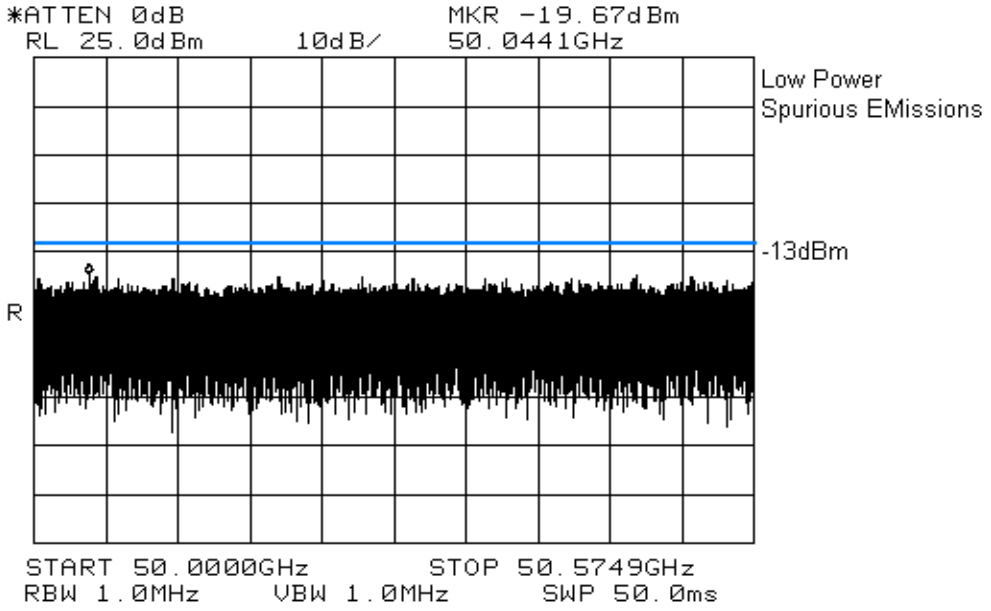

*ATTEN 0dB
RL 35.0dBm
10dB/
MKR -19.50dBm
50.1131GHz
High Power
Spurious Em.
-13dBm
R
START 50.0000GHz
STOP 50.5749GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50.0ms

Low Power


ATTEN 10dB
RL 23.5dBm
10dB/
MKR -21.67dBm
637MHz
4W26642
Low Power Spurious Em.
-13 dBm
R
START 0Hz
STOP 1.000GHz
*RBW 1.0MHz
VBW 1.0MHz
SWP 50.0ms


ATTEN 10dB
RL 23.5dBm
10dB/
MKR -18.50dBm
2.620GHz
4W26642
Low Power Spurious
-13dBm
R
START 1.000GHz
STOP 10.000GHz
*RBW 1.0MHz
VBW 1.0MHz
SWP 180ms


*ATTEN 0dB
MKR -20.83dBm
RL 23.5dBm
10dB/
36.87GHz
4W26642
Low Power Spurious
-13dBm
R
START 10.00GHz
STOP 50.00GHz
*RBW 1.0MHz
VBW 1.0MHz
SWP 800ms


*ATTEN 0dB
MKR -19.67dBm
RL 25.0dBm
10dB/
50.0441GHz
Low Power
Spurious EMissions
-13dBm
R
START 50.0000GHz
STOP 50.5749GHz
RBW 1.0MHz
VBW 1.0MHz
SWP 50.0ms

Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

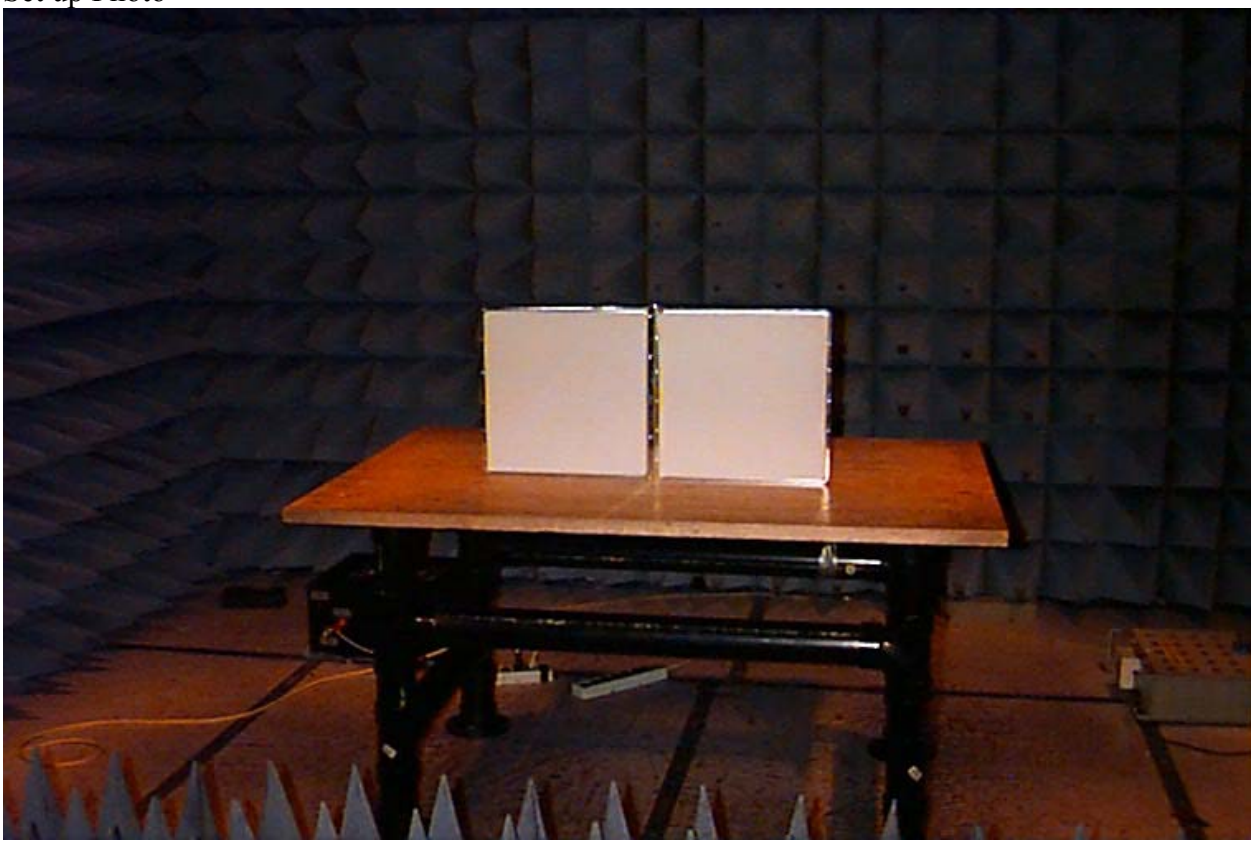
Test Performed By: Kevin Carr	**Date of Test: July 29, 2004**

Minimum Standard: -13dBm

Test Results: Complies

Measurement Data: No emissions detected. The EUT was searched from 30MHz to 50.625GHz.

Set up Photo



Section 7. Frequency Stability

Para. No.: 2.1055

Test Performed By: Kevin Carr	**Date of Test: 28 July 2004**

Minimum Standard: NA

Test Results: Complies

Measurement Data: See Plots

STV=120VAC, 60Hz

Voltage Stability

	Ref. Freq.	Measured	Variance	
	(MHz)	(MHz)	(Hz)	ppm
85% STV@20Deg. C	10524.717942	10524.716536	1405.999999	0.133590
115% STV@20Deg. C	10524.717942	10524.716634	1307.999999	0.124279

Temperature Stability

	Ref. Freq.	Measured	Variance	
	(MHz)	(MHz)	(Hz)	ppm
-30	10524.717942	10525.234830	-516888.000000	-49.111815
-20	10524.717942	10525.254404	-536462.000000	-50.971627
-10	10524.717942	10525.189540	-471598.000000	-44.808612
0	10524.717942	10525.062136	-344194.000001	-32.703394
10	10524.717942	10525.140719	-422777.000002	-40.169913
30	10524.717942	10524.758659	-40717.000000	-3.868702
40	10524.717942	10524.661533	56408.999999	5.359669
50	10524.717942	10524.514206	203735.999999	19.357858

Ref. Freq.: 10524.717942 MHz @ 20Deg. C
1 ppm = 0.010524718 MHz
1 ppm = 10524.71794 Hz

Section 8. Test Equipment List

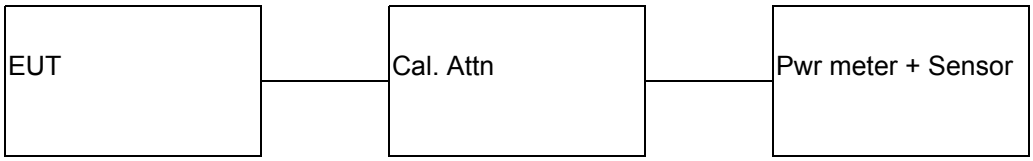
Equipment List - Radiated Emissions

CAL Cycle	Equipment	Manufacturer	Model No.	Asset/Serial No.	Last Cal.	Next Cal.
1 Year	Spectrum Analyzer	Hewlett-Packard	8565E	FA000981	May 31/04	May 31/05
1 Year	Horn Antenna #2	EMCO	3115	FA000825	Dec. 10/03	Dec. 10/04
COU	18.0 – 26.0 GHz Amplifier	NARDA	BBS-1826N612	FA001550	COU	COU
COU	26 – 40.0 GHz Amplifier	NARDA	DBL-2640N610	FA001556	COU	COU
1 Year	26-40GHz Horn	ETS	3166	FA001847	19 June 04	19 June 05
COU	40-60GHz Horn	Olson	OMLWR19	FA1523	COU	COU
COU	20 dB Attn	Narda	769-20	FA001394	COU	COU
COU	20 dB Attn	Narda	776B-20	FA001153	COU	COU
COU	10 dB Attn	Weinschel	47-10-34	FA001739	COU	COU
COU	Temperature Chamber	Thermotron	SM-19C	FA001030	COU	COU
1 Year	Thermometer and sensor system	Fluke	52	FA001247, FA001248	17 Feb. 04	17 Feb. 05
1 Year	Power Meter	HP	E4418B	FA001413	26 May 04	26 May 05
1 Year	Power Sensor	HP	8487A	FA001741	9 June 04	9 June 05

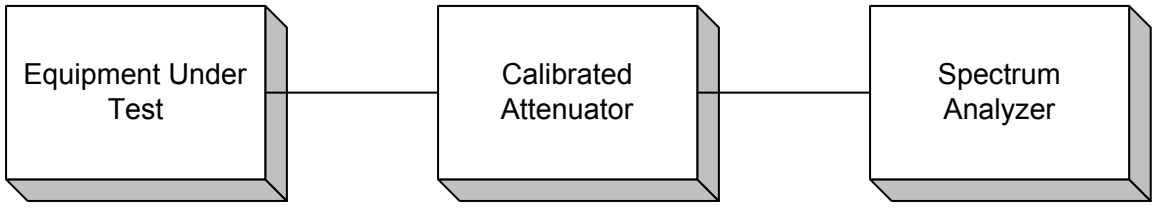
Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair

Section 9. Test Diagrams

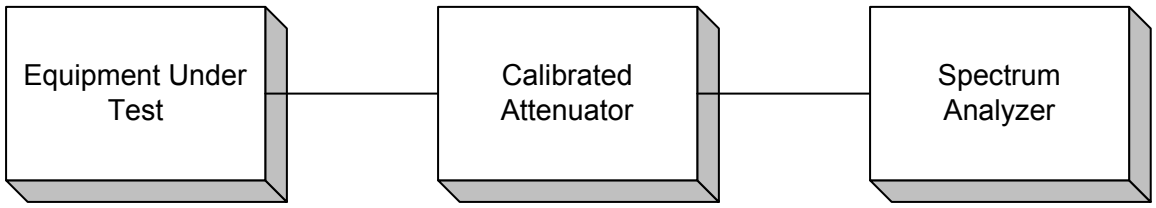
Para. No. 2.1046 - R.F. Power Output



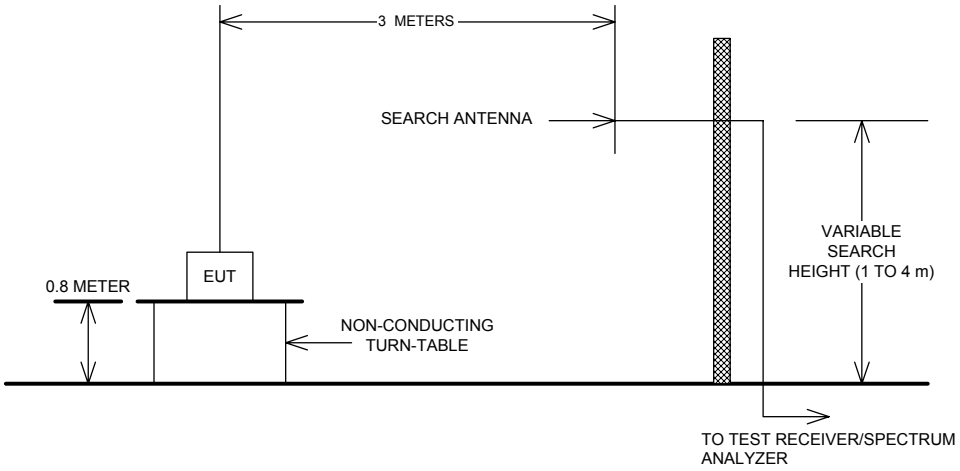
Para. No. 2.1049 - Occupied Bandwidth



Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



Para. No. 2.1053 - Field Strength of Spurious Radiation



Para. No. 2.1055 - Frequency Stability