



**Test Report:** 2W04890  
Issue 2.0

**Applicant:** Dekolink Wireless LTD.  
16 Bazel St. Qiryat-Arieh  
Petah-Tikva, 49510  
Israel

**Equipment Under Test:  
(EUT)** CBDA PCSAC 10W80  
Indoor Repeater

**FCC ID:** OIWCBDA PCSAC10W80

**In Accordance With:** **FCC Part 24, Subpart E**

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

A handwritten signature in blue ink, appearing to read 'Glen Westwell'.

**Authorized By:** Glen Westwell, Wireless Technologist

**Date:** 28 June 2002

**Total Number of Pages:** 30

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*EQUIPMENT:* CBDA PCSAC 10W80

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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 24, Subpart E.

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.



TESTED BY: \_\_\_\_\_  
Kevin Carr, EMC Specialist

DATE: 28 June 2002

Nemko Canada Inc., a testing laboratory, is accredited by the Standards Council of Canada. The tests included in this report are within the scope of this accreditation. The results apply only to the samples tested.

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This report applies only to the items tested.

*EQUIPMENT:* CBDA PCSAC 10W80

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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	Complied.
Audio Frequency Response	2.1047	N/A
Audio Low-Pass Filter Response	2.1047	N/A
Modulation Limiting	2.1047	N/A
Occupied Bandwidth	2.1049	Complied.
Spurious Emissions at Antenna Terminals	2.1051	Complied.
Field Strength of Spurious Emissions	2.1053	Complied.
Frequency Stability	2.1055	Complied.
Transient Frequency Behavior	—	N/A

**Footnotes For N/A's:**

**Indoor**                      Temperature: 23°C  
                                    Humidity:     38%

**Outdoor**                    Temperature: 24°C  
                                    Humidity:     50%

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*EQUIPMENT:* CBDA PCSAC 10W80

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

<b>Manufacturer:</b>	Dekolink Wireless LTD.
<b>Model No.:</b>	CBDA PCSAC 10W80
<b>Serial No.:</b>	02058001
<b>Date Received In Laboratory:</b>	12June 2002
<b>Nemko Identification No.:</b>	1
<b>Supply Input Voltage:</b>	120 VAC, 60 Hz
<b>Frequency Range:</b>	Downlink:       1930-1990MHz Uplink:         1850-1910MHz
<b>RF Output (Rated):</b>	Downlink, CDMA:   1.0Watts, 30.0dBm Downlink, TDMA:   1.0Watts, 30.0dBm Downlink, GSM:     1.0Watts, 30.0dBm  Uplink, CDMA:       0.251Watts, 24dBm Uplink, TDMA:       0.251Watts, 24dBm Uplink, GSM:        0.251Watts, 24dBm
<b>Emission Designator</b>	CDMA, DXW TDMA, F9W GSM,   GXW

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

**Para. No.: 2.1046**

<b>Test Performed By: Kevin Carr</b>	<b>Date of Test: 12 June 2002</b>
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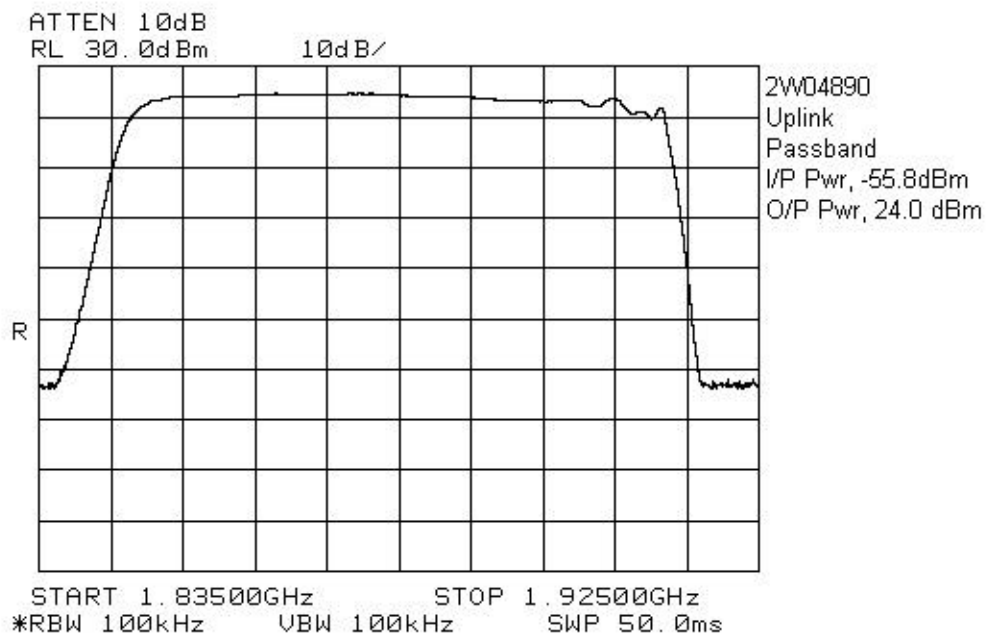
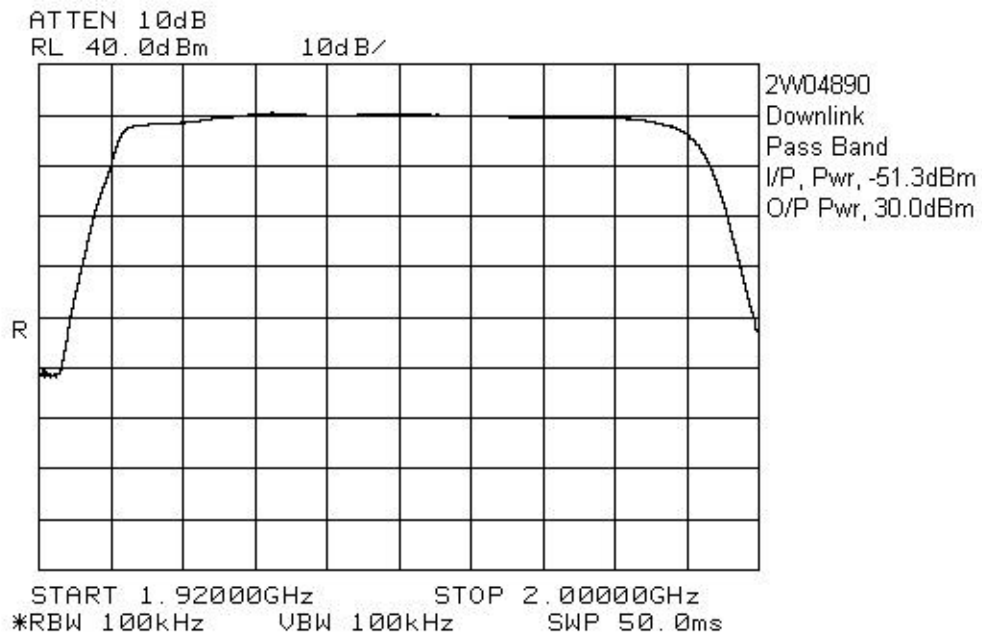
**Minimum Standard:** 24.232

**Test Results:** Complied.

**Measurement Data:** See Attached Graphs. The maximum RF output power is within  $\pm 1$ 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: CBDA PCSAC 10W80



*EQUIPMENT:* CBDA PCSAC 10W80

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## **Section 4.        Occupied Bandwidth**

**Para. No.: 2.1049**

<b>Test Performed By: Kevin Carr</b>	<b>Date of Test: 12 June 2002</b>
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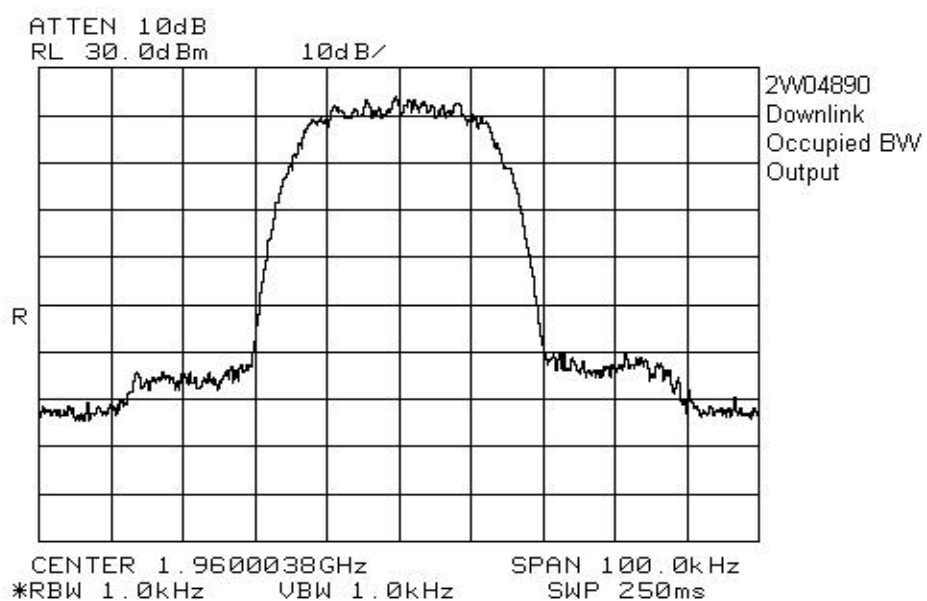
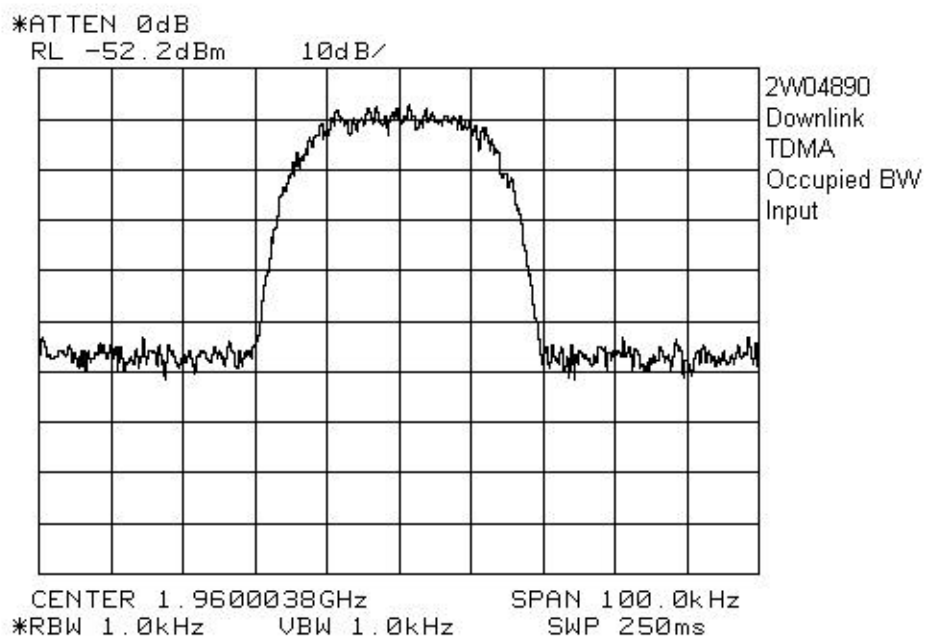
**Minimum Standard:**        24.238, Input vs Output

**Test Results:**                Complied

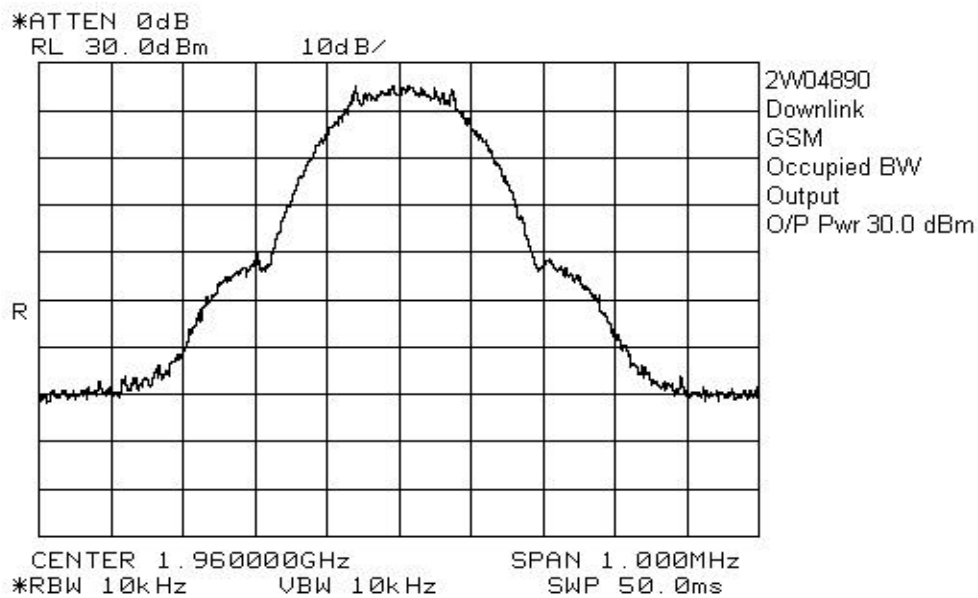
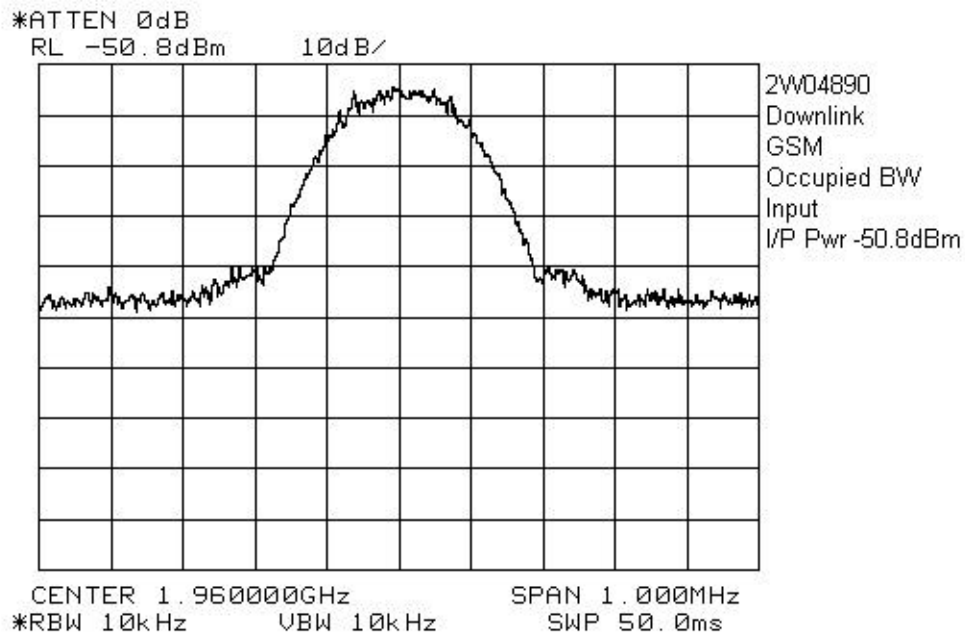
**Measurement Data:**        See attached graphs.

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.

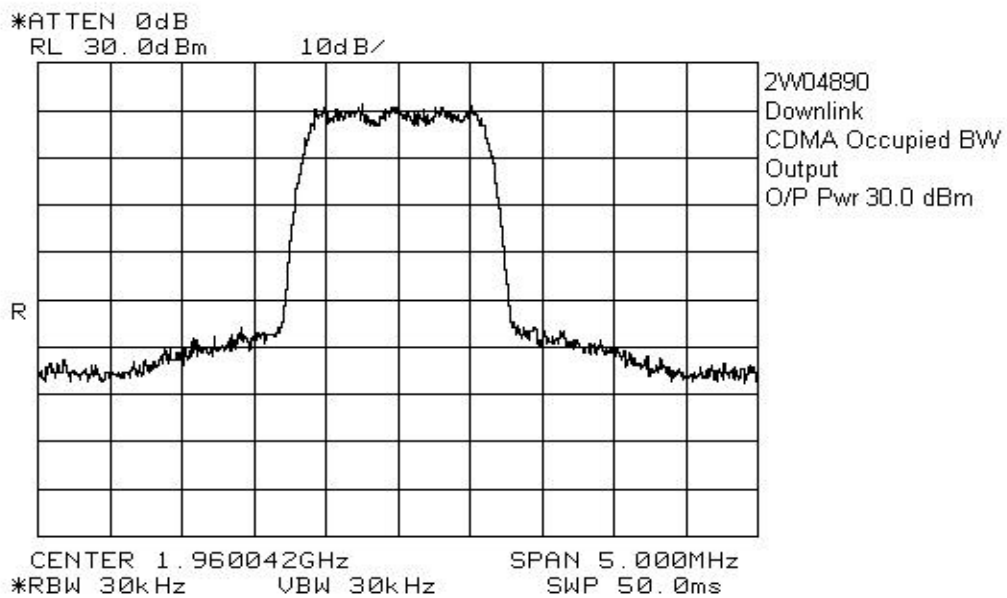
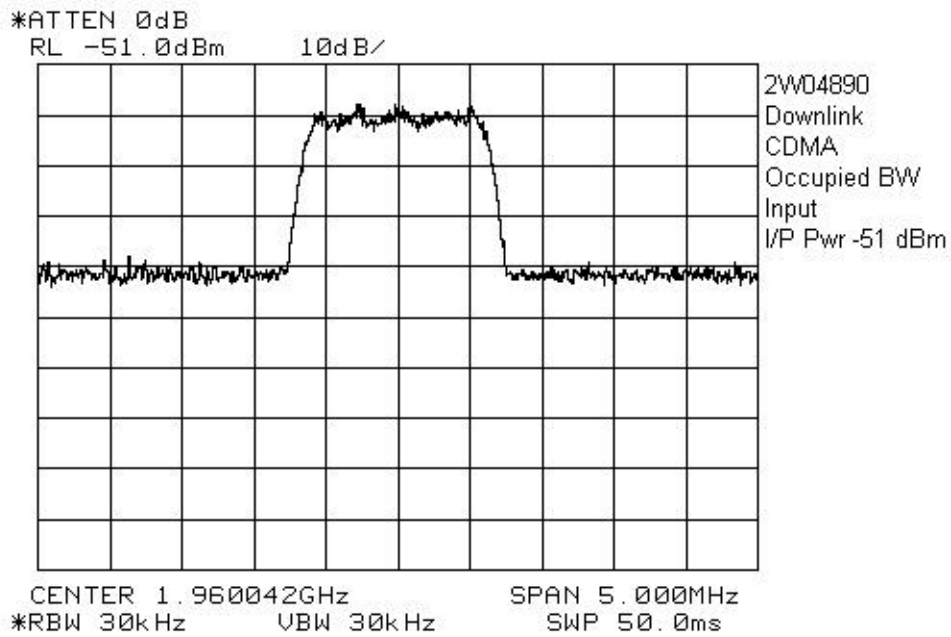
EQUIPMENT: CBDA PCSAC 10W80



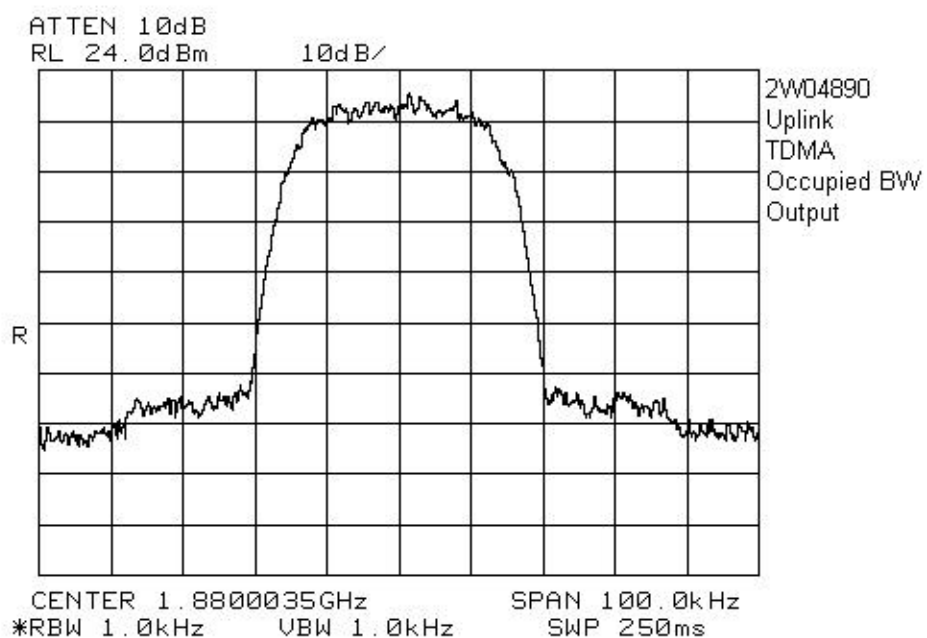
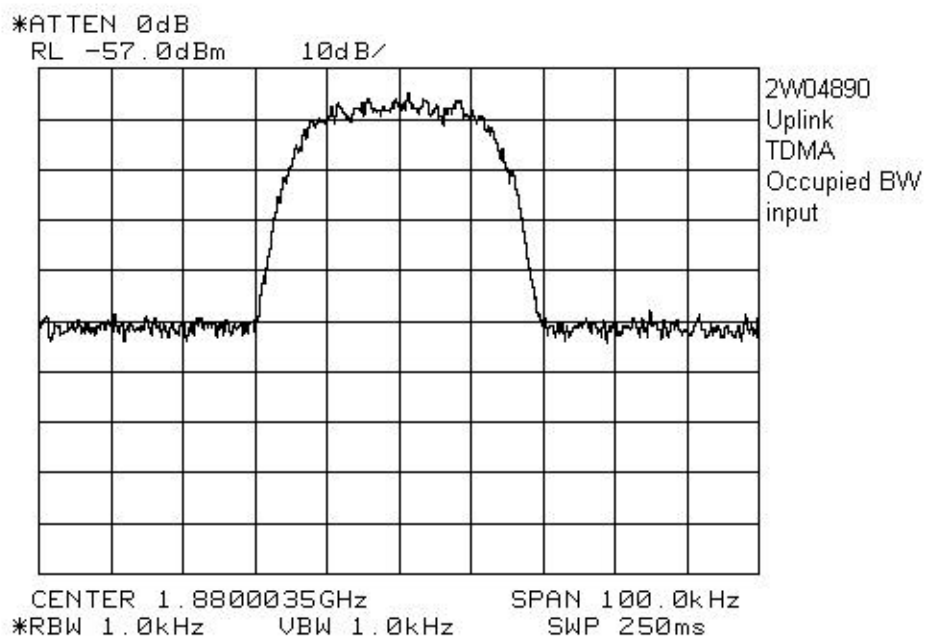
EQUIPMENT: CBDA PCSAC 10W80



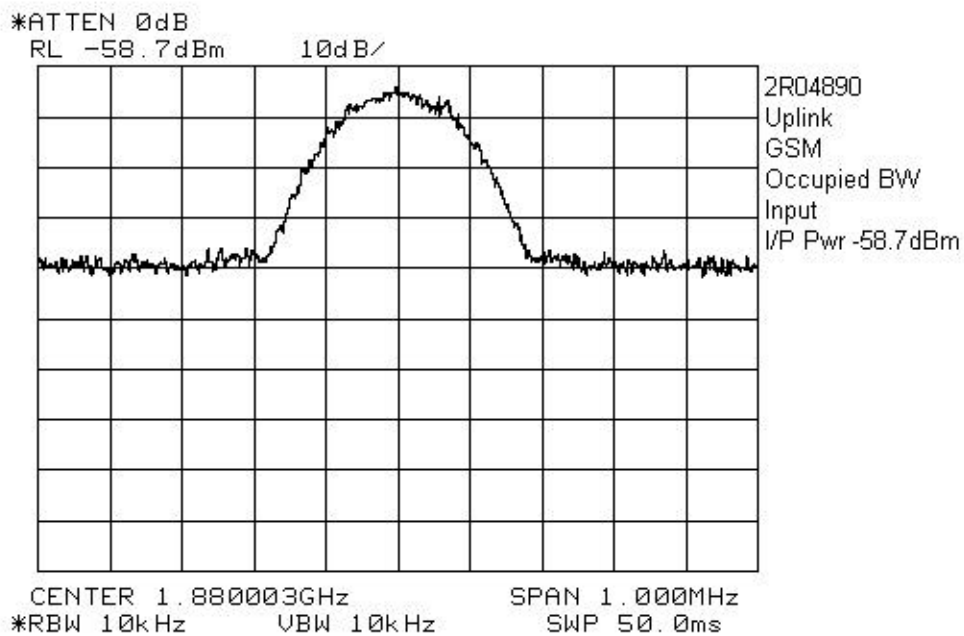
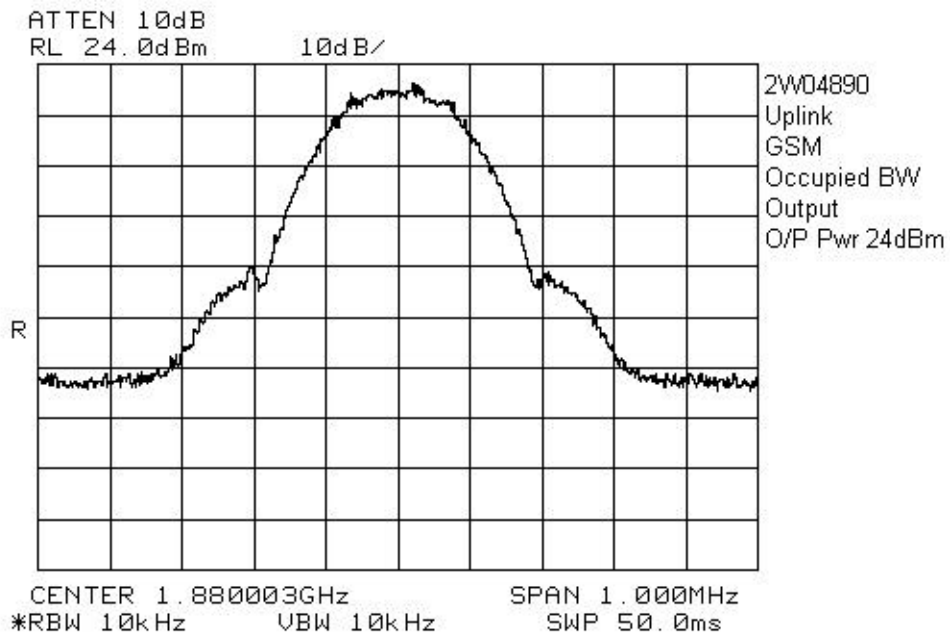
EQUIPMENT: CBDA PCSAC 10W80



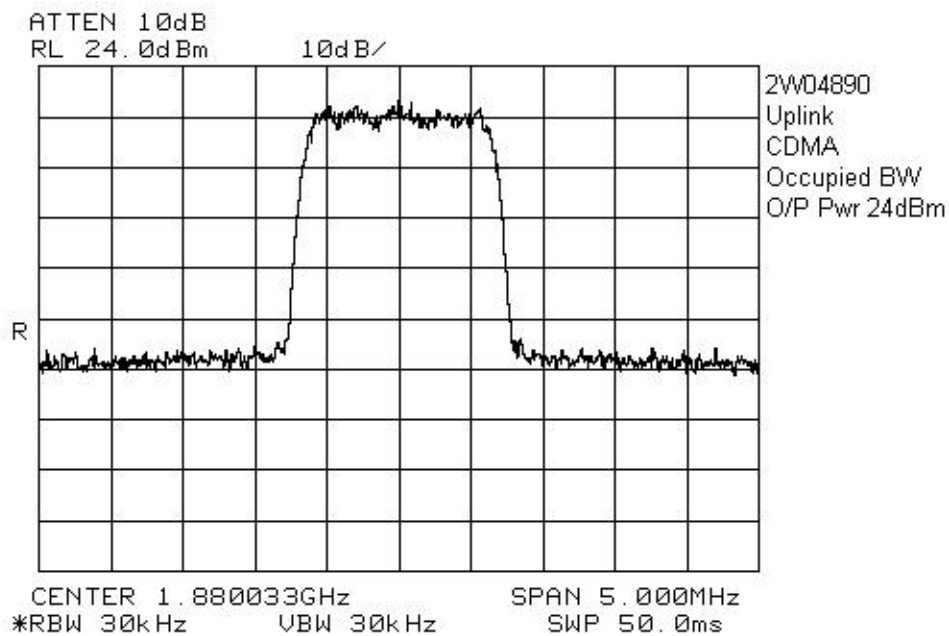
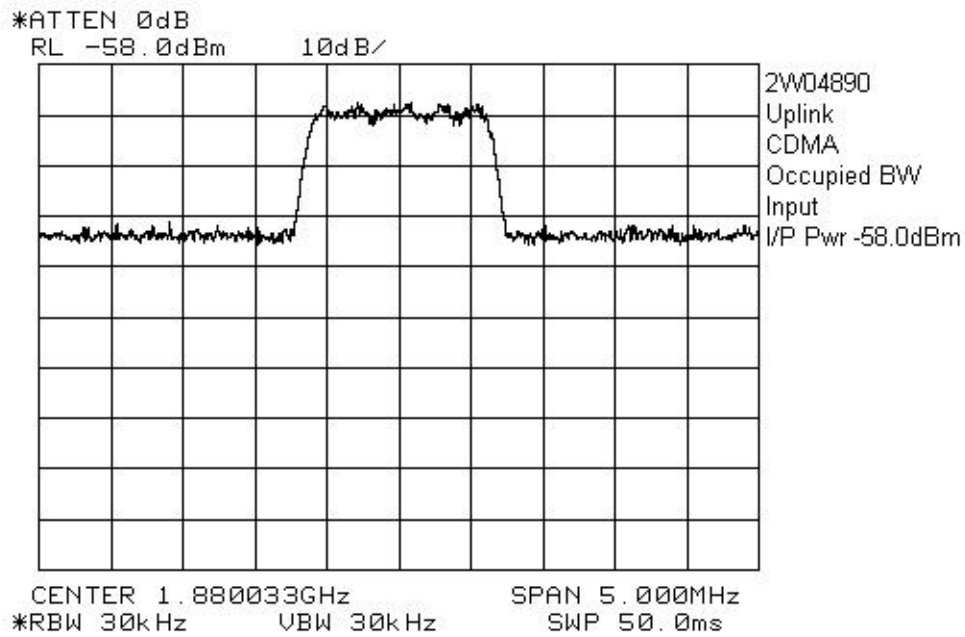
EQUIPMENT: CBDA PCSAC 10W80



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*EQUIPMENT:* CBDA PCSAC 10W80

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

**Para. No.: 2.1051**

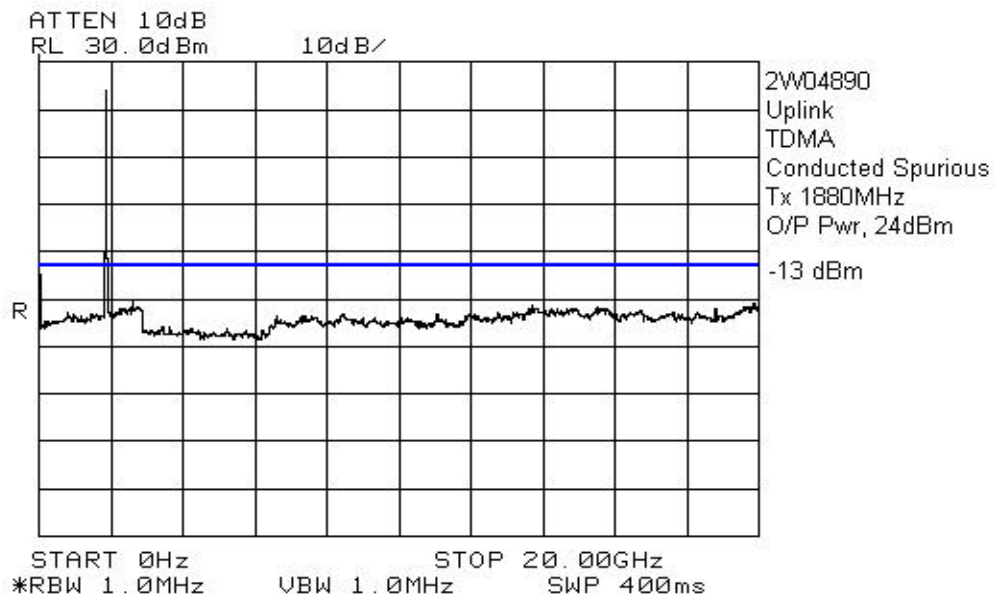
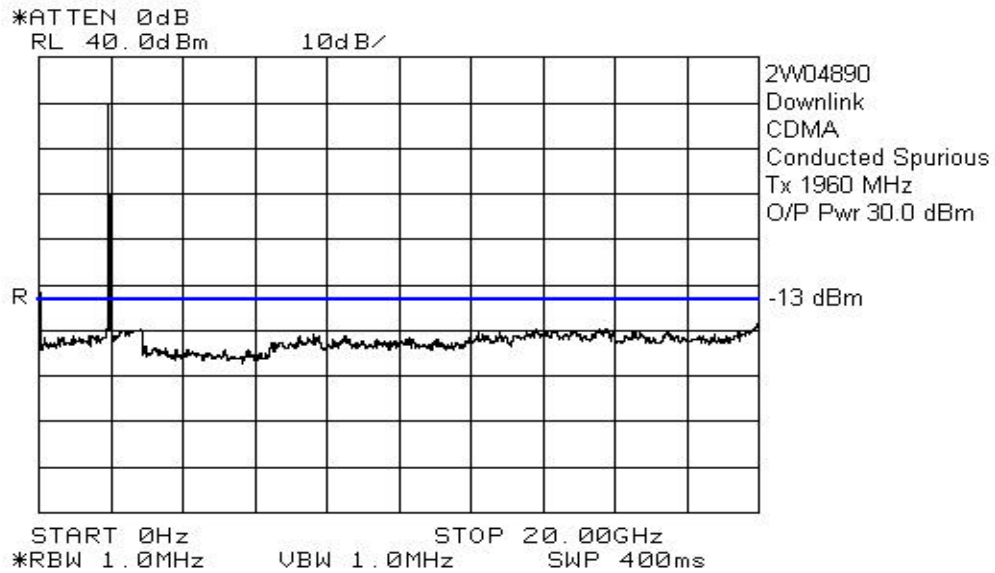
<b>Test Performed By: Kevin Carr</b>	<b>Date of Test: 12 June 2002</b>
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**Minimum Standard:**           24.238

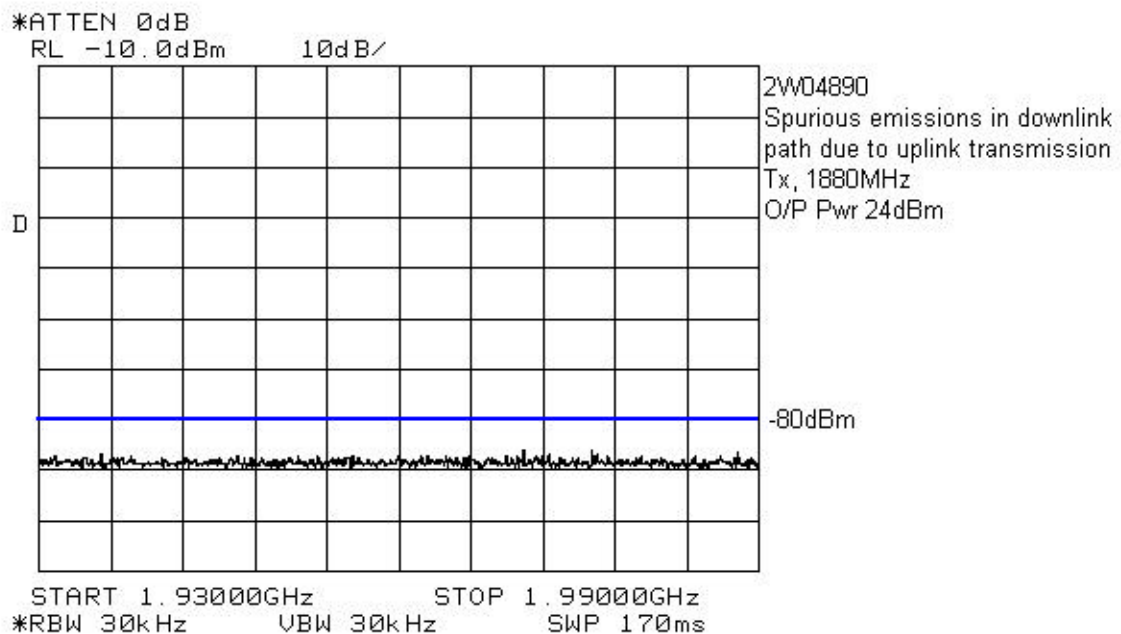
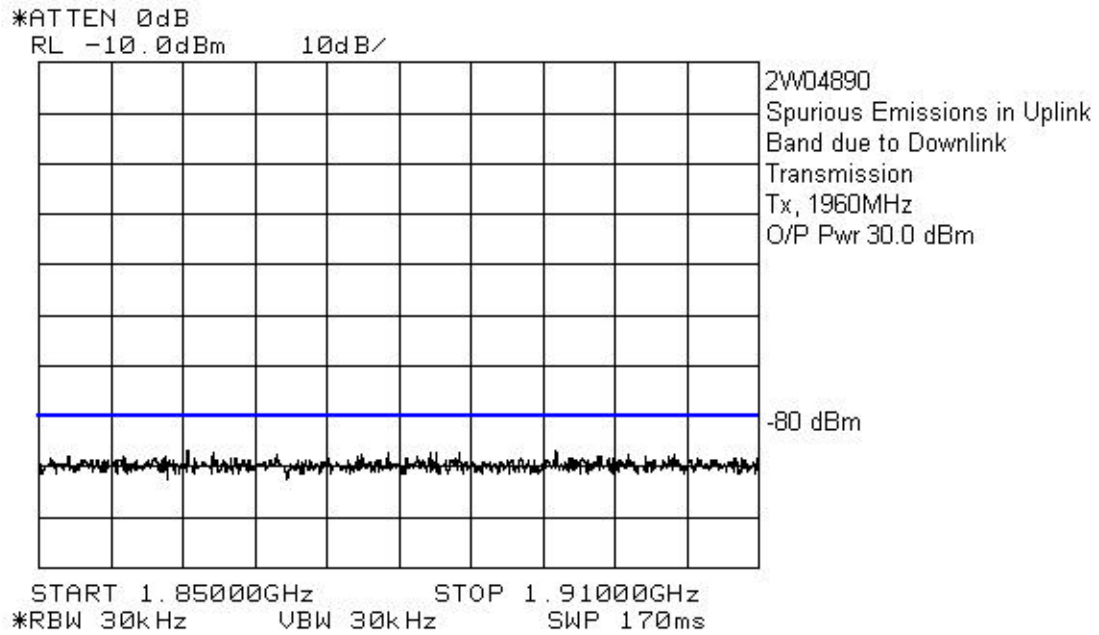
**Test Results:**                 Complied.

**Measurement Data:**         See Attached Graphs. Only worst case has been reported.

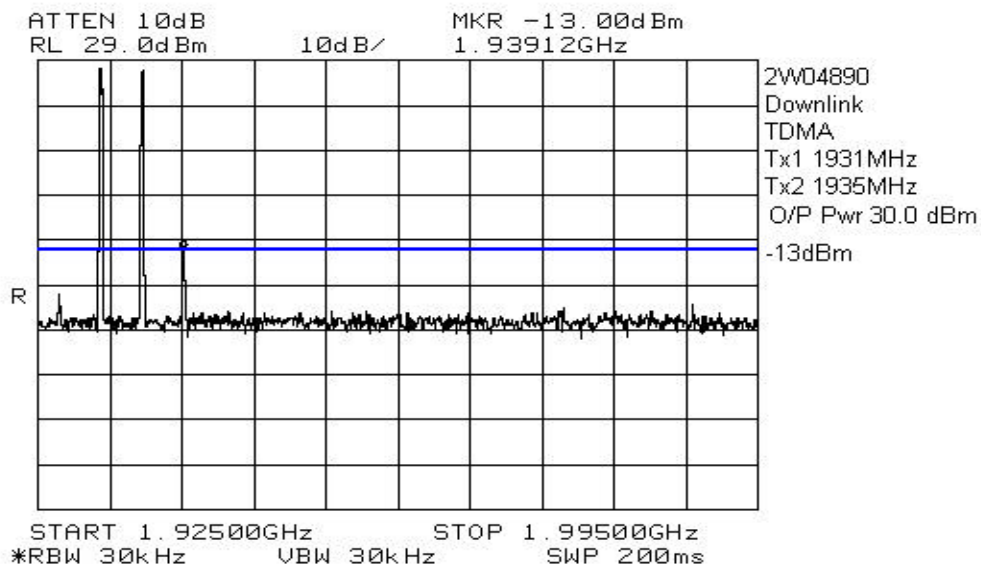
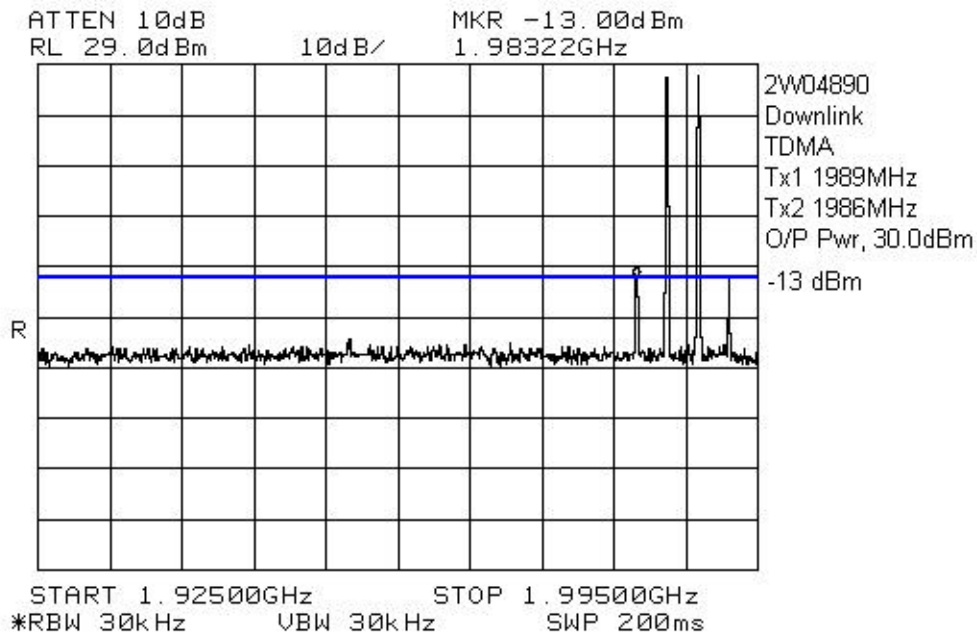
## Spurious Emissions-Conducted



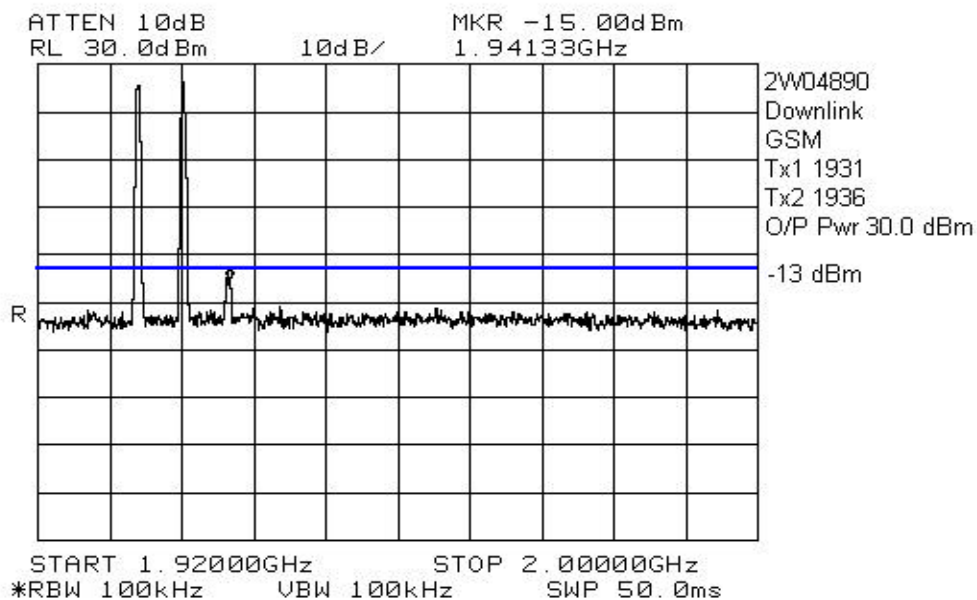
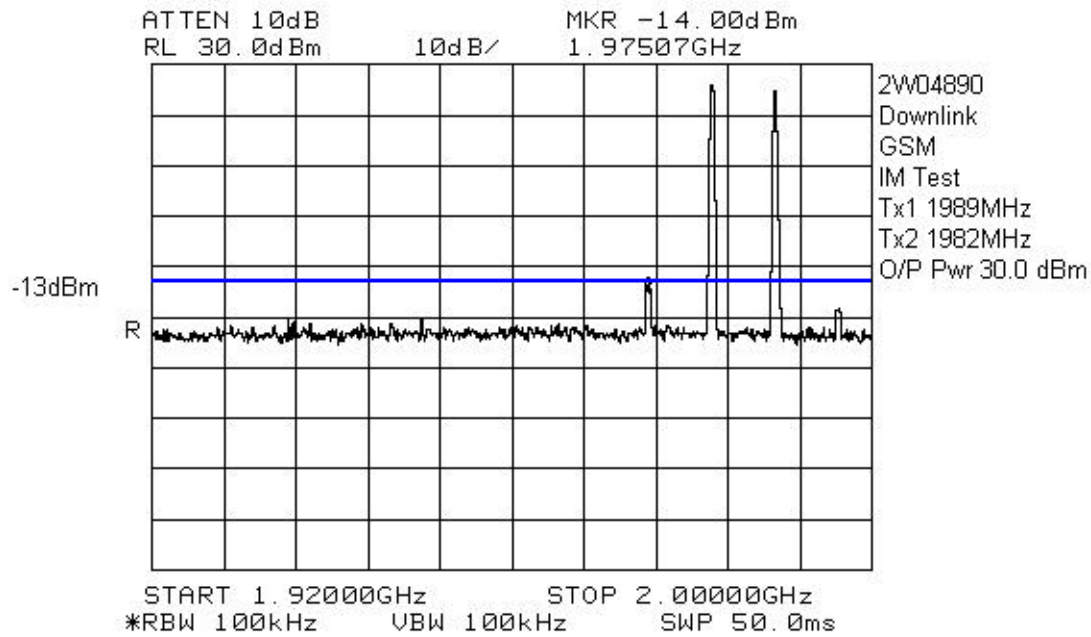
EQUIPMENT: CBDA PCSAC 10W80



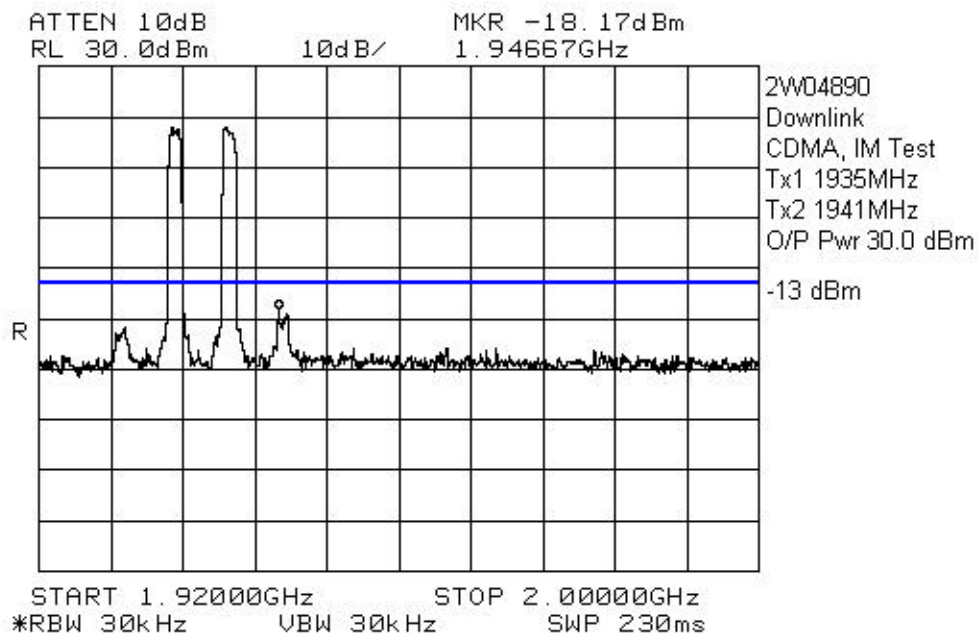
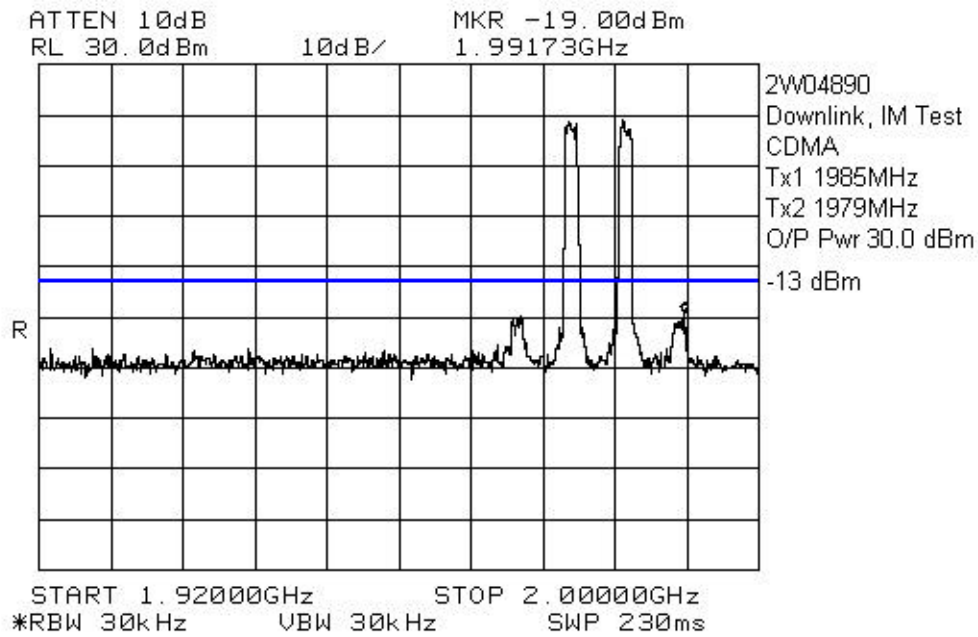
EQUIPMENT: CBDA PCSAC 10W80



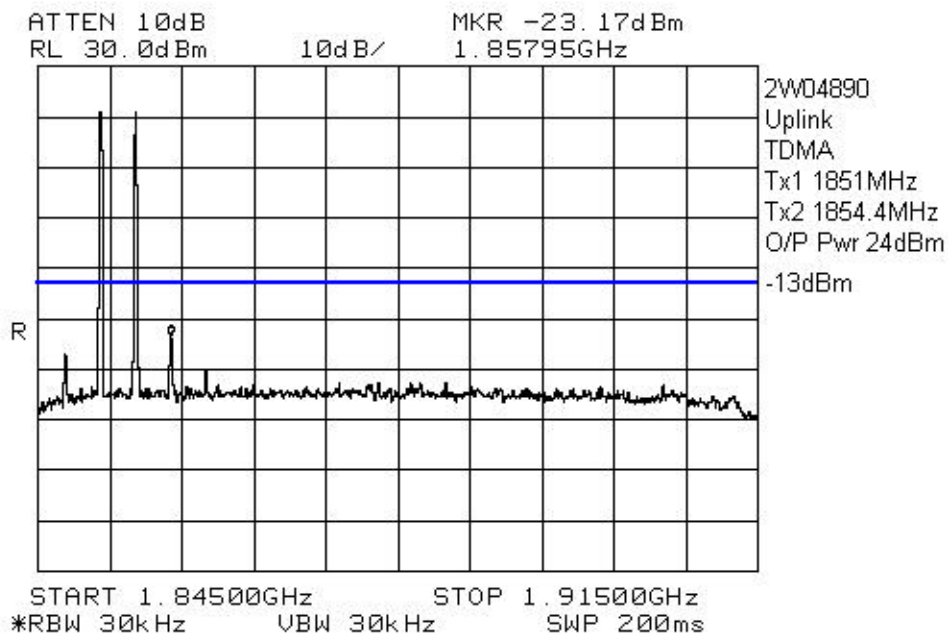
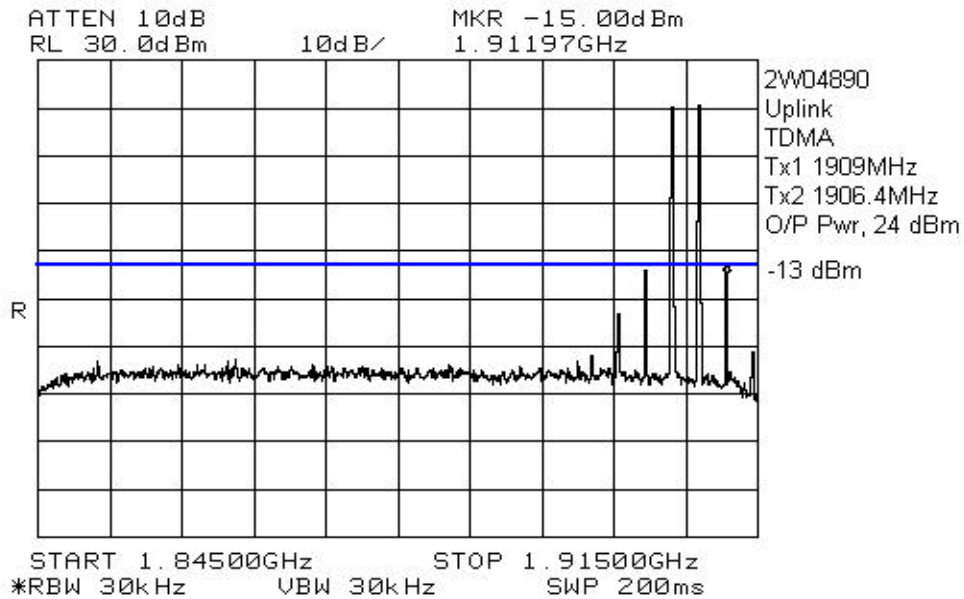
EQUIPMENT: CBDA PCSAC 10W80



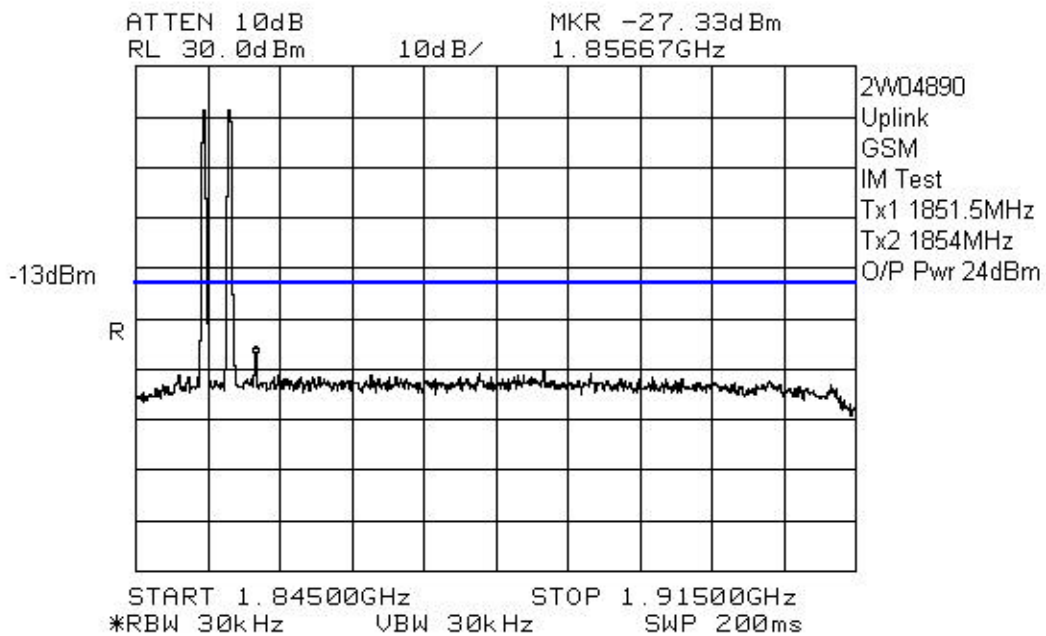
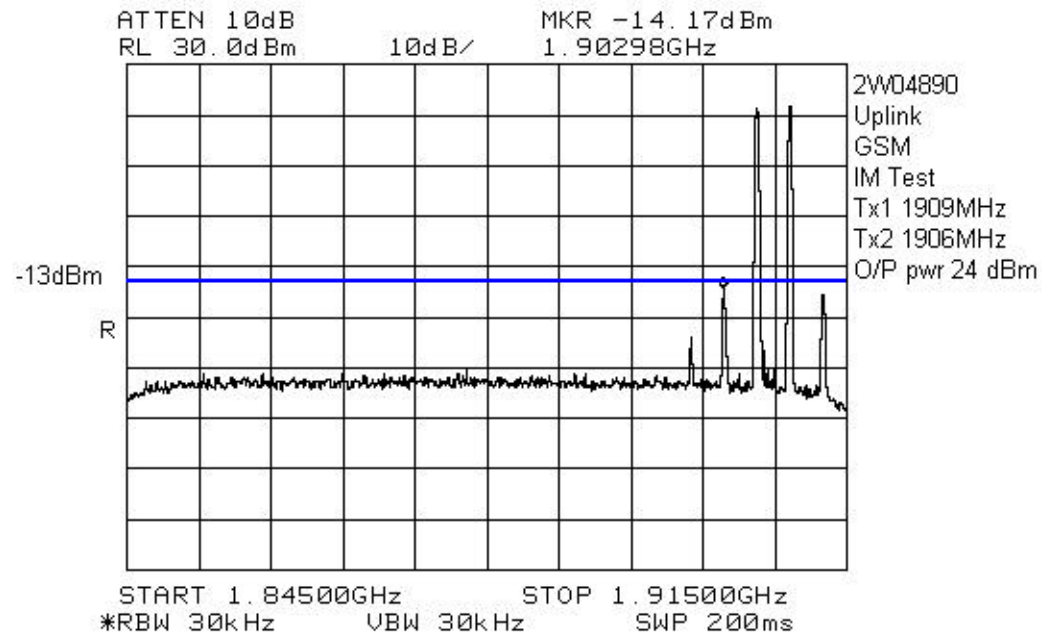
EQUIPMENT: CBDA PCSAC 10W80



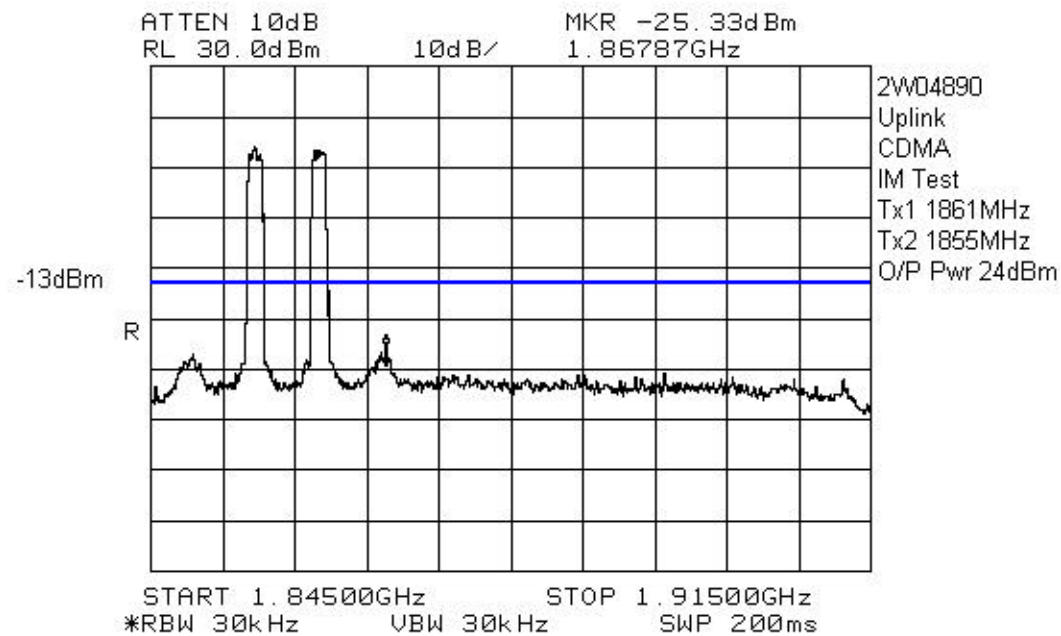
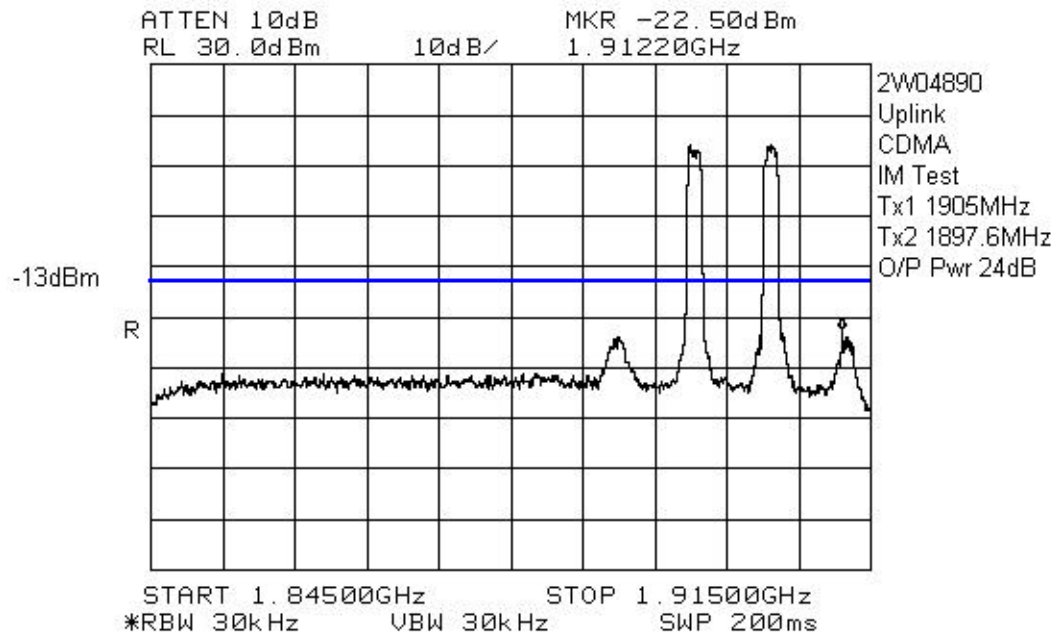
EQUIPMENT: CBDA PCSAC 10W80



EQUIPMENT: CBDA PCSAC 10W80



EQUIPMENT: CBDA PCSAC 10W80



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

**Para. No.: 2.1053**

<b>Test Performed By: Kevin Carr</b>	<b>Date of Test: 13 June 2002</b>
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**Minimum Standard:**           24.238

**Test Results:**                 Complied.

**Measurement Data:**         See attached data.

EQUIPMENT: CBDA PCSAC 10W80

**Test Data - Radiated Emissions**

Test Distance (meters) : 3		Range: A		Receiver: HP8565E			RBW(kHz): 1000		Detector: Peak	
No.	Freq. (MHz)	Ant.	Pol (V/H)	RCVD Signal (dBμV)	Conv. Factor (dB)**	Amp. Gain (dB)* **	Dist. Corr. (dB)	Signal Strength (dBm)	Limit (dBm)	Margin (dB)
1	3920	SSV	V	61	-117.5			-56.5	-13	43.5
2	3920	SSH	H	61.2	-117.5			-56.3	-13	43.3
3	5880	SSV	V	57.5	-110.2			-52.7	-13	39.7
4	5880	SSH	H	57.3	-107.8			-50.5	-13	37.5
5	7840	SSV	V	56.7	-102.8			-46.1	-13	33.1
6	7840	SSH	H	57.3	-102.8			-45.5	-13	32.5
7	3760	SSV	V	49.7	-118			-68.3	-13	-55.3
8	3760	SSH	H	49.5	-119.3			-69.8	-13	-56.8
9	5640	SSV	V	46	-110			-64	-13	-51
10	5640	SSH	H	46.7	-107.3			-60.6	-13	-47.6
11	7520	SSV	V	48.6	-104.6			-56	-13	-43
12	7520	SSH	H	48.8	-104.5			-55.7	-13	-42.7

**Notes:**

B/C = Biconical, BL = Bilog, L/P = Log-Periodic, H = Horn, D/P = Dipole, E/D = EMCO  
Dipole

\* Re-measured using dipole antenna.

\*\* Includes cable loss when amplifier is not used.

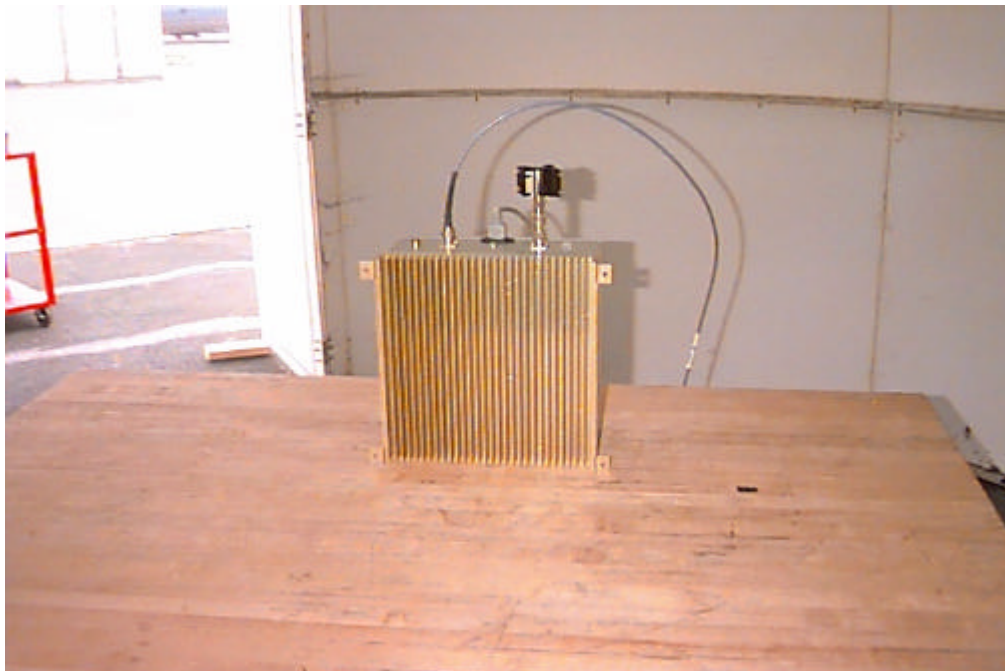
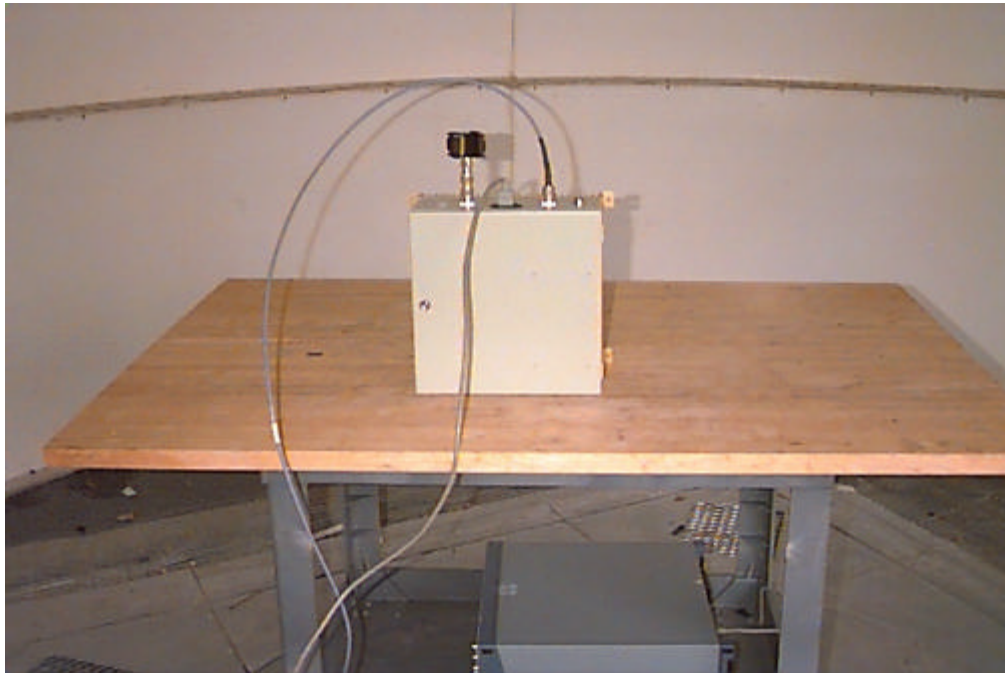
\*\*\* Includes cable loss.

( ) Denotes failing emission level.

N.D. = Not Detected

All spurious and harmonic emissions to the 10<sup>th</sup> harmonic for the downlink were searched.

## **Radiated Spurious Emissions-Photograph**



## **Section 7. Frequency Stability**

**Para. No.: 2.1055**

<b>Test Performed By: Kevin Carr</b>	<b>Date of Test: 13 June 2002</b>
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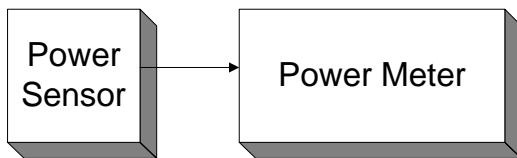
**Minimum Standard:** 24.235

**Test Results:** Complied. The maximum frequency drift was 0Hz.

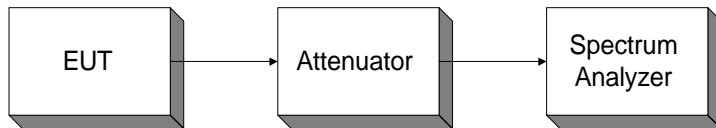
**Measurement Data:** Temperature Range : -30Deg. C to 50 Deg. C, Ref. Client  
Documentation  
Downlink, Test Frequency: 1960MHz

## **Section 8. Block Diagrams**

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



### **Para. No. 2.1049 - Occupied Bandwidth**



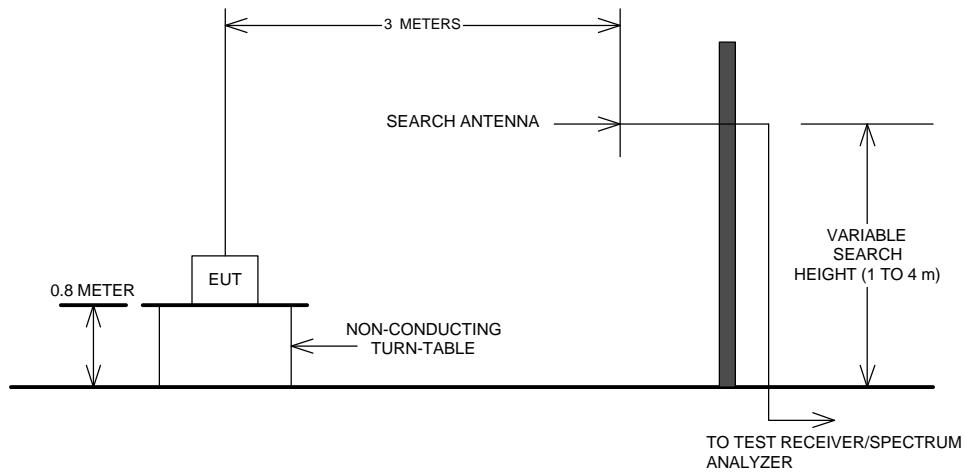
### **Para. No. 2.1051 - Spurious Emissions at Antenna Terminals**



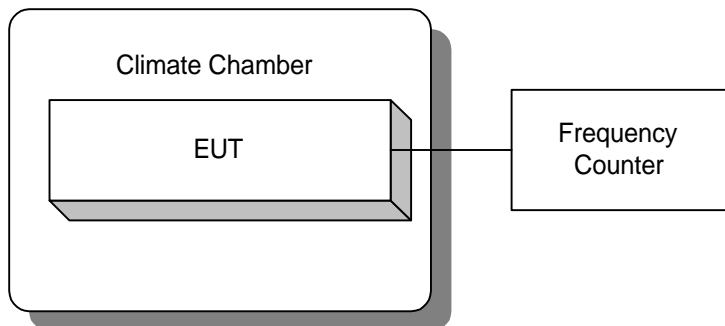
EQUIPMENT: CBDA PCSAC 10W80

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



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



EQUIPMENT: CBDA PCSAC 10W80

**Section 9. Test Equipment List**

CAL CYCLE	EQUIPMENT	MANUFACTURER	MODEL	SERIAL	LAST CAL.	NEXT CAL.
1 Year	Spectrum Analyzer	Hewlett Packard	8564E	3846A01407	Mar. 6/02	Mar. 6/03
1 Year	Climate Chamber	Thermotron	SM-16C	15649-S	COU	COU
1 Year	Attenuator	Narda	768-20	9507	Oct. 12/00	Oct. 12/01
COU	Attenuator	Narda	768-10	9709	COU	COU
COU	Attenuator	Narda	769-20	4153	COU	COU
1 Year	Horn Antenna	EMCO #2	3115	4336	Dec. 1/01	Dec. 1/02
3 Year	Signal Generator	Rohde & Schwarz	SM1Q03	DE22004	Sept. 18/00	Sept. 18/03
3 Year	Signal Generator	Rhode & Schwarz	SM1Q03E	FA001269	Oct. 4/99	Oct. 4/02
COU	RF AMP	JCA	2-4 GHz	FA001496	COU	COU
COU	RF AMP	JCA	1-2 GHz	FA001498	COU	COU
COU	RF AMP	JCA	4-8 GHz	FA001497	COU	COU
COU	RF AMP	Narda	5 - 18GHz	FA001409	COU	COU
COU	RF AMP	Narda	18 - 26.5GHz	FA001550	COU	COU
1 Year	Frequency Counter	Hewlett Packard	HP5350A	2444A00135	11 Jan 2002	11 Jan 2003
NCR	Power Supply	Hewlett Packard	6274B	2552A-08243	NCR	NCR
1 Year	Power Meter	Hewlett Packard	E4418B	FA001413	Sept. 27/01	Sept. 27/02
COU	Isolator	Narda	IOS-1530-10W	FA001585	COU	COU
1 Year	Power Sensor	Hewlett Packard	8487A	FA001419	Sept. 27/01	Sept. 27/02

NA: Not Applicable

NCR: No Cal Required

COU: CAL On Use