

TEST RESULT SUMMARY

FCC Part 24

MANUFACTURER'S NAME ADC Inc.

NAME OF EQUIPMENT Digivance® Indoor Coverage Solution
In-building wireless communication system

MODEL NUMBER(S) TESTED DGVIH3110000000000
DGVIR3300000000000

MANUFACTURER'S ADDRESS P.O. Box 1101
Minneapolis, MN 55440-1101

TEST REPORT NUMBER WC604235 Rev A

TEST DATE(S) 21 July 2006 at TUV
24 - 26 July 2006 at ADC

According to testing performed at TÜV America Inc, the above-mentioned unit is in compliance with the applicable electromagnetic compatibility (EMC) portions of the requirements defined in FCC CFR 47 Part 24.

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.

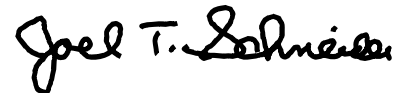
TÜV America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the applicable EMC requirements of FCC CFR 47 Part 24 "Personal Communications Services" Subpart E "Broadband PCS" Sections 24.232 "Power and antenna height limits", 24.235 "Frequency stability", 24.238 "Emission limitations for Broadband PCS equipment".

Date: 18 October 2006

Location: Taylors Falls MN
USA



Joe C. Sausen
EMC Senior Technician



Joel T. Schneider
Senior EMC Engineer

Not Transferable

EMC TEST REPORT

Test Report File No. : **WC604235 Rev A** Date of issue: 18 October 2006

Model / Serial No(s) Tested : DGVIH3110000000000 / ---
DGVIR3300000000000 / ---

Product Type : Digivance® Indoor Coverage Solution
In-building wireless communication system

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
References : **WC604235 Rev**

Total pages including
Appendices : **162**

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, NARTE, and VCCI.

REVISION RECORD

REVISION	TOTAL NUMBER OF PAGES	DATE	DESCRIPTION
	136	08 August 2006	Initial Release
A	162	18 October 2006	<p>Note – revisions reference original report page numbers. Revisions include:</p> <ul style="list-style-type: none"> ▪ Page 2: Revision of directory. ▪ Page 3: Added DC supply voltage. ▪ Page 4: Corrected Minimum Margin of Compliance Statement to 23.17 dBm at 1962.5 MHz (EDGE Band BEF). ▪ Pages 5-6: Replace Conducted Output Power Data. ▪ Pages 8-11: Replaced Frequency Tolerance Data. ▪ Page 13-16: Replaced page 14 and added a Occupied Bandwidth datasheet. ▪ Page 19-20: Replaced page 18 and added Band Edge Data. ▪ Page 21; Deleted blank page. ▪ Page 47: Replaced. ▪ Pages 59-60: Added Intermodulation Data. ▪ Pages 77-78: Added Intermodulation Data. ▪ Pages 95-96: Added Intermodulation Data. ▪ Pages 113-114: Added Intermodulation Data.

D I R E C T O R Y

Documentation	Page(s)
Revision History	<u>2</u>
Directory	<u>3</u>
Test Regulations, Environmental conditions, Power supply	<u>4</u>
Test Results and Data:	FCC
Power and antenna height limits	24.232 <u>5 - 7</u>
Frequency stability	24.235 <u>8 - 12</u>
Emission limitations for Broadband PCS equipment	24.238 <u>13 - 144</u>
Test area diagram	<u>145</u>
Test setup drawings & photos	<u>145 - 148</u>
Test Operation Mode, Configuration of the device	<u>149</u>
Deviations From Standard, General Remarks, Summary	<u>150</u>
Appendix A	
Constructional Data Form and Block Diagrams	<u>151 - 160</u>
Appendix B	
Measurement Protocol	<u>161 - 162</u>

Sign Explanations:

- not applicable
- applicable

EMC TEST REGULATIONS:

The tests were performed according to the following regulations :

- EN 55014-2: 1997 + Amendment A1: 2001 - Category ___
- EN 55024: 1998 + Amendments A1: 2001 + A2: 2003
- EN 60601-1-2: 2001
- EN 61000-6-1: 2001
- EN 61000-6-2: 2001
- EN 61326: 1997 + Amendments A1: 1998 + A2: 2001 + A3: 2003
- EN 61800-3: 1996 + Amendment A11: 2000
- ETS 300 683: 1997
- ETSI EN 301 489-3 V1.4.1: 2002
- EN 300 330-2 V1.1.1 (2001-06)
- FCC Part 15 Subpart C Section 15.209
- FCC Part 24
- IC RSS-210 Issue 6
- IC RSS-Gen Issue 1

ENVIRONMENTAL CONDITIONS IN THE LAB

TUV

Temperature: 22 °C

Relative Humidity: 30 %

Atmospheric pressure: 98.0 kPa

ADC

Temperature: 26 °C

Relative Humidity: 22 %

Atmospheric pressure: 98.6 kPa

POWER SUPPLY UTILIZED

Power supply system : 1 phase, 60 Hz, 120 V

Internal Remote Power, Supplied From Host Unit : 48 VDC

24.232 Power and antenna height limits

Test summary

The requirements are: - MET - NOT MET

Minimum margin of compliance is 23.17 dBm at 1962.5 MHz (EDGE Band BEF)

ERP & EIRP calculations will be supplied with the SAR/MPE letter.

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
6810.17.A	Huber Suhner	Attenuator	n/a	CNR
HP8563E	HP	Spectrum Analyzer	MC27690	12-22-06
EPM-441A	HP	Power Meter	MC27670	9-28-06
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, 24.232(a)

100 watts or 50 dBm

Test Data

Pages 5 - 6

**Conducted Output Power Test for ADC Inc.
 Digivance® Indoor Coverage Solution
 Model Number DGVIH3110000000000 and
 DGVIR3300000000000**

*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 power meter. The carrier output, below, was conducted using a single TDMA, GSM, EDGE, and CDMA signal generator. The power meter level was offset to compensate for attenuators and cable loss between the EUT and the power meter.

A signal was used at the low, mid and high parts of the selected band. The power meter level was offset by 34.4 dB to compensate for attenuators and cable loss between the EUT and the power meter.

TDMA		445.65 mWatts		GSM		453.94 mWatts	
Band AD	(1900 MHz)	Band AD	(1900 MHz)	Band AD	(1900 MHz)	Band AD	(1900 MHz)
Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output
1930.0 MHz	<u>25.48</u> dBm	1930.0 MHz	<u>25.59</u> dBm	1930.0 MHz	<u>25.59</u> dBm	1930.0 MHz	<u>25.59</u> dBm
1940.0 MHz	<u>25.06</u> dBm	1940.0 MHz	<u>25.18</u> dBm	1940.0 MHz	<u>25.18</u> dBm	1940.0 MHz	<u>25.18</u> dBm
1950.0 MHz	<u>23.60</u> dBm	1950.0 MHz	<u>23.69</u> dBm	1950.0 MHz	<u>23.69</u> dBm	1950.0 MHz	<u>23.69</u> dBm
Band DBE	(1900 MHz)	Band DBE	(1900 MHz)	Band DBE	(1900 MHz)	Band DBE	(1900 MHz)
Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output
1945.0 MHz	<u>24.23</u> dBm	1945.0 MHz	<u>24.33</u> dBm	1945.0 MHz	<u>24.33</u> dBm	1945.0 MHz	<u>24.33</u> dBm
1957.5 MHz	<u>25.34</u> dBm	1957.5 MHz	<u>25.33</u> dBm	1957.5 MHz	<u>25.33</u> dBm	1957.5 MHz	<u>25.33</u> dBm
1970.0 MHz	<u>25.83</u> dBm	1970.0 MHz	<u>25.94</u> dBm	1970.0 MHz	<u>25.94</u> dBm	1970.0 MHz	<u>25.94</u> dBm
Band BEF	(1900 MHz)	Band BEF	(1900 MHz)	Band BEF	(1900 MHz)	Band BEF	(1900 MHz)
Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output
1950.0 MHz	<u>23.61</u> dBm	1950.0 MHz	<u>23.70</u> dBm	1950.0 MHz	<u>23.70</u> dBm	1950.0 MHz	<u>23.70</u> dBm
1962.5 MHz	<u>26.49</u> dBm	1962.5 MHz	<u>26.57</u> dBm	1962.5 MHz	<u>26.57</u> dBm	1962.5 MHz	<u>26.57</u> dBm
1975.0 MHz	<u>25.38</u> dBm	1975.0 MHz	<u>25.48</u> dBm	1975.0 MHz	<u>25.48</u> dBm	1975.0 MHz	<u>25.48</u> dBm
Band EFC	(1900 MHz)	Band EFC	(1900 MHz)	Band EFC	(1900 MHz)	Band EFC	(1900 MHz)
Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output
1965.0 MHz	<u>25.98</u> dBm	1965.0 MHz	<u>26.09</u> dBm	1965.0 MHz	<u>26.09</u> dBm	1965.0 MHz	<u>26.09</u> dBm
1977.5 MHz	<u>26.34</u> dBm	1977.5 MHz	<u>26.47</u> dBm	1977.5 MHz	<u>26.47</u> dBm	1977.5 MHz	<u>26.47</u> dBm
1990.0 MHz	<u>22.03</u> dBm	1990.0 MHz	<u>22.10</u> dBm	1990.0 MHz	<u>22.10</u> dBm	1990.0 MHz	<u>22.10</u> dBm

EDGE		481.94 mWatts		CDMA		167.10 mWatts	
Band AD	(1900 MHz)	Carrier Output		Band AD	(1900 MHz)	Carrier Output	
Carrier Frequency		Carrier Output		Carrier Frequency		Carrier Output	
1930.0 MHz		<u>25.45</u> dBm		1930.0 MHz		<u>18.22</u> dBm	
1940.0 MHz		<u>26.17</u> dBm		1940.0 MHz		<u>18.13</u> dBm	
1950.0 MHz		<u>25.73</u> dBm		1950.0 MHz		<u>16.81</u> dBm	
Band DBE	(1900 MHz)	Carrier Output		Band DBE	(1900 MHz)	Carrier Output	
Carrier Frequency		Carrier Output		Carrier Frequency		Carrier Output	
1945.0 MHz		<u>23.72</u> dBm		1945.0 MHz		<u>17.24</u> dBm	
1957.5 MHz		<u>25.74</u> dBm		1957.5 MHz		<u>19.74</u> dBm	
1970.0 MHz		<u>26.67</u> dBm		1970.0 MHz		<u>22.23</u> dBm	
Band BEF	(1900 MHz)	Carrier Output		Band BEF	(1900 MHz)	Carrier Output	
Carrier Frequency		Carrier Output		Carrier Frequency		Carrier Output	
1950.0 MHz		<u>23.53</u> dBm		1950.0 MHz		<u>16.19</u> dBm	
1962.5 MHz		<u>26.83</u> dBm		1962.5 MHz		<u>21.18</u> dBm	
1975.0 MHz		<u>26.52</u> dBm		1975.0 MHz		<u>21.90</u> dBm	
Band EFC	(1900 MHz)	Carrier Output		Band EFC	(1900 MHz)	Carrier Output	
Carrier Frequency		Carrier Output		Carrier Frequency		Carrier Output	
1965.0 MHz		<u>25.72</u> dBm		1965.0 MHz		<u>19.37</u> dBm	
1977.5 MHz		<u>26.11</u> dBm		1977.5 MHz		<u>20.36</u> dBm	
1990.0 MHz		<u>25.31</u> dBm		1990.0 MHz		<u>19.09</u> dBm	

24.235 Frequency stability

Test summary

The requirements are: - MET - NOT MET

The fundamental emission stays within the authorized frequency block

Frequency measured over a temperature range of 0 to 50°C and an input voltage range of 85 to 287 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
87	Fluke	Multimeter	MC20083	4-26-07
5347A	HP	Freq. Counter	MC27548	8-18-07
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

The emission must stay within the authorized frequency block

Test data

Pages 8 - 11

**Frequency Tolerance Test for ADC Inc.
 Digivance® Indoor Coverage Solution
 Model Numbers DGVIH310000000000 and DGVIR3300000000000**

EUT PCS (1900 MHz - AD)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
85 VAC	34 VDC	1930.000 MHz	1930.000 MHz	Yes
175 VAC	41 VDC	1930.000 MHz	1930.000 MHz	Yes
287 VAC	48 VDC	1930.000 MHz	1930.000 MHz	Yes
85 VAC	34 VDC	1940.000 MHz	1940.000 MHz	Yes
175 VAC	41 VDC	1940.000 MHz	1940.000 MHz	Yes
287 VAC	48 VDC	1940.000 MHz	1940.000 MHz	Yes
85 VAC	34 VDC	1950.000 MHz	1950.000 MHz	Yes
175 VAC	41 VDC	1950.000 MHz	1950.000 MHz	Yes
287 VAC	48 VDC	1950.000 MHz	1950.000 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
0 Deg. C		1930.000 MHz	1930.000 MHz	Yes
10 Deg. C		1930.000 MHz	1930.000 MHz	Yes
20 Deg. C		1930.000 MHz	1930.000 MHz	Yes
30 Deg. C		1930.000 MHz	1930.000 MHz	Yes
40 Deg. C		1930.000 MHz	1930.000 MHz	Yes
50 Deg. C		1930.000 MHz	1930.000 MHz	Yes
0 Deg. C		1940.000 MHz	1940.000 MHz	Yes
10 Deg. C		1940.000 MHz	1940.000 MHz	Yes
20 Deg. C		1940.000 MHz	1940.000 MHz	Yes
30 Deg. C		1940.000 MHz	1940.000 MHz	Yes
40 Deg. C		1940.000 MHz	1940.000 MHz	Yes
50 Deg. C		1940.000 MHz	1940.000 MHz	Yes
0 Deg. C		1950.000 MHz	1950.000 MHz	Yes
10 Deg. C		1950.000 MHz	1950.000 MHz	Yes
20 Deg. C		1950.000 MHz	1950.000 MHz	Yes
30 Deg. C		1950.000 MHz	1950.000 MHz	Yes
40 Deg. C		1950.000 MHz	1950.000 MHz	Yes
50 Deg. C		1950.000 MHz	1950.000 MHz	Yes

**Frequency Tolerance Test for ADC Inc.
 Digivance® Indoor Coverage Solution
 Model Numbers DGVIH310000000000 and DGVIR3300000000000**

EUT PCS (1900 MHz - DBE)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
85 VAC	34 VDC	1945.000 MHz	1945.000 MHz	Yes
175 VAC	41 VDC	1945.000 MHz	1945.000 MHz	Yes
287 VAC	48 VDC	1945.000 MHz	1945.000 MHz	Yes
85 VAC	34 VDC	1957.500 MHz	1957.500 MHz	Yes
175 VAC	41 VDC	1957.500 MHz	1957.500 MHz	Yes
287 VAC	48 VDC	1957.500 MHz	1957.500 MHz	Yes
85 VAC	34 VDC	1970.000 MHz	1970.000 MHz	Yes
175 VAC	41 VDC	1970.000 MHz	1970.000 MHz	Yes
287 VAC	48 VDC	1970.000 MHz	1970.000 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
0 Deg. C		1945.000 MHz	1945.000 MHz	Yes
10 Deg. C		1945.000 MHz	1945.000 MHz	Yes
20 Deg. C		1945.000 MHz	1945.000 MHz	Yes
30 Deg. C		1945.000 MHz	1945.000 MHz	Yes
40 Deg. C		1945.000 MHz	1945.000 MHz	Yes
50 Deg. C		1945.000 MHz	1945.000 MHz	Yes
0 Deg. C		1957.500 MHz	1957.500 MHz	Yes
10 Deg. C		1957.500 MHz	1957.500 MHz	Yes
20 Deg. C		1957.500 MHz	1957.500 MHz	Yes
30 Deg. C		1957.500 MHz	1957.500 MHz	Yes
40 Deg. C		1957.500 MHz	1957.500 MHz	Yes
50 Deg. C		1957.500 MHz	1957.500 MHz	Yes
0 Deg. C		1970.000 MHz	1970.000 MHz	Yes
10 Deg. C		1970.000 MHz	1970.000 MHz	Yes
20 Deg. C		1970.000 MHz	1970.000 MHz	Yes
30 Deg. C		1970.000 MHz	1970.000 MHz	Yes
40 Deg. C		1970.000 MHz	1970.000 MHz	Yes
50 Deg. C		1970.000 MHz	1970.000 MHz	Yes

**Frequency Tolerance Test for ADC Inc.
 Digivance® Indoor Coverage Solution
 Model Numbers DGVIH310000000000 and DGVIR3300000000000**

EUT PCS (1900 MHz - BEF)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
85 VAC	34 VDC	1950.000 MHz	1950.000 MHz	Yes
175 VAC	41 VDC	1950.000 MHz	1950.000 MHz	Yes
287 VAC	48 VDC	1950.000 MHz	1950.000 MHz	Yes
85 VAC	34 VDC	1962.500 MHz	1962.500 MHz	Yes
175 VAC	41 VDC	1962.500 MHz	1962.500 MHz	Yes
287 VAC	48 VDC	1962.500 MHz	1962.500 MHz	Yes
85 VAC	34 VDC	1975.000 MHz	1975.000 MHz	Yes
175 VAC	41 VDC	1975.000 MHz	1975.000 MHz	Yes
287 VAC	48 VDC	1975.000 MHz	1975.000 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
0 Deg. C		1950.000 MHz	1950.000 MHz	Yes
10 Deg. C		1950.000 MHz	1950.000 MHz	Yes
20 Deg. C		1950.000 MHz	1950.000 MHz	Yes
30 Deg. C		1950.000 MHz	1950.000 MHz	Yes
40 Deg. C		1950.000 MHz	1950.000 MHz	Yes
50 Deg. C		1950.000 MHz	1950.000 MHz	Yes
0 Deg. C		1962.500 MHz	1962.500 MHz	Yes
10 Deg. C		1962.500 MHz	1962.500 MHz	Yes
20 Deg. C		1962.500 MHz	1962.500 MHz	Yes
30 Deg. C		1962.500 MHz	1962.500 MHz	Yes
40 Deg. C		1962.500 MHz	1962.500 MHz	Yes
50 Deg. C		1962.500 MHz	1962.500 MHz	Yes
0 Deg. C		1975.000 MHz	1975.000 MHz	Yes
10 Deg. C		1975.000 MHz	1975.000 MHz	Yes
20 Deg. C		1975.000 MHz	1975.000 MHz	Yes
30 Deg. C		1975.000 MHz	1975.000 MHz	Yes
40 Deg. C		1975.000 MHz	1975.000 MHz	Yes
50 Deg. C		1975.000 MHz	1975.000 MHz	Yes

**Frequency Tolerance Test for ADC Inc.
Digivance® Indoor Coverage Solution
Model Numbers DGVIH310000000000 and DGVIR3300000000000**

EUT PCS (1900 MHz - EFC)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
85 VAC	34 VDC	1965.000 MHz	1965.000 MHz	Yes
175 VAC	41 VDC	1965.000 MHz	1965.000 MHz	Yes
287 VAC	48 VDC	1965.000 MHz	1965.000 MHz	Yes
85 VAC	34 VDC	1977.500 MHz	1977.500 MHz	Yes
175 VAC	41 VDC	1977.500 MHz	1977.500 MHz	Yes
287 VAC	48 VDC	1977.500 MHz	1977.500 MHz	Yes
85 VAC	34 VDC	1990.000 MHz	1990.000 MHz	Yes
175 VAC	41 VDC	1990.000 MHz	1990.000 MHz	Yes
287 VAC	48 VDC	1990.000 MHz	1990.000 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
0 Deg. C		1965.000 MHz	1965.000 MHz	Yes
10 Deg. C		1965.000 MHz	1965.000 MHz	Yes
20 Deg. C		1965.000 MHz	1965.000 MHz	Yes
30 Deg. C		1965.000 MHz	1965.000 MHz	Yes
40 Deg. C		1965.000 MHz	1965.000 MHz	Yes
50 Deg. C		1965.000 MHz	1965.000 MHz	Yes
0 Deg. C		1977.500 MHz	1977.500 MHz	Yes
10 Deg. C		1977.500 MHz	1977.500 MHz	Yes
20 Deg. C		1977.500 MHz	1977.500 MHz	Yes
30 Deg. C		1977.500 MHz	1977.500 MHz	Yes
40 Deg. C		1977.500 MHz	1977.500 MHz	Yes
50 Deg. C		1977.500 MHz	1977.500 MHz	Yes
0 Deg. C		1990.000 MHz	1990.000 MHz	Yes
10 Deg. C		1990.000 MHz	1990.000 MHz	Yes
20 Deg. C		1990.000 MHz	1990.000 MHz	Yes
30 Deg. C		1990.000 MHz	1990.000 MHz	Yes
40 Deg. C		1990.000 MHz	1990.000 MHz	Yes
50 Deg. C		1990.000 MHz	1990.000 MHz	Yes

24.238 Emission limitations for Broadband PCS equipment

Test summary

The requirements are: ■ - MET □ - NOT MET

Out of band emissions were less than -13dBm from the equation $(19\text{dBm} - [43 + 10\log(0.08\text{W})])$

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
6810.17.A	Huber Suhner	Attenuator	n/a	CNR
HP8563E	HP	Spectrum Analyzer	MC27690	6-22-06
EPM-441A	HP	Power Meter	MC27670	9-28-06
87	Fluke	Multimeter	MC20083	4-26-07
5347A	HP	Freq. Counter	MC27548	8-18-07
na	Ecosphere	Temperature Chamber	MC21679	12-27-06
1520CT	Staco	Variable Auto Transformer	MC/44655	CNR
E4436B	Agilent	Signal Generator	963739	10-16-06
E4438C	Agilent	Signal Generator	1018532	3-13-08

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
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
3847	ZHL-1042J	Mini-Circuits	Preamplifier 10 - 3000 MHz	0607	Code B
3958	SL18B4020	Phase One Microwave	Preamplifier 1 - 18 GHz	0002	Code B
2684	85650A	Hewlett-Packard	Quasi-Peak Adapter	2521A01006	15 Mar 07
2690	8566B	Hewlett-Packard	Spectrum Analyzer	2430A00930	12 May 07
2673	85662A	Hewlett-Packard	Analyzer Display	2152A03687	12 May 07

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, pages 14 - 18
 Conducted Emissions, pages 19 - 34
 Radiated Emissions, pages 35 - 47
 Inter-Modulation Test, pages 48 - 144

**Occupied Bandwidth Modulation Test for ADC Inc.
Digivance® Indoor Coverage Solution
Model Number DGVIH3110000000000 and
DGVIR3300000000000**

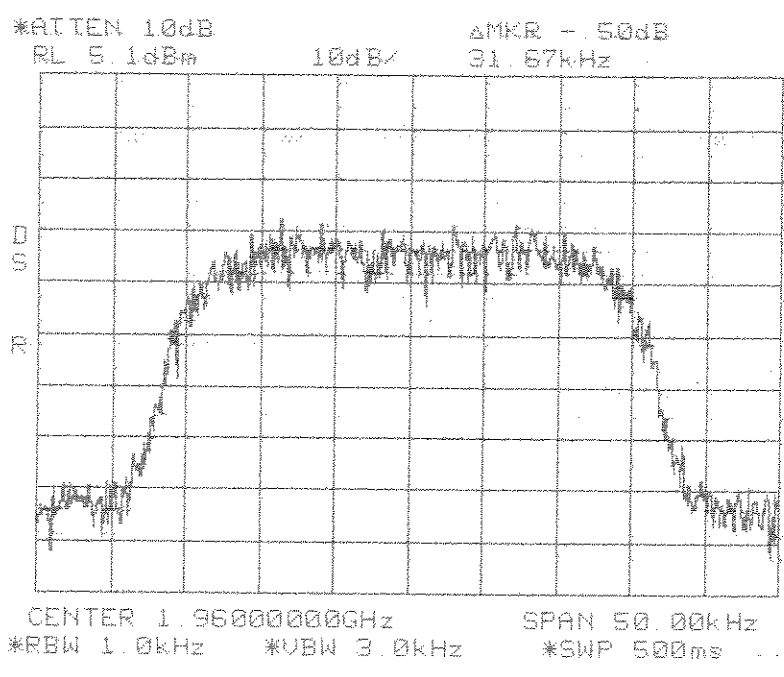
An input/output Occupied Bandwidth test was done with modulation types: TDMA, GSM, EDGE, and CDMA. The purpose was to determine the amount of distortion added to different types of modulation schemes by the EUT. The following plots show input signals vs. output signals.

The resolution bandwidth is reduced to 1% of the estimated emission bandwidth and the video bandwidth is set to 3 times the resolution bandwidth. The markers are moved to the -20 dB points (from the previously established center frequency level) on either side of center frequency.

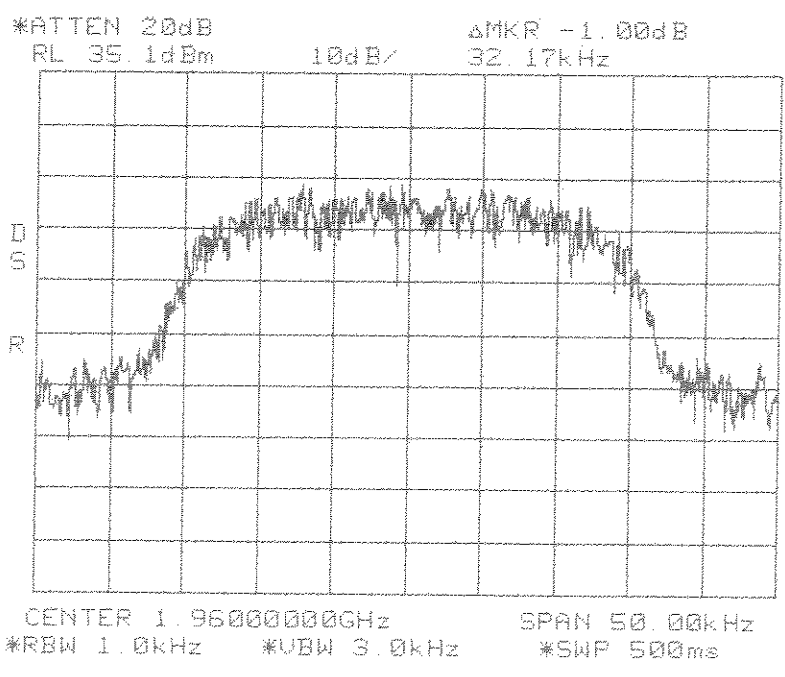
Results:

Pass (see plots)

Span: 50 kHz
RBW: 1 kHz
VBW: 3.0 kHz



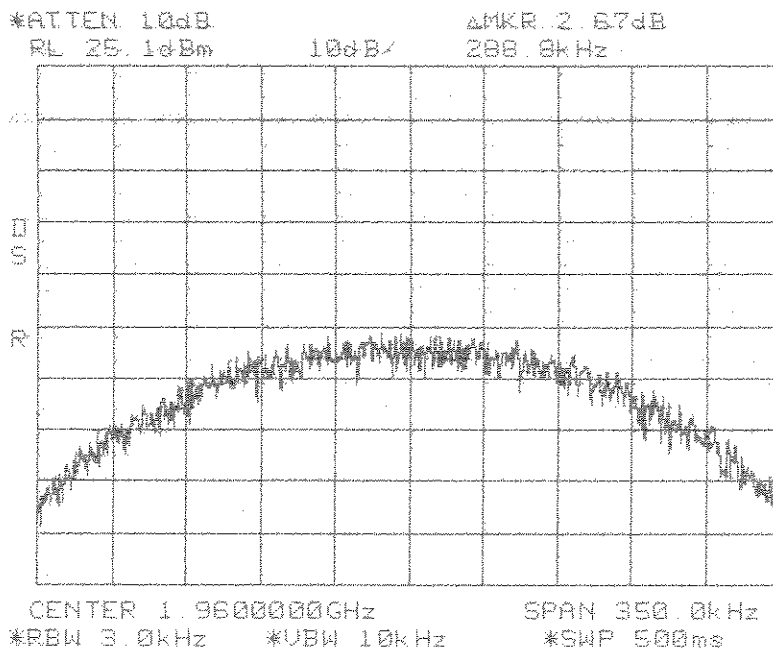
**Occupied Bandwidth
TDMA
Signal In**



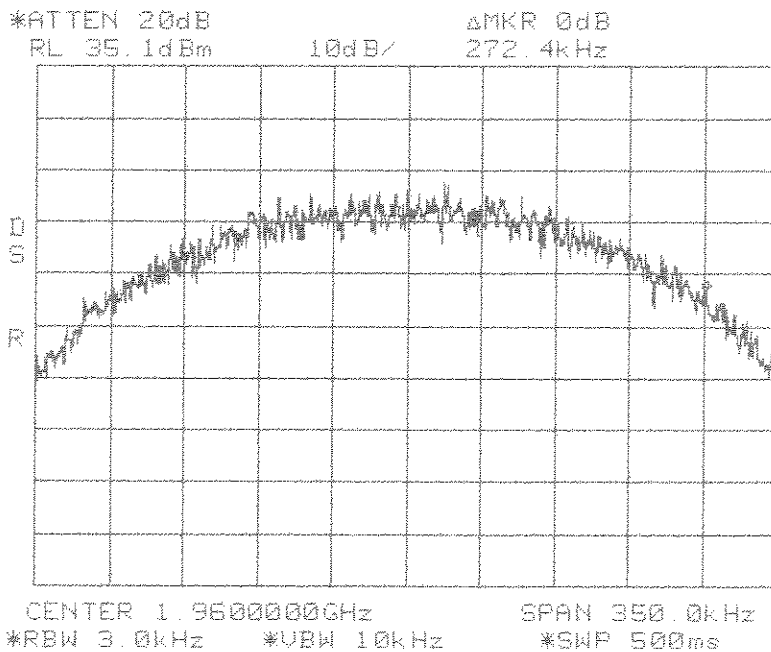
**Occupied Bandwidth
TDMA
Signal Out**

Span: 50 kHz
RBW: 1 kHz
VBW: 3.0 kHz

Span: 350 kHz
RBW: 3 kHz
VBW: 10 kHz



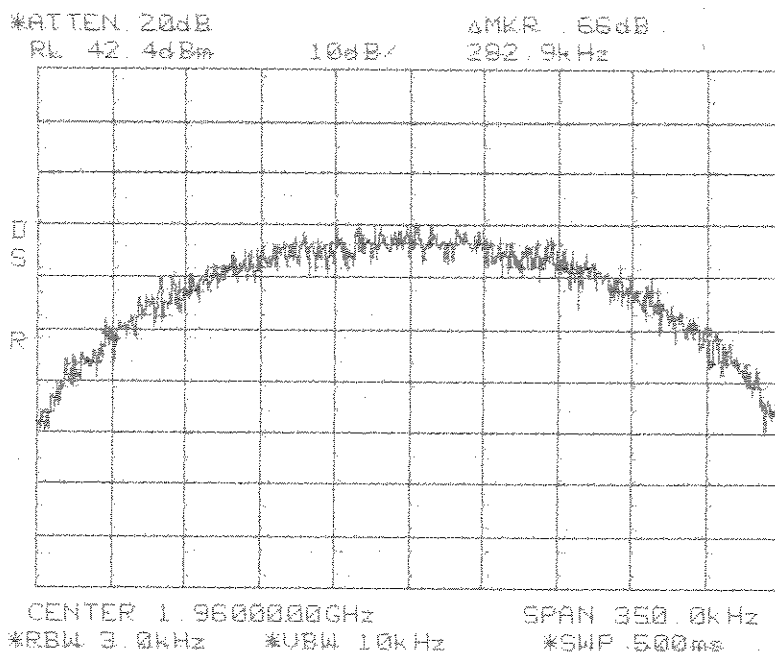
Occupied Bandwidth GSM Signal In



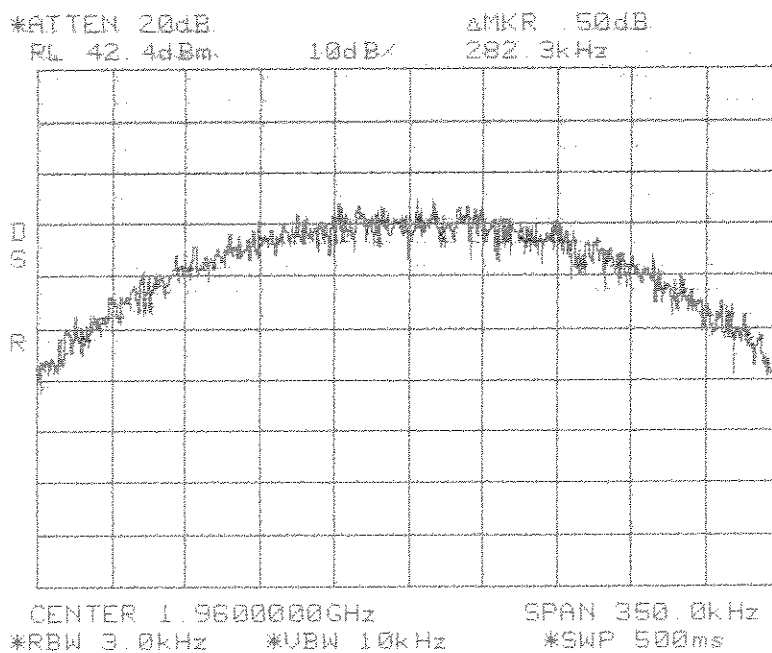
Occupied Bandwidth GSM Signal Out

Span: 350 kHz
RBW: 3 kHz
VBW: 10 kHz

Span: 350 kHz
RBW: 3 kHz
VBW: 10 kHz



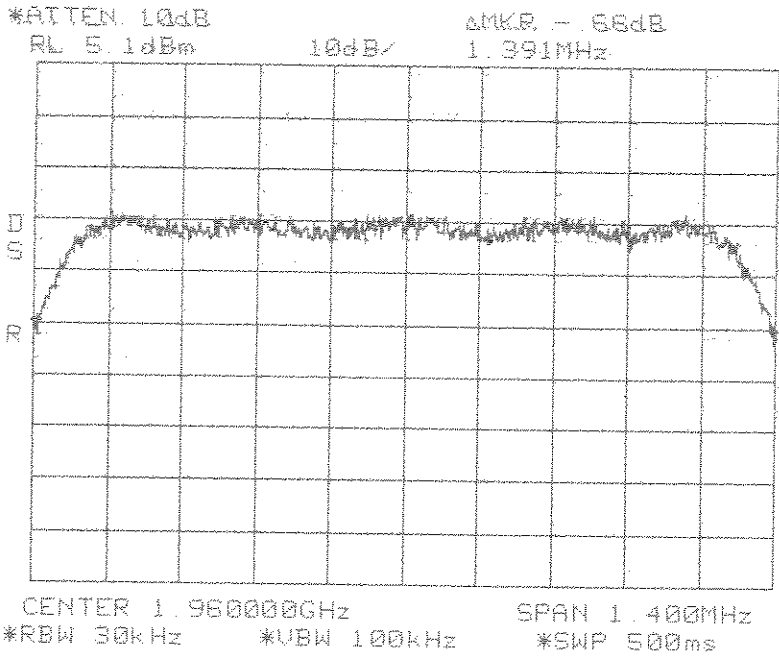
**Occupied Bandwidth
EDGE
Signal In**



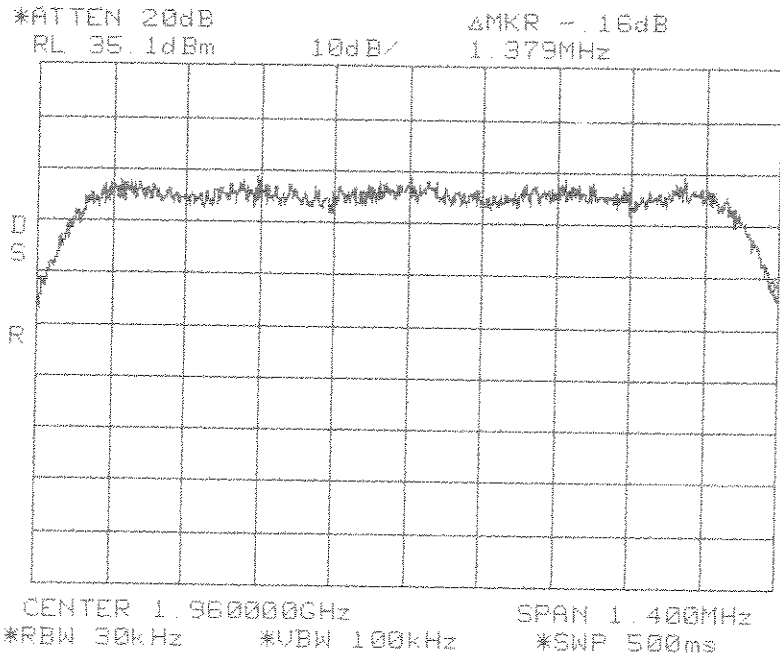
**Occupied Bandwidth
EDGE
Signal Out**

Span: 350 kHz
RBW: 3 kHz
VBW: 10 kHz

Span: 1.4 MHz
RBW: 30 kHz
VBW: 100 kHz



**Occupied Bandwidth
CDMA
Signal In**



**Occupied Bandwidth
CDMA
Signal Out**

Span: 1.4 MHz
RBW: 30 kHz
VBW: 100 kHz

**Conducted Emission Limits Test for ADC Inc.
Digivance® Indoor Coverage Solution
Model Number DGVIH3110000000000 and
DGVIR3300000000000**

The out of band emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 10th harmonic of the highest carrier frequency. Test signals used are TDMA, GSM, EDGE, 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
(19dBm - [43 + 10log(0.08W)])

Band edge compliance is also demonstrated using a TDMA, GSM, EDGE, and CDMA signal at the upper and lower limits of the band.

The Host unit connects directly to the BTS via coax. The Host unit does not connect to an antenna or amplifier, thus it is a Part 15 device and has been tested and is compliant as such. No FCC ID is necessary.

Industry practice has generally set the input signal power level. Test signal used was \approx -10 dBm input to DHU.
Industry practice has generally set the output signal power level.

Digital Host Unit (DHU):
Range: 85 - 250 VAC
Tested @: 120 VAC
Tested @: 1.2 A

Digital Remote Unit (DRU):
Range: 34-48 VDC
Tested @: 48 VDC
Tested @: 350 mA

Application details for 2.1033(c)(10), and 2.1033(c)(13):

The input to the host unit has a digital attenuation chip (ALC) to provide protection from overdrive with 5-10 millisecond attack time / 100 millisecond decay time and 31 dB of head room, such that single channel operation, or multi-channel operation will not exceed nominal gain of the system.

The frequency stability is derived by the BTS, base transceiver station. This product uses internal frequency stability to keep the signal inside our filter bandwidths. This means that the frequency can change, but the frequency that transmits is still at the original frequency. The remote system uses the data over the fiber optic path to phase/frequency lock to the host. The purpose is to frequency lock the up- and down-conversion local oscillators, and thereby eliminate any end-to-end frequency shift.

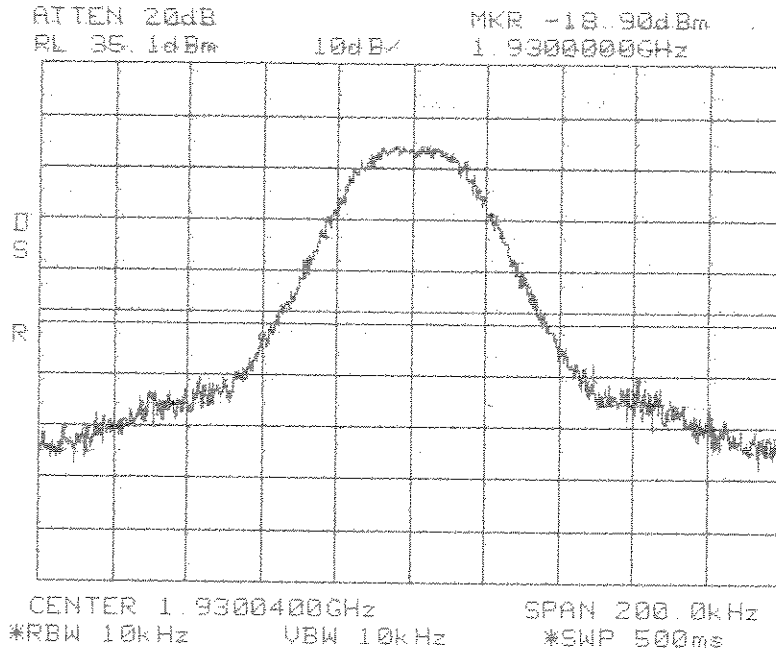
The spurious limitation is completed with the duplexer. The ALC also suppresses in-band spurious by preventing PA overdrive, while the duplexer suppresses out-of-band spurious.

This equipment does not modulate the RF, so there is no modulation limiter. This equipment does not change the modulation of the RF or the occupied bandwidth of any channel. It transports the signal, as is, over an optical link. The RF input is not changed in the RF output.

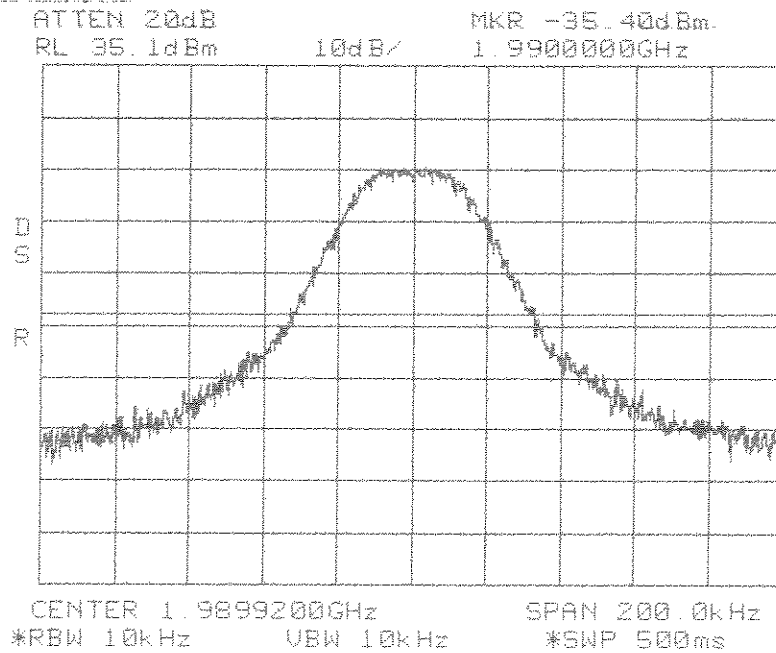
This is a constant gain device, so the setup controls the output. There is an overdrive and overpower limit control that prevents excess power.

Results:
Pass (See plots)

Center: 1930.04
Span: 200 kHz
RBW: 10 kHz
VBW: 10 kHz



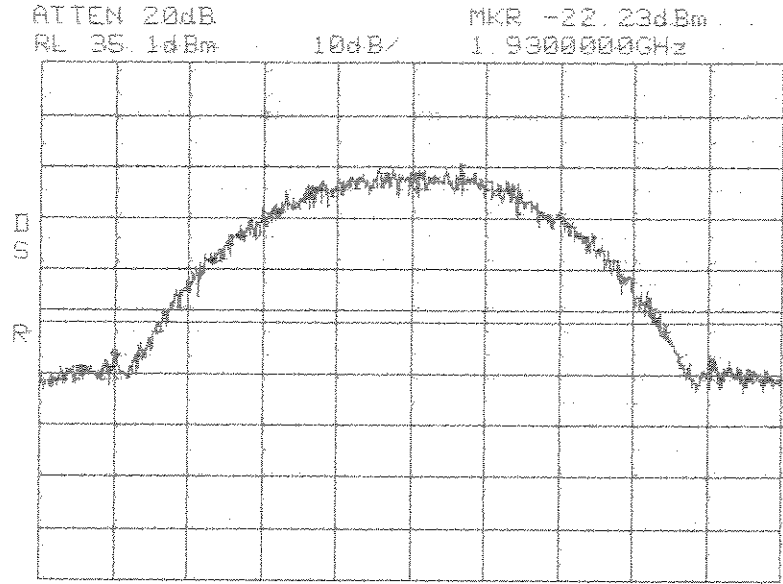
**Band Edge
TDMA**



**Band Edge
TDMA**

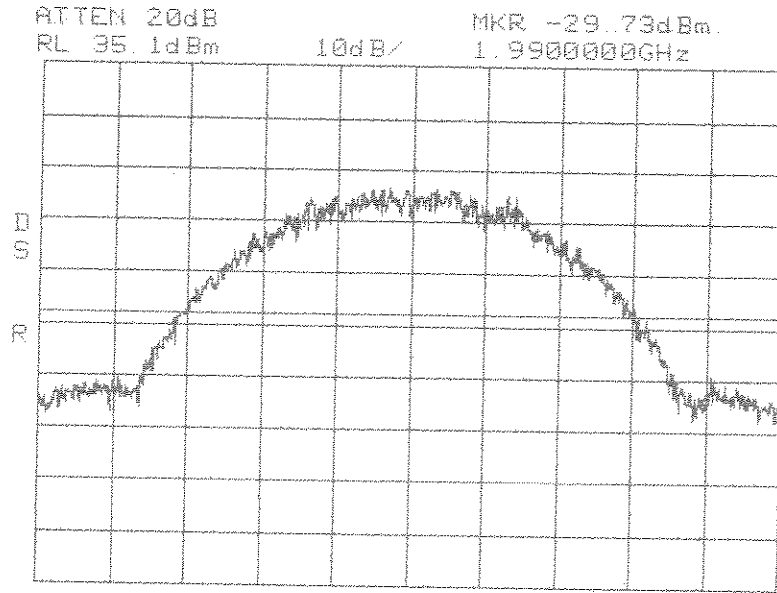
Center: 1989.92 MHz
Span: 200 kHz
RBW: 10 kHz
VBW: 10 kHz

Center: 1930.20
 Span: 500 kHz
 RBW: 10 kHz
 VBW: 10 kHz



**Band Edge
 GSM**

CENTER 1.9302000GHz SPAN 500.0kHz
 *RBW 10kHz VBW 10kHz *SWP 500ms

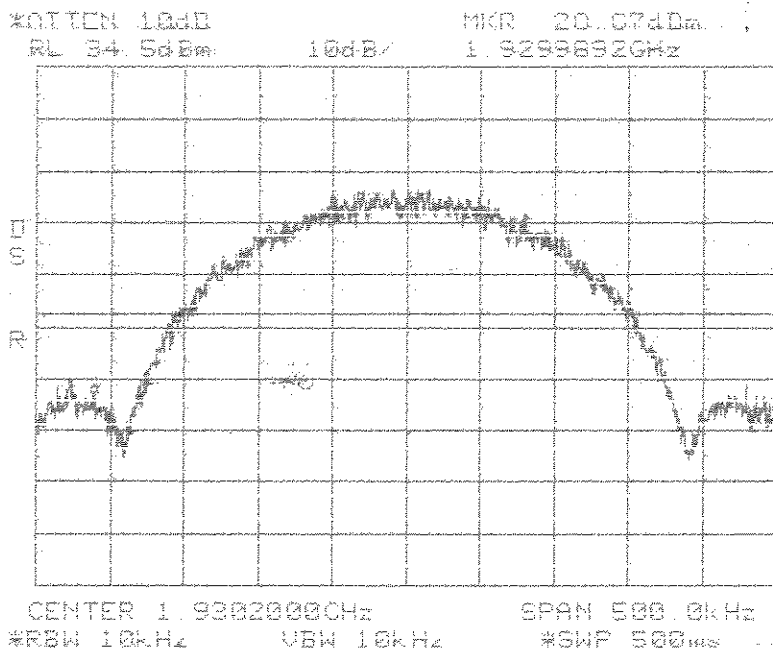


**Band Edge
 GSM**

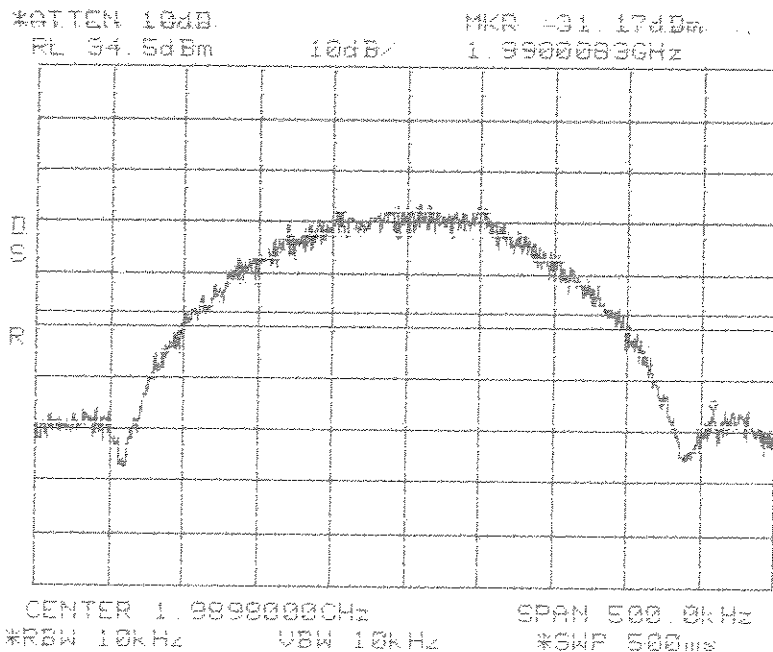
CENTER 1.9898000GHz SPAN 500.0kHz
 *RBW 10kHz VBW 10kHz *SWP 500ms

Center: 1989.80 MHz
 Span: 500 kHz
 RBW: 10 kHz
 VBW: 10 kHz

Center: 1930.20
Span: 500 kHz
RBW: 10 kHz
VBW: 10 kHz



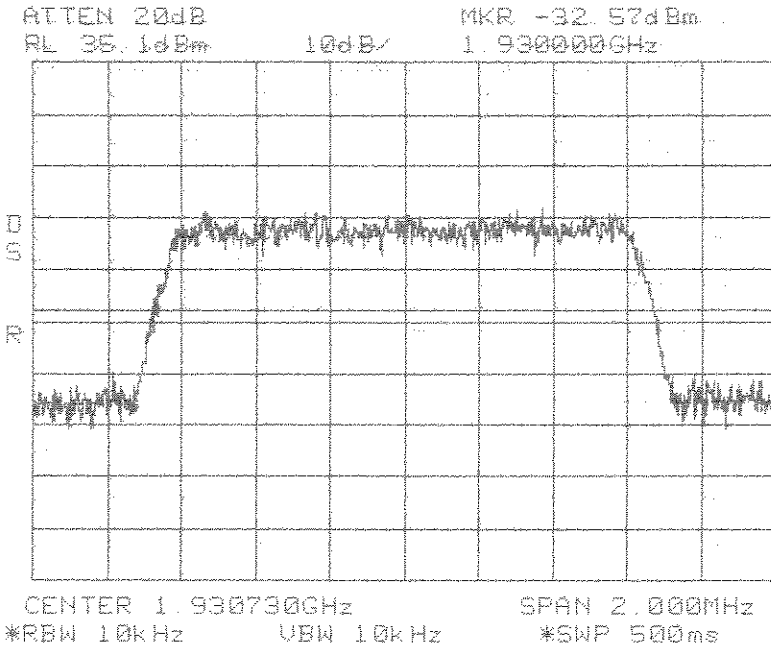
**Band Edge
EDGE**



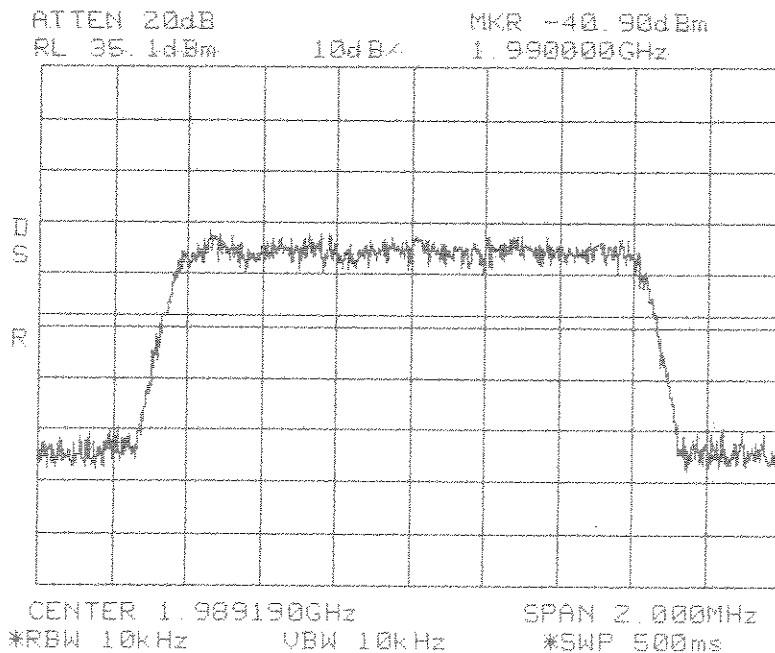
**Band Edge
EDGE**

Center: 1989.80 MHz
Span: 500 kHz
RBW: 10 kHz
VBW: 10 kHz

Center: 1930.73
Span: 2 MHz
RBW: 10 kHz
VBW: 10 kHz



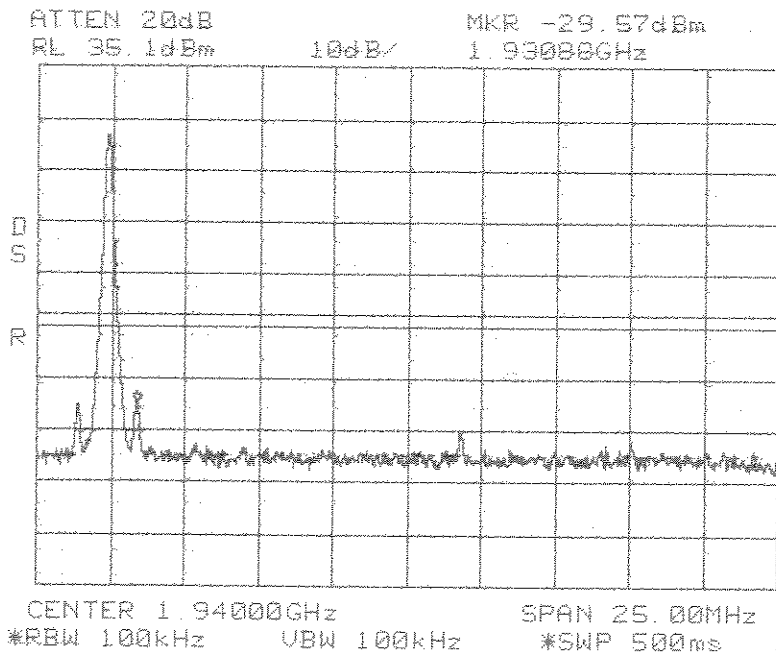
**Band Edge
CDMA**



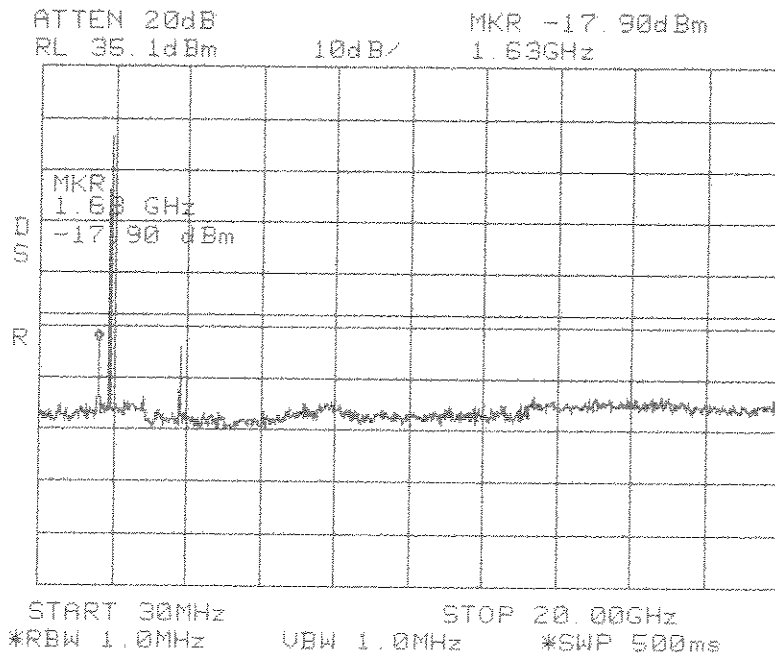
**Band Edge
CDMA**

Center: 1989.19 MHz
Span: 2 MHz
RBW: 10 kHz
VBW: 10 kHz

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



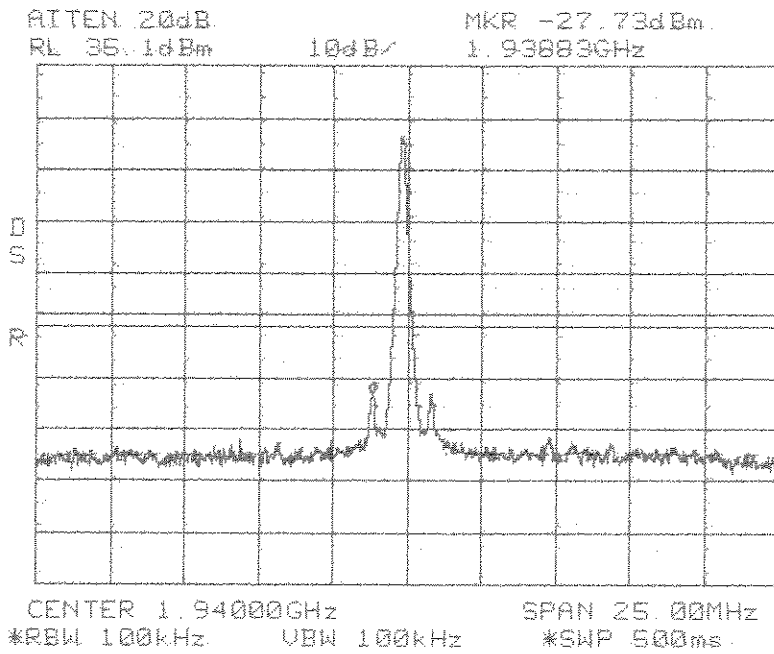
**Conducted Emissions
Low
PCS 1900 MHz
AD Band**



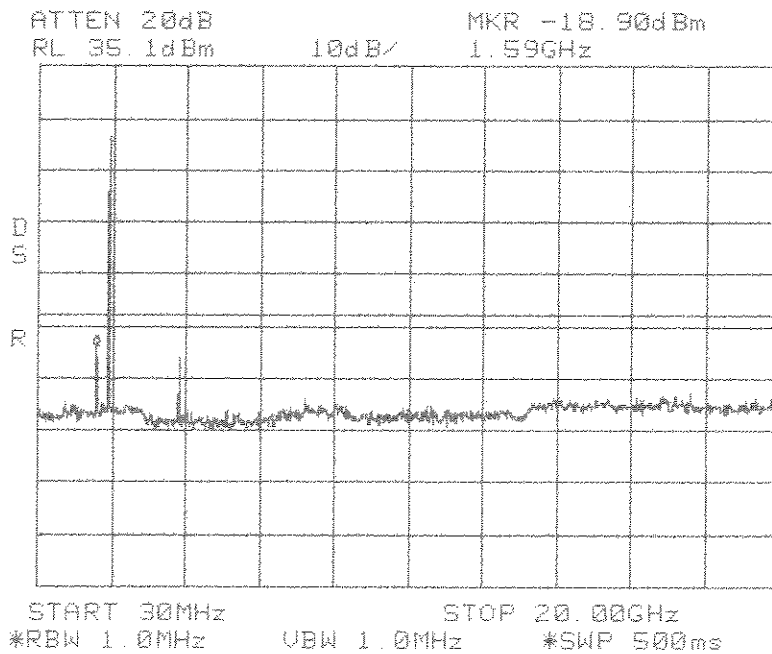
**Conducted Emissions
Low
PCS 1900 MHz
AD Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



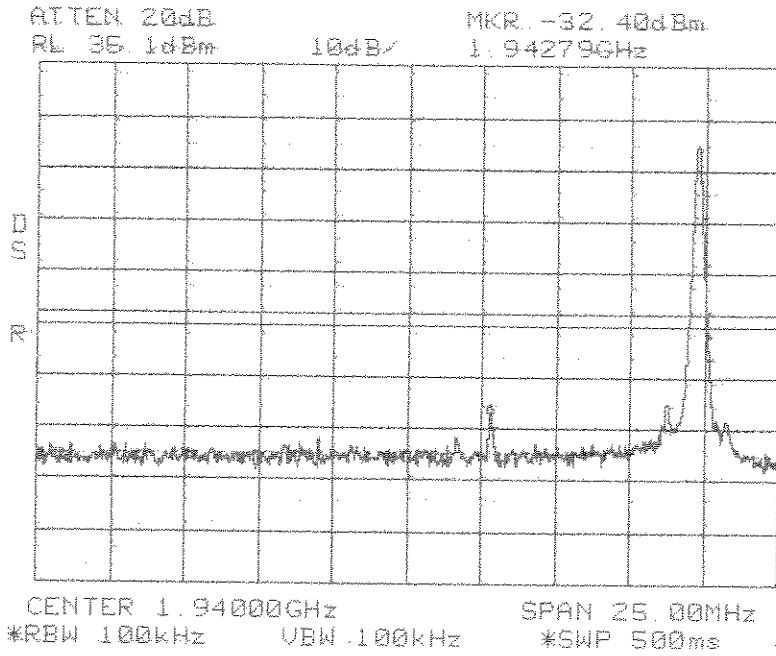
**Conducted Emissions
Mid
PCS 1900 MHz
AD Band**



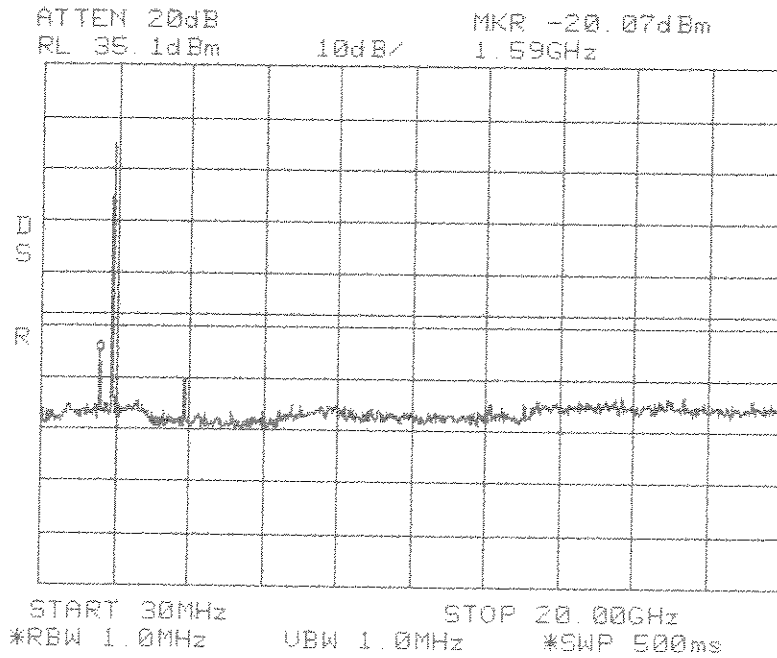
**Conducted Emissions
Mid
PCS 1900 MHz
AD Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



**Conducted Emissions
High
PCS 1900 MHz
AD Band**

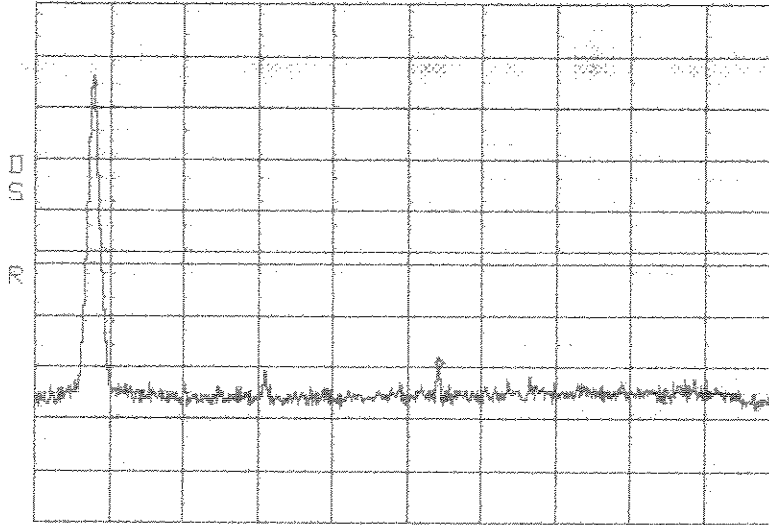


**Conducted Emissions
High
PCS 1900 MHz
AD Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

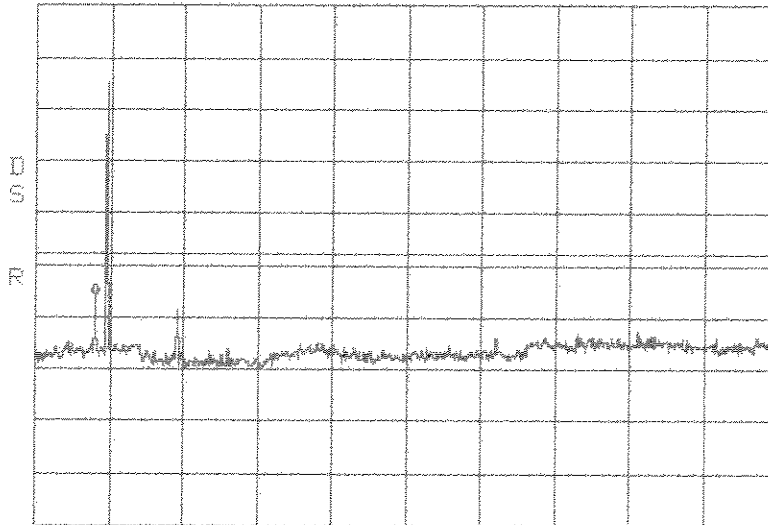
ATTEN 20dB MKR -34.90dBm
RL 35.1dBm 10dB/ 1.95880GHz



CENTER 1.95750GHz SPAN 30.00MHz
*RBW 100kHz UBW 100kHz *SWP 500ms

**Conducted Emissions
Low
PCS 1900 MHz
DBE Band**

ATTEN 20dB MKR -20.73dBm
RL 35.1dBm 10dB/ 1.69GHz

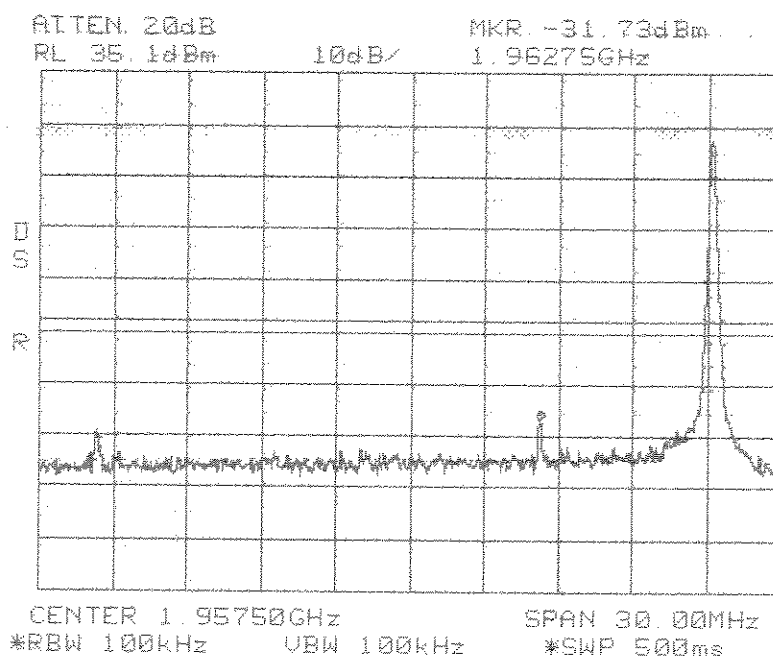


START 30MHz STOP 20.00GHz
*RBW 1.0MHz UBW 1.0MHz *SWP 500ms

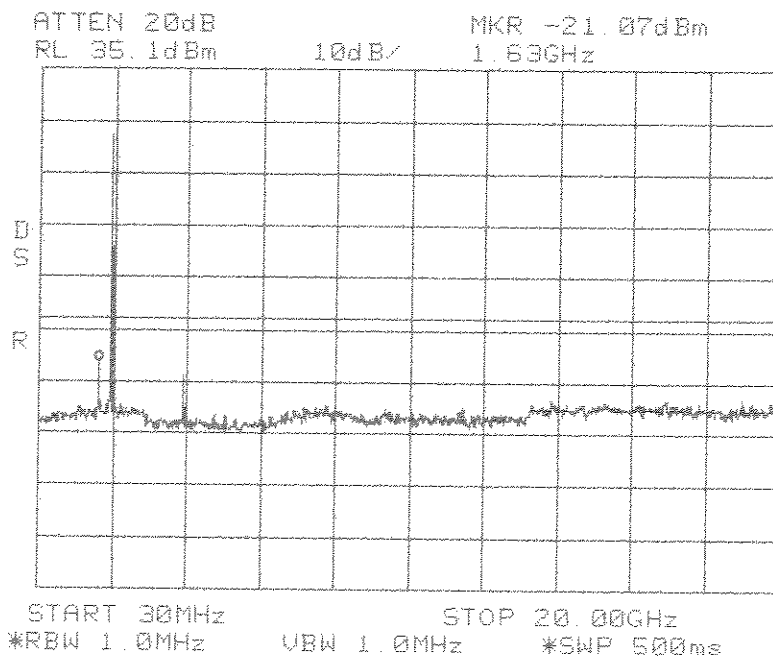
**Conducted Emissions
Low
PCS 1900 MHz
DBE Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



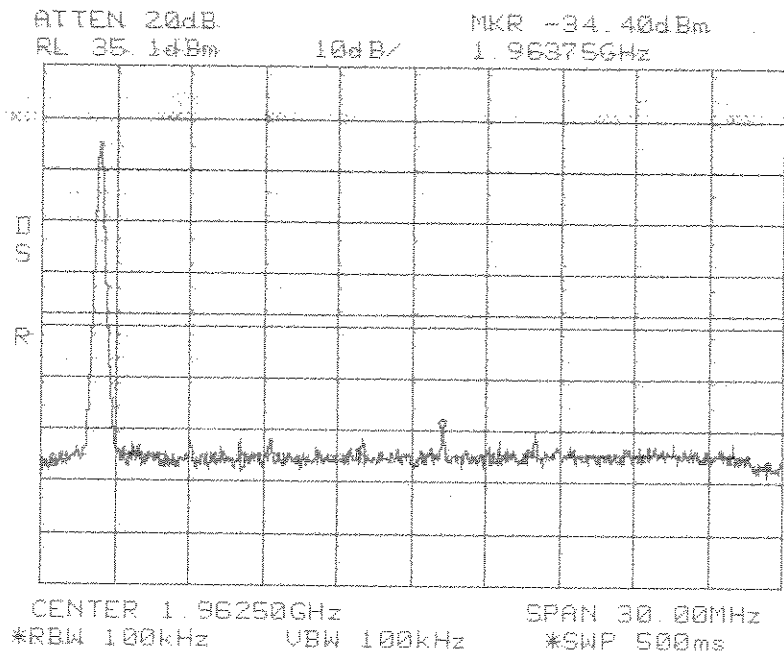
**Conducted Emissions
High
PCS 1900 MHz
DBE Band**



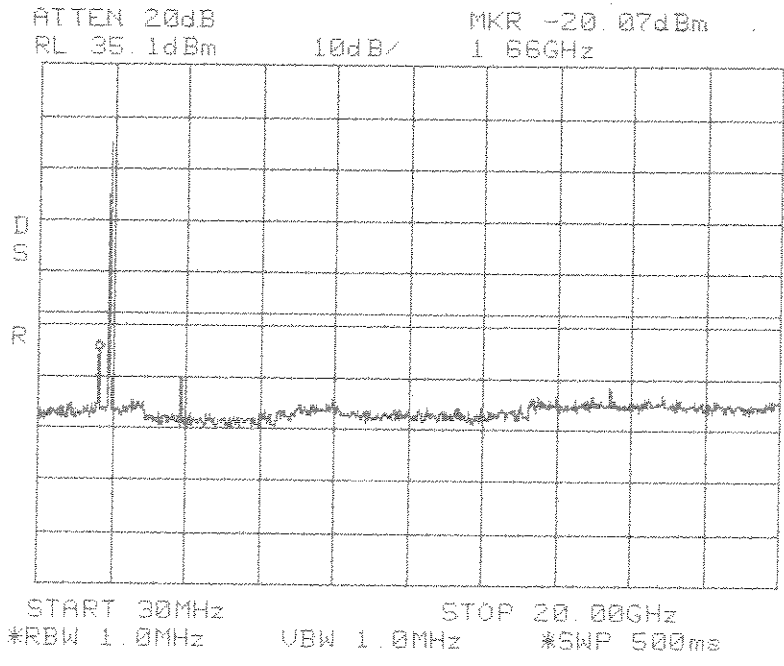
**Conducted Emissions
High
PCS 1900 MHz
DBE Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1962.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



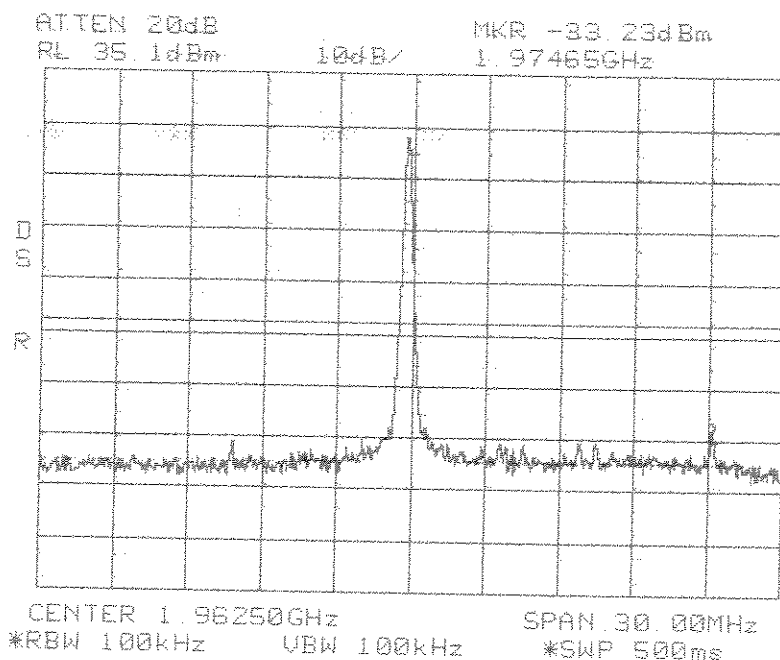
**Conducted Emissions
Low
PCS 1900 MHz
BEF Band**



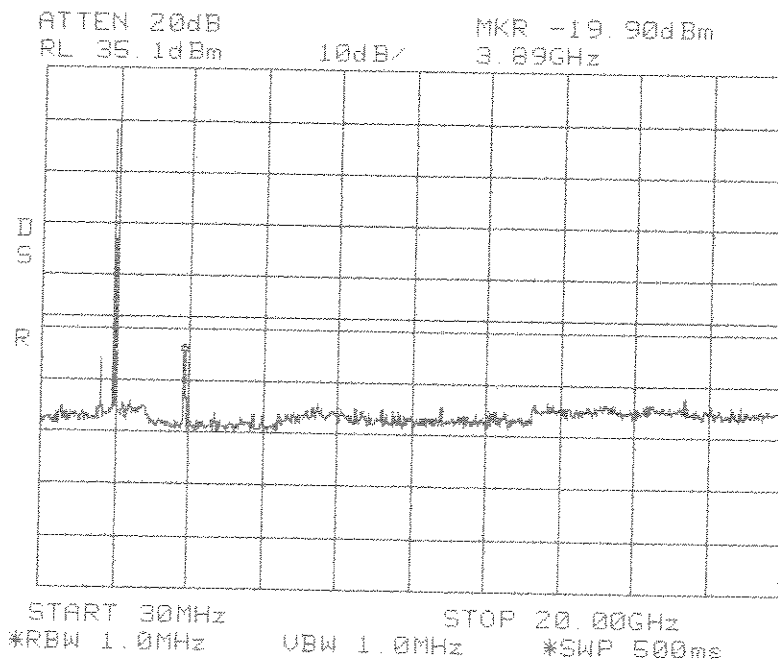
**Conducted Emissions
Low
PCS 1900 MHz
BEF Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1962.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



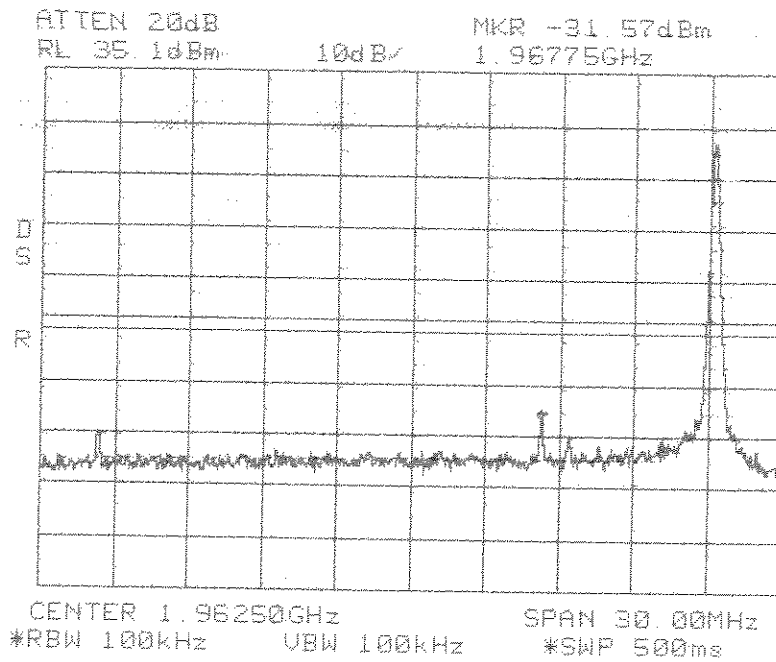
**Conducted Emissions
Mid
PCS 1900 MHz
BEF Band**



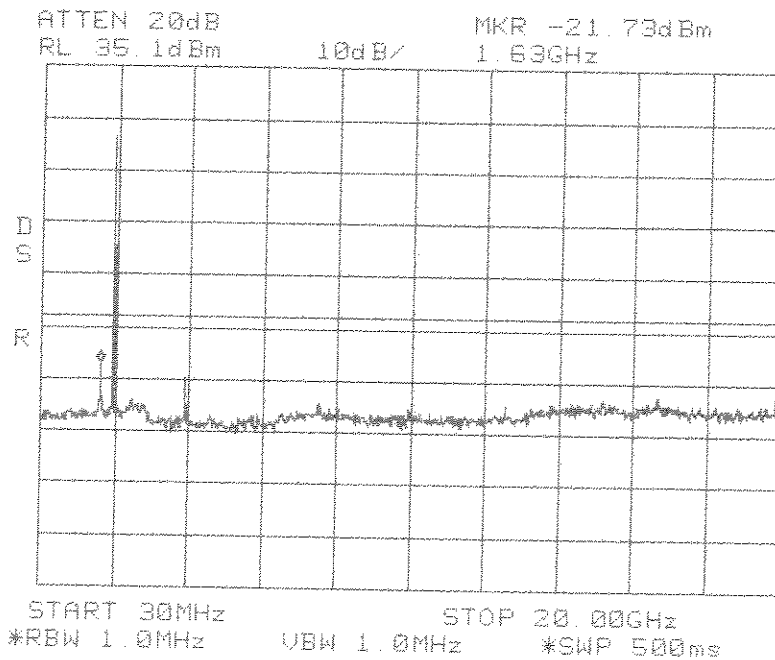
**Conducted Emissions
Mid
PCS 1900 MHz
BEF Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1962.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



**Conducted Emissions
High
PCS 1900 MHz
BEF Band**

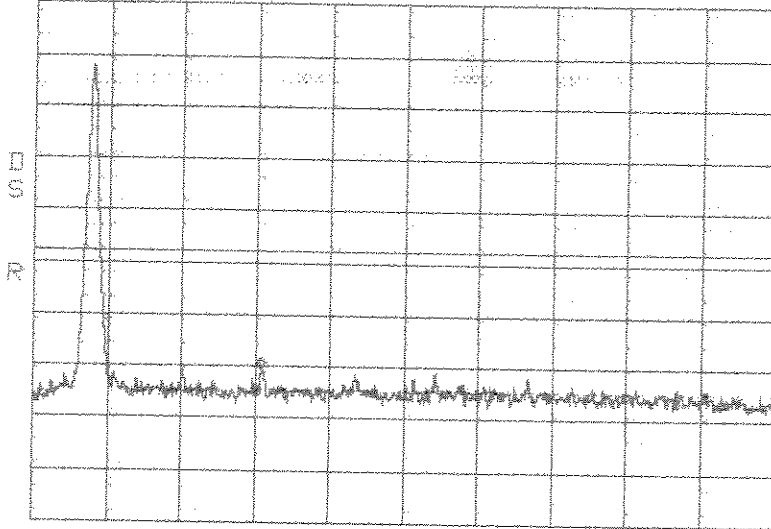


**Conducted Emissions
High
PCS 1900 MHz
BEF Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1977.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

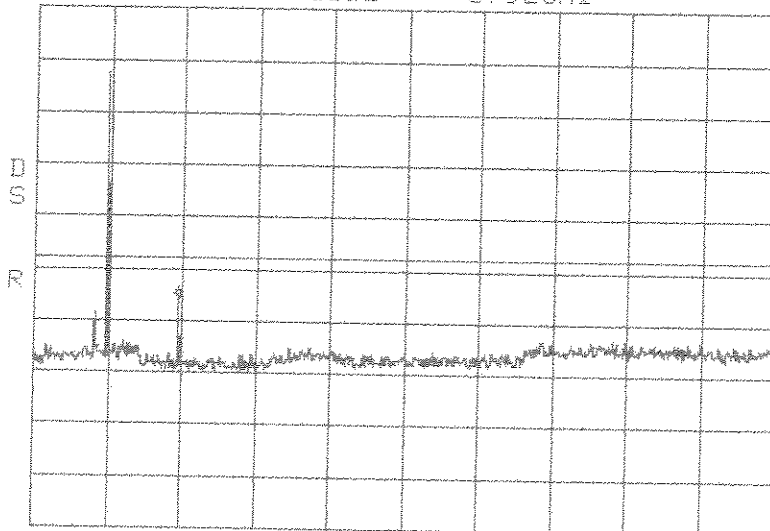
ATTEN 20dB MKR -35.23dBm
RL 35.1dBm 10dB/ 1.97175GHz



CENTER 1.97750GHz SPAN 30.00MHz
*RBW 100kHz VBW 100kHz *SWP 500ms

**Conducted Emissions
Low
PCS 1900 MHz
EFC Band**

ATTEN 20dB MKR -20.57dBm
RL 35.1dBm 10dB/ 3.92GHz

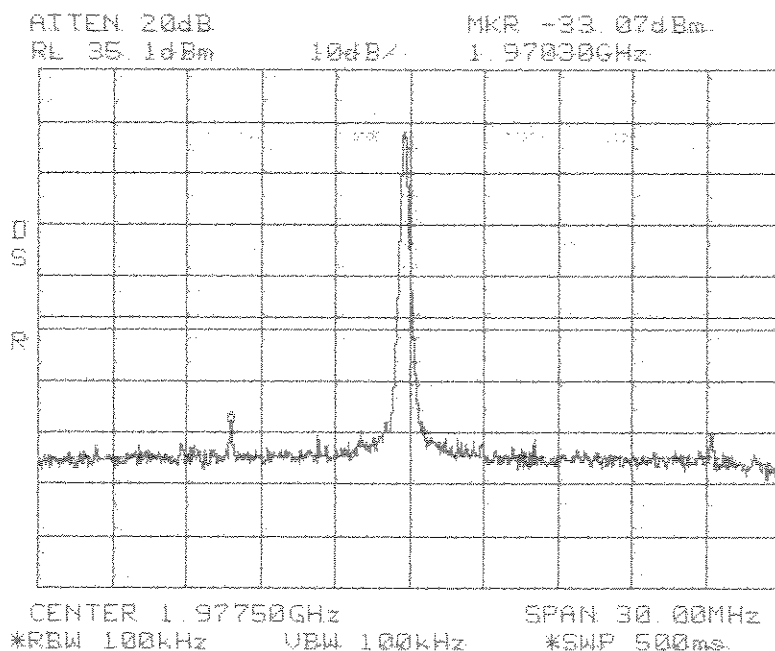


START 30MHz STOP 20.00GHz
*RBW 1.0MHz VBW 1.0MHz *SWP 500ms

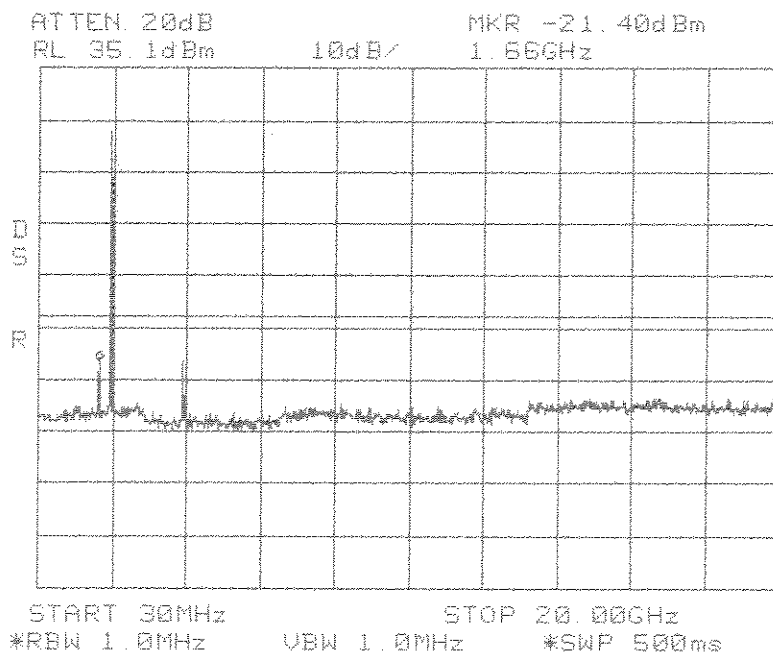
**Conducted Emissions
Low
PCS 1900 MHz
EFC Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1977.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



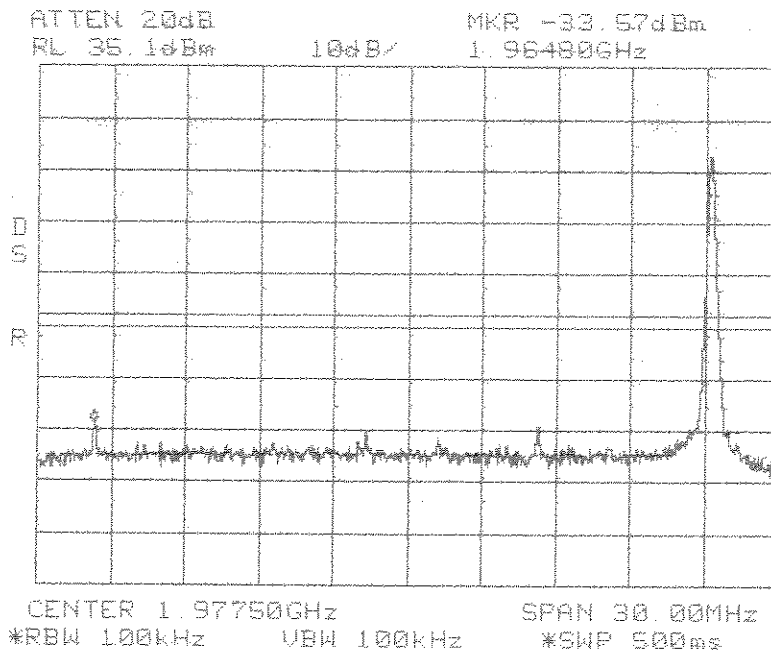
**Conducted Emissions
Mid
PCS 1900 MHz
EFC Band**



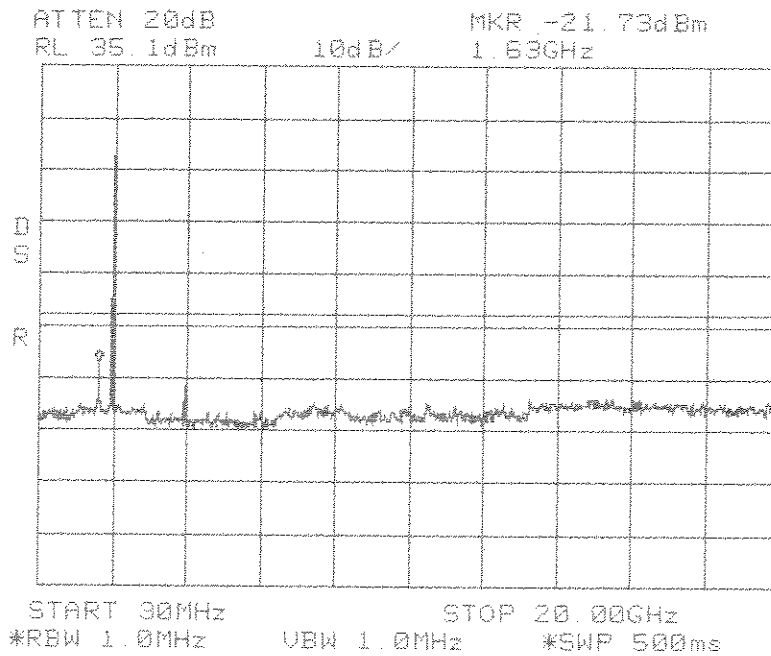
**Conducted Emissions
Mid
PCS 1900 MHz
EFC Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Center: 1977.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



**Conducted Emissions
High
PCS 1900 MHz
EFC Band**



**Conducted Emissions
High
PCS 1900 MHz
EFC Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 1 MHz

Equivalent Isotropically Radiated Power (EIRP) Substitution

Company: **ADC**
EUT: **DGVIH311000000000 & DG VIR330000000000**
Tested By: **GSJ**

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

Freq. (MHz)	Final (dBuV/m)	Matches Sig Gen Level (dBm)	Cable Loss (dB)	Dipole Ant. Gain (dB)	Matches Final (dBm)
213	57.09	-34.5	1.6	-6.21	-42.31

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 (dBuV/m)	Correction Factor	Final (dBm)	Final (µW)	Final (nW)
213	57.09	99.40	-42.31	0.058749	58.749
5790	56.61	99.40	-42.79	0.052602	52.602
284	54.95	99.40	-44.45	0.035892	35.892

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DGVIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 50.0 %


EUT Description: Indoor Coverage Solution


Notes: _____

Data File Name: 4235.dat Page: 1 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
124.249 MHz	40.0 Qp	1.62 / 7.89 / 29.58 / 0.0	19.93	V / 1.00 / 0	-64.45	n/a
130.003 MHz	38.4 Qp	1.65 / 7.68 / 29.59 / 0.0	18.14	V / 1.00 / 0	-66.24	n/a
137.72 MHz	37.4 Qp	1.69 / 7.94 / 29.6 / 0.0	17.43	V / 1.00 / 0	-66.95	n/a
141.974 MHz	65.35 Qp	1.73 / 8.62 / 29.59 / 0.0	46.11	V / 1.00 / 0	-38.27	n/a
195.247 MHz	50.0 Qp	2.08 / 9.89 / 29.56 / 0.0	32.42	V / 1.00 / 0	-51.96	n/a
200.984 MHz	40.1 Qp	2.13 / 9.73 / 29.57 / 0.0	22.39	V / 1.00 / 0	-61.99	n/a
212.983 MHz	67.95 Qp	2.21 / 10.13 / 29.58 / 0.0	50.71	V / 1.00 / 0	-33.67	n/a
225.001 MHz	44.35 Qp	2.26 / 10.53 / 29.6 / 0.0	27.54	V / 1.00 / 0	-56.84	n/a
230.749 MHz	46.7 Qp	2.29 / 10.72 / 29.61 / 0.0	30.1	V / 1.00 / 0	-54.28	n/a
246.919 MHz	46.2 Qp	2.36 / 11.26 / 29.64 / 0.0	30.18	V / 1.00 / 0	-54.2	n/a
250.051 MHz	44.95 Qp	2.37 / 11.37 / 29.64 / 0.0	29.05	V / 1.00 / 0	-55.33	n/a
283.975 MHz	66.5 Qp	2.53 / 12.02 / 29.7 / 0.0	51.35	V / 1.00 / 0	-33.03	n/a
354.985 MHz	57.0 Qp	2.85 / 14.41 / 29.81 / 0.0	44.44	V / 1.00 / 0	-39.94	n/a
425.985 MHz	57.6 Qp	3.12 / 16.32 / 29.93 / 0.0	47.11	V / 1.00 / 0	-37.27	n/a
496.985 MHz	50.15 Qp	3.41 / 17.08 / 30.04 / 0.0	40.6	V / 1.00 / 0	-43.78	n/a
567.985 MHz	41.35 Qp	3.66 / 18.54 / 30.15 / 0.0	33.4	V / 1.00 / 0	-50.98	n/a
638.985 MHz	45.85 Qp	3.9 / 19.33 / 30.14 / 0.0	38.93	V / 1.00 / 0	-45.45	n/a
709.985 MHz	38.9 Qp	4.14 / 19.57 / 30.04 / 0.0	32.57	V / 1.00 / 0	-51.81	n/a
780.985 MHz	36.3 Qp	4.38 / 20.72 / 29.95 / 0.0	31.45	V / 1.00 / 0	-52.93	n/a
851.985 MHz	43.3 Qp	4.58 / 22.01 / 29.85 / 0.0	40.04	V / 1.00 / 0	-44.34	n/a
70.985 MHz	62.55 Qp	1.21 / 8.79 / 29.55 / 0.0	43.0	V / 1.00 / 0	-41.38	n/a
70.985 MHz	64.75 Qp	1.21 / 8.79 / 29.55 / 0.0	45.2	V / 3.00 / 0	-39.18	n/a
496.985 MHz	51.6 Qp	3.41 / 17.08 / 30.04 / 0.0	42.05	V / 3.00 / 0	-42.33	n/a
567.985 MHz	46.25 Qp	3.66 / 18.54 / 30.15 / 0.0	38.3	V / 3.00 / 0	-46.08	n/a
70.985 MHz	67.85 Qp	1.21 / 8.79 / 29.55 / 0.0	48.3	V / 3.00 / 90	-36.08	n/a

Tested by: J. C. Sausen 
Printed Signature

Reviewed by: Greg Jakubowski 
Printed Signature

RADIATED EMISSIONS



Test Report #: WC604235 Run 1 Test Area: LTS
 EUT Model #: DGVIH3110000000000 & DGVIR3300000000000 Date: 7/21/2006
 EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C
 Test Method: FCC Part 24 Air Pressure: 99.0 kPa
 Customer: ADC Telecommunications Rel. Humidity: 50.0 %
 EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat

Page: 2 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
124.249 MHz	45.1 Qp	1.62 / 7.89 / 29.58 / 0.0	25.03	V / 3.00 / 90	-59.35	n/a
780.985 MHz	38.7 Qp	4.38 / 20.72 / 29.95 / 0.0	33.85	V / 3.00 / 90	-50.53	n/a
124.249 MHz	47.5 Qp	1.62 / 7.89 / 29.58 / 0.0	27.43	V / 1.00 / 90	-56.95	n/a
425.985 MHz	59.05 Qp	3.12 / 16.32 / 29.93 / 0.0	48.56	V / 1.00 / 90	-35.82	n/a
567.985 MHz	54.9 Qp	3.66 / 18.54 / 30.15 / 0.0	46.95	V / 1.00 / 90	-37.43	n/a
200.984 MHz	44.85 Qp	2.13 / 9.73 / 29.57 / 0.0	27.14	V / 1.00 / 180	-57.24	n/a
70.985 MHz	69.25 Qp	1.21 / 8.79 / 29.55 / 0.0	49.7	V / 3.00 / 270	-34.68	n/a
709.985 MHz	39.8 Qp	4.14 / 19.57 / 30.04 / 0.0	33.47	V / 3.00 / 270	-50.91	n/a
130.003 MHz	40.05 Qp	1.65 / 7.68 / 29.59 / 0.0	19.79	V / 3.00 / 270	-64.59	n/a
354.985 MHz	60.65 Qp	2.85 / 14.41 / 29.81 / 0.0	48.09	V / 3.00 / 270	-36.29	n/a
284 MHz maxed:						
283.975 MHz	70.1 Qp	2.53 / 12.02 / 29.7 / 0.0	54.95	V / 1.00 / 224	-29.43	n/a
425.985 MHz	62.8 Qp	3.12 / 16.32 / 29.93 / 0.0	52.31	V / 1.00 / 224	-32.07	n/a
70.985 MHz	52.85 Qp	1.21 / 8.79 / 29.55 / 0.0	33.3	H / 1.00 / 224	-51.08	n/a
124.249 MHz	36.75 Qp	1.62 / 7.89 / 29.58 / 0.0	16.68	H / 1.00 / 224	-67.7	n/a
130.003 MHz	31.15 Qp	1.65 / 7.68 / 29.59 / 0.0	10.89	H / 1.00 / 224	-73.49	n/a
137.72 MHz	31.05 Qp	1.69 / 7.94 / 29.6 / 0.0	11.08	H / 1.00 / 224	-73.3	n/a
141.974 MHz	47.35 Qp	1.73 / 8.62 / 29.59 / 0.0	28.11	H / 1.00 / 224	-56.27	n/a
195.247 MHz	48.4 Qp	2.08 / 9.89 / 29.56 / 0.0	30.82	H / 1.00 / 224	-53.56	n/a
200.984 MHz	38.65 Qp	2.13 / 9.73 / 29.57 / 0.0	20.94	H / 1.00 / 224	-63.44	n/a
212.983 MHz	63.6 Qp	2.21 / 10.13 / 29.58 / 0.0	46.36	H / 1.00 / 224	-38.02	n/a
225.001 MHz	37.65 Qp	2.26 / 10.53 / 29.6 / 0.0	20.84	H / 1.00 / 224	-63.54	n/a
230.749 MHz	39.35 Qp	2.29 / 10.72 / 29.61 / 0.0	22.75	H / 1.00 / 224	-61.63	n/a
246.919 MHz	36.2 Qp	2.36 / 11.26 / 29.64 / 0.0	20.18	H / 1.00 / 224	-64.2	n/a
250.051 MHz	36.3 Qp	2.37 / 11.37 / 29.64 / 0.0	20.4	H / 1.00 / 224	-63.98	n/a

Tested by: J. C. Sausen
 Printed

J. C. Sausen
 Signature

Reviewed by: Greg Jakubowski
 Printed

G. Jakubowski
 Signature

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 50.0 %

EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat

Page: 3 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
283.975 MHz	56.4 Qp	2.53 / 12.02 / 29.7 / 0.0	41.25	H / 1.00 / 224	-43.13	n/a
354.985 MHz	62.55 Qp	2.85 / 14.41 / 29.81 / 0.0	49.99	H / 1.00 / 224	-34.39	n/a
425.985 MHz	53.1 Qp	3.12 / 16.32 / 29.93 / 0.0	42.61	H / 1.00 / 224	-41.77	n/a
496.985 MHz	53.95 Qp	3.41 / 17.08 / 30.04 / 0.0	44.4	H / 1.00 / 224	-39.98	n/a
567.985 MHz	54.6 Qp	3.66 / 18.54 / 30.15 / 0.0	46.65	H / 1.00 / 224	-37.73	n/a
638.985 MHz	44.75 Qp	3.9 / 19.33 / 30.14 / 0.0	37.83	H / 1.00 / 224	-46.55	n/a
709.985 MHz	42.65 Qp	4.14 / 19.57 / 30.04 / 0.0	36.32	H / 1.00 / 224	-48.06	n/a
780.985 MHz	45.7 Qp	4.38 / 20.72 / 29.95 / 0.0	40.85	H / 1.00 / 224	-43.53	n/a
851.985 MHz	46.15 Qp	4.58 / 22.01 / 29.85 / 0.0	42.89	H / 1.00 / 224	-41.49	n/a
212 MHz maxed:						
212.983 MHz	74.33 Qp	2.21 / 10.13 / 29.58 / 0.0	57.09	H / 3.37 / 241	-27.29	n/a
354.985 MHz	67.45 Qp	2.85 / 14.41 / 29.81 / 0.0	54.89	H / 3.37 / 241	-29.49	n/a
195.247 MHz	52.85 Qp	2.08 / 9.89 / 29.56 / 0.0	35.27	H / 3.37 / 241	-49.11	n/a
709.985 MHz	44.3 Qp	4.14 / 19.57 / 30.04 / 0.0	37.97	H / 3.37 / 270	-46.41	n/a
195.247 MHz	52.5 Qp	2.08 / 9.89 / 29.56 / 0.0	34.92	H / 3.37 / 90	-49.46	n/a
212.983 MHz	73.65 Qp	2.21 / 10.13 / 29.58 / 0.0	56.41	H / 3.37 / 90	-27.97	n/a
283.975 MHz	69.3 Qp	2.53 / 12.02 / 29.7 / 0.0	54.15	H / 3.37 / 0	-30.23	n/a
TRX setting = 1960 MHz.						
70.985 MHz	66.25 Qp	1.21 / 8.79 / 29.55 / 0.0	46.7	H / 3.37 / 0	-37.68	n/a
124.249 MHz	36.35 Qp	1.62 / 7.89 / 29.58 / 0.0	16.28	H / 3.37 / 0	-68.1	n/a
130.003 MHz	35.05 Qp	1.65 / 7.68 / 29.59 / 0.0	14.79	H / 3.37 / 0	-69.59	n/a
141.974 MHz	47.2 Qp	1.73 / 8.62 / 29.59 / 0.0	27.96	H / 3.37 / 0	-56.42	n/a
195.247 MHz	50.75 Qp	2.08 / 9.89 / 29.56 / 0.0	33.17	H / 3.37 / 0	-51.21	n/a

Tested by: J. C. Sausen *J C Sausen*
 Printed Signature

Reviewed by: Greg Jakubowski *G Jakubowski*
 Printed Signature

RADIATED EMISSIONS



Test Report #: WC604235 Run 1 Test Area: LTS
 EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006
 EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C
 Test Method: FCC Part 24 Air Pressure: 99.0 kPa
 Customer: ADC Telecommunications Rel. Humidity: 50.0 %
 EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat

Page: 4 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
200.984 MHz	35.95 Qp	2.13 / 9.73 / 29.57 / 0.0	18.24	H / 3.37 / 0	-66.14	n/a
212.983 MHz	68.1 Qp	2.21 / 10.13 / 29.58 / 0.0	50.86	H / 3.37 / 0	-33.52	n/a
225.037 MHz	39.65 Qp	2.26 / 10.53 / 29.6 / 0.0	22.84	H / 3.37 / 0	-61.54	n/a
230.749 MHz	47.55 Qp	2.29 / 10.72 / 29.61 / 0.0	30.95	H / 3.37 / 0	-53.43	n/a
851.985 MHz	43.9 Qp	4.58 / 22.01 / 29.85 / 0.0	40.64	V / 3.37 / 0	-43.74	n/a
124.249 MHz	47.75 Qp	1.62 / 7.89 / 29.58 / 0.0	27.68	V / 1.00 / 0	-56.7	n/a
141.974 MHz	65.4 Qp	1.73 / 8.62 / 29.59 / 0.0	46.16	V / 1.00 / 0	-38.22	n/a
212 MHz maxed:						
212.983 MHz	69.59 Qp	2.21 / 10.13 / 29.58 / 0.0	52.35	H / 3.37 / 337	-32.03	n/a
496.985 MHz	54.15 Qp	3.41 / 17.08 / 30.04 / 0.0	44.6	H / 3.37 / 337	-39.78	n/a
709.985 MHz	43.75 Qp	4.14 / 19.57 / 30.04 / 0.0	37.42	H / 3.37 / 337	-46.96	n/a
851.985 MHz	46.75 Qp	4.58 / 22.01 / 29.85 / 0.0	43.49	H / 3.37 / 337	-40.89	n/a
922.985 MHz	37.55 Qp	4.77 / 21.69 / 29.75 / 0.0	34.26	H / 3.37 / 337	-50.12	n/a
993.985 MHz	32.55 Qp	4.96 / 22.88 / 29.65 / 0.0	30.74	H / 3.37 / 337	-53.64	n/a
TRX setting = 1990 MHz:						
212.983 MHz	62.1 Qp	2.21 / 10.13 / 29.58 / 0.0	44.86	H / 3.37 / 337	-39.52	n/a
70.985 MHz	62.6 Qp	1.21 / 8.79 / 29.55 / 0.0	43.05	H / 3.37 / 337	-41.33	n/a
141.974 MHz	59.6 Qp	1.73 / 8.62 / 29.59 / 0.0	40.36	H / 3.37 / 337	-44.02	n/a
212.983 MHz	61.95 Qp	2.21 / 10.13 / 29.58 / 0.0	44.71	H / 3.37 / 337	-39.67	n/a
283.975 MHz	64.1 Qp	2.53 / 12.02 / 29.7 / 0.0	48.95	H / 3.37 / 337	-35.43	n/a
354.985 MHz	59.8 Qp	2.85 / 14.41 / 29.81 / 0.0	47.24	H / 3.37 / 337	-37.14	n/a
425.985 MHz	56.15 Qp	3.12 / 16.32 / 29.93 / 0.0	45.66	H / 3.37 / 337	-38.72	n/a
496.985 MHz	51.7 Qp	3.41 / 17.08 / 30.04 / 0.0	42.15	H / 3.37 / 337	-42.23	n/a
71 MHz maxed:						

Tested by: J. C. Sausen
Printed

J C Sausen

Signature

Reviewed by: Greg Jakubowski
Printed

G Jakubowski

Signature

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 50.0 %


EUT Description: Indoor Coverage Solution


Notes: _____

Data File Name: 4235.dat Page: 5 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
70.985 MHz	70.9 Qp	1.21 / 8.79 / 29.55 / 0.0	51.35	V / 2.53 / 282	-33.03	n/a
141.974 MHz	63.6 Qp	1.73 / 8.62 / 29.59 / 0.0	44.36	V / 2.53 / 282	-40.02	n/a
993.985 MHz	34.15 Qp	4.96 / 22.88 / 29.65 / 0.0	32.34	V / 2.53 / 282	-52.04	n/a
1.064 GHz maxed:						
1.065 GHz	68.08 Av	2.73 / 25.17 / 50.18 / 0.0	45.81	V / 1.73 / 236	n/a	-38.57
1.065 GHz	69.25 Pk	2.73 / 25.17 / 50.18 / 0.0	46.98	V / 1.73 / 236	n/a	-37.4*
1.136 GHz	58.0 Av	2.85 / 25.15 / 50.49 / 0.0	35.51	V / 1.73 / 236	n/a	-48.87
1.136 GHz	62.0 Pk	2.85 / 25.15 / 50.49 / 0.0	39.51	V / 1.73 / 236	n/a	-44.87*
1.207 GHz	62.35 Pk	3.02 / 25.12 / 50.8 / 0.0	39.69	V / 1.73 / 236	n/a	-44.69*
1.278 GHz	61.7 Pk	3.14 / 25.09 / 50.74 / 0.0	39.19	V / 1.73 / 236	n/a	-45.19*
1.562 GHz	58.29 Av	3.95 / 25.37 / 50.64 / 0.0	36.98	V / 1.73 / 236	n/a	-47.4
1.562 GHz	62.35 Pk	3.95 / 25.37 / 50.64 / 0.0	41.04	V / 1.73 / 236	n/a	-43.34*
2.059 GHz	57.96 Av	4.07 / 28.11 / 50.39 / 0.0	39.75	V / 1.73 / 236	n/a	-44.63
2.059 GHz	58.05 Pk	4.07 / 28.11 / 50.39 / 0.0	39.84	V / 1.73 / 236	n/a	-44.54*
2.84 GHz	47.65 Av	4.72 / 29.6 / 49.56 / 0.0	32.41	V / 1.73 / 236	n/a	-51.97
2.84 GHz	54.75 Pk	4.72 / 29.6 / 49.56 / 0.0	39.51	V / 1.73 / 236	n/a	-44.87*
7.26 GHz maxed:						
7.264 GHz	52.03 Av	8.04 / 35.73 / 47.04 / 0.0	48.76	V / 1.26 / 12	n/a	-35.62
6.177 GHz	45.83 Av	7.46 / 34.3 / 46.19 / 0.0	41.4	V / 1.26 / 12	n/a	-42.98
5.97 GHz	42.46 Av	7.35 / 34.03 / 46.2 / 0.0	37.64	V / 1.26 / 12	n/a	-46.74
5.796 GHz	43.52 Av	7.2 / 33.8 / 46.39 / 0.0	38.14	V / 1.26 / 12	n/a	-46.24
8.236 GHz	45.74 Av	8.84 / 36.84 / 46.95 / 0.0	44.47	V / 1.26 / 12	n/a	-39.91
8.236 GHz	52.05 Pk	8.84 / 36.84 / 46.95 / 0.0	50.78	V / 1.26 / 12	n/a	-33.6*
5.796 GHz	51.7 Pk	7.2 / 33.8 / 46.39 / 0.0	46.32	V / 1.26 / 12	n/a	-38.06*

Tested by: J. C. Sausen 
 Printed Signature

Reviewed by: Greg Jakubowski 
 Printed Signature

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 50.0 %

EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat

Page: 6 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
5.97 GHz	50.15 Pk	7.35 / 34.03 / 46.2 / 0.0	45.33	V / 1.26 / 12	n/a	-39.05*
6.177 GHz	51.95 Pk	7.46 / 34.3 / 46.19 / 0.0	47.52	V / 1.26 / 12	n/a	-36.86*
7.264 GHz	55.15 Pk	8.04 / 35.73 / 47.04 / 0.0	51.88	V / 1.26 / 12	n/a	-32.5*
TRX setting = 1960 MHz						
2.044 GHz	50.51 Av	4.07 / 28.08 / 50.41 / 0.0	32.26	H / 1.26 / 12	n/a	-52.12
2.044 GHz	58.8 Pk	4.07 / 28.08 / 50.41 / 0.0	40.55	H / 1.26 / 12	n/a	-43.83*
1.349 GHz	64.32 Av	3.26 / 25.06 / 50.62 / 0.0	42.03	H / 1.26 / 12	n/a	-42.35
1.349 GHz	65.75 Pk	3.26 / 25.06 / 50.62 / 0.0	43.46	H / 1.26 / 12	n/a	-40.92*
1.278 GHz	68.85 Av	3.14 / 25.09 / 50.74 / 0.0	46.34	H / 1.26 / 12	n/a	-38.04
1.278 GHz	70.0 Pk	3.14 / 25.09 / 50.74 / 0.0	47.49	H / 1.26 / 12	n/a	-36.89*
1.207 GHz	68.44 Av	3.02 / 25.12 / 50.8 / 0.0	45.78	H / 1.26 / 12	n/a	-38.6
1.207 GHz	70.0 Pk	3.02 / 25.12 / 50.8 / 0.0	47.34	H / 1.26 / 12	n/a	-37.04*
1.136 GHz	59.5 Av	2.85 / 25.15 / 50.49 / 0.0	37.01	H / 1.26 / 12	n/a	-47.37
1.136 GHz	63.65 Pk	2.85 / 25.15 / 50.49 / 0.0	41.16	H / 1.26 / 12	n/a	-43.22*
1.135 GHz maxed:						
1.136 GHz	66.39 Av	2.85 / 25.15 / 50.49 / 0.0	43.9	V / 1.00 / 317	n/a	-40.48
1.136 GHz	68.15 Pk	2.85 / 25.15 / 50.49 / 0.0	45.66	V / 1.00 / 317	n/a	-38.72*
2.044 GHz	60.18 Av	4.07 / 28.08 / 50.41 / 0.0	41.93	V / 1.00 / 317	n/a	-42.45
2.044 GHz	62.7 Pk	4.07 / 28.08 / 50.41 / 0.0	44.45	V / 1.00 / 317	n/a	-39.93*
TRX setting = 1930 MHz:						
5.79 GHz	58.71 Av	7.19 / 33.8 / 46.39 / 0.0	53.3	V / 1.00 / 317	n/a	-31.08
5.79 GHz	60.55 Pk	7.19 / 33.8 / 46.39 / 0.0	55.14	V / 1.00 / 317	n/a	-29.24*
1.93 GHz	72.88 Av	4.05 / 27.58 / 50.53 / 0.0	53.98	V / 1.00 / 317	n/a	-30.4

Tested by: J. C. Sausen

Printed

J. C. Sausen

Signature

Reviewed by: Greg Jakubowski

by:

Printed

G. Jakubowski

Signature

RADIATED EMISSIONS



Test Report #: WC604235 Run 1 Test Area: LTS
 EUT Model #: DGVIH3110000000000 & DGVIR3300000000000 Date: 7/21/2006
 EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C
 Test Method: FCC Part 24 Air Pressure: 99.0 kPa
 Customer: ADC Telecommunications Rel. Humidity: 50.0 %
 EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat

Page: 7 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
1.93 GHz	73.6 Pk	4.05 / 27.58 / 50.53 / 0.0	54.7	V / 1.00 / 317	n/a	-29.68*
7.72 GHz	45.33 Av	8.28 / 36.33 / 47.12 / 0.0	42.82	V / 1.00 / 317	n/a	-41.56
7.72 GHz	52.05 Pk	8.28 / 36.33 / 47.12 / 0.0	49.54	V / 1.00 / 317	n/a	-34.84*
5.7 GHz maxed:						
5.79 GHz	62.01 Av	7.19 / 33.8 / 46.39 / 0.0	56.61	V / 1.20 / 0	n/a	-27.77
5.79 GHz	62.8 Pk	7.19 / 33.8 / 46.39 / 0.0	57.4	V / 1.20 / 0	n/a	-26.98*
1.136 GHz	68.58 Av	2.85 / 25.15 / 50.49 / 0.0	46.09	V / 1.20 / 0	n/a	-38.29
1.136 GHz	71.05 Pk	2.85 / 25.15 / 50.49 / 0.0	48.56	V / 1.20 / 0	n/a	-35.82*
1.065 GHz	73.6 Av	2.73 / 25.17 / 50.18 / 0.0	51.33	V / 1.20 / 0	n/a	-33.05
1.065 GHz	73.61 Av	2.73 / 25.17 / 50.18 / 0.0	51.34	V / 1.20 / 0	n/a	-33.04
7.72 GHz	44.97 Av	8.28 / 36.33 / 47.12 / 0.0	42.46	V / 1.20 / 0	n/a	-41.92
7.72 GHz	52.95 Pk	8.28 / 36.33 / 47.12 / 0.0	50.44	V / 1.20 / 0	n/a	-33.94*
1.93 GHz maxed:						
1.93 GHz	69.85 Av	4.05 / 27.58 / 50.53 / 0.0	50.95	H / 2.00 / 150	n/a	-33.43
1.93 GHz	70.2 Pk	4.05 / 27.58 / 50.53 / 0.0	51.3	H / 2.00 / 150	n/a	-33.08*
1.065 GHz	66.04 Av	2.73 / 25.17 / 50.18 / 0.0	43.77	H / 2.00 / 150	n/a	-40.61
1.065 GHz	67.55 Pk	2.73 / 25.17 / 50.18 / 0.0	45.28	H / 2.00 / 150	n/a	-39.1*
returned to 1960 MHz TRX setting:						
1.96 GHz	59.64 Av	4.06 / 27.76 / 50.5 / 0.0	40.96	H / 2.00 / 150	n/a	-43.42
1.96 GHz	62.8 Pk	4.06 / 27.76 / 50.5 / 0.0	44.12	H / 2.00 / 150	n/a	-40.26*
3.92 GHz	51.42 Av	5.56 / 32.11 / 48.4 / 0.0	40.69	H / 2.00 / 150	n/a	-43.69
3.92 GHz	55.9 Pk	5.56 / 32.11 / 48.4 / 0.0	45.17	H / 2.00 / 150	n/a	-39.21*
5.88 GHz	45.28 Av	7.3 / 33.91 / 46.3 / 0.0	40.2	H / 2.00 / 150	n/a	-44.18

Tested by: J. C. Sausen
 Printed

J. C. Sausen
 Signature

Reviewed by: Greg Jakubowski
 Printed

G. Jakubowski
 Signature

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 50.0 %

EUT Description: Indoor Coverage Solution

Notes: _____


Data File Name: 4235.dat Page: 8 of 12

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz	DELTA2 -13dBm GUIDELINE > 1GHz
5.88 GHz	51.9 Pk	7.3 / 33.91 / 46.3 / 0.0	46.82	H / 2.00 / 150	n/a	-37.56*
1.96 GHz	66.98 Av	4.06 / 27.76 / 50.5 / 0.0	48.3	V / 1.10 / 150	n/a	-36.08
1.96 GHz	67.55 Pk	4.06 / 27.76 / 50.5 / 0.0	48.87	V / 1.10 / 150	n/a	-35.51*

No further significant EUT emissions detected 30 MHz to 19.9 GHz, vert and hor ant.

Tested by: J. C. Sausen 
Printed Signature

Reviewed by: Greg Jakubowski 
Printed Signature

RADIATED EMISSIONS



Test Report #: WC604235 Run 1 Test Area: LTS
 EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006
 EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C
 Test Method: FCC Part 24 Air Pressure: 99.0 kPa
 Customer: ADC Telecommunications Rel. Humidity: 50.0 %
 EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat

Page: 9 of 12

Measurement summary for limit1: -13dBm GUIDELINE < 1GHz (Qp)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm GUIDELINE < 1GHz
212.983 MHz	74.33 Qp	2.21 / 10.13 / 29.58 / 0.0	57.09	H / 3.37 / 241	-27.29
283.975 MHz	70.1 Qp	2.53 / 12.02 / 29.7 / 0.0	54.95	V / 1.00 / 224	-29.43
354.985 MHz	67.45 Qp	2.85 / 14.41 / 29.81 / 0.0	54.89	H / 3.37 / 241	-29.49
425.985 MHz	62.8 Qp	3.12 / 16.32 / 29.93 / 0.0	52.31	V / 1.00 / 224	-32.07
70.985 MHz	70.9 Qp	1.21 / 8.79 / 29.55 / 0.0	51.35	V / 2.53 / 282	-33.03
567.985 MHz	54.9 Qp	3.66 / 18.54 / 30.15 / 0.0	46.95	V / 1.00 / 90	-37.43
141.974 MHz	65.4 Qp	1.73 / 8.62 / 29.59 / 0.0	46.16	V / 1.00 / 0	-38.22
496.985 MHz	54.15 Qp	3.41 / 17.08 / 30.04 / 0.0	44.6	H / 3.37 / 337	-39.78
851.985 MHz	46.75 Qp	4.58 / 22.01 / 29.85 / 0.0	43.49	H / 3.37 / 337	-40.89
780.985 MHz	45.7 Qp	4.38 / 20.72 / 29.95 / 0.0	40.85	H / 1.00 / 224	-43.53
638.985 MHz	45.85 Qp	3.9 / 19.33 / 30.14 / 0.0	38.93	V / 1.00 / 0	-45.45
709.985 MHz	44.3 Qp	4.14 / 19.57 / 30.04 / 0.0	37.97	H / 3.37 / 270	-46.41
195.247 MHz	52.85 Qp	2.08 / 9.89 / 29.56 / 0.0	35.27	H / 3.37 / 241	-49.11
922.985 MHz	37.55 Qp	4.77 / 21.69 / 29.75 / 0.0	34.26	H / 3.37 / 337	-50.12
993.985 MHz	34.15 Qp	4.96 / 22.88 / 29.65 / 0.0	32.34	V / 2.53 / 282	-52.04
230.749 MHz	47.55 Qp	2.29 / 10.72 / 29.61 / 0.0	30.95	H / 3.37 / 0	-53.43
246.919 MHz	46.2 Qp	2.36 / 11.26 / 29.64 / 0.0	30.18	V / 1.00 / 0	-54.2
250.051 MHz	44.95 Qp	2.37 / 11.37 / 29.64 / 0.0	29.05	V / 1.00 / 0	-55.33
124.249 MHz	47.75 Qp	1.62 / 7.89 / 29.58 / 0.0	27.68	V / 1.00 / 0	-56.7
225.001 MHz	44.35 Qp	2.26 / 10.53 / 29.6 / 0.0	27.54	V / 1.00 / 0	-56.84
200.984 MHz	44.85 Qp	2.13 / 9.73 / 29.57 / 0.0	27.14	V / 1.00 / 180	-57.24
130.003 MHz	40.05 Qp	1.65 / 7.68 / 29.59 / 0.0	19.79	V / 3.00 / 270	-64.59
137.72 MHz	37.4 Qp	1.69 / 7.94 / 29.6 / 0.0	17.43	V / 1.00 / 0	-66.95

Tested by: J. C. Sausen
 Printed

J C Sausen
 Signature

Reviewed by: Greg Jakubowski
 Printed

G Jakubowski
 Signature

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 50.0 %


EUT Description: Indoor Coverage Solution


Notes: _____

Data File Name: 4235.dat Page: 10 of 12

Measurement summary for limit2: -13dBm GUIDELINE > 1GHz (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 -13dBm GUIDELINE > 1GHz
5.79 GHz	62.01 Av	7.19 / 33.8 / 46.39 / 0.0	56.61	V / 1.20 / 0	-27.77
1.93 GHz	72.88 Av	4.05 / 27.58 / 50.53 / 0.0	53.98	V / 1.00 / 317	-30.4
1.065 GHz	73.61 Av	2.73 / 25.17 / 50.18 / 0.0	51.34	V / 1.20 / 0	-33.04
7.264 GHz	52.03 Av	8.04 / 35.73 / 47.04 / 0.0	48.76	V / 1.26 / 12	-35.62
1.96 GHz	66.98 Av	4.06 / 27.76 / 50.5 / 0.0	48.3	V / 1.10 / 150	-36.08
1.278 GHz	68.85 Av	3.14 / 25.09 / 50.74 / 0.0	46.34	H / 1.26 / 12	-38.04
1.136 GHz	68.58 Av	2.85 / 25.15 / 50.49 / 0.0	46.09	V / 1.20 / 0	-38.29
1.207 GHz	68.44 Av	3.02 / 25.12 / 50.8 / 0.0	45.78	H / 1.26 / 12	-38.6
8.236 GHz	45.74 Av	8.84 / 36.84 / 46.95 / 0.0	44.47	V / 1.26 / 12	-39.91
7.72 GHz	45.33 Av	8.28 / 36.33 / 47.12 / 0.0	42.82	V / 1.00 / 317	-41.56
1.349 GHz	64.32 Av	3.26 / 25.06 / 50.62 / 0.0	42.03	H / 1.26 / 12	-42.35
2.044 GHz	60.18 Av	4.07 / 28.08 / 50.41 / 0.0	41.93	V / 1.00 / 317	-42.45
6.177 GHz	45.83 Av	7.46 / 34.3 / 46.19 / 0.0	41.4	V / 1.26 / 12	-42.98
3.92 GHz	51.42 Av	5.56 / 32.11 / 48.4 / 0.0	40.69	H / 2.00 / 150	-43.69
5.88 GHz	45.28 Av	7.3 / 33.91 / 46.3 / 0.0	40.2	H / 2.00 / 150	-44.18
2.059 GHz	57.96 Av	4.07 / 28.11 / 50.39 / 0.0	39.75	V / 1.73 / 236	-44.63
5.796 GHz	43.52 Av	7.2 / 33.8 / 46.39 / 0.0	38.14	V / 1.26 / 12	-46.24
5.97 GHz	42.46 Av	7.35 / 34.03 / 46.2 / 0.0	37.64	V / 1.26 / 12	-46.74
1.562 GHz	58.29 Av	3.95 / 25.37 / 50.64 / 0.0	36.98	V / 1.73 / 236	-47.4
2.84 GHz	47.65 Av	4.72 / 29.6 / 49.56 / 0.0	32.41	V / 1.73 / 236	-51.97
1.065 GHz	69.25 Pk	2.73 / 25.17 / 50.18 / 0.0	46.98	V / 1.73 / 236	-37.4*

Tested by: J. C. Sausen  _____
Printed Signature

Reviewed by: Greg Jakubowski  _____
Printed Signature

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

Customer: ADC Telecommunications Rel. Humidity: 50.0 %

EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat

Page: 11 of 12

Measurement summary for limit2: -13dBm GUIDELINE > 1GHz (Av)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 -13dBm GUIDELINE > 1GHz
1.136 GHz	71.05 Pk	2.85 / 25.15 / 50.49 / 0.0	48.56	V / 1.20 / 0	-35.82*
1.207 GHz	70.0 Pk	3.02 / 25.12 / 50.8 / 0.0	47.34	H / 1.26 / 12	-37.04*
1.278 GHz	70.0 Pk	3.14 / 25.09 / 50.74 / 0.0	47.49	H / 1.26 / 12	-36.89*
1.562 GHz	62.35 Pk	3.95 / 25.37 / 50.64 / 0.0	41.04	V / 1.73 / 236	-43.34*
2.059 GHz	58.05 Pk	4.07 / 28.11 / 50.39 / 0.0	39.84	V / 1.73 / 236	-44.54*
2.84 GHz	54.75 Pk	4.72 / 29.6 / 49.56 / 0.0	39.51	V / 1.73 / 236	-44.87*
8.236 GHz	52.05 Pk	8.84 / 36.84 / 46.95 / 0.0	50.78	V / 1.26 / 12	-33.6*
5.796 GHz	51.7 Pk	7.2 / 33.8 / 46.39 / 0.0	46.32	V / 1.26 / 12	-38.06*
5.97 GHz	50.15 Pk	7.35 / 34.03 / 46.2 / 0.0	45.33	V / 1.26 / 12	-39.05*
6.177 GHz	51.95 Pk	7.46 / 34.3 / 46.19 / 0.0	47.52	V / 1.26 / 12	-36.86*
7.264 GHz	55.15 Pk	8.04 / 35.73 / 47.04 / 0.0	51.88	V / 1.26 / 12	-32.5*
2.044 GHz	62.7 Pk	4.07 / 28.08 / 50.41 / 0.0	44.45	V / 1.00 / 317	-39.93*
1.349 GHz	65.75 Pk	3.26 / 25.06 / 50.62 / 0.0	43.46	H / 1.26 / 12	-40.92*
5.79 GHz	62.8 Pk	7.19 / 33.8 / 46.39 / 0.0	57.4	V / 1.20 / 0	-26.98*
1.93 GHz	73.6 Pk	4.05 / 27.58 / 50.53 / 0.0	54.7	V / 1.00 / 317	-29.68*
7.72 GHz	52.95 Pk	8.28 / 36.33 / 47.12 / 0.0	50.44	V / 1.20 / 0	-33.94*
1.96 GHz	67.55 Pk	4.06 / 27.76 / 50.5 / 0.0	48.87	V / 1.10 / 150	-35.51*
3.92 GHz	55.9 Pk	5.56 / 32.11 / 48.4 / 0.0	45.17	H / 2.00 / 150	-39.21*
5.88 GHz	51.9 Pk	7.3 / 33.91 / 46.3 / 0.0	46.82	H / 2.00 / 150	-37.56*

Tested by: J. C. Sausen *J C Sausen*
Printed Signature

Reviewed by: Greg Jakubowski *G Jakubowski*
Printed Signature

RADIATED EMISSIONS



America

Test Report #: WC604235 Run 1 Test Area: LTS

EUT Model #: DGVIH3110000000000 & DG VIR3300000000000 Date: 7/21/2006

EUT Serial #: _____ EUT Power: 60 Hz / 120 VAC Temperature: 23.0 °C

Test Method: FCC Part 24 Air Pressure: 99.0 kPa

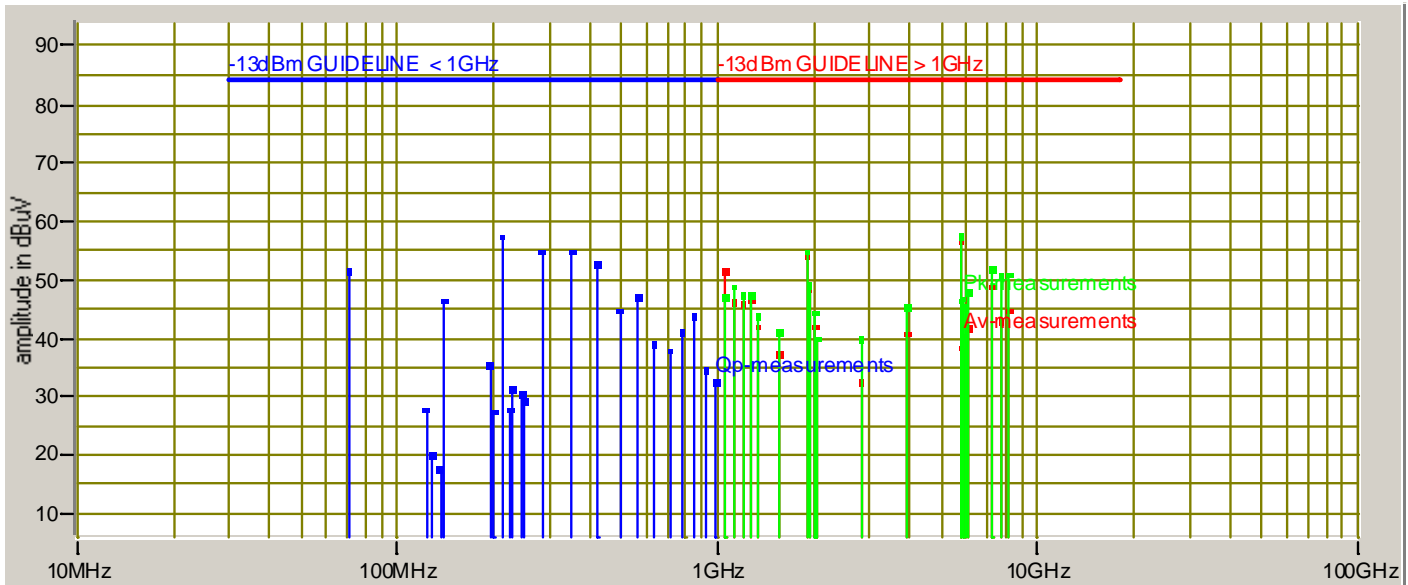
Customer: ADC Telecommunications Rel. Humidity: 50.0 %

EUT Description: Indoor Coverage Solution

Notes: _____

Data File Name: 4235.dat Page: 12 of 12

Graph:



Tested by: J. C. Sausen *J C Sausen*
 Printed Signature

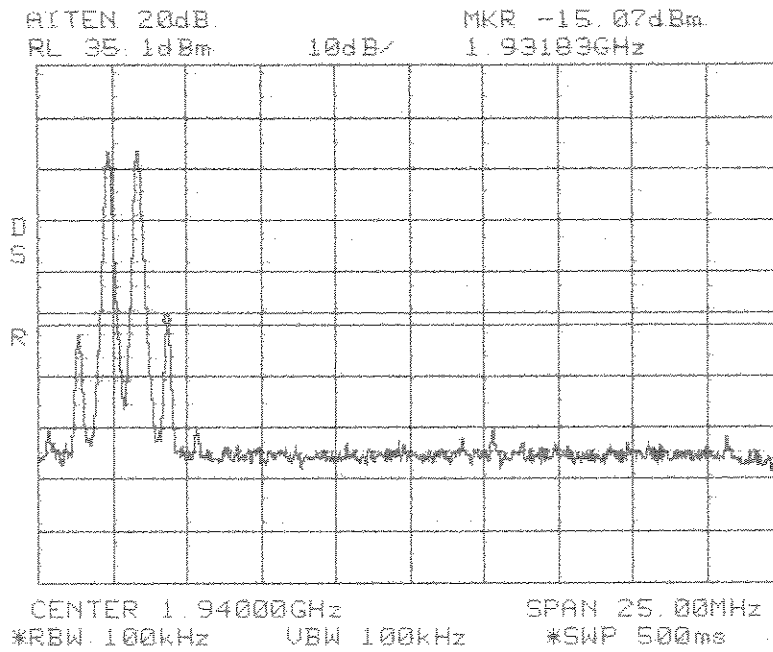
Reviewed by: Greg Jakubowski *G Jakubowski*
 Printed Signature

**Inter-Modulation Test for ADC Inc
Digivance® Indoor Coverage Solution
Model Number DGVIH3110000000000 and
DGVIR3300000000000**

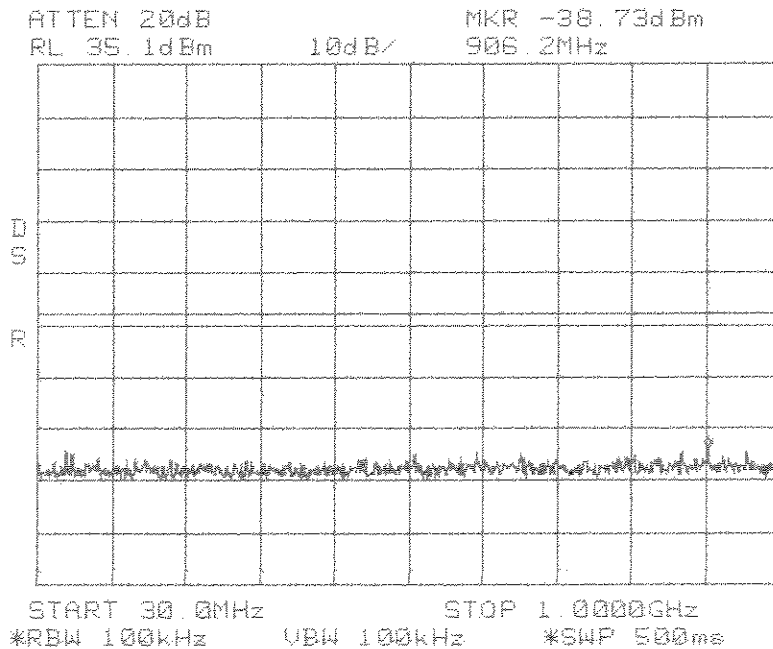
The inter-modulation products test was performed for the EUT. Three tests were performed with the modulation type. Test 1 was with 2 signals input to the EUT at lower end channels. Test 2 was with 2 signals input to the EUT at upper end channels. Test 3 was with 2 signals input to the EUT at upper and lower end channels. The modulation types tested were TDMA, GSM, EDGE, and CDMA. An investigation was made from 30 MHz to the 10th Harmonic of the highest fundamental frequency (~20 GHz). The following plots show the results.

Results:
(See Plots)

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



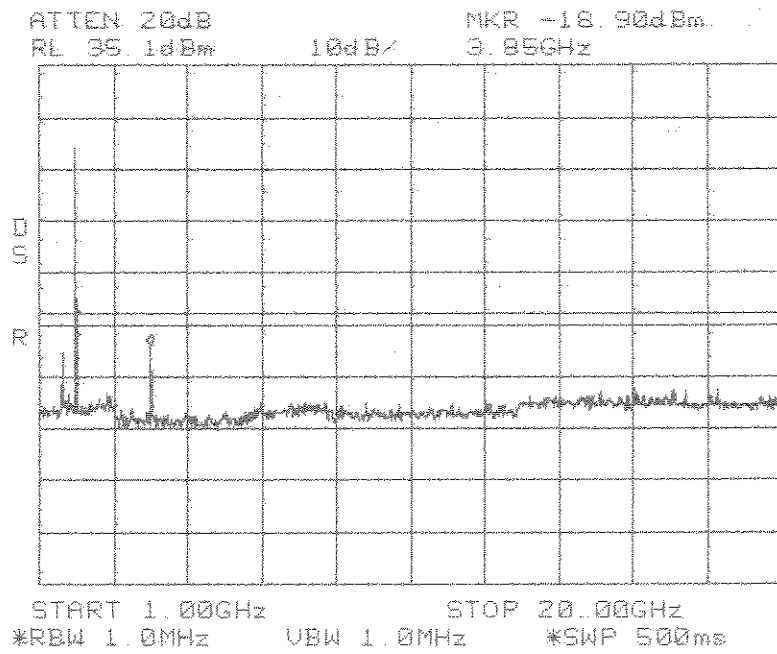
**Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
AD Band**



**Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
AD Band**

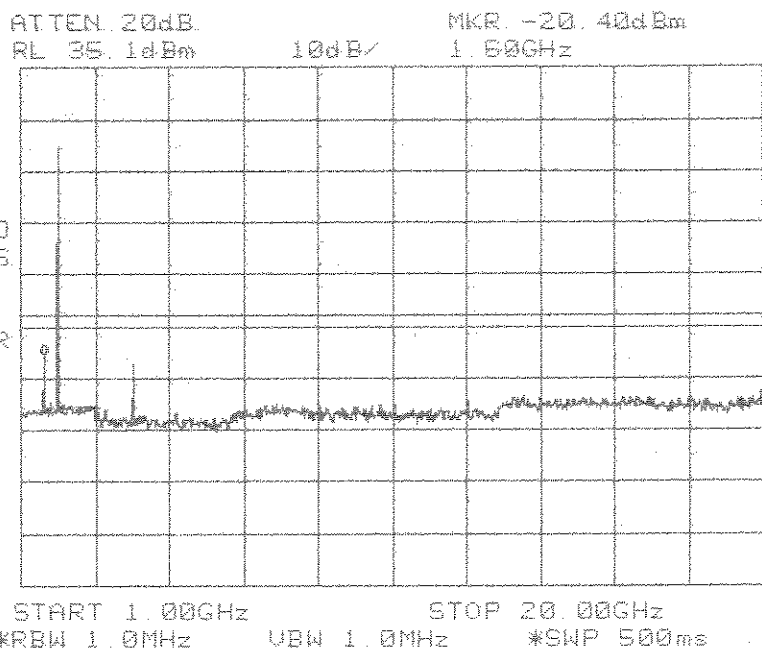
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz



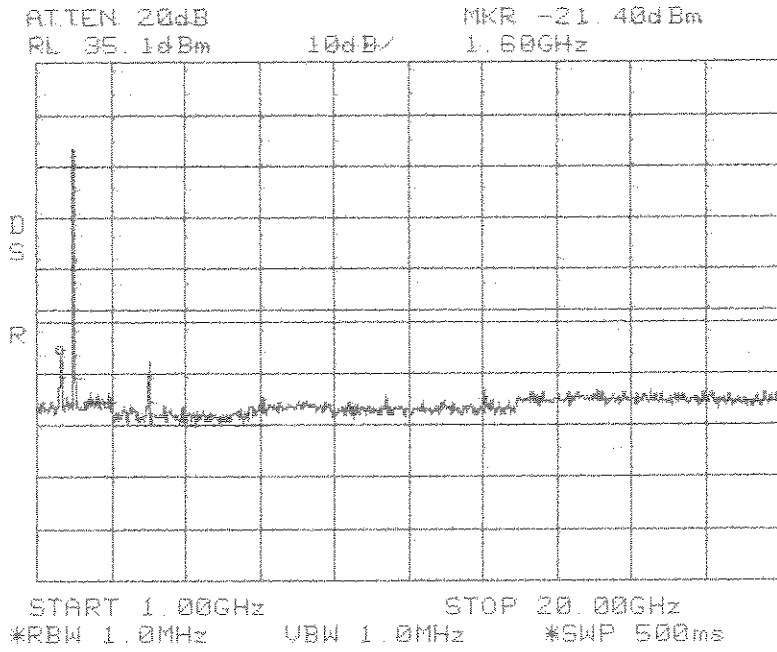
**Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
AD Band**

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz



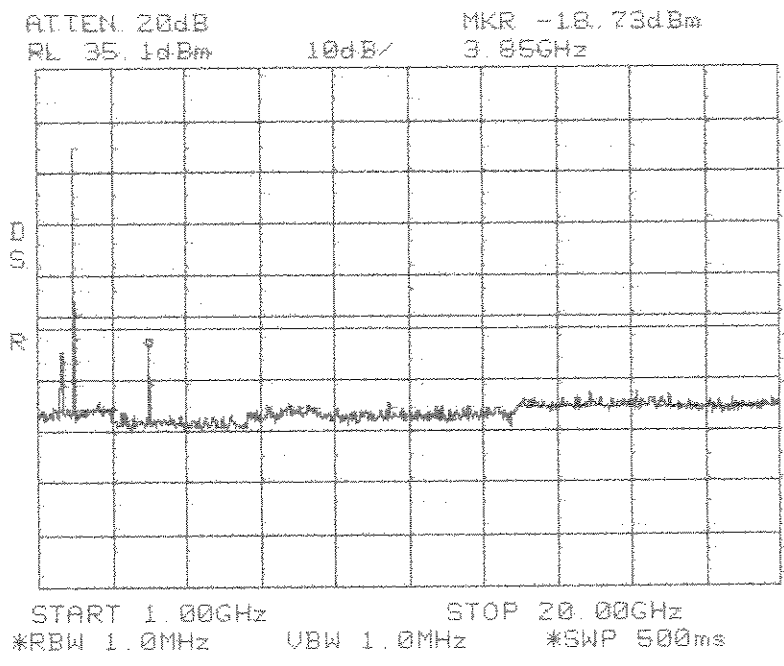
**Intermodulation
Close
Upper
TDMA
PCS 1900 MHz
AD Band**

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz



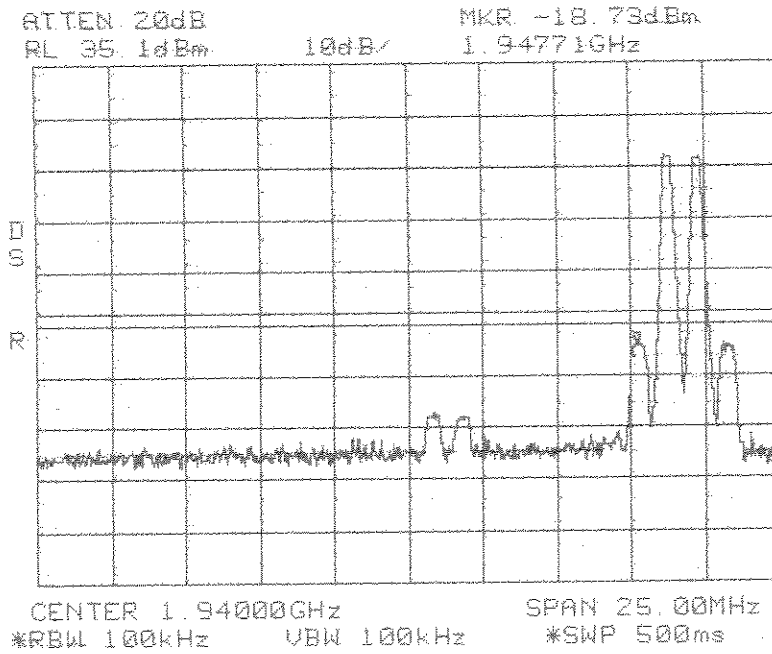
**Intermodulation
Apart
TDMA
PCS 1900 MHz
AD Band**

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

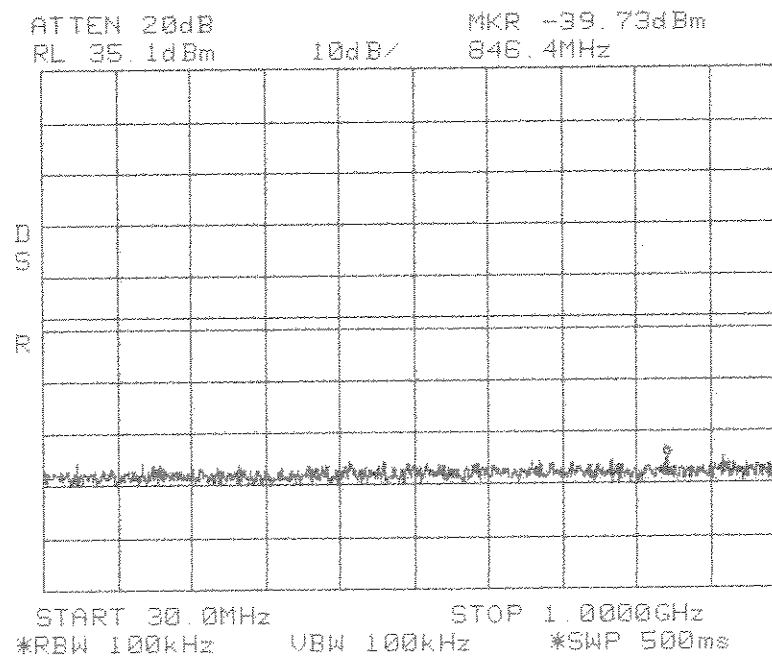


Intermodulation
Close
Lower
GSM
PCS 1900 MHz
AD Band

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



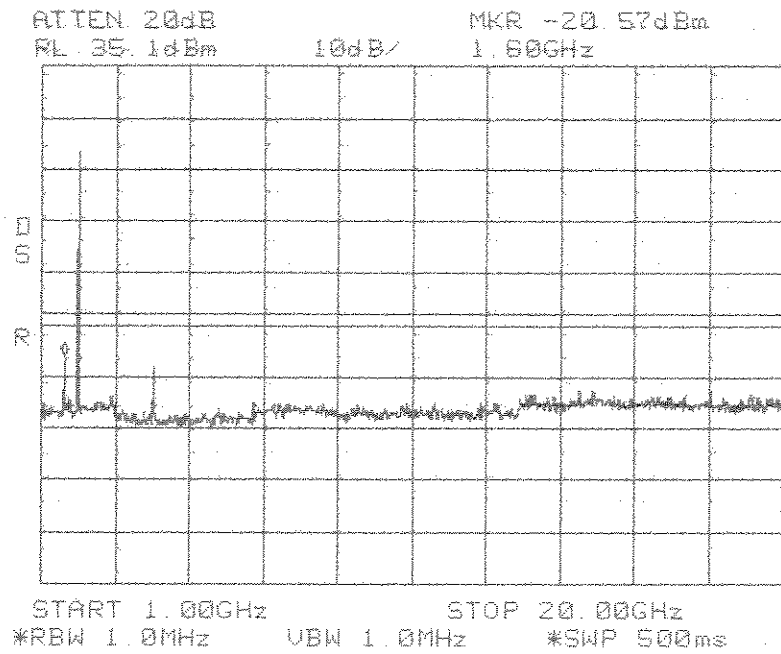
**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
AD Band**



**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
AD Band**

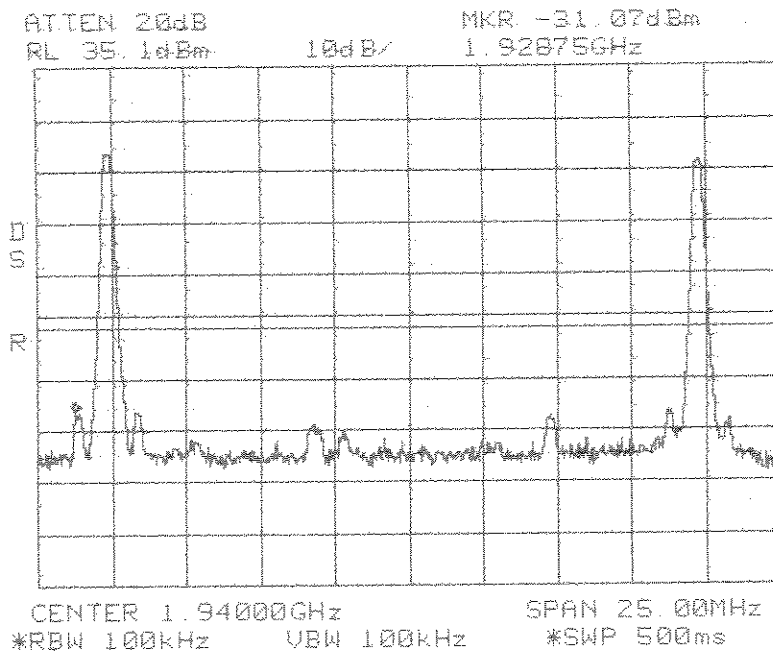
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

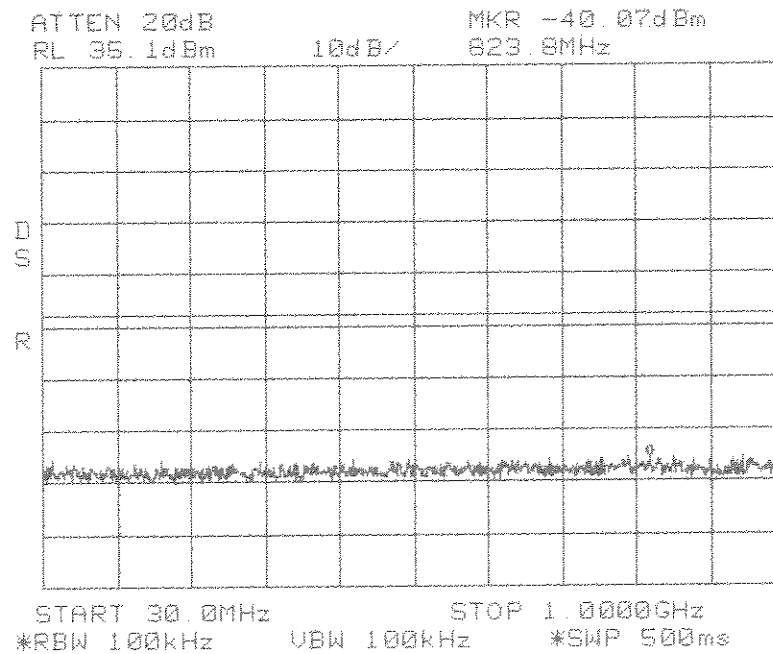


**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
AD Band**

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



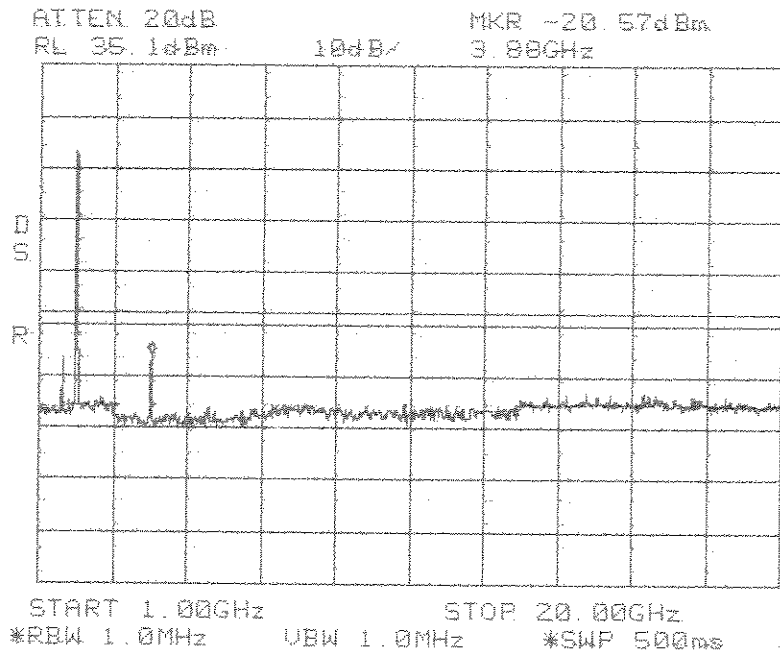
**Intermodulation
Apart
GSM
PCS 1900 MHz
AD Band**



**Intermodulation
Apart
GSM
PCS 1900 MHz
AD Band**

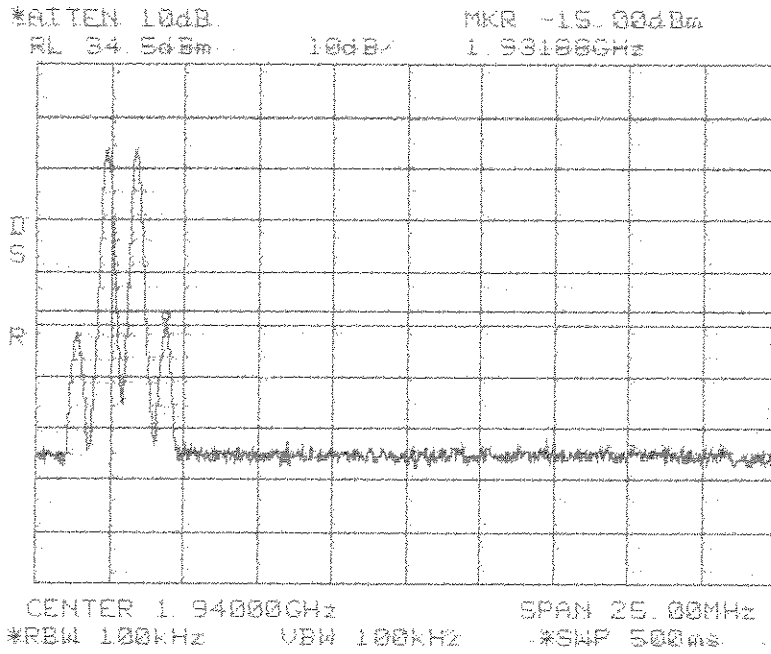
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

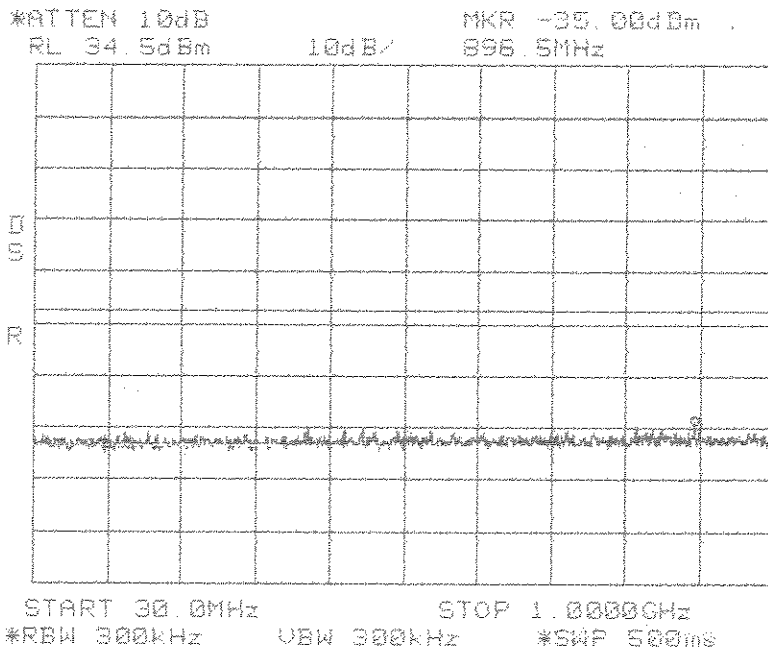


**Intermodulation
Apart
GSM
PCS 1900 MHz
AD Band**

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



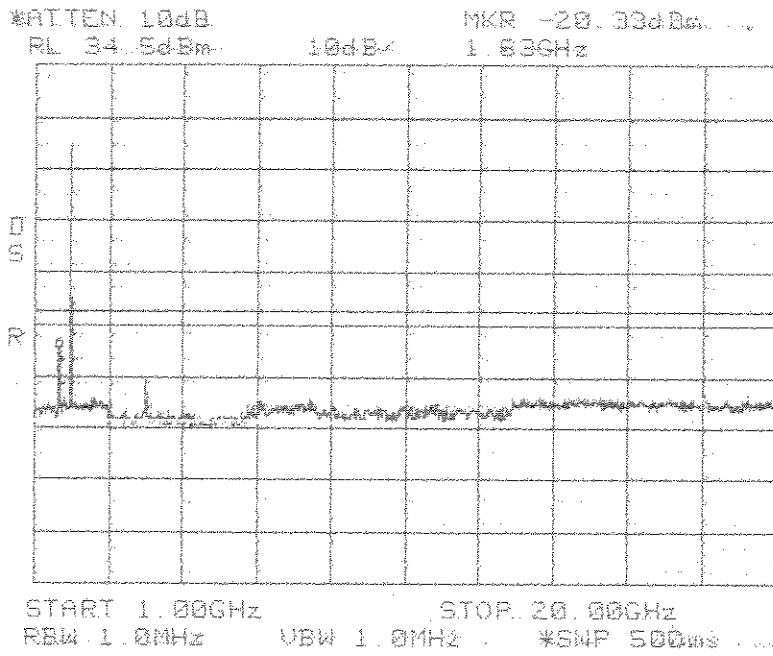
**Intermodulation
Close
Lower
EDGE
PCS 1900 MHz
AD Band**



**Intermodulation
Close
Lower
EDGE
PCS 1900 MHz
AD Band**

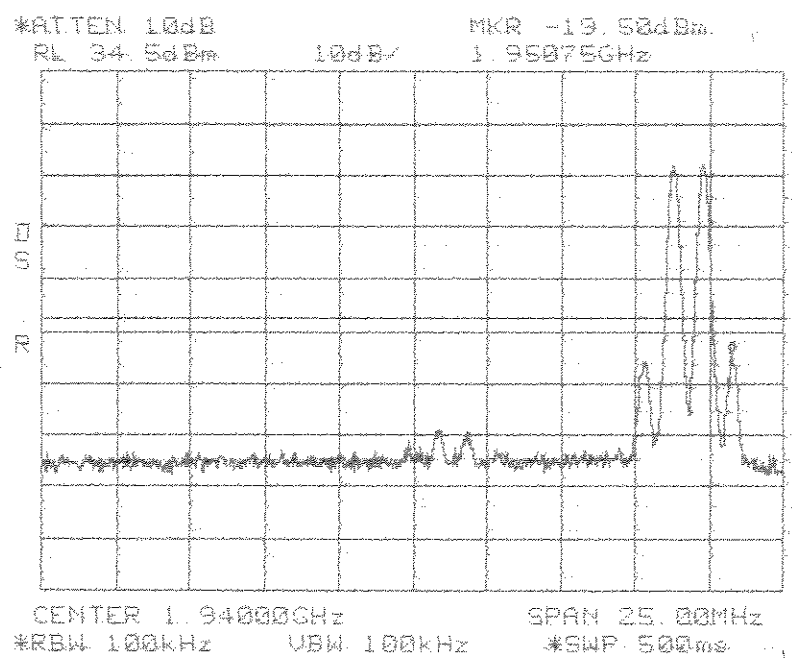
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

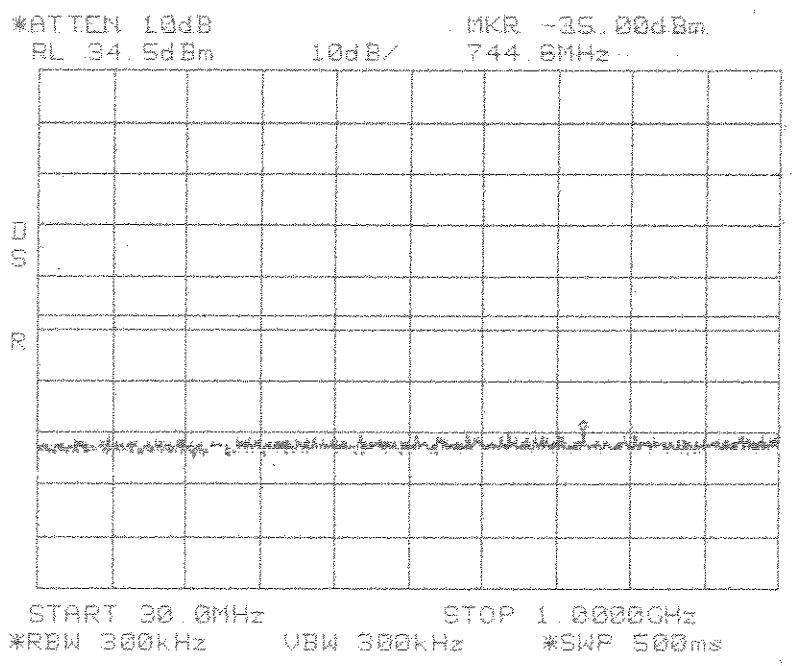


Intermodulation
Close
Lower
EDGE
PCS 1900 MHz
AD Band

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



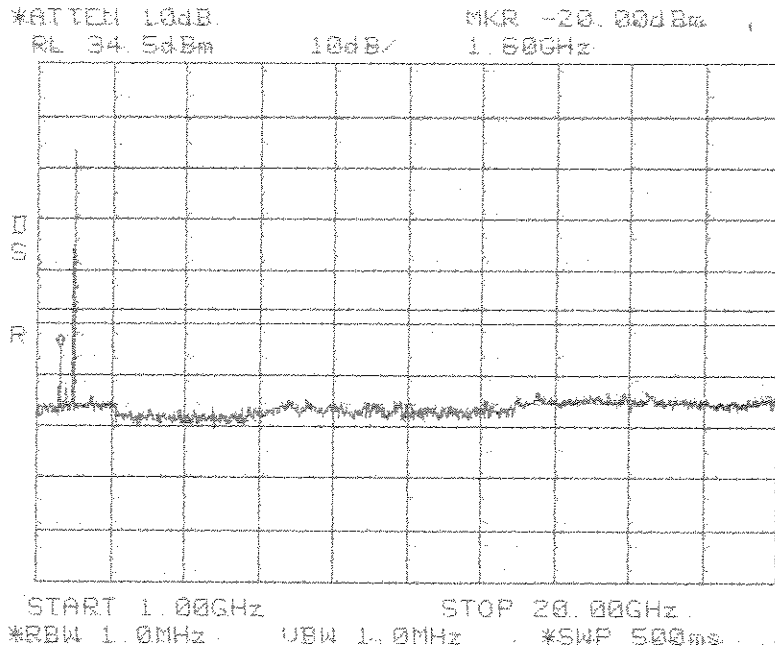
**Intermodulation
Close
Upper
EDGE
PCS 1900 MHz
AD Band**



**Intermodulation
Close
Upper
EDGE
PCS 1900 MHz
AD Band**

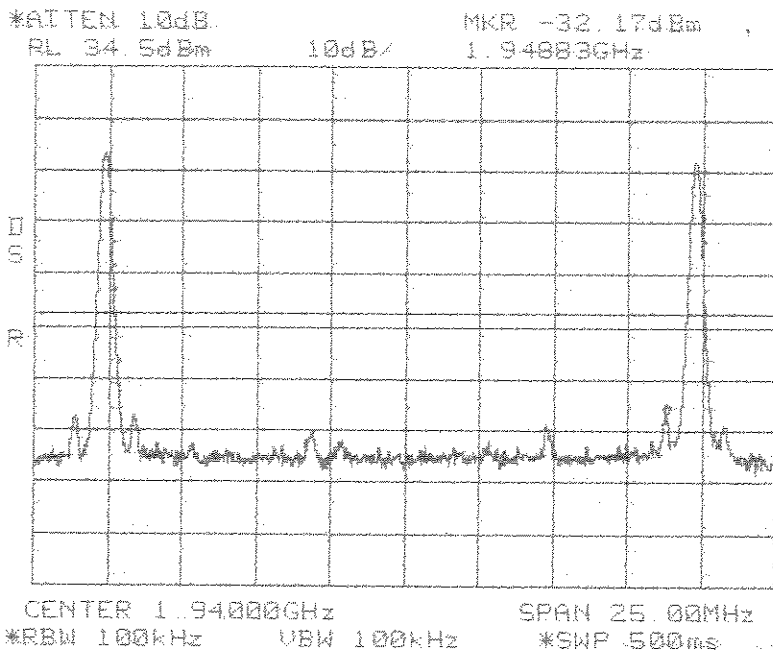
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

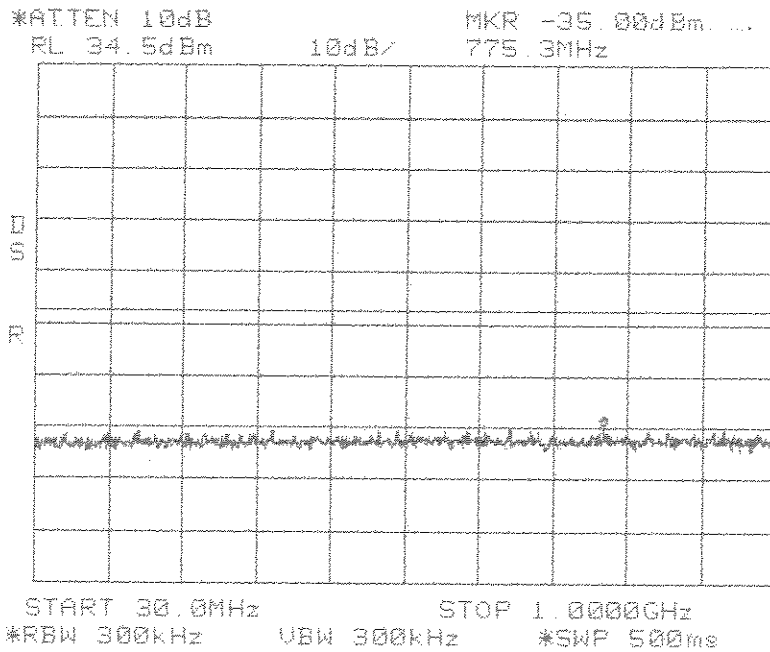


**Intermodulation
Close
Upper
EDGE
PCS 1900 MHz
AD Band**

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



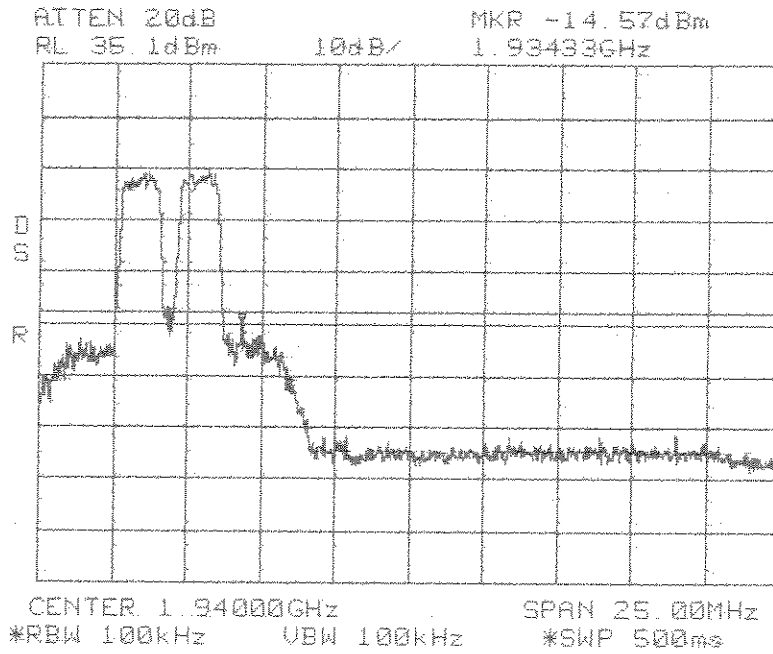
**Intermodulation
Apart
EDGE
PCS 1900 MHz
AD Band**



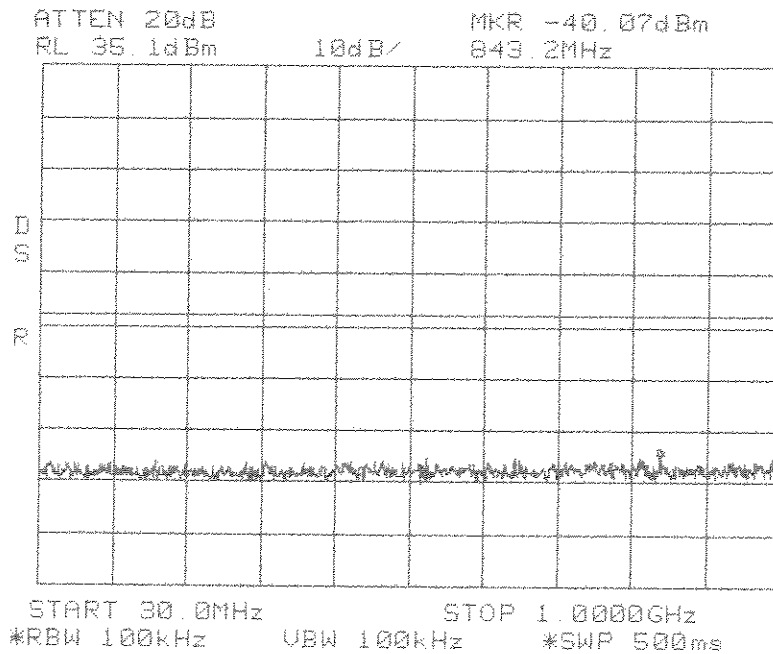
**Intermodulation
Apart
EDGE
PCS 1900 MHz
AD Band**

Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



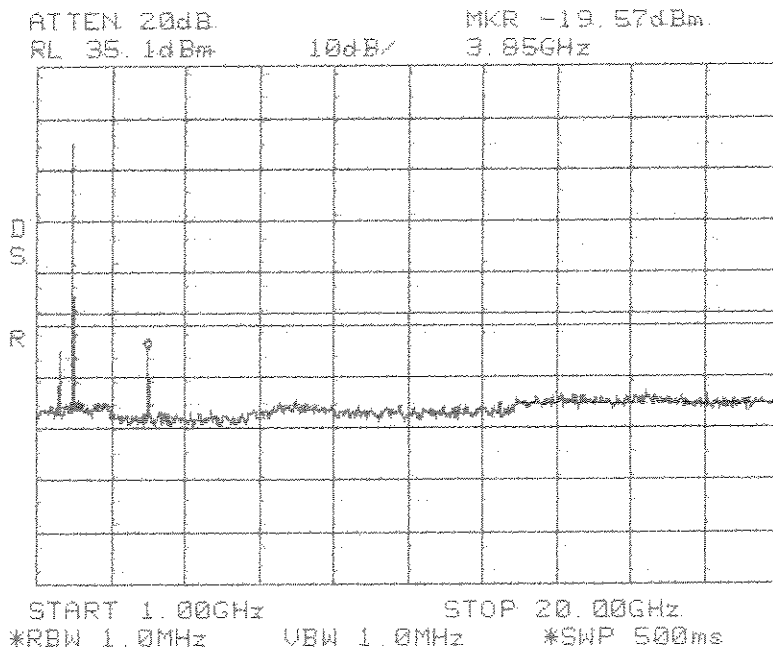
**Intermodulation
Close
Lower
CDMA
PCS 1900 MHz
AD Band**



**Intermodulation
Close
Lower
CDMA
PCS 1900 MHz
AD Band**

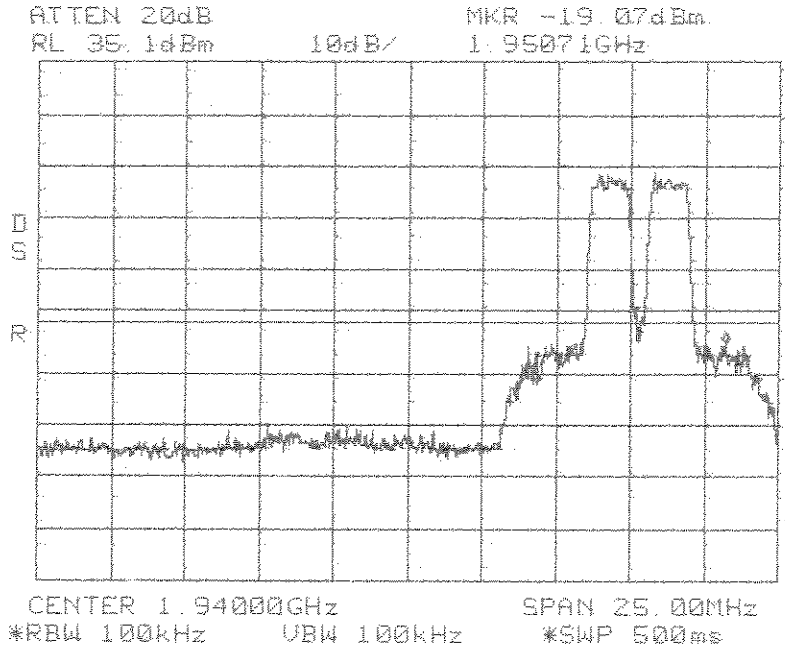
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

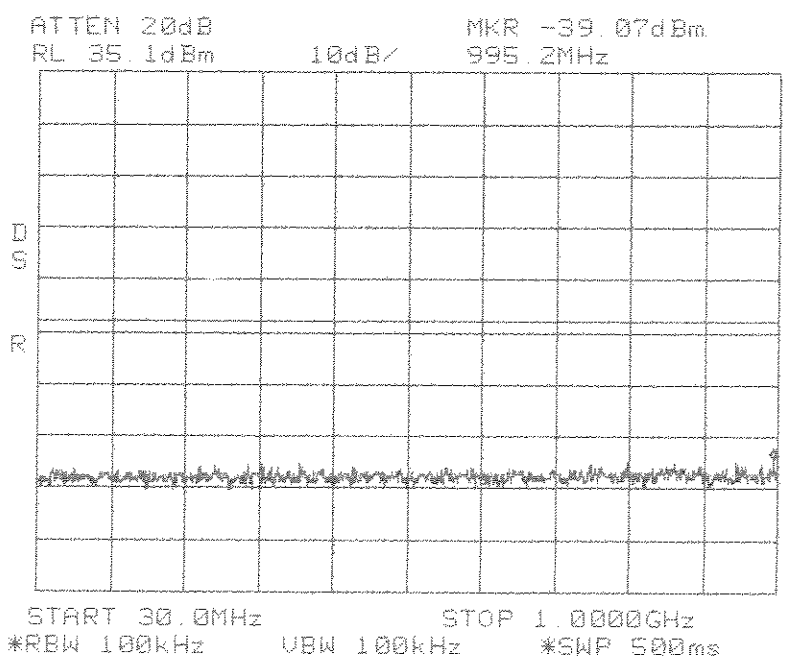


**Intermodulation
Close
Lower
CDMA
PCS 1900 MHz
AD Band**

Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



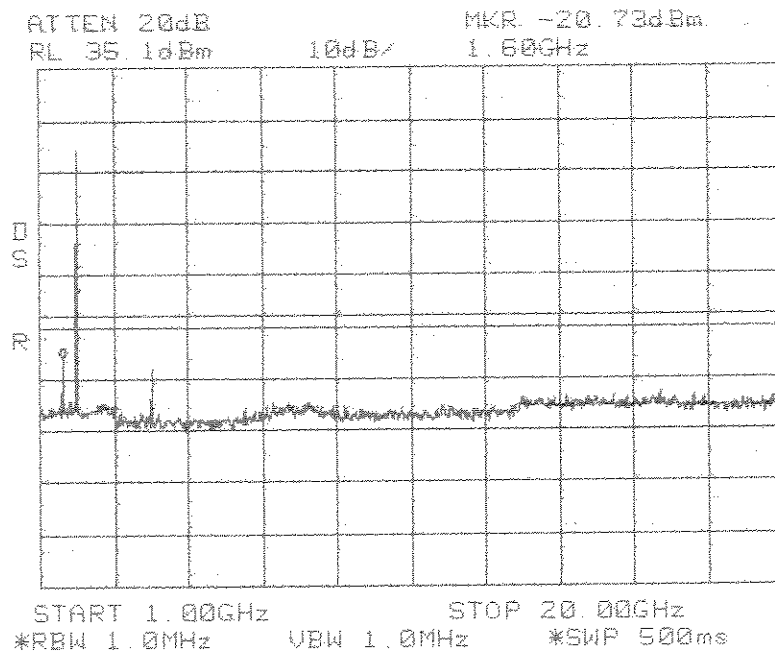
**Intermodulation
Close
Upper
CDMA
PCS 1900 MHz
AD Band**



**Intermodulation
Close
Upper
CDMA
PCS 1900 MHz
AD Band**

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

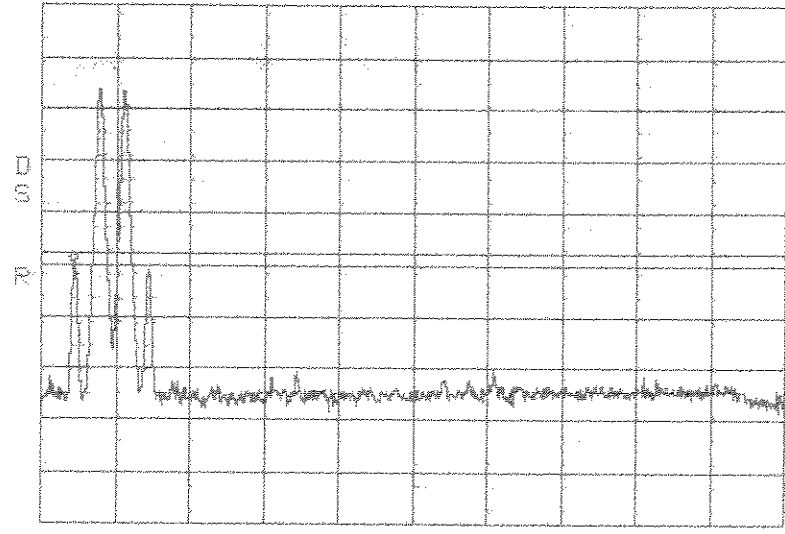
Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz



Intermodulation
Close
Upper
CDMA
PCS 1900 MHz
AD Band

Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

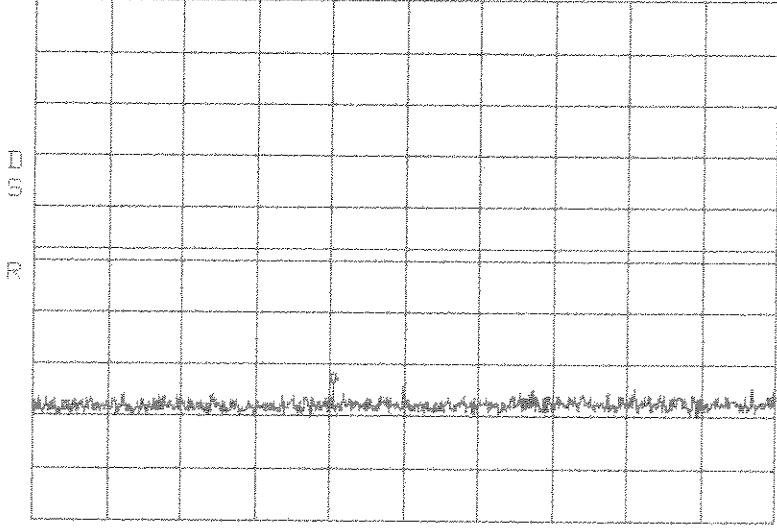
ATTEN 20dB
RL 35.1dBm 10dB/ MKR -14.57dBm
1.94980GHz



CENTER 1.95750GHz SPAN 30.00MHz
*RBW 100kHz VBW 100kHz *SWP 500ms

**Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
DBE Band**

ATTEN 20dB
RL 35.1dBm 10dB/ MKR -38.73dBm
422.9MHz

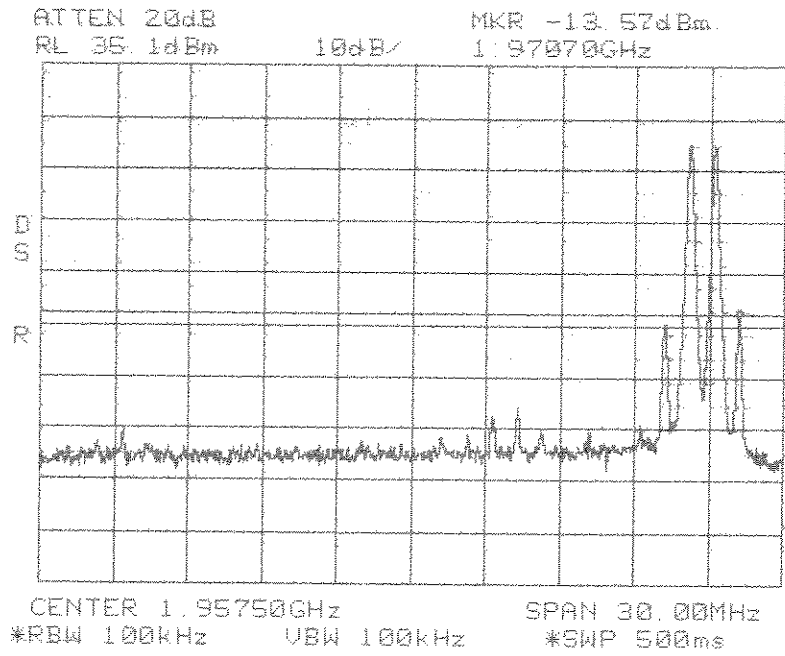


START 30.0MHz STOP 1.0000GHz
*RBW 100kHz VBW 100kHz *SWP 500ms

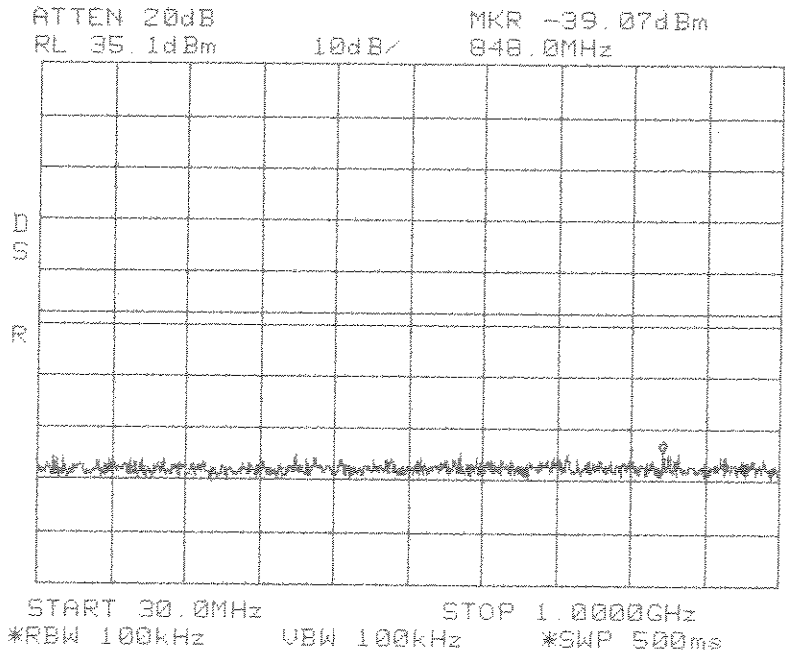
**Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
DBE Band**

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

Center: 1957.5 MHz
 Span: 30 MHz
 RBW/VBW: 100 kHz



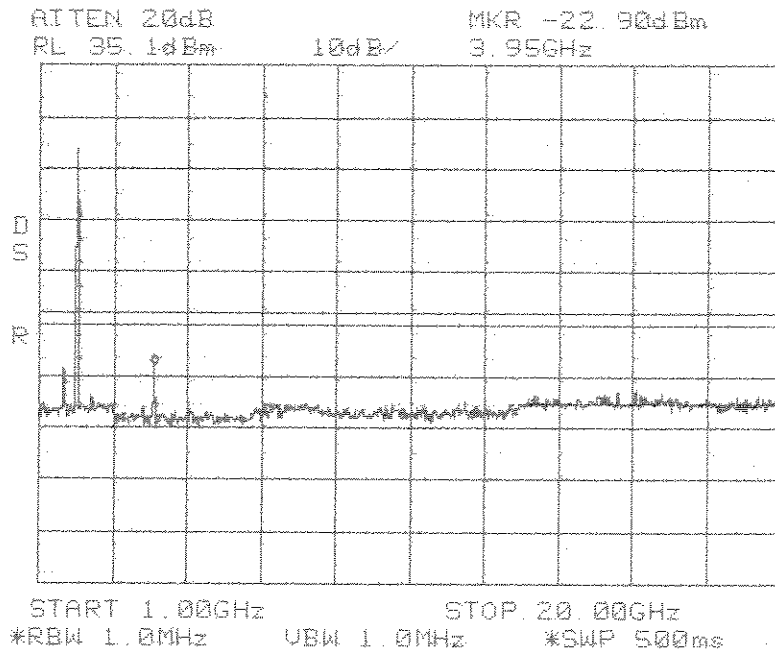
**Intermodulation
 Close
 Upper
 TDMA
 PCS 1900 MHz
 DBE Band**



**Intermodulation
 Close
 Upper
 TDMA
 PCS 1900 MHz
 DBE Band**

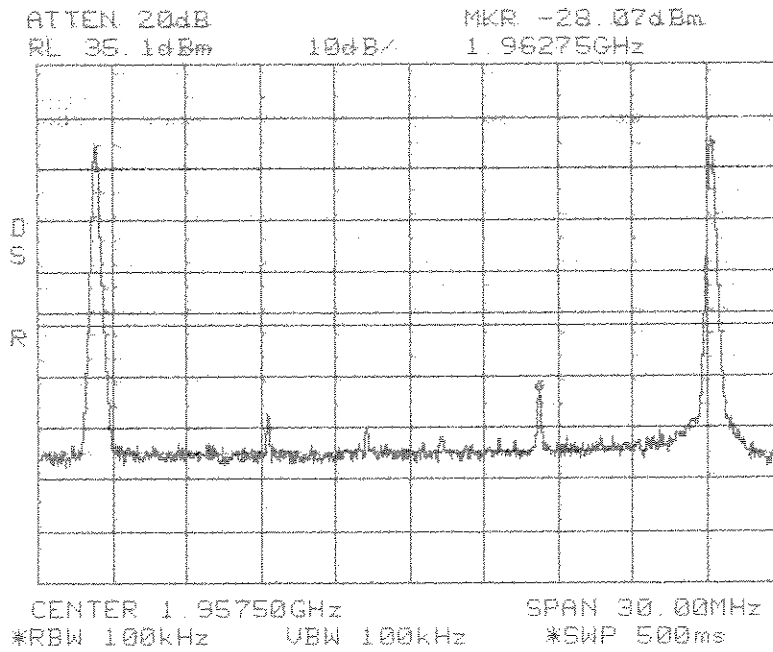
Span: 30 MHz to 1 GHz
 RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

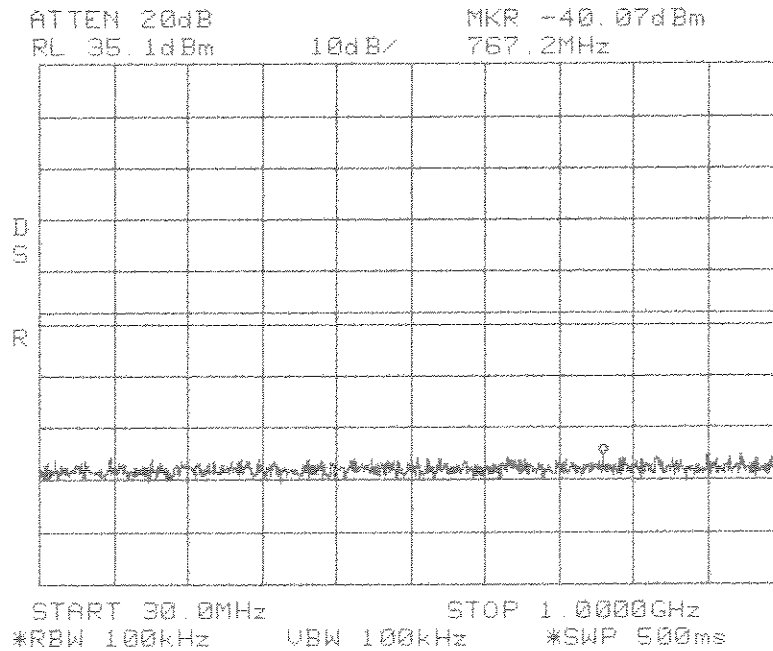


**Intermodulation
Close
Upper
TDMA
PCS 1900 MHz
DBE Band**

Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



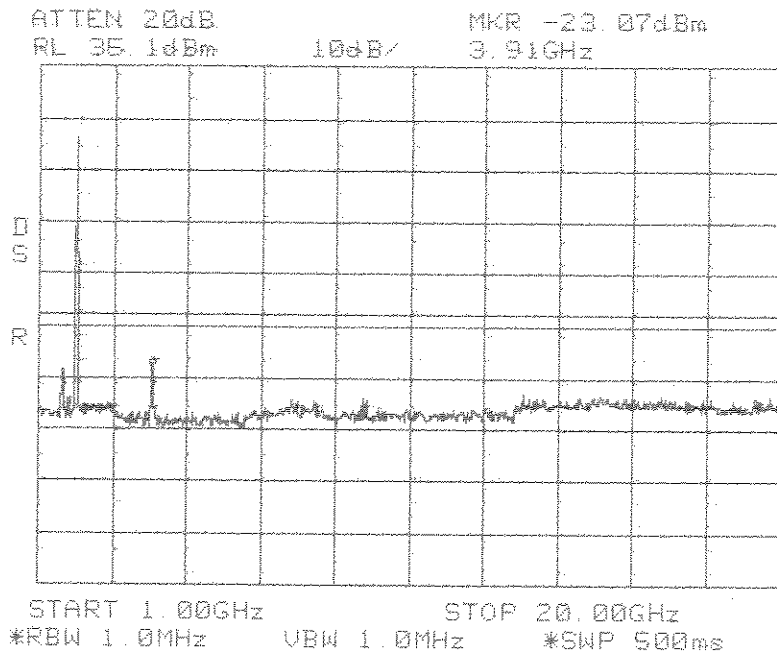
**Intermodulation
Apart
TDMA
PCS 1900 MHz
DBE Band**



**Intermodulation
Apart
TDMA
PCS 1900 MHz
DBE Band**

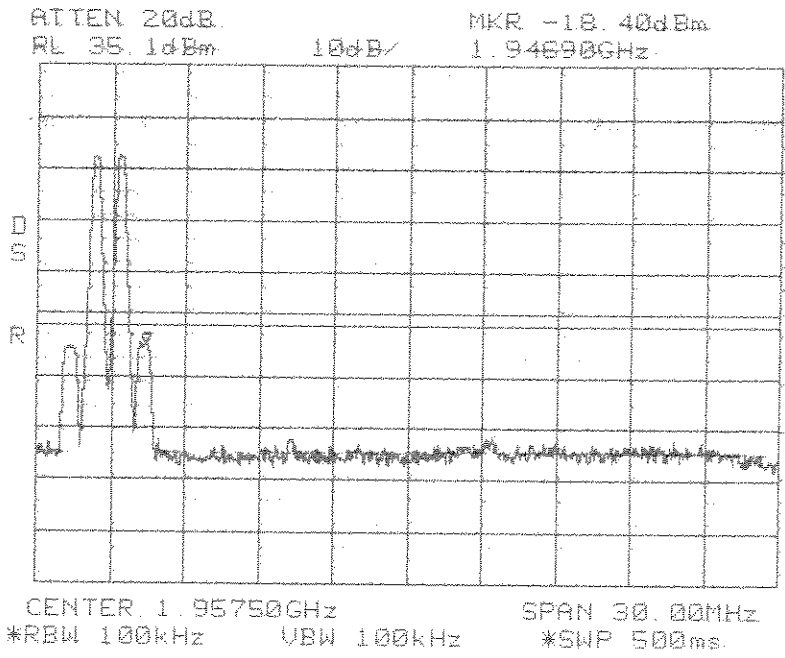
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz

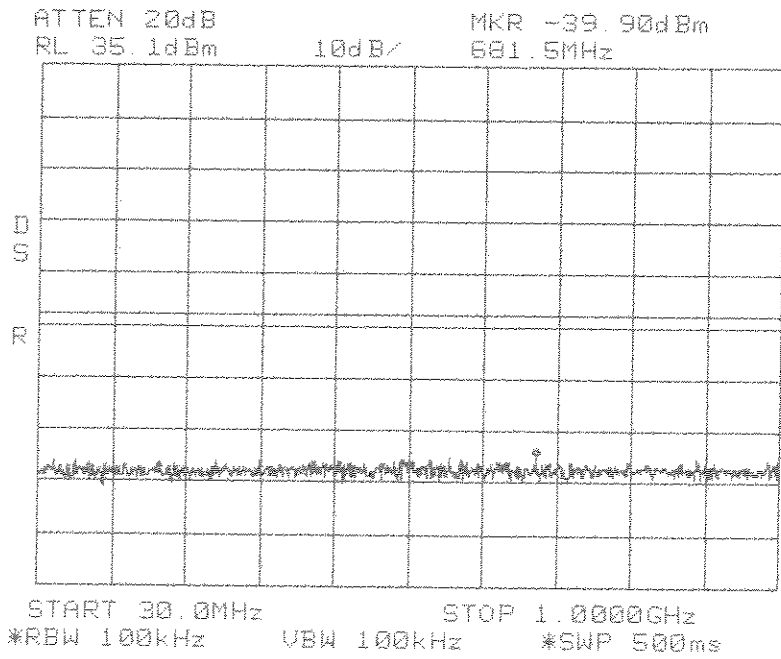


**Intermodulation
Apart
TDMA
PCS 1900 MHz
DBE Band**

Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz



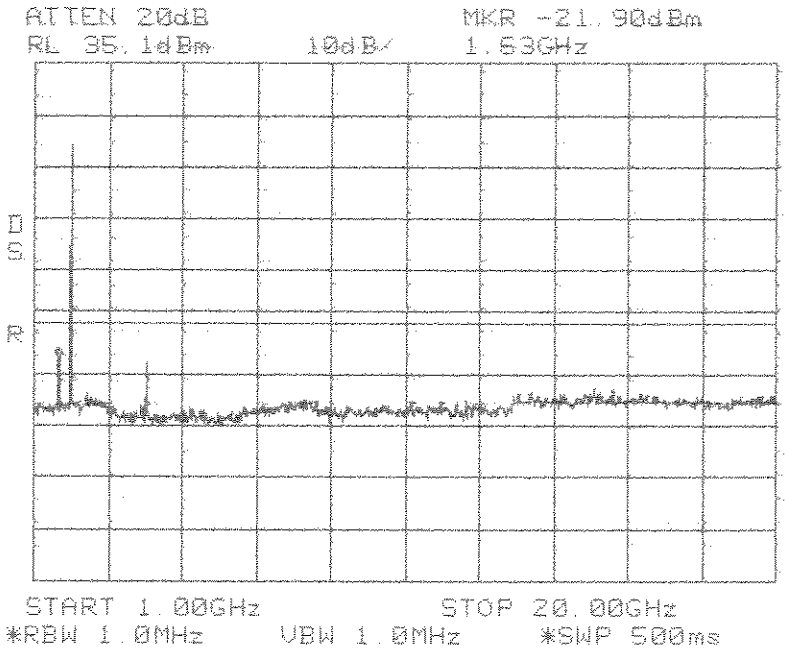
**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
DBE Band**



**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
DBE Band**

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

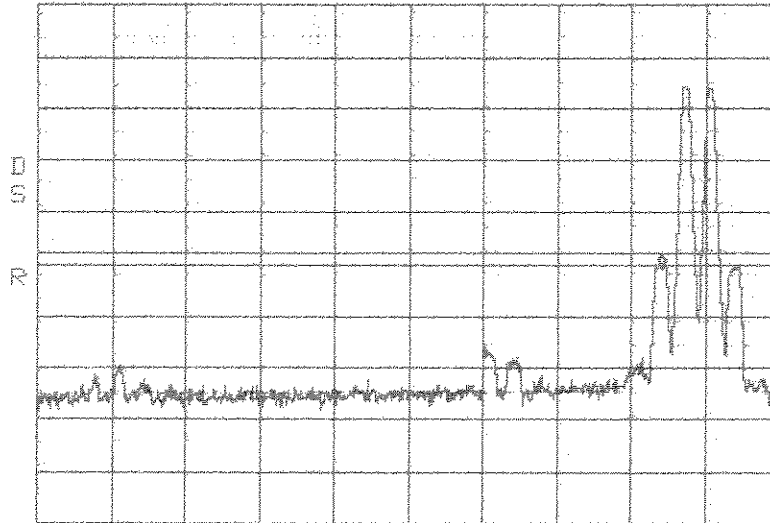
Span: 1 GHz to 20 GHz
RBW/VBW: 1 MHz



**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
DBE Band**

Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

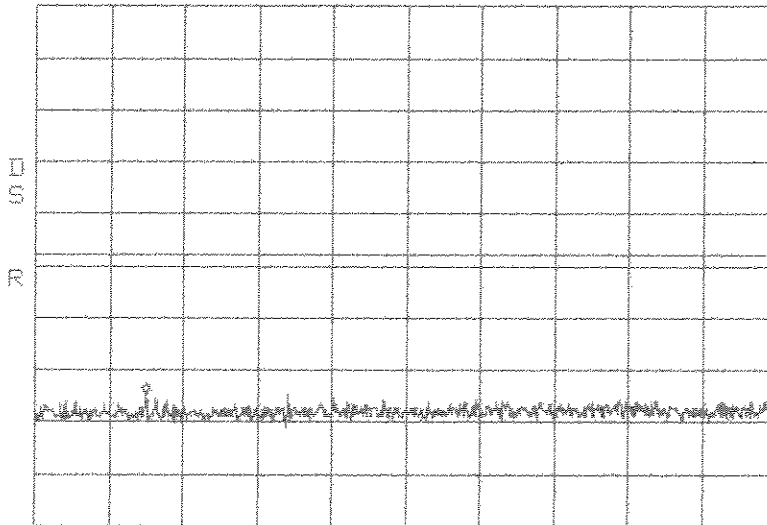
ATTEN 20dB
RL 35.1dBm 10dB/
MKR -15.07dBm
1.96775GHz



CENTER 1.95750GHz SPAN 30.00MHz
*RBW 100kHz VBW 100kHz *SWP 500ms

**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
DBE Band**

ATTEN 20dB
RL 35.1dBm 10dB/
MKR -39.40dBm
175.5MHz



START 30.0MHz STOP 1.0000GHz
*RBW 100kHz VBW 100kHz *SWP 500ms

**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
DBE Band**

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