



Nemko

Test Report: 3W07299

Applicant: Spotwave Wireless Inc.
1 Hines Rd.
Ottawa, Ontario
K2K 3C7

**Equipment Under Test:
(EUT)** SpotCell 100 CU
Low Power Cellular Band Repeater

In Accordance With: **FCC Part 22, Subpart H**

FCC ID. : P3YSPOTCELL0008

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

Authorized By: 
Russell Grant, Senior Technical Assessor.

Date: 14 July 2003

Total Number of Pages: 34

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EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater

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 22, Subpart H.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

A	M	P
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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: _____
Glen Westwell, Wireless Technologist

DATE: 14 July 2003

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This report applies only to the items tested.

EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater

Summary Of Test Data

Name Of Test	Para. No.	Result
RF Power Output	2.1046	Complies
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	N/A

Notes:

This RF device, the Spotcell 100 CU is part of a Cellular Band amplifier. It is used to enhance signals in the Downlink direction.

The EUT is an f1-f1 amplifier, as such frequency stability was not performed.

Indoor Temperature: 22 °C
 Humidity: 45 %

Outdoor Temperature: 28 °C
 Humidity: 40 %

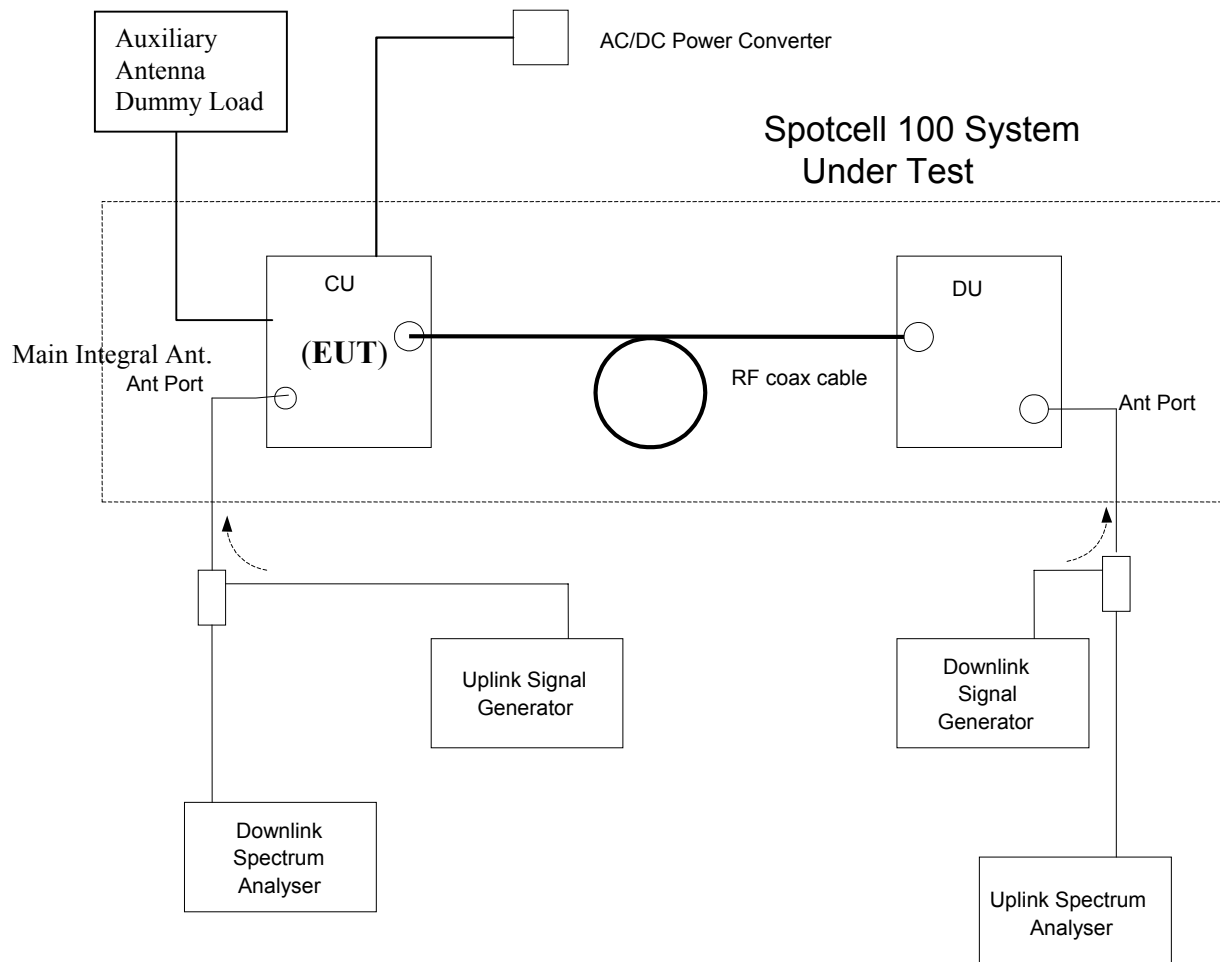
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EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater

Section 2. General Equipment Specification

Manufacturer:	Spotwave Wireless Inc.
Model No.:	SpotCell 100 CU
Serial No.:	CU S/N SPO-030004570001 S/N SPO-030004580002
Date Received In Laboratory:	04 July 2003
Nemko Identification No.:	#1&6
Supply Input Voltage:	120 VAC
Frequency Range:	Downlink: BLK A&B: 869-894MHz
RF Output (Rated/Antenna Port):	CU (Downlink): +7dBm (Max. Composite)
Antenna Gain (Integral):	CU (Downlink): 3dBi
Emission Designator(modulation):	CDMA - DXW TDMA - F9W AMPS - F8W

Test Set Up Configuration



Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Glen Westwell	Date of Test: 14 July 2003
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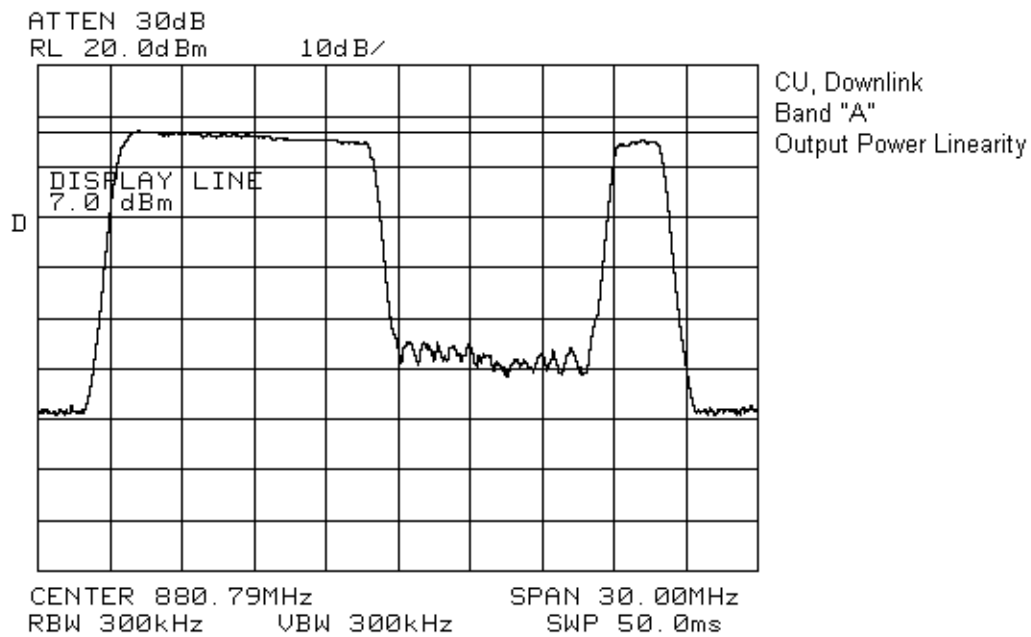
Minimum Standard: 22.913(a)

Test Results: Complies.

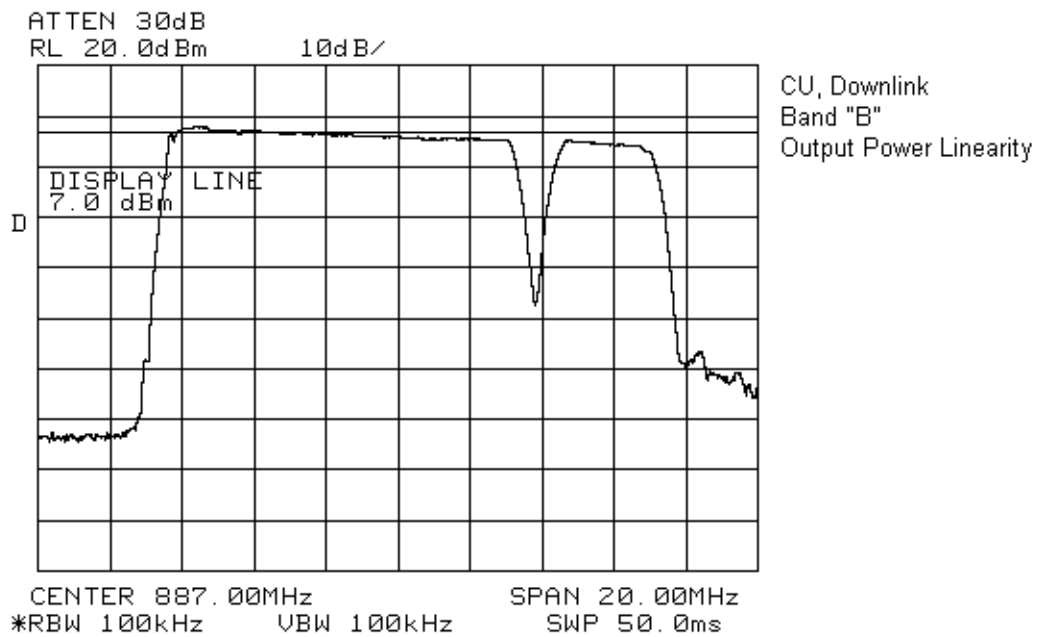
The maximum RF output power is within ± 1 dB of the manufacturer's rating. The RF output power is de-rated according to the number of channels via AGC and is equal to $P_{\max} - 10\log N$.

$P_{\max}$ = Maximum RF Output Power
N = Number Of Channels

EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Glen Westwell	Date of Test: 14 July 2003
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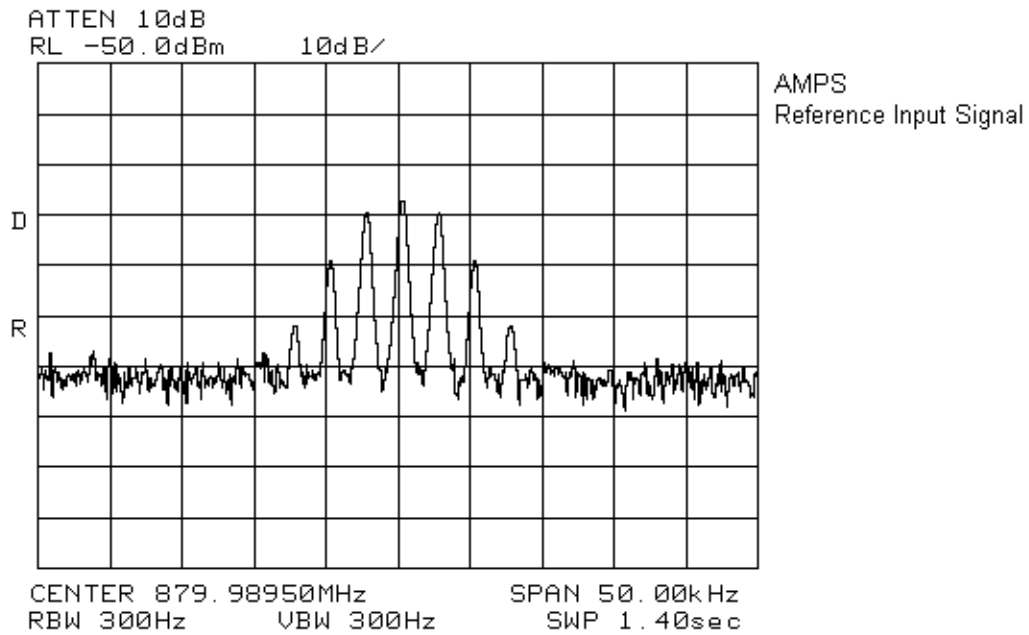
Minimum Standard: 22.917

Test Results: Complies.

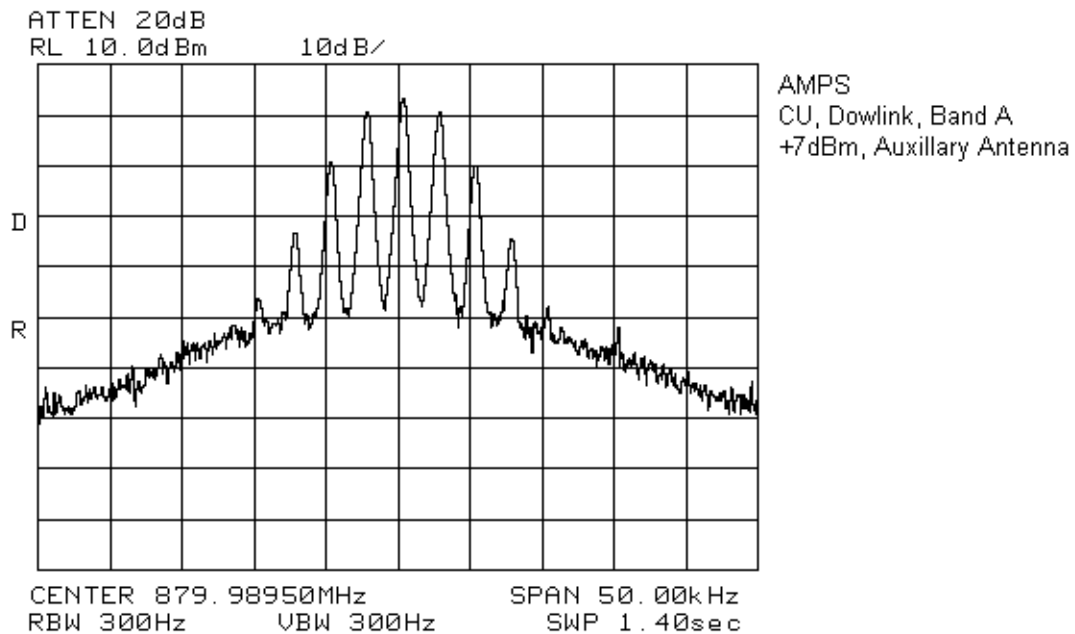
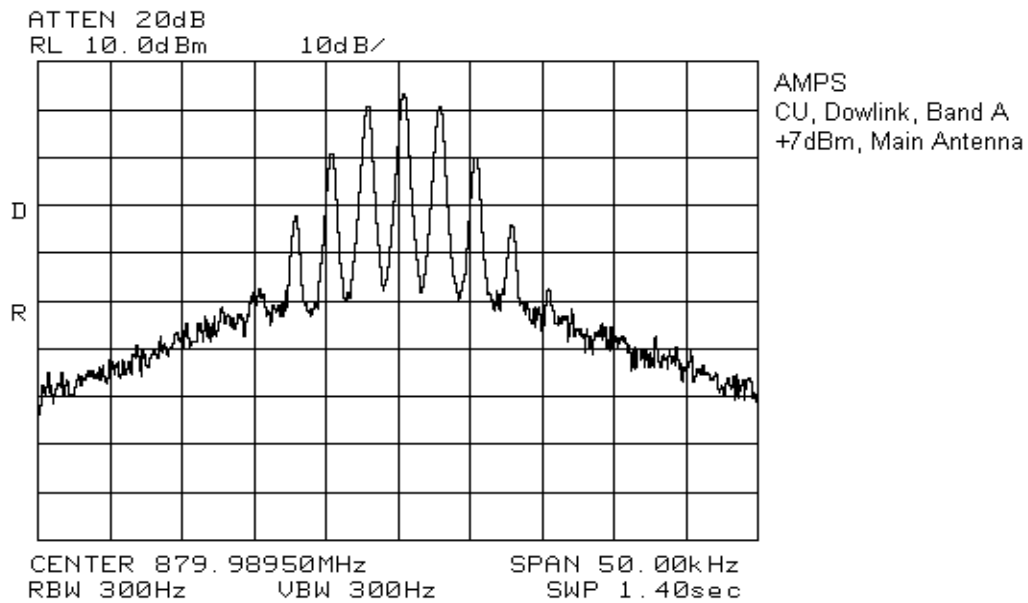
Measurement Data: See attached graphs.

The occupied bandwidth was measured by comparison of input to the output signal. This was done in order to determine if there was any degradation to the output signal due to the amplification through the repeater.

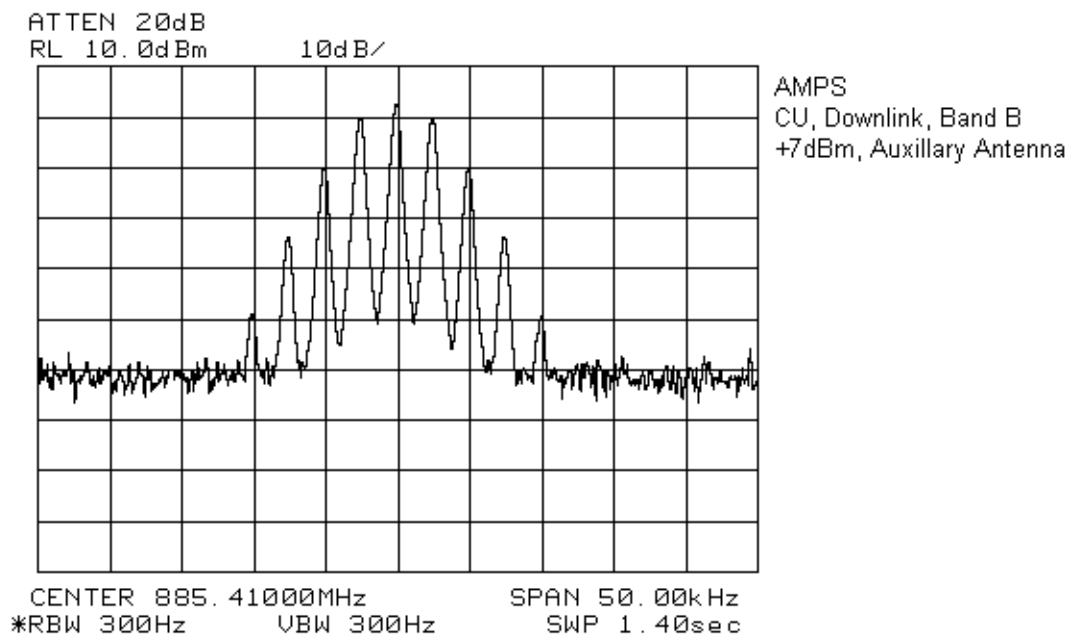
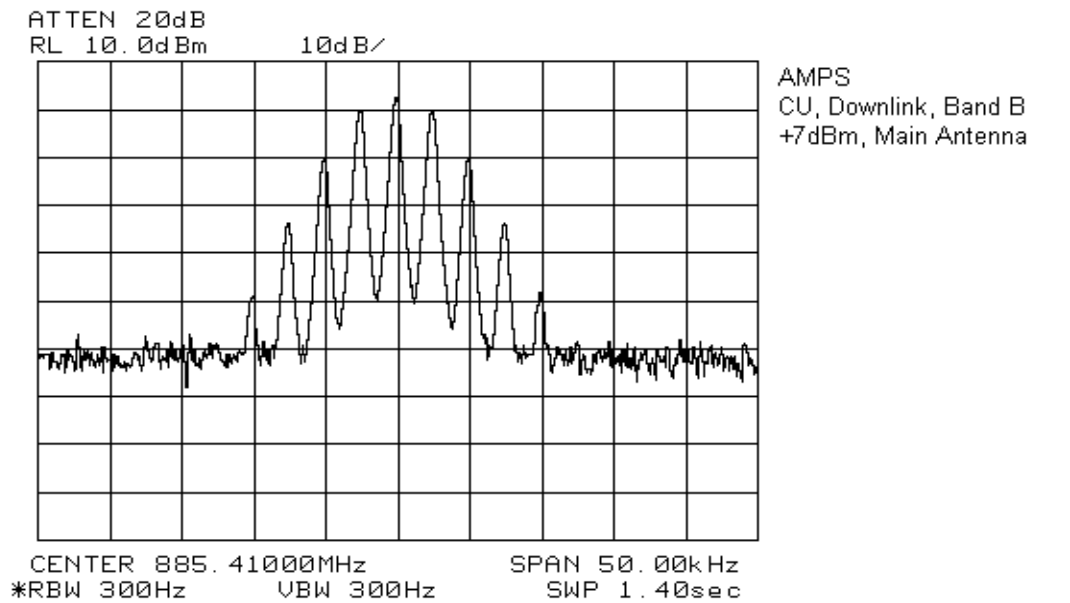
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



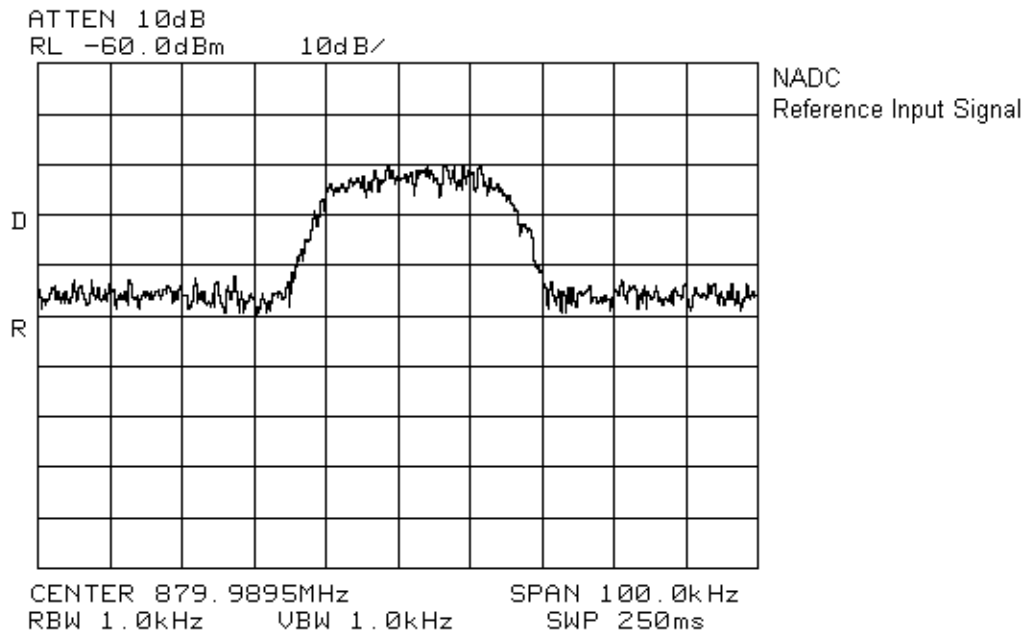
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



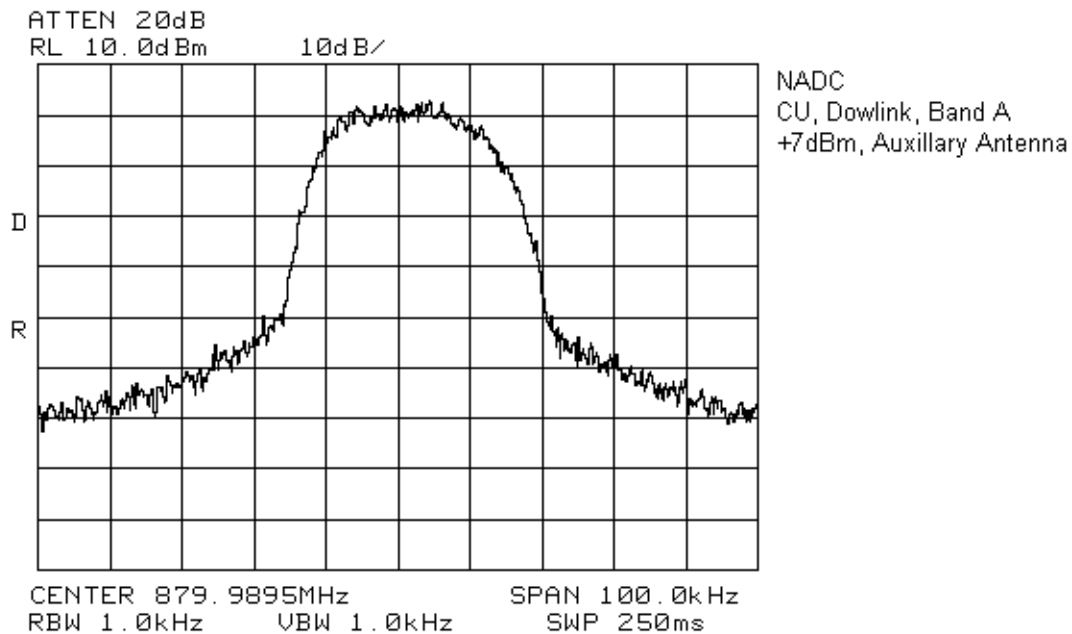
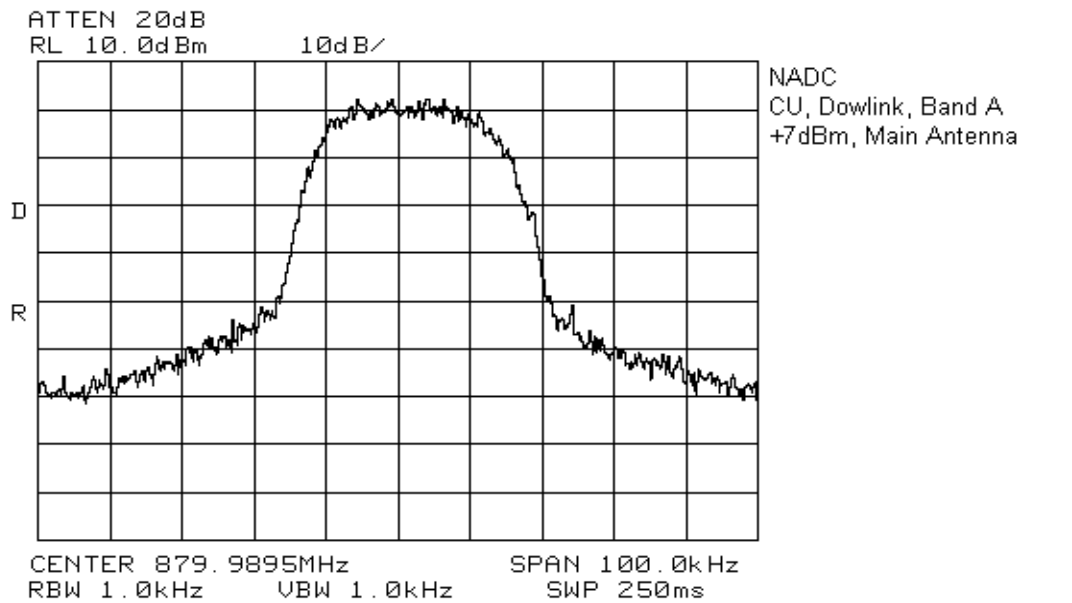
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



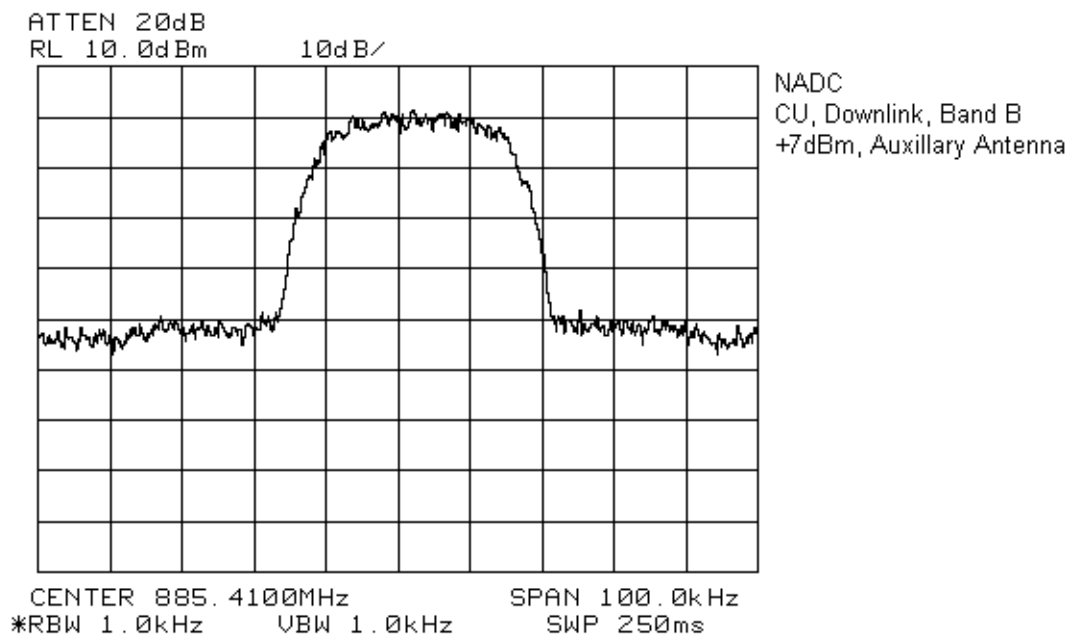
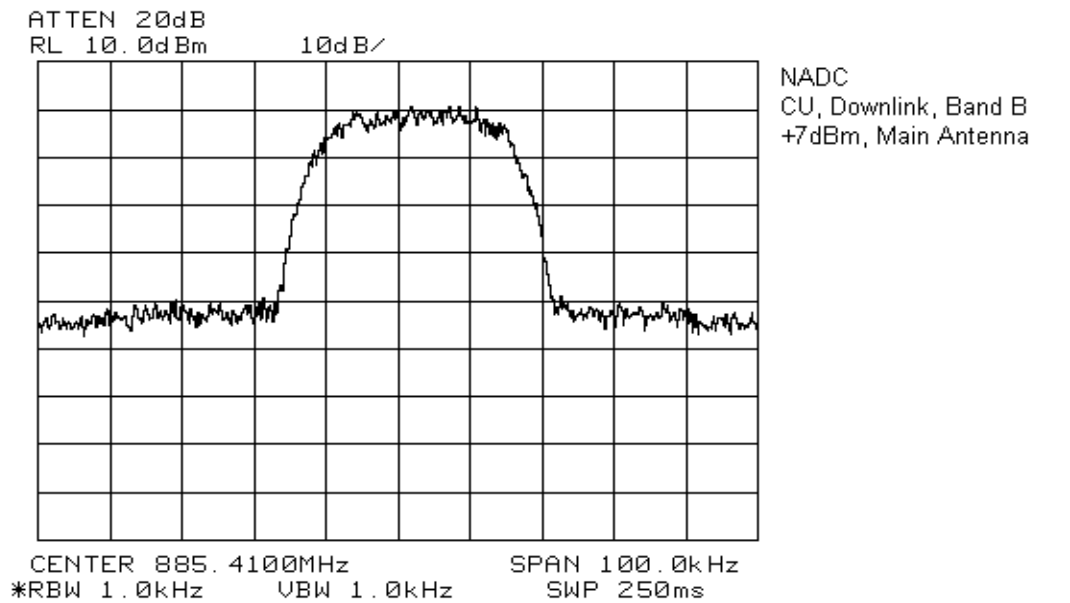
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



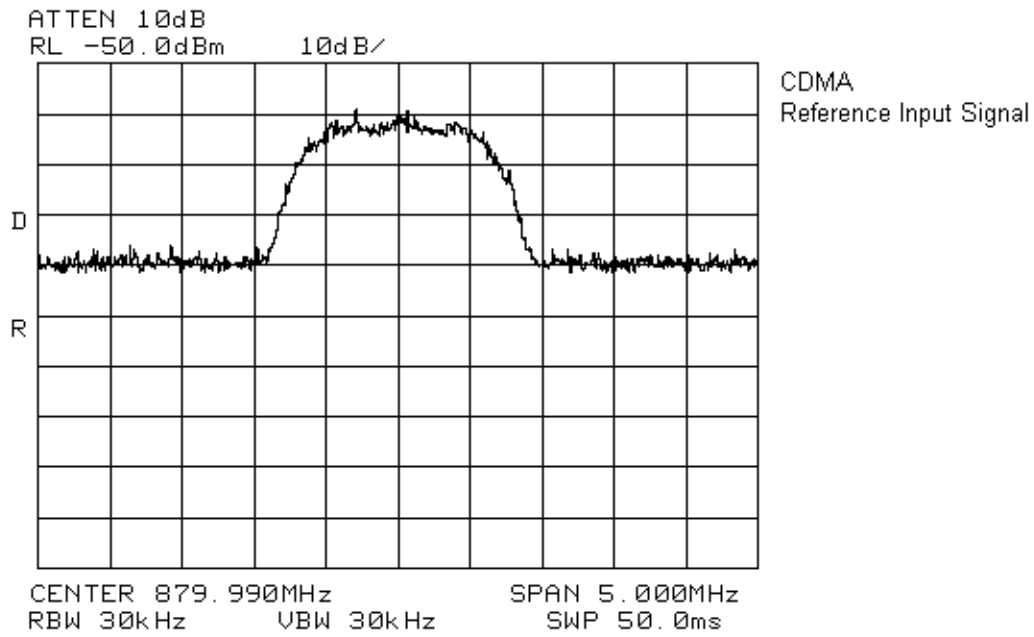
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



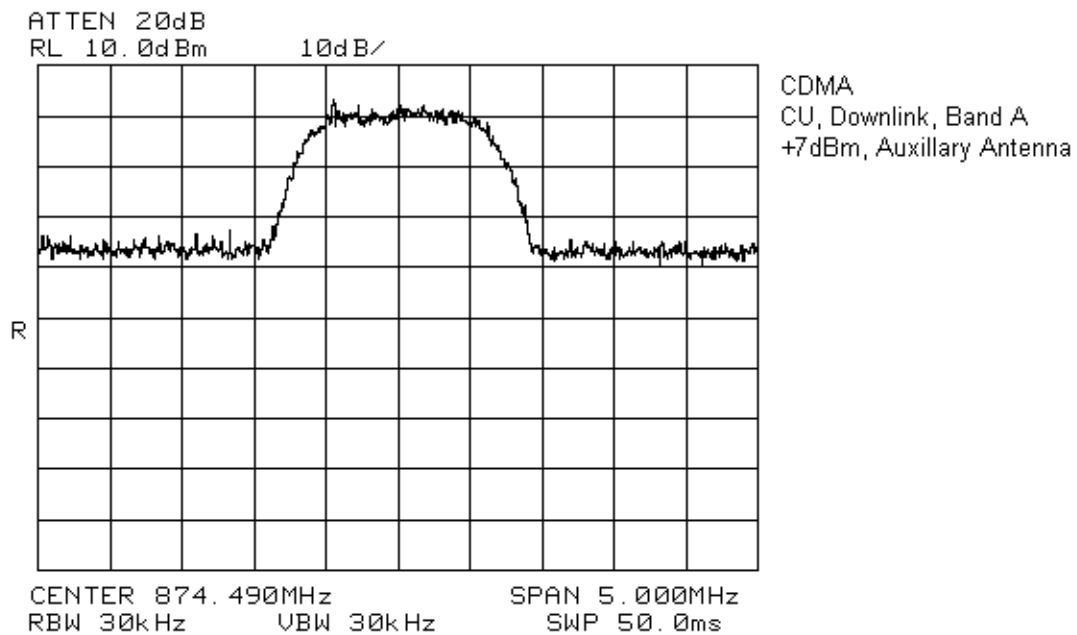
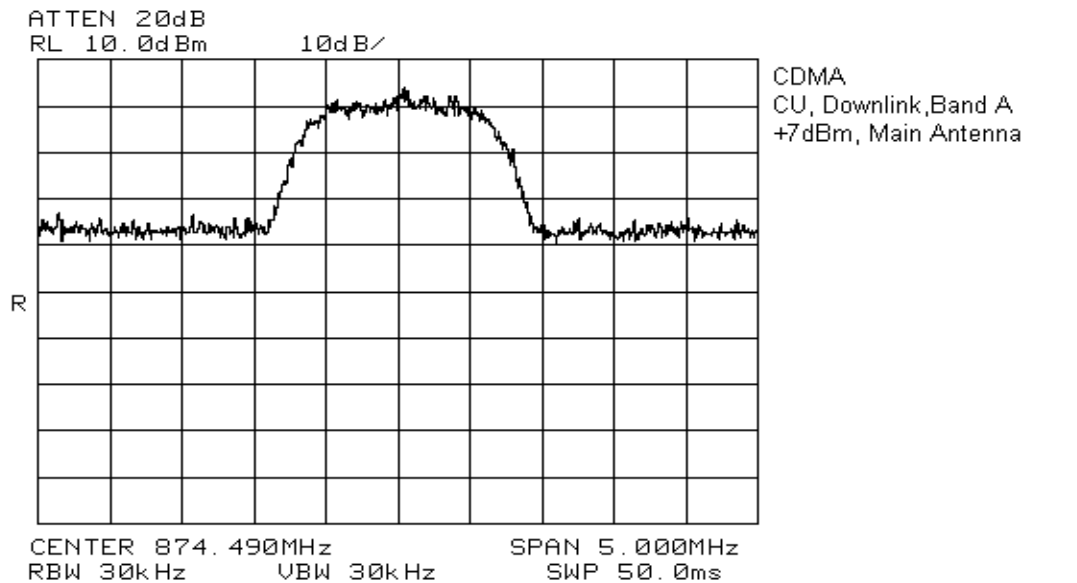
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

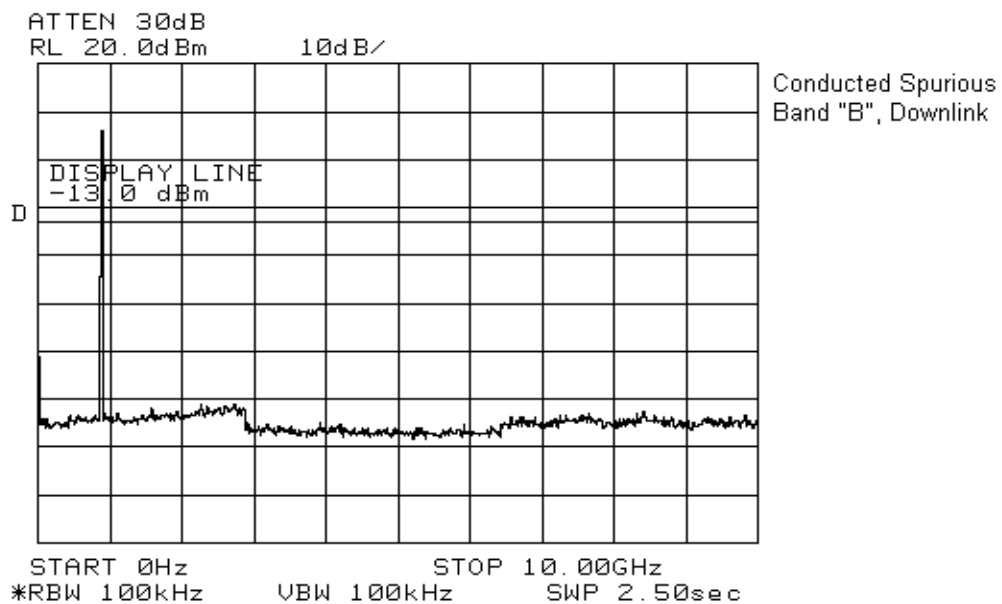
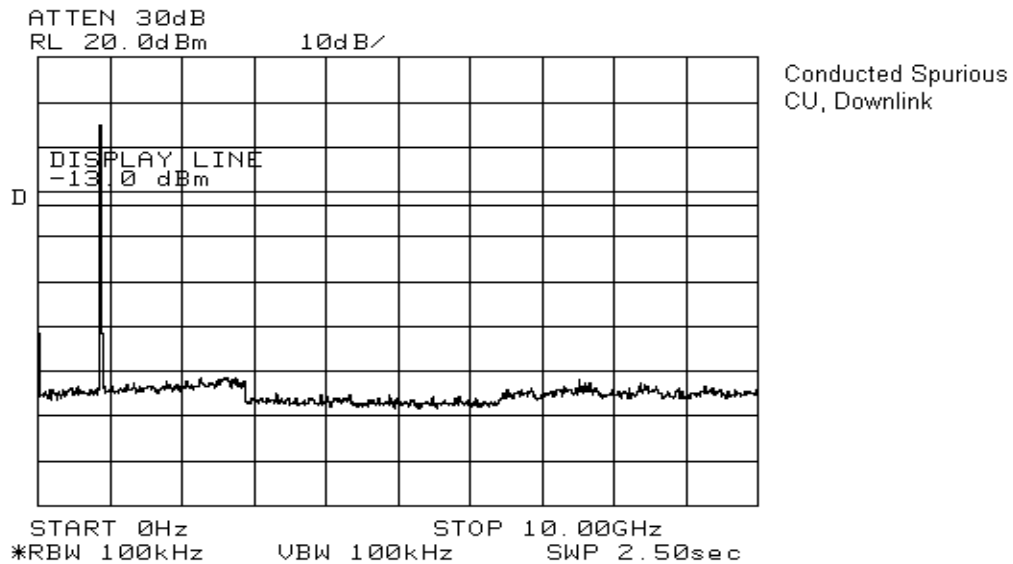
Test Performed By: Glen Westwell	Date of Test: 14 July 2003
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Minimum Standard: 22.917 (e); -13 dBm

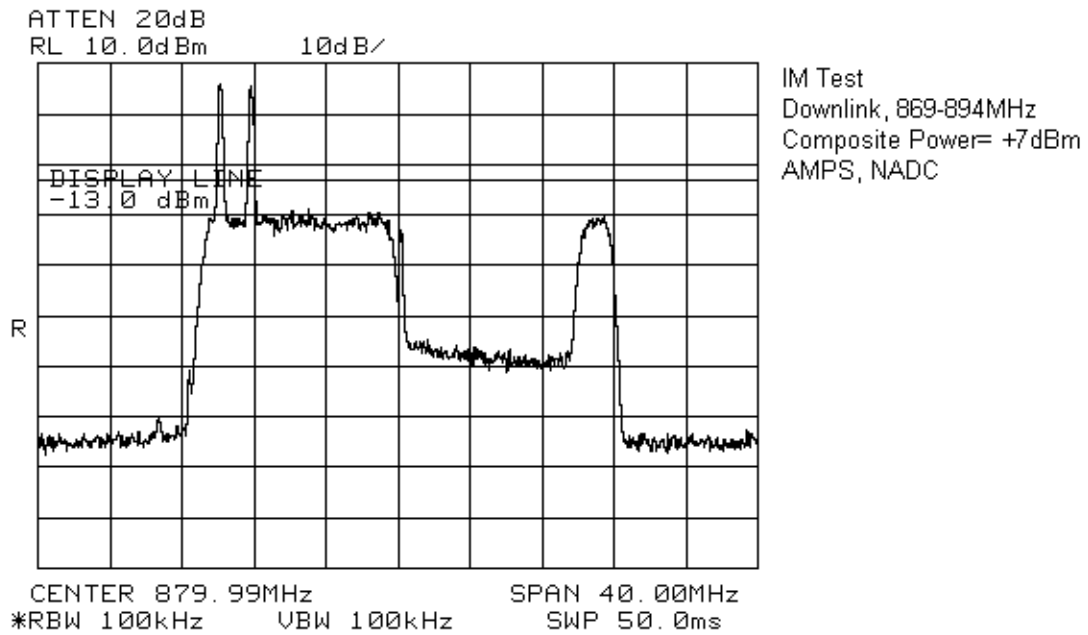
Test Results: Complies.

Measurement Data: See attached graphs (worst case).

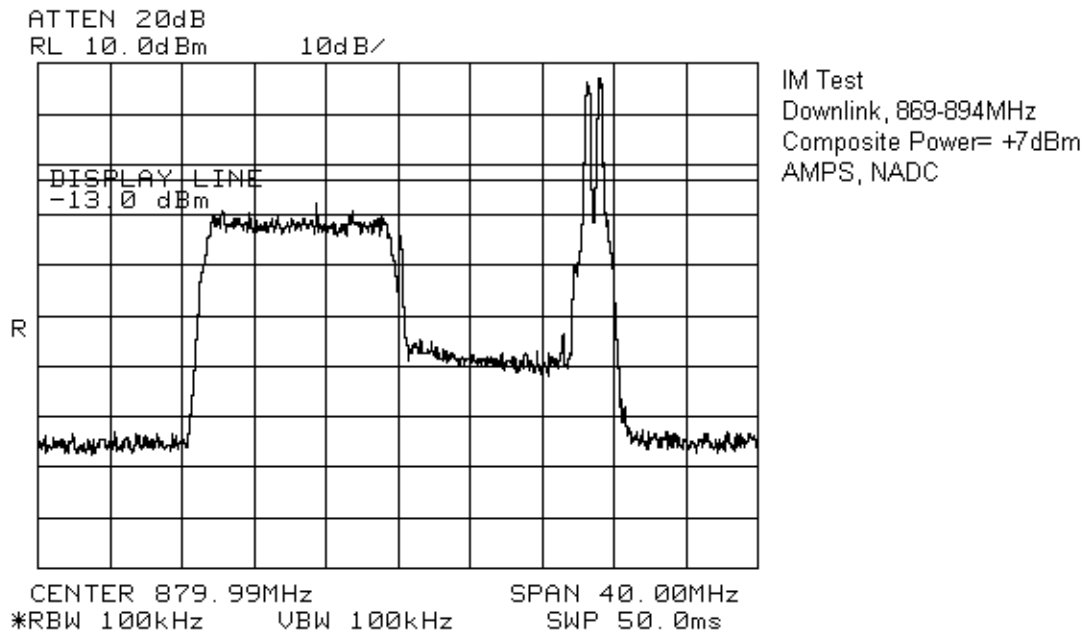
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



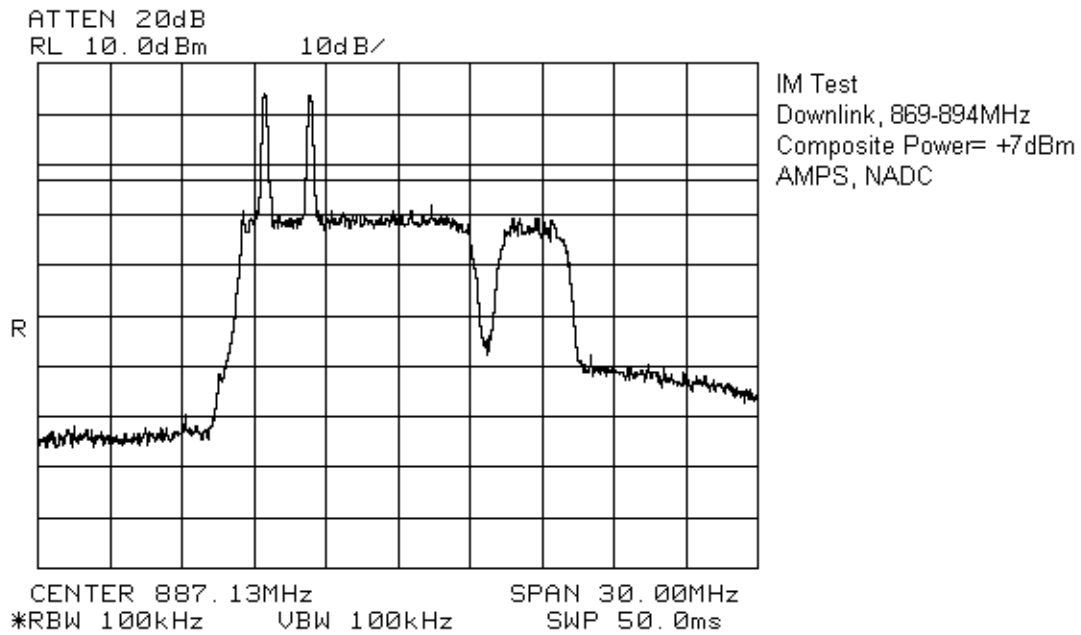
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



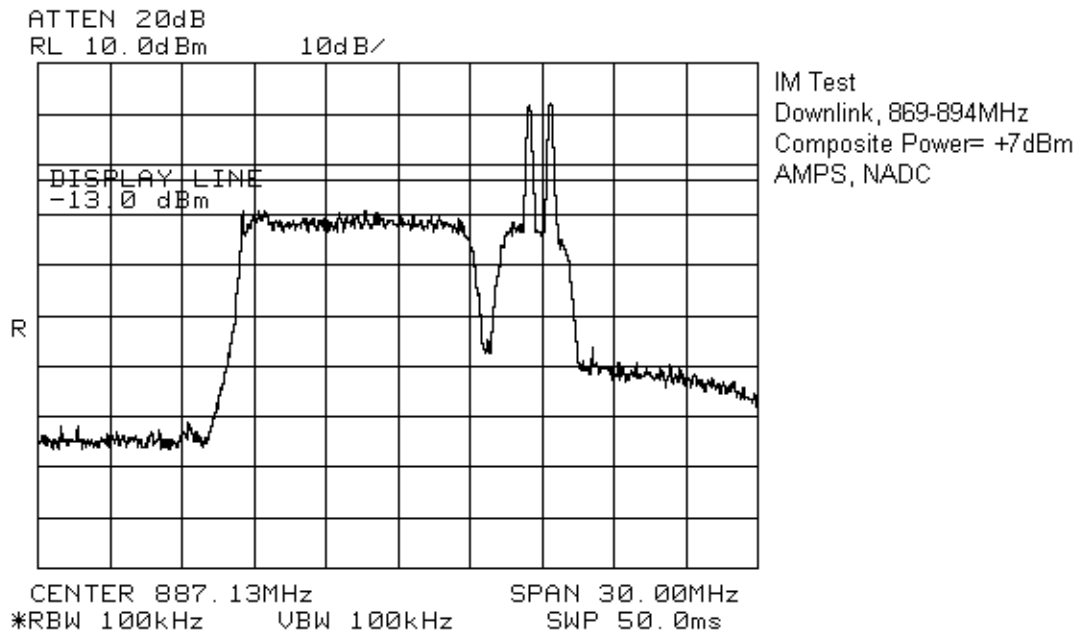
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



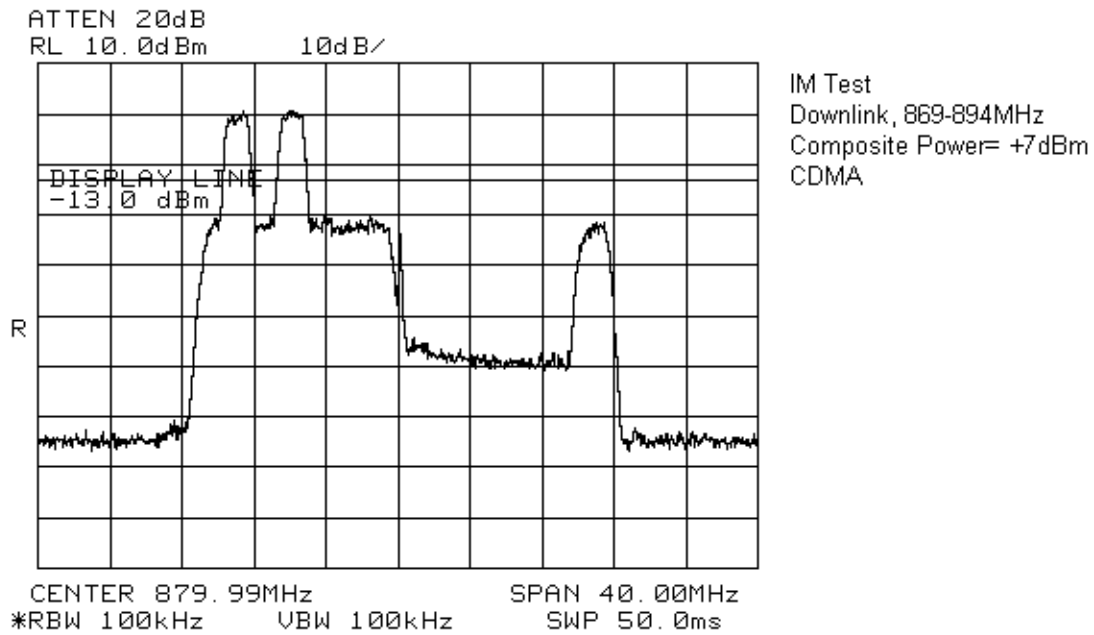
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



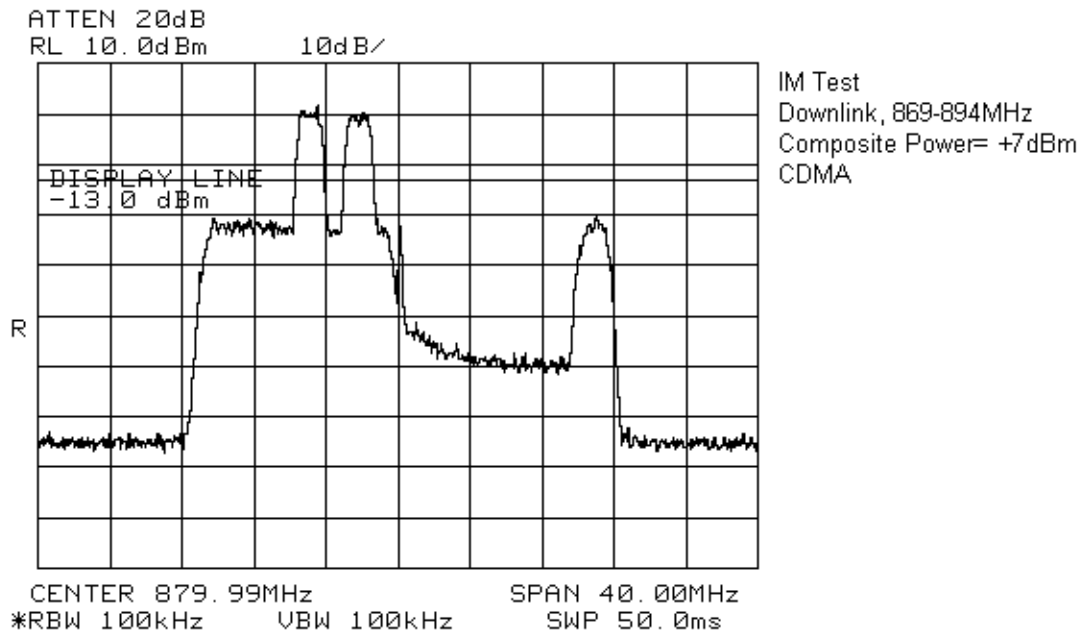
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



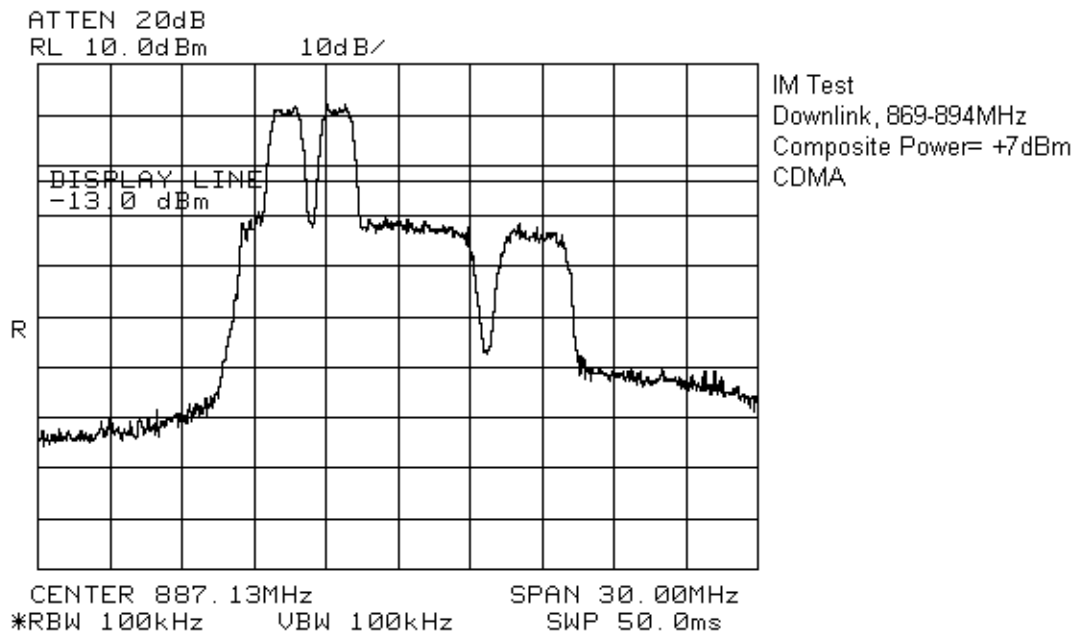
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



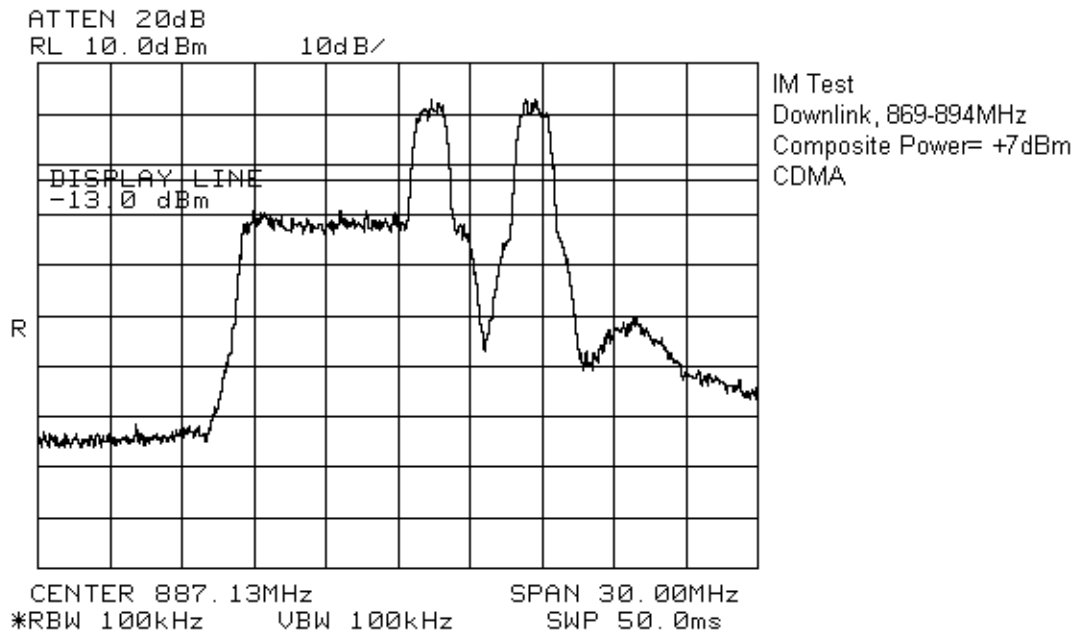
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Glen Westwell	Date of Test: 14 July 2003
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Minimum Standard: 22.917(e); -13dBm

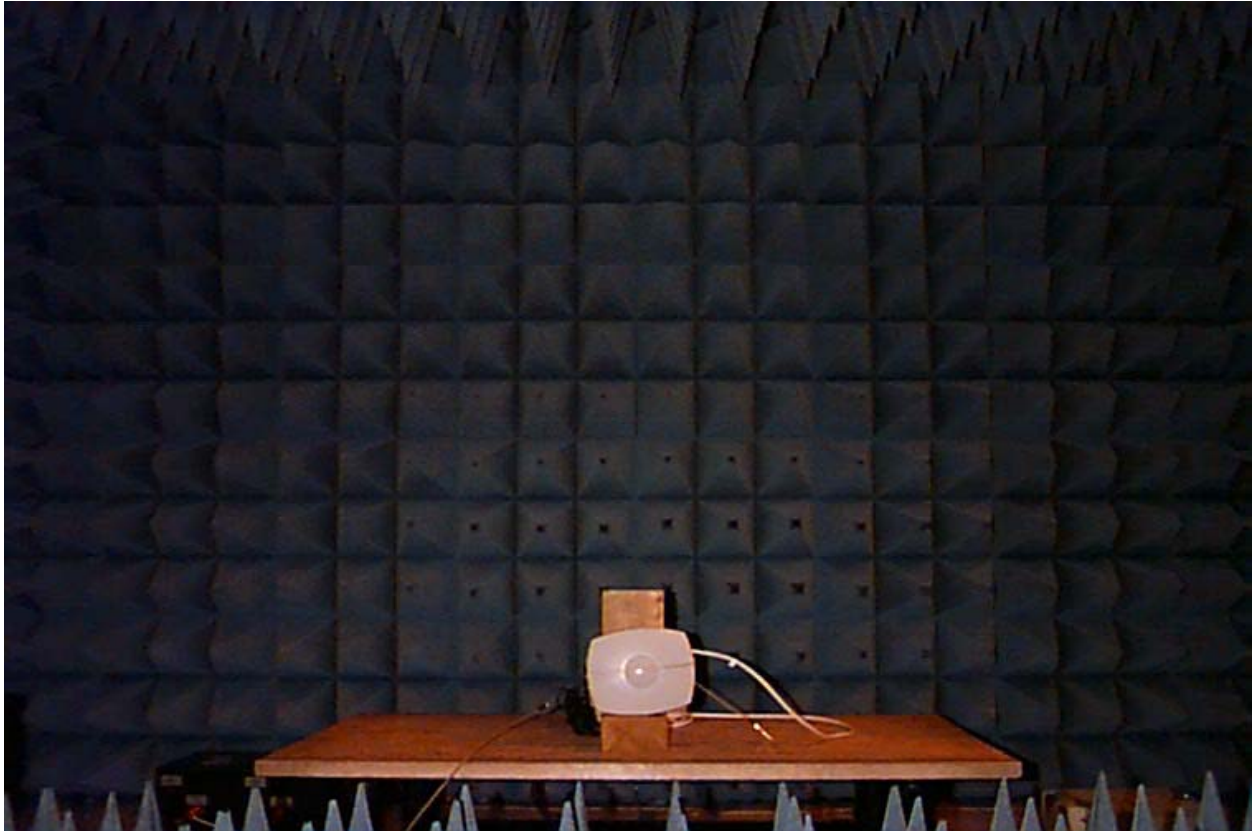
Test Results: Complies.

Measurement Data: No emissions detected.

All spurious and harmonic emissions were search to the 10th harmonic.

EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater

Field Strength of Spurious Emissions
SpotCell 100 CU



EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater

Section 7. Frequency Stability

Para. No.: 2.1055

Test Performed By: Glen Westwell	Date of Test: 14 July 2003
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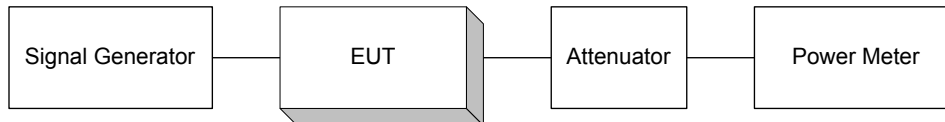
Minimum Standard: 22.355

Test Results: N/A

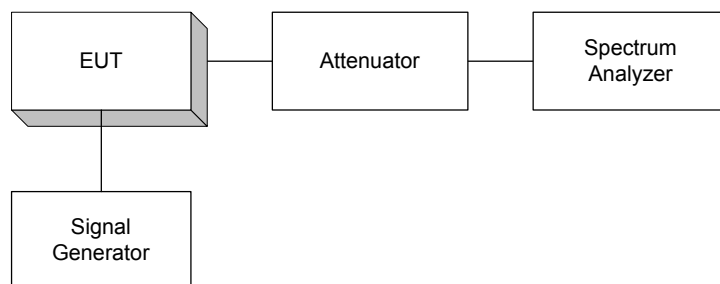
The EUT is a f1-f1 amplifier, as such frequency stability was not performed.

Section 8. Block Diagrams

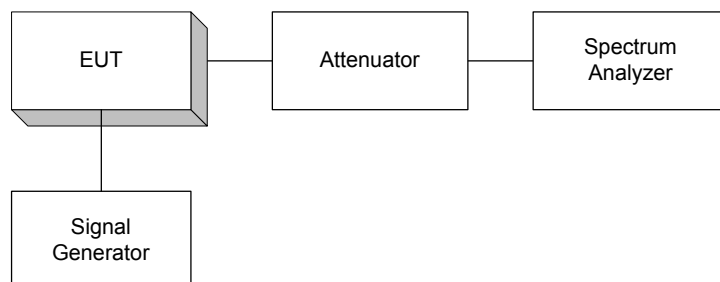
Para. No. 2.1046 - R.F. Power Output



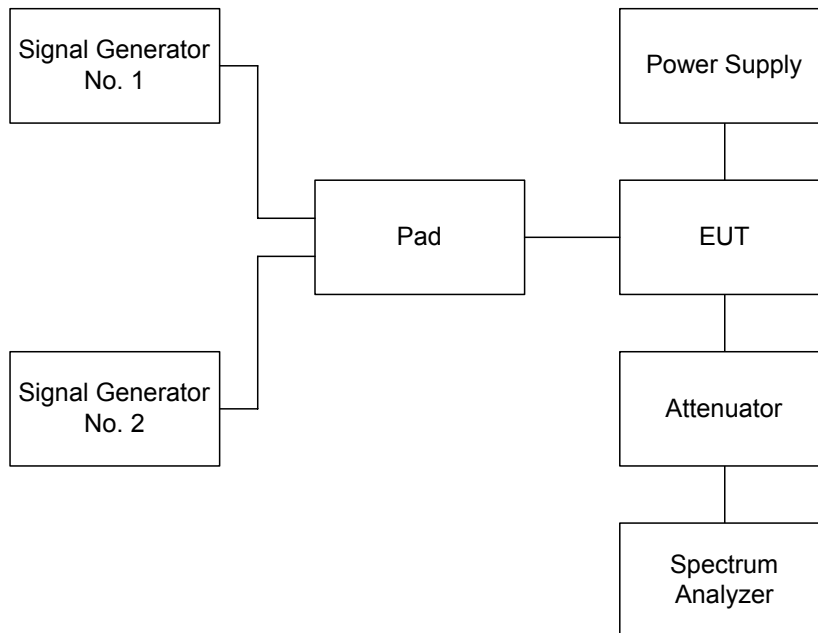
Para. No. 2.1049 - Occupied Bandwidth



Para. No. 2.1051 - Spurious Emissions at Antenna Terminals



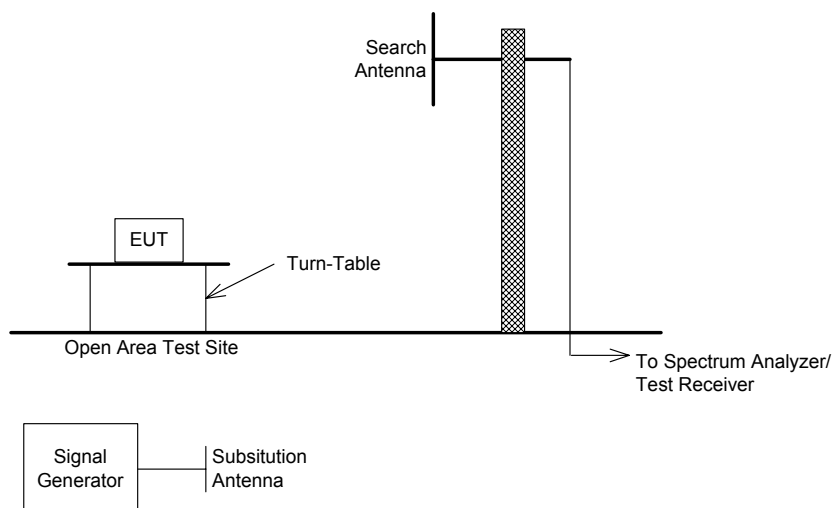
EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater



Para. No. 2.1053 - Field Strength of Spurious Radiation

TIA/EIA 603

Effective Radiated Power
Spurious Emissions



*EQUIPMENT: SpotCell 100, Low Power Cellular Band Repeater***Section 9. Test Equipment List**

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	03 Jul 03	03 Jul 04
1 Year	Spectrum Analyzer	Hewlett-Packard	8566B	FA001309	June. 05/03	June. 05/04
1 Year	Spectrum Analyzer Display	Hewlett-Packard	85662A	FA001309	June. 05/03	June. 05/04
NCR	Bilog	Schaffner	CBL6112B	FA001504	NCR	NCR
1 Year	Horn Antenna	EMCO #1	3115	FA000649	23 Dec 02	23 Dec 03
1 Year	RF AMP	JCA	4-8 GHz	FA001497	18 June 03	18 June 04
1 Year	RF AMP	JCA	2-4 GHz	FA001496	18 June 03	18 June 04
1 Year	RF AMP	JCA	1-2 GHz	FA001498	18 June 03	18 June 04
-3 Year	Signal Generator	Rhode & Schwarz	SM1Q03E	FA001269	06 Dec 02	06 Dec 03
3 Year	Signal Generator	Rohde & Schwarz	SM1Q03	FA001091	18 Sep 00	18 Sep 03
1 Year	Power Meter	Hewlett Packard	E4418B	FA001678	01 Apr 03	01 Apr 04
1 Year	Power Sensor	Hewlett Packard	8487A	FA001741	28 Mar 03	28 Mar 04

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