

TEST RESULT SUMMARY

FCC Part 24 Subpart E Sections

MANUFACTURER	ADC Inc.
ADDRESS	P.O. Box 1101 Minneapolis, MN 55440-1101
NAME OF EQUIPMENT	Digivance® Software Defined Radio 1900 MHz 40-Watt System
MODEL NUMBERS	DGVS-431XX0SYS DGVS-441XX0SYS DGVS-451XX0SYS DGVS-461XX0SYS
TEST REPORT NUMBER	WC503860
TEST DATES	29 July, 2005 (TÜV) 30 August, 2005 (ADC)

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

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

TÜV America Inc, as an independent testing laboratory, declares that the equipment tested as specified above conforms to the EMC requirements of FCC Part 24 Subpart E "Broadband PCS".

Date: 14 October 2005

Tested By

Technical Writer



J. C. Sausen

G. S. Jakubowski

Not Transferable

EMC EMISSION - TEST REPORT

Test Report File No. : **WC503860** Date of issue: 14 October 2005

Model / Serial Nos. : **DGVS-431XX0SYS /
DGVS-441XX0SYS /
DGVS-451XX0SYS /
DGVS-461XX0SYS /**

Product Name : **Digivance® Software Defined Radio 1900 MHz 40-Watt System**

Applicant : **ADC Inc.**

Manufacturer : **ADC Inc.**

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

Test Result : ☒ **Positive** ☐ **Negative**

Test Project Number :
Reference(s) : **WC503860**

Total pages including
Appendices : **104**

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

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

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

DIRECTORY - EMISSIONS

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Sign Explanations:

- ☐ - not applicable
- ☒ - applicable

EMISSIONS TEST REGULATIONS :

The emissions tests were performed according to following regulations:

- | | | |
|---|---|------------------------------------|
| ☐ - EN 50081-1 / 1991 | ☐ - Group 1 | ☐ - Group 2 |
| ☐ - EN 55011 / 1991 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55013 / 1990 | ☐ - Household appliances and similar | |
| ☐ - EN 55014 / 1987 | ☐ - Portable tools | |
| | ☐ - Semiconductor devices | |
| ☐ - EN 55014 / A2:1990 | ☐ - Household appliances and similar | |
| ☐ - EN 55014 / 1993 | ☐ - Portable tools | |
| | ☐ - Semiconductor devices | |
| ☐ - EN 55015 / 1987 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55015 / A1:1990 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55015 / 1993 | | |
| ☐ - EN 55022 / 1987 | ☐ - Class A | ☐ - Class B |
| ☐ - EN 55022 / 1994 | ☐ - Class A | ☐ - Class B |
| ☐ - BS | ☐ - Class A | ☐ - Class B |
| ☐ - VCCI | ☐ - Class A | ☐ - Class B |
| ☒ - FCC Part 24 Subpart E | ☐ - Class A | ☐ - Class B |
| ☐ - FCC Part 15 Subpart B | ☐ - Class A | ☐ - Class B |
| ☐ - CISPR 11 (1990) | ☐ - Group 1 | ☐ - Group 2 |
| | ☐ - Class A | ☐ - Class B |
| ☐ - CISPR 22 (1993) | ☐ - Class A | ☐ - Class B |

24.232 Power and antenna height limits

The transmit power measurements were tested at the following test location:

☐ - Test not applicable

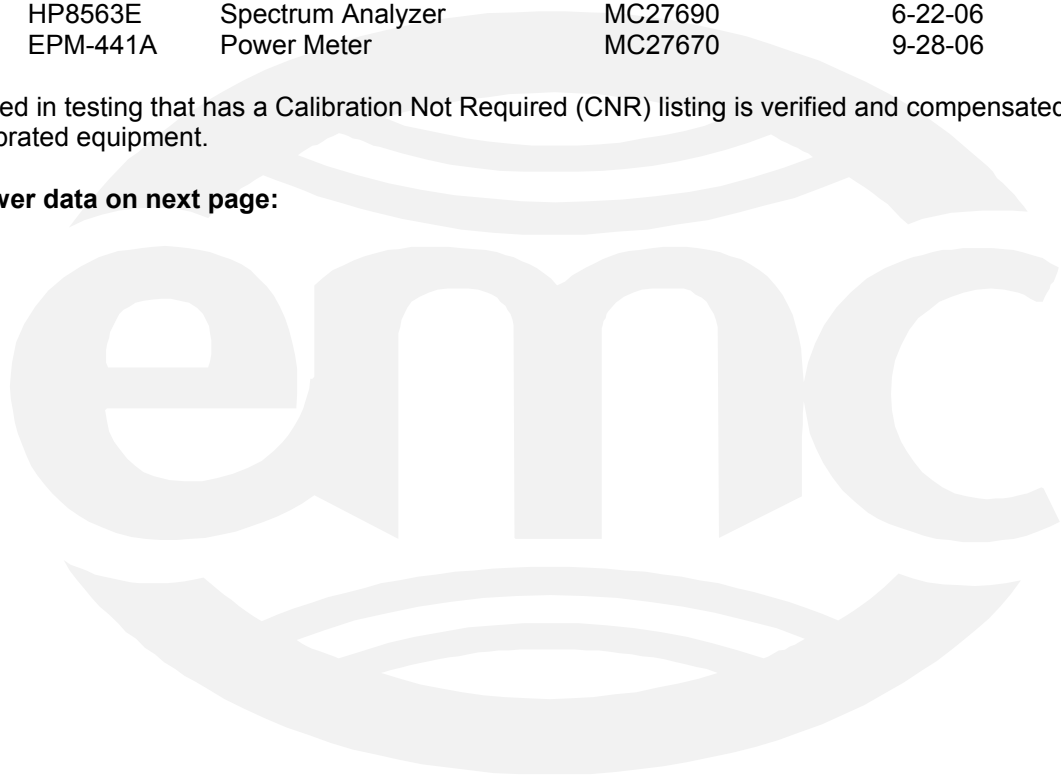
- ☐ - Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☒ - ADC facility

ADC's Test equipment used:

Manufacturer	Model	Description	ADC Serial No.	Cal Due
Aeroflex	49-30-33	Attenuator	n/a	CNR
HP	HP8563E	Spectrum Analyzer	MC27690	6-22-06
HP	EPM-441A	Power Meter	MC27670	9-28-06

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

Transmit power data on next page:



Effective Isotropic Radiated Power Limit Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGVs-431XXSYS, DGVs-441XXSYS, DGVs-
451XXSYS, and DGVs-461XXSYS

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

A GSM signal was used at the low, mid and high parts of the selected band. The spectrum analyzer level was offset by 51.9 dB to compensate for attenuators and cable loss between the EUT and the analyzer.

Band A	
Carrier Frequency	Carrier Output
1930.2 MHz	+ 42.97 dBm
1937.0 MHz	+ 43.67 dBm
1944.8 MHz	+ 43.30 dBm

Band D	
Carrier Frequency	Carrier Output
1945.0 MHz	+ 43.97 dBm
1947.0 MHz	+ 43.13 dBm
1949.8 MHz	+ 43.63 dBm

Band B	
Carrier Frequency	Carrier Output
1950.0 MHz	+ 43.63 dBm
1957.0 MHz	+ 43.47 dBm
1964.8 MHz	+ 43.47 dBm

Band E	
Carrier Frequency	Carrier Output
1965.0 MHz	+ 43.67 dBm
1967.0 MHz	+ 43.83 dBm
1969.8 MHz	+ 43.67 dBm

Band C	
Carrier Frequency	Carrier Output
1975.0 MHz	+ 43.47 dBm
1982.0 MHz	+ 43.30 dBm
1989.8 MHz	+ 42.97 dBm

Band F	
Carrier Frequency	Carrier Output
1970.0 MHz	+ 43.67 dBm
1972.0 MHz	+ 43.17 dBm
1974.8 MHz	+ 43.67 dBm

24.235 Frequency Stability

The Frequency Stability measurements were tested at the following test location:

☐ - Test not applicable

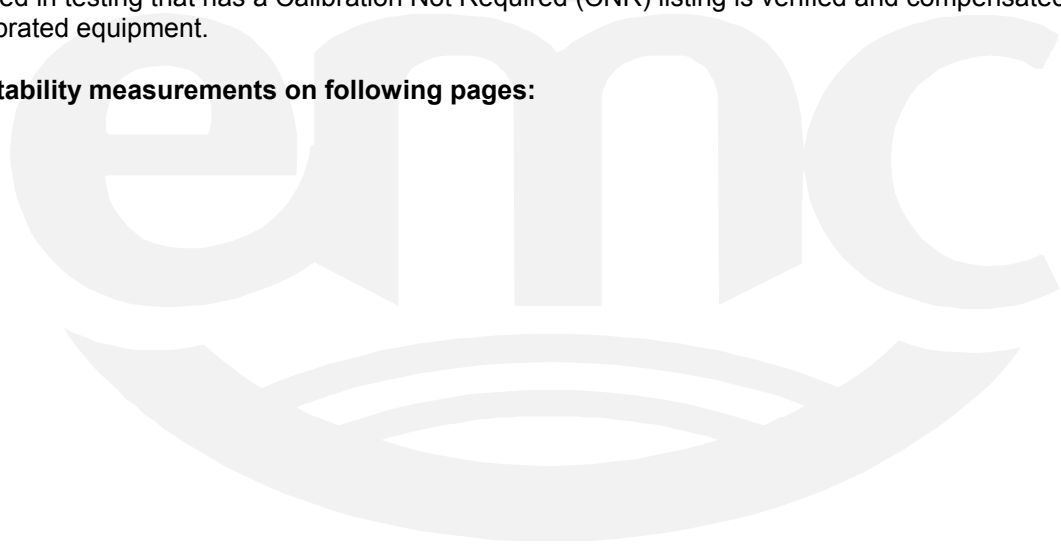
- ☐ - Wild River Lab Large Test Site (Open Area Test Site)
- ☐ - Wild River Lab Small Test Site (Open Area Test Site)
- ☒ - ADC facility

ADC's Test equipment used:

Manufacturer	Model	Description	ADC Serial No.	Cal Due
Aeroflex	49-30-33	Attenuator	n/a	CNR
HP	5347A	Freq. counter	MC27569	7-21-06
Staco	1520CT	Variable Auto Transformer	MC/44655	CNR
Thermotron	n/a	Temperature Chamber	MC18966	3-1-06
HP	HP8563E	Spectrum Analyzer	MC27690	6-22-06
HP	EPM-441A	Power Meter	MC27670	9-28-06
Fluke	26III	Multimeter	MC22687	4-27-06

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

Frequency Stability measurements on following pages:



Frequency Tolerance Test for ADC Inc
Digivance â SDR System
Model Numbers: DGVS-431XXXSYS, DGVS-441XXXSYS, DGVS-451XXXSYS, and DGVS-461XXXSYS

EUT Band A and D Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1930.200000 MHz	1930.200000 MHz	YES
120 VAC	1930.200000 MHz	1930.200000 MHz	YES
138 VAC	1930.200000 MHz	1930.200000 MHz	YES
102 VAC	1940.000000 MHz	1940.000000 MHz	YES
120 VAC	1940.000000 MHz	1940.000000 MHz	YES
138 VAC	1940.000000 MHz	1940.000000 MHz	YES
102 VAC	1949.800000 MHz	1949.800000 MHz	YES
120 VAC	1949.800000 MHz	1949.800000 MHz	YES
138 VAC	1949.800000 MHz	1949.800000 MHz	YES
Temperature	Carrier Frequency	Measured Frequency	Meets requirement?
-30 Deg C	1930.200000 MHz	1930.200000 MHz	YES
-20 Deg C	1930.200000 MHz	1930.200000 MHz	YES
-10 Deg C	1930.200000 MHz	1930.200000 MHz	YES
0 Deg. C	1930.200000 MHz	1930.200000 MHz	YES
10 Deg C	1930.200000 MHz	1930.200000 MHz	YES
20 Deg C	1930.200000 MHz	1930.200000 MHz	YES
30 Deg C	1930.200000 MHz	1930.200000 MHz	YES
40 Deg C	1930.200000 MHz	1930.200000 MHz	YES
50 Deg C	1930.200000 MHz	1930.200000 MHz	YES
-30 Deg C	1940.000000 MHz	1940.000000 MHz	YES
-20 Deg C	1940.000000 MHz	1940.000000 MHz	YES
-10 Deg C	1940.000000 MHz	1940.000000 MHz	YES
0 Deg. C	1940.000000 MHz	1940.000000 MHz	YES
10 Deg C	1940.000000 MHz	1940.000000 MHz	YES
20 Deg C	1940.000000 MHz	1940.000000 MHz	YES
30 Deg C	1940.000000 MHz	1940.000000 MHz	YES
40 Deg C	1940.000000 MHz	1940.000000 MHz	YES
50 Deg C	1940.000000 MHz	1940.000000 MHz	YES
-30 Deg C	1949.800000 MHz	1949.800000 MHz	YES
-20 Deg C	1949.800000 MHz	1949.800000 MHz	YES
-10 Deg C	1949.800000 MHz	1949.800000 MHz	YES
0 Deg. C	1949.800000 MHz	1949.800000 MHz	YES
10 Deg C	1949.800000 MHz	1949.800000 MHz	YES
20 Deg C	1949.800000 MHz	1949.800000 MHz	YES
30 Deg C	1949.800000 MHz	1949.800000 MHz	YES
40 Deg C	1949.800000 MHz	1949.800000 MHz	YES
50 Deg C	1949.800000 MHz	1949.800000 MHz	YES

EUT Band D, B, and E Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1945.000000 MHz	1945.000000 MHz	YES
120 VAC	1945.000000 MHz	1945.000000 MHz	YES
138 VAC	1945.000000 MHz	1945.000000 MHz	YES
102 VAC	1960.000000 MHz	1960.000000 MHz	YES
120 VAC	1960.000000 MHz	1960.000000 MHz	YES
138 VAC	1960.000000 MHz	1960.000000 MHz	YES
102 VAC	1969.800000 MHz	1969.800000 MHz	YES
120 VAC	1969.800000 MHz	1969.800000 MHz	YES
138 VAC	1969.800000 MHz	1969.800000 MHz	YES
Temperature	Carrier Frequency	Measured Frequency	Meets requirement?
-30 Deg C	1945.000000 MHz	1945.000000 MHz	YES
-20 Deg C	1945.000000 MHz	1945.000000 MHz	YES
-10 Deg C	1945.000000 MHz	1945.000000 MHz	YES
0 Deg. C	1945.000000 MHz	1945.000000 MHz	YES
10 Deg C	1945.000000 MHz	1945.000000 MHz	YES
20 Deg C	1945.000000 MHz	1945.000000 MHz	YES
30 Deg C	1945.000000 MHz	1945.000000 MHz	YES
40 Deg C	1945.000000 MHz	1945.000000 MHz	YES
50 Deg C	1945.000000 MHz	1945.000000 MHz	YES
-30 Deg C	1960.000000 MHz	1960.000000 MHz	YES
-20 Deg C	1960.000000 MHz	1960.000000 MHz	YES
-10 Deg C	1960.000000 MHz	1960.000000 MHz	YES
0 Deg. C	1960.000000 MHz	1960.000000 MHz	YES
10 Deg C	1960.000000 MHz	1960.000000 MHz	YES
20 Deg C	1960.000000 MHz	1960.000000 MHz	YES
30 Deg C	1960.000000 MHz	1960.000000 MHz	YES
40 Deg C	1960.000000 MHz	1960.000000 MHz	YES
50 Deg C	1960.000000 MHz	1960.000000 MHz	YES
-30 Deg C	1969.800000 MHz	1969.800000 MHz	YES
-20 Deg C	1969.800000 MHz	1969.800000 MHz	YES
-10 Deg C	1969.800000 MHz	1969.800000 MHz	YES
0 Deg. C	1969.800000 MHz	1969.800000 MHz	YES
10 Deg C	1969.800000 MHz	1969.800000 MHz	YES
20 Deg C	1969.800000 MHz	1969.800000 MHz	YES
30 Deg C	1969.800000 MHz	1969.800000 MHz	YES
40 Deg C	1969.800000 MHz	1969.800000 MHz	YES
50 Deg C	1969.800000 MHz	1969.800000 MHz	YES

EUT Band B, E, and F Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1950.000000 MHz	1950.000000 MHz	YES
120 VAC	1950.000000 MHz	1950.000000 MHz	YES
138 VAC	1950.000000 MHz	1950.000000 MHz	YES
102 VAC	1965.000000 MHz	1965.000000 MHz	YES
120 VAC	1965.000000 MHz	1965.000000 MHz	YES
138 VAC	1965.000000 MHz	1965.000000 MHz	YES
102 VAC	1974.800000 MHz	1974.800000 MHz	YES
120 VAC	1974.800000 MHz	1974.800000 MHz	YES
138 VAC	1974.800000 MHz	1974.800000 MHz	YES
Temperature	Carrier Frequency	Measured Frequency	Meets requirement?
-30 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-20 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-10 Deg C	1950.000000 MHz	1950.000000 MHz	YES
0 Deg. C	1950.000000 MHz	1950.000000 MHz	YES
10 Deg C	1950.000000 MHz	1950.000000 MHz	YES
20 Deg C	1950.000000 MHz	1950.000000 MHz	YES
30 Deg C	1950.000000 MHz	1950.000000 MHz	YES
40 Deg C	1950.000000 MHz	1950.000000 MHz	YES
50 Deg C	1950.000000 MHz	1950.000000 MHz	YES
-30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
0 Deg. C	1965.000000 MHz	1965.000000 MHz	YES
10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
40 Deg C	1965.000000 MHz	1965.000000 MHz	YES
50 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-30 Deg C	1974.800000 MHz	1974.800000 MHz	YES
-20 Deg C	1974.800000 MHz	1974.800000 MHz	YES
-10 Deg C	1974.800000 MHz	1974.800000 MHz	YES
0 Deg. C	1974.800000 MHz	1974.800000 MHz	YES
10 Deg C	1974.800000 MHz	1974.800000 MHz	YES
20 Deg C	1974.800000 MHz	1974.800000 MHz	YES
30 Deg C	1974.800000 MHz	1974.800000 MHz	YES
40 Deg C	1974.800000 MHz	1974.800000 MHz	YES
50 Deg C	1974.800000 MHz	1974.800000 MHz	YES

EUT Band E, F, and C Selected

Input Voltage	Carrier Frequency	Measured Frequency	Meets requirement?
102 VAC	1965.000000 MHz	1965.000000 MHz	YES
120 VAC	1965.000000 MHz	1965.000000 MHz	YES
138 VAC	1965.000000 MHz	1965.000000 MHz	YES
102 VAC	1980.000000 MHz	1980.000000 MHz	YES
120 VAC	1980.000000 MHz	1980.000000 MHz	YES
138 VAC	1980.000000 MHz	1980.000000 MHz	YES
102 VAC	1989.800000 MHz	1989.800000 MHz	YES
120 VAC	1989.800000 MHz	1989.800000 MHz	YES
138 VAC	1989.800000 MHz	1989.800000 MHz	YES
Temperature	Carrier Frequency	Measured Frequency	Meets requirement?
-30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
0 Deg. C	1965.000000 MHz	1965.000000 MHz	YES
10 Deg C	1965.000000 MHz	1965.000000 MHz	YES
20 Deg C	1965.000000 MHz	1965.000000 MHz	YES
30 Deg C	1965.000000 MHz	1965.000000 MHz	YES
40 Deg C	1965.000000 MHz	1965.000000 MHz	YES
50 Deg C	1965.000000 MHz	1965.000000 MHz	YES
-30 Deg C	1980.000000 MHz	1980.000000 MHz	YES
-20 Deg C	1980.000000 MHz	1980.000000 MHz	YES
-10 Deg C	1980.000000 MHz	1980.000000 MHz	YES
0 Deg. C	1980.000000 MHz	1980.000000 MHz	YES
10 Deg C	1980.000000 MHz	1980.000000 MHz	YES
20 Deg C	1980.000000 MHz	1980.000000 MHz	YES
30 Deg C	1980.000000 MHz	1980.000000 MHz	YES
40 Deg C	1980.000000 MHz	1980.000000 MHz	YES
50 Deg C	1980.000000 MHz	1980.000000 MHz	YES
-30 Deg C	1989.800000 MHz	1989.800000 MHz	YES
-20 Deg C	1989.800000 MHz	1989.800000 MHz	YES
-10 Deg C	1989.800000 MHz	1989.800000 MHz	YES
0 Deg. C	1989.800000 MHz	1989.800000 MHz	YES
10 Deg C	1989.800000 MHz	1989.800000 MHz	YES
20 Deg C	1989.800000 MHz	1989.800000 MHz	YES
30 Deg C	1989.800000 MHz	1989.800000 MHz	YES
40 Deg C	1989.800000 MHz	1989.800000 MHz	YES
50 Deg C	1989.800000 MHz	1989.800000 MHz	YES

Note: EUT Host is specified for indoor use only with temperature range of 0 to +50° C and was tested within its range.

Note: EUT STM and LPA are specified with a temperature range of -30 to +50° C and were tested with their range.

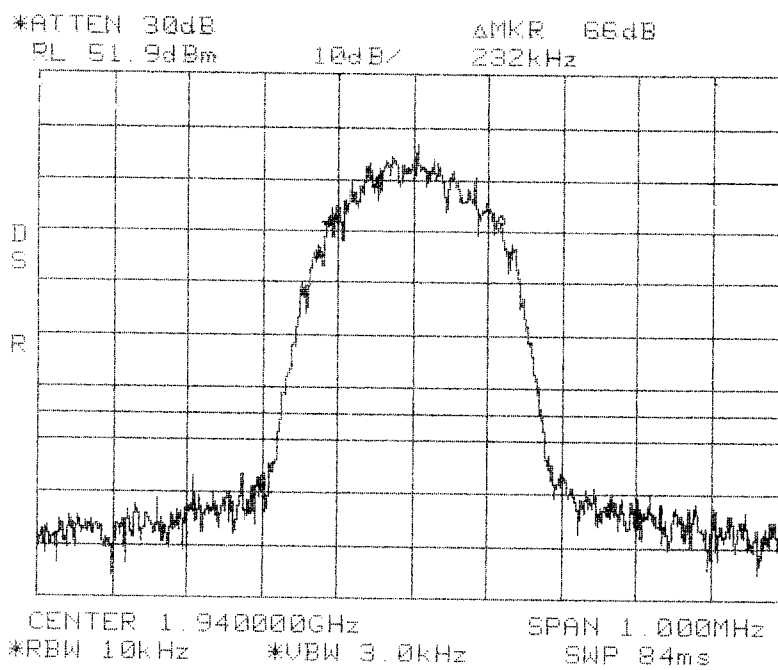
Occupied Bandwidth Modulation Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGVs-431XXxSYS, DGVs-441XXxSYS,
DGVs-451XXxSYS, and DGVs-461XXxSYS

An output Occupied Bandwidth test was done with modulation type GSM. The purpose was to determine the amount of distortion added to this modulation scheme by the EUT. The following plots show output signals.

Results:

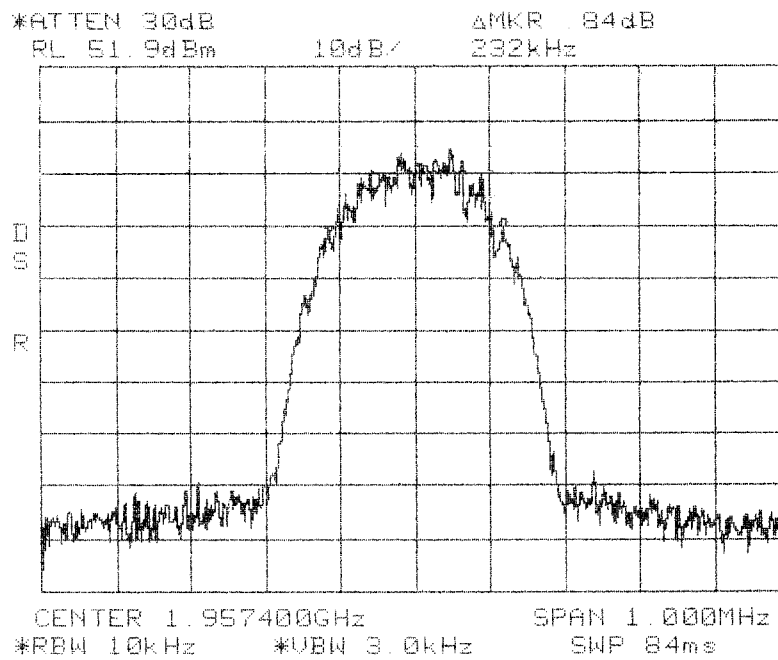
Pass (see plots)

Center: 1940.0 MHz
Span: 1 MHz
RBW/VBW: 10 kHz / 3 kHz



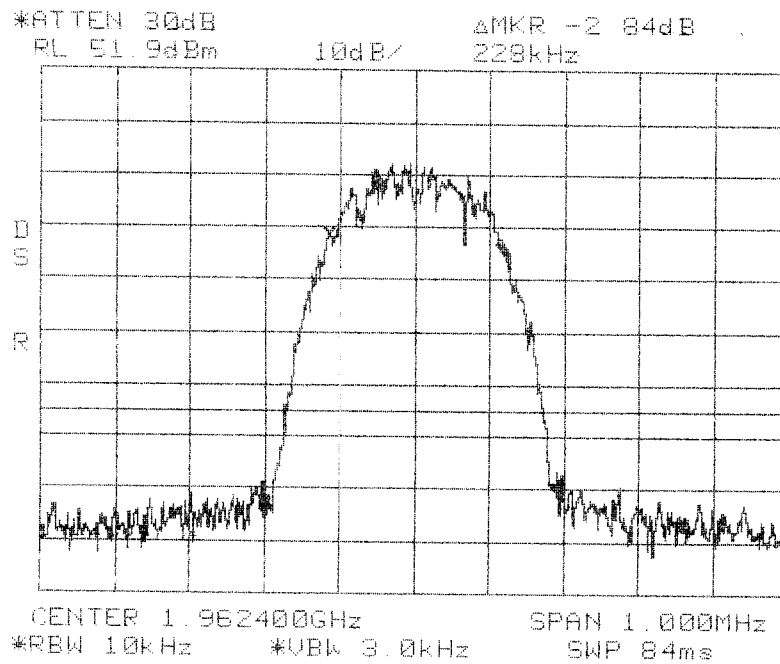
Occupied Bandwidth
GSM Out
PCS 1900 MHz
AD Band

Center: 1957.5 MHz
Span: 1 MHz
RBW/VBW: 10 kHz / 3 kHz



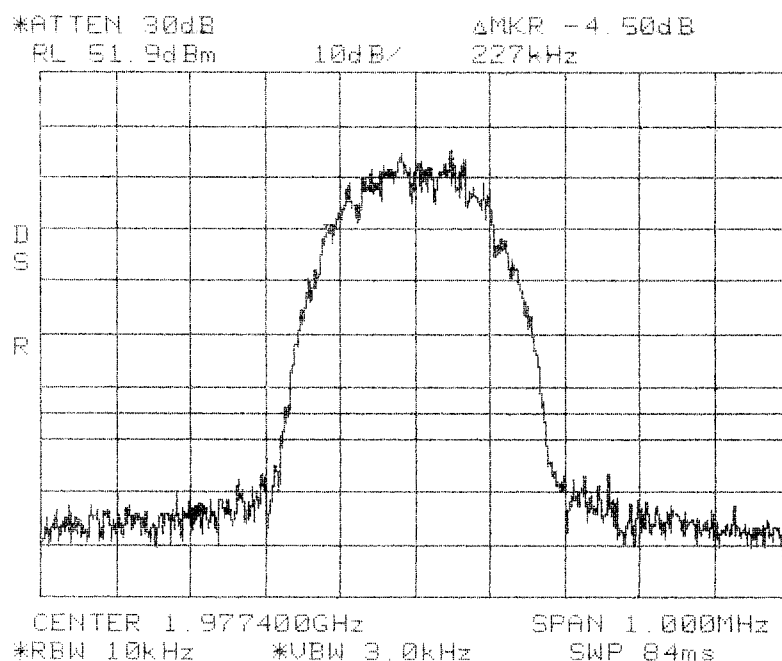
Occupied Bandwidth
GSM Out
PCS 1900 MHz
DBE Band

Center: 1962.5 MHz
Span: 1 MHz
RBW/VBW: 10 kHz / 3 kHz



Occupied Bandwidth
GSM Out
PCS 1900 MHz
BEF Band

Center: 1977.5 MHz
Span: 1 MHz
RBW/VBW: 10 kHz / 3 kHz



Occupied Bandwidth
GSM Out
PCS 1900 MHz
EFC Band

24.238 Emission Limits

The Emission limits measurements were performed at the following test location:

- - ADC facility (Conducted emissions)

ADC's Test equipment used:

Manufacturer	Model	Description	ADC Serial No.	Cal Due
Aeroflex	49-30-33	Attenuator	n/a	CNR
HP	HP8563E	Spectrum Analyzer	MC27690	6-22-06
HP	EPM-441A	Power Meter	MC27670	9-28-06

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

- - Wild River Lab Large Test Site (Radiated case emissions)

TÜV's Test equipment used:

Manufacturer	Model	Description	TUV asset ID	Cal Due
Electro-Metrics	EM-6917B	Biconicalog Periodic	3204	21 Oct 05
EMCO	3115	Ridge Guide Ant. 1-18 GHz	2075	24 Nov 05
Mini-Circuits	ZHL-1042J	Preamplifier	3961	Code B
Phase1 μ wave	SL18B4020	Preamplifier 1 – 18 GHz	3958	Code B
HP	8566B	Spectrum analyzer	8052	24 Mar 06
HP	85650A	Quasi-Peak Adapter	2681	03 Feb 06
HP	85662A	Analyzer Display	8051	24 Mar 06

Cal Code B = Calibration verification performed internally.

Emission Limits data on following pages:

Conducted Emission Limits Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGVs-431XXxSYS, DGVs-441XXxSYS,
DGVs-451XXxSYS, and DGVs-461XXxSYS

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 signal used is GSM. The different signals were input one at a time to the EUT. In all cases, the out of band emissions were less than -13dBm from the equation

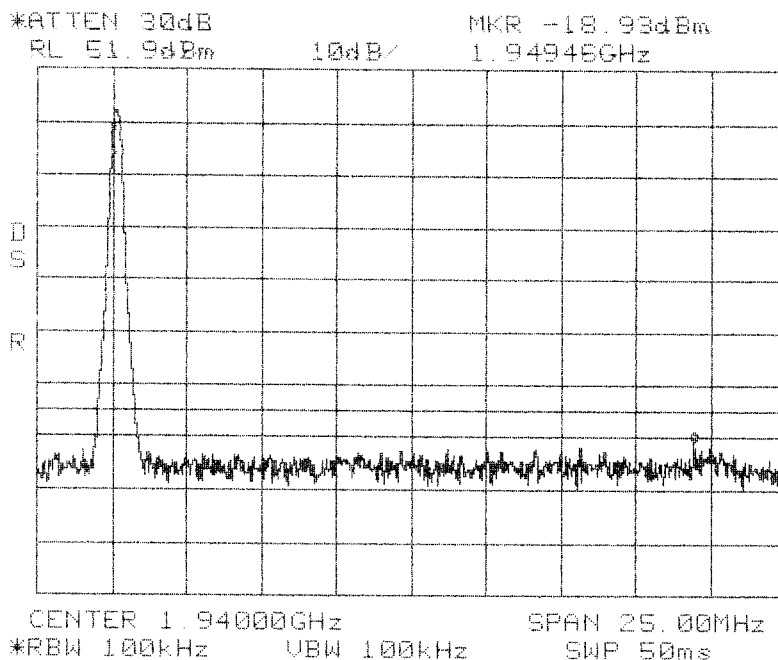
$$(19\text{dBm} - [43 + 10\log(0.08\text{W})])$$

Band edge compliance is also demonstrated using a GSM signal at the upper and lower limits of the band and a resolution bandwidth of 1 kHz.

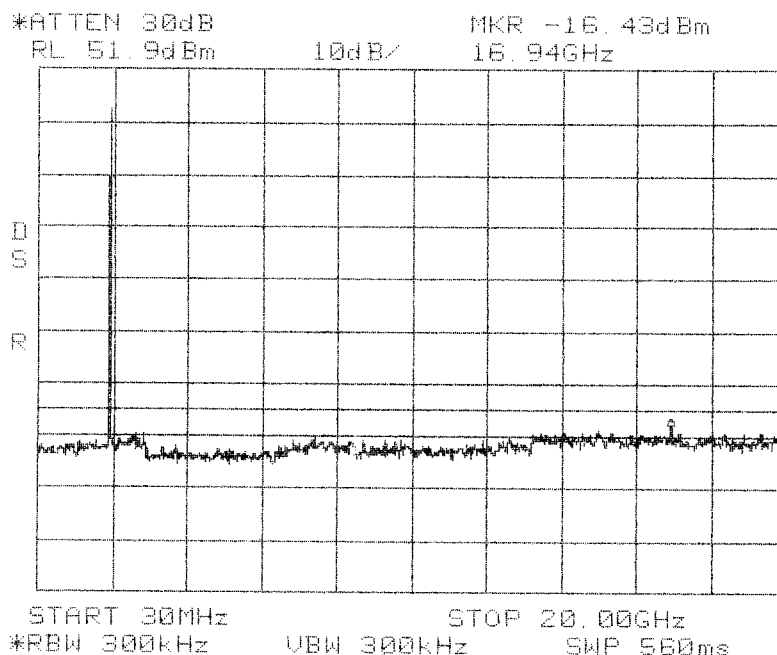
Results:

Pass (see plots)

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



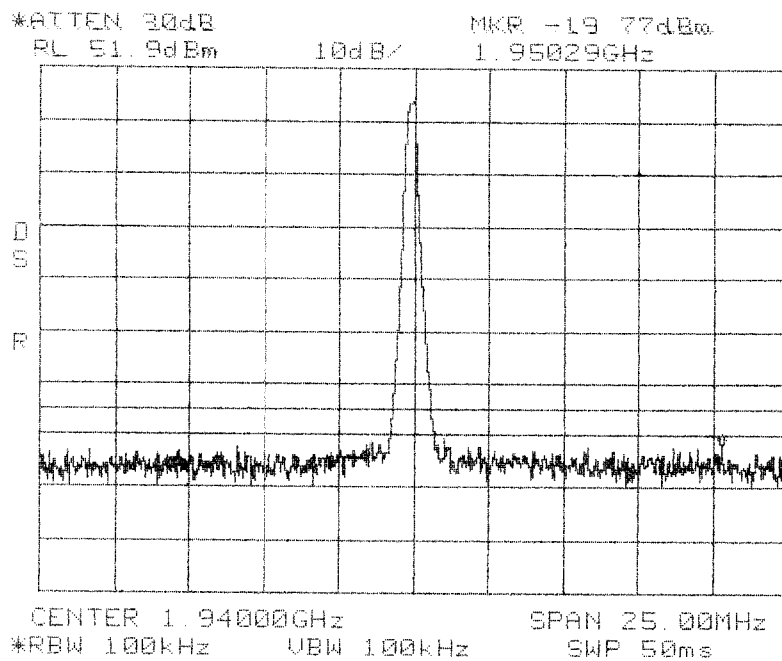
Conducted Emissions
Low
PCS 1900 MHz
AD Band



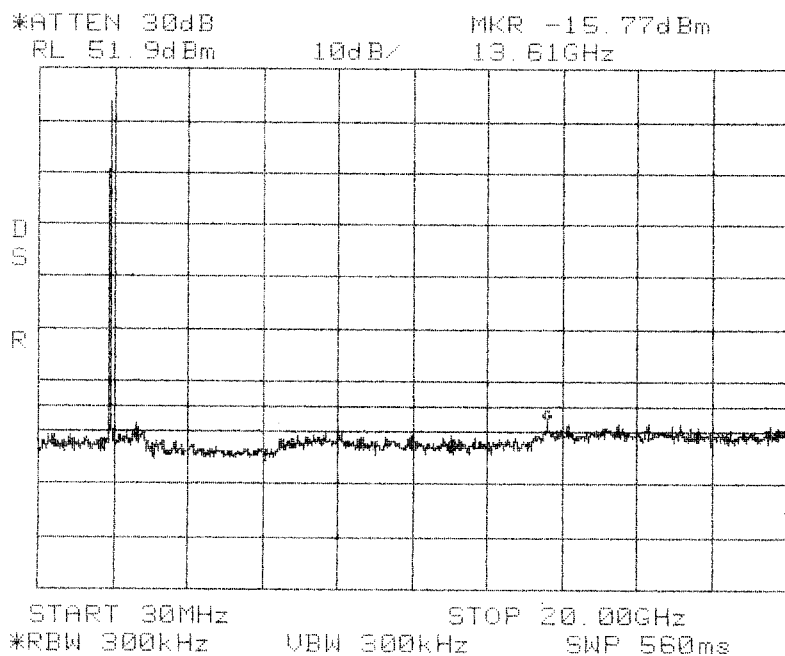
Conducted Emissions
Low
PCS 1900 MHz
AD Band

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



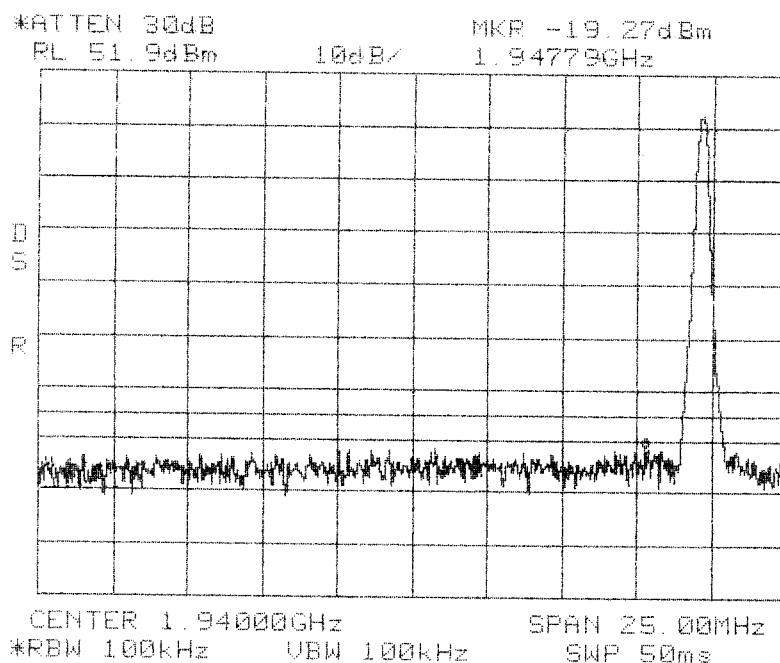
Conducted Emissions
Mid
PCS 1900 MHz
AD Band



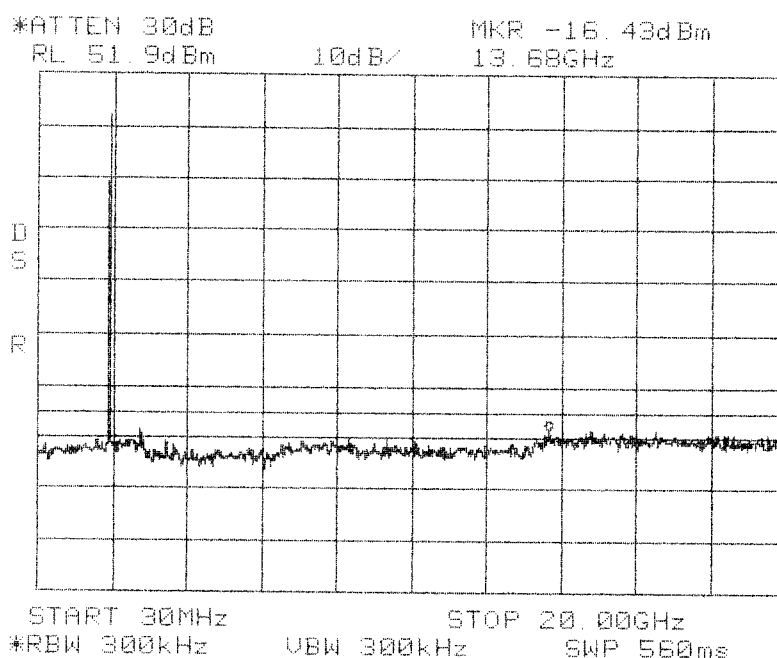
Conducted Emissions
Mid
PCS 1900 MHz
AD Band

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



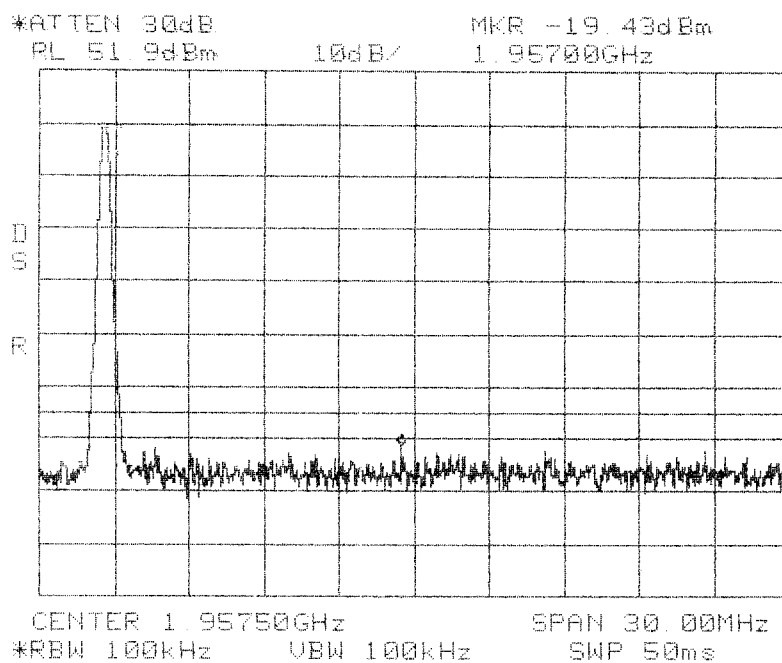
**Conducted Emissions
High
PCS 1900 MHz
AD Band**



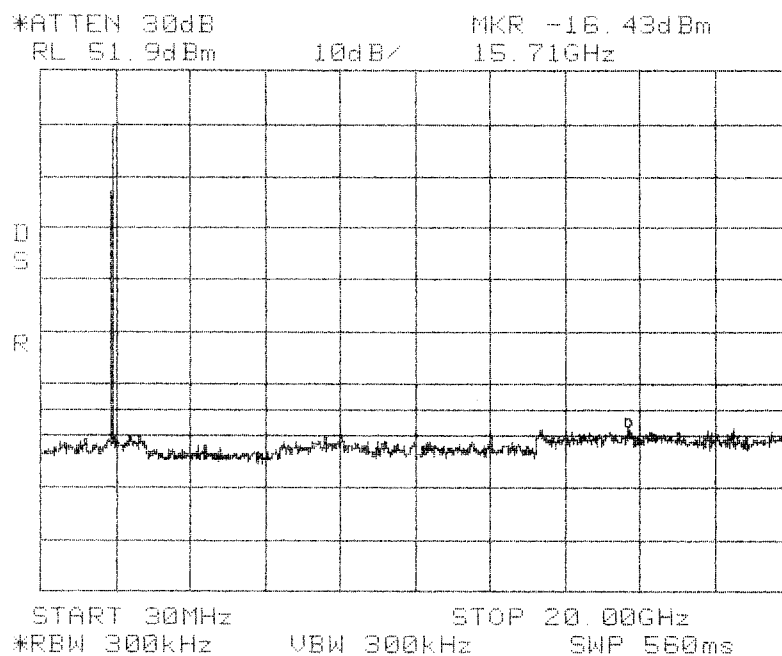
**Conducted Emissions
High
PCS 1900 MHz
AD Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



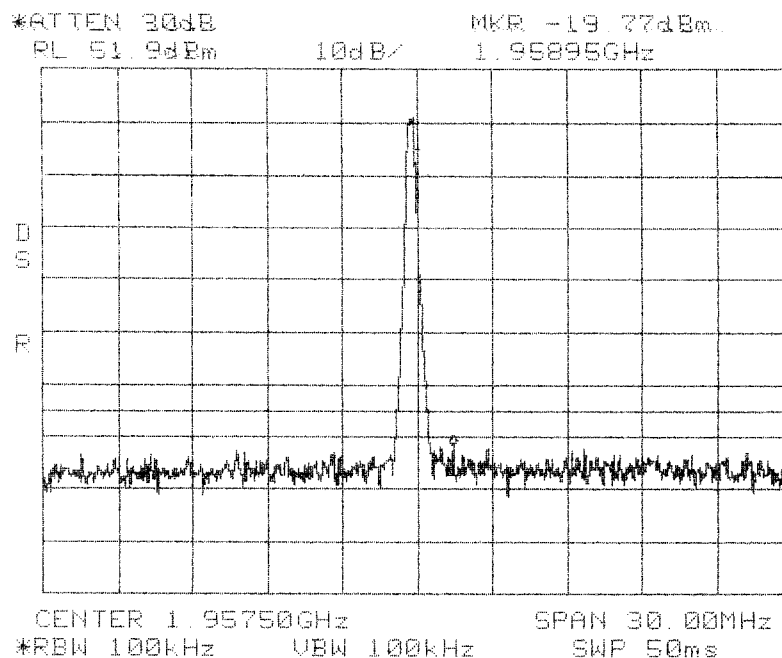
Conducted Emissions
Low
PCS 1900 MHz
DBE Band



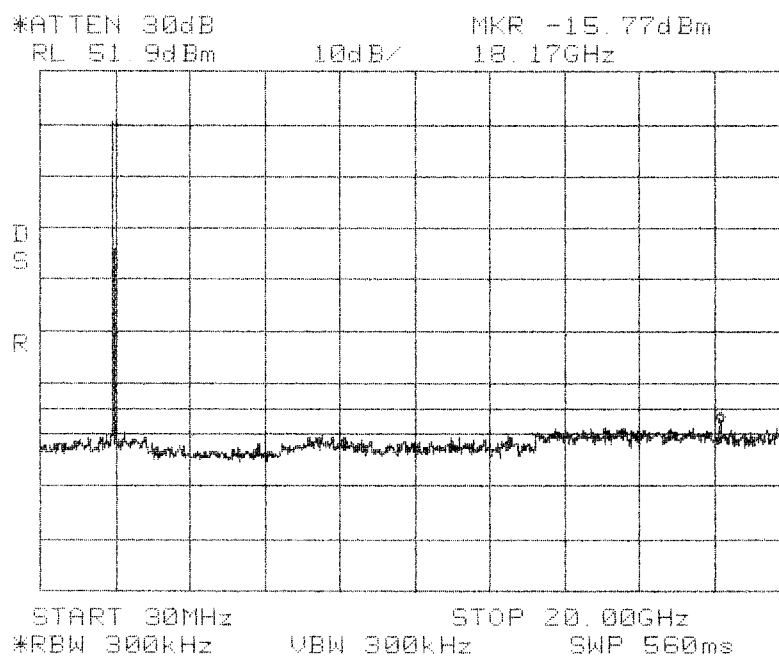
Conducted Emissions
Low
PCS 1900 MHz
DBE Band

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



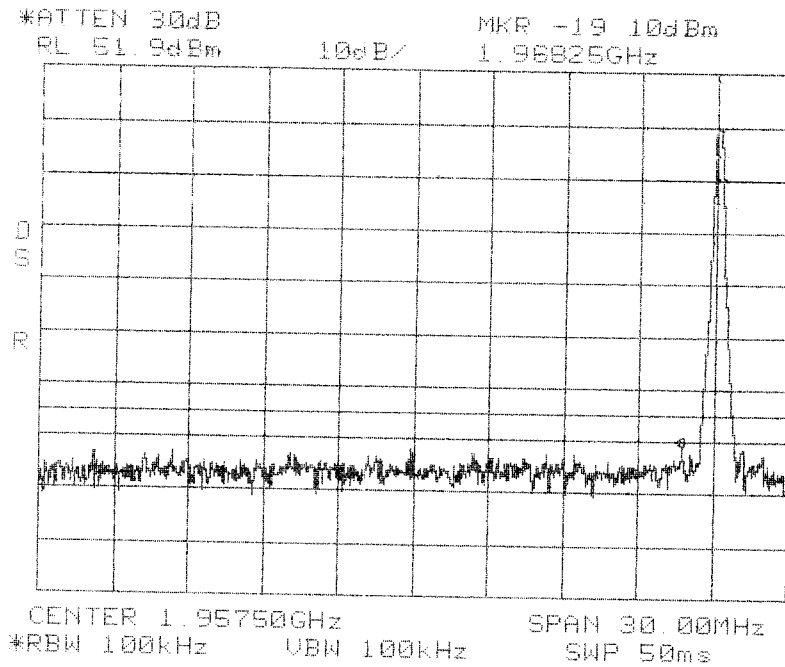
**Conducted Emissions
Mid
PCS 1900 MHz
DBE Band**



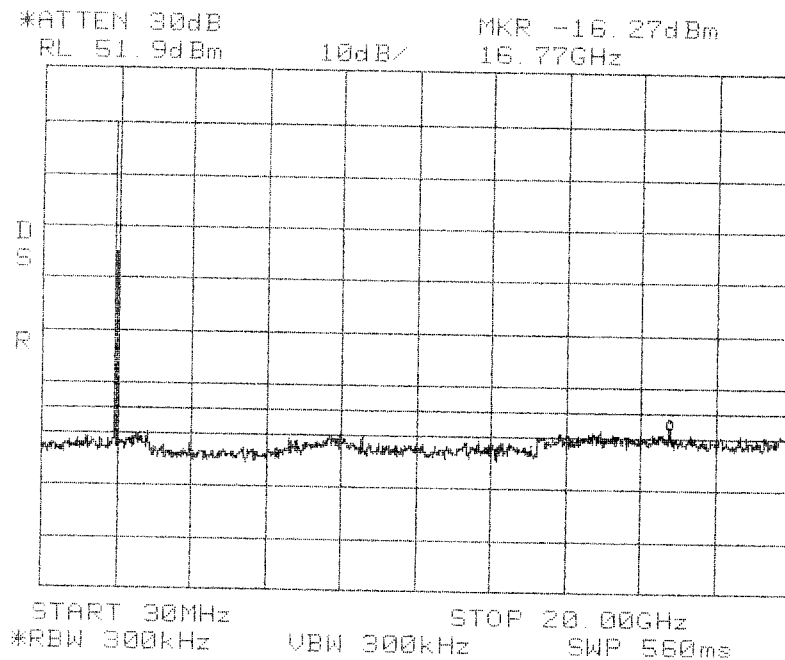
**Conducted Emissions
Mid
PCS 1900 MHz
DBE Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



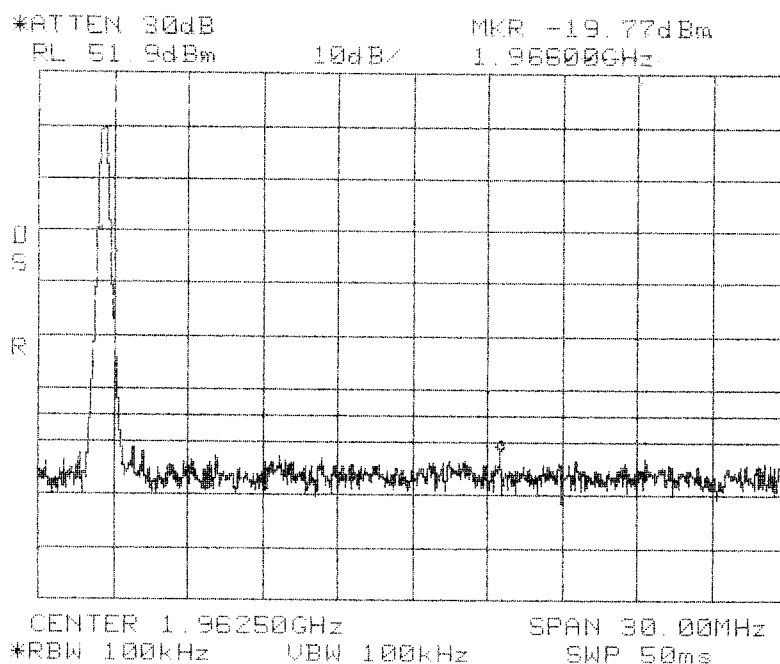
**Conducted Emissions
High
PCS 1900 MHz
DBE Band**



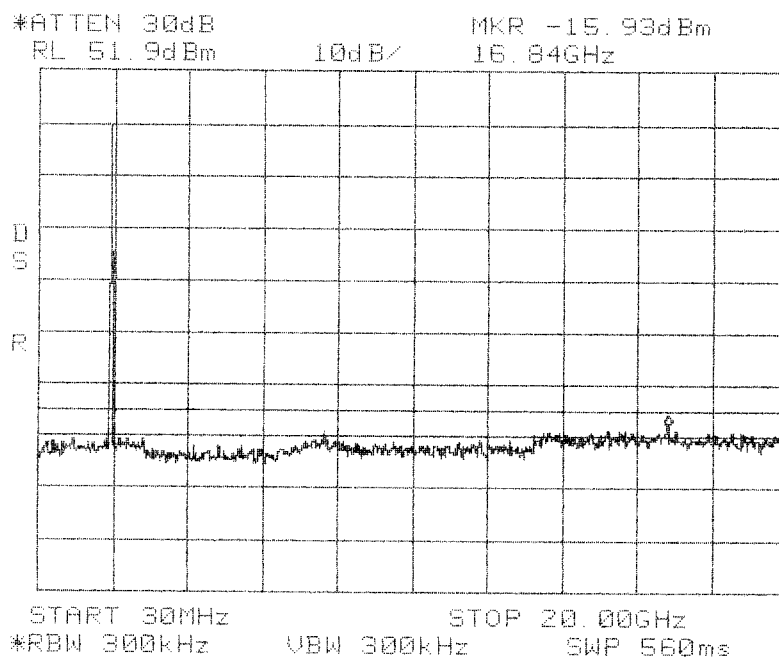
**Conducted Emissions
High
PCS 1900 MHz
DBE Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



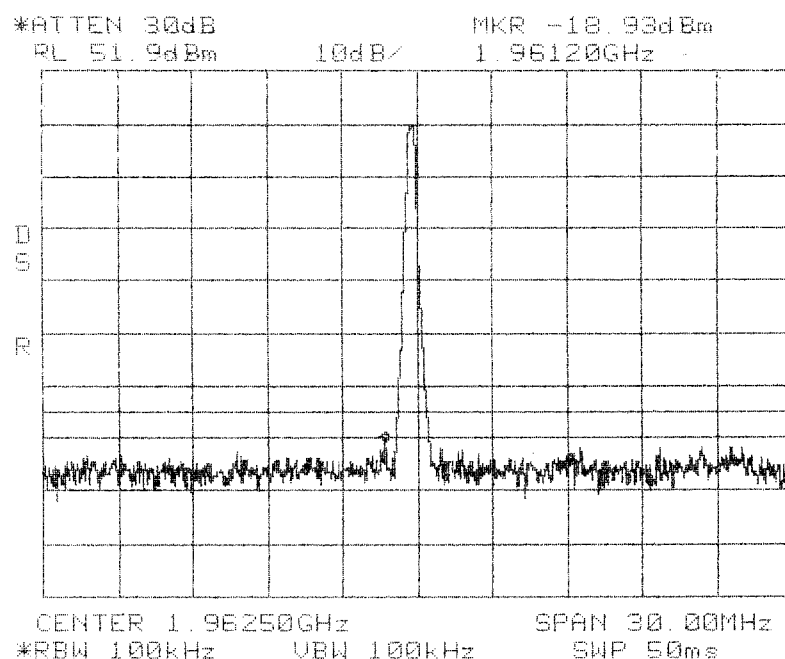
Conducted Emissions
Low
PCS 1900 MHz
BEF Band



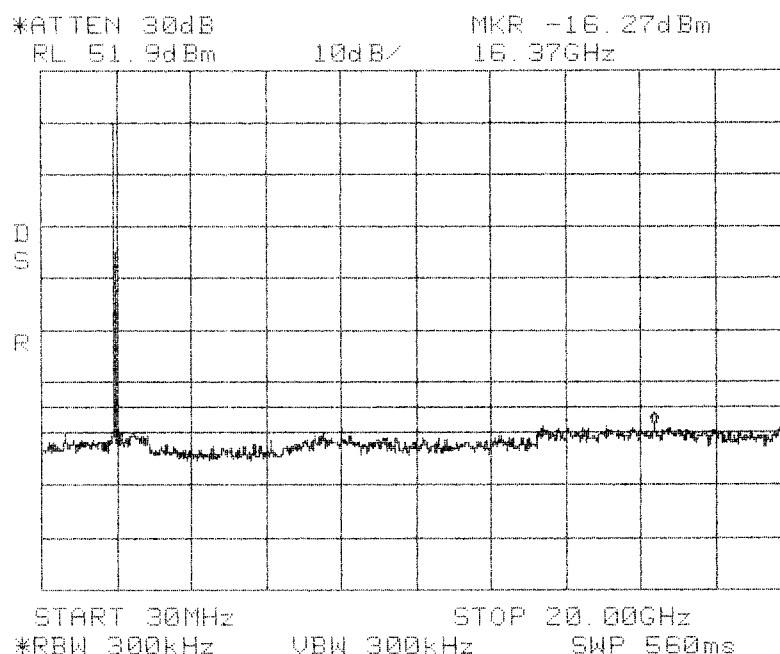
Conducted Emissions
Low
PCS 1900 MHz
BEF Band

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



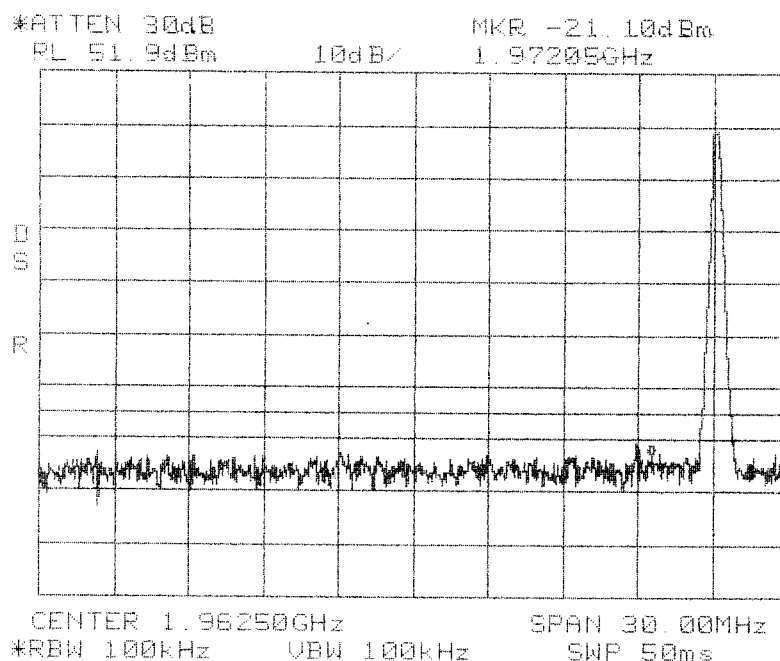
Conducted Emissions
Mid
PCS 1900 MHz
BEF Band



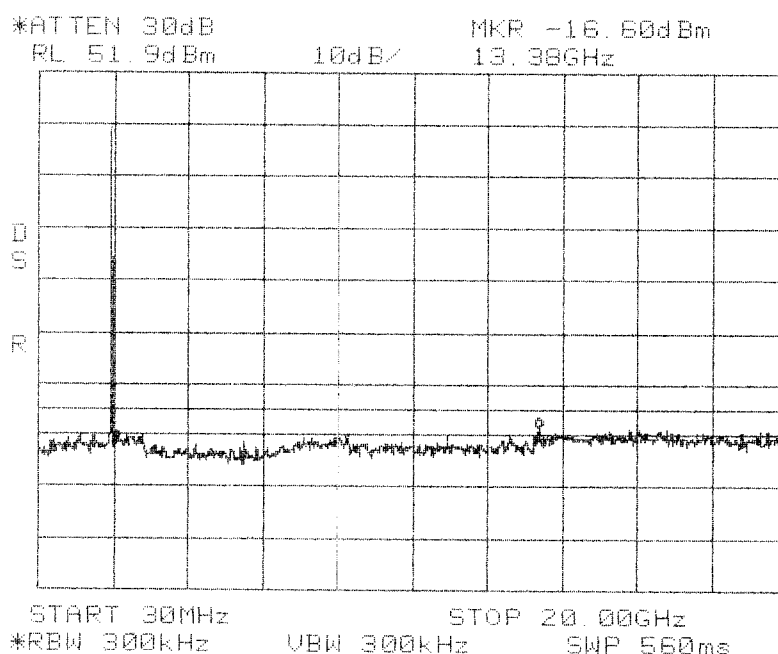
Conducted Emissions
Mid
PCS 1900 MHz
BEF Band

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



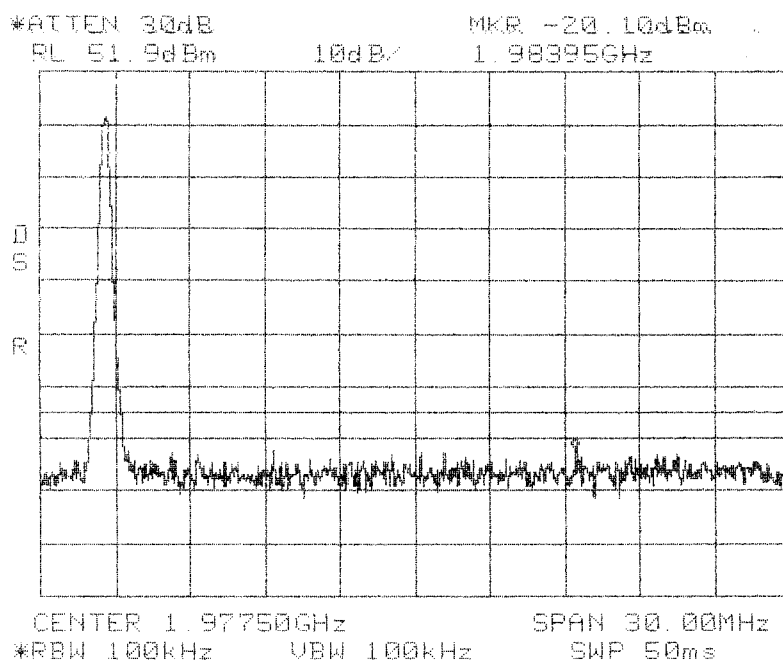
**Conducted Emissions
High
PCS 1900 MHz
BEF Band**



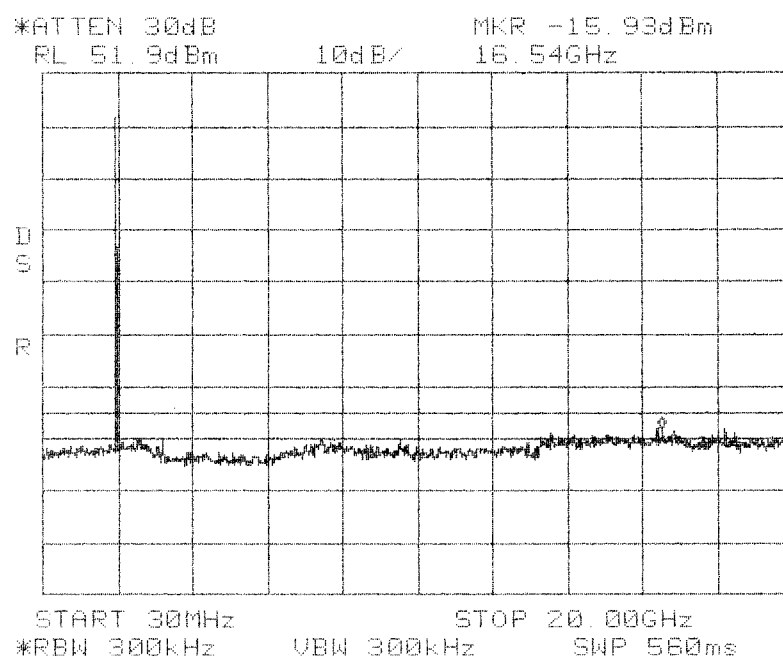
**Conducted Emissions
High
PCS 1900 MHz
BEF Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



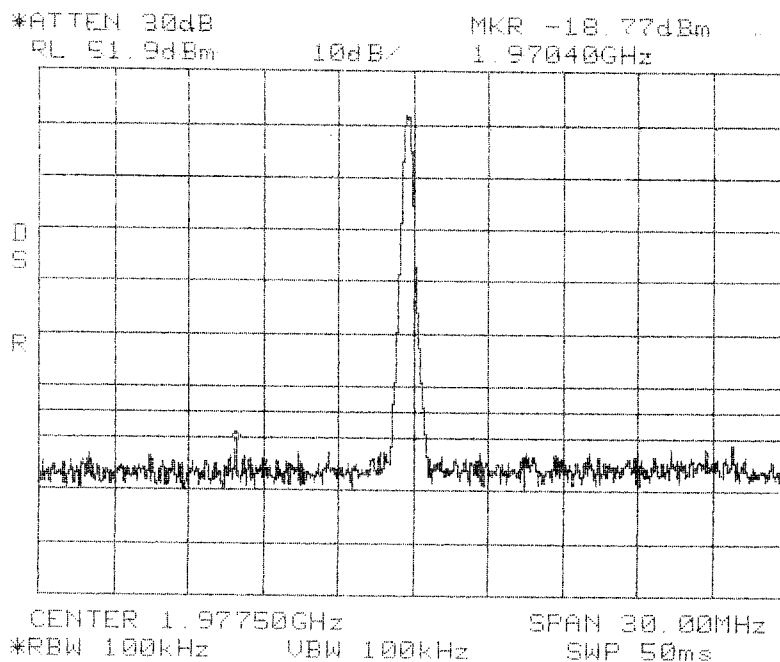
Conducted Emissions
Low
PCS 1900 MHz
EFC Band



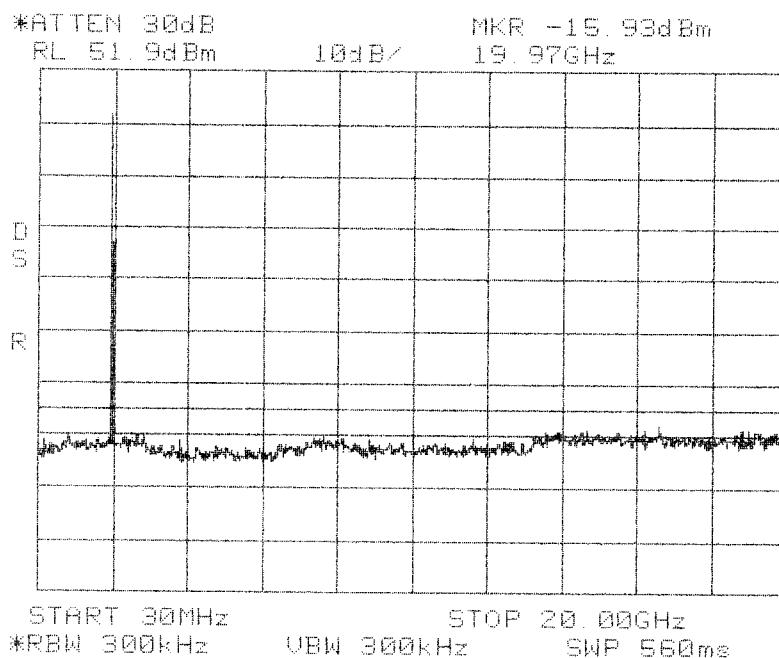
Conducted Emissions
Low
PCS 1900 MHz
EFC Band

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



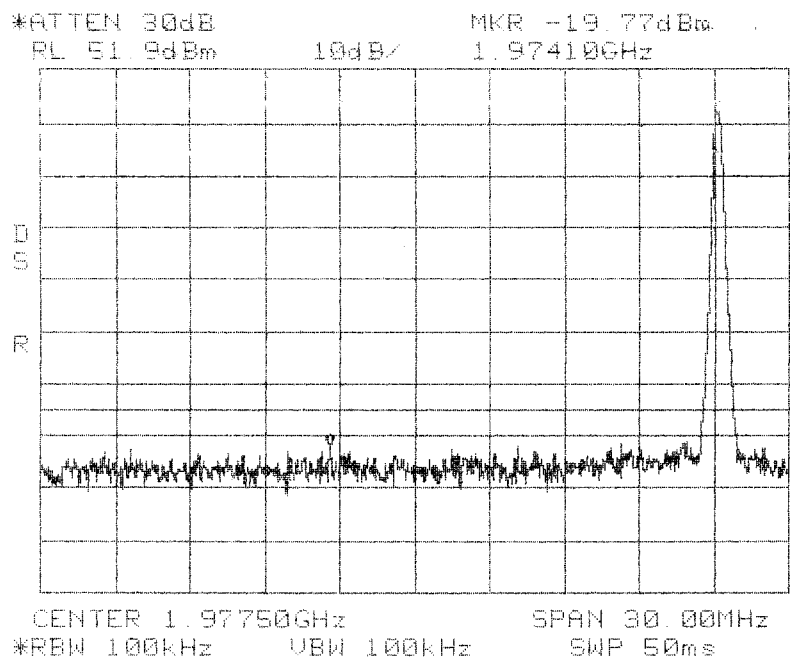
Conducted Emissions
Mid
PCS 1900 MHz
EFC Band



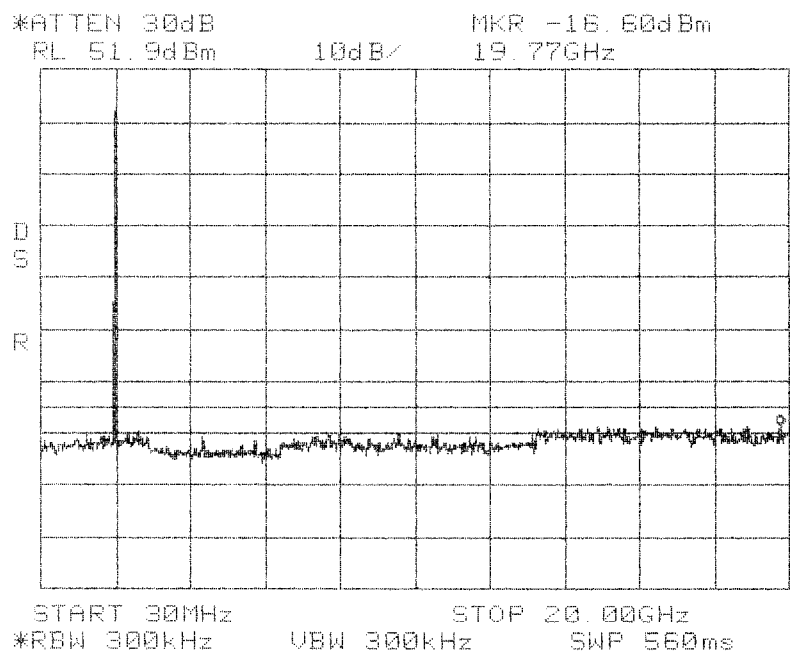
Conducted Emissions
Mid
PCS 1900 MHz
EFC Band

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

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



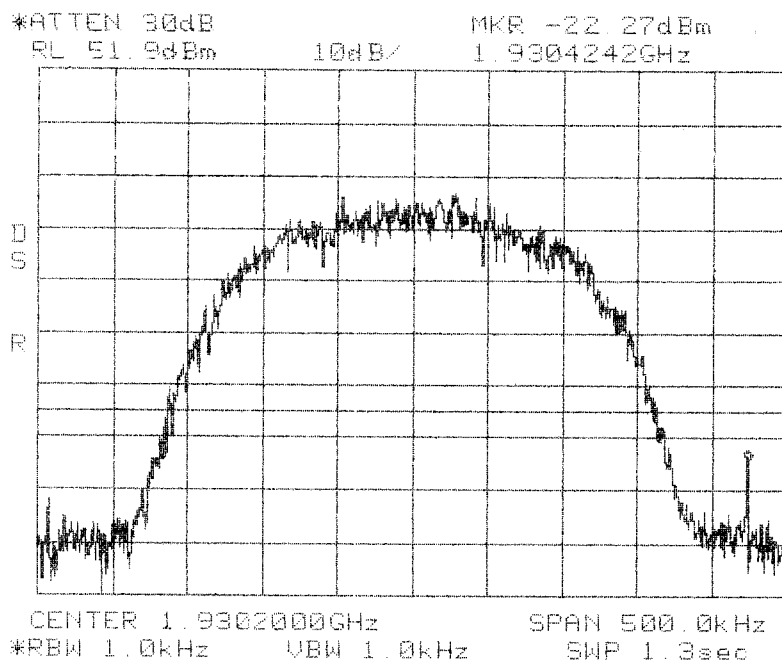
**Conducted Emissions
High
PCS 1900 MHz
EFC Band**



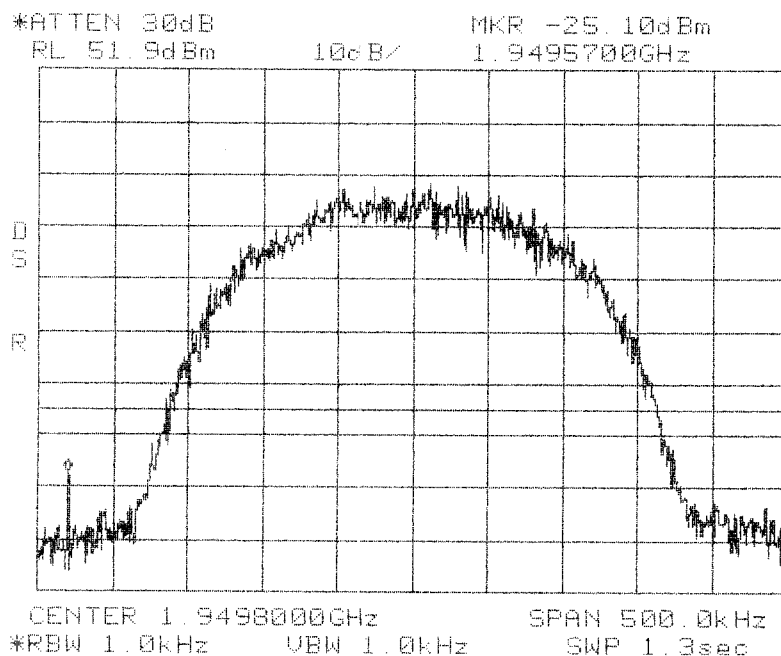
**Conducted Emissions
High
PCS 1900 MHz
EFC Band**

Span: 30 MHz to 20 GHz
RBW/VBW: 300 kHz

Center: 1930.2 MHz
Span: 500 kHz
RBW/VBW: 1 kHz



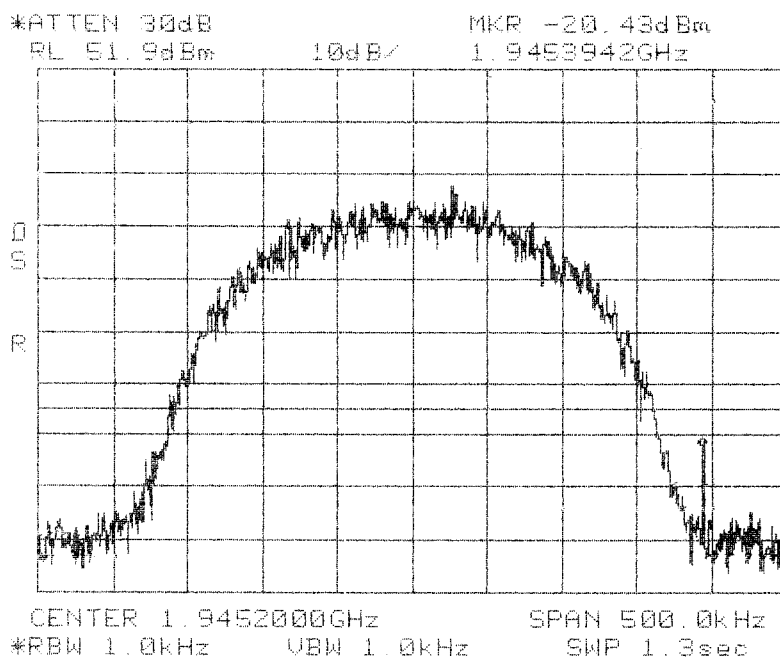
**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
AD Band**



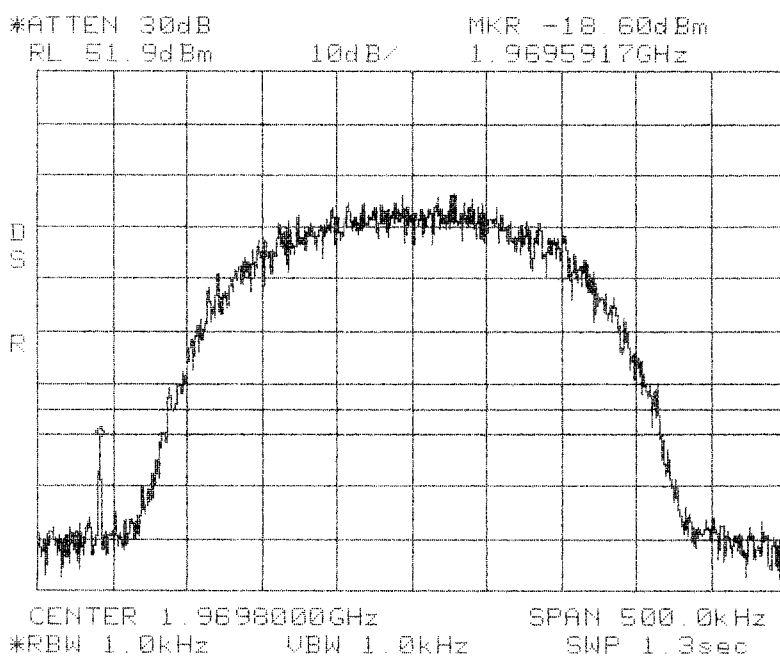
**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
AD Band**

Center: 1949.8 MHz
Span: 500 kHz
RBW/VBW: 1 kHz

Center: 1945.2 MHz
Span: 500 kHz
RBW/VBW: 1 kHz



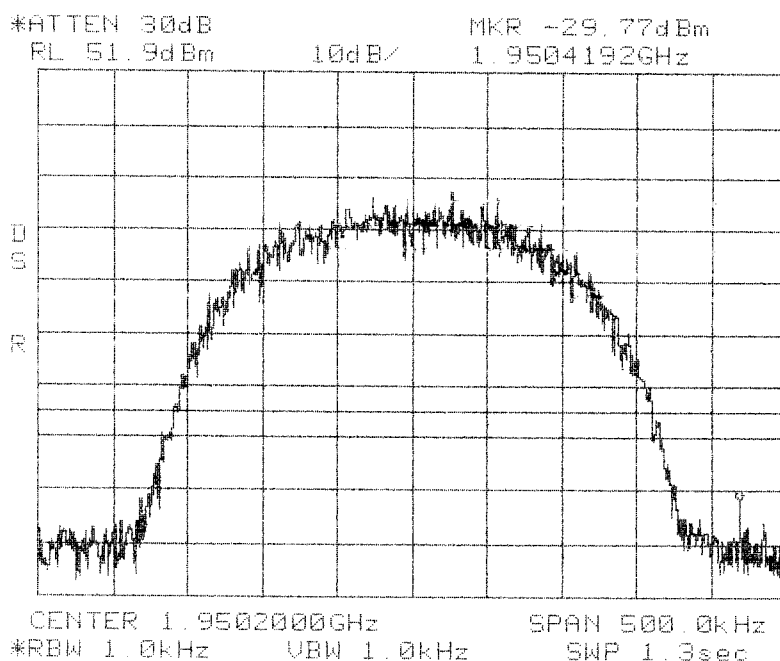
**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
DBE Band**



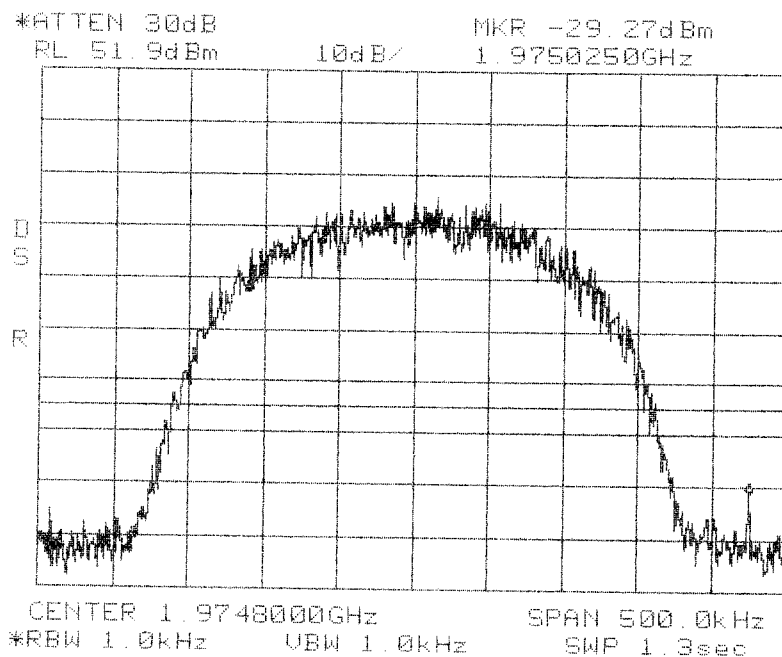
**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
DBE Band**

Center: 1969.8 MHz
Span: 500 kHz
RBW/VBW: 1 kHz

Center: 1950.2 MHz
Span: 500 kHz
RBW/VBW: 1 kHz



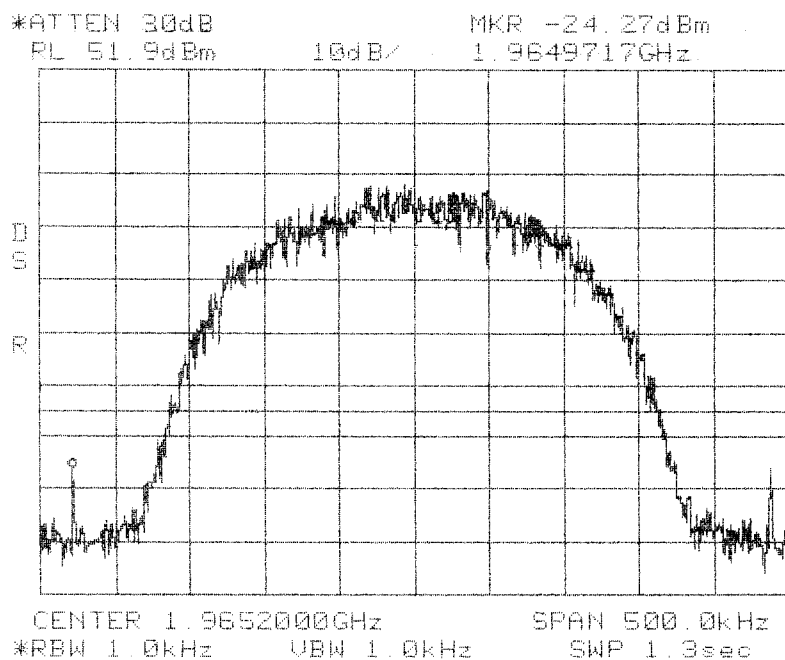
**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
BEF Band**



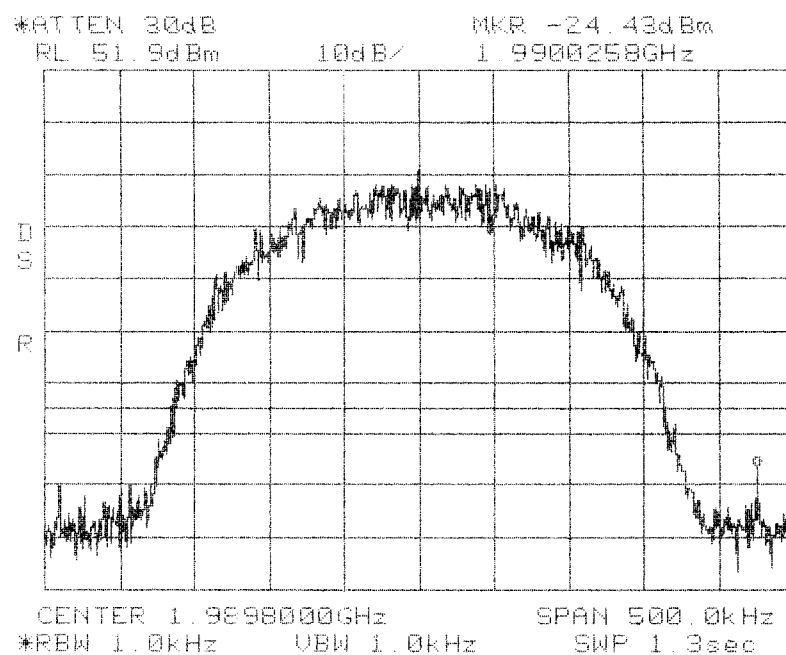
**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
BEF Band**

Center: 1974.8 MHz
Span: 500 kHz
RBW/VBW: 1 kHz

Center: 1965.2 MHz
Span: 500 kHz
RBW/VBW: 1 kHz



**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
EFC Band**



**Conducted Emissions
Band Edge
GSM
PCS 1900 MHz
EFC Band**

Center: 1989.8 MHz
Span: 500 kHz
RBW/VBW: 1 kHz

RADIATED EMISSIONS



Test Report #: WC503860 Run 1 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 1 of 6

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz
30.0 MHz	37.25 Qp	0.7 / 20.5 / 27.4 / 0.0	31.05	V / 1.00 / 0	-55.15	n/a
55.928 MHz	45.77 Qp	0.98 / 11.61 / 27.0 / 0.0	31.36	V / 1.00 / 0	-54.84	n/a
67.988 MHz	43.65 Qp	1.06 / 9.36 / 27.0 / 0.0	27.08	V / 1.00 / 0	-59.12	n/a
70.994 MHz	41.9 Qp	1.1 / 8.78 / 27.0 / 0.0	24.78	V / 1.00 / 0	-61.42	n/a
80.006 MHz	46.25 Qp	1.2 / 7.25 / 26.9 / 0.0	27.8	V / 1.00 / 0	-58.4	n/a
109.678 MHz	38.9 Qp	1.4 / 8.4 / 27.05 / 0.0	21.65	V / 1.00 / 0	-64.55	n/a
121.918 MHz	38.85 Qp	1.51 / 8.0 / 27.09 / 0.0	21.27	V / 1.00 / 0	-64.93	n/a
142.006 MHz	50.65 Qp	1.63 / 8.76 / 26.97 / 0.0	34.07	V / 1.00 / 0	-52.13	n/a
198.525 MHz	37.2 Qp	2.0 / 10.0 / 27.1 / 0.0	22.1	V / 1.00 / 0	-64.1	n/a
199.005 MHz	36.65 Qp	2.0 / 10.0 / 27.1 / 0.0	21.55	V / 1.00 / 0	-64.65	n/a
214.749 MHz	36.95 Qp	2.02 / 10.27 / 27.12 / 0.0	22.12	V / 1.00 / 0	-64.08	n/a
212.997 MHz	33.1 Qp	2.01 / 10.22 / 27.11 / 0.0	18.22	V / 1.00 / 0	-67.98	n/a
376.885 MHz	29.5 Qp	2.84 / 14.62 / 27.67 / 0.0	19.28	V / 1.00 / 0	-66.92	n/a
397.915 MHz	34.2 Qp	2.91 / 15.37 / 27.81 / 0.0	24.67	V / 1.00 / 0	-61.53	n/a
142 MHz maxed:						
142.006 MHz	51.41 Qp	1.63 / 8.76 / 26.97 / 0.0	34.83	V / 1.00 / 187	-51.37	n/a
141.976 MHz	52.13 Qp	1.63 / 8.76 / 26.97 / 0.0	35.54	V / 1.00 / 187	-50.66	n/a
67.988 MHz	43.55 Qp	1.06 / 9.36 / 27.0 / 0.0	26.98	V / 1.00 / 187	-59.22	n/a
80.006 MHz	47.95 Qp	1.2 / 7.25 / 26.9 / 0.0	29.5	V / 1.00 / 187	-56.7	n/a
109.678 MHz	47.1 Qp	1.4 / 8.4 / 27.05 / 0.0	29.85	V / 1.00 / 187	-56.35	n/a
212.997 MHz	35.9 Qp	2.01 / 10.22 / 27.11 / 0.0	21.02	V / 1.00 / 187	-65.18	n/a
104.321 MHz	46.25 Qp	1.4 / 8.37 / 27.0 / 0.0	29.02	V / 1.00 / 187	-57.18	n/a
109.185 MHz	47.0 Qp	1.4 / 8.4 / 27.05 / 0.0	29.75	V / 1.00 / 187	-56.45	n/a
109.395 MHz	44.55 Qp	1.4 / 8.4 / 27.05 / 0.0	27.3	V / 1.00 / 187	-58.9	n/a
109.678 MHz	47.75 Qp	1.4 / 8.4 / 27.05 / 0.0	30.5	V / 1.00 / 187	-55.7	n/a
109.887 MHz	45.05 Qp	1.4 / 8.4 / 27.06 / 0.0	27.79	V / 1.00 / 187	-58.41	n/a
110.169 MHz	47.1 Qp	1.4 / 8.4 / 27.06 / 0.0	29.84	V / 1.00 / 187	-56.36	n/a

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RADIATED EMISSIONS



Test Report #: WC503860 Run 1 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 2 of 6

List of measurements for run #: 1

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz
200.007 MHz	36.0 Qp	2.0 / 10.0 / 27.1 / 0.0	20.9	V / 1.00 / 187	-65.3	n/a
200.439 MHz	42.0 Qp	2.0 / 10.0 / 27.1 / 0.0	26.9	V / 1.00 / 187	-59.3	n/a
212.997 MHz	37.75 Qp	2.01 / 10.22 / 27.11 / 0.0	22.87	V / 1.00 / 270	-63.33	n/a
121.918 MHz	39.25 Qp	1.51 / 8.0 / 27.09 / 0.0	21.67	V / 1.00 / 90	-64.53	n/a
376.885 MHz	31.7 Qp	2.84 / 14.62 / 27.67 / 0.0	21.48	V / 1.00 / 90	-64.72	n/a
67.988 MHz	44.15 Qp	1.06 / 9.36 / 27.0 / 0.0	27.58	V / 3.00 / 180	-58.62	n/a
70.994 MHz	42.5 Qp	1.1 / 8.78 / 27.0 / 0.0	25.38	V / 3.00 / 180	-60.82	n/a
212.997 MHz	36.7 Qp	2.01 / 10.22 / 27.11 / 0.0	21.82	H / 3.00 / 0	-64.38	n/a
Moved cables to maximize emission level at 142 MHz. No higher levels noted.						
2.84 GHz	46.86 Av	4.6 / 29.62 / 48.37 / 0.0	32.71	V / 1.00 / 175	n/a	-53.49
2.84 GHz maxed:						
2.84 GHz	60.73 Av	4.6 / 29.62 / 48.37 / 0.0	46.58	V / 3.38 / 181	n/a	-39.62
2.84 GHz maxed:						
2.84 GHz	67.93 Av	4.6 / 29.62 / 48.37 / 0.0	53.78	H / 1.18 / 200	n/a	-32.42
2.982 GHz	47.38 Av	4.74 / 30.03 / 48.19 / 0.0	33.95	H / 1.18 / 200	n/a	-52.25
4.402 GHz	47.95 Av	6.1 / 32.33 / 45.82 / 0.0	40.55	H / 1.00 / 201	n/a	-45.65
No further EUT emissions detected above noise floor. Noise floor measurements:						
5.0 GHz	39.25 Av	6.5 / 33.4 / 44.64 / 0.0	34.51	H / 1.00 / 201	n/a	-51.69
7.0 GHz	38.4 Av	8.1 / 35.36 / 45.8 / 0.0	36.06	H / 1.00 / 201	n/a	-50.14
8.0 GHz	38.43 Av	8.43 / 36.91 / 45.29 / 0.0	38.48	H / 1.00 / 201	n/a	-47.72
10.0 GHz	38.56 Av	9.71 / 38.07 / 44.95 / 0.0	41.39	H / 1.00 / 201	n/a	-44.81
9.0 GHz	37.95 Av	9.28 / 37.34 / 44.57 / 0.0	40.01	H / 1.00 / 201	n/a	-46.19
6.0 GHz	38.31 Av	7.1 / 34.36 / 45.74 / 0.0	34.03	H / 1.00 / 201	n/a	-52.17

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RADIATED EMISSIONS



Test Report #: WC503860 Run 1 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat Page: 3 of 6

Substitution method was performed at 709 MHz (highest emission measurement of run 3) to determine the ERP
 Measured field strength, final level = 59.4 dBμV/m
 Matching signal generator level = -33.2 dBm
 Cable loss = 0.4 dB
 Dipole antenna gain = -6.2
 $-33.2 \text{ dBm} + 0.4 \text{ dB} + -6.2 = -39.0 \text{ dBm ERP}$
 Correction factor from field strength to ERP = 59.4 dBμV/m - -39 dBm = -98.4dB

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

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz
141.976 MHz	52.13 Qp	1.63 / 8.76 / 26.97 / 0.0	35.54	V / 1.00 / 187	-50.66
55.928 MHz	45.77 Qp	0.98 / 11.61 / 27.0 / 0.0	31.36	V / 1.00 / 0	-54.84
30.0 MHz	37.25 Qp	0.7 / 20.5 / 27.4 / 0.0	31.05	V / 1.00 / 0	-55.15
109.678 MHz	47.75 Qp	1.4 / 8.4 / 27.05 / 0.0	30.5	V / 1.00 / 187	-55.7
110.169 MHz	47.1 Qp	1.4 / 8.4 / 27.06 / 0.0	29.84	V / 1.00 / 187	-56.36
109.185 MHz	47.0 Qp	1.4 / 8.4 / 27.05 / 0.0	29.75	V / 1.00 / 187	-56.45
80.006 MHz	47.95 Qp	1.2 / 7.25 / 26.9 / 0.0	29.5	V / 1.00 / 187	-56.7
104.321 MHz	46.25 Qp	1.4 / 8.37 / 27.0 / 0.0	29.02	V / 1.00 / 187	-57.18
109.887 MHz	45.05 Qp	1.4 / 8.4 / 27.06 / 0.0	27.79	V / 1.00 / 187	-58.41
67.988 MHz	44.15 Qp	1.06 / 9.36 / 27.0 / 0.0	27.58	V / 3.00 / 180	-58.62
109.395 MHz	44.55 Qp	1.4 / 8.4 / 27.05 / 0.0	27.3	V / 1.00 / 187	-58.9
200.439 MHz	42.0 Qp	2.0 / 10.0 / 27.1 / 0.0	26.9	V / 1.00 / 187	-59.3
70.994 MHz	42.5 Qp	1.1 / 8.78 / 27.0 / 0.0	25.38	V / 3.00 / 180	-60.82
397.915 MHz	34.2 Qp	2.91 / 15.37 / 27.81 / 0.0	24.67	V / 1.00 / 0	-61.53
212.997 MHz	37.75 Qp	2.01 / 10.22 / 27.11 / 0.0	22.87	V / 1.00 / 270	-63.33
214.749 MHz	36.95 Qp	2.02 / 10.27 / 27.12 / 0.0	22.12	V / 1.00 / 0	-64.08
198.525 MHz	37.2 Qp	2.0 / 10.0 / 27.1 / 0.0	22.1	V / 1.00 / 0	-64.1
121.918 MHz	39.25 Qp	1.51 / 8.0 / 27.09 / 0.0	21.67	V / 1.00 / 90	-64.53
199.005 MHz	36.65 Qp	2.0 / 10.0 / 27.1 / 0.0	21.55	V / 1.00 / 0	-64.65

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Signature File No. WC503860, Page 36 of 91

RADIATED EMISSIONS



Test Report #: WC503860 Run 1 Test Area: LTS
EUT Model #: (see notes) Date: 7/29/2005
EUT Serial #: n/a EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C
Test Method: FCC Air Pressure: 99.0 kPa
Customer: ADC Telecomm Rel. Humidity: 40.0 %
EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 4 of 6

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

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz
376.885 MHz	31.7 Qp	2.84 / 14.62 / 27.67 / 0.0	21.48	V / 1.00 / 90	-64.72
200.007 MHz	36.0 Qp	2.0 / 10.0 / 27.1 / 0.0	20.9	V / 1.00 / 187	-65.3

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File No. WC503860, Page 37 of 91

RADIATED EMISSIONS



Test Report #: WC503860 Run 1 Test Area: LTS
EUT Model #: (see notes) Date: 7/29/2005
EUT Serial #: n/a EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C
Test Method: FCC Air Pressure: 99.0 kPa
Customer: ADC Telecomm Rel. Humidity: 40.0 %
EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 5 of 6

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

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 -13dBm >1ghz
2.84 GHz	67.93 Av	4.6 / 29.62 / 48.37 / 0.0	53.78	H / 1.18 / 200	-32.42
10.0 GHz	38.56 Av	9.71 / 38.07 / 44.95 / 0.0	41.39	H / 1.00 / 201	-44.81
4.402 GHz	47.95 Av	6.1 / 32.33 / 45.82 / 0.0	40.55	H / 1.00 / 201	-45.65
9.0 GHz	37.95 Av	9.28 / 37.34 / 44.57 / 0.0	40.01	H / 1.00 / 201	-46.19
8.0 GHz	38.43 Av	8.43 / 36.91 / 45.29 / 0.0	38.48	H / 1.00 / 201	-47.72
7.0 GHz	38.4 Av	8.1 / 35.36 / 45.8 / 0.0	36.06	H / 1.00 / 201	-50.14
5.0 GHz	39.25 Av	6.5 / 33.4 / 44.64 / 0.0	34.51	H / 1.00 / 201	-51.69
6.0 GHz	38.31 Av	7.1 / 34.36 / 45.74 / 0.0	34.03	H / 1.00 / 201	-52.17
2.982 GHz	47.38 Av	4.74 / 30.03 / 48.19 / 0.0	33.95	H / 1.18 / 200	-52.25

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by: G. Jakubowski

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RADIATED EMISSIONS



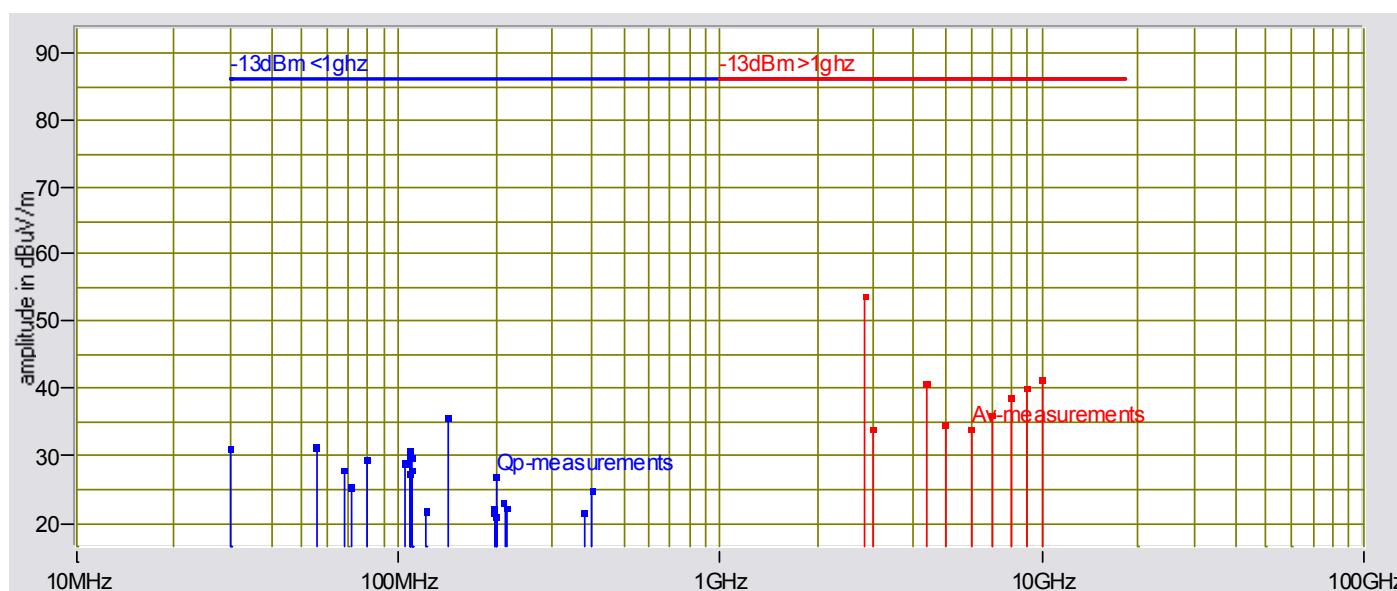
Test Report #: WC503860 Run 1 Test Area: LTS
EUT Model #: (see notes) Date: 7/29/2005
EUT Serial #: n/a EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C
Test Method: FCC Air Pressure: 99.0 kPa
Customer: ADC Telecomm Rel. Humidity: 40.0 %
EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 6 of 6

Graph:



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File No. WC503860, Page 39 of 91

RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 1 of 14

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
AD Configuration:						
30.0 MHz	39.8 Qp	0.42 / 20.3 / 27.4 / 0.0	33.12	H / 1.00 / 0	-53.08	n/a
48.6 MHz	43.1 Qp	0.6 / 14.59 / 27.1 / 0.0	31.19	H / 1.00 / 0	-55.01	n/a
69.9 MHz	42.4 Qp	0.7 / 9.29 / 27.0 / 0.0	25.39	H / 1.00 / 0	-60.81	n/a
93.48 MHz	48.1 Qp	0.82 / 8.46 / 26.92 / 0.0	30.46	H / 1.00 / 0	-55.74	n/a
109.656 MHz	53.7 Qp	0.85 / 9.33 / 27.05 / 0.0	36.83	H / 1.00 / 0	-49.37	n/a
109.92 MHz	51.75 Qp	0.86 / 9.34 / 27.06 / 0.0	34.89	H / 1.00 / 0	-51.31	n/a
110.154 MHz	53.6 Qp	0.86 / 9.35 / 27.06 / 0.0	36.75	H / 1.00 / 0	-49.45	n/a
127.578 MHz	48.95 Qp	0.97 / 8.53 / 27.03 / 0.0	31.43	H / 1.00 / 0	-54.77	n/a
152.478 MHz	56.65 Qp	1.0 / 9.08 / 26.93 / 0.0	39.8	H / 1.00 / 0	-46.4	n/a
142.002 MHz	55.75 Qp	1.0 / 9.43 / 26.97 / 0.0	39.21	H / 1.00 / 0	-46.99	n/a
172.405 MHz	59.9 Qp	1.1 / 8.98 / 27.01 / 0.0	42.97	H / 1.00 / 0	-43.23	n/a
183.255 MHz	46.3 Qp	1.1 / 9.71 / 27.1 / 0.0	30.02	H / 1.00 / 0	-56.18	n/a
190.671 MHz	47.75 Qp	1.15 / 10.4 / 27.1 / 0.0	32.21	H / 1.00 / 0	-53.99	n/a
240.069 MHz	54.8 Qp	1.3 / 11.33 / 27.2 / 0.0	40.23	H / 1.00 / 0	-45.97	n/a
283.989 MHz	49.3 Qp	1.5 / 12.51 / 27.43 / 0.0	35.89	H / 1.00 / 0	-50.31	n/a
307.755 MHz	48.8 Qp	1.5 / 13.44 / 27.5 / 0.0	36.24	H / 1.00 / 0	-49.96	n/a
332.451 MHz	46.7 Qp	1.55 / 14.08 / 27.55 / 0.0	34.78	H / 1.00 / 0	-51.42	n/a
390.151 MHz	44.05 Qp	1.69 / 15.64 / 27.77 / 0.0	33.61	H / 1.00 / 0	-52.59	n/a
425.984 MHz	52.55 Qp	1.71 / 16.37 / 27.9 / 0.0	42.73	H / 1.00 / 0	-43.47	n/a
467.816 MHz	49.05 Qp	1.85 / 16.61 / 27.9 / 0.0	39.61	H / 1.00 / 0	-46.59	n/a
710.0 MHz	56.05 Qp	2.3 / 20.52 / 27.95 / 0.0	50.92	H / 1.00 / 0	-35.28	n/a
720.254 MHz	39.95 Qp	2.3 / 20.67 / 27.97 / 0.0	34.95	H / 1.00 / 0	-51.25	n/a
780.987 MHz	49.4 Qp	2.39 / 21.43 / 27.83 / 0.0	45.4	H / 1.00 / 0	-40.8	n/a
787.959 MHz	41.0 Qp	2.4 / 21.23 / 27.8 / 0.0	36.83	H / 1.00 / 0	-49.37	n/a
800.007 MHz	39.0 Qp	2.42 / 21.51 / 27.8 / 0.0	35.13	H / 1.00 / 0	-51.07	n/a
994.006 MHz	38.6 Qp	2.73 / 23.22 / 27.57 / 0.0	36.99	H / 1.00 / 0	-49.21	n/a
30.0 MHz	52.45 Qp	0.42 / 20.3 / 27.4 / 0.0	45.77	V / 1.00 / 0	-40.43	n/a

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 2 of 14

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
48.6 MHz	58.0 Qp	0.6 / 14.59 / 27.1 / 0.0	46.09	V / 1.00 / 0	-40.11	n/a
69.9 MHz	54.85 Qp	0.7 / 9.29 / 27.0 / 0.0	37.84	V / 1.00 / 0	-48.36	n/a
93.48 MHz	55.5 Qp	0.82 / 8.46 / 26.92 / 0.0	37.86	V / 1.00 / 0	-48.34	n/a
109.656 MHz	63.55 Qp	0.85 / 9.33 / 27.05 / 0.0	46.68	V / 1.00 / 0	-39.52	n/a
109.92 MHz	61.05 Qp	0.86 / 9.34 / 27.06 / 0.0	44.19	V / 1.00 / 0	-42.01	n/a
110.154 MHz	62.7 Qp	0.86 / 9.35 / 27.06 / 0.0	45.85	V / 1.00 / 0	-40.35	n/a
142.002 MHz	56.4 Qp	1.0 / 9.43 / 26.97 / 0.0	39.86	V / 1.00 / 0	-46.34	n/a
152.478 MHz	57.35 Qp	1.0 / 9.08 / 26.93 / 0.0	40.5	V / 1.00 / 0	-45.7	n/a
183.255 MHz	49.55 Qp	1.1 / 9.71 / 27.1 / 0.0	33.27	V / 1.00 / 0	-52.93	n/a
307.755 MHz	50.55 Qp	1.5 / 13.44 / 27.5 / 0.0	37.99	V / 1.00 / 0	-48.21	n/a
332.451 MHz	54.45 Qp	1.55 / 14.08 / 27.55 / 0.0	42.53	V / 1.00 / 0	-43.67	n/a
787.959 MHz	42.75 Qp	2.4 / 21.23 / 27.8 / 0.0	38.58	V / 1.00 / 0	-47.62	n/a
709 MHz maxed:						
709.97 MHz	59.65 Pk	2.3 / 20.52 / 27.95 / 0.0	54.52	V / 1.00 / 155	-31.68*	n/a
30.0 MHz	53.05 Qp	0.42 / 20.3 / 27.4 / 0.0	46.37	V / 1.00 / 155	-39.83	n/a
48.6 MHz	60.9 Qp	0.6 / 14.59 / 27.1 / 0.0	48.99	V / 1.00 / 155	-37.21	n/a
69.9 MHz	57.75 Qp	0.7 / 9.29 / 27.0 / 0.0	40.74	V / 1.00 / 155	-45.46	n/a
127.578 MHz	52.4 Qp	0.97 / 8.53 / 27.03 / 0.0	34.88	V / 1.00 / 155	-51.32	n/a
425.984 MHz	52.75 Qp	1.71 / 16.37 / 27.9 / 0.0	42.93	V / 1.00 / 155	-43.27	n/a
467.816 MHz	50.2 Qp	1.85 / 16.61 / 27.9 / 0.0	40.76	V / 1.00 / 155	-45.44	n/a
709.97 MHz	59.6 Qp	2.3 / 20.52 / 27.95 / 0.0	54.47	V / 1.00 / 155	-31.73	n/a
720.254 MHz	45.2 Qp	2.3 / 20.67 / 27.97 / 0.0	40.2	V / 1.00 / 155	-46.0	n/a
787.959 MHz	49.4 Qp	2.4 / 21.23 / 27.8 / 0.0	45.23	V / 1.00 / 155	-40.97	n/a
993.975 MHz	43.75 Qp	2.73 / 23.22 / 27.57 / 0.0	42.14	V / 1.00 / 155	-44.06	n/a
142.002 MHz	59.35 Qp	1.0 / 9.43 / 26.97 / 0.0	42.81	V / 1.00 / 180	-43.39	n/a
332.451 MHz	55.95 Qp	1.55 / 14.08 / 27.55 / 0.0	44.03	V / 1.00 / 180	-42.17	n/a
425.984 MHz	55.85 Qp	1.71 / 16.37 / 27.9 / 0.0	46.03	V / 1.00 / 180	-40.17	n/a

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 3 of 14

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
720.254 MHz	48.5 Qp	2.3 / 20.67 / 27.97 / 0.0	43.5	V / 1.00 / 180	-42.7	n/a
787.959 MHz	50.35 Qp	2.4 / 21.23 / 27.8 / 0.0	46.18	V / 1.00 / 180	-40.02	n/a
30.0 MHz	54.15 Qp	0.42 / 20.3 / 27.4 / 0.0	47.47	V / 1.00 / 270	-38.73	n/a
109.656 MHz	64.35 Qp	0.85 / 9.33 / 27.05 / 0.0	47.48	V / 1.00 / 270	-38.72	n/a
110.154 MHz	63.6 Qp	0.86 / 9.35 / 27.06 / 0.0	46.75	V / 1.00 / 270	-39.45	n/a
152.478 MHz	58.2 Qp	1.0 / 9.08 / 26.93 / 0.0	41.35	V / 1.00 / 270	-44.85	n/a
240.069 MHz	57.3 Qp	1.3 / 11.33 / 27.2 / 0.0	42.73	V / 1.00 / 270	-43.47	n/a
283.989 MHz	51.65 Qp	1.5 / 12.51 / 27.43 / 0.0	38.24	V / 1.00 / 270	-47.96	n/a
425.984 MHz	57.85 Qp	1.71 / 16.37 / 27.9 / 0.0	48.03	V / 1.00 / 270	-38.17	n/a
48.6 MHz	60.8 Qp	0.6 / 14.59 / 27.1 / 0.0	48.89	V / 1.00 / 90	-37.31	n/a
307.755 MHz	50.8 Qp	1.5 / 13.44 / 27.5 / 0.0	38.24	V / 1.00 / 90	-47.96	n/a
390.151 MHz	44.1 Qp	1.69 / 15.64 / 27.77 / 0.0	33.66	V / 1.00 / 90	-52.54	n/a
425.984 MHz	57.6 Qp	1.71 / 16.37 / 27.9 / 0.0	47.78	V / 3.00 / 180	-38.42	n/a
152.478 MHz	57.55 Qp	1.0 / 9.08 / 26.93 / 0.0	40.7	V / 3.00 / 270	-45.5	n/a
425.984 MHz	59.0 Qp	1.71 / 16.37 / 27.9 / 0.0	49.18	H / 1.00 / 190	-37.02	n/a
780.987 MHz	52.0 Qp	2.39 / 21.43 / 27.83 / 0.0	48.0	H / 1.00 / 190	-38.2	n/a
390.151 MHz	47.45 Qp	1.69 / 15.64 / 27.77 / 0.0	37.01	H / 1.00 / 190	-49.19	n/a
283.989 MHz	53.45 Qp	1.5 / 12.51 / 27.43 / 0.0	40.04	H / 1.00 / 190	-46.16	n/a
240.069 MHz	59.05 Qp	1.3 / 11.33 / 27.2 / 0.0	44.48	H / 1.00 / 190	-41.72	n/a
152.478 MHz	59.0 Qp	1.0 / 9.08 / 26.93 / 0.0	42.15	H / 3.00 / 0	-44.05	n/a
190.671 MHz	49.45 Qp	1.15 / 10.4 / 27.1 / 0.0	33.91	H / 3.00 / 180	-52.29	n/a
142.002 MHz	58.65 Qp	1.0 / 9.43 / 26.97 / 0.0	42.11	H / 3.00 / 270	-44.09	n/a
172.405 MHz	61.5 Qp	1.1 / 8.98 / 27.01 / 0.0	44.57	H / 3.00 / 270	-41.63	n/a
780.987 MHz	52.35 Qp	2.39 / 21.43 / 27.83 / 0.0	48.35	H / 3.00 / 270	-37.85	n/a
780 MHz maxed:						
780.967 MHz	56.19 Qp	2.39 / 21.44 / 27.83 / 0.0	52.19	H / 1.44 / 269	-34.01	n/a

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 4 of 14

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
141.972 MHz	59.91 Qp	1.0 / 9.42 / 26.97 / 0.0	43.36	H / 1.44 / 269	-42.84	n/a
172.388 MHz	65.46 Qp	1.1 / 8.97 / 27.01 / 0.0	48.53	H / 1.44 / 269	-37.67	n/a
240.069 MHz	62.8 Qp	1.3 / 11.33 / 27.2 / 0.0	48.23	H / 1.44 / 269	-37.97	n/a
283.989 MHz	59.0 Qp	1.5 / 12.51 / 27.43 / 0.0	45.59	H / 1.44 / 269	-40.61	n/a
307.755 MHz	53.3 Qp	1.5 / 13.44 / 27.5 / 0.0	40.74	H / 1.44 / 269	-45.46	n/a
332.451 MHz	59.4 Qp	1.55 / 14.08 / 27.55 / 0.0	47.48	H / 1.44 / 269	-38.72	n/a
1.04 GHz	49.1 Pk	2.8 / 25.62 / 49.04 / 0.0	28.48	H / 1.44 / 269	n/a	-57.72
1.065 GHz	56.7 Pk	2.83 / 25.59 / 49.22 / 0.0	35.9	H / 1.44 / 269	n/a	-50.3
1.108 GHz	55.95 Pk	2.89 / 25.54 / 49.5 / 0.0	34.88	H / 1.44 / 269	n/a	-51.32
1.121 GHz	53.2 Pk	2.91 / 25.53 / 49.52 / 0.0	32.11	H / 1.44 / 269	n/a	-54.09
1.133 GHz	52.75 Pk	2.92 / 25.51 / 49.55 / 0.0	31.64	H / 1.44 / 269	n/a	-54.56
1.136 GHz	53.25 Pk	2.93 / 25.51 / 49.55 / 0.0	32.13	H / 1.44 / 269	n/a	-54.07
1.207 GHz	63.15 Pk	3.01 / 25.43 / 49.62 / 0.0	41.97	H / 1.44 / 269	n/a	-44.23
1.278 GHz	59.45 Pk	3.1 / 25.35 / 49.25 / 0.0	38.64	H / 1.44 / 269	n/a	-47.56
1.349 GHz	59.15 Pk	3.18 / 25.27 / 49.37 / 0.0	38.22	H / 1.44 / 269	n/a	-47.98
1.42 GHz	56.45 Pk	3.3 / 25.19 / 49.65 / 0.0	35.28	H / 1.44 / 269	n/a	-50.92
1.491 GHz	62.45 Pk	3.42 / 25.11 / 49.8 / 0.0	41.18	H / 1.44 / 269	n/a	-45.02
1.562 GHz	52.65 Pk	3.49 / 25.49 / 49.62 / 0.0	32.01	H / 1.44 / 269	n/a	-54.19
1.633 GHz	57.2 Pk	3.55 / 25.93 / 49.58 / 0.0	37.1	H / 1.44 / 269	n/a	-49.1
1.775 GHz	58.25 Pk	3.74 / 26.83 / 49.67 / 0.0	39.15	H / 1.44 / 269	n/a	-47.05
1.988 GHz	48.9 Pk	3.9 / 28.17 / 49.65 / 0.0	31.31	H / 1.44 / 269	n/a	-54.89
2.414 GHz	49.15 Pk	4.31 / 28.57 / 49.36 / 0.0	32.67	H / 1.44 / 269	n/a	-53.53
2.769 GHz	43.1 Pk	4.53 / 29.41 / 48.26 / 0.0	28.77	H / 1.44 / 269	n/a	-57.43
2.84 GHz	58.0 Pk	4.6 / 29.62 / 48.37 / 0.0	43.85	H / 1.44 / 269	n/a	-42.35
3.124 GHz	46.8 Pk	4.87 / 30.35 / 47.17 / 0.0	34.86	H / 1.44 / 269	n/a	-51.34
3.479 GHz	42.35 Pk	5.27 / 31.14 / 47.32 / 0.0	31.44	H / 1.44 / 269	n/a	-54.76
3.976 GHz	43.8 Pk	5.84 / 32.39 / 46.09 / 0.0	35.94	H / 1.44 / 269	n/a	-50.26

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 5 of 14

List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
5.112 GHz	42.1 Pk	6.57 / 33.55 / 44.66 / 0.0	37.56	H / 1.44 / 269	n/a	-48.64
4.038 GHz	54.75 Pk	5.93 / 32.44 / 45.84 / 0.0	47.27	H / 1.44 / 269	n/a	-38.93
2.84 GHz maxed:						
2.84 GHz	68.0 Pk	4.6 / 29.62 / 48.37 / 0.0	53.85	H / 1.00 / 212	n/a	-32.35
2.769 GHz	52.2 Pk	4.53 / 29.41 / 48.26 / 0.0	37.87	H / 1.00 / 212	n/a	-48.33
1.988 GHz	56.1 Pk	3.9 / 28.17 / 49.65 / 0.0	38.51	H / 1.00 / 212	n/a	-47.69
1.633 GHz	62.2 Pk	3.55 / 25.93 / 49.58 / 0.0	42.1	H / 1.00 / 212	n/a	-44.1
1.562 GHz	61.7 Pk	3.49 / 25.49 / 49.62 / 0.0	41.06	H / 1.00 / 212	n/a	-45.14
1.491 GHz	64.35 Pk	3.42 / 25.11 / 49.8 / 0.0	43.08	H / 1.00 / 212	n/a	-43.12
1.42 GHz	62.55 Pk	3.3 / 25.19 / 49.65 / 0.0	41.38	H / 1.00 / 212	n/a	-44.82
1.278 GHz	68.85 Pk	3.1 / 25.35 / 49.25 / 0.0	48.04	H / 1.00 / 212	n/a	-38.16
1.207 GHz	77.25 Pk	3.01 / 25.43 / 49.62 / 0.0	56.07	H / 1.00 / 212	n/a	-30.13
1.136 GHz	65.9 Pk	2.93 / 25.51 / 49.55 / 0.0	44.78	H / 1.00 / 212	n/a	-41.42
1.04 GHz maxed:						
1.04 GHz	55.6 Pk	2.8 / 25.62 / 49.04 / 0.0	34.98	V / 1.00 / 212	n/a	-51.22
1.562 GHz	63.6 Pk	3.49 / 25.49 / 49.62 / 0.0	42.96	V / 1.00 / 212	n/a	-43.24
3.124 GHz	49.75 Pk	4.87 / 30.35 / 47.17 / 0.0	37.81	V / 1.00 / 212	n/a	-48.39
1.562 GHz	65.1 Pk	3.49 / 25.49 / 49.62 / 0.0	44.46	V / 2.00 / 212	n/a	-41.74
5.538 GHz	41.5 Pk	6.82 / 34.1 / 44.94 / 0.0	37.49	V / 2.00 / 212	n/a	-48.71
1.206 GHz maxed:						
1.207 GHz	78.0 Pk	3.01 / 25.43 / 49.62 / 0.0	56.82	H / 1.00 / 206	n/a	-29.38
1.278 GHz	70.5 Pk	3.1 / 25.35 / 49.25 / 0.0	49.69	H / 1.00 / 206	n/a	-36.51
1.349 GHz	63.15 Pk	3.18 / 25.27 / 49.37 / 0.0	42.22	H / 1.00 / 206	n/a	-43.98
1.775 GHz	61.1 Pk	3.74 / 26.83 / 49.67 / 0.0	42.0	H / 1.00 / 206	n/a	-44.2
2.769 GHz	57.7 Pk	4.53 / 29.41 / 48.26 / 0.0	43.37	H / 1.00 / 206	n/a	-42.83

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

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List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
No further EUT emissions detected above noise floor up to 18 GHz.						
The following are noise floor measurements:						
6.0 GHz	38.8 Pk	7.1 / 34.36 / 45.74 / 0.0	34.52	H / 1.00 / 0	n/a	-51.68
7.0 GHz	42.4 Pk	8.1 / 35.36 / 45.8 / 0.0	40.06	H / 1.00 / 0	n/a	-46.14
8.0 GHz	39.4 Pk	8.43 / 36.91 / 45.29 / 0.0	39.45	H / 1.00 / 0	n/a	-46.75
9.0 GHz	39.45 Pk	9.28 / 37.34 / 44.57 / 0.0	41.51	H / 1.00 / 0	n/a	-44.69
10.0 GHz	38.3 Pk	9.71 / 38.07 / 44.95 / 0.0	41.13	H / 1.00 / 0	n/a	-45.07
11.0 GHz	40.75 Pk	10.05 / 38.31 / 44.96 / 0.0	44.15	H / 1.00 / 0	n/a	-42.05
12.0 GHz	40.75 Pk	10.5 / 39.26 / 44.61 / 0.0	45.9	H / 1.00 / 0	n/a	-40.3
13.0 GHz	37.3 Pk	10.82 / 39.74 / 44.85 / 0.0	43.0	H / 1.00 / 0	n/a	-43.2
14.0 GHz	36.15 Pk	11.01 / 41.87 / 43.92 / 0.0	45.11	H / 1.00 / 0	n/a	-41.09
15.0 GHz	37.0 Pk	11.53 / 39.68 / 44.28 / 0.0	43.93	H / 1.00 / 0	n/a	-42.27
16.0 GHz	39.75 Pk	12.06 / 37.76 / 44.69 / 0.0	44.88	H / 1.00 / 0	n/a	-41.32
17.0 GHz	38.2 Pk	12.43 / 41.83 / 45.45 / 0.0	47.01	H / 1.00 / 0	n/a	-39.19
18.0 GHz	36.65 Pk	13.5 / 47.44 / 45.08 / 0.0	52.51	H / 1.00 / 0	n/a	-33.69

NOTE! Scanned to 20 GHz. No EUT emissions detected, vert and hor ant.

DBE Configuration:

1.207 GHz maxed:

1.207 GHz	71.4 Pk	3.01 / 25.43 / 49.62 / 0.0	50.22	H / 1.09 / 179	n/a	-35.98
1.207 GHz	68.7 Pk	3.01 / 25.43 / 49.62 / 0.0	47.52	V / 1.33 / 185	n/a	-38.68

5.537 GHz maxed:

5.538 GHz	44.25 Pk	6.82 / 34.1 / 44.94 / 0.0	40.24	V / 1.06 / 1	n/a	-45.96
5.538 GHz	42.95 Pk	6.82 / 34.1 / 44.94 / 0.0	38.94	H / 1.18 / 205	n/a	-47.26
1.065 GHz	57.5 Pk	2.83 / 25.59 / 49.22 / 0.0	36.7	H / 1.18 / 205	n/a	-49.5
1.278 GHz	63.6 Pk	3.1 / 25.35 / 49.25 / 0.0	42.79	H / 1.18 / 205	n/a	-43.41
1.42 GHz	61.55 Pk	3.3 / 25.19 / 49.65 / 0.0	40.38	H / 1.18 / 205	n/a	-45.82

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

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List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
1.491 GHz	57.55 Pk	3.42 / 25.11 / 49.8 / 0.0	36.28	H / 1.18 / 205	n/a	-49.92
1.562 GHz	57.55 Pk	3.49 / 25.49 / 49.62 / 0.0	36.91	H / 1.18 / 205	n/a	-49.29
2.769 GHz	55.05 Pk	4.53 / 29.41 / 48.26 / 0.0	40.72	H / 1.18 / 205	n/a	-45.48
2.84 GHz	71.95 Pk	4.6 / 29.62 / 48.37 / 0.0	57.8	H / 1.00 / 193	n/a	-28.4
3.976 GHz	48.0 Pk	5.84 / 32.39 / 46.09 / 0.0	40.14	H / 1.00 / 193	n/a	-46.06
1.491 GHz	63.9 Pk	3.42 / 25.11 / 49.8 / 0.0	42.63	V / 1.00 / 193	n/a	-43.57
1.065 GHz	65.05 Pk	2.83 / 25.59 / 49.22 / 0.0	44.25	V / 1.00 / 193	n/a	-41.95
BEF Configuration:						
1.632 GHz maxed:						
1.633 GHz	67.45 Pk	3.55 / 25.93 / 49.58 / 0.0	47.35	V / 1.63 / 238	n/a	-38.85
1.136 GHz	55.85 Pk	2.93 / 25.51 / 49.55 / 0.0	34.73	V / 1.63 / 238	n/a	-51.47
1.207 GHz	55.75 Pk	3.01 / 25.43 / 49.62 / 0.0	34.57	V / 1.63 / 238	n/a	-51.63
1.207 GHz maxed:						
1.207 GHz	71.35 Pk	3.01 / 25.43 / 49.62 / 0.0	50.17	V / 1.00 / 247	n/a	-36.03
1.207 GHz	76.55 Pk	3.01 / 25.43 / 49.62 / 0.0	55.37	H / 1.00 / 187	n/a	-30.83
1.775 GHz	61.7 Pk	3.74 / 26.83 / 49.67 / 0.0	42.6	H / 1.00 / 187	n/a	-43.6
2.84 GHz	68.05 Pk	4.6 / 29.62 / 48.37 / 0.0	53.9	H / 1.00 / 187	n/a	-32.3
2.839 GHz maxed:						
2.84 GHz	71.4 Pk	4.6 / 29.62 / 48.37 / 0.0	57.25	H / 1.20 / 189	n/a	-28.95
2.414 GHz	54.55 Pk	4.31 / 28.57 / 49.36 / 0.0	38.07	H / 1.20 / 189	n/a	-48.13
1.775 GHz	63.35 Pk	3.74 / 26.83 / 49.67 / 0.0	44.25	H / 1.20 / 189	n/a	-41.95
1.491 GHz	66.6 Pk	3.42 / 25.11 / 49.8 / 0.0	45.33	H / 1.20 / 189	n/a	-40.87
EFC Configuration:						
2.839 GHz maxed:						
2.84 GHz	70.95 Pk	4.6 / 29.62 / 48.37 / 0.0	56.8	H / 1.20 / 190	n/a	-29.4

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

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List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
1.2 GHz maxed:						
1.207 GHz	77.35 Pk	3.01 / 25.43 / 49.62 / 0.0	56.17	H / 1.04 / 223	n/a	-30.03
1.278 GHz	67.95 Pk	3.1 / 25.35 / 49.25 / 0.0	47.14	H / 1.04 / 223	n/a	-39.06
1.349 GHz	62.15 Pk	3.18 / 25.27 / 49.37 / 0.0	41.22	H / 1.04 / 223	n/a	-44.98
1.42 GHz	63.75 Pk	3.3 / 25.19 / 49.65 / 0.0	42.58	H / 1.04 / 223	n/a	-43.62
1.491 GHz	61.8 Pk	3.42 / 25.11 / 49.8 / 0.0	40.53	H / 1.04 / 223	n/a	-45.67
1.633 GHz	69.05 Pk	3.55 / 25.93 / 49.58 / 0.0	48.95	H / 1.04 / 223	n/a	-37.25
1.775 GHz	62.85 Pk	3.74 / 26.83 / 49.67 / 0.0	43.75	H / 1.04 / 223	n/a	-42.45
1.988 GHz	55.8 Pk	3.9 / 28.17 / 49.65 / 0.0	38.21	H / 1.04 / 223	n/a	-47.99
2.414 GHz	50.25 Pk	4.31 / 28.57 / 49.36 / 0.0	33.77	H / 1.04 / 223	n/a	-52.43
2.769 GHz	55.3 Pk	4.53 / 29.41 / 48.26 / 0.0	40.97	H / 1.04 / 223	n/a	-45.23
3.124 GHz	53.35 Pk	4.87 / 30.35 / 47.17 / 0.0	41.41	H / 1.04 / 223	n/a	-44.79
3.479 GHz	46.05 Pk	5.27 / 31.14 / 47.32 / 0.0	35.14	H / 1.04 / 223	n/a	-51.06
3.976 GHz	47.9 Pk	5.84 / 32.39 / 46.09 / 0.0	40.04	H / 1.04 / 223	n/a	-46.16
1.065 GHz	71.9 Pk	2.83 / 25.59 / 49.22 / 0.0	51.1	H / 1.04 / 223	n/a	-35.1
2.839 GHz maxed:						
2.84 GHz	65.55 Pk	4.6 / 29.62 / 48.37 / 0.0	51.4	V / 1.75 / 160	n/a	-34.8
1.775 GHz	65.55 Pk	3.74 / 26.83 / 49.67 / 0.0	46.45	V / 1.04 / 223	n/a	-39.75
1.988 GHz	55.25 Pk	3.9 / 28.17 / 49.65 / 0.0	37.66	V / 1.04 / 223	n/a	-48.54
3.976 GHz	46.15 Pk	5.84 / 32.39 / 46.09 / 0.0	38.29	V / 1.04 / 223	n/a	-47.91
48 MHz maxed:						
48.6 MHz	63.05 Qp	0.6 / 14.59 / 27.1 / 0.0	51.14	V / 1.00 / 160	-35.06	n/a
390.151 MHz	50.8 Qp	1.69 / 15.64 / 27.77 / 0.0	40.36	V / 1.00 / 160	-45.84	n/a
709 MHz maxed:						
709.984 MHz	61.8 Pk	2.3 / 20.52 / 27.95 / 0.0	56.67	V / 2.25 / 167	-29.53*	n/a
709.984 MHz	61.4 Qp	2.3 / 20.52 / 27.95 / 0.0	56.27	V / 2.25 / 167	-29.93	n/a

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

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List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
240.069 MHz	63.15 Qp	1.3 / 11.33 / 27.2 / 0.0	48.58	H / 2.25 / 167	-37.62	n/a
190.671 MHz	51.55 Qp	1.15 / 10.4 / 27.1 / 0.0	36.01	H / 2.25 / 167	-50.19	n/a
183.255 MHz	50.8 Qp	1.1 / 9.71 / 27.1 / 0.0	34.52	H / 2.25 / 167	-51.68	n/a
141.972 MHz	59.25 Qp	1.0 / 9.42 / 26.97 / 0.0	42.7	H / 2.25 / 167	-43.5	n/a
240 MHz maxed:						
240.069 MHz	64.72 Qp	1.3 / 11.33 / 27.2 / 0.0	50.15	H / 2.25 / 167	-36.05	n/a
141.972 MHz	60.85 Qp	1.0 / 9.42 / 26.97 / 0.0	44.3	H / 1.40 / 167	-41.9	n/a
183.255 MHz	52.15 Qp	1.1 / 9.71 / 27.1 / 0.0	35.87	H / 1.40 / 167	-50.33	n/a
190.671 MHz	53.3 Qp	1.15 / 10.4 / 27.1 / 0.0	37.76	H / 1.40 / 167	-48.44	n/a
BEF Configuration:						
240 MHz maxed:						
240.069 MHz	62.35 Qp	1.3 / 11.33 / 27.2 / 0.0	47.78	H / 1.70 / 183	-38.42	n/a
240.069 MHz	62.25 Qp	1.3 / 11.33 / 27.2 / 0.0	47.68	H / 1.70 / 183	-38.52	n/a
467.816 MHz	49.3 Qp	1.85 / 16.61 / 27.9 / 0.0	39.86	H / 1.70 / 183	-46.34	n/a
780.983 MHz	53.9 Qp	2.39 / 21.43 / 27.83 / 0.0	49.9	H / 1.70 / 183	-36.3	n/a
709 MHz maxed:						
709.984 MHz	57.35 Qp	2.3 / 20.52 / 27.95 / 0.0	52.22	H / 3.28 / 185	-33.98	n/a
780.978 MHz	55.13 Qp	2.39 / 21.44 / 27.83 / 0.0	51.13	H / 3.28 / 185	-35.07	n/a
709 MHz maxed:						
709.984 MHz	61.35 Qp	2.3 / 20.52 / 27.95 / 0.0	56.22	V / 1.44 / 178	-29.98	n/a
69.9 MHz	57.75 Qp	0.7 / 9.29 / 27.0 / 0.0	40.74	V / 1.44 / 178	-45.46	n/a
307.755 MHz	54.85 Qp	1.5 / 13.44 / 27.5 / 0.0	42.29	V / 1.44 / 178	-43.91	n/a
467.816 MHz	51.7 Qp	1.85 / 16.61 / 27.9 / 0.0	42.26	V / 1.44 / 178	-43.94	n/a

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

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List of measurements for run #: 3

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz	DELTA2 -13dBm >1ghz- pk
DBE Configuration:						
709 MHz maxed:						
709.984 MHz	64.1 Qp	2.3 / 20.52 / 27.95 / 0.0	58.97	V / 1.35 / 174	-27.23	n/a
141.972 MHz	59.0 Qp	1.0 / 9.42 / 26.97 / 0.0	42.45	V / 1.35 / 174	-43.75	n/a
307.755 MHz	54.2 Qp	1.5 / 13.44 / 27.5 / 0.0	41.64	V / 1.35 / 174	-44.56	n/a
332.451 MHz	60.75 Qp	1.55 / 14.08 / 27.55 / 0.0	48.83	V / 1.35 / 174	-37.37	n/a
425.984 MHz	58.4 Qp	1.71 / 16.37 / 27.9 / 0.0	48.58	V / 1.35 / 174	-37.62	n/a
467.816 MHz	53.4 Qp	1.85 / 16.61 / 27.9 / 0.0	43.96	V / 1.35 / 174	-42.24	n/a
787.959 MHz	50.25 Qp	2.4 / 21.23 / 27.8 / 0.0	46.08	V / 1.35 / 174	-40.12	n/a
709 MHz maxed:						
709.984 MHz	64.49 Qp	2.3 / 20.52 / 27.95 / 0.0	59.36	H / 1.00 / 264	-26.84	n/a
141.972 MHz	65.75 Qp	1.0 / 9.42 / 26.97 / 0.0	49.2	H / 1.00 / 264	-37.0	n/a
172.388 MHz	61.65 Qp	1.1 / 8.97 / 27.01 / 0.0	44.72	H / 1.00 / 264	-41.48	n/a
240.069 MHz	65.1 Qp	1.3 / 11.33 / 27.2 / 0.0	50.53	H / 1.00 / 264	-35.67	n/a
307.755 MHz	54.6 Qp	1.5 / 13.44 / 27.5 / 0.0	42.04	H / 1.00 / 264	-44.16	n/a
332.451 MHz	61.6 Qp	1.55 / 14.08 / 27.55 / 0.0	49.68	H / 1.00 / 264	-36.52	n/a
425.984 MHz	58.15 Qp	1.71 / 16.37 / 27.9 / 0.0	48.33	H / 1.00 / 264	-37.87	n/a
467.816 MHz	54.3 Qp	1.85 / 16.61 / 27.9 / 0.0	44.86	H / 1.00 / 264	-41.34	n/a
141.9 MHz maxed:						
141.972 MHz	67.51 Qp	1.0 / 9.42 / 26.97 / 0.0	50.96	H / 2.00 / 268	-35.24	n/a
307.755 MHz	57.41 Qp	1.5 / 13.44 / 27.5 / 0.0	44.85	H / 2.00 / 268	-41.35	n/a
No further significant EUT emissions detected 30 MHz to 1000 MHz, vert and hor ant when the EUT is configured in AD, DBE, BEF, and EFC configurations.						

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

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

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA1 -13dBm <1ghz
709.984 MHz	64.49 Qp	2.3 / 20.52 / 27.95 / 0.0	59.36	H / 1.00 / 264	-26.84
780.967 MHz	56.19 Qp	2.39 / 21.44 / 27.83 / 0.0	52.19	H / 1.44 / 269	-34.01
48.6 MHz	63.05 Qp	0.6 / 14.59 / 27.1 / 0.0	51.14	V / 1.00 / 160	-35.06
141.972 MHz	67.51 Qp	1.0 / 9.42 / 26.97 / 0.0	50.96	H / 2.00 / 268	-35.24
240.069 MHz	65.1 Qp	1.3 / 11.33 / 27.2 / 0.0	50.53	H / 1.00 / 264	-35.67
332.451 MHz	61.6 Qp	1.55 / 14.08 / 27.55 / 0.0	49.68	H / 1.00 / 264	-36.52
425.984 MHz	59.0 Qp	1.71 / 16.37 / 27.9 / 0.0	49.18	H / 1.00 / 190	-37.02
172.388 MHz	65.46 Qp	1.1 / 8.97 / 27.01 / 0.0	48.53	H / 1.44 / 269	-37.67
109.656 MHz	64.35 Qp	0.85 / 9.33 / 27.05 / 0.0	47.48	V / 1.00 / 270	-38.72
30.0 MHz	54.15 Qp	0.42 / 20.3 / 27.4 / 0.0	47.47	V / 1.00 / 270	-38.73
110.154 MHz	63.6 Qp	0.86 / 9.35 / 27.06 / 0.0	46.75	V / 1.00 / 270	-39.45
787.959 MHz	50.35 Qp	2.4 / 21.23 / 27.8 / 0.0	46.18	V / 1.00 / 180	-40.02
283.989 MHz	59.0 Qp	1.5 / 12.51 / 27.43 / 0.0	45.59	H / 1.44 / 269	-40.61
467.816 MHz	54.3 Qp	1.85 / 16.61 / 27.9 / 0.0	44.86	H / 1.00 / 264	-41.34
307.755 MHz	57.41 Qp	1.5 / 13.44 / 27.5 / 0.0	44.85	H / 2.00 / 268	-41.35
109.92 MHz	61.05 Qp	0.86 / 9.34 / 27.06 / 0.0	44.19	V / 1.00 / 0	-42.01
720.254 MHz	48.5 Qp	2.3 / 20.67 / 27.97 / 0.0	43.5	V / 1.00 / 180	-42.7
152.478 MHz	59.0 Qp	1.0 / 9.08 / 26.93 / 0.0	42.15	H / 3.00 / 0	-44.05
993.975 MHz	43.75 Qp	2.73 / 23.22 / 27.57 / 0.0	42.14	V / 1.00 / 155	-44.06
69.9 MHz	57.75 Qp	0.7 / 9.29 / 27.0 / 0.0	40.74	V / 1.00 / 155	-45.46
390.151 MHz	50.8 Qp	1.69 / 15.64 / 27.77 / 0.0	40.36	V / 1.00 / 160	-45.84
93.48 MHz	55.5 Qp	0.82 / 8.46 / 26.92 / 0.0	37.86	V / 1.00 / 0	-48.34
190.671 MHz	53.3 Qp	1.15 / 10.4 / 27.1 / 0.0	37.76	H / 1.40 / 167	-48.44
183.255 MHz	52.15 Qp	1.1 / 9.71 / 27.1 / 0.0	35.87	H / 1.40 / 167	-50.33
800.007 MHz	39.0 Qp	2.42 / 21.51 / 27.8 / 0.0	35.13	H / 1.00 / 0	-51.07
127.578 MHz	52.4 Qp	0.97 / 8.53 / 27.03 / 0.0	34.88	V / 1.00 / 155	-51.32
709.984 MHz	61.8 Pk	2.3 / 20.52 / 27.95 / 0.0	56.67	V / 2.25 / 167	-29.53*

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RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 12 of 14

Measurement summary for limit2: -13dBm >1ghz-pk (Pk)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 -13dBm >1ghz- pk
2.84 GHz	71.95 Pk	4.6 / 29.62 / 48.37 / 0.0	57.8	H / 1.00 / 193	-28.4
1.207 GHz	78.0 Pk	3.01 / 25.43 / 49.62 / 0.0	56.82	H / 1.00 / 206	-29.38
18.0 GHz	36.65 Pk	13.5 / 47.44 / 45.08 / 0.0	52.51	H / 1.00 / 0	-33.69
1.065 GHz	71.9 Pk	2.83 / 25.59 / 49.22 / 0.0	51.1	H / 1.04 / 223	-35.1
1.278 GHz	70.5 Pk	3.1 / 25.35 / 49.25 / 0.0	49.69	H / 1.00 / 206	-36.51
1.633 GHz	69.05 Pk	3.55 / 25.93 / 49.58 / 0.0	48.95	H / 1.04 / 223	-37.25
4.038 GHz	54.75 Pk	5.93 / 32.44 / 45.84 / 0.0	47.27	H / 1.44 / 269	-38.93
17.0 GHz	38.2 Pk	12.43 / 41.83 / 45.45 / 0.0	47.01	H / 1.00 / 0	-39.19
1.775 GHz	65.55 Pk	3.74 / 26.83 / 49.67 / 0.0	46.45	V / 1.04 / 223	-39.75
12.0 GHz	40.75 Pk	10.5 / 39.26 / 44.61 / 0.0	45.9	H / 1.00 / 0	-40.3
1.491 GHz	66.6 Pk	3.42 / 25.11 / 49.8 / 0.0	45.33	H / 1.20 / 189	-40.87
14.0 GHz	36.15 Pk	11.01 / 41.87 / 43.92 / 0.0	45.11	H / 1.00 / 0	-41.09
16.0 GHz	39.75 Pk	12.06 / 37.76 / 44.69 / 0.0	44.88	H / 1.00 / 0	-41.32
1.136 GHz	65.9 Pk	2.93 / 25.51 / 49.55 / 0.0	44.78	H / 1.00 / 212	-41.42
1.562 GHz	65.1 Pk	3.49 / 25.49 / 49.62 / 0.0	44.46	V / 2.00 / 212	-41.74
11.0 GHz	40.75 Pk	10.05 / 38.31 / 44.96 / 0.0	44.15	H / 1.00 / 0	-42.05
15.0 GHz	37.0 Pk	11.53 / 39.68 / 44.28 / 0.0	43.93	H / 1.00 / 0	-42.27
2.769 GHz	57.7 Pk	4.53 / 29.41 / 48.26 / 0.0	43.37	H / 1.00 / 206	-42.83
13.0 GHz	37.3 Pk	10.82 / 39.74 / 44.85 / 0.0	43.0	H / 1.00 / 0	-43.2
1.42 GHz	63.75 Pk	3.3 / 25.19 / 49.65 / 0.0	42.58	H / 1.04 / 223	-43.62
1.349 GHz	63.15 Pk	3.18 / 25.27 / 49.37 / 0.0	42.22	H / 1.00 / 206	-43.98
9.0 GHz	39.45 Pk	9.28 / 37.34 / 44.57 / 0.0	41.51	H / 1.00 / 0	-44.69
3.124 GHz	53.35 Pk	4.87 / 30.35 / 47.17 / 0.0	41.41	H / 1.04 / 223	-44.79
10.0 GHz	38.3 Pk	9.71 / 38.07 / 44.95 / 0.0	41.13	H / 1.00 / 0	-45.07
5.538 GHz	44.25 Pk	6.82 / 34.1 / 44.94 / 0.0	40.24	V / 1.06 / 1	-45.96
3.976 GHz	48.0 Pk	5.84 / 32.39 / 46.09 / 0.0	40.14	H / 1.00 / 193	-46.06
7.0 GHz	42.4 Pk	8.1 / 35.36 / 45.8 / 0.0	40.06	H / 1.00 / 0	-46.14

Tested by: J. C. Sausen

Printed

Signature

Reviewed by: G. Jakubowski

Printed

Signature

File No. WC503860, Page 51 of 91

RADIATED EMISSIONS



Test Report #: WC503860 Run 3 Test Area: LTS

EUT Model #: (see notes) Date: 7/29/2005

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

Test Method: FCC Air Pressure: 99.0 kPa

Customer: ADC Telecomm Rel. Humidity: 40.0 %

EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 13 of 14

Measurement summary for limit2: -13dBm >1ghz-pk (Pk)

FREQ	LEVEL (dBuV)	CABLE / ANT / PREAMP / ATTEN (dB)	FINAL (dBuV / m)	POL / HGT / AZ (m)(DEG)	DELTA2 -13dBm >1ghz- pk
8.0 GHz	39.4 Pk	8.43 / 36.91 / 45.29 / 0.0	39.45	H / 1.00 / 0	-46.75
1.988 GHz	56.1 Pk	3.9 / 28.17 / 49.65 / 0.0	38.51	H / 1.00 / 212	-47.69
2.414 GHz	54.55 Pk	4.31 / 28.57 / 49.36 / 0.0	38.07	H / 1.20 / 189	-48.13
5.112 GHz	42.1 Pk	6.57 / 33.55 / 44.66 / 0.0	37.56	H / 1.44 / 269	-48.64
3.479 GHz	46.05 Pk	5.27 / 31.14 / 47.32 / 0.0	35.14	H / 1.04 / 223	-51.06
1.04 GHz	55.6 Pk	2.8 / 25.62 / 49.04 / 0.0	34.98	V / 1.00 / 212	-51.22
1.108 GHz	55.95 Pk	2.89 / 25.54 / 49.5 / 0.0	34.88	H / 1.44 / 269	-51.32
6.0 GHz	38.8 Pk	7.1 / 34.36 / 45.74 / 0.0	34.52	H / 1.00 / 0	-51.68
1.121 GHz	53.2 Pk	2.91 / 25.53 / 49.52 / 0.0	32.11	H / 1.44 / 269	-54.09
1.133 GHz	52.75 Pk	2.92 / 25.51 / 49.55 / 0.0	31.64	H / 1.44 / 269	-54.56

Tested by: J. C. Sausen

Printed

Signature

Reviewed by: G. Jakubowski

Printed

Signature File No. WC503860, Page 52 of 91

RADIATED EMISSIONS



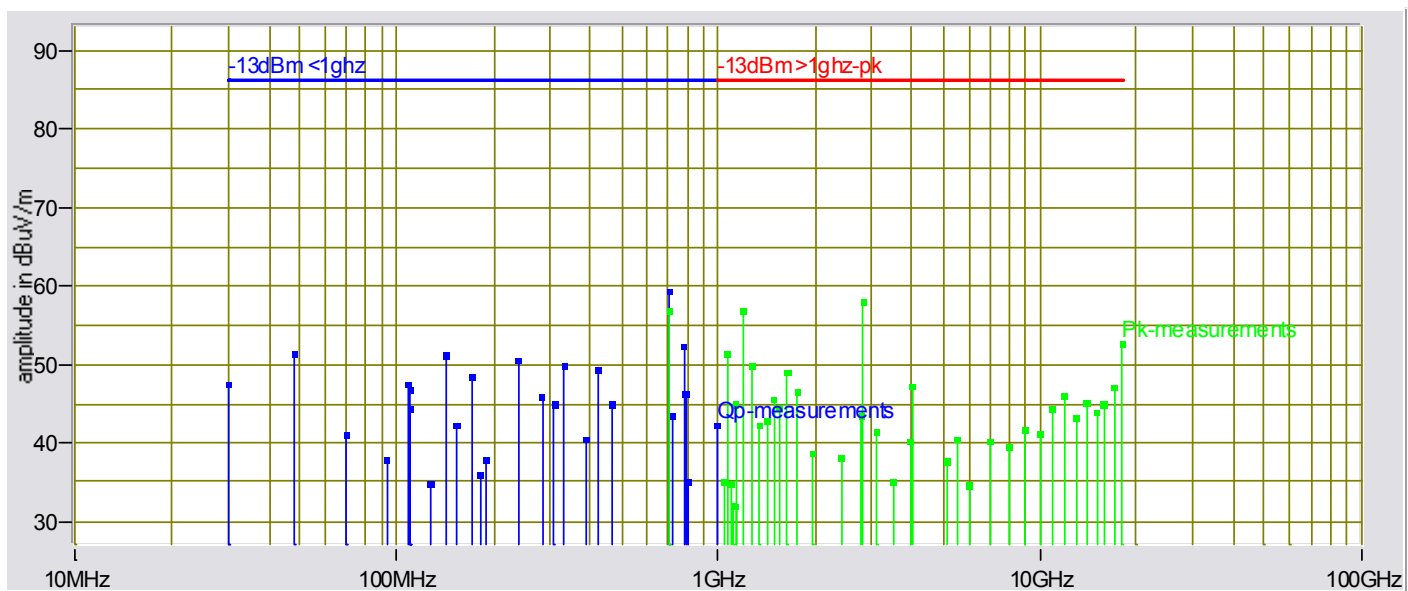
Test Report #: WC503860 Run 3 Test Area: LTS
EUT Model #: (see notes) Date: 7/29/2005
EUT Serial #: n/a EUT Power: 60 Hz / 120 VAC Temperature: 22.0 °C
Test Method: FCC Air Pressure: 99.0 kPa
Customer: ADC Telecomm Rel. Humidity: 40.0 %
EUT Description: Software defined radio

Notes: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, DGVS-461XX0SYS

Data File Name: 3860 [RE per Pt 24].dat

Page: 14 of 14

Graph:



Tested by: J. C. Sausen

Printed

Signature

Reviewed by: G. Jakubowski

Printed

Signature

File No. WC503860, Page 53 of 91

Intermodulation

The Intermodulation measurements were performed at the following test location:

■ - ADC facility

ADC's Test equipment used:

Manufacturer	Model	Description	ADC Serial No.	Cal Due
Aeroflex	49-30-33	Attenuator	n/a	CNR
HP	HP8563E	Spectrum Analyzer	MC27690	6-22-06
HP	EPM-441A	Power Meter	MC27670	9-28-06

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

Intermodulation data on following pages:



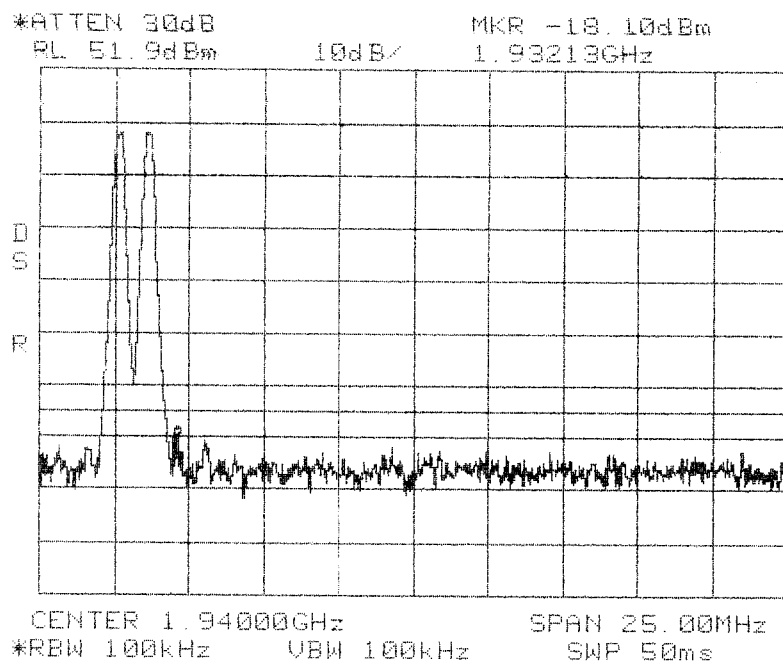
Inter-Modulation Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGVs-431XXxSYS, DGVs-441XXxSYS,
DGVs-451XXxSYS, and DGVs-461XXxSYS

The intermodulation product test was performed for each bandwidth setting of the EUT. Three tests were performed with GSM modulation. Test 1 was with two signals input into the EUT at lower end channels. Test 2 was with two signals input into the EUT at upper end channels. Test 3 was with two signals input into the EUT at both ends of the band. An investigation was made from 30 MHz to the 10th harmonic of the highest fundamental frequency (~20 GHz).

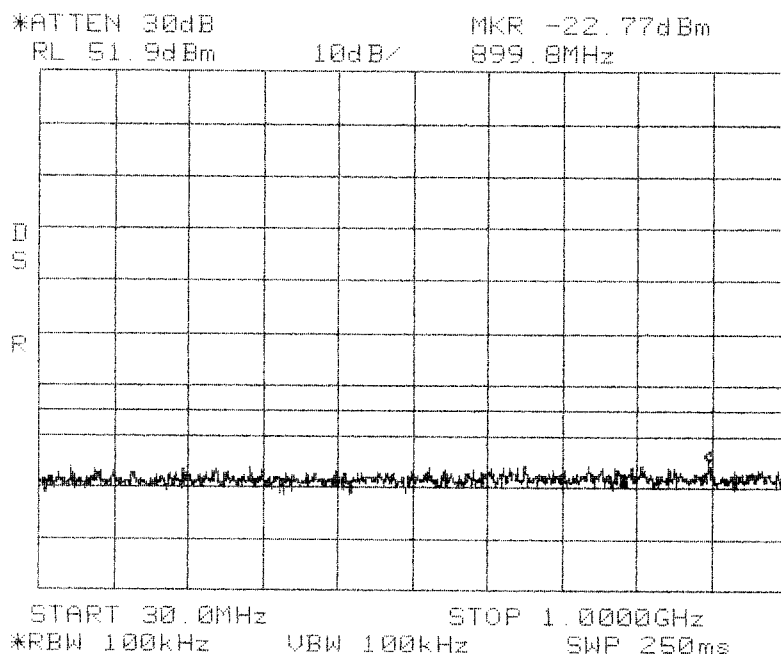
Results:

Pass (see plots)

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



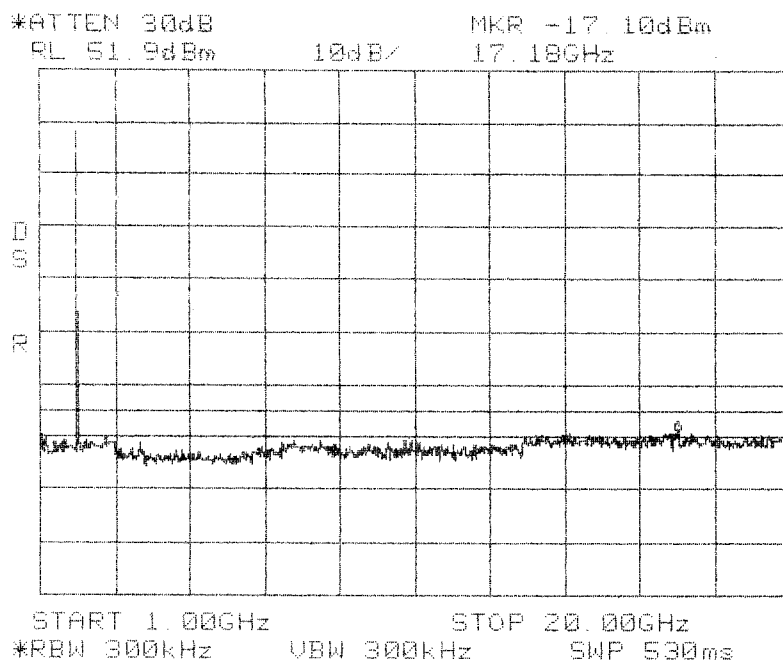
**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
AD Band**



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

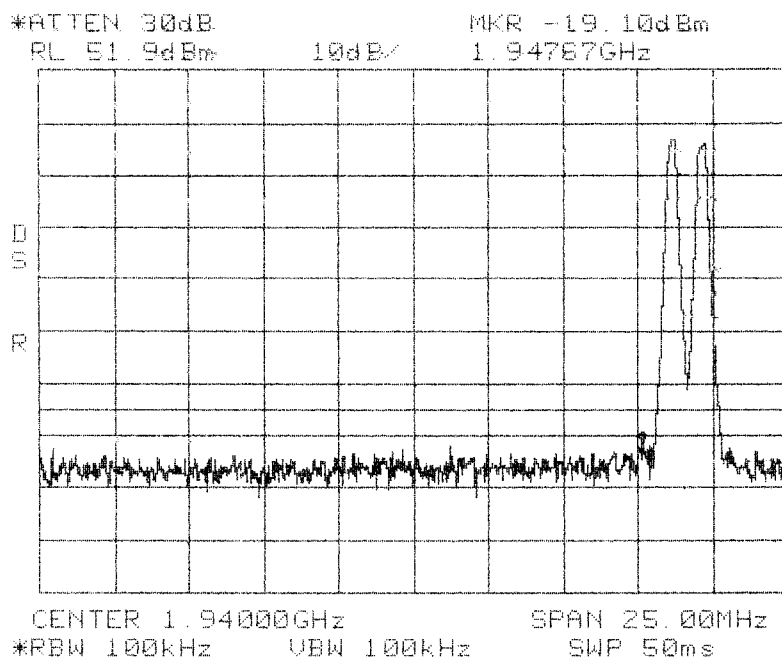
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

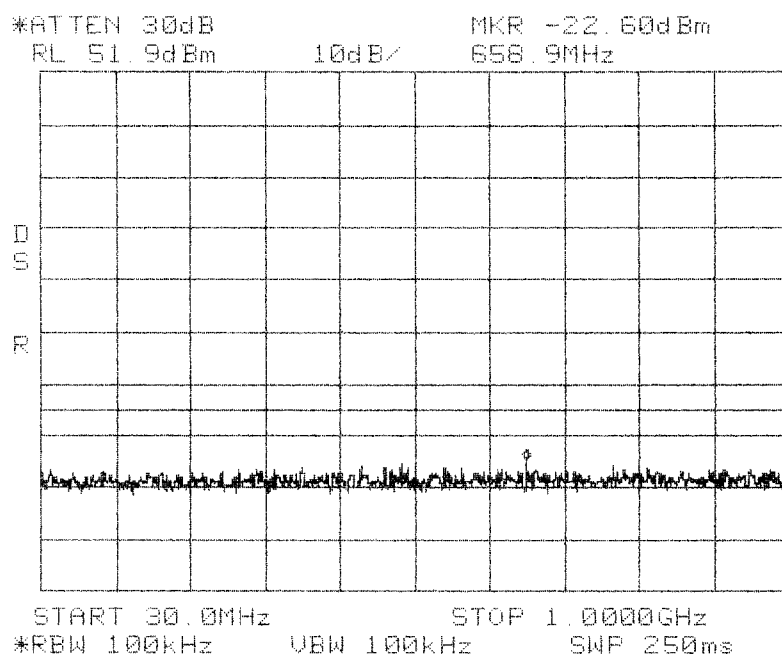


**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
AD Band**

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



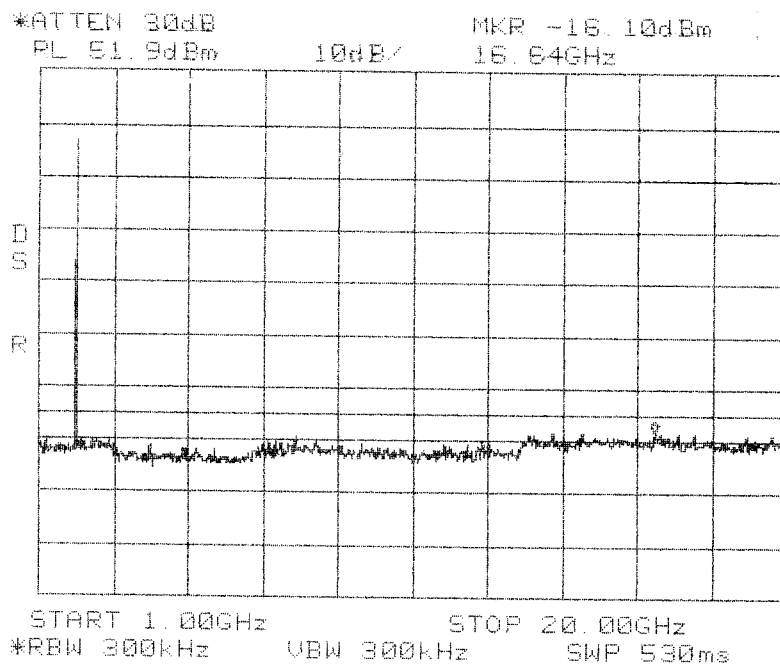
**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
AD Band**



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

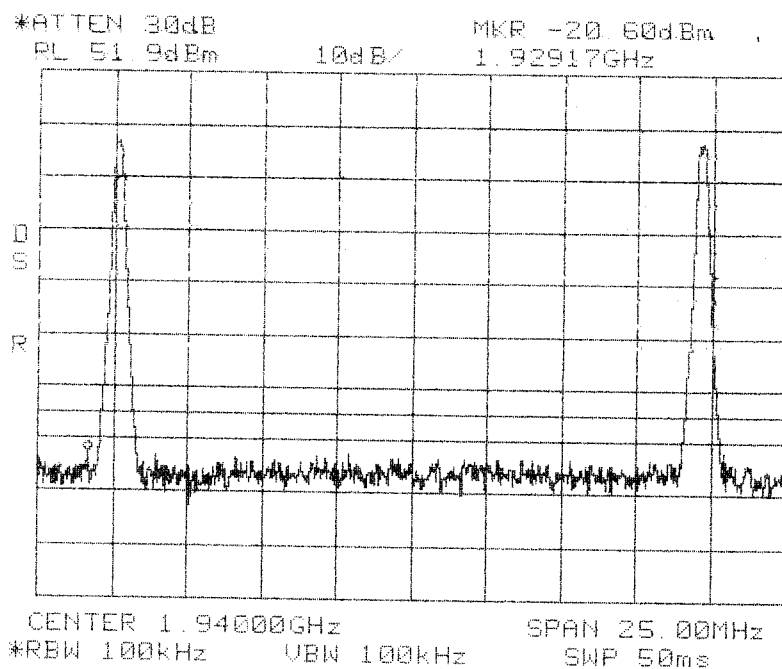
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

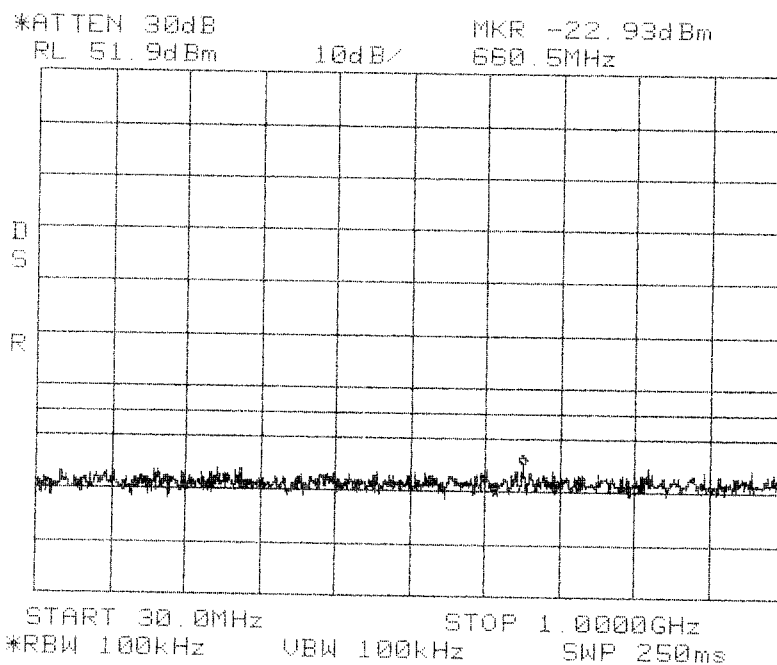


**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
AD Band**

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



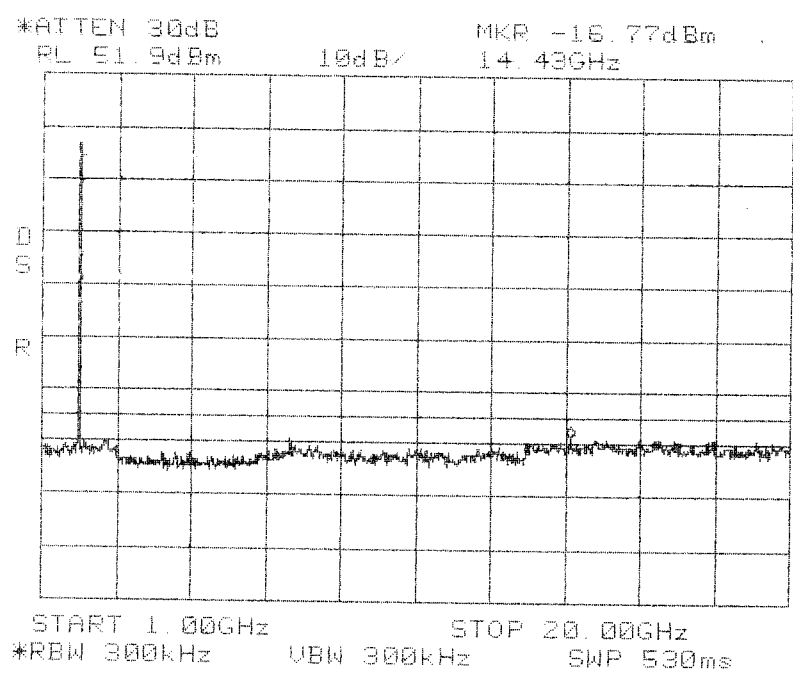
**Intermodulation
Apart
GSM
PCS 1900 MHz
AD Band**



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

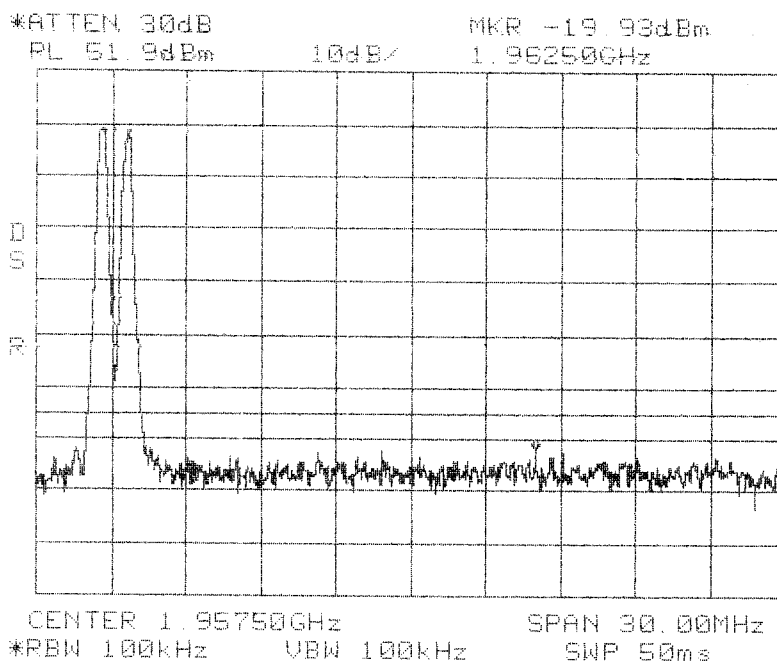
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

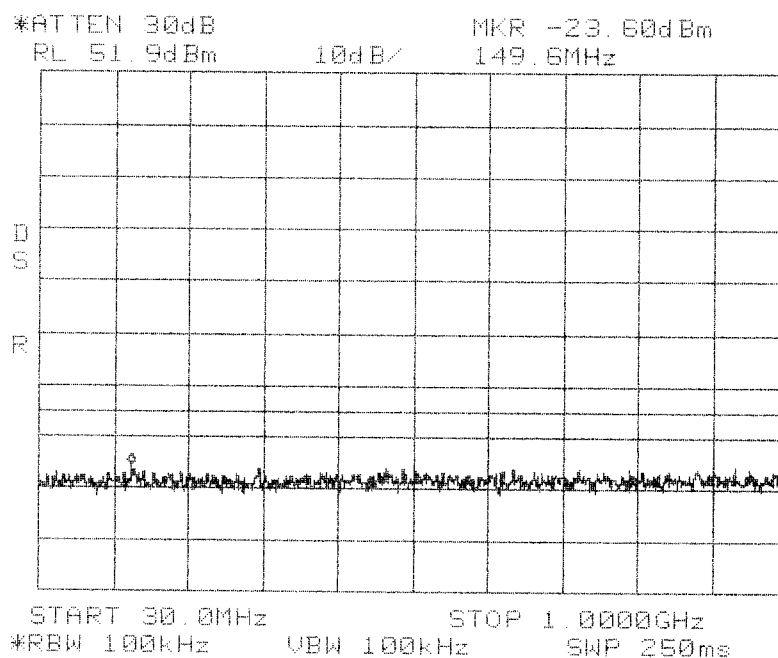


**Intermodulation
Apart
GSM
PCS 1900 MHz
AD Band**

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



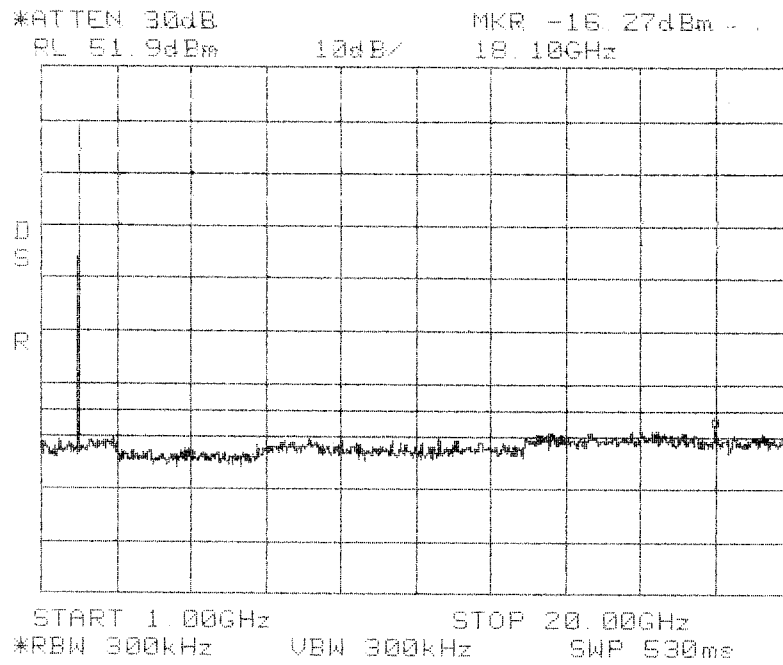
**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
DBE Band**



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

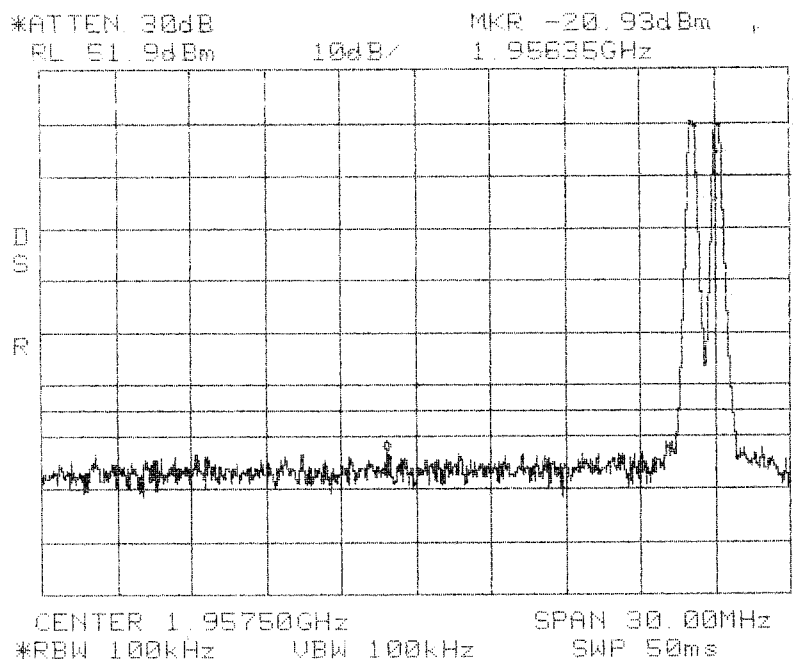
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

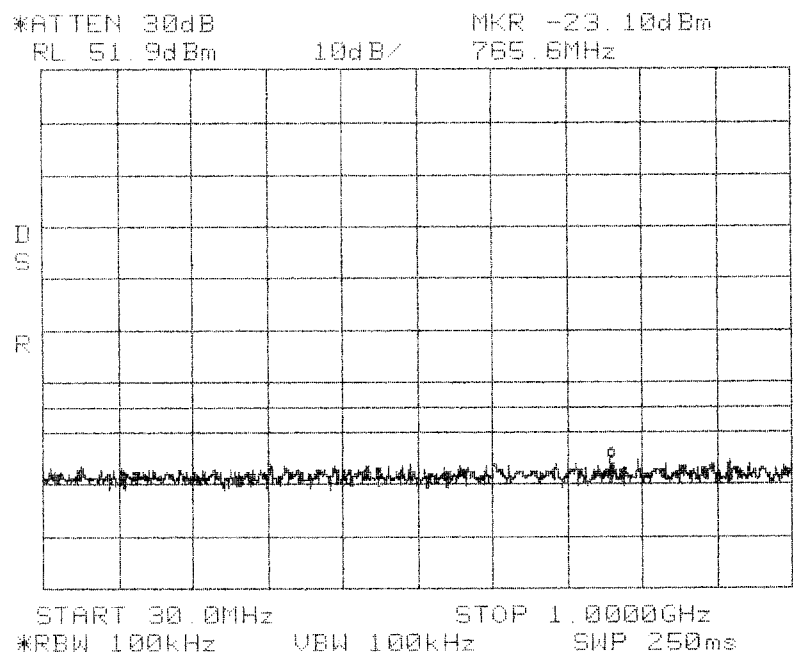


**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
DBE Band**

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



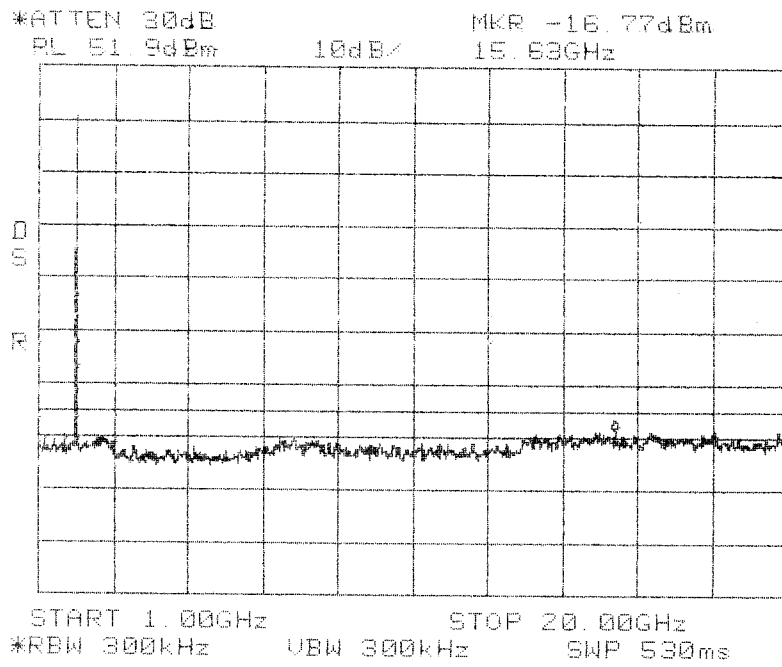
**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
DBE Band**



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

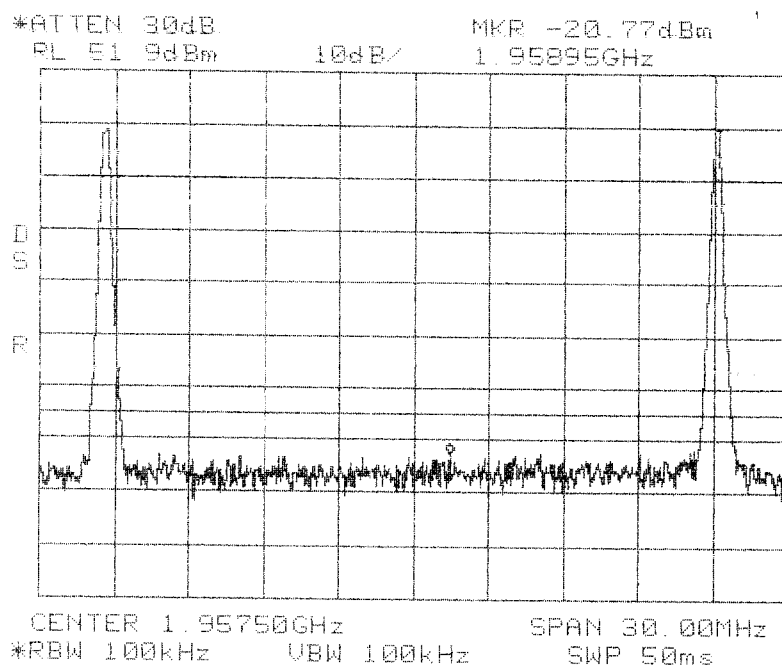
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

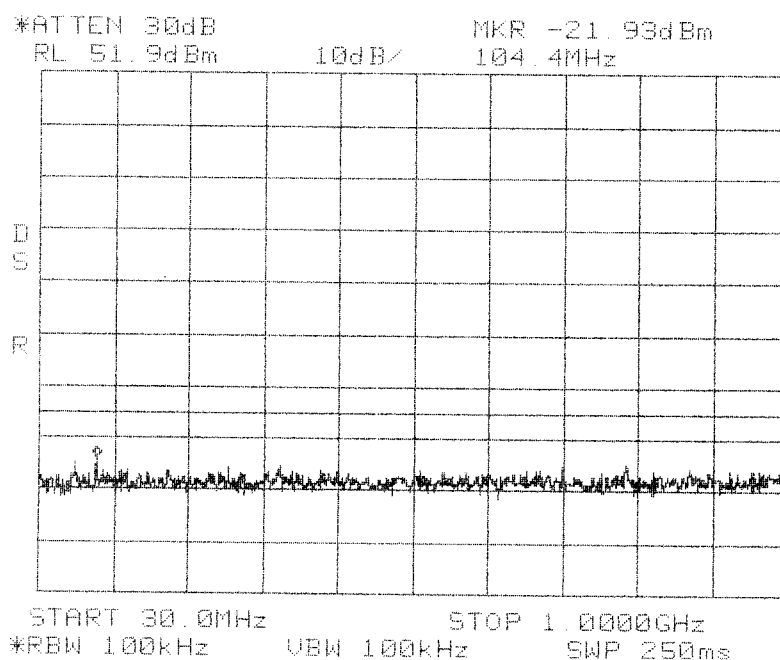


**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
DBE Band**

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



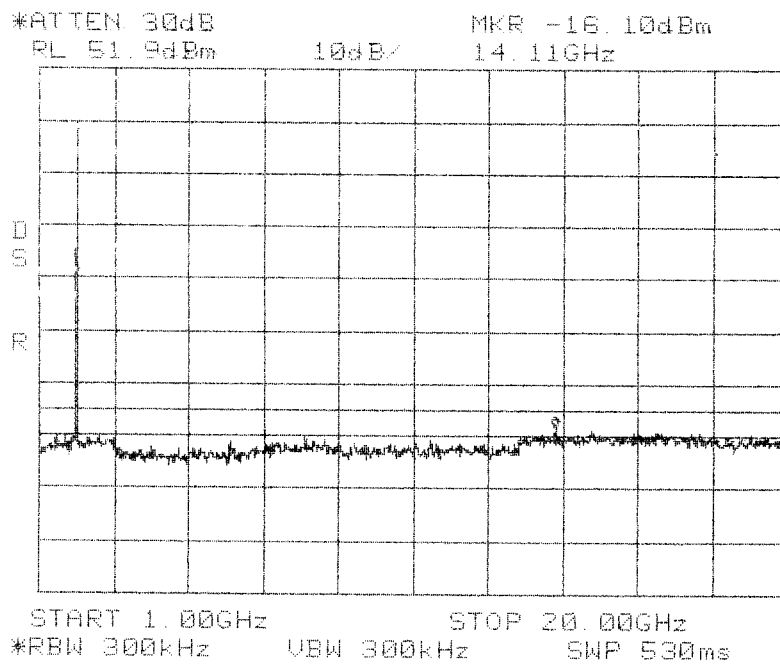
**Intermodulation
Apart
GSM
PCS 1900 MHz
DBE Band**



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

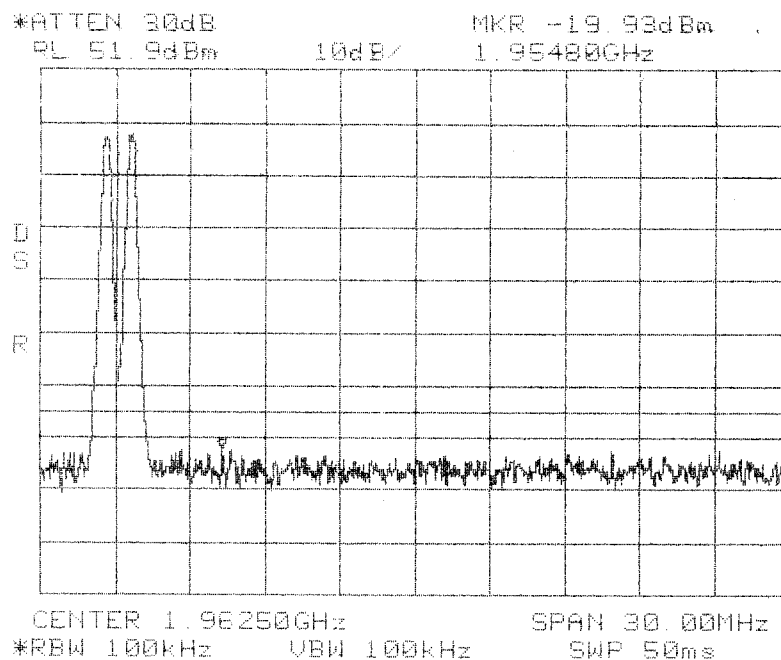
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

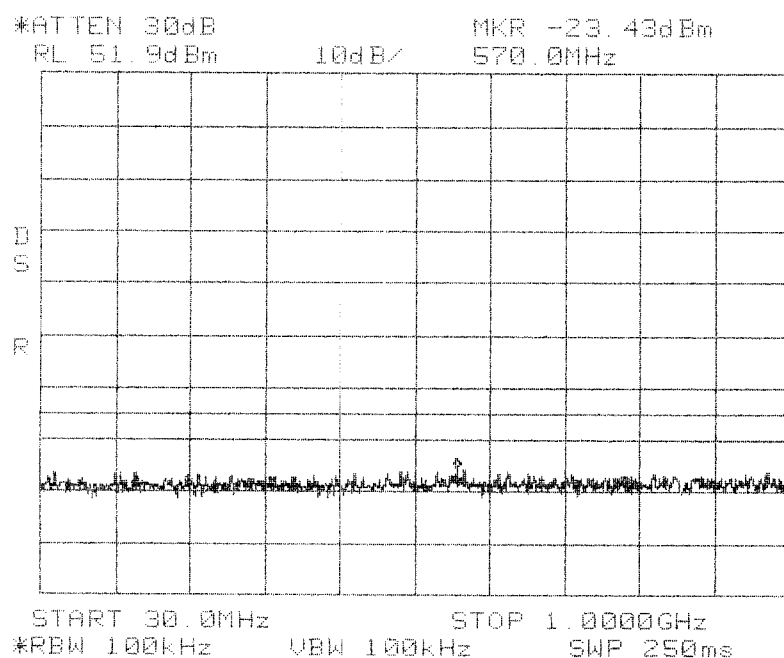


**Intermodulation
Apart
GSM
PCS 1900 MHz
DBE Band**

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



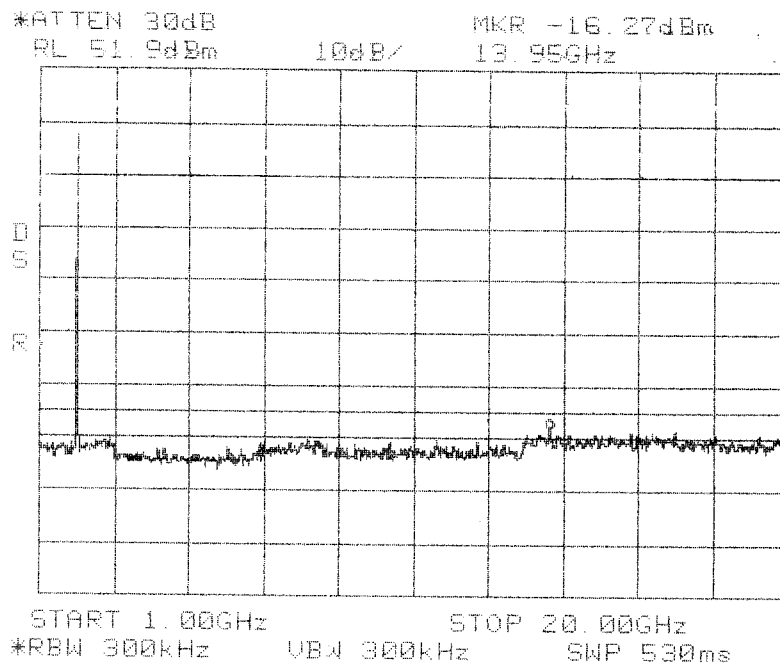
**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
BEF Band**



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

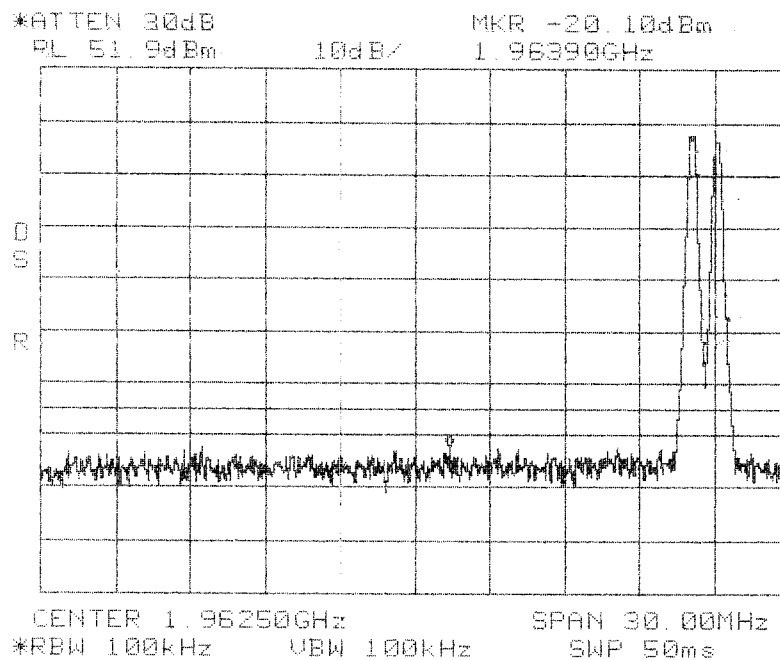
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

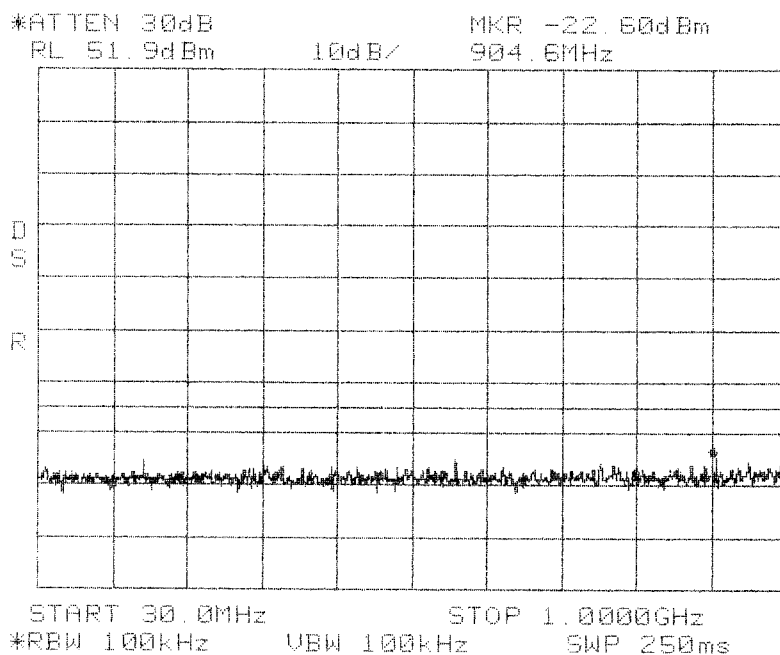


**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
BEF Band**

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



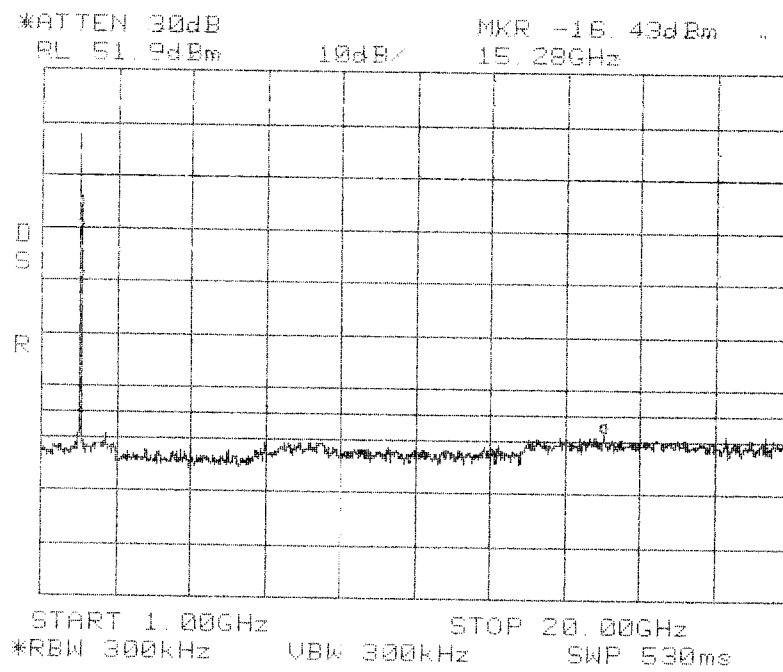
**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
BEF Band**



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

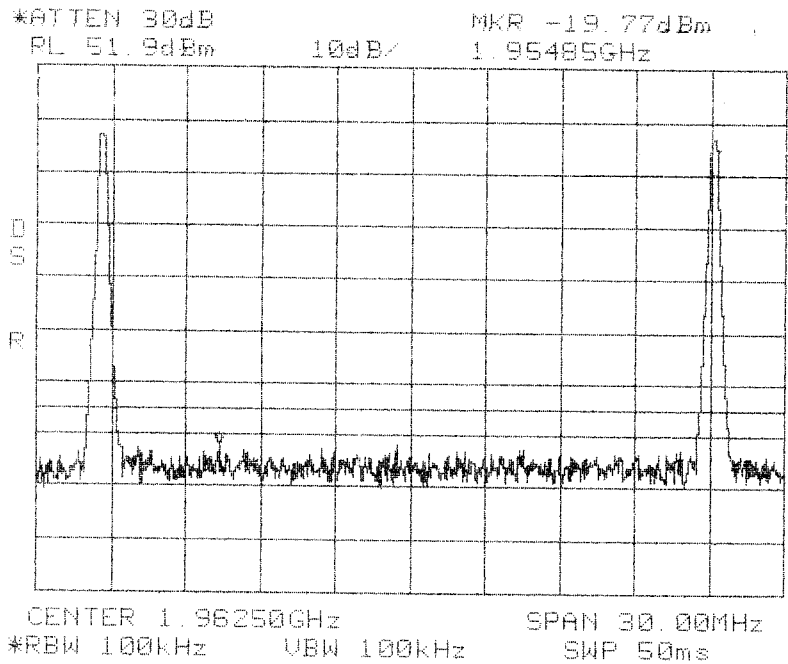
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

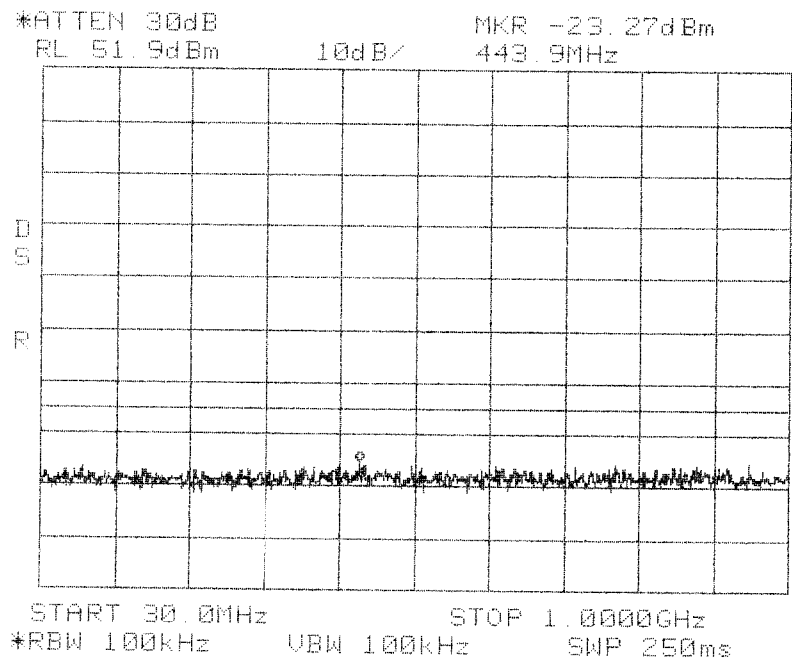


**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
BEF Band**

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



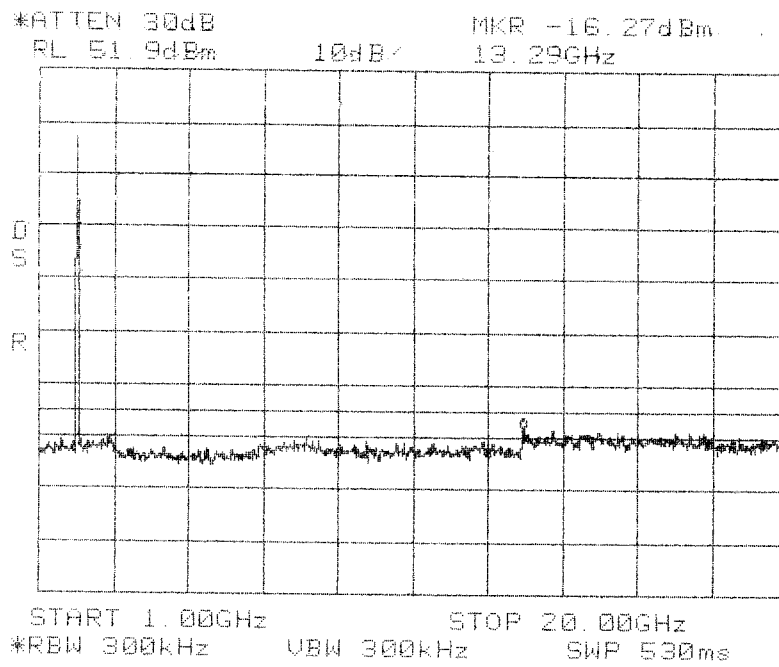
**Intermodulation
Apart
GSM
PCS 1900 MHz
BEF Band**



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

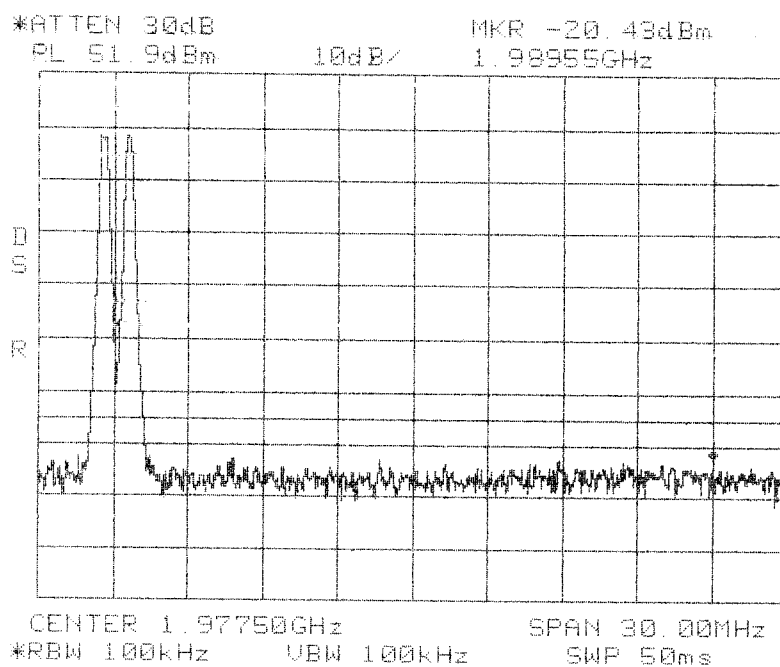
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

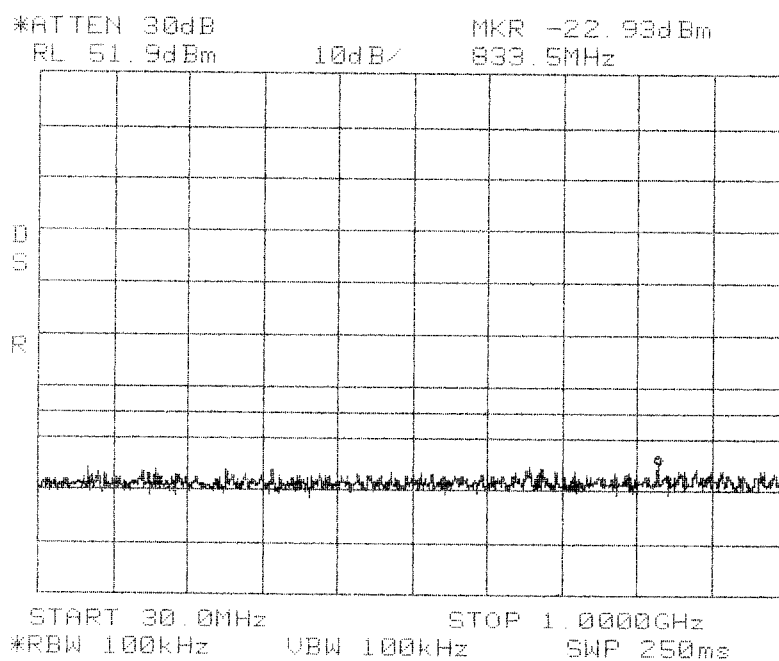


**Intermodulation
Apart
GSM
PCS 1900 MHz
BEF Band**

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



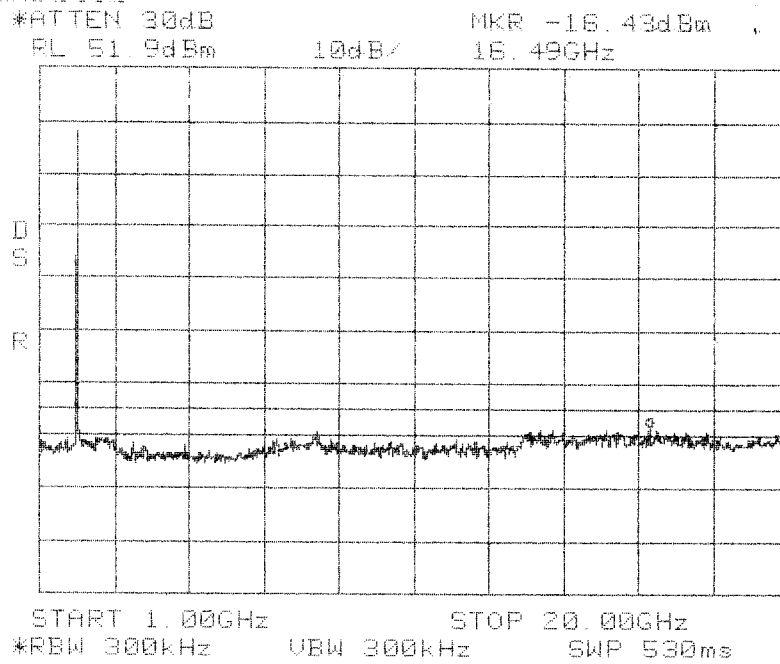
**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
EFC Band**



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

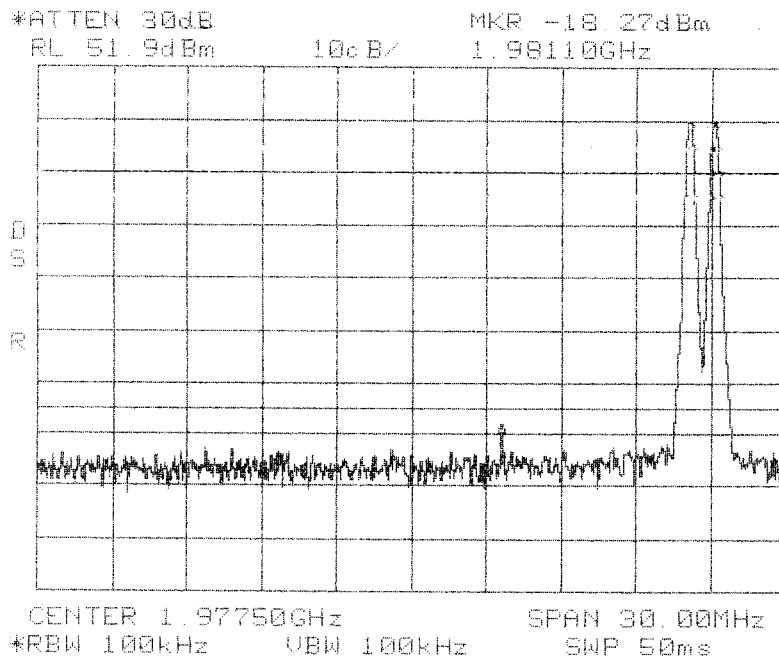
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

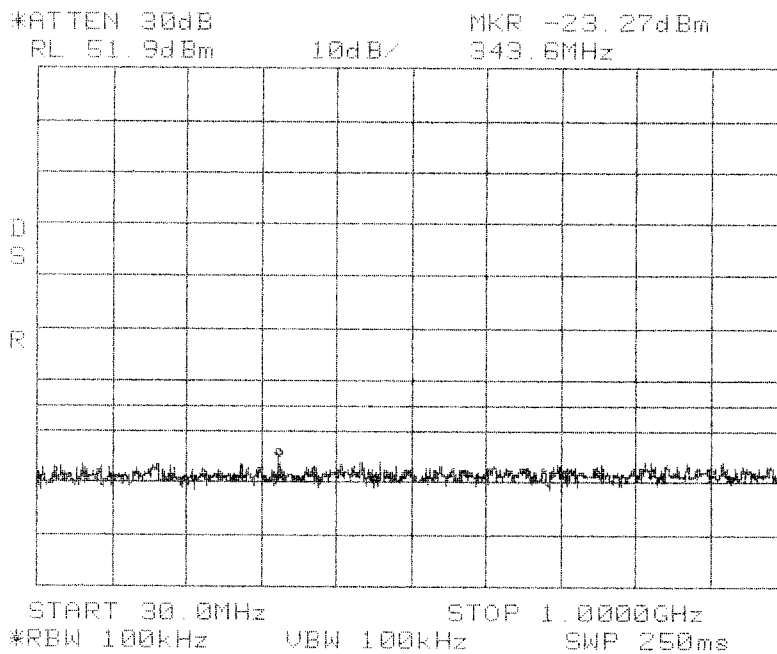


**Intermodulation
Close
Lower
GSM
PCS 1900 MHz
EFC Band**

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



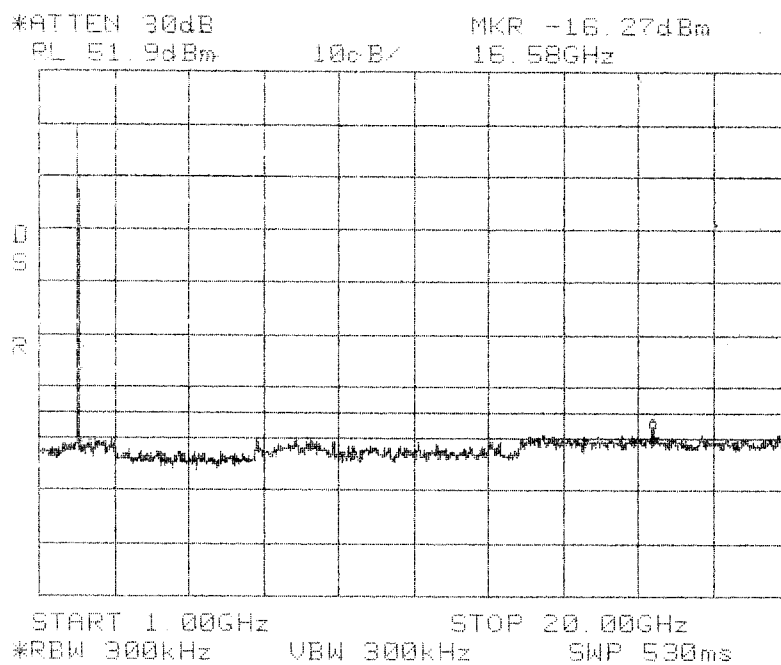
**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
EFC Band**



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

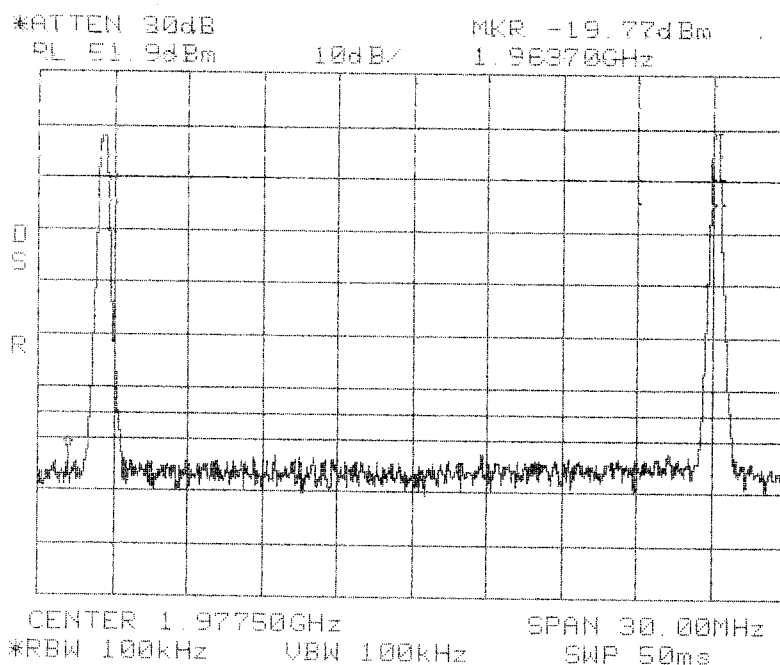
Span: 30 MHz to 1 GHz
RBW/VBW: 100 kHz

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz

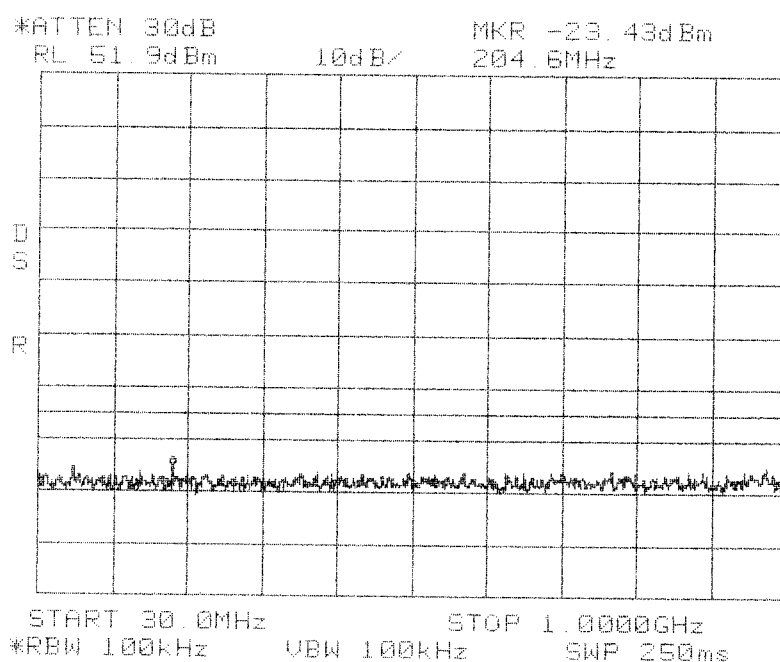


**Intermodulation
Close
Upper
GSM
PCS 1900 MHz
EFC Band**

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



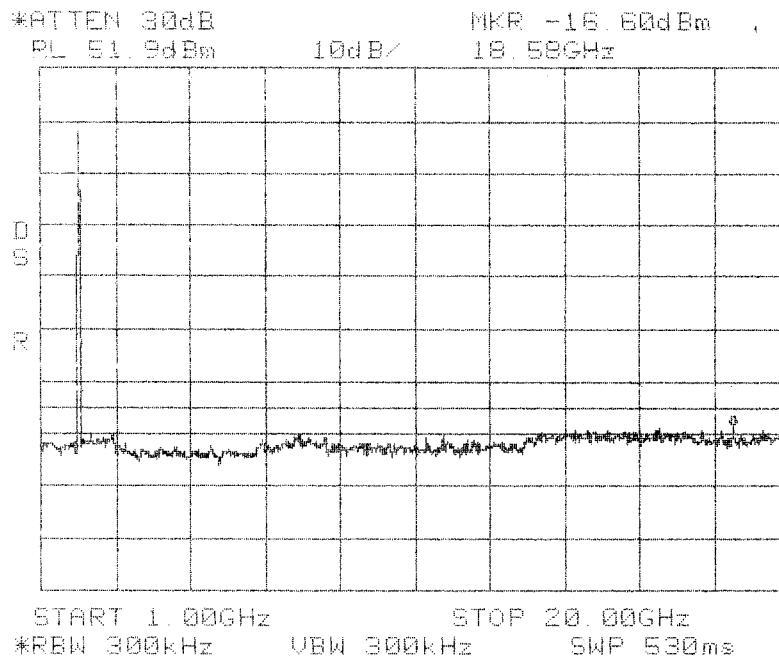
**Intermodulation
Apart
GSM
PCS 1900 MHz
EFC Band**



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

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

Span: 1 GHz to 20 GHz
RBW/VBW: 300 kHz



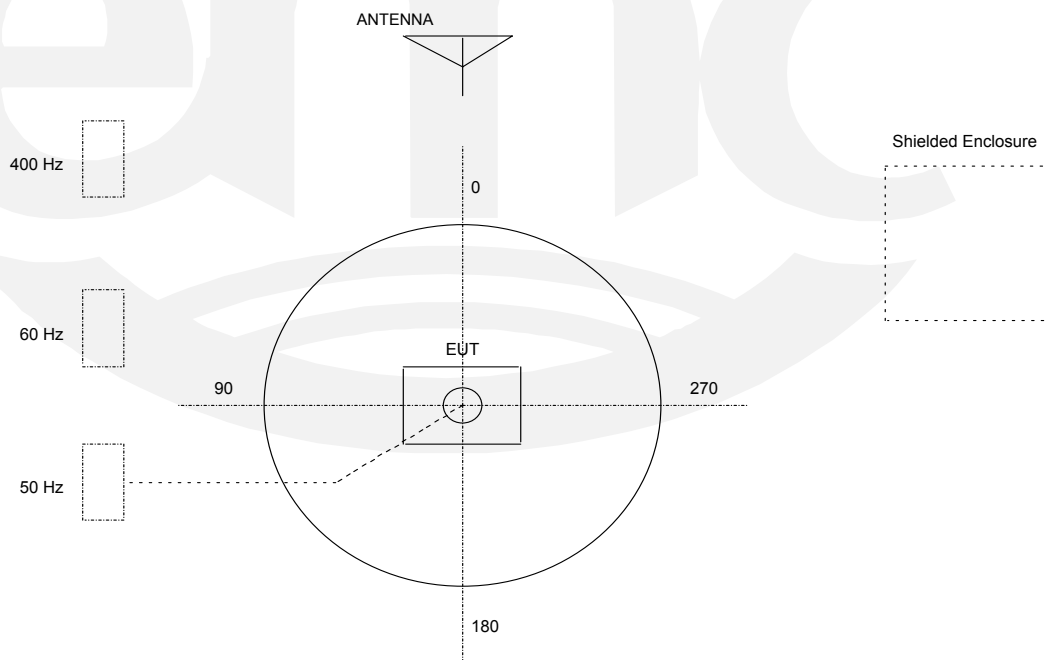
**Intermodulation
Apart
GSM
PCS 1900 MHz
EFC Band**

TEST SETUP FOR EMISSIONS TESTING

WILD RIVER LAB Large Test Site

Notes:

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



Test-setup photos (TÜV run 1)



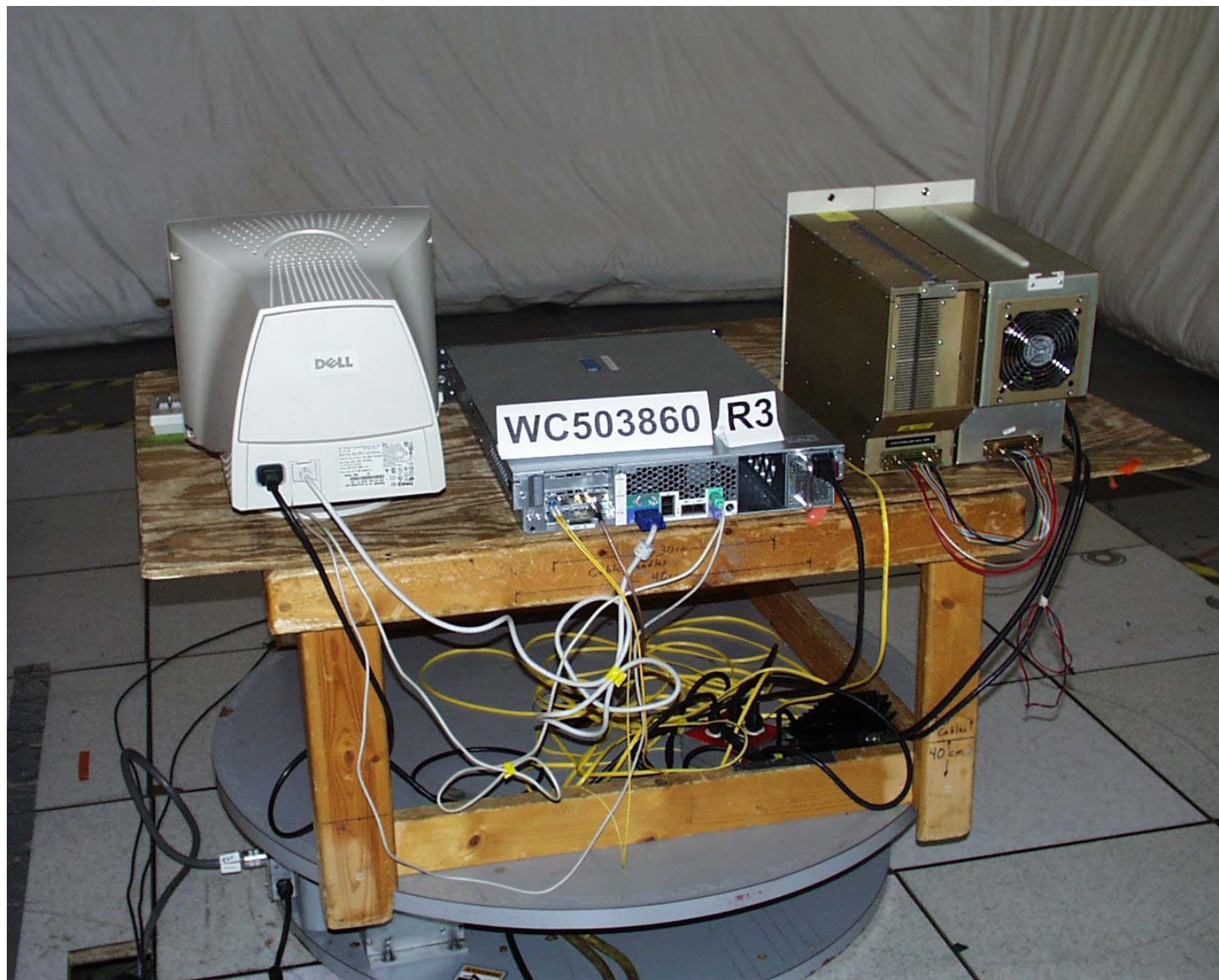
Test-setup photos (TÜV run 1)



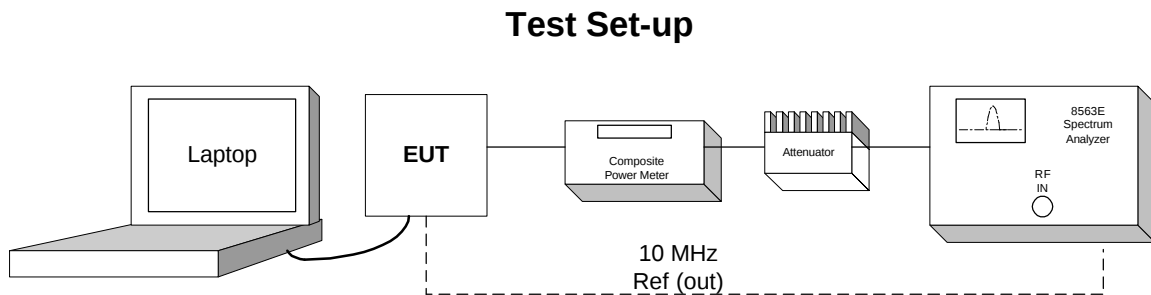
Test-setup photos (TÜV run 3)



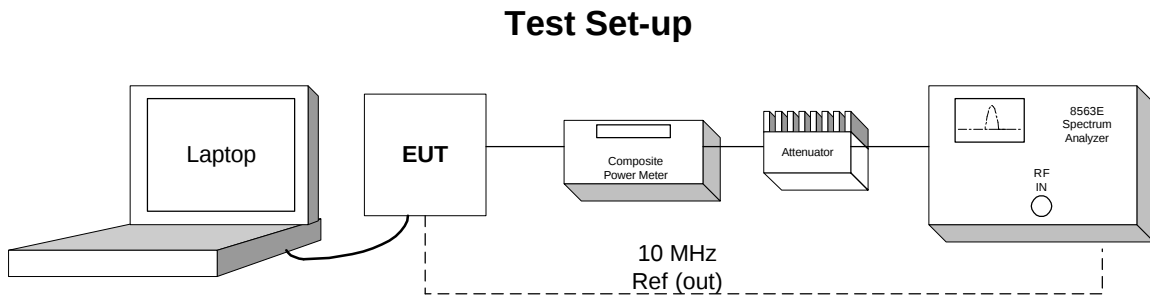
Test-setup photos (TÜV run 3)



Conducted Emission Limits Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGV5-431XXSYS, DGV5-441XXSYS,
DGV5-451XXSYS, and DGV5-461XXSYS



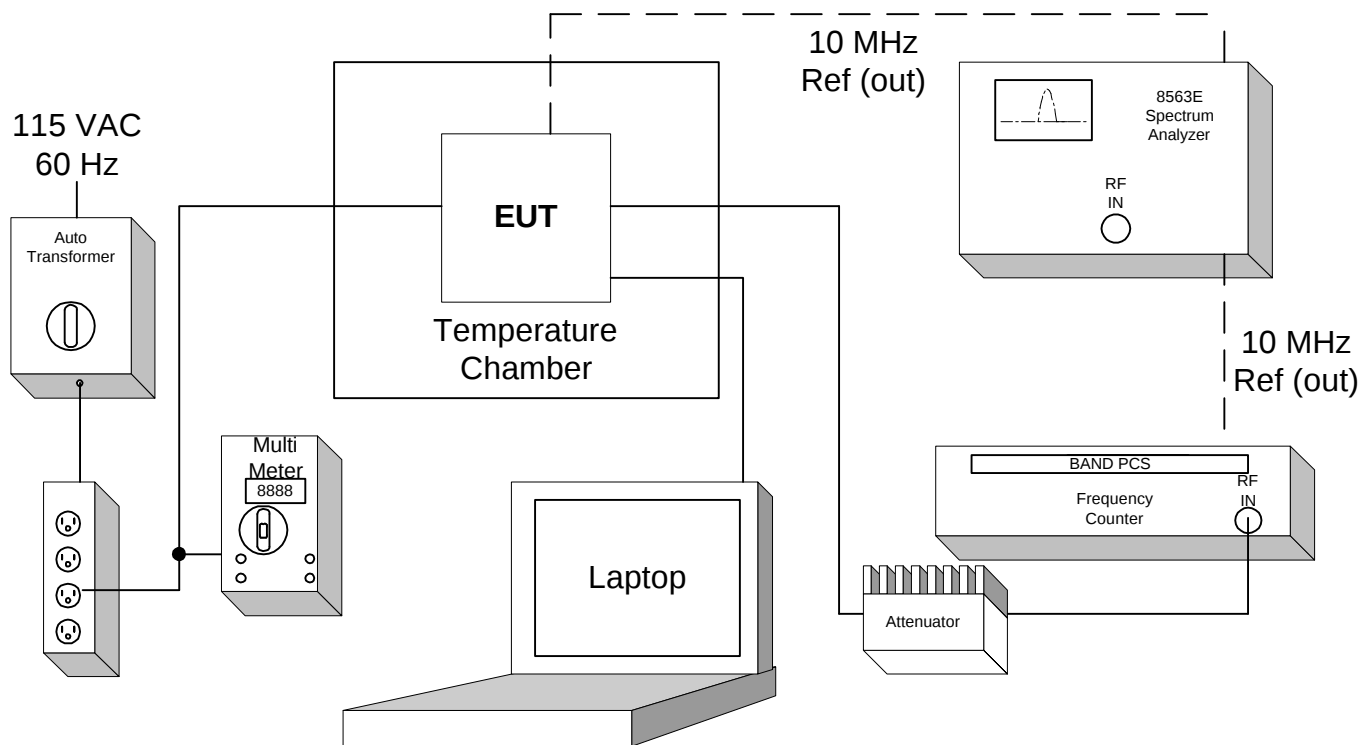
Effective Isotropic Radiated Power Limit Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGV5-431XXSYS, DGV5-441XXSYS,
DGV5-451XXSYS, and DGV5-461XXSYS



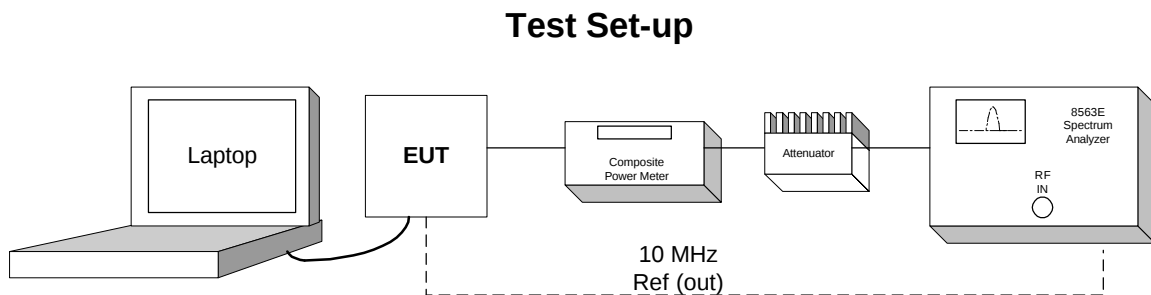
Frequency Tolerance Test for ADC Inc
Digivance â SDR System
Model Numbers: DGVS-431XXXSYS, DGVS-441XXXSYS, DGVS-451XXXSYS, and DGVS-461XXXSYS

EUT Server is specified for indoor use only with temperature range of 10° to +35° C, and was tested with its range.
EUT STM and LPA are specified with a temperature range of -30° to +50° C and were tested with their range.

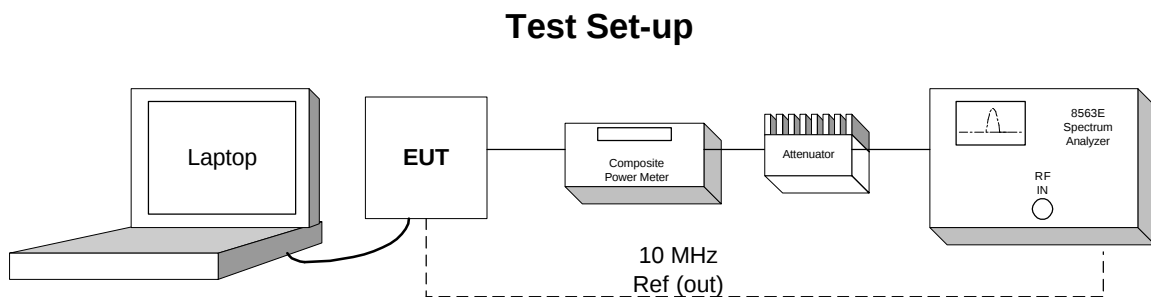
Test Set-up



Inter-Modulation Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGVs-431XXxSYS, DGVs-441XXxSYS,
DGVs-451XXxSYS, and DGVs-461XXxSYS



**Occupied Bandwidth Modulation Test for ADC Inc.
Digivance â SDR System
Model Numbers: DGVS-431XXSYS, DGVS-441XXSYS,
DGVS-451XXSYS, and DGVS-461XXSYS**



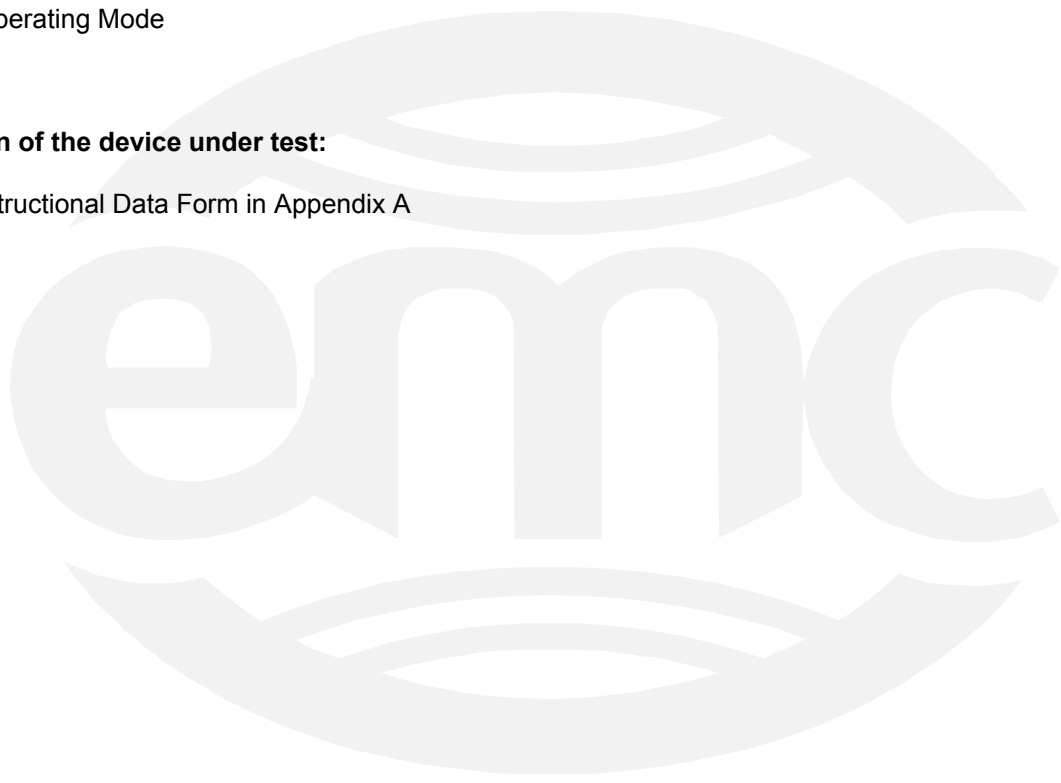
Test Operation Mode:

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

- ☐ - Standby
- ☐ - Test program (H - Pattern)
- ☐ - Test program (color bar)
- ☐ - Test program (customer specific)
- ☐ - Practice operation
- ☒ - Normal Operating Mode

Configuration of the device under test:

- ☒ - See Constructional Data Form in Appendix A



DEVIATIONS FROM STANDARD:

None.

GENERAL REMARKS:

Modifications required to pass:

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

Test Specification Deviations: Additions to or Exclusions from:

- ☒ None
- ☐ As indicated in the Test Plan

SUMMARY:

The requirements according to the technical regulations are

- ☒ - met
- ☐ - **not** met.

The device under test does

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

EUT Received Date (TÜV):	<u>29 July 2005</u>
Condition of EUT:	<u>Normal</u>
Testing Start Date (TÜV):	<u>29 July 2005</u>
Testing End Date: (ADC)	<u>30 August 2005</u>

- TÜV AMERICA INC -

Tested By:



J. C. Sausen

Reviewed By:



G. S. Jakubowski

Appendix A

Constructional Data Form

and

Block Diagrams



EMC Test Plan and Constructional Data Form

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

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

Company: ADC Inc.

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

Contact: Mark F. Miska Position: Compliance Engineer

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

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

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

EUT Description Transports RF between a remote antenna and Software Defined Radio base station.

EUT Name Digivance Software Defined Radio 1900 MHz 40-Watt System

Model No.: DGVS-431XX0SYS, DGVS-441XX0SYS, DGVS-451XX0SYS, and DGVS-461XX0SYS Serial No.: None

Product Options: Receive Diversity

Configurations to be tested: 1900 MHz System: AD, DBE, BEF, and EFC Band Version with Diversity option

Test Objective

- | | |
|--|---|
| ☐ EMC Directive 89/336/EEC (EMC) | ☒ FCC: Class ☐ A ☐ B Part <u>24</u> |
| Std: _____ | ☐ VCCI: Class ☐ A ☐ B |
| ☐ Machinery Directive 89/392/EEC (EMC) | ☐ BCIQ: Class ☐ A ☐ B |
| Std: _____ | ☐ Canada: Class ☐ A ☐ B |
| ☐ Medical Device Directive 93/42/EEC (EMC) | ☐ Australia: Class ☐ A ☐ B |
| Std: _____ | ☒ Other: <u>FCC Part 15 Class A</u> |
| ☐ Vehicle Directive 72/245/EEC (EMC) | |
| Std: _____ | |
| ☐ FDA Reviewers Guidance for Premarket Notification Submissions (EMC) | |

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

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

Attendance

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

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

If a failure occurs, TÜV Product Service should:

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

EUT Specifications and Requirements

Length: 20" Width: 17.11" Height: 3.5" Weight: 48 LBS

Power Requirements

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

Voltage: 100-120/200-240 VAC (If battery powered, make sure battery life is sufficient to complete testing.)

of Phases: 1

Current (Amps/phase(max)): 6/4 Current (Amps/phase(nominal)): 4

Other _____

Other Special Requirements

none

Typical Installation and/or Operating Environment

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

Server/PCIx card indoor only with STM and LPA indoor or outdoor. System is typically employed as a GSM base station.

EMC Test Plan and Constructional Data Form



EUT Power Cable

☐	Permanent	OR	☒	Removable	Length (in meters): <u>1</u>
☐	Shielded	OR	☒	Unshielded	
☐	Not Applicable				

EMC Test Plan and Constructional Data Form

EUT Interface Ports and Cables												
Interface			Shielding									
Type	Analog	Digital	Qty	Yes	No	Type	Termination	Connector Type	Port Termination	Length (in meters)	Removable	Permanent
EXAMPLE:												
RS232	☐	☒	2	☒	☐	Foil over braid	Coaxial	Metallized 9-pin D-Sub	Characteristic Impedance	6	☒	☐
RF "N" type	☒	☐	2	☒	☐	Braid	Coaxial	N	50 Ohms	>3	☒	☐
RF "SMR" type	☒	☐	2	☐	☒	Braid	Coaxial	SMA	50 Ohms	>3	☒	☐
Alarm	☒	☐	1	☐	☒	Not Specified	N/A	4 Pin Standoff		>3	☒	☐
Fiber	☐	☒	3	☐	☒	N/A	N/A	SC	N/A	>3	☒	☐
9 Pin Din	☐	☒	2	☒	☐	Not Specified	AC Coupled	Din		>3	☒	☐
AC power	☒	☐	1	☐	☒	N/A				>3	☒	☐
Battery Connection	☒	☐	1	☐	☒	N/A	N/A	2 Pin Standoff		1	☒	☐
STM to Amp Interconnect	☒	☐	1	☐	☒	Varied		Terminal		1	☒	☐
	☐	☐		☐	☐						☐	☐
	☐	☐		☐	☐						☐	☐
	☐	☐		☐	☐						☐	☐
	☐	☐		☐	☐						☐	☐

EMC Test Plan and Constructional Data Form

EUT Software.

Revision Level: Version 4.00.00.12

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

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

1. Max composite out
- 2.
- 3.

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

Description	Model #	Serial #	FCC ID #
Host Unit	DGVS-401010HU	None	
STM AD Band	DGVL-431010STM	None	
STM DBE Band	DGVL-441010STM	None	
STM BEF Band	DGVL-451010STM	None	
STM EFC Band	DGVL-461010STM	None	
LPA	DGVL-401000LPA	None	
Digivance Software Defined Radio 1900 MHz System consist of the HU, STM, and LPA.		None	

EMC Test Plan and Constructional Data Form



Support Equipment -- List and describe all support equipment which is not part of the EUT. (i.e. peripherals, simulators, etc)

<i>Description</i>	<i>Model #</i>	<i>Serial #</i>	<i>FCC ID #</i>
Server	HP Proliant DL380	D402LJC1H278	
Monitor	N/A		
Keyboard	N/A		
Mouse	N/A		

Oscillator Frequencies

<i>Frequency</i>	<i>Derived Frequency</i>	<i>Component # / Location</i>	<i>Description of Use</i>

Power Supply

<i>Manufacturer</i>	<i>Model #</i>	<i>Serial #</i>	<i>Type</i>
			☐ Switched-mode: (Frequency) _____ ☐ Linear ☐ Other: _____
			☐ Switched-mode: (Frequency) _____ ☐ Linear ☐ Other: _____

Power Line Filters

<i>Manufacturer</i>	<i>Model #</i>	<i>Location in EUT</i>
None		

Form

EMC Test Plan and Constructional Data Form



Critical EMI Components (Capacitors, ferrites, etc.)

Description	Manufacturer	Part # or Value	Qty	Component # / Location
None				

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

None

(PLEASE INSERT "ELECTRONIC SIGNATURE" BELOW IF POSSIBLE)

Authorization Signatures

A handwritten signature in black ink, appearing to read 'Mark D. Smith'.

Customer authorization to perform tests
according to this test plan.

8-8-05

Date

Test Plan/CDF Prepared By (please print)

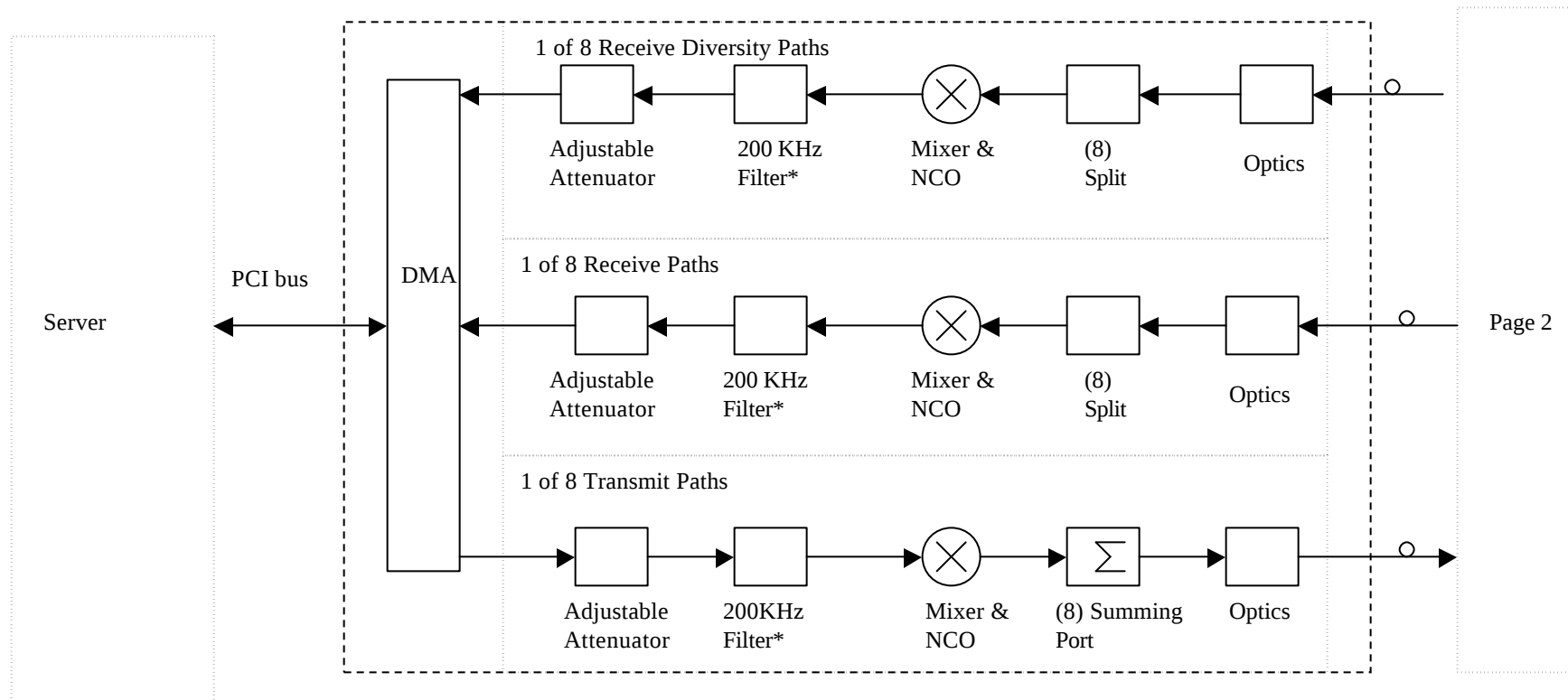
Date

Reviewed by TÜV Product Service Associate

Date

Digivance® Software Defined Radio 1900 MHz

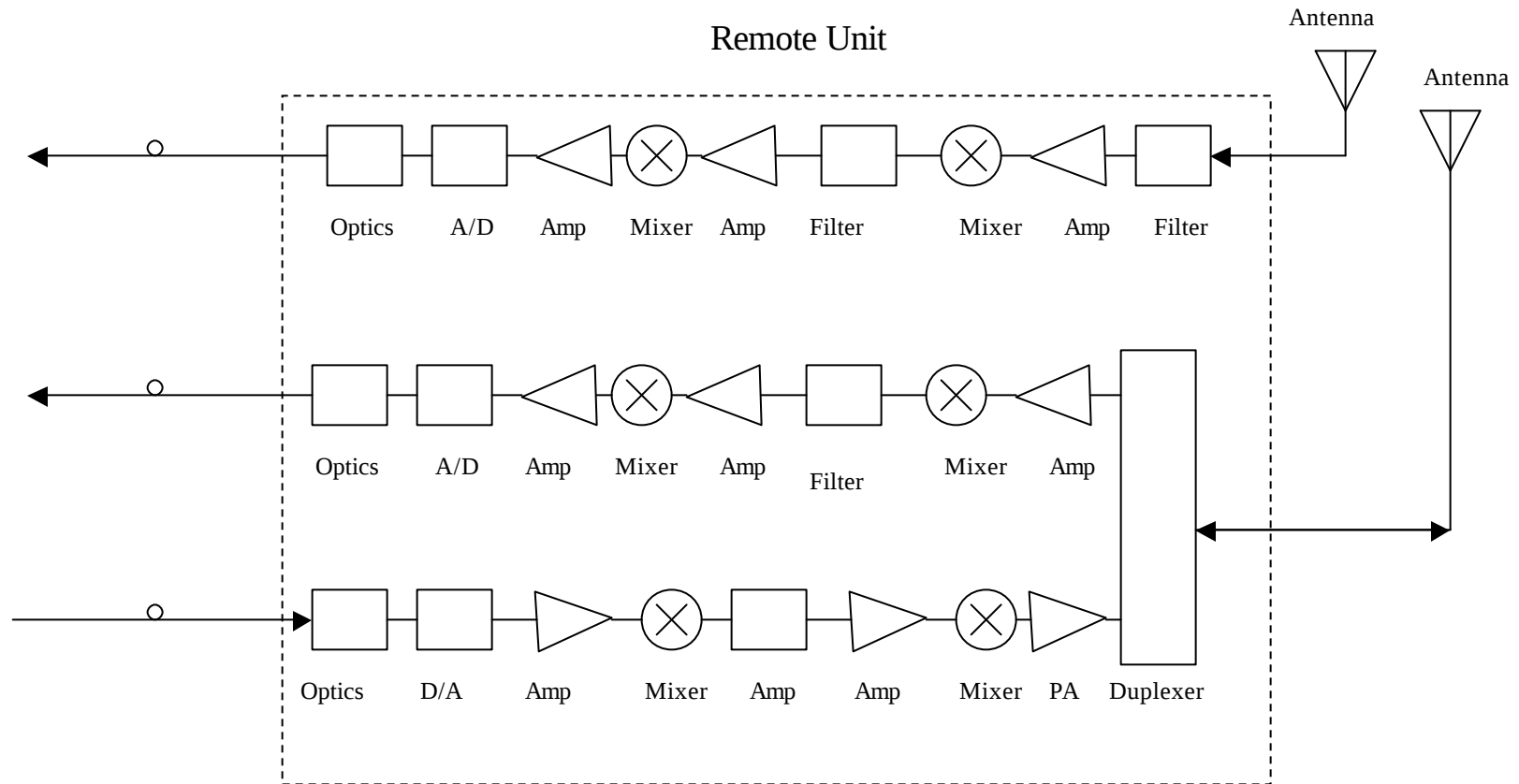
Host Unit



Page 2

* The 200KHz Filter is specific to GSM/AMPS and is not “hard-coded” in the system.

Digivance® Software Defined Radio 1900 MHz



Appendix B

Measurement Protocol



MEASUREMENT PROTOCOL

GENERAL INFORMATION

Environmental conditions in the lab, TUV America Large Test Site

Actual

Temperature: 22 °C

Relative Humidity: 40 %

Atmospheric pressure: 99.0 kPa

Power supply system: 60 Hz, 120 VAC;

The FCC guideline for measuring a device which draws its power from a device which connects to the AC mains, indicates that it must be demonstrated that it does not cause the device which connects to the AC mains to become non-compliant. If it can be demonstrated that it will be compliant in a representative host, it does not have to demonstrate compliance in every possible host. Thus, the testing proves the EUT's RF board, when connected to a compliant host connected to the AC mains, allows the host to remain compliant. The host that was provided for the testing operated at 60 Hz 120 VAC.

Test Methodology

Conducted and radiated emission testing is performed according to the procedures in ANSI C63.4-2003.

Measurement Uncertainty

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

Justification

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

Conducted Emissions

The final level, in dB μ V, equals the EMI receiver level plus the cable loss and LISN factor.

Radiated Emissions

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

Example:

FREQ (MHz)	LEVEL (dB μ V)	CABLE/ANT/PREAMP (dB)	FINAL (dB μ V/m)	POL/HGT/AZ (m) (deg)	DELTA1
60.80	42.5Qp +	1.2 + 10.9 - 25.5 =	29.1	V 1.0 0.0	-10.9

Test Equipment

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

Substitution Method

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

