

# TEST RESULT SUMMARY

## FCC Part 22

|                        |                                                                      |
|------------------------|----------------------------------------------------------------------|
| MANUFACTURER           | ADC Inc.                                                             |
| NAME OF EQUIPMENT      | Digivance Long Range Coverage Solution 800 MHz System (A and B Band) |
| MODEL NUMBER           | <b>DGVL-112XXSYS</b><br><b>DGVL-122XXSYS</b>                         |
| MANUFACTURER'S ADDRESS | P.O. Box 1101<br>Minneapolis, MN 55440-1101                          |
| TEST REPORT NUMBER     | WC505744                                                             |
| TEST DATES             | 30 September 2005 (ADC)<br>7 November 2005 (TÜV)                     |

According to testing performed at TÜV America Inc, the above-mentioned unit is in compliance with the electromagnetic compatibility (EMC) portions of the requirements defined in FCC Part 22.

It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics. Any modifications necessary for compliance made during testing on the above mentioned date(s) must be implemented in all production units for compliance to be maintained.

TÜV America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the EMC requirements of FCC Part 22, Subpart C Section 22.355, "Frequency tolerance" and Subpart H Sections 22.913 "Effective radiated power limits" and 22.917 "Emission limitations for cellular".

Date: 27 January 2006    Tested By



Joe Sausen, Michael Schultz

Technical Writer



Greg Jakubowski

Not Transferable

# EMC Emission - TEST REPORT

Test Report File No. : **WC505744** Date of issue: 27 January 2006

Model Nos. : **DGVL-112XXSYS**  
**DGVL-122XXSYS**

Product Name : Digivance Long Range Coverage Solution 800 MHz System (A and B Band)

Product Type : Transports RF between a remote antenna and a customer provided base station

Applicant : ADC Inc.

Manufacturer : ADC Inc.

License Holder : ADC Inc.

Address : P.O. Box 1101  
Minneapolis, MN 55440-1101

Test Result : ☒ Positive ☐ Negative

Test Project Number :  
Reference(s) **WC505744**

Total pages including Appendices **111**

*TÜV America Inc reports apply only to the specific samples tested under stated test conditions. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. TÜV America Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV America Inc issued reports.*

*This report is the confidential property of the client. As a mutual protection to our clients, the public and ourselves, extracts from the test report shall not be reproduced except in full without our written approval. This report shall not be used by the client to claim product endorsement by NVLAP, NIST, or any agency of the US government.*

*TÜV America Inc and its professional staff hold government and professional organization certifications and are members of AAMI, ACIL, AEA, ANSI, IEEE, NVLAP, and VCCI*

## DIRECTORY

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### Sign Explanations:

- ☐ - not applicable
- ☒ - applicable

## EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- ☐ - EN 50081-1 / 1991
- ☐ - EN 55011 / 1991

- ☐ - Group 1
- ☐ - Class A

- ☐ - Group 2
- ☐ - Class B

- ☐ - EN 55013 / 1990
- ☐ - EN 55014 / 1987

- ☐ - Household appliances and similar
- ☐ - Portable tools
- ☐ - Semiconductor devices

- ☐ - EN 55014 / A2:1990
- ☐ - EN 55014 / 1993

- ☐ - Household appliances and similar
- ☐ - Portable tools
- ☐ - Semiconductor devices

- ☐ - EN 55015 / 1987
- ☐ - EN 55015 / A1:1990
- ☐ - EN 55015 / 1993
- ☐ - EN 55022 / 1987
- ☐ - EN 55022 / 1991

- ☐ - Class A
- ☐ - Class A

- ☐ - Class B
- ☐ - Class B

- ☐ - BS
- ☐ - VCCI

- ☐ - Class A

- ☐ - Class B

- ☐ - FCC Part 15 Subpart B
- ☐ - FCC Part 15 Subpart C
- ☒ - FCC Part 22

- ☐ - Class A

- ☐ - Class B

- ☐ - CISPR 11 (1990)

- ☐ - Group 1
- ☐ - Class A

- ☐ - Group 2
- ☐ - Class B

- ☐ - CISPR 22 (1993)

- ☐ - Class A

- ☐ - Class B

- ☐ - IC RSS-Gen Issue 1
- ☐ - IC RSS-193 Issue 1

## 22.913 Effective radiated power limits

### Test summary

The requirements are: ☒ - MET ☐ - NOT MET

Minimum margin of compliance is 12 dB at 869 MHz (FM, band A)

### Test location

☐ - Wild River Lab Large Test Site (Open Area Test Site)

☐ - Wild River Lab Small Test Site (Open Area Test Site)

☒ - ADC facility

### Test Distance

☐ - 3 meters

☐ - 10 meters

☒ - Conducted measurement

### Test equipment (ADC)

| Model Number | Manufacturer | Description       | ADC Serial Number | Cal Due |
|--------------|--------------|-------------------|-------------------|---------|
| 49-30-33     | Aeroflex     | Attenuator        | n/a               | CNR     |
| HP8563E      | HP           | Spectrum Analyzer | MC27690           | 6-22-06 |
| EPM-441A     | HP           | Power Meter       | MC27670           | 9-28-06 |

Equipment with a Calibration Not Required (CNR) listing is verified and compensated for with NIST traceable calibrated equipment.

### Test limit

500 watts or 57dBm

### Test Data

See page A2

## 22.355 Frequency tolerance

### Test summary

The requirements are: ■ - MET □ - NOT MET

The carrier frequency of each channel is maintained within the tolerances given in Table C–1 of this section.

Frequency measured over a temperature range of -30 to 50°C and an input voltage range of 102 to 138 VAC

### Test location

□ - Wild River Lab Large Test Site (Open Area Test Site)

□ - Wild River Lab Small Test Site (Open Area Test Site)

■ - ADC facility

### Test equipment (ADC)

| Model Number | Manufacturer | Description               | ADC Serial Number | Cal Due  |
|--------------|--------------|---------------------------|-------------------|----------|
| 26III        | Fluke        | Multimeter                | MC22687           | 4-27-06  |
| 5347A        | HP           | Freq. Counter             | MC27569           | 7-21-06  |
| 1520CT       | Staco        | Variable Auto Transformer | MC/44655          | CNR      |
| E4436B       | Agilent      | Signal Generator          | 963739            | 10-16-06 |

Equipment with a Calibration Not Required (CNR) listing is verified and compensated for with NIST traceable calibrated equipment.

### Test limit

TABLE C–1—FREQUENCY TOLERANCE FOR TRANSMITTERS IN THE PUBLIC MOBILE SERVICES

| Frequency range (MHz) | Base, fixed (ppm) | Mobile ≤3 watts (ppm) | Mobile ≤3 watts (ppm) |
|-----------------------|-------------------|-----------------------|-----------------------|
| 25 to 50 .....        | 20.0              | 20.0                  | 50.0                  |
| 50 to 450 .....       | 5.0               | 5.0                   | 50.0                  |
| 450 to 512 .....      | 2.5               | 5.0                   | 5.0                   |
| 821 to 896 .....      | 1.5               | 2.5                   | 2.5                   |
| 928 to 929 .....      | 5.0               | n/a                   | n/a                   |
| 929 to 960 .....      | 1.5               | n/a                   | n/a                   |
| 2110 to 2220 .....    | 10.0              | n/a                   | n/a                   |

### Test data

See pages A3 – A4

## 22.917 Emission limitations for cellular

### Test summary

The requirements are: ■ - MET □ - NOT MET

The power of any emission outside of the authorized operating frequency ranges are attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

Outside the emission bandwidth of the carrier, all emissions are attenuated at least 26 dB below the transmitter power.

### Test location

■ - Wild River Lab Large Test Site (Open Area Test Site)

□ - Wild River Lab Small Test Site (Open Area Test Site)

■ - ADC facility

### Test equipment (ADC)

| Model Number | Manufacturer | Description               | ADC Serial Number | Cal Due  |
|--------------|--------------|---------------------------|-------------------|----------|
| 49-30-33     | Aeroflex     | Attenuator                | n/a               | CNR      |
| HP8563E      | HP           | Spectrum Analyzer         | MC27690           | 6-22-06  |
| EPM-441A     | HP           | Power Meter               | MC27670           | 9-28-06  |
| 26III        | Fluke        | Multimeter                | MC22687           | 4-27-06  |
| 5347A        | HP           | Freq. Counter             | MC27569           | 7-21-06  |
| Thermotron   | Thermotron   | Temperature Chamber       | MC18966           | 3-1-06   |
| 1520CT       | Staco        | Variable Auto Transformer | MC/44655          | CNR      |
| E4436B       | Agilent      | Signal Generator          | 963739            | 10-16-06 |
| E4436B       | Agilent      | Signal Generator          | MC50601           | 12-29-06 |

Equipment with a Calibration Not Required (CNR) listing is verified and compensated for with NIST traceable calibrated equipment.

### Test equipment (TUV)

| TUV ID | Model Number | Manufacturer             | Description               | Serial Number | Cal Due   |
|--------|--------------|--------------------------|---------------------------|---------------|-----------|
| 3203   | EM-6917B     | Electro-Metrics          | Biconicalog Periodic      | 106           | 01-Apr-06 |
| 3204   | EM-6917B     | Electro-Metrics          | Biconicalog Periodic      | 102           | 19-Oct-06 |
| 2075   | 3115         | Electro-Mechanics (EMCO) | Ridge Guide Ant. 1-18 GHz | 9001-3275     | 07-Dec-06 |
| 3961   | ZHL-1042J    | Mini-Circuits            | Preamplifier              | D120403-1     | Code B    |
| 3958   | SL18B4020    | Phase One Microwave      | Preamplifier 1 – 18 GHz   | 0002          | Code B    |
| 2681   | 85650A       | Hewlett-Packard          | Quasi-Peak Adapter        | 2430A00562    | 03-Feb-06 |
| 8052   | 8566B        | Hewlett-Packard          | Spectrum Analyzer         | 2115A00853    | 24-Mar-06 |
| 8051   | 85662A       | Hewlett-Packard          | Analyzer Display          | 2112A02220    | 24-Mar-06 |

Cal Code B = Calibration verification performed internally. Cal Code Y = Calibration not required when used with other calibrated equipment.

### Test limits

Out of band emissions:

Attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

$(19\text{dBm} - [43 + 10\log(0.08\text{W})]) = -13\text{ dBm}$

Outside of the carrier emission bandwidth:

26 dB below the transmitter power

### Test data

Occupied Bandwidth Modulation, pages A5 – A13

Conducted Emission Limits, pages A14 – A28

Radiated emissions, pages A29 – A52

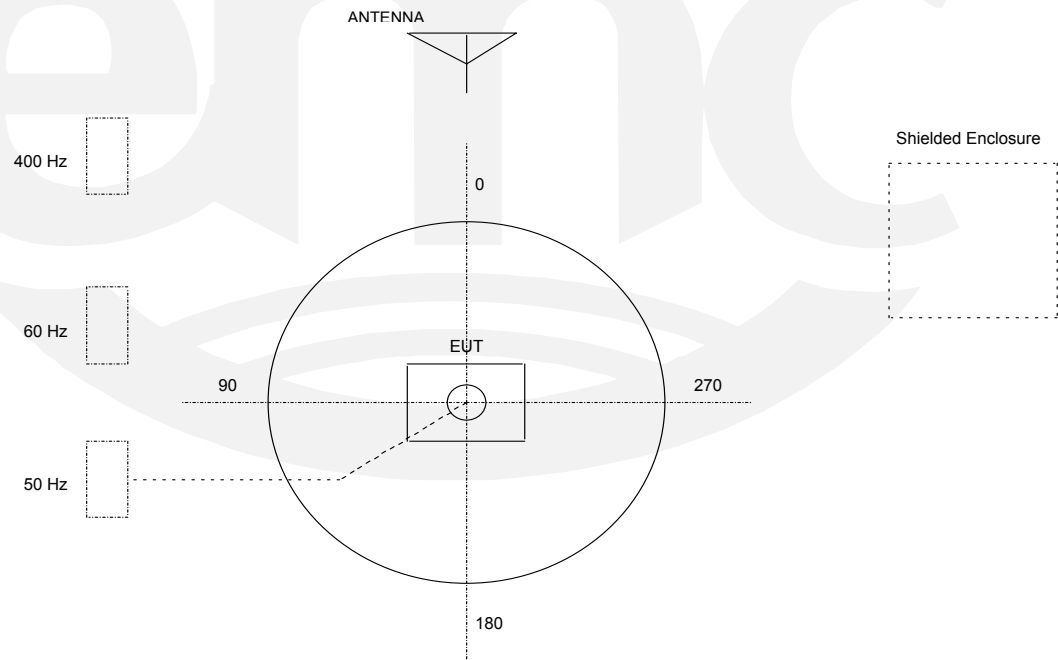
Inter-Modulation Test, pages A53 – A85

## TEST SETUP FOR EMISSIONS TESTING

### WILD RIVER LAB Large Test Site

#### Notes:

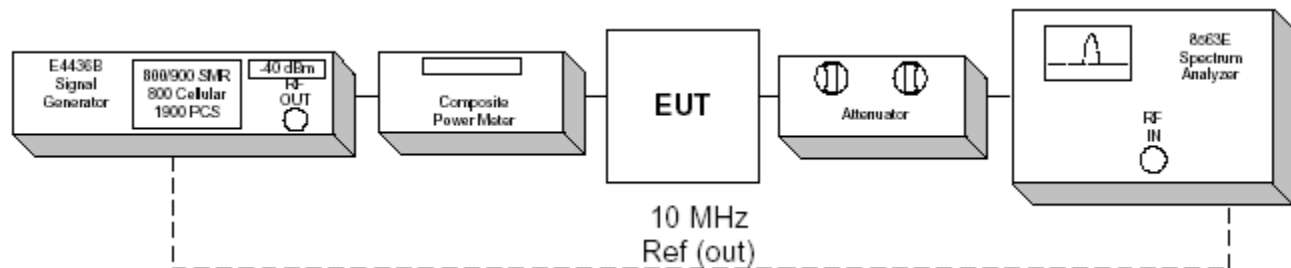
1. Items shown in dotted lines are located on the floor below the test area. It is 5 meters vertically from the ground floor to the test area.
2. 50 Hz, 60 Hz, and 400 Hz are power panels for alternating current.
3. The antenna may be positioned horizontally 3, 10 or 30 meters from the center of the turntable.
4. The circle is a 6.7 meter diameter turntable.
5. A ground plane is in the plane of this sheet.
6. The test sample is shown in the azimuthal position representing zero degrees.



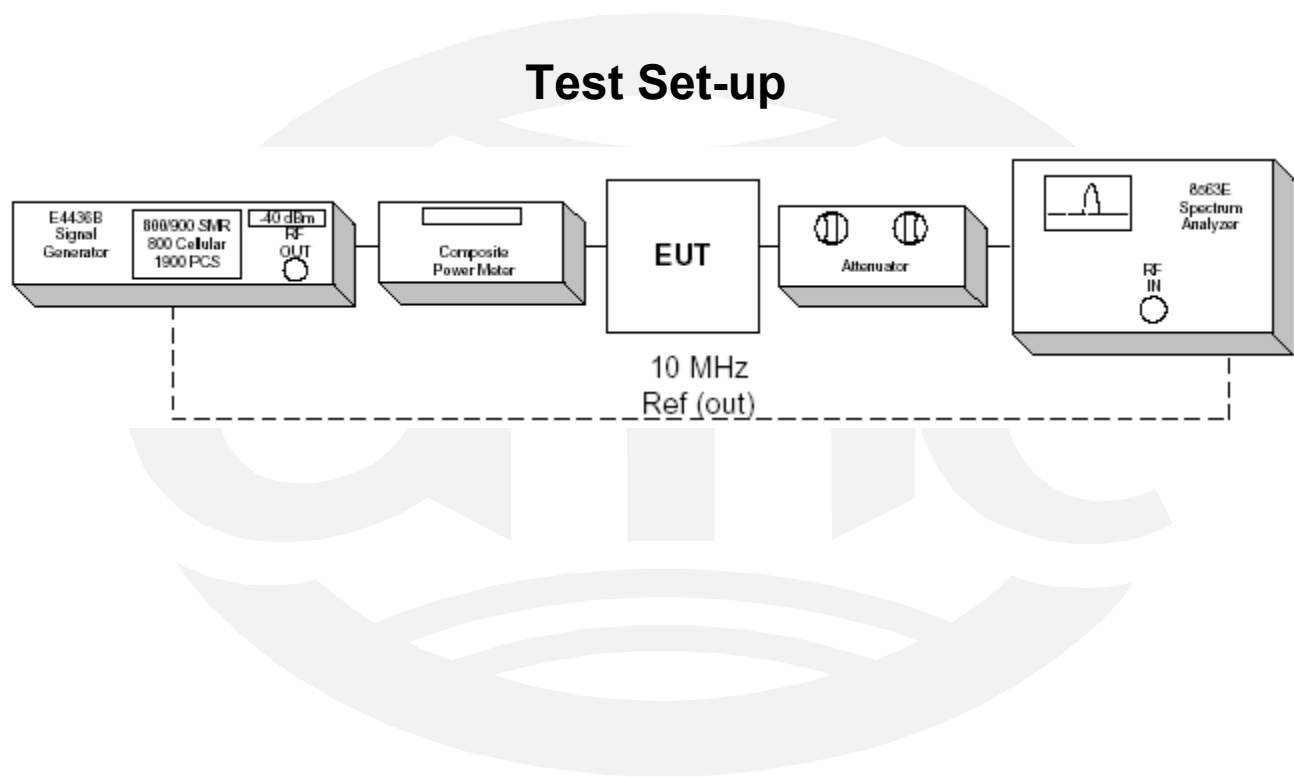


**Conducted Emission Limits Test for ADC Inc.  
Digivance® Long Range Coverage Solution  
Model Numbers DGVL-112XXXSYS and DGVL-122XXXSYS**

**Test Set-up**



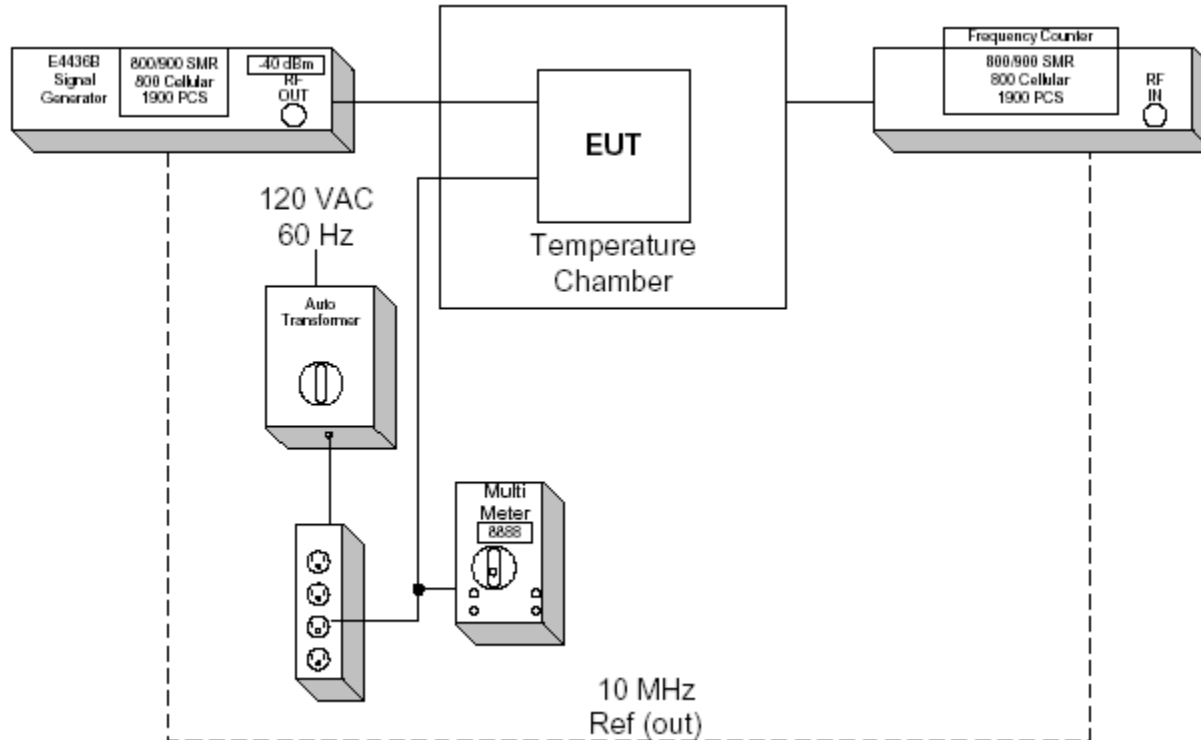
**Effective Radiated Power Limit Test for ADC Inc.  
Digivance® Long Range Coverage Solution  
Model Numbers DGVL-112XXSYS and DGVL-122XXSYS**



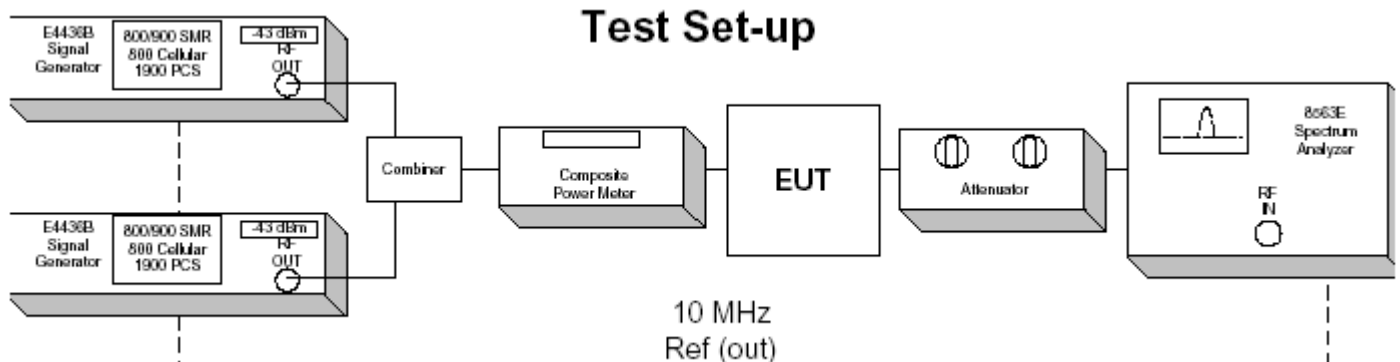
# **Frequency Tolerance Test for ADC Inc.** **Digivance® Long Range Coverage Solution** **Model Numbers DGVL-112XXXSYS and DGVL-122XXXSYS**

EUT Host is specified for indoor use only with temperature range of 0° to +50° C, and was tested with its range.  
 EUT Remote is specified with a temperature range of -30° to +50° C and was tested with its range.

## **Test Set-up**



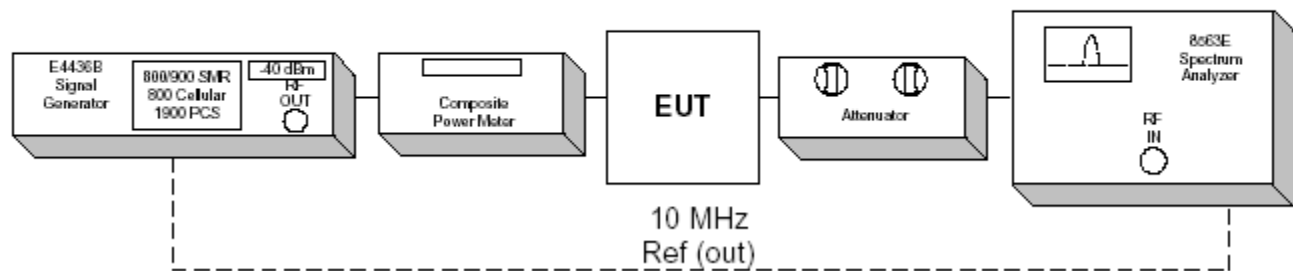
**Inter-Modulation Test for ADC Inc.  
Digivance® Long Range Coverage Solution  
Model Numbers DGVL-112XXSYS and DGVL-122XXSYS**



**Occupied Bandwidth Modulation Test for ADC Inc.  
Digivance® Long Range Coverage Solution  
Model Numbers DGVL-112XXXSYS and DGVL-122XXXSYS**



**Test Set-up**



Test setup photo, radiated emissions





Test setup photo, radiated emissions



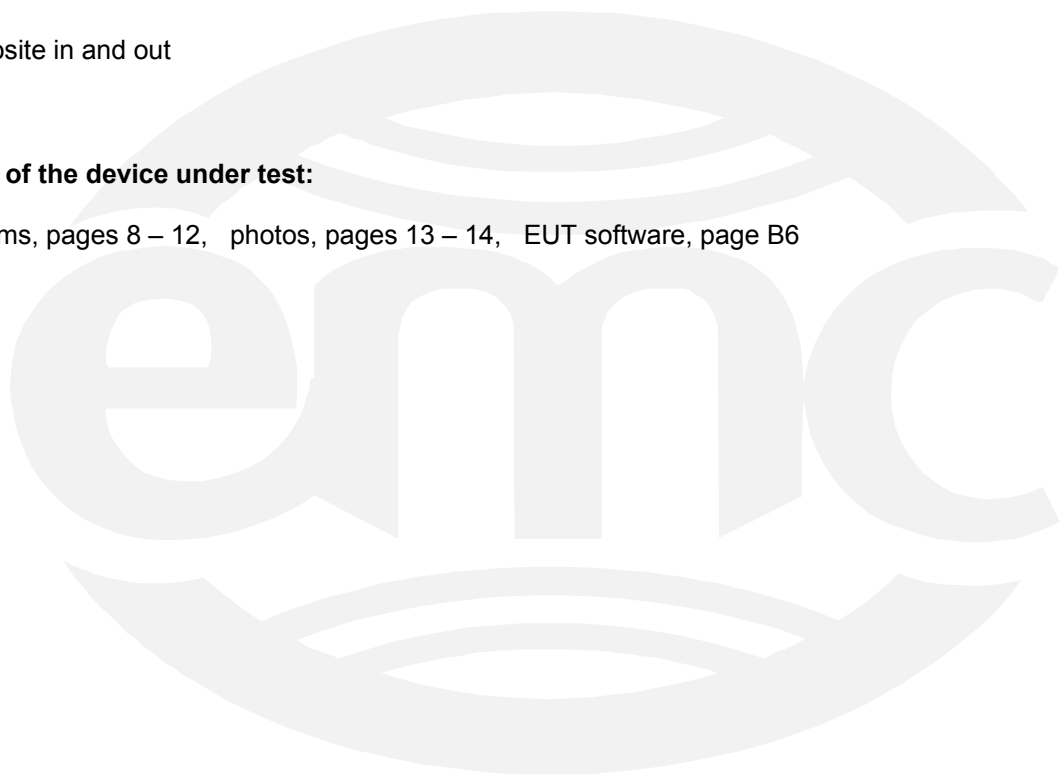
### **Test Operation Mode:**

**The device under test was operated under the following conditions during emissions testing:**

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☐ - Test program (color bar)
- ☐ - Test program (customer specific)
- ☐ - Practice operation
- ☒ - Max composite in and out

### **Configuration of the device under test:**

- ☒ - See diagrams, pages 8 – 12, photos, pages 13 – 14, EUT software, page B6





## DEVIATIONS FROM STANDARD:

None.

## GENERAL REMARKS:

### Modifications required to pass:

- ☒ None
- ☐ As indicated on the data sheet(s)

### Test Specification Deviations: Additions to or Exclusions from:

- ☒ None
- ☐ As indicated in the Test Plan

## SUMMARY:

The requirements according to the technical regulations are

- ☒ - met
- ☐ - **not** met.

The device under test does

- ☒ - fulfill the general approval requirements mentioned on page 3.
- ☐ - **not** fulfill the general approval requirements mentioned on page 3.

|                           |                          |
|---------------------------|--------------------------|
| EUT Received Date: (TÜV)  | <u>7 November 2005</u>   |
| Condition of EUT:         | <u>Normal</u>            |
| Testing Start Date: (ADC) | <u>30 September 2005</u> |
| Testing End Date: (TÜV)   | <u>7 November 2005</u>   |

- TÜV AMERICA INC -

Tested By:



Joe Sausen, Michael Schultz

Reviewed By:



Greg Jakubowski

## Appendix A

Test data



# Effective Radiated Power Test for ADC Inc.

## Digivance â Long Range Coverage Solution

### Model Numbers DGPL-112XXXSYS and DGPL-122XXXSYS

\*Note: The EUT is a fixed repeater and not a base station.

This measurement was made as a direct conducted emission measurement. The output from the EUT antenna connector was connected to the spectrum analyzer. The carrier output, below, was conducted using a single FM, TDMA, GSM, and CDMA signal generator. The spectrum analyzer level was offset to compensate for attenuators and cable loss between the EUT and the analyzer.

For the CDMA modulation type, the average value of the measured frequency will be 16.23 dB down from the CW peak power.

A signal was used at the low, mid and high parts of the selected band. The spectrum analyzer level was offset by 51.5 dB to compensate for attenuators and cable loss between the EUT and the analyzer.

#### **FM - 31.12 Watts**

| Band A            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 869.0 MHz         | <u>44.93</u> dBm |
| 880.0 MHz         | <u>44.60</u> dBm |
| 891.5 MHz         | <u>44.87</u> dBm |

| Band B            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 880.0 MHz         | <u>44.87</u> dBm |
| 887.0 MHz         | <u>44.57</u> dBm |
| 894.0 MHz         | <u>44.57</u> dBm |

#### **TDMA – 27.73 Watts**

| Band A            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 869.0 MHz         | <u>44.13</u> dBm |
| 880.0 MHz         | <u>44.27</u> dBm |
| 891.5 MHz         | <u>44.43</u> dBm |

| Band B            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 880.0 MHz         | <u>44.10</u> dBm |
| 887.0 MHz         | <u>44.27</u> dBm |
| 894.0 MHz         | <u>44.27</u> dBm |

#### **GSM – 30.20 Watts**

| Band A            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 869.0 MHz         | <u>44.13</u> dBm |
| 880.0 MHz         | <u>44.60</u> dBm |
| 891.5 MHz         | <u>44.43</u> dBm |

| Band B            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 880.0 MHz         | <u>44.57</u> dBm |
| 887.0 MHz         | <u>44.80</u> dBm |
| 894.0 MHz         | <u>44.43</u> dBm |

#### **CDMA – 28.64 Watts**

| Band A            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 869.0 MHz         | <u>28.27</u> dBm |
| 880.0 MHz         | <u>27.60</u> dBm |
| 891.5 MHz         | <u>27.43</u> dBm |

| Band B            |                  |
|-------------------|------------------|
| Carrier Frequency | Carrier Output   |
| 880.0 MHz         | <u>28.13</u> dBm |
| 887.0 MHz         | <u>28.34</u> dBm |
| 894.0 MHz         | <u>27.87</u> dBm |

**Frequency Tolerance Test for ADC Inc.**  
**Digivance â Long Range Coverage Solution**  
**Model Numbers DGVL-112XXSYS and DGVL-122XXSYS**

**EUT A Band**

| <b>Input Voltage</b> | <b>Carrier Frequency</b> | <b>Measured Frequency</b> | <b>Meets Requirements?</b> |
|----------------------|--------------------------|---------------------------|----------------------------|
| 102 VAC              | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 120 VAC              | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 138 VAC              | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 102 VAC              | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 120 VAC              | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 138 VAC              | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 102 VAC              | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 120 VAC              | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 138 VAC              | 891.500 MHz              | 891.500 MHz               | Yes                        |
| <b>Temperature</b>   | <b>Carrier Frequency</b> | <b>Measured Frequency</b> | <b>Meets Requirements?</b> |
|                      |                          |                           |                            |
| -30 Deg. C           | 869.000 MHz              | 869.000 MHz               | Yes                        |
| -20 Deg. C           | 869.000 MHz              | 869.000 MHz               | Yes                        |
| -10 Deg. C           | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 0 Deg. C             | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 10 Deg. C            | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 20 Deg. C            | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 30 Deg. C            | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 40 Deg. C            | 869.000 MHz              | 869.000 MHz               | Yes                        |
| 50 Deg. C            | 869.000 MHz              | 869.000 MHz               | Yes                        |
|                      |                          |                           |                            |
| -30 Deg. C           | 880.000 MHz              | 880.000 MHz               | Yes                        |
| -20 Deg. C           | 880.000 MHz              | 880.000 MHz               | Yes                        |
| -10 Deg. C           | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 0 Deg. C             | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 10 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 20 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 30 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 40 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 50 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
|                      |                          |                           |                            |
| -30 Deg. C           | 891.500 MHz              | 891.500 MHz               | Yes                        |
| -20 Deg. C           | 891.500 MHz              | 891.500 MHz               | Yes                        |
| -10 Deg. C           | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 0 Deg. C             | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 10 Deg. C            | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 20 Deg. C            | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 30 Deg. C            | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 40 Deg. C            | 891.500 MHz              | 891.500 MHz               | Yes                        |
| 50 Deg. C            | 891.500 MHz              | 891.500 MHz               | Yes                        |

**Frequency Tolerance Test for ADC Inc.**  
**Digivance â Long Range Coverage Solution**  
**Model Numbers DGVL-112XXXSYS and DGVL-122XXXSYS**

**EUT B Band**

| <b>Input Voltage</b> | <b>Carrier Frequency</b> | <b>Measured Frequency</b> | <b>Meets Requirements?</b> |
|----------------------|--------------------------|---------------------------|----------------------------|
| 102 VAC              | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 120 VAC              | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 138 VAC              | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 102 VAC              | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 120 VAC              | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 138 VAC              | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 102 VAC              | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 120 VAC              | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 138 VAC              | 894.000 MHz              | 894.000 MHz               | Yes                        |
| <b>Temperature</b>   | <b>Carrier Frequency</b> | <b>Measured Frequency</b> | <b>Meets Requirements?</b> |
|                      |                          |                           |                            |
| -30 Deg. C           | 880.000 MHz              | 880.000 MHz               | Yes                        |
| -20 Deg. C           | 880.000 MHz              | 880.000 MHz               | Yes                        |
| -10 Deg. C           | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 0 Deg. C             | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 10 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 20 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 30 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 40 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
| 50 Deg. C            | 880.000 MHz              | 880.000 MHz               | Yes                        |
|                      |                          |                           |                            |
| -30 Deg. C           | 887.000 MHz              | 887.000 MHz               | Yes                        |
| -20 Deg. C           | 887.000 MHz              | 887.000 MHz               | Yes                        |
| -10 Deg. C           | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 0 Deg. C             | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 10 Deg. C            | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 20 Deg. C            | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 30 Deg. C            | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 40 Deg. C            | 887.000 MHz              | 887.000 MHz               | Yes                        |
| 50 Deg. C            | 887.000 MHz              | 887.000 MHz               | Yes                        |
|                      |                          |                           |                            |
| -30 Deg. C           | 894.000 MHz              | 894.000 MHz               | Yes                        |
| -20 Deg. C           | 894.000 MHz              | 894.000 MHz               | Yes                        |
| -10 Deg. C           | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 0 Deg. C             | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 10 Deg. C            | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 20 Deg. C            | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 30 Deg. C            | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 40 Deg. C            | 894.000 MHz              | 894.000 MHz               | Yes                        |
| 50 Deg. C            | 894.000 MHz              | 894.000 MHz               | Yes                        |

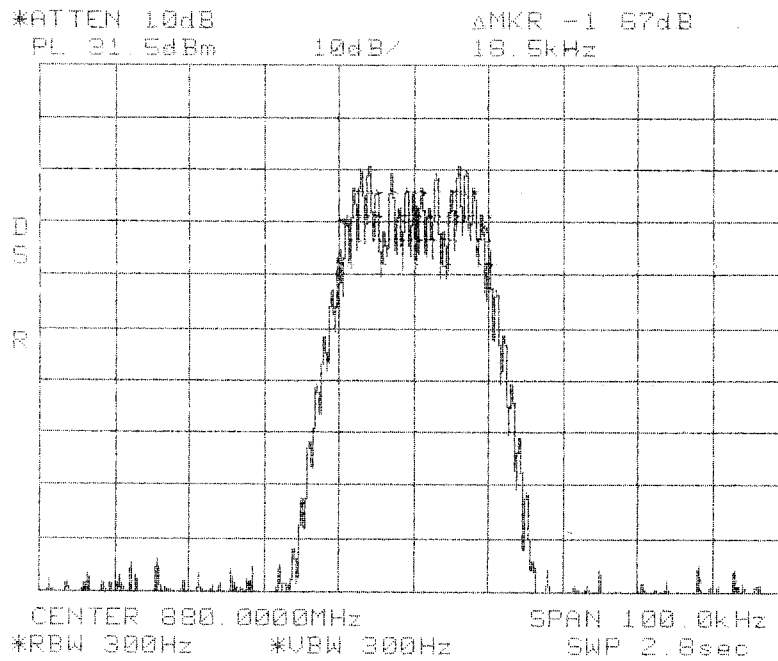
**Occupied Bandwidth Modulation Test for ADC Inc.**  
**Digivance â Long Range Coverage Solution**  
**Model Numbers DGPL-112XXXSYS and DGPL-122XXXSYS**

An input/output Occupied Bandwidth test was done with modulation types: FM, TDMA, GSM, and CDMA. The purpose was to determine the amount of distortion added to different types of modulation schemes by the EUT. The following plots show input signals vs. output signals.

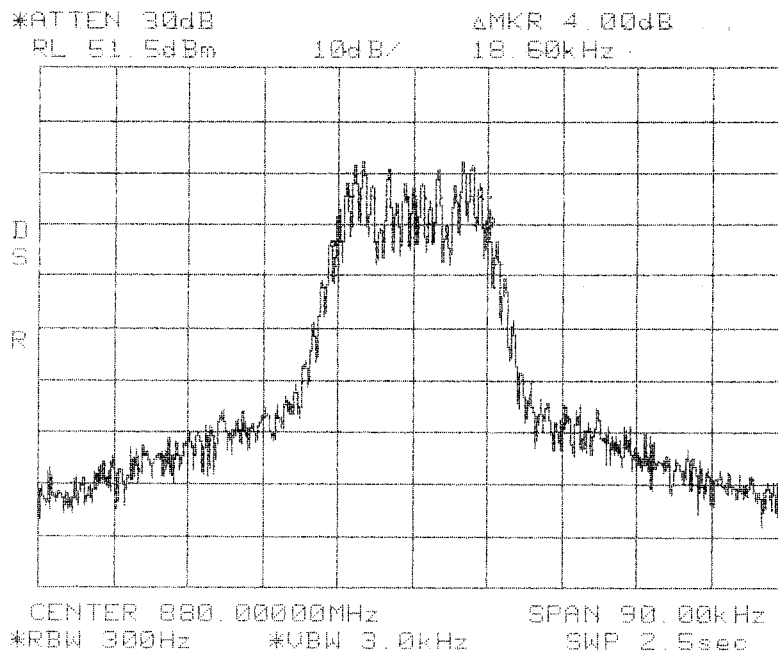
**Results:**

Pass (see plots)

Center: 880.0 MHz  
Span: 90 KHz  
RBW/VBW: 300 Hz / 3 kHz



**Occupied Bandwidth  
FM In  
Cellular 800 MHz  
A Band**

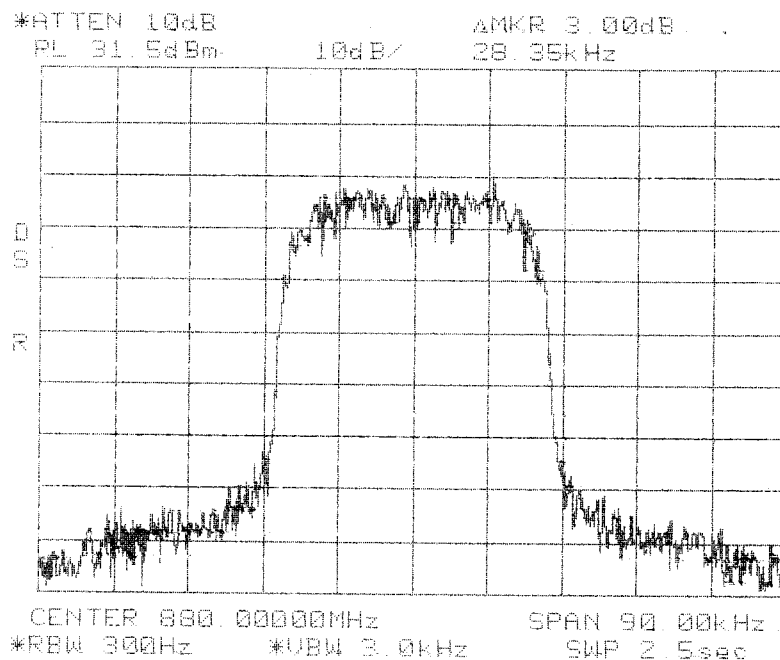


**Occupied Bandwidth  
FM Out  
Cellular 800 MHz  
A Band**

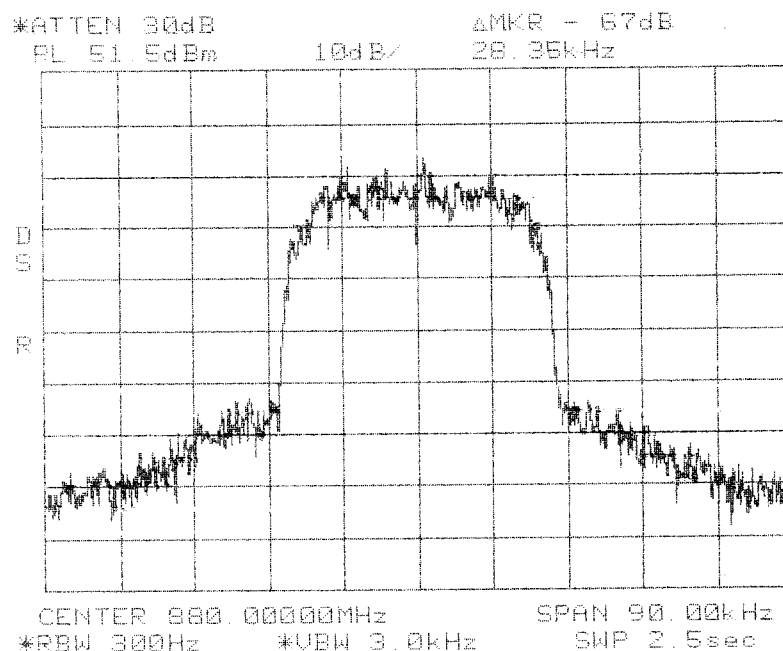
Center: 880.0 MHz  
Span: 90 KHz  
RBW/VBW: 300 Hz / 3 kHz



Center: 880.0 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 3 kHz



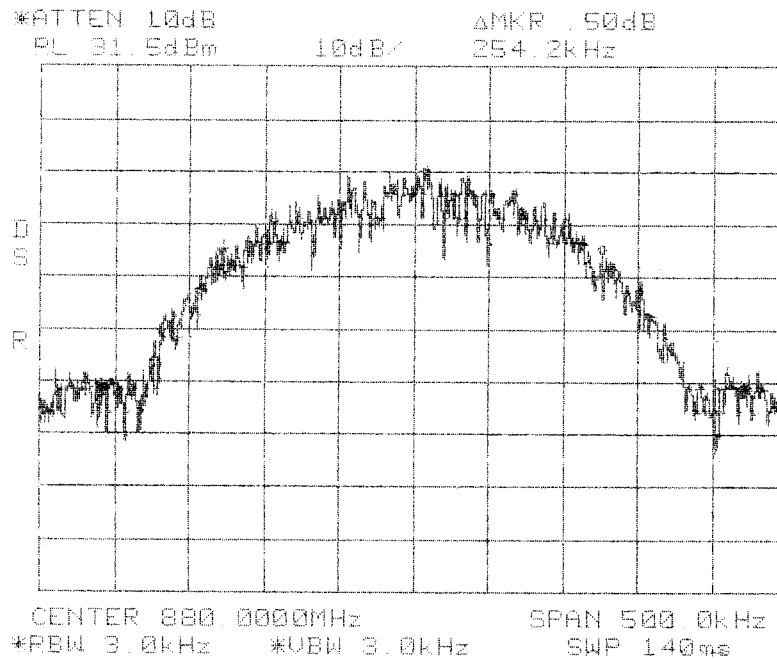
**Occupied Bandwidth  
TDMA In  
Cellular 800 MHz  
A Band**



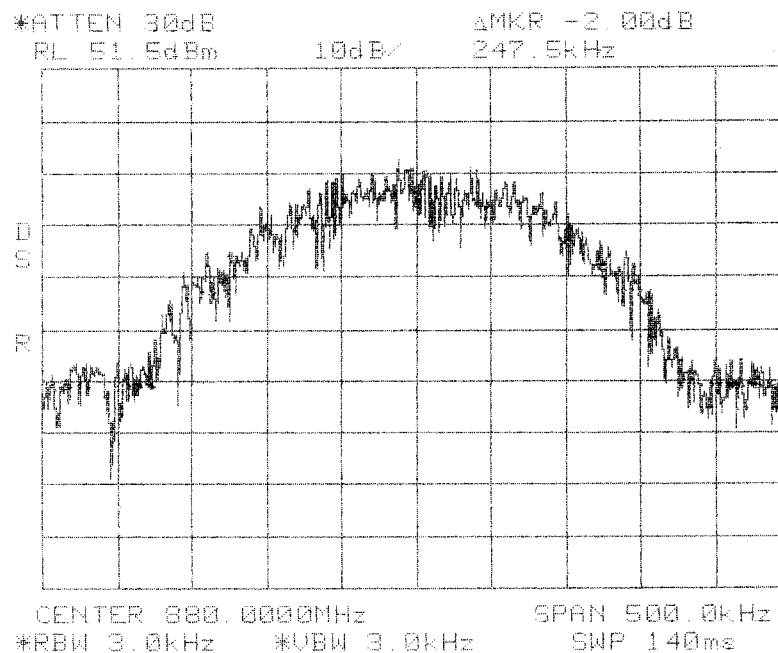
**Occupied Bandwidth  
TDMA Out  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 3 kHz

Center: 880.0 MHz  
Span: 500 KHz  
RBW/VBW: 3 kHz / 3 kHz



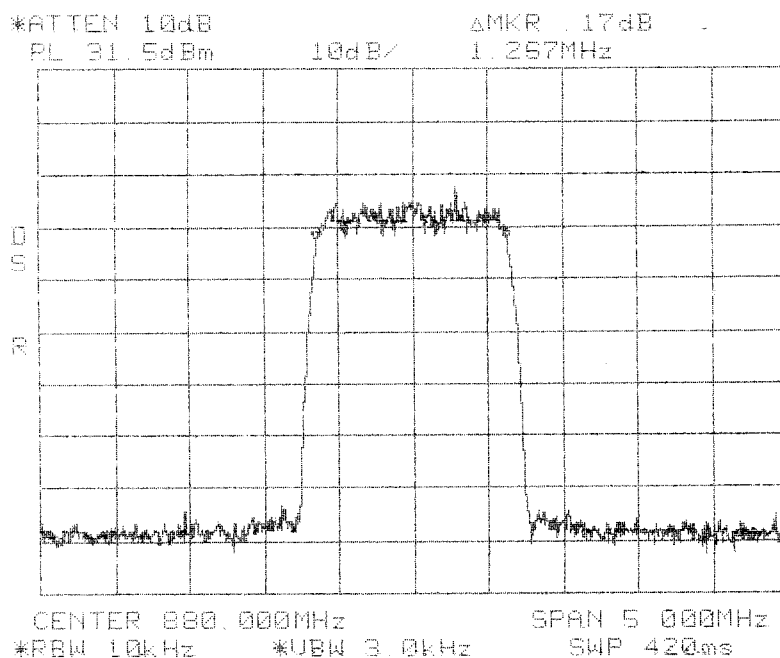
**Occupied Bandwidth  
GSM In  
Cellular 800 MHz  
A Band**



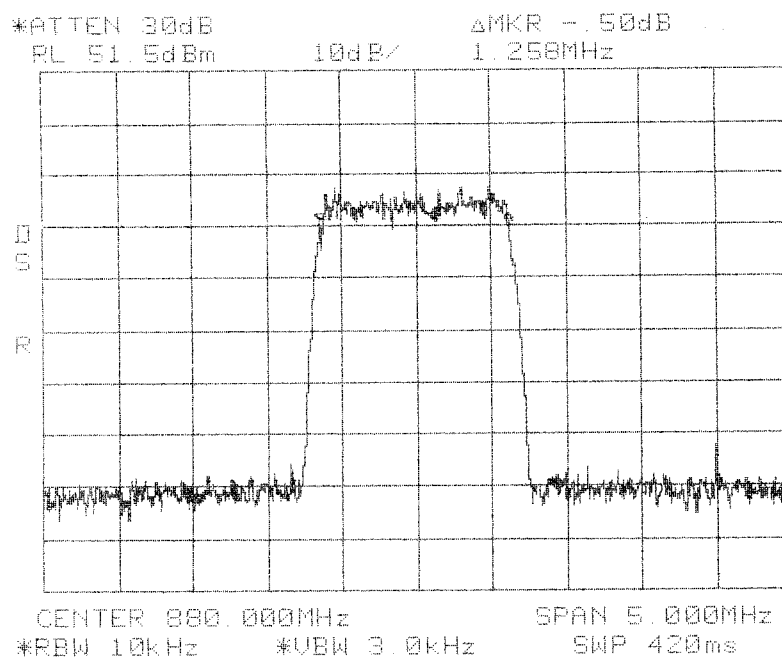
**Occupied Bandwidth  
GSM Out  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 500 KHz  
RBW/VBW: 3 kHz / 3 kHz

Center: 880.0 MHz  
Span: 5 MHz  
RBW/VBW: 10 kHz / 3 kHz



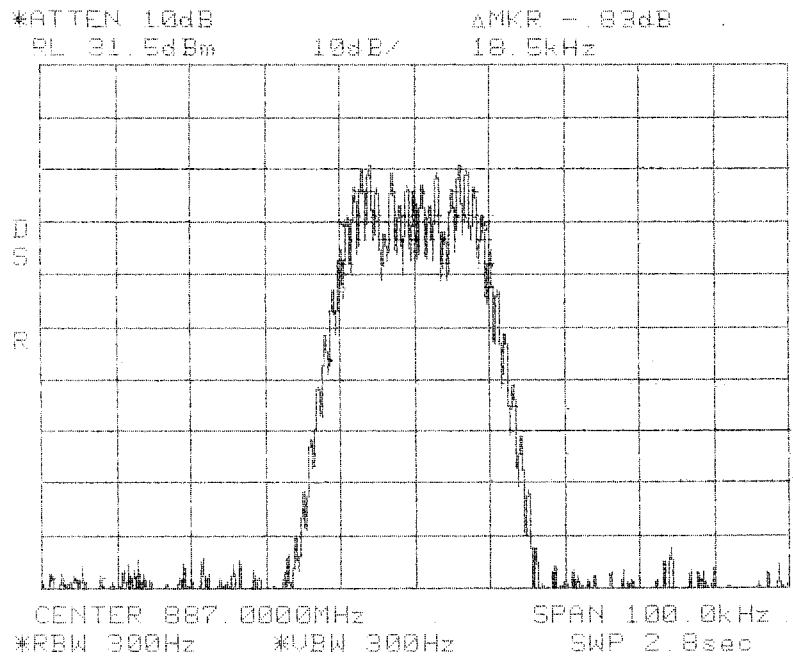
**Occupied Bandwidth  
CDMA In  
Cellular 800 MHz  
A Band**



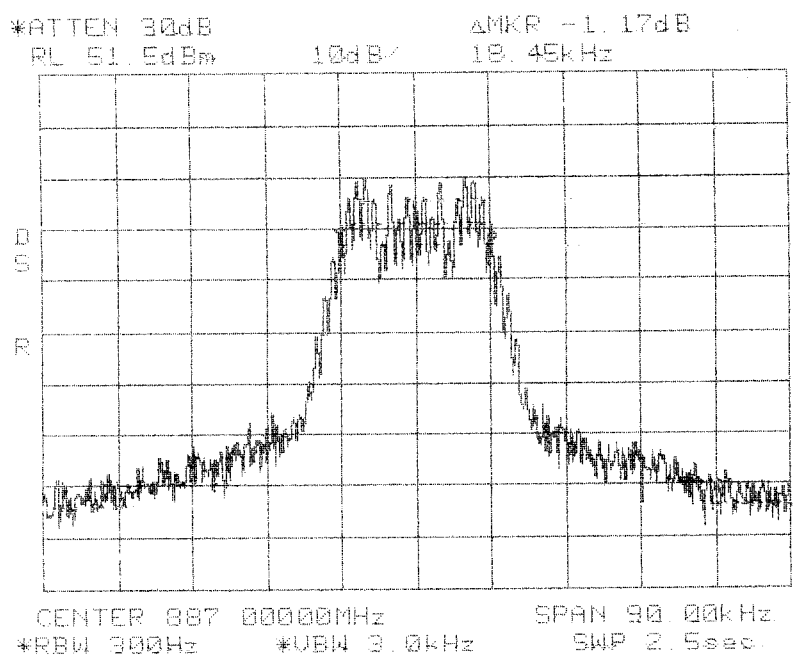
**Occupied Bandwidth  
CDMA Out  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 5 MHz  
RBW/VBW: 10 kHz / 3 kHz

Center: 887.0 MHz  
Span: 90 KHz  
RBW/VBW: 300 Hz / 3 kHz



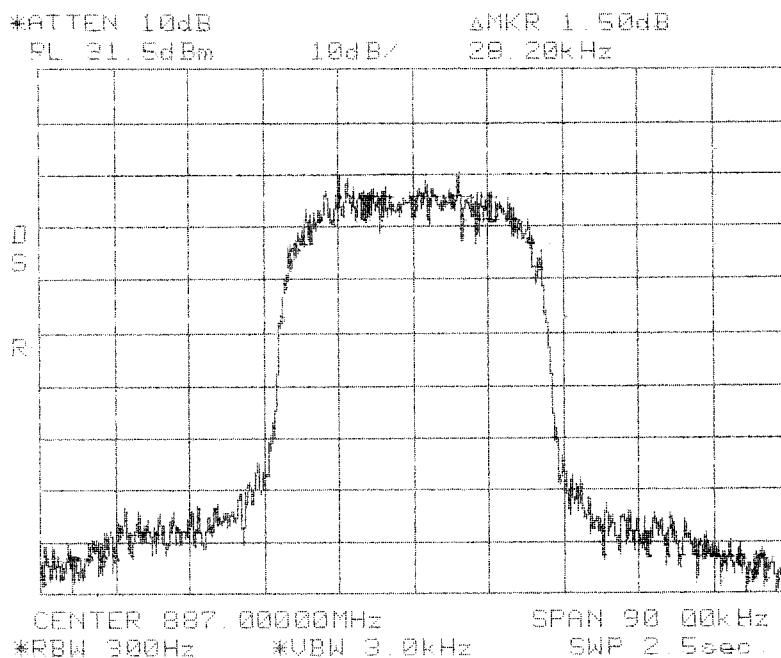
**Occupied Bandwidth  
FM In  
Cellular 800 MHz  
B Band**



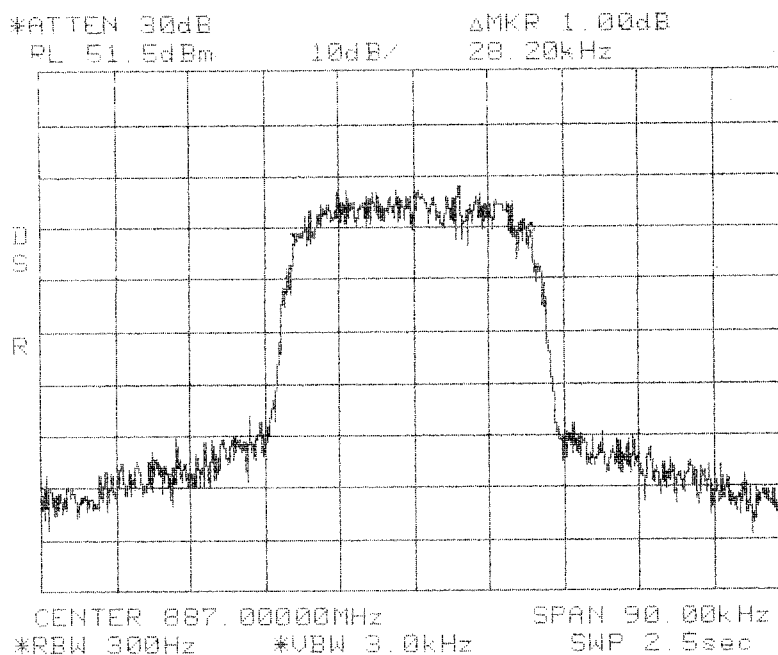
**Occupied Bandwidth  
FM Out  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 90 KHz  
RBW/VBW: 300 Hz / 3 kHz

Center: 887.0 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 3 kHz



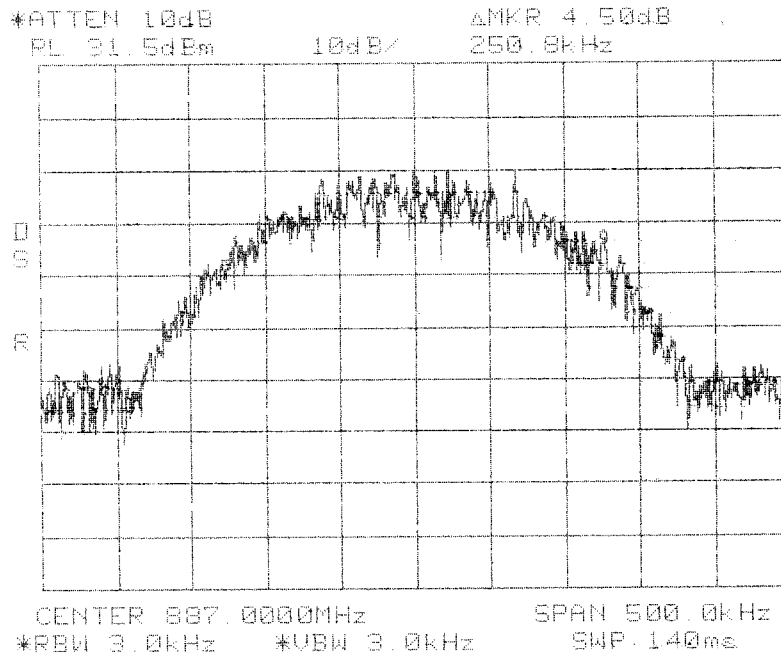
**Occupied Bandwidth  
TDMA In  
Cellular 800 MHz  
B Band**



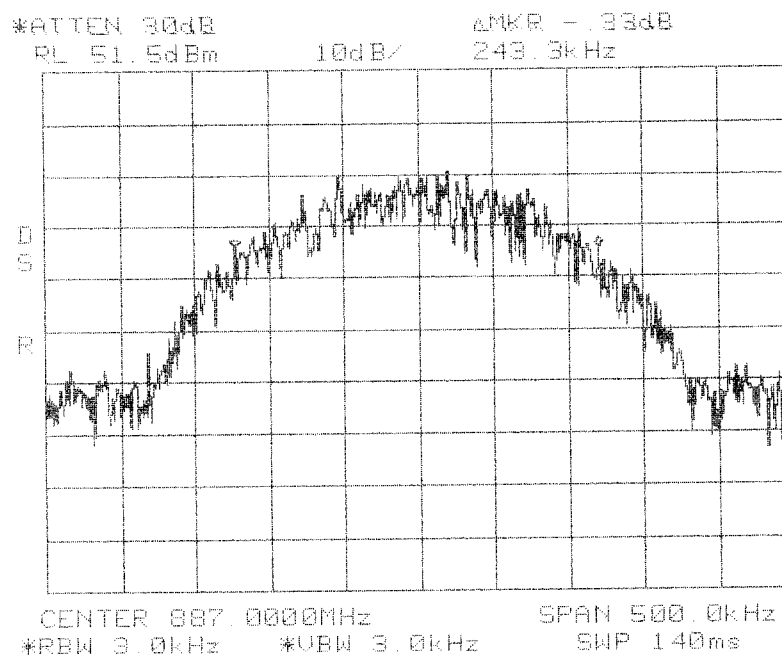
**Occupied Bandwidth  
TDMA Out  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 3 kHz

Center: 887.0 MHz  
Span: 500 KHz  
RBW/VBW: 3 kHz / 3 kHz



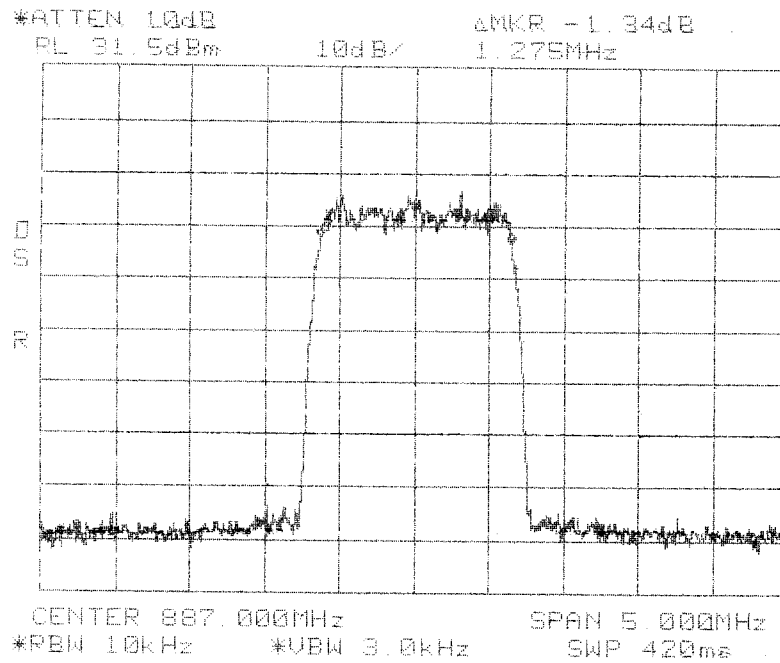
**Occupied Bandwidth  
GSM In  
Cellular 800 MHz  
B Band**



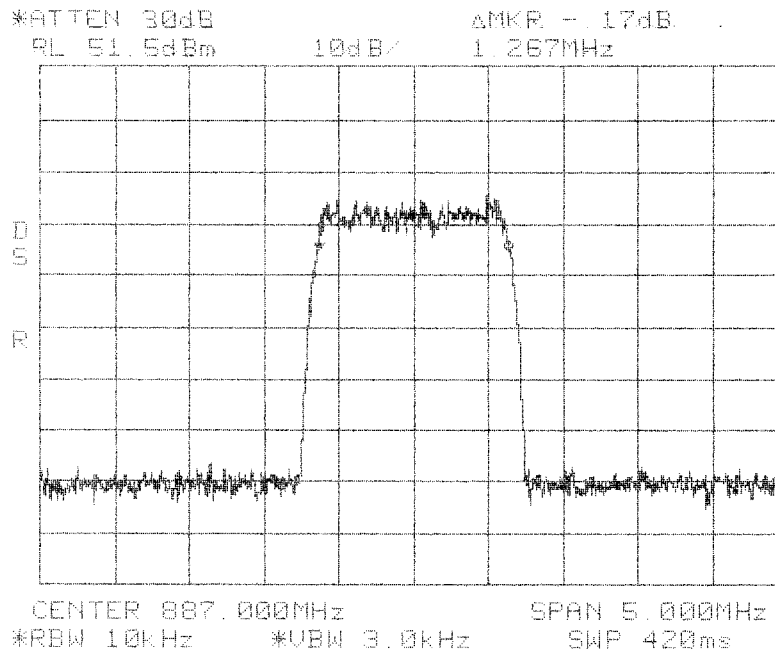
**Occupied Bandwidth  
GSM Out  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 500 KHz  
RBW/VBW: 3 kHz / 3 kHz

Center: 887.0 MHz  
Span: 5 MHz  
RBW/VBW: 10 kHz / 3 kHz



**Occupied Bandwidth  
CDMA In  
Cellular 800 MHz  
B Band**



**Occupied Bandwidth  
CDMA Out  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 5 MHz  
RBW/VBW: 10 kHz / 3 kHz

**Conducted Emission Limits Test for ADC Inc.**  
**Digivance â Long Range Coverage Solution**  
**Model Numbers DGVL-112XXXSYS and DGVL-122XXXSYS**

The out of band emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 10<sup>th</sup> harmonic of the highest carrier frequency. Test signals used are FM, TDMA, GSM, and CDMA. The different signals were input one at a time to the EUT. In all cases, the out of band emissions were less than -13dBm from the equation  
$$(19\text{dBm} - [43 + 10\log(0.08\text{W})])$$

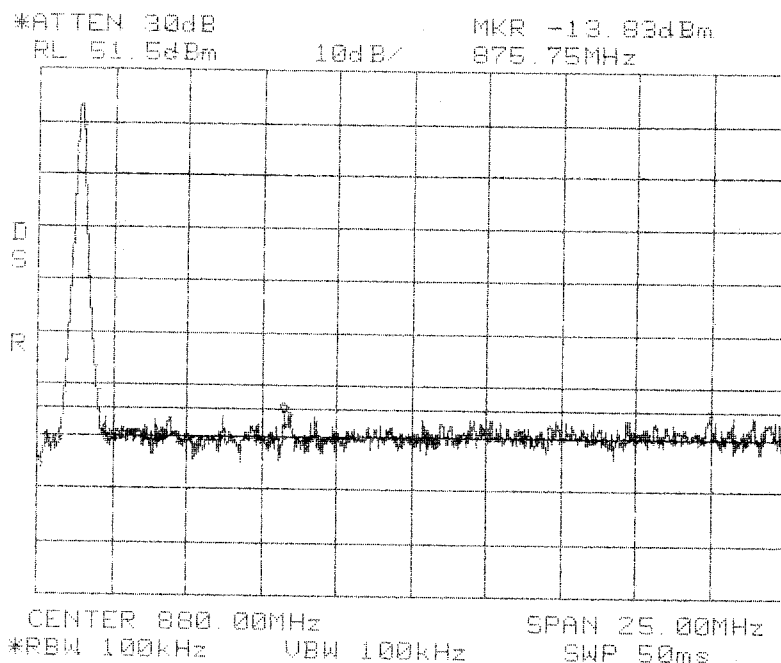
Band edge compliance is also demonstrated using each modulation signal at the upper and lower limits of the band.

Results:

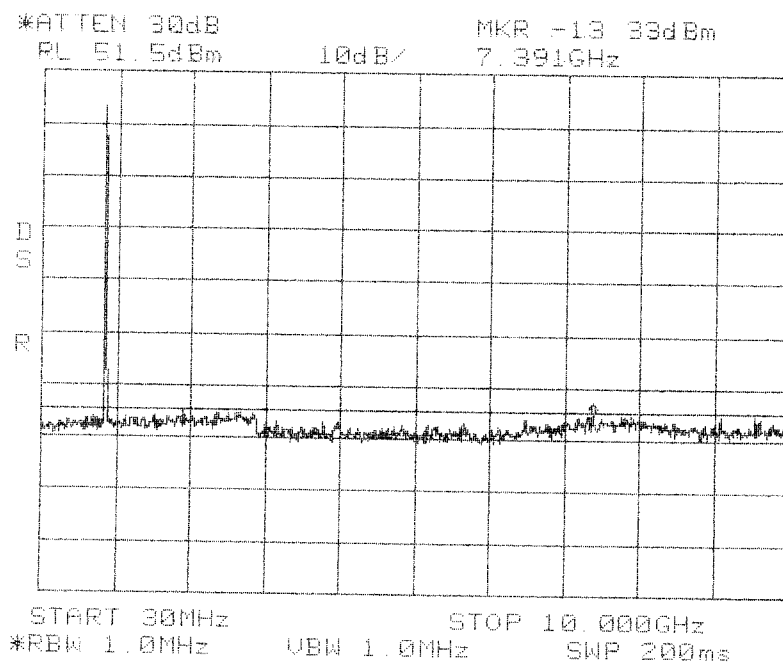
Pass (See plots)



Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



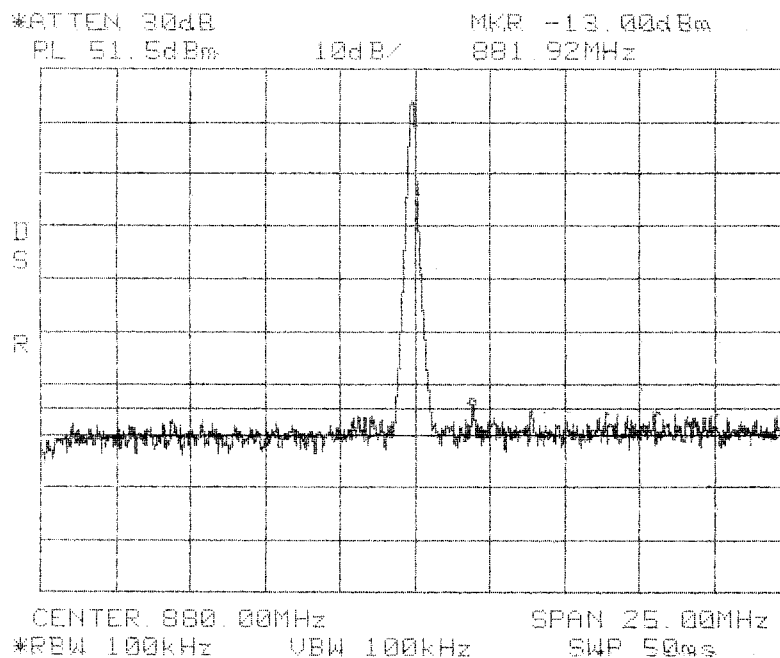
**Conducted Emissions**  
**Low**  
**Cellular 800 MHz**  
**A Band**



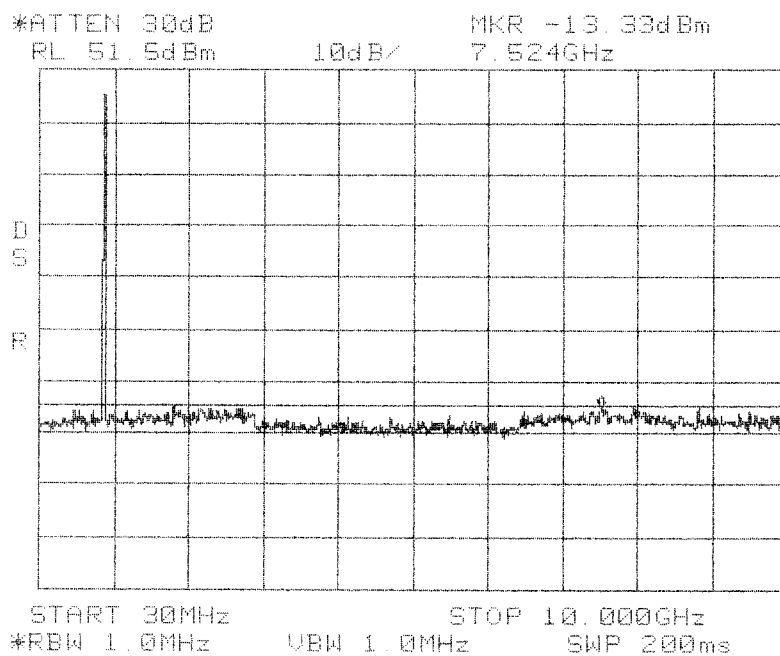
**Conducted Emissions**  
**Low**  
**Cellular 800 MHz**  
**A Band**

Span: 30 MHz to 10 GHz  
RBW/VBW: 1 MHz

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



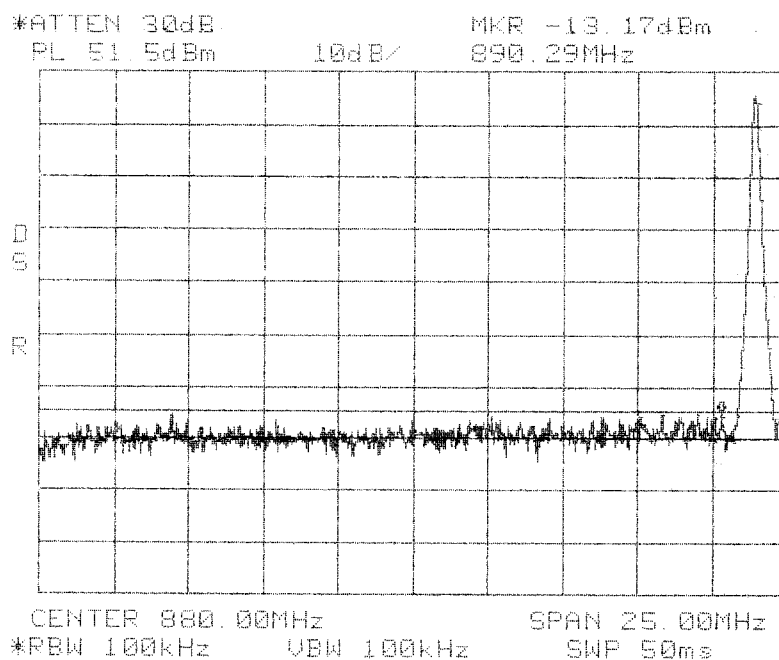
**Conducted Emissions**  
**Mid**  
**Cellular 800 MHz**  
**A Band**



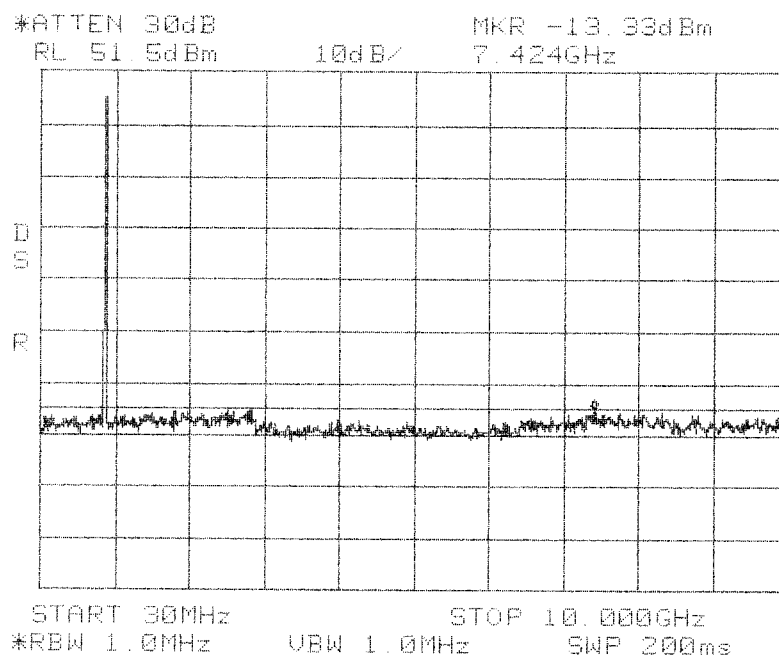
**Conducted Emissions**  
**Mid**  
**Cellular 800 MHz**  
**A Band**

Span: 30 MHz to 10 GHz  
RBW/VBW: 1 MHz

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



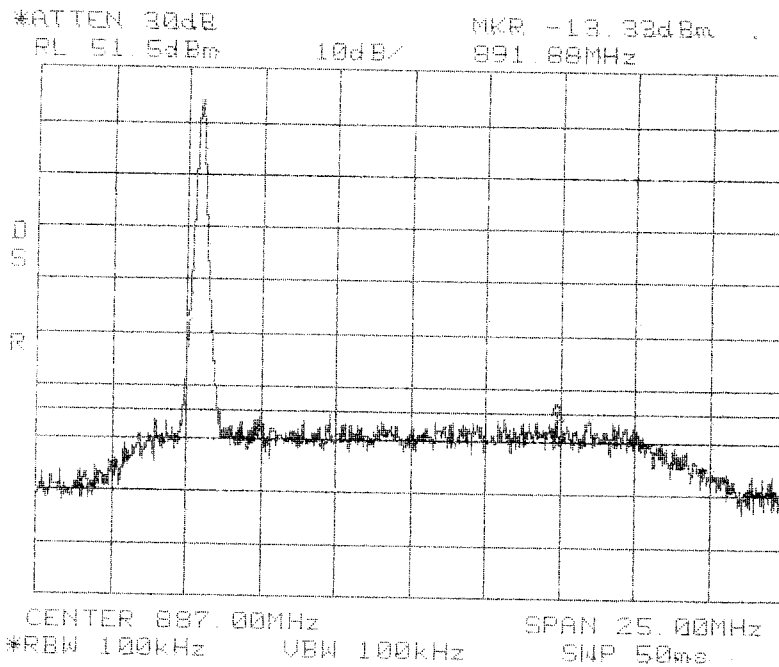
**Conducted Emissions  
High  
Cellular 800 MHz  
A Band**



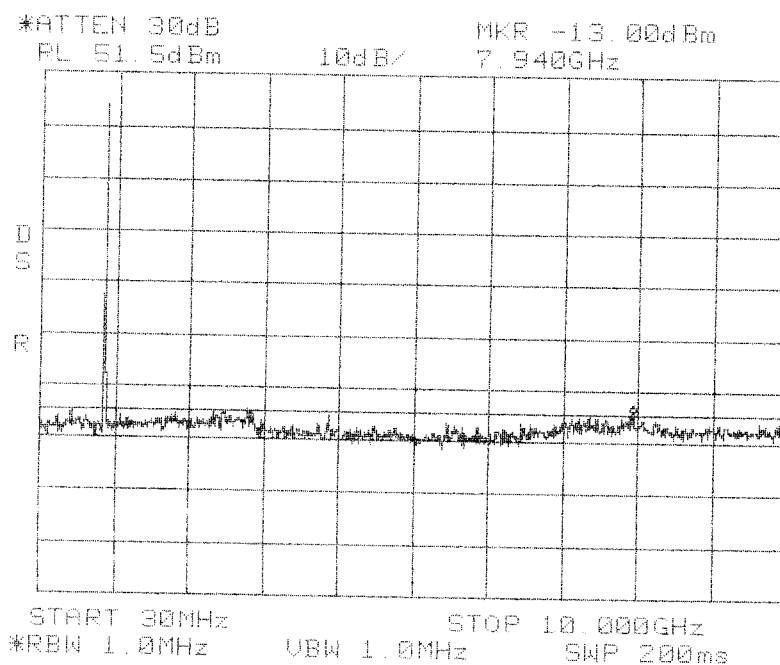
**Conducted Emissions  
High  
Cellular 800 MHz  
A Band**

Span: 30 MHz to 10 GHz  
RBW/VBW: 1 MHz

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



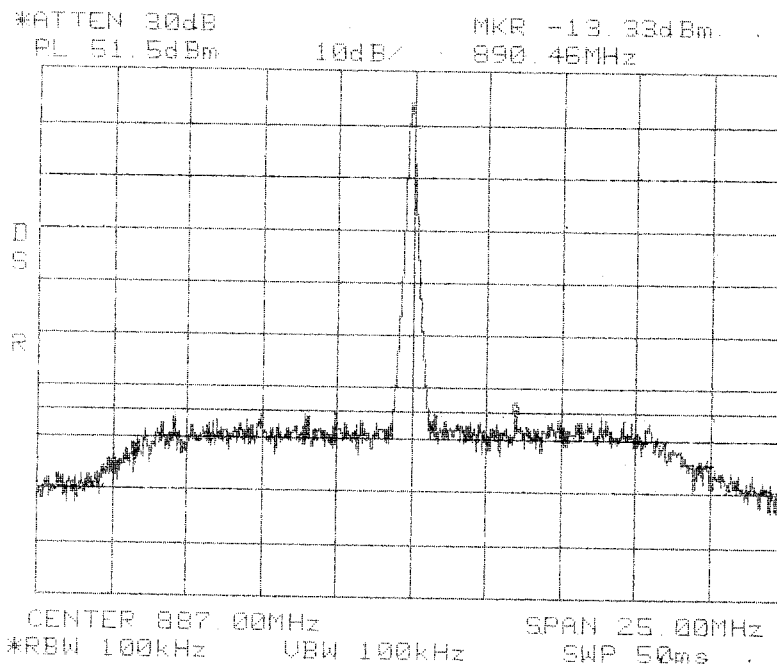
**Conducted Emissions**  
**Low**  
**Cellular 800 MHz**  
**B Band**



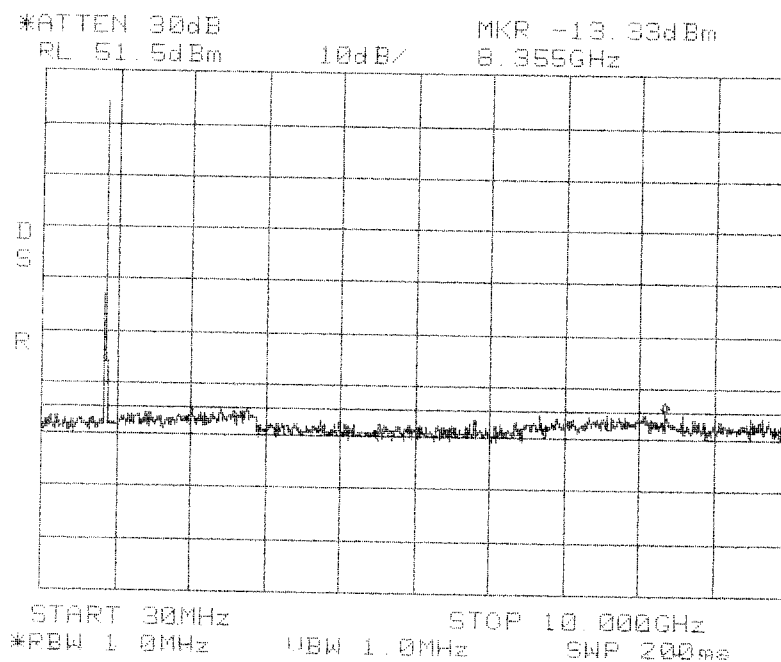
**Conducted Emissions**  
**Low**  
**Cellular 800 MHz**  
**B Band**

Span: 30 MHz to 10 GHz  
RBW/VBW: 1 MHz

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



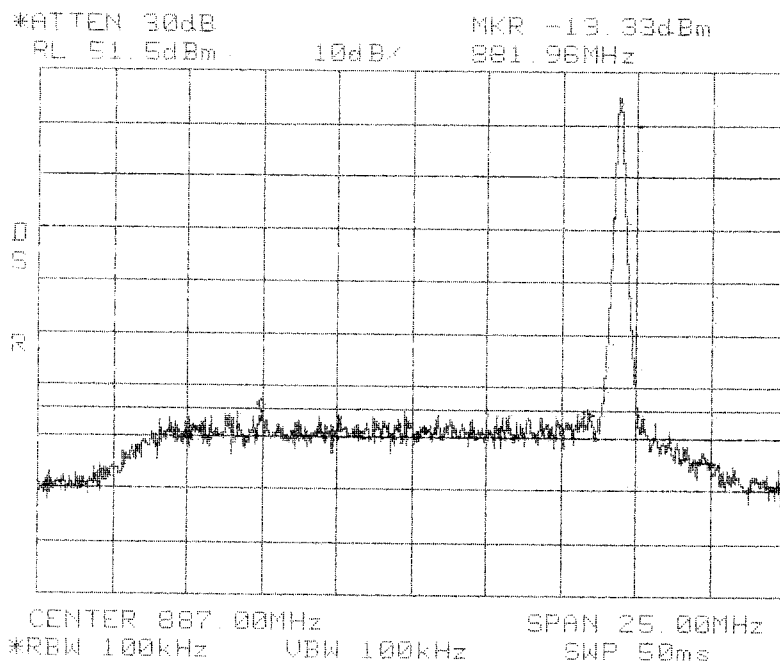
**Conducted Emissions  
Mid  
Cellular 800 MHz  
B Band**



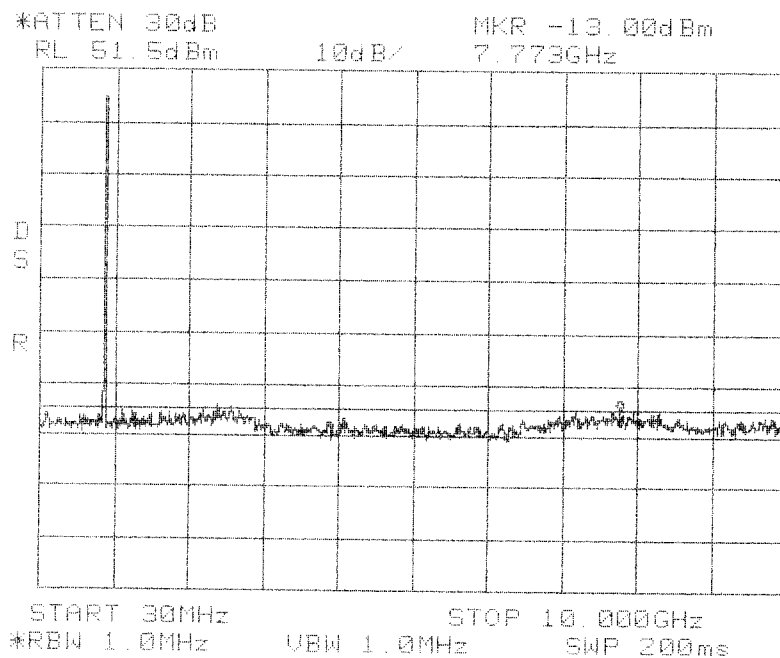
**Conducted Emissions  
Mid  
Cellular 800 MHz  
B Band**

Span: 30 MHz to 10 GHz  
RBW/VBW: 1 MHz

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



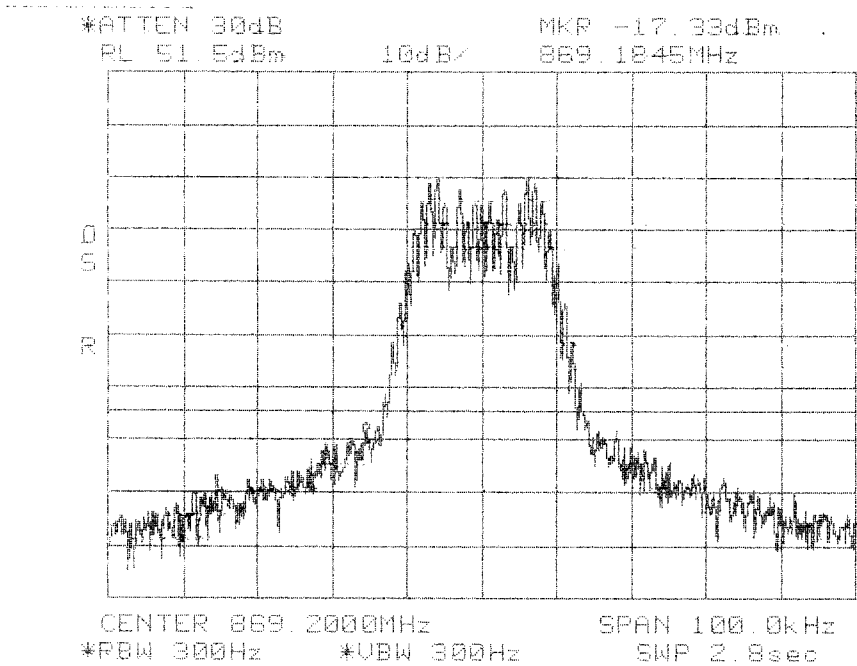
**Conducted Emissions  
High  
Cellular 800 MHz  
B Band**



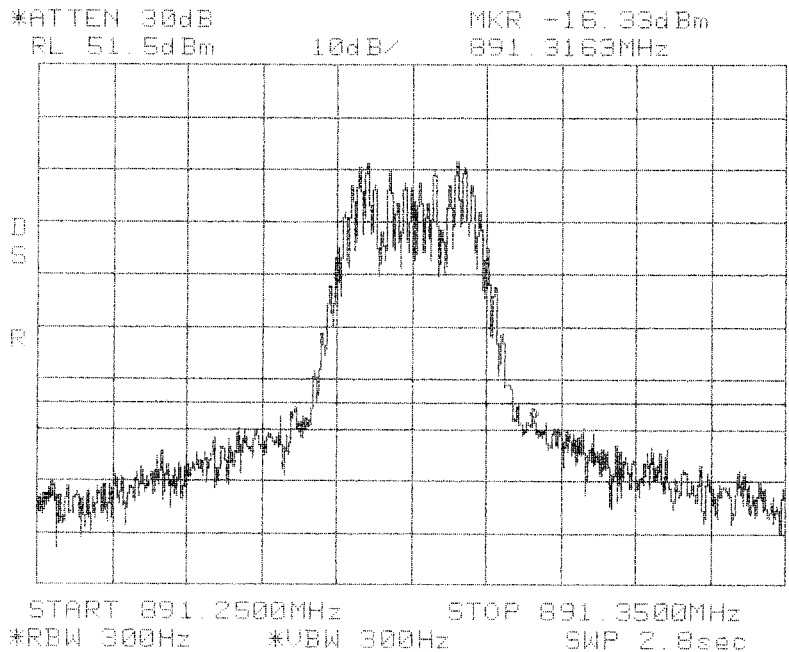
**Conducted Emissions  
High  
Cellular 800 MHz  
B Band**

Span: 30 MHz to 10 GHz  
RBW/VBW: 1 MHz

Center: 869.2 MHz  
Span: 100 kHz  
RBW/VBW: 300 Hz / 300 Hz



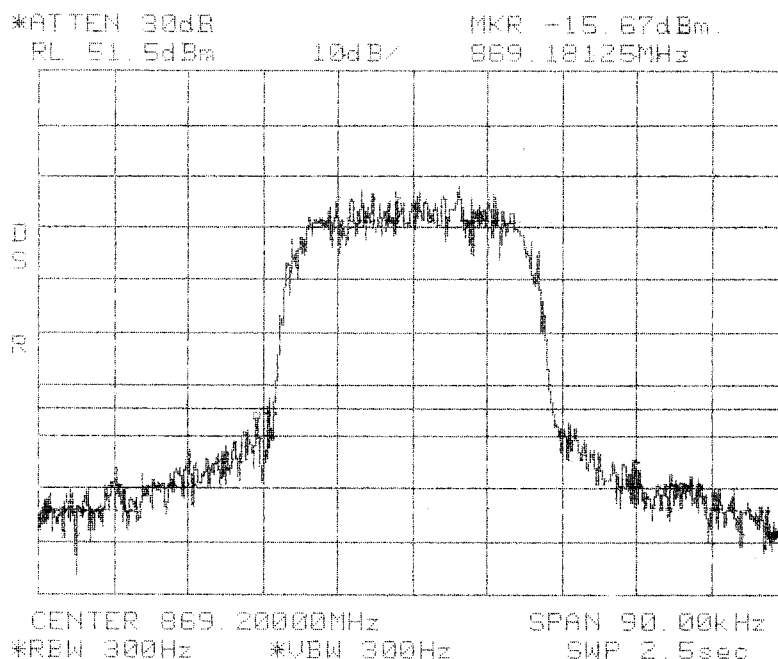
**Conducted Emissions  
Band Edge  
FM  
Cellular 800 MHz  
A Band**



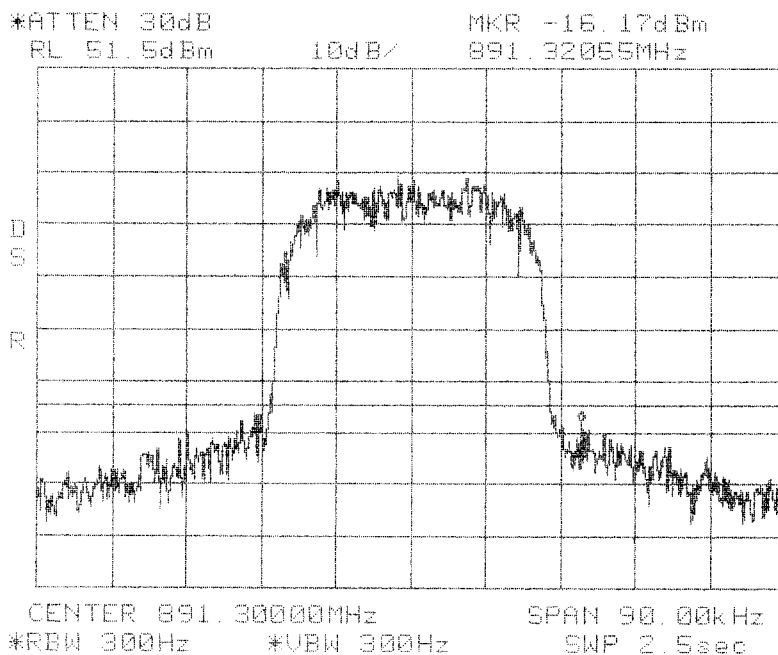
**Conducted Emissions  
Band Edge  
FM  
Cellular 800 MHz  
A Band**

Center: 891.3 MHz  
Span: 100 kHz  
RBW/VBW: 300 Hz / 300 Hz

Center: 869.2 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 300 Hz



**Conducted Emissions  
Band Edge  
TDMA  
Cellular 800 MHz  
A Band**

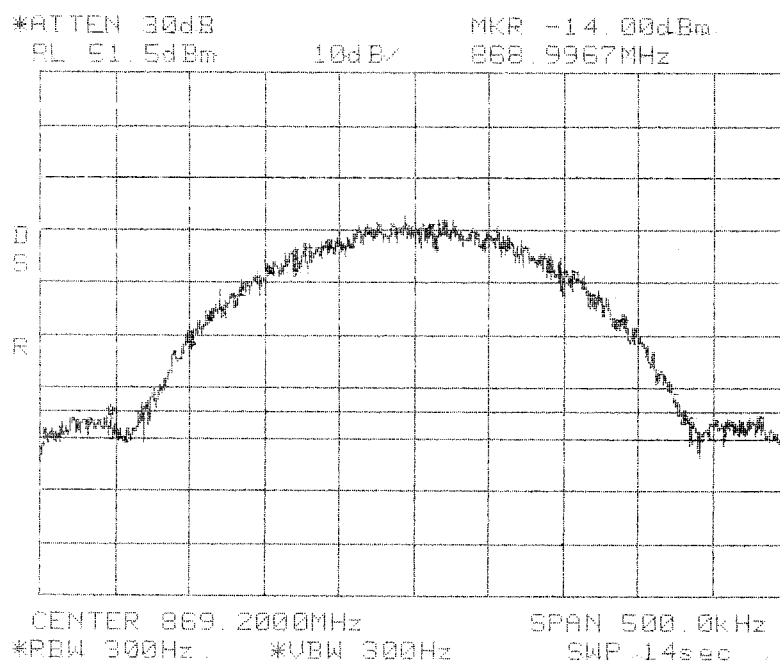


**Conducted Emissions  
Band Edge  
TDMA  
Cellular 800 MHz  
A Band**

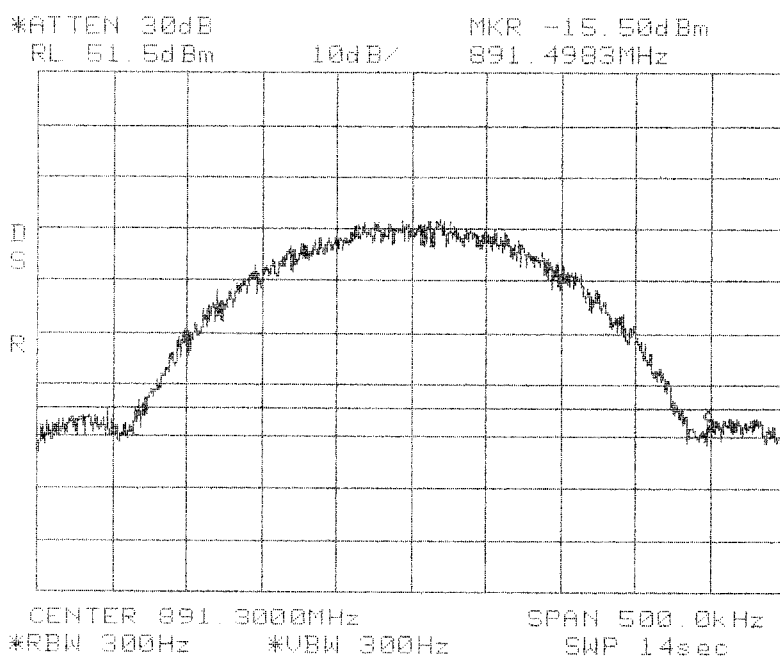
Center: 891.3 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 300 Hz



Center: 869.2 MHz  
Span: 500 kHz  
RBW/VBW: 1 kHz / 300 Hz



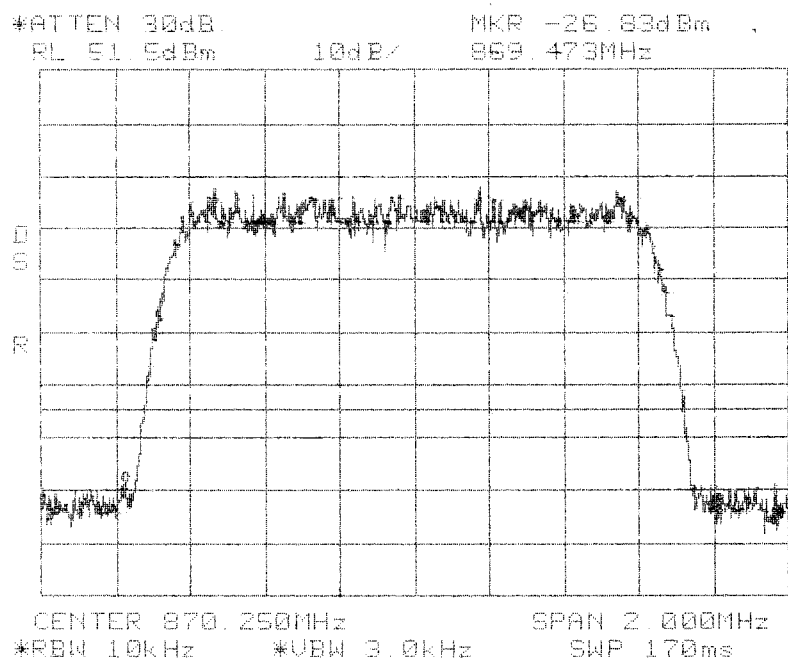
**Conducted Emissions  
Band Edge  
GSM  
Cellular 800 MHz  
A Band**



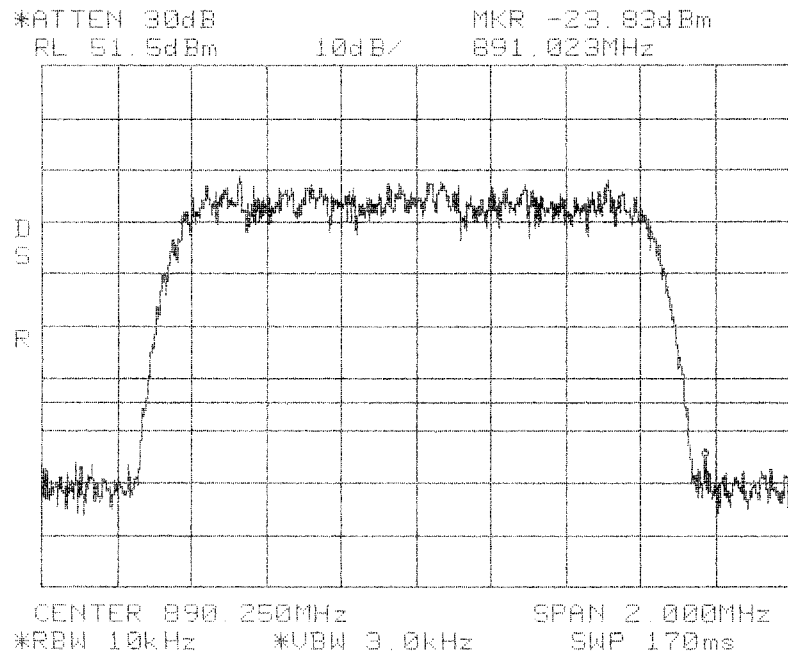
**Conducted Emissions  
Band Edge  
GSM  
Cellular 800 MHz  
A Band**

Center: 891.3 MHz  
Span: 500 kHz  
RBW/VBW: 1 kHz / 300 Hz

Center: 870.25 MHz  
Span: 2 MHz  
RBW/VBW: 10 kHz / 3 kHz



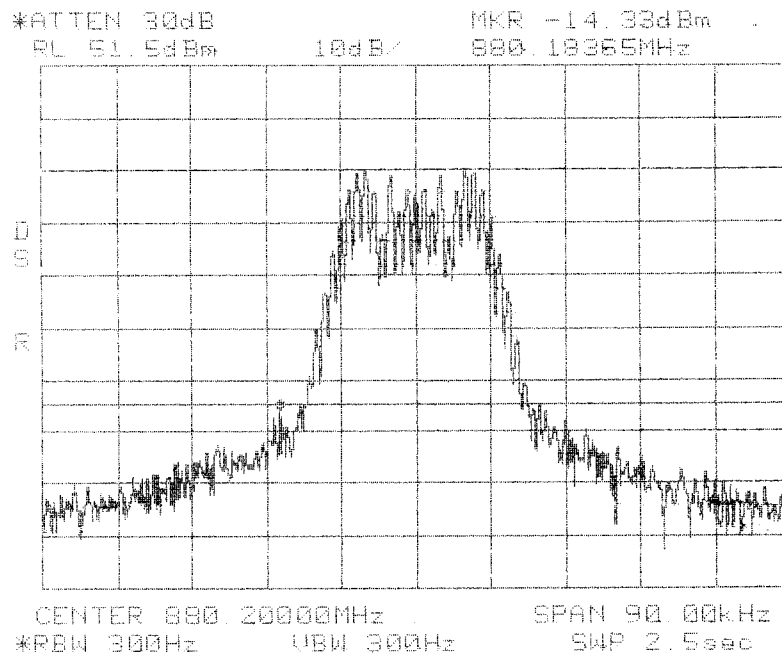
**Conducted Emissions  
Band Edge  
CDMA  
Cellular 800 MHz  
A Band**



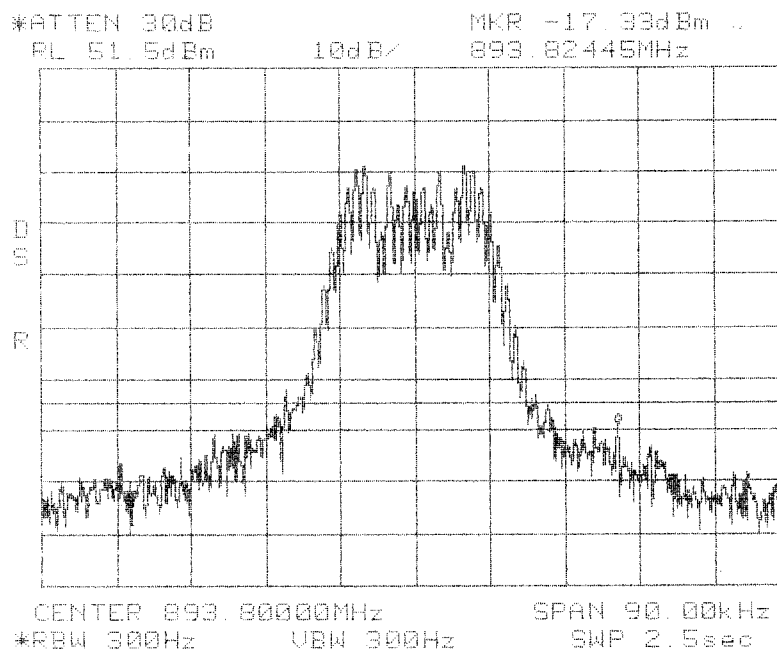
**Conducted Emissions  
Band Edge  
CDMA  
Cellular 800 MHz  
A Band**

Center: 890.25 MHz  
Span: 2 MHz  
RBW/VBW: 10 kHz / 3 kHz

Center: 880.2 MHz  
Span: 100 kHz  
RBW/VBW: 300 Hz / 300 Hz



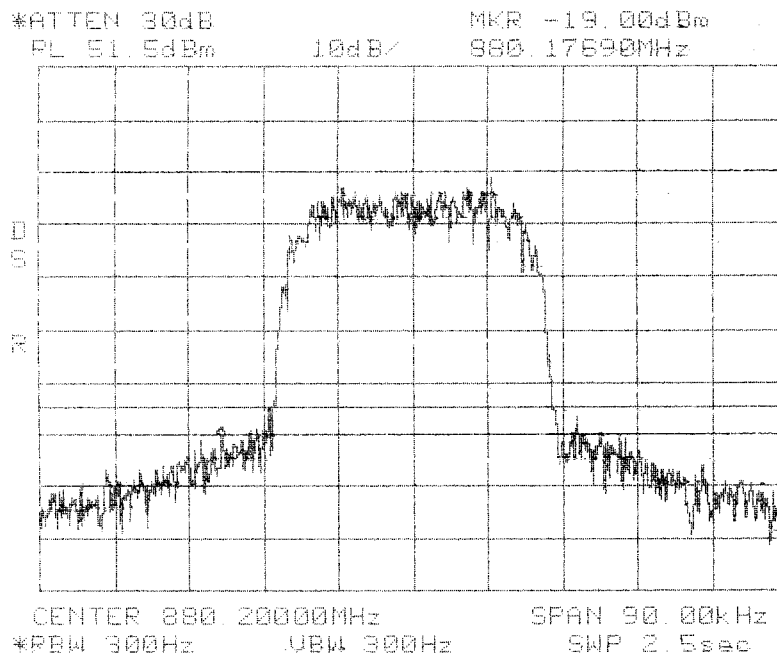
**Conducted Emissions  
Band Edge  
FM  
Cellular 800 MHz  
B Band**



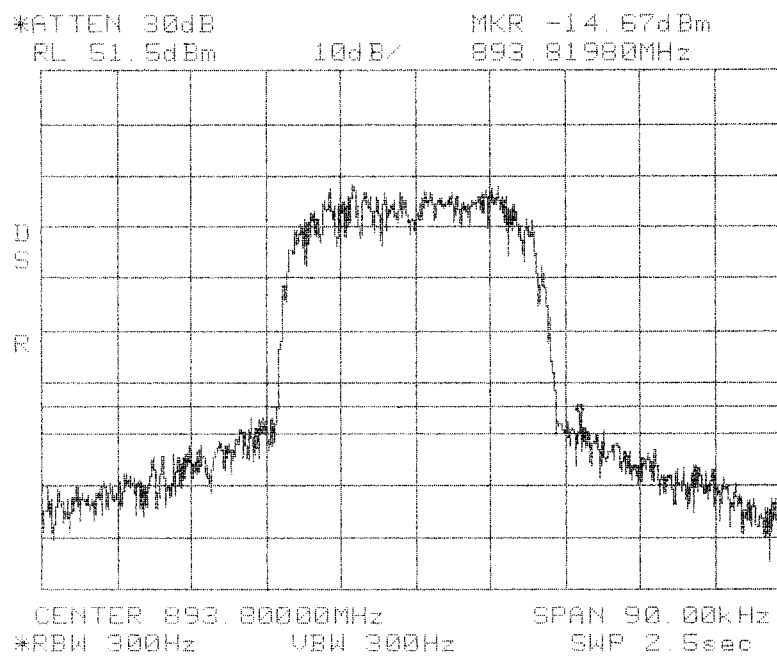
**Conducted Emissions  
Band Edge  
FM  
Cellular 800 MHz  
B Band**

Center: 893.8 MHz  
Span: 100 kHz  
RBW/VBW: 300 Hz / 300 Hz

Center: 880.2 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 300 Hz



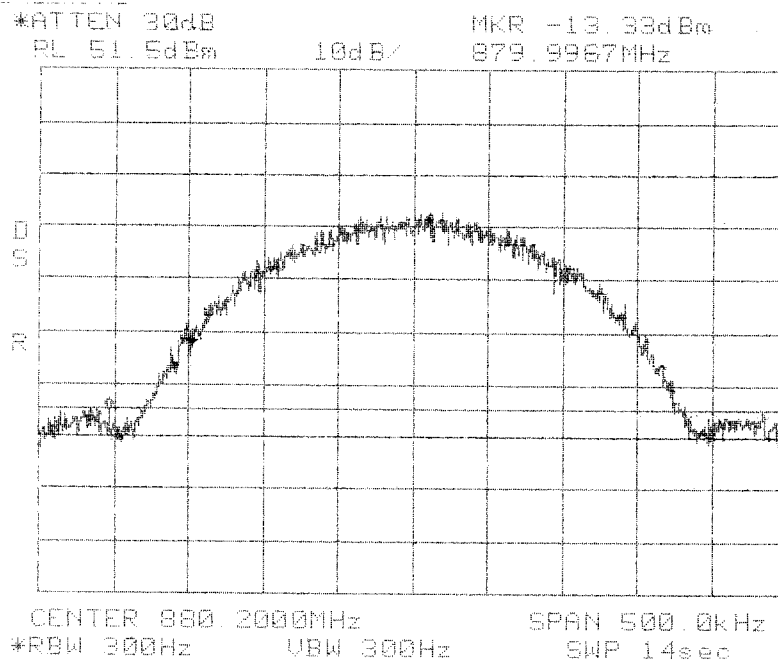
**Conducted Emissions  
Band Edge  
TDMA  
Cellular 800 MHz  
B Band**



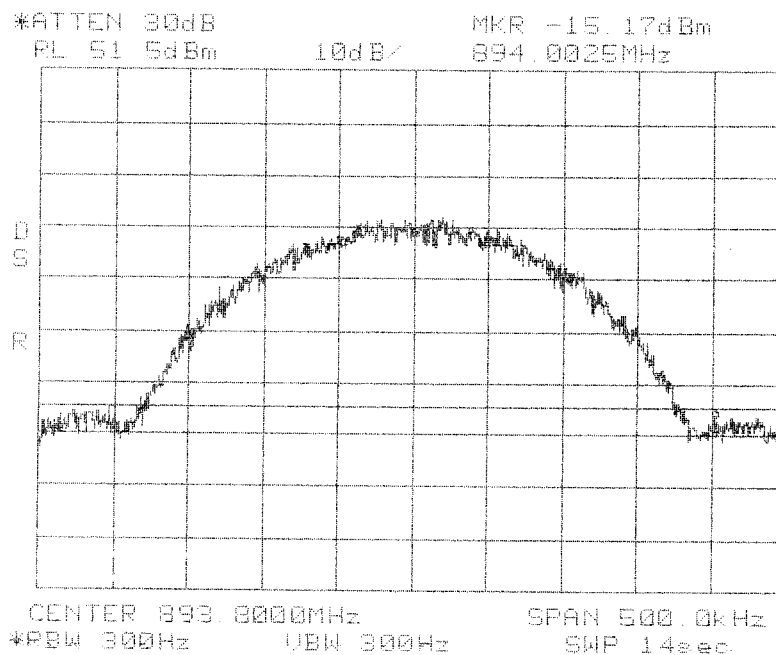
**Conducted Emissions  
Band Edge  
TDMA  
Cellular 800 MHz  
B Band**

Center: 893.8 MHz  
Span: 90 kHz  
RBW/VBW: 300 Hz / 300 Hz

Center: 880.2 MHz  
Span: 500 kHz  
RBW/VBW: 1 kHz / 300 Hz



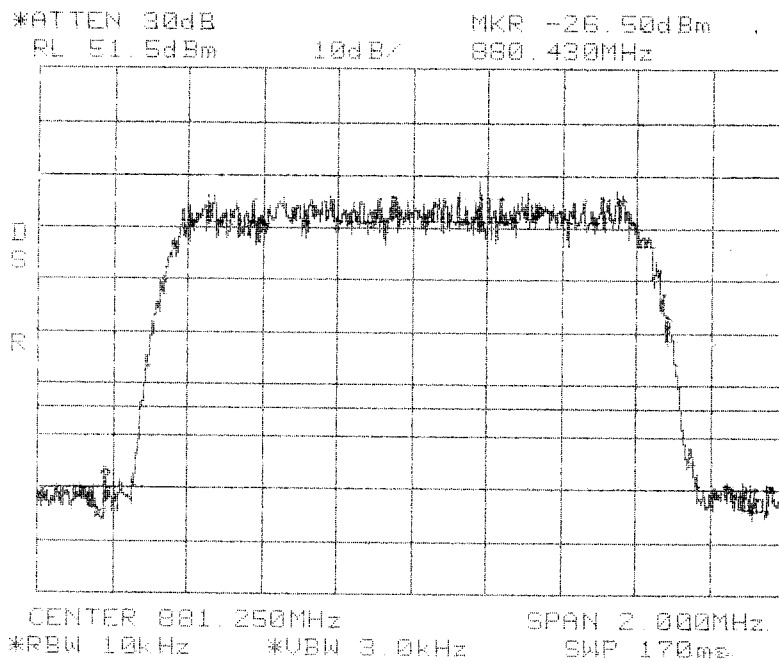
**Conducted Emissions  
Band Edge  
GSM  
Cellular 800 MHz  
B Band**



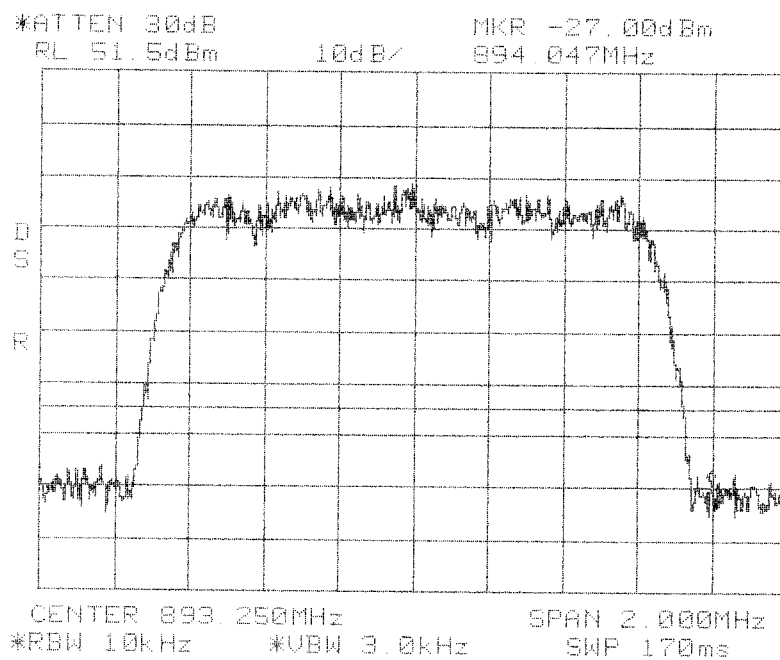
**Conducted Emissions  
Band Edge  
GSM  
Cellular 800 MHz  
B Band**

Center: 893.8 MHz  
Span: 500 kHz  
RBW/VBW: 1 kHz / 300 Hz

Center: 881.25 MHz  
Span: 2 MHz  
RBW/VBW: 10 kHz / 3 kHz



**Conducted Emissions  
Band Edge  
CDMA  
Cellular 800 MHz  
B Band**



**Conducted Emissions  
Band Edge  
CDMA  
Cellular 800 MHz  
B Band**

Center: 893.25 MHz  
Span: 2 MHz  
RBW/VBW: 10 kHz / 3 kHz

### Equivalent Isotropically Radiated Power (EIRP) Substitution

Company: ADC Inc.  
EUT: DGVK461110SYS  
Date: 11/10/05  
Tested By: Joe Sausen

### SUBSTITUTION PERFORMED

Plug in freq, final dBuV/m, Matching Sig gen level, and cable loss

(if using antenna other than dipole also enter ant. Gain) - final matching dBm will automatically be calculated in column F. (Final dBm = Sig gen level (dBm) - Cable loss + Ant. Gain)

Schwarzbeck dipole antenna gain : 2.15dBi -10dB + 1.64dB = -6.21

2.15dBi theoretical gain of a dipole, 10dB internal attenuator, 1.64dB correction for 73 / 50 ohm balun

|             |                   | Matches                |                    | Dipole            | Matches        |
|-------------|-------------------|------------------------|--------------------|-------------------|----------------|
| Freq. (MHz) | Final<br>(dBuV/m) | Sig Gen Level<br>(dBm) | Cable Loss<br>(dB) | Ant. Gain<br>(dB) | Final<br>(dBm) |
| 426         | 68.8              | -31.3                  | 1.6                | -6.21             | -39.11         |

### SUBSTITUTION EXTRAPOLATED TO OTHER SPURIOUS EMISSIONS

Enter any more spurious frequencies and final dBuV/m. Corresponding final power levels will automatically be calculated.

| Freq. MHz | Final<br>dBuV/m | Correction<br>Factor | Final<br>dBm | Final<br>uW |
|-----------|-----------------|----------------------|--------------|-------------|
| 426       | 68.8            | 107.91               | -39.11       | 0.122744    |
| 868.97    | 83.27           | 107.91               | -24.64       | 3.435579    |
| 891.468   | 76.44           | 107.91               | -31.47       | 0.712853    |
| 880.005   | 73.83           | 107.91               | -34.08       | 0.390841    |
| 910.671   | 69.38           | 107.91               | -38.53       | 0.140281    |

# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 1 of 11

## List of measurements for run #: 1

| FREQ                   | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| Note! 869 MHz setting: |                 |                                         |                     |                            |                |                          |
| 44.866 MHz             | 44.45 Qp        | 0.6 / 15.68 / 27.06 / 0.0               | 33.67               | H / 1.00 / 0               | -74.24         | -61.24                   |
| 57.616 MHz             | 39.3 Qp         | 0.6 / 12.17 / 27.0 / 0.0                | 25.07               | H / 1.00 / 0               | -82.84         | -69.84                   |
| 64.516 MHz             | 49.05 Qp        | 0.69 / 10.44 / 27.0 / 0.0               | 33.18               | H / 1.00 / 0               | -74.73         | -61.73                   |
| 68.176 MHz             | 50.3 Qp         | 0.7 / 9.63 / 27.0 / 0.0                 | 33.63               | H / 1.00 / 0               | -74.28         | -61.28                   |
| 77.674 MHz             | 47.3 Qp         | 0.76 / 7.86 / 26.94 / 0.0               | 28.97               | H / 1.00 / 0               | -78.94         | -65.94                   |
| 99.754 MHz             | 44.85 Qp        | 0.88 / 8.93 / 27.0 / 0.0                | 27.66               | H / 1.00 / 0               | -80.25         | -67.25                   |
| 106.108 MHz            | 43.3 Qp         | 0.81 / 9.23 / 27.01 / 0.0               | 26.33               | H / 1.00 / 0               | -81.58         | -68.58                   |
| 121.408 MHz            | 47.1 Qp         | 0.9 / 8.95 / 27.1 / 0.0                 | 29.85               | H / 1.00 / 0               | -78.06         | -65.06                   |
| 135.208 MHz            | 49.75 Qp        | 1.0 / 8.3 / 27.0 / 0.0                  | 32.05               | H / 1.00 / 0               | -75.86         | -62.86                   |
| 142.0 MHz              | 54.0 Qp         | 1.0 / 9.43 / 26.97 / 0.0                | 37.46               | H / 1.00 / 0               | -70.45         | -57.45                   |
| 184.841 MHz            | 44.1 Qp         | 1.11 / 9.84 / 27.1 / 0.0                | 27.95               | H / 1.00 / 0               | -79.96         | -66.96                   |
| 197.327 MHz            | 46.75 Qp        | 1.2 / 10.82 / 27.1 / 0.0                | 31.67               | H / 1.00 / 0               | -76.24         | -63.24                   |
| 212.987 MHz            | 58.25 Qp        | 1.21 / 10.62 / 27.11 / 0.0              | 42.97               | H / 1.00 / 0               | -64.94         | -51.94                   |
| 225.467 MHz            | 44.6 Qp         | 1.29 / 10.89 / 27.19 / 0.0              | 29.59               | H / 1.00 / 0               | -78.32         | -65.32                   |
| 283.98 MHz             | 45.95 Qp        | 1.5 / 12.51 / 27.43 / 0.0               | 32.54               | H / 1.00 / 0               | -75.37         | -62.37                   |
| 337.08 MHz             | 36.2 Qp         | 1.57 / 14.24 / 27.57 / 0.0              | 24.44               | H / 1.00 / 0               | -83.47         | -70.47                   |
| 354.978 MHz            | 52.4 Qp         | 1.6 / 14.8 / 27.6 / 0.0                 | 41.2                | H / 1.00 / 0               | -66.71         | -53.71                   |
| 426.001 MHz            | 52.75 Qp        | 1.71 / 16.37 / 27.9 / 0.0               | 42.94               | H / 1.00 / 0               | -64.97         | -51.97                   |
| 497.0 MHz              | 42.8 Qp         | 1.9 / 17.29 / 27.93 / 0.0               | 34.05               | H / 1.00 / 0               | -73.86         | -60.86                   |
| 567.993 MHz            | 49.4 Qp         | 2.03 / 18.32 / 28.1 / 0.0               | 41.65               | H / 1.00 / 0               | -66.26         | -53.26                   |
| 710.003 MHz            | 50.35 Qp        | 2.3 / 20.52 / 27.95 / 0.0               | 45.22               | H / 1.00 / 0               | -62.69         | -49.69                   |
| 780.978 MHz            | 44.45 Qp        | 2.39 / 21.44 / 27.83 / 0.0              | 40.45               | H / 1.00 / 0               | -67.46         | -54.46                   |
| 827.323 MHz            | 37.3 Qp         | 2.47 / 21.58 / 27.8 / 0.0               | 33.55               | H / 1.00 / 0               | -74.36         | -61.36                   |
| 851.983 MHz            | 41.0 Qp         | 2.51 / 21.93 / 27.78 / 0.0              | 37.66               | H / 1.00 / 0               | -70.25         | -57.25                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 2 of 11

## List of measurements for run #: 1

| FREQ                               | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 860.437 MHz                        | 36.7 Qp         | 2.53 / 22.01 / 27.75 / 0.0              | 33.49               | H / 1.00 / 0               | -74.42         | -61.42                   |
| 910.651 MHz                        | 58.75 Qp        | 2.61 / 22.42 / 27.6 / 0.0               | 56.18               | H / 1.00 / 0               | -51.73         | -38.73                   |
| 922.988 MHz                        | 42.7 Qp         | 2.63 / 22.7 / 27.6 / 0.0                | 40.43               | H / 1.00 / 0               | -67.48         | -54.48                   |
| 993.986 MHz                        | 43.45 Qp        | 2.73 / 23.22 / 27.57 / 0.0              | 41.84               | H / 1.00 / 0               | -66.07         | -53.07                   |
| Fundamental Frequency measurement. |                 |                                         |                     |                            |                |                          |
| 868.97 MHz                         | 86.35 Qp        | 2.54 / 22.1 / 27.72 / 0.0               | 83.27               | H / 1.00 / 0               | -24.64         | -11.64                   |
| 868.97 MHz                         | 86.45 Pk        | 2.54 / 22.1 / 27.72 / 0.0               | 83.37               | H / 1.00 / 0               | -24.54         | -11.54                   |
| 910 MHz maxed:                     |                 |                                         |                     |                            |                |                          |
| 910.651 MHz                        | 70.4 Qp         | 2.61 / 22.42 / 27.6 / 0.0               | 67.83               | H / 1.20 / 129             | -40.08         | -27.08                   |
| 910.671 MHz                        | 71.95 Qp        | 2.61 / 22.42 / 27.6 / 0.0               | 69.38               | H / 1.20 / 129             | -38.53         | -25.53                   |
| 57.616 MHz                         | 46.85 Qp        | 0.6 / 12.17 / 27.0 / 0.0                | 32.62               | H / 1.20 / 129             | -75.29         | -62.29                   |
| 68.176 MHz                         | 52.6 Qp         | 0.7 / 9.63 / 27.0 / 0.0                 | 35.93               | H / 1.20 / 129             | -71.98         | -58.98                   |
| 77.674 MHz                         | 52.25 Qp        | 0.76 / 7.86 / 26.94 / 0.0               | 33.92               | H / 1.20 / 129             | -73.99         | -60.99                   |
| 106.108 MHz                        | 47.1 Qp         | 0.81 / 9.23 / 27.01 / 0.0               | 30.13               | H / 1.20 / 129             | -77.78         | -64.78                   |
| 121.408 MHz                        | 51.1 Qp         | 0.9 / 8.95 / 27.1 / 0.0                 | 33.85               | H / 1.20 / 129             | -74.06         | -61.06                   |
| 142.0 MHz                          | 61.65 Qp        | 1.0 / 9.43 / 26.97 / 0.0                | 45.11               | H / 1.20 / 129             | -62.8          | -49.8                    |
| 184.841 MHz                        | 48.9 Qp         | 1.11 / 9.84 / 27.1 / 0.0                | 32.75               | H / 1.20 / 129             | -75.16         | -62.16                   |
| 197.327 MHz                        | 47.8 Qp         | 1.2 / 10.82 / 27.1 / 0.0                | 32.72               | H / 1.20 / 129             | -75.19         | -62.19                   |
| 212.987 MHz                        | 53.25 Qp        | 1.21 / 10.62 / 27.11 / 0.0              | 37.97               | H / 1.20 / 129             | -69.94         | -56.94                   |
| 283.98 MHz                         | 61.15 Qp        | 1.5 / 12.51 / 27.43 / 0.0               | 47.74               | H / 1.20 / 129             | -60.17         | -47.17                   |
| 354.978 MHz                        | 56.35 Qp        | 1.6 / 14.8 / 27.6 / 0.0                 | 45.15               | H / 1.20 / 129             | -62.76         | -49.76                   |
| 426.001 MHz                        | 53.05 Qp        | 1.71 / 16.37 / 27.9 / 0.0               | 43.24               | H / 1.20 / 129             | -64.67         | -51.67                   |
| 567.993 MHz                        | 55.3 Qp         | 2.03 / 18.32 / 28.1 / 0.0               | 47.55               | H / 1.20 / 129             | -60.36         | -47.36                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 3 of 11

## List of measurements for run #: 1

| FREQ           | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|----------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 710.003 MHz    | 58.35 Qp        | 2.3 / 20.52 / 27.95 / 0.0               | 53.22               | H / 1.20 / 129             | -54.69         | -41.69                   |
| 780.978 MHz    | 49.65 Qp        | 2.39 / 21.44 / 27.83 / 0.0              | 45.65               | H / 1.20 / 129             | -62.26         | -49.26                   |
| 827.275 MHz    | 40.65 Qp        | 2.47 / 21.58 / 27.8 / 0.0               | 36.9                | H / 1.20 / 129             | -71.01         | -58.01                   |
| 860.437 MHz    | 45.95 Qp        | 2.53 / 22.01 / 27.75 / 0.0              | 42.74               | H / 1.20 / 129             | -65.17         | -52.17                   |
| 922.988 MHz    | 49.0 Qp         | 2.63 / 22.7 / 27.6 / 0.0                | 46.73               | H / 1.20 / 129             | -61.18         | -48.18                   |
| 993.986 MHz    | 46.7 Qp         | 2.73 / 23.22 / 27.57 / 0.0              | 45.09               | H / 1.20 / 129             | -62.82         | -49.82                   |
| 710 MHz maxed: |                 |                                         |                     |                            |                |                          |
| 709.963 MHz    | 60.65 Qp        | 2.3 / 20.52 / 27.95 / 0.0               | 55.52               | H / 1.17 / 117             | -52.39         | -39.39                   |
| 68.176 MHz     | 55.65 Qp        | 0.7 / 9.63 / 27.0 / 0.0                 | 38.98               | H / 1.17 / 117             | -68.93         | -55.93                   |
| 142.0 MHz      | 64.85 Qp        | 1.0 / 9.43 / 26.97 / 0.0                | 48.31               | H / 1.17 / 117             | -59.6          | -46.6                    |
| 184.841 MHz    | 49.1 Qp         | 1.11 / 9.84 / 27.1 / 0.0                | 32.95               | H / 1.17 / 117             | -74.96         | -61.96                   |
| 780.978 MHz    | 50.9 Qp         | 2.39 / 21.44 / 27.83 / 0.0              | 46.9                | H / 1.17 / 117             | -61.01         | -48.01                   |
| 142 MHz maxed: |                 |                                         |                     |                            |                |                          |
| 141.97 MHz     | 72.25 Qp        | 1.0 / 9.42 / 26.97 / 0.0                | 55.7                | H / 2.23 / 100             | -52.21         | -39.21                   |
| 77.674 MHz     | 55.9 Qp         | 0.76 / 7.86 / 26.94 / 0.0               | 37.57               | H / 2.23 / 100             | -70.34         | -57.34                   |
| 121.408 MHz    | 54.3 Qp         | 0.9 / 8.95 / 27.1 / 0.0                 | 37.05               | H / 2.23 / 100             | -70.86         | -57.86                   |
| 425.971 MHz    | 61.0 Qp         | 1.71 / 16.37 / 27.9 / 0.0               | 51.18               | H / 2.23 / 100             | -56.73         | -43.73                   |
| 860.437 MHz    | 48.05 Qp        | 2.53 / 22.01 / 27.75 / 0.0              | 44.84               | H / 2.23 / 100             | -63.07         | -50.07                   |
| 993.976 MHz    | 48.4 Qp         | 2.73 / 23.22 / 27.57 / 0.0              | 46.79               | H / 2.23 / 100             | -61.12         | -48.12                   |
| 425 MHz maxed: |                 |                                         |                     |                            |                |                          |
| 425.971 MHz    | 60.45 Qp        | 1.71 / 16.37 / 27.9 / 0.0               | 50.63               | H / 2.38 / 100             | -57.28         | -44.28                   |
| 851.983 MHz    | 43.0 Qp         | 2.51 / 21.93 / 27.78 / 0.0              | 39.66               | H / 2.38 / 100             | -68.25         | -55.25                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 4 of 11

## List of measurements for run #: 1

| FREQ           | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|----------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 38.248 MHz     | 56.2 Qp         | 0.49 / 17.5 / 27.17 / 0.0               | 47.02               | V / 1.00 / 0               | -60.89         | -47.89                   |
| 44.866 MHz     | 59.4 Qp         | 0.6 / 15.68 / 27.06 / 0.0               | 48.62               | V / 1.00 / 0               | -59.29         | -46.29                   |
| 57.616 MHz     | 56.05 Qp        | 0.6 / 12.17 / 27.0 / 0.0                | 41.82               | V / 1.00 / 0               | -66.09         | -53.09                   |
| 64.516 MHz     | 51.2 Qp         | 0.69 / 10.44 / 27.0 / 0.0               | 35.33               | V / 1.00 / 0               | -72.58         | -59.58                   |
| 68.176 MHz     | 57.3 Qp         | 0.7 / 9.63 / 27.0 / 0.0                 | 40.63               | V / 1.00 / 0               | -67.28         | -54.28                   |
| 77.674 MHz     | 59.9 Qp         | 0.76 / 7.86 / 26.94 / 0.0               | 41.57               | V / 1.00 / 0               | -66.34         | -53.34                   |
| 99.754 MHz     | 54.45 Qp        | 0.88 / 8.93 / 27.0 / 0.0                | 37.26               | V / 1.00 / 0               | -70.65         | -57.65                   |
| 106.108 MHz    | 48.3 Qp         | 0.81 / 9.23 / 27.01 / 0.0               | 31.33               | V / 1.00 / 0               | -76.58         | -63.58                   |
| 121.408 MHz    | 57.2 Qp         | 0.9 / 8.95 / 27.1 / 0.0                 | 39.95               | V / 1.00 / 0               | -67.96         | -54.96                   |
| 135.208 MHz    | 54.25 Qp        | 1.0 / 8.3 / 27.0 / 0.0                  | 36.55               | V / 1.00 / 0               | -71.36         | -58.36                   |
| 197.327 MHz    | 50.9 Qp         | 1.2 / 10.82 / 27.1 / 0.0                | 35.82               | V / 1.00 / 0               | -72.09         | -59.09                   |
| 212.987 MHz    | 58.9 Qp         | 1.21 / 10.62 / 27.11 / 0.0              | 43.62               | V / 1.00 / 0               | -64.29         | -51.29                   |
| 497.0 MHz      | 46.9 Qp         | 1.9 / 17.29 / 27.93 / 0.0               | 38.15               | V / 1.00 / 0               | -69.76         | -56.76                   |
| 910 MHz maxed: |                 |                                         |                     |                            |                |                          |
| 910.683 MHz    | 68.0 Qp         | 2.61 / 22.42 / 27.6 / 0.0               | 65.43               | V / 1.93 / 176             | -42.48         | -29.48                   |
| 425.971 MHz    | 62.55 Qp        | 1.71 / 16.37 / 27.9 / 0.0               | 52.73               | V / 1.93 / 176             | -55.18         | -42.18                   |
| 425 MHz maxed: |                 |                                         |                     |                            |                |                          |
| 425.971 MHz    | 62.6 Qp         | 1.71 / 16.37 / 27.9 / 0.0               | 52.78               | V / 2.02 / 165             | -55.13         | -42.13                   |
| 142 MHz maxed: |                 |                                         |                     |                            |                |                          |
| 141.97 MHz     | 73.5 Qp         | 1.0 / 9.42 / 26.97 / 0.0                | 56.95               | V / 1.02 / 151             | -50.96         | -37.96                   |
| 496.97 MHz     | 49.7 Qp         | 1.9 / 16.95 / 27.93 / 0.0               | 40.61               | V / 1.02 / 151             | -67.3          | -54.3                    |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 5 of 11

## List of measurements for run #: 1

| FREQ      | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-----------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 1.065 GHz | 46.95 Pk        | 2.83 / 25.59 / 27.53 / 0.0              | 47.84               | H / 1.00 / 151             | -60.07         | -47.07                   |
| 1.065 GHz | 45.62 Av        | 2.83 / 25.59 / 27.53 / 0.0              | 46.51               | H / 1.00 / 151             | -61.4          | -48.4                    |
| 1.136 GHz | 47.0 Pk         | 2.93 / 25.51 / 27.57 / 0.0              | 47.86               | H / 1.00 / 151             | -60.05         | -47.05                   |
| 1.136 GHz | 44.98 Av        | 2.93 / 25.51 / 27.57 / 0.0              | 45.84               | H / 1.00 / 151             | -62.07         | -49.07                   |
| 1.207 GHz | 44.2 Pk         | 3.01 / 25.43 / 27.5 / 0.0               | 45.14               | H / 1.00 / 151             | -62.77         | -49.77                   |
| 1.278 GHz | 40.15 Pk        | 3.1 / 25.35 / 27.5 / 0.0                | 41.1                | H / 1.00 / 151             | -66.81         | -53.81                   |
| 1.278 GHz | 62.5 Pk         | 3.1 / 25.35 / 49.25 / 0.0               | 41.69               | H / 1.00 / 151             | -66.22         | -53.22                   |
| 1.349 GHz | 64.15 Pk        | 3.18 / 25.27 / 49.37 / 0.0              | 43.22               | H / 1.00 / 151             | -64.69         | -51.69                   |
| 1.42 GHz  | 67.65 Pk        | 3.3 / 25.19 / 49.65 / 0.0               | 46.48               | H / 1.00 / 151             | -61.43         | -48.43                   |
| 1.491 GHz | 61.95 Pk        | 3.42 / 25.11 / 49.8 / 0.0               | 40.68               | H / 1.00 / 151             | -67.23         | -54.23                   |
| 1.562 GHz | 60.25 Pk        | 3.49 / 25.49 / 49.62 / 0.0              | 39.61               | H / 1.00 / 151             | -68.3          | -55.3                    |
| 1.633 GHz | 57.05 Pk        | 3.55 / 25.93 / 49.58 / 0.0              | 36.95               | H / 1.00 / 151             | -70.96         | -57.96                   |
| 1.704 GHz | 67.9 Pk         | 3.62 / 26.38 / 49.76 / 0.0              | 48.14               | H / 1.00 / 151             | -59.77         | -46.77                   |
| 1.775 GHz | 60.3 Pk         | 3.74 / 26.83 / 49.67 / 0.0              | 41.2                | H / 1.00 / 151             | -66.71         | -53.71                   |
| 1.846 GHz | 54.9 Pk         | 3.83 / 27.27 / 49.79 / 0.0              | 36.21               | H / 1.00 / 151             | -71.7          | -58.7                    |
| 1.917 GHz | 53.2 Pk         | 3.88 / 27.72 / 49.91 / 0.0              | 34.89               | H / 1.00 / 151             | -73.02         | -60.02                   |
| 1.988 GHz | 56.4 Pk         | 3.9 / 28.17 / 49.65 / 0.0               | 38.81               | H / 1.00 / 151             | -69.1          | -56.1                    |
| 2.13 GHz  | 55.7 Pk         | 3.97 / 28.34 / 49.41 / 0.0              | 38.61               | H / 1.00 / 151             | -69.3          | -56.3                    |
| 2.201 GHz | 50.2 Pk         | 4.06 / 28.4 / 49.42 / 0.0               | 33.25               | H / 1.00 / 151             | -74.66         | -61.66                   |
| 2.414 GHz | 54.75 Pk        | 4.31 / 28.57 / 49.36 / 0.0              | 38.27               | H / 1.00 / 151             | -69.64         | -56.64                   |
| 2.556 GHz | 52.1 Pk         | 4.4 / 28.8 / 48.79 / 0.0                | 36.51               | H / 1.00 / 151             | -71.4          | -58.4                    |
| 2.84 GHz  | 59.15 Pk        | 4.6 / 29.62 / 48.37 / 0.0               | 45.0                | H / 1.00 / 151             | -62.91         | -49.91                   |
| 2.911 GHz | 49.4 Pk         | 4.67 / 29.82 / 48.48 / 0.0              | 35.42               | H / 1.00 / 151             | -72.49         | -59.49                   |
| 3.124 GHz | 52.8 Pk         | 4.87 / 30.35 / 47.17 / 0.0              | 40.86               | H / 1.00 / 151             | -67.05         | -54.05                   |

Tested by: J. C. Sausen

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Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 6 of 11

## List of measurements for run #: 1

| FREQ           | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|----------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 3.266 GHz      | 44.35 Pk        | 5.0 / 30.67 / 47.55 / 0.0               | 32.47               | H / 1.00 / 151             | -75.44         | -62.44                   |
| 4.544 GHz      | 44.85 Pk        | 6.15 / 32.39 / 45.32 / 0.0              | 38.07               | H / 1.00 / 151             | -69.84         | -56.84                   |
| 5.254 GHz      | 42.1 Pk         | 6.65 / 33.75 / 44.74 / 0.0              | 37.75               | H / 1.00 / 151             | -70.16         | -57.16                   |
| 7.2 GHz        | 51.3 Pk         | 8.1 / 35.86 / 45.78 / 0.0               | 49.48               | H / 1.00 / 151             | -58.43         | -45.43                   |
| 6.986 GHz      | 49.75 Pk        | 8.1 / 35.34 / 45.74 / 0.0               | 47.45               | H / 1.00 / 151             | -60.46         | -47.46                   |
| 5.988 GHz      | 46.05 Pk        | 7.09 / 34.35 / 45.66 / 0.0              | 41.83               | H / 1.00 / 151             | -66.08         | -53.08                   |
| 5.214 GHz      | 45.7 Pk         | 6.63 / 33.69 / 44.66 / 0.0              | 41.36               | H / 1.00 / 151             | -66.55         | -53.55                   |
| 4.387 GHz      | 48.3 Pk         | 6.1 / 32.33 / 45.84 / 0.0               | 40.89               | H / 1.00 / 151             | -67.02         | -54.02                   |
| 4.345 GHz      | 56.7 Pk         | 6.1 / 32.34 / 45.87 / 0.0               | 49.27               | H / 1.00 / 151             | -58.64         | -45.64                   |
| 4.32 GHz       | 47.7 Pk         | 6.1 / 32.35 / 45.89 / 0.0               | 40.27               | H / 1.00 / 151             | -67.64         | -54.64                   |
| 3.476 GHz      | 53.85 Pk        | 5.26 / 31.14 / 47.32 / 0.0              | 42.93               | H / 1.00 / 151             | -64.98         | -51.98                   |
| 3.195 GHz      | 50.75 Pk        | 4.94 / 30.51 / 47.65 / 0.0              | 38.55               | H / 1.00 / 151             | -69.36         | -56.36                   |
| 3.124 GHz      | 53.05 Pk        | 4.87 / 30.35 / 47.17 / 0.0              | 41.11               | H / 1.00 / 151             | -66.8          | -53.8                    |
| 2.982 GHz      | 50.25 Pk        | 4.74 / 30.03 / 48.19 / 0.0              | 36.82               | H / 1.00 / 151             | -71.09         | -58.09                   |
| 7.2 GHz maxed: |                 |                                         |                     |                            |                |                          |
| 7.2 GHz        | 51.4 Pk         | 8.1 / 35.86 / 45.78 / 0.0               | 49.58               | H / 1.10 / 124             | -58.33         | -45.33                   |
| 5.988 GHz      | 50.1 Pk         | 7.09 / 34.35 / 45.66 / 0.0              | 45.88               | H / 1.10 / 124             | -62.03         | -49.03                   |
| 2.414 GHz      | 56.35 Pk        | 4.31 / 28.57 / 49.36 / 0.0              | 39.87               | H / 1.10 / 124             | -68.04         | -55.04                   |
| 1.917 GHz      | 57.6 Pk         | 3.88 / 27.72 / 49.91 / 0.0              | 39.29               | H / 1.10 / 124             | -68.62         | -55.62                   |
| 1.846 GHz      | 61.3 Pk         | 3.83 / 27.27 / 49.79 / 0.0              | 42.61               | H / 1.10 / 124             | -65.3          | -52.3                    |
| 1.633 GHz      | 66.6 Pk         | 3.55 / 25.93 / 49.58 / 0.0              | 46.5                | H / 1.10 / 124             | -61.41         | -48.41                   |
| 1.491 GHz      | 72.15 Pk        | 3.42 / 25.11 / 49.8 / 0.0               | 50.88               | H / 1.10 / 124             | -57.03         | -44.03                   |
| 1.278 GHz      | 66.35 Pk        | 3.1 / 25.35 / 49.25 / 0.0               | 45.54               | H / 1.10 / 124             | -62.37         | -49.37                   |
| 1.207 GHz      | 69.05 Pk        | 3.01 / 25.43 / 49.62 / 0.0              | 47.87               | H / 1.10 / 124             | -60.04         | -47.04                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 7 of 11

## List of measurements for run #: 1

| FREQ              | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 1.065 GHz         | 69.7 Pk         | 2.83 / 25.59 / 49.22 / 0.0              | 48.9                | H / 1.10 / 124             | -59.01         | -46.01                   |
| 1.49 GHz maxed:   |                 |                                         |                     |                            |                |                          |
| 1.491 GHz         | 73.1 Pk         | 3.42 / 25.11 / 49.8 / 0.0               | 51.83               | H / 1.15 / 111             | -56.08         | -43.08                   |
| 1.491 GHz         | 72.53 Av        | 3.42 / 25.11 / 49.8 / 0.0               | 51.26               | H / 1.15 / 111             | -56.65         | -43.65                   |
| 1.065 GHz         | 70.3 Pk         | 2.83 / 25.59 / 49.22 / 0.0              | 49.5                | H / 1.15 / 111             | -58.41         | -45.41                   |
| 1.065 GHz         | 69.88 Av        | 2.83 / 25.59 / 49.22 / 0.0              | 49.08               | H / 1.15 / 111             | -58.83         | -45.83                   |
| 1.207 GHz         | 62.05 Pk        | 3.01 / 25.43 / 49.62 / 0.0              | 40.87               | H / 1.15 / 111             | -67.04         | -54.04                   |
| 1.278 GHz         | 70.05 Pk        | 3.1 / 25.35 / 49.25 / 0.0               | 49.24               | H / 1.15 / 111             | -58.67         | -45.67                   |
| 4.34 GHz maxed:   |                 |                                         |                     |                            |                |                          |
| 4.345 GHz         | 57.5 Pk         | 6.1 / 32.34 / 45.87 / 0.0               | 50.07               | H / 1.27 / 54              | -57.84         | -44.84                   |
| 4.345 GHz         | 55.37 Av        | 6.1 / 32.34 / 45.87 / 0.0               | 47.94               | H / 1.27 / 54              | -59.97         | -46.97                   |
| 3.476 GHz         | 58.5 Pk         | 5.26 / 31.14 / 47.32 / 0.0              | 47.58               | H / 1.27 / 54              | -60.33         | -47.33                   |
| 1.136 GHz         | 59.35 Pk        | 2.93 / 25.51 / 49.55 / 0.0              | 38.23               | V / 1.27 / 54              | -69.68         | -56.68                   |
| 4.34 GHz maxed:   |                 |                                         |                     |                            |                |                          |
| 4.345 GHz         | 67.65 Pk        | 6.1 / 32.34 / 45.87 / 0.0               | 60.22               | V / 1.45 / 28              | -47.69         | -34.69                   |
| 4.345 GHz         | 66.56 Av        | 6.1 / 32.34 / 45.87 / 0.0               | 59.13               | V / 1.45 / 28              | -48.78         | -35.78                   |
| 4.387 GHz         | 57.5 Pk         | 6.1 / 32.33 / 45.84 / 0.0               | 50.09               | V / 1.45 / 28              | -57.82         | -44.82                   |
| 3.266 GHz         | 49.9 Pk         | 5.0 / 30.67 / 47.55 / 0.0               | 38.02               | V / 1.45 / 28              | -69.89         | -56.89                   |
| 1.349 GHz         | 66.05 Pk        | 3.18 / 25.27 / 49.37 / 0.0              | 45.12               | V / 1.45 / 28              | -62.79         | -49.79                   |
| 1.136 GHz         | 62.0 Pk         | 2.93 / 25.51 / 49.55 / 0.0              | 40.88               | V / 1.45 / 28              | -67.03         | -54.03                   |
| 1.4999 GHz maxed: |                 |                                         |                     |                            |                |                          |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 8 of 11

## List of measurements for run #: 1

| FREQ                                                                 | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|----------------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 1.491 GHz                                                            | 69.8 Pk         | 3.42 / 25.11 / 49.8 / 0.0               | 48.53               | V / 1.95 / 145             | -59.38         | -46.38                   |
| No further significant EUT emissions up to 10 GHz, vert and hor ant. |                 |                                         |                     |                            |                |                          |
| NOTE! 880 MHz Tx frequency:                                          |                 |                                         |                     |                            |                |                          |
| 1.136 GHz                                                            | 64.85 Pk        | 2.93 / 25.51 / 49.55 / 0.0              | 43.73               | H / 1.95 / 145             | -64.18         | -51.18                   |
| 3.52 GHz                                                             | 50.15 Pk        | 5.33 / 31.24 / 47.26 / 0.0              | 39.47               | H / 1.95 / 145             | -68.44         | -55.44                   |
| 1.76 GHz                                                             | 70.1 Pk         | 3.72 / 26.73 / 49.69 / 0.0              | 50.86               | H / 1.95 / 145             | -57.05         | -44.05                   |
| 2.64 GHz                                                             | 55.2 Pk         | 4.44 / 29.04 / 48.44 / 0.0              | 40.24               | H / 1.95 / 145             | -67.67         | -54.67                   |
| 2.698 GHz                                                            | 52.05 Pk        | 4.48 / 29.21 / 48.26 / 0.0              | 37.48               | H / 1.95 / 145             | -70.43         | -57.43                   |
| 4.4 GHz                                                              | 58.5 Pk         | 6.1 / 32.33 / 45.83 / 0.0               | 51.1                | H / 1.95 / 145             | -56.81         | -43.81                   |
| 4.431 GHz                                                            | 49.4 Pk         | 6.1 / 32.32 / 45.73 / 0.0               | 42.09               | H / 1.95 / 145             | -65.82         | -52.82                   |
| 5.28 GHz                                                             | 47.05 Pk        | 6.67 / 33.78 / 44.8 / 0.0               | 42.7                | H / 1.95 / 145             | -65.21         | -52.21                   |
| 1.759 GHz maxed:                                                     |                 |                                         |                     |                            |                |                          |
| 1.76 GHz                                                             | 75.75 Pk        | 3.72 / 26.73 / 49.69 / 0.0              | 56.51               | H / 1.95 / 310             | -51.4          | -38.4                    |
| 2.13 GHz                                                             | 59.35 Pk        | 3.97 / 28.34 / 49.41 / 0.0              | 42.26               | H / 1.95 / 310             | -65.65         | -52.65                   |
| 1.759 GHz maxed:                                                     |                 |                                         |                     |                            |                |                          |
| 1.76 GHz                                                             | 79.85 Pk        | 3.72 / 26.73 / 49.69 / 0.0              | 60.61               | V / 1.20 / 168             | -47.3          | -34.3                    |
| 1.278 GHz                                                            | 71.9 Pk         | 3.1 / 25.35 / 49.25 / 0.0               | 51.09               | V / 1.20 / 186             | -56.82         | -43.82                   |
| 1.917 GHz                                                            | 60.55 Pk        | 3.88 / 27.72 / 49.91 / 0.0              | 42.24               | V / 1.20 / 186             | -65.67         | -52.67                   |
| 2.64 GHz                                                             | 64.2 Pk         | 4.44 / 29.04 / 48.44 / 0.0              | 49.24               | V / 1.20 / 186             | -58.67         | -45.67                   |
| 4.4 GHz                                                              | 62.8 Pk         | 6.1 / 32.33 / 45.83 / 0.0               | 55.4                | V / 1.20 / 186             | -52.51         | -39.51                   |
| 4.431 GHz                                                            | 52.55 Pk        | 6.1 / 32.32 / 45.73 / 0.0               | 45.24               | V / 1.20 / 186             | -62.67         | -49.67                   |
| NOTE! 891.5 MHz Tx frequency:                                        |                 |                                         |                     |                            |                |                          |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 9 of 11

## List of measurements for run #: 1

| FREQ             | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 7.2 GHz          | 47.2 Pk         | 8.1 / 35.86 / 45.78 / 0.0               | 45.38               | V / 1.23 / 186             | -62.53         | -49.53                   |
| 4.99 GHz         | 46.3 Pk         | 6.49 / 33.37 / 44.66 / 0.0              | 41.5                | V / 1.23 / 186             | -66.41         | -53.41                   |
| 4.477 GHz        | 46.3 Pk         | 6.11 / 32.3 / 45.58 / 0.0               | 39.14               | V / 1.23 / 186             | -68.77         | -55.77                   |
| 4.457 GHz        | 61.15 Pk        | 6.1 / 32.31 / 45.64 / 0.0               | 53.92               | V / 1.23 / 186             | -53.99         | -40.99                   |
| 4.438 GHz        | 47.4 Pk         | 6.1 / 32.31 / 45.7 / 0.0                | 40.11               | V / 1.23 / 186             | -67.8          | -54.8                    |
| 3.692 GHz        | 46.15 Pk        | 5.56 / 31.67 / 46.95 / 0.0              | 36.42               | V / 1.23 / 186             | -71.49         | -58.49                   |
| 3.566 GHz        | 49.3 Pk         | 5.41 / 31.36 / 47.12 / 0.0              | 38.95               | V / 1.23 / 186             | -68.96         | -55.96                   |
| 3.55 GHz         | 48.5 Pk         | 5.38 / 31.31 / 47.17 / 0.0              | 38.03               | V / 1.23 / 186             | -69.88         | -56.88                   |
| 3.053 GHz        | 47.25 Pk        | 4.81 / 30.2 / 47.53 / 0.0               | 34.72               | V / 1.23 / 186             | -73.19         | -60.19                   |
| 2.769 GHz        | 49.1 Pk         | 4.53 / 29.41 / 48.26 / 0.0              | 34.77               | V / 1.23 / 186             | -73.14         | -60.14                   |
| 2.674 GHz        | 61.55 Pk        | 4.46 / 29.14 / 48.33 / 0.0              | 46.82               | V / 1.23 / 186             | -61.09         | -48.09                   |
| 2.272 GHz        | 52.0 Pk         | 4.15 / 28.46 / 49.07 / 0.0              | 35.54               | V / 1.23 / 186             | -72.37         | -59.37                   |
| 1.802 GHz        | 60.2 Pk         | 3.79 / 27.0 / 49.65 / 0.0               | 41.34               | V / 1.23 / 186             | -66.57         | -53.57                   |
| 1.783 GHz        | 68.35 Pk        | 3.76 / 26.88 / 49.66 / 0.0              | 49.32               | V / 1.23 / 186             | -58.59         | -45.59                   |
| 4.457 GHz maxed: |                 |                                         |                     |                            |                |                          |
| 4.457 GHz        | 64.3 Pk         | 6.1 / 32.31 / 45.64 / 0.0               | 57.07               | V / 1.55 / 21              | -50.84         | -37.84                   |
| 3.692 GHz        | 50.05 Pk        | 5.56 / 31.67 / 46.95 / 0.0              | 40.32               | V / 1.55 / 21              | -67.59         | -54.59                   |
| 4.477 GHz        | 53.05 Pk        | 6.11 / 32.3 / 45.58 / 0.0               | 45.89               | V / 1.55 / 21              | -62.02         | -49.02                   |
| 4.457 GHz maxed: |                 |                                         |                     |                            |                |                          |
| 4.457 GHz        | 61.45 Pk        | 6.1 / 32.31 / 45.64 / 0.0               | 54.22               | H / 2.00 / 24              | -53.69         | -40.69                   |
| 3.566 GHz        | 53.2 Pk         | 5.41 / 31.36 / 47.12 / 0.0              | 42.85               | H / 2.00 / 24              | -65.06         | -52.06                   |
| 1.135 GHz maxed: |                 |                                         |                     |                            |                |                          |
| 1.562 GHz        | 62.9 Pk         | 3.49 / 25.49 / 49.62 / 0.0              | 42.26               | H / 2.13 / 121             | -65.65         | -52.65                   |
| 1.136 GHz        | 67.4 Pk         | 2.93 / 25.51 / 49.55 / 0.0              | 46.28               | H / 2.13 / 121             | -61.63         | -48.63                   |

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Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

Page: 10 of 11

## List of measurements for run #: 1

| FREQ                      | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|---------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 993 MHz maxed:            |                 |                                         |                     |                            |                |                          |
| 993.976 MHz               | 52.45 Qp        | 2.73 / 22.02 / 27.57 / 0.0              | 49.64               | H / 1.43 / 118             | -58.27         | -45.27                   |
| Fundamental tx frequency: |                 |                                         |                     |                            |                |                          |
| 891.468 MHz               | 80.15 Pk        | 2.58 / 21.66 / 27.64 / 0.0              | 76.74               | H / 1.43 / 118             | -31.17         | -18.17                   |
| 891.468 MHz               | 79.85 Qp        | 2.58 / 21.66 / 27.64 / 0.0              | 76.44               | H / 1.43 / 118             | -31.47         | -18.47                   |
| 638.969 MHz               | 53.7 Qp         | 2.1 / 19.08 / 28.2 / 0.0                | 46.68               | H / 1.43 / 118             | -61.23         | -48.23                   |
| 187.54 MHz                | 52.4 Qp         | 1.13 / 9.6 / 27.1 / 0.0                 | 36.03               | H / 1.43 / 118             | -71.88         | -58.88                   |
| 83.295 MHz                | 70.7 Qp         | 0.8 / 6.83 / 26.9 / 0.0                 | 51.43               | H / 1.43 / 118             | -56.48         | -43.48                   |
| 69.219 MHz                | 60.6 Qp         | 0.7 / 8.48 / 27.0 / 0.0                 | 42.78               | H / 1.43 / 118             | -65.13         | -52.13                   |
| 354.978 MHz               | 58.2 Qp         | 1.6 / 14.6 / 27.6 / 0.0                 | 46.8                | V / 1.43 / 118             | -61.11         | -48.11                   |
| NOTE! 880 Tx frequency:   |                 |                                         |                     |                            |                |                          |
| 68.176 MHz                | 62.6 Qp         | 0.7 / 8.66 / 27.0 / 0.0                 | 44.96               | V / 1.43 / 118             | -62.95         | -49.95                   |
| 69.219 MHz                | 62.95 Qp        | 0.7 / 8.48 / 27.0 / 0.0                 | 45.13               | V / 1.43 / 118             | -62.78         | -49.78                   |
| 880.005 MHz               | 77.15 Pk        | 2.56 / 21.8 / 27.68 / 0.0               | 73.83               | V / 1.43 / 118             | -34.08         | -21.08                   |
| 880.005 MHz               | 77.15 Qp        | 2.56 / 21.8 / 27.68 / 0.0               | 73.83               | V / 1.43 / 118             | -34.08         | -21.08                   |
| 184.841 MHz               | 52.9 Qp         | 1.11 / 9.48 / 27.1 / 0.0                | 36.39               | H / 1.43 / 118             | -71.52         | -58.52                   |
| 425.9 MHz maxed:          |                 |                                         |                     |                            |                |                          |
| 425.971 MHz               | 64.53 Qp        | 1.71 / 16.56 / 27.9 / 0.0               | 54.9                | H / 1.00 / 65              | -53.01         | -40.01                   |
| 860.437 MHz               | 50.0 Qp         | 2.53 / 21.12 / 27.75 / 0.0              | 45.9                | H / 1.00 / 65              | -62.01         | -49.01                   |
| 910 MHz maxed:            |                 |                                         |                     |                            |                |                          |
| 910.723 MHz               | 71.0 Qp         | 2.61 / 21.11 / 27.6 / 0.0               | 67.12               | H / 1.11 / 246             | -40.79         | -27.79                   |
| 567.967 MHz               | 57.35 Qp        | 2.03 / 18.46 / 28.1 / 0.0               | 49.74               | H / 1.11 / 246             | -58.17         | -45.17                   |
| 212.968 MHz               | 61.3 Qp         | 1.21 / 10.16 / 27.11 / 0.0              | 45.56               | H / 1.11 / 246             | -62.35         | -49.35                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 1 Test Area: LTS

EUT Model #: DGVL-112110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "A" Band

Data File Name: 5744-1.dat

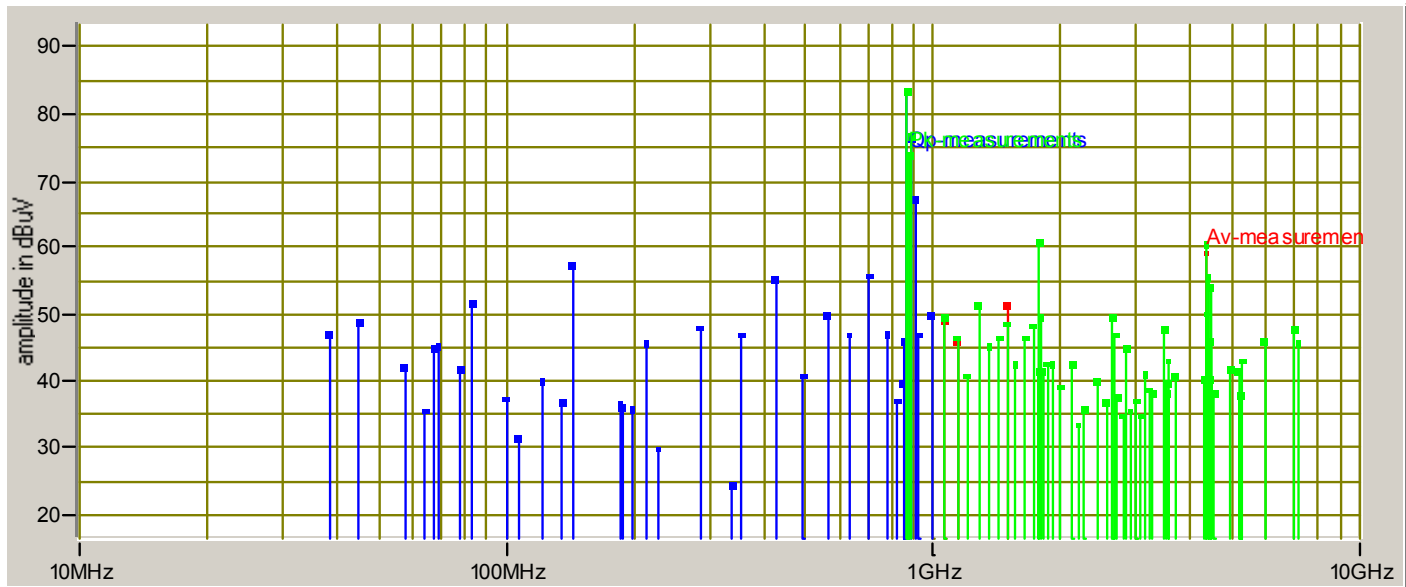
Page: 11 of 11

## List of measurements for run #: 1

| FREQ | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
|------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|

No further significant EUT emissions 30 MHz to 10 GHz, vert and hor ant.

## Graph:



Tested by: J. C. Sausen

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 1 of 12

## List of measurements for run #: 2

| FREQ                    | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| Note 880 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 38.248 MHz              | 43.65 Qp        | 0.49 / 16.7 / 27.17 / 0.0               | 33.67               | H / 1.00 / 0               | -74.24         | -61.24                   |
| 44.866 MHz              | 41.0 Qp         | 0.6 / 14.64 / 27.06 / 0.0               | 29.18               | H / 1.00 / 0               | -78.73         | -65.73                   |
| 57.616 MHz              | 41.05 Qp        | 0.6 / 11.32 / 27.0 / 0.0                | 25.97               | H / 1.00 / 0               | -81.94         | -68.94                   |
| 64.516 MHz              | 46.2 Qp         | 0.69 / 9.5 / 27.0 / 0.0                 | 29.39               | H / 1.00 / 0               | -78.52         | -65.52                   |
| 68.176 MHz              | 47.35 Qp        | 0.7 / 8.66 / 27.0 / 0.0                 | 29.71               | H / 1.00 / 0               | -78.2          | -65.2                    |
| 69.219 MHz              | 44.1 Qp         | 0.7 / 8.48 / 27.0 / 0.0                 | 26.28               | H / 1.00 / 0               | -81.63         | -68.63                   |
| 77.674 MHz              | 45.15 Qp        | 0.76 / 7.13 / 26.94 / 0.0               | 26.1                | H / 1.00 / 0               | -81.81         | -68.81                   |
| 83.295 MHz              | 45.6 Qp         | 0.8 / 6.83 / 26.9 / 0.0                 | 26.33               | H / 1.00 / 0               | -81.58         | -68.58                   |
| 99.754 MHz              | 44.85 Qp        | 0.88 / 8.28 / 27.0 / 0.0                | 27.01               | H / 1.00 / 0               | -80.9          | -67.9                    |
| 106.108 MHz             | 41.55 Qp        | 0.81 / 8.48 / 27.01 / 0.0               | 23.83               | H / 1.00 / 0               | -84.08         | -71.08                   |
| 121.408 MHz             | 42.4 Qp         | 0.9 / 7.82 / 27.1 / 0.0                 | 24.02               | H / 1.00 / 0               | -83.89         | -70.89                   |
| 135.208 MHz             | 41.4 Qp         | 1.0 / 7.42 / 27.0 / 0.0                 | 22.82               | H / 1.00 / 0               | -85.09         | -72.09                   |
| 141.97 MHz              | 70.45 Qp        | 1.0 / 8.32 / 26.97 / 0.0                | 52.79               | H / 1.00 / 0               | -55.12         | -42.12                   |
| 184.841 MHz             | 48.1 Qp         | 1.11 / 9.48 / 27.1 / 0.0                | 31.59               | H / 1.00 / 0               | -76.32         | -63.32                   |
| 187.54 MHz              | 47.5 Qp         | 1.13 / 9.6 / 27.1 / 0.0                 | 31.13               | H / 1.00 / 0               | -76.78         | -63.78                   |
| 197.327 MHz             | 48.75 Qp        | 1.2 / 9.85 / 27.1 / 0.0                 | 32.7                | H / 1.00 / 0               | -75.21         | -62.21                   |
| 212.968 MHz             | 57.7 Qp         | 1.21 / 10.16 / 27.11 / 0.0              | 41.96               | H / 1.00 / 0               | -65.95         | -52.95                   |
| 225.467 MHz             | 42.6 Qp         | 1.29 / 10.35 / 27.19 / 0.0              | 27.05               | H / 1.00 / 0               | -80.86         | -67.86                   |
| 283.98 MHz              | 64.95 Qp        | 1.5 / 11.92 / 27.43 / 0.0               | 50.94               | H / 1.00 / 0               | -56.97         | -43.97                   |
| 337.08 MHz              | 38.35 Qp        | 1.57 / 13.67 / 27.57 / 0.0              | 26.02               | H / 1.00 / 0               | -81.89         | -68.89                   |
| 354.978 MHz             | 43.35 Qp        | 1.6 / 14.6 / 27.6 / 0.0                 | 31.95               | H / 1.00 / 0               | -75.96         | -62.96                   |
| 425.971 MHz             | 57.7 Qp         | 1.71 / 16.56 / 27.9 / 0.0               | 48.07               | H / 1.00 / 0               | -59.84         | -46.84                   |
| 496.97 MHz              | 45.15 Qp        | 1.9 / 16.95 / 27.93 / 0.0               | 36.06               | H / 1.00 / 0               | -71.85         | -58.85                   |
| 567.967 MHz             | 54.65 Qp        | 2.03 / 18.46 / 28.1 / 0.0               | 47.04               | H / 1.00 / 0               | -60.87         | -47.87                   |
| 638.969 MHz             | 46.2 Qp         | 2.1 / 19.08 / 28.2 / 0.0                | 39.18               | H / 1.00 / 0               | -68.73         | -55.73                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 2 of 12

## List of measurements for run #: 2

| FREQ        | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 709.963 MHz | 61.7 Qp         | 2.3 / 19.4 / 27.95 / 0.0                | 55.45               | H / 1.00 / 0               | -52.46         | -39.46                   |
| 780.978 MHz | 42.05 Qp        | 2.39 / 21.11 / 27.83 / 0.0              | 37.72               | H / 1.00 / 0               | -70.19         | -57.19                   |
| 827.275 MHz | 27.0 Qp         | 2.47 / 21.45 / 27.8 / 0.0               | 23.12               | H / 1.00 / 0               | -84.79         | -71.79                   |
| 851.983 MHz | 41.7 Qp         | 2.51 / 21.66 / 27.78 / 0.0              | 38.1                | H / 1.00 / 0               | -69.81         | -56.81                   |
| 860.437 MHz | 40.9 Qp         | 2.53 / 21.12 / 27.75 / 0.0              | 36.8                | H / 1.00 / 0               | -71.11         | -58.11                   |
| 868.97 MHz  | 29.75 Qp        | 2.54 / 21.46 / 27.72 / 0.0              | 26.03               | H / 1.00 / 0               | -81.88         | -68.88                   |
| 880.005 MHz | 71.15 Qp        | 2.56 / 21.8 / 27.68 / 0.0               | 67.83               | H / 1.00 / 0               | -40.08         | -27.08                   |
| 891.468 MHz | 31.0 Qp         | 2.58 / 21.66 / 27.64 / 0.0              | 27.59               | H / 1.00 / 0               | -80.32         | -67.32                   |
| 910.671 MHz | 67.05 Qp        | 2.61 / 21.11 / 27.6 / 0.0               | 63.17               | H / 1.00 / 0               | -44.74         | -31.74                   |
| 922.988 MHz | 52.35 Qp        | 2.63 / 21.63 / 27.6 / 0.0               | 49.01               | H / 1.00 / 0               | -58.9          | -45.9                    |
| 993.976 MHz | 50.55 Qp        | 2.73 / 22.02 / 27.57 / 0.0              | 47.74               | H / 1.00 / 0               | -60.17         | -47.17                   |
| 66.764 MHz  | 50.05 Qp        | 0.7 / 8.97 / 27.0 / 0.0                 | 32.72               | H / 1.00 / 0               | -75.19         | -62.19                   |
| 76.064 MHz  | 48.0 Qp         | 0.73 / 7.29 / 26.97 / 0.0               | 29.05               | H / 1.00 / 0               | -78.86         | -65.86                   |
| 163.97 MHz  | 53.15 Qp        | 1.03 / 8.08 / 27.0 / 0.0                | 35.26               | H / 1.00 / 0               | -72.65         | -59.65                   |
| 179.978 MHz | 55.25 Qp        | 1.1 / 9.0 / 27.07 / 0.0                 | 38.28               | H / 1.00 / 0               | -69.63         | -56.63                   |
| 199.238 MHz | 51.35 Qp        | 1.2 / 9.82 / 27.1 / 0.0                 | 35.27               | H / 1.00 / 0               | -72.64         | -59.64                   |

## Maximized Horizontal frequencies 30-1000 MHz 880 MHz Tx setting

|             |          |                           |       |                |        |        |
|-------------|----------|---------------------------|-------|----------------|--------|--------|
| 910.695 MHz | 75.8 Qp  | 2.61 / 21.11 / 27.6 / 0.0 | 71.92 | H / 1.00 / 135 | -35.99 | -22.99 |
| 709.963 MHz | 66.31 Qp | 2.3 / 19.4 / 27.95 / 0.0  | 60.06 | H / 1.00 / 175 | -47.85 | -34.85 |
| 66.764 MHz  | 54.73 Qp | 0.7 / 8.97 / 27.0 / 0.0   | 37.4  | H / 1.00 / 175 | -70.51 | -57.51 |
| 68.176 MHz  | 56.64 Qp | 0.7 / 8.66 / 27.0 / 0.0   | 39.0  | H / 1.00 / 175 | -68.91 | -55.91 |
| 69.219 MHz  | 54.46 Qp | 0.7 / 8.48 / 27.0 / 0.0   | 36.64 | H / 1.00 / 175 | -71.27 | -58.27 |
| 76.064 MHz  | 58.23 Qp | 0.73 / 7.29 / 26.97 / 0.0 | 39.28 | H / 1.00 / 175 | -68.63 | -55.63 |
| 141.97 MHz  | 72.95 Qp | 1.0 / 8.32 / 26.97 / 0.0  | 55.29 | H / 2.00 / 90  | -52.62 | -39.62 |
| 283.98 MHz  | 68.64 Qp | 1.5 / 11.92 / 27.43 / 0.0 | 54.63 | H / 2.00 / 90  | -53.28 | -40.28 |

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Reviewed by: Greg Jakubowski

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*Greg Jakubowski*

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 3 of 12

## List of measurements for run #: 2

| FREQ                                                          | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|---------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 38.248 MHz                                                    | 57.35 Qp        | 0.49 / 16.7 / 27.17 / 0.0               | 47.37               | V / 1.00 / 0               | -60.54         | -47.54                   |
| 44.866 MHz                                                    | 59.15 Qp        | 0.6 / 14.64 / 27.06 / 0.0               | 47.33               | V / 1.00 / 0               | -60.58         | -47.58                   |
| 57.616 MHz                                                    | 55.45 Qp        | 0.6 / 11.32 / 27.0 / 0.0                | 40.37               | V / 1.00 / 0               | -67.54         | -54.54                   |
| 64.516 MHz                                                    | 52.7 Qp         | 0.69 / 9.5 / 27.0 / 0.0                 | 35.89               | V / 1.00 / 0               | -72.02         | -59.02                   |
| 66.764 MHz                                                    | 57.0 Qp         | 0.7 / 8.97 / 27.0 / 0.0                 | 39.67               | V / 1.00 / 0               | -68.24         | -55.24                   |
| 69.219 MHz                                                    | 55.85 Qp        | 0.7 / 8.48 / 27.0 / 0.0                 | 38.03               | V / 1.00 / 0               | -69.88         | -56.88                   |
| 77.674 MHz                                                    | 57.95 Qp        | 0.76 / 7.13 / 26.94 / 0.0               | 38.9                | V / 1.00 / 0               | -69.01         | -56.01                   |
| 83.295 MHz                                                    | 60.7 Qp         | 0.8 / 6.83 / 26.9 / 0.0                 | 41.43               | V / 1.00 / 0               | -66.48         | -53.48                   |
| 99.754 MHz                                                    | 50.2 Qp         | 0.88 / 8.28 / 27.0 / 0.0                | 32.36               | V / 1.00 / 0               | -75.55         | -62.55                   |
| 106.108 MHz                                                   | 51.15 Qp        | 0.81 / 8.48 / 27.01 / 0.0               | 33.43               | V / 1.00 / 0               | -74.48         | -61.48                   |
| 121.408 MHz                                                   | 54.85 Qp        | 0.9 / 7.82 / 27.1 / 0.0                 | 36.47               | V / 1.00 / 0               | -71.44         | -58.44                   |
| 135.208 MHz                                                   | 53.3 Qp         | 1.0 / 7.42 / 27.0 / 0.0                 | 34.72               | V / 1.00 / 0               | -73.19         | -60.19                   |
| 179.978 MHz                                                   | 56.1 Qp         | 1.1 / 9.0 / 27.07 / 0.0                 | 39.13               | V / 1.00 / 0               | -68.78         | -55.78                   |
| 184.841 MHz                                                   | 50.2 Qp         | 1.11 / 9.48 / 27.1 / 0.0                | 33.69               | V / 1.00 / 0               | -74.22         | -61.22                   |
| 187.54 MHz                                                    | 48.8 Qp         | 1.13 / 9.6 / 27.1 / 0.0                 | 32.43               | V / 1.00 / 0               | -75.48         | -62.48                   |
| 197.327 MHz                                                   | 50.1 Qp         | 1.2 / 9.85 / 27.1 / 0.0                 | 34.05               | V / 1.00 / 0               | -73.86         | -60.86                   |
| 199.238 MHz                                                   | 52.1 Qp         | 1.2 / 9.82 / 27.1 / 0.0                 | 36.02               | V / 1.00 / 0               | -71.89         | -58.89                   |
| 212.968 MHz                                                   | 58.45 Qp        | 1.21 / 10.16 / 27.11 / 0.0              | 42.71               | V / 1.00 / 0               | -65.2          | -52.2                    |
| 425.971 MHz                                                   | 58.8 Qp         | 1.71 / 16.56 / 27.9 / 0.0               | 49.17               | V / 1.00 / 0               | -58.74         | -45.74                   |
| 496.97 MHz                                                    | 51.6 Qp         | 1.9 / 16.95 / 27.93 / 0.0               | 42.51               | V / 1.00 / 0               | -65.4          | -52.4                    |
| 638.969 MHz                                                   | 47.7 Qp         | 2.1 / 19.08 / 28.2 / 0.0                | 40.68               | V / 1.00 / 0               | -67.23         | -54.23                   |
| 860.437 MHz                                                   | 41.0 Qp         | 2.53 / 21.12 / 27.75 / 0.0              | 36.9                | V / 1.00 / 0               | -71.01         | -58.01                   |
| Maximized Vertical frequencies 30-1000 MHz 880 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 38.235 MHz                                                    | 59.08 Qp        | 0.49 / 16.71 / 27.17 / 0.0              | 49.11               | V / 1.00 / 0               | -58.8          | -45.8                    |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 4 of 12

## List of measurements for run #: 2

| FREQ                                                            | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-----------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 425.971 MHz                                                     | 62.29 Qp        | 1.71 / 16.56 / 27.9 / 0.0               | 52.66               | V / 1.00 / 270             | -55.25         | -42.25                   |
| 64.516 MHz                                                      | 58.47 Qp        | 0.69 / 9.5 / 27.0 / 0.0                 | 41.66               | V / 1.00 / 270             | -66.25         | -53.25                   |
| 76.064 MHz                                                      | 61.97 Qp        | 0.73 / 7.29 / 26.97 / 0.0               | 43.02               | V / 1.00 / 270             | -64.89         | -51.89                   |
| Note 887 MHz Tx setting (mid range)                             |                 |                                         |                     |                            |                |                          |
| 887.0 MHz                                                       | 78.99 Qp        | 2.57 / 21.66 / 27.66 / 0.0              | 75.56               | H / 1.00 / 0               | -32.35         | -19.35                   |
| 199.238 MHz                                                     | 53.05 Qp        | 1.2 / 9.82 / 27.1 / 0.0                 | 36.97               | H / 1.00 / 0               | -70.94         | -57.94                   |
| 225.467 MHz                                                     | 45.7 Qp         | 1.29 / 10.35 / 27.19 / 0.0              | 30.15               | H / 1.00 / 0               | -77.76         | -64.76                   |
| 354.978 MHz                                                     | 45.75 Qp        | 1.6 / 14.6 / 27.6 / 0.0                 | 34.35               | H / 1.00 / 0               | -73.56         | -60.56                   |
| 860.437 MHz                                                     | 46.6 Qp         | 2.53 / 21.12 / 27.75 / 0.0              | 42.5                | H / 1.00 / 0               | -65.41         | -52.41                   |
| 868.97 MHz                                                      | 30.0 Qp         | 2.54 / 21.46 / 27.72 / 0.0              | 26.28               | H / 1.00 / 0               | -81.63         | -68.63                   |
| Maximized Horizontal frequencies 30-1000 MHz 887 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 44.829 MHz                                                      | 48.85 Qp        | 0.6 / 14.65 / 27.06 / 0.0               | 37.04               | H / 2.00 / 35              | -70.87         | -57.87                   |
| 77.674 MHz                                                      | 64.5 Qp         | 0.76 / 7.13 / 26.94 / 0.0               | 45.45               | H / 2.50 / 150             | -62.46         | -49.46                   |
| 128.608 MHz                                                     | 57.19 Qp        | 0.98 / 7.46 / 27.02 / 0.0               | 38.61               | H / 2.50 / 0               | -69.3          | -56.3                    |
| 212.968 MHz                                                     | 61.41 Qp        | 1.21 / 10.16 / 27.11 / 0.0              | 45.67               | H / 1.00 / 90              | -62.24         | -49.24                   |
| 283.98 MHz                                                      | 73.84 Qp        | 1.5 / 11.92 / 27.43 / 0.0               | 59.83               | H / 1.00 / 90              | -48.08         | -35.08                   |
| 354.978 MHz                                                     | 61.94 Qp        | 1.6 / 14.6 / 27.6 / 0.0                 | 50.54               | H / 1.00 / 160             | -57.37         | -44.37                   |
| 425.971 MHz                                                     | 63.47 Qp        | 1.71 / 16.56 / 27.9 / 0.0               | 53.84               | H / 1.00 / 80              | -54.07         | -41.07                   |
| 638.969 MHz                                                     | 56.66 Qp        | 2.1 / 19.08 / 28.2 / 0.0                | 49.64               | H / 1.00 / 135             | -58.27         | -45.27                   |
| 709.963 MHz                                                     | 66.67 Qp        | 2.3 / 19.4 / 27.95 / 0.0                | 60.42               | H / 1.00 / 0               | -47.49         | -34.49                   |
| 860.449 MHz                                                     | 48.37 Qp        | 2.53 / 21.12 / 27.75 / 0.0              | 44.27               | H / 1.00 / 0               | -63.64         | -50.64                   |
| 860.449 MHz                                                     | 51.6 Qp         | 2.53 / 21.12 / 27.75 / 0.0              | 47.5                | H / 1.00 / 45              | -60.41         | -47.41                   |
| 910.695 MHz                                                     | 76.69 Qp        | 2.61 / 21.11 / 27.6 / 0.0               | 72.81               | H / 1.00 / 140             | -35.1          | -22.1                    |

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Reviewed by: Greg Jakubowski

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 5 of 12

## List of measurements for run #: 2

| FREQ                                                          | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|---------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 44.866 MHz                                                    | 59.6 Qp         | 0.6 / 14.64 / 27.06 / 0.0               | 47.78               | V / 1.00 / 0               | -60.13         | -47.13                   |
| 57.616 MHz                                                    | 55.75 Qp        | 0.6 / 11.32 / 27.0 / 0.0                | 40.67               | V / 1.00 / 0               | -67.24         | -54.24                   |
| 66.764 MHz                                                    | 58.35 Qp        | 0.7 / 8.97 / 27.0 / 0.0                 | 41.02               | V / 1.00 / 0               | -66.89         | -53.89                   |
| 99.754 MHz                                                    | 51.6 Qp         | 0.88 / 8.28 / 27.0 / 0.0                | 33.76               | V / 1.00 / 0               | -74.15         | -61.15                   |
| 135.208 MHz                                                   | 55.4 Qp         | 1.0 / 7.42 / 27.0 / 0.0                 | 36.82               | V / 1.00 / 0               | -71.09         | -58.09                   |
| 197.327 MHz                                                   | 52.4 Qp         | 1.2 / 9.85 / 27.1 / 0.0                 | 36.35               | V / 1.00 / 0               | -71.56         | -58.56                   |
| 827.275 MHz                                                   | 27.35 Qp        | 2.47 / 21.45 / 27.8 / 0.0               | 23.47               | V / 1.00 / 0               | -84.44         | -71.44                   |
| Maximized Vertical frequencies 30-1000 MHz 887 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 44.866 MHz                                                    | 61.33 Qp        | 0.6 / 14.64 / 27.06 / 0.0               | 49.51               | V / 1.00 / 0               | -58.4          | -45.4                    |
| 66.764 MHz                                                    | 64.58 Qp        | 0.7 / 8.97 / 27.0 / 0.0                 | 47.25               | V / 1.00 / 156             | -60.66         | -47.66                   |
| 68.864 MHz                                                    | 67.96 Qp        | 0.7 / 8.53 / 27.0 / 0.0                 | 50.19               | V / 1.00 / 156             | -57.72         | -44.72                   |
| 77.674 MHz                                                    | 61.9 Qp         | 0.76 / 7.13 / 26.94 / 0.0               | 42.85               | V / 1.00 / 156             | -65.06         | -52.06                   |
| 128.608 MHz                                                   | 60.3 Qp         | 0.98 / 7.46 / 27.02 / 0.0               | 41.72               | V / 1.00 / 180             | -66.19         | -53.19                   |
| 496.97 MHz                                                    | 57.41 Qp        | 1.9 / 16.95 / 27.93 / 0.0               | 48.32               | V / 1.00 / 180             | -59.59         | -46.59                   |
| 567.967 MHz                                                   | 55.47 Qp        | 2.03 / 18.46 / 28.1 / 0.0               | 47.86               | V / 1.00 / 180             | -60.05         | -47.05                   |
| 910.761 MHz                                                   | 73.08 Qp        | 2.61 / 21.12 / 27.6 / 0.0               | 69.2                | H / 1.00 / 135             | -38.71         | -25.71                   |
| Note 894 MHz Tx setting                                       |                 |                                         |                     |                            |                |                          |
| 894.0 MHz                                                     | 87.99 Qp        | 2.58 / 21.76 / 27.64 / 0.0              | 84.7                | H / 1.00 / 255             | -23.21         | -10.21                   |
| 827.275 MHz                                                   | 27.5 Qp         | 2.47 / 21.45 / 27.8 / 0.0               | 23.62               | H / 1.00 / 255             | -84.29         | -71.29                   |
| 868.97 MHz                                                    | 30.05 Qp        | 2.54 / 21.46 / 27.72 / 0.0              | 26.33               | H / 1.00 / 255             | -81.58         | -68.58                   |
| 891.468 MHz                                                   | 31.25 Qp        | 2.58 / 21.66 / 27.64 / 0.0              | 27.84               | H / 1.00 / 255             | -80.07         | -67.07                   |
| 199.238 MHz                                                   | 53.8 Qp         | 1.2 / 9.82 / 27.1 / 0.0                 | 37.72               | H / 1.00 / 15              | -70.19         | -57.19                   |
| 225.467 MHz                                                   | 47.05 Qp        | 1.29 / 10.35 / 27.19 / 0.0              | 31.5                | H / 1.00 / 15              | -76.41         | -63.41                   |

Tested by: Michael Schultz

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Reviewed by: Greg Jakubowski

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 6 of 12

## List of measurements for run #: 2

| FREQ                                                            | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-----------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 337.08 MHz                                                      | 42.65 Qp        | 1.57 / 13.67 / 27.57 / 0.0              | 30.32               | H / 1.00 / 15              | -77.59         | -64.59                   |
| Maximized Horizontal frequencies 30-1000 MHz 894 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 910.787 MHz                                                     | 75.06 Qp        | 2.61 / 21.12 / 27.6 / 0.0               | 71.18               | H / 1.00 / 15              | -36.73         | -23.73                   |
| 68.176 MHz                                                      | 59.78 Qp        | 0.7 / 8.66 / 27.0 / 0.0                 | 42.14               | H / 1.00 / 130             | -65.77         | -52.77                   |
| 69.219 MHz                                                      | 60.14 Qp        | 0.7 / 8.48 / 27.0 / 0.0                 | 42.32               | H / 1.00 / 130             | -65.59         | -52.59                   |
| 199.238 MHz                                                     | 56.96 Qp        | 1.2 / 9.82 / 27.1 / 0.0                 | 40.88               | H / 1.00 / 130             | -67.03         | -54.03                   |
| 638.969 MHz                                                     | 58.66 Qp        | 2.1 / 19.08 / 28.2 / 0.0                | 51.64               | H / 1.00 / 130             | -56.27         | -43.27                   |
| 851.983 MHz                                                     | 47.21 Qp        | 2.51 / 21.66 / 27.78 / 0.0              | 43.61               | H / 1.00 / 130             | -64.3          | -51.3                    |
| 780.978 MHz                                                     | 46.05 Qp        | 2.39 / 21.11 / 27.83 / 0.0              | 41.72               | H / 1.00 / 65              | -66.19         | -53.19                   |
| 425.971 MHz                                                     | 64.35 Qp        | 1.71 / 16.56 / 27.9 / 0.0               | 54.72               | H / 1.00 / 80              | -53.19         | -40.19                   |
| 283.98 MHz                                                      | 73.5 Qp         | 1.5 / 11.92 / 27.43 / 0.0               | 59.49               | H / 1.00 / 80              | -48.42         | -35.42                   |
| Maximized Vertical frequencies 30-1000 MHz 894 MHz Tx setting   |                 |                                         |                     |                            |                |                          |
| 57.616 MHz                                                      | 56.95 Qp        | 0.6 / 11.32 / 27.0 / 0.0                | 41.87               | V / 1.00 / 130             | -66.04         | -53.04                   |
| 83.295 MHz                                                      | 60.9 Qp         | 0.8 / 6.83 / 26.9 / 0.0                 | 41.63               | V / 1.00 / 130             | -66.28         | -53.28                   |
| 99.754 MHz                                                      | 53.15 Qp        | 0.88 / 8.28 / 27.0 / 0.0                | 35.31               | V / 1.00 / 130             | -72.6          | -59.6                    |
| 197.327 MHz                                                     | 53.05 Qp        | 1.2 / 9.85 / 27.1 / 0.0                 | 37.0                | V / 1.00 / 130             | -70.91         | -57.91                   |
| Maximized Vertical frequencies 30-1000 MHz 894 MHz Tx setting   |                 |                                         |                     |                            |                |                          |
| 827.275 MHz                                                     | 30.05 Qp        | 2.47 / 21.45 / 27.8 / 0.0               | 26.17               | V / 1.00 / 130             | -81.74         | -68.74                   |
| 993.976 MHz                                                     | 49.95 Qp        | 2.73 / 22.02 / 27.57 / 0.0              | 47.14               | V / 1.00 / 325             | -60.77         | -47.77                   |
| 117.976 MHz                                                     | 57.05 Qp        | 0.9 / 8.02 / 27.1 / 0.0                 | 38.87               | V / 1.00 / 0               | -69.04         | -56.04                   |
| 60.196 MHz                                                      | 59.8 Qp         | 0.6 / 10.64 / 27.0 / 0.0                | 44.04               | V / 1.00 / 0               | -63.87         | -50.87                   |
| 44.859 MHz                                                      | 60.0 Qp         | 0.6 / 14.64 / 27.06 / 0.0               | 48.18               | V / 1.00 / 0               | -59.73         | -46.73                   |
| 131.325 MHz                                                     | 58.25 Qp        | 1.0 / 7.4 / 27.0 / 0.0                  | 39.65               | V / 1.00 / 0               | -68.26         | -55.26                   |
| 425.971 MHz                                                     | 62.8 Qp         | 1.71 / 16.56 / 27.9 / 0.0               | 53.17               | V / 1.00 / 0               | -54.74         | -41.74                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 7 of 12

## List of measurements for run #: 2

| FREQ                    | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| Note 894 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 1.065 GHz               | 68.23 Av        | 2.83 / 25.59 / 49.22 / 0.0              | 47.43               | H / 1.00 / 135             | -60.48         | -47.48                   |
| 1.136 GHz               | 68.82 Av        | 2.93 / 25.51 / 49.55 / 0.0              | 47.7                | H / 1.00 / 135             | -60.21         | -47.21                   |
| 1.207 GHz               | 71.2 Av         | 3.01 / 25.43 / 49.62 / 0.0              | 50.02               | H / 1.00 / 135             | -57.89         | -44.89                   |
| 1.278 GHz               | 69.35 Av        | 3.1 / 25.35 / 49.25 / 0.0               | 48.54               | H / 1.00 / 135             | -59.37         | -46.37                   |
| 1.349 GHz               | 56.97 Av        | 3.18 / 25.27 / 49.37 / 0.0              | 36.04               | H / 1.00 / 135             | -71.87         | -58.87                   |
| 1.42 GHz                | 61.03 Av        | 3.3 / 25.19 / 49.65 / 0.0               | 39.86               | H / 1.00 / 135             | -68.05         | -55.05                   |
| 1.491 GHz               | 65.6 Av         | 3.42 / 25.11 / 49.8 / 0.0               | 44.33               | H / 1.00 / 135             | -63.58         | -50.58                   |
| 1.562 GHz               | 57.5 Av         | 3.49 / 25.49 / 49.62 / 0.0              | 36.86               | H / 1.00 / 135             | -71.05         | -58.05                   |
| 1.633 GHz               | 69.18 Av        | 3.55 / 25.93 / 49.58 / 0.0              | 49.08               | H / 1.00 / 135             | -58.83         | -45.83                   |
| 1.704 GHz               | 66.16 Av        | 3.62 / 26.38 / 49.76 / 0.0              | 46.4                | H / 1.00 / 135             | -61.51         | -48.51                   |
| 1.775 GHz               | 57.97 Av        | 3.74 / 26.83 / 49.67 / 0.0              | 38.87               | H / 1.00 / 135             | -69.04         | -56.04                   |
| 1.846 GHz               | 59.23 Av        | 3.83 / 27.27 / 49.79 / 0.0              | 40.54               | H / 1.00 / 135             | -67.37         | -54.37                   |
| 1.917 GHz               | 53.08 Av        | 3.88 / 27.72 / 49.91 / 0.0              | 34.77               | H / 1.00 / 135             | -73.14         | -60.14                   |
| 1.988 GHz               | 51.73 Av        | 3.9 / 28.17 / 49.65 / 0.0               | 34.14               | H / 1.00 / 135             | -73.77         | -60.77                   |
| 2.13 GHz                | 61.38 Av        | 3.97 / 28.34 / 49.41 / 0.0              | 44.29               | H / 1.00 / 135             | -63.62         | -50.62                   |
| 2.272 GHz               | 50.07 Av        | 4.15 / 28.46 / 49.07 / 0.0              | 33.61               | H / 1.00 / 135             | -74.3          | -61.3                    |
| 2.414 GHz               | 50.19 Av        | 4.31 / 28.57 / 49.36 / 0.0              | 33.71               | H / 1.00 / 135             | -74.2          | -61.2                    |
| 2.556 GHz               | 46.86 Av        | 4.4 / 28.8 / 48.79 / 0.0                | 31.27               | H / 1.00 / 135             | -76.64         | -63.64                   |
| 2.84 GHz                | 51.25 Av        | 4.6 / 29.62 / 48.37 / 0.0               | 37.1                | H / 1.00 / 135             | -70.81         | -57.81                   |
| 2.982 GHz               | 48.85 Av        | 4.74 / 30.03 / 48.19 / 0.0              | 35.42               | H / 1.00 / 135             | -72.49         | -59.49                   |
| 3.266 GHz               | 46.88 Av        | 5.0 / 30.67 / 47.55 / 0.0               | 35.0                | H / 1.00 / 135             | -72.91         | -59.91                   |
| 4.544 GHz               | 42.21 Av        | 6.15 / 32.39 / 45.32 / 0.0              | 35.43               | H / 1.00 / 135             | -72.48         | -59.48                   |
| 5.988 GHz               | 51.74 Av        | 7.09 / 34.35 / 45.66 / 0.0              | 47.52               | H / 1.00 / 135             | -60.39         | -47.39                   |
| 7.2 GHz                 | 44.12 Av        | 8.1 / 35.86 / 45.78 / 0.0               | 42.3                | H / 1.00 / 135             | -65.61         | -52.61                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 8 of 12

## List of measurements for run #: 2

| FREQ      | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|-----------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 1.349 GHz | 60.54 Av        | 3.18 / 25.27 / 49.37 / 0.0              | 39.61               | H / 1.00 / 0               | -68.3          | -55.3                    |
| 1.805 GHz | 56.07 Av        | 3.79 / 27.01 / 49.66 / 0.0              | 37.22               | H / 1.00 / 0               | -70.69         | -57.69                   |
| 2.84 GHz  | 53.07 Av        | 4.6 / 29.62 / 48.37 / 0.0               | 38.92               | H / 1.00 / 0               | -68.99         | -55.99                   |
| 1.788 GHz | 60.26 Av        | 3.76 / 26.91 / 49.66 / 0.0              | 41.28               | H / 1.00 / 45              | -66.63         | -53.63                   |
| 1.349 GHz | 62.62 Av        | 3.18 / 25.27 / 49.37 / 0.0              | 41.69               | H / 1.00 / 90              | -66.22         | -53.22                   |
| 1.788 GHz | 62.59 Av        | 3.76 / 26.91 / 49.66 / 0.0              | 43.61               | H / 1.00 / 90              | -64.3          | -51.3                    |
| 1.42 GHz  | 62.47 Av        | 3.3 / 25.19 / 49.65 / 0.0               | 41.3                | H / 1.00 / 135             | -66.61         | -53.61                   |
| 2.414 GHz | 54.45 Av        | 4.31 / 28.57 / 49.36 / 0.0              | 37.97               | H / 1.00 / 135             | -69.94         | -56.94                   |
| 3.266 GHz | 46.48 Av        | 5.0 / 30.67 / 47.55 / 0.0               | 34.6                | H / 1.00 / 135             | -73.31         | -60.31                   |
| 1.562 GHz | 62.02 Av        | 3.49 / 25.49 / 49.62 / 0.0              | 41.38               | H / 1.00 / 135             | -66.53         | -53.53                   |
| 1.704 GHz | 70.24 Av        | 3.62 / 26.38 / 49.76 / 0.0              | 50.48               | H / 1.00 / 135             | -57.43         | -44.43                   |
| 1.788 GHz | 67.91 Av        | 3.76 / 26.91 / 49.66 / 0.0              | 48.93               | H / 1.00 / 180             | -58.98         | -45.98                   |
| 1.805 GHz | 59.25 Av        | 3.79 / 27.01 / 49.66 / 0.0              | 40.4                | H / 1.00 / 180             | -67.51         | -54.51                   |
| 1.846 GHz | 62.23 Av        | 3.83 / 27.27 / 49.79 / 0.0              | 43.54               | H / 1.00 / 180             | -64.37         | -51.37                   |
| 3.124 GHz | 49.22 Av        | 4.87 / 30.35 / 47.17 / 0.0              | 37.28               | H / 1.00 / 180             | -70.63         | -57.63                   |
| 4.544 GHz | 42.55 Av        | 6.15 / 32.39 / 45.32 / 0.0              | 35.77               | H / 1.00 / 180             | -72.14         | -59.14                   |
| 6.986 GHz | 48.78 Av        | 8.1 / 35.34 / 45.74 / 0.0               | 46.48               | H / 1.00 / 180             | -61.43         | -48.43                   |
| 1.278 GHz | 72.09 Av        | 3.1 / 25.35 / 49.25 / 0.0               | 51.28               | H / 1.00 / 225             | -56.63         | -43.63                   |
| 1.846 GHz | 63.69 Av        | 3.83 / 27.27 / 49.79 / 0.0              | 45.0                | H / 1.00 / 225             | -62.91         | -49.91                   |
| 1.988 GHz | 54.44 Av        | 3.9 / 28.17 / 49.65 / 0.0               | 36.85               | H / 1.00 / 225             | -71.06         | -58.06                   |
| 2.272 GHz | 54.68 Av        | 4.15 / 28.46 / 49.07 / 0.0              | 38.22               | H / 1.00 / 225             | -69.69         | -56.69                   |
| 1.42 GHz  | 65.04 Av        | 3.3 / 25.19 / 49.65 / 0.0               | 43.87               | H / 1.00 / 315             | -64.04         | -51.04                   |
| 2.84 GHz  | 56.07 Av        | 4.6 / 29.62 / 48.37 / 0.0               | 41.92               | H / 1.00 / 315             | -65.99         | -52.99                   |
| 2.982 GHz | 50.35 Av        | 4.74 / 30.03 / 48.19 / 0.0              | 36.92               | H / 1.00 / 315             | -70.99         | -57.99                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 9 of 12

## List of measurements for run #: 2

| FREQ                                                         | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|--------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| Maximized Horizontal frequencies 1-10 GHz 894 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 1.065 GHz                                                    | 70.33 Av        | 2.83 / 25.59 / 49.22 / 0.0              | 49.53               | H / 1.25 / 135             | -58.38         | -45.38                   |
| 1.136 GHz                                                    | 66.58 Av        | 2.93 / 25.51 / 49.55 / 0.0              | 45.46               | H / 1.15 / 115             | -62.45         | -49.45                   |
| 1.42 GHz                                                     | 71.87 Av        | 3.3 / 25.19 / 49.65 / 0.0               | 50.7                | H / 1.20 / 150             | -57.21         | -44.21                   |
| 1.788 GHz                                                    | 74.09 Av        | 3.76 / 26.91 / 49.66 / 0.0              | 55.11               | H / 1.15 / 133             | -52.8          | -39.8                    |
| 2.13 GHz                                                     | 64.1 Av         | 3.97 / 28.34 / 49.41 / 0.0              | 47.01               | H / 1.15 / 200             | -60.9          | -47.9                    |
| 2.414 GHz                                                    | 57.54 Av        | 4.31 / 28.57 / 49.36 / 0.0              | 41.06               | H / 1.15 / 200             | -66.85         | -53.85                   |
| 2.698 GHz                                                    | 54.68 Av        | 4.48 / 29.21 / 48.26 / 0.0              | 40.11               | H / 1.15 / 200             | -67.8          | -54.8                    |
| 2.84 GHz                                                     | 62.43 Av        | 4.6 / 29.62 / 48.37 / 0.0               | 48.28               | H / 1.30 / 150             | -59.63         | -46.63                   |
| 7.2 GHz                                                      | 47.71 Av        | 8.1 / 35.86 / 45.78 / 0.0               | 45.89               | H / 1.30 / 150             | -62.02         | -49.02                   |
| Maximized Vertical frequencies 1-10 GHz 894 Mhz Tx setting   |                 |                                         |                     |                            |                |                          |
| 1.065 GHz                                                    | 70.49 Av        | 2.83 / 25.59 / 49.22 / 0.0              | 49.69               | V / 1.20 / 110             | -58.22         | -45.22                   |
| 1.349 GHz                                                    | 63.55 Av        | 3.18 / 25.27 / 49.37 / 0.0              | 42.62               | V / 1.20 / 110             | -65.29         | -52.29                   |
| 1.491 GHz                                                    | 68.22 Av        | 3.42 / 25.11 / 49.8 / 0.0               | 46.95               | V / 1.20 / 110             | -60.96         | -47.96                   |
| 1.805 GHz                                                    | 58.96 Av        | 3.79 / 27.01 / 49.66 / 0.0              | 40.11               | V / 1.20 / 110             | -67.8          | -54.8                    |
| Note 887 MHz Tx setting (mid settting)                       |                 |                                         |                     |                            |                |                          |
| Maximized Horizontal frequencies 1-10 GHz 887 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 1.774 GHz                                                    | 71.63 Av        | 3.74 / 26.82 / 49.67 / 0.0              | 52.52               | H / 1.00 / 100             | -55.39         | -42.39                   |
| 1.065 GHz                                                    | 70.29 Av        | 2.83 / 25.59 / 49.22 / 0.0              | 49.49               | H / 1.30 / 135             | -58.42         | -45.42                   |
| 1.136 GHz                                                    | 67.42 Av        | 2.93 / 25.51 / 49.55 / 0.0              | 46.3                | H / 1.20 / 130             | -61.61         | -48.61                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 10 of 12

## List of measurements for run #: 2

| FREQ                                                         | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|--------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| 1.42 GHz                                                     | 71.94 Av        | 3.3 / 25.19 / 49.65 / 0.0               | 50.77               | H / 1.20 / 130             | -57.14         | -44.14                   |
| 2.13 GHz                                                     | 62.67 Av        | 3.97 / 28.34 / 49.41 / 0.0              | 45.58               | H / 1.20 / 200             | -62.33         | -49.33                   |
| 2.414 GHz                                                    | 57.74 Av        | 4.31 / 28.57 / 49.36 / 0.0              | 41.26               | H / 1.20 / 200             | -66.65         | -53.65                   |
| 2.698 GHz                                                    | 51.92 Av        | 4.48 / 29.21 / 48.26 / 0.0              | 37.35               | H / 1.20 / 200             | -70.56         | -57.56                   |
| 2.84 GHz                                                     | 61.28 Av        | 4.6 / 29.62 / 48.37 / 0.0               | 47.13               | H / 1.30 / 150             | -60.78         | -47.78                   |
| 7.2 GHz                                                      | 47.29 Av        | 8.1 / 35.86 / 45.78 / 0.0               | 45.47               | H / 1.30 / 150             | -62.44         | -49.44                   |
| Maximized Vertical frequencies 1-10 GHz 887 MHz Tx setting   |                 |                                         |                     |                            |                |                          |
| 1.278 GHz                                                    | 68.77 Av        | 3.1 / 25.35 / 49.25 / 0.0               | 47.96               | V / 1.40 / 150             | -59.95         | -46.95                   |
| 1.562 GHz                                                    | 67.16 Av        | 3.49 / 25.49 / 49.62 / 0.0              | 46.52               | V / 1.00 / 270             | -61.39         | -48.39                   |
| 1.774 GHz                                                    | 69.32 Av        | 3.74 / 26.82 / 49.67 / 0.0              | 50.21               | V / 1.00 / 300             | -57.7          | -44.7                    |
| 4.435 GHz                                                    | 61.18 Av        | 6.1 / 32.32 / 45.71 / 0.0               | 53.88               | V / 1.30 / 165             | -54.03         | -41.03                   |
| 7.2 GHz                                                      | 49.63 Av        | 8.1 / 35.86 / 45.78 / 0.0               | 47.81               | V / 1.30 / 165             | -60.1          | -47.1                    |
| Note 880 MHz Tx setting                                      |                 |                                         |                     |                            |                |                          |
| Maximized Horizontal frequencies 1-10 GHz 880 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 1.76 GHz                                                     | 78.03 Av        | 3.72 / 26.73 / 49.69 / 0.0              | 58.79               | H / 1.30 / 130             | -49.12         | -36.12                   |
| 1.065 GHz                                                    | 70.81 Av        | 2.83 / 25.59 / 49.22 / 0.0              | 50.01               | H / 1.30 / 130             | -57.9          | -44.9                    |
| 1.136 GHz                                                    | 66.36 Av        | 2.93 / 25.51 / 49.55 / 0.0              | 45.24               | H / 1.15 / 116             | -62.67         | -49.67                   |
| 1.42 GHz                                                     | 71.24 Av        | 3.3 / 25.19 / 49.65 / 0.0               | 50.07               | H / 1.15 / 116             | -57.84         | -44.84                   |
| 2.13 GHz                                                     | 64.26 Av        | 3.97 / 28.34 / 49.41 / 0.0              | 47.17               | H / 1.15 / 200             | -60.74         | -47.74                   |
| 2.414 GHz                                                    | 58.1 Av         | 4.31 / 28.57 / 49.36 / 0.0              | 41.62               | H / 1.15 / 200             | -66.29         | -53.29                   |
| 2.698 GHz                                                    | 53.26 Av        | 4.48 / 29.21 / 48.26 / 0.0              | 38.69               | H / 1.15 / 200             | -69.22         | -56.22                   |
| 2.84 GHz                                                     | 60.34 Av        | 4.6 / 29.62 / 48.37 / 0.0               | 46.19               | H / 1.30 / 150             | -61.72         | -48.72                   |
| 7.2 GHz                                                      | 47.18 Av        | 8.1 / 35.86 / 45.78 / 0.0               | 45.36               | H / 1.30 / 150             | -62.55         | -49.55                   |

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# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS  
EUT Model #: DGVL-122110SYS Date: 11/7/2005  
EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C  
Test Method: FCC part 22 Air Pressure: 98.0 kPa  
Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat

Page: 11 of 12

## List of measurements for run #: 2

| FREQ                                                       | LEVEL<br>(dBuV) | CABLE / ANT / PREAMP /<br>ATTEN<br>(dB) | FINAL<br>(dBuV / m) | POL / HGT / AZ<br>(m)(DEG) | FINAL<br>(dBm) | DELTA<br>-13dBm<br>Limit |
|------------------------------------------------------------|-----------------|-----------------------------------------|---------------------|----------------------------|----------------|--------------------------|
| Maximized Vertical frequencies 1-10 GHz 880 MHz Tx setting |                 |                                         |                     |                            |                |                          |
| 1.76 GHz                                                   | 77.2 Av         | 3.72 / 26.73 / 49.69 / 0.0              | 57.96               | V / 1.30 / 130             | -49.95         | -36.95                   |
| 1.278 GHz                                                  | 72.27 Av        | 3.1 / 25.35 / 49.25 / 0.0               | 51.46               | V / 1.20 / 165             | -56.45         | -43.45                   |
| 1.562 GHz                                                  | 66.86 Av        | 3.49 / 25.49 / 49.62 / 0.0              | 46.22               | V / 1.00 / 270             | -61.69         | -48.69                   |
| 2.13 GHz                                                   | 63.14 Av        | 3.97 / 28.34 / 49.41 / 0.0              | 46.05               | V / 1.00 / 175             | -61.86         | -48.86                   |
| 2.64 GHz                                                   | 68.95 Av        | 4.44 / 29.04 / 48.44 / 0.0              | 53.99               | V / 1.00 / 200             | -53.92         | -40.92                   |
| 7.2 GHz                                                    | 48.22 Av        | 8.1 / 35.86 / 45.78 / 0.0               | 46.4                | V / 1.00 / 200             | -61.51         | -48.51                   |
| Scan complete                                              |                 |                                         |                     |                            |                |                          |

Tested by: Michael Schultz

Printed

Signature

Reviewed by: Greg Jakubowski

Printed

Signature

# RADIATED EMISSIONS



Test Report #: WC505744 Run 2 Test Area: LTS

EUT Model #: DGVL-122110SYS Date: 11/7/2005

EUT Serial #: na EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C

Test Method: FCC part 22 Air Pressure: 98.0 kPa

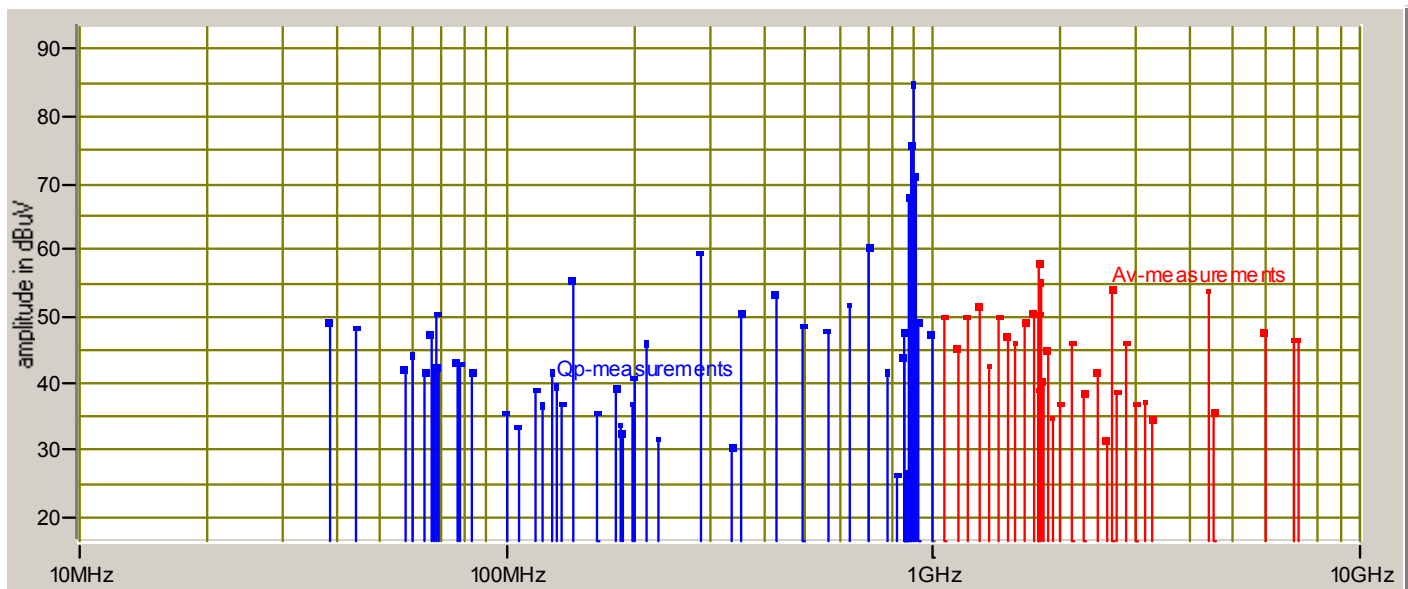
Customer: ADC Telecommunications Rel. Humidity: 35.0 %

EUT Description: LRCS 800 MHz

Notes: "B" Band

Data File Name: 5744-1.dat Page: 12 of 12

## Graph:



Tested by: Michael Schultz

Printed

Michael Schultz

Signature

Reviewed by: Greg Jakubowski

Printed

Greg Jakubowski

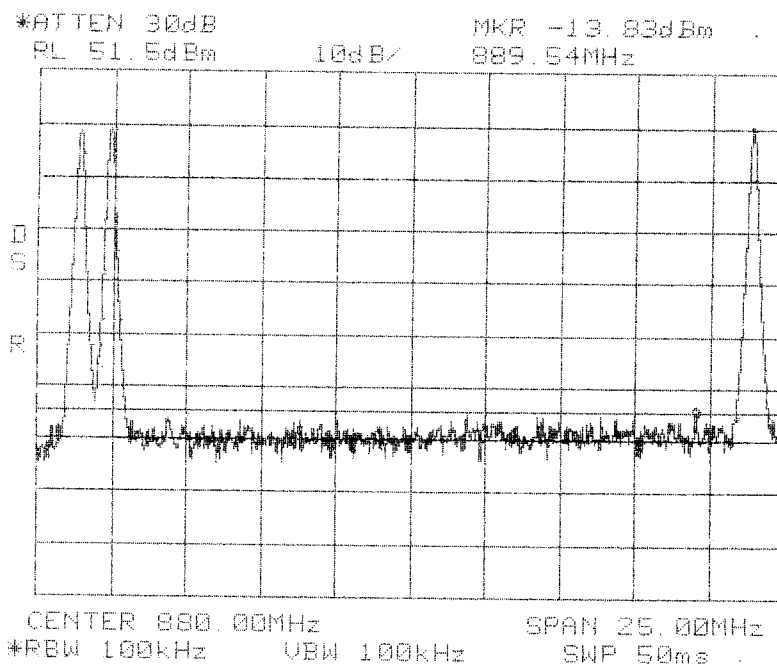
Signature

**Inter-Modulation Test for ADC Inc**  
**Digivance â Long Range Coverage Solution**  
**Model Numbers DGVL-112XXSYS and DGVL-122XXSYS**

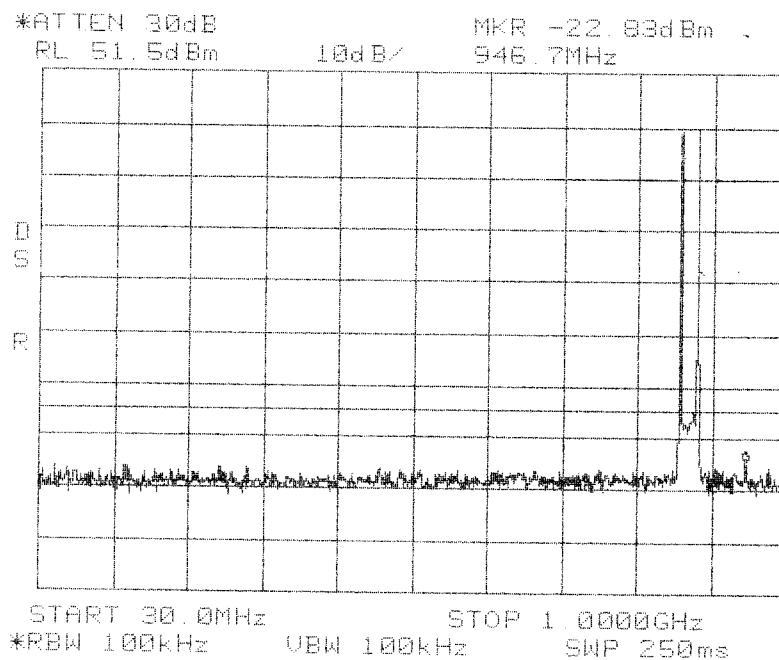
The intermodulation products test was performed for the EUT. Three tests were performed with the modulation type. Test 1 was with 2 signals input to the EUT at lower end channels. Test 2 was with 2 signals input to the EUT at upper end channels. Test 3 was with 2 signals, one at a lower end channel and one at a higher end channel. The modulation types tested were FM, TDMA, GSM, and CDMA. An investigation was made from 30 MHz to the 10<sup>th</sup> Harmonic of the highest fundamental frequency (~10 GHz). The following plots show the results.

Results:  
(See Plots)

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



**Intermodulation  
Close  
Lower  
FM  
Cellular 800 MHz  
A Band**

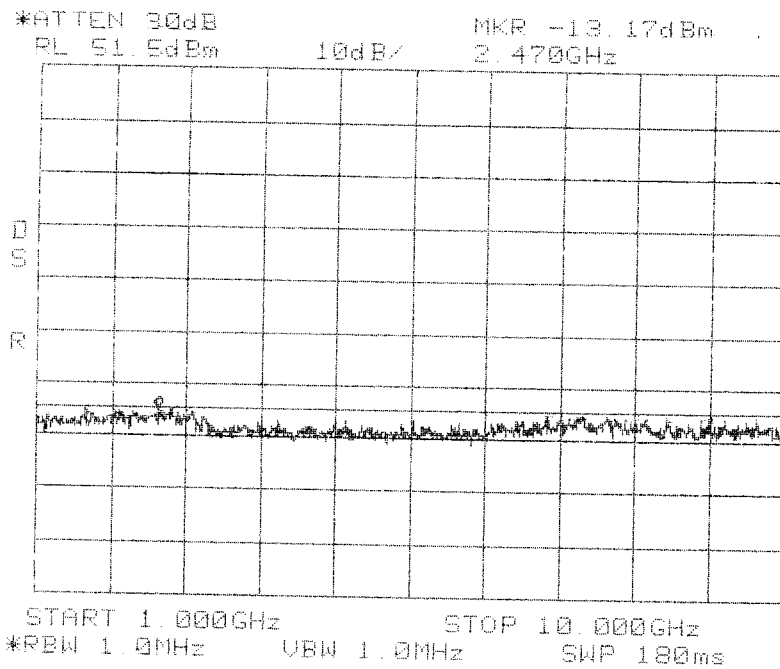


**Intermodulation  
Close  
Lower  
FM  
Cellular 800 MHz  
A Band**

Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

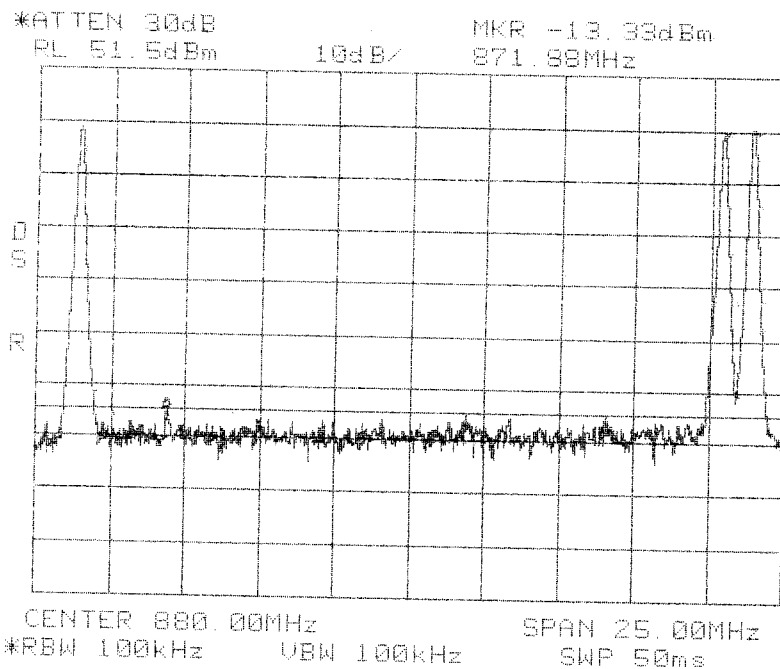


Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

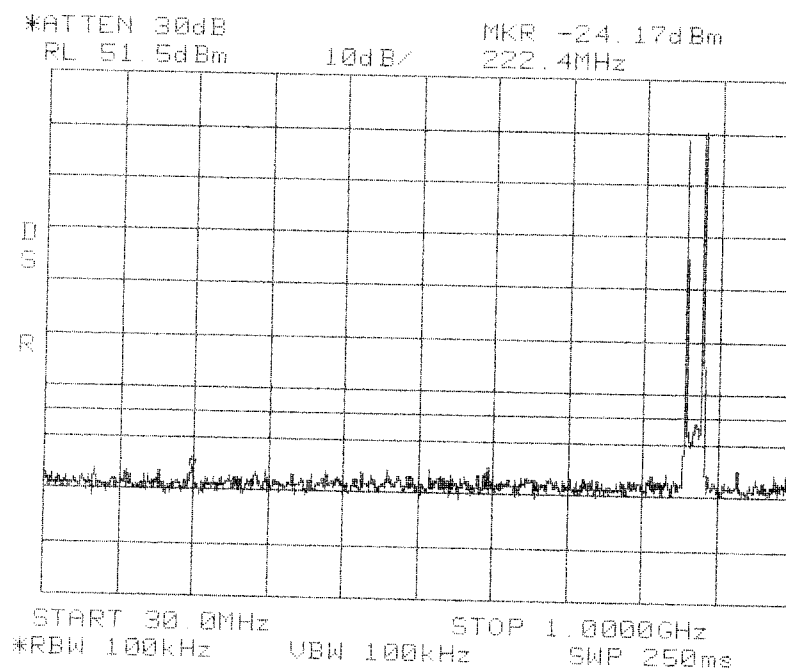


**Intermodulation  
Close  
Lower  
FM  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



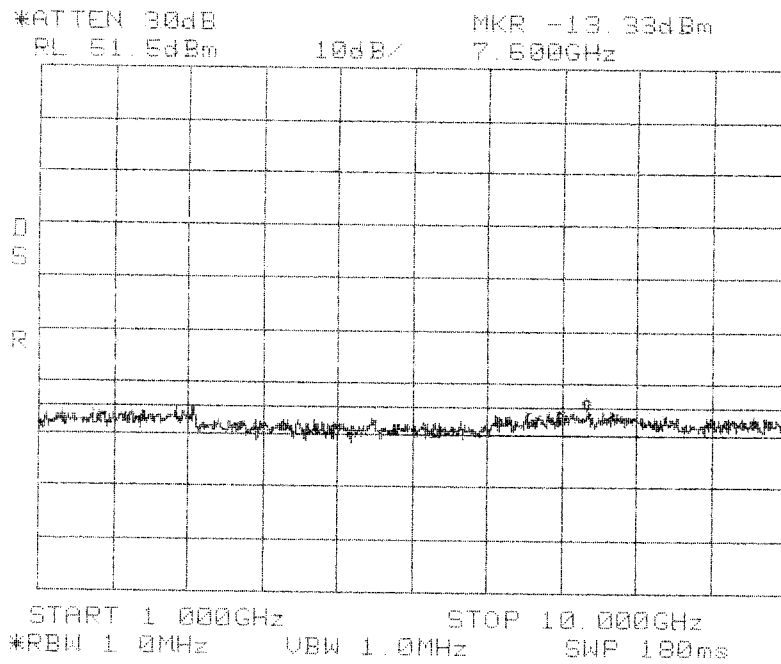
**Intermodulation  
Close  
Upper  
FM  
Cellular 800 MHz  
A Band**



**Intermodulation  
Close  
Upper  
FM  
Cellular 800 MHz  
A Band**

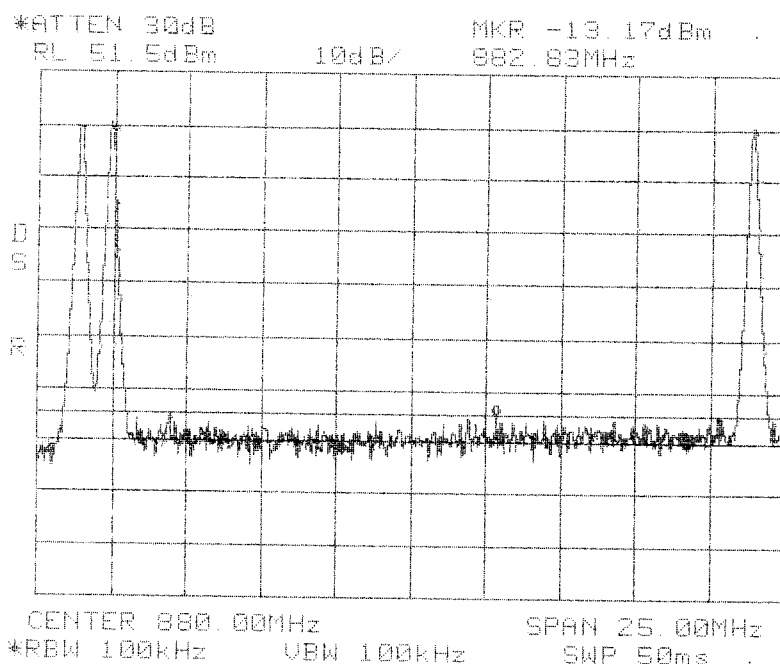
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

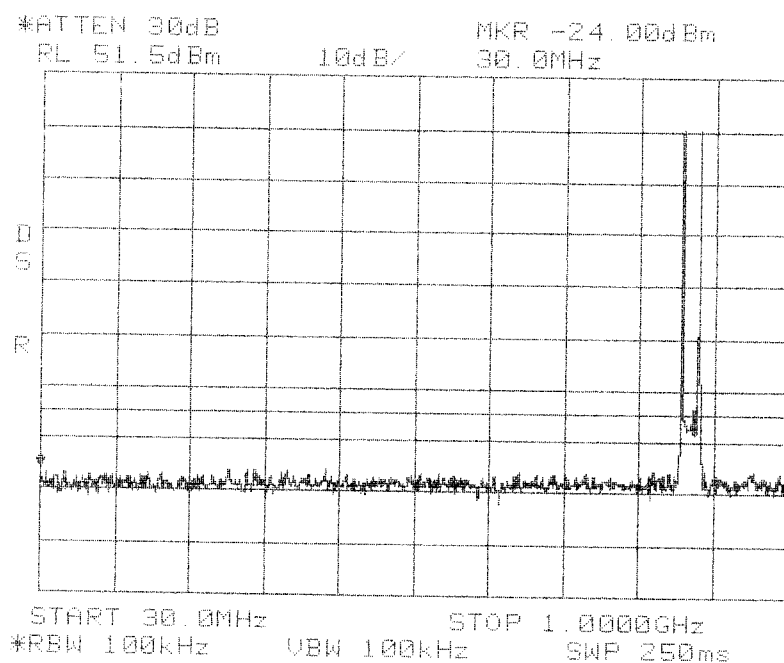


**Intermodulation  
Close  
Upper  
FM  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



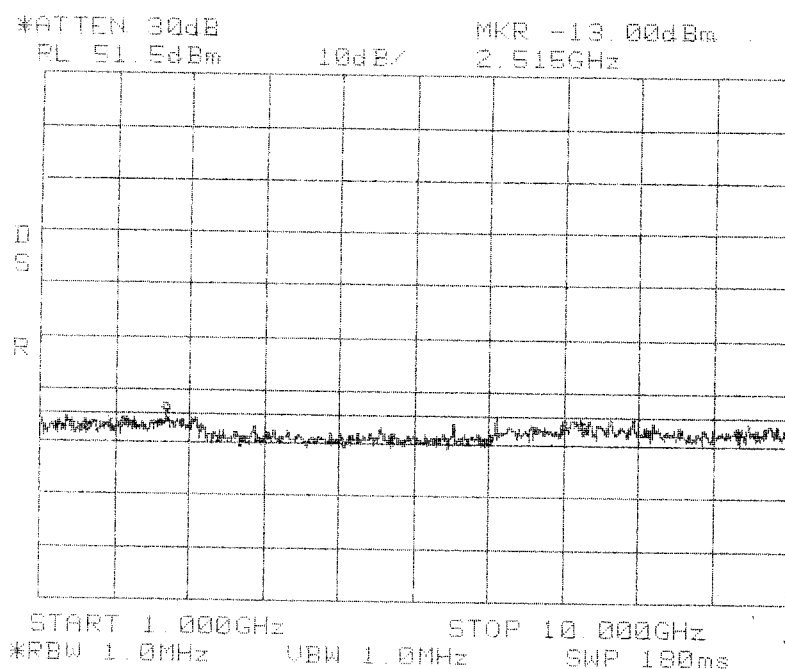
**Intermodulation  
Close  
Lower  
TDMA  
Cellular 800 MHz  
A Band**



**Intermodulation  
Close  
Lower  
TDMA  
Cellular 800 MHz  
A Band**

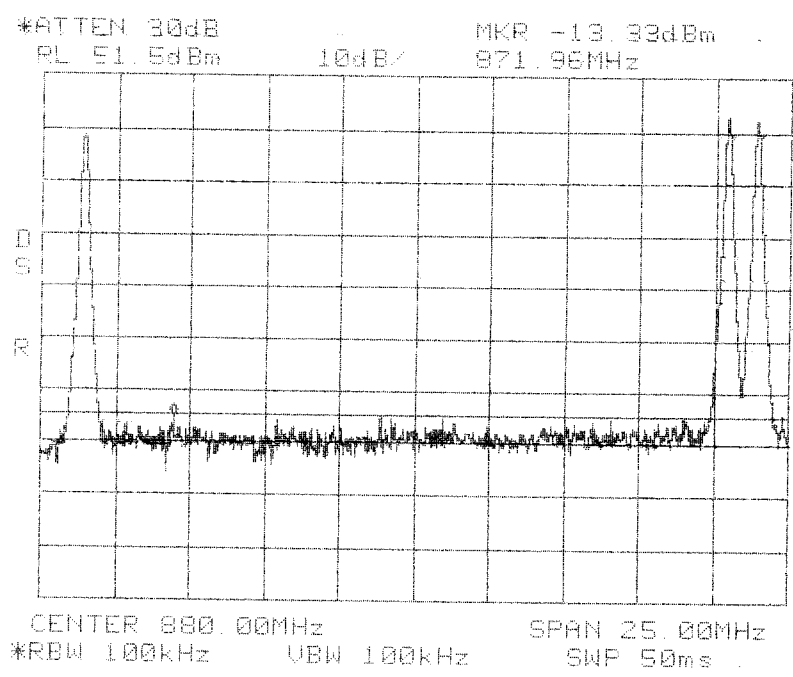
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

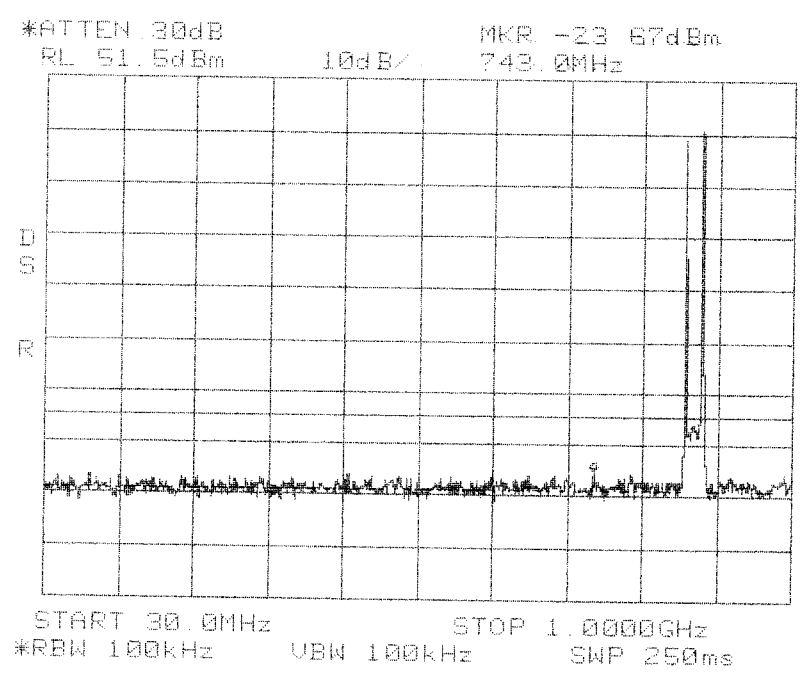


**Intermodulation  
Close  
Lower  
TDMA  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



**Intermodulation  
Close  
Upper  
TDMA  
Cellular 800 MHz  
A Band**

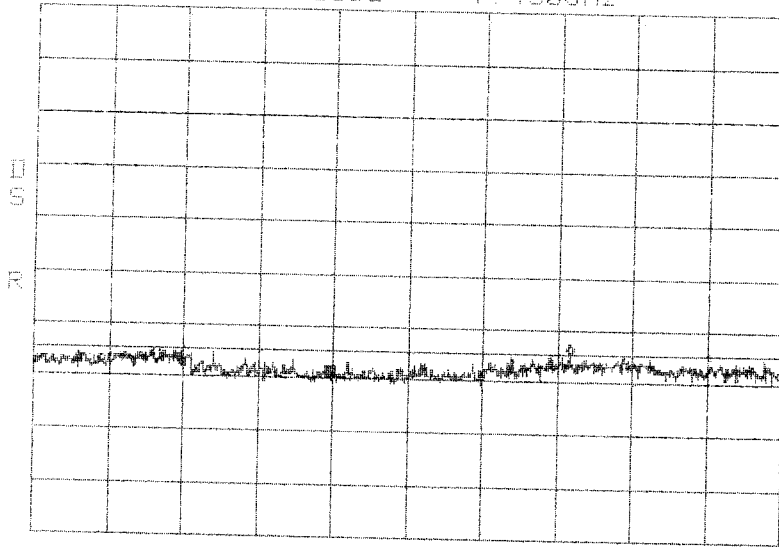


**Intermodulation  
Close  
Upper  
TDMA  
Cellular 800 MHz  
A Band**

Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

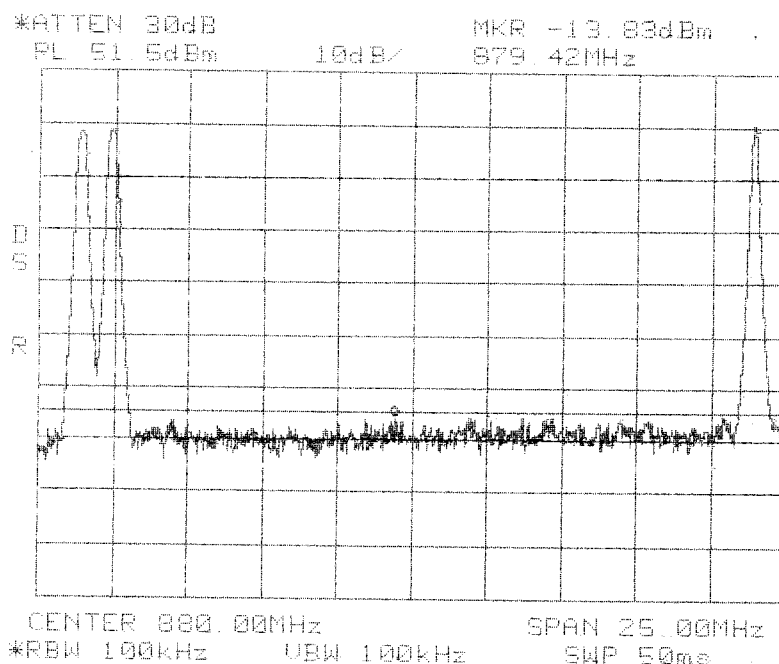
\*ATTEN 30dB  
PL 51.5dBm 10dB/ MKR -13.17dBm  
7.450GHz



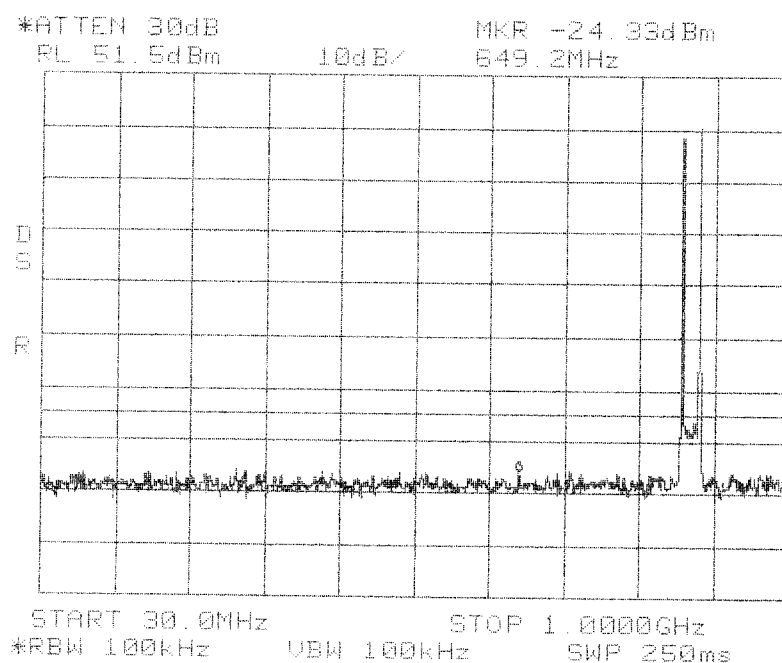
START 1.000GHz STOP 10.000GHz  
\*PBW 1.0MHz VBW 1.0MHz SWP 180ms

**Intermodulation  
Close  
Upper  
TDMA  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



**Intermodulation  
Close  
Lower  
GSM  
Cellular 800 MHz  
A Band**



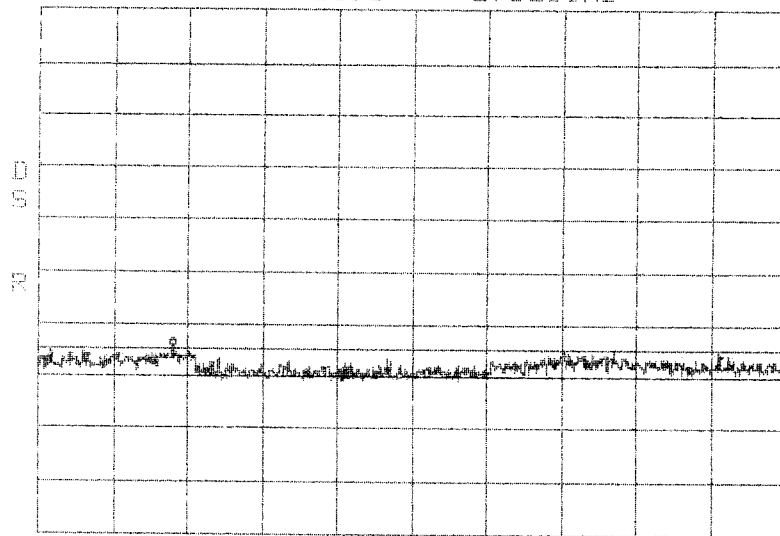
**Intermodulation  
Close  
Lower  
GSM  
Cellular 800 MHz  
A Band**

Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz



Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

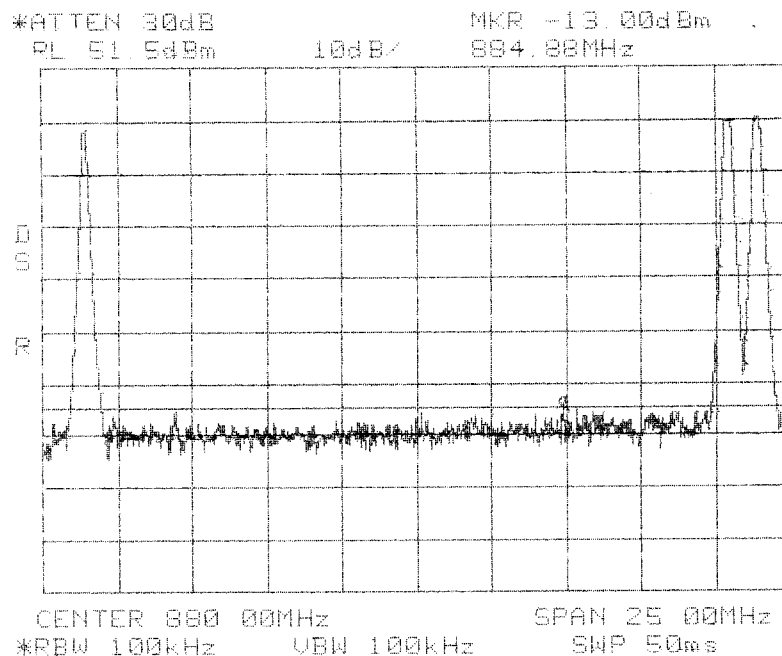
\*ATTEN 30dB MKR -13.17dBm  
PL 51.5dBm 10dB/ 2.620GHz



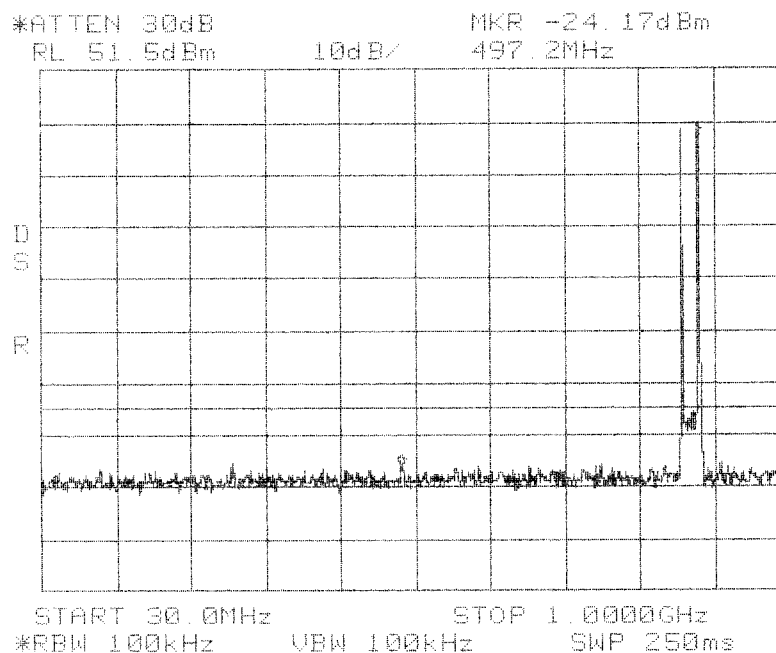
START 1.000GHz STOP 10.000GHz  
\*RBW 1.0MHz VBW 1.0MHz SWP 180ms

**Intermodulation  
Close  
Lower  
GSM  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



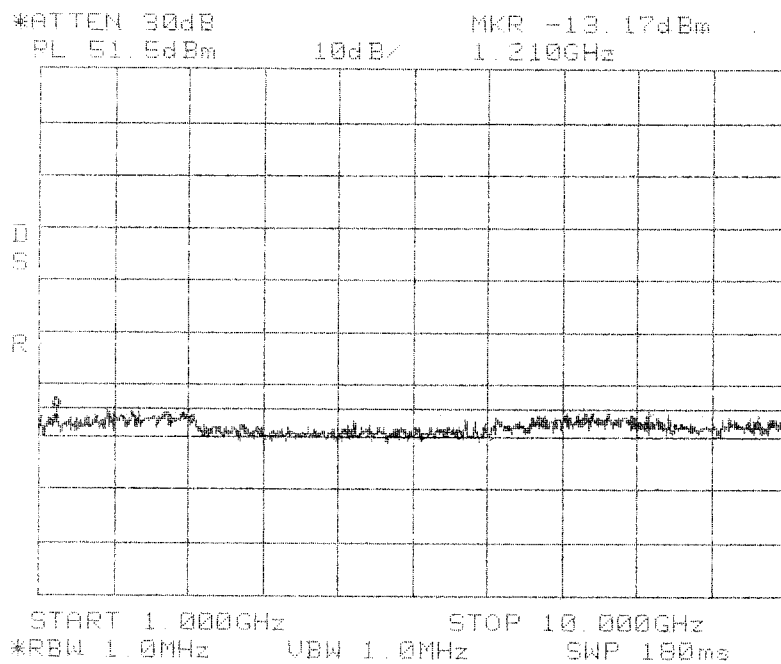
**Intermodulation  
Close  
Upper  
GSM  
Cellular 800 MHz  
A Band**



**Intermodulation  
Close  
Upper  
GSM  
Cellular 800 MHz  
A Band**

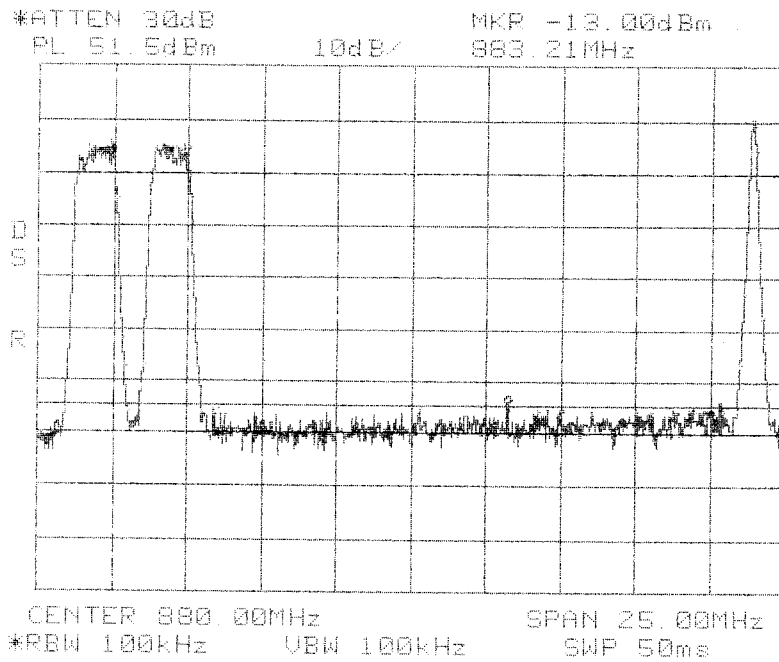
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

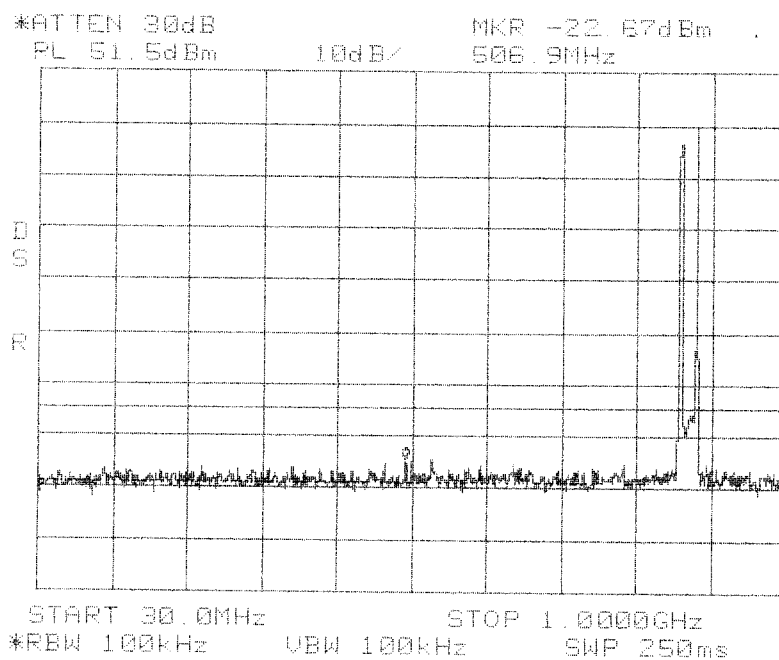


**Intermodulation  
Close  
Upper  
GSM  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



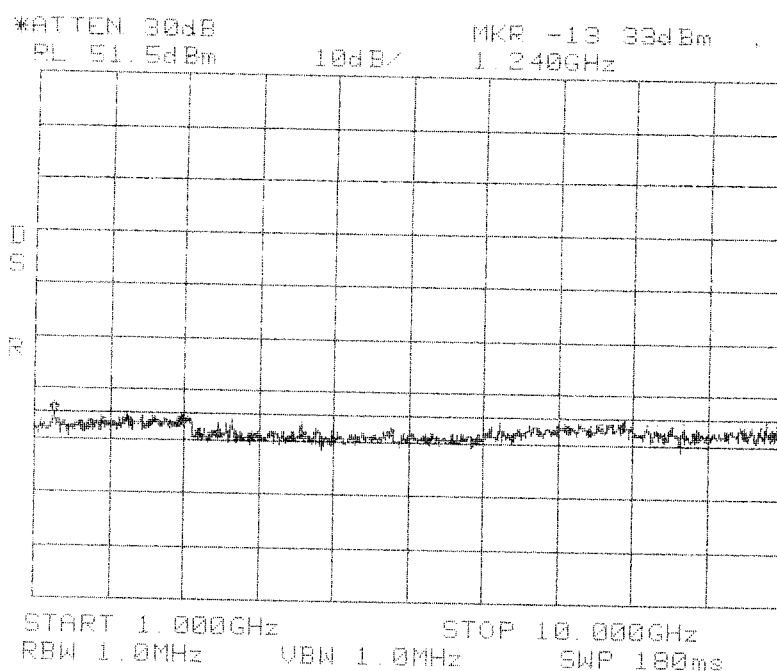
**Intermodulation  
Close  
Lower  
CDMA  
Cellular 800 MHz  
A Band**



**Intermodulation  
Close  
Lower  
CDMA  
Cellular 800 MHz  
A Band**

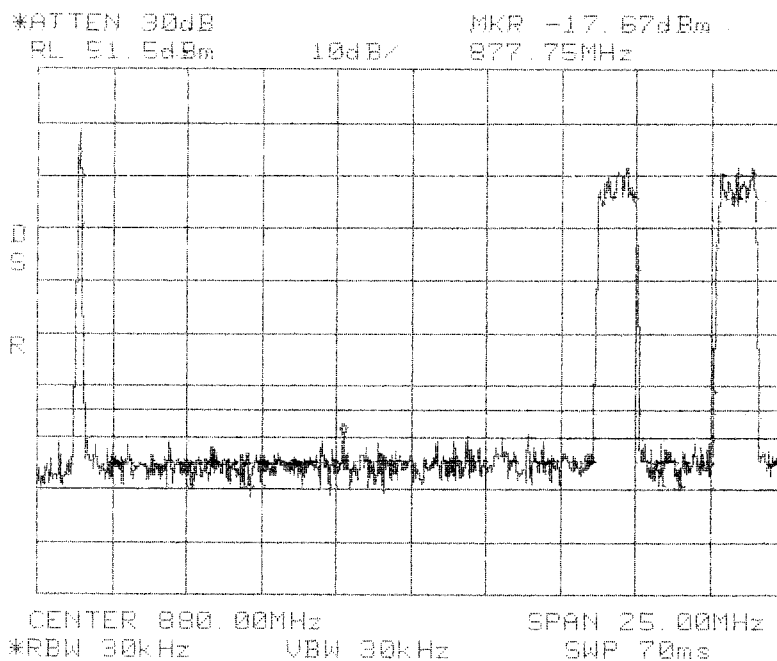
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

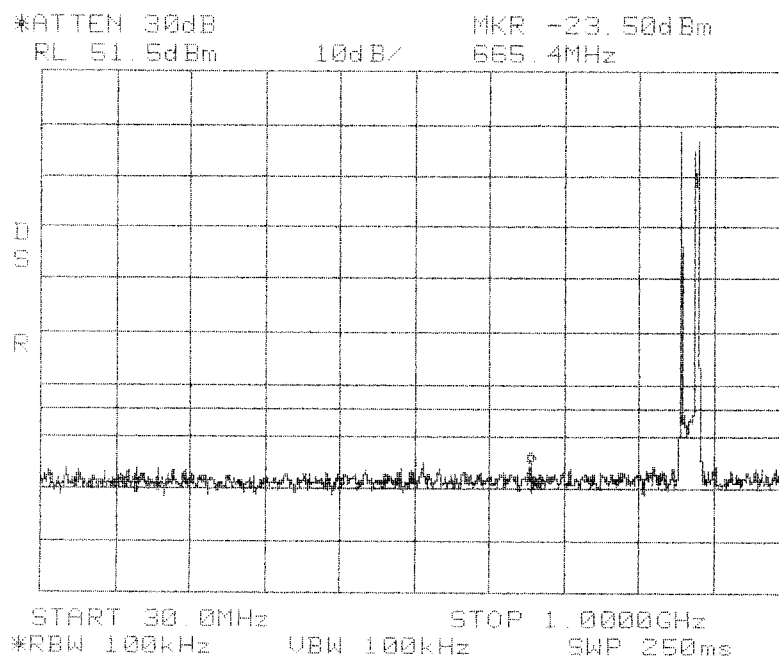


**Intermodulation  
Close  
Lower  
CDMA  
Cellular 800 MHz  
A Band**

Center: 880.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



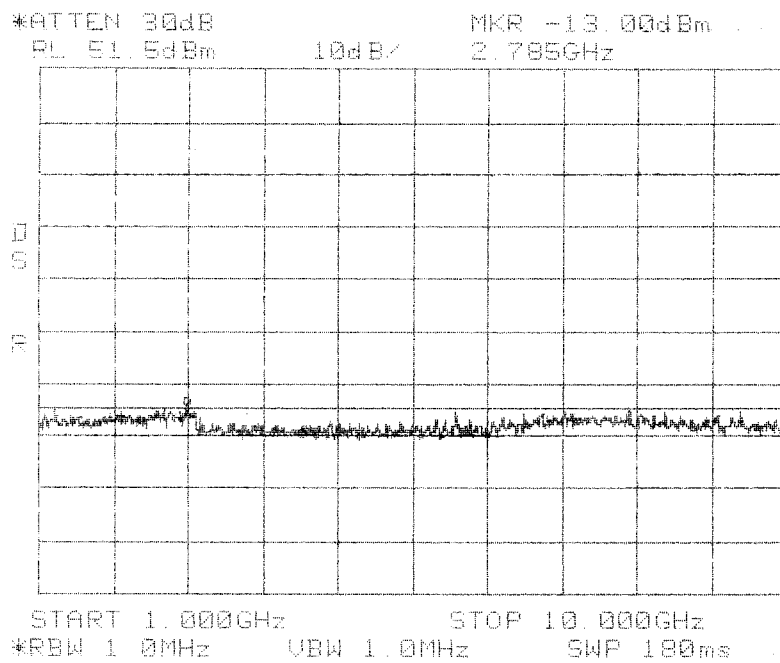
**Intermodulation  
Close  
Upper  
CDMA  
Cellular 800 MHz  
A Band**



**Intermodulation  
Close  
Upper  
CDMA  
Cellular 800 MHz  
A Band**

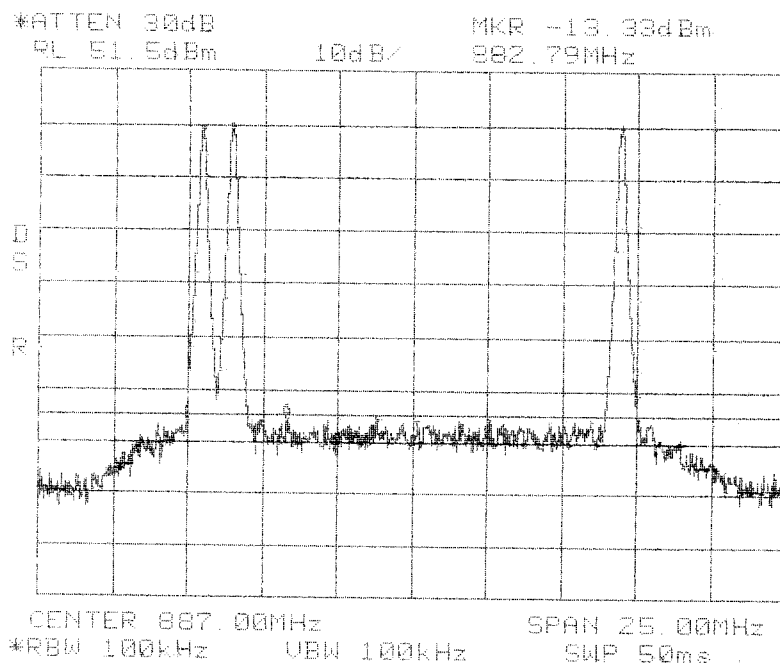
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

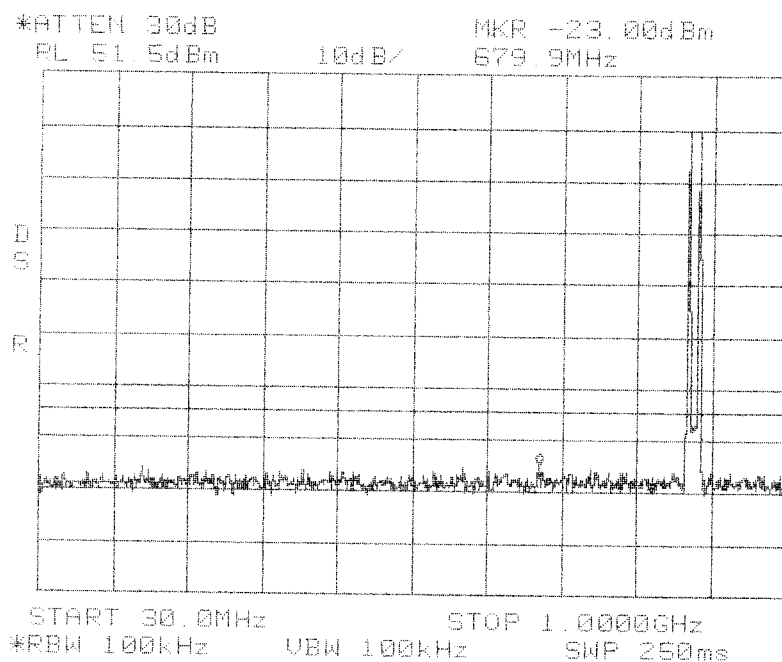


**Intermodulation  
Close  
Upper  
CDMA  
Cellular 800 MHz  
A Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



**Intermodulation  
Close  
Lower  
FM  
Cellular 800 MHz  
B Band**

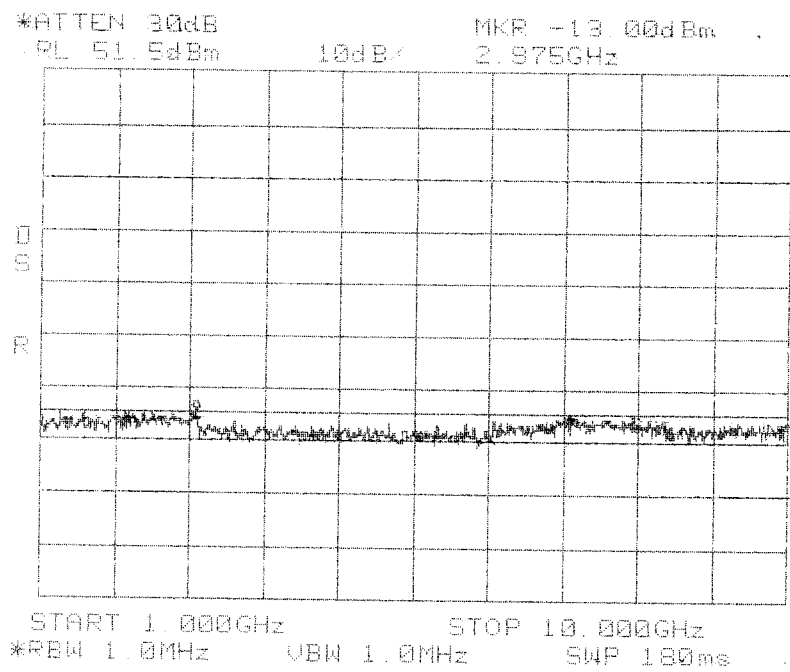


**Intermodulation  
Close  
Lower  
FM  
Cellular 800 MHz  
B Band**

Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

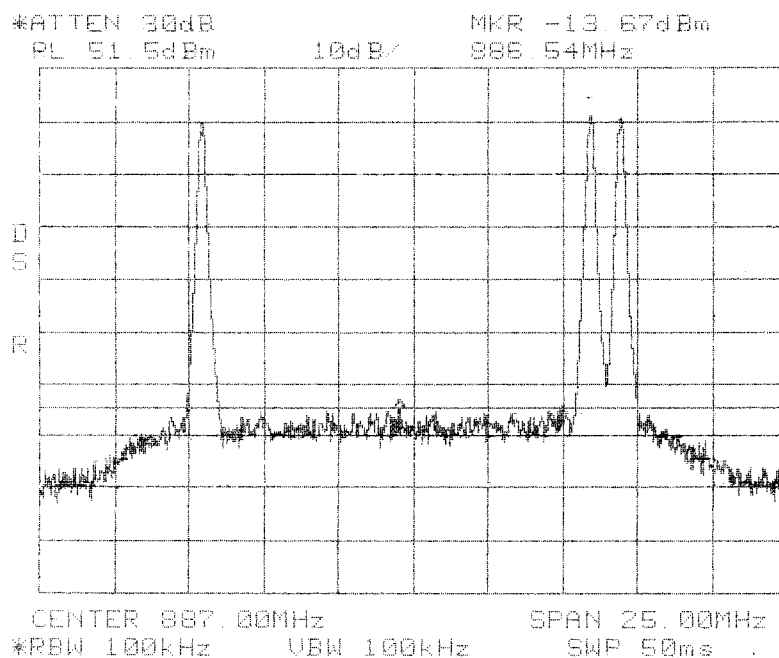


Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

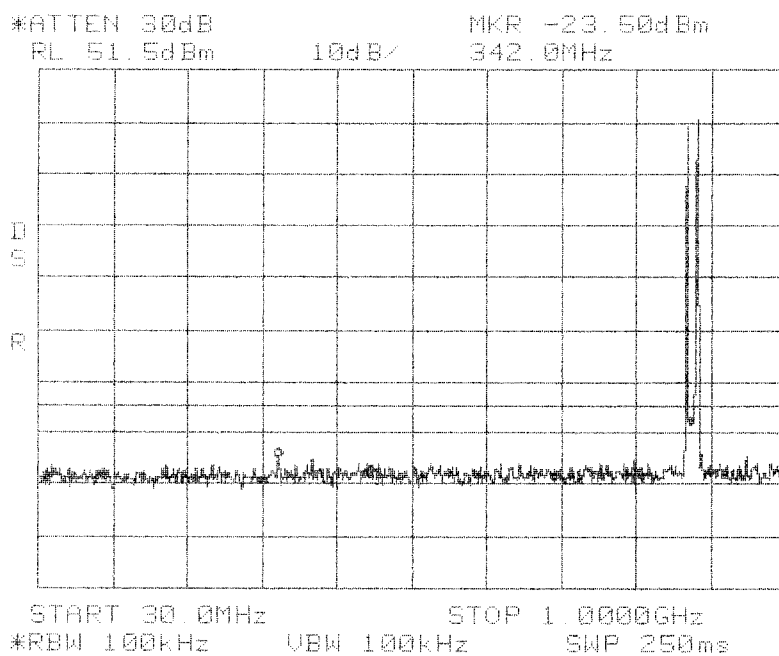


**Intermodulation  
Close  
Lower  
FM  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



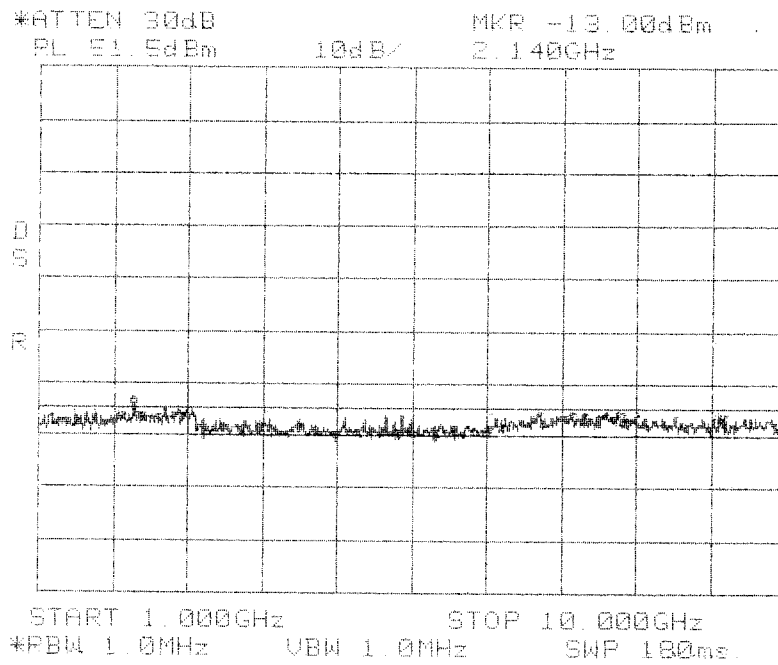
**Intermodulation  
Close  
Upper  
FM  
Cellular 800 MHz  
B Band**



**Intermodulation  
Close  
Upper  
FM  
Cellular 800 MHz  
B Band**

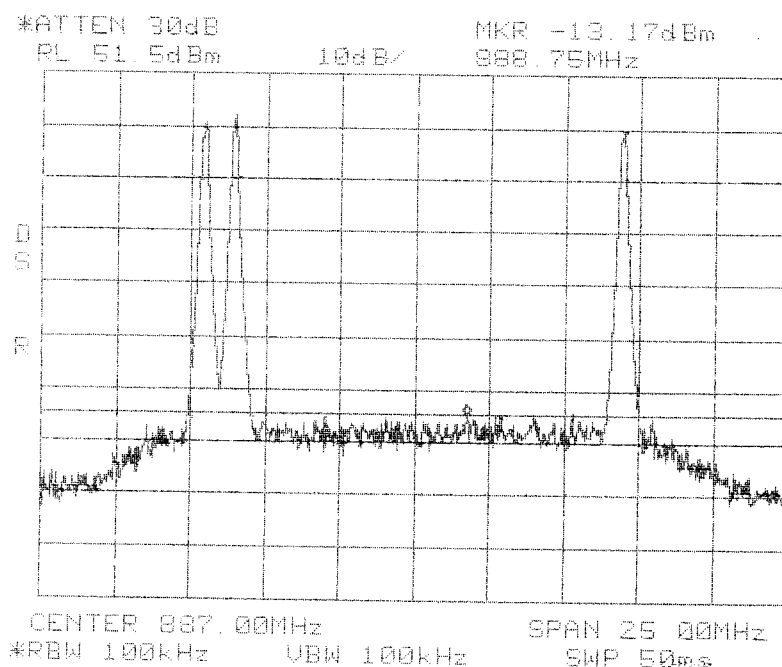
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

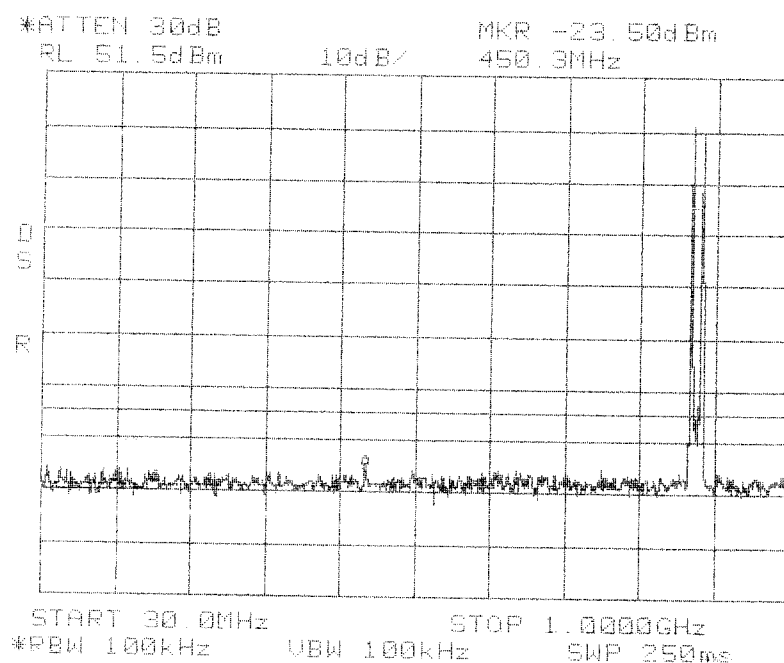


**Intermodulation  
Close  
Upper  
FM  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



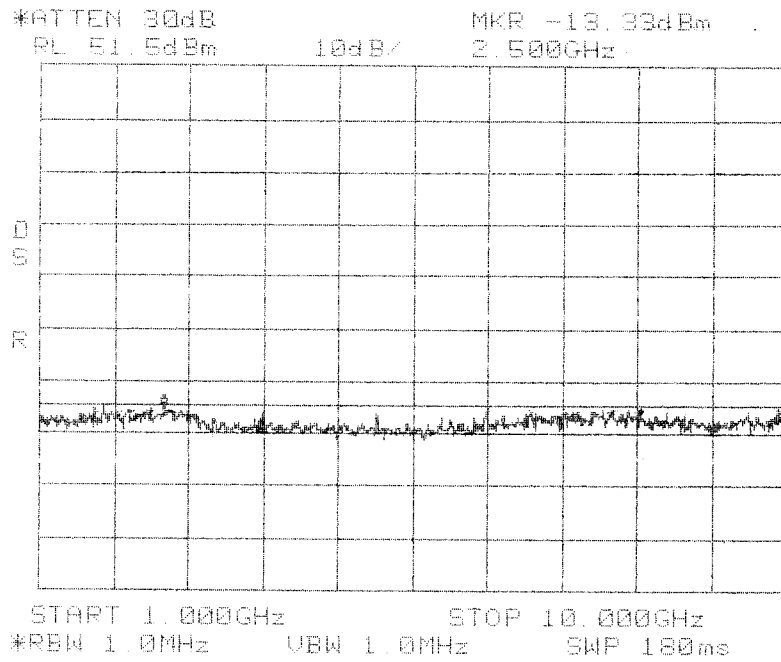
**Intermodulation  
Close  
Lower  
TDMA  
Cellular 800 MHz  
B Band**



**Intermodulation  
Close  
Lower  
TDMA  
Cellular 800 MHz  
B Band**

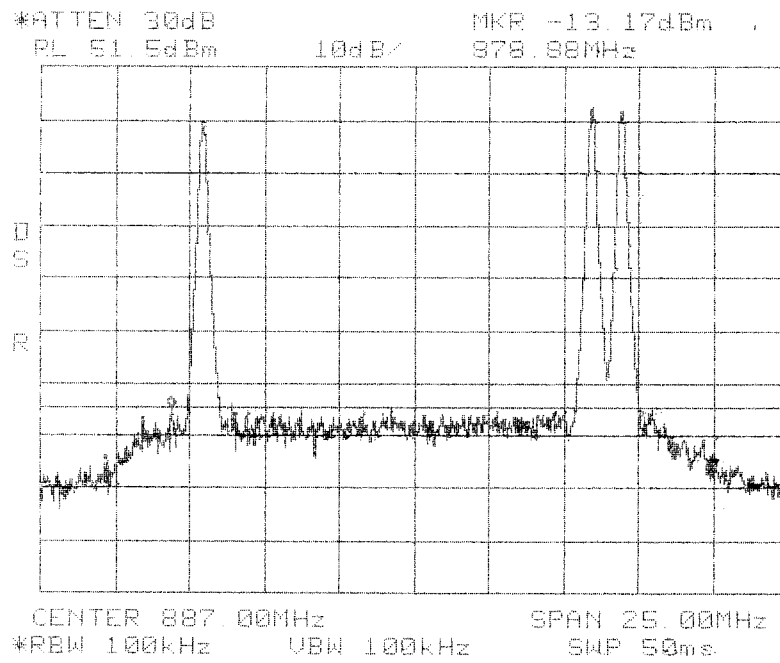
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

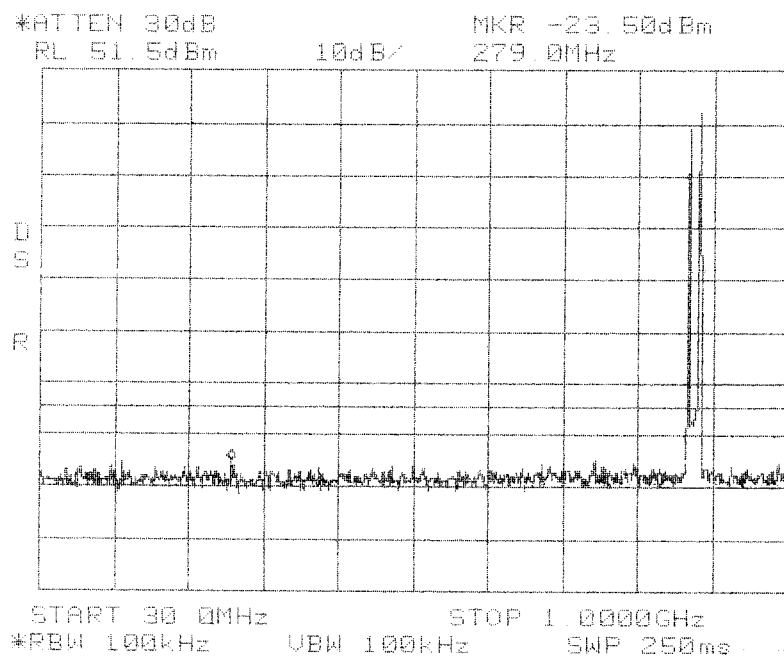


**Intermodulation  
Close  
Lower  
TDMA  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



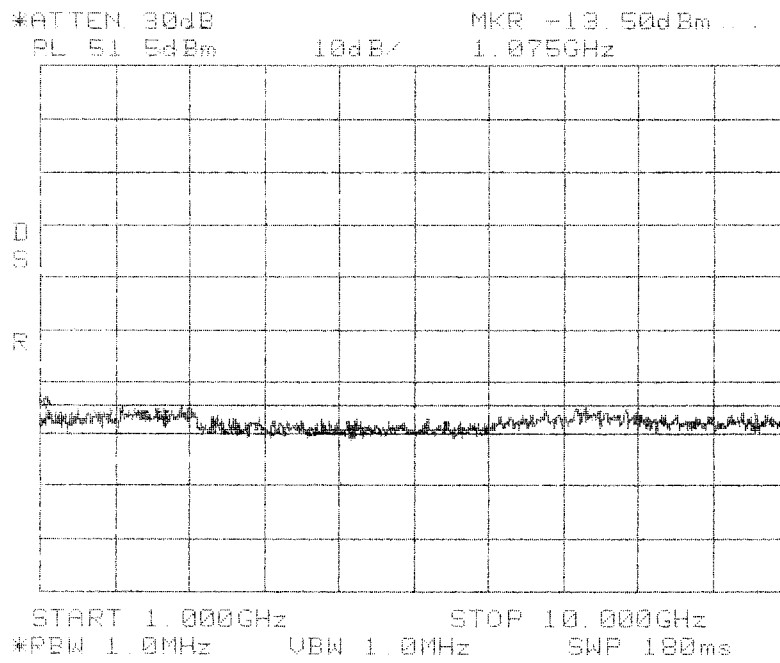
**Intermodulation  
Close  
Upper  
TDMA  
Cellular 800 MHz  
B Band**



**Intermodulation  
Close  
Upper  
TDMA  
Cellular 800 MHz  
B Band**

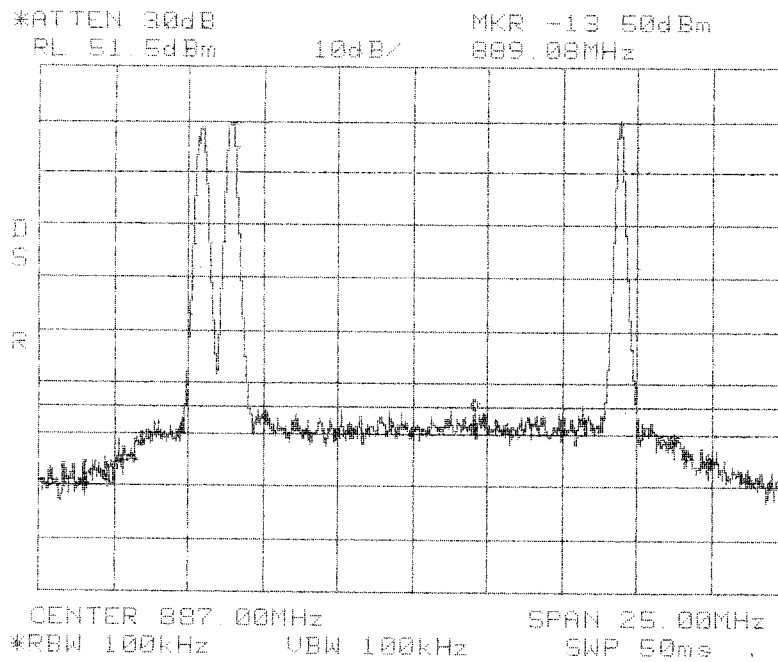
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

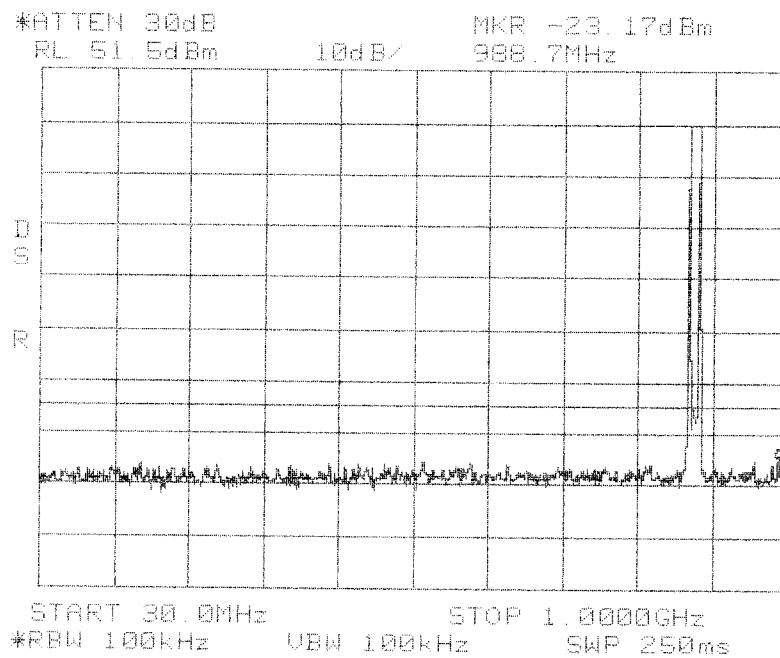


**Intermodulation  
Close  
Upper  
TDMA  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



**Intermodulation  
Close  
Lower  
GSM  
Cellular 800 MHz  
B Band**



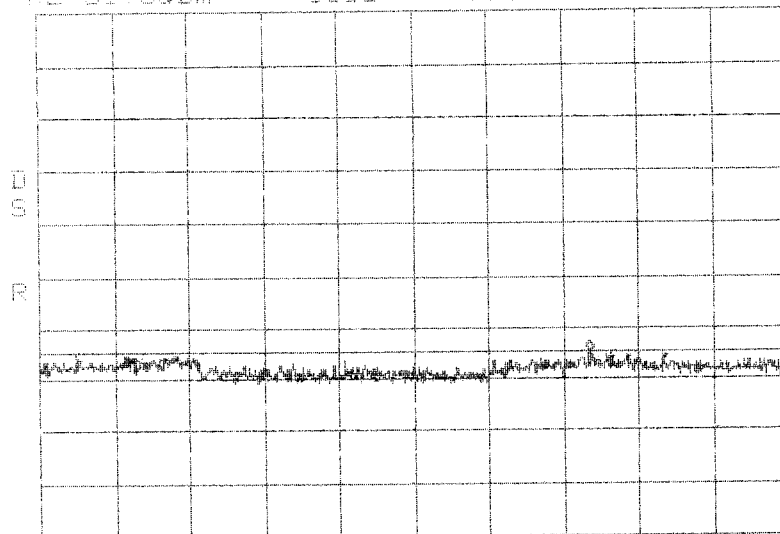
**Intermodulation  
Close  
Lower  
GSM  
Cellular 800 MHz  
B Band**

Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz



Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

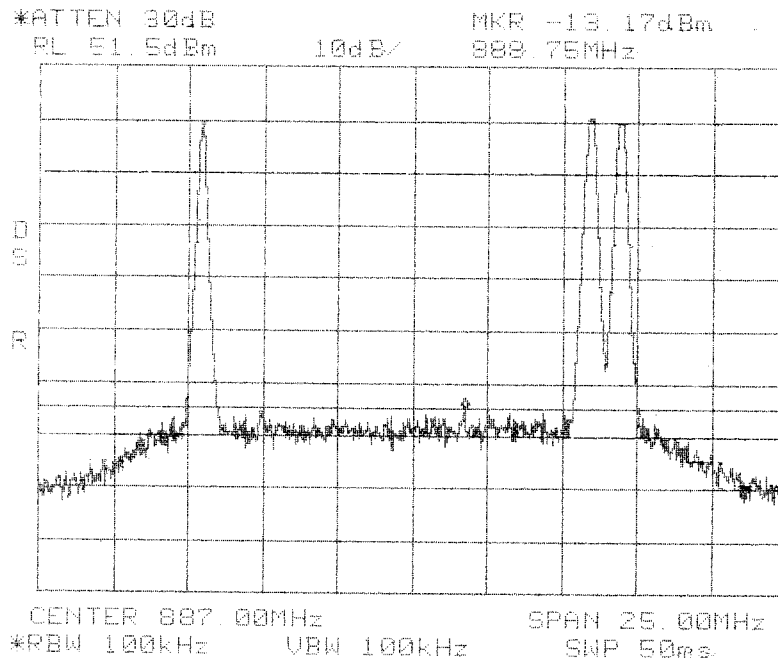
\*ATTEN 30dB MKR -13.17dBm  
\*ATTEN 30dB MKR -13.17dBm  
PL 51.5dBm 10dB/ 7.515GHz



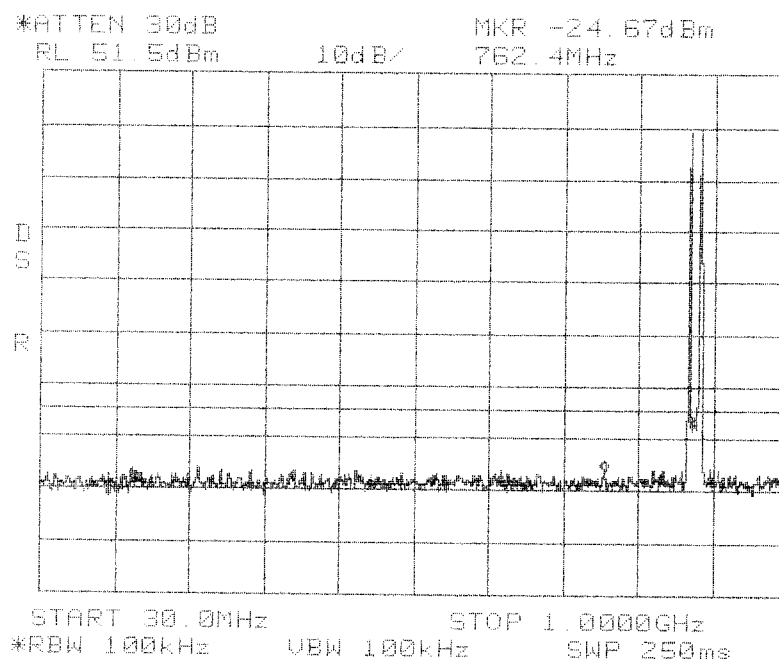
START 1.000GHz STOP 10.000GHz  
\*RBW 1.0MHz VBW 1.0MHz SWP 180ms

**Intermodulation  
Close  
Lower  
GSM  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



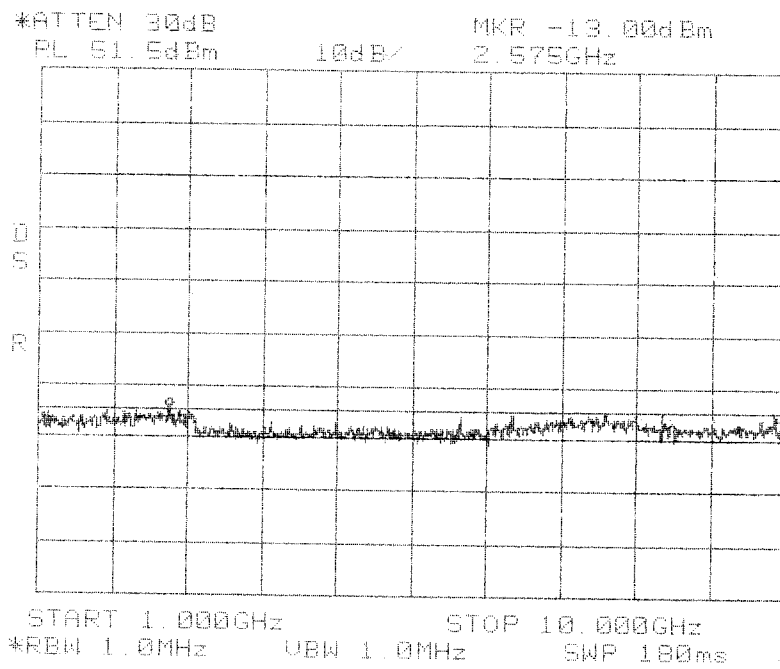
**Intermodulation  
Close  
Upper  
GSM  
Cellular 800 MHz  
B Band**



**Intermodulation  
Close  
Upper  
GSM  
Cellular 800 MHz  
B Band**

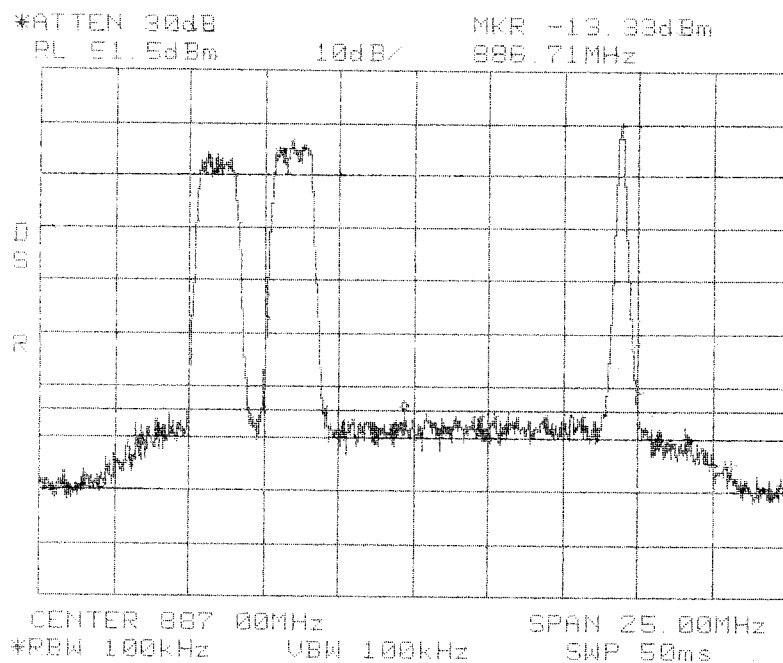
Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

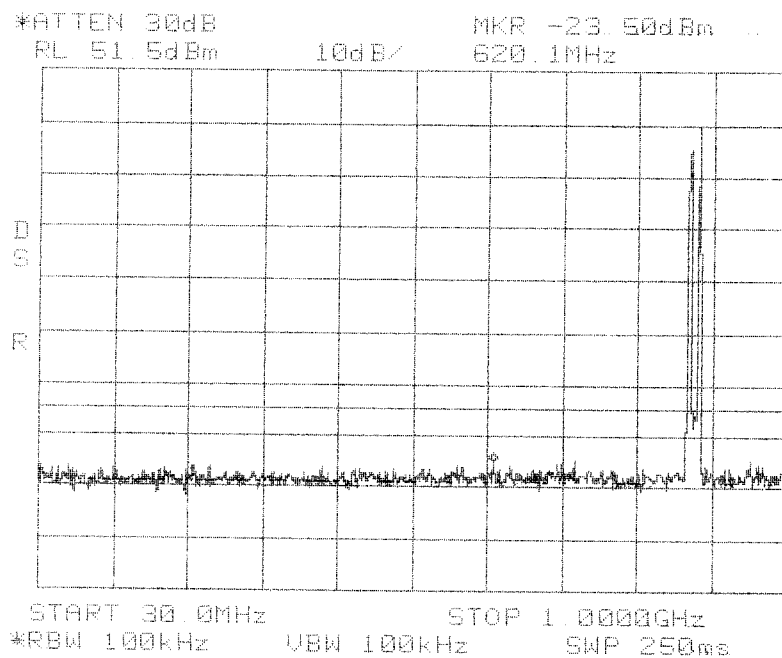


**Intermodulation  
Close  
Upper  
GSM  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



**Intermodulation  
Close  
Lower  
CDMA  
Cellular 800 MHz  
B Band**

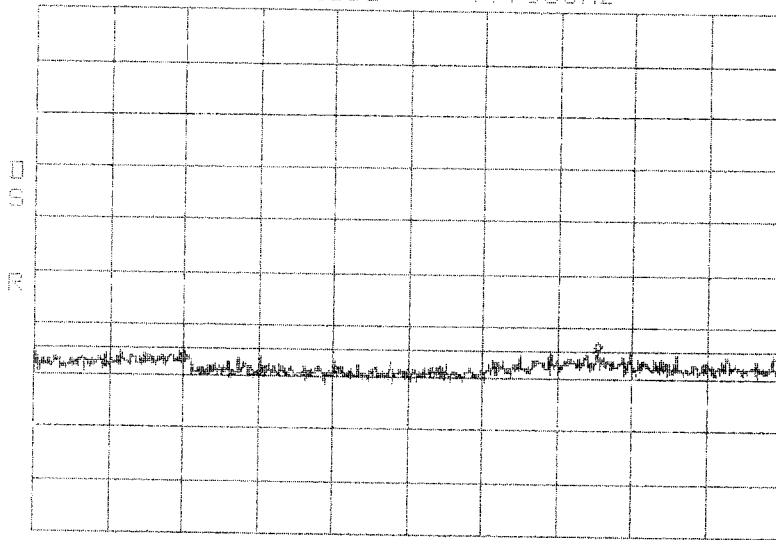


**Intermodulation  
Close  
Lower  
CDMA  
Cellular 800 MHz  
B Band**

Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz

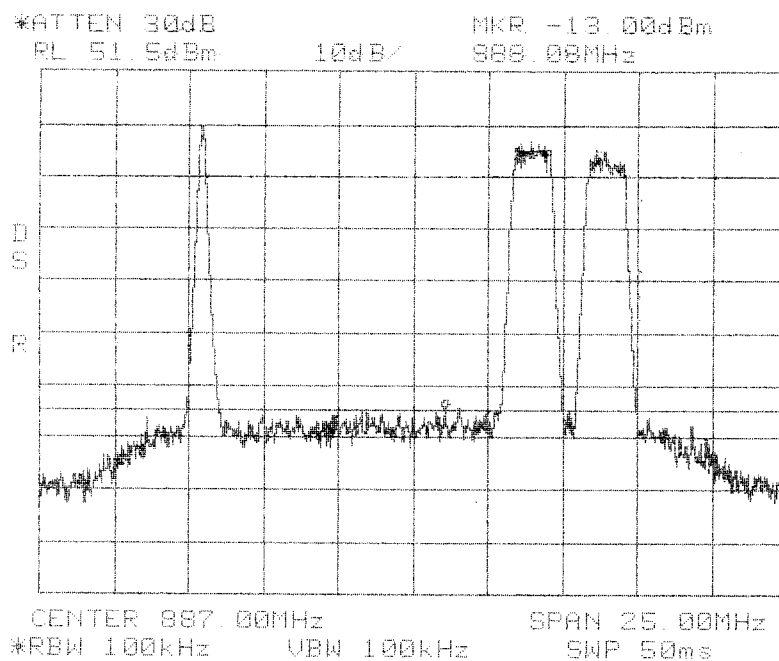
\*ATTEN 30dB MKR -13.33dBm  
RL 51.5dBm 10dB/ 7.795GHz



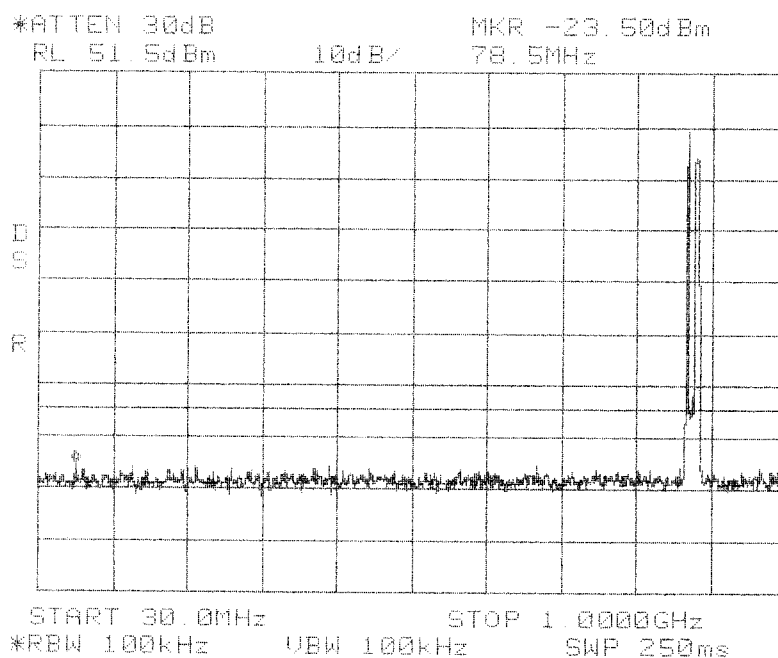
START 1.000GHz STOP 10.000GHz  
\*RBW 1.0MHz VBW 1.0MHz SWP 180ms

**Intermodulation  
Close  
Lower  
CDMA  
Cellular 800 MHz  
B Band**

Center: 887.0 MHz  
Span: 25 MHz  
RBW/VBW: 100 kHz



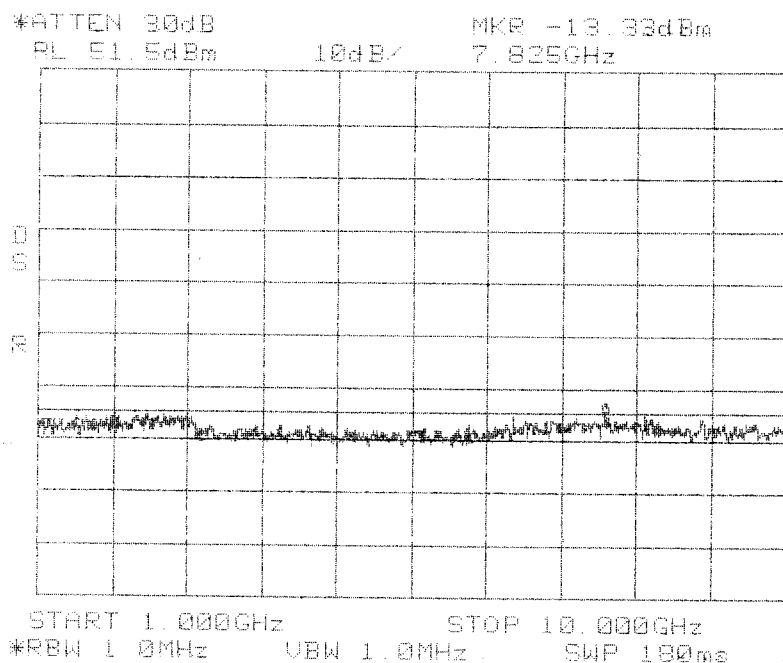
**Intermodulation  
Close  
Upper  
CDMA  
Cellular 800 MHz  
B Band**



**Intermodulation  
Close  
Upper  
CDMA  
Cellular 800 MHz  
B Band**

Span: 30 MHz to 1 GHz  
RBW/VBW: 100 kHz

Span: 1 GHz to 10 GHz  
RBW/VBW: 1 MHz



**Intermodulation  
Close  
Upper  
CDMA  
Cellular 800 MHz  
B Band**

## Appendix B

### Constructional Data Form





## EMC Test Plan and Constructional Data Form

PLEASE COMPLETE THIS DOCUMENT IN FULL, ENTERING N/A IF THE FIELD IS NOT APPLICABLE.

**Applicant** -- NOTE: This information will be input into your test report as shown below.  
Press the F1 key at any time to get HELP for the current field selected.

Company: ADC Inc.

Address: P.O. Box 1101  
Minneapolis, MN 55440-1101

Contact: Mark F. Miska Position: Compliance Engineer

Phone: 952-403-8340 Fax: 952-403-8858

E-mail Address: mark.miska@adc.com

**General Equipment Description** -- NOTE: This information will be input into your test report as shown below.

EUT Description Transports RF between a remote antenna and a customer provided base station.

EUT Name Digivance Long Range Coverage Solution 800 MHz System (A and B Band)

Model No.: DGVL-112XXSYS Serial No.: None  
and DGVL-122XXSYS

Product Options: Receive Diversity and Reverse Link Monitor

Configurations to be tested: 800 MHz A Band and B Band Version with Diversity and RLM

**Test Objective**

- |                                                                                              |                                                                                                                     |
|----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> EMC Directive 89/336/EEC (EMC)                                      | <input checked="" type="checkbox"/> FCC: Class <input type="checkbox"/> A <input type="checkbox"/> B Part <u>22</u> |
| Std: _____                                                                                   | <input type="checkbox"/> VCCI: Class <input type="checkbox"/> A <input type="checkbox"/> B                          |
| <input type="checkbox"/> Machinery Directive 89/392/EEC (EMC)                                | <input type="checkbox"/> BCIQ: Class <input type="checkbox"/> A <input type="checkbox"/> B                          |
| Std: _____                                                                                   | <input type="checkbox"/> Canada: Class <input type="checkbox"/> A <input type="checkbox"/> B                        |
| <input type="checkbox"/> Medical Device Directive 93/42/EEC (EMC)                            | <input type="checkbox"/> Australia: Class <input type="checkbox"/> A <input type="checkbox"/> B                     |
| Std: _____                                                                                   | <input type="checkbox"/> Other: _____                                                                               |
| <input type="checkbox"/> Vehicle Directive 72/245/EEC (EMC)                                  |                                                                                                                     |
| Std: _____                                                                                   |                                                                                                                     |
| <input type="checkbox"/> FDA Reviewers Guidance for Premarket Notification Submissions (EMC) |                                                                                                                     |

**EMC Test Plan and Constructional Data Form****TÜV Product Service Certification Requested**

- ☐ Attestation of Conformity (AoC) ☐ International EMC Mark (IEM)  
☐ Certificate of Conformity (CoC) ☐ Compliance Document  
Protection Class (N/A for vehicles) ☐ Class I ☐ Class II ☐ Class III  
(Press **F1** when field is selected to show additional information on Protection Class.)

**Attendance**

Test will be: ☒ Attended by the customer ☐ Unattended by the customer

**Failure - Complete this section if testing will not be attended by the customer.**

If a failure occurs, TÜV Product Service should:

- ☐ Call contact listed above, if not available then stop testing. (After hrs phone): \_\_\_\_\_  
☐ Continue testing to complete test series.  
☐ Continue testing to define corrective action.  
☐ Stop testing.

**EUT Specifications and Requirements**

Length: 19 Width: 8" Height: 12 Weight: 37 LB

**Power Requirements**

*Regulations require testing to be performed at typical power ratings in the countries of intended use. (i.e., European power is typically 230 VAC 50 Hz or 400 VAC 50 Hz, single and three phase, respectively)*

Voltage: 115 VAC (If battery powered, make sure battery life is sufficient to complete testing.)

# of Phases: 1

Current (Amps/phase(max)): 6.7 Current (Amps/phase(nominal)): 7.3

Other \_\_\_\_\_

**Other Special Requirements**

None

**Typical Installation and/or Operating Environment**

(ie. Hospital, Small Business, Industrial/Factory, etc.)

Host indoor only with STM and LPA indoor or outdoor. System is typically employed as a Microcell.

EMC Test Plan and Constructional Data Form



EUT Power Cable

|                                         |    |                                                |                              |
|-----------------------------------------|----|------------------------------------------------|------------------------------|
| <input type="checkbox"/> Permanent      | OR | <input checked="" type="checkbox"/> Removable  | Length (in meters): <u>1</u> |
| <input type="checkbox"/> Shielded       | OR | <input checked="" type="checkbox"/> Unshielded |                              |
| <input type="checkbox"/> Not Applicable |    |                                                |                              |

## EMC Test Plan and Constructional Data Form

| EUT Interface Ports and Cables |                                     |                                     |           |                                     |                                     |                 |             |                        |                          |                    |                                     |                          |
|--------------------------------|-------------------------------------|-------------------------------------|-----------|-------------------------------------|-------------------------------------|-----------------|-------------|------------------------|--------------------------|--------------------|-------------------------------------|--------------------------|
| Interface                      |                                     |                                     | Shielding |                                     |                                     |                 |             |                        |                          |                    |                                     |                          |
| Type                           | Analog                              | Digital                             | Qty       | Yes                                 | No                                  | Type            | Termination | Connector Type         | Port Termination         | Length (in meters) | Removable                           | Permanent                |
| <b>EXAMPLE:</b>                |                                     |                                     |           |                                     |                                     |                 |             |                        |                          |                    |                                     |                          |
| RS232                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 2         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Foil over braid | Coaxial     | Metallized 9-pin D-Sub | Characteristic Impedance | 6                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| RF "N" type                    | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 5         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Braid           | Coaxial     | N                      | 50 Ohms                  | >3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Alarm                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 1         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Not Specified   | N/A         | 6 Pin Standoff         |                          | >3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Alarm                          | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 1         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Not Specified   | N/A         | 4 Pin Standoff         |                          | >3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Fiber                          | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 3         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | N/A             | N/A         | SC                     | N/A                      | >3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9 Pin Din                      | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 4         | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | Not Specified   | AC Coupled  | Din                    |                          | >3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Net in                         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 1         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Not Specified   | N/A         | Cat 5                  |                          | >3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Net out                        | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | 1         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | Not Specified   | N/A         | Cat 5                  |                          | 3                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| DC power block                 | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 1         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | None            |             | Terminal               |                          | >3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| AC power                       | <input checked="" type="checkbox"/> | <input type="checkbox"/>            | 1         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | None            |             |                        |                          | <3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| STM to Amp Interconnect        | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | 1         | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | Varied          | Chassis     | Special                |                          | .3                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Battery Connection             | <input type="checkbox"/>            | <input type="checkbox"/>            | 1         | <input type="checkbox"/>            | <input checked="" type="checkbox"/> | N/A             | N/A         | 2 Pin Standoff         |                          | <1                 | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
|                                | <input type="checkbox"/>            | <input type="checkbox"/>            |           | <input type="checkbox"/>            | <input type="checkbox"/>            |                 |             |                        |                          |                    | <input type="checkbox"/>            | <input type="checkbox"/> |

## EMC Test Plan and Constructional Data Form

### EUT Software.

Revision Level: Version 7.00.00.01

Description: Digivance Element Management System (DEMS). System Management and Interface Matching Software.

**EUT Operating Modes to be Tested** -- list the operating modes to be used during test. It is recommended the equipment be tested while operating in a typical operation mode. FCC testing of personal computers and/or peripherals requires that a simple program generate a complete line of upper case H's. Provide a general description of all software, firmware, and PLD algorithms used in the equipment. List all code modules as described above, with the revision level used during testing. Consult with your TÜV Product Service Representative if additional assistance is required.

1. Max composite in and out
- 2.
- 3.

**EUT System Components** -- List and describe all components which are part of the EUT. For FCC testing a minimum configuration is required. (ie. Mouse, Printer, Monitor, External Disk Drive, Motherboard, etc.)

| Description                                                                                                   | Model #        | Serial # | FCC ID # |
|---------------------------------------------------------------------------------------------------------------|----------------|----------|----------|
| Host Unit                                                                                                     | DGVL-102010HU  | None     |          |
| STM A Band                                                                                                    | DGVL-112101STM | None     |          |
| STM B Band                                                                                                    | DGVL-122010STM | None     |          |
| Amp                                                                                                           | DGVL-102000LPA | None     |          |
| Digivance LRCS 800 MHz System<br>Model DGVL-112XXSYS and<br>DGVL-122XXSYS consist of the<br>HU, STM, and LPA. |                |          |          |



**EMC Test Plan and Constructional Data Form****Critical EMI Components (Capacitors, ferrites, etc.)**

| <i>Description</i> | <i>Manufacturer</i> | <i>Part # or Value</i> | <i>Qty</i> | <i>Component # / Location</i> |
|--------------------|---------------------|------------------------|------------|-------------------------------|
| None               |                     |                        |            |                               |
|                    |                     |                        |            |                               |
|                    |                     |                        |            |                               |
|                    |                     |                        |            |                               |

**EMC Critical Detail --** Describe other EMC Design details used to reduce high frequency noise.

None

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

**Authorization Signatures**

---

Customer authorization to perform tests  
according to this test plan.

---

Date

---

Test Plan/CDF Prepared By (please print)

---

Date

---

Reviewed by TÜV Product Service Associate

---

Date

## Appendix C

### Measurement Protocol





## MEASUREMENT PROTOCOL

### Environmental conditions in the lab, (TUV)

Temperature: 22 °C  
Relative Humidity: 35 %  
Atmospheric pressure: 98.0 kPa

### Test Methodology

Emissions testing is performed according to the procedures in ANSI C63.4-2003.

### Measurement Uncertainty

The test system for conducted emissions is defined as the LISN, tuned receiver or spectrum analyzer, and coaxial cable. The test system has a measurement uncertainty of  $\pm 1.8$  dB. The test system for radiated emissions is defined as the antenna, the pre-amplifier, the spectrum analyzer and the coaxial cable. The test system has a measurement uncertainty of  $\pm 4.8$  dB. The equipment comprising the test systems is calibrated on an annual basis.

### Justification

The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left unterminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

### Radiated Emissions

The final level, in dB $\mu$ V/m, equals the reading from the spectrum analyzer (Level dB $\mu$ V), adding the antenna correction factor and cable loss factor (Factor dB) to it, and subtracting the preamp gain (and duty cycle correction factor, if applicable). This result then has the limit subtracted from it to provide the Delta, which gives the tabular data as shown in the data sheets in Attachment A.

Example:

| FREQ<br>(MHz) | LEVEL<br>(dB $\mu$ V) | CABLE/ANT/PREAMP<br>(dB) (dB/m) (dB) | FINAL<br>(dB $\mu$ V/m) | POL/HGT/AZ<br>(m) (deg) | DELTA1 |
|---------------|-----------------------|--------------------------------------|-------------------------|-------------------------|--------|
| 60.80         | 42.5Qp +              | 1.2 + 10.9 - 25.5 =                  | 29.1                    | V 1.0 0.0               | -10.9  |

### Substitution Method

A radiated emission scan was also made, at TUV America's Wild River Lab Large Test Site, with the EUT's antenna replaced with a termination to demonstrate case radiation compliance to the -13 dBm requirement. Radiated emissions from the EUT are measured in the frequency range of 30 to 10000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is placed directly on the turntable/ground plane. Interface cables that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. The field strength levels were measured per ANSI C63.4. The EUT is then replaced with a tuned dipole antenna (below 1 GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the highest level measured from the EUT. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level.

### Test Equipment

All measurement instrumentation is traceable to the National Institute of Standards and Technology and is calibrated according to internal procedure.