Test Report Summary
FCC CFR 47, Part 24
Subpart E Broadband PCS

Manufacturer: ADC Telecommunications

Name of Equipment: Digivance® Long Range Coverage Solution

Model Number(s): DGVL-406000LPA

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

Test Report Number: MN061117

Test Date(s): 07 November, 2006 (ETL)
08-09 November, 2006 (ADC)

According to testing performed at Intertek, the above-mentioned unit is in accordance with the applicable electromagnetic compatibility (EMC) portions of the requirements defined in FCC Part 24.

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

All testing was done in accordance with the Federal Communications Commission's CFR 47 Part 24 and the EUT fulfills the requirements of the Federal Communications Commission's CFR 47 Part 24.

Date: 17 November 2006

Location:

Intertek Testing Services (ETL)
7250 Hudson Blvd., Suite 100
Oakdale, MN 55128
Phone: (651) 730-1188
Fax: (651) 730-1282

ADC Telecommunications
5341 12th Ave E
Shakopee, MN 55379
Phone: (952) 403-8340
Fax: (952) 403-8858

Testing Conducted by (ADC):
And Report Written by:

Mark F. Miska
Compliance Engineer

EMC Emission – T E S T R E P O R T

Test Report File Number: MN061117 **Date of Issue:** 17 November, 2006

Model Number(s): DGVL-406000LPA

Product Name: Digivance® Long Range Coverage Solution

Product Type: Linear Power Amplifier, 20 Watt

Applicant: ADC Telecommunications

Manufacturer: ADC Telecommunications

License Holder: ADC Telecommunications

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

Test Result: ■ **Positive** □ Negative

Test Project Number: 3109813

Reference(s)

Total pages including Appendices: 156

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1.0 REVISION DESCRIPTION

Rev	Total Pages	Date	Description
A	156	November 17, 2006	Original Release

2.0 DOCUMENTATION

2.1 Test Regulations

24.232 Power and antenna height limits
24.235 Frequency stability
24.238 Emission limits for Broadband PCS equipment

The emissions tests were performed according to the following regulations:

☐ FCC Part 22

■ **FCC Part 24**

☐ FCC Part 90

☐ IC RSS-131 Issue 2

Environmental Conditions in the lab:

ADC	**ETL**
Temperature: 25º C	23º C
Relative Humidity: 23%	31%
Atmospheric Pressure: 97.7 kPa	98.3 kPa

Power Supply Utilized:

Power Supply System (Remote) : 1 phase, 60 Hz, 120 VAC
Power Supply System (Host) : 48 VDC

2.2 Test Operation Mode

☐ Standby

☐ Test Program

☐ Practice Operation

■ **Max composite in and out**

2.3 Configuration of the device under test:

Normal Operation – PCS - 1930 to 1990 MHz

2.4 Product Options:

None

2.5 EUT Specifications and Requirements:

Length: 15”
Width: 6.5”
Height: 7.75”
Weight: 17.5 pounds

2.6 Cables:

Cable Type	Length	From	To
Optical	> 3M	Ancillary Equip	EUT
RF	< 3M	EUT	50 Ohm Load
Power	< 3M	Power	Input Power
RF/Data	< 3M	LPA	STM

2.7 Power Requirements:

Voltage: 120 VAC
Amps: 4.8 A

2.8 Typical Installation and/or Operating Environment:

Host indoor only with Remote Unit indoor or outdoor. System is typically employed as a Microcell.

2.9 Other Special Requirements:

None

2.10 EUT Software:

Revision Level: Version 3.01.04
Description: Digivance Element Management System (DEMS). System Management and Interface Matching Software

2.11 EUT System Components

Description	Model #	Serial #	FCC ID #
Host Unit	DGVL-400000HU	None	
STM	DGVL-4X0000STM	None	
LPA	DGVL-406000LPA	None	

Note: Digivance® LRCS System consists of the HU, STM, and LPA.

2.12 Support Equipment

Description	Manufacturer	Model #	FCC ID #
Power Meter	HP	EPM-441A	
Signal Generator	Agilent	E4438C	
Attenuator	Aeroflex	49-30-33	
Power Supply	Xantrex	HPD 60-5	

2.13 Deviations from standard:

Modifications required to pass:

☐ As indicated on the data sheet(s)

■ **None**

Test Specification Deviations; Additions to or Exclusions from:

☐ As indicated in the Test Plan

■ **None**

2.14 General Remarks:

None.

2.15 Summary:

The requirements according to the technical regulations are

■ **met**

☐ not Met

The equipment under test does

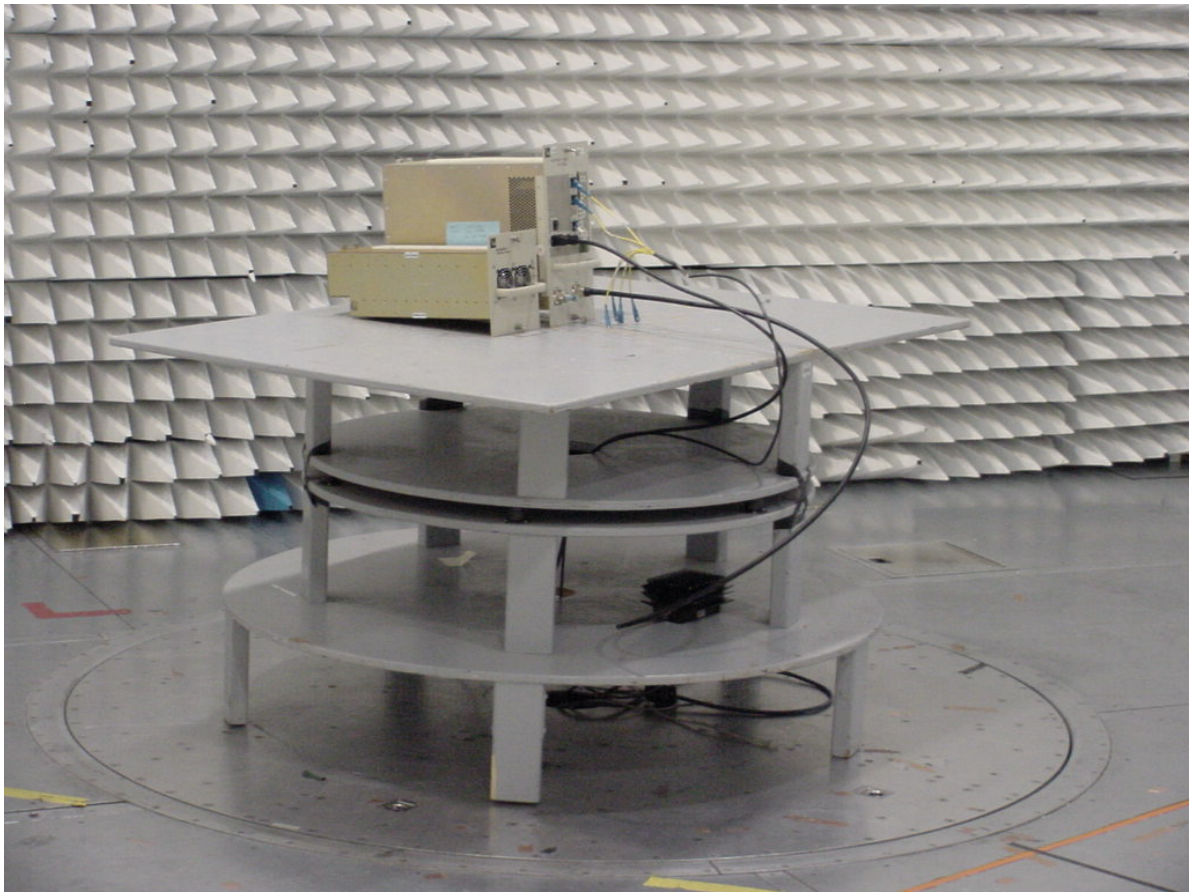
■ **fulfill the general approval requirements mentioned on page 4.**

☐ not fulfill the general approval requirements mentioned on page 4.

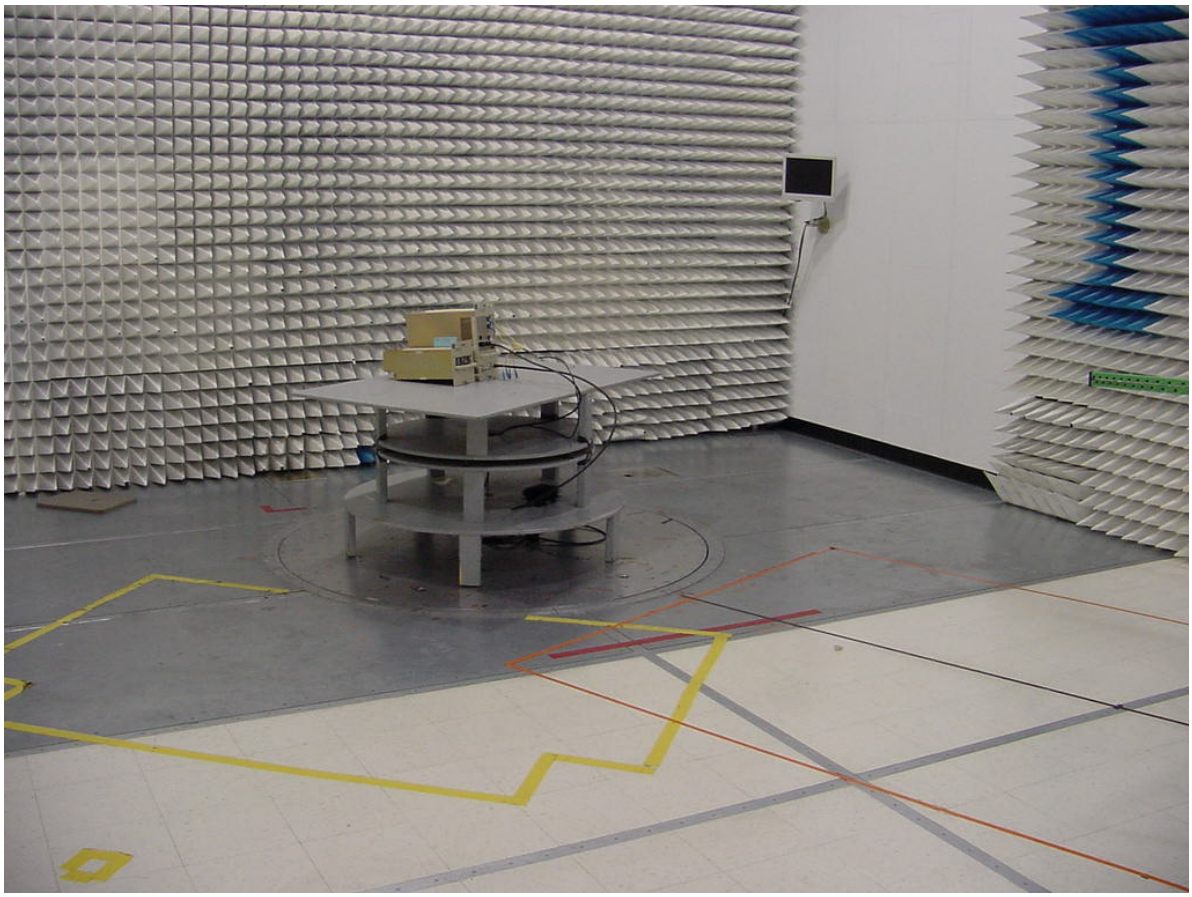
3.0 TEST SET-UP DRAWINGS AND PHOTOS

Back to Table of Contents:

3.1 Test set-up photo, radiated emissions

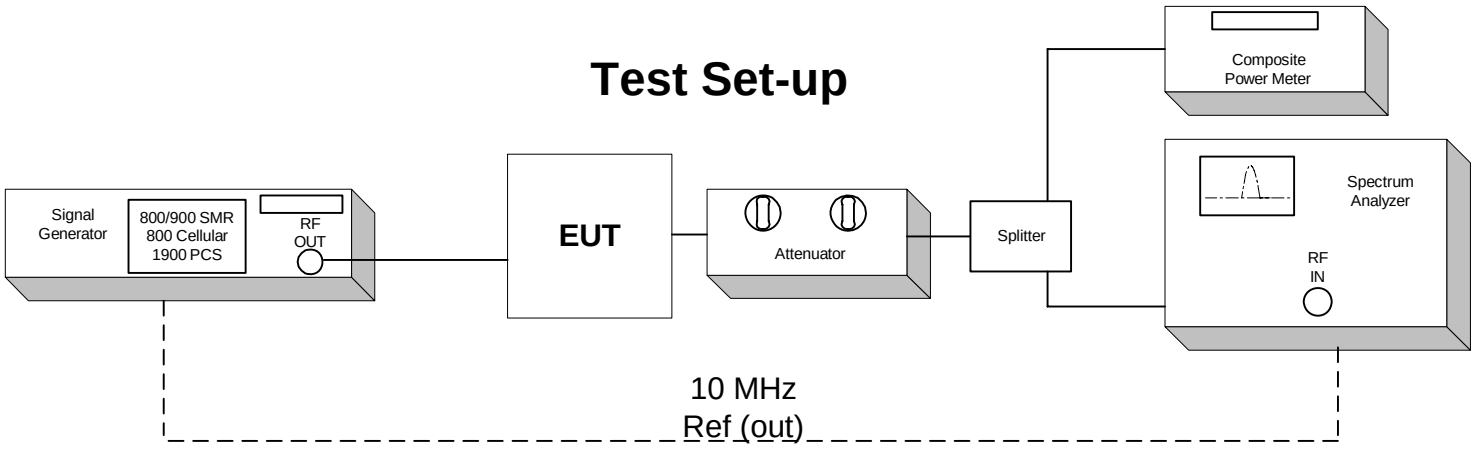


3.2 Test set-up photo, radiated emissions

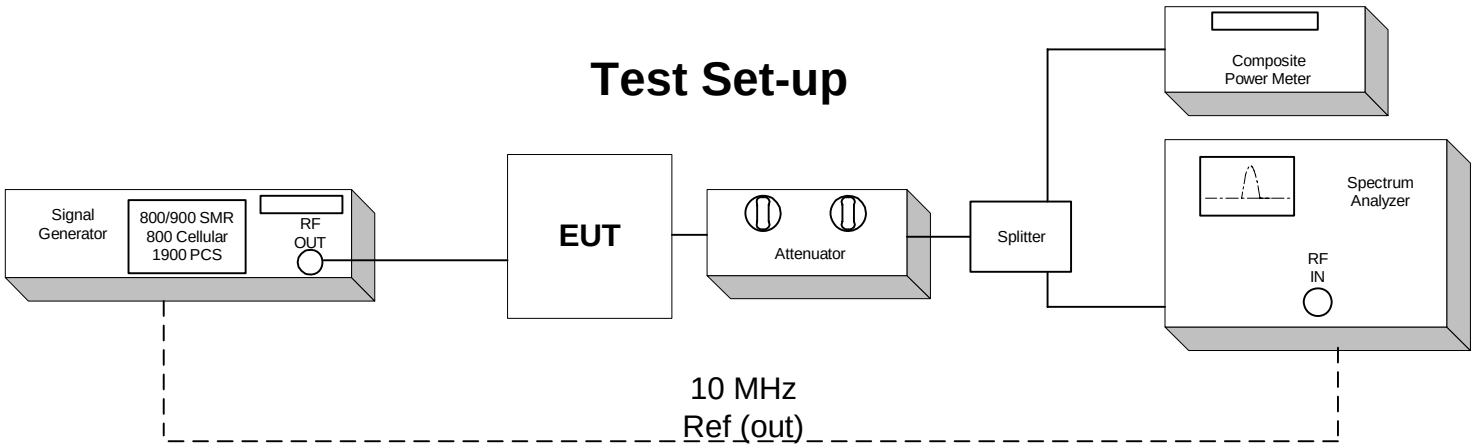


3.3 Test Set-up Drawings

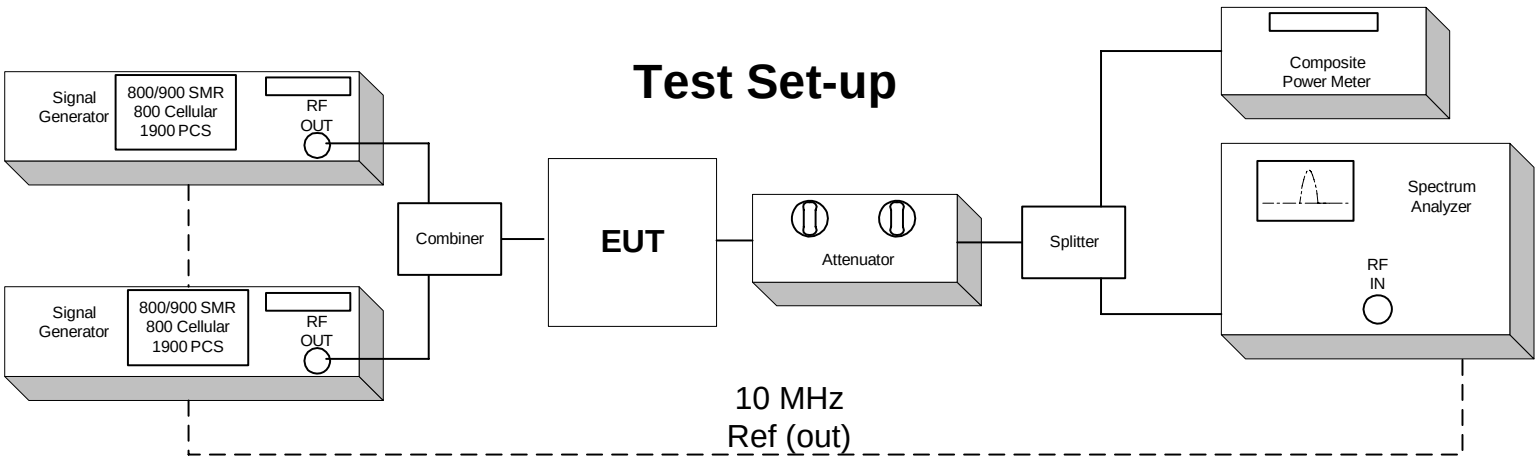
Conducted and Radiated Emission Limits Test for ADC Inc. Digivance® Long Range Coverage Solution Model Number DGVL-406000LPA



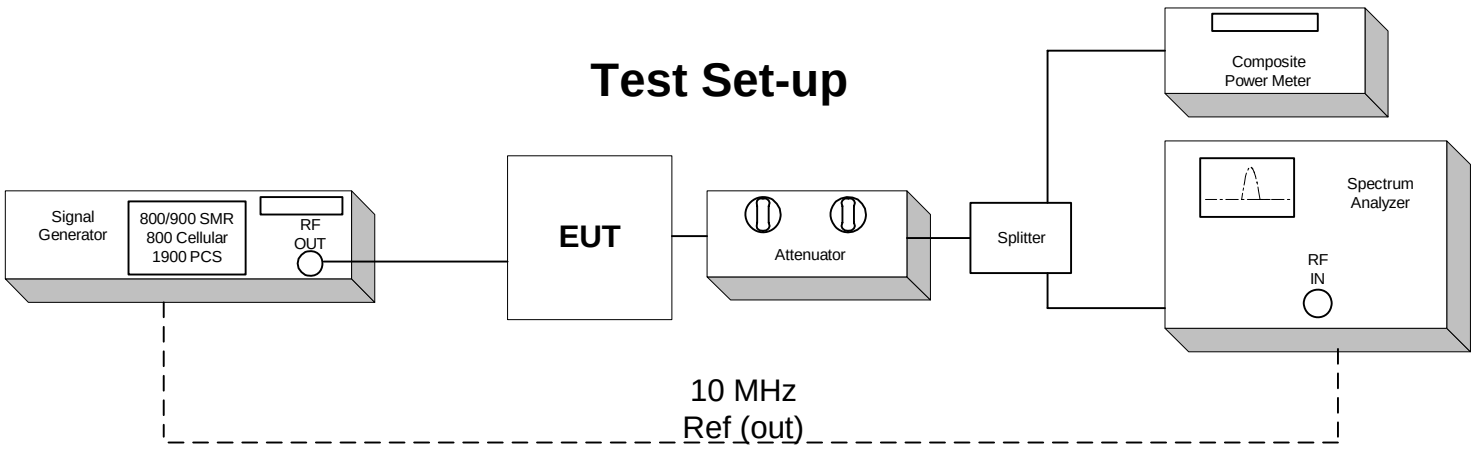
Conducted Output Power Test for ADC Inc. Digivance® Long Range Coverage Solution Model Number DGVL-406000LPA



Inter-Modulation Test for ADC Inc.
Digivance® Long Range Coverage Solution
Model Number DGVL-406000LPA



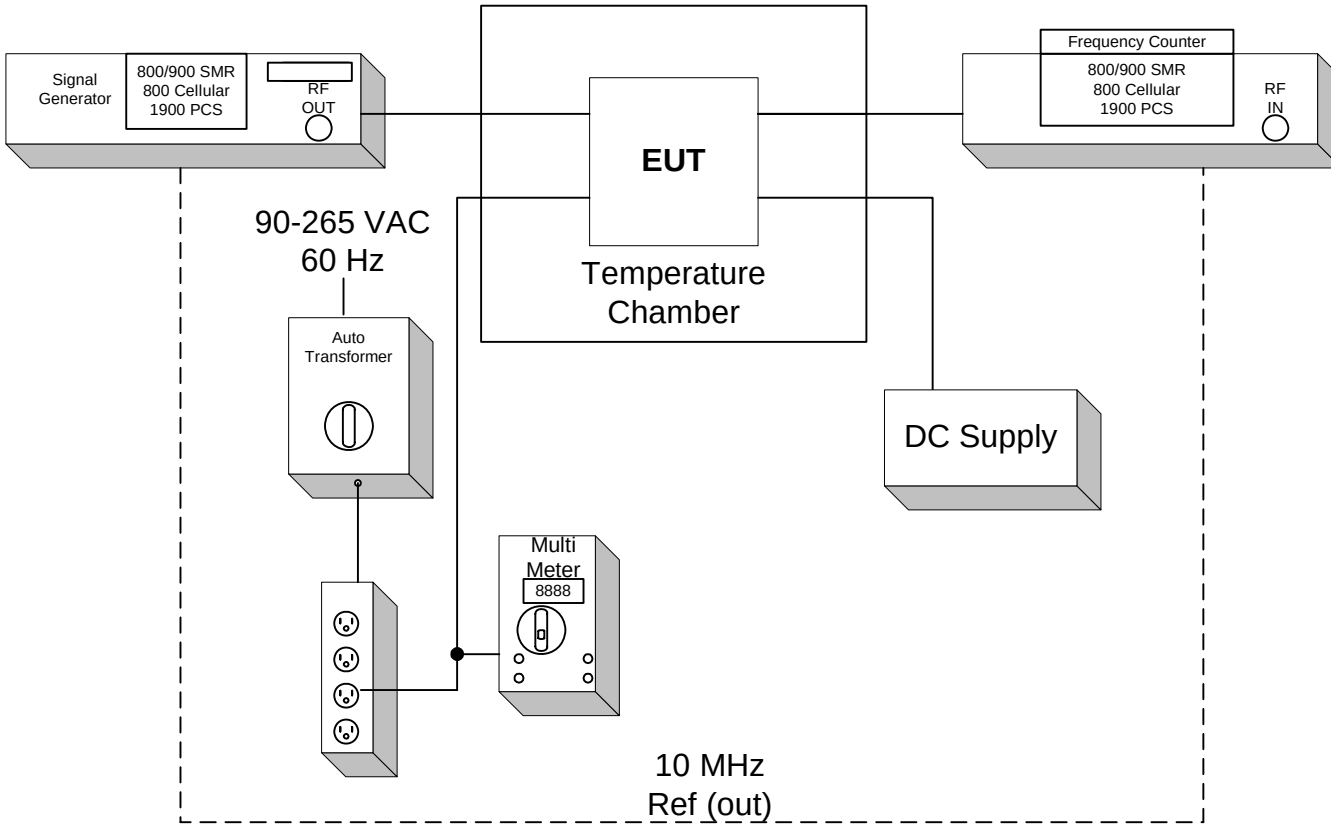
Occupied Bandwidth Modulation Test for ADC Inc.
Digivance® Long Range Coverage Solution
Model Number DGVL-406000LPA



Frequency Tolerance Test for ADC Inc.
Digivance® Long Range Coverage Solution
Model Number DGVL-406000LPA

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

Test Set-up



4.0 TEST RESULTS

4.1.1 24.232 Power and antenna height limits

Test Summary:

- The requirements are: ■ **MET** □ NOT MET
- Minimum margin of compliance is 7.24 dB at 1960.0 MHz (GSM)

Test Location:

□ ETL (Oakdale, MN)

■ **ADC facility (Shakopee, MN)**

Test Distance:

□ 3 Meters

□ 10 Meters

■ **Conducted measurement**

Test Equipment (ADC):

Equipment	Manufacturer	Model	ADC Serial Number	Calibration Due.
Attenuator	Aeroflex	49-30-33	N/A	CNR
Spectrum Analyzer	HP	8563E	MC27690	12-22-06
Power Meter	HP	EPM-441A	MC27670	9-20-07
Signal Generator	Agilent	E4437B	83781	6-13-08

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

Test Limit:
100 Watts or 50 dBm Limit

Test Data:
See page 47

Test Engineer: Mark F. Miska
Date: 08 November, 2006

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4.1.2 24.235 Frequency Stability

Test Summary:

- The requirements are: ■ **MET** □ NOT MET
- The fundamental emission stays within the authorized frequency block.
- Frequency measured over a temperature range of –30 to 50º C and an input voltage range of 90 to 265 VAC (Remote) and 24 to 48 DC (Host).

Test Location:

□ ETL (Oakdale, MN)

■ **ADC facility (Shakopee, MN)**

Test Equipment (ADC):

Equipment	Manufacturer	Model	ADC Serial Number	Calibration Due.
Multimeter	Fluke	87	MC20083	4-26-07
Frequency Counter	HP	5347A	MC27548	8-18-07
Variable Auto Transformer	Staco	1520CT	MC44655	CNR
Signal Generator	Agilent	E4437B	83781	6-13-08

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

Test Limit:
The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Data:
See pages 128 – 131

Test Engineer: Mark F. Miska
Date: 08 November, 2006

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4.1.3 24.238 Emission limitations for broadband PCS equipment

Test Summary:

- The requirements are: ■ **MET** □ NOT MET
- Out of band emissions were less than –13 dBm.
- Outside the emission bandwidth of the carrier, all emissions are attenuated at least 26 dB below the transmitter power.

Test Location:

□ ETL (Oakdale, MN)

■ **ADC facility (Shakopee, MN)**

Test Equipment (ADC):

Equipment	Manufacturer	Model	ADC Serial Number	Calibration Due.
Spectrum Analyzer	HP	8563E	MC27690	12-22-06
Power Meter	HP	EPM-441A	MC27670	9-20-07
Multimeter	Fluke	87	MC20083	4-26-07
Frequency Counter	HP	5347A	MC27548	8-18-07
Temperature Chamber	Ecosphere		MC21679	12-27-06
Variable Auto Transformer	Staco	1520CT	MC44655	CNR
Signal Generator	Agilent	E4437B	83781	6-13-08
Signal Generator	Agilent	E4436B	1283112C	4-4-08
Power Supply	Xantrex	HPD 60-5	MC27764	6-25-08
Attenuator	Aeroflex	49-30-33	N/A	CNR

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

Test Equipment (Intertek):

Equipment	Manufacturer	Model	Serial No.	Cal. Due.
Spectrum Analyzer	Rohde & Schwarz	FSP 40	100024	07/07
Spectrum Analyzer	Rohde & Schwarz	ESCI	100358	04/07
Instrument Control	TILE!	Ver. 3.4 K.15	N/A	N/A
Antenna	Schaffner-Chase	Bicono-Log	2468	01/07
Antenna	EMCO	Horn 3115	9507-4513	01/07
Antenna	EMCO	Horn 3115	6579	02/07
Antenna	EMCO	Waveguide Horn 3116	9904-2423	07/07
Pre-Amp	MITEQ	AMF-5D	1122951	02/07
Pre-Amp	MITEQ	AMF-6F-16002600-25-10P	1222383	09/07
Generator	HP	8340B	2819A01098	09/07

Test Limit:

Out of band emissions:
Attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB, or –13 dBm.

Outside of the carrier emissions bandwidth:
26 dB below the transmitter power

Test Data:
Conducted Emissions, pages 16 – 46
Intermodulation Test, pages 48 – 120
Occupied Bandwidth, pages 121 – 127
Radiated Emissions, pages 132 – 154 (Appendix B)

Test Engineer: Mark F. Miska
Date: 08 November, 2006
Date: 09 November, 2006
Date: 09 November, 2006

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5.0 APPENDIX A

Test Data

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Conducted Emission Limits Test for ADC Inc.
Digivance® Long Range Coverage Solution
Model Number DGVL-406000LPA

Back

The out of band emissions were measured directly from the EUT antenna output with a spectrum analyzer from 30 MHz to the 10th harmonic of the highest carrier frequency. Test signals used are TDMA, GSM, EDGE, CDMA, EVDO, and W-CDMA. The different signals were input one at a time to the EUT. In all cases, the out of band emissions were less than –13 dBm from the equation

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

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

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

Industry practice has generally set the input signal power level. Test signal used was ≈ -40 dBm input to DHU.
Industry practice has generally set the output signal power level.

Digital Host Unit (DHU):
Range: 24-48 VDC
Tested @: 48 VDC
Tested @: 1.2 A

Remote Unit (STM, including LPA):
Range: 90 - 265 VAC
Tested @: 120 VAC
Tested @: 4.8 A
The LPA requires a constant input voltage supply of 28 VDC from the STM and was tested @ 11.7 A

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

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

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

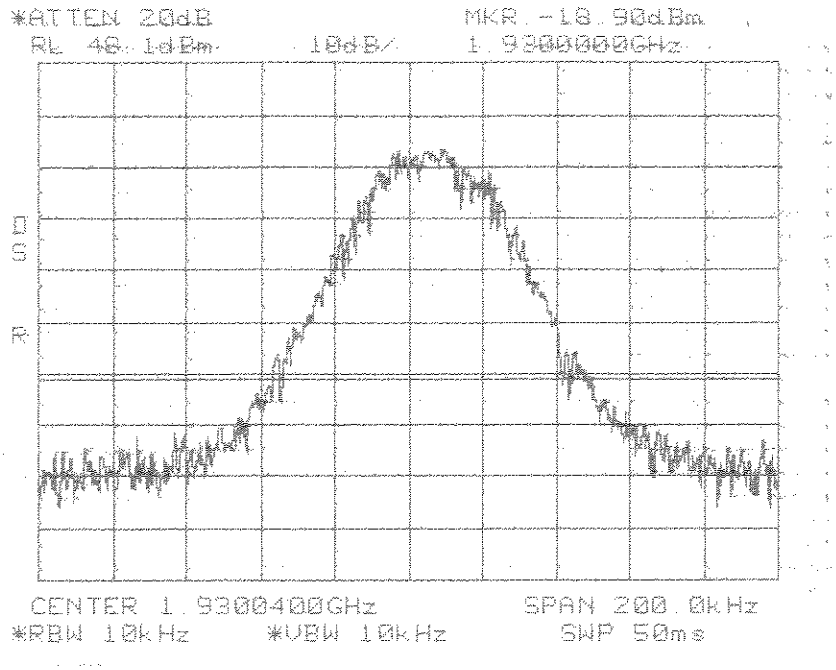
The spurious limitation is completed with the duplexer. The ALC also suppresses in-band spurious by preventing PA overdrive, while the duplexer suppresses out-of-band spurious. Internal to the electronics, the use of SAW filters provides for higher Q roll-off at band edges.

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

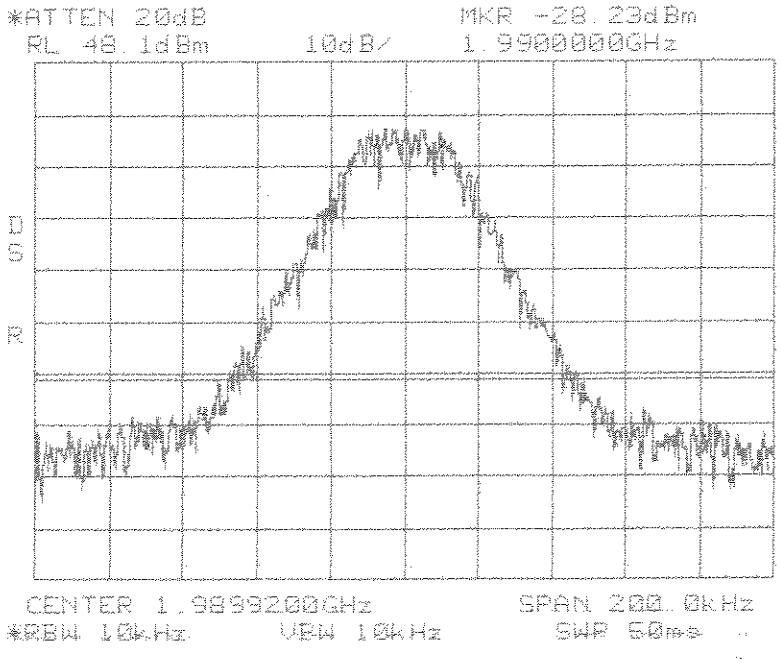
This is a constant gain device, so the setup controls the output. There is an overdrive and overpower limit control that prevents excess power.

Results:
Pass (See plots)

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



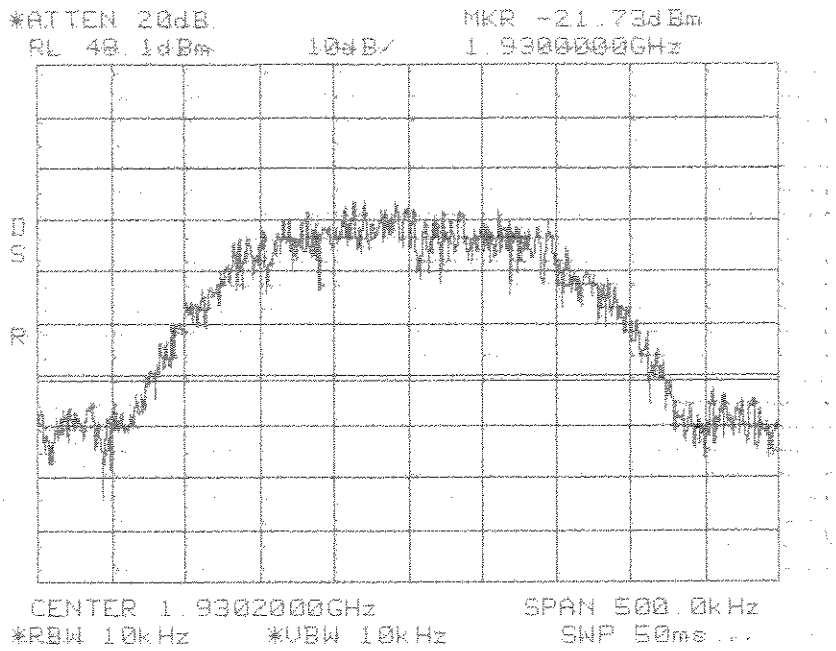
Band Edge
TDMA



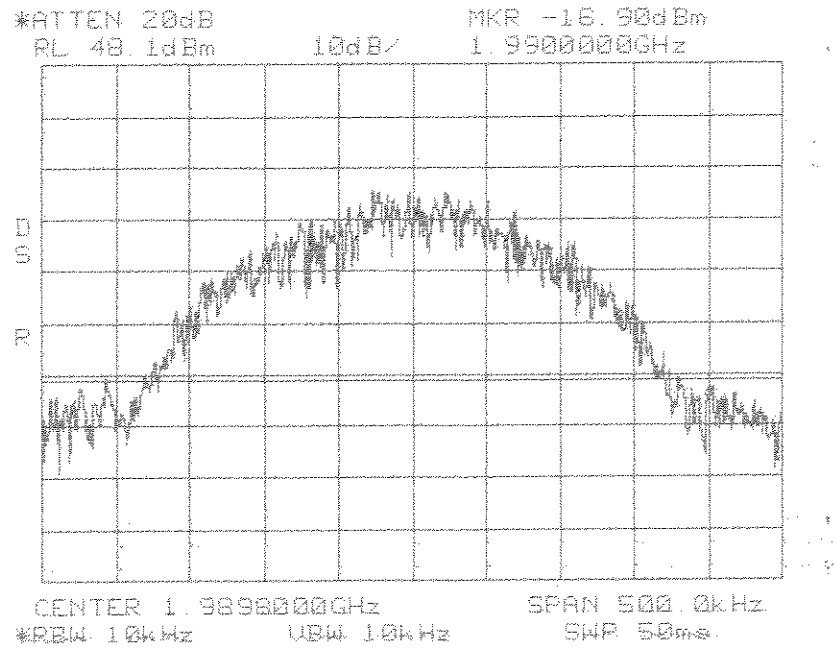
Band Edge
TDMA

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

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



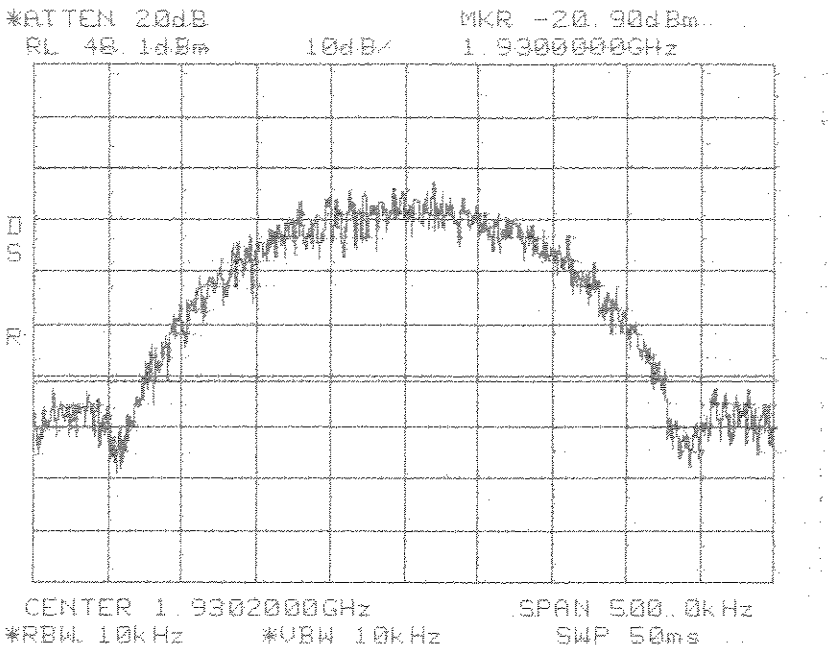
Band Edge
GSM



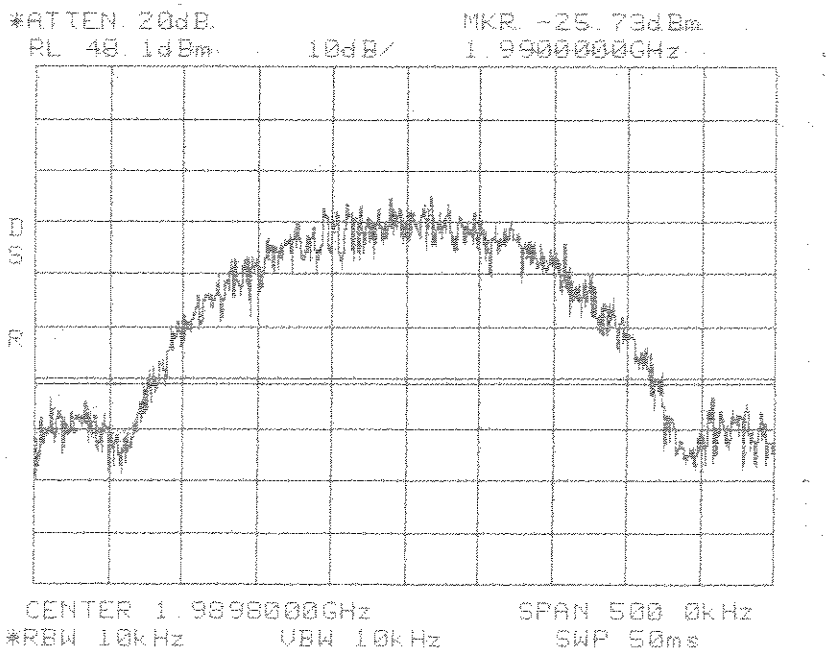
Band Edge
GSM

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

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



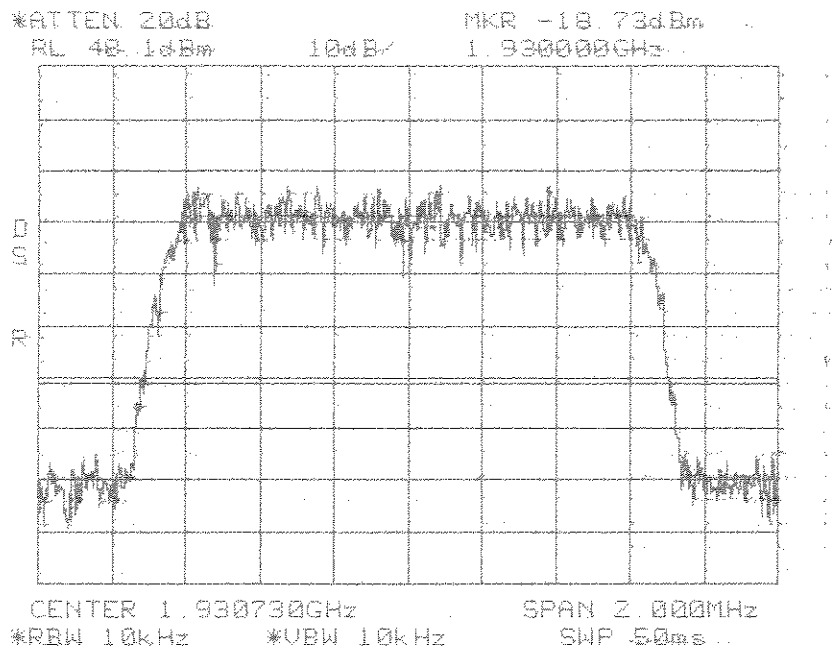
Band Edge
EDGE



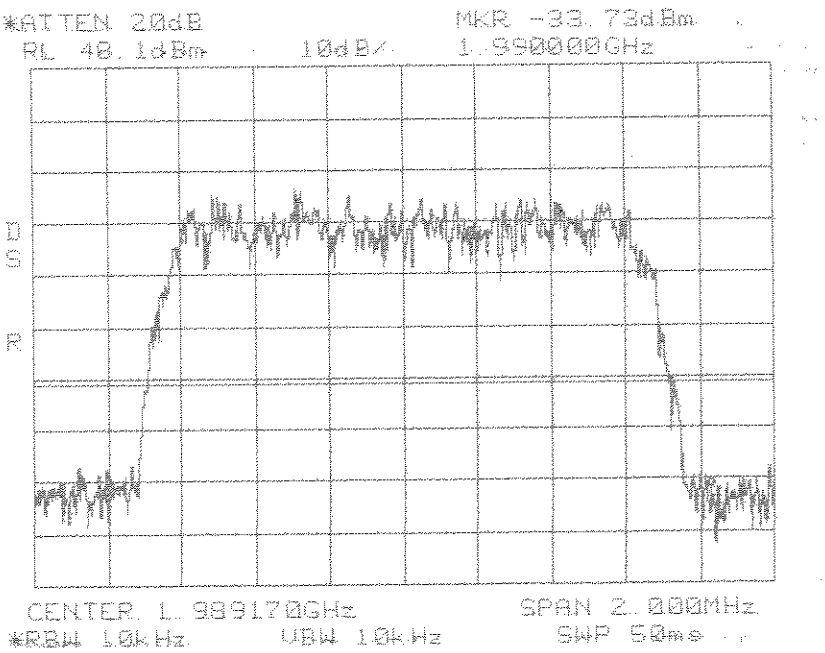
Band Edge
EDGE

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

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



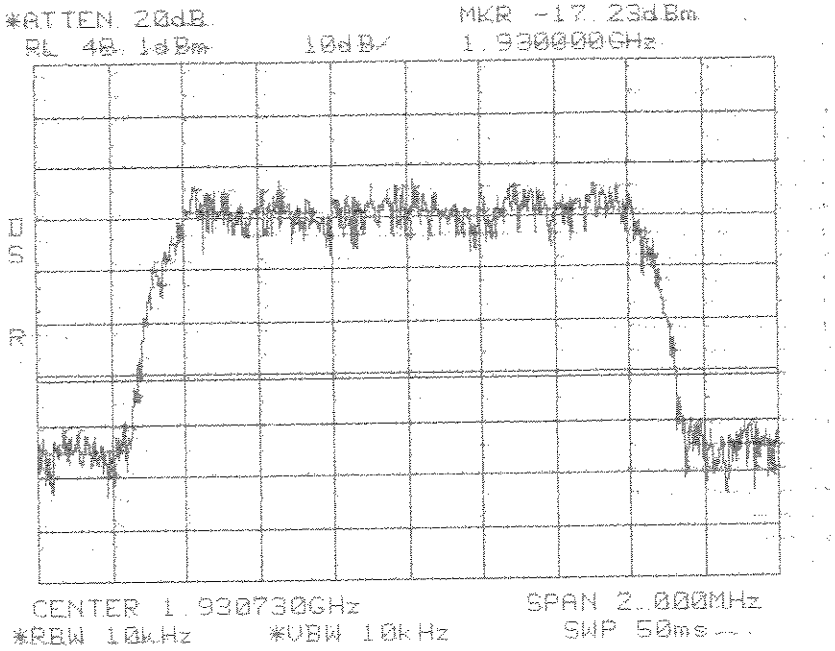
Band Edge
CDMA



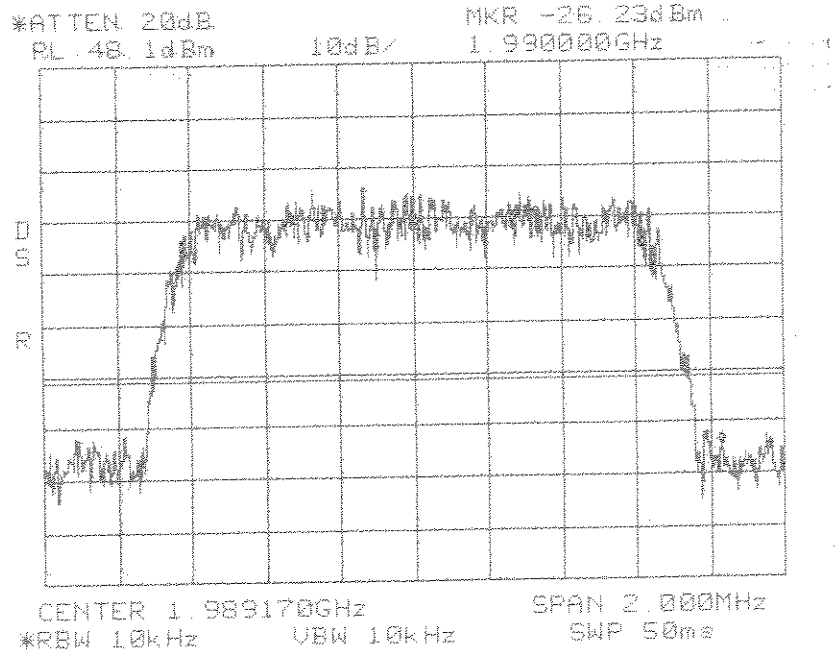
Band Edge
CDMA

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

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



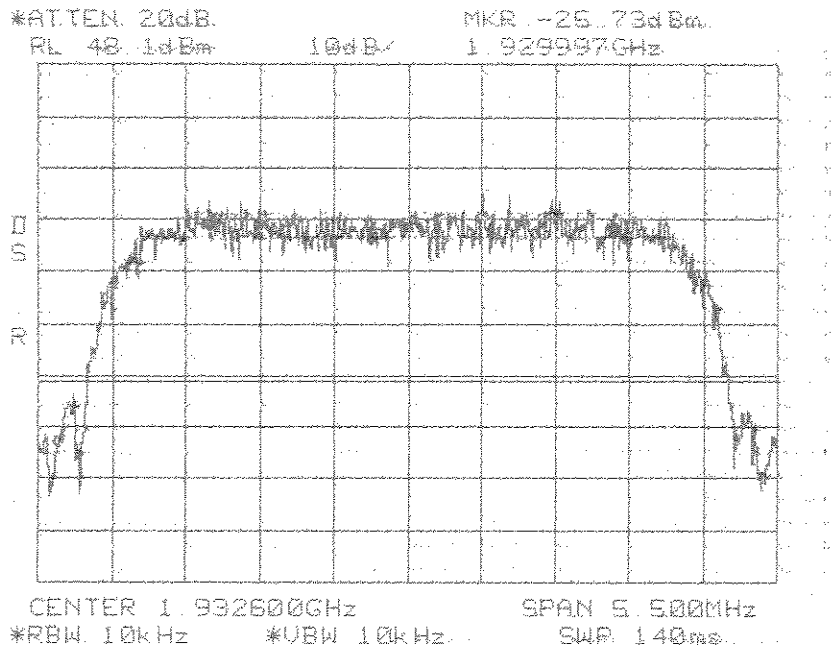
Band Edge
EVDO



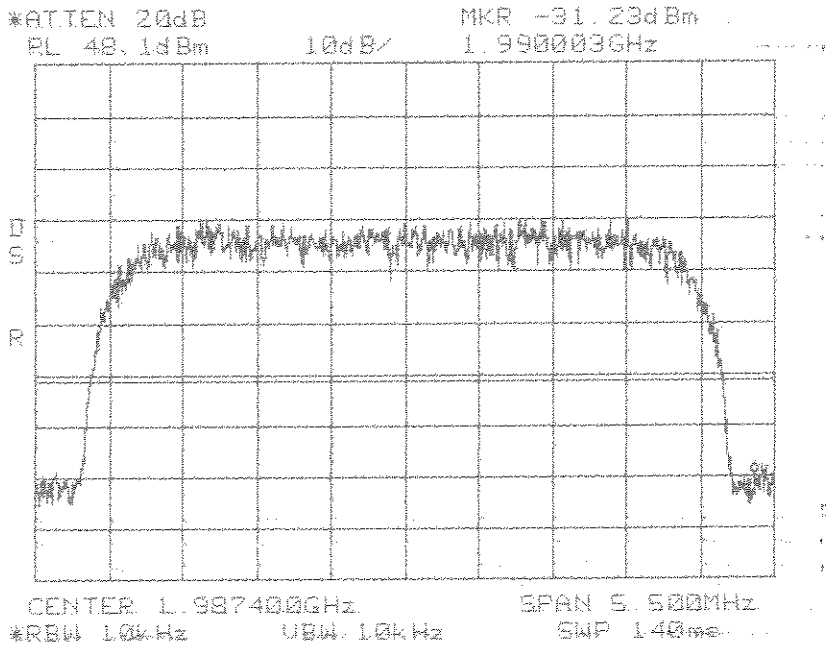
Band Edge
EVDO

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

Center: 1932.60
Span: 5.5 MHz
RBW: 10 kHz
VBW: 10 kHz



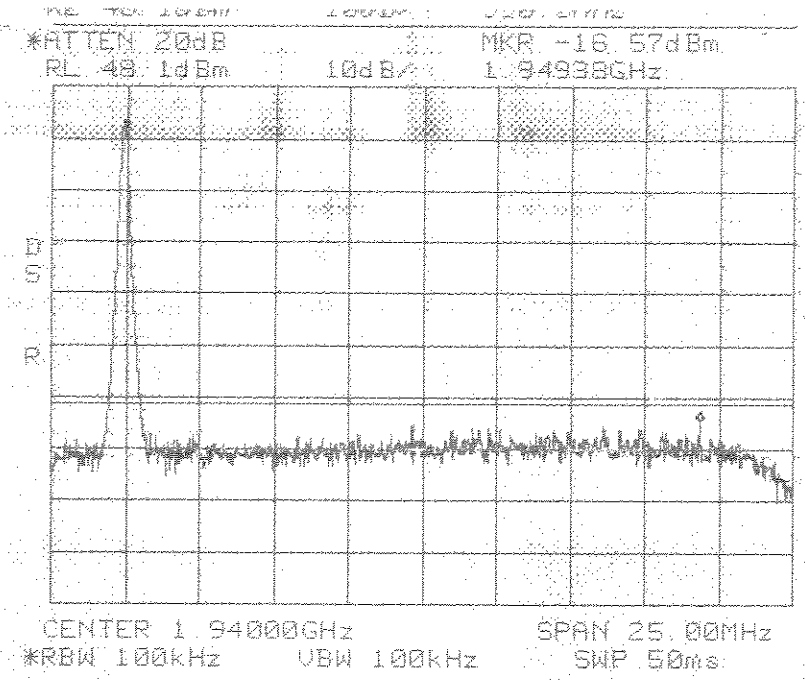
Band Edge
W-CDMA



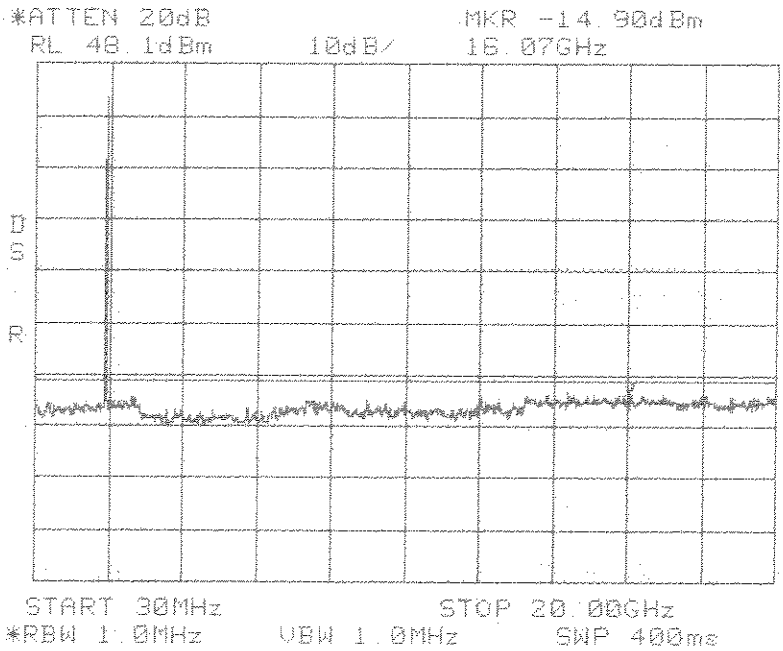
Band Edge
W-CDMA

Center: 1987.40 MHz
Span: 5.5 MHz
RBW: 10 kHz
VBW: 10 kHz

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



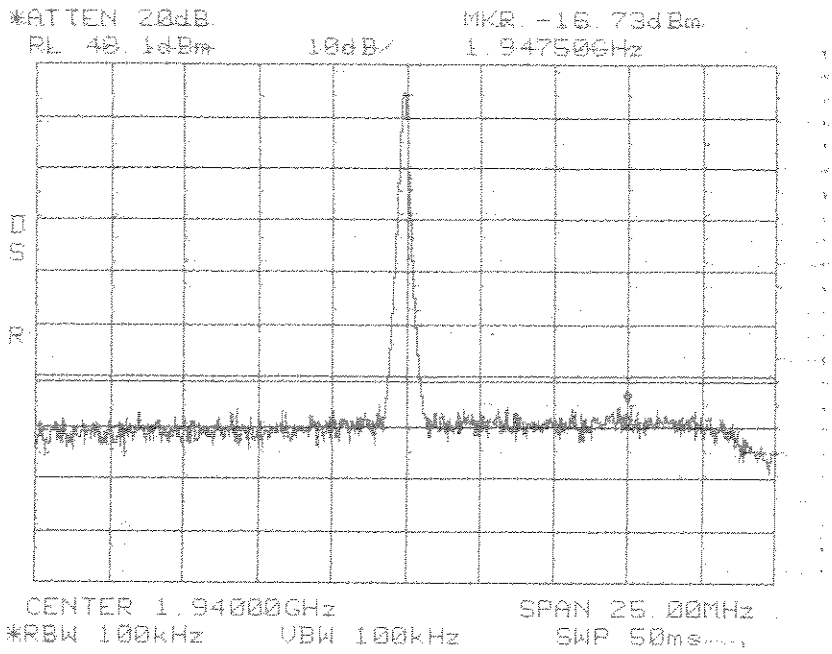
Conducted Emissions
Low
PCS 1900 MHz
AD Band



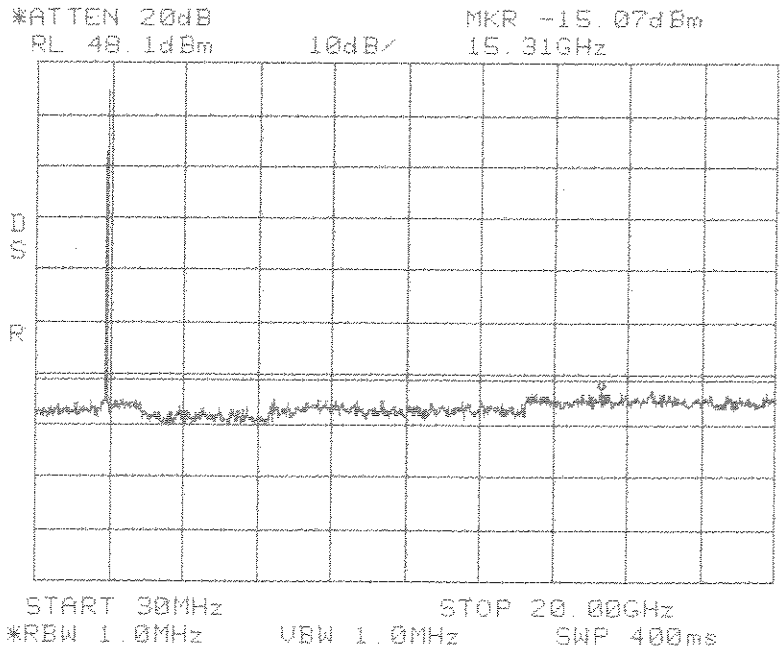
Conducted Emissions
Low
PCS 1900 MHz
AD Band

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

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



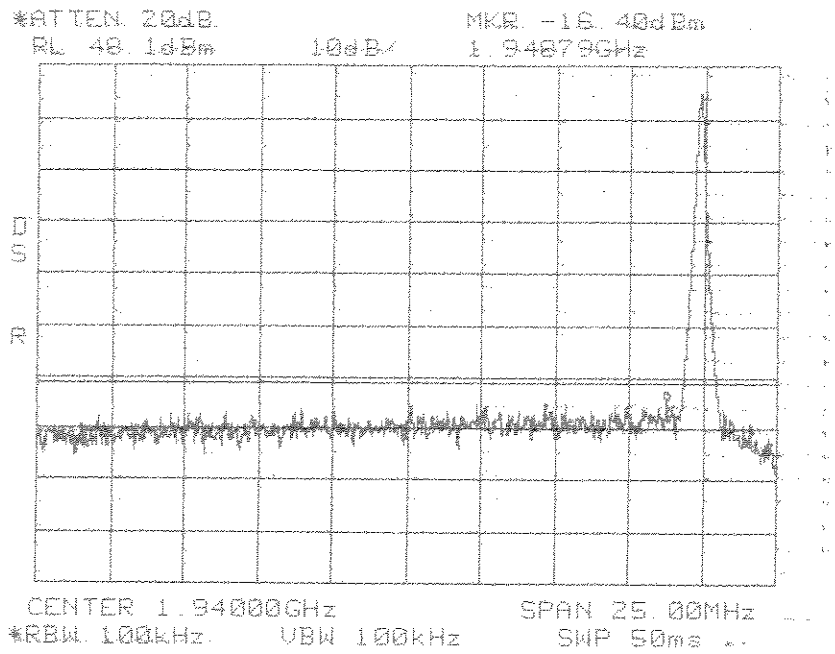
Conducted Emissions
Mid
PCS 1900 MHz
AD Band



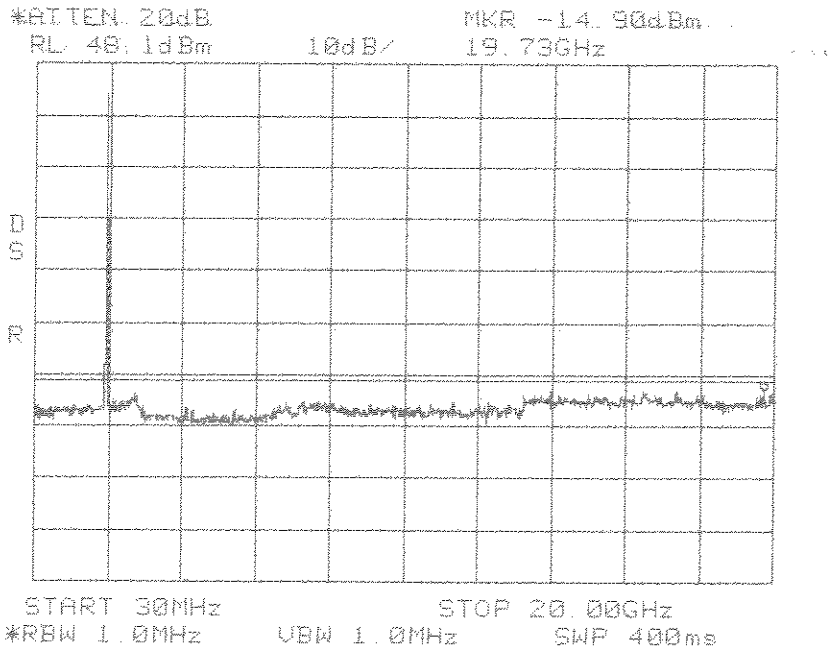
Conducted Emissions
Mid
PCS 1900 MHz
AD Band

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

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



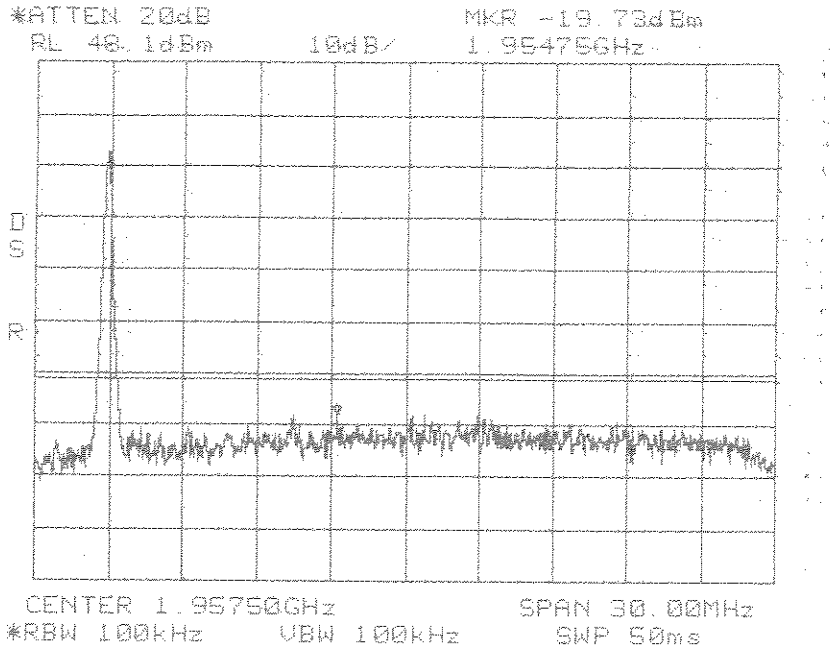
Conducted Emissions
High
PCS 1900 MHz
AD Band



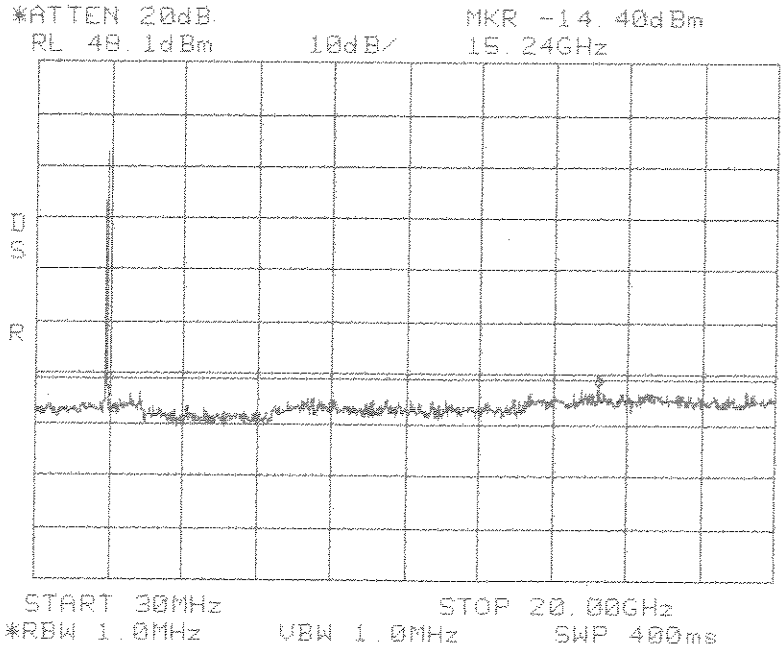
Conducted Emissions
High
PCS 1900 MHz
AD Band

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

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



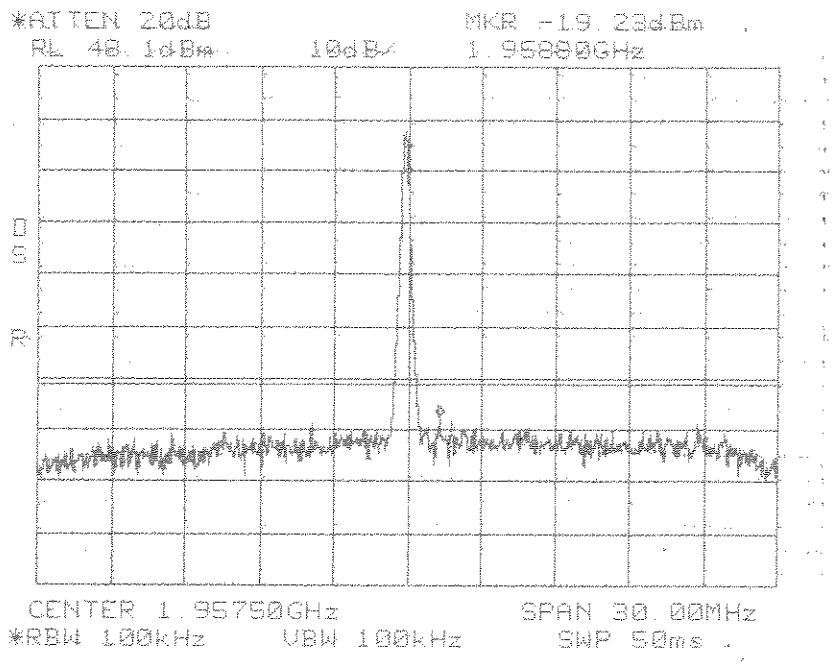
Conducted Emissions
Low
PCS 1900 MHz
DBE Band



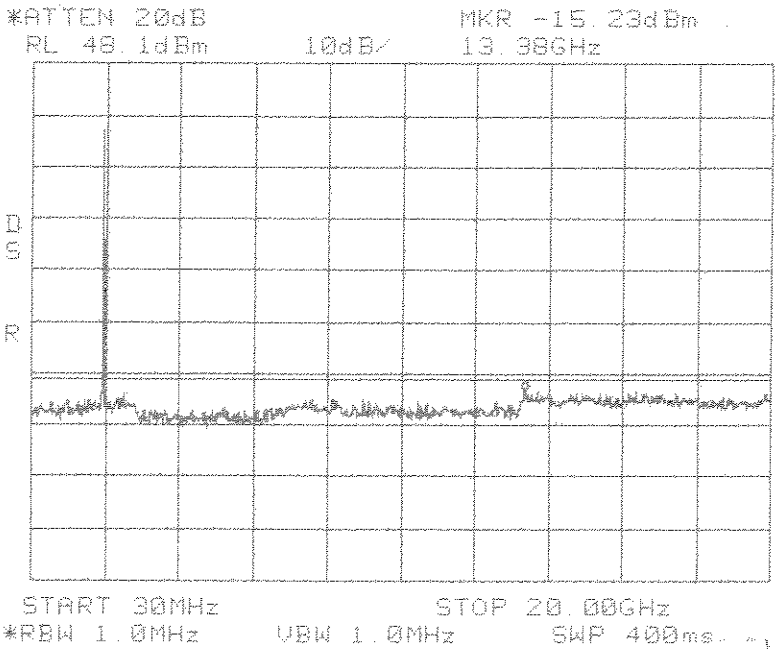
Conducted Emissions
Low
PCS 1900 MHz
DBE Band

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

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



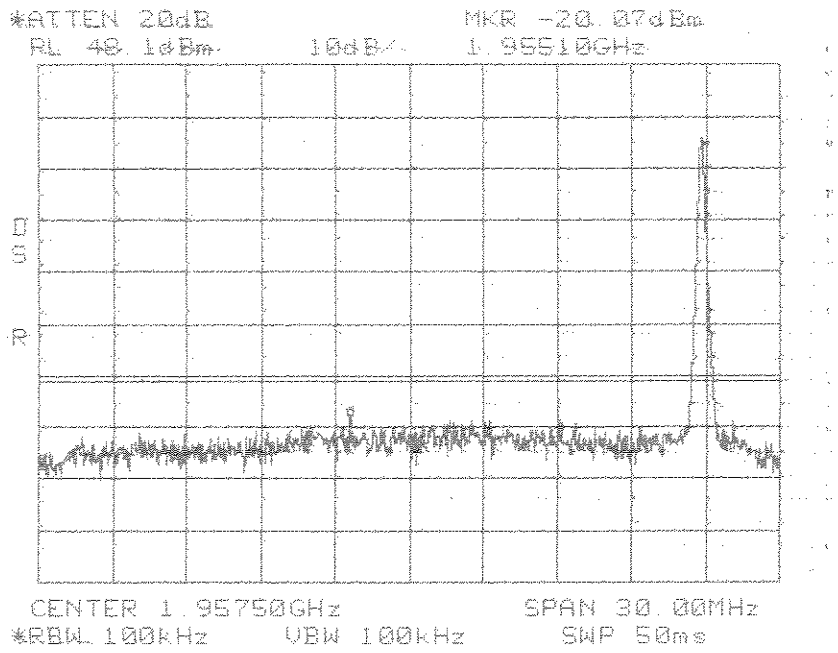
Conducted Emissions
Mid
PCS 1900 MHz
DBE Band



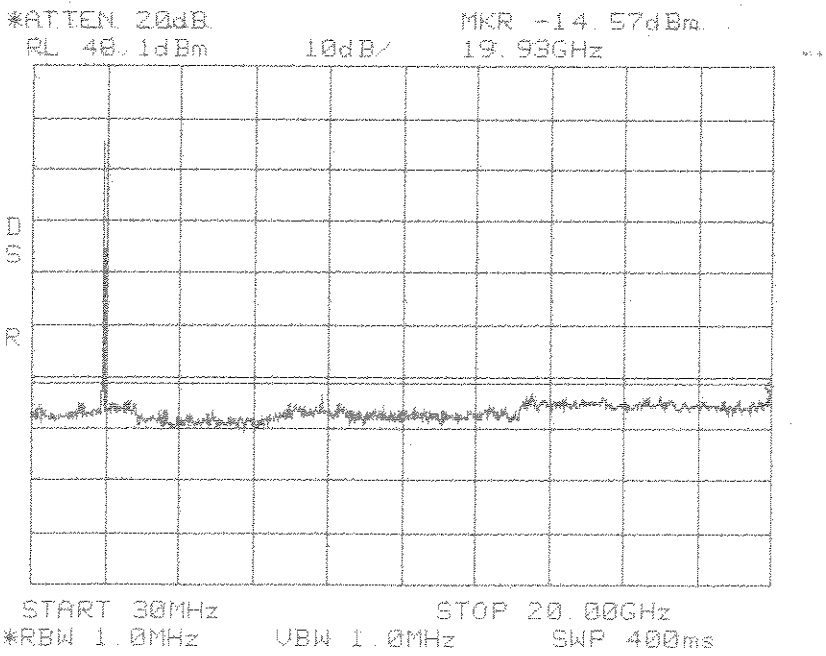
Conducted Emissions
Mid
PCS 1900 MHz
DBE Band

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

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



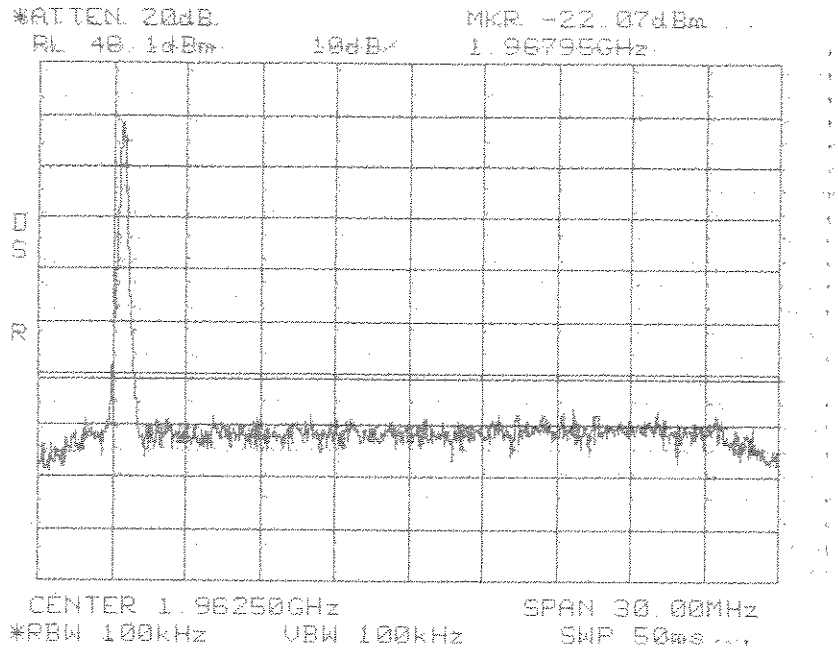
Conducted Emissions
High
PCS 1900 MHz
DBE Band



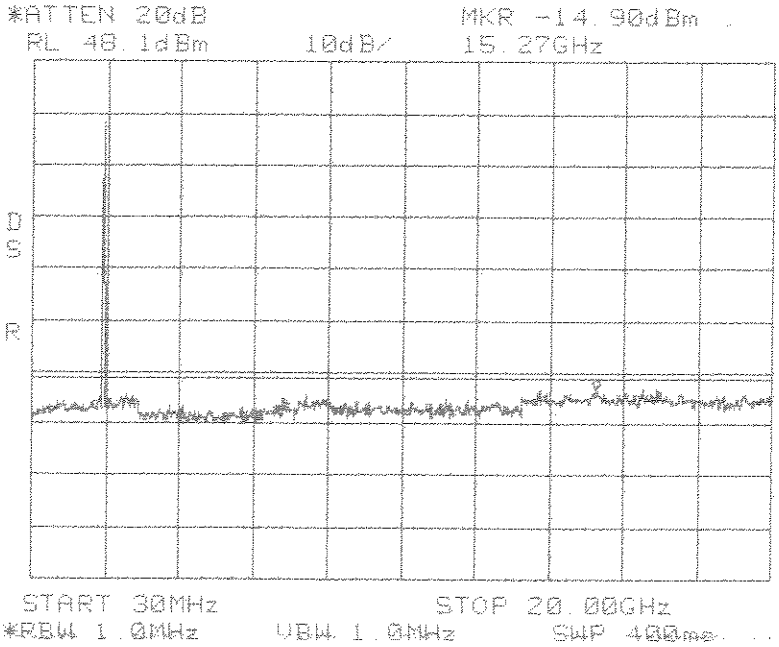
Conducted Emissions
High
PCS 1900 MHz
DBE Band

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

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



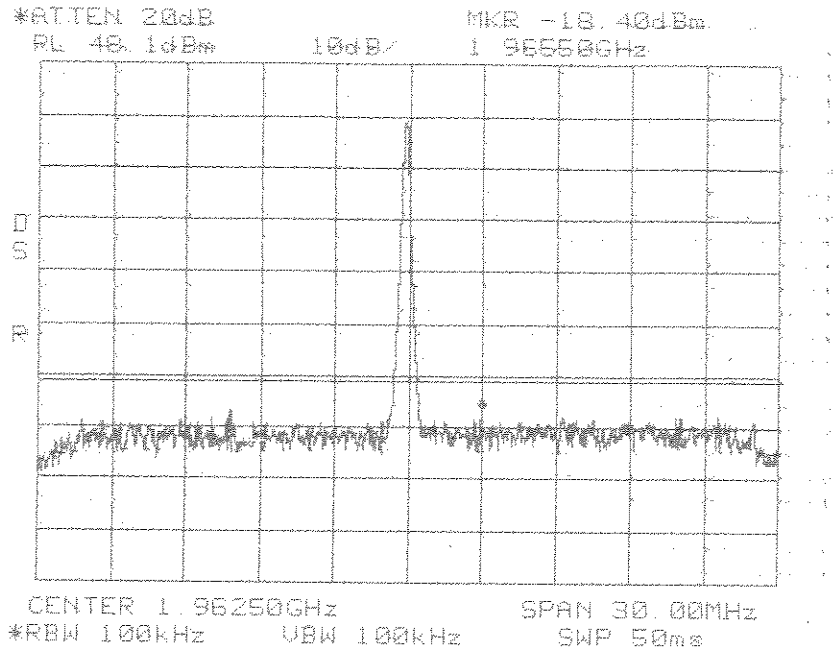
Conducted Emissions
Low
PCS 1900 MHz
BEF Band



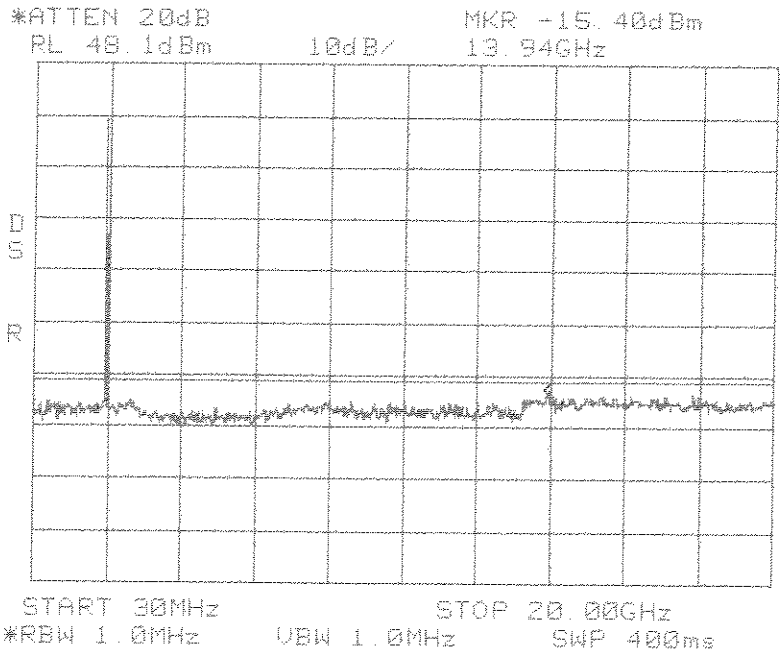
Conducted Emissions
Low
PCS 1900 MHz
BEF Band

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

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



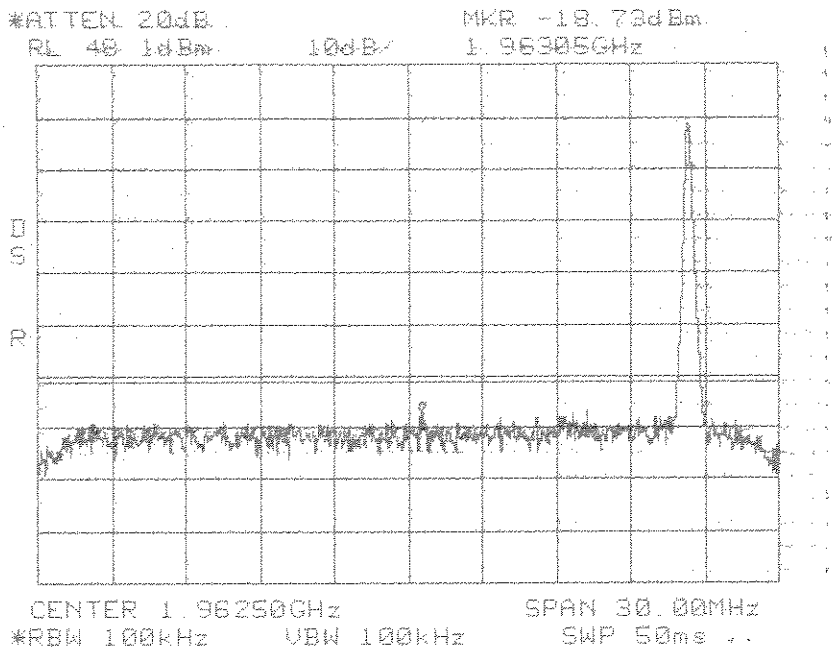
Conducted Emissions
Mid
PCS 1900 MHz
BEF Band



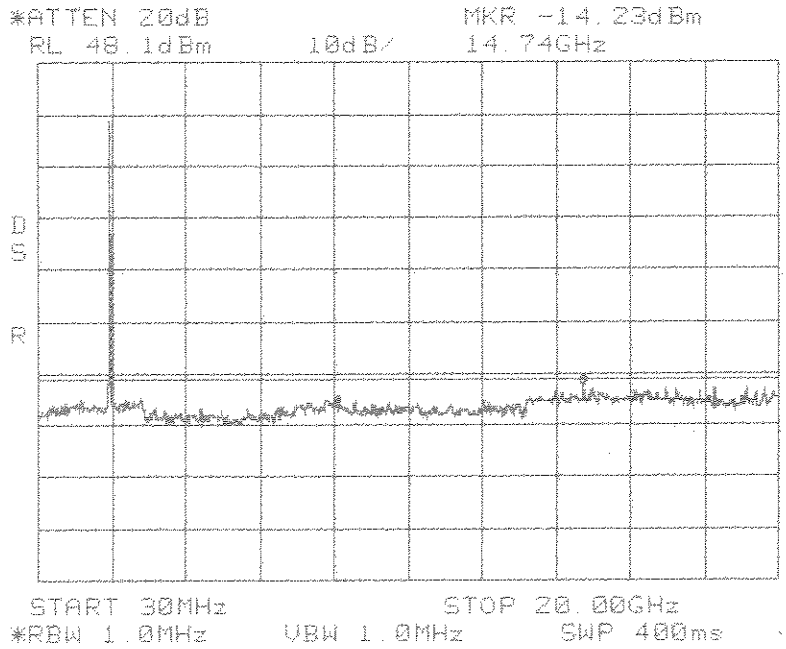
Conducted Emissions
Mid
PCS 1900 MHz
BEF Band

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

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



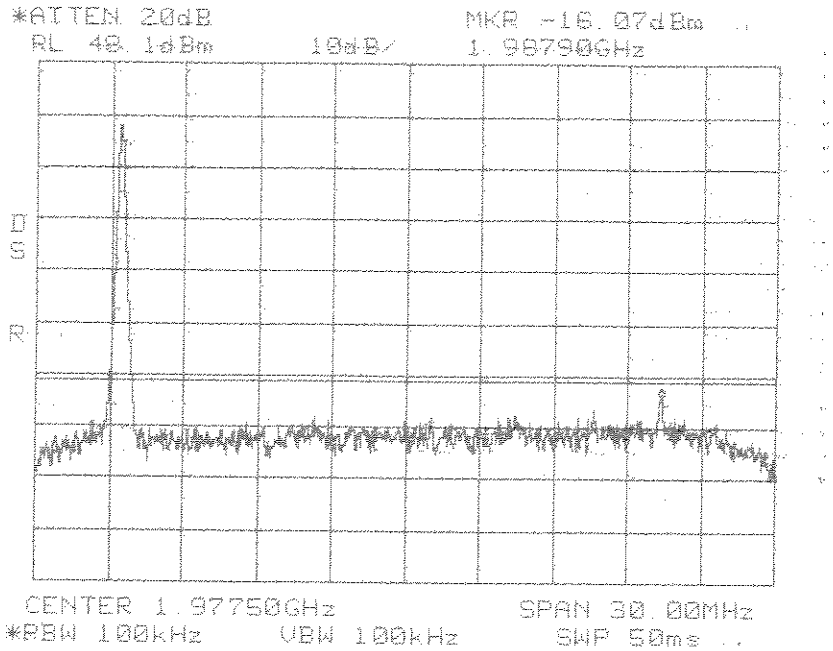
Conducted Emissions
High
PCS 1900 MHz
BEF Band



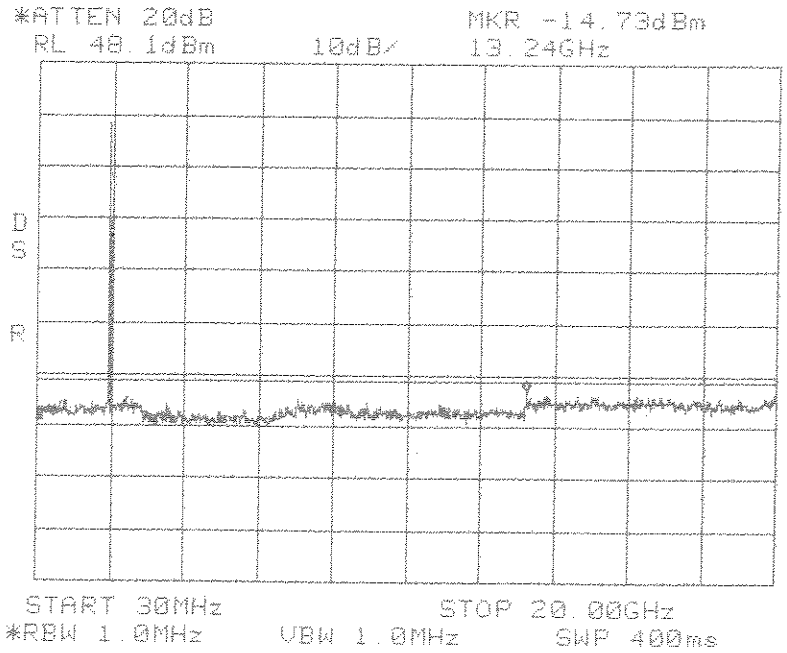
Conducted Emissions
High
PCS 1900 MHz
BEF Band

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

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



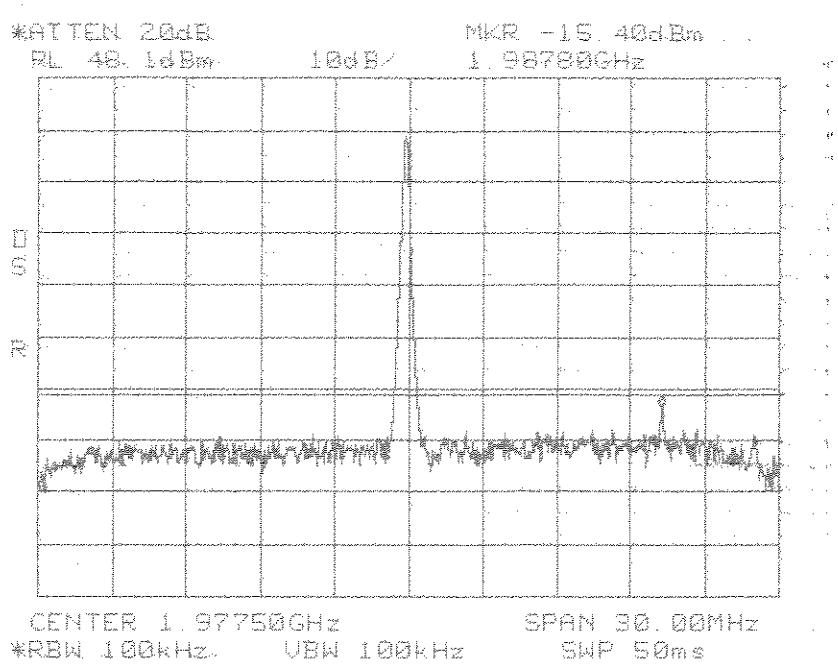
Conducted Emissions
Low
PCS 1900 MHz
EFC Band



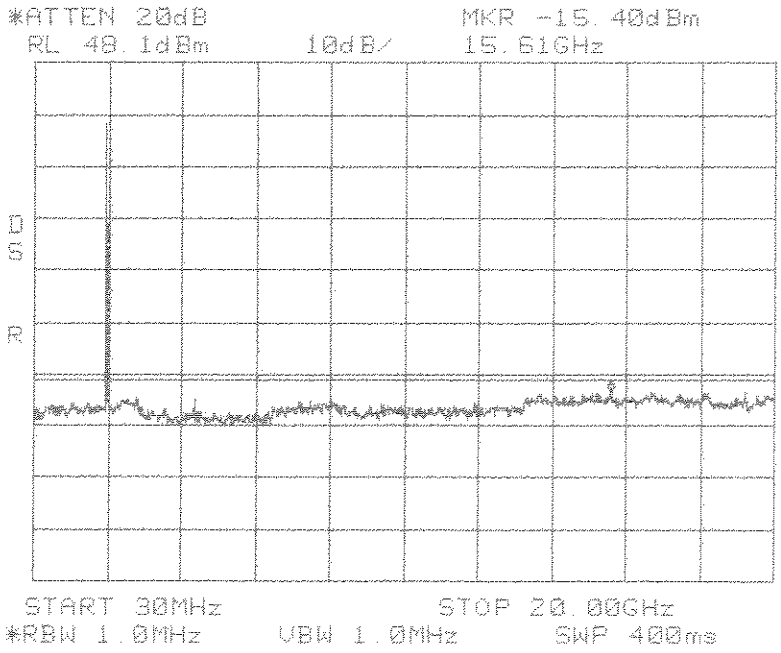
Conducted Emissions
Low
PCS 1900 MHz
EFC Band

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

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



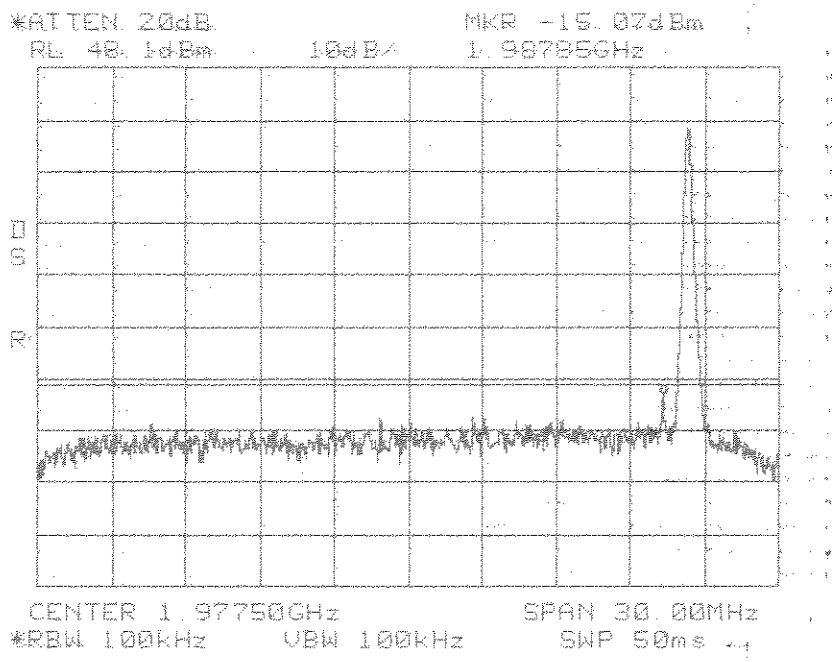
Conducted Emissions
Mid
PCS 1900 MHz
EFC Band



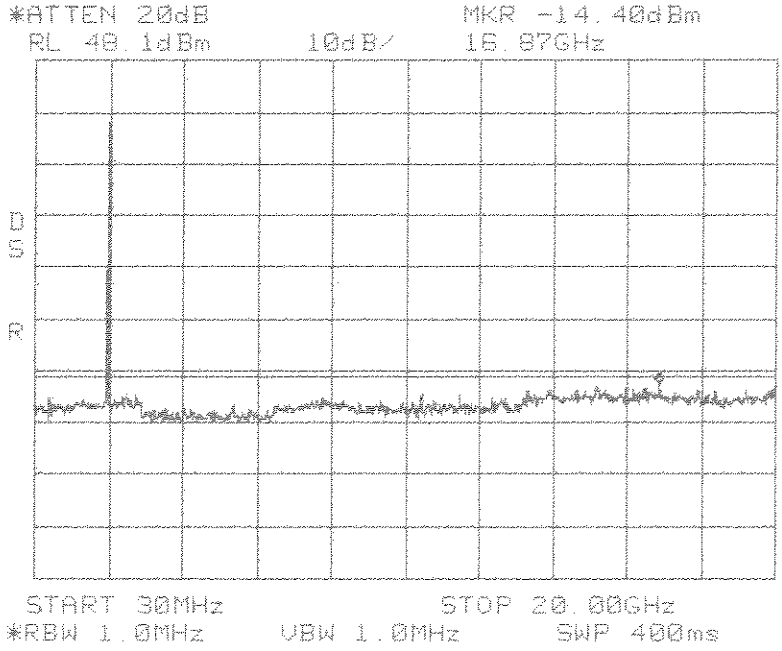
Conducted Emissions
Mid
PCS 1900 MHz
EFC Band

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

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



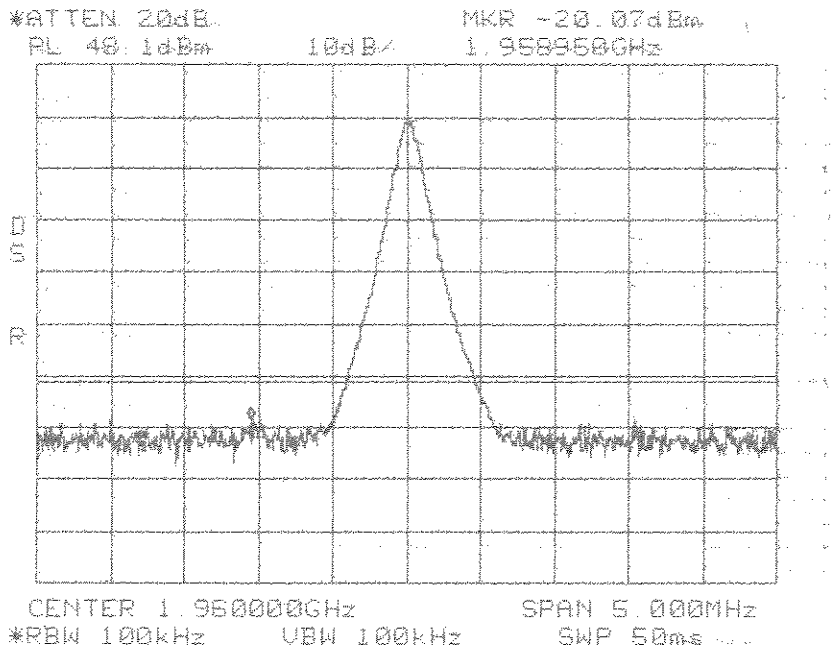
Conducted Emissions
High
PCS 1900 MHz
EFC Band



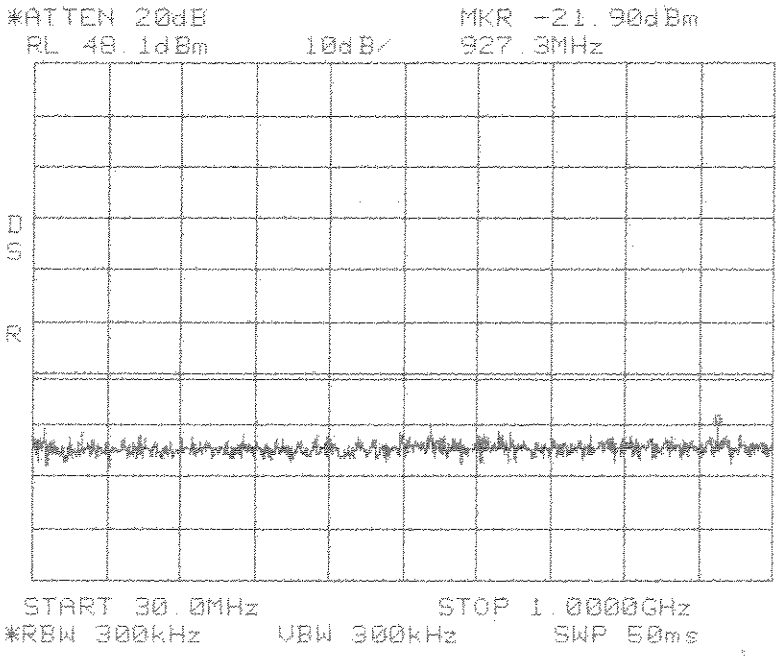
Conducted Emissions
High
PCS 1900 MHz
EFC Band

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

Mid Band
Span: 5 MHz
RBW/VBW: 100 kHz



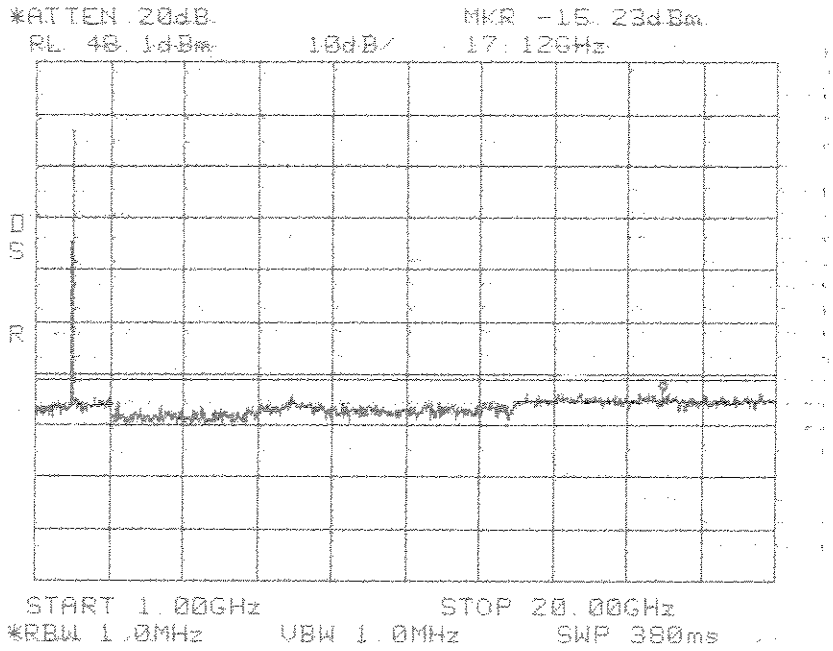
Conducted Emissions
TDMA
1900 MHz



Conducted Emissions
TDMA
1900 MHz

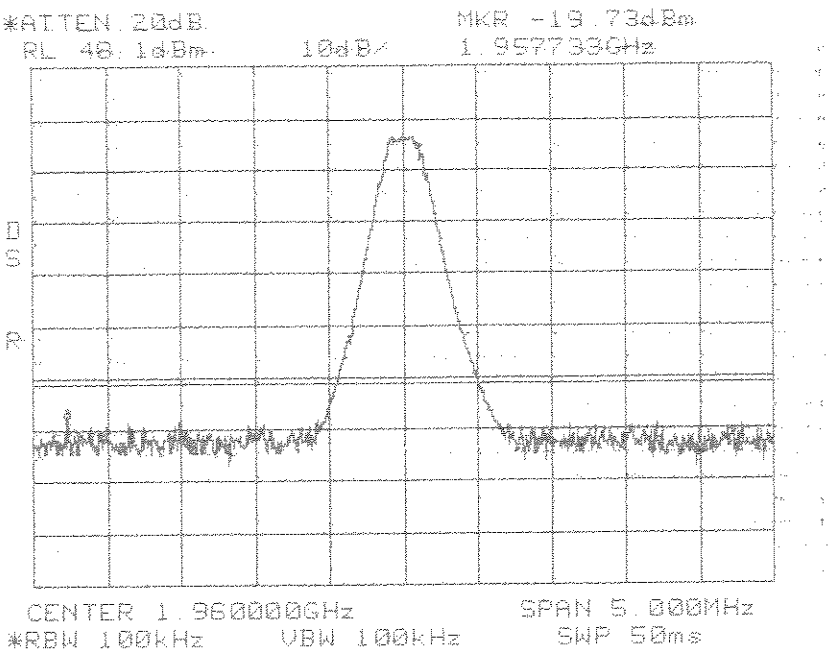
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz

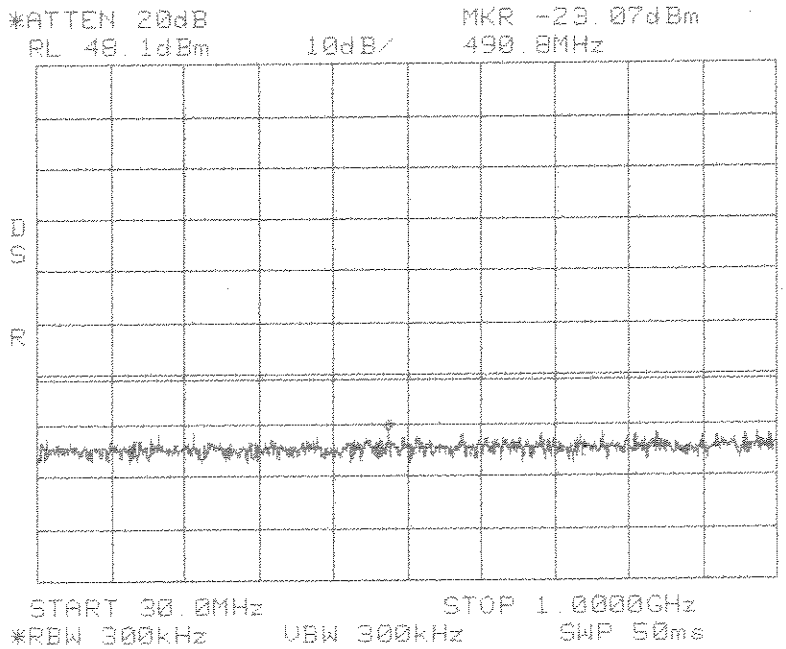


Conducted Emissions
TDMA
1900 MHz

Mid Band
Span: 5 MHz
RBW/VBW: 100 kHz



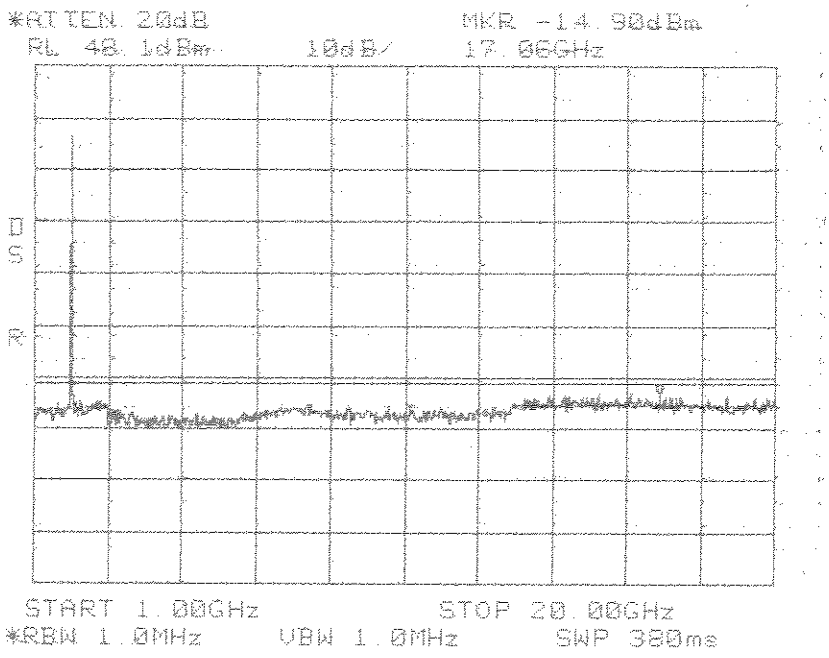
Conducted Emissions
GSM
1900 MHz



Conducted Emissions
GSM
1900 MHz

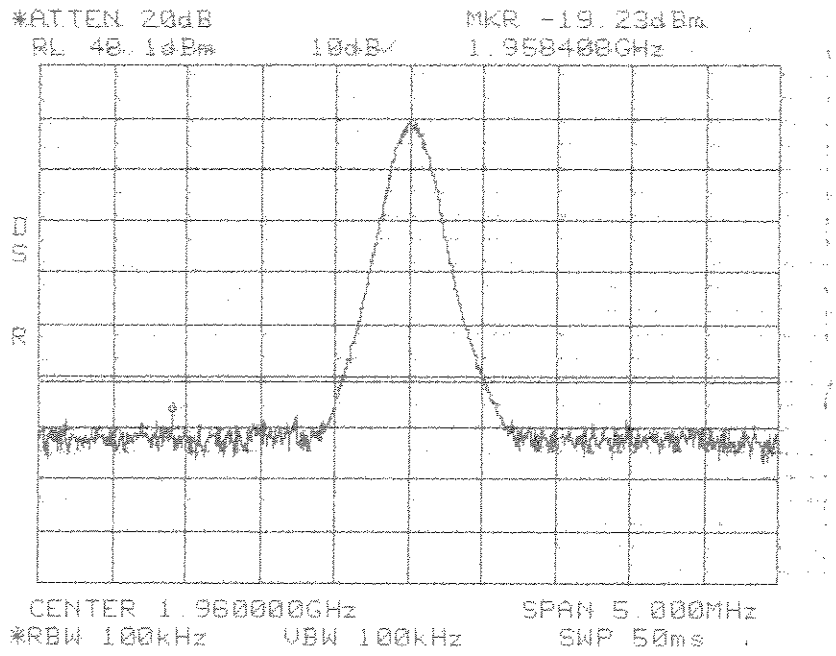
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz

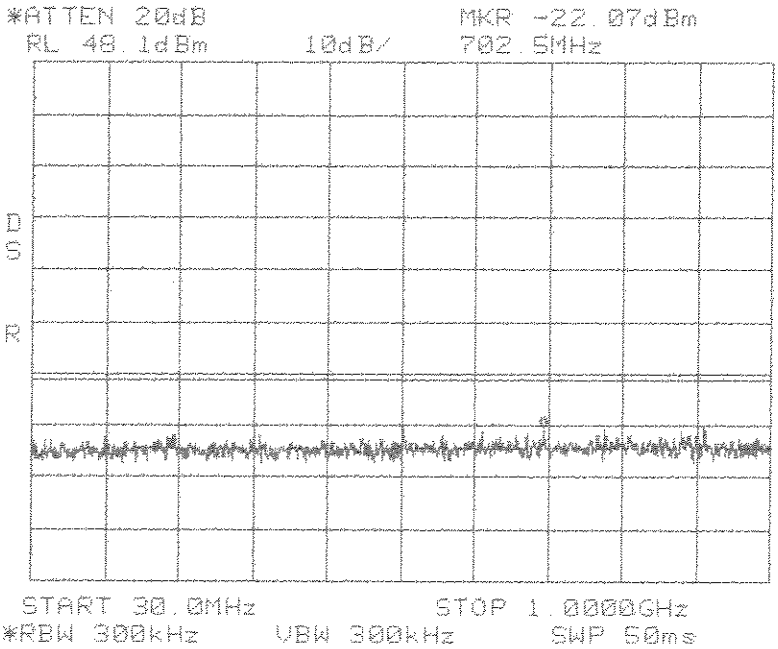


Conducted Emissions
GSM
1900 MHz

Mid Band
Span: 5 MHz
RBW/VBW: 100 kHz



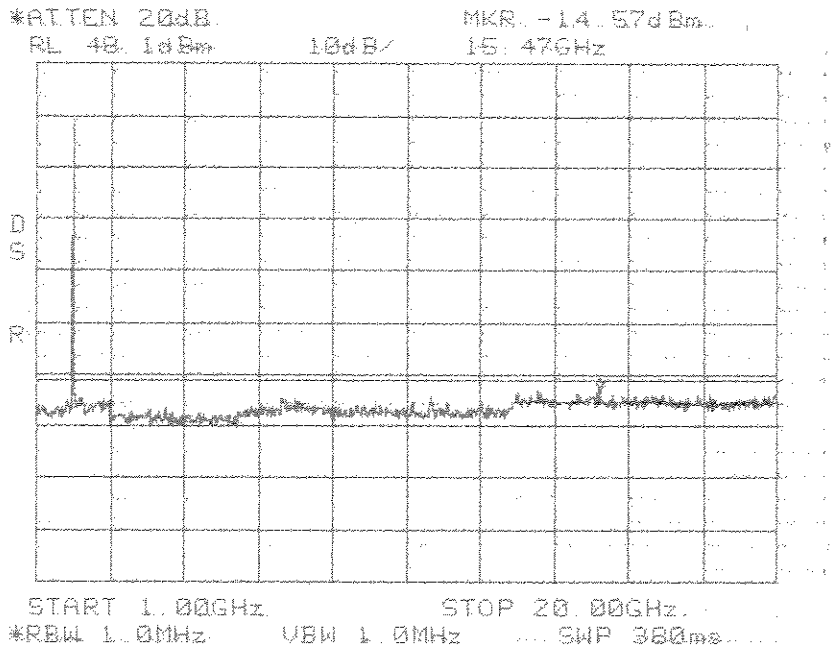
Conducted Emissions
EDGE
1900 MHz



Conducted Emissions
EDGE
1900 MHz

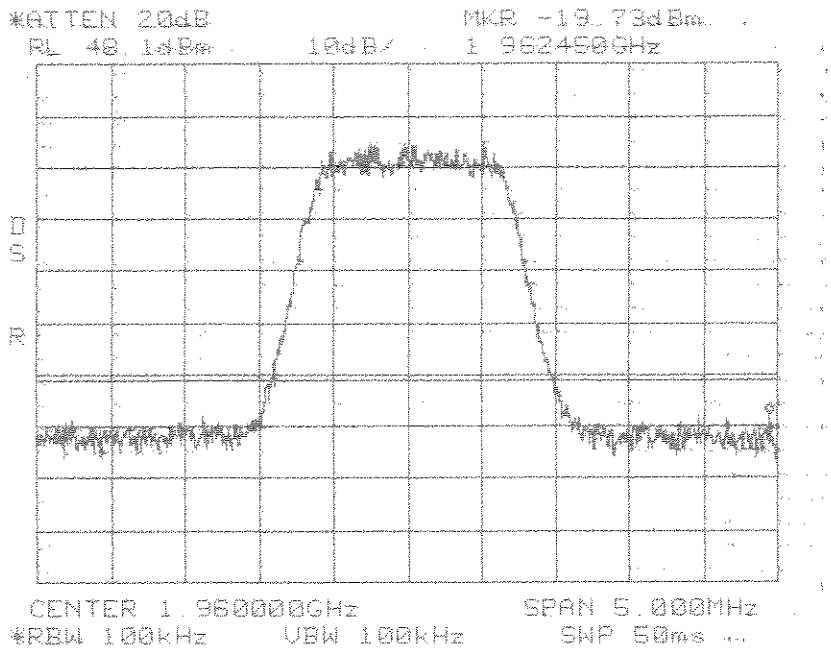
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz

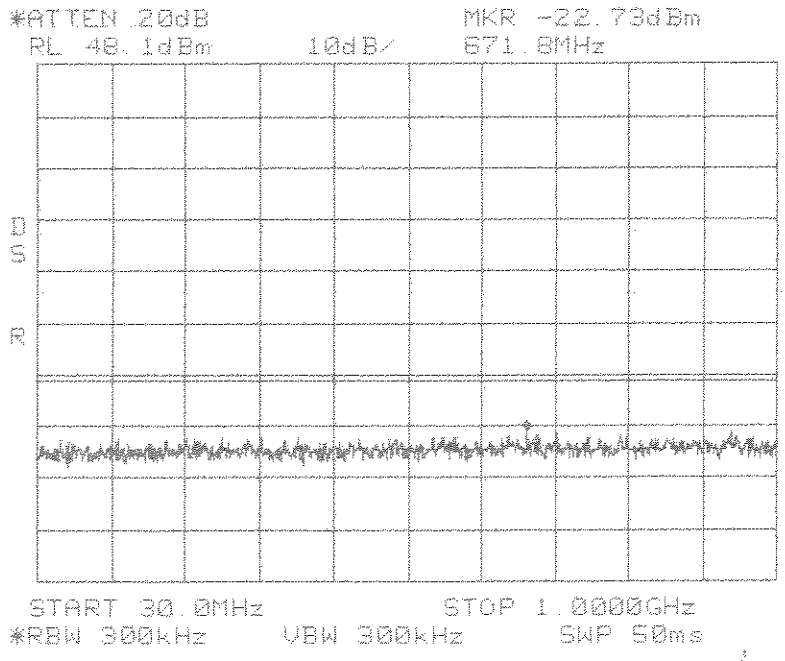


Conducted Emissions
EDGE
1900 MHz

Mid Band
Span: 5 MHz
RBW/VBW: 100 kHz



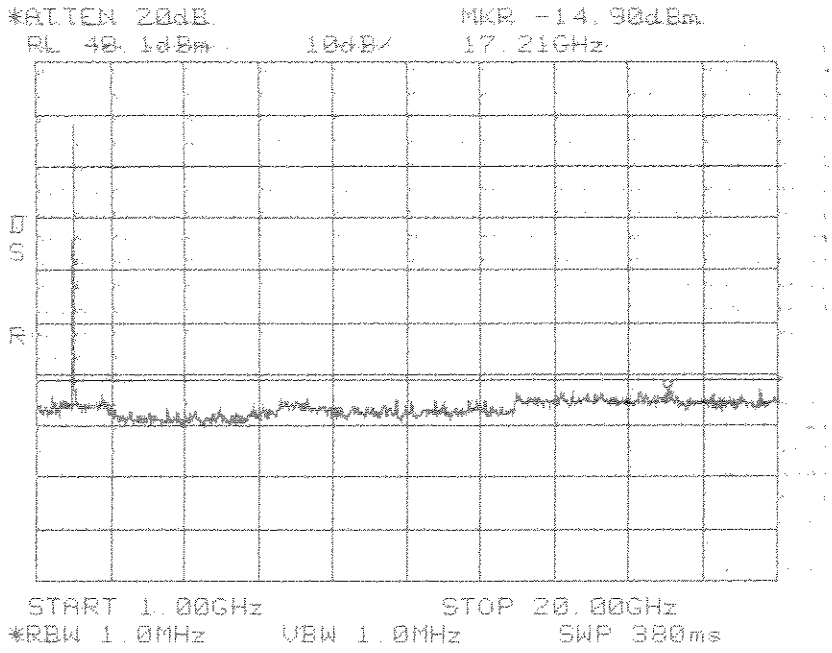
Conducted Emissions
CDMA
1900 MHz



Conducted Emissions
CDMA
1900 MHz

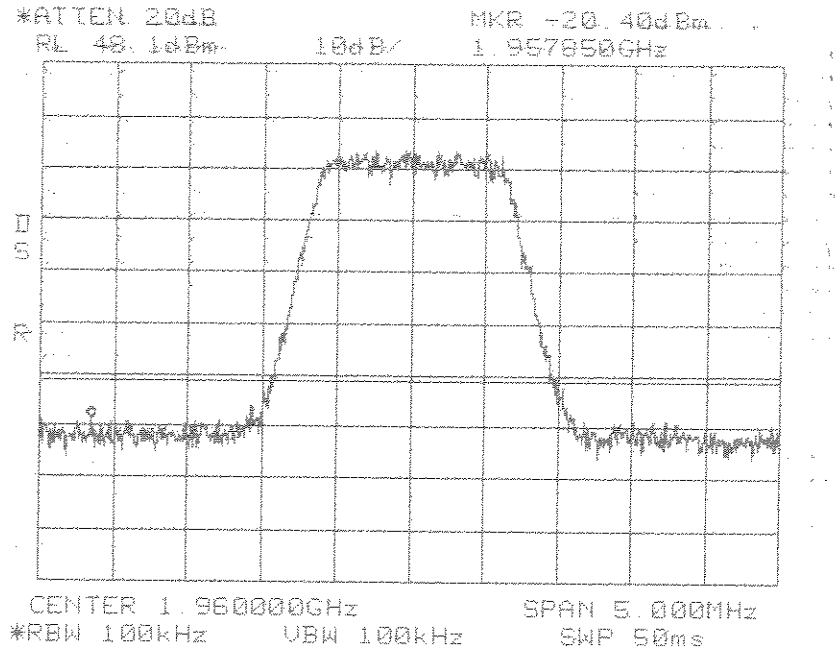
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz

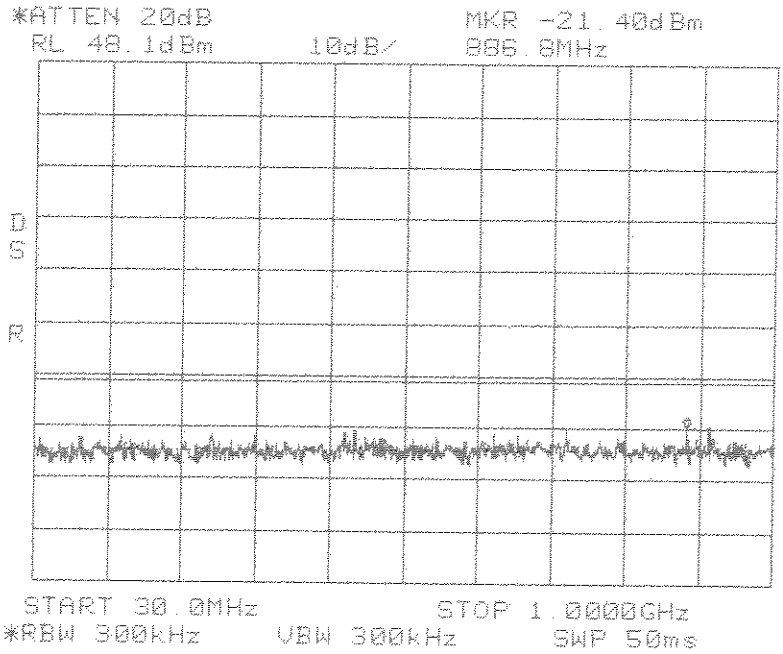


Conducted Emissions
CDMA
1900 MHz

Mid Band
Span: 5 MHz
RBW/VBW: 100 kHz



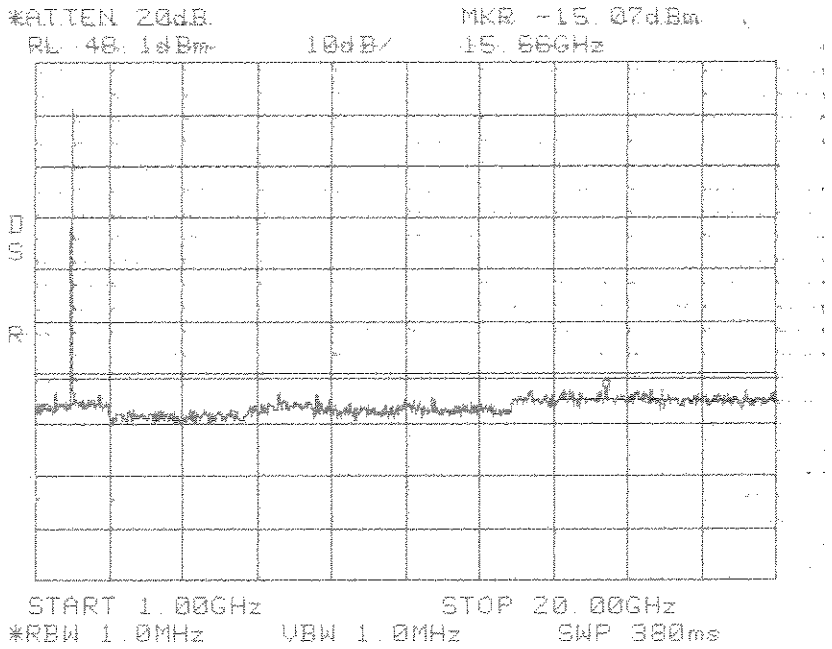
Conducted Emissions
EVDO
1900 MHz



Conducted Emissions
EVDO
1900 MHz

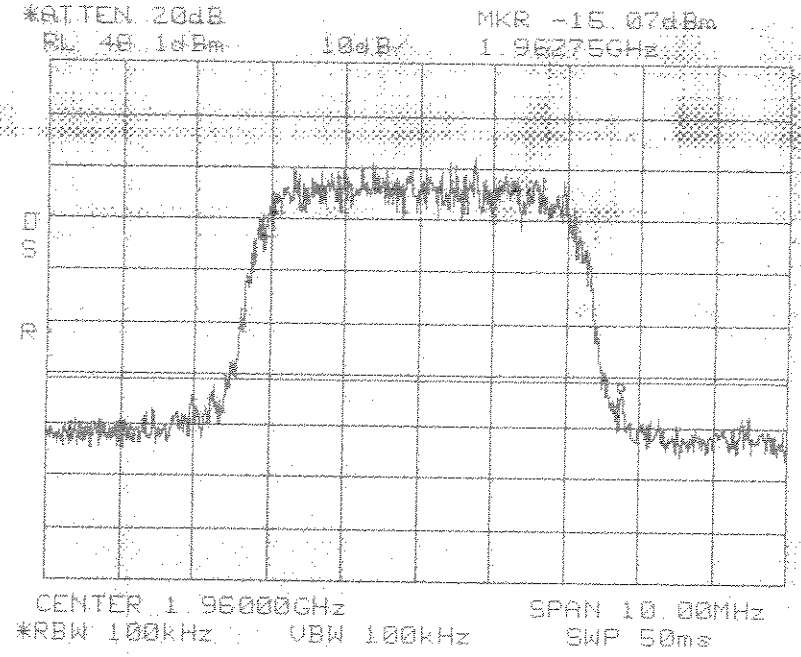
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz

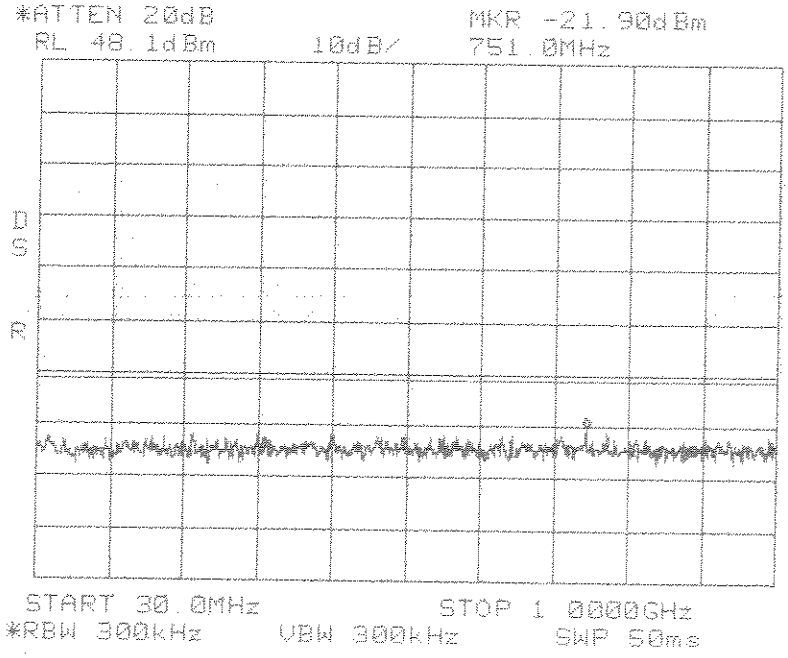


Conducted Emissions
EVDO
1900 MHz

Mid Band
Span: 10 MHz
RBW/VBW: 100 kHz



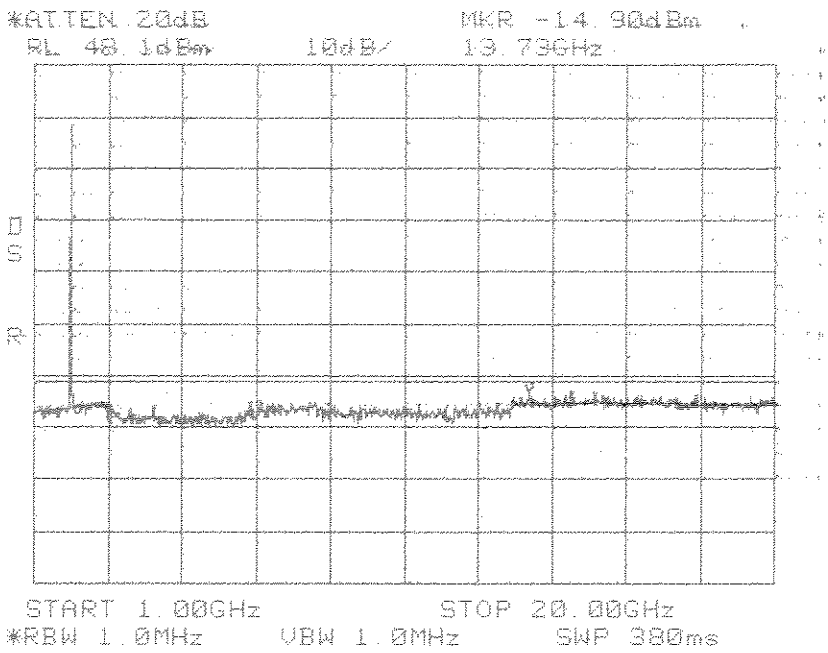
Conducted Emissions
W-CDMA
1900 MHz



Conducted Emissions
W-CDMA
1900 MHz

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

1 GHz to 20 GHz
RBW/VBW: 1 MHz



Conducted Emissions
W-CDMA
1900 MHz

Conducted Output Power Test for ADC Inc.
Digivance® Long Range Coverage Solution
Model Number DGVL-406000LPA

Back

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

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

A signal was used at the low, mid and high parts of the selected band. The power meter level was offset by 37.7 dB to compensate for attenuators and cable loss between the EUT and the power meter.

TDMA	**16.22 Watts**
Carrier Frequency	Carrier Output
1930.2 MHz	41.62 dBm
1960.0 MHz	42.10 dBm
1989.8 MHz	42.07 dBm

GSM	**16.83 Watts**
Carrier Frequency	Carrier Output
1930.2 MHz	41.83 dBm
1960.0 MHz	42.26 dBm
1989.8 MHz	41.87 dBm

EDGE	**18.88 Watts**
Carrier Frequency	Carrier Output
1930.2 MHz	42.25 dBm
1960.0 MHz	42.76 dBm
1989.8 MHz	41.98 dBm

CDMA	**15.31 Watts**
Carrier Frequency	Carrier Output
1930.8 MHz	41.85 dBm
1960.0 MHz	41.77 dBm
1989.2 MHz	41.56 dBm

EVDO	**17.56 Watts**
Carrier Frequency	Carrier Output
1930.8 MHz	41.88 dBm
1960.0 MHz	42.34 dBm
1989.2 MHz	42.47 dBm

W-CDMA	**16.90 Watts**
Carrier Frequency	Carrier Output
1932.6 MHz	41.55 dBm
1960.0 MHz	42.28 dBm
1987.4 MHz	41.87 dBm

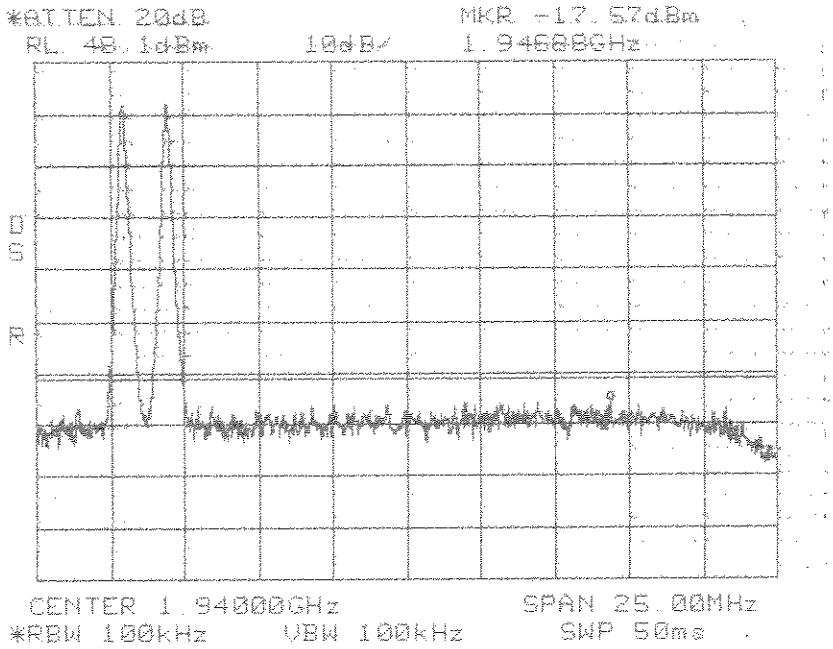
Intermodulation Test for ADC Inc
Digivance® Long Range Coverage Solution
Model Number DGVL-406000LPA

Back

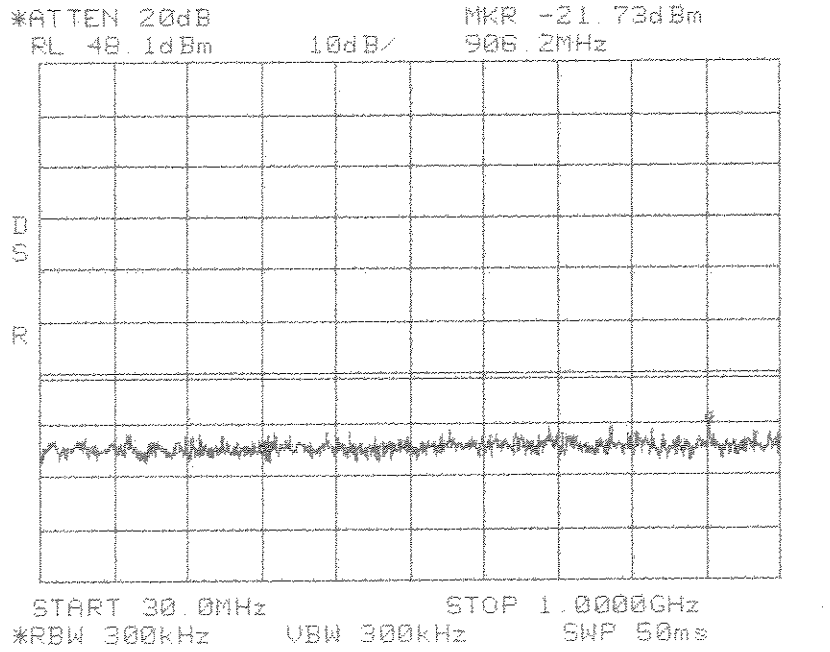
The inter-modulation products test was performed for the EUT. Three tests were preformed with the modulation type. Test 1 was with 2 signals input to the EUT at lower end channels. Test 2 was with 2 signals input to the EUT at upper end channels. Test 3 was with 2 signals input to the EUT at upper and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

Results:
(See Plots)

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



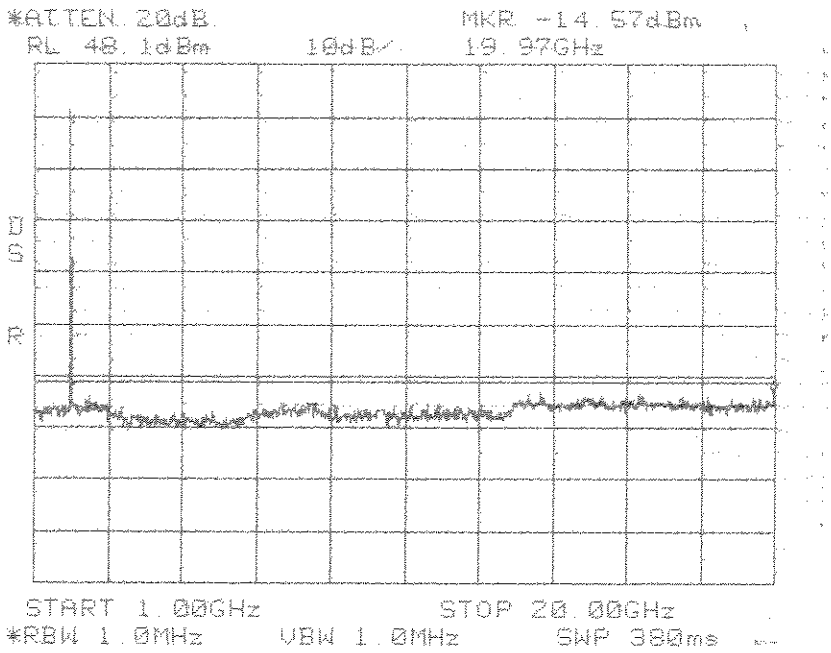
Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
AD Band



Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
AD Band

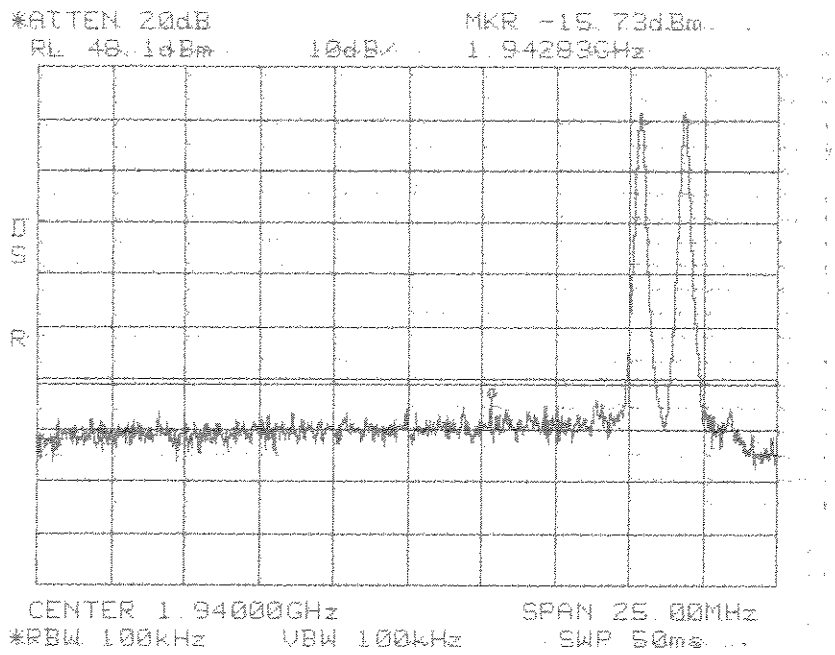
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz

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

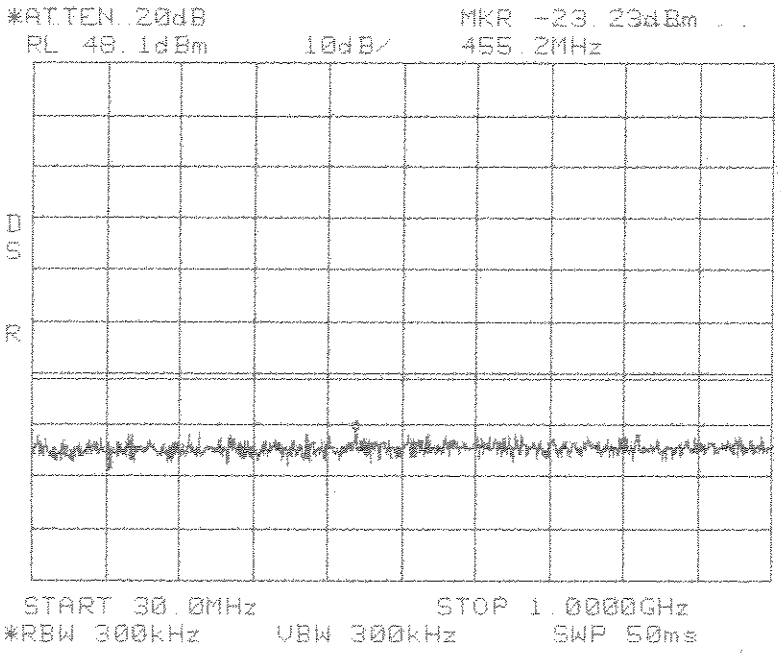


Intermodulation
Close
Lower
TDMA
PCS 1900 MHz
AD Band

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



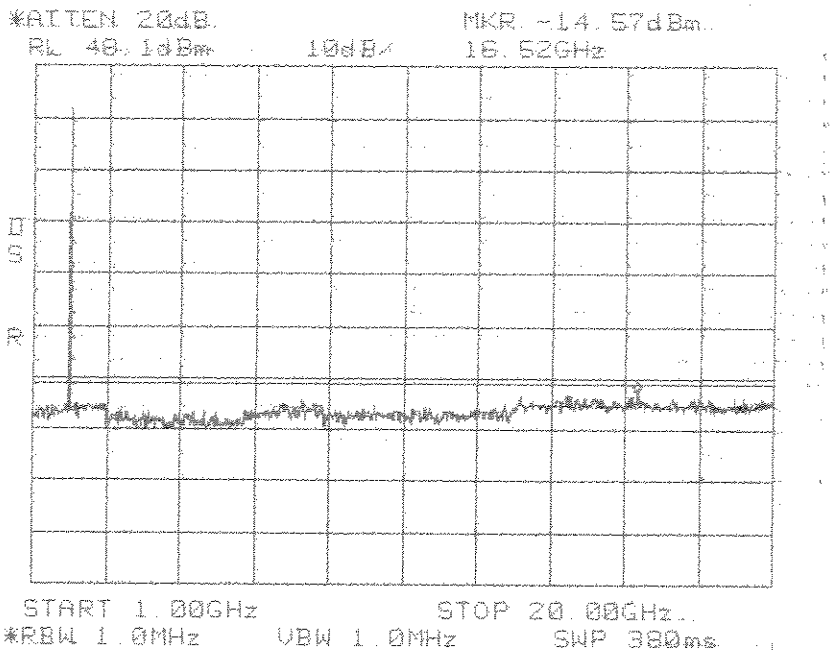
Intermodulation
Close
Upper
TDMA
PCS 1900 MHz
AD Band



Intermodulation
Close
Upper
TDMA
PCS 1900 MHz
AD Band

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

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



Intermodulation
Close
Upper
TDMA
PCS 1900 MHz
AD Band