



# Nemko

**Test Report:**

4W08096

**Applicant:**

G-Wave Inc.  
15 Ron's Edge Road  
Springfield, NJ, USA  
07081

**Equipment Under Test:  
(EUT)**

BDA-PCS/A-0.5/0.5W-70-A  
BDA-PCS/B-0.5/0.5W-70-A  
BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A  
BDA-PCS/E-0.5/0.5W-70-A  
BDA-PCS/F-0.5/0.5W-70-A

Q8KPCSHW70A

**FCC ID:****In Accordance With:****FCC Part 24, Subpart E****Tested By:**

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

**Authorized By:**

Glen Westwell, Wireless Technologist

**Date:**

22 June 2004

**Total Number of Pages:**

39

*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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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.

See " Summary of Test Data".



TESTED BY: \_\_\_\_\_  
Daxesh Thakker, Wireless Test Engineer

DATE: June 18, 2004



TESTED BY: \_\_\_\_\_  
Kevin Carr, EMC/EMI/Wireless Specialist

DATE: June 18, 2004

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This report applies only to the items tested.

**EQUIPMENT:**

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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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                              |
| 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           | N/A, the Eut is not a band translator |

**Test Conditions:**

- The EUT was tested at full power
- Testing was performed at proper temperature and humidity
- At the clients request, testing was conducted on downlink side only, due to changes in the downlink amplifier. The uplink data should be used from Nemko project 07892, appropriate report page references have been made through out the report
- Testing was carried out on the top, middle and bottom PCS Bands only.
- The device employs a ALC, and was assessed at max. I/P Power as per published gain levels
- Radiated testing was done on the top mid and bottom freq's of the PCS Band

**Indoor**

Temperature: 24 °C

Humidity: 45%

*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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**Section 2. General Equipment Specification**

|                                                       |                                                                                                             |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| <b>Manufacturer:</b>                                  | G-Wave Inc.                                                                                                 |
| <b>Model No./Serial No. Submitted for Assessment:</b> | BDA-PCS/A-0.5/0.5W-70-A, 04021001<br>BDA-PCS/B-0.5/0.5W-70-A, 04021001<br>BDA-PCS/C-0.5/0.5W-70-A, 04021001 |
| <b>Date Received In Laboratory:</b>                   | 3 June 2004                                                                                                 |
| <b>Nemko Identification No.:</b>                      | 1, 2, 3                                                                                                     |
| <b>Supply Voltage:</b>                                | 120VAC, 60Hz                                                                                                |
| <b>Frequency Range:</b>                               | <b>Downlink:</b> 1930 – 1990 MHz                                                                            |
| <b>RF Output Power (Rated)</b>                        | <b>Downlink:</b> 18.0dBm, Total composite Power, 2 Tone                                                     |
| <b>RF Output Power (measured)</b>                     | <b>Downlink:</b> 18.0dBm, Total composite Power, 2 Tone                                                     |
| <b>Emission Designator:</b>                           | DXW, F9W, GXW                                                                                               |

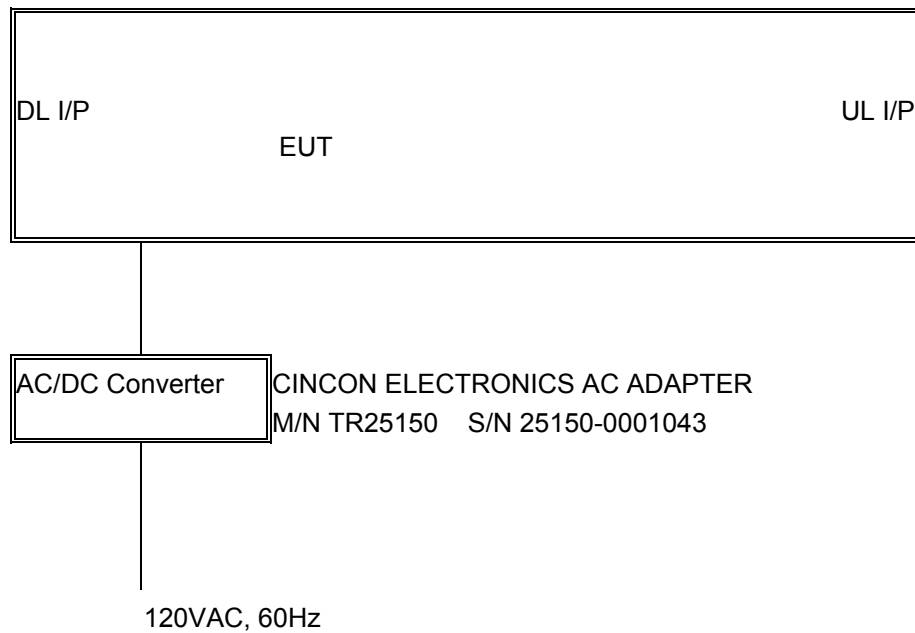
**NOTE:** UL data can be found on page 5, in report 4W07892, Issue 2 included in the submission package

*EQUIPMENT:*

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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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Block Diagram:



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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**Section 3. RF Power Output****Para. No.: 2.1046****Test Performed By: Kevin Carr****Date of Test: 10 June 04****Minimum Standard:** Para. No.: 24.232.**Test Results:** Complied, UL data can be found on page 7, in report 4W07892, Issue 2 included in the submission package**Measurement Data:** See attached graphs, 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  $P_{max} - 10\log N$ . $P_{max}$  = Max. RF output power

N = Number of Channels

|    | Channel | Rated | Measured | Delta |
|----|---------|-------|----------|-------|
|    |         | dBm   | dBm      | dB    |
| DL | Low     | 18.0  | 18.0     | 0.0   |
|    | Mid     | 18.0  | 17.6     | 0.4   |
|    | High    | 18.0  | 17.6     | 0.4   |

*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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**Section 4.        Occupied Bandwidth**

**Para. No.: 2.1049**

|                                      |                                   |
|--------------------------------------|-----------------------------------|
| <b>Test Performed By: Kevin Carr</b> | <b>Date of Test: 10 June 2004</b> |
|--------------------------------------|-----------------------------------|

**Minimum Standard:**        Para. No.: 24.238.

**Test Results:**                Complied, UL data can be found on page 9, 10, 11, in report  
4W07892, Issue 2 included in the submission package

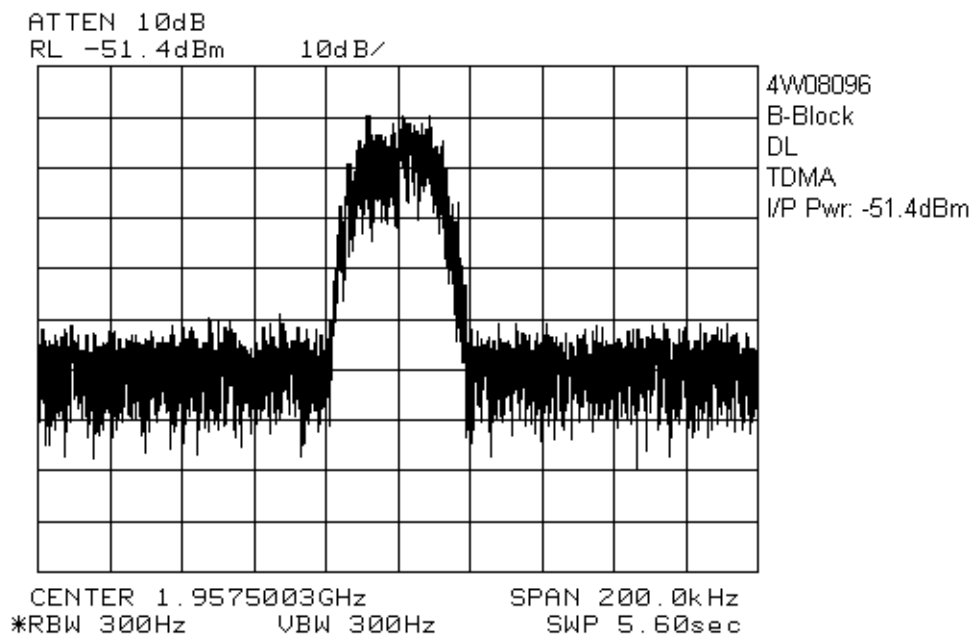
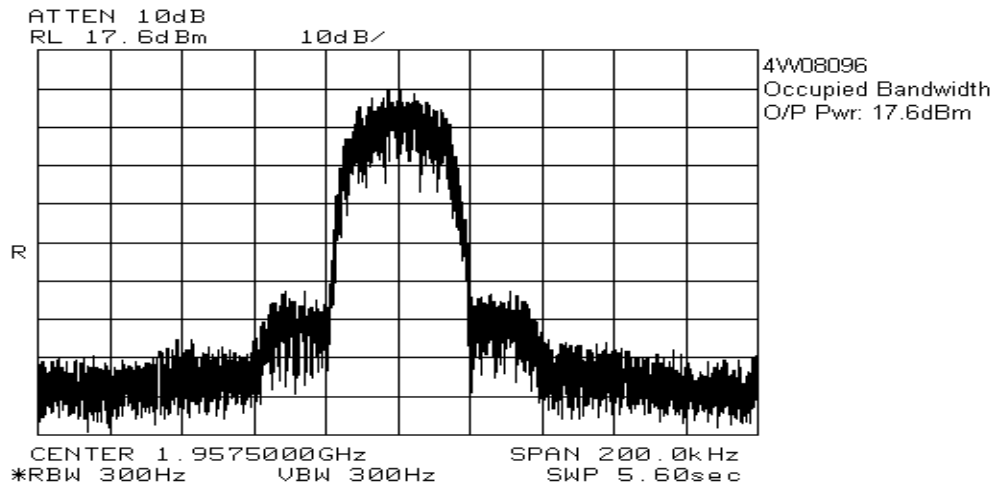
**Test Data:**                    See attached graph(s).

*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

Downlink

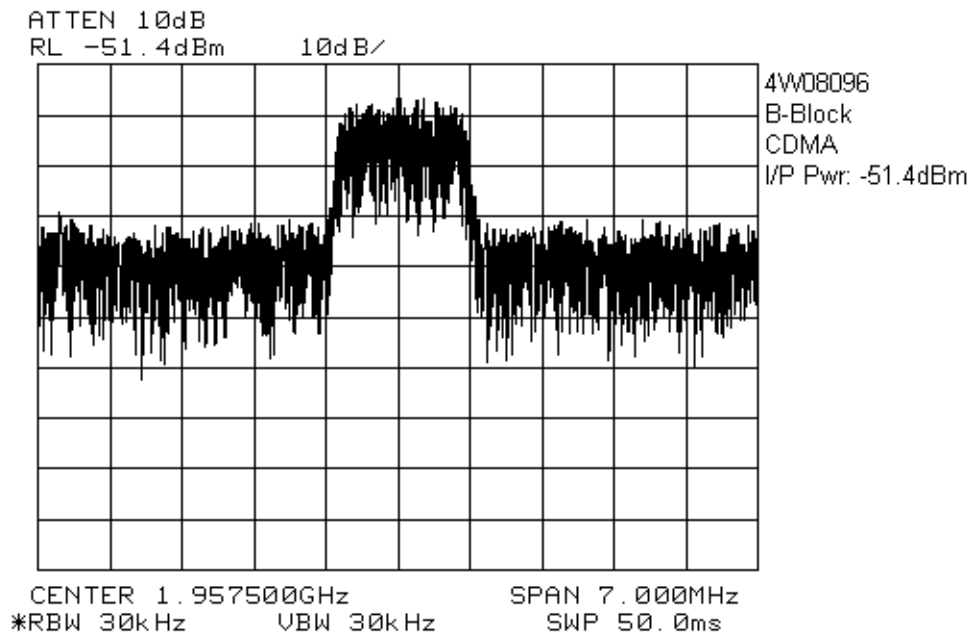
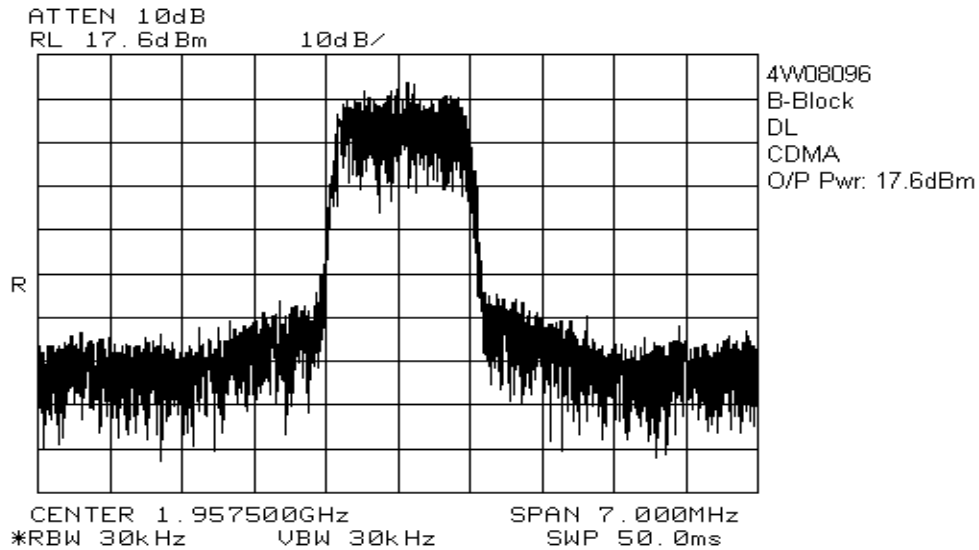
TDMA



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

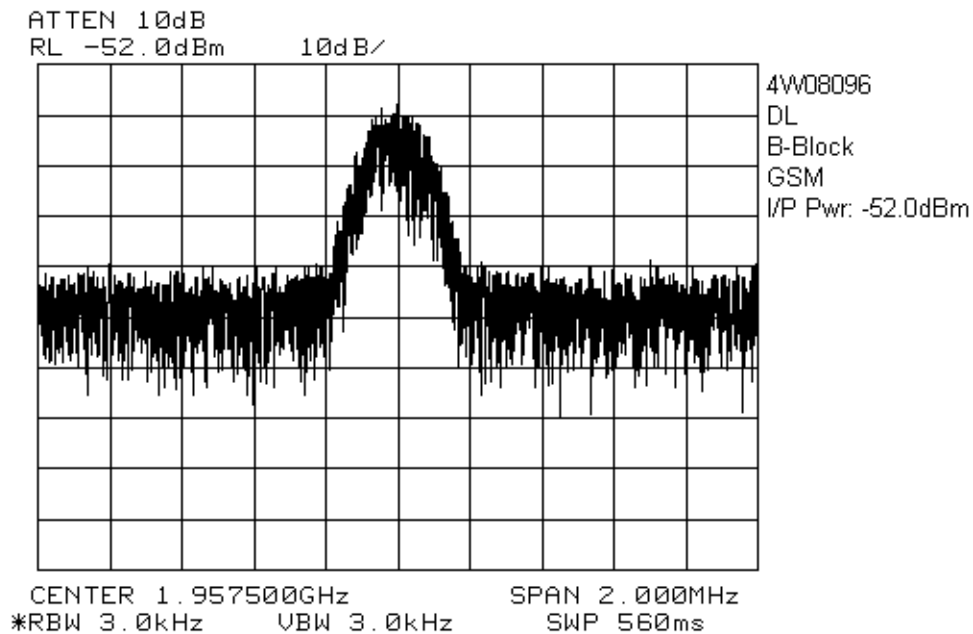
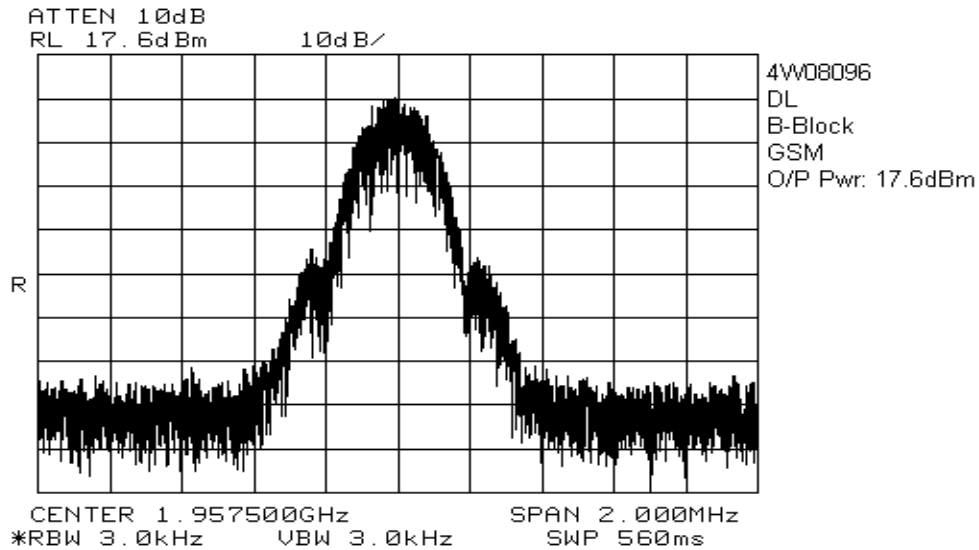
CDMA



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

GSM



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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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: 10/11 June 2004</b> |
|--------------------------------------|--------------------------------------|

**Minimum Standard:** Para. No.: 24.238.

**Test Results:** Complied, UL intermodulation and unwanted emission data can be found on page 16 through 24, in report 4W07892, Issue 2 included in the submission package.

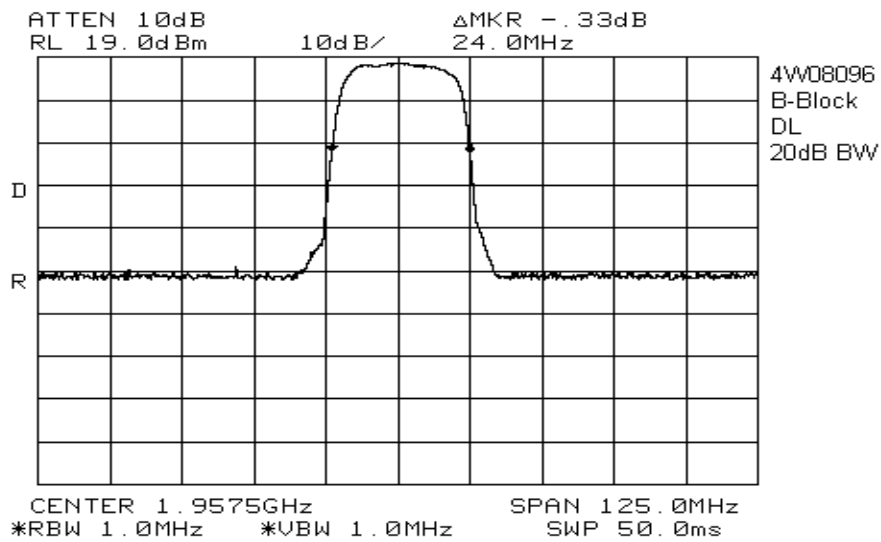
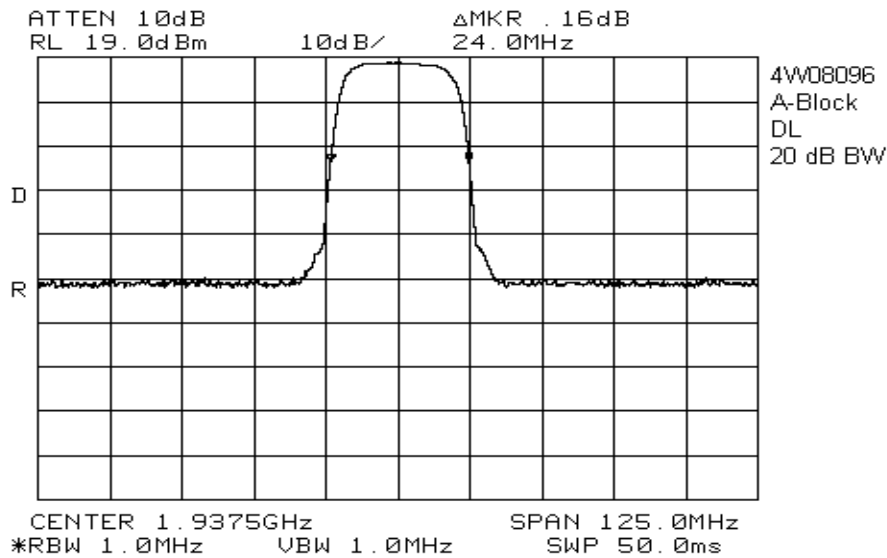
UL Bandwidth characteristics can be found pages 8, 10 and 11 of report 4W07892.1, Issue 2 included in the submission package

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

*EQUIPMENT:*

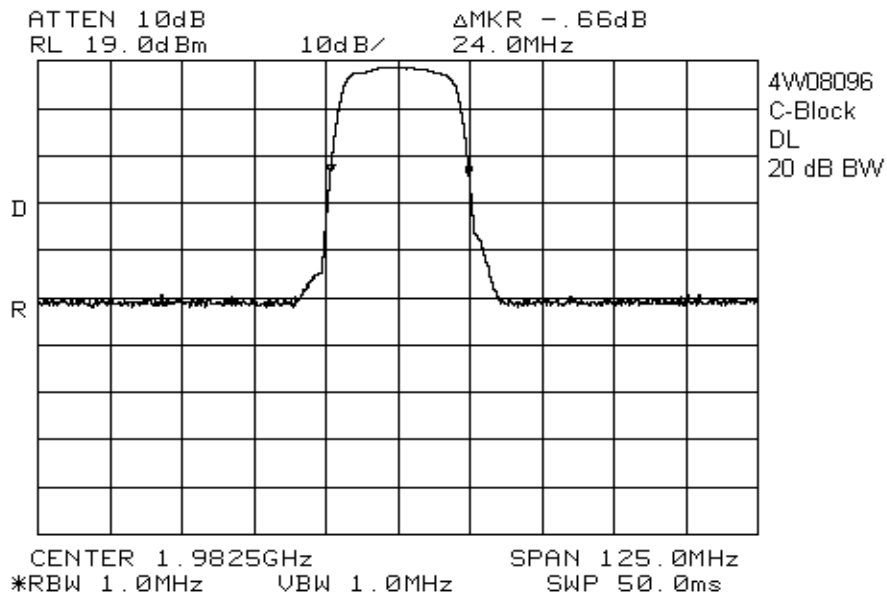
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

DL Bandwidth Characteristics



*EQUIPMENT:*

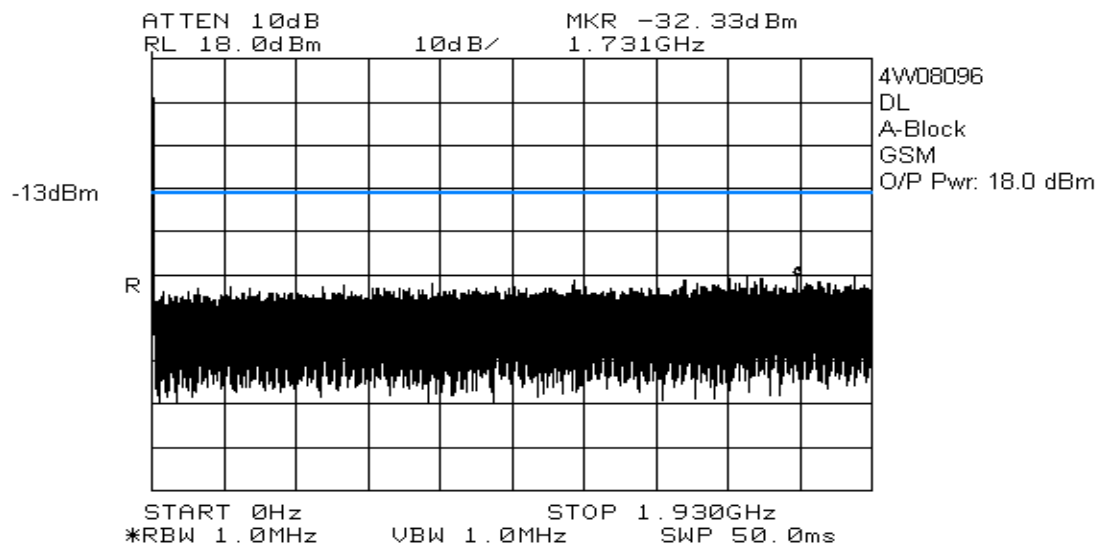
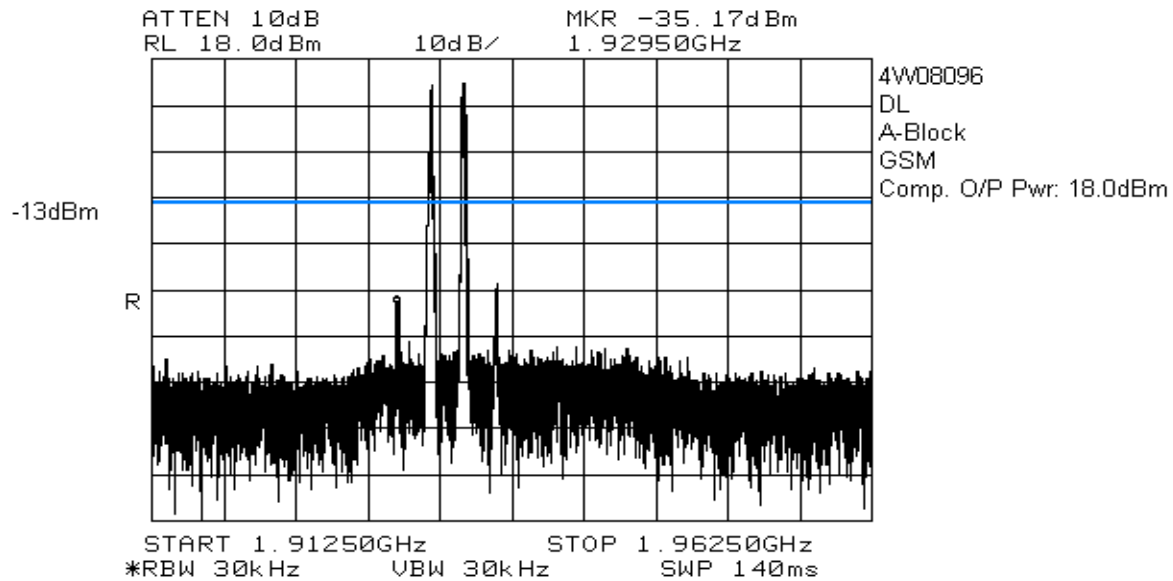
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

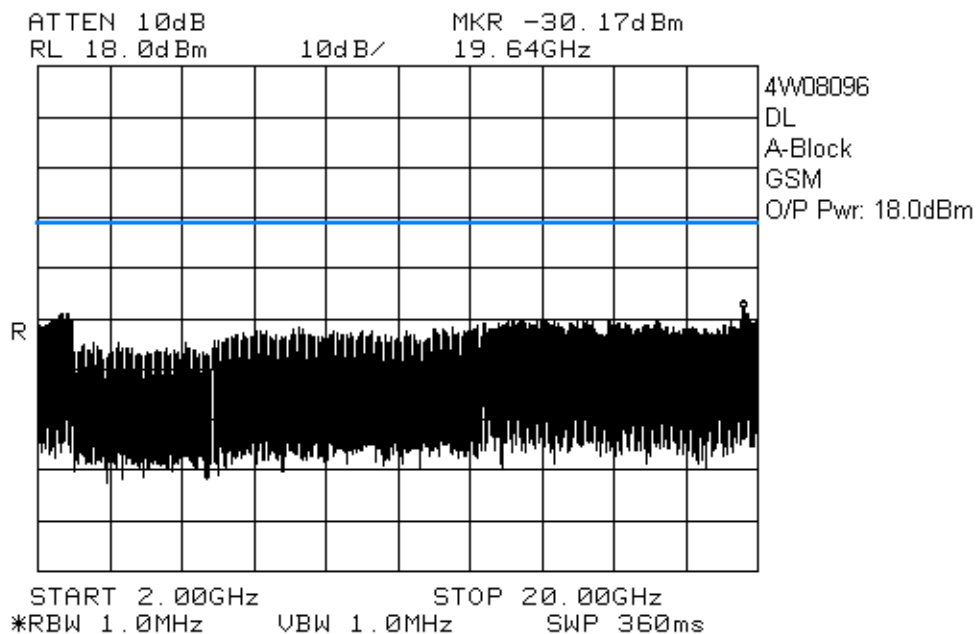
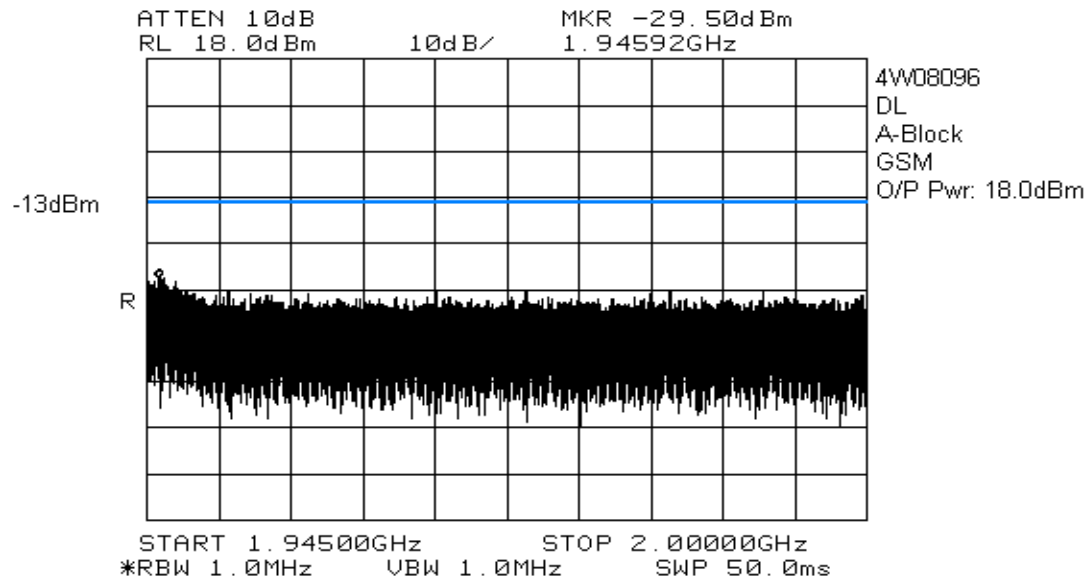
Downlink  
A-Block, GSM



*EQUIPMENT:*

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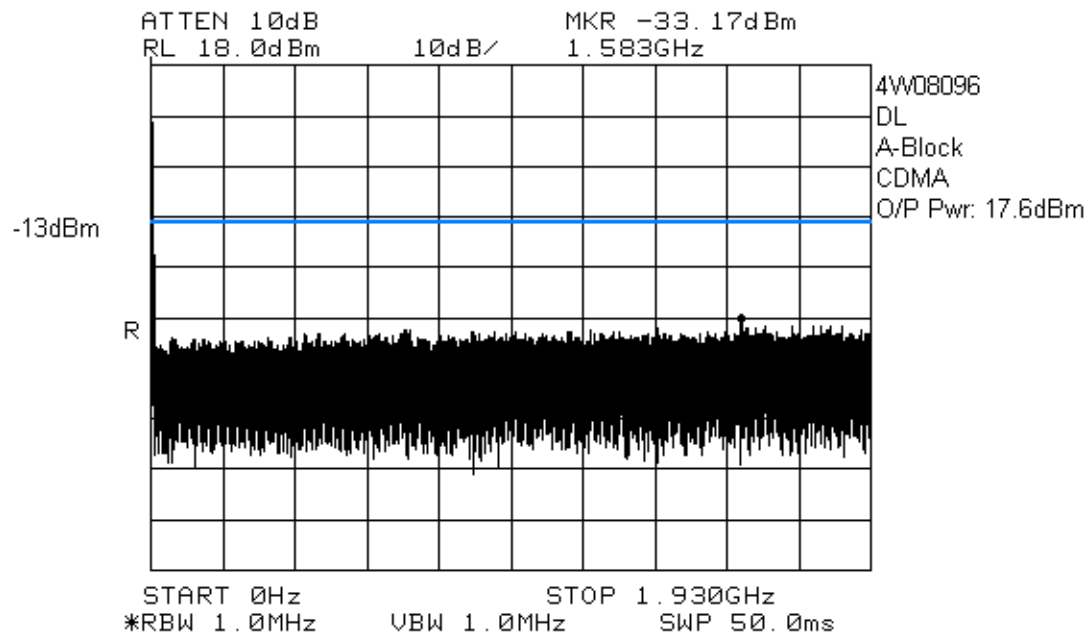
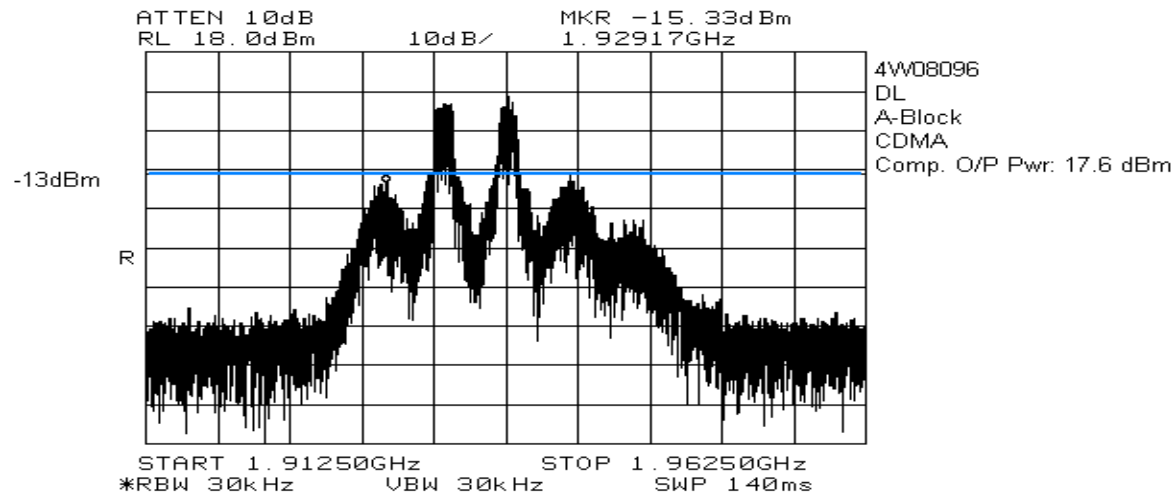
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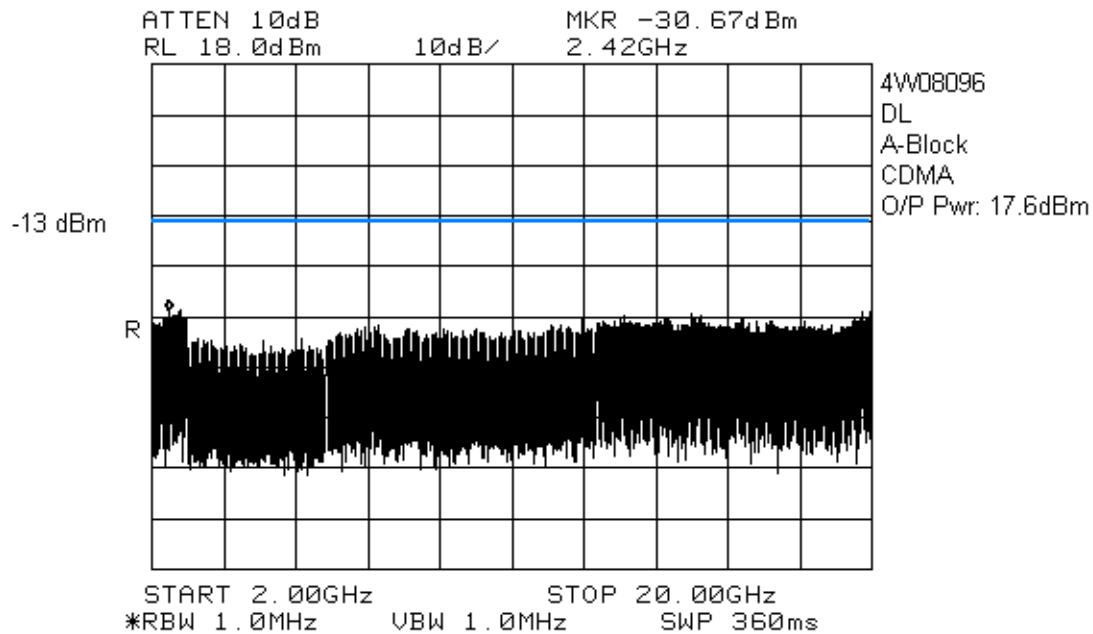
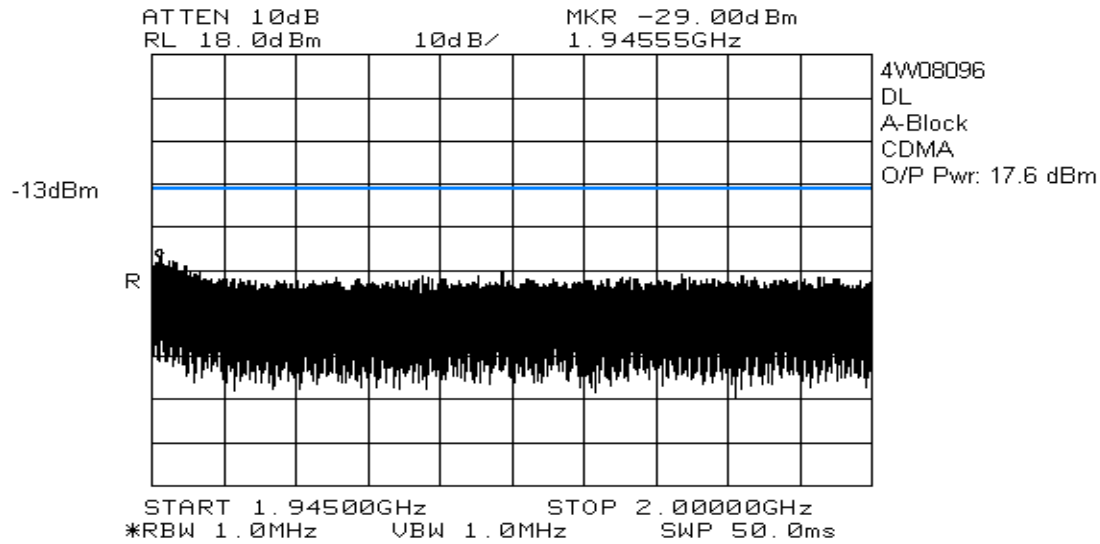
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

## CDMA



*EQUIPMENT:*

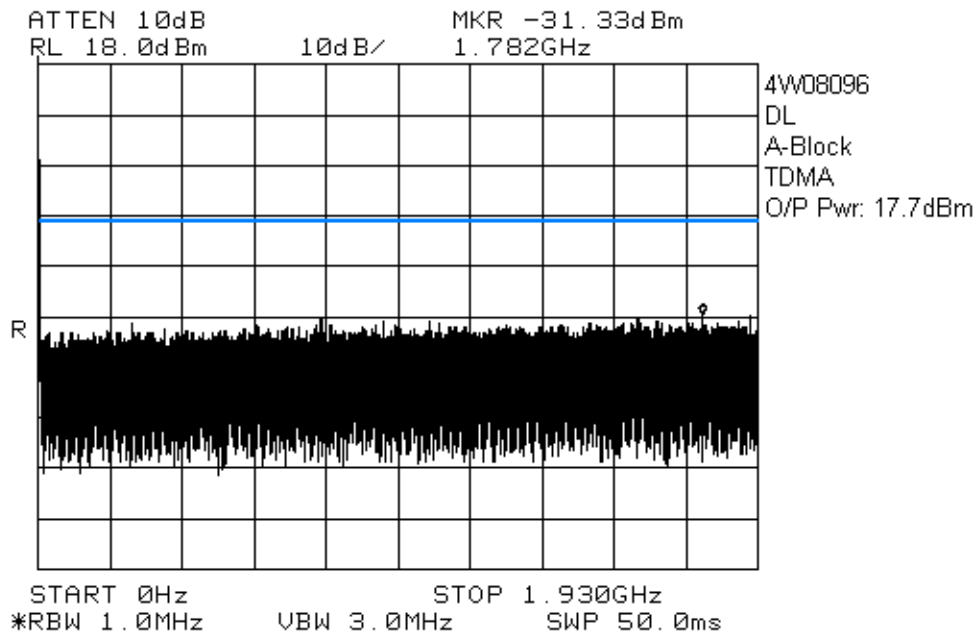
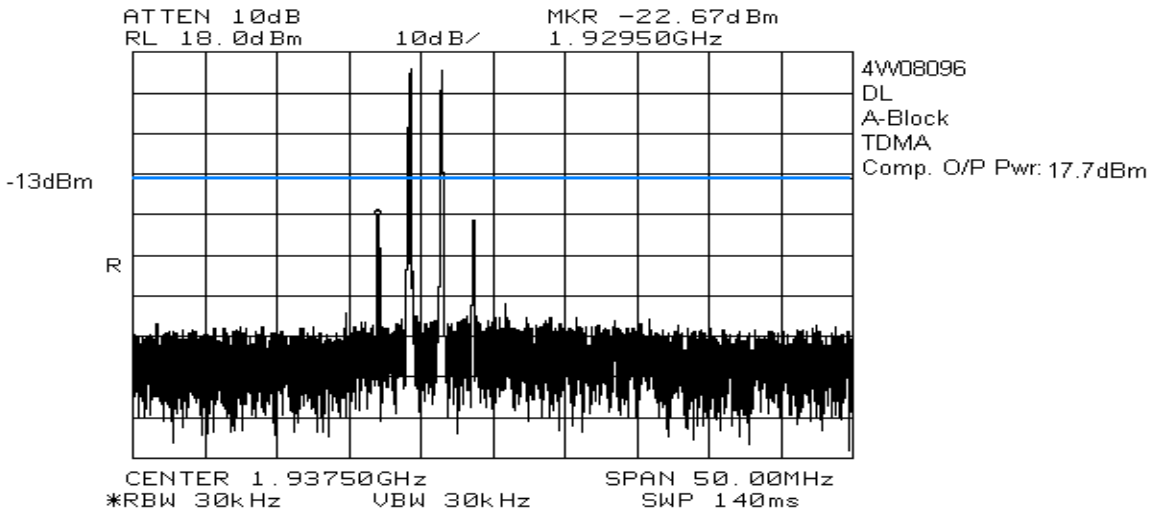
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*EQUIPMENT:*

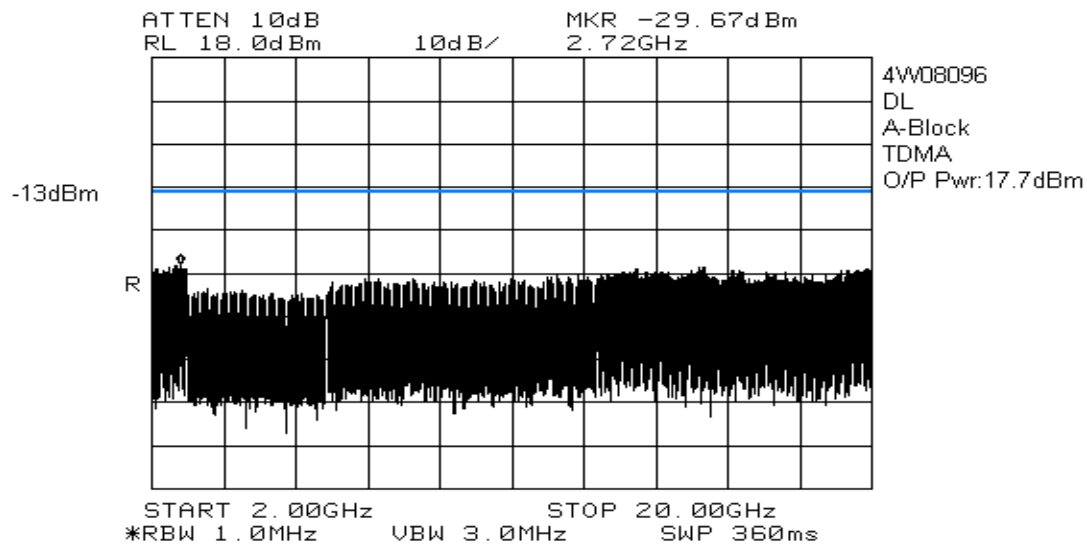
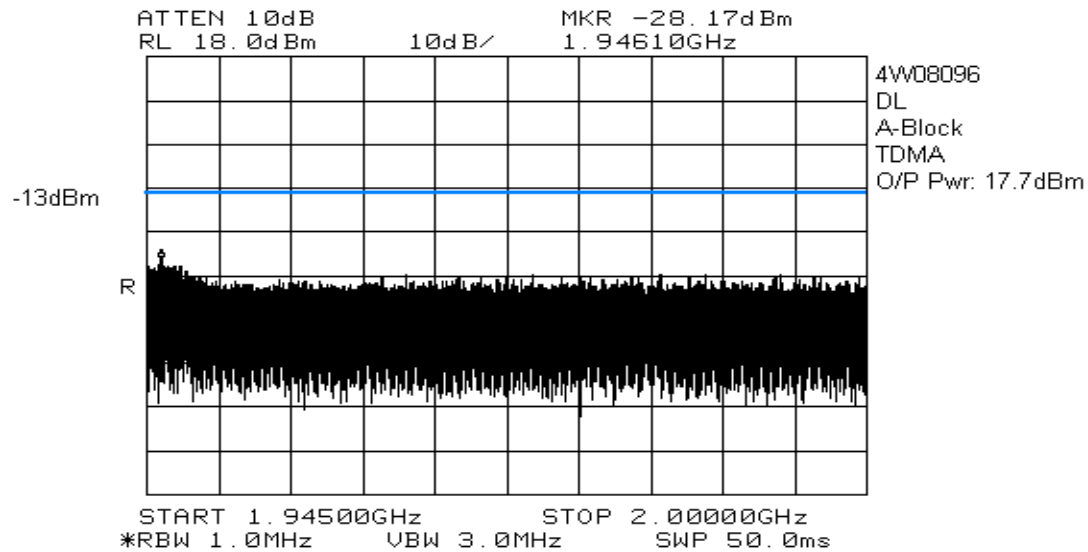
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

## TDMA



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
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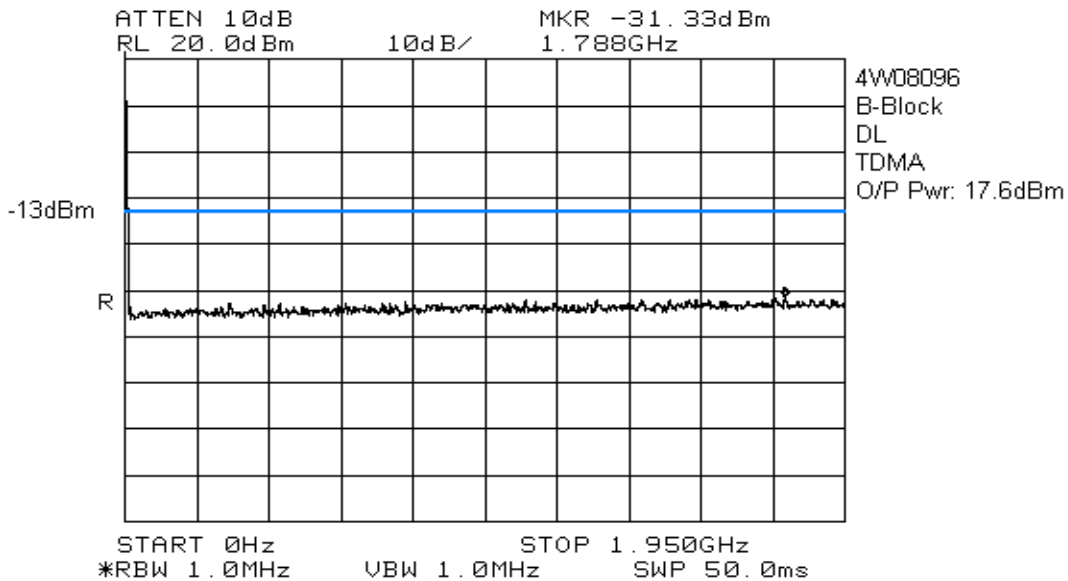
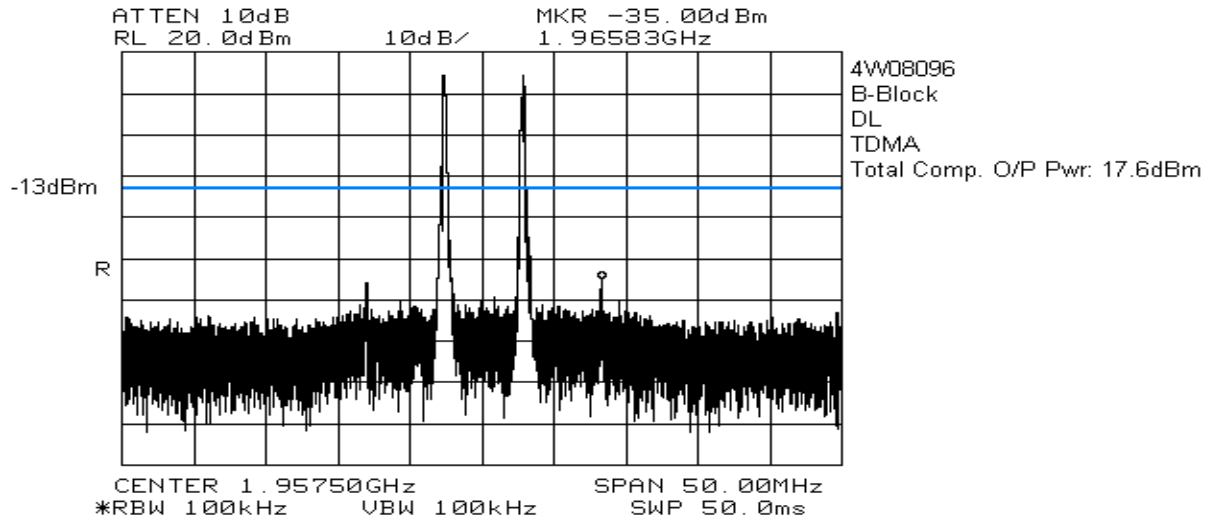


*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

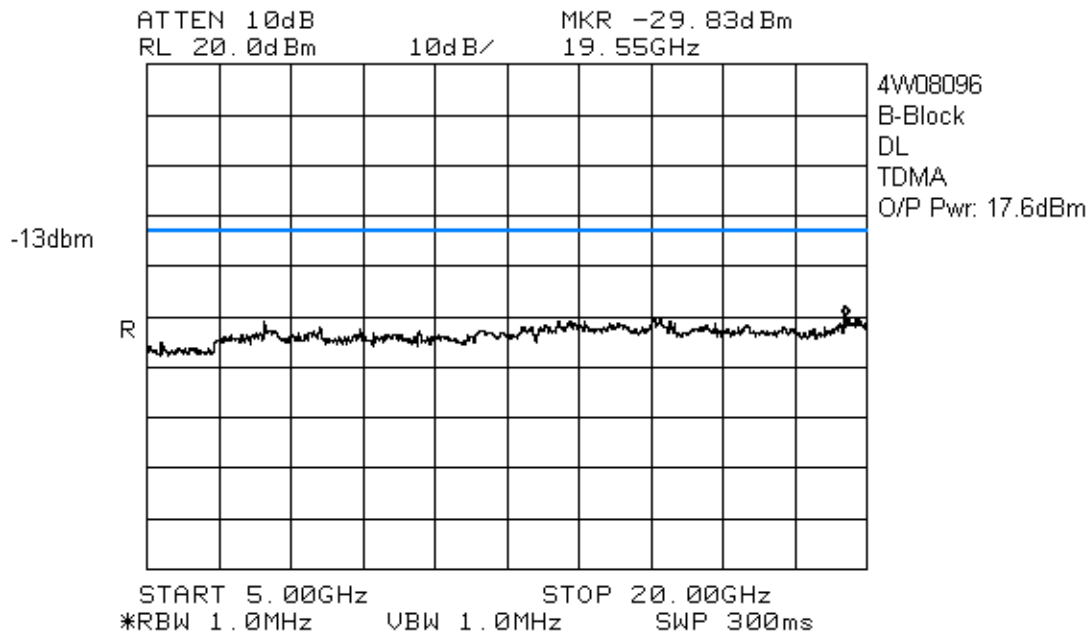
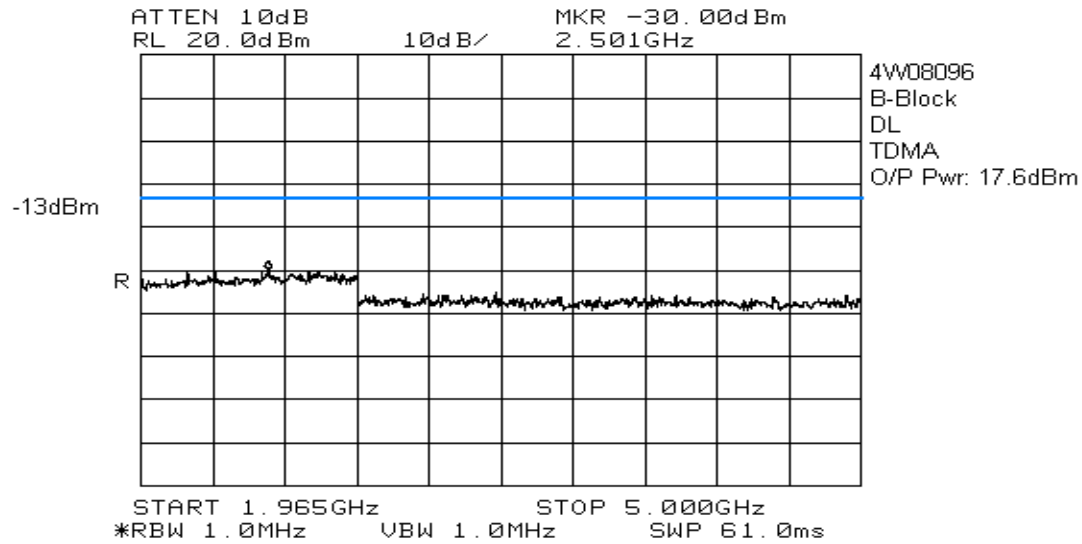
B-Block

TDMA



*EQUIPMENT:*

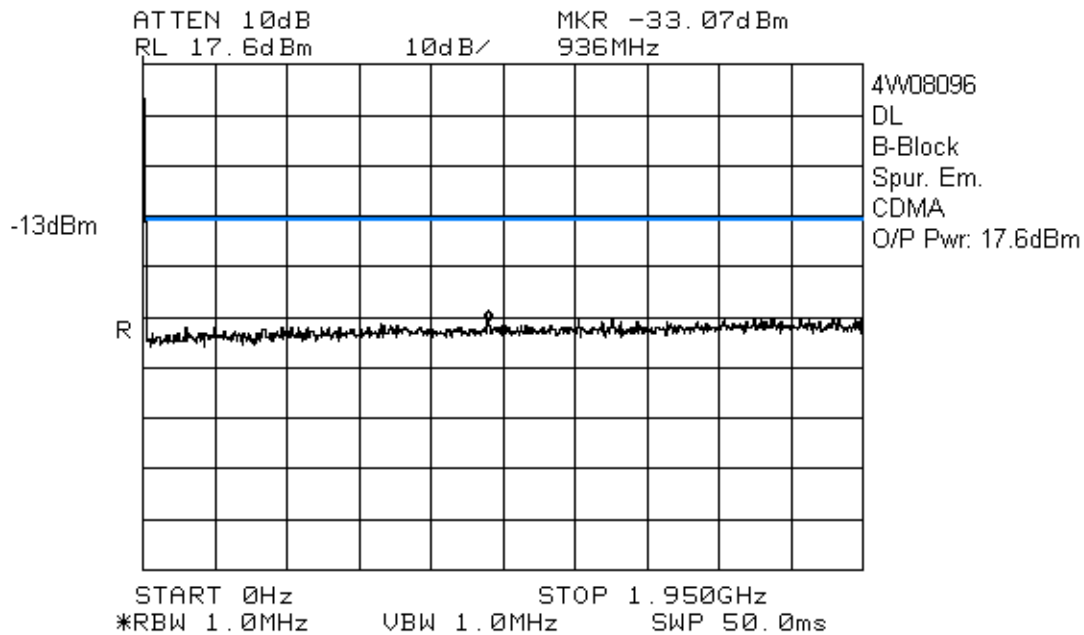
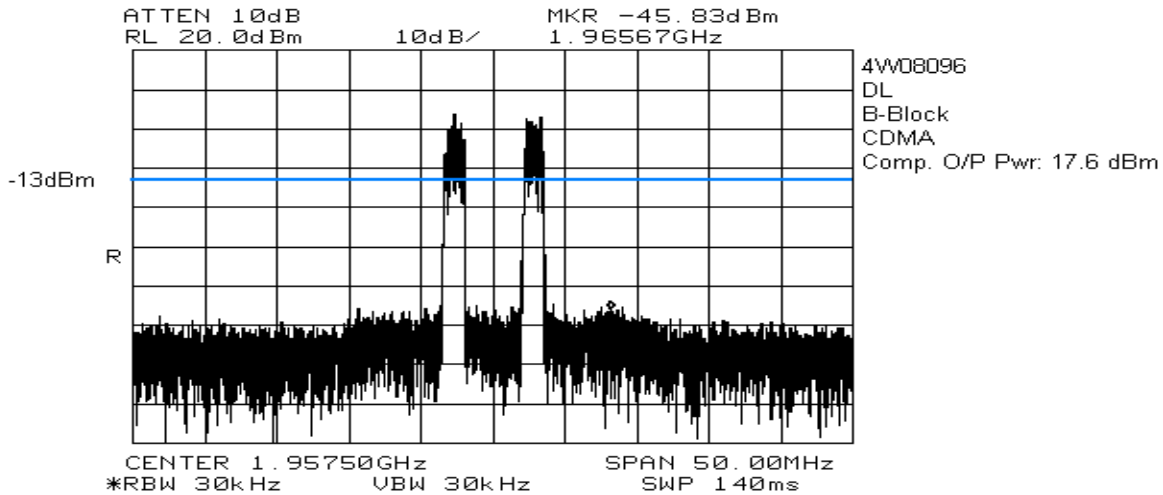
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A



*EQUIPMENT:*

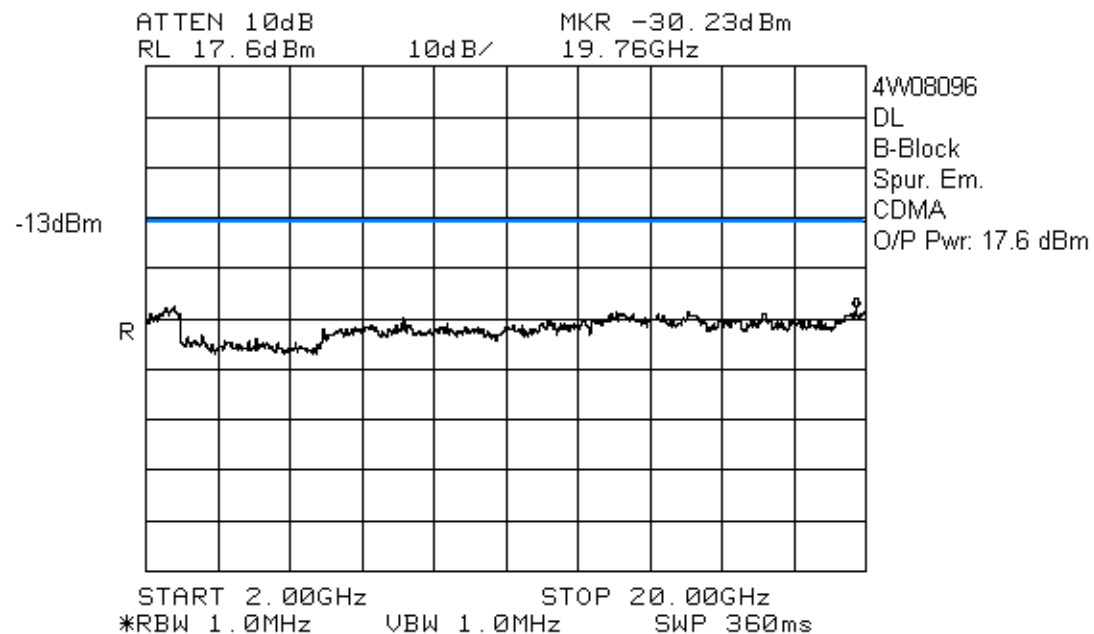
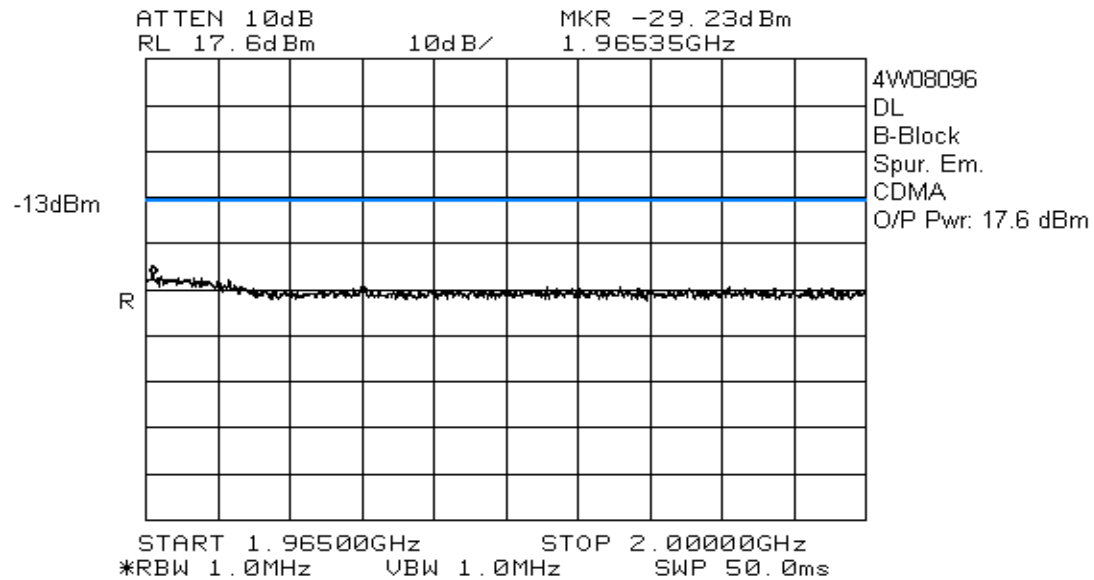
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

CDMA



*EQUIPMENT:*

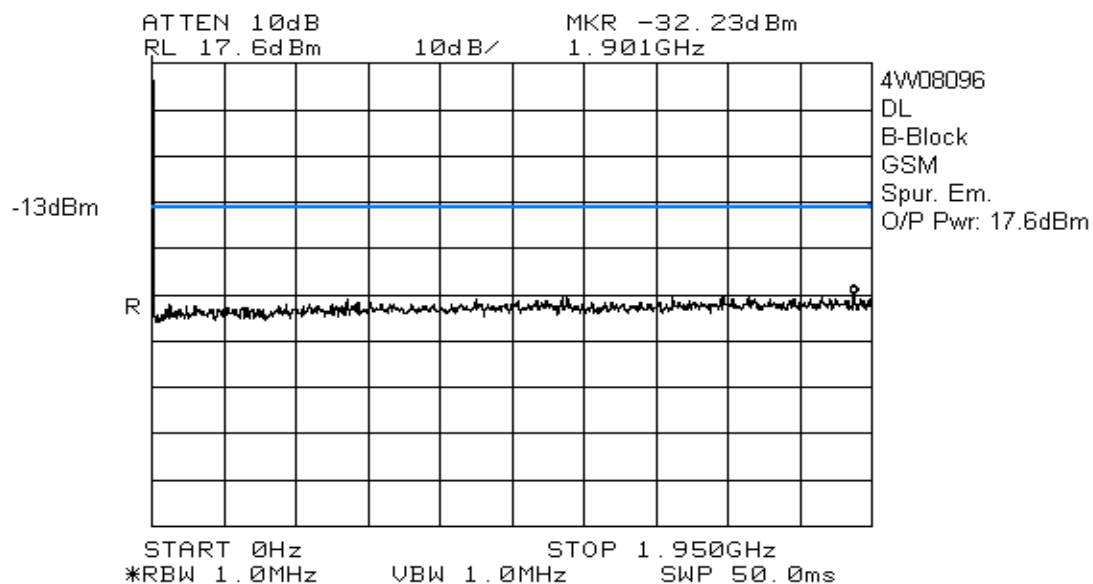
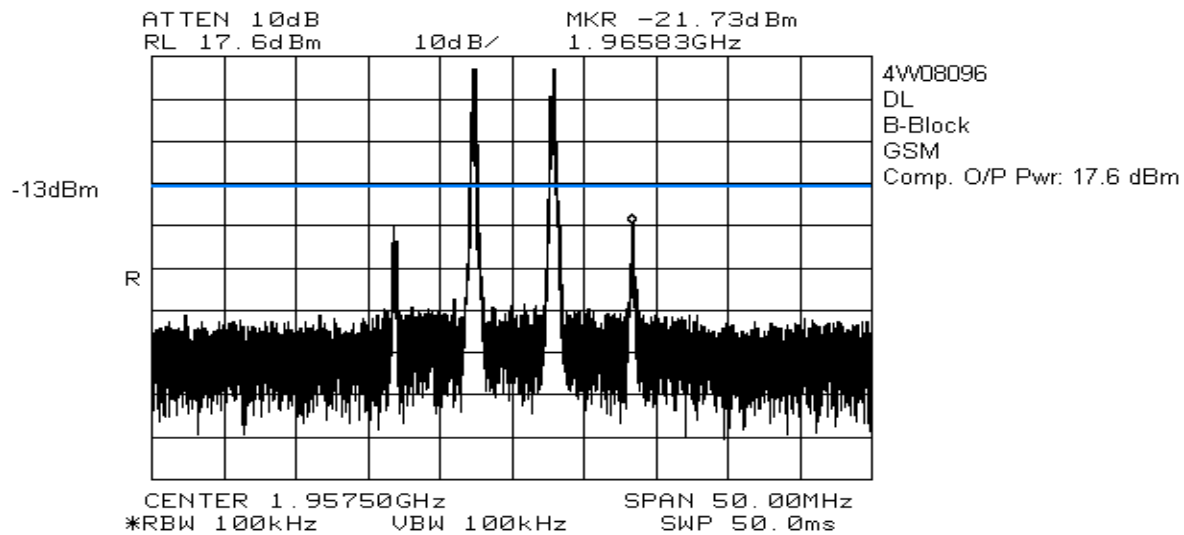
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A



*EQUIPMENT:*

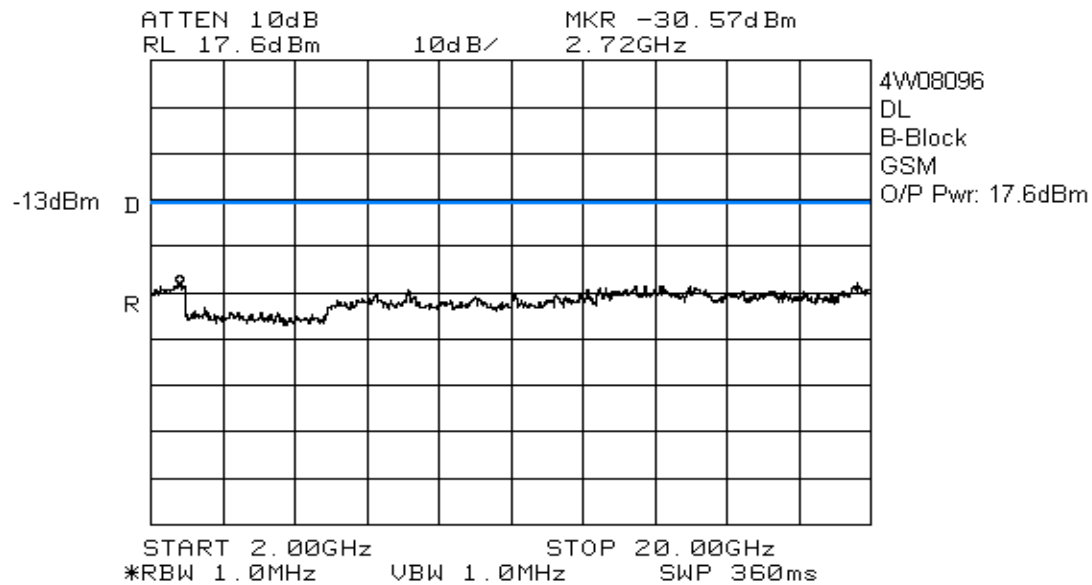
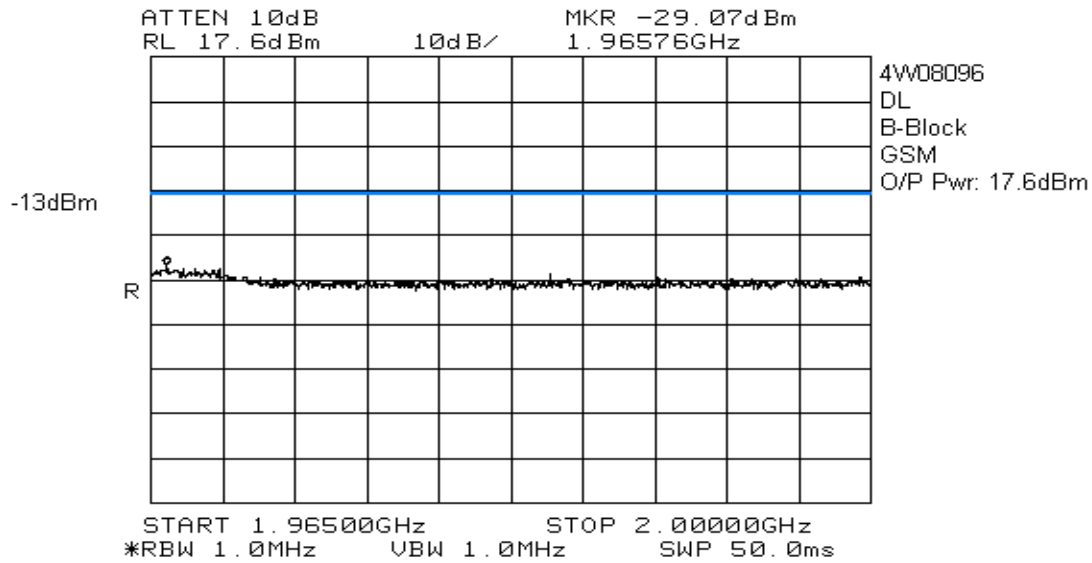
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

GSM



*EQUIPMENT:*

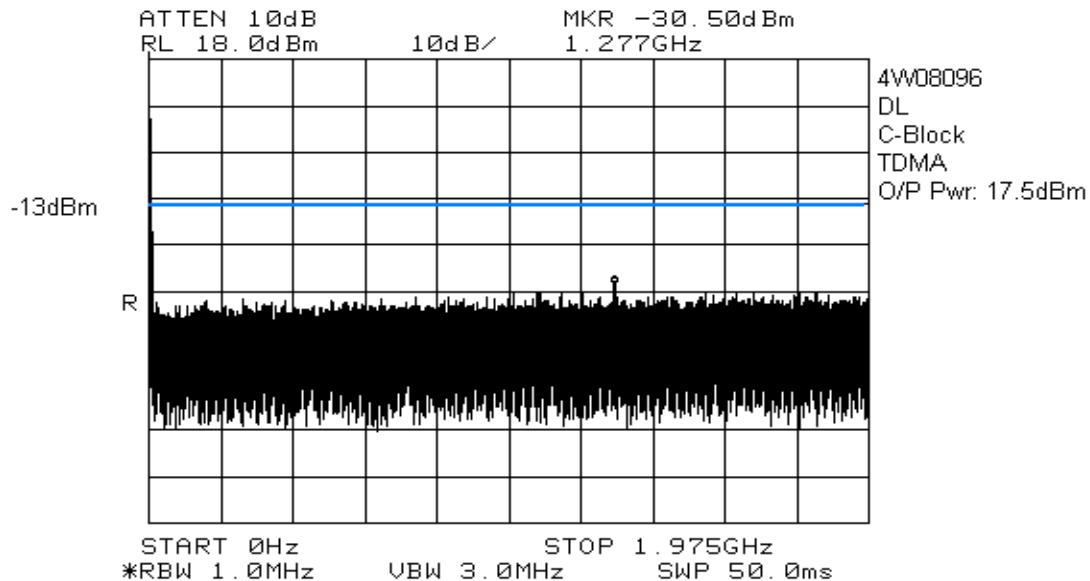
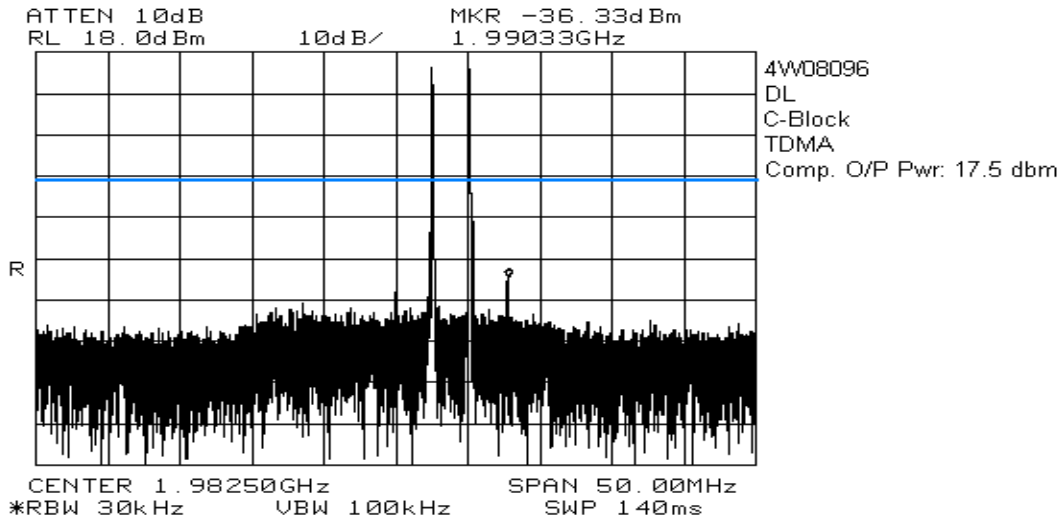
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A



*EQUIPMENT:*

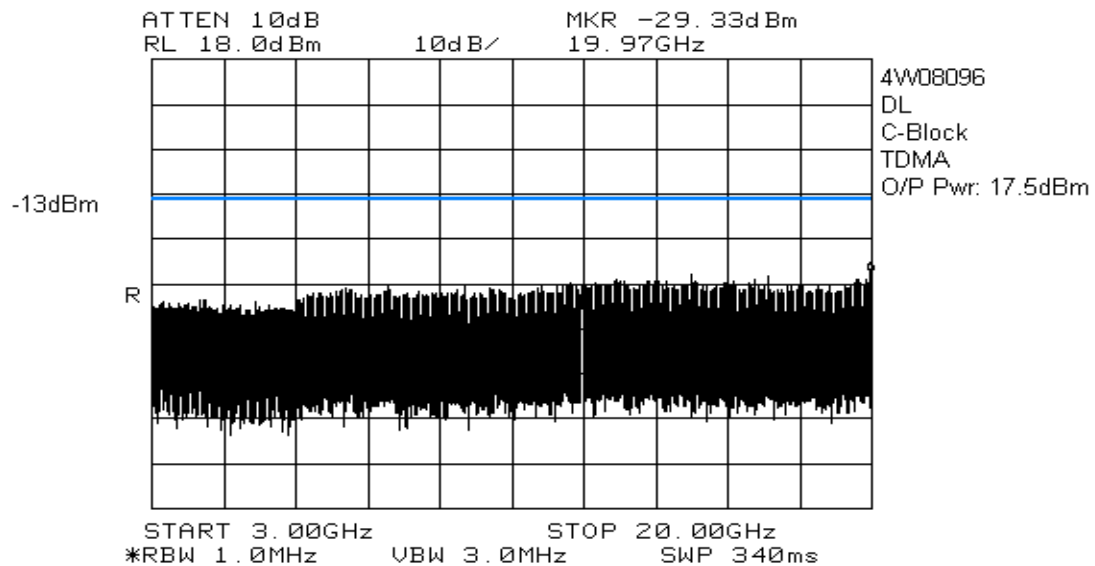
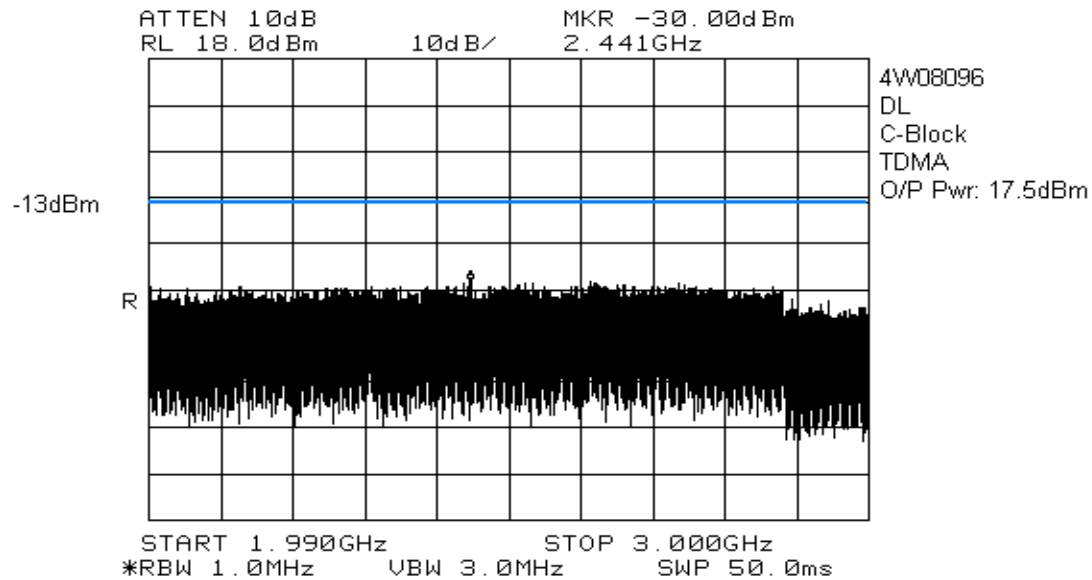
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

C-Block  
TDMA



*EQUIPMENT:*

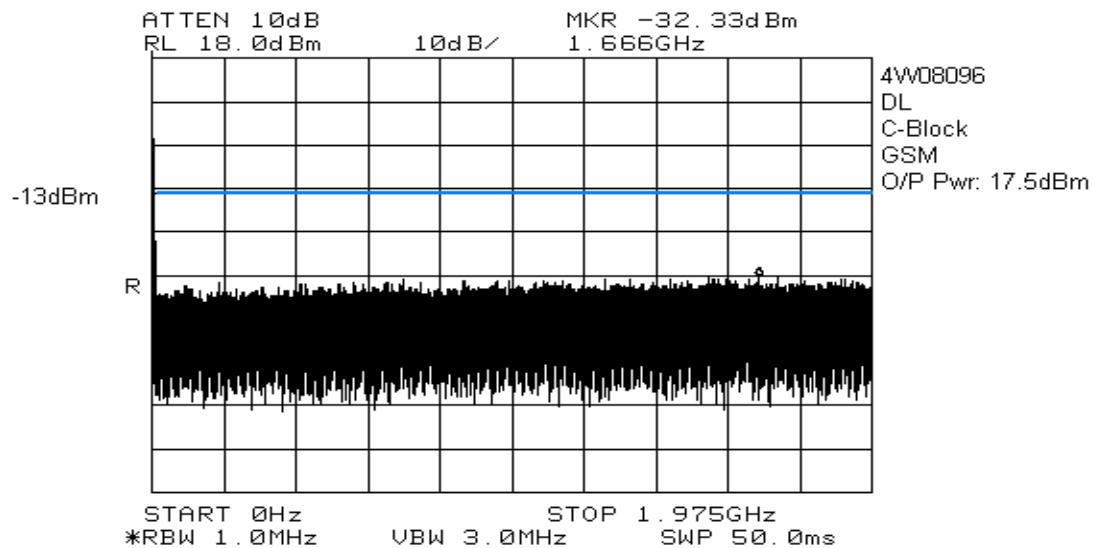
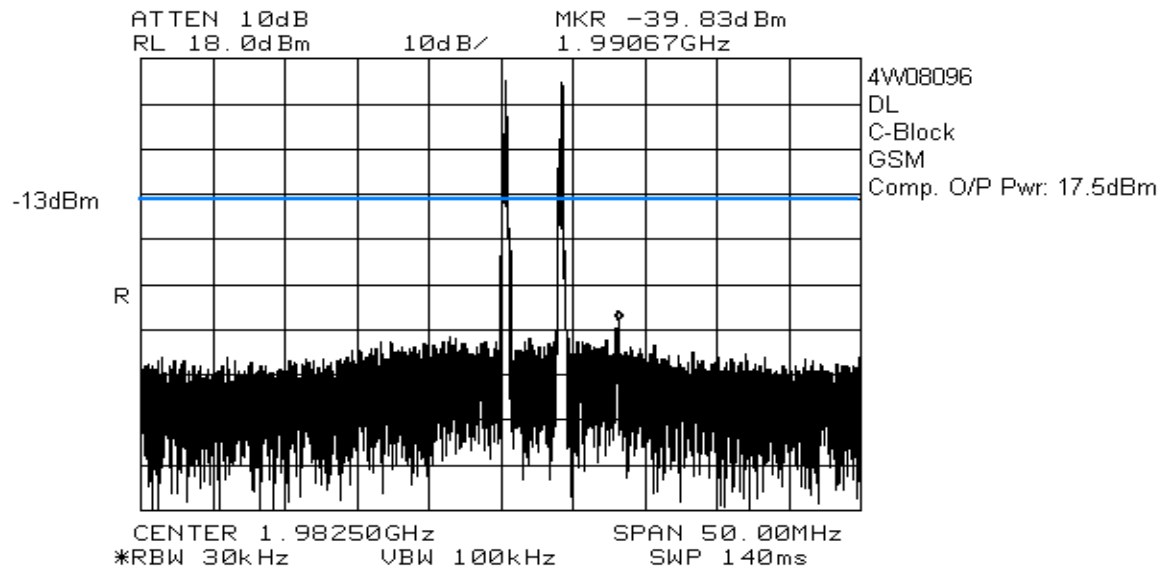
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A



*EQUIPMENT:*

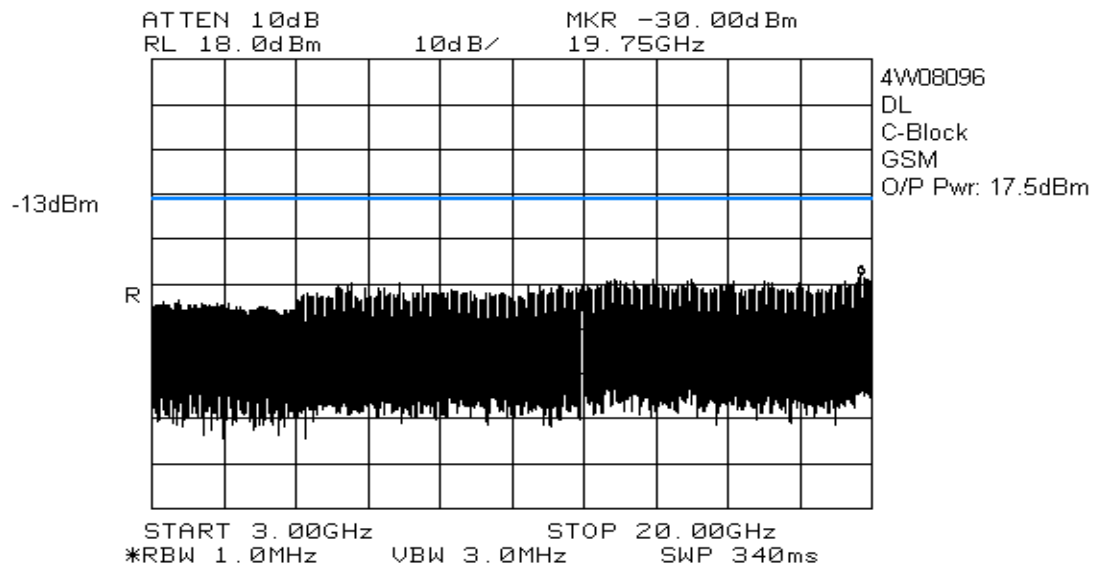
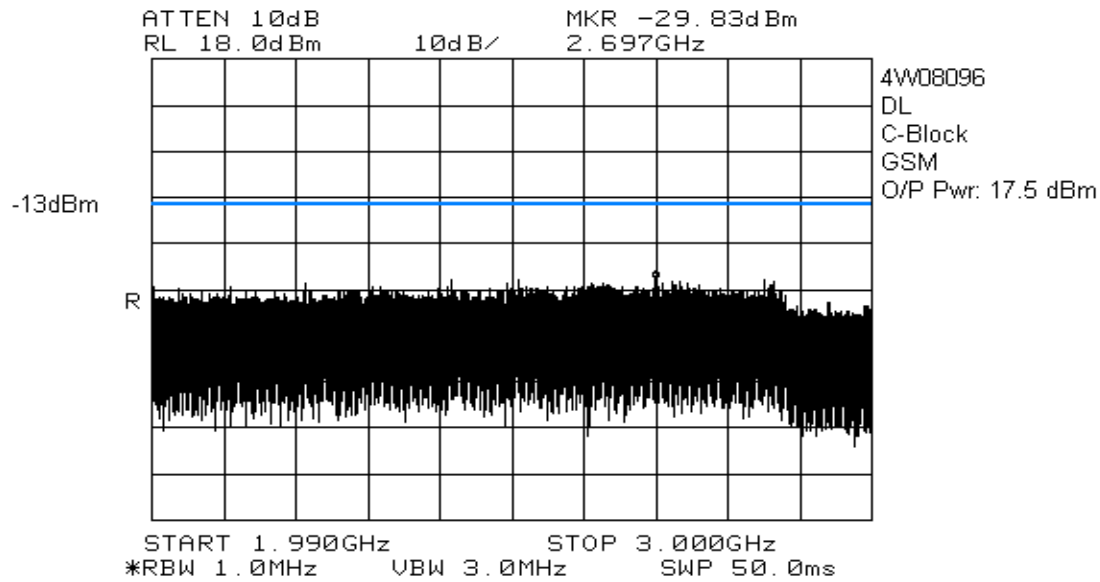
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

## GSM



*EQUIPMENT:*

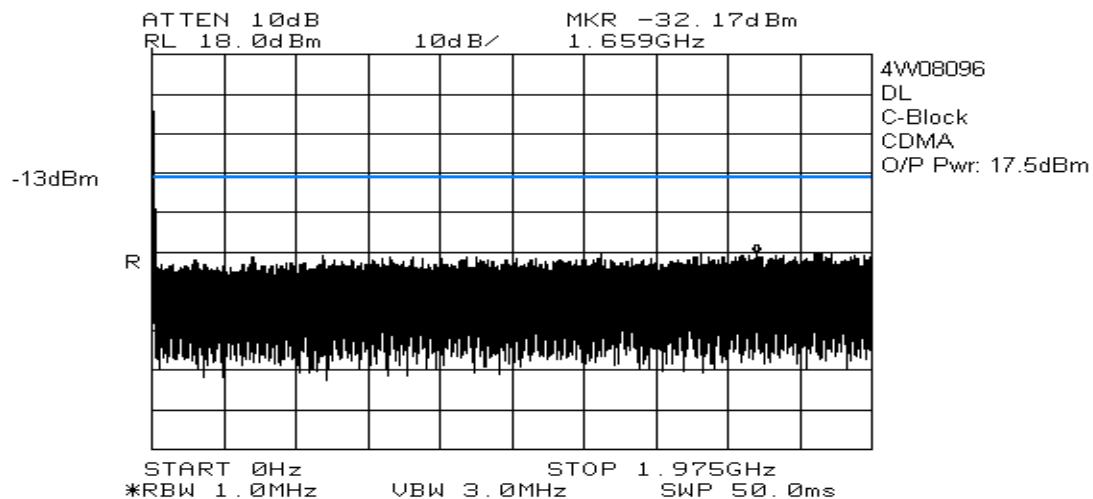
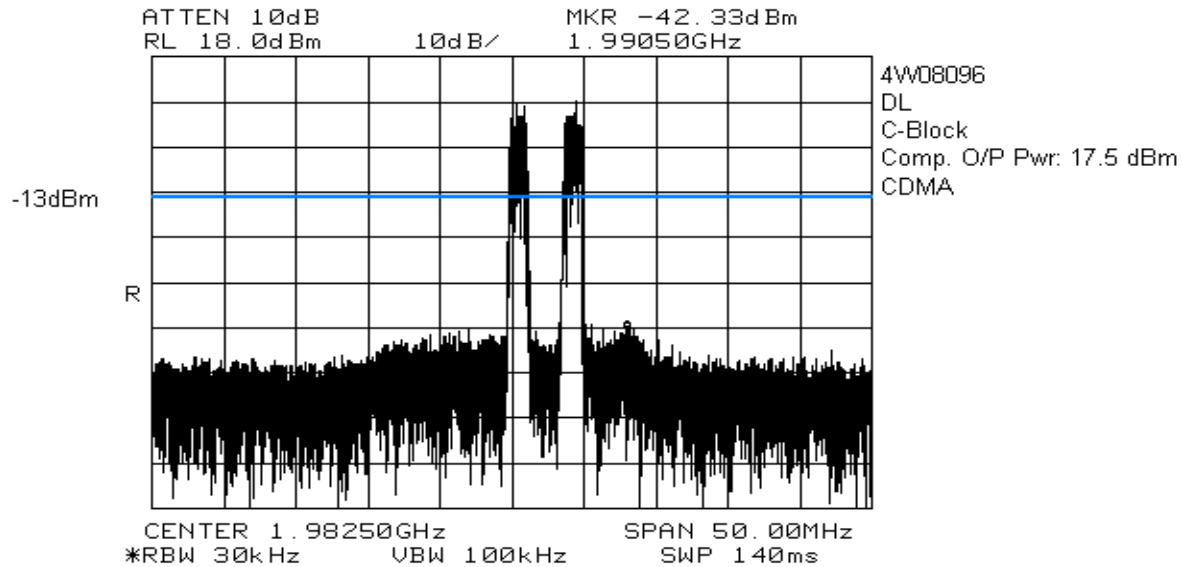
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A



*EQUIPMENT:*

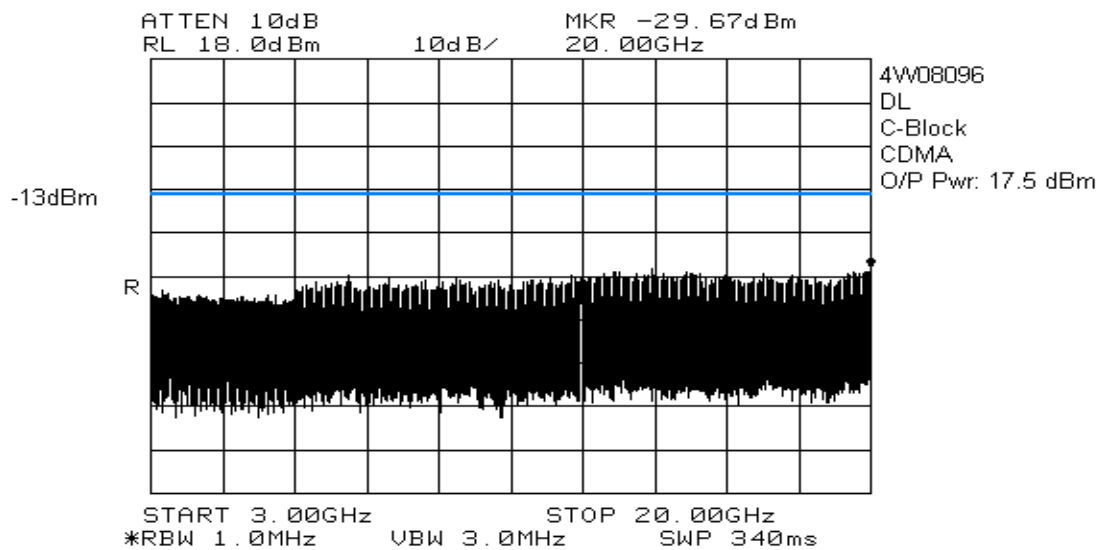
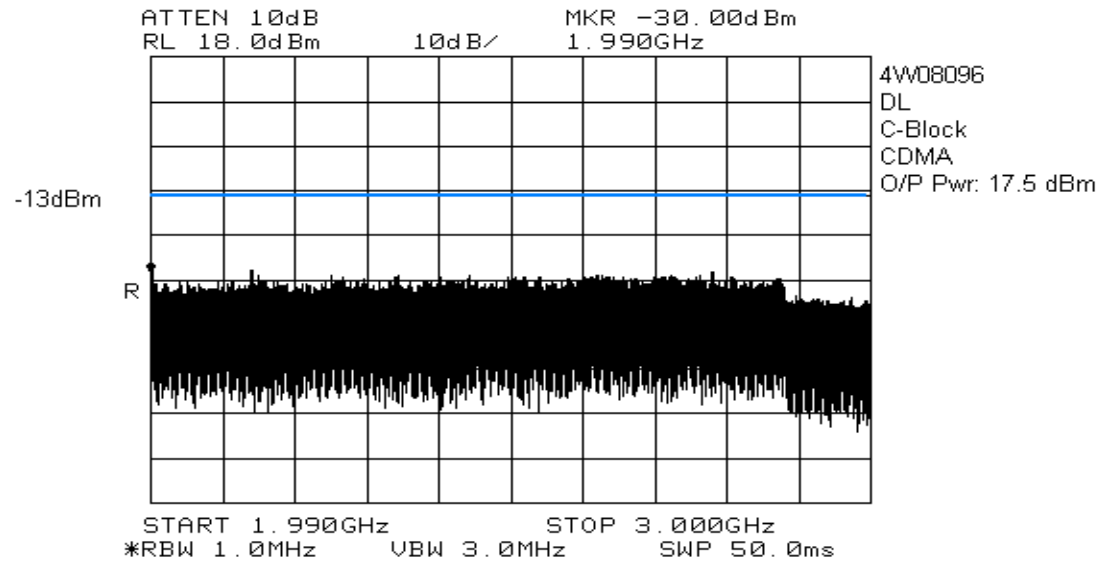
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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

## CDMA



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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**Section 6.        Field Strength of Spurious**

**Para. No.: 2.1053**

|                                          |                                   |
|------------------------------------------|-----------------------------------|
| <b>Test Performed By: Daxesh Thakker</b> | <b>Date of Test: 18 June 2004</b> |
|------------------------------------------|-----------------------------------|

**Minimum Standard:**        Para. No.: 24.238.

**Test Results:**                Complied, UL data can be found on page 35, in report 4W07892,  
Issue 2 included in the submission package

**Test Data:**                    See the table.

*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

**Radiated Disturbance Test Data:**

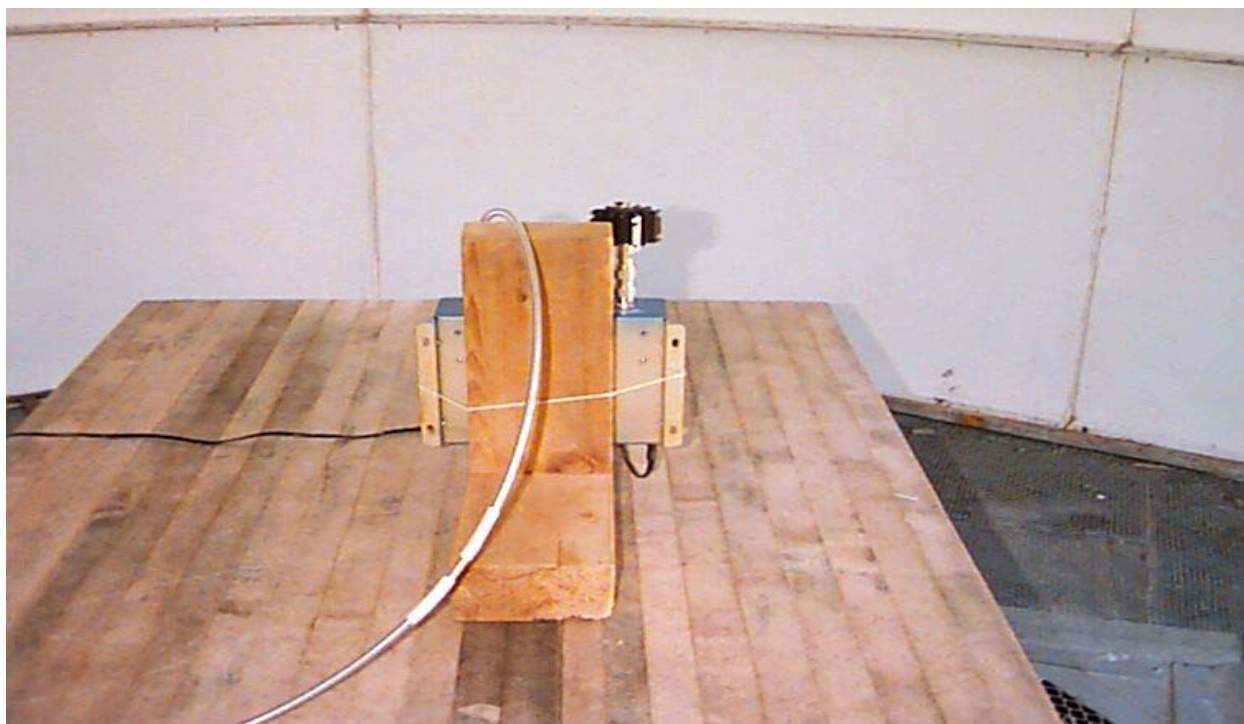
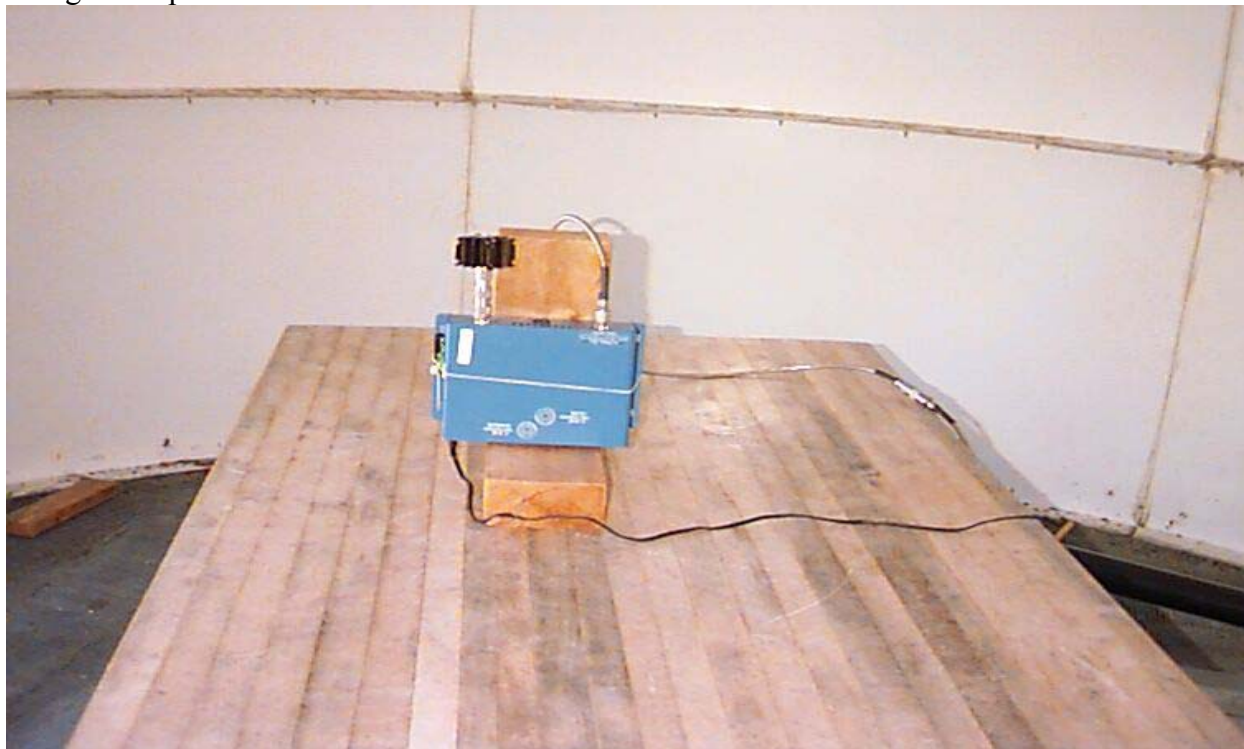
|                                                                                                      |       |             |                          |                            |                                          |                        |             |          |           |
|------------------------------------------------------------------------------------------------------|-------|-------------|--------------------------|----------------------------|------------------------------------------|------------------------|-------------|----------|-----------|
| Test Date: 18 June 2004                                                                              |       |             |                          |                            |                                          |                        |             |          |           |
| Engineer's Name: Daxesh Thakker                                                                      |       |             |                          |                            |                                          |                        |             |          |           |
| Temperature (C°): 21 Outdoor                                                                         |       |             |                          |                            |                                          | Humidity: 52 % Outdoor |             |          |           |
|                                                                                                      |       |             |                          |                            |                                          |                        |             |          |           |
| Tested as per Table Top                                                                              |       |             |                          |                            |                                          |                        |             |          |           |
| Test Distance (meters): 3                                                                            |       |             |                          |                            |                                          | Range: 1               |             |          |           |
| Freq.<br>(MHz)                                                                                       | Ant.  | Pol.<br>V/H | RCVD<br>Signal<br>(dBμV) | Sig Sub.<br>Factor<br>(dB) | Signal<br>Substitution<br>Power<br>(dBm) | Limit<br>(dBm)         | Margin (dB) | Detector | Amp.      |
|                                                                                                      |       |             |                          |                            |                                          |                        |             |          |           |
|                                                                                                      |       |             |                          |                            |                                          |                        |             |          |           |
| 3860.4000                                                                                            | Horn1 | V           | 60.8                     | -116.1                     | -55.3                                    | -13.0                  | 42.3        | Peak     | 2 – 4 GHz |
| 3860.4000                                                                                            | Horn1 | H           | 60.5                     | -118.4                     | -57.9                                    | -13.0                  | 44.9        | Peak     | 2 – 4 GHz |
| 5790.6000                                                                                            | Horn1 | V           | 62.5                     | -109.6                     | -47.1                                    | -13.0                  | 34.1        | Peak     | 4 – 8 GHz |
| 5790.6000                                                                                            | Horn1 | H           | 62.3                     | -106.9                     | -44.6                                    | -13.0                  | 31.6        | Peak     | 4 – 8 GHz |
| 7720.8000                                                                                            | Horn1 | V           | 58.5                     | -104.3                     | -45.8                                    | -13.0                  | 32.8        | Peak     | 4 – 8 GHz |
| 7720.8000                                                                                            | Horn1 | H           | 58.2                     | -105.4                     | -47.2                                    | -13.0                  | 34.2        | Peak     | 4 – 8 GHz |
|                                                                                                      |       |             |                          |                            |                                          |                        |             |          |           |
| 3915.0000                                                                                            | Horn1 | V           | 59.7                     | -116.0                     | -56.3                                    | -13.0                  | 43.3        | Peak     | 2 – 4 GHz |
| 3915.0000                                                                                            | Horn1 | H           | 59.0                     | -117.9                     | -58.9                                    | -13.0                  | 45.9        | Peak     | 2 – 4 GHz |
| 5872.5000                                                                                            | Horn1 | V           | 61.9                     | -109.5                     | -47.6                                    | -13.0                  | 34.6        | Peak     | 4 – 8 GHz |
| 5872.5000                                                                                            | Horn1 | H           | 61.5                     | -107.1                     | -45.6                                    | -13.0                  | 32.6        | Peak     | 4 – 8 GHz |
| 7830.0000                                                                                            | Horn1 | V           | 58.0                     | -103.1                     | -45.1                                    | -13.0                  | 32.1        | Peak     | 4 – 8 GHz |
| 7830.0000                                                                                            | Horn1 | H           | 57.7                     | -104.2                     | -46.5                                    | -13.0                  | 33.5        | Peak     | 4 – 8 GHz |
|                                                                                                      |       |             |                          |                            |                                          |                        |             |          |           |
| 3979.6000                                                                                            | Horn1 | V           | 67.0                     | -115.8                     | -48.8                                    | -13.0                  | 35.8        | Peak     | 2 – 4 GHz |
| 3979.6000                                                                                            | Horn1 | H           | 61.7                     | -117.2                     | -55.5                                    | -13.0                  | 42.5        | Peak     | 2 – 4 GHz |
| 5969.4000                                                                                            | Horn1 | V           | 59.8                     | -109.3                     | -49.5                                    | -13.0                  | 36.5        | Peak     | 4 – 8 GHz |
| 5969.4000                                                                                            | Horn1 | H           | 59.3                     | -107.4                     | -48.1                                    | -13.0                  | 35.1        | Peak     | 4 – 8 GHz |
| 7959.2000                                                                                            | Horn1 | V           | 56.7                     | -101.2                     | -44.5                                    | -13.0                  | 31.5        | Peak     | 4 – 8 GHz |
| 7959.2000                                                                                            | Horn1 | H           | 55.8                     | -101.8                     | -46.0                                    | -13.0                  | 33.0        | Peak     | 4 – 8 GHz |
| Note 1: Antenna Legend: BC = Biconical, BL = Bilog, LP = Log-Periodic, Horn = Horn, ED = EMCO Dipole |       |             |                          |                            |                                          |                        |             |          |           |
| Note 2: Detector Legend: Q-Peak = 120 kHz RBW, Average = 1.0 MHz RBW                                 |       |             |                          |                            |                                          |                        |             |          |           |
| Note 3: The EUT was searched up the 10 <sup>th</sup> harmonic of the fund.                           |       |             |                          |                            |                                          |                        |             |          |           |

*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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Range Set up: Photo



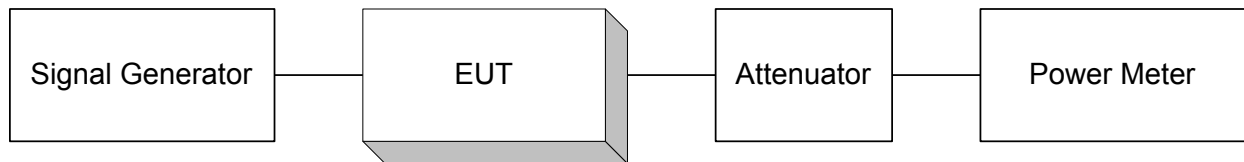
*EQUIPMENT:*

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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

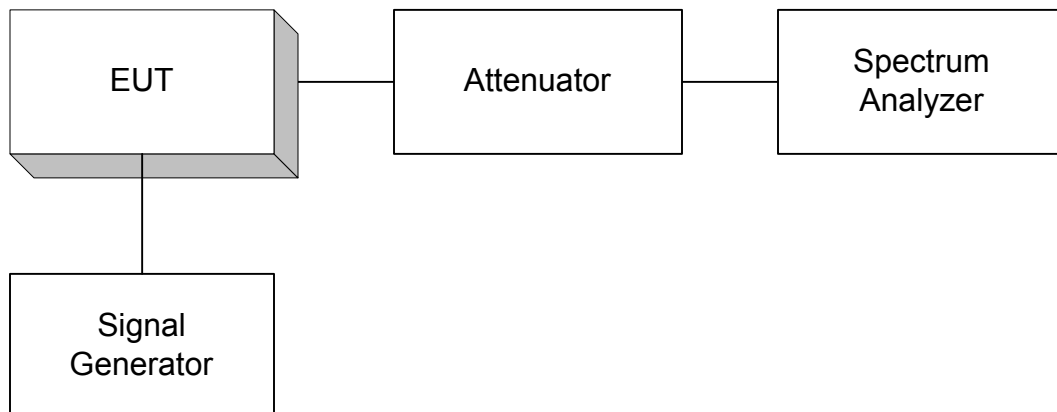
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## Section 7. Block Diagrams

### Para. No. 1046 - R.F. Power Output



### Para. No. 2.1049 - Occupied Bandwidth

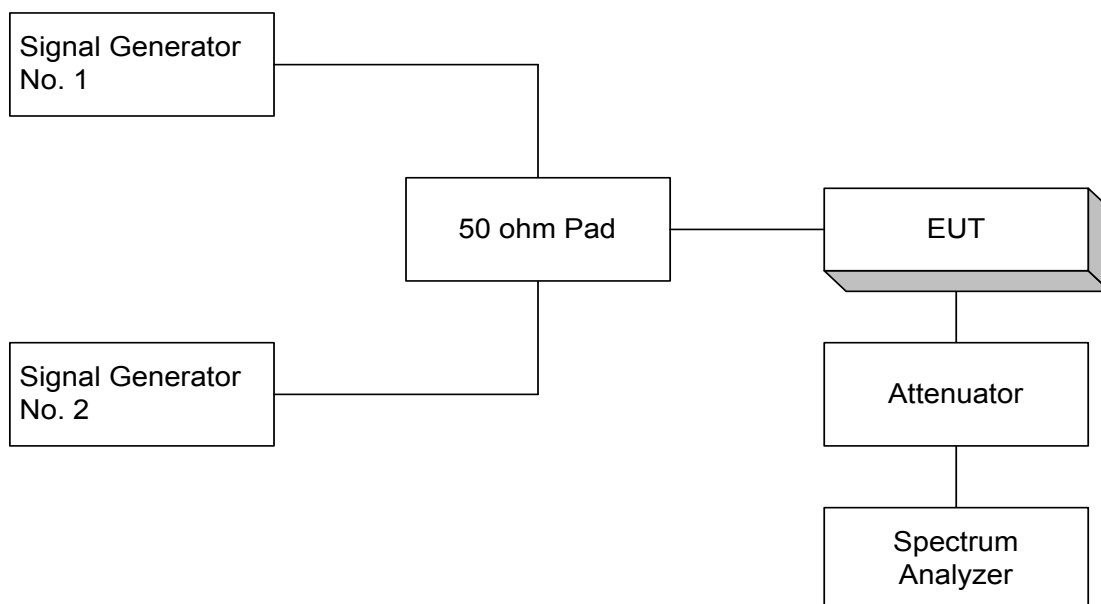
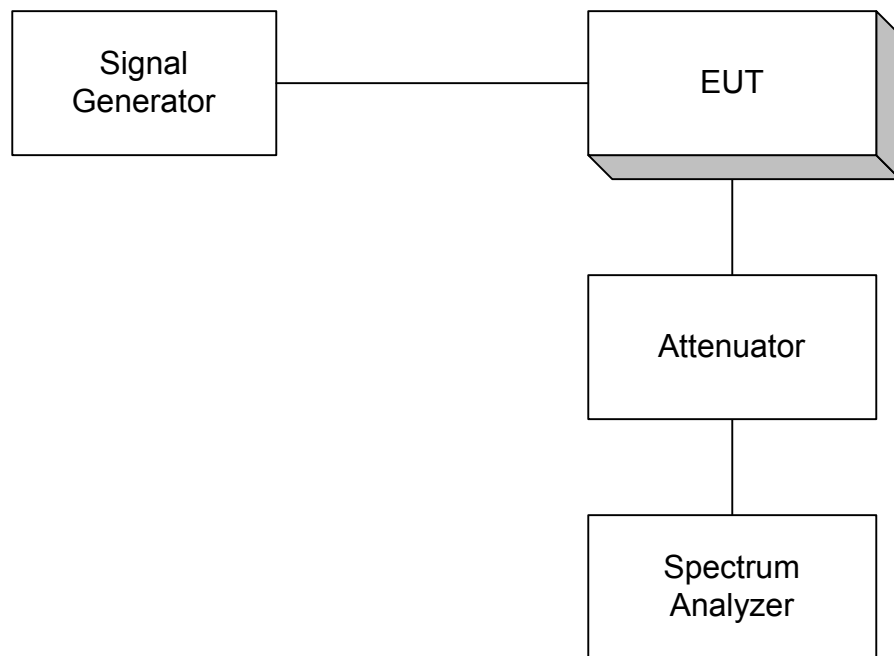


*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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

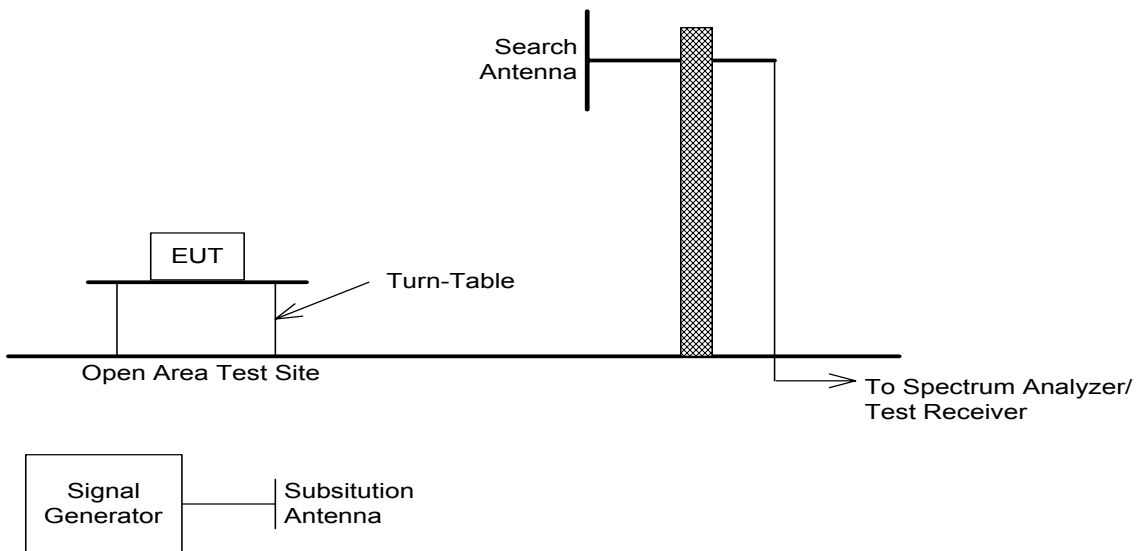


*EQUIPMENT:*

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BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

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



*EQUIPMENT:*

BDA-PCS/A-0.5/0.5W-70-A, BDA-PCS/B-0.5/0.5W-70-A, BDA-PCS/C-0.5/0.5W-70-A  
BDA-PCS/D-0.5/0.5W-70-A, BDA-PCS/E-0.5/0.5W-70-A, BDA-PCS/F-0.5/0.5W-70-A

**Section 8. Test Equipment List**

| CAL Cycle                                                                                     | Equipment                 | Manufacturer    | Model No.     | Asset/Serial No. | Last Cal.   | Next Cal.   |
|-----------------------------------------------------------------------------------------------|---------------------------|-----------------|---------------|------------------|-------------|-------------|
| 1 Year                                                                                        | Spectrum Analyzer         | Hewlett-Packard | 8565E         | FA000981         | July. 03/03 | July. 03/04 |
| 1 Year                                                                                        | Horn Antenna #2           | EMCO            | 3115          | FA000825         | Dec. 10/03  | Dec. 10/04  |
| 1 Year                                                                                        | Horn 18 – 40 GHz          | Electro-Metrics | 3116          | FA001847         | Jan. 19/04  | Jan. 19/05  |
| 1 Year                                                                                        | 1.0 – 2.0 GHz Amplifier   | JCA             | 12-400        | FA001498         | June. 18/03 | June. 18/04 |
| 1 Year                                                                                        | 2.0 – 4.0 GHz Amplifier   | JCA             | 24-600        | FA001496         | June. 18/03 | June. 18/04 |
| 1 Year                                                                                        | 4.0 – 8.0 GHz Amplifier   | JCA             | 48-600        | FA001497         | June. 18/03 | June. 18/04 |
| 3 Year                                                                                        | Signal Generator          | Rohde & Schwarz | SMIQ03        | FA001091         | Sept. 25/03 | Sept. 25/06 |
| 1 Year                                                                                        | Signal Generator          | Rohde & Schwarz | SMIQ03E       | FA001269         | Jan. 09/04  | Jan. 09/05  |
| COU                                                                                           | Coupler                   | Mini-Circuits   | 15542         | FA001155         | COU         | COU         |
| COU                                                                                           | Isolator                  | Narda           | 1530-10W      | FA001585         | COU         | COU         |
| COU                                                                                           | Isolator                  | Narda           | 1530-10W      | FA001586         | COU         | COU         |
| COU                                                                                           | Attn                      | Weinschel Corp. | 47-10-34      | FA001740         | COU         | COU         |
| COU                                                                                           | Attn                      | Narda           | 769-20        | FA001394         | COU         | COU         |
| COU                                                                                           | 5.0 – 18.0 GHz Amplifier  | NARDA           | DWT-186N23U40 | FA001409         | COU         | COU         |
| COU                                                                                           | 18.0 – 26.0 GHz Amplifier | NARDA           | BBS-1826N612  | FA001550         | COU         | COU         |
| Note: N/A = Not Applicable, NCR = No Cal Required, COU = CAL On Use, OUT = Out For CAL/Repair |                           |                 |               |                  |             |             |