

**KTL Test Report:** 8R01059

**Applicant:** Allen Telecom Group  
140 Vista Centre Drive  
Forest, Virginia  
24551

**Equipment Under Test:  
(E.U.T.)** Brite Cell PCS

**FCC ID:** BCR-BCEL-PCS

**In Accordance With:** **FCC Part 24, Subpart E**  
Broadband PCS Repeaters

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

**Authorized By:** \_\_\_\_\_  
T. Tidwell, Wireless Group Manager

**Date:** \_\_\_\_\_

**Total Number of Pages:** 61

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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## **Table of Contents**

### **Section 1. Summary of Test Results**

- General
- Summary of Test Data

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

- Specifications
- Description of Modifications for Class II Permissive Change
- Modifications Made During Testing
- Theory of Operation
- System Diagram

### **Section 3. RF Power Output**

- Test Results
- Measurement Data
- Power Over Bandwidth Graphs

### **Section 4. Occupied Bandwidth**

- Occupied Bandwidth (CDMA)
  - Test Results
  - CDMA Input and Output Graphs
- Occupied Bandwidth (GSM)
  - Test Results
  - GSM Input and Output Graphs
- Occupied Bandwidth (NADC)
  - Test Results
  - NADC Input and Output Graphs

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

- Test Results
- Test Data
- Graphs

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

- Test Results
- Test Data
- Test Data - Radiated Emissions - Uplink
- Test Data - Radiated Emissions - Downlink
- Photographs of Test Setup
- Pre-Scan Data

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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## **Table of Contents, continued**

### **Section 7. Frequency Stability**

- Test Results
- Measurement Data
- Graphs

### **Section 8. Test Equipment List**

#### **Annex A - Test Methodologies**

- RF Power Output
- Occupied Bandwidth (CDMA)
- Occupied Bandwidth (GSM)
- Occupied Bandwidth (NADC)
- Spurious Emission at Antenna Terminals
- Field Strength of Spurious
- Frequency Stability

#### **Annex B - Test Diagrams**

- R.F. Power Output
- Occupied Bandwidth
- Spurious Emissions at Antenna Terminals
- Field Strength of Spurious
- Frequency Stability

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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## **Section 1. Summary of Test Results**

Manufacturer: Allen Telecom Group

Model No.: Brite Cell PCS

Serial No.: 982701926

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. None  
See " Summary of Test Data".



**NVLAP LAB CODE: 100351-0**

TESTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
Kevin Carr, Technologist

TECHNICAL REVIEW: \_\_\_\_\_ DATE: \_\_\_\_\_

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*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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**Summary Of Test Data**

NAME OF TEST	PARA. NO.	SPEC.	MEAS.	RESULT
RF Power Output	24.232	100W	0.063 W	Complies
Occupied Bandwidth (CDMA)	24.238	Input/Output	Plot	Complies
Occupied Bandwidth (GSM)	24.238	Input/Output	Plot	Complies
Occupied Bandwidth (NADC)	24.238	Input/Output	Plot	Complies
Spurious Emissions at Antenna Terminals	24.238(a)	-13 dBm	-13.0	Complies
Field Strength of Spurious Emissions	24.238(a)	-13 dBm E.I.R.P.	-19.6 dBm	Complies
Frequency Stability	24.235		N/A	N/A

**Footnotes For N/A's:****Test Conditions:**      Temperature: 18 °C  
                                 Humidity: 25 %

*EQUIPMENT: Brite Cell PCS*  
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## Section 2. General Equipment Specification

<b>Supply Voltage Input:</b>		120 VAC, 60 Hz		
<b>Frequency Range:</b>	<b>Downlink:</b>	1930 – 1990 GHz		
<b>Frequency Range:</b>	<b>Uplink:</b>	Not Tested		
<b>Type of Modulation and Designator:</b>		<b>CDMA (F9W)</b> <input checked="" type="checkbox"/>	<b>GSM (GXW)</b> <input checked="" type="checkbox"/>	<b>NADC (DXW)</b> <input checked="" type="checkbox"/>
<b>AGC Threshold:</b>		Not Applicable		
<b>Output Impedance:</b>		50 ohm		
<b>Gain:</b>		4.5 dB Nominal		
<b>Max Input Power:</b>		16.0 dBm		
<b>RF Output (Rated):</b>		15.0 dBm		
		<b>Single:</b> 15.0 dBm <b>Composite:</b> 18.0 dBm / 2 Channel		
<b>Frequency Translation:</b>		<b>F1-F1</b> <input checked="" type="checkbox"/>	<b>F1-F2</b> <input type="checkbox"/>	<b>N/A</b> <input type="checkbox"/>
<b>Band Selection:</b>		<b>Software</b> <input type="checkbox"/>	<b>Duplexer Change</b> <input type="checkbox"/>	<b>Fullband Coverage</b> <input checked="" type="checkbox"/>

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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**Description of Modifications For Class II Permissive Change**

**NOT APPLICABLE**

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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**Modifications Made During Testing**

**NOT APPLICABLE**



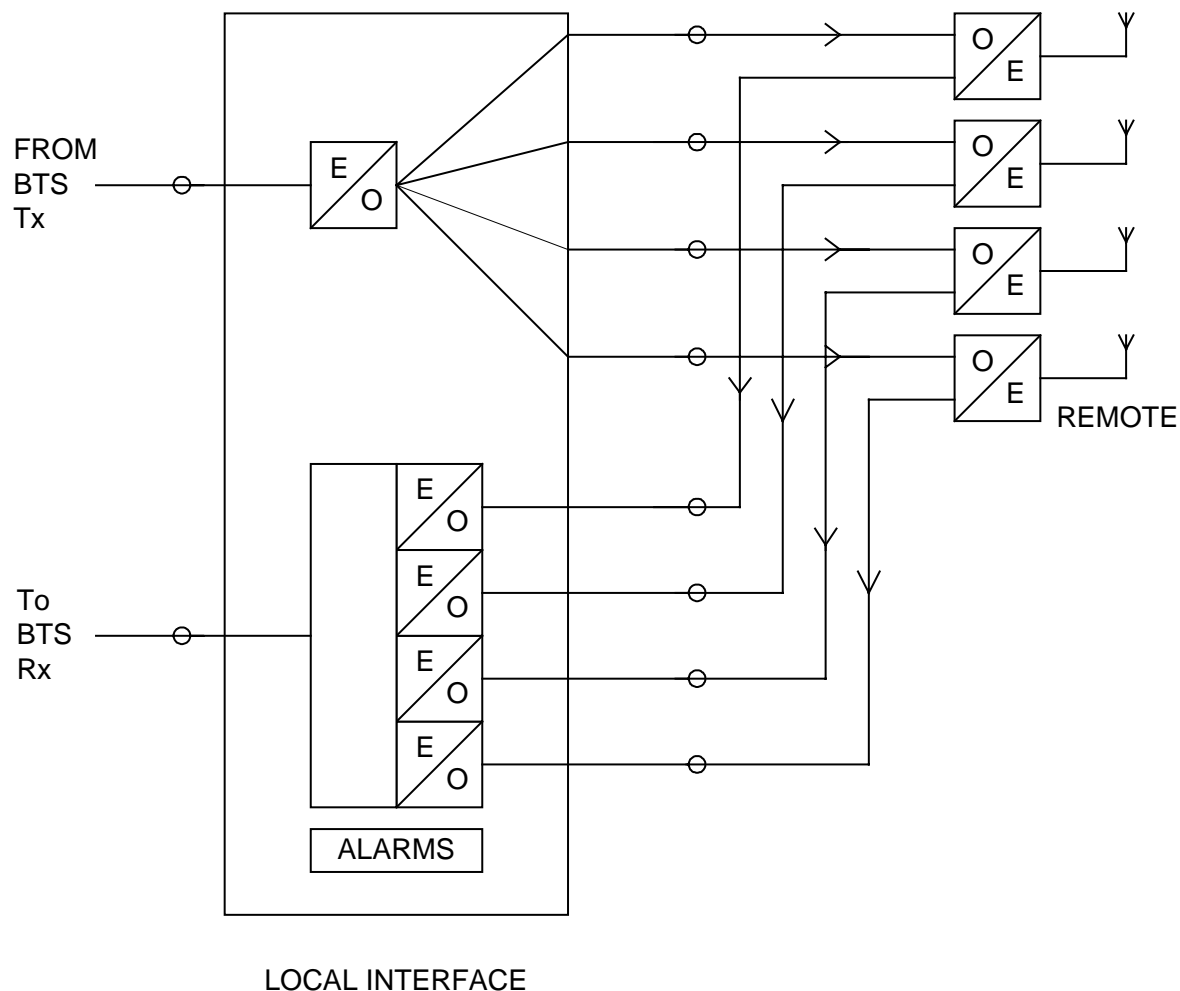
*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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## Theory of Operation

The Brite Cell Dual Band is an active indoor coverage system incorporating fibre optic and RF technologies. The device operates in the 800 MHz cell band and the 1990 MHz band. It features dual RF outputs and can operate from a 120 VAC line or battery. This system is hardwired to the base station and only re-transmits the downlink signal.

## System Diagram



*EQUIPMENT: Brite Cell PCS**FCC ID: BCR-BCEL-PCS*

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**Section 3. RF Power Output**

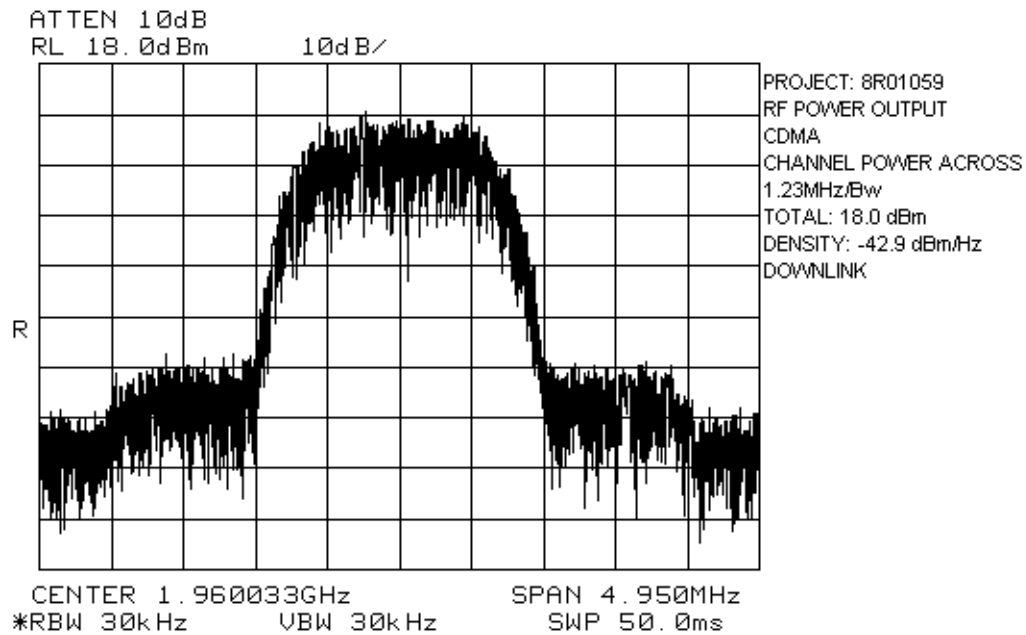
NAME OF TEST: RF Power Output	PARA. NO.: 2.985
TESTED BY: Kevin Carr	DATE: December 23, 1998

**Test Results:** Complies.**Measurement Data:**

	<b>Modulation Type</b>	<b>Per Channel Output Power (dBm)</b>	<b>Composite Output Power (dBm)</b>
Downlink	CDMA	15.0	18.0
Downlink	GSM	13.5	16.5
Downlink	NADC	13.0	16.0

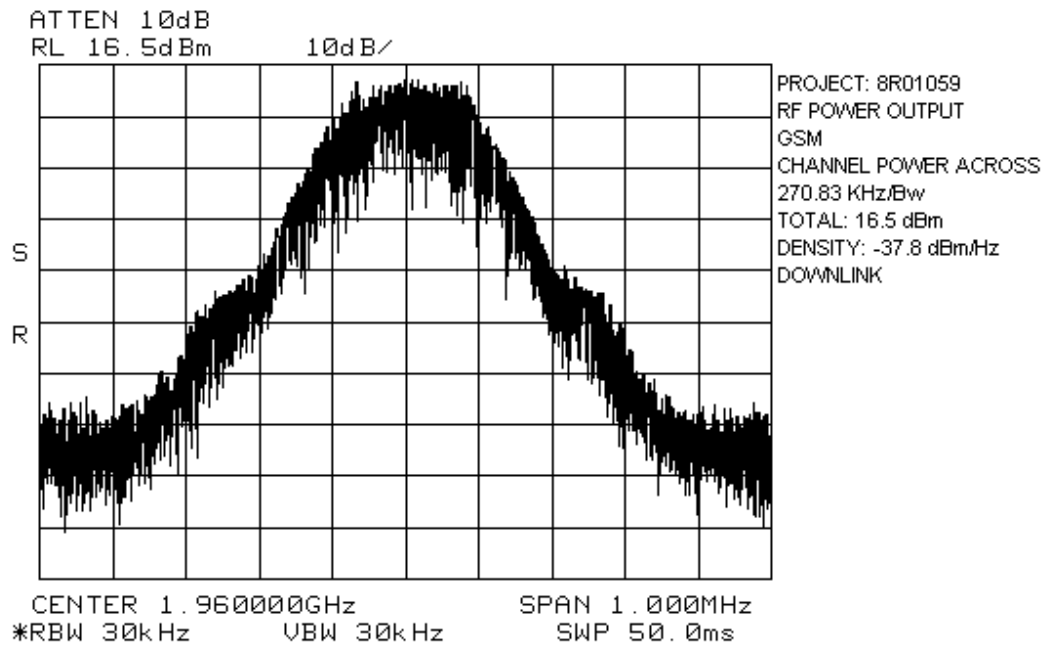
EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS

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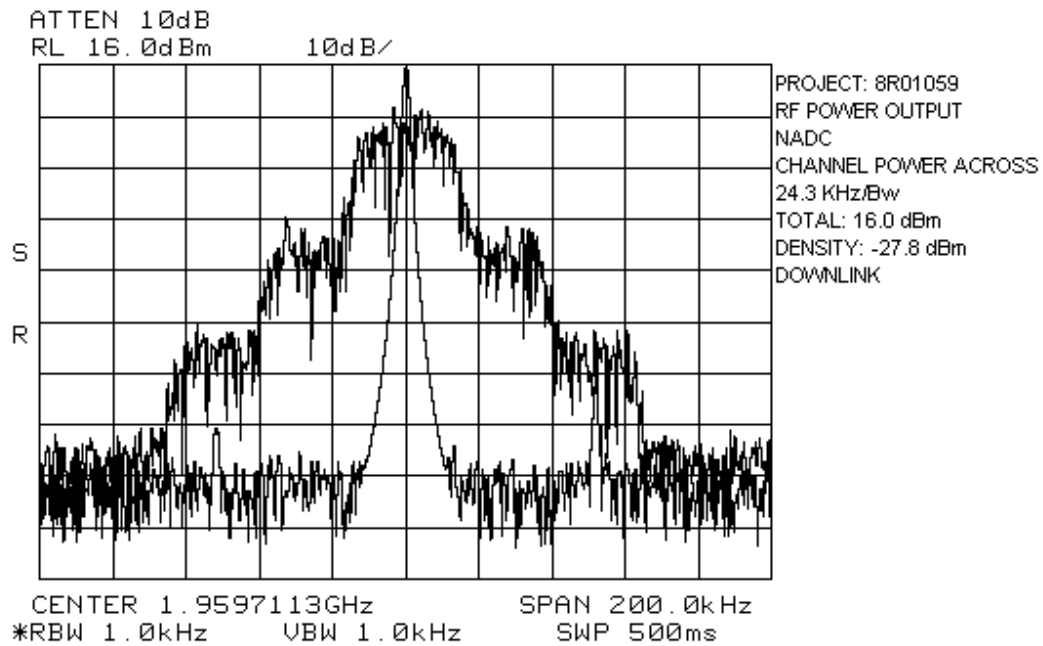
EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS

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EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS

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*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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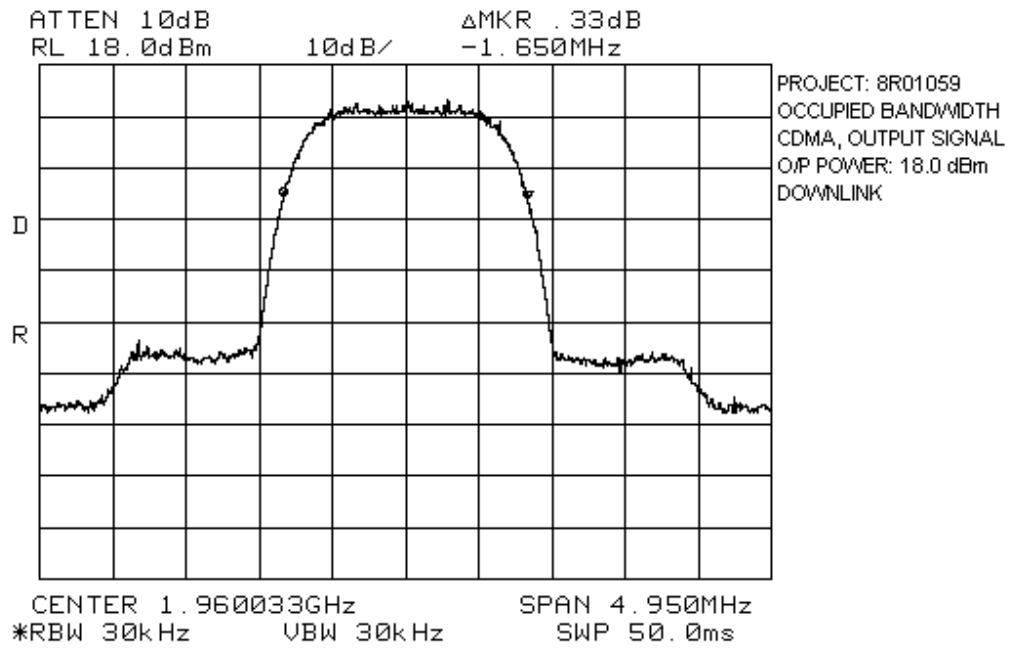
## **Section 4.        Occupied Bandwidth**

NAME OF TEST: Occupied Bandwidth (CDMA)	PARA. NO.: 2.917(c)
TESTED BY: Kevin Carr	DATE: December 23, 1998

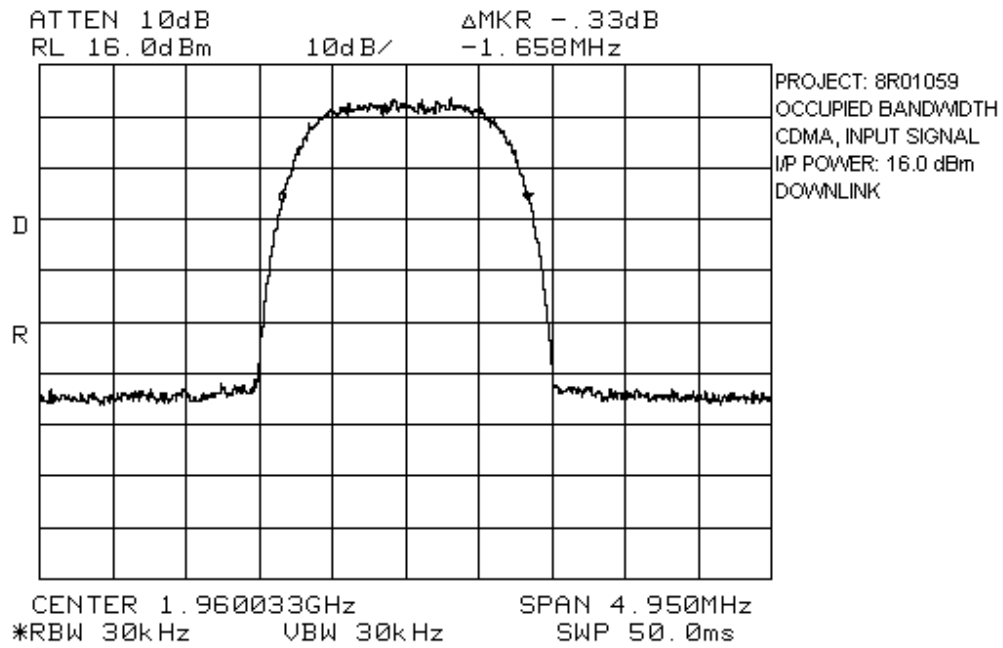
**Test Results:**                Complies.

**Test Data:**                See attached graph(s).

EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS



EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS





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BROADBAND PCS REPEATERS  
PROJECT NO.: 8R01059

*EQUIPMENT: Brite Cell PCS*

*FCC ID: BCR-BCEL-PCS*

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NAME OF TEST: Occupied Bandwidth (GSM)

PARA. NO.: 2.917(c)

TESTED BY: Kevin Carr

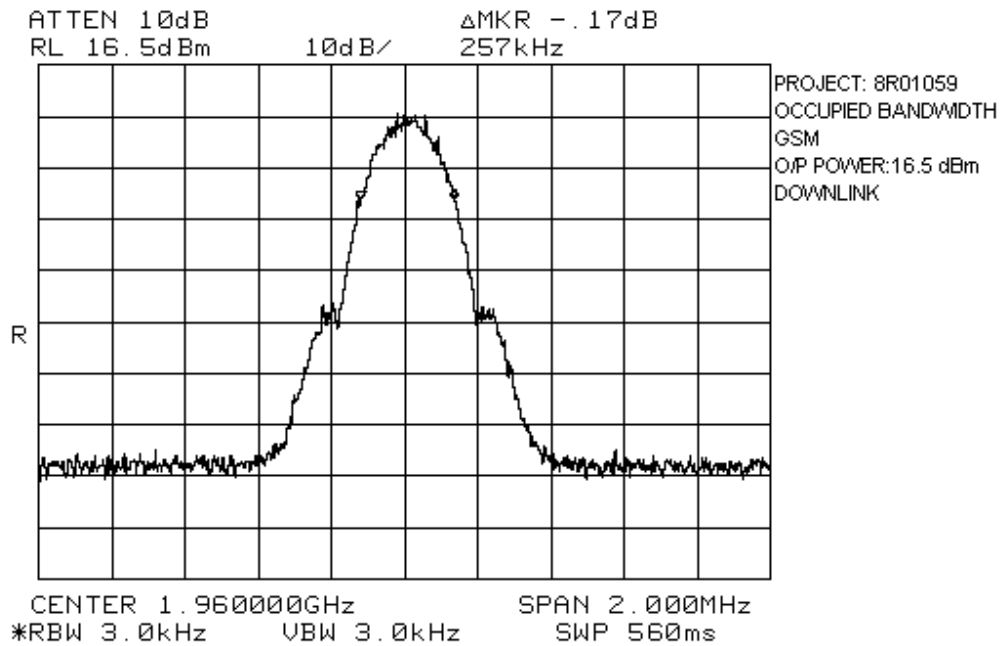
DATE: November 30, 1998

**Test Results:** Complies.

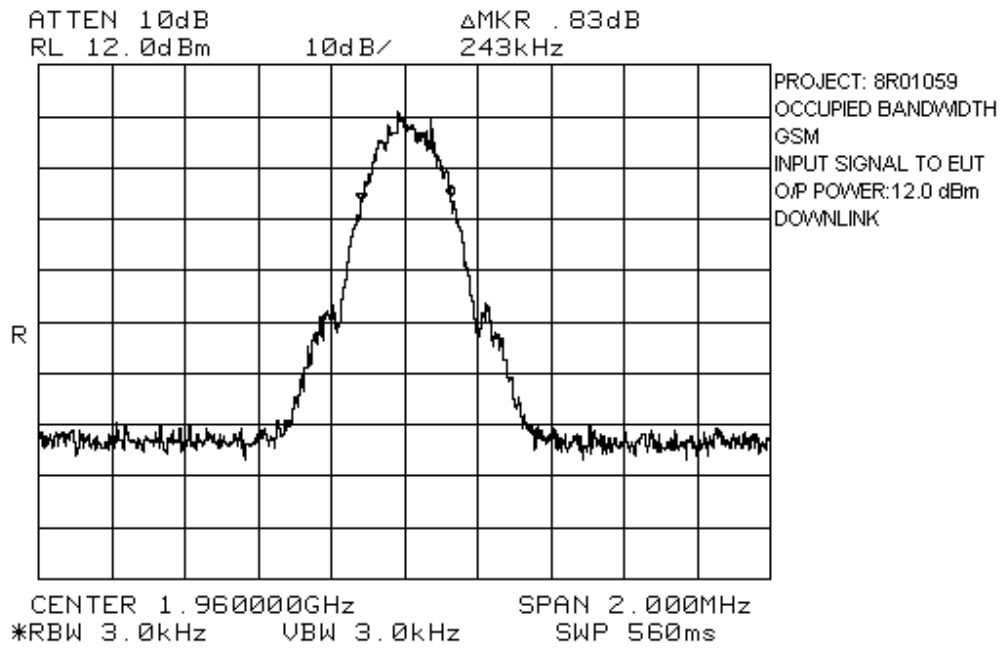
**Test Data:** See attached graph(s).

EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS

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EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS



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BROADBAND PCS REPEATERS  
PROJECT NO.: 8R01059

*EQUIPMENT: Brite Cell PCS*

*FCC ID: BCR-BCEL-PCS*

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NAME OF TEST: Occupied Bandwidth (NADC)	PARA. NO.: 2.917(c)
TESTED BY: Kevin Carr	DATE: December 17, 1998

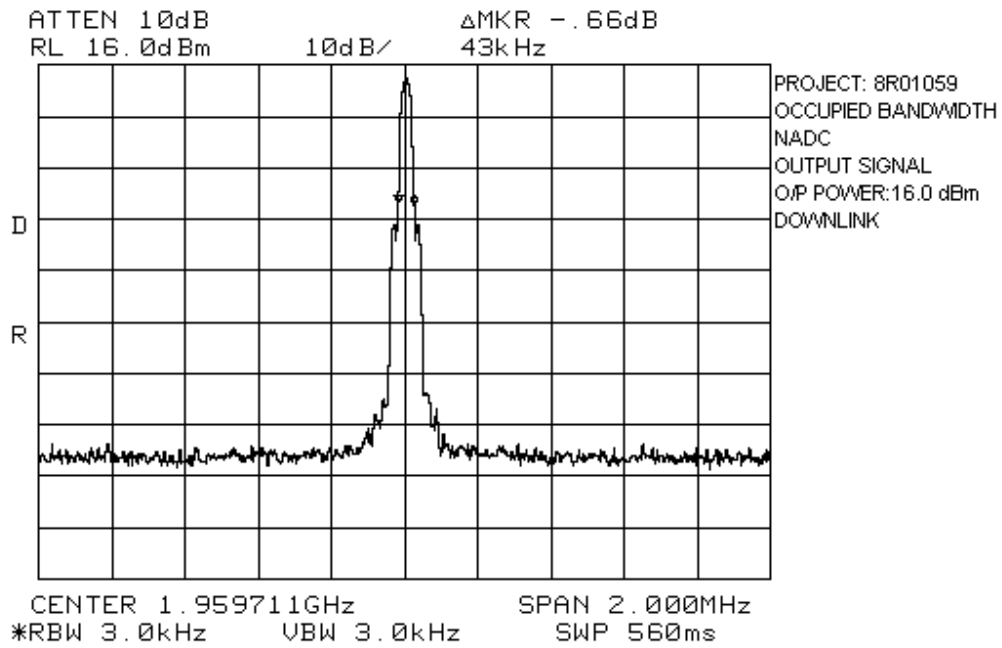
**Test Results:**

Complies.

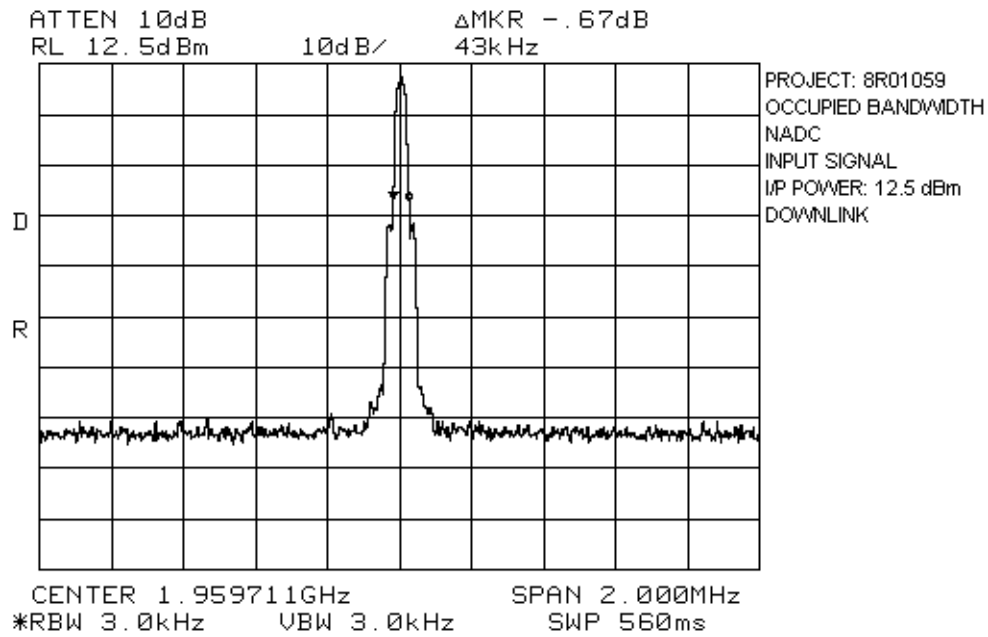
**Test Data:**

See attached graph(s).

EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS



EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS



*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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

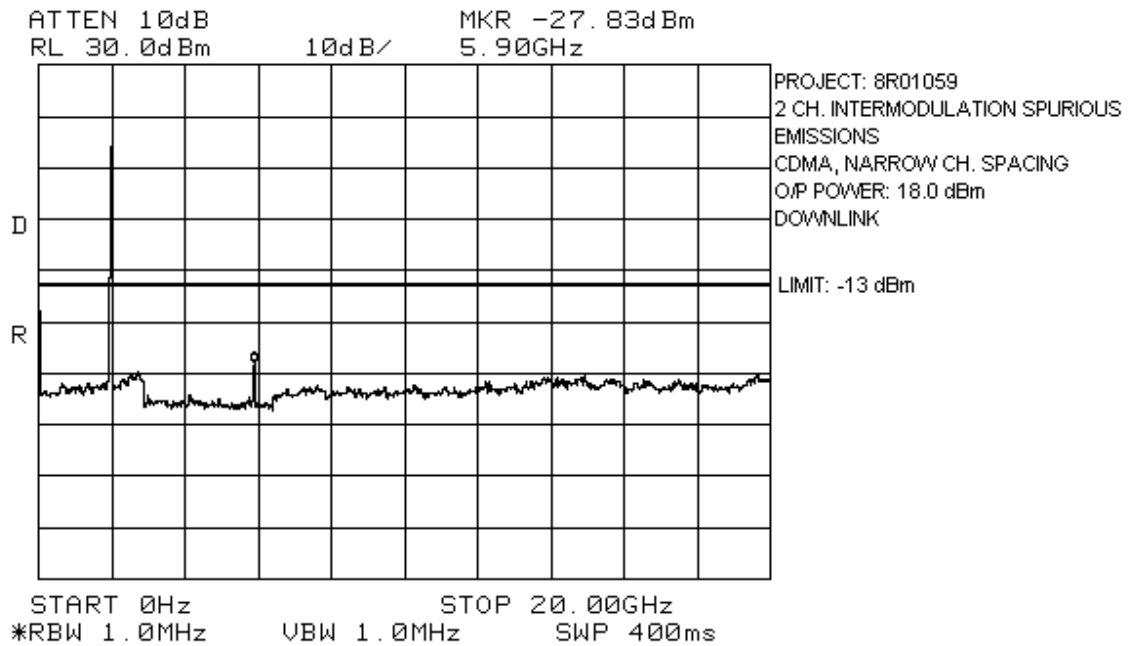
NAME OF TEST: Spurious Emissions @ Antenna Terminals      PARA. NO.: 2.917(e)

TESTED BY: Kevin Carr      DATE: December 23, 1998

**Test Results:**      Complies.**Test Data:**

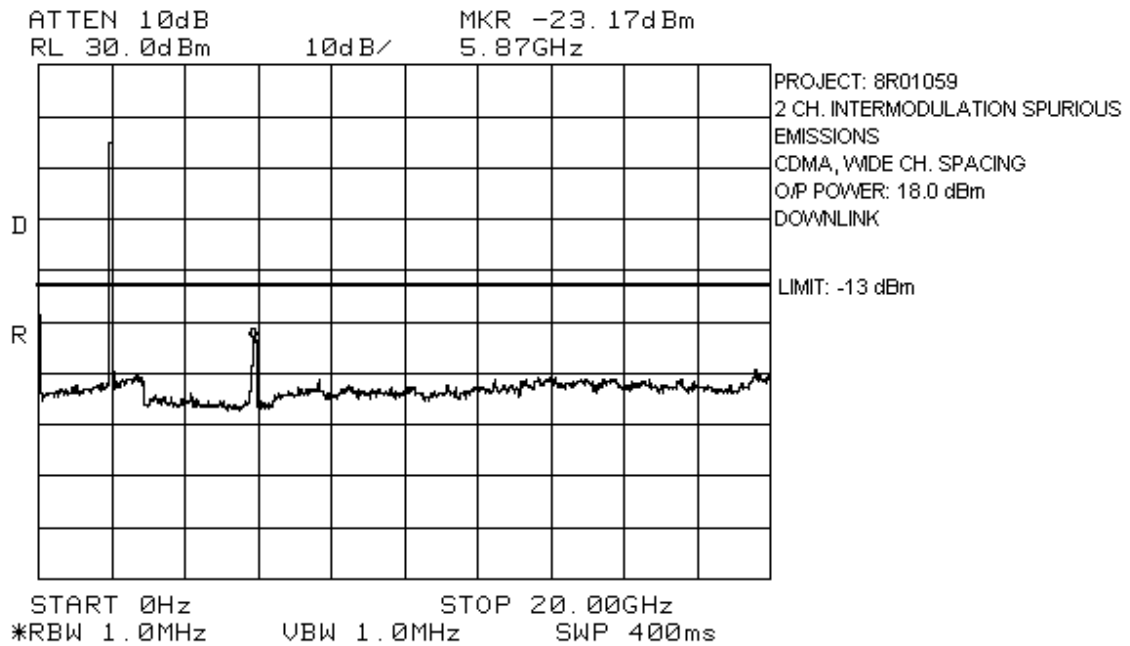
NAME OF TEST	WORST-CASE SPURIOUS LEVEL(dBm)
0 to 20 GHz spurious (Downlink)	-23.83
2 - signal intermodulation (Downlink)	-13.0
Lower band edge spurious (Downlink)	-33.5
Upper band edge spurious (Downlink)	-33.17

EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS

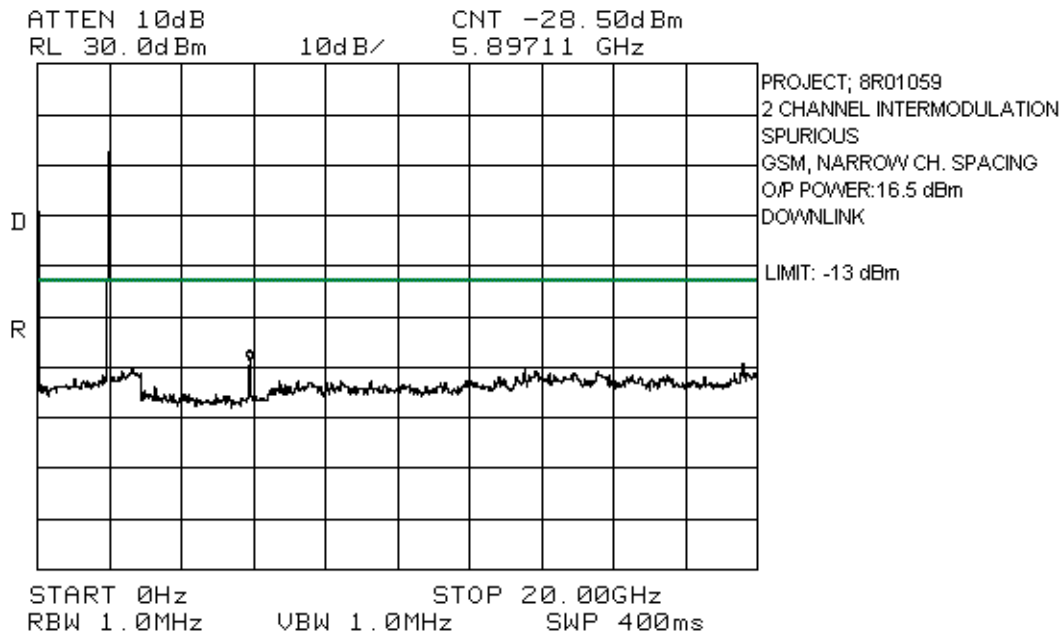




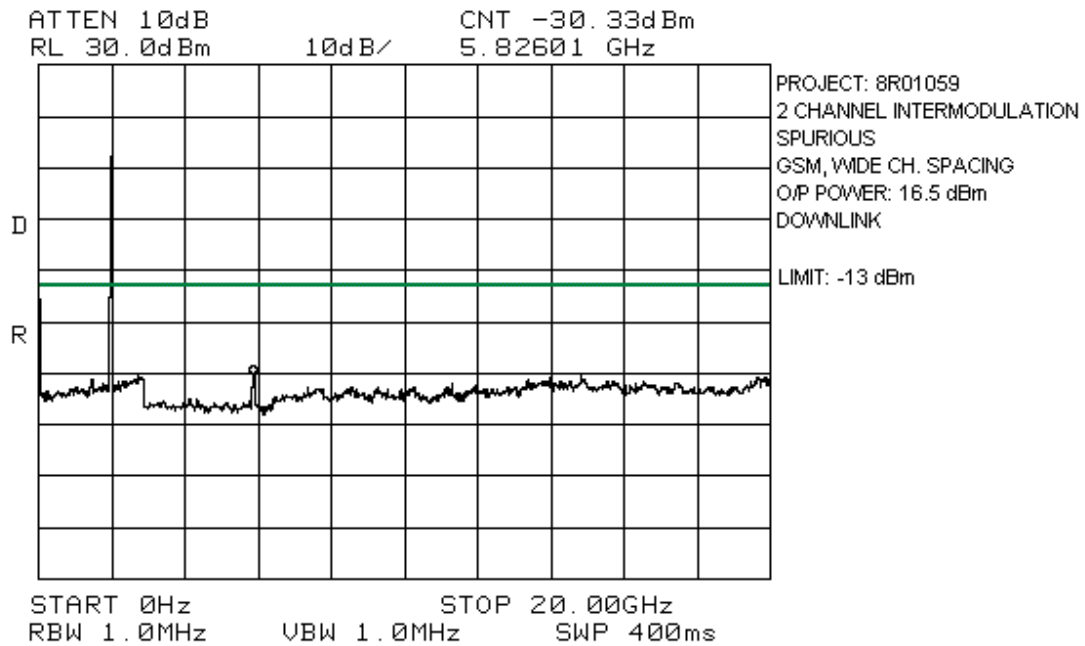
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FCC ID: BCR-BCEL-PCS



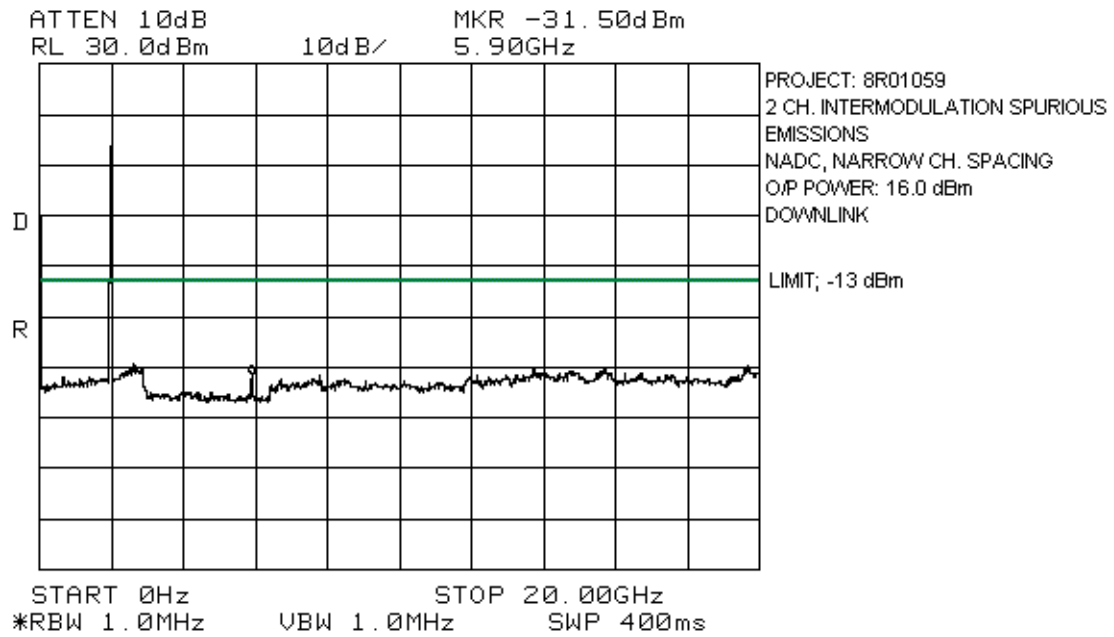
EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS



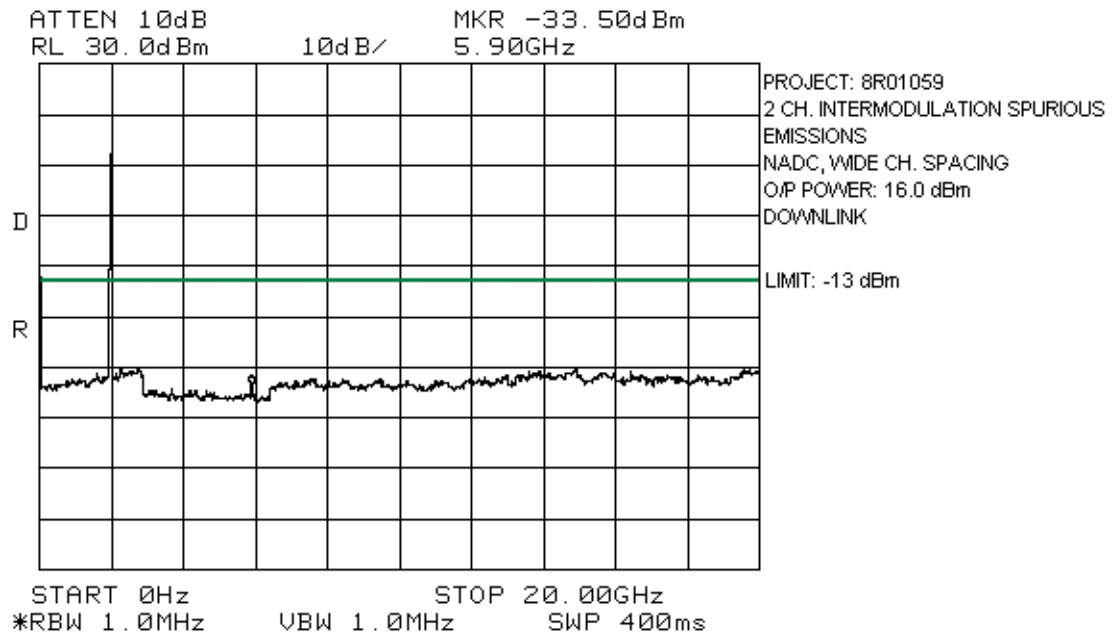
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FCC ID: BCR-BCEL-PCS



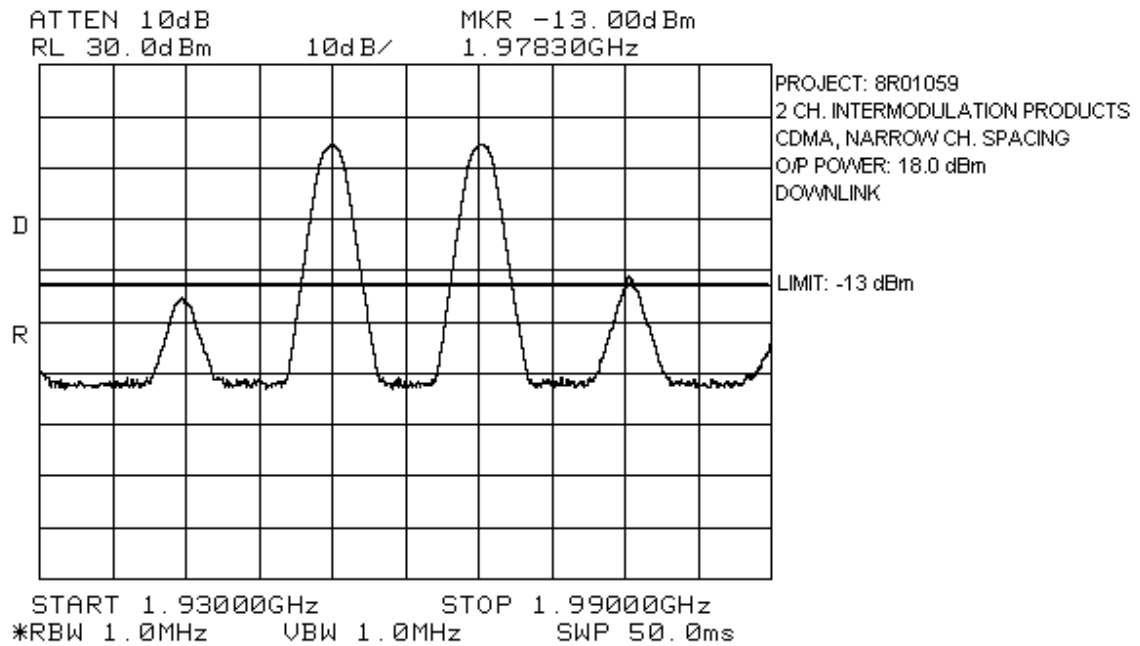
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FCC ID: BCR-BCEL-PCS



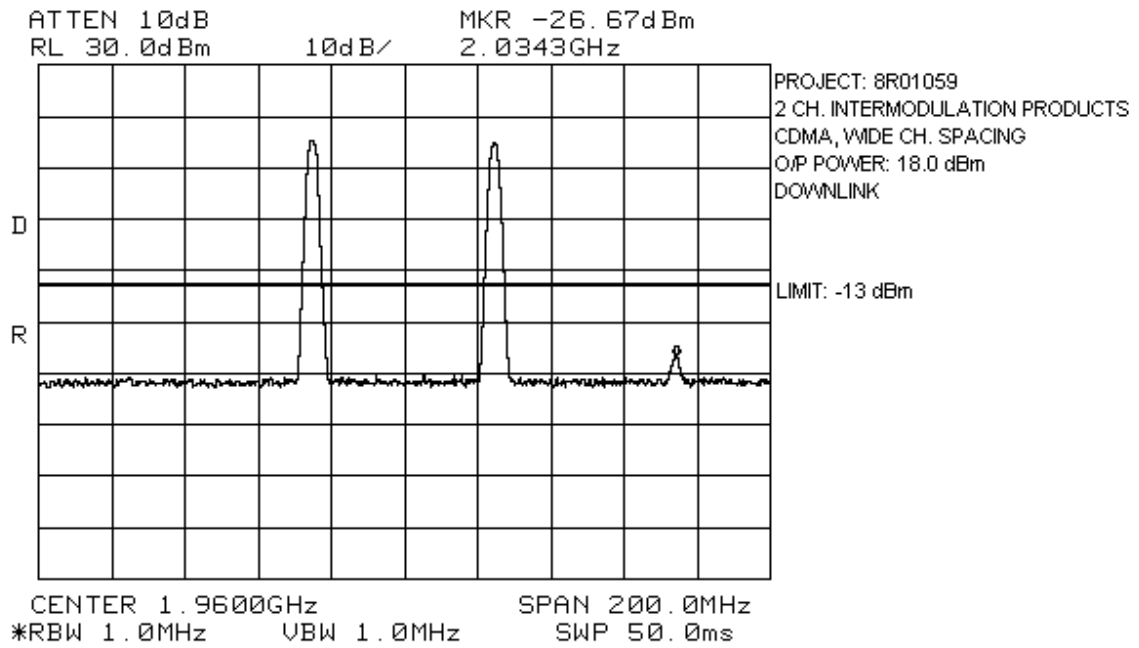
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FCC ID: BCR-BCEL-PCS



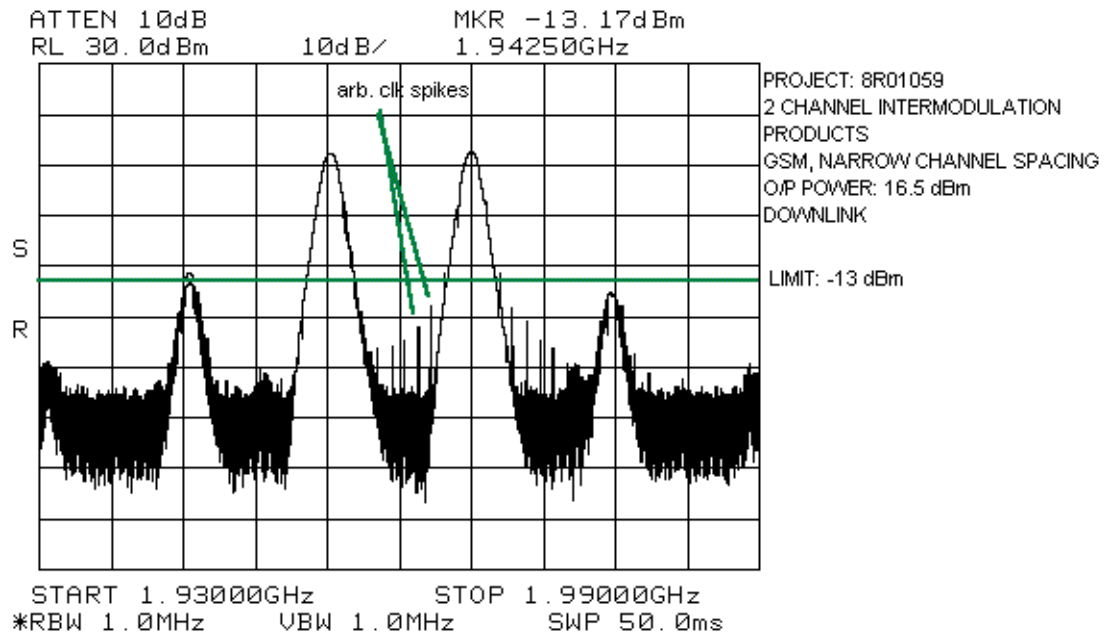
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FCC ID: BCR-BCEL-PCS



EQUIPMENT: Brite Cell PCS  
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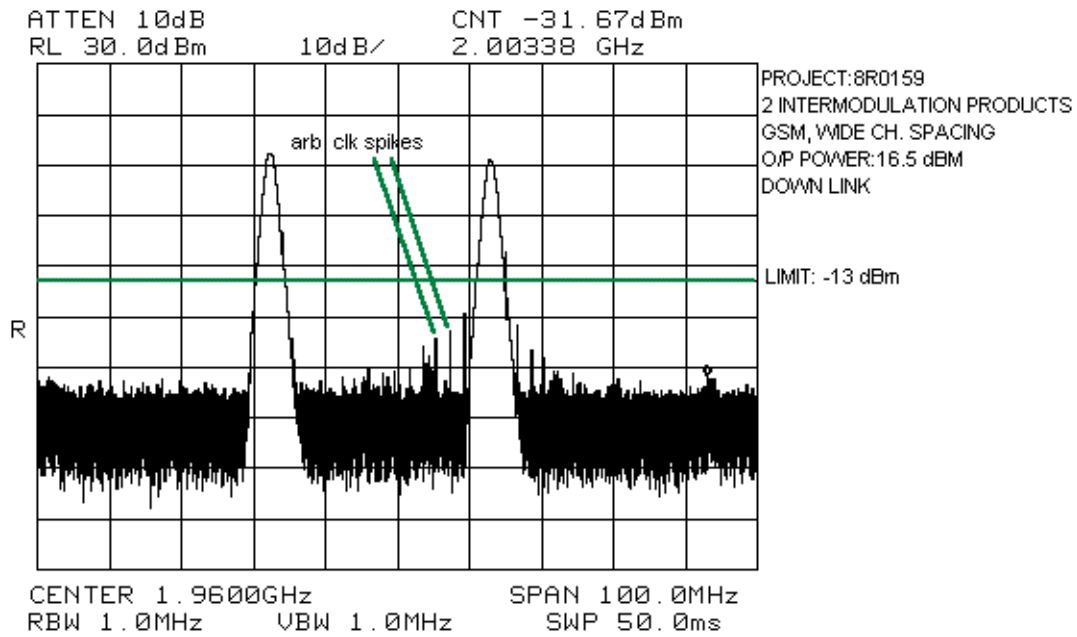


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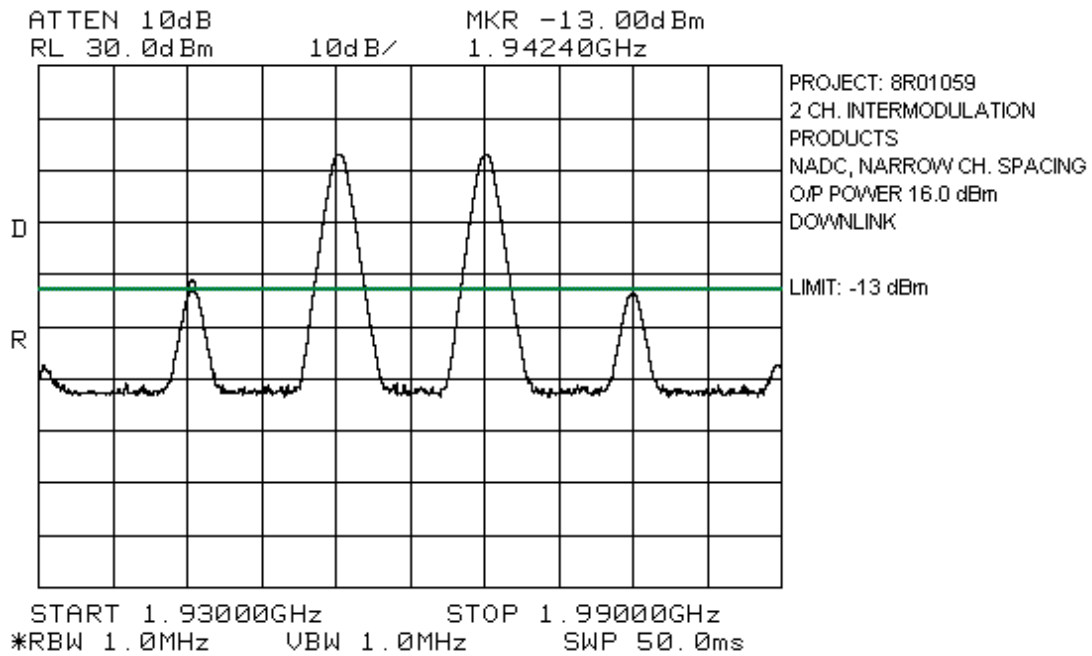




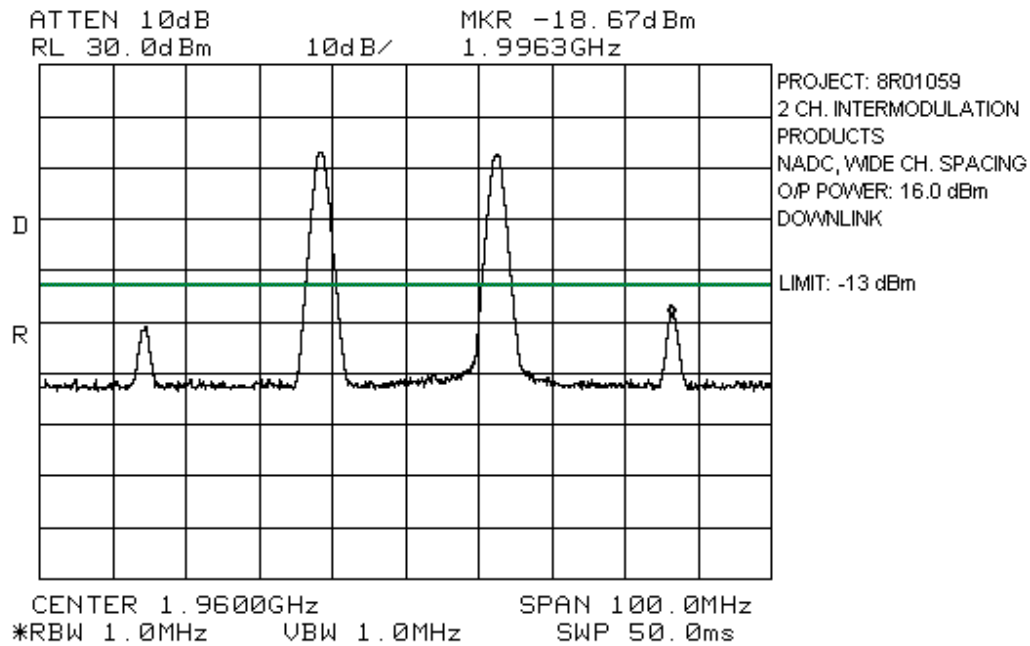
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FCC ID: BCR-BCEL-PCS



EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS

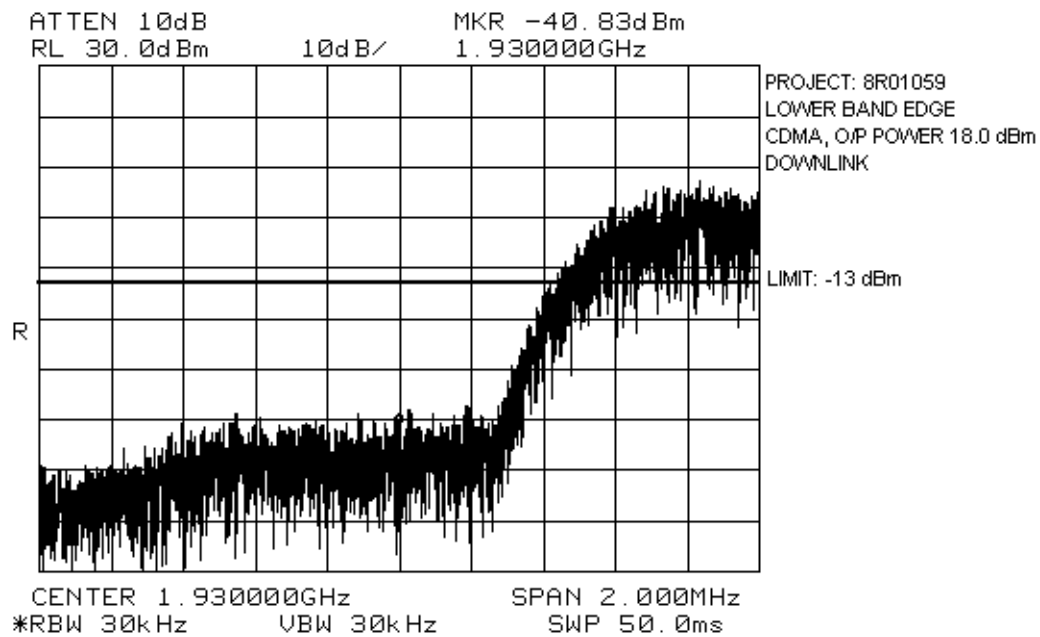


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FCC ID: BCR-BCEL-PCS



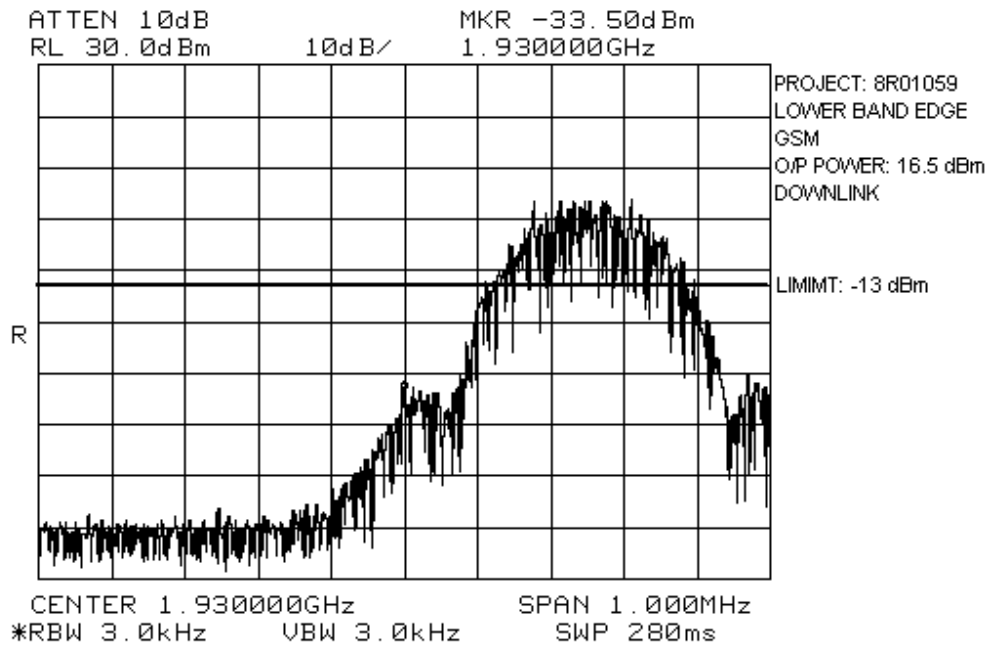
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FCC ID: BCR-BCEL-PCS

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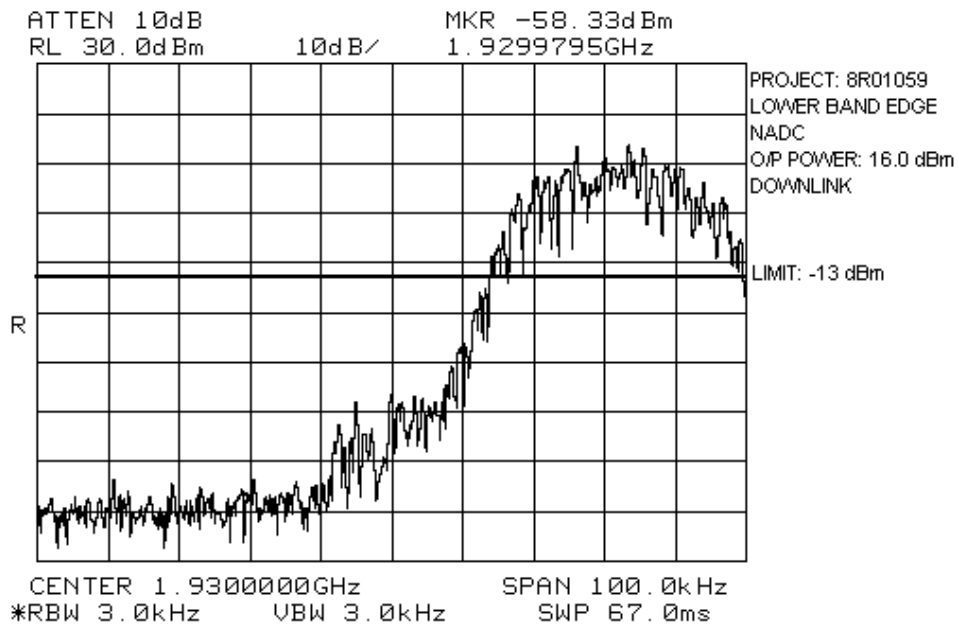


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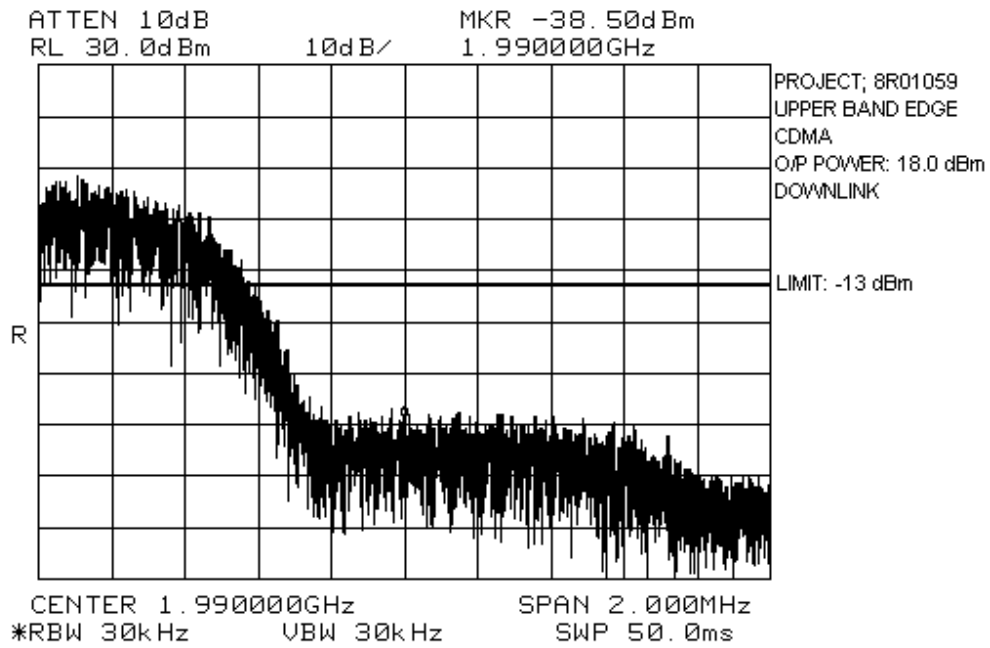
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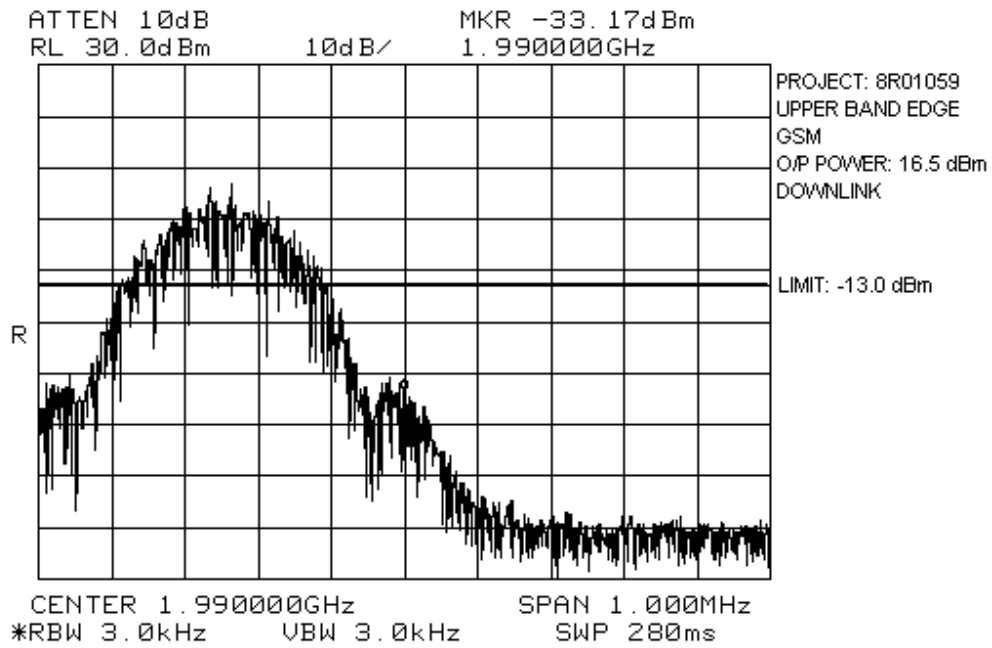
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EQUIPMENT: Brite Cell PCS  
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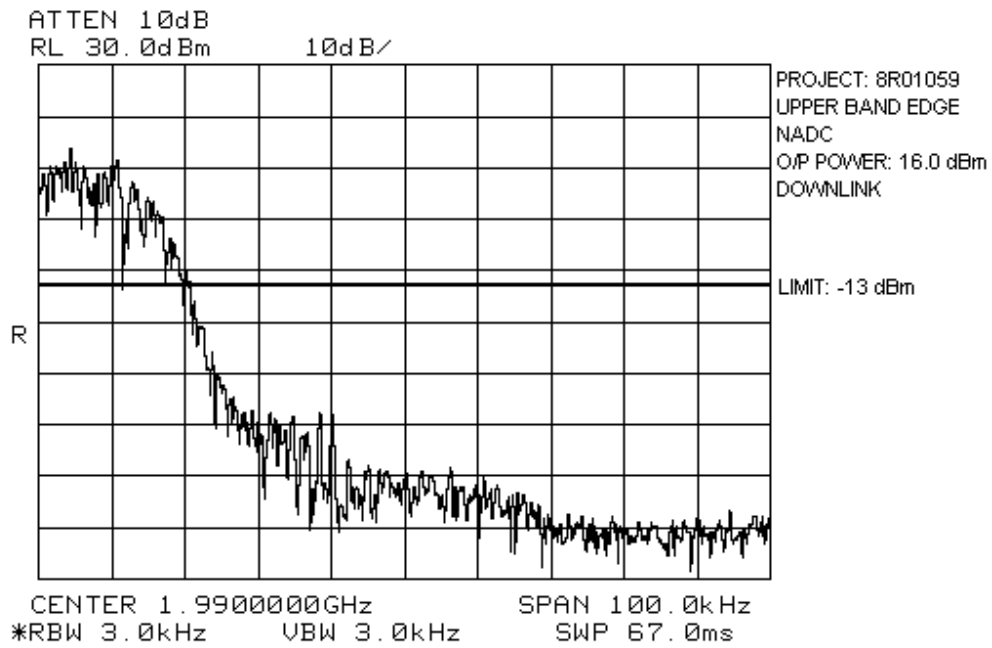
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EQUIPMENT: Brite Cell PCS  
FCC ID: BCR-BCEL-PCS

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*EQUIPMENT: Brite Cell PCS*

*FCC ID: BCR-BCEL-PCS*

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

NAME OF TEST: Radiated Emissions	PARA. NO.: 2.917(e)
TESTED BY: Kevin Carr	DATE: December 23, 1998

**Test Results:**

Complies.

The maximum field strength is 75.8 dB $\mu$ V/m @ 3m.

**Test Data:**

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

**Test Data - Radiated Emissions - Downlink**

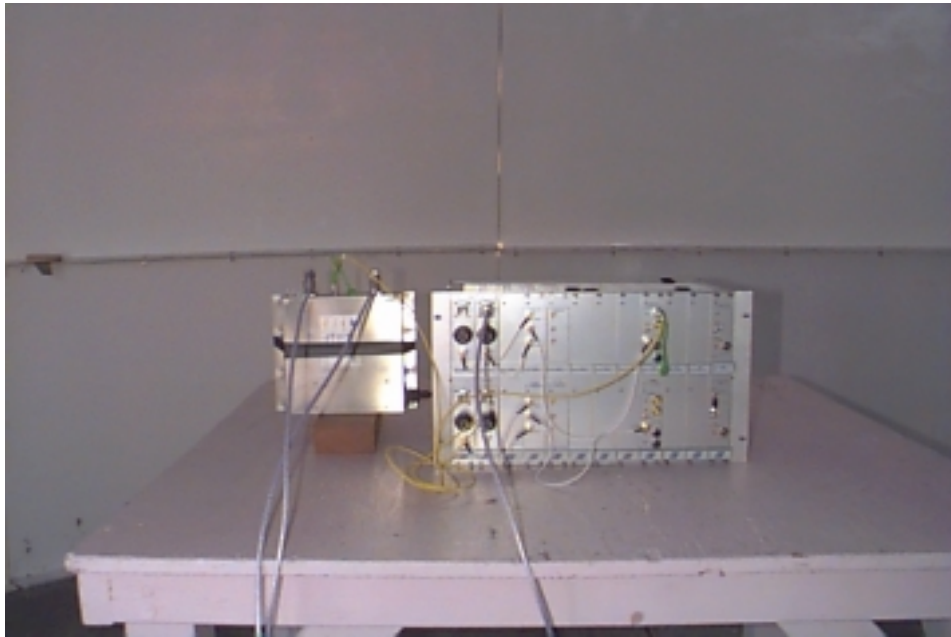
Test Distance (meters) : 3		Range: Shield Room		Receiver: HP 8566B		RBW 100 kHz		Detector: Peak			
Freq. (MHz)	Ant. *	Pol. (V/H)	Ant. HGT. (m)	Table (deg.)	RCVD Signal (dBµV/m)	Ant. Factor (dB)**	Amp. Gain (dB)***	Dist. Corr. (dB)	Field Strength (dBµV/m)	Limit (dBµV/m)	Margin (dB)
3920.0	H2	V			56.0	33.7	-42.6		47.1	82.3	35.2
3920.0	H2	H			59.9	33.7	-42.6		51.0	82.3	31.3
5880.0	H2	V			51.3	36.3	-44.5		43.1	82.3	39.2
5880.0	H2	H			50.6	36.3	-44.5		42.4	82.3	39.9
7840	H2	V			45.2	38.4	-43.7		39.9	82.3	42.4
7840	H2	H			47.0	38.4	-43.7		41.7	82.3	40.6
9800	H2	V			37.8	39.8	-44.3		33.3	82.3	49.0
9800	H2	H			37.3	39.8	-44.3		32.8	82.3	44.5
11760.0	H2	V			37.7	39.9	-44.8		33.8	82.3	48.5
11760.0	H2	H			37.9	39.9	-44.8		34.0	82.3	48.3
13720.0	H2	V			38.6	41.5		-9.54	70.6	82.3	11.7
13720.0	H2	H			38.3	41.5		-9.54	70.2	82.3	12.0
15680	H2	V			38.6	39.5		-9.54	68.6	82.3	13.7
15680	H2	H			39.4	39.5		-9.54	69.4	82.3	12.9
17640.0	H2	V			40.8	44.5		-9.54	75.8	82.3	6.5
17640.0	H2	H			39.8	44.5		-9.54	74.8	82.3	7.5
19600.0	SH50-1	V			38.9	40.46		-9.54	68.8	82.3	13.5
19600.0	SH50-1	H			39.0	40.46		-9.54	69.9	82.3	12.4
<b>Notes:</b> The spectrum was search up to the 10 <sup>th</sup> harmonic of the fundamental frequency. B/C = Biconical, B/L = Biconilog, L/P = Log-Periodic, H = Horn, D/P = Dipole * Includes cable loss when amplifier is not used. ** Includes cable loss. ( ) Denotes failing emission level. Measurements incorporating Dist. Connection were taken at 1 meter.											

*EQUIPMENT: Brite Cell PCS*  
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## **Photographs of Test Setup**

### **Front View**



### **Rear View**



**KTL Ottawa**

FCC PART 24, SUBPART E  
BROADBAND PCS REPEATERS  
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**Pre-Scan Data**

*INSERT PRESCAN GRAPHS*

**KTL Ottawa**

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Prescan Data

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Project Number : 8R01059  
Project Filename : 8R1059.LST  
Date : January 5, 1999  
Start Frequency : 30 MHz  
Stop Frequency : 1000 MHz  
Display Line Value: 24 dBuV

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Vertical Prescan

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Top 6 Emissions below 300 MHz from the vertical prescan list:

74.11 MHz, 27.1 dBuV.  
73.42 MHz, 26.5 dBuV.  
73.7 MHz, 26.4 dBuV.  
74.25 MHz, 25.6 dBuV.  
73.01 MHz, 24.7 dBuV.  
75.22 MHz, 24.3 dBuV.

Full Emission List below 300 MHz:

72.59 MHz, 24.1 dBuV. Peak.  
73.01 MHz, 24.7 dBuV. Peak.  
73.42 MHz, 26.5 dBuV. Peak.  
73.7 MHz, 26.4 dBuV. Peak.  
73.84 MHz, 26.4 dBuV. Peak.  
74.11 MHz, 27.1 dBuV. Peak.  
74.25 MHz, 25.6 dBuV. Peak.  
75.22 MHz, 24.3 dBuV. Peak.

Top 6 Emissions above 300 MHz from the vertical prescan list:

462.31 MHz, 26.8 dBuV.  
531.08 MHz, 26.5 dBuV.  
452.5 MHz, 25.9 dBuV.  
491.79 MHz, 25.7 dBuV.  
472.13 MHz, 25.3 dBuV.  
550.73 MHz, 25 dBuV.

Full Emission List above 300 MHz:

300 MHz, 16.5 dBuV. Peak.  
305.06 MHz, 20.4 dBuV. Peak.  
314.89 MHz, 22.4 dBuV. Peak.  
324.72 MHz, 17 dBuV. Peak.  
334.54 MHz, 20.8 dBuV. Peak.

373.86 MHz, 22.7 dBuV. Peak.  
383.7 MHz, 18.2 dBuV. Peak.  
393.53 MHz, 16 dBuV. Peak.  
423.02 MHz, 16.2 dBuV. Peak.  
432.84 MHz, 20.5 dBuV. Peak.  
442.66 MHz, 22.4 dBuV. Peak.  
452.5 MHz, 25.9 dBuV. Peak.  
462.31 MHz, 26.8 dBuV. Peak.  
472.13 MHz, 25.3 dBuV. Peak.  
481.95 MHz, 23.5 dBuV. Peak.  
491.79 MHz, 25.7 dBuV. Peak.  
500.01 MHz, 17.2 dBuV. Peak.  
501.62 MHz, 22.7 dBuV. Peak.  
511.43 MHz, 16.4 dBuV. Peak.  
521.27 MHz, 24.7 dBuV. Peak.  
531.08 MHz, 26.5 dBuV. Peak.  
540.91 MHz, 25.7 dBuV. Peak.  
550.73 MHz, 25 dBuV. Peak.  
560.55 MHz, 25 dBuV. Peak.  
570.37 MHz, 22.6 dBuV. Peak.  
580.19 MHz, 17.3 dBuV. Peak.  
658.77 MHz, 18.1 dBuV. Peak.  
668.63 MHz, 16.6 dBuV. Peak.  
678.45 MHz, 20.4 dBuV. Peak.  
698.08 MHz, 16.7 dBuV. Peak.  
717.7 MHz, 16.9 dBuV. Peak.

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Horizontal Prescan

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Top Emissions below 300 MHz from the horizontal prescan list:

Full Emission List below 300 MHz:

Top Emissions above 300 MHz from the horizontal prescan list:

369.99 MHz, 23.3 dBuV.  
500.01 MHz, 21.3 dBuV.  
507.24 MHz, 16 dBuV.

Full Emission List above 300 MHz:

369.99 MHz, 23.3 dBuV. Peak.  
370 MHz, 23.3 dBuV. Peak.  
500.01 MHz, 21.3 dBuV. Peak.  
507.24 MHz, 16 dBuV. Peak.

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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**Section 7. Frequency Stability**

NAME OF TEST: Frequency Stability	PARA. NO. 24.235
TESTED BY:	DATE:

**Test Results:** Complies/Does Not Comply

**Measurement Data:** Standard Test Frequency: \_\_\_\_\_ MHz  
Standard Test Voltage: \_\_\_\_\_ Vdc

**NOT APPLICABLE**

*EQUIPMENT: Brite Cell PCS*  
*FCC ID: BCR-BCEL-PCS*

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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	May 20/98	May 20/99	
1 Year	Spectrum Analyzer-2	Hewlett Packard	8566B	1950A00400	July 22/98	July 22/99	
1 Year	Spectrum Analyzer Display-2	Hewlett Packard	85662A	1950A01177	July 22/98	July 22/99	
1 Year	Quasi Peak Adaptor-2	Hewlett Packard	85650A	2251A00620	July 22/98	July 22/99	
	Power Supply	Astron	VS-50M	8405071	NCR	NCR	
1 Year	Attenuator	Narda	768-20	9507	July 24/98	July 24/99	
1 Year	Attenuator	Narda	765-20	9510	July 24/98	July 24/99	
1 Year	RF Millivoltmeter	Rohde & Schwarz	URV5	FA000420	July 23/98	July 23/99	
1 Year	Insertion Unit	Rohde & Schwarz	URV5-Z4	FA000905	July 23/98	July 23/99	
2 Year	Horn Antenna	EMCO #2	3115	4336	Oct. 30/97	Oct. 30/99	
1 Year	50 ohm Combiner Pad	Mini Circuits	ZA3PD-2	9746	July 23/98	July 23/99	
1 Year	Low Noise Amplifier	Avantek	AWT-8035	1005	Aug. 4/98	Aug. 4/99	
1 Year	Low Noise Amplifier	DBS Microwave	DWT-13035	9623	Aug. 4/98	Aug. 4/99	
1 Year	Signal Generator	Rohde & Schwarz	SM1Q03	1084-8004-03	July 23/98	July 23/99	
1 Year	Arbitrary Waveform Gen.	Sony/Tektronix	AWG2021	J310495	NCR	NCR	
3 Year	Standard Gain Horn	Electro-Metrics	SH-50/60-1	FA000479	July 29/97	July 29/00	
3 Year	RF Generator	Rohde & Schwarz	SME3	DE14439	June 29/96	June 29/99	
1 Year	RF Amp.	Comtest	GPA301	BCS320-1040	NCR	NCR	

NA: Not Applicable  
NCR: No Cal Required

*EQUIPMENT: Brite Cell PCS*  
*FCC ID:*

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**ANNEX A**  
**TEST METHODOLOGIES**

*EQUIPMENT: Brite Cell PCS**FCC ID:***NAME OF TEST: RF Power Output****PARA. NO.: 2.985****Test Conditions:** Standard Temperature & Humidity  
Standard Test Voltage**Minimum Standard:** Para. No.24.232. Base stations are limited to 1640 watts peak E.I.R.P. with an antenna height up to 300 meters HAAT. In no case may the peak output power of a base station transmitter exceed 100 watts.**Method Of Measurement:**Detachable Antenna:

The peak power at antenna terminals is measured using an in-line peak power meter. Power output is measured with the maximum rated input level.

Integral Antenna:

If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation  $GP/4\pi R^2 = E^2/120\pi$  and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts

E = the maximum measured field strength in V/m

R = the measurement range (3 meters)

G = the numeric gain of the transmit antenna in relation to an isotropic radiator

*EQUIPMENT: Brite Cell PCS**FCC ID:*

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**NAME OF TEST: Occupied Bandwidth****PARA. NO.: 2.989**

**Test Conditions:** Standard Temperature & Humidity  
Standard Test Voltage

**Minimum Standard:** Para. No. 24.238(b). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB.

**Method Of Measurement:**CDMA

Spectrum analyzer settings:

RBW: 30 kHz

VBW:  $\geq$  RBW

Span: 5 MHz

Sweep: Auto

Mask: Set markers to -26 dB from peak of CW.

GSM

RBW: 3 kHz

VBW:  $\geq$  RBW

Span: 2 MHz

Sweep: Auto

Mask: Set markers to -26 dB from peak of CW.

NADC

RBW: 1 kHz

VBW:  $\geq$  RBW

Span: 1 MHz

Sweep: Auto

Mask: Set markers to -26 dB from peak of CW.

*EQUIPMENT: Brite Cell PCS*  
*FCC ID:*

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<b>NAME OF TEST: Spurious Emission at Antenna Terminals</b>	<b>PARA. NO.: 2.991</b>
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**Test Conditions:** Standard Temperature & Humidity  
Standard Test Voltage

**Minimum Standard:** Para. No.24.238(a). On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power by at least  $43 + 10 \log (P)$  dB.

**Method Of Measurement:**

Spectrum analyzer settings:

CDMA

RBW: 1 MHz (> 1 MHz from Band Edge)  
RBW: 30 kHz (< 1 MHz from Band Edge)  
VBW:  $\geq$  RBW  
Sweep: Auto  
Video Avg: 6 Sweeps

GSM

RBW: 1 MHz (> 1 MHz from Band Edge)  
RBW: 3 kHz (< 1 MHz from Band Edge)  
VBW:  $\geq$  RBW  
Sweep: Auto  
Video Avg: Disabled

NADC

RBW: 1 MHz (> 1 MHz from Band Edge)  
RBW: 3 kHz (< 1 MHz from Band Edge)  
VBW:  $\geq$  RBW  
Sweep: Auto  
Video Avg: Disabled

To demonstrate compliance at band edges the frequency of the input signal is set to the lowest and highest assigned channel and the center frequency of the spectrum analyzer is set to the upper and lower edges of the appropriate frequency block.

EQUIPMENT: Brite Cell PCS  
FCC ID:

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<b>NAME OF TEST: Field Strength of Spurious Radiation</b>	<b>PARA. NO.: 2.993</b>
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**Test Conditions:** Outdoor Range  
Standard Test Voltage

**Minimum Standard:** Para. No.24.238(a). On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power by at least  $43 + 10 \log (P)$  dB.

### Calculation Of Field Strength Limit

An example of attenuation requirement of  $43 + 10 \log P$  is equivalent to -13 dBm ( $5 \times 10^{-5}$  Watts) at the antenna terminal. We determine the field strength limit by using the plane wave relation.

$$GP/4\pi R^2 = E^2/120\pi$$

For emissions  $\leq 1$  GHz:

$G = 1.64$  (Dipole Gain)

$P = 10^{-5}$  Watts (Maximum spurious output power)

$R = 3$ m (Measurement Distance)

$$E = \frac{\sqrt{30GP}}{R}$$

$$E = \frac{\sqrt{30 \times 1.64 \times 5 \times 10^{-5}}}{3} = 0.016533 \text{ V / m} = 84.4 \text{ dB}\mu\text{V / m}$$

For emissions  $> 1$  GHz:

$G = 1$  (Isotropic Gain)

$P = 1 \times 10^{-5}$  Watts (Maximum spurious output power)

$R = 3$ m (Measurement Distance)

$$E = 84.4 - 20 \log \sqrt{1.64} = 82.3 \text{ dB}\mu\text{V / m} @ 3\text{m}$$



*EQUIPMENT: Brite Cell PCS**FCC ID:*

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**NAME OF TEST: Frequency Stability****PARA. NO.: 2.995****Test Conditions:** As per measurement data.**Minimum Standard:** Para. No. 24.235. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.**Method Of Measurement:**Frequency Stability With Voltage Variation

The E.U.T. is placed in an environmental chamber and allowed to stabilize at +20 degrees Celsius for at least 15 minutes. The frequency counter and signal generator are phase locked with the same 10 MHz reference frequency by connecting the 10 MHz ref. out of the counter to the 10 MHz ref, in of the signal generator. With the voltage input to the E.U.T. set to 85% S.T.V., the frequency is measured in 30 second intervals for a period of 5 minutes. This procedure is repeated at 100% S.T.V. and 115% S.T.V.

Frequency Stability With Temperature Variation

The input voltage to the E.U.T. is set to S.T.V. and the temperature of the environmental chamber is varied in 10 degree steps from -30 degrees C to +50 degrees C. The E.U.T. is allowed to stabilize at each temperature and the frequency is measured in 30 second intervals for a period of 5 minutes.

**KTL Ottawa**

FCC PART 24, SUBPART E  
BROADBAND PCS REPEATERS  
PROJECT NO.: 8R01059  
ANNEX B

*EQUIPMENT: Brite Cell PCS*  
*FCC ID:*

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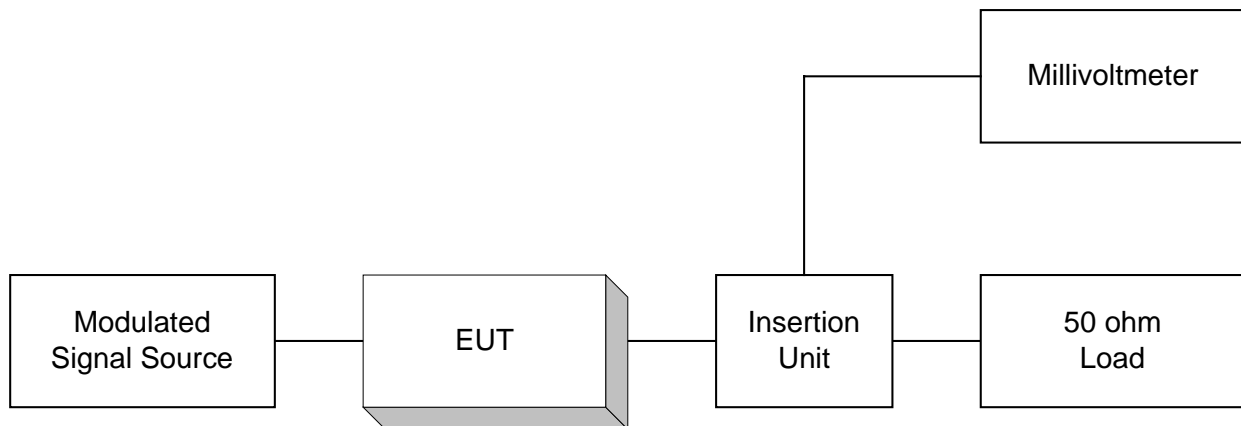
**ANNEX B**  
**TEST DIAGRAMS**

*EQUIPMENT: Brite Cell PCS*

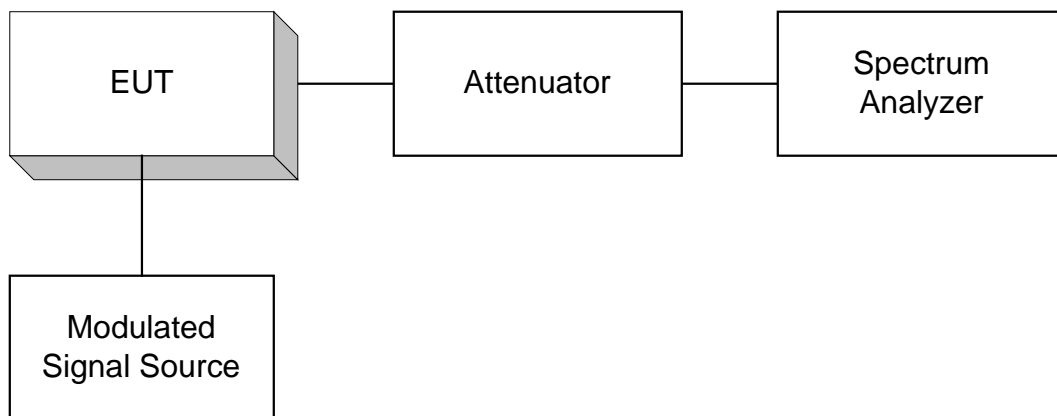
*FCC ID:*

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**Para. No. 2.985 - R.F. Power Output**



**Para. No. 2.989 - Occupied Bandwidth**



*EQUIPMENT: Brite Cell PCS*  
*FCC ID:*

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**Para. No. 2.991 Spurious Emissions at Antenna Terminals**

