

# TEST RESULT SUMMARY

## FCC PART 22 SUBPART H

MANUFACTURER'S NAME                      ADC Telecommunications

NAME OF EQUIPMENT                         Digivance Remote Interface Unit – Cellular Amplifier

MODEL NUMBER                                **DGVI-110000RIU** (A Band)  
   **DGVI-120000RIU** (B Band)

MANUFACTURER'S ADDRESS                 PO Box 1101  
   Minneapolis MN 55440

TEST REPORT NUMBER                        NC103645

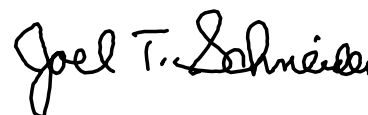
TEST DATE                                      25 April, 23 & 24 May 2001

According to testing performed at TÜV Product Service Inc, the above-mentioned unit is in compliance with the electromagnetic compatibility requirements defined in FCC Part 22 Subpart H.

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 Product Service Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the requirements of FCC Part 22 Subpart H.

Date:            04 June 2001



Location:    Taylors Falls MN  
                  USA

\_\_\_\_\_  
J. C. Sausen  
Test Engineer  
Not Transferable

\_\_\_\_\_  
J. T. Schneider  
Chief Engineer

# EMC EMISSION - TEST REPORT

Test Report File No. : **NC103645** Date of issue: 04 June 2001

Model / Serial No. : **DGVI-110000RIU (A Band) / 214090058**  
**DGVI-120000RIU (B Band) / 214090059**

Product Type : Digivance Remote Interface Unit – Cellular Amplifier

Applicant : ADC Telecommunications

Manufacturer : ADC Telecommunications

License holder : ADC Telecommunications

Address : PO Box 1101

: Minneapolis MN 55440

Test Result :  **Positive**     **Negative**

Test Project Number :  
 Reference(s) : **NC103645**

Total pages including Appendices : 79

*TÜV Product Service Inc is a subcontractor to TÜV Product Service, GmbH according to the principles outlined in ISO/IEC Guide 25 and EN 45001. TÜV Product Service 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 Product Service Inc shall have no liability for any deductions, inferences or generalizations drawn by the client or others from TÜV Product Service 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 or any agency of the US government.*

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

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**EMISSIONS TEST REGULATIONS :**

The emissions tests were performed according to following regulations:

- |   |   |                                    |
|---|---|------------------------------------|
| <input type="checkbox"/> - EN 50081-1 / 1991                | <input type="checkbox"/> - Group 1                          | <input type="checkbox"/> - Group 2 |
| <input type="checkbox"/> - EN 55011 / 1991                  | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B |
| <input type="checkbox"/> - EN 55013 / 1990                  | <input type="checkbox"/> - Household appliances and similar |                                    |
| <input type="checkbox"/> - EN 55014 / 1987                  | <input type="checkbox"/> - Portable tools                   |                                    |
|   | <input type="checkbox"/> - Semiconductor devices            |                                    |
| <input type="checkbox"/> - EN 55014 / A2:1990               | <input type="checkbox"/> - Household appliances and similar |                                    |
| <input type="checkbox"/> - EN 55014 / 1993                  | <input type="checkbox"/> - Portable tools                   |                                    |
|   | <input type="checkbox"/> - Semiconductor devices            |                                    |
| <input type="checkbox"/> - EN 55015 / 1987                  |   |                                    |
| <input type="checkbox"/> - EN 55015 / A1:1990               |   |                                    |
| <input type="checkbox"/> - EN 55015 / 1993                  |   |                                    |
| <input type="checkbox"/> - EN 55022 / 1987                  | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B |
| <input checked="" type="checkbox"/> - FCC Part 22 Subpart H |   |                                    |
| <input type="checkbox"/> - BS                               |   |                                    |
| <input type="checkbox"/> - VCCI                             | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B |
| <input type="checkbox"/> - FCC                              | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B |
| <input type="checkbox"/> - AS 3548 (1992)                   | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B |
| <input type="checkbox"/> - CISPR 11 (1990)                  | <input type="checkbox"/> - Group 1                          | <input type="checkbox"/> - Group 2 |
|   | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B |
| <input type="checkbox"/> - CISPR 22 (1993)                  | <input type="checkbox"/> - Class A                          | <input type="checkbox"/> - Class B |

**Environmental conditions in the lab:**

	<u>Actual</u>
Temperature	: 20 °C
Relative Humidity	: 49 %
Atmospheric pressure	: 99.1 kPa
Power supply system	: 60 Hz - 115 V - 1-phase

**Sign Explanations:**

- not applicable
- applicable



**Emissions Test Conditions: CONDUCTED EMISSIONS (Interference Voltage) per 15.207**

**The CONDUCTED EMISSIONS (INTERFERENCE VOLTAGE) measurements were performed at the following test location:**

- Test not applicable

- Wild River Lab Large Test Site (Open Area Test Site)
- Wild River Lab Small Test Site (Open Area Test Site)
- Oakwood Lab (Open Area Test Site)
- Wild River Lab Screen Room
- New Brighton Lab Shielded Room

**Test equipment used :**

	TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ -	2417	3825/2	Electro-Mechanics (EMCO)	50 Ω LISN	8812-1439	9-21-01
■ -	2534	ESHS-20	Rhode & Schwarz	EMI Receiver	837055/003	8-22-01
■ -	2741	11947A	Hewlett-Packard	Transient Limiter	3107A00779	3-21-02

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

Conducted emissions on the 60 Hz power interface of the EUT are measured in the frequency range of 450 kHz to 30 MHz. The measurements are performed using a receiver, which has CISPR characteristic bandwidth and quasi-peak detection, and a Line Impedance Stabilization Network (LISN), with 50 Ω/50 μH (CISPR 16) characteristics. Table top equipment is placed on a non-conducting table 80 centimeters above the floor and is positioned 40 centimeters from the vertical ground plane (wall) of the screen room. In some cases, a pre-scan using a spectrum analyzer is initially performed on the units comprising the system under test to locate the highest emissions. If the minimum passing margin appears to be less than 20 dB with a peak mode measurement, the emissions are re-measured using a tuned receiver or spectrum analyzer with quasi-peak and average detection and recorded on the data sheets.

**Conducted Emissions data on next 2 pages**

# Conducted Electromagnetic Emissions



Test Report #: 3645 Run 01 Test Area: SCREEN ROOM  
 Test Method: FCC Test Date: 25-Apr-2001  
 EUT Model #: A Band EUT Power: 60 Hz / 120 VAC  
 EUT Serial #: \_\_\_\_\_ Temperature: 20 °C  
 Manufacturer: ADC Relative Humidity: 499 %  
 EUT Description: \_\_\_\_\_ Air Pressure: 99.2 kPa  
 Notes: \_\_\_\_\_ Page: 1 of 2  
 \_\_\_\_\_  
 \_\_\_\_\_

FREQ (MHz)	LEVEL (dBuV)	CABLE / LISN / ATTEN (dB)	FINAL (dBuV)	TEST POINT	DELTA1 FCC B	DELTA2 N/A
1.77	18.8 Qp	0.0 / 0.1 / -9.9	28.9	Line 1	-19.1	N/A
6.62	7.3 Qp	0.1 / 0.1 / -9.9	17.4	Line 1	-30.6	N/A
13.74	21.4 Qp	0.3 / 0.2 / -9.9	31.8	Line 1	-16.2	N/A
21.50	26.0 Qp	0.5 / 0.3 / -10.0	36.8	Line 1	-11.2	N/A
0.450	2.4 Qp	0.0 / 0.1 / -9.9	12.4	Neutral	-35.6	N/A
6.62	15.0 Qp	0.1 / 0.1 / -9.9	25.1	Neutral	-22.9	N/A
13.74	17.3 Qp	0.3 / 0.2 / -9.9	27.7	Neutral	-20.3	N/A
21.50	24.4 Qp	0.5 / 0.3 / -10.0	35.2	Neutral	-12.8	N/A
30.00	7.3 Qp	0.7 / 0.5 / -10.0	18.5	Neutral	-29.5	N/A
2.57	14.6 Qp	0.1 / 0.1 / -10.0	24.7	Neutral	-23.3	N/A
0.450	1.2 Qp	0.0 / 0.1 / -9.9	11.2	Line 1	-36.8	N/A

Tested by: J. C. Sausen

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Signature

Reviewed by: J. T. Schneider

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Printed

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Signature

# Conducted Electromagnetic Emissions



Test Report #: 3645 Run 01      Test Area: SCREEN ROOM  
 Test Method: FCC      Test Date: 25-Apr-2001  
 EUT Model #: A Band      EUT Power: 60 Hz / 120 VAC  
 EUT Serial #: \_\_\_\_\_      Temperature: 20 °C  
 Manufacturer: ADC      Relative Humidity: 499 %  
 EUT Description: \_\_\_\_\_      Air Pressure: 99.2 kPa  
 Notes: \_\_\_\_\_      Page: 2 of 2

FREQ (MHz)	LEVEL (dBuV)	CABLE / LISN / ATTEN (dB)	FINAL (dBuV)	TEST POINT	DELTA1 FCC B	DELTA2 N/A
---------------	-----------------	------------------------------	-----------------	------------	-----------------	---------------

***** MEASUREMENT SUMMARY *****						
21.50	26.0 Qp	0.5 / 0.3 / -10.0	36.8	Line 1	-11.2	N/A
13.74	21.4 Qp	0.3 / 0.2 / -9.9	31.8	Line 1	-16.2	N/A
1.77	18.8 Qp	0.0 / 0.1 / -9.9	28.9	Line 1	-19.1	N/A
6.62	15.0 Qp	0.1 / 0.1 / -9.9	25.1	Neutral	-22.9	N/A
2.57	14.6 Qp	0.1 / 0.1 / -10.0	24.7	Neutral	-23.3	N/A
30.00	7.3 Qp	0.7 / 0.5 / -10.0	18.5	Neutral	-29.5	N/A
0.450	2.4 Qp	0.0 / 0.1 / -9.9	12.4	Neutral	-35.6	N/A
0.160	23.5 Qp	0.0 / 0.1 / -9.8	33.4	Line 1	N/A	N/A
0.180	23.8 Qp	0.0 / 0.1 / -9.9	33.8	Line 1	N/A	N/A
0.205	22.9 Qp	0.0 / 0.1 / -9.9	32.9	Line 1	N/A	N/A
0.225	22.0 Qp	0.0 / 0.1 / -9.8	31.9	Line 1	N/A	N/A
0.315	19.7 Qp	0.0 / 0.1 / -9.9	29.7	Line 1	N/A	N/A

Minimum Margin of Compliance is 11 dB at 21.5 MHz.

Tested by: J. C. Sausen

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Reviewed by: J. T. Schneider

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## 22.355 Frequency tolerance

The Frequency Tolerance measurements were performed at the following test location:

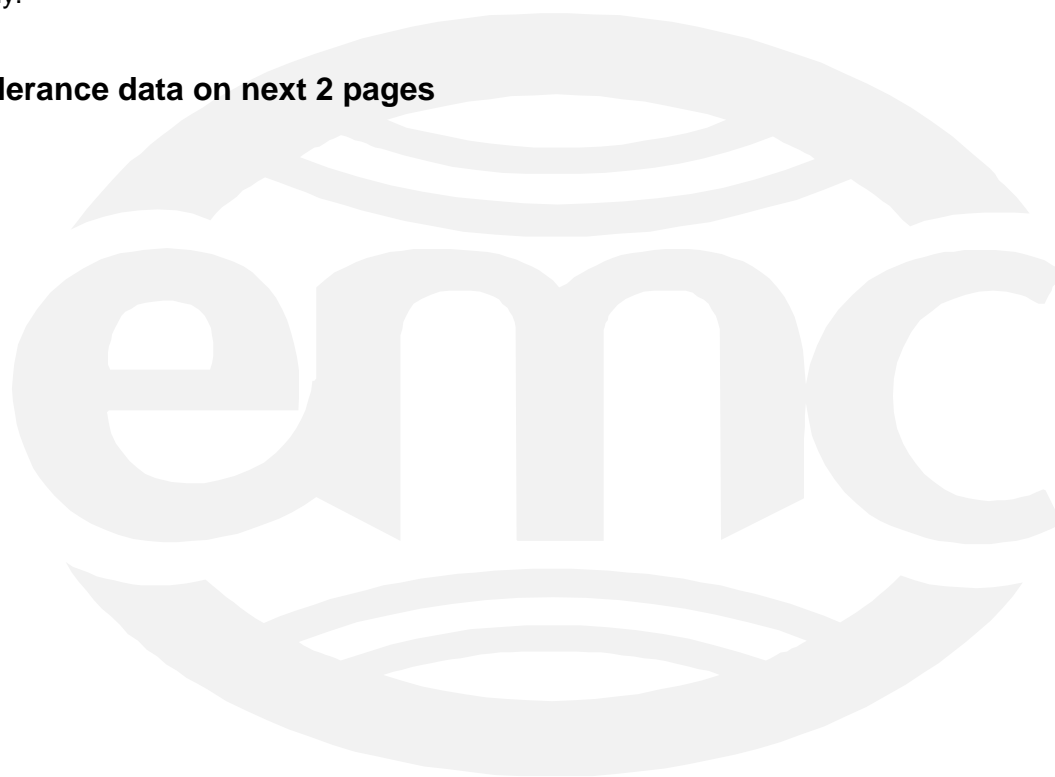
- - ADC facility

### Test equipment used :

Model Number	Manufacturer	Description	Serial Number	Cal Due
■ - F-12-CHV-S-5	Despatch/Ecosphere	Temperature chamber	MC21679	Aug 01
■ - 5385A	Hewlett-Packard	Microwave Frequency Counter	MC27851	Feb 02
■ - HH23	Omega	Microprocessor Thermometer		11-01

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually.

Frequency tolerance data on next 2 pages



**Frequency Tolerance Test for ADC Inc. Digivance 800 Remote Interface Unit  
Models DGVI-110000RIU (Band A) and DGVI-120000RIU (Band B).  
Per FCC CFR 47 Part 22.355**

**Band A EUT**

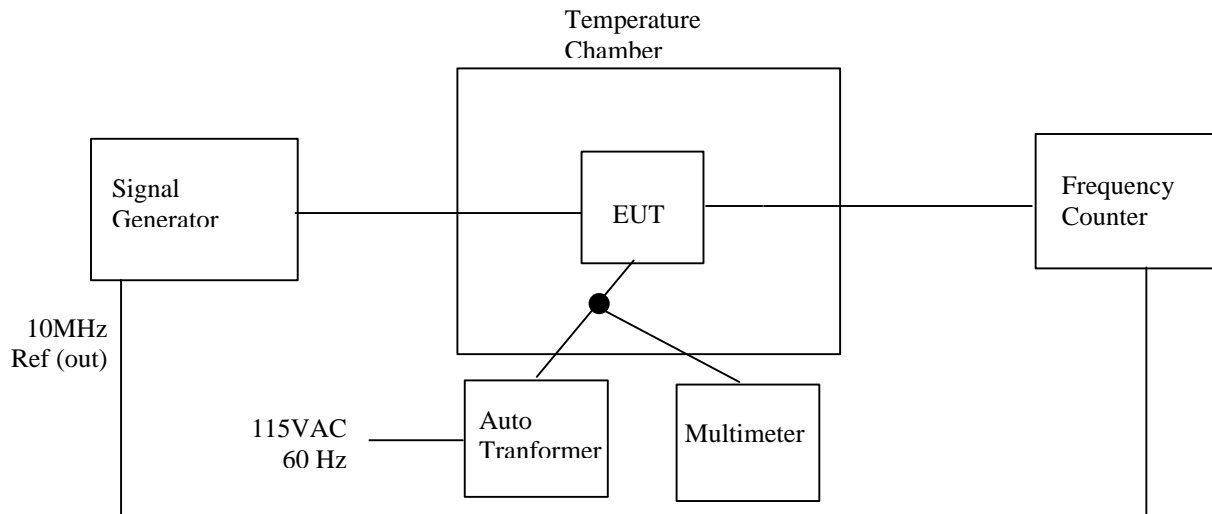
<b>Input Voltage</b>	<b>Carrier Frequency</b>	<b>Measured Frequency</b>	<b>Meets 1.5ppm requirement</b>
102 VAC	824.500000 MHz	824.500000 MHz	< 1.5 ppm
120 VAC	824.500000 MHz	824.500000 MHz	< 1.5 ppm
138 VAC	824.500000 MHz	824.500000 MHz	< 1.5 ppm
102 VAC	830.000000 MHz	830.000000 MHz	< 1.5 ppm
120 VAC	830.000000 MHz	830.000000 MHz	< 1.5 ppm
138 VAC	830.000000 MHz	830.000000 MHz	< 1.5 ppm
102 VAC	846.400000MHz	846.400000MHz	< 1.5 ppm
120 VAC	846.400000MHz	846.400000MHz	< 1.5 ppm
138 VAC	846.400000MHz	846.400000MHz	< 1.5 ppm
<b>Temperature</b>	<b>Carrier Frequency</b>	<b>Measured Frequency</b>	<b>Meets 1.5ppm requirement</b>
0 Deg. C	824.500000 MHz	824.500000 MHz	< 1.5 ppm
10 Deg C	824.500000 MHz	824.500000 MHz	< 1.5 ppm
20 Deg C	824.500000 MHz	824.500000 MHz	< 1.5 ppm
30 Deg C	824.500000MHz	824.500000MHz	< 1.5 ppm
40 Deg C	824.500000 MHz	824.500000 MHz	< 1.5 ppm
50 Deg C	824.500000 MHz	824.500000 MHz	< 1.5 ppm
0 Deg. C	830.000000 MHz	830.000000 MHz	< 1.5 ppm
10 Deg C	830.000000 MHz	830.000000 MHz	< 1.5 ppm
20 Deg C	830.000000 MHz	830.000000 MHz	< 1.5 ppm
30 Deg C	830.000000 MHz	830.000000 MHz	< 1.5 ppm
40 Deg C	830.000000 MHz	830.000000 MHz	< 1.5 ppm
50 Deg C	830.000000 MHz	830.000000 MHz	< 1.5 ppm
0 Deg. C	846.400000MHz	846.400000MHz	< 1.5 ppm
10 Deg C	846.400000MHz	846.400000MHz	< 1.5 ppm
20 Deg C	846.400000MHz	846.400000MHz	< 1.5 ppm
30 Deg C	846.400000MHz	846.400000MHz	< 1.5 ppm
40 Deg C	846.400000MHz	846.400000MHz	< 1.5 ppm
50 Deg C	846.400000MHz	846.400000MHz	< 1.5 ppm

## Band B EUT

<b>Input Voltage</b>	<b>Carrier Frequency</b>	<b>Measured Frequency</b>	<b>Meets 1.5ppm requirement</b>
102 VAC	835.500000 MHz	835.500000 MHz	< 1.5 ppm
120 VAC	835.500000 MHz	835.500000 MHz	< 1.5 ppm
138 VAC	835.500000 MHz	835.500000 MHz	< 1.5 ppm
102 VAC	840.000000 MHz	840.000000 MHz	< 1.5 ppm
120 VAC	840.000000 MHz	840.000000 MHz	< 1.5 ppm
138 VAC	840.000000 MHz	840.000000 MHz	< 1.5 ppm
102 VAC	848.000000 MHz	848.000000 MHz	< 1.5 ppm
120 VAC	848.000000 MHz	848.000000 MHz	< 1.5 ppm
138 VAC	848.000000 MHz	848.000000 MHz	< 1.5 ppm
<b>Temperature</b>	<b>Carrier Frequency</b>	<b>Measured Frequency</b>	<b>Meets 1.5ppm requirement</b>
0 Deg. C	835.500000 MHz	835.500000 MHz	< 1.5 ppm
10 Deg C	835.500000 MHz	835.500000 MHz	< 1.5 ppm
20 Deg C	835.500000 MHz	835.500000 MHz	< 1.5 ppm
30 Deg C	835.500000 MHz	835.500000 MHz	< 1.5 ppm
40 Deg C	835.500000 MHz	835.500000 MHz	< 1.5 ppm
50 Deg C	835.500000 MHz	835.500000 MHz	< 1.5 ppm
0 Deg. C	840.000000 MHz	840.000000 MHz	< 1.5 ppm
10 Deg C	840.000000 MHz	840.000000 MHz	< 1.5 ppm
20 Deg C	840.000000 MHz	840.000000 MHz	< 1.5 ppm
30 Deg C	840.000000 MHz	840.000000 MHz	< 1.5 ppm
40 Deg C	840.000000 MHz	840.000000 MHz	< 1.5 ppm
50 Deg C	840.000000 MHz	840.000000 MHz	< 1.5 ppm
0 Deg. C	848.000000 MHz	848.000000 MHz	< 1.5 ppm
10 Deg C	848.000000 MHz	848.000000 MHz	< 1.5 ppm
20 Deg C	848.000000 MHz	848.000000 MHz	< 1.5 ppm
30 Deg C	848.000000 MHz	848.000000 MHz	< 1.5 ppm
40 Deg C	848.000000 MHz	848.000000 MHz	< 1.5 ppm
50 Deg C	848.000000 MHz	848.000000 MHz	< 1.5 ppm

Note: Not tested below 0 degrees C because EUT is only specified for indoor use only with temperature range of 0 to 50 degrees C.

## Test Set-up



## 22.913 Effective Radiated Power Limit

The Effective Radiated Power Limit measurements were tested at the following test location :

- Test not applicable

■ - The Specialty Lab Inc

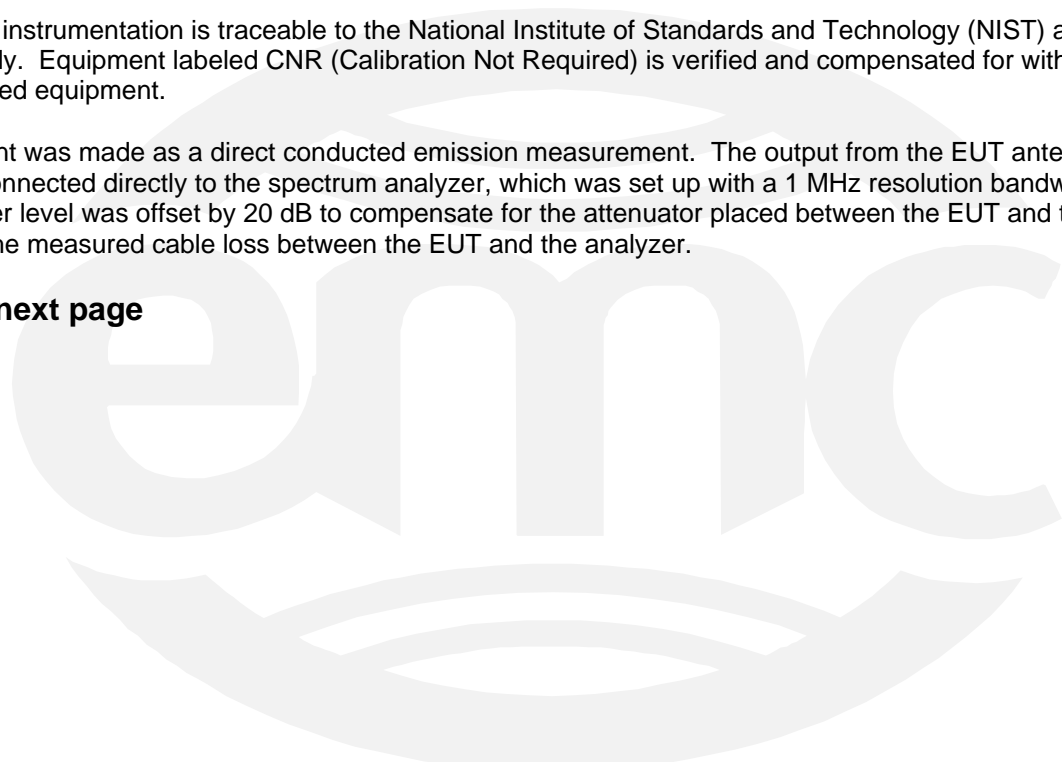
### Test equipment used :

Model Number	Manufacturer	Description	Serial Number	Cal Due
■ - 8563E	Hewlett-Packard	Spectrum Analyzer	MC27690	Apr 02
■ - 6810.17.A	Huber+Suhner	Attenuator		CNR

All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually. Equipment labeled CNR (Calibration Not Required) is verified and compensated for with NIST traceable calibrated equipment.

This measurement was made as a direct conducted emission measurement. The output from the EUT antenna connector was connected directly to the spectrum analyzer, which was set up with a 1 MHz resolution bandwidth. The spectrum analyzer level was offset by 20 dB to compensate for the attenuator placed between the EUT and the analyzer, and by 2 dB for the measured cable loss between the EUT and the analyzer.

**ERP data on next page**



**Effective Radiated Power Limit Test for ADC Inc. Digivance 800 Remote Interface Unit  
Models DGVI-110000RIU (Band A) and DGVI-120000RIU (Band B).  
Per FCC CFR 47 Part 22.913**

This measurement was made as a direct conducted emission measurement. The output from the EUT antenna connector was connected to the spectrum analyzer as shown below. The spectrum analyzer level was offset by 31.1dB to compensate for attenuators and cable losses between the EUT and analyzer.

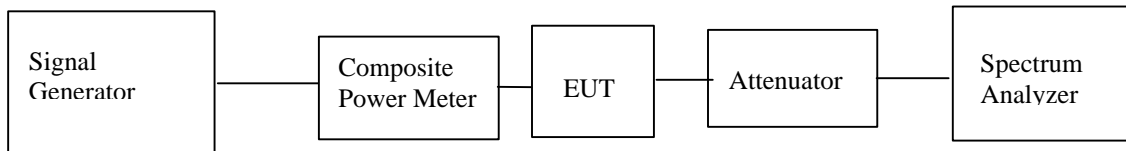
**Band A**

Carrier Frequency	Carrier Output
824.1MHz	+29.5dBm (0.9 Watts)
830.0MHz	+29.5dBm
845.5MHz	+29.5dBm

**Band B**

Carrier Frequency	Carrier Output
835.1MHz	+29.5dBm
845MHz	+29.5dBm
848MHz	+29.5dBm

**Test Set-up**



## 22.915 Modulation requirements

The Modulation requirement measurements were performed at the following test location :

■ - Test not applicable

- Wild River Lab Large Test Site
- Wild River Lab Small Test Site (Open Area Test Site)
- Oakwood Lab (Open Area Test Site)
- Wild River Lab Screen Room
- New Brighton Lab Shielded Room

The instantaneous frequency deviation measurements and the audio filter characteristics measurements are not applicable to this device – it is an amplifier.

## 22.917 Emission Limitations for cellular

The Emission limitations for cellular measurements were performed at the following test location :

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

at a test distance of:

- - 3 meters
- - 10 meters

Test equipment used :

TUV ID	Model Number	Manufacturer	Description	Serial Number	Cal Due
■ - 2543	ZHL-1042J	Mini-Circuits	Preamplifier	H072294-11	4-04-02
■ - 3202	EM-6917B	Electro-Metrics	Biconicalog Periodic	101	9-21-01
■ - 2075	3115	Electro-Mechanics (EMCO)	Ridge Guide Ant. 1-18 GHz	9001-3275	10-20-01
■ - 2865	11867A	Hewlett-Packard	Limiter	01972	3-21-02
■ - 2690	8566B	Hewlett-Packard	Spectrum Analyzer (Unit F)	2430A00930	11-16-01
■ - 2678	85662A	Hewlett-Packard	Analyzer Display (Unit F)	2403A08134	11-16-01
■ - 2684	85650A	Hewlett-Packard	Quasi-Peak Adapter (Unit F)	2521A01006	11-24-01
■ - 2478	AWT-18037	Avantek	Preamplifier 8-18 GHz	1001-9226	3-21-02
■ - 2477	AFT-8434	Avantek	Preamplifier 4-8 GHz	2613A92801	3-21-02
■ -	UHAP-10dB	Schwarzbeck	Dipole Antenna 300-1000	164	N/A
■ -	VHAP	Schwarzbeck	Dipole Antenna 30-300	177	N/A
■ - 2396	2520	Wavetek	Signal Generator	6271013	3-13-02
■ -	E4432B	Hewlett-Packard	Signal Generator	930466	9-01

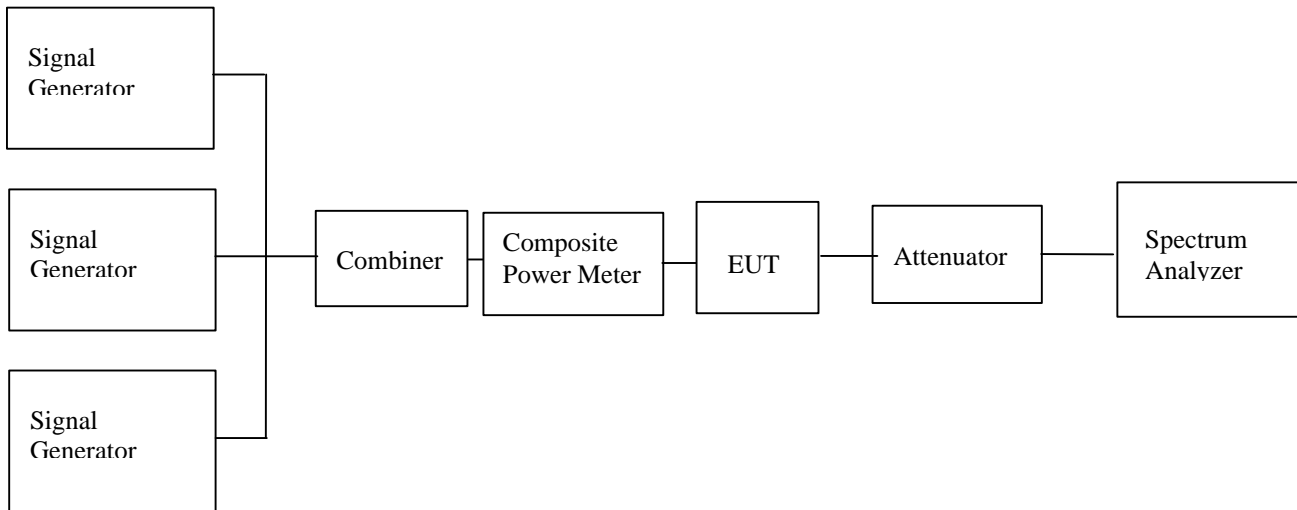
All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST) and is calibrated annually. Equipment labeled CNR (Calibration Not Required) is verified and compensated for with NIST traceable calibrated equipment.

# Inter-modulation Test for ADC Inc. Digivance 800 Remote Interface Unit Models DGVI-110000RIU (Band A) and DGVI-120000RIU (Band B). Per FCC CFR 47 Part 22.917 Emission Limitations for Cellular

The intermodulation products test was performed for both the A and B frequency band EUT's. Test 1 was with 3 CW signals input to the EUT, 2 at lower end channels and one at a higher end channel. Test 2 was with 3 modulated signals (1kHz @8kHz deviation) input into the EUT. Test 3 was with 3 CDMA signals input into the EUT. In all cases, the intermodulation products were less than:

-13dBm from the equation  $(29.5\text{dBm} - [43 + 10 \log(.9\text{W})])$

## Test Set-up



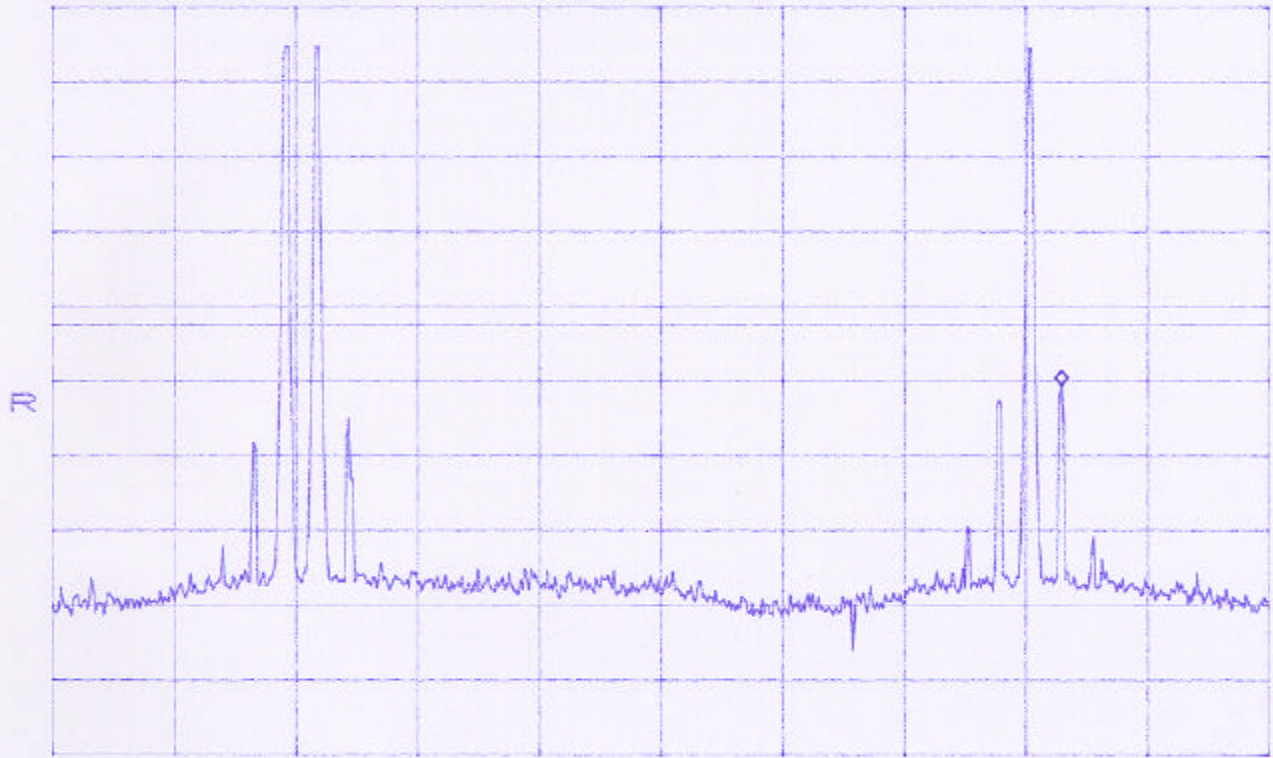
## Results:

Pass (see plots)

# Band A EUT Data

A Intermod CW

ATTEN 10dB    VAVG 0    MKR -21.00dBm  
RL 29.5dBm    10dB/    846.70MHz

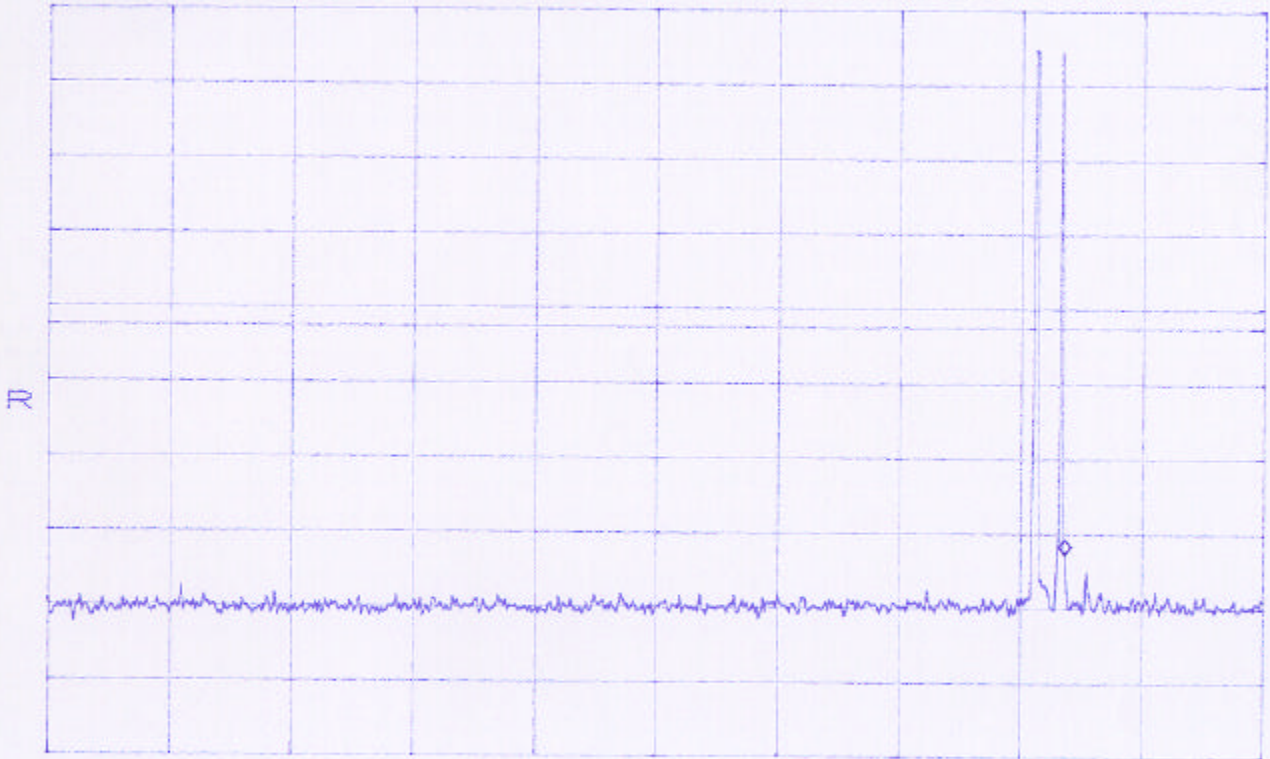


CENTER 835.15MHz    SPAN 35.00MHz  
\*RBW 30kHz    VBW 30kHz    SWP 98ms



A Intermod CW

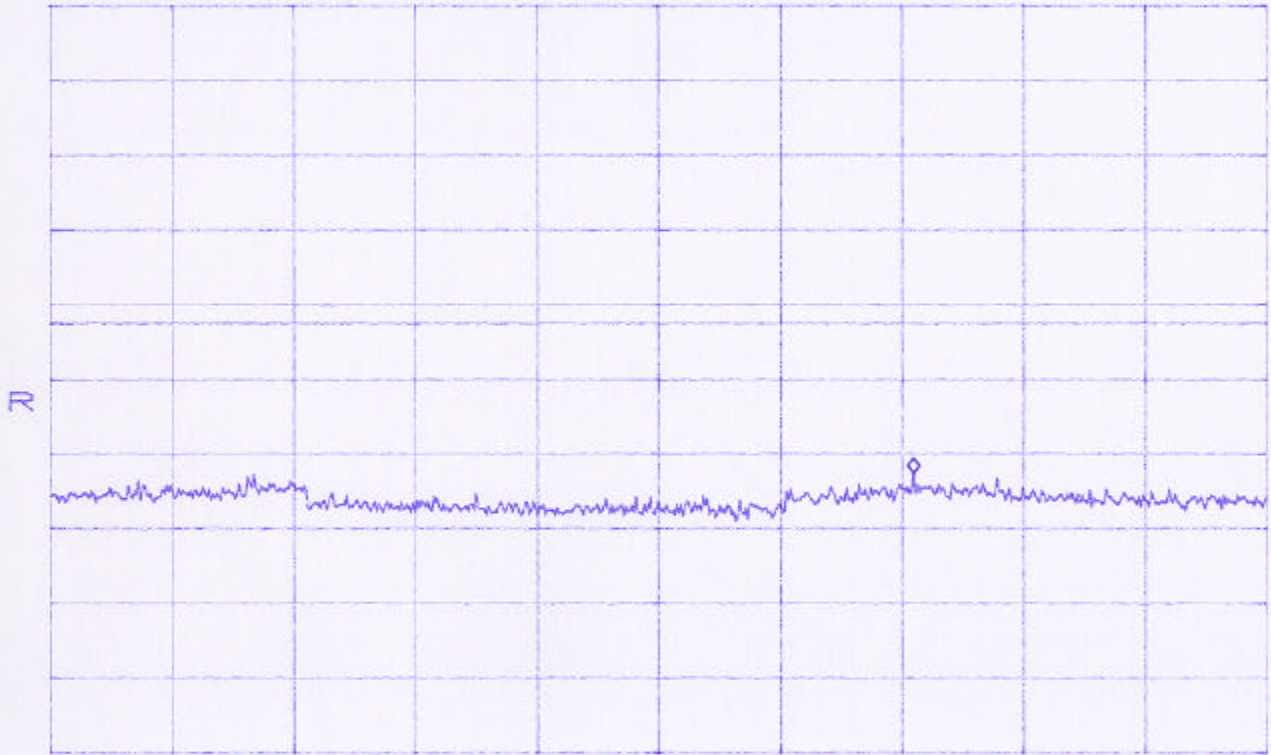
ATTEN 10dB VAVG 0 MKR -43.17dBm  
RL 29.5dBm 10dB/BPC 841.6MHz



START 30.0MHz STOP 1.0000GHz  
\*RBW 30kHz VBW 30kHz SWP 2.7sec

A Intermed CW

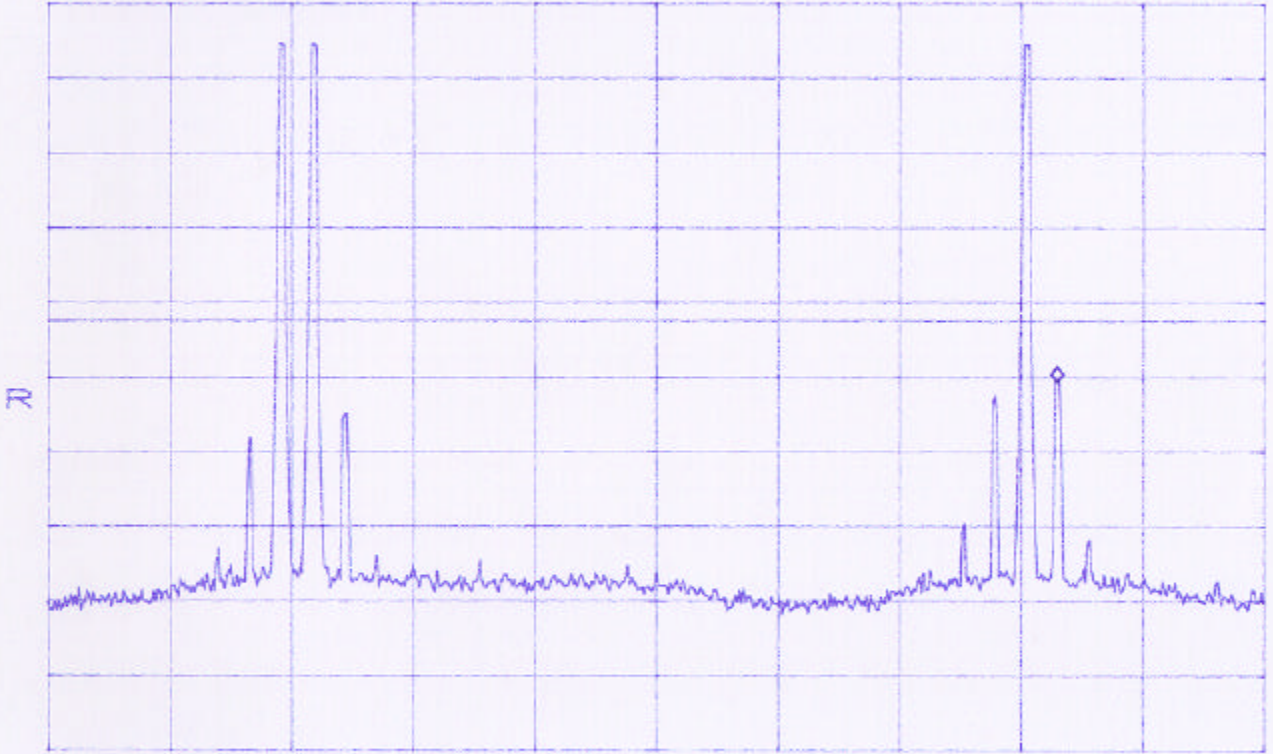
ATTEN 10dB    VAVG 0    MKR -33.00dBm  
RL 29.5dBm    10dB/    7.390GHz



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

A Intermod (8k, 1k)

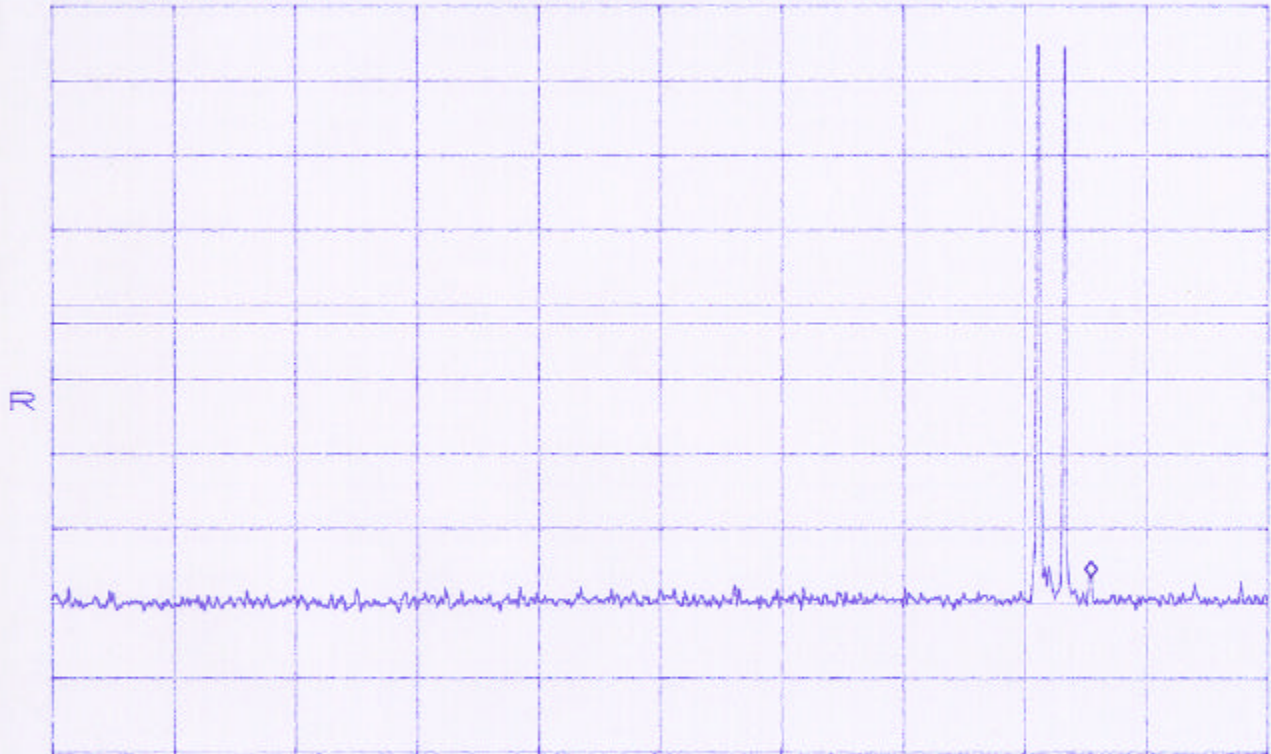
ATTEN 10dB VAVG 0 MKR -21.00dBm  
RL 29.5dBm 10dB/8P01 846.70MHz



CENTER 835.15MHz SPAN 35.00MHz  
\*RBW 30kHz VBW 30kHz SWP 98ms

A Intermod (8k, 1k)

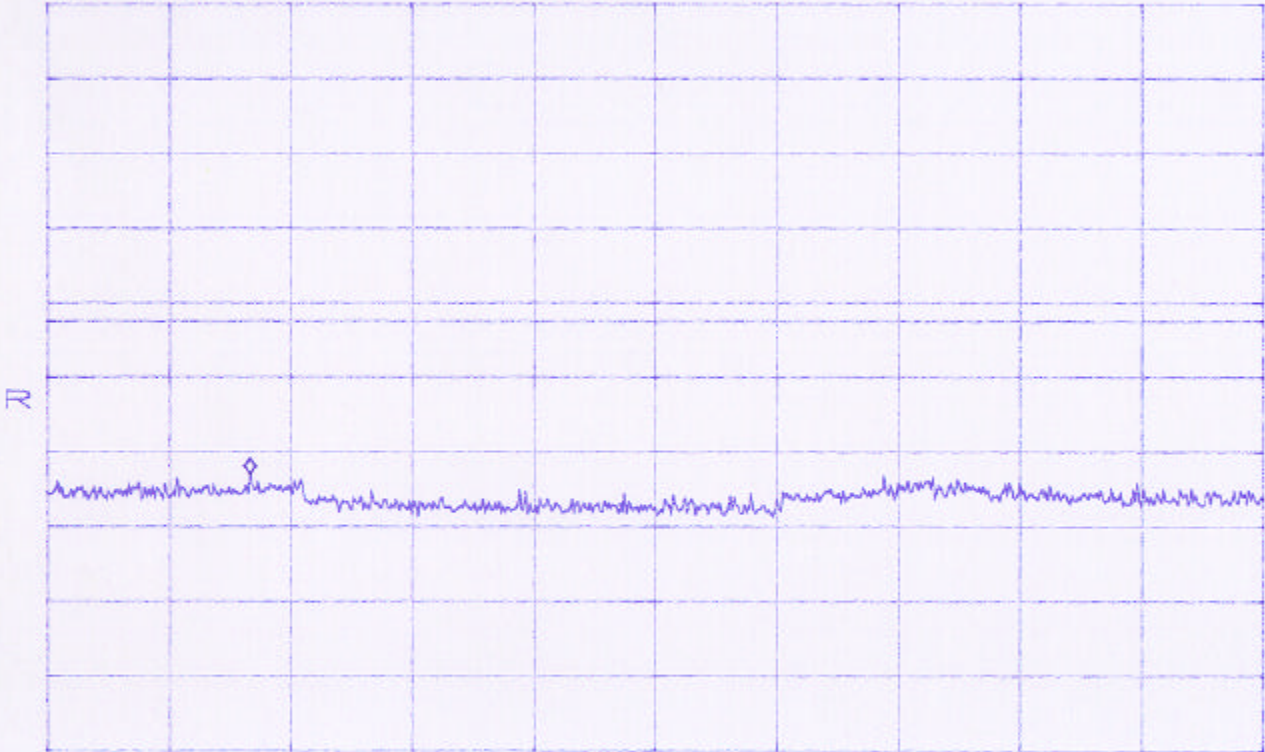
ATTEN 10dB    VAVG 0    MKR -46.83dBm  
RL 29.5dBm    10dB/    859.4MHz



START 30.0MHz    STOP 1.0000GHz  
\*RBW 30kHz    VBW 30kHz    SWP 2.7sec

A Intermod (8k, 1k)

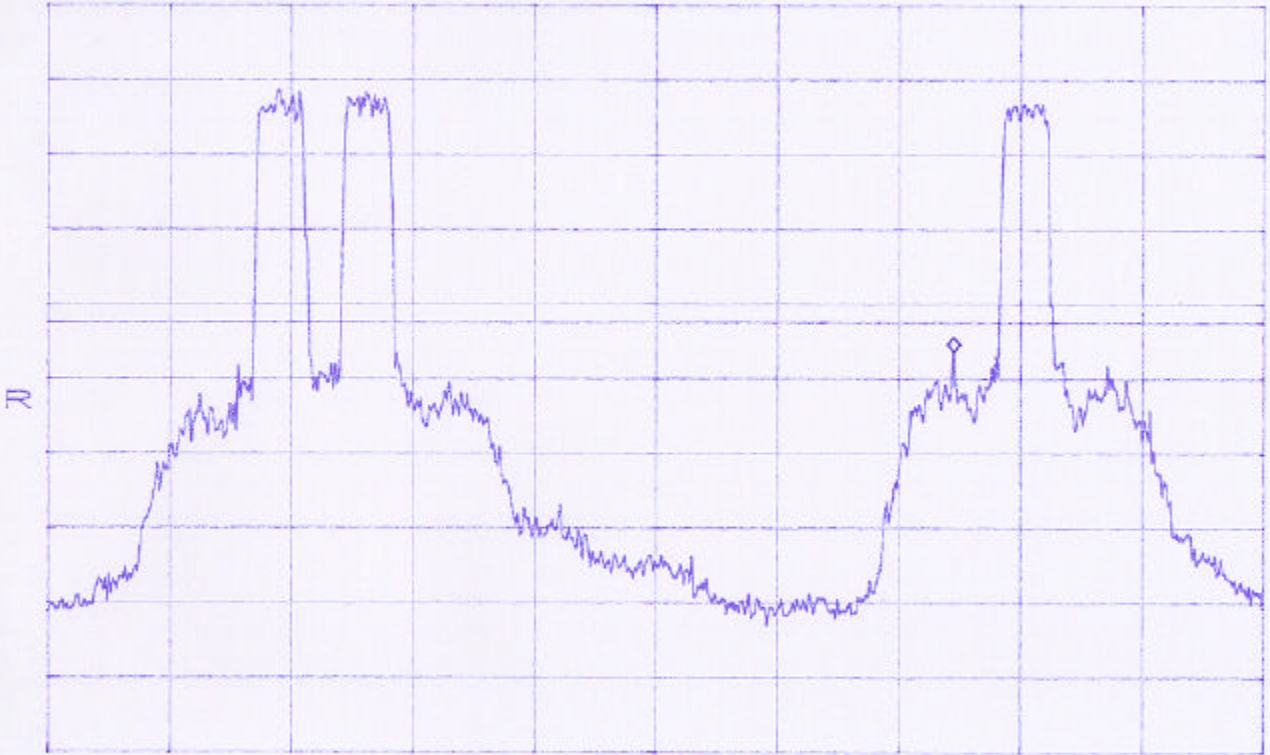
ATTEN 10dB    VAVG 0    MKR -33.33dBm  
RL 29.5dBm    10dB/    2.500GHz



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

A Intermod CDMA

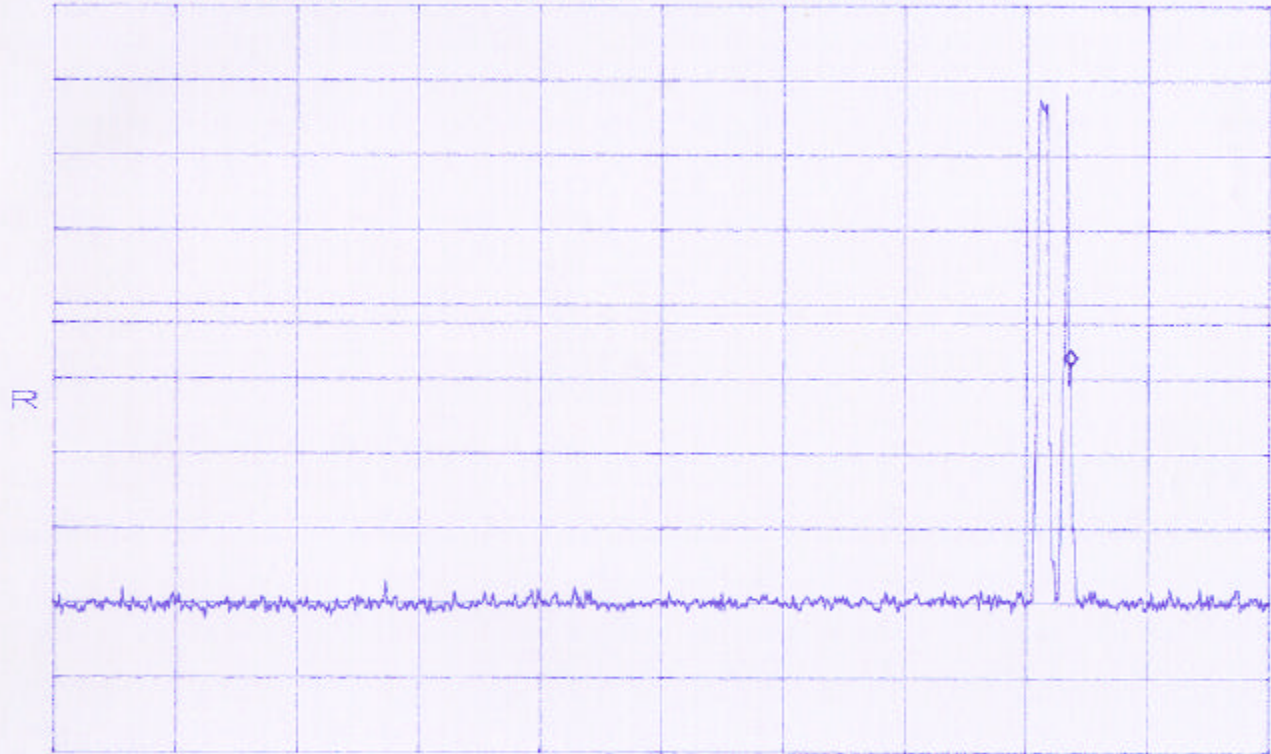
ATTEN 10dB VAVG 0 MKR -16.83dBm  
RL 29.5dBm 10dB/843.73MHz



CENTER 835.15MHz SPAN 35.00MHz  
\*RBW 30kHz VBW 30kHz SWP 98ms

A Intermod CDMA

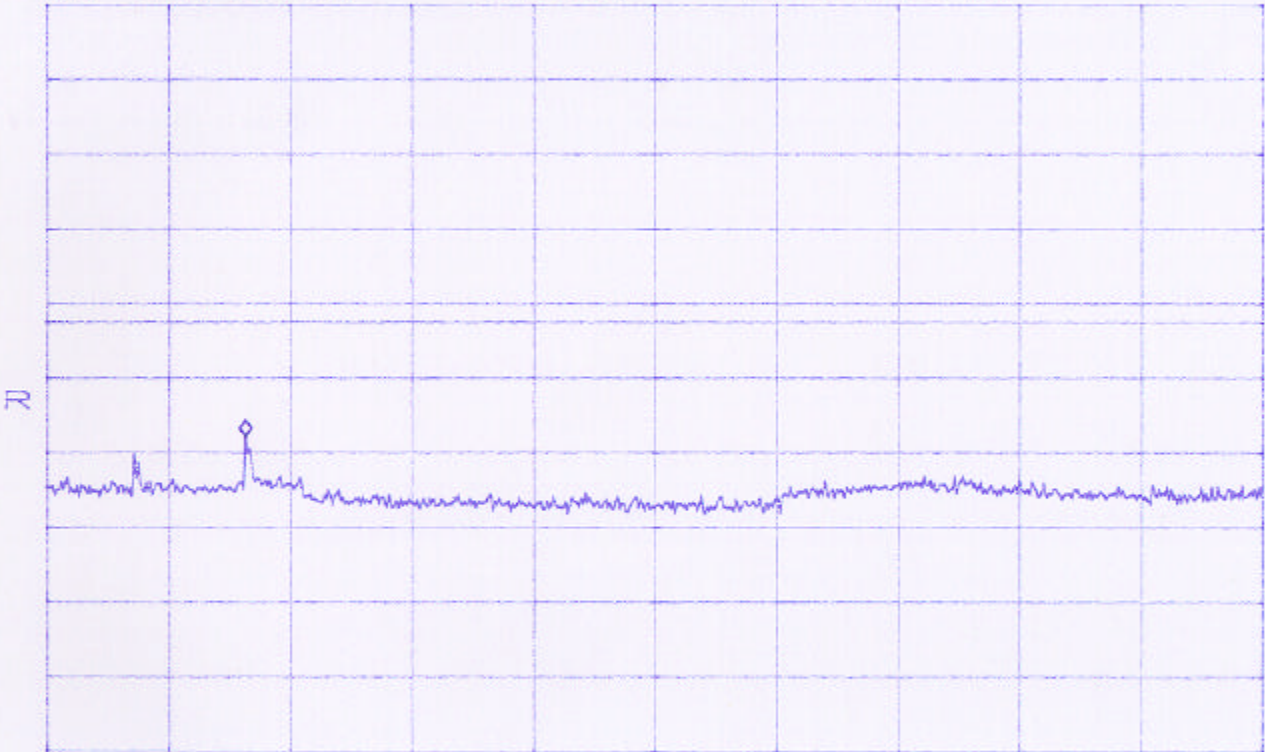
ATTEN 10dB    VAVG 0    MKR -18.50dBm  
RL 29.5dBm    10dB/    841.6MHz



START 30.0MHz    STOP 1.0000GHz  
\*RBW 30kHz    VBW 30kHz    SWP 2.7sec

A Intermod CDMA

ATTEN 10dB    VAVG 0    MKR -28.17dBm  
RL 29.5dBm    10dB/    2.470GHz



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



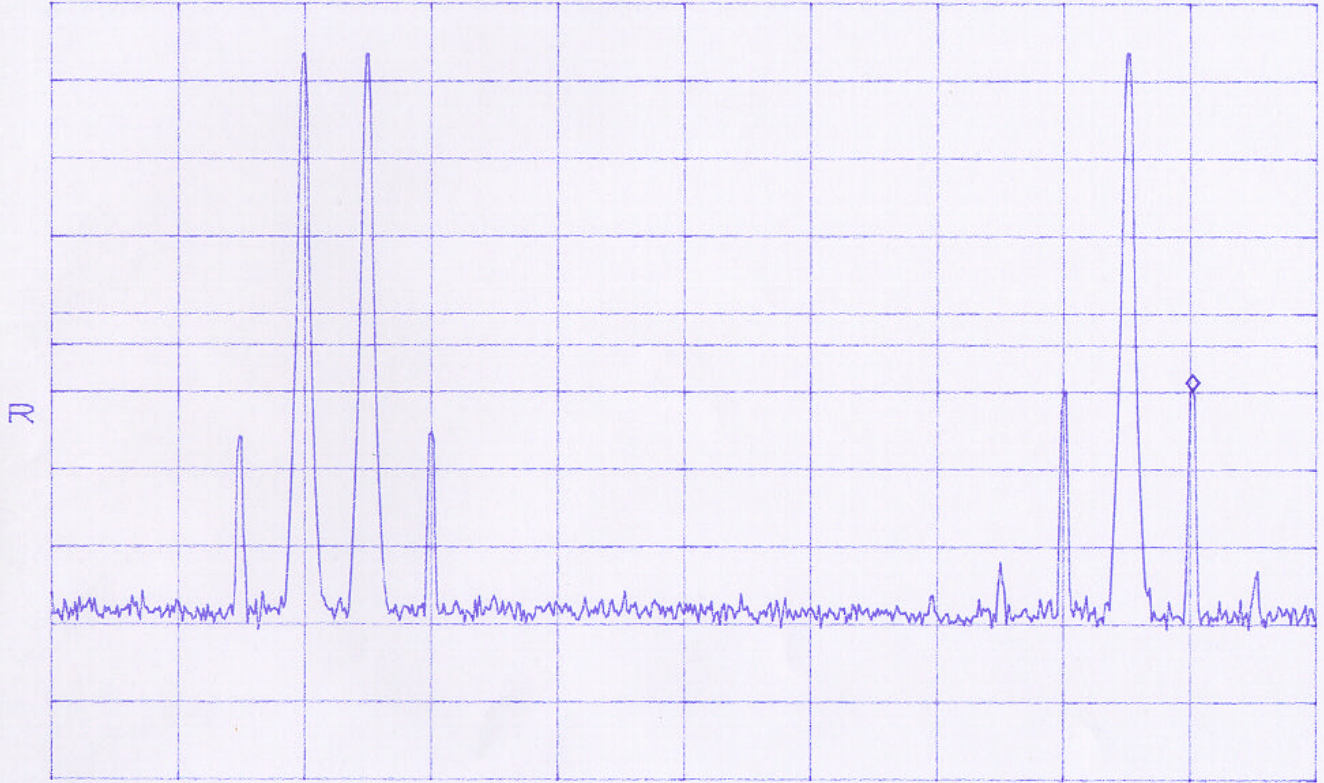
# Band B EUT Data

*Intermod CW.*

ATTEN 10dB  
RL 31.0dBm

10dB/

MKR -18.67dBm  
850.03MHz



CENTER 842.00MHz  
\*RBW 30kHz VBW 30kHz

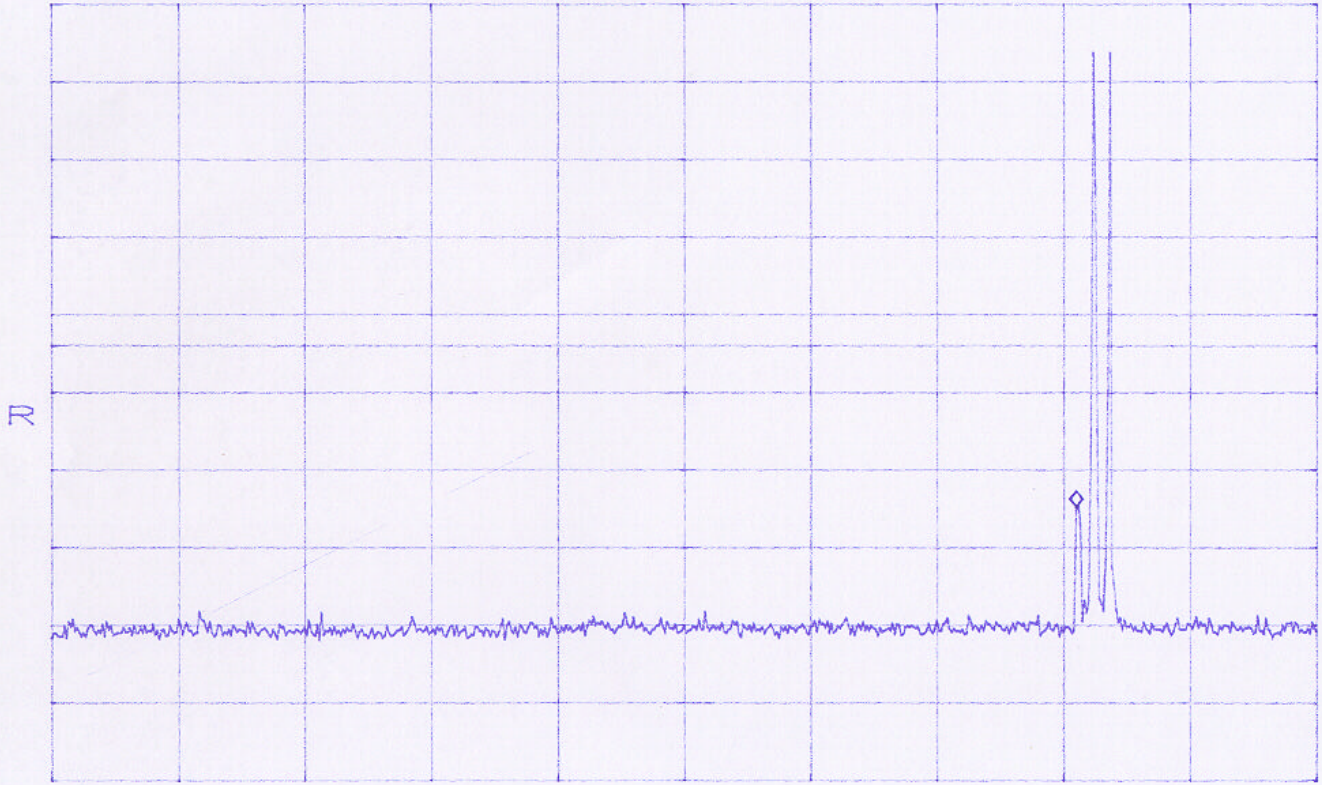
SPAN 20.00MHz  
SWP 56ms

Intermod CW

ATTEN 10dB  
RL 31.0dBm

10dB/

MKR -33.67dBm  
815.7MHz



START 30.0MHz                      STOP 1.0000GHz  
\*RBW 30kHz                      VBW 30kHz                      SWP 2.7sec

Intermod CW

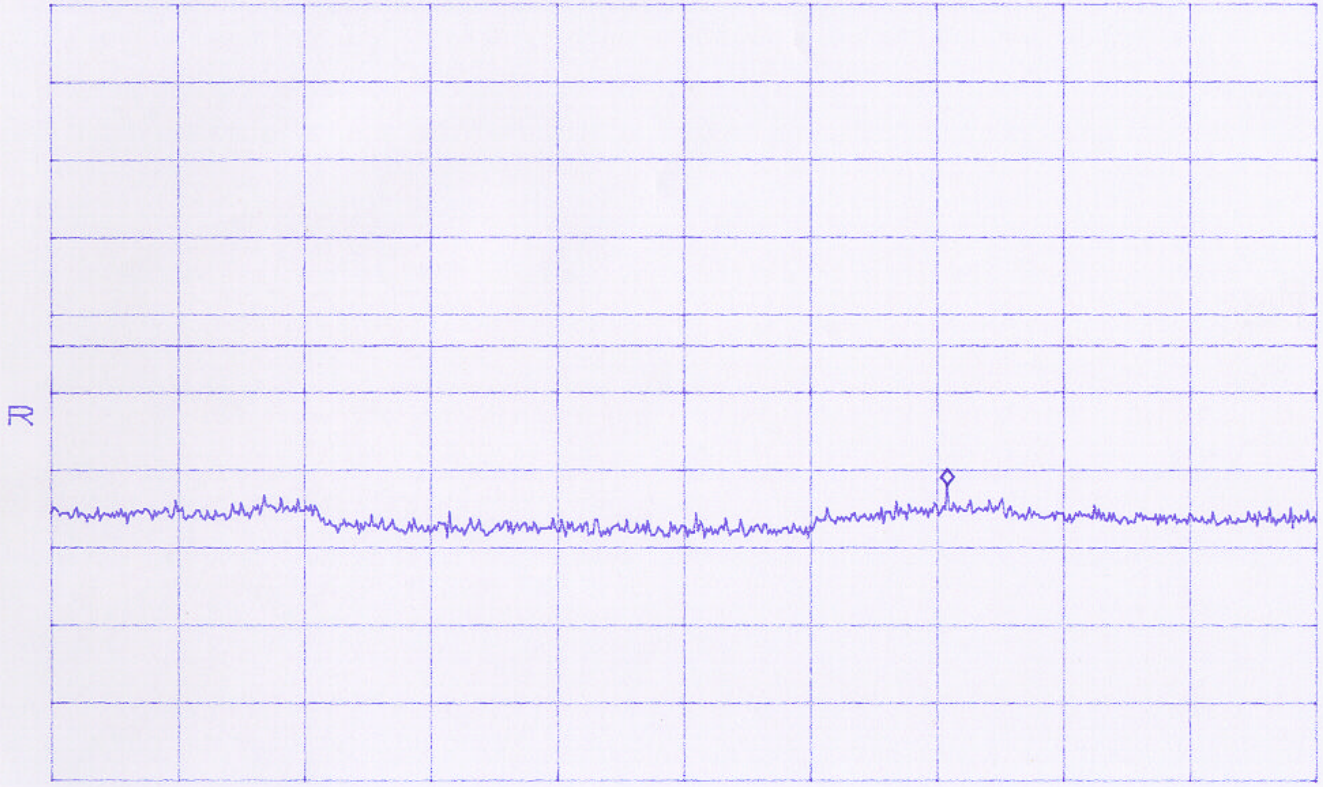
ATTEN 10dB

MKR -30.83dBm

RL 31.0dBm

10dB/

7.375GHz



START 1.000GHz

STOP 10.000GHz

\*RBW 1.0MHz

VBW 1.0MHz

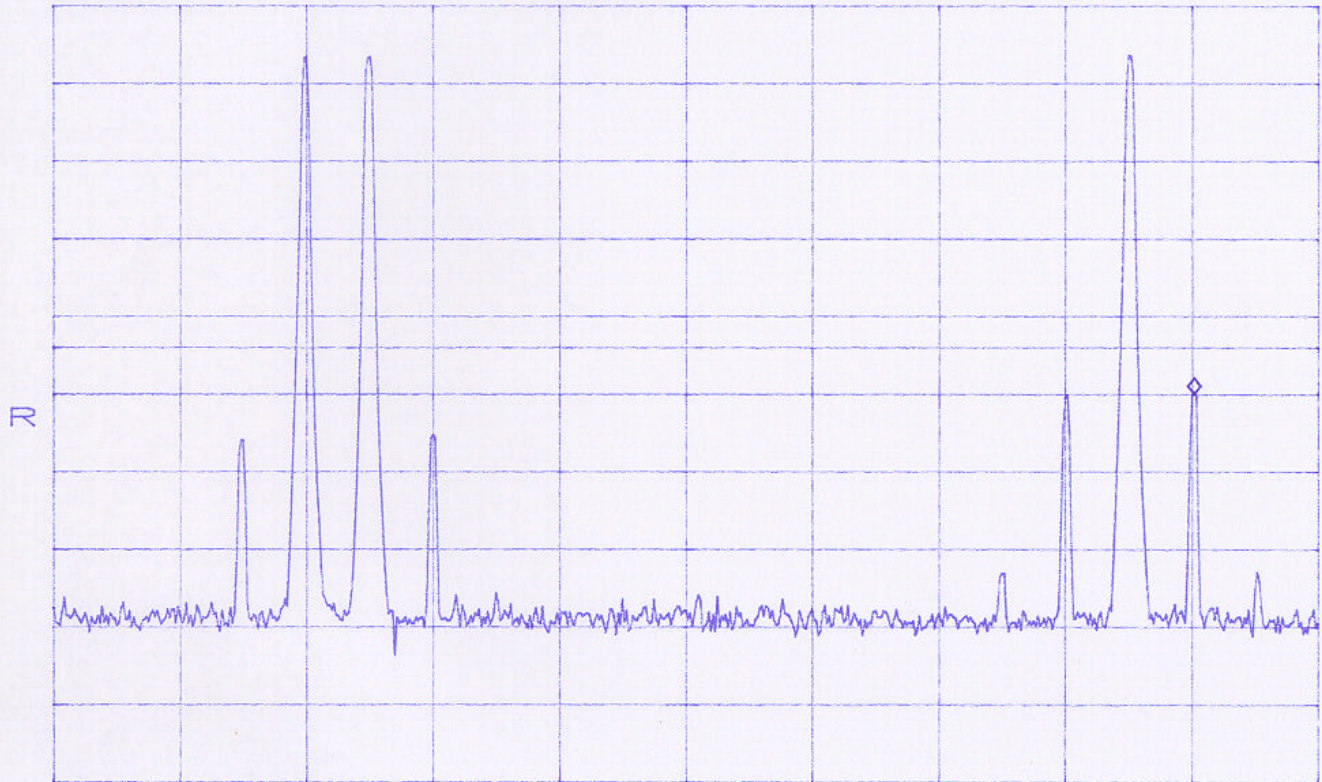
SWP 180ms

Intermod (8k, 1k)

ATTEN 10dB  
RL 31.0dBm

10dB/

MKR -18.83dBm  
850.03MHz



CENTER 842.00MHz  
\*RBW 30kHz

VBW 30kHz

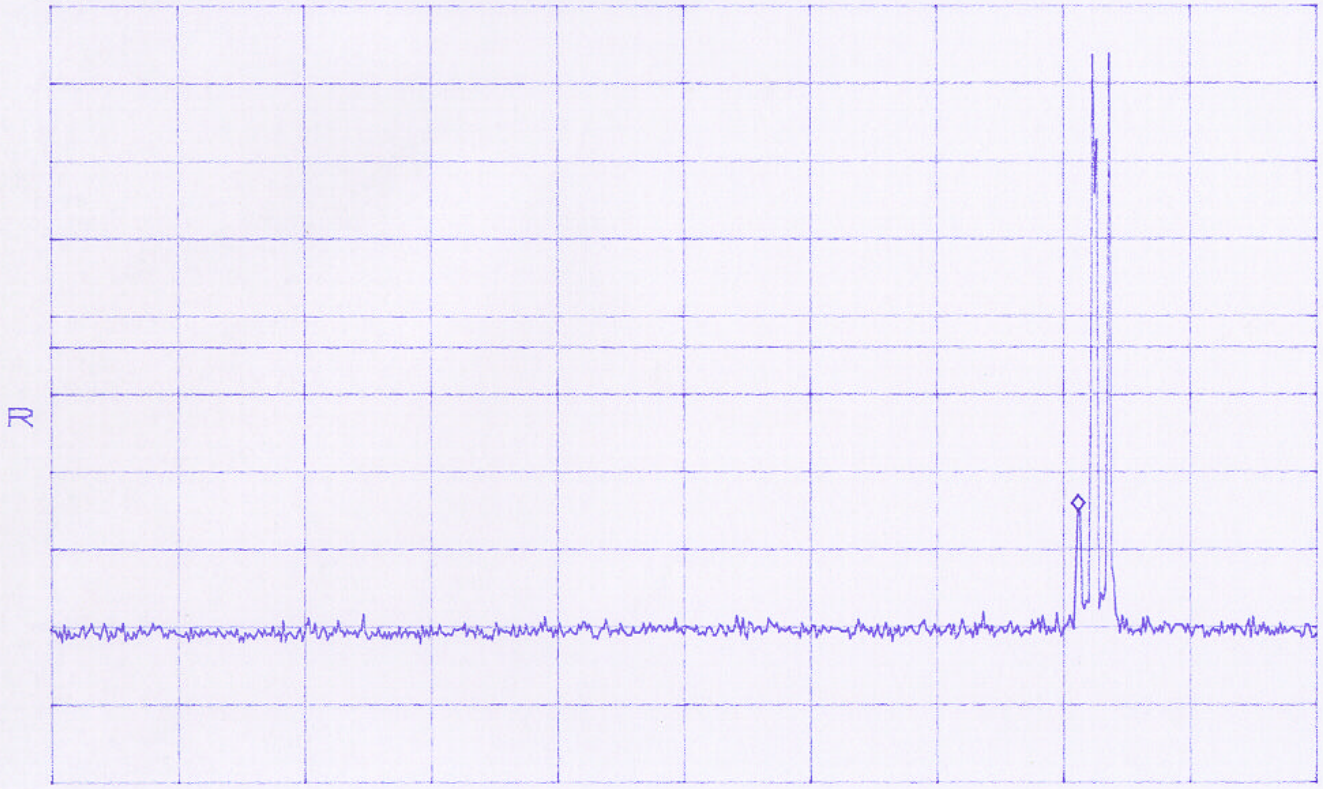
SPAN 20.00MHz  
SWP 56ms

Intermod (8k,1k)

ATTEN 10dB  
RL 31.0dBm

10dB/

MKR -34.00dBm  
817.3MHz



START 30.0MHz  
\*RBW 30kHz

STOP 1.0000GHz  
VBW 30kHz

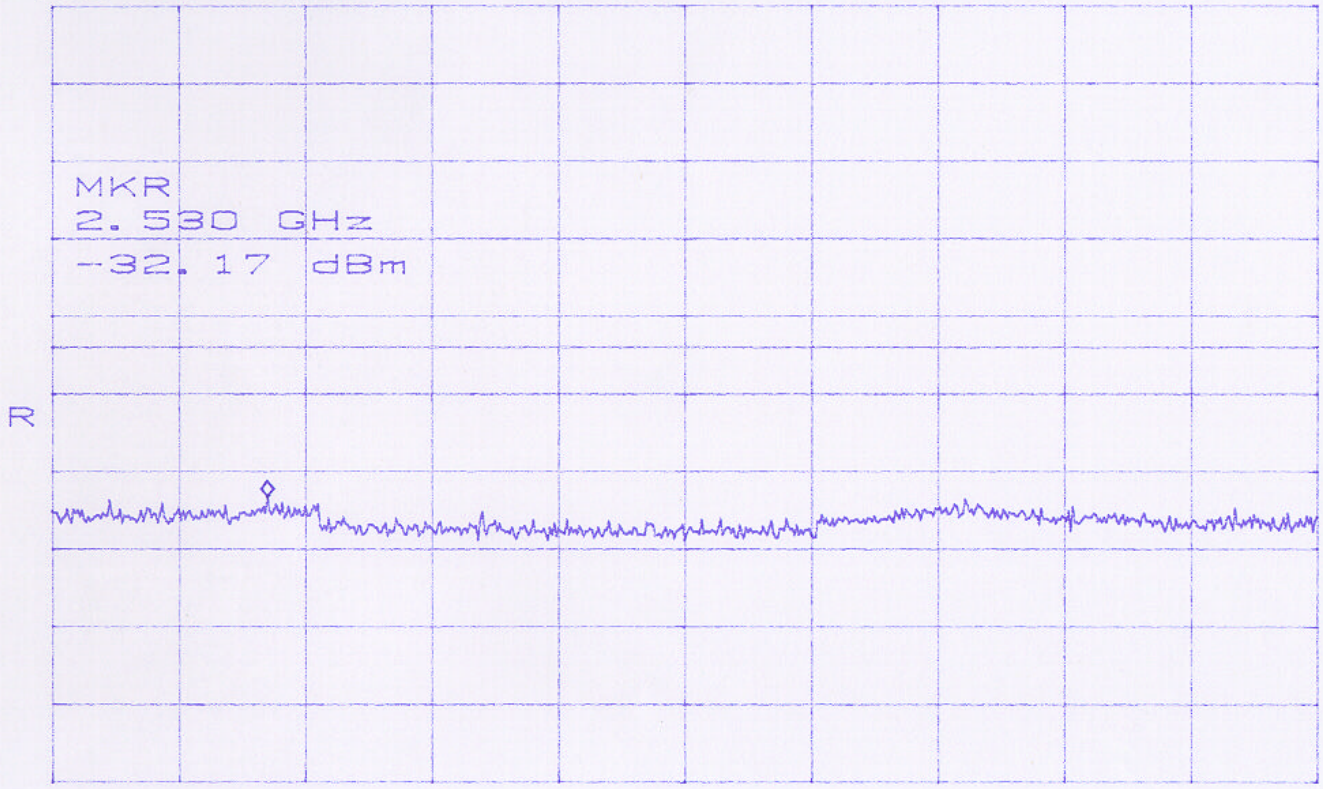
SWP 2.7sec

Intermod (8k, 1k)

ATTEN 10dB  
RL 31.0dBm

10dB/

MKR -32.17dBm  
2.530GHz



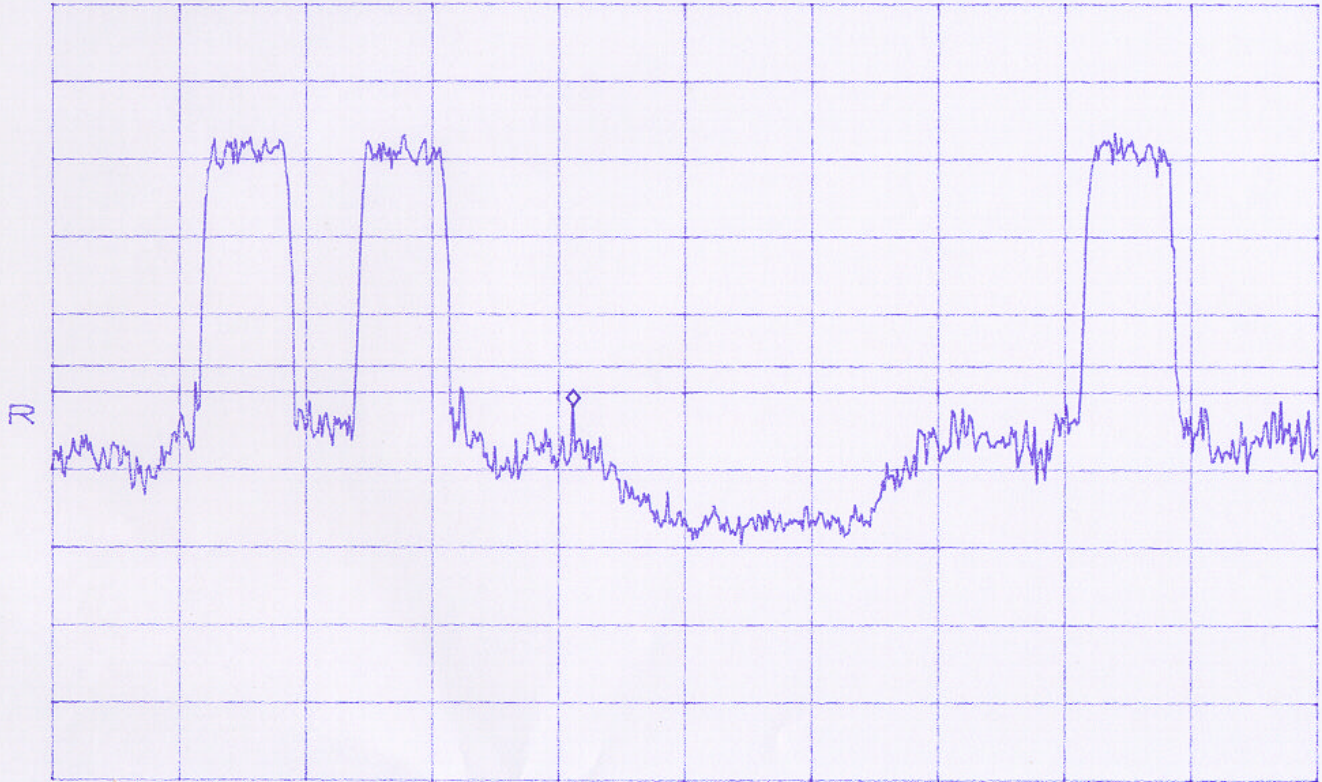
START 1.000GHz      STOP 10.000GHz  
\*RBW 1.0MHz      VBW 1.0MHz      SWP 180ms

Intermod CDMA

ATTEN 10dB  
RL 33.8dBm

10dB/

MKR -17.87dBm  
840.23MHz



CENTER 842.00MHz  
\*RBW 30kHz

VBW 30kHz

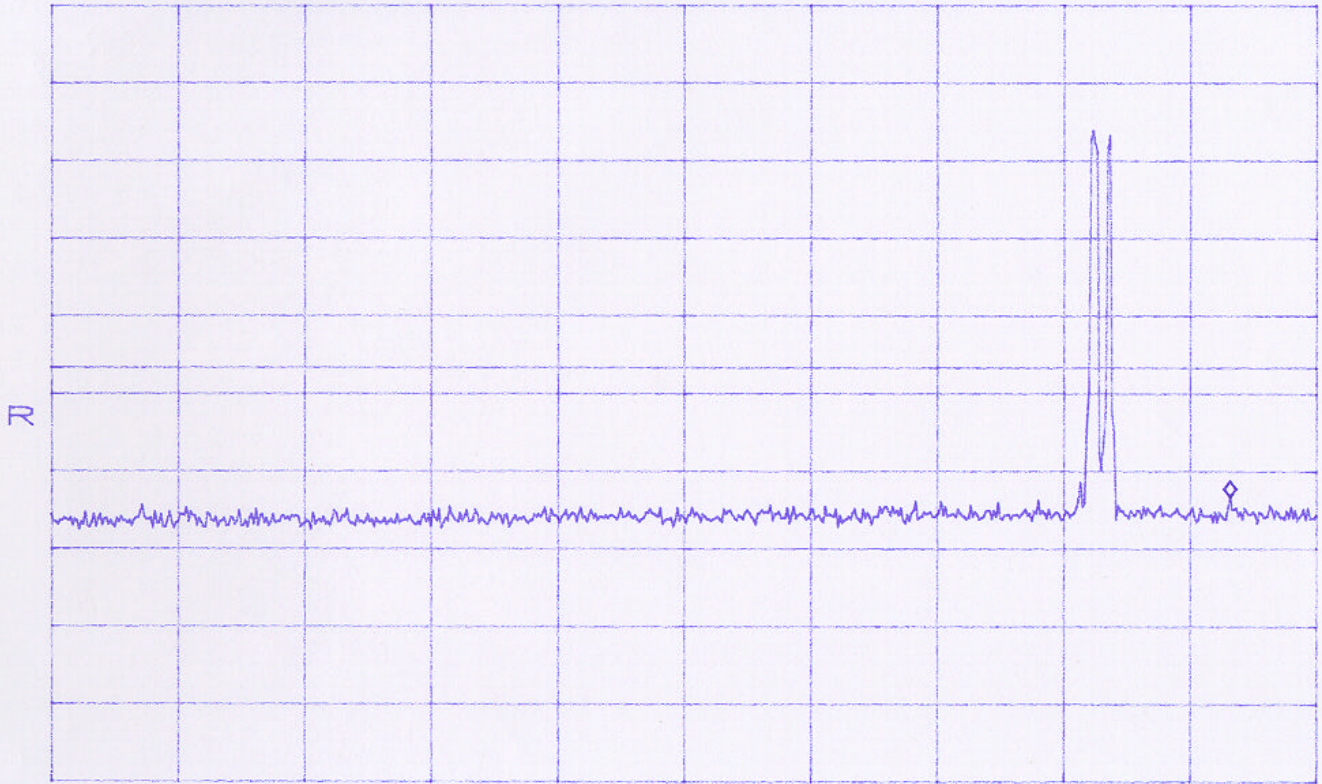
SPAN 20.00MHz  
SWP 56ms

Inter Mod CDMA

ATTEN 10dB  
RL 33.8dBm

10dB/

MKR -29.37dBm  
933.7MHz



START 30.0MHz  
\*RBW 30kHz

VBW 30kHz

STOP 1.0000GHz

SWP 2.7sec



Intermod CDM4

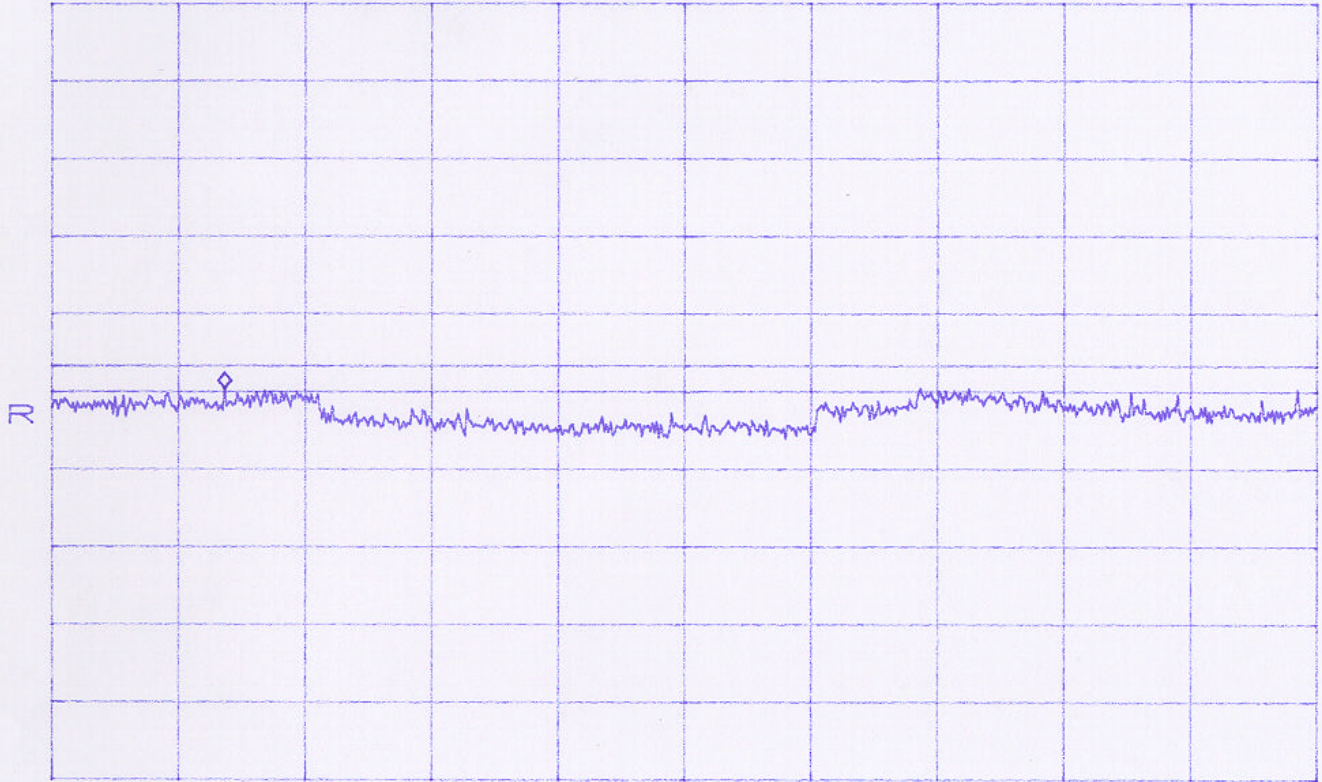
ATTEN 10dB

MKR -15.70dBm

RL 33.8dBm

10dB/

2.230GHz



START 1.000GHz

STOP 10.000GHz

\*RBW 1.0MHz

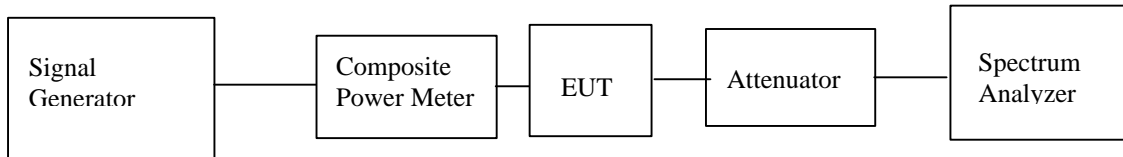
VBW 1.0MHz

SWP 180ms

# CDMA Mask Test for ADC Inc. Digivance 800 Remote Interface Unit Models DGVI-110000RIU (Band A) and DGVI-120000RIU (Band B). IS-97

For the CDMA modulation type emission mask test, the average value of the center frequency will be 16.23dB down from the CW peak power. On any frequency removed from the center carrier frequency by up to 750KHz the emissions are at or below 16.23dB below the peak power. On any frequency between 750KHz and 1.98MHz the emissions are below 45dB below the peak power. On any frequency removed from the carrier frequency by more than 1.98MHz the emissions are below 60dB below the peak power. The test was performed at the low mid and high parts of the respective A and B cellular bands.

## Test Set-up



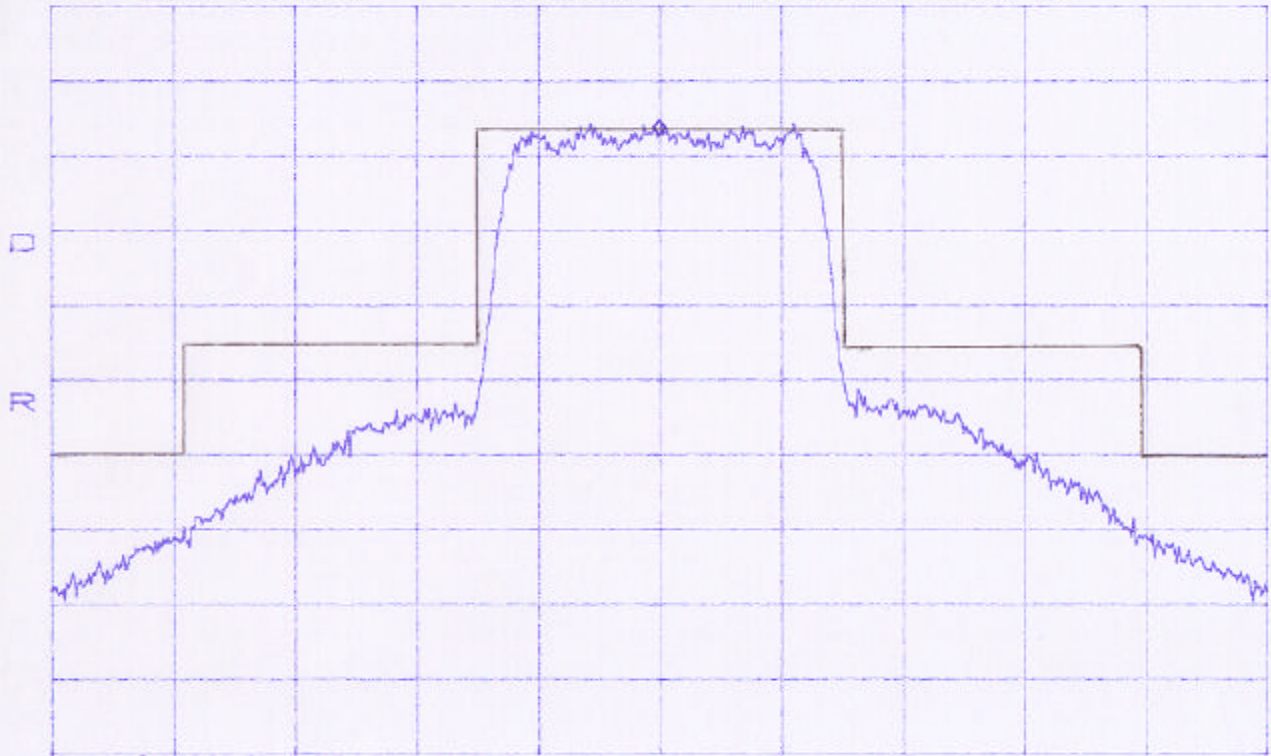
## Results:

Pass (see plots)

# Band A EUT Data

A CDMA Mask @ F<sub>1</sub>

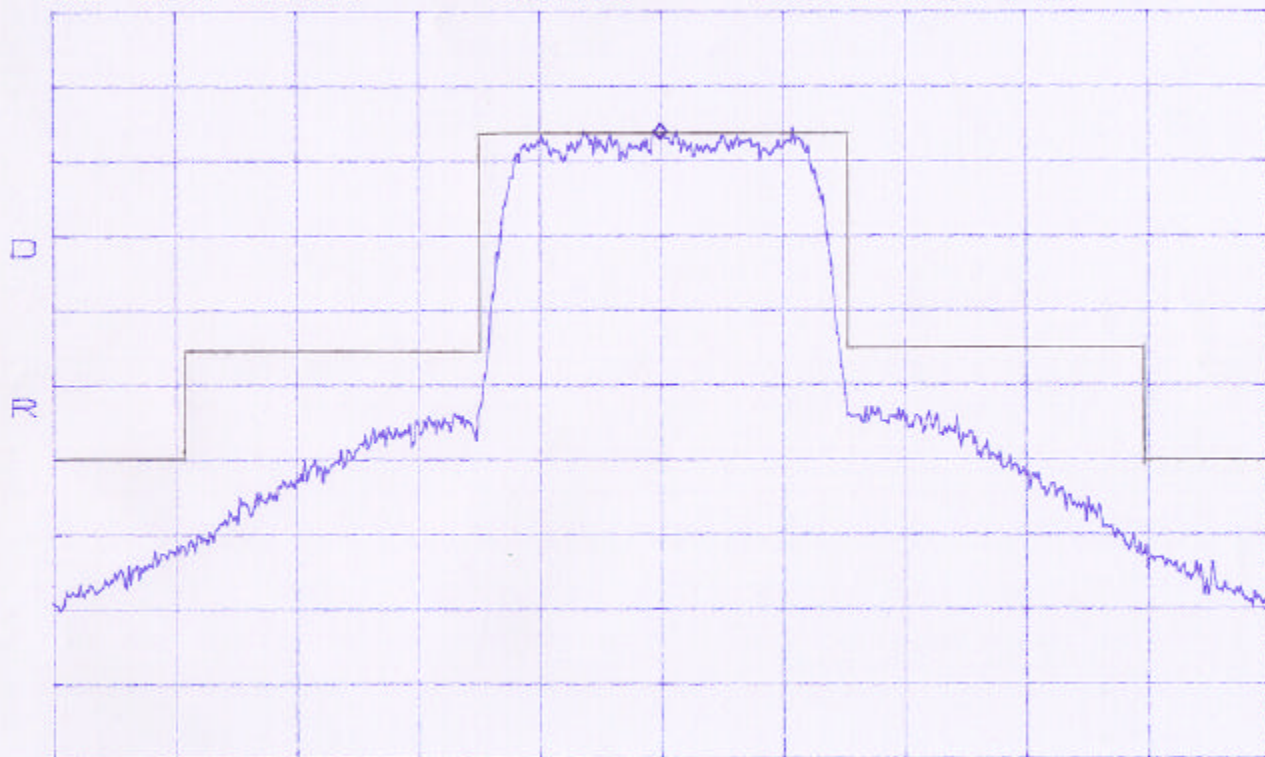
ATTEN 10dB    VAVG 100    MKR 12.33dBm  
RL 29.5dBm    10dB/    825.500MHz



CENTER 825.500MHz    SPAN 5.000MHz  
\*RBW 30kHz    VBW 30kHz    SWP 50ms

A CDMA Mask @ Fz

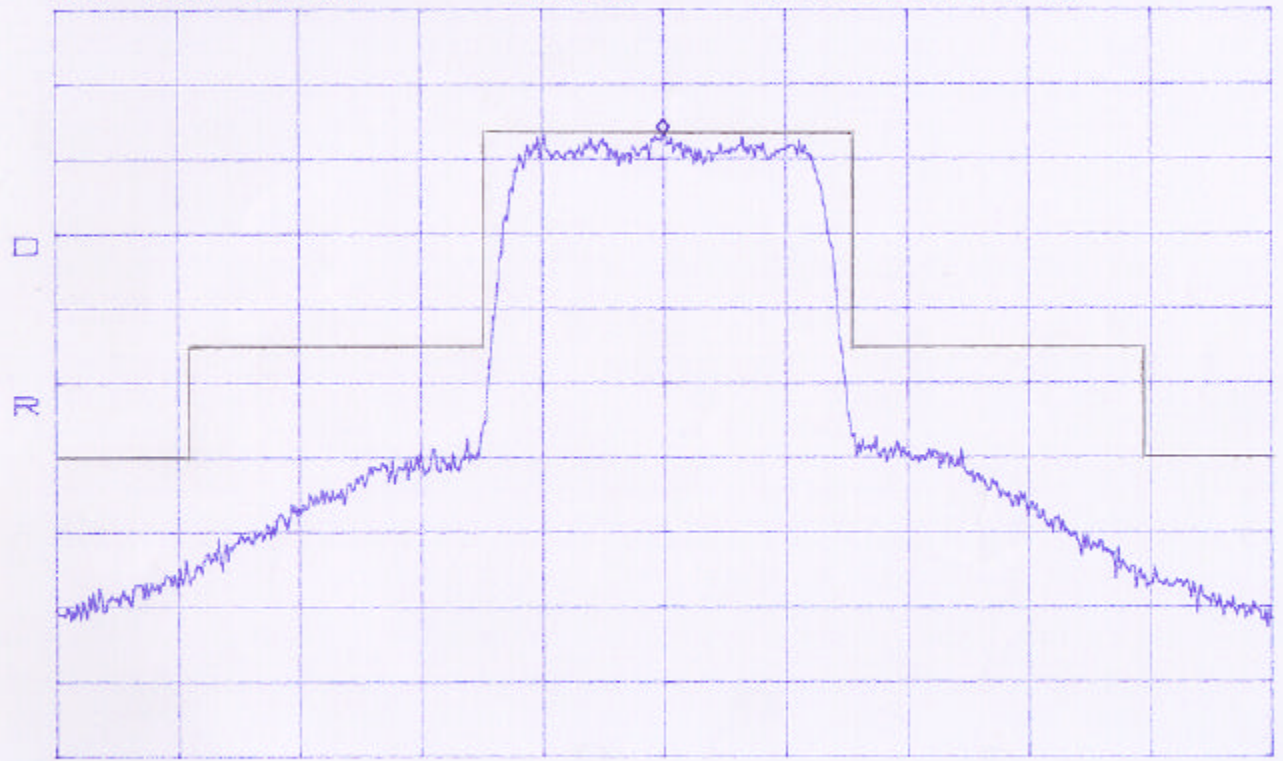
ATTEN 10dB VAVG 100 MKR 12.50dBm  
RL 29.5dBm 10dB/ 830.000MHz



CENTER 830.000MHz SPAN 5.000MHz  
\*RBW 30kHz VBW 30kHz SWP 50ms

A CDMA Mask @ F3

ATTEN 10dB    VAVG 100    MKR 12.83dBm  
RL 29.5dBm    10dB/    846.000MHz

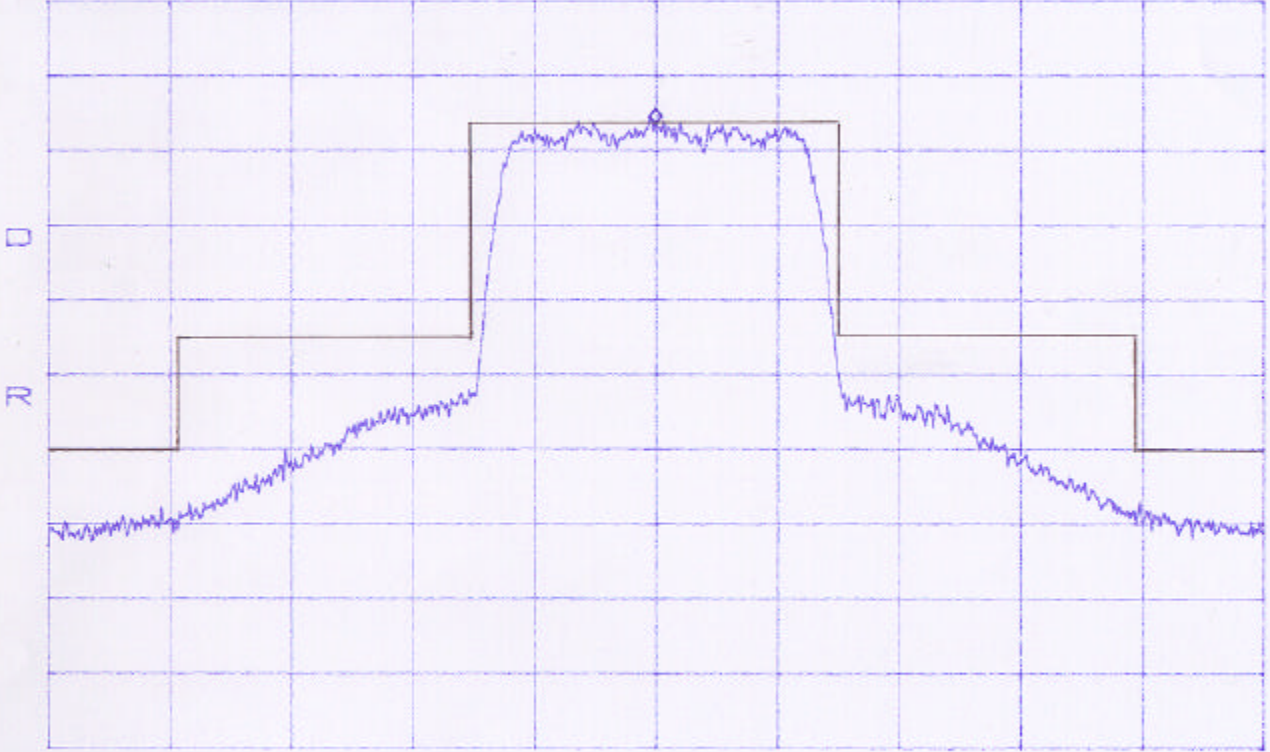


CENTER 846.000MHz    SPAN 5.000MHz  
\*RBW 30kHz    VBW 30kHz    SWP 50ms

# Band B EUT Data

B CDMA Mask @ F1

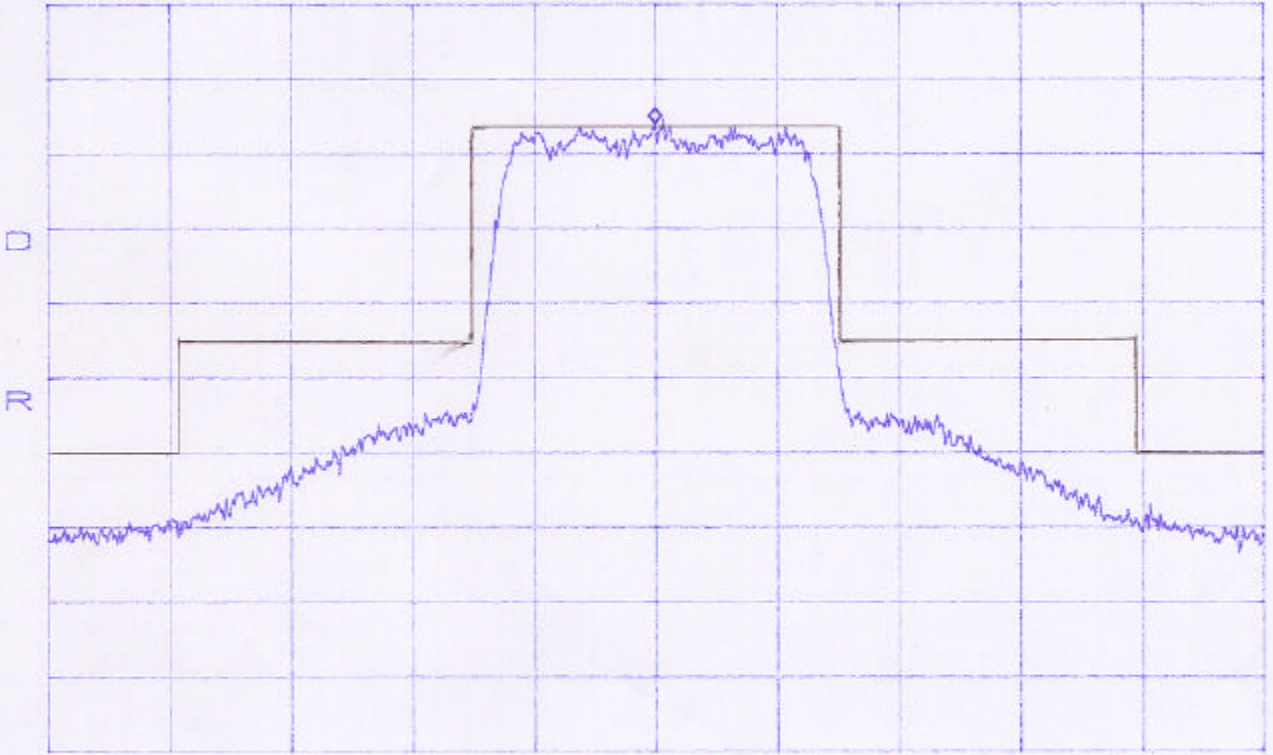
ATTEN 10dB    VAVG 100    MKR 13.17dBm  
RL 29.5dBm    10dB/    836.000MHz



CENTER 836.000MHz    SPAN 5.000MHz  
\*RBW 30kHz    VBW 30kHz    SWP 50ms

B CDMA mask @ F<sub>2</sub>

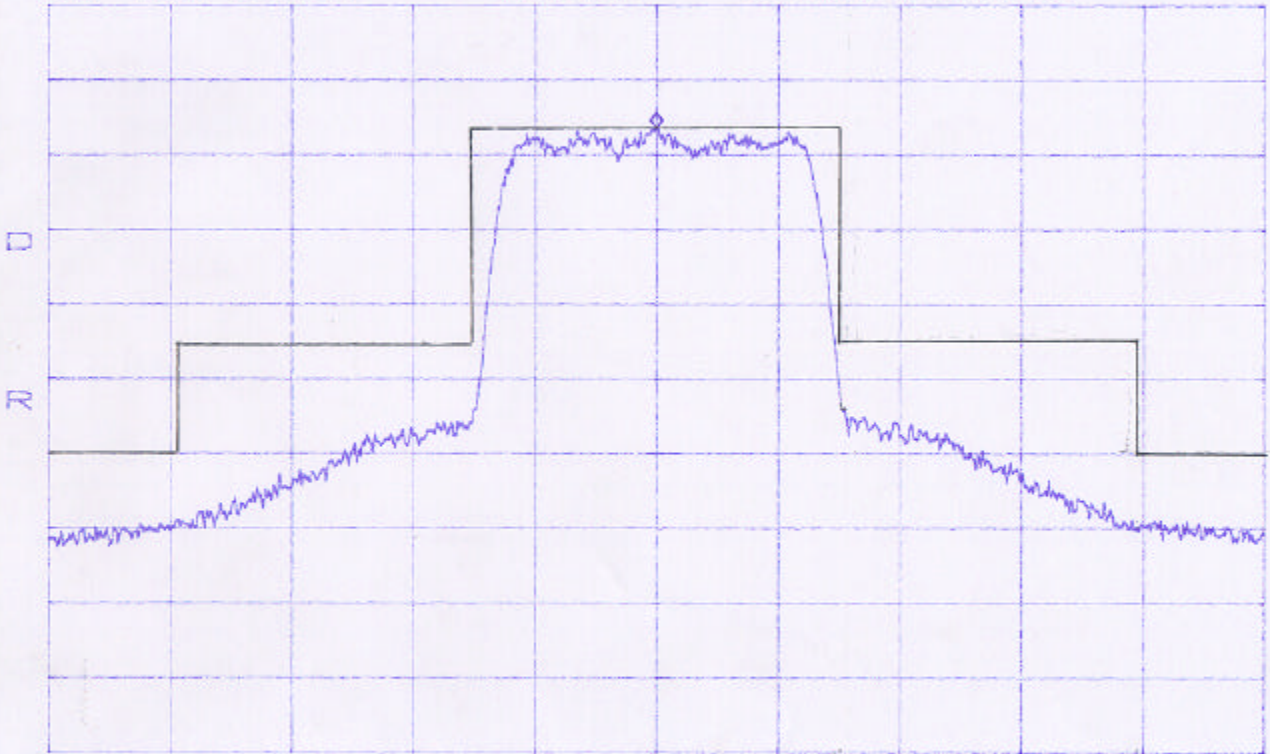
ATTN 10dB VAVG 100 MKR 13.67dBm  
RL 29.5dBm 10dB/ BPO1 844.000MHz



CENTER 844.000MHz SPAN 5.000MHz  
\*RBW 30kHz VBW 30kHz SWP 50ms

B CDMA Mask @ F3

ATTEN 10dB VAVG 100 MKR 13.17dBm  
RL 29.5dBm 10dB/847.500MHz



CENTER 847.500MHz SPAN 5.000MHz  
\*RBW 30kHz VBW 30kHz SWP 50ms