



Nemko

Test Report:

2W06371

Applicant:

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

**Equipment Under Test:
(EUT)**

SpotCell 111/112 CU
PCS Low Power Repeater

In Accordance With:

FCC Part 24, Subpart E

FCC ID. :

P3YSPOTCELL0006

Tested By:

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

Authorized By:

Kevin Carr, EMC Specialist

Date:

20 September 2002

Total Number of Pages:

28

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EQUIPMENT: *SpotCell 111/112, PCS Low Power 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 24, Subpart E.



New Submission



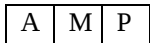
Production Unit



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: _____
Glen Westwell, Wireless Technologist

DATE: 20 September 2002

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This report applies only to the items tested.

EQUIPMENT: SpotCell 111/112, PCS Low Power 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	Complies

Notes:

This RF device, the Sptocell 111/112 CU is part of a PCS Band amplifier. It is used to enhance signals in the Downlink direction.

Indoor Temperature: 22 °C
 Humidity: 45 %

Outdoor Temperature: 23 °C
 Humidity: 48 %

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EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater

Section 2. General Equipment Specification

Manufacturer:	Spotwave Wireless Inc.
Model No.:	SpotCell 111/112 CU
Serial No.:	CU S/N 0020002830005
Date Received In Laboratory:	3 Sept., 2002
Nemko Identification No.:	#3
Supply Input Voltage:	120 VAC
Frequency Range:	Downlink: BLK A: 1930-1945MHz BLK D: 1945-1950MHz BLK B: 1950-1965MHz BLK E: 1965-1970MHz BLK F: 1970-1975MHz BLK C: 1975-1990MHz
RF Output (Rated):	CU (Downlink): +7dBm
Antenna Gain (Integral):	CU (Downlink): 3dBi
Emission Designator(modulation):	CDMA - G7W GSM - F7W

Section 3. RF Power Output

Para. No.: 2.1046

Test Performed By: Glen Westwell	Date of Test: 5 Sept., 2002
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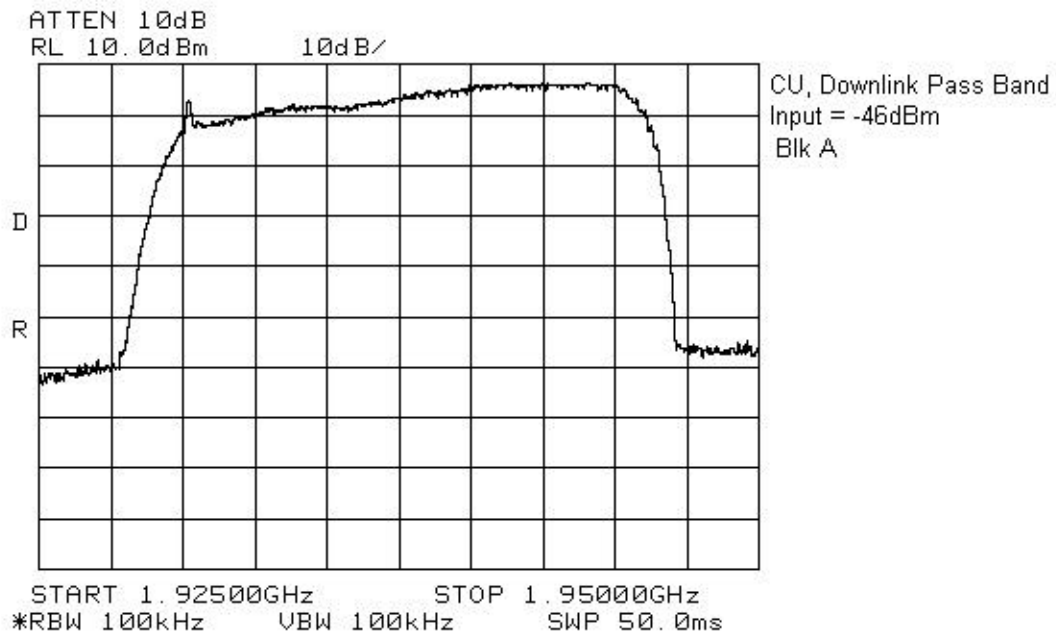
Minimum Standard: 24.232

Test Results: Complies.

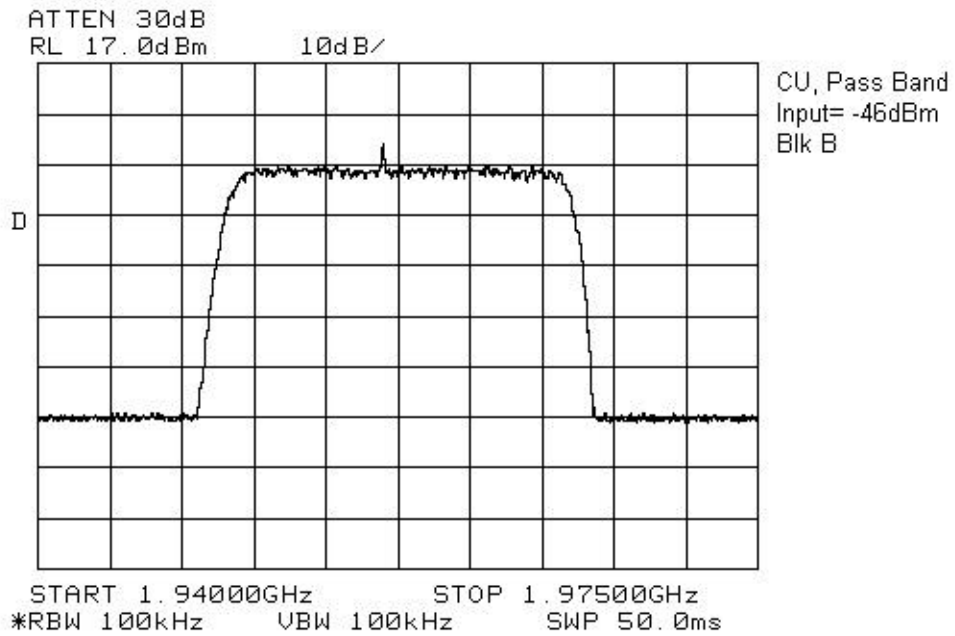
The maximum RF output power is within ± 1 dB of the manufacturer's rating. The RF output power is de-rated according to the number of channels via AGE and is equal to $P_{max} - 10\log N$.

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

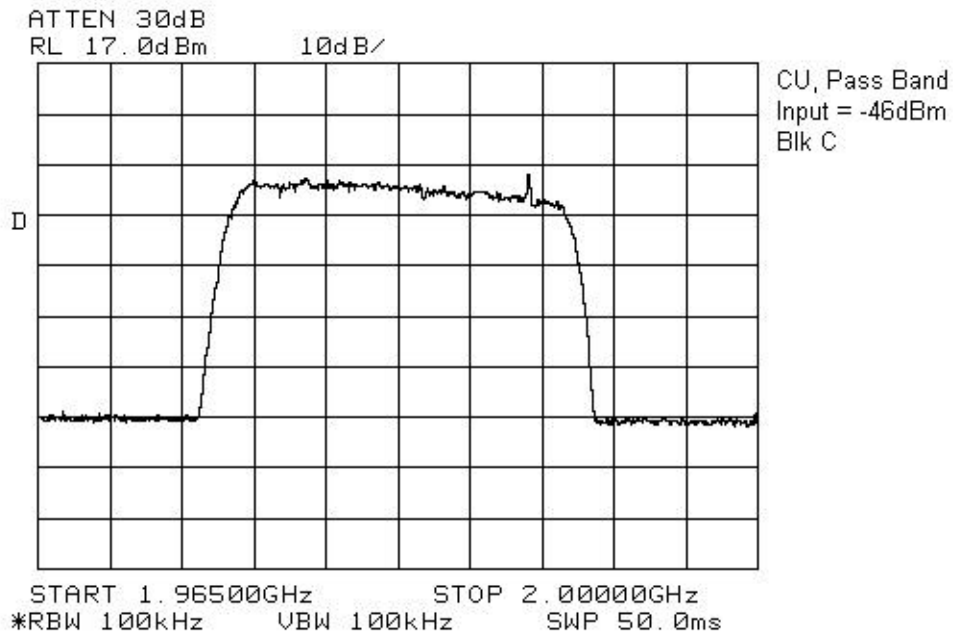
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



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EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater

Section 4. Occupied Bandwidth

Para. No.: 2.1049

Test Performed By: Glen Westwell	Date of Test: 5 Sept., 2002
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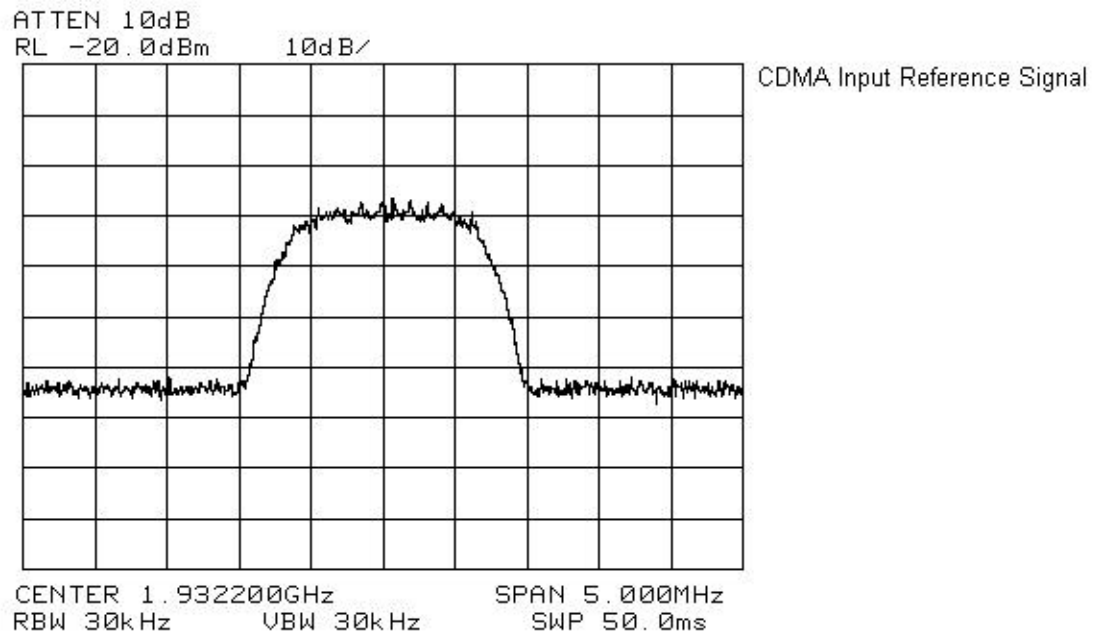
Minimum Standard: 24.238

Test Results: Complies.

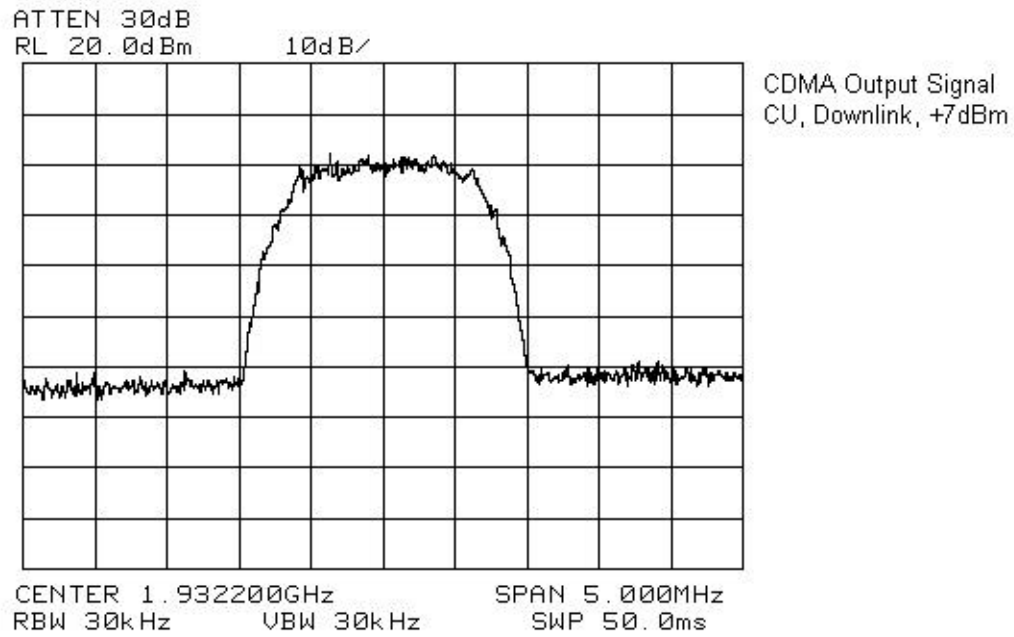
Measurement Data: See attached graphs.

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.

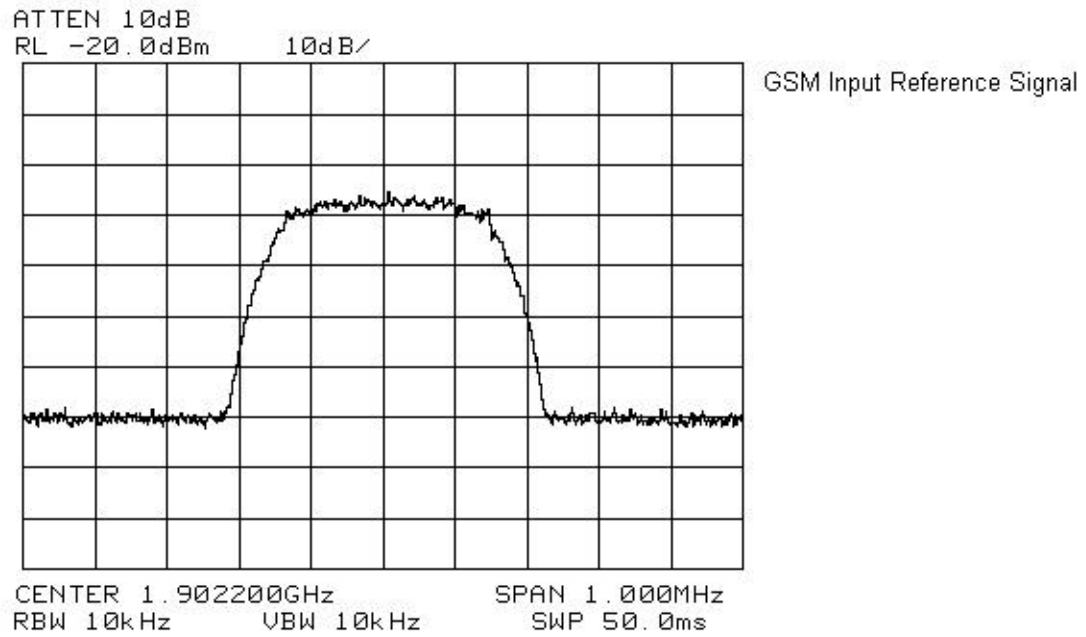
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



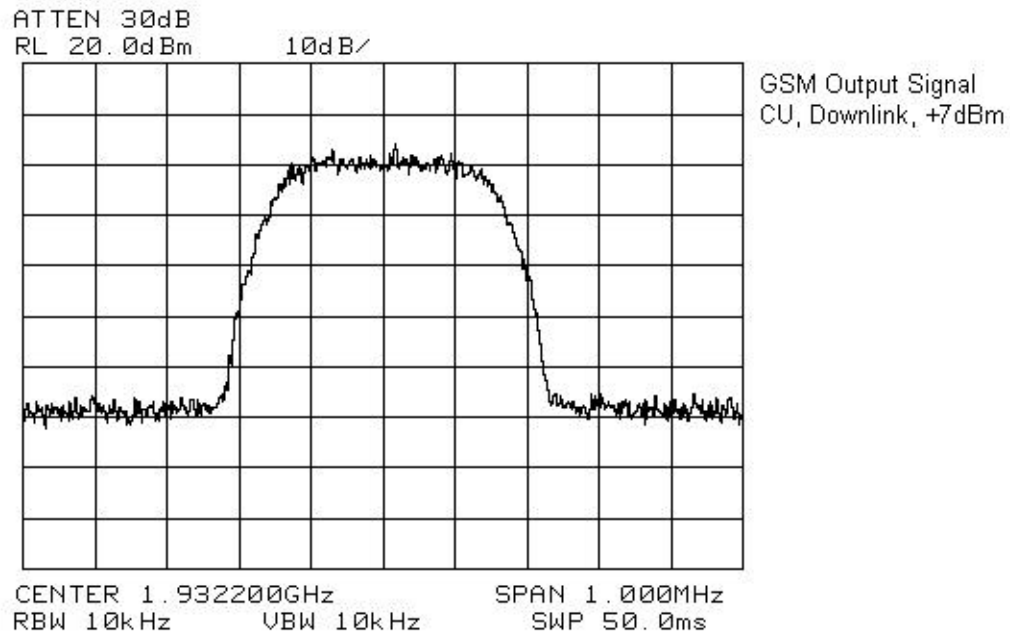
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



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EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater

Section 5. Spurious Emissions at Antenna Terminals

Para. No.: 2.1051

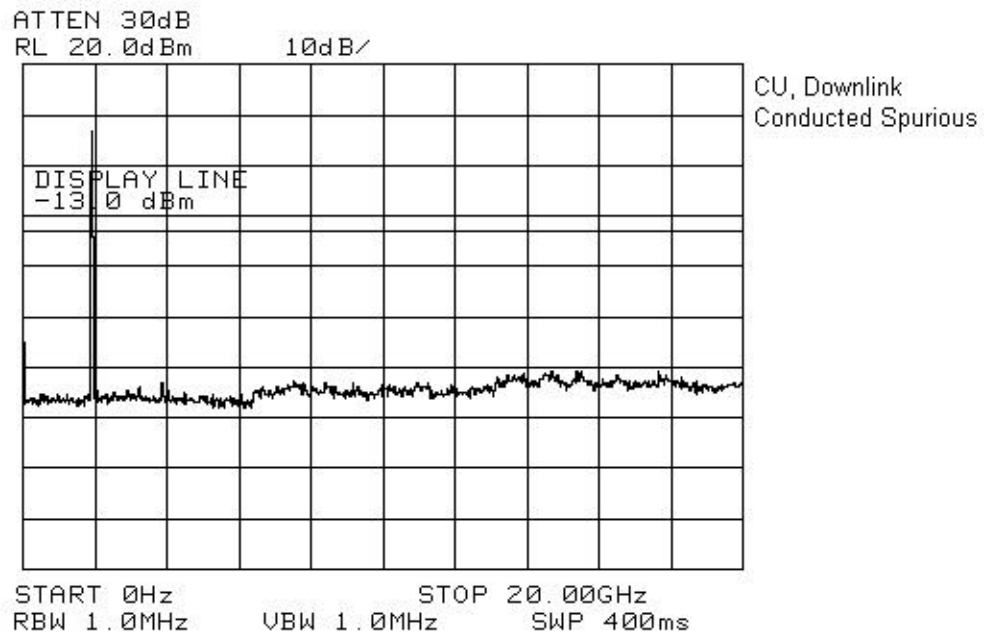
Test Performed By: Glen Westwell	Date of Test: 6 Sept., 2002
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Minimum Standard: 24.238 (a); -13 dBm

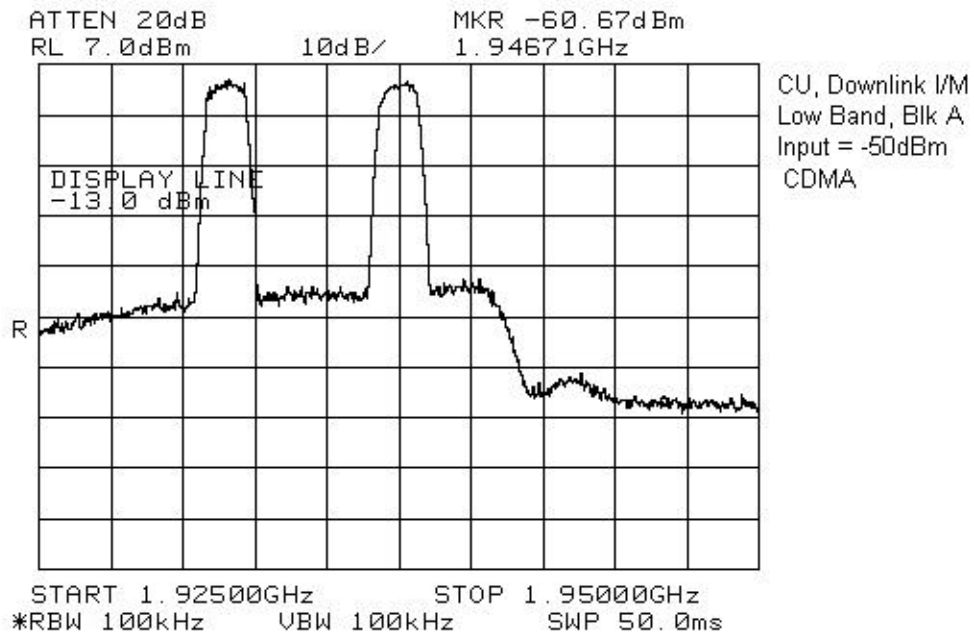
Test Results: Complies.

Measurement Data: See attached graphs (worst case).

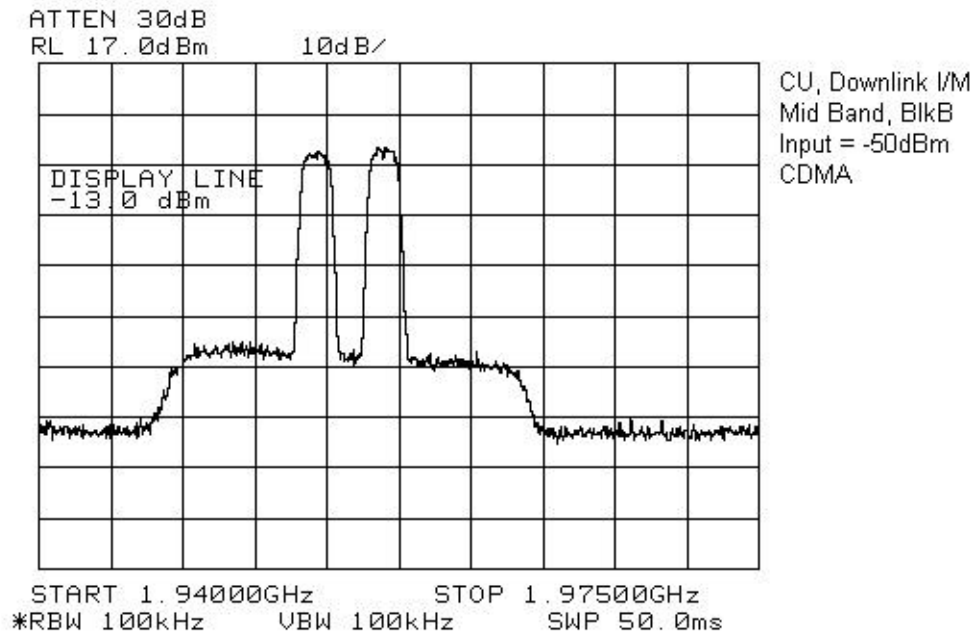
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



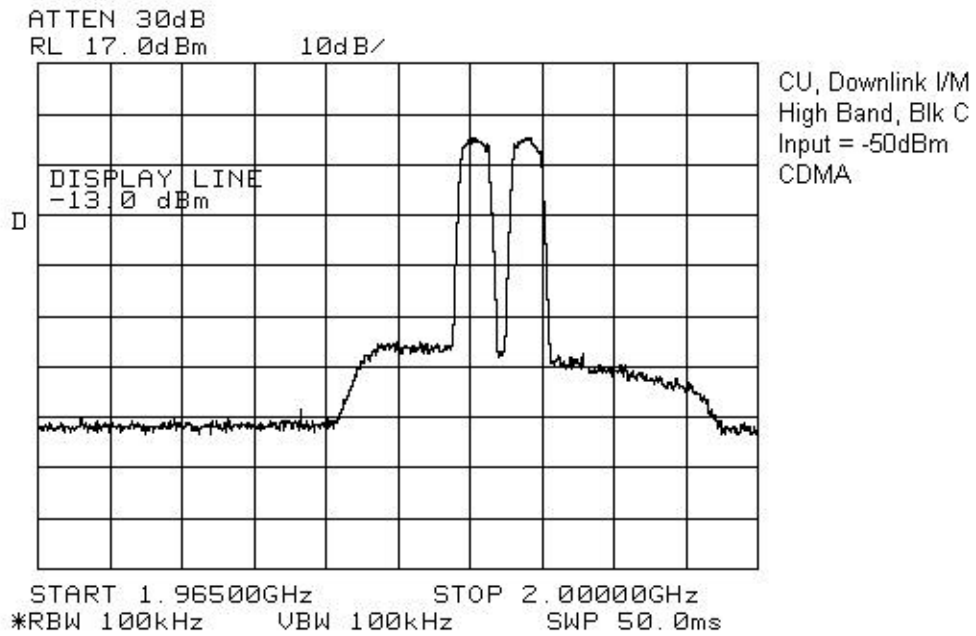
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



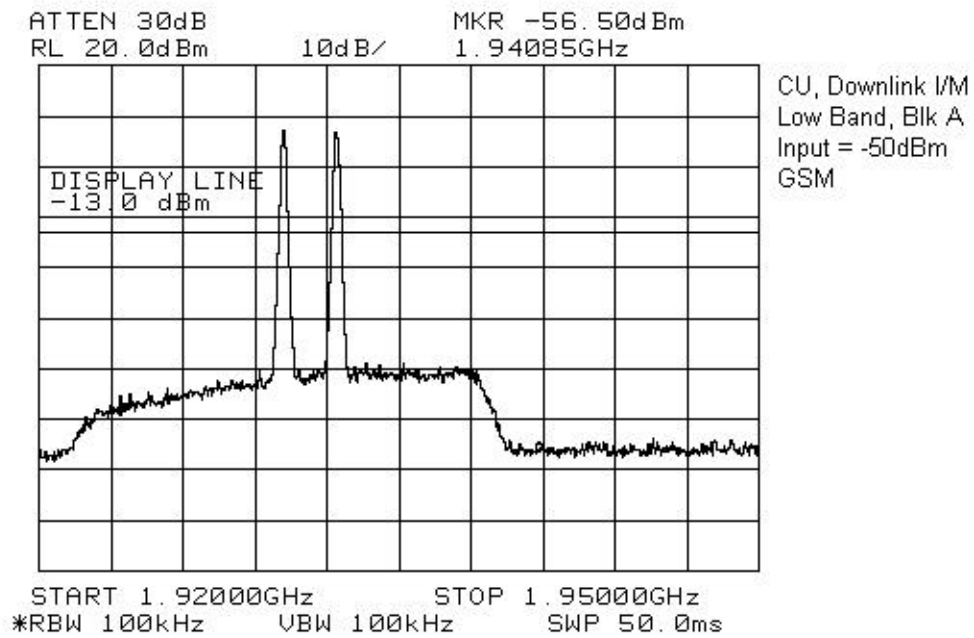
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



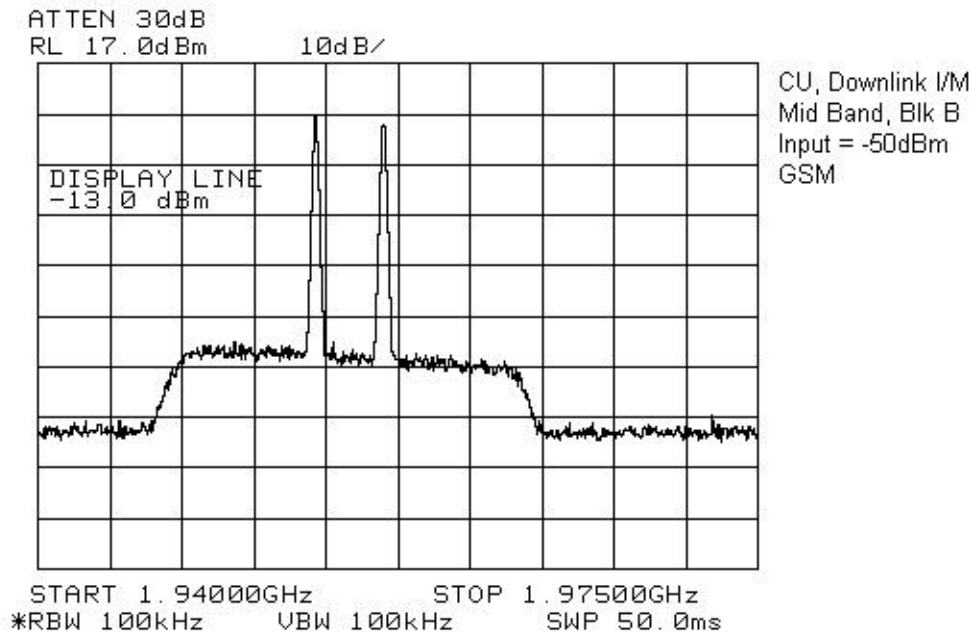
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



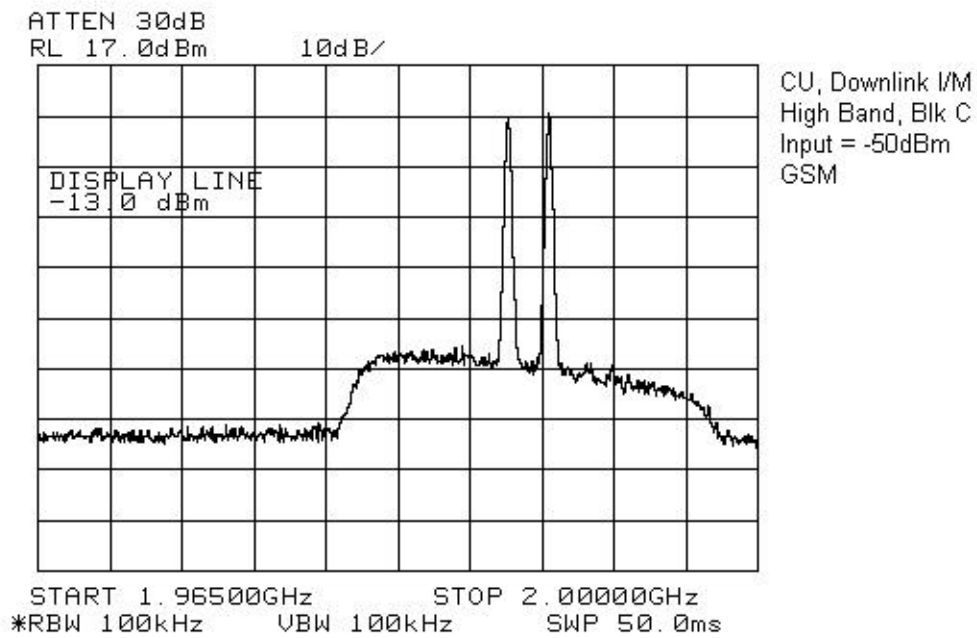
EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater



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EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater

Section 6. Field Strength of Spurious Emissions

Para. No.: 2.1053

Test Performed By: Glen Westwell	Date of Test: 9 Sept., 2002
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Minimum Standard: 24.238(a); -13dBm

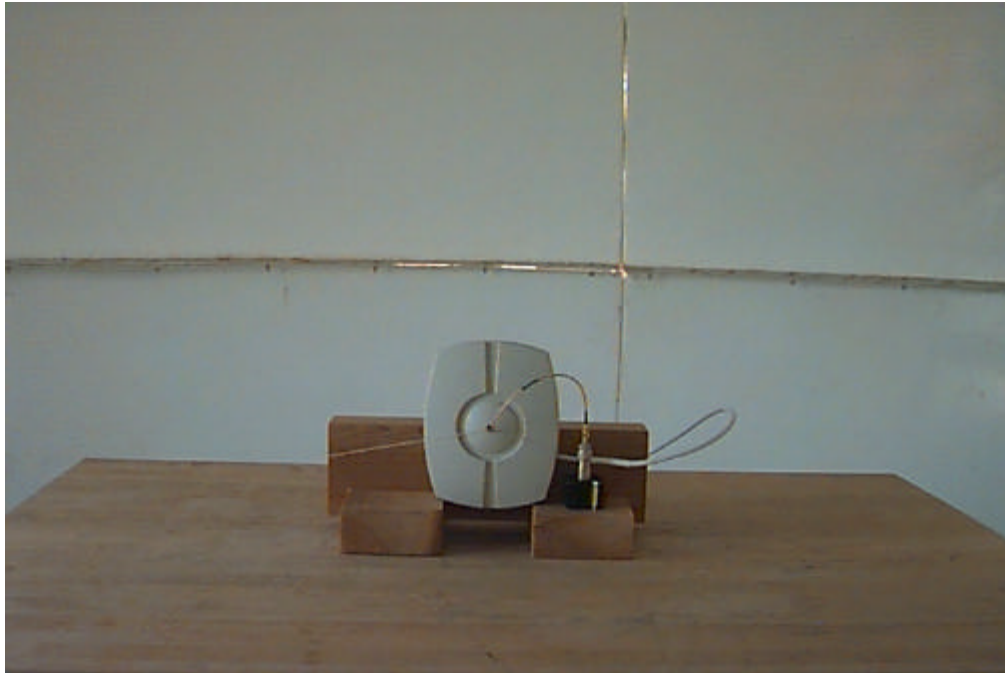
Test Results: Complies.

Measurement Data: No emissions detected.

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

EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater

**Field Strength of Spurious Emissions - Photograph
SpotCell 111/112 CU**



EQUIPMENT: *SpotCell 111/112 CU, PCS Low Power Repeater*

Section 7. Frequency Stability

Para. No.: 2.1055

Test Performed By: Glen Westwell	Date of Test: 10 Sept., 2002
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Minimum Standard: 22.355

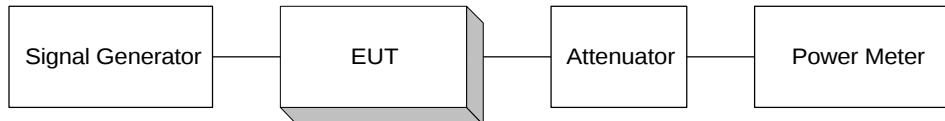
Test Results: Complies. The maximum frequency drift is 0 Hz.
There is no frequency translation.

Measurement Data: Standard Test Frequency: (-30°C to +50°C)

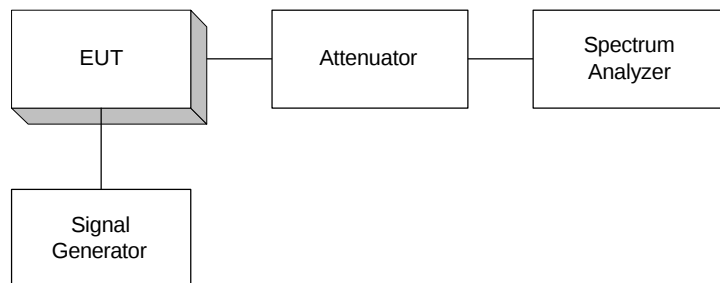
Downlink: 1935.000 000 MHz

Section 8. Block Diagrams

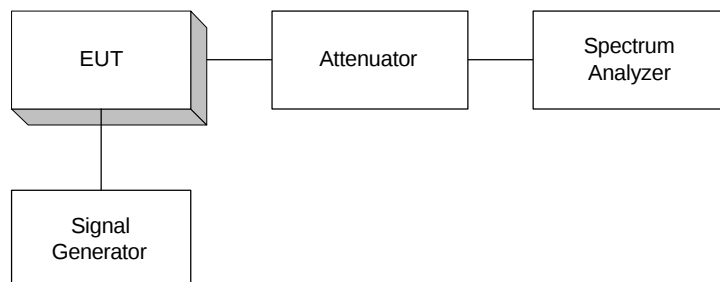
Para. No. 2.1046 - R.F. Power Output



Para. No. 2.1049 - Occupied Bandwidth



Para. No. 2.1051 - Spurious Emissions at Antenna Terminals

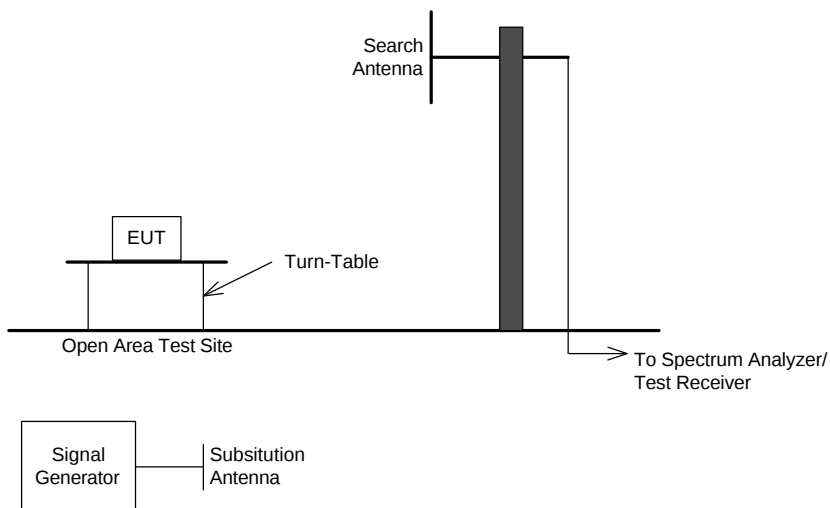


EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater

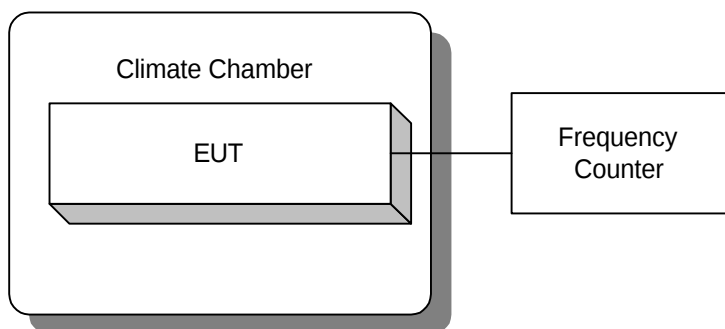
Para. No. 2.1053 - Field Strength of Spurious Radiation

TIA/EIA 603

Effective Radiated Power
Spurious Emissions



Para. No. 2.1055 - Frequency Stability



EQUIPMENT: SpotCell 111/112 CU, PCS Low Power Repeater

Section 9. Test Equipment List

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8565E	FA000981	6 Mar. 02	6 Mar. 03
1 Year	Spectrum Analyzer-1	Hewlett Packard	8566B	2311A02238	27 Nov 2001	27 Nov 2002
1 Year	Spectrum Analyzer Display-1	Hewlett Packard	8566B	2314A04759	27 Nov 2001	27 Nov 2002
1 Year	Quasi-peak adapter-1	Hewlett-Packard	85650A	2043A00302	27 Nov 2001	27 Nov 2002
1 Year	Climate Chamber	Thermotron	SM-16C	15649-S	COU	COU
1 Year	Horn Antenna	EMCO #2	3115	4336	Dec. 1/01	Dec. 1/02
1 Year	RF AMP	JCA	2-4 GHz	FA001496	COU	COU
1 Year	RF AMP	JCA	1-2 GHz	FA001498	COU	COU
1 Year	RF AMP	JCA	4-8 GHz	FA001497	COU	COU
1 Year	RF AMP	DBS Microwave	5-18GHz	FA001409	COU	COU
1Year	Frequency Counter	Hewlett Packard	HP5350A	2444A00135	11 Jan 2002	11 Jan 2003
3 Year	RF Generator	Rohde & Schwarz	SIMIQ03	DE22004	Sept. 10/00	Sept. 18/03
3 Year	RF Generator	Rohde & Schwarz	SIMIQ03E	DE24154	Oct. 4/99	Oct. 4/02

NA: Not Applicable

NCR: No Cal Required

COU: CAL On Use