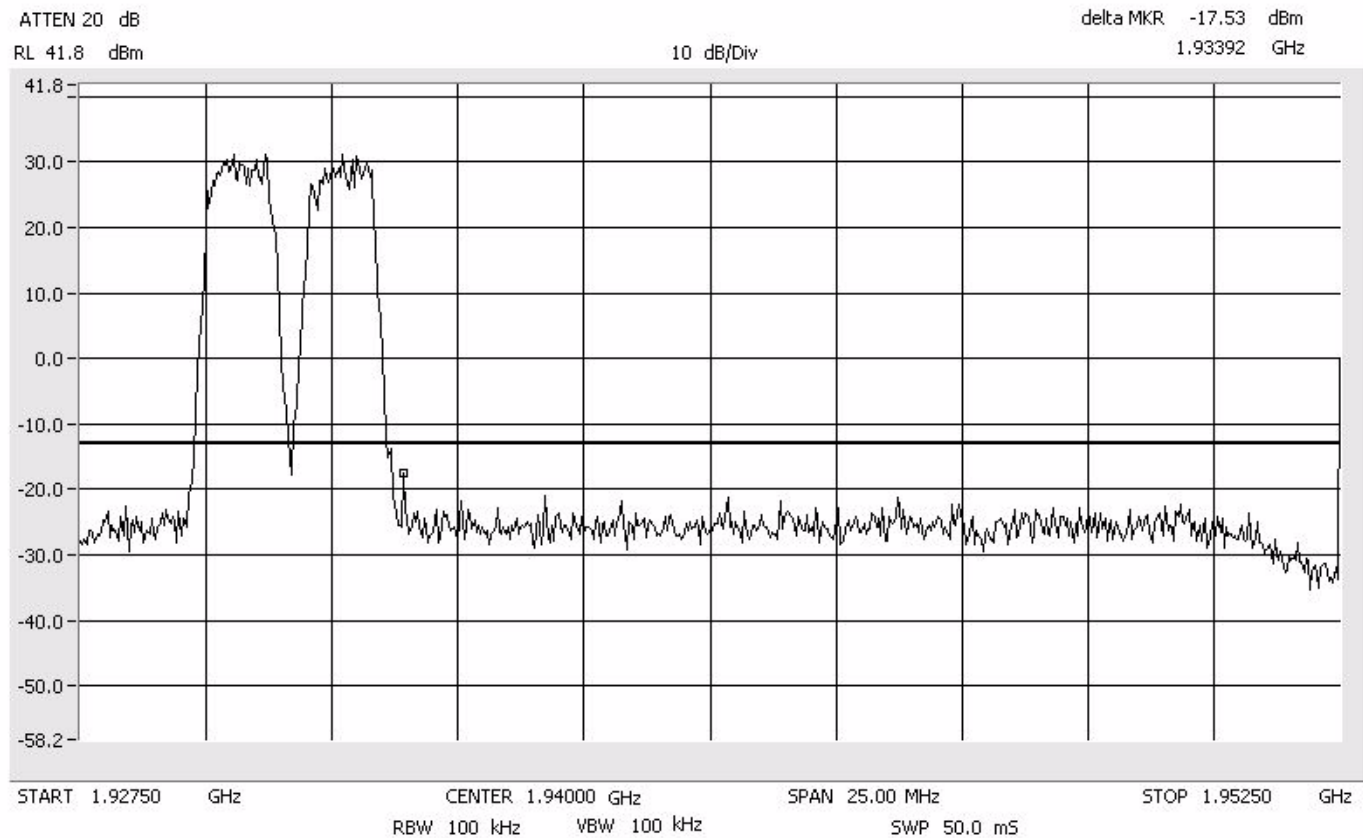


CDMA
AD Band

Intermodulation
Close - Lower
PCS 1900 MHz

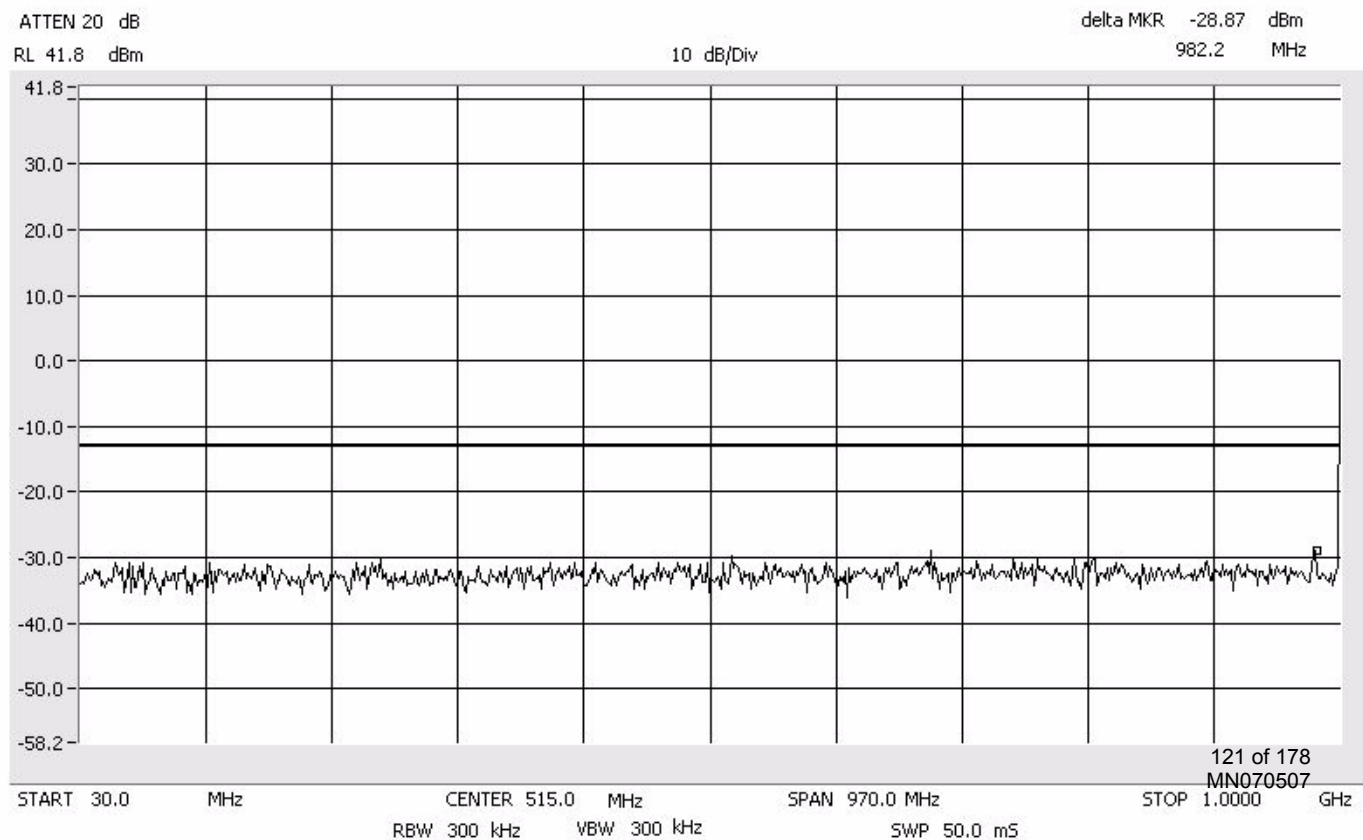
Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz

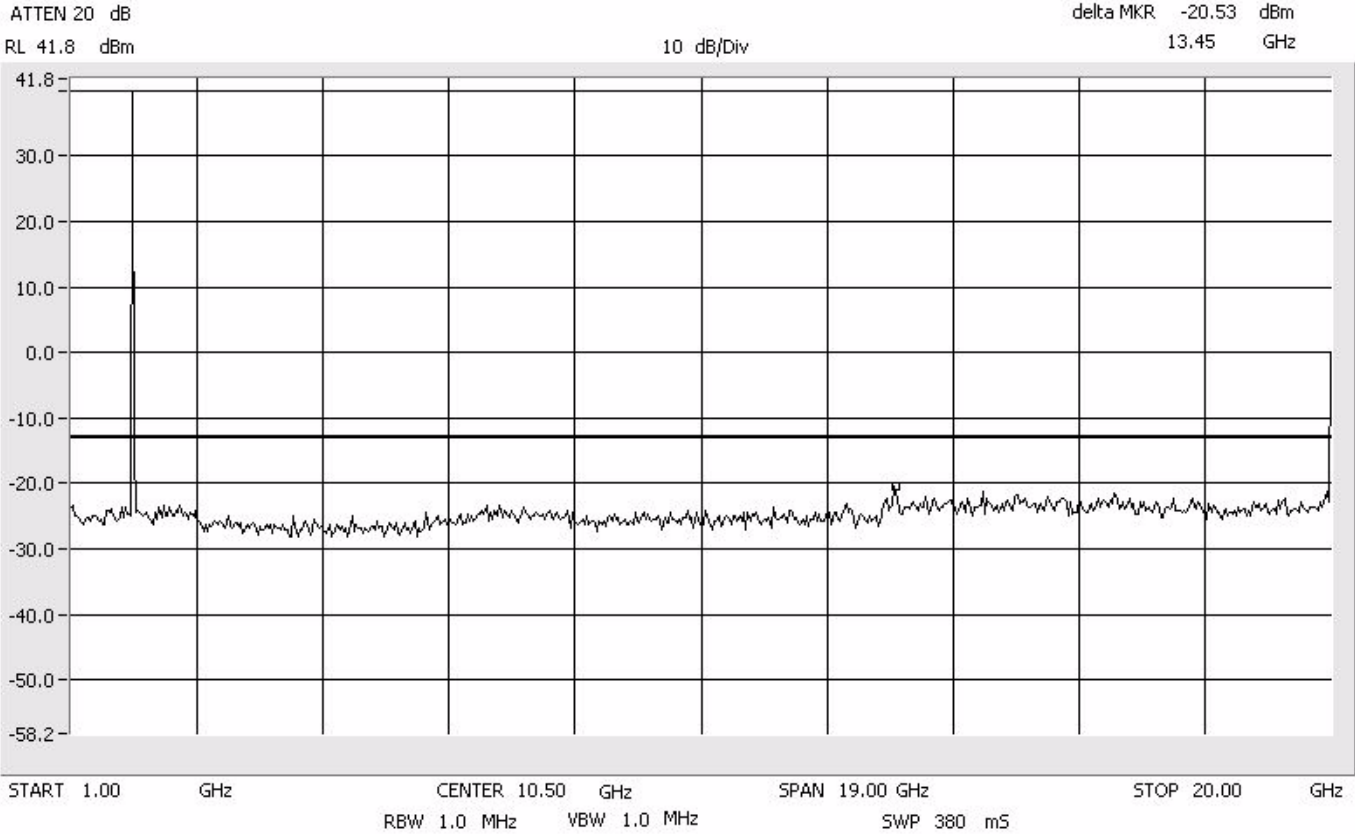


CDMA
AD Band

Intermodulation
Close - Lower
PCS 1900 MHz

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

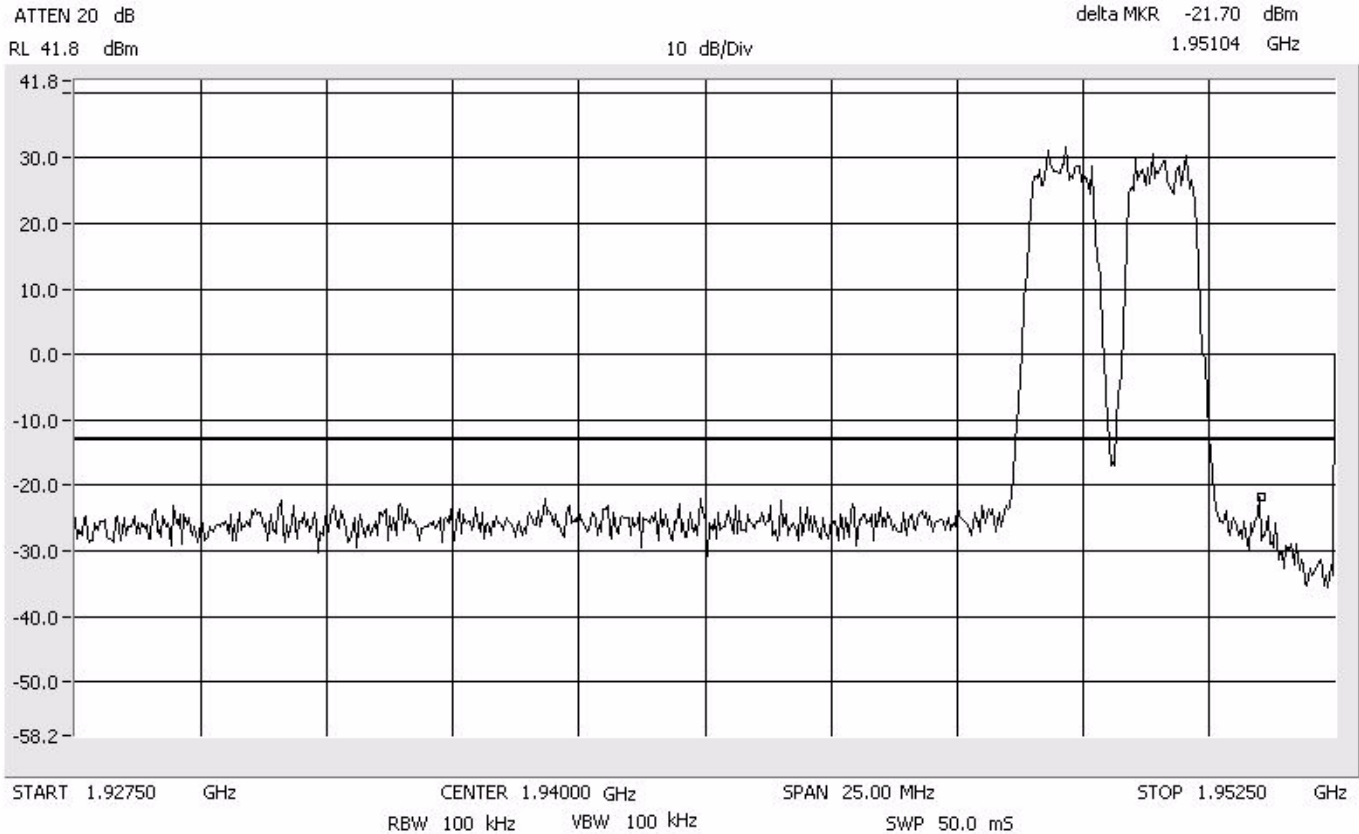




CDMA
AD Band

Intermodulation
Close - Upper
PCS 1900 MHz

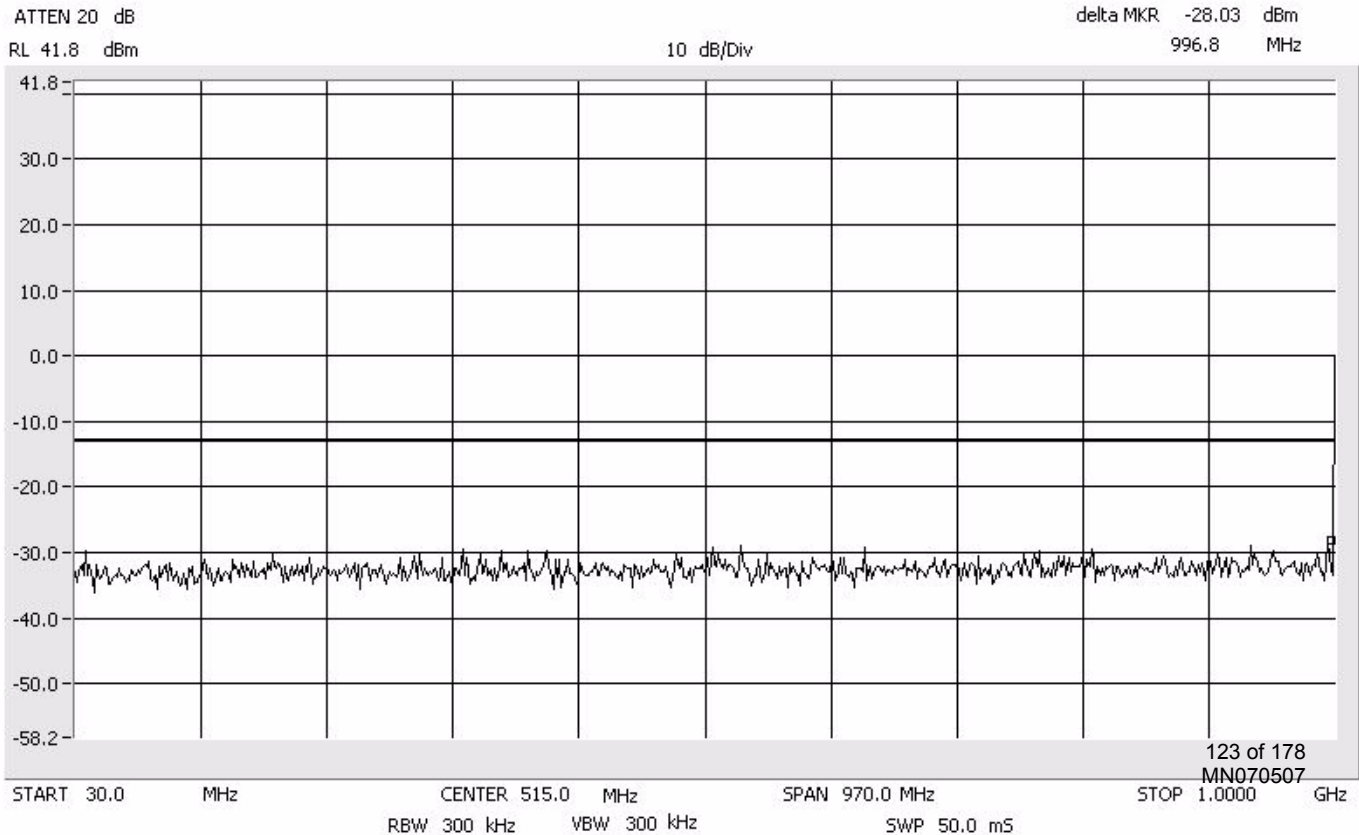
Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz

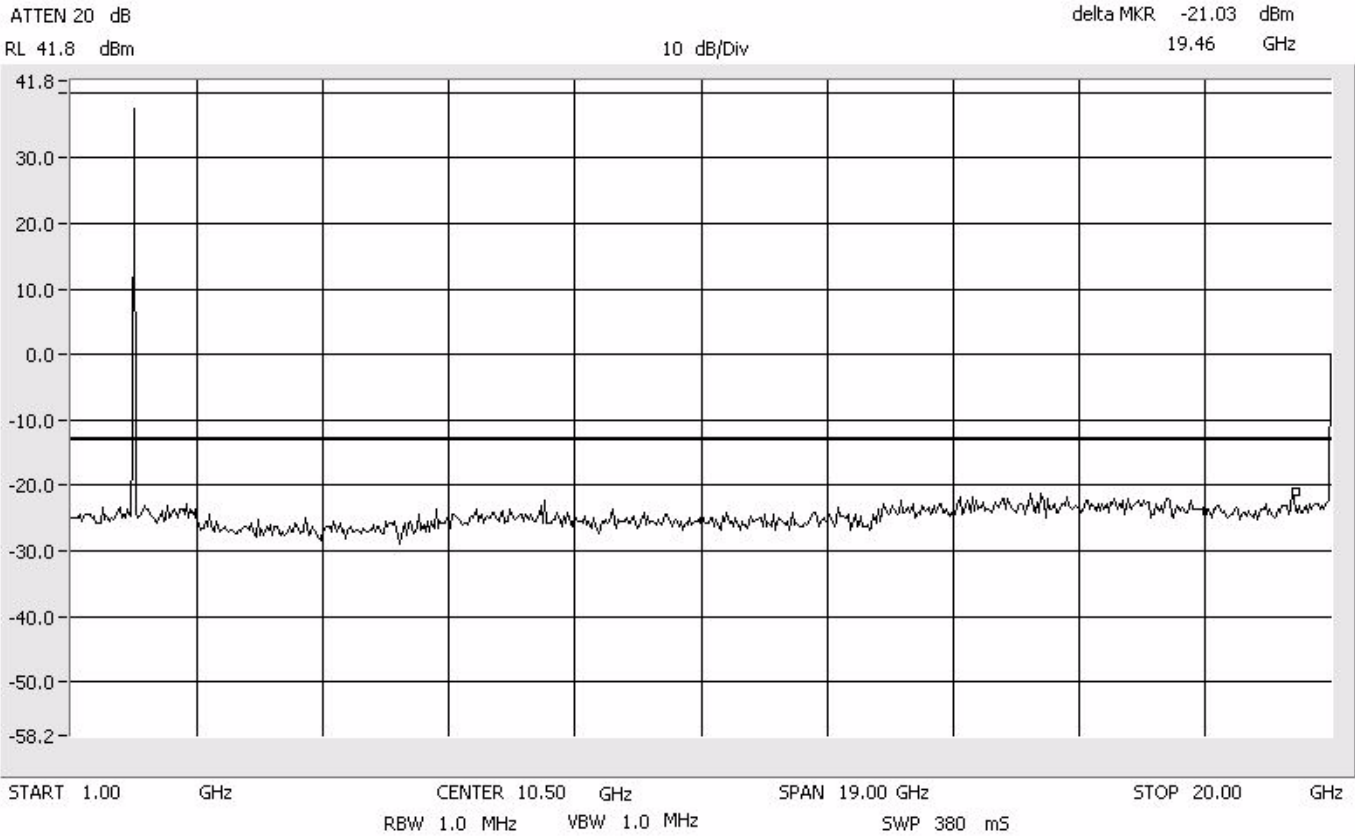


CDMA
AD Band

Intermodulation
Close - Upper
PCS 1900 MHz

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

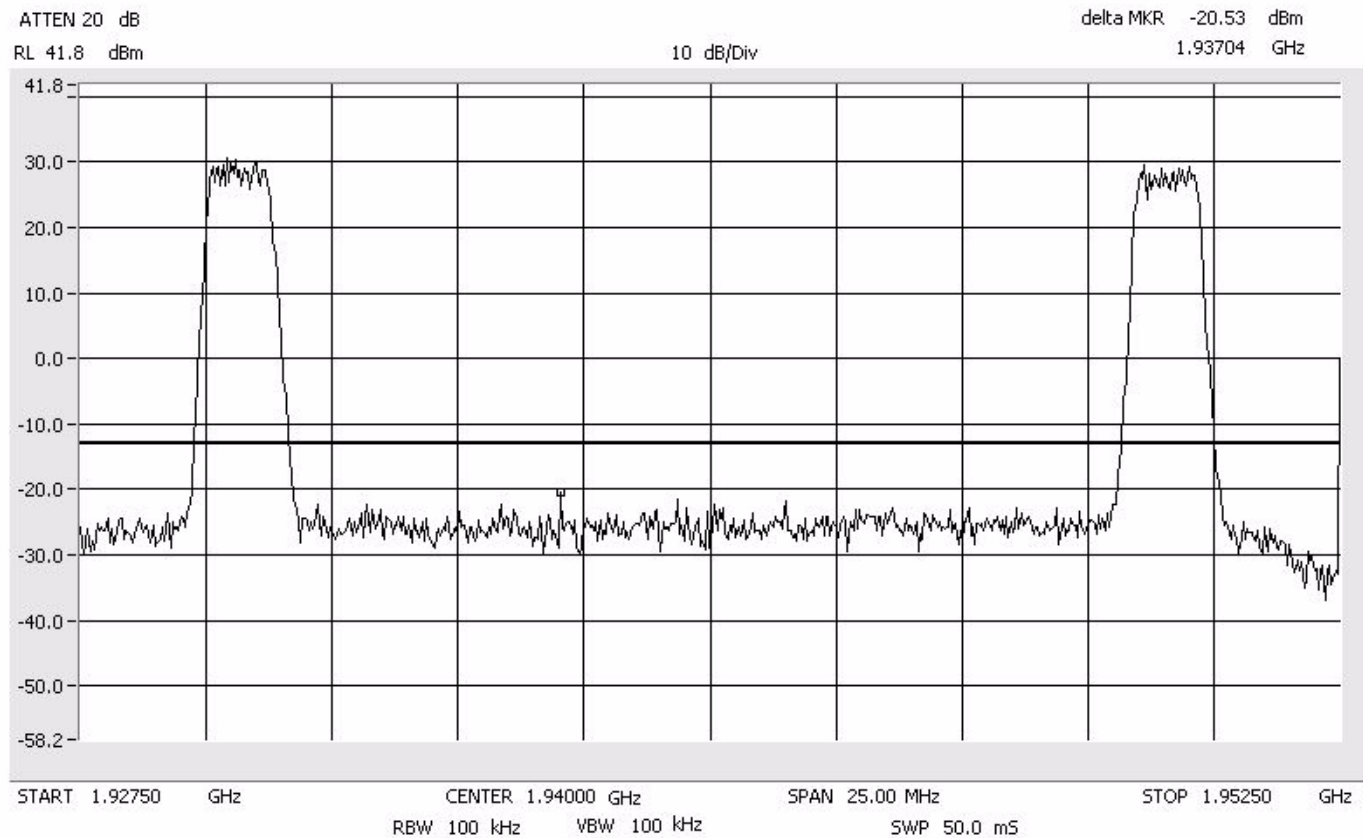




CDMA
AD Band

Intermodulation
Apart
PCS 1900 MHz

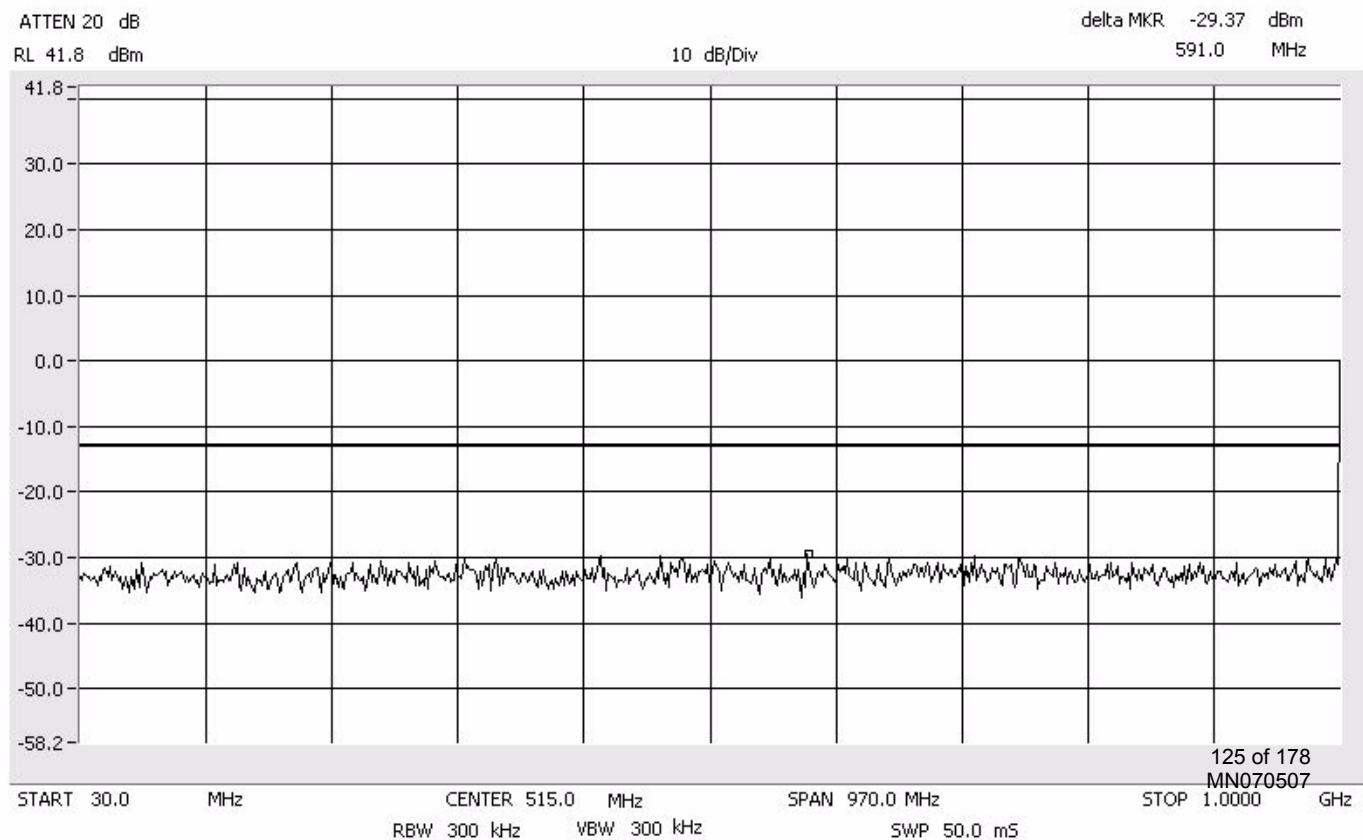
Center: 1940.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz

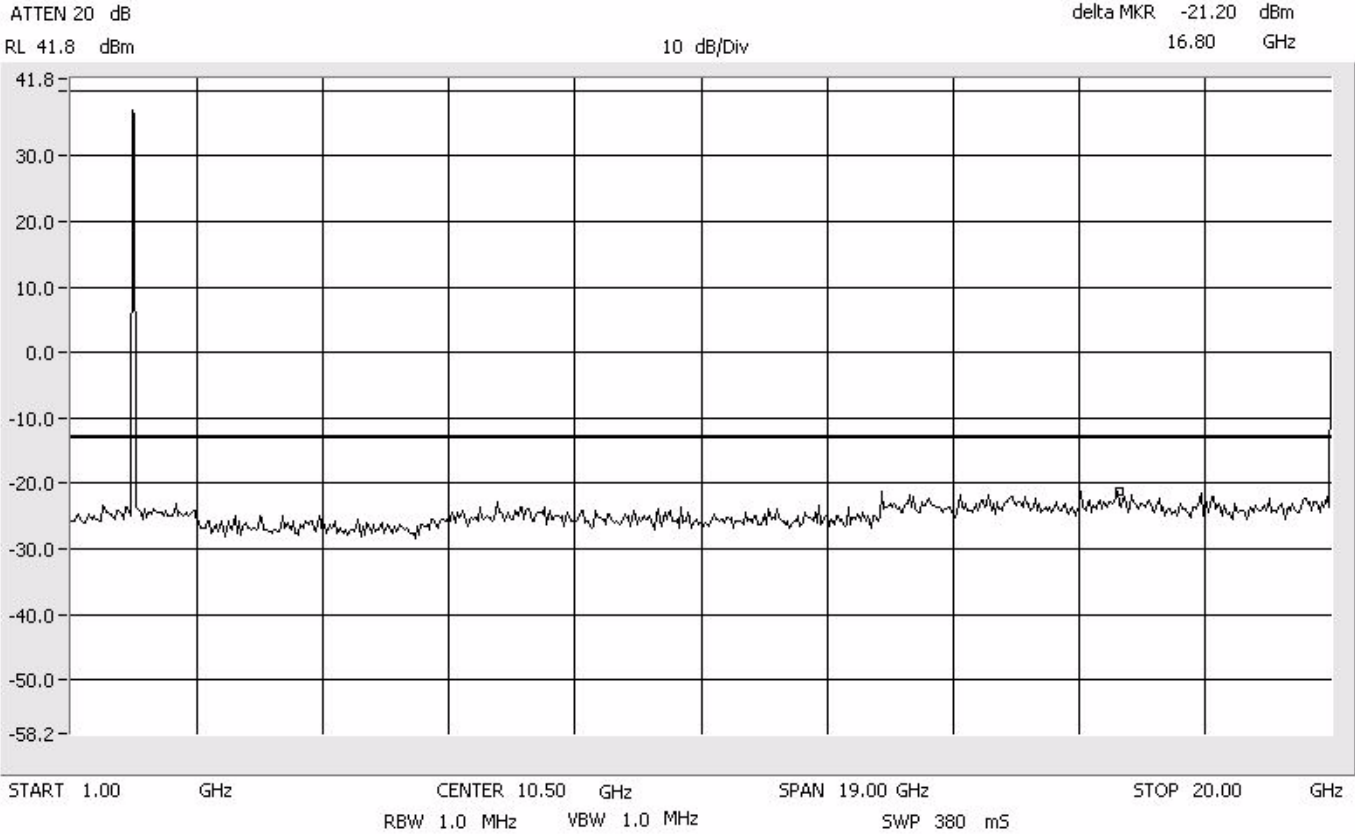


CDMA
AD Band

Intermodulation
Apart
PCS 1900 MHz

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

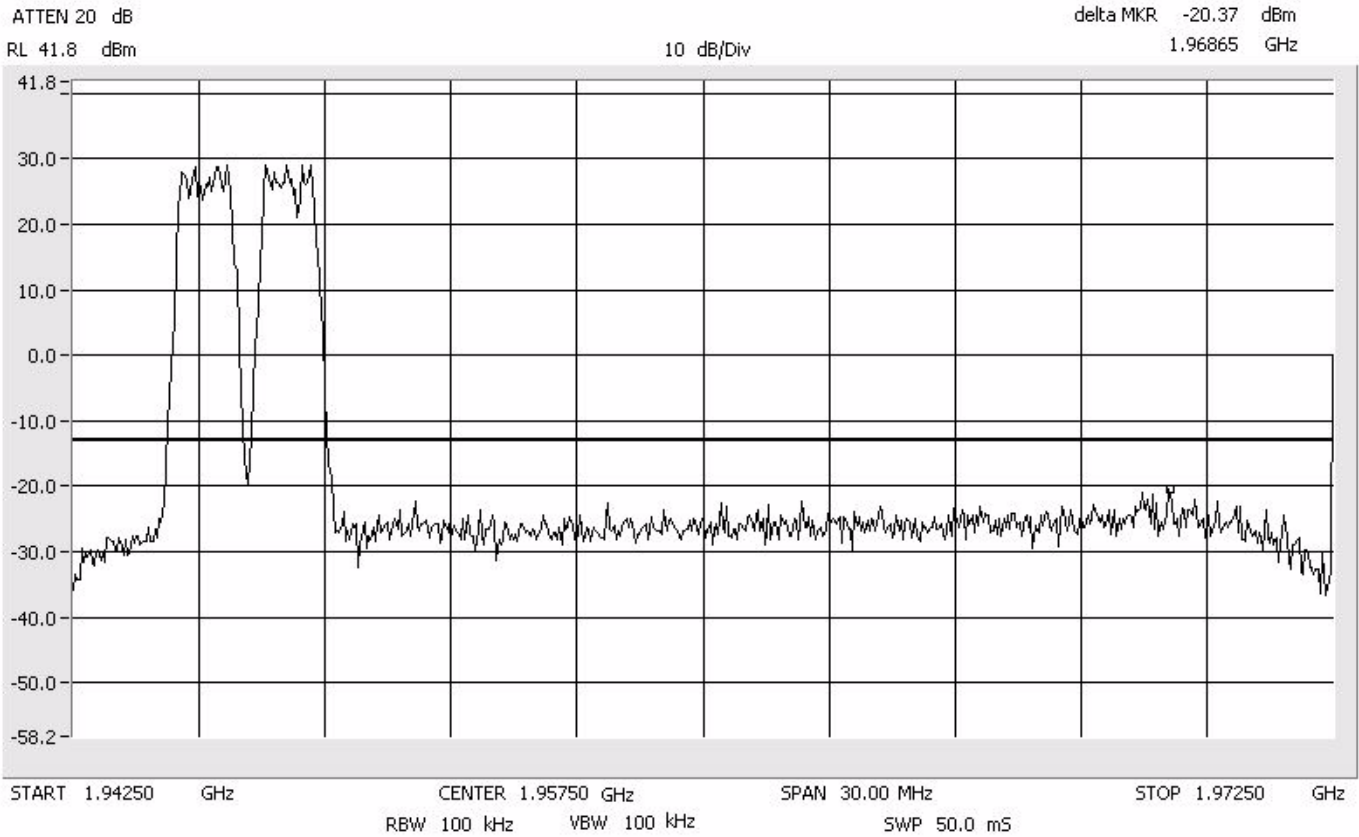




CDMA
DBE Band

Intermodulation
Close - Lower
PCS 1900 MHz

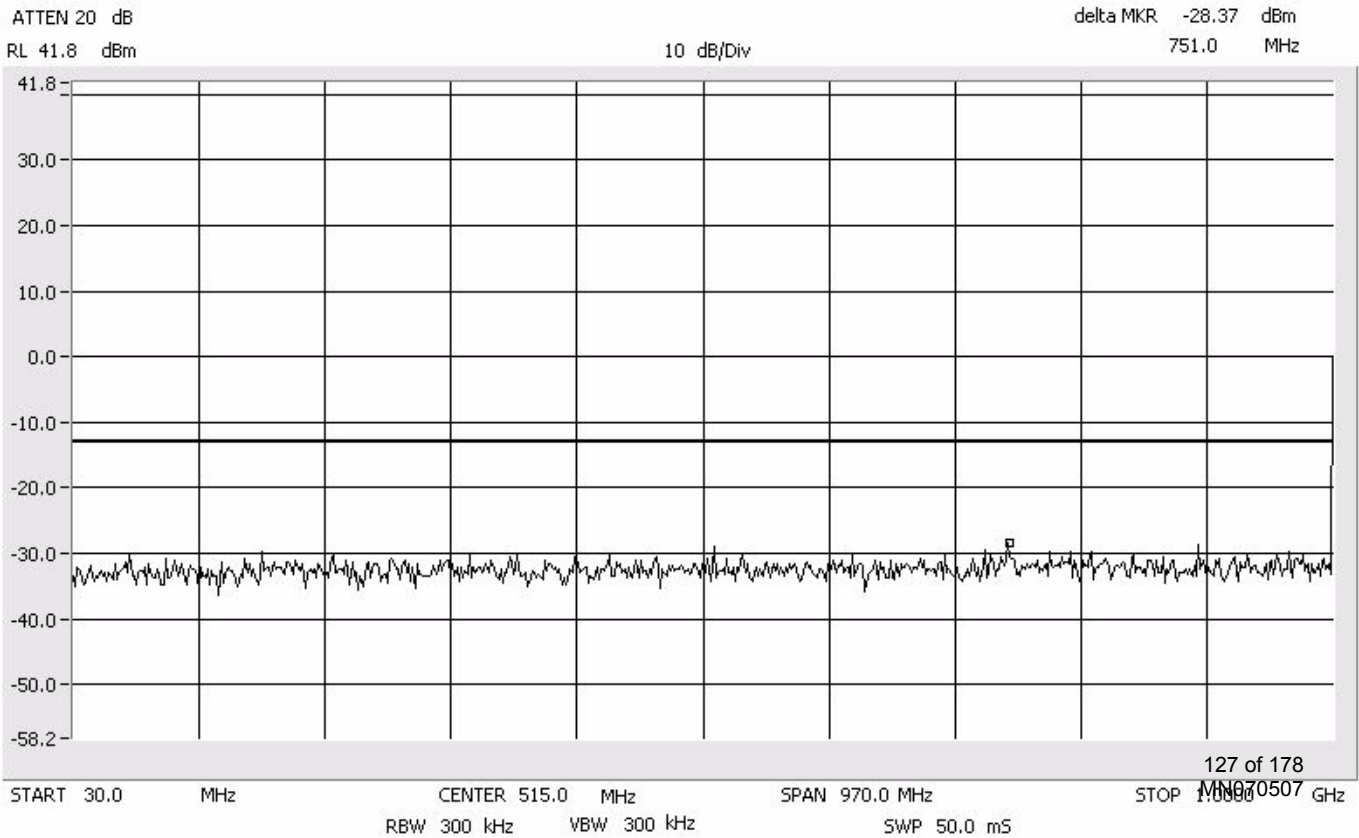
Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

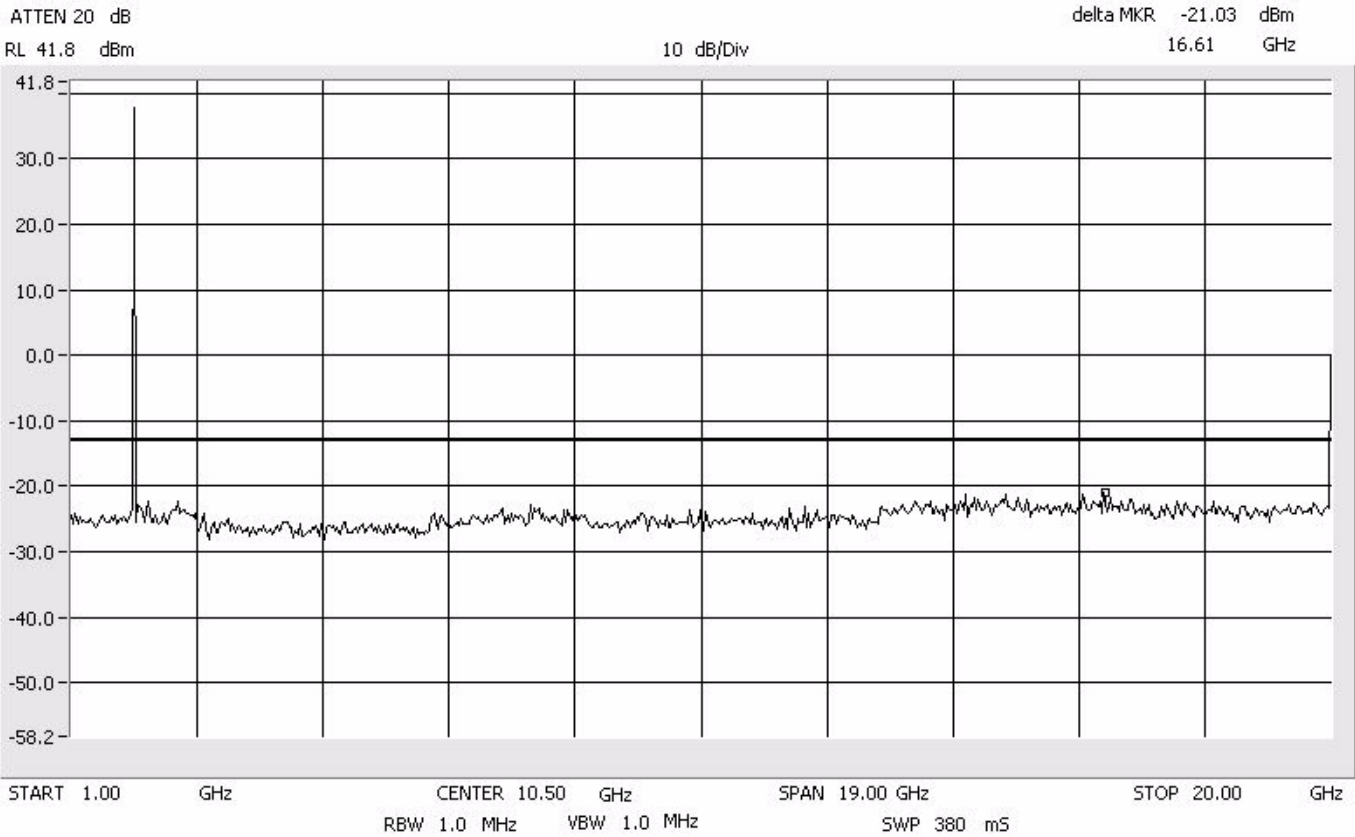


CDMA
DBE Band

Intermodulation
Close - Lower
PCS 1900 MHz

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

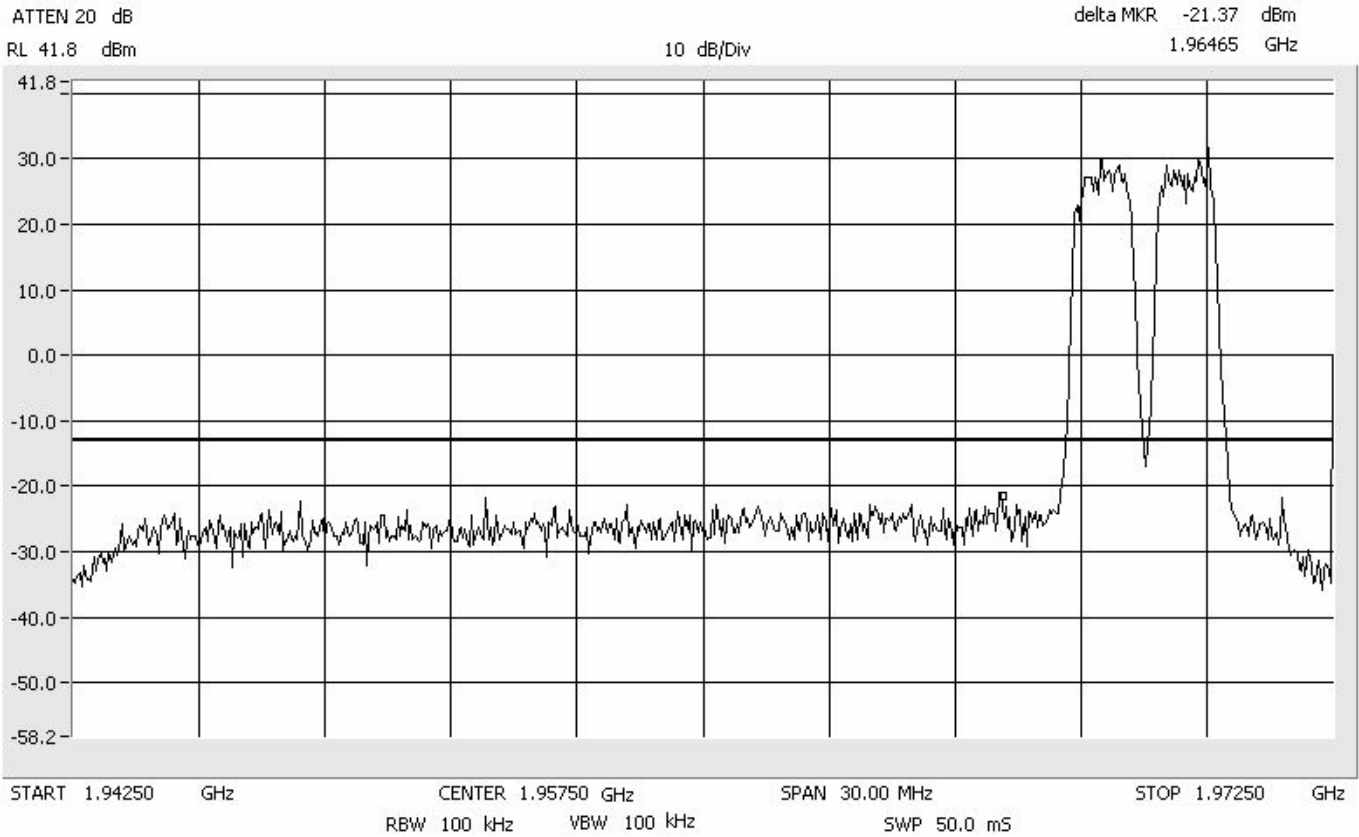




CDMA
DBE Band

Intermodulation
Close - Upper
PCS 1900 MHz

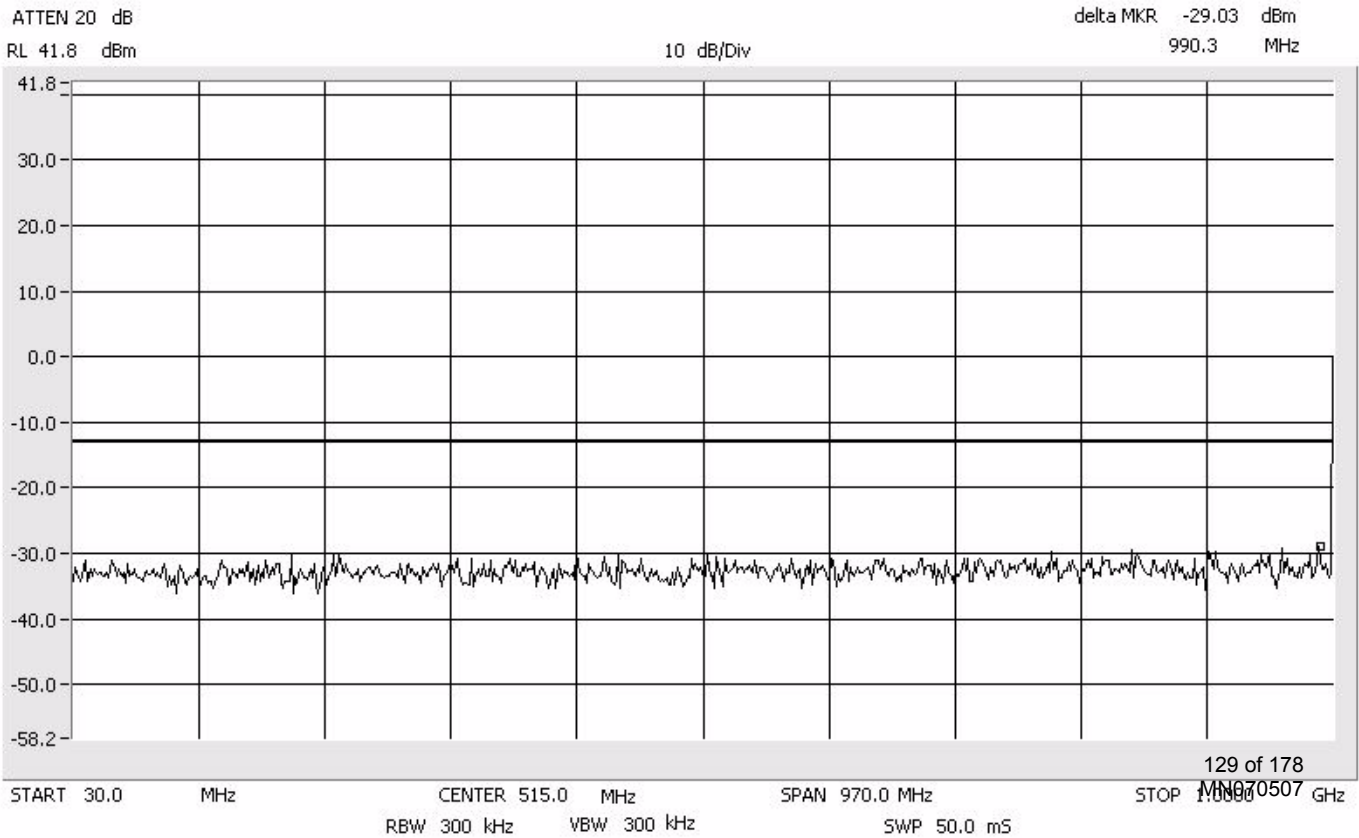
Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

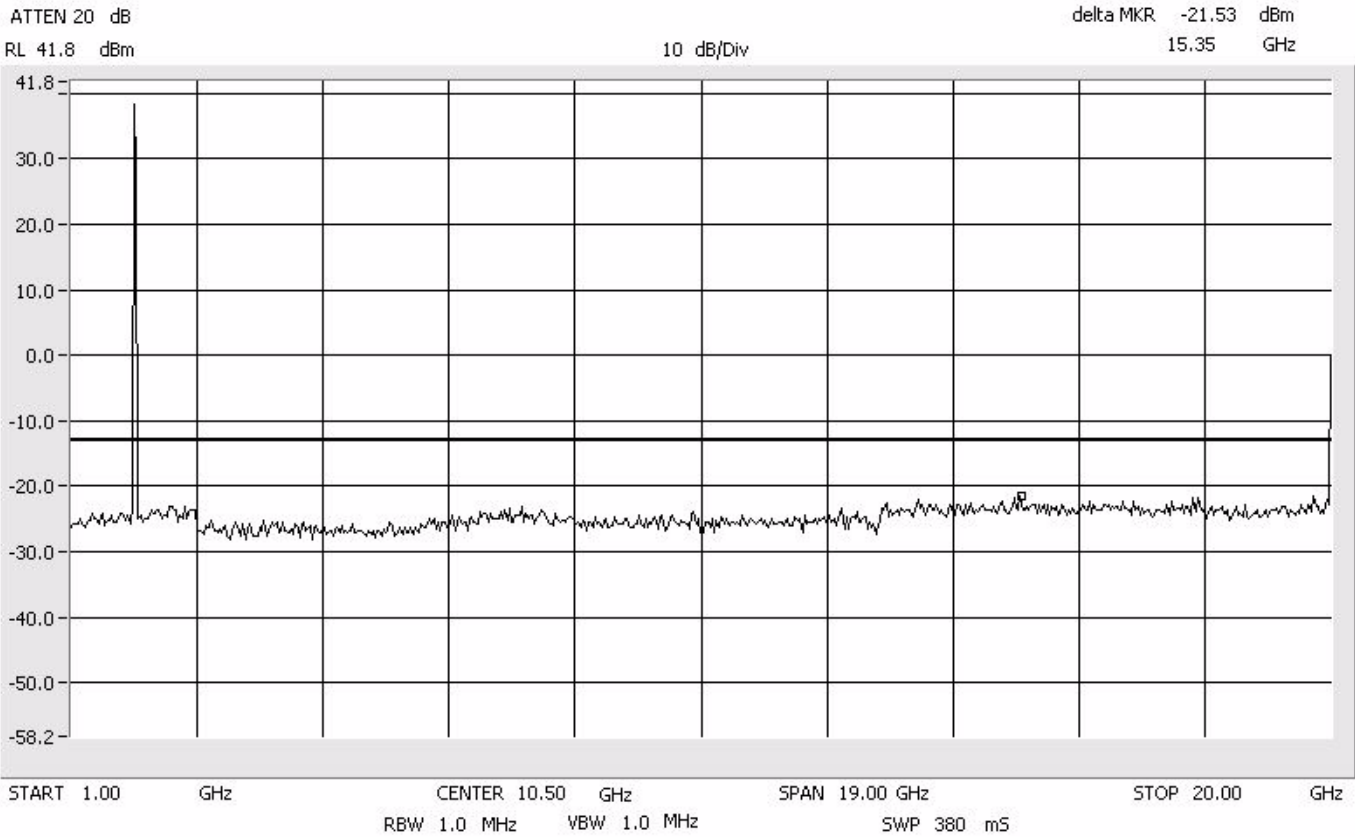


CDMA
DBE Band

Intermodulation
Close - Upper
PCS 1900 MHz

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

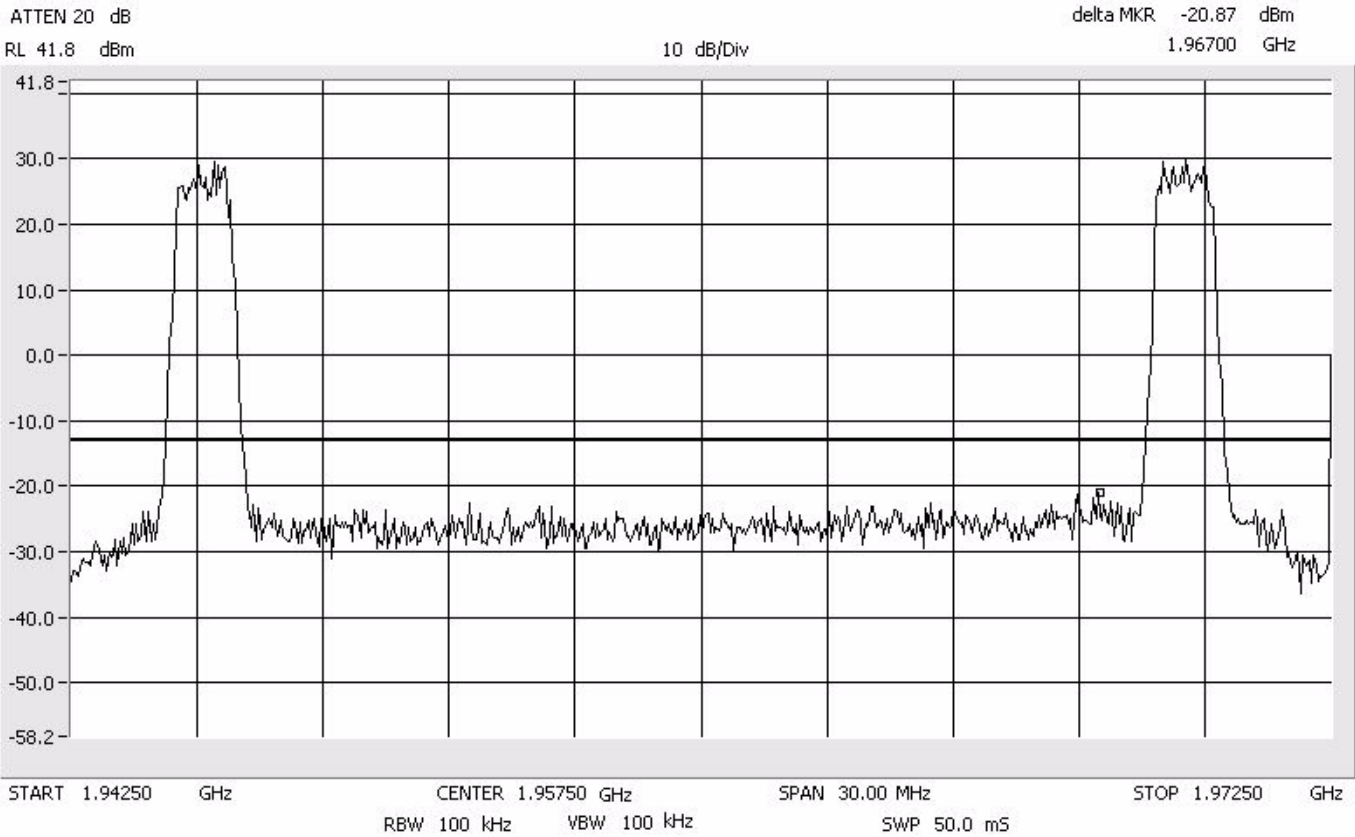




CDMA
DBE Band

Intermodulation
Apart
PCS 1900 MHz

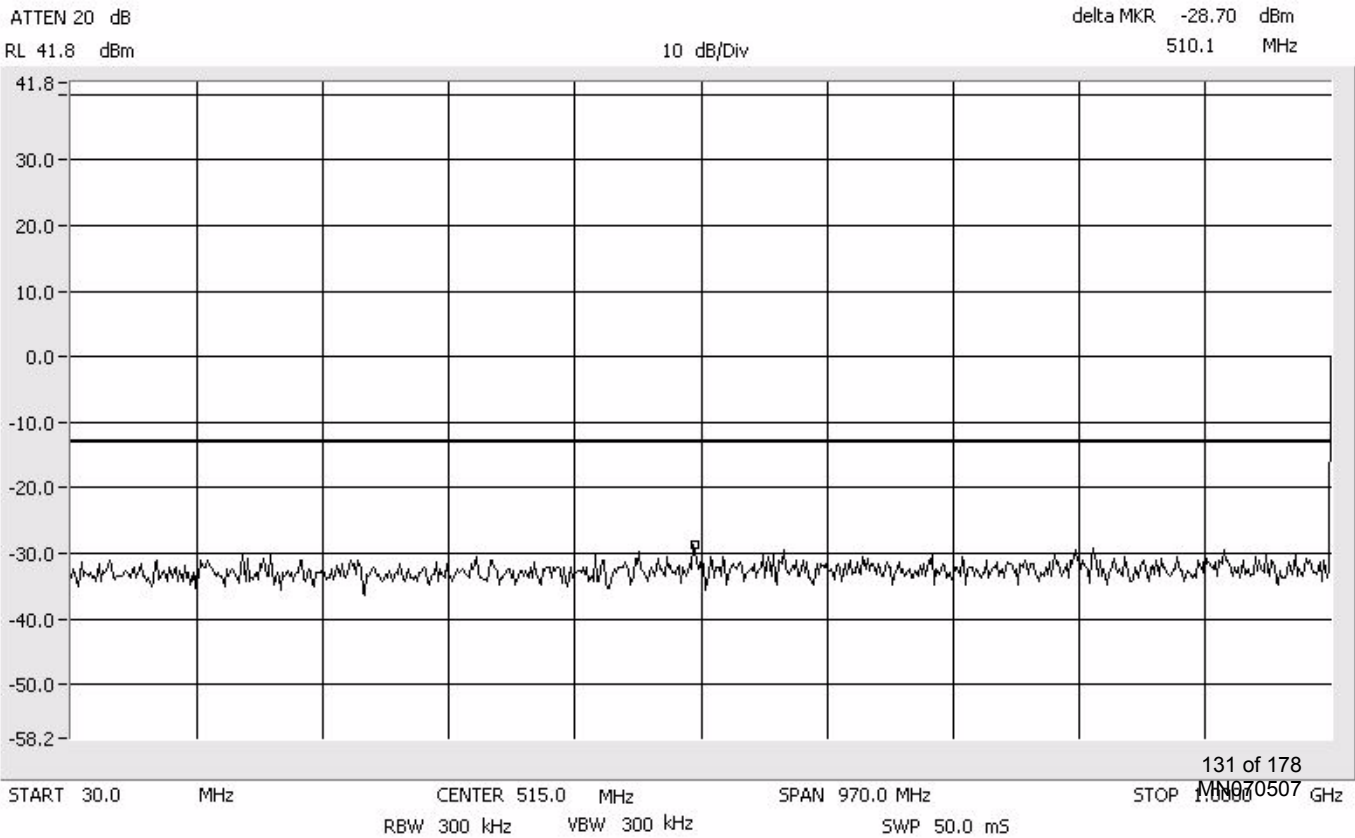
Center: 1957.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

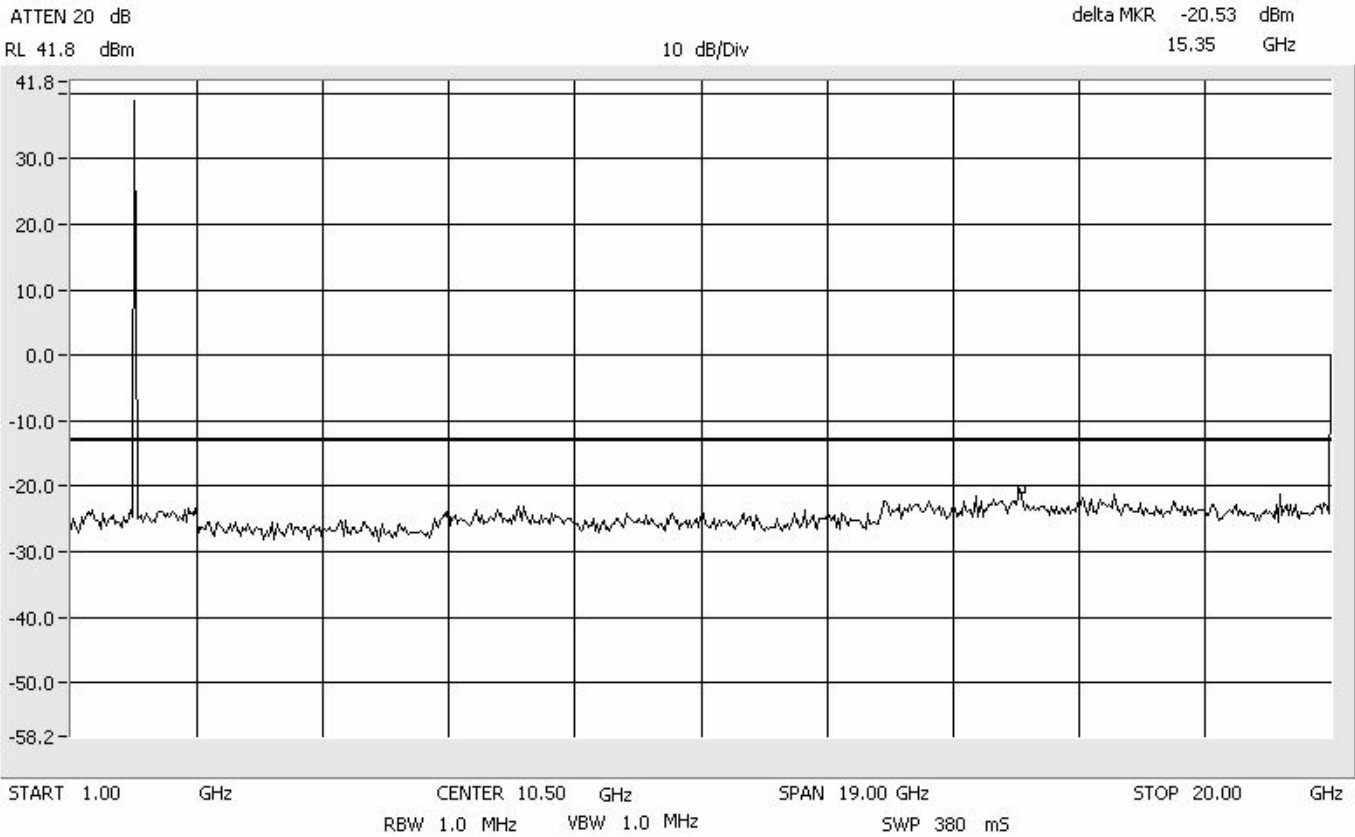


CDMA
DBE Band

Intermodulation
Apart
PCS 1900 MHz

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

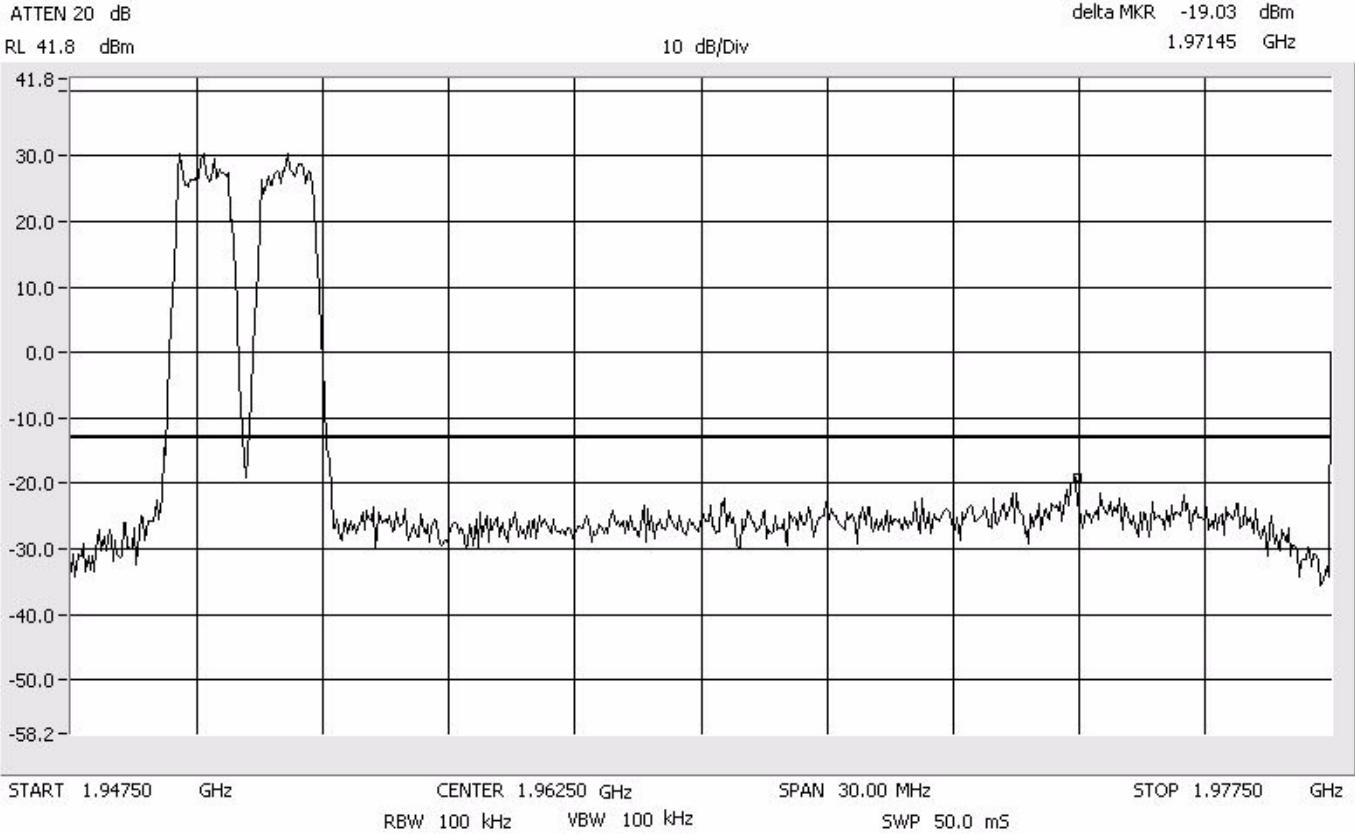




CDMA
BEF Band

Intermodulation
Close - Lower
PCS 1900 MHz

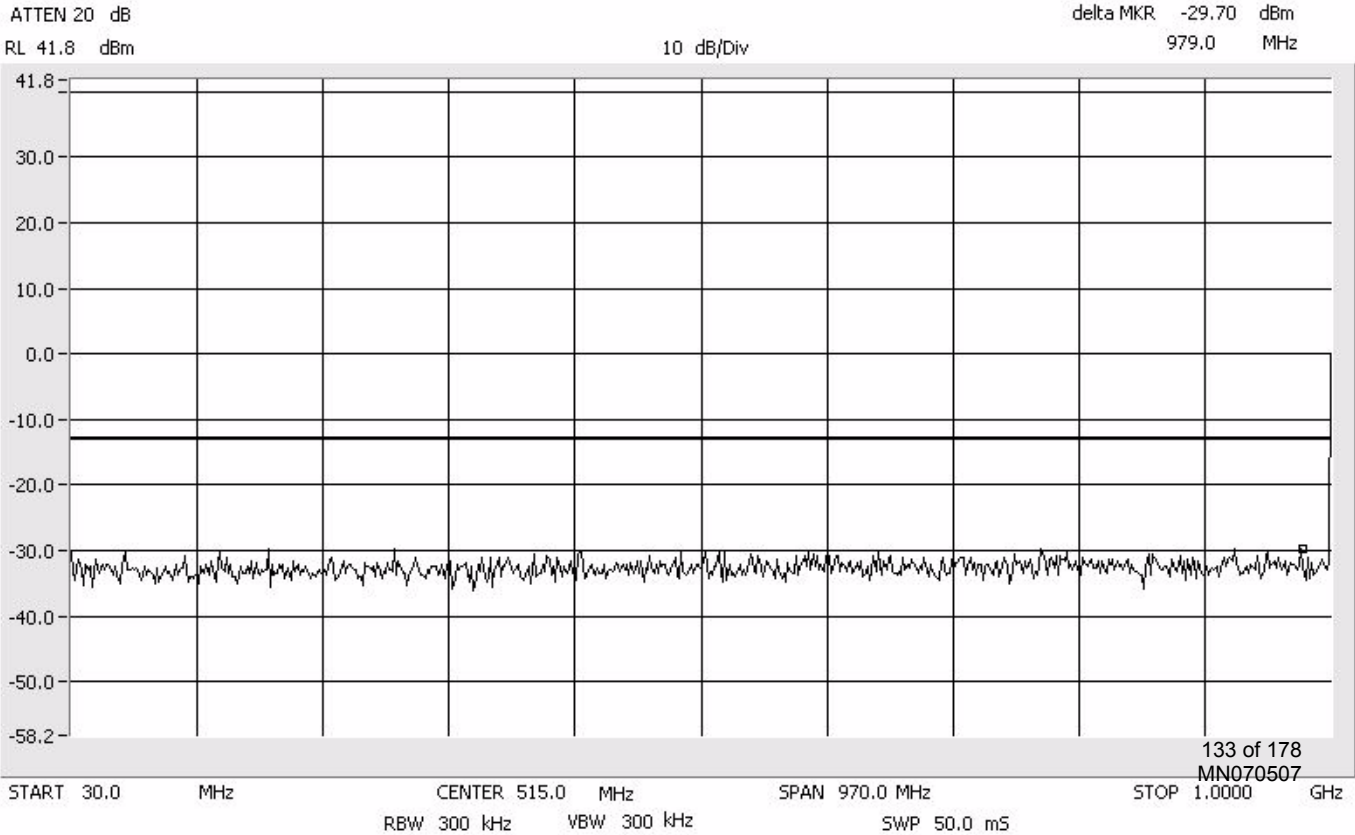
Center: 1962.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

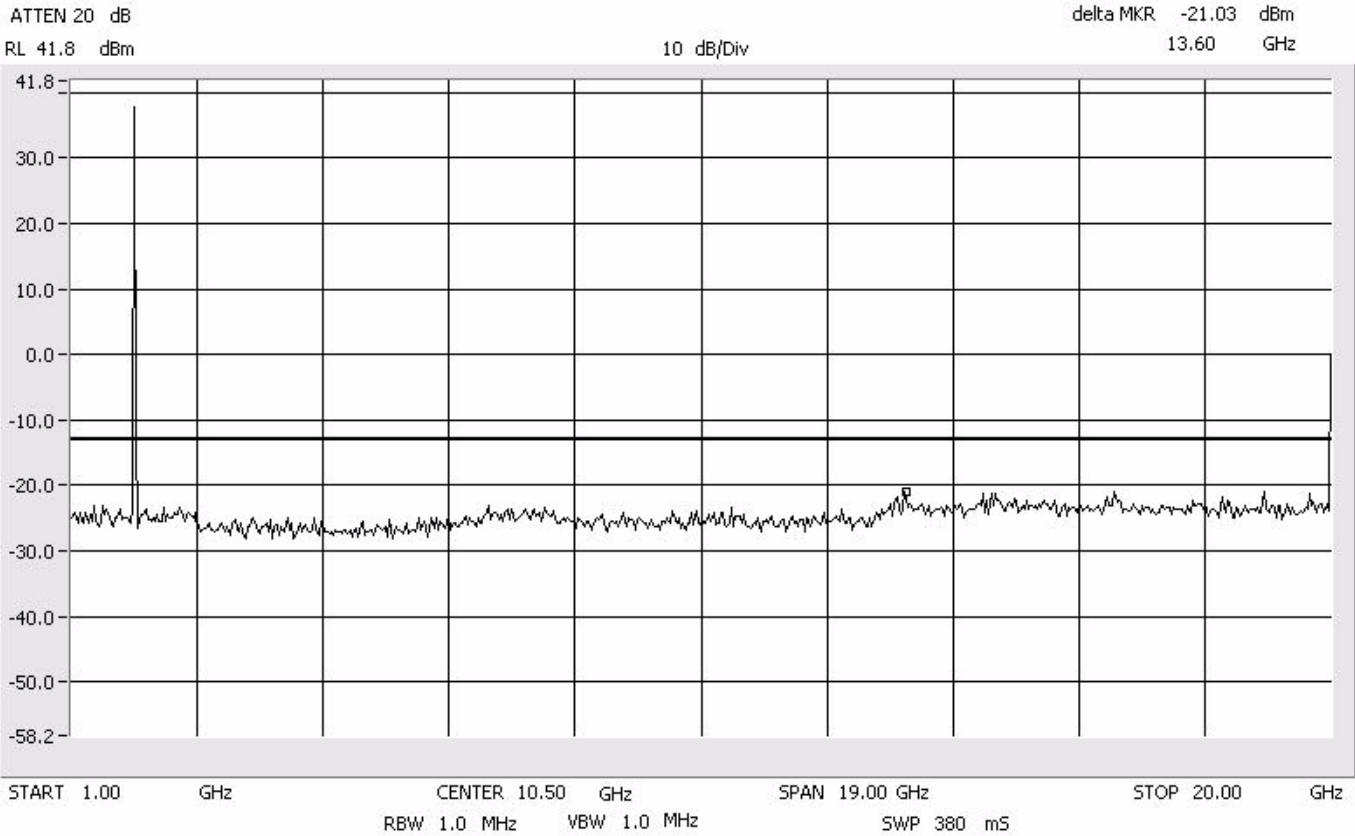


CDMA
BEF Band

Intermodulation
Close - Lower
PCS 1900 MHz

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

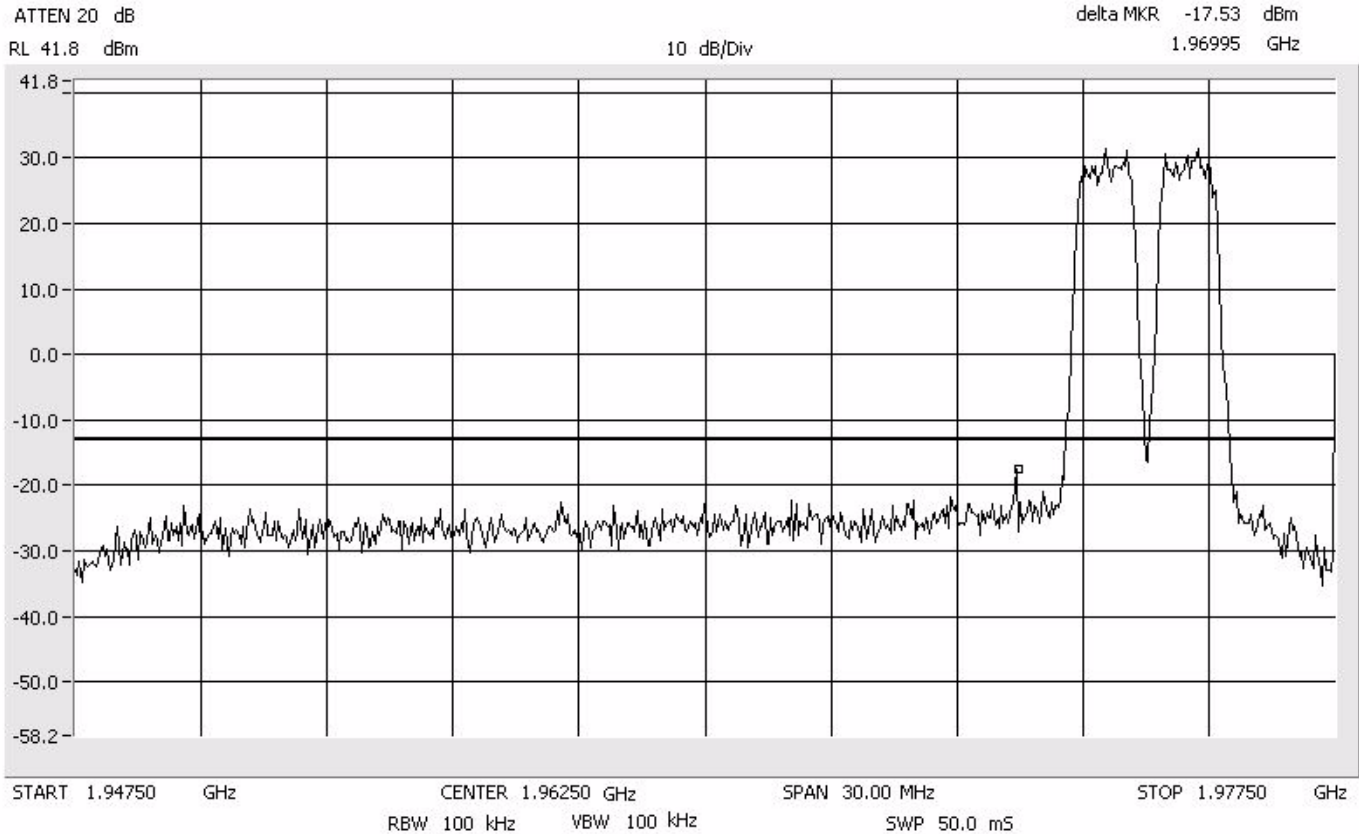




CDMA
BEF Band

Intermodulation
Close - Upper
PCS 1900 MHz

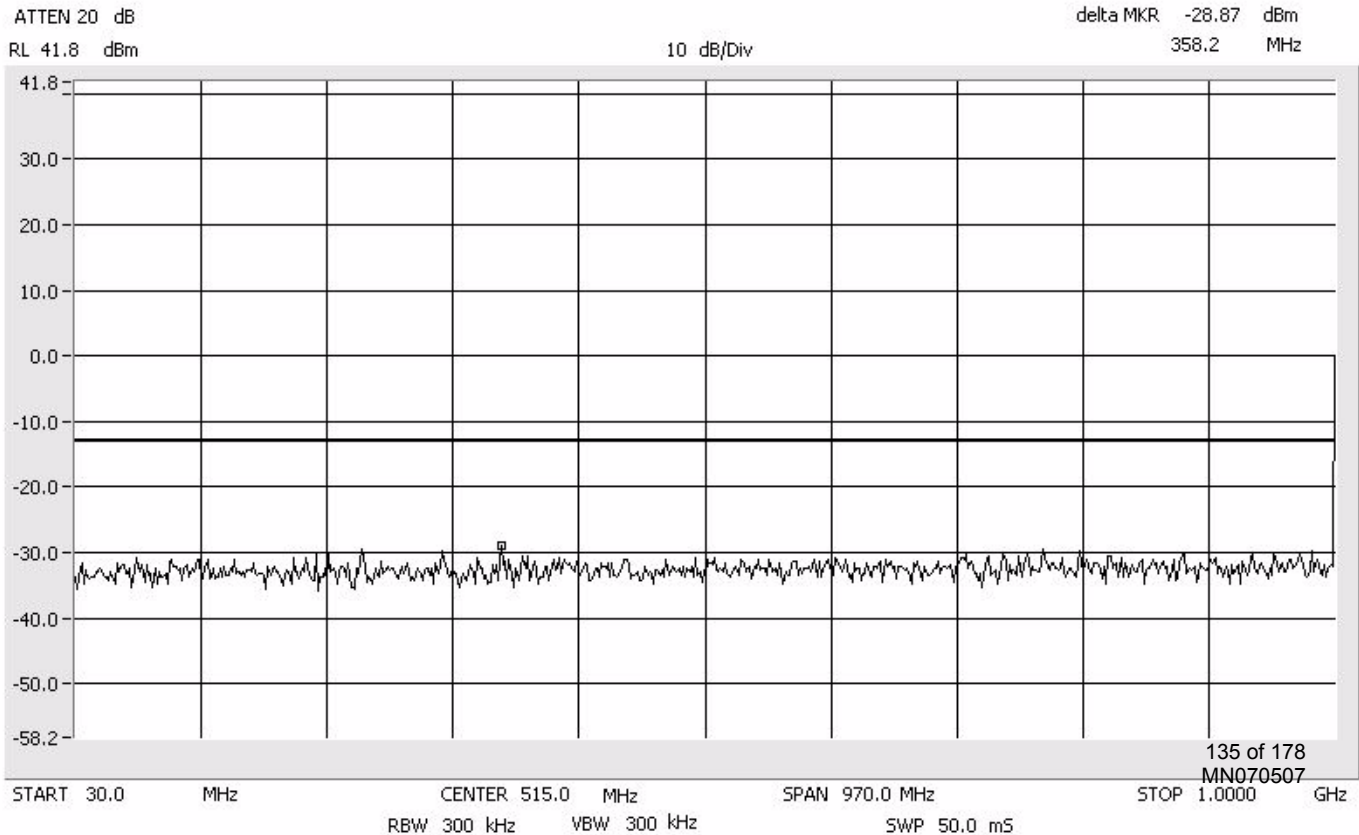
Center: 1962.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

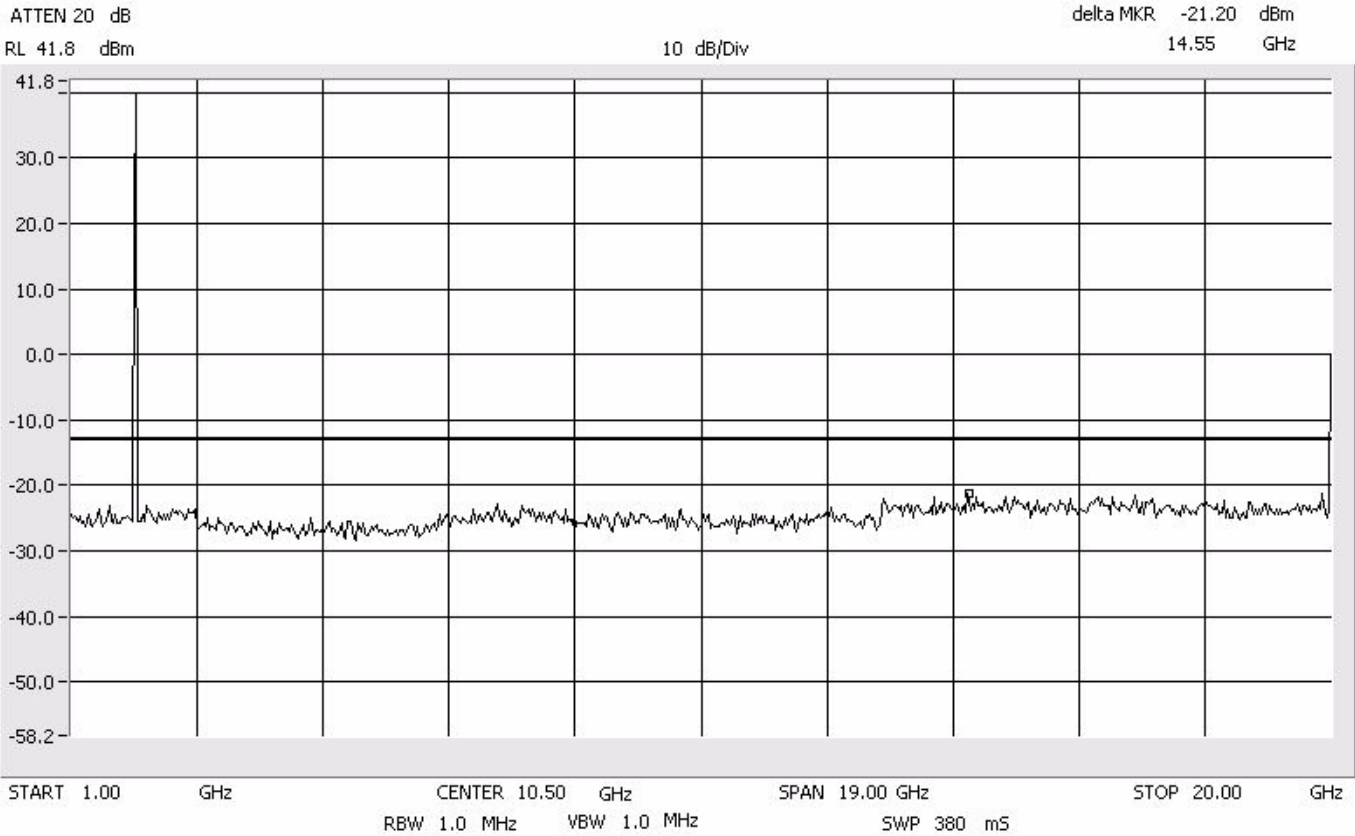


CDMA
BEF Band

Intermodulation
Close - Upper
PCS 1900 MHz

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

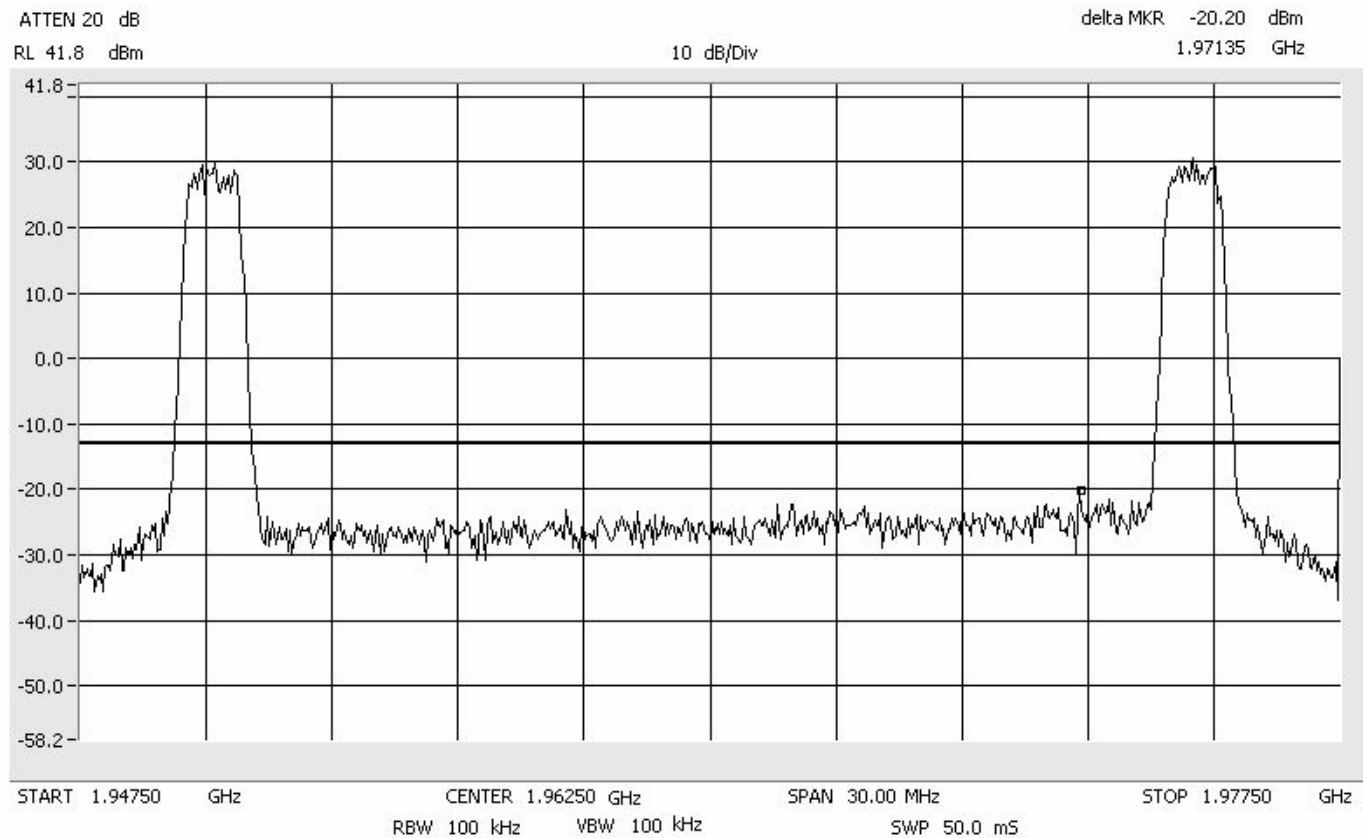




CDMA
BEF Band

Intermodulation
Apart
PCS 1900 MHz

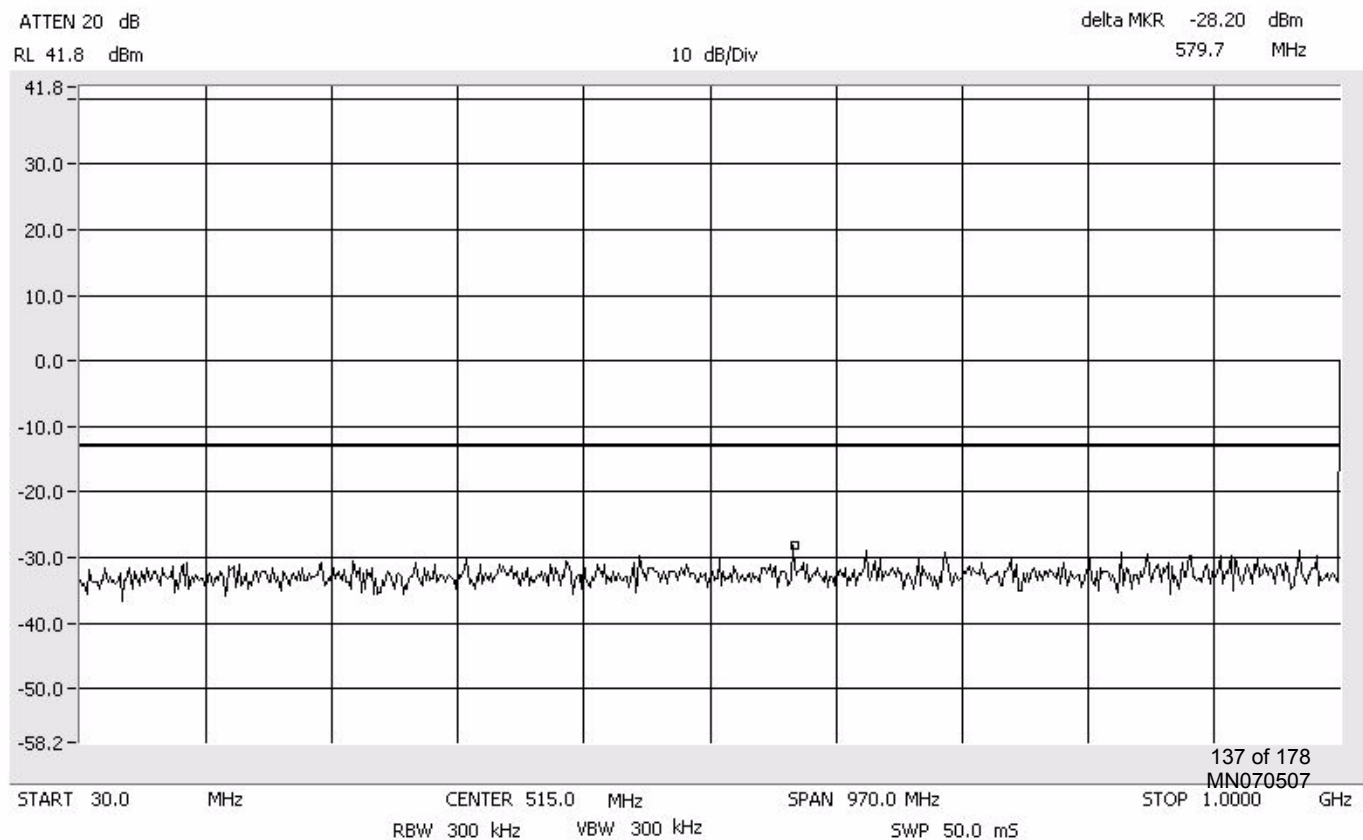
Center: 1962.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

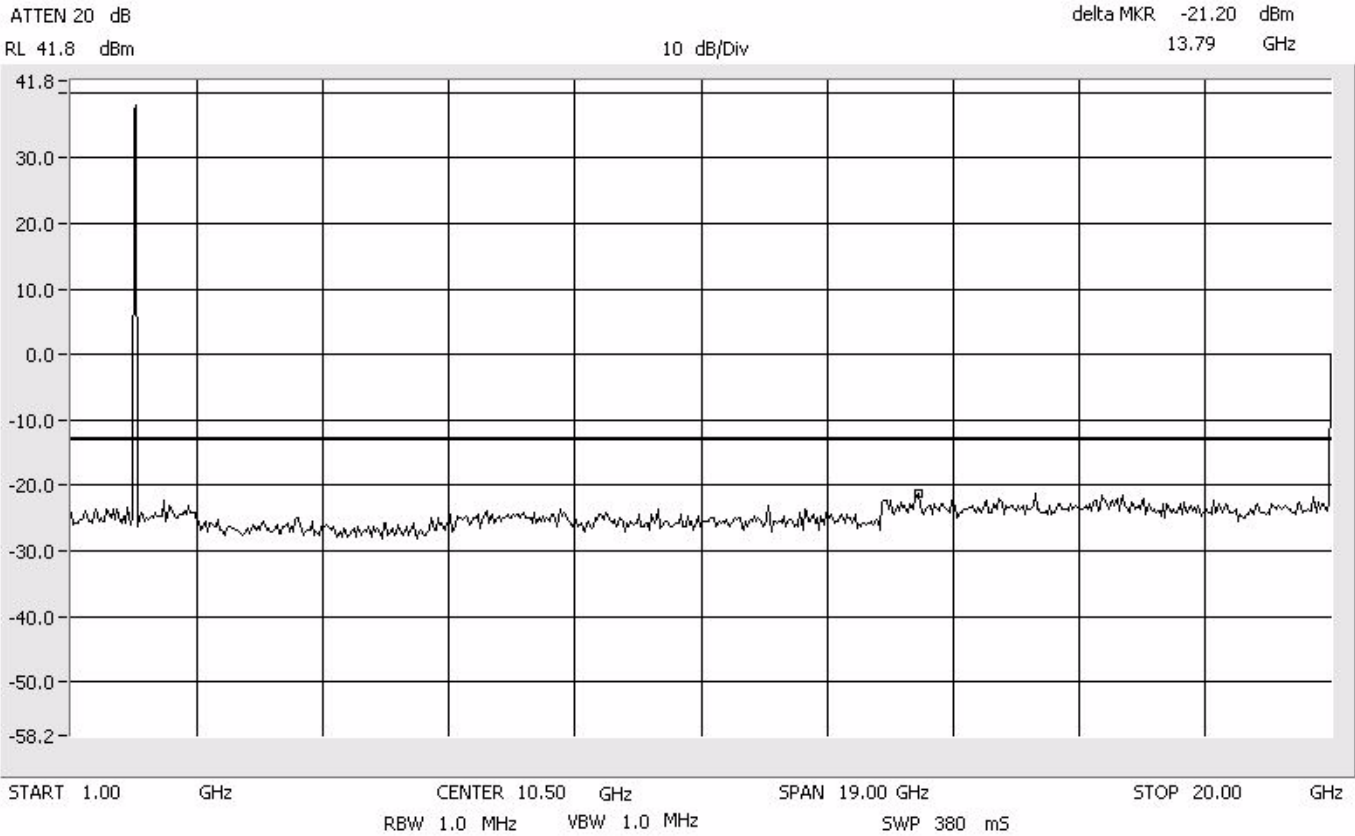


CDMA
BEF Band

Intermodulation
Apart
PCS 1900 MHz

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

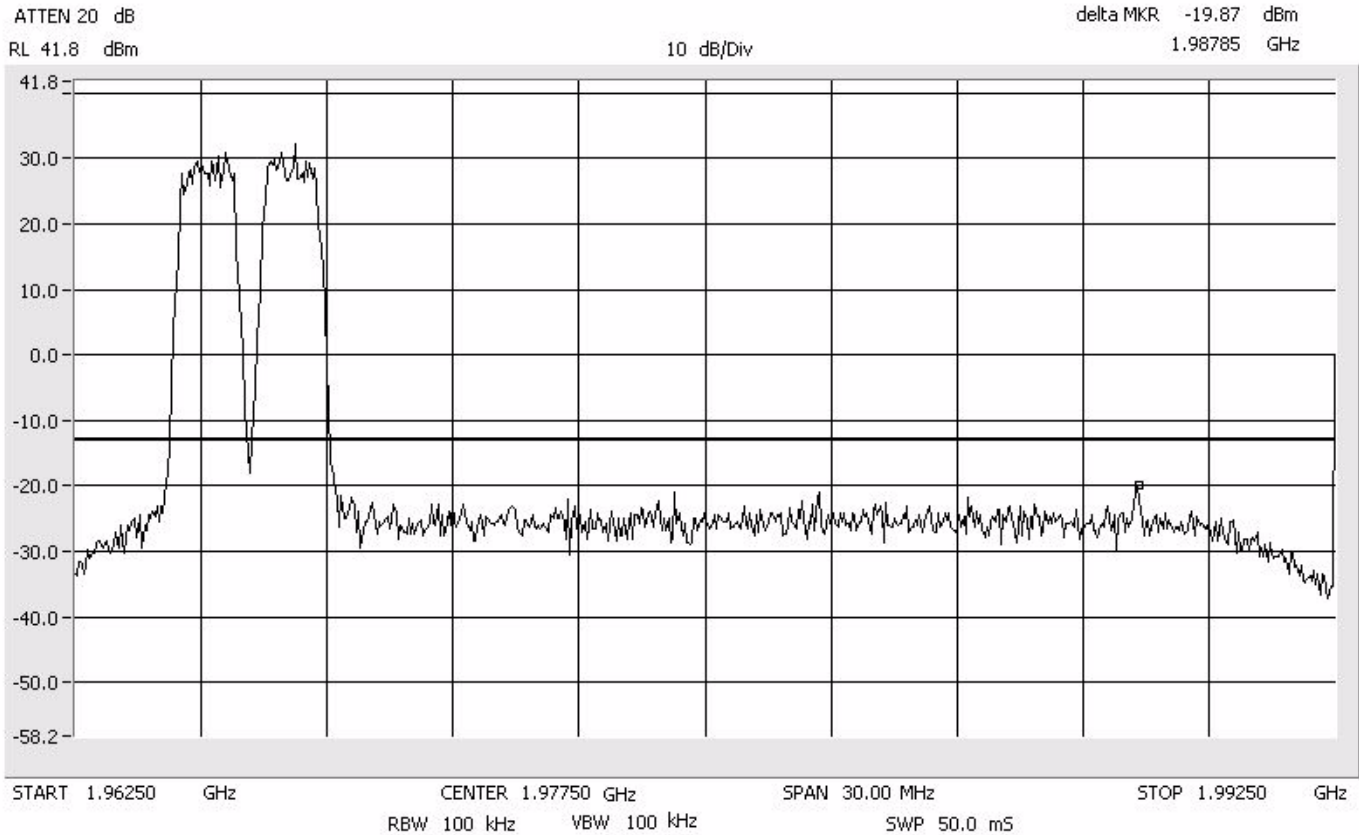




CDMA
EFC Band

Intermodulation
Close - Lower
PCS 1900 MHz

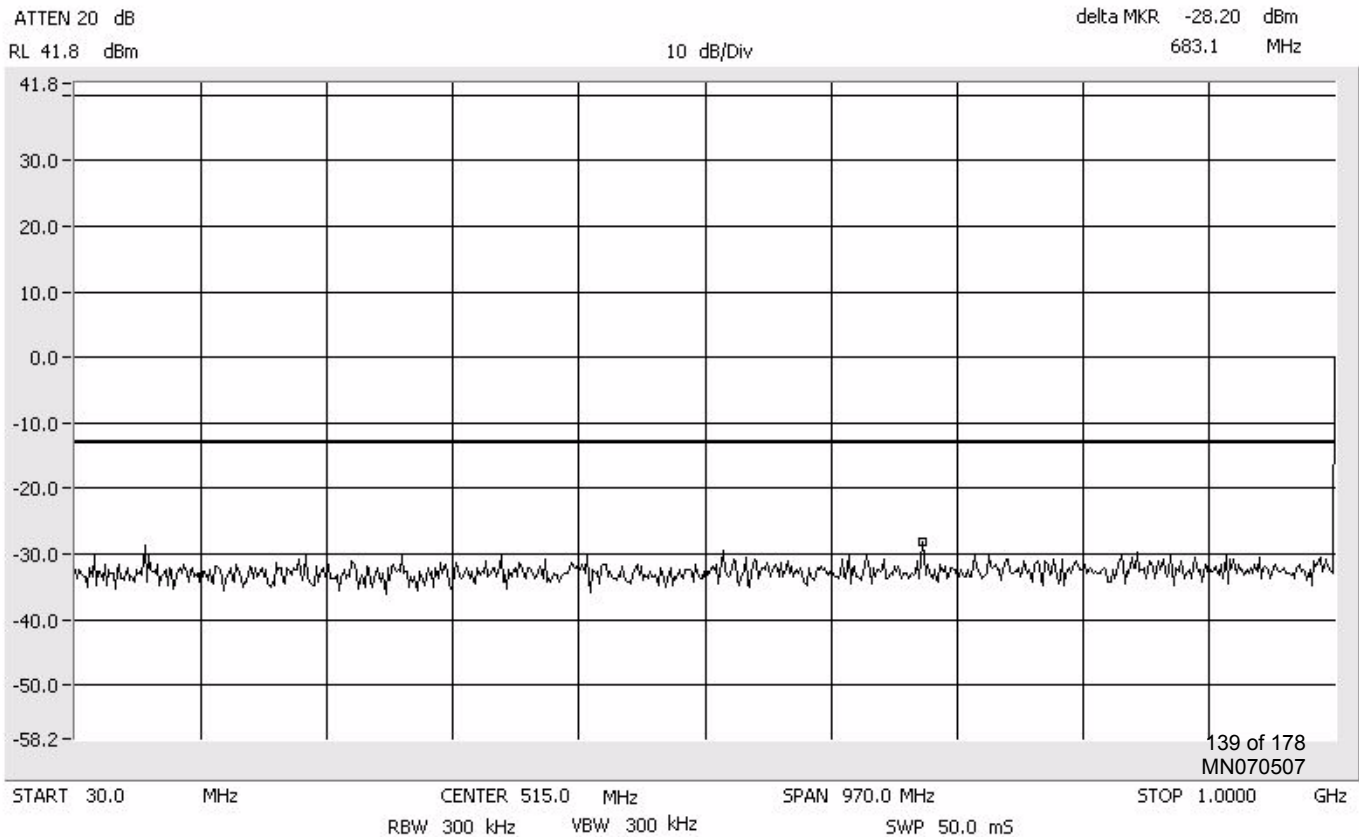
Center: 1977.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

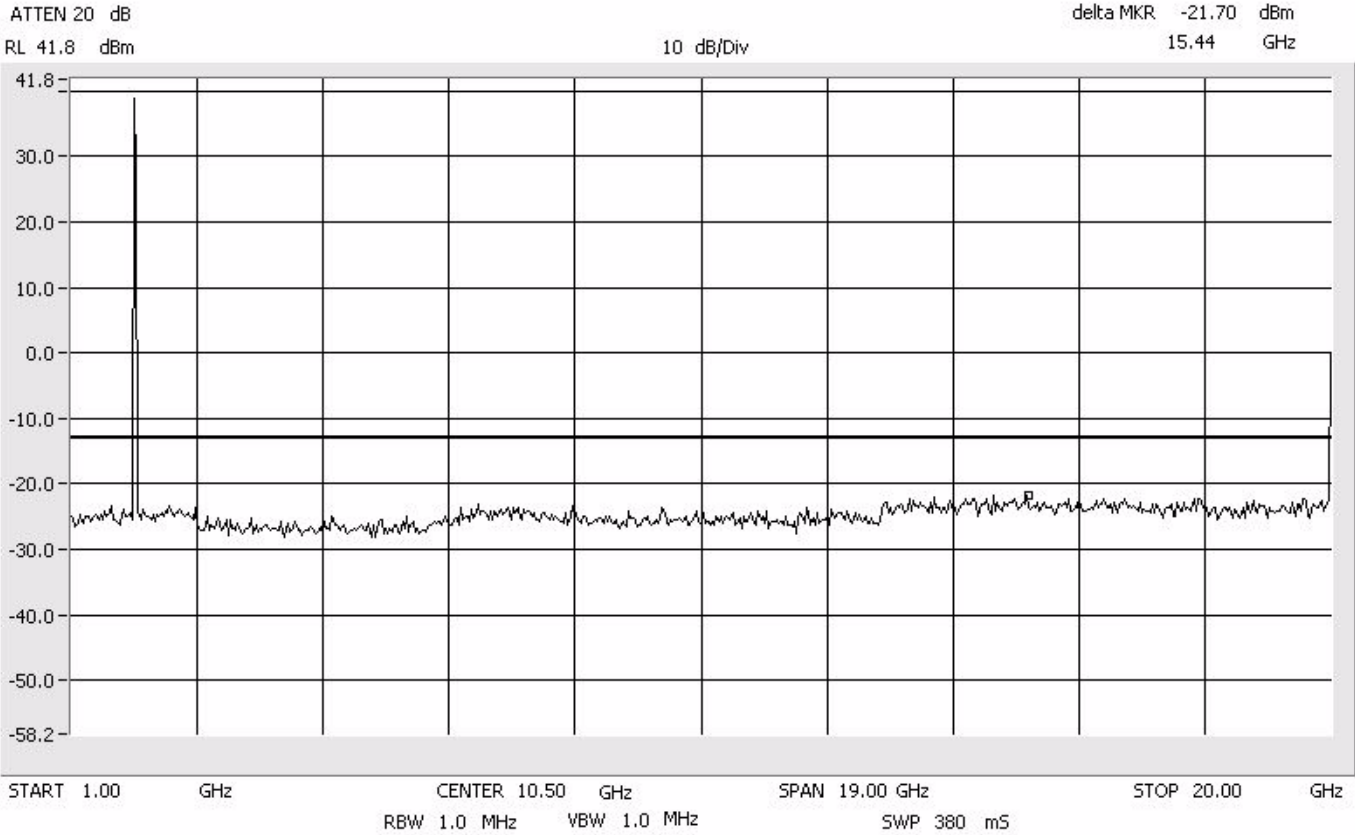


CDMA
EFC Band

Intermodulation
Close - Lower
PCS 1900 MHz

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

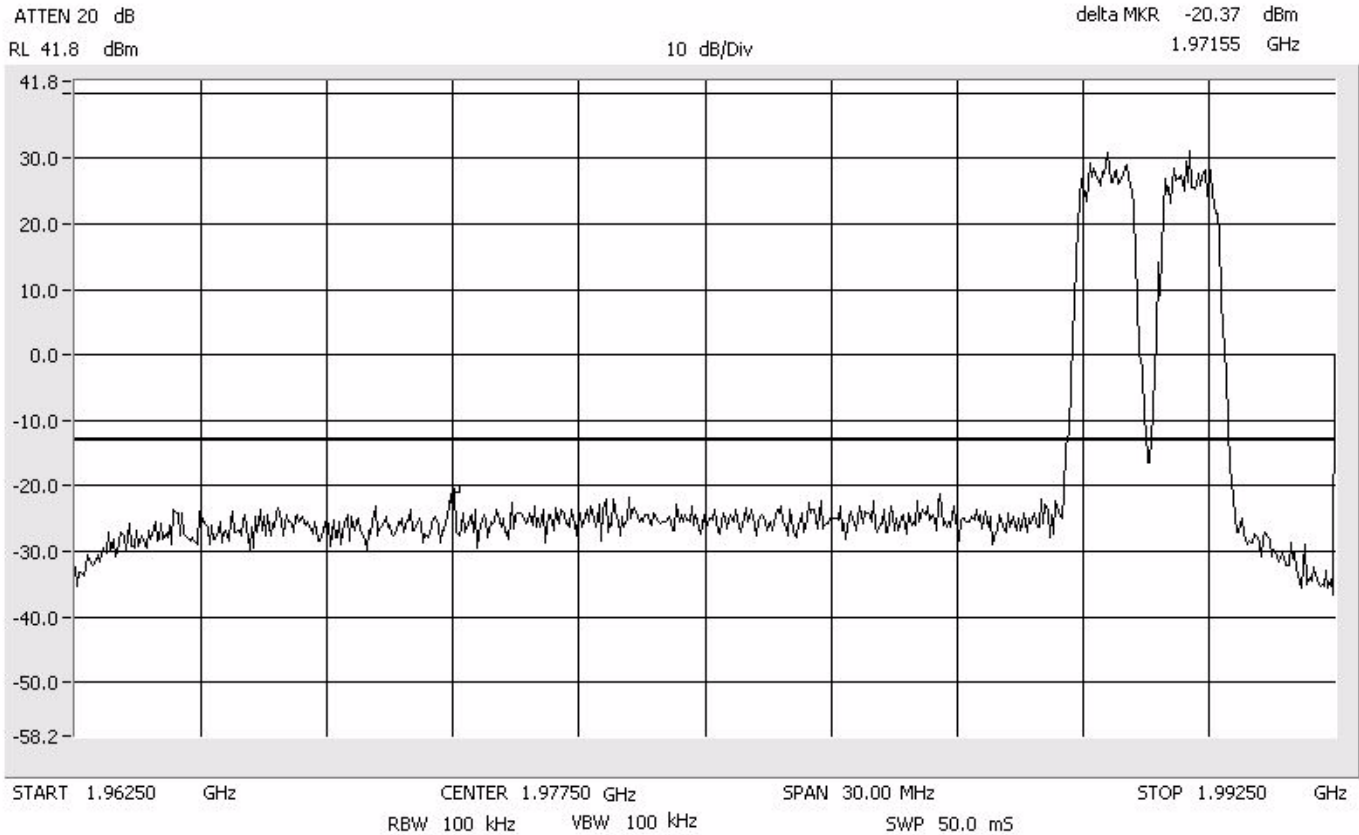




CDMA
EFC Band

Intermodulation
Close - Upper
PCS 1900 MHz

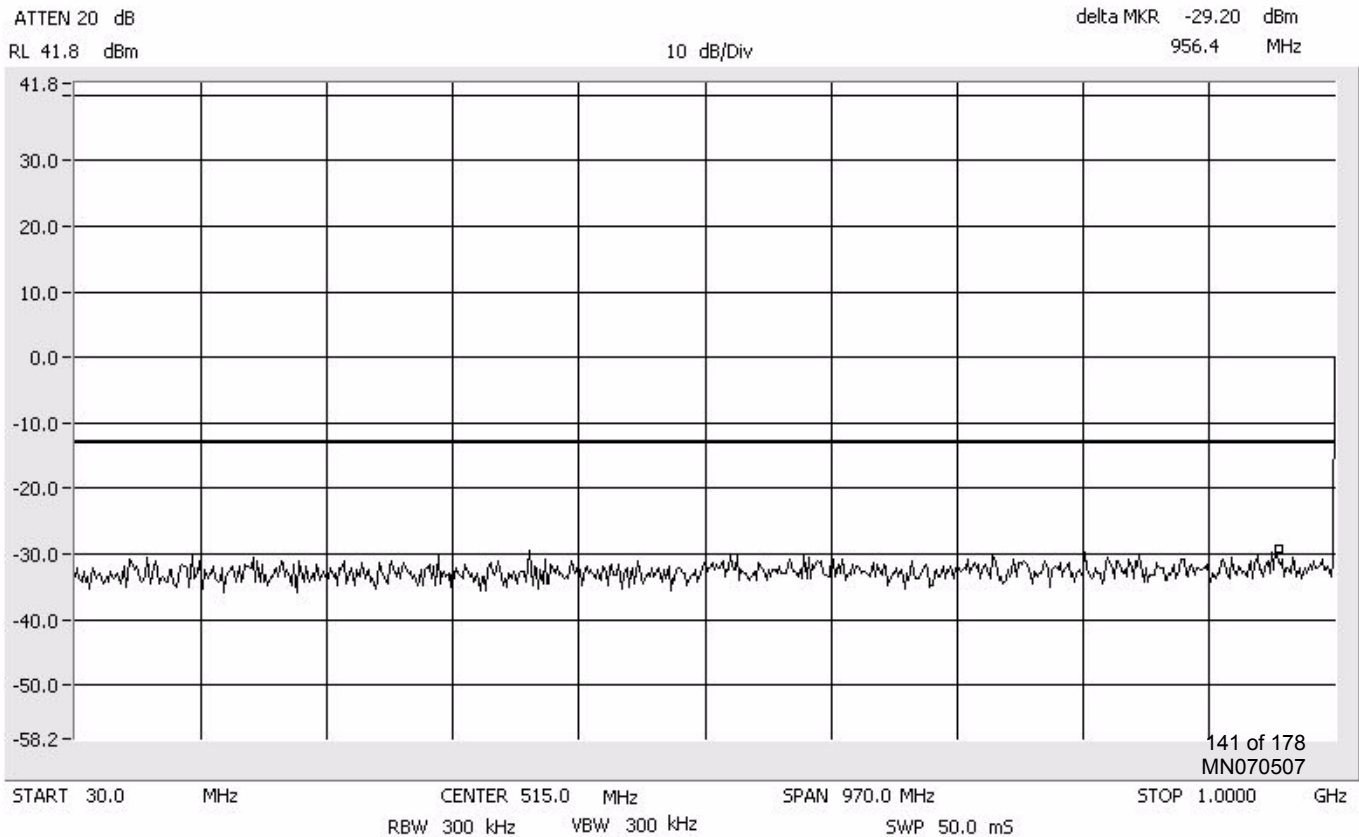
Center: 1977.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

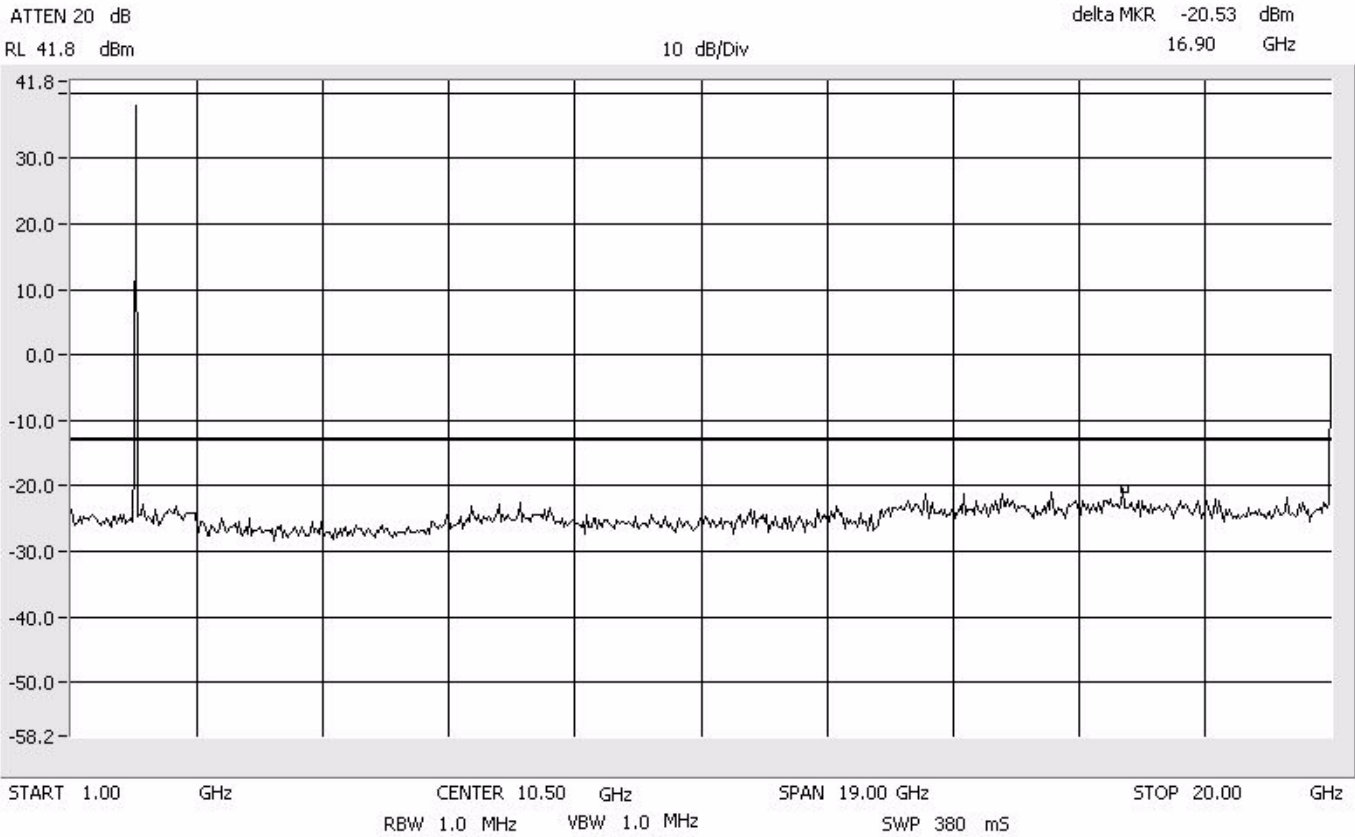


CDMA
EFC Band

Intermodulation
Close - Upper
PCS 1900 MHz

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

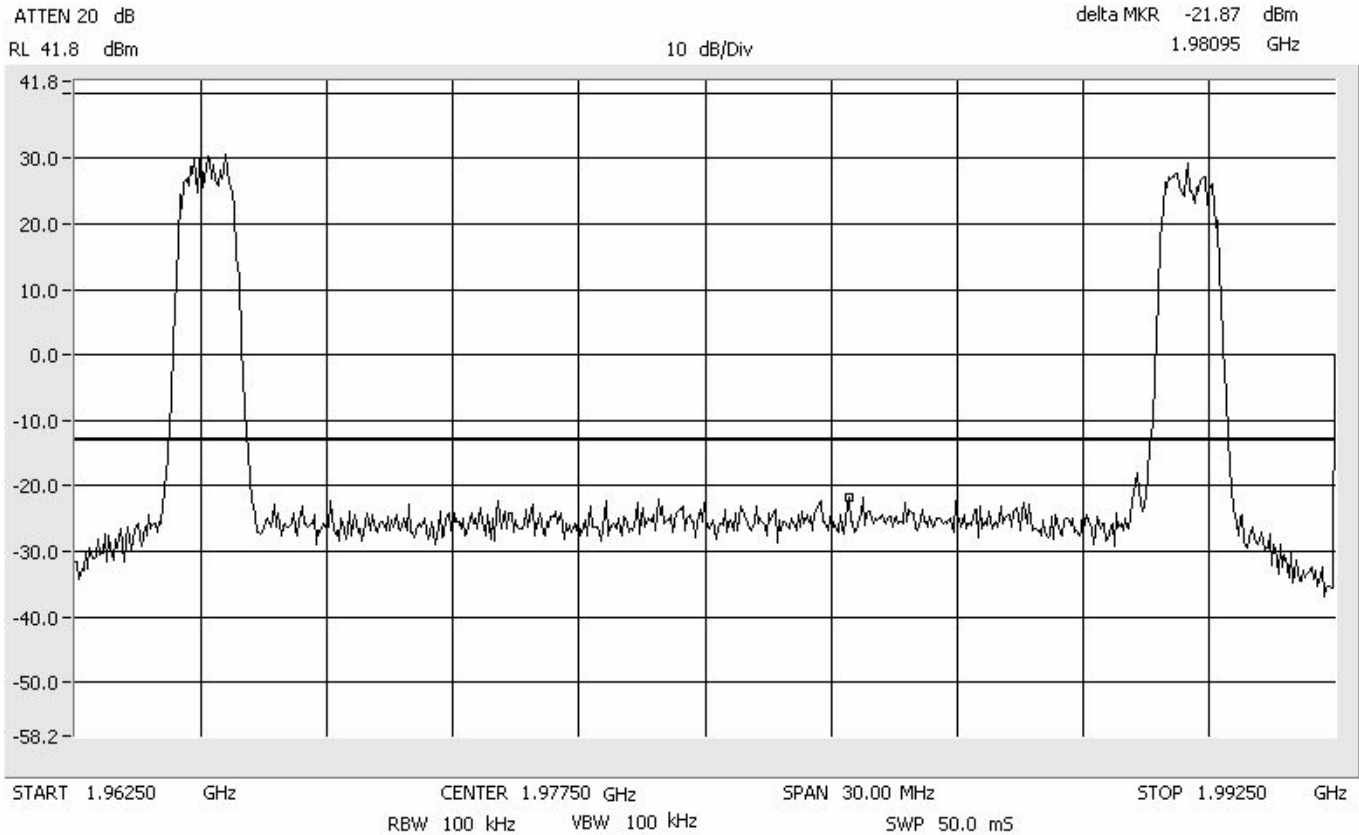




CDMA
EFC Band

Intermodulation
Apart
PCS 1900 MHz

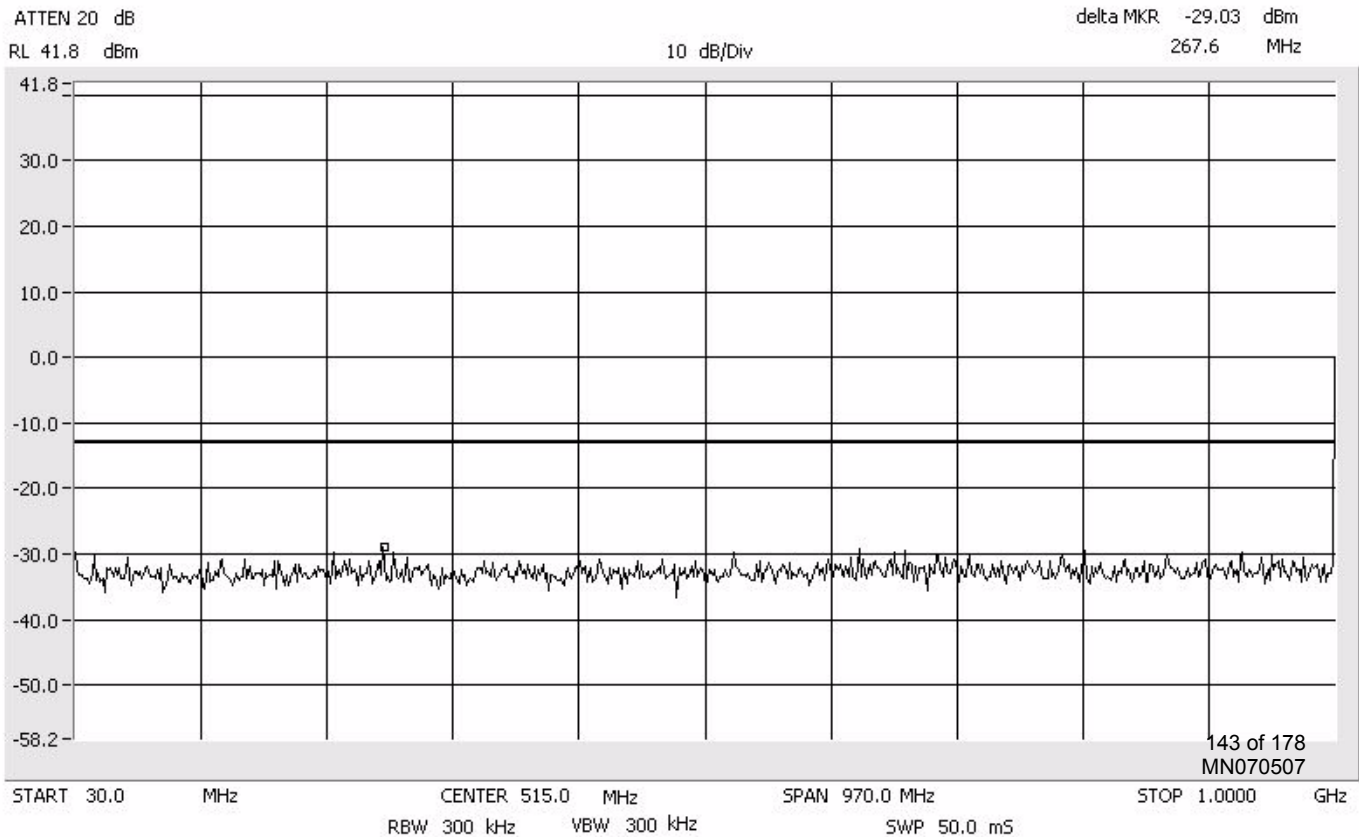
Center: 1977.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

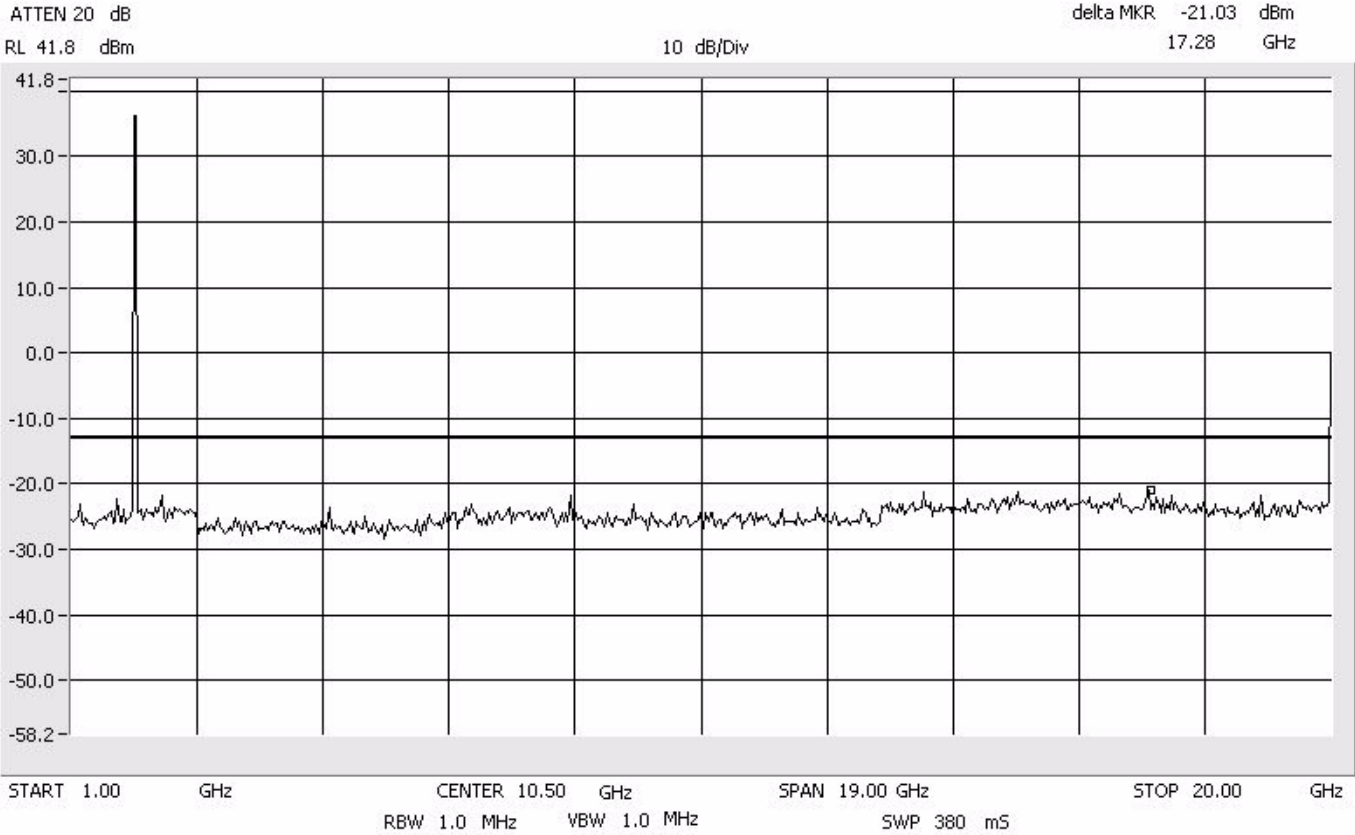


CDMA
EFC Band

Intermodulation
Apart
PCS 1900 MHz

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





Occupied Bandwidth Modulation Test for ADC Inc.
Digivance® SCX
Model Numbers DGVC-4X1000RU and DGVC-4X1000RU-L

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

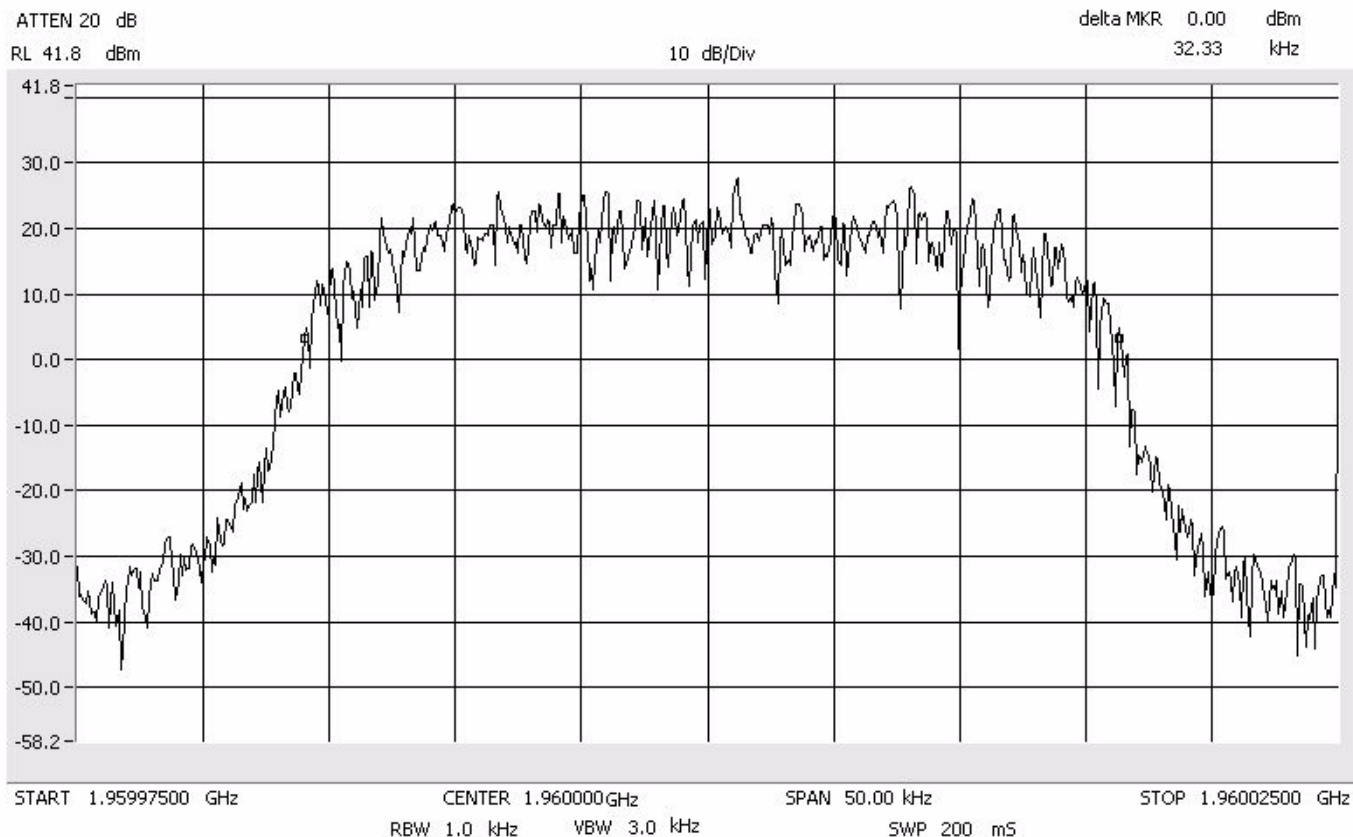
The resolution bandwidth is reduced to 1% of the estimated emission bandwidth and the video bandwidth is set to 3 times the resolution bandwidth. The markers are moved to the -20 dB points (from the previously established center frequency level) on either side of center frequency.

Results:

Pass (see plots)

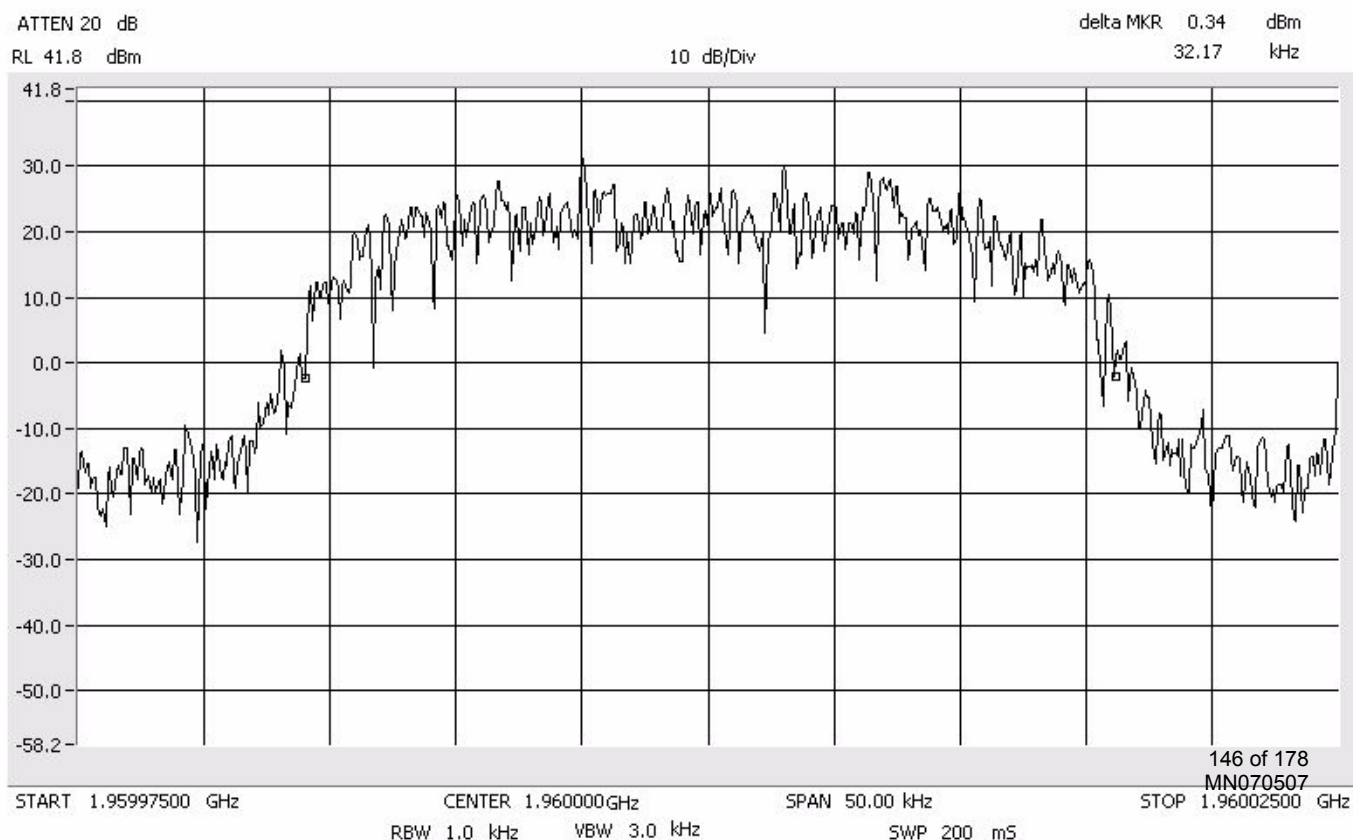
Occupied Bandwidth TDMA Signal In

Span: 50 kHz
RBW: 1 kHz
VBW: 3 kHz



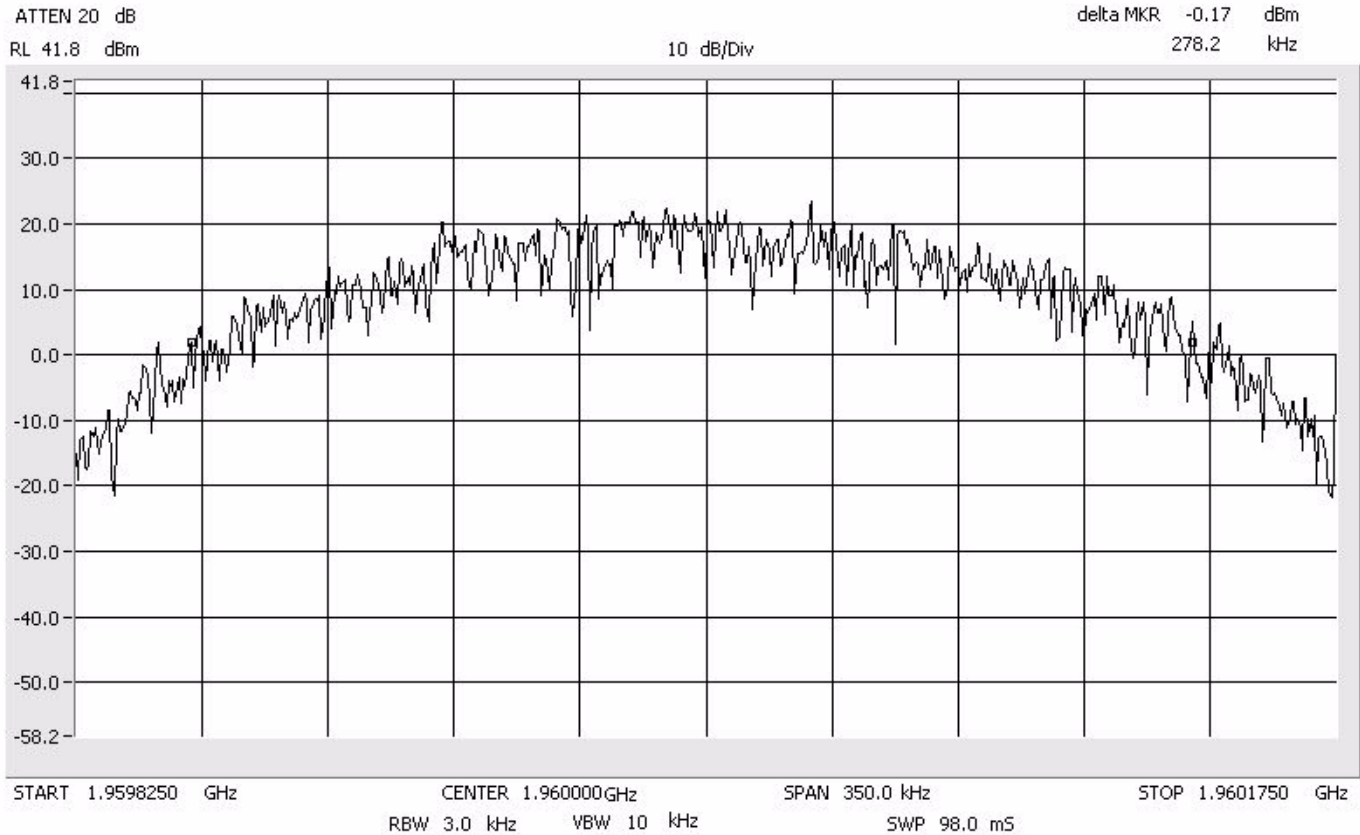
Occupied Bandwidth TDMA Signal Out

Span: 50 kHz
RBW: 1 kHz
VBW: 3 kHz



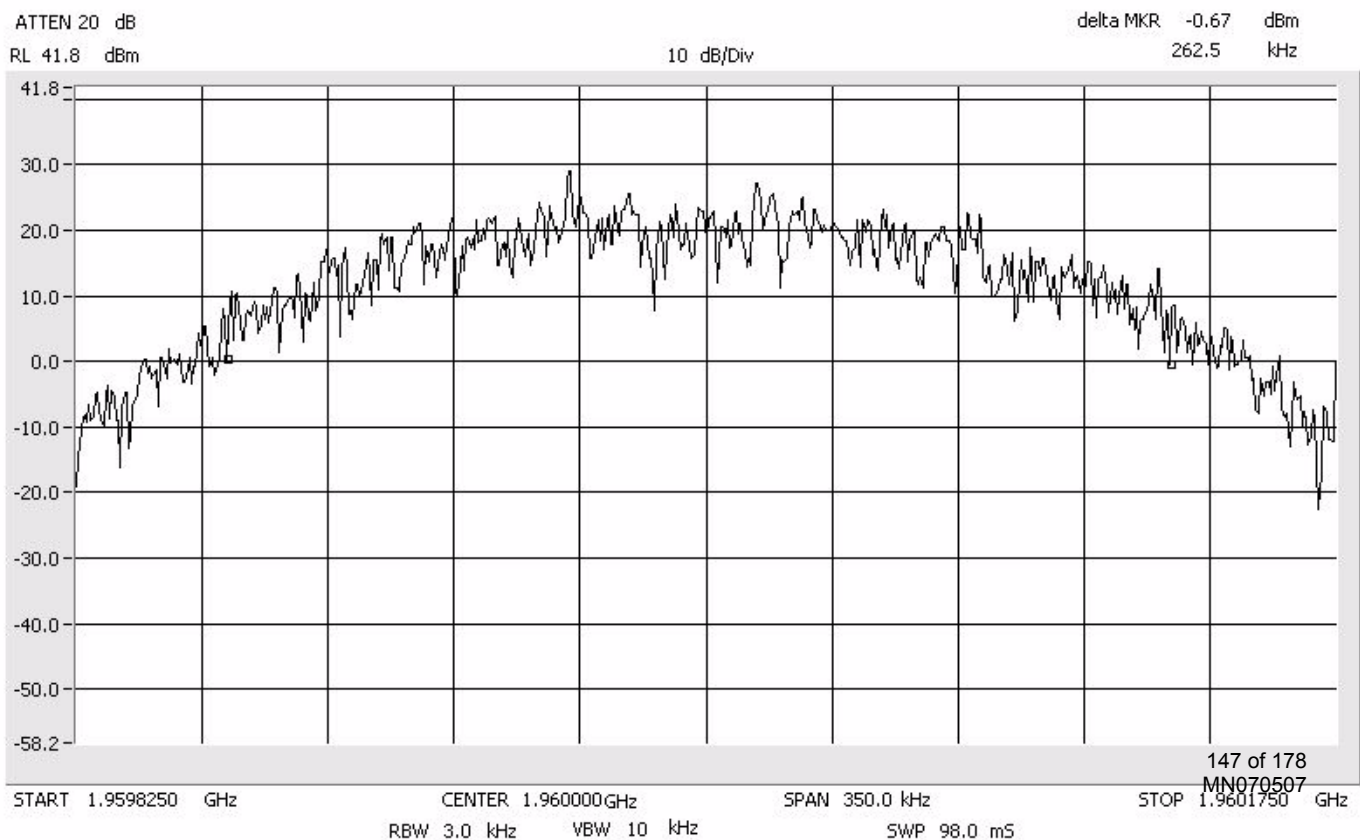
Occupied Bandwidth GSM Signal In

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



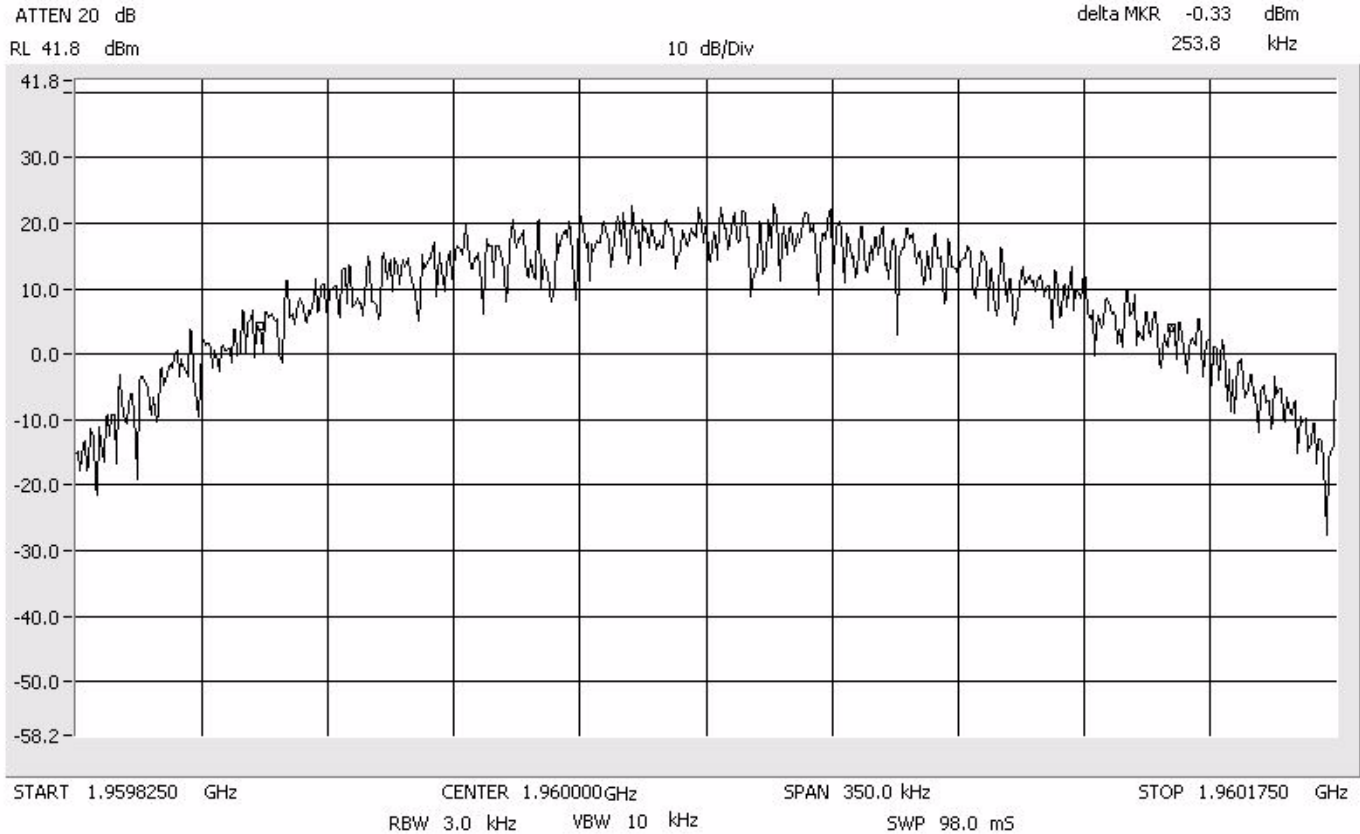
Occupied Bandwidth GSM Signal Out

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



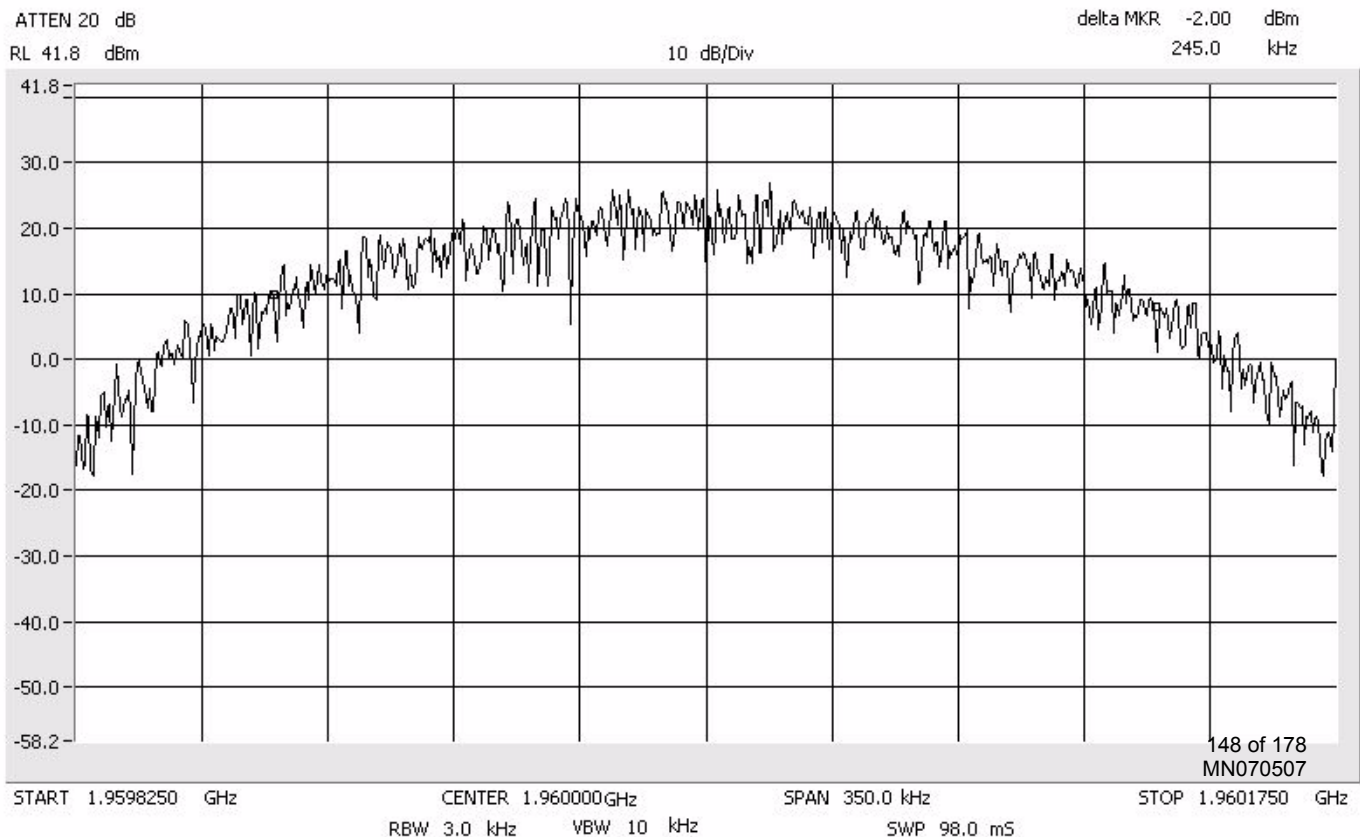
Occupied Bandwidth EDGE Signal In

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



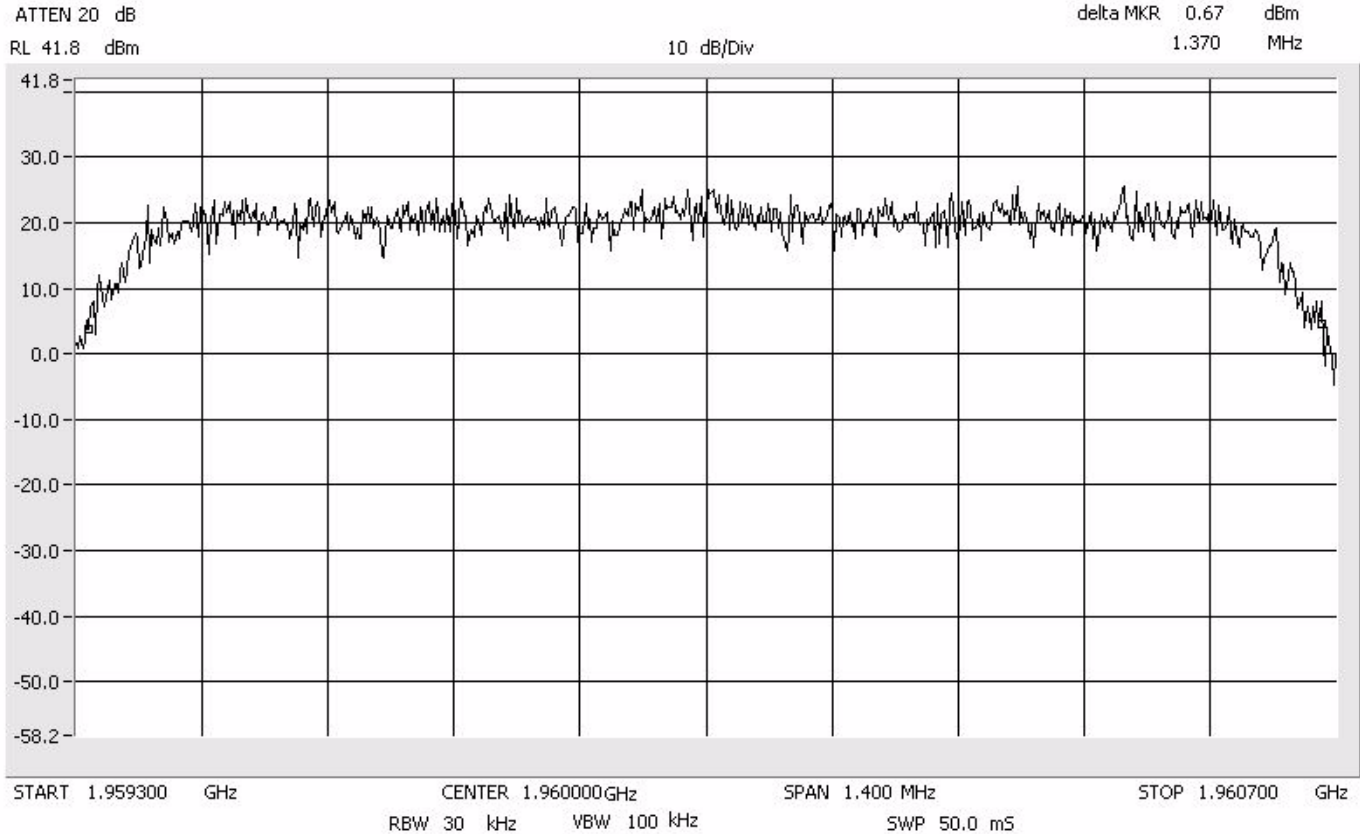
Occupied Bandwidth EDGE Signal Out

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



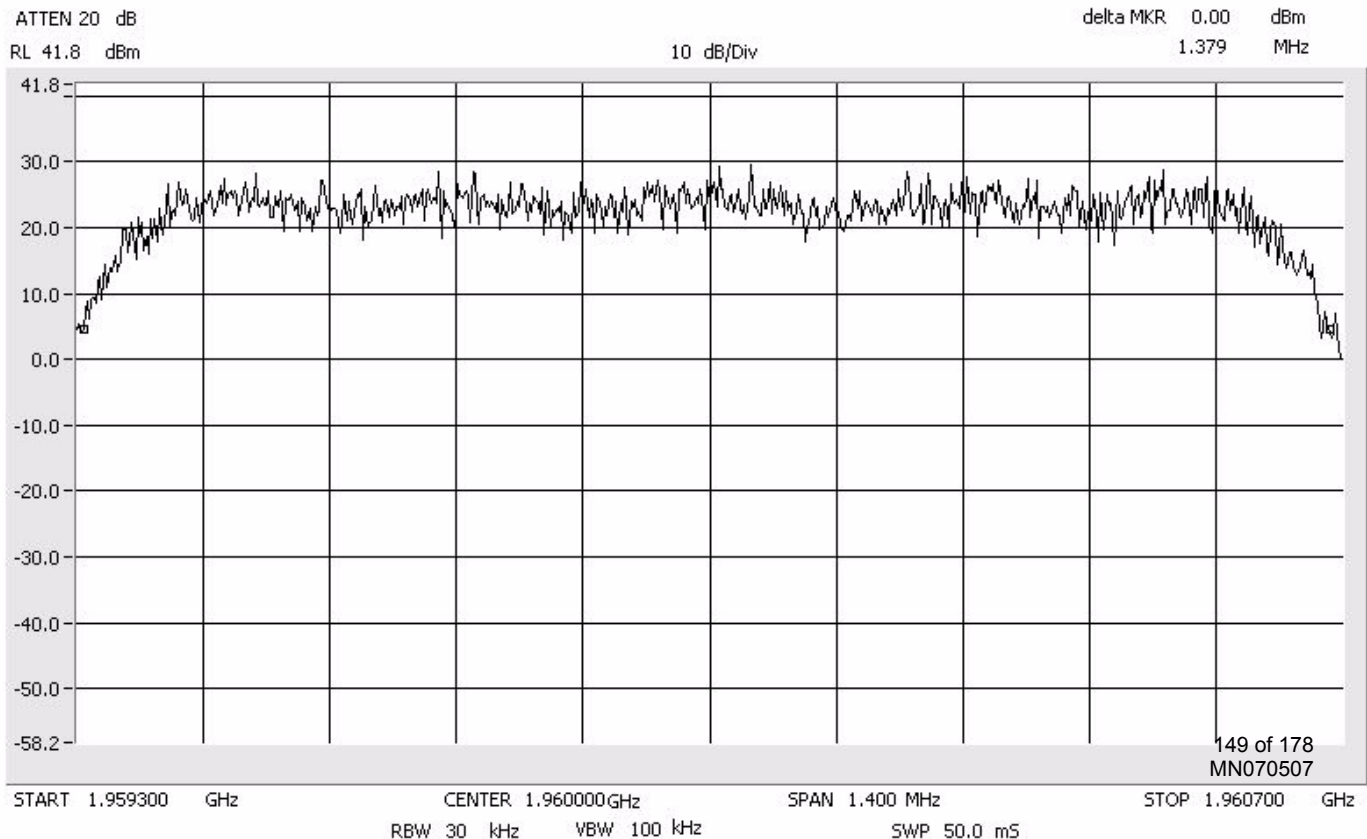
Occupied Bandwidth CDMA Signal In

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



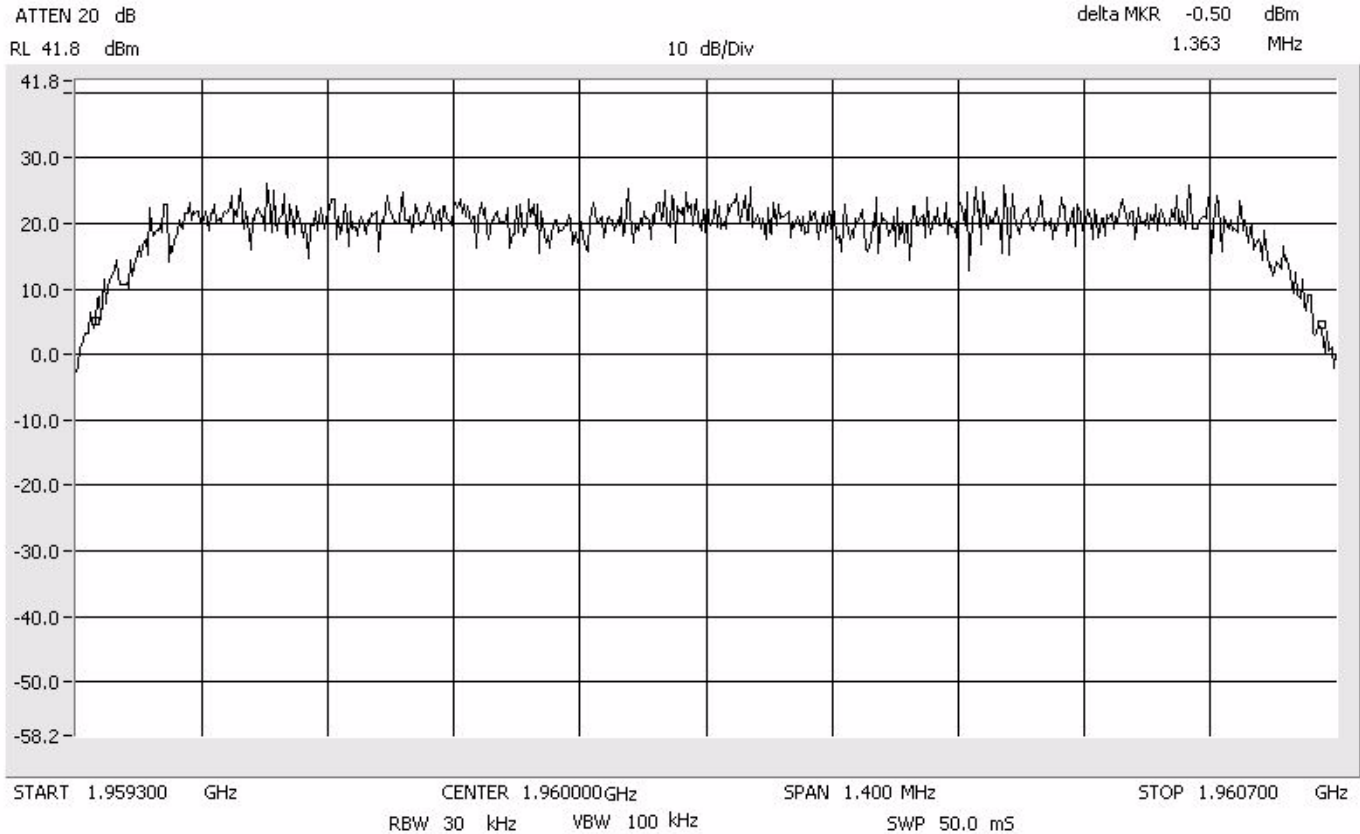
Occupied Bandwidth CDMA Signal Out

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



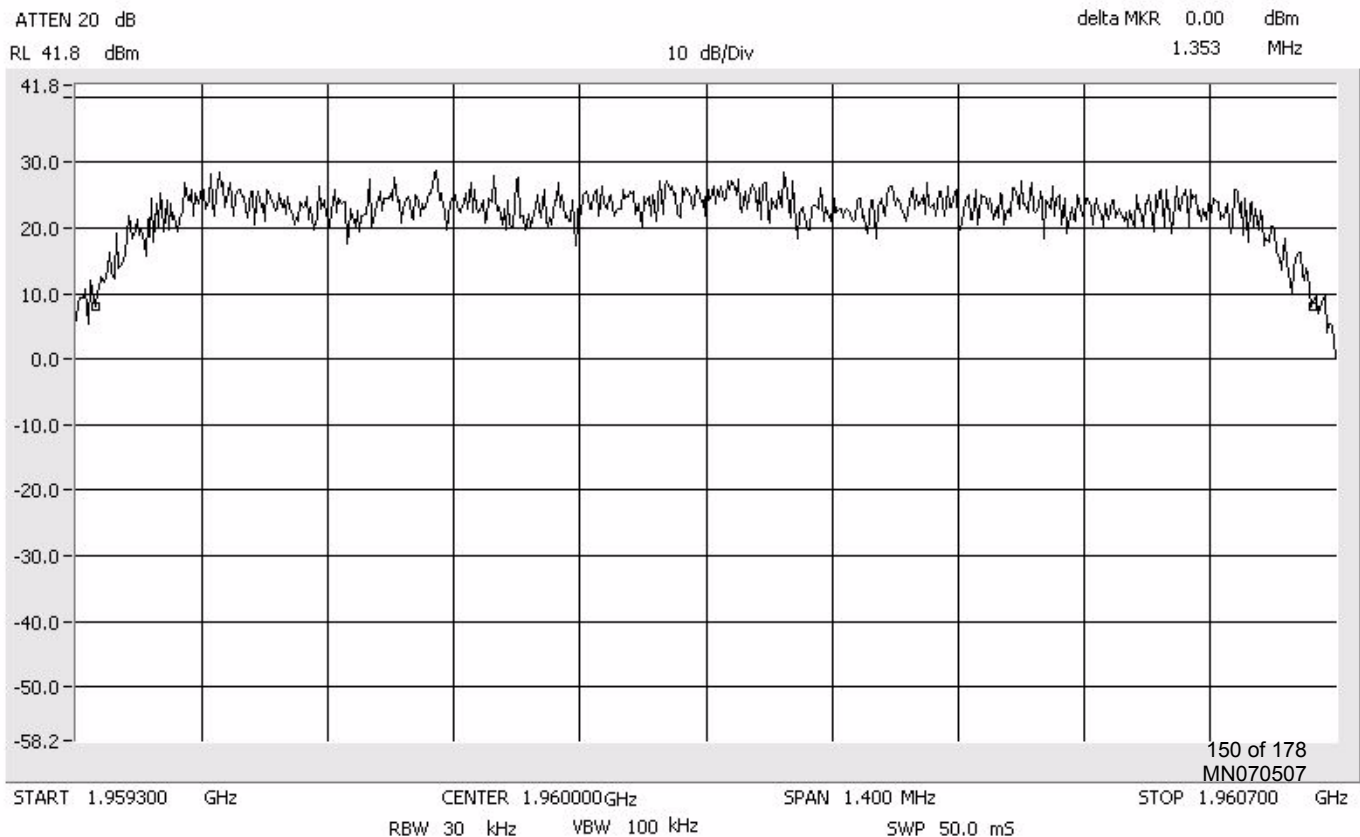
Occupied Bandwidth EVDO Signal In

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



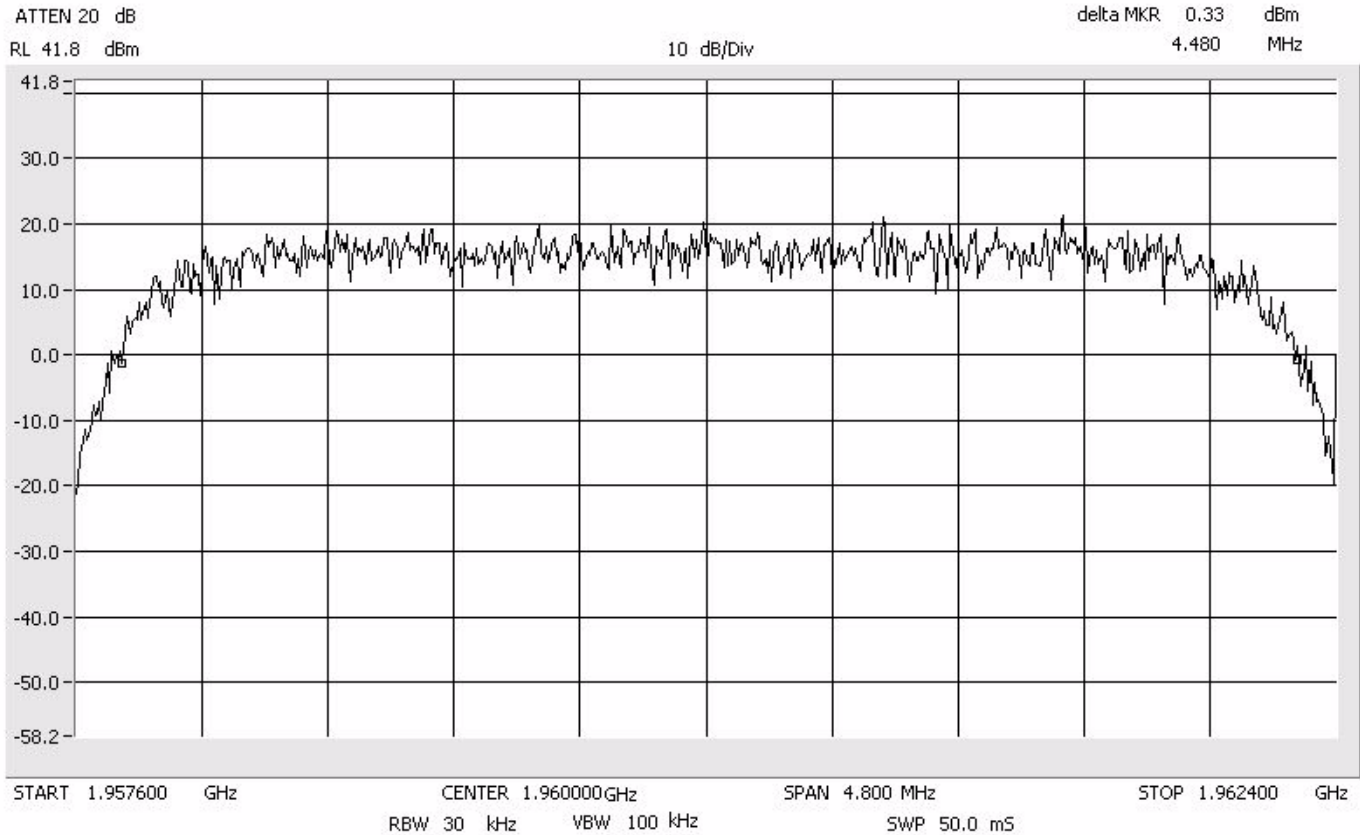
Occupied Bandwidth EVDO Signal Out

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



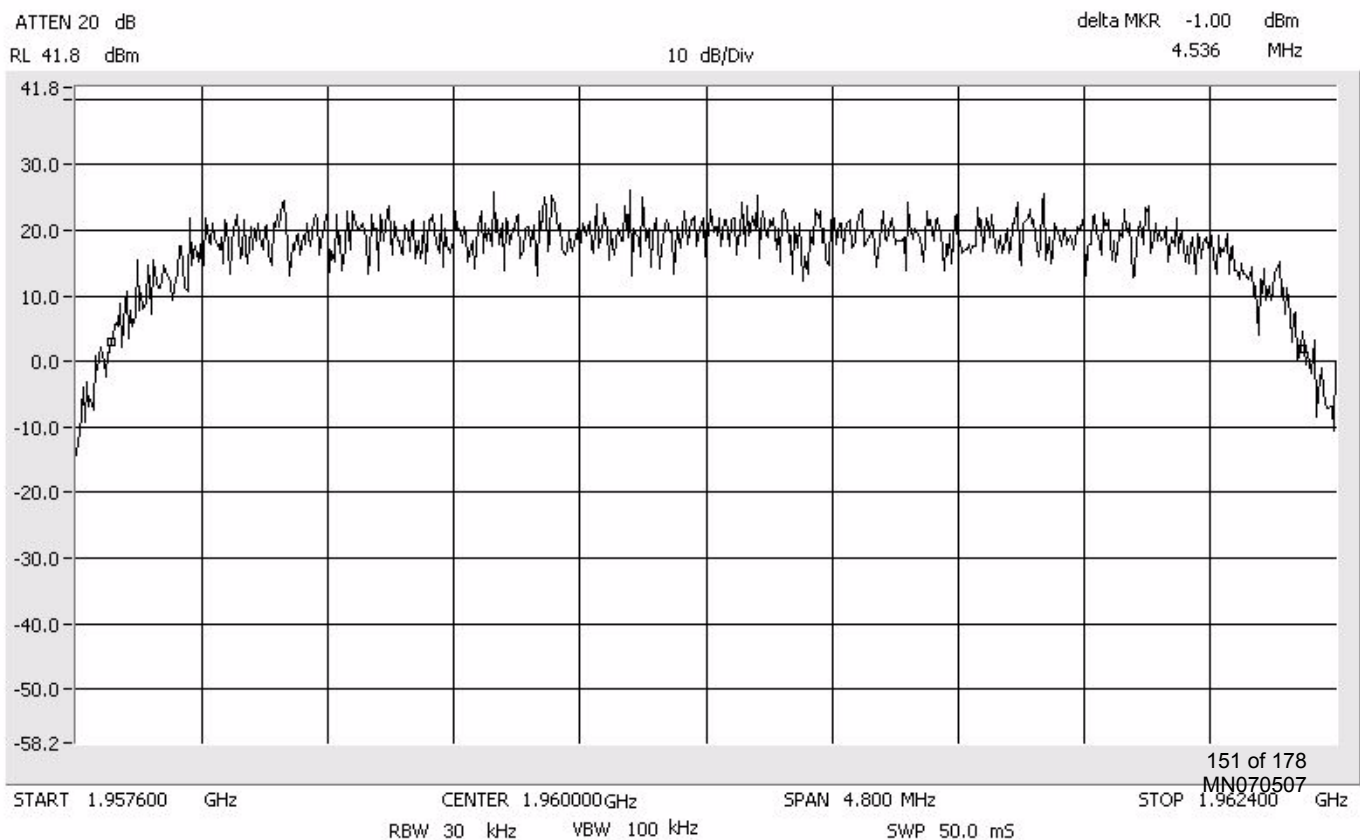
Occupied Bandwidth W-CDMA Signal In

Span: 4.8 MHz
RBW: 30 kHz
VBW: 100 kHz



Occupied Bandwidth W-CDMA Signal Out

Span: 4.8 MHz
RBW: 30 kHz
VBW: 100 kHz



Frequency Tolerance Test for ADC Inc.

Digivance® SCX

Model Numbers DGVC-4X1000RU and DGVC-4X1000RU-L

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EUT PCS (1900 MHz - AD)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
24 VDC	100 VAC	1930.200 MHz	1930.200 MHz	Yes
36 VDC	175 VAC	1930.200 MHz	1930.200 MHz	Yes
48 VDC	250 VAC	1930.200 MHz	1930.200 MHz	Yes
24 VDC	100 VAC	1940.000 MHz	1940.000 MHz	Yes
36 VDC	175 VAC	1940.000 MHz	1940.000 MHz	Yes
48 VDC	250 VAC	1940.000 MHz	1940.000 MHz	Yes
24 VDC	100 VAC	1949.800 MHz	1949.800 MHz	Yes
36 VDC	175 VAC	1949.800 MHz	1949.800 MHz	Yes
48 VDC	250 VAC	1949.800 MHz	1949.800 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
-30 Deg. C		1930.200 MHz	1930.200 MHz	Yes
-20 Deg. C		1930.200 MHz	1930.200 MHz	Yes
-10 Deg. C		1930.200 MHz	1930.200 MHz	Yes
0 Deg. C		1930.200 MHz	1930.200 MHz	Yes
10 Deg. C		1930.200 MHz	1930.200 MHz	Yes
20 Deg. C		1930.200 MHz	1930.200 MHz	Yes
30 Deg. C		1930.200 MHz	1930.200 MHz	Yes
40 Deg. C		1930.200 MHz	1930.200 MHz	Yes
50 Deg. C		1930.200 MHz	1930.200 MHz	Yes
-30 Deg. C		1940.000 MHz	1940.000 MHz	Yes
-20 Deg. C		1940.000 MHz	1940.000 MHz	Yes
-10 Deg. C		1940.000 MHz	1940.000 MHz	Yes
0 Deg. C		1940.000 MHz	1940.000 MHz	Yes
10 Deg. C		1940.000 MHz	1940.000 MHz	Yes
20 Deg. C		1940.000 MHz	1940.000 MHz	Yes
30 Deg. C		1940.000 MHz	1940.000 MHz	Yes
40 Deg. C		1940.000 MHz	1940.000 MHz	Yes
50 Deg. C		1940.000 MHz	1940.000 MHz	Yes
-30 Deg. C		1949.800 MHz	1949.800 MHz	Yes
-20 Deg. C		1949.800 MHz	1949.800 MHz	Yes
-10 Deg. C		1949.800 MHz	1949.800 MHz	Yes
0 Deg. C		1949.800 MHz	1949.800 MHz	Yes
10 Deg. C		1949.800 MHz	1949.800 MHz	Yes
20 Deg. C		1949.800 MHz	1949.800 MHz	Yes
30 Deg. C		1949.800 MHz	1949.800 MHz	Yes
40 Deg. C		1949.800 MHz	1949.800 MHz	Yes
50 Deg. C		1949.800 MHz	1949.800 MHz	Yes

Frequency Tolerance Test for ADC Inc.
Digivance® SCX
Model Numbers DGVC-4X1000RU and DGVC-4X1000RU-L

EUT PCS (1900 MHz - DBE)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
24 VDC	100 VAC	1945.200 MHz	1945.200 MHz	Yes
36 VDC	175 VAC	1945.200 MHz	1945.200 MHz	Yes
48 VDC	250 VAC	1945.200 MHz	1945.200 MHz	Yes
24 VDC	100 VAC	1957.500 MHz	1957.500 MHz	Yes
36 VDC	175 VAC	1957.500 MHz	1957.500 MHz	Yes
48 VDC	250 VAC	1957.500 MHz	1957.500 MHz	Yes
24 VDC	100 VAC	1969.800 MHz	1969.800 MHz	Yes
36 VDC	175 VAC	1969.800 MHz	1969.800 MHz	Yes
48 VDC	250 VAC	1969.800 MHz	1969.800 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
-30 Deg. C		1945.200 MHz	1945.200 MHz	Yes
-20 Deg. C		1945.200 MHz	1945.200 MHz	Yes
-10 Deg. C		1945.200 MHz	1945.200 MHz	Yes
0 Deg. C		1945.200 MHz	1945.200 MHz	Yes
10 Deg. C		1945.200 MHz	1945.200 MHz	Yes
20 Deg. C		1945.200 MHz	1945.200 MHz	Yes
30 Deg. C		1945.200 MHz	1945.200 MHz	Yes
40 Deg. C		1945.200 MHz	1945.200 MHz	Yes
50 Deg. C		1945.200 MHz	1945.200 MHz	Yes
-30 Deg. C		1957.500 MHz	1957.500 MHz	Yes
-20 Deg. C		1957.500 MHz	1957.500 MHz	Yes
-10 Deg. C		1957.500 MHz	1957.500 MHz	Yes
0 Deg. C		1957.500 MHz	1957.500 MHz	Yes
10 Deg. C		1957.500 MHz	1957.500 MHz	Yes
20 Deg. C		1957.500 MHz	1957.500 MHz	Yes
30 Deg. C		1957.500 MHz	1957.500 MHz	Yes
40 Deg. C		1957.500 MHz	1957.500 MHz	Yes
50 Deg. C		1957.500 MHz	1957.500 MHz	Yes
-30 Deg. C		1969.800 MHz	1969.800 MHz	Yes
-20 Deg. C		1969.800 MHz	1969.800 MHz	Yes
-10 Deg. C		1969.800 MHz	1969.800 MHz	Yes
0 Deg. C		1969.800 MHz	1969.800 MHz	Yes
10 Deg. C		1969.800 MHz	1969.800 MHz	Yes
20 Deg. C		1969.800 MHz	1969.800 MHz	Yes
30 Deg. C		1969.800 MHz	1969.800 MHz	Yes
40 Deg. C		1969.800 MHz	1969.800 MHz	Yes
50 Deg. C		1969.800 MHz	1969.800 MHz	Yes

Frequency Tolerance Test for ADC Inc.
Digivance® SCX
Model Numbers DGVC-4X1000RU and DGVC-4X1000RU-L

EUT PCS (1900 MHz - BEF)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
24 VDC	100 VAC	1950.200 MHz	1950.200 MHz	Yes
36 VDC	175 VAC	1950.200 MHz	1950.200 MHz	Yes
48 VDC	250 VAC	1950.200 MHz	1950.200 MHz	Yes
24 VDC	100 VAC	1962.500 MHz	1962.500 MHz	Yes
36 VDC	175 VAC	1962.500 MHz	1962.500 MHz	Yes
48 VDC	250 VAC	1962.500 MHz	1962.500 MHz	Yes
24 VDC	100 VAC	1974.800 MHz	1974.800 MHz	Yes
36 VDC	175 VAC	1974.800 MHz	1974.800 MHz	Yes
48 VDC	250 VAC	1974.800 MHz	1974.800 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
-30 Deg. C		1950.200 MHz	1950.200 MHz	Yes
-20 Deg. C		1950.200 MHz	1950.200 MHz	Yes
-10 Deg. C		1950.200 MHz	1950.200 MHz	Yes
0 Deg. C		1950.200 MHz	1950.200 MHz	Yes
10 Deg. C		1950.200 MHz	1950.200 MHz	Yes
20 Deg. C		1950.200 MHz	1950.200 MHz	Yes
30 Deg. C		1950.200 MHz	1950.200 MHz	Yes
40 Deg. C		1950.200 MHz	1950.200 MHz	Yes
50 Deg. C		1950.200 MHz	1950.200 MHz	Yes
-30 Deg. C		1962.500 MHz	1962.500 MHz	Yes
-20 Deg. C		1962.500 MHz	1962.500 MHz	Yes
-10 Deg. C		1962.500 MHz	1962.500 MHz	Yes
0 Deg. C		1962.500 MHz	1962.500 MHz	Yes
10 Deg. C		1962.500 MHz	1962.500 MHz	Yes
20 Deg. C		1962.500 MHz	1962.500 MHz	Yes
30 Deg. C		1962.500 MHz	1962.500 MHz	Yes
40 Deg. C		1962.500 MHz	1962.500 MHz	Yes
50 Deg. C		1962.500 MHz	1962.500 MHz	Yes
-30 Deg. C		1974.800 MHz	1974.800 MHz	Yes
-20 Deg. C		1974.800 MHz	1974.800 MHz	Yes
-10 Deg. C		1974.800 MHz	1974.800 MHz	Yes
0 Deg. C		1974.800 MHz	1974.800 MHz	Yes
10 Deg. C		1974.800 MHz	1974.800 MHz	Yes
20 Deg. C		1974.800 MHz	1974.800 MHz	Yes
30 Deg. C		1974.800 MHz	1974.800 MHz	Yes
40 Deg. C		1974.800 MHz	1974.800 MHz	Yes
50 Deg. C		1974.800 MHz	1974.800 MHz	Yes

Frequency Tolerance Test for ADC Inc.
Digivance® SCX
Model Numbers DGVC-4X1000RU and DGVC-4X1000RU-L

EUT PCS (1900 MHz - EFC)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
24 VDC	100 VAC	1965.200 MHz	1965.200 MHz	Yes
36 VDC	175 VAC	1965.200 MHz	1965.200 MHz	Yes
48 VDC	250 VAC	1965.200 MHz	1965.200 MHz	Yes
24 VDC	100 VAC	1977.500 MHz	1977.500 MHz	Yes
36 VDC	175 VAC	1977.500 MHz	1977.500 MHz	Yes
48 VDC	250 VAC	1977.500 MHz	1977.500 MHz	Yes
24 VDC	100 VAC	1989.800 MHz	1989.800 MHz	Yes
36 VDC	175 VAC	1989.800 MHz	1989.800 MHz	Yes
48 VDC	250 VAC	1989.800 MHz	1989.800 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
-30 Deg. C		1965.200 MHz	1965.200 MHz	Yes
-20 Deg. C		1965.200 MHz	1965.200 MHz	Yes
-10 Deg. C		1965.200 MHz	1965.200 MHz	Yes
0 Deg. C		1965.200 MHz	1965.200 MHz	Yes
10 Deg. C		1965.200 MHz	1965.200 MHz	Yes
20 Deg. C		1965.200 MHz	1965.200 MHz	Yes
30 Deg. C		1965.200 MHz	1965.200 MHz	Yes
40 Deg. C		1965.200 MHz	1965.200 MHz	Yes
50 Deg. C		1965.200 MHz	1965.200 MHz	Yes
-30 Deg. C		1977.500 MHz	1977.500 MHz	Yes
-20 Deg. C		1977.500 MHz	1977.500 MHz	Yes
-10 Deg. C		1977.500 MHz	1977.500 MHz	Yes
0 Deg. C		1977.500 MHz	1977.500 MHz	Yes
10 Deg. C		1977.500 MHz	1977.500 MHz	Yes
20 Deg. C		1977.500 MHz	1977.500 MHz	Yes
30 Deg. C		1977.500 MHz	1977.500 MHz	Yes
40 Deg. C		1977.500 MHz	1977.500 MHz	Yes
50 Deg. C		1977.500 MHz	1977.500 MHz	Yes
-30 Deg. C		1989.800 MHz	1989.800 MHz	Yes
-20 Deg. C		1989.800 MHz	1989.800 MHz	Yes
-10 Deg. C		1989.800 MHz	1989.800 MHz	Yes
0 Deg. C		1989.800 MHz	1989.800 MHz	Yes
10 Deg. C		1989.800 MHz	1989.800 MHz	Yes
20 Deg. C		1989.800 MHz	1989.800 MHz	Yes
30 Deg. C		1989.800 MHz	1989.800 MHz	Yes
40 Deg. C		1989.800 MHz	1989.800 MHz	Yes
50 Deg. C		1989.800 MHz	1989.800 MHz	Yes

Intertek Test Data

[Back to Test Data:](#)[Substitution Results:](#)

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[Back to Table of Contents:](#)**Test Engineer:** Uri Spector**Date:** 28 March, 2007**Test Procedure:**

Test measurements were made in accordance with ANSI C63.4-2003, Standard Methods of Measurement of Radio Noise Emissions from Low-Voltage Electrical and Electronics Equipment in the Range of 9 kHz to 40 GHz.

Test Site Location:

The test site is a 3 meter Semi-Anechoic Chamber, constructed by Panashield™ Inc. and located inside the building at 7250 Hudson Blvd. Suite 100, Oakdale, MN 55128.

Test Site Description:

The 3 meter Semi-Anechoic Chamber is constructed of Panabolt™ modular RF shielding and self-supported with structural steel designed for the local seismic zone rating. The chamber has the nominal size of 20' wide x 29' long x 18' high. All walls and ceiling of the chamber are treated with FFG-1000 Ferrite Grid absorber which was developed specifically to meet international requirements for EMC anechoic chambers for emissions and immunity measurements. To meet high frequency testing white HY-35 hybrid absorber is mounted on the ferrites in specular regions of the chamber.

The chamber has a 2 meter diameter ANSI test volume area and meets the requirements of ANSI C63.4 (1992), EN55022, and FCC Part 15 standards for testing at a 3 meter path length.

FCC Registration Number: 90706

IC Registration Number: 4359

TEST DATA

Test Data Number: 3118538MIN-001

Project Number: 3118538

March 28, 2007

**Testing performed on the
PCS DGVC-4X1000RU**

**to
FCC Part 24**

**For
ADC Telecommunications**

Test Performed by:
Intertek
7250 Hudson Blvd. Suite 100
Oakdale, MN 55128

Test Authorized by:
ADC Telecommunications
5341 12th Avenue East
Shakopee, MN 55379

Prepared by:



Uri Spector

Date:

March 28, 2007

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1.0 JOB DESCRIPTION

Equipment:	PCS DGVC-4X1000RU
Equipment Description:	PCS DGVC
Transmitter Operating Range:	1930 to 1990MHz
Customer:	Mr. Mark F. Miska ADC Telecommunications 5341 12 th Avenue East Shakopee, MN 55379
Test Standards:	FCC Part 24
Date Sample Submitted:	March 21, 2007
Test Work Started:	March 22, 2007
Test Work Completed:	March 23, 2007
Test Sample Conditions:	Good

2.0 TEST RESULTS

Referring to the performance criteria and the operating mode during the tests specified in this report, the equipment complies with the requirements according to the following standards.

TEST STANDARD	TEST	COMMENTS
FCC Part 24	Spurious Enclosure Radiated Emissions	Pass

The EUT was tested at low (1930MHz), middle (1960MHz), and upper (1990MHz) operating frequency.

Testing was performed in frequency range from 30MHz to 10GHz.

Spurious Radiated Emissions in frequency range from 30MHz to 1GHz are shown in Tables 1, 2, 3 and Graphs 1 to 3.

Spurious Radiated Emissions in frequency range from 1 to 20GHz are shown in Tables 4, 5, 6 and Graphs 4 to 6.

Spurious Radiated Emissions Power (substitution measurements) is shown in Table 7.

Note: No Spurious Radiated Emissions were detected above 18GHz.

Spurious Radiated Emissions from 30MHz to 1GHz
Date:

3/22/2007

Company: ADC Telecommunications
Model: DGVC-4X1000RU
Test Engineer: Uri Spector
Special Info: Operating Frequency 1930MHz
Standard: FCC Part 24
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions

All measurements were taken using a Peak detector

Table # 1

Frequency	Ant. Polarity	Reading dB μ V	Ant & Cable CF (dB1/m)	Total at 3m dB μ V/m	Reference Limit dB μ V/m	Margin dB
38.546 MHz	V	20.5	14.0	34.6	94.0	-59.4
52.601 MHz	V	31.8	8.2	40.0	94.0	-54.0
62.981 MHz	V	42.5	7.0	49.6	94.0	-44.4
64.061 MHz	V	42.7	7.0	49.7	94.0	-44.3
64.559 MHz	V	43.7	7.0	50.7	94.0	-43.4
95.016 MHz	V	36.0	11.0	47.0	94.0	-47.0
141.97 MHz	V	21.2	12.8	34.0	94.0	-60.0
163.39 MHz	V	25.2	11.7	36.9	94.0	-57.1
284.24 MHz	V	24.9	15.5	40.4	94.0	-53.6
426.08 MHz	V	23.6	19.7	43.3	94.0	-50.7
497.06 MHz	V	27.1	20.6	47.7	94.0	-46.3
567.53 MHz	V	29.5	22.1	51.6	94.0	-42.4
638.94 MHz	V	23.2	22.8	45.9	94.0	-48.1
780.94 MHz	V	20.8	24.1	44.8	94.0	-49.2
923.77 MHz	V	21.8	25.4	47.2	94.0	-46.8
994.05 MHz	V	21.3	26.2	47.5	94.0	-46.5
30.327 MHz	H	14.7	18.8	33.5	94.0	-60.5
53.208 MHz	H	21.2	8.1	29.3	94.0	-64.7
60.822 MHz	H	22.4	7.1	29.5	94.0	-64.5
63.064 MHz	H	37.0	7.0	44.0	94.0	-50.0
64.642 MHz	H	37.7	7.0	44.7	94.0	-49.3
109.34 MHz	H	29.5	13.5	43.0	94.0	-51.0
142.12 MHz	H	22.5	12.8	35.3	94.0	-58.7
161.91 MHz	H	25.6	11.7	37.3	94.0	-56.7
175.53 MHz	H	23.0	11.3	34.3	94.0	-59.8
284.24 MHz	H	30.1	15.5	45.6	94.0	-48.4
355.1 MHz	H	22.8	17.7	40.5	94.0	-53.5
426.08 MHz	H	29.2	19.7	48.9	94.0	-45.1
497.06 MHz	H	34.3	20.6	54.9	94.0	-39.1
567.53 MHz	H	29.6	22.1	51.7	94.0	-42.4
638.94 MHz	H	25.7	22.8	48.5	94.0	-45.5
710.36 MHz	H	22.5	23.1	45.7	94.0	-48.3
780.94 MHz	H	22.9	24.1	46.9	94.0	-47.1
923.77 MHz	H	24.0	25.4	49.3	94.0	-44.7
994.05 MHz	H	22.2	26.2	48.4	94.0	-45.6

Spurious Radiated Emissions from 30MHz to 1GHz
Date:

3/22/2007

Company: ADC Telecommunications
Model: DGVC-4X1000RU
Test Engineer: Uri Spector
Special Info: Operating Frequency 1960MHz
Standard: FCC Part 24
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions

All measurements were taken using a Peak detector

Table # 2

Frequency	Ant. Polarity	Reading dBμV	Ant & Cable CF (dB1/m)	Total at 3m dBμV/m	Reference Limit dBμV/m	Margin dB
37.565 MHz	V	21.0	14.6	35.6	94.0	-58.4
54.843 MHz	V	32.5	7.8	40.3	94.0	-53.7
60.988 MHz	V	29.6	7.1	36.6	94.0	-57.4
61.486 MHz	V	34.4	7.1	41.5	94.0	-52.5
61.985 MHz	V	36.0	7.0	43.0	94.0	-51.0
63.562 MHz	V	45.0	7.0	52.0	94.0	-42.0
97.083 MHz	V	36.0	11.5	47.5	94.0	-46.5
142.12 MHz	V	29.4	12.8	42.2	94.0	-51.8
157.77 MHz	V	20.8	11.9	32.7	94.0	-61.3
172.9 MHz	V	20.0	11.4	31.3	94.0	-62.7
213.08 MHz	V	19.9	12.0	31.9	94.0	-62.1
284.24 MHz	V	26.3	15.5	41.8	94.0	-52.2
426.08 MHz	V	30.0	19.7	49.7	94.0	-44.3
567.53 MHz	V	25.8	22.1	47.8	94.0	-46.2
710.36 MHz	V	23.3	23.1	46.4	94.0	-47.6
780.94 MHz	V	22.7	24.1	46.8	94.0	-47.2
30.0 MHz	H	13.7	19.0	32.7	94.0	-61.3
60.988 MHz	H	25.2	7.1	32.3	94.0	-61.7
61.486 MHz	H	28.7	7.1	35.8	94.0	-58.2
62.068 MHz	H	30.8	7.0	37.8	94.0	-56.2
63.562 MHz	H	38.7	7.0	45.7	94.0	-48.3
106.68 MHz	H	27.0	13.2	40.1	94.0	-53.9
142.12 MHz	H	28.1	12.8	40.9	94.0	-53.1
158.37 MHz	H	23.1	11.9	35.0	94.0	-59.1
190.24 MHz	H	20.0	11.2	31.2	94.0	-62.8
213.08 MHz	H	22.8	12.0	34.8	94.0	-59.2
284.24 MHz	H	41.0	15.5	56.5	94.0	-37.5
355.1 MHz	H	21.8	17.7	39.5	94.0	-54.5
426.08 MHz	H	36.7	19.7	56.4	94.0	-37.7
497.06 MHz	H	19.9	20.6	40.5	94.0	-53.5
567.53 MHz	H	24.2	22.1	46.3	94.0	-47.8
638.94 MHz	H	23.5	22.8	46.3	94.0	-47.7
710.36 MHz	H	29.4	23.1	52.6	94.0	-41.4
780.94 MHz	H	28.6	24.1	52.6	94.0	-41.4
923.77 MHz	H	23.3	25.4	48.7	94.0	-45.3
994.05 MHz	H	20.9	26.2	47.1	94.0	-46.9

Spurious Radiated Emissions from 30MHz to 1GHz
Date:

3/22/2007

Company: ADC Telecommunications
Model: DGVC-4X1000RU
Test Engineer: Uri Spector
Special Info: Operating Frequency 1990MHz
Standard: FCC Part 24
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions

All measurements were taken using a Peak detector

Table # 3

Frequency	Ant. Polarity	Reading dBμV	Ant & Cable CF (dB1/m)	Total at 3m dBμV/m	Reference Limit dBμV/m	Margin dB
33.018 MHz	V	16.4	17.2	33.7	94.0	-60.4
37.58 MHz	V	20.5	14.6	35.1	94.0	-58.9
61.841 MHz	V	30.4	7.1	37.4	94.0	-56.6
63.12 MHz	V	42.4	7.0	49.4	94.0	-44.6
63.621 MHz	V	44.3	7.0	51.3	94.0	-42.7
64.121 MHz	V	44.7	7.0	51.8	94.0	-42.3
64.622 MHz	V	45.6	7.0	52.6	94.0	-41.4
65.123 MHz	V	45.1	7.0	52.1	94.0	-41.9
65.623 MHz	V	42.2	7.0	49.2	94.0	-44.8
93.604 MHz	V	34.7	10.7	45.4	94.0	-48.6
142.07 MHz	V	19.5	12.8	32.3	94.0	-61.7
157.85 MHz	V	21.5	11.9	33.4	94.0	-60.6
284.06 MHz	V	22.8	15.5	38.2	94.0	-55.8
425.99 MHz	V	18.8	19.7	38.5	94.0	-55.5
496.6 MHz	V	33.6	20.6	54.2	94.0	-39.8
567.8 MHz	V	26.2	22.1	48.3	94.0	-45.7
638.99 MHz	H	19.7	22.8	42.5	94.0	-51.5
781.17 MHz	H	21.7	24.1	45.8	94.0	-48.3
923.11 MHz	H	21.9	25.4	47.2	94.0	-46.8
994.09 MHz	H	18.2	26.2	44.3	94.0	-49.7
63.621 MHz	H	36.7	7.0	43.7	94.0	-50.3
64.066 MHz	H	37.4	7.0	44.5	94.0	-49.6
64.622 MHz	H	38.0	7.0	45.0	94.0	-49.1
65.067 MHz	H	37.1	7.0	44.1	94.0	-49.9
65.568 MHz	H	34.9	7.0	41.9	94.0	-52.1
102.24 MHz	H	31.7	12.5	44.2	94.0	-49.9
142.07 MHz	H	24.3	12.8	37.1	94.0	-56.9
154.78 MHz	H	24.6	12.1	36.7	94.0	-57.3
212.98 MHz	H	22.5	12.0	34.5	94.0	-59.6
284.06 MHz	H	27.8	15.5	43.3	94.0	-50.7
337.2 MHz	H	20.5	16.9	37.3	94.0	-56.7
355.1 MHz	H	22.8	17.7	40.5	94.0	-53.5
425.99 MHz	H	26.2	19.7	45.9	94.0	-48.1
496.6 MHz	H	37.9	20.6	58.5	94.0	-35.5
567.8 MHz	H	27.6	22.1	49.6	94.0	-44.4
638.99 MHz	H	27.0	22.8	49.8	94.0	-44.2
710.18 MHz	H	23.5	23.1	46.6	94.0	-47.4
781.17 MHz	H	25.5	24.1	49.5	94.0	-44.5
923.11 MHz	H	22.9	25.4	48.3	94.0	-45.8
994.09 MHz	H	22.2	26.2	48.4	94.0	-45.6

Spurious Radiated Emissions Field Strength from 1 to 20GHz
Date:

3/22/2007

Company: ADC Telecommunications
Model: DGVC-4X1000RU
Test Engineer: Uri Spector
Special Info: 1930MHz Opearaing Frequency.
Standard: FCC Part 24
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
All measurements were taken using a Peak detector
Emission at fundamental frequency was removed from the table

Table # 4

Frequency MHz	Antenna Polarity	Reading dBμV	Ant & Cable CF (dB1/m)	Pre-Amp. Gain (dB)	Total at 3m dBμV/m	Reference Limit dBμV/m	Margin dB
1.0642 GHz	V	57.3	26.2	39.7	43.8	94.0	-50.2
1.0718 GHz	V	61.1	26.3	39.7	47.6	94.0	-46.4
1.2758 GHz	V	53.1	27.0	39.6	40.5	94.0	-53.5
1.3476 GHz	V	56.6	27.3	39.5	44.4	94.0	-49.6
1.4193 GHz	V	52.7	27.6	39.5	40.8	94.0	-53.2
1.4911 GHz	V	55.9	27.8	39.4	44.3	94.0	-49.7
1.5629 GHz	V	54.9	28.1	39.3	43.7	94.0	-50.3
1.6347 GHz	V	56.3	28.4	39.2	45.5	94.0	-48.5
1.8916 GHz	V	61.0	29.5	38.8	51.8	94.0	-42.2
2.3638 GHz	V	58.1	30.9	38.0	51.0	94.0	-43.0
2.4318 GHz	V	47.2	31.1	37.9	40.4	94.0	-53.6
3.5538 GHz	V	50.3	34.7	37.6	47.4	94.0	-46.6
3.8598 GHz	V	53.2	35.7	37.7	51.3	94.0	-42.7
4.0411 GHz	V	45.7	36.2	37.7	44.2	94.0	-49.8
6.0584 GHz	V	49.0	38.8	36.5	51.2	94.0	-42.8
7.1049 GHz	V	43.4	40.5	37.1	46.9	94.0	-47.1
8.0758 GHz	V	46.6	42.2	35.6	53.2	94.0	-40.8
14.543 GHz	H	42.6	50.2	35.7	57.1	94.0	-36.9
17.974 GHz	H	41.9	54.8	35.5	61.3	94.0	-32.7
1.0642 GHz	H	58.5	26.2	39.7	45.0	94.0	-49.0
1.2078 GHz	H	56.9	26.8	39.6	44.0	94.0	-50.0
1.2758 GHz	H	56.8	27.0	39.6	44.2	94.0	-49.8
1.3476 GHz	H	54.6	27.3	39.5	42.4	94.0	-51.6
1.4911 GHz	H	54.9	27.8	39.4	43.3	94.0	-50.7
1.5629 GHz	H	52.8	28.1	39.3	41.6	94.0	-52.4
1.6347 GHz	H	55.5	28.4	39.2	44.8	94.0	-49.2
1.7027 GHz	H	49.8	28.7	39.1	39.4	94.0	-54.6
1.8953 GHz	H	62.8	29.6	38.8	53.6	94.0	-40.4
2.02 GHz	H	47.7	30.1	38.6	39.2	94.0	-54.8
2.4507 GHz	H	45.7	31.1	37.9	39.0	94.0	-55.1
3.55 GHz	H	47.1	34.7	37.6	44.2	94.0	-49.8
3.8598 GHz	H	55.6	35.7	37.7	53.7	94.0	-40.3
4.0373 GHz	H	44.9	36.2	37.7	43.5	94.0	-50.5
6.0584 GHz	H	47.0	38.8	36.5	49.2	94.0	-44.8
7.1049 GHz	H	44.2	40.5	37.1	47.7	94.0	-46.3
8.0758 GHz	H	46.3	42.2	35.6	52.9	94.0	-41.1
14.589 GHz	H	42.4	50.0	35.8	56.6	94.0	-37.4
17.981 GHz	H	41.7	54.9	35.5	61.1	94.0	-32.9

Spurious Radiated Emissions Field Strength from 1 to 20GHz
Date:

3/22/2007

Company: ADC Telecommunications
Model: DGVC-4X1000RU
Test Engineer: Uri Spector
Special Info: 1960MHz Opearaing Frequency.
Standard: FCC Part 24
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
All measurements were taken using a Peak detector
Emission at fundamental frequency was removed from the table

Table # 5

Frequency MHz	Antenna Polarity	Reading dBμV	Ant & Cable CF (dB1/m)	Pre-Amp. Gain (dB)	Total at 3m dBμV/m	Reference Limit dBμV/m	Margin dB
1.0642 GHz	V	61.1	26.2	39.7	47.6	94.0	-46.4
1.136 GHz	V	51.7	26.5	39.7	38.5	94.0	-55.5
1.2078 GHz	V	51.7	26.8	39.6	38.8	94.0	-55.2
1.3476 GHz	V	54.5	27.3	39.5	42.3	94.0	-51.7
1.4193 GHz	V	50.3	27.6	39.5	38.3	94.0	-55.7
1.4911 GHz	V	56.3	27.8	39.4	44.7	94.0	-49.3
1.5629 GHz	V	56.5	28.1	39.3	45.2	94.0	-48.8
1.6347 GHz	V	57.2	28.4	39.2	46.4	94.0	-47.6
1.7027 GHz	V	51.6	28.7	39.1	41.3	94.0	-52.7
1.7744 GHz	V	51.7	29.0	39.0	41.8	94.0	-52.2
1.8953 GHz	V	61.2	29.6	38.8	52.0	94.0	-42.0
2.0464 GHz	V	51.7	30.2	38.5	43.3	94.0	-50.7
3.6029 GHz	V	49.0	34.9	37.6	46.2	94.0	-47.8
3.9202 GHz	V	59.1	35.9	37.7	57.4	94.0	-36.6
6.134 GHz	V	46.7	38.8	36.5	49.0	94.0	-45.0
8.1778 GHz	V	55.3	42.4	35.6	62.2	94.0	-31.8
12.269 GHz	V	41.6	46.1	35.3	52.5	94.0	-41.5
13.946 GHz	V	44.0	49.0	35.6	57.4	94.0	-36.6
17.974 GHz	H	42.4	54.8	35.5	61.7	94.0	-32.3
1.0642 GHz	H	60.5	26.2	39.7	47.0	94.0	-47.0
1.136 GHz	H	57.2	26.5	39.7	44.1	94.0	-49.9
1.2078 GHz	H	53.5	26.8	39.6	40.6	94.0	-53.4
1.3476 GHz	H	58.2	27.3	39.5	46.0	94.0	-48.0
1.4911 GHz	H	55.0	27.8	39.4	43.4	94.0	-50.6
1.5629 GHz	H	51.2	28.1	39.3	40.0	94.0	-54.0
1.6347 GHz	H	56.7	28.4	39.2	46.0	94.0	-48.1
1.7027 GHz	H	49.7	28.7	39.1	39.3	94.0	-54.7
1.8462 GHz	H	49.6	29.3	38.8	40.1	94.0	-53.9
1.8953 GHz	H	57.3	29.6	38.8	48.1	94.0	-45.9
2.0464 GHz	H	50.8	30.2	38.5	42.4	94.0	-51.6
2.0578 GHz	H	47.4	30.2	38.5	39.1	94.0	-54.9
3.6029 GHz	H	45.7	34.9	37.6	42.9	94.0	-51.1
3.9202 GHz	H	61.0	35.9	37.7	59.3	94.0	-34.7
6.134 GHz	H	45.2	38.8	36.5	47.5	94.0	-46.5
8.1778 GHz	H	51.3	42.4	35.6	58.2	94.0	-35.8
12.265 GHz	H	40.6	46.2	35.3	51.5	94.0	-42.5
14.283 GHz	H	43.1	49.8	35.7	57.2	94.0	-36.8
17.989 GHz	H	42.0	54.9	35.5	61.4	94.0	-32.6

Spurious Radiated Emissions Field Strength from 1 to 20GHz
Date:

3/22/2007

Company: ADC Telecommunications
Model: DGVC-4X1000RU
Test Engineer: Uri Spector
Special Info: 1990MHz Opearaing Frequency.
Standard: FCC Part 24
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
All measurements were taken using a Peak detector
Emission at fundamental frequency was removed from the table

Table # 6

Frequency MHz	Antenna Polarity	Reading dBµV	Ant & Cable CF (dB1/m)	Pre-Amp. Gain (dB)	Total at 3m dBµV/m	Reference Limit dBµV/m	Margin dB
1.0646 GHz	V	59.5	26.2	39.7	46.0	94.0	-48.0
1.136 GHz	V	57.3	26.5	39.7	44.2	94.0	-49.8
1.2754 GHz	V	53.1	27.0	39.6	40.5	94.0	-53.5
1.3468 GHz	V	61.3	27.3	39.5	49.1	94.0	-44.9
1.4182 GHz	V	53.2	27.6	39.5	41.3	94.0	-52.7
1.4896 GHz	V	56.3	27.8	39.4	44.7	94.0	-49.3
1.561 GHz	V	52.8	28.1	39.3	41.6	94.0	-52.4
1.6324 GHz	V	55.6	28.4	39.2	44.8	94.0	-49.2
1.7038 GHz	V	52.3	28.7	39.1	41.9	94.0	-52.1
1.7752 GHz	V	49.2	29.0	39.0	39.3	94.0	-54.7
1.8942 GHz	V	58.4	29.6	38.8	49.2	94.0	-44.8
2.0608 GHz	V	46.6	30.2	38.5	38.3	94.0	-55.7
3.9818 GHz	V	67.3	36.1	37.7	65.7	94.0	-28.3
6.1748 GHz	V	48.7	38.9	36.5	51.1	94.0	-42.9
8.2352 GHz	V	52.3	42.5	35.5	59.3	94.0	-34.7
12.356 GHz	V	43.5	46.0	35.2	54.3	94.0	-39.7
14.335 GHz	V	43.9	50.0	35.7	58.2	94.0	-35.8
18.0 GHz	V	41.8	55.0	35.5	61.3	94.0	-32.7
1.0646 GHz	H	61.0	26.2	39.7	47.5	94.0	-46.5
1.136 GHz	H	53.7	26.5	39.7	40.6	94.0	-53.4
1.2074 GHz	H	56.4	26.8	39.6	43.5	94.0	-50.5
1.2788 GHz	H	56.3	27.0	39.6	43.8	94.0	-50.2
1.3468 GHz	H	58.0	27.3	39.5	45.8	94.0	-48.2
1.4896 GHz	H	53.9	27.8	39.4	42.2	94.0	-51.8
1.561 GHz	H	53.0	28.1	39.3	41.8	94.0	-52.2
1.6324 GHz	H	56.9	28.4	39.2	46.1	94.0	-47.9
1.7038 GHz	H	52.8	28.7	39.1	42.5	94.0	-51.5
1.7752 GHz	H	50.2	29.0	39.0	40.3	94.0	-53.7
1.8942 GHz	H	57.8	29.6	38.8	48.6	94.0	-45.4
2.0608 GHz	H	49.6	30.2	38.5	41.3	94.0	-52.7
3.9818 GHz	H	66.1	36.1	37.7	64.6	94.0	-29.4
4.1212 GHz	H	45.8	36.3	37.7	44.5	94.0	-49.5
6.1748 GHz	H	47.5	38.9	36.5	49.9	94.0	-44.1
8.2352 GHz	H	52.8	42.5	35.5	59.9	94.0	-34.1
12.356 GHz	H	42.9	46.0	35.2	53.8	94.0	-40.2
13.75 GHz	H	43.5	48.5	35.2	56.8	94.0	-37.2
17.976 GHz	H	42.2	54.9	35.5	61.5	94.0	-32.5

Spurious Radiated Emissions Power
Date: 3/23/2007

Company: ADC Telecommunications
Model: PCS DGVC-4X1000RU
Test Engineer: Uri Spector
Special Config. Info: Substitution Method
Standard: FCC Part 24
Frequency Range: 30MHz to 20GHz
Test Site: 3m Anechoic Chamber
Note: The table shows the worst case radiated emissions
Emissions at fundamental frequency removed from the Table

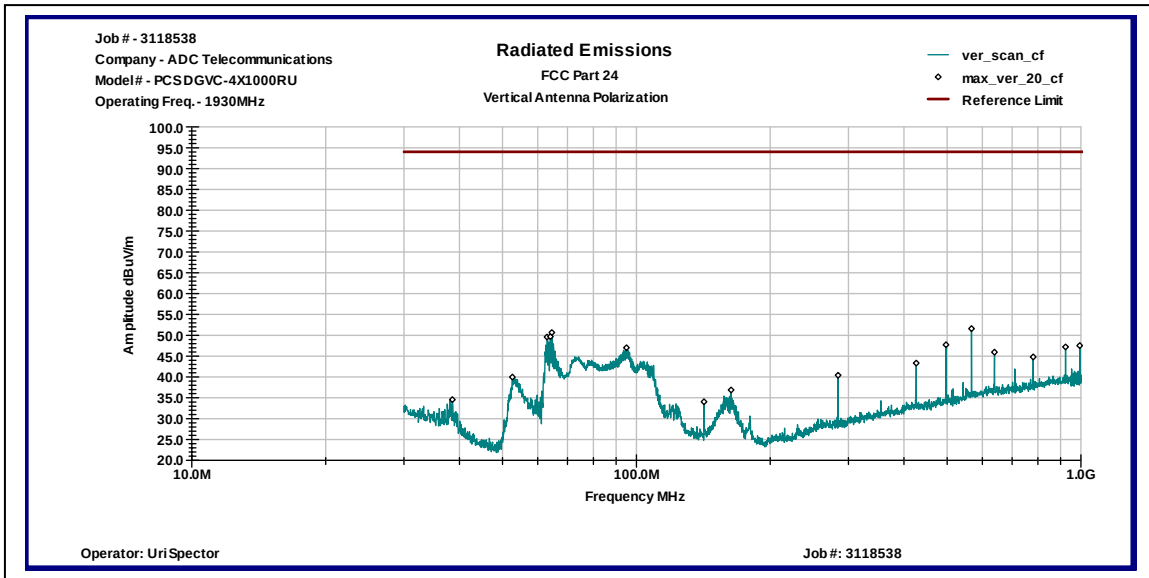
Table # 7

Frequency of Emissions MHz	Operating Frequency MHz	Antenna Polarity	Measured Emissions dBμV	Substitution Generator Power dBm	Substitution Antenna Gain dBi	Cable Loss dB	ERP Spur. Emissions dBm	Limit dBm	Margin dB
64.62	1990	V	45.6	-43.1	0.0	0.1	-43.2	-13.0	-30.2
284.24	1960	V	26.3	-58.0	0.0	0.1	-58.1	-13.0	-45.1
567.53	1930	V	29.5	-46.7	0.0	0.1	-46.8	-13.0	-33.8
3982.00	1990	V	67.3	-38.9	9.5	0.3	-29.7	-13.0	-16.7
8178.00	1960	V	55.3	-45.0	11.4	0.5	-34.1	-13.0	-21.1
64.62	1990	H	38.0	-51.0	0.0	0.1	-51.1	-13.0	-38.1
284.24	1960	H	41.0	-48.0	0.0	0.1	-48.1	-13.0	-35.1
567.53	1930	H	29.6	-49.8	0.0	0.1	-49.9	-13.0	-36.9
3982.00	1990	H	66.1	-39.8	9.6	0.3	-30.5	-13.0	-17.5
8178.00	1960	H	51.3	-47.1	11.4	0.5	-36.2	-13.0	-23.2

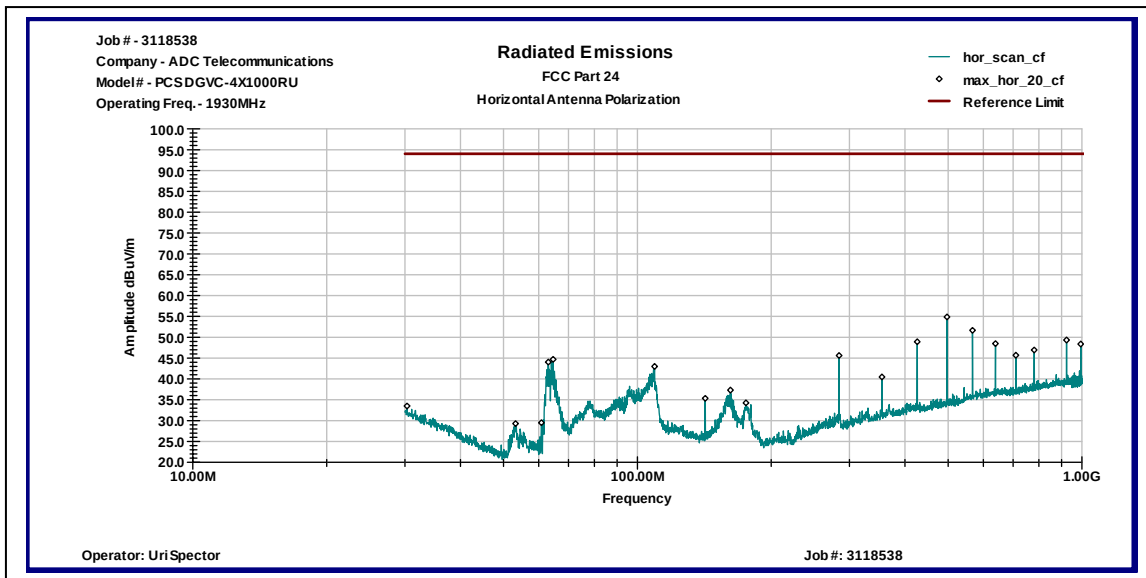
Graph # 1

Radiated Emissions from 30MHz to 1GHz, 1930MHz Channel

Vertical Antenna Polarization



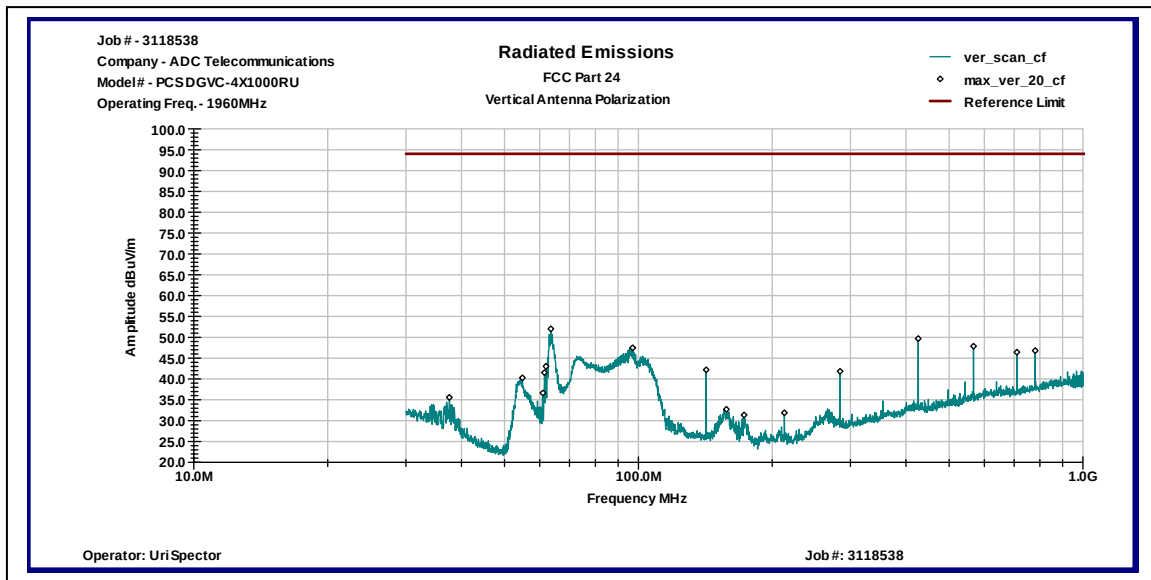
Horizontal Antenna Polarization



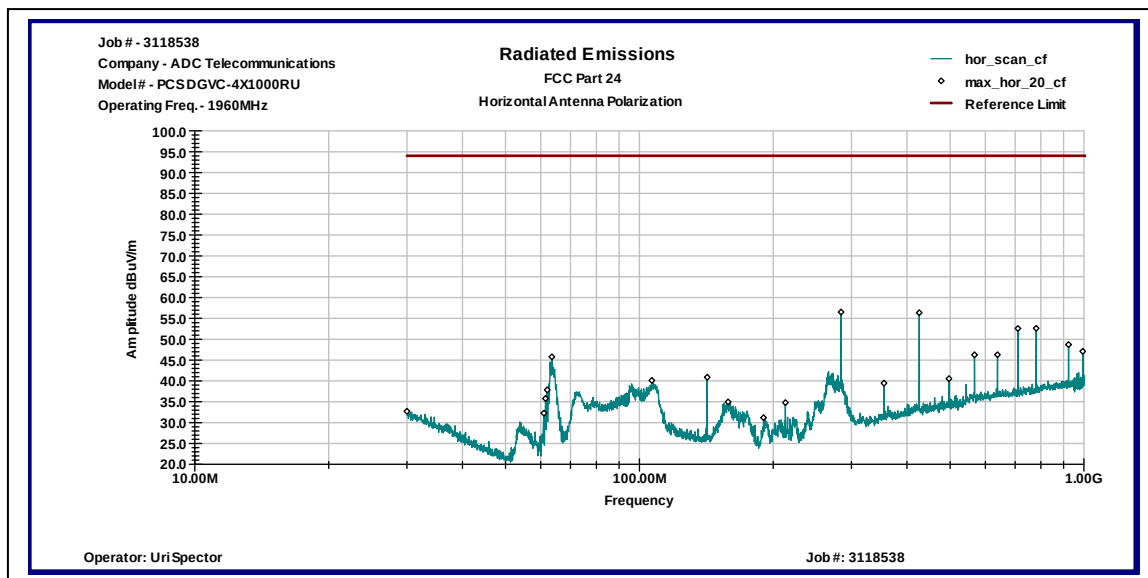
Graph # 2

Radiated Emissions from 30MHz to 1GHz, 1960MHz Channel

Vertical Antenna Polarization



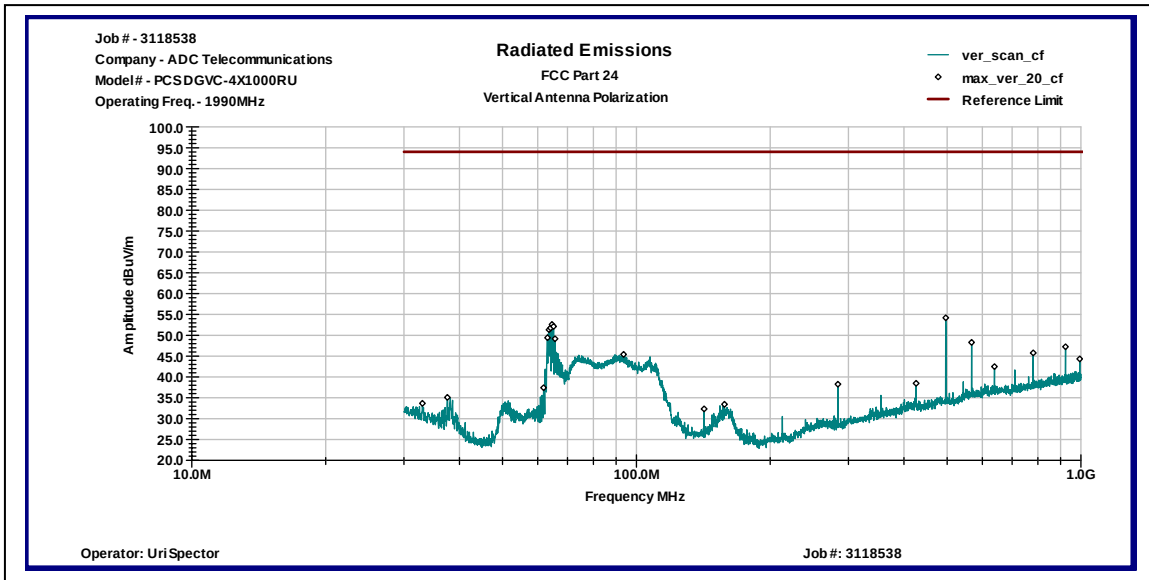
Horizontal Antenna Polarization



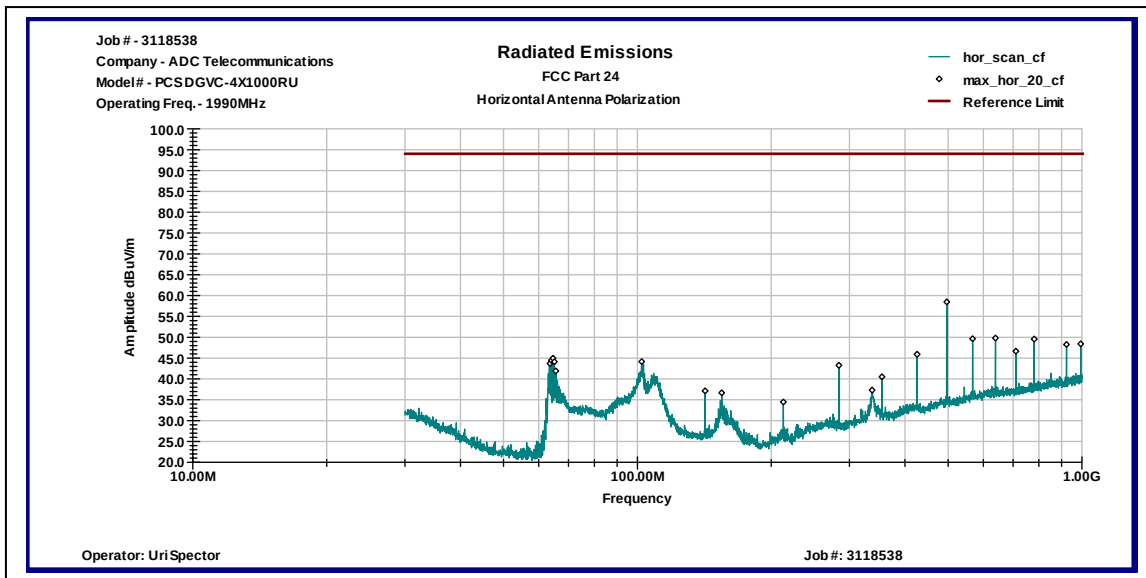
Graph # 3

Radiated Emissions from 30MHz to 1GHz, 1990MHz Channel

Vertical Antenna Polarization



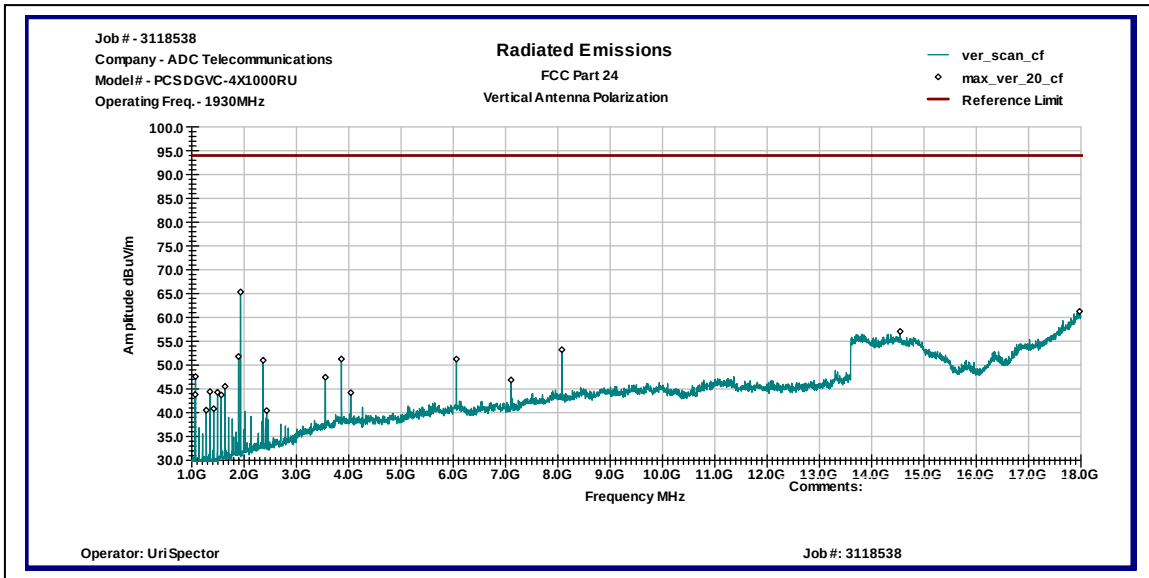
Horizontal Antenna Polarization



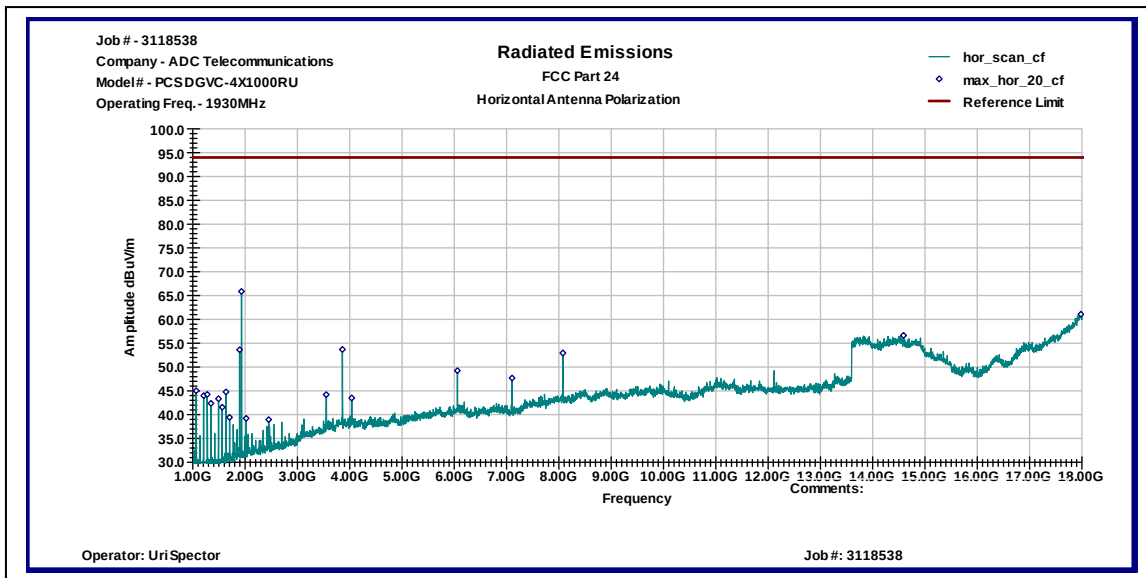
Graph # 4

Radiated Emissions from 1 to 20GHz, 1930MHz Channel

Vertical Antenna Polarization



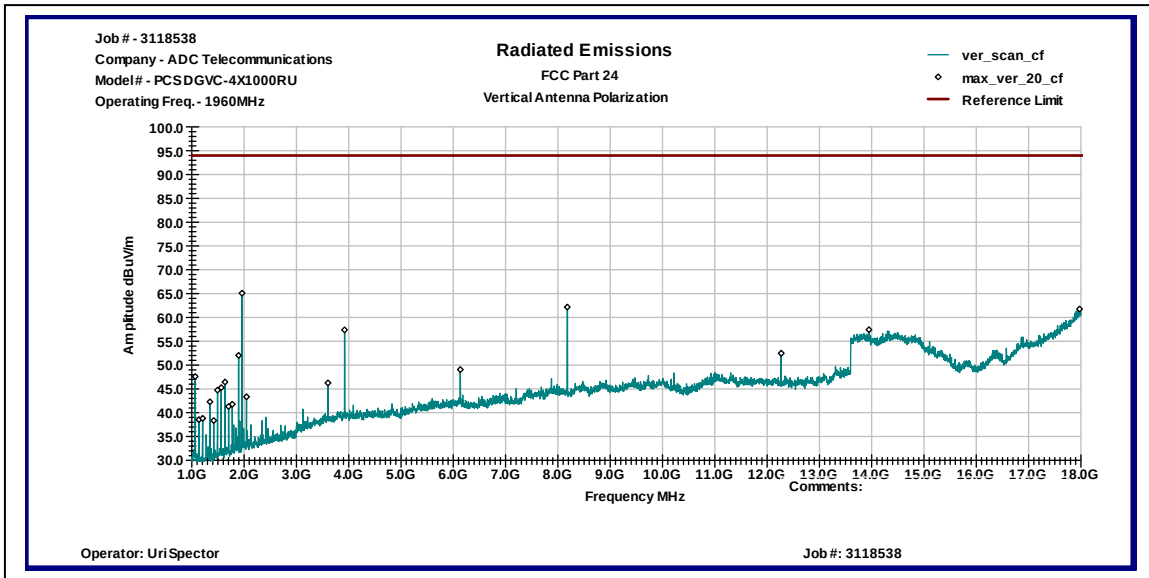
Horizontal Antenna Polarization



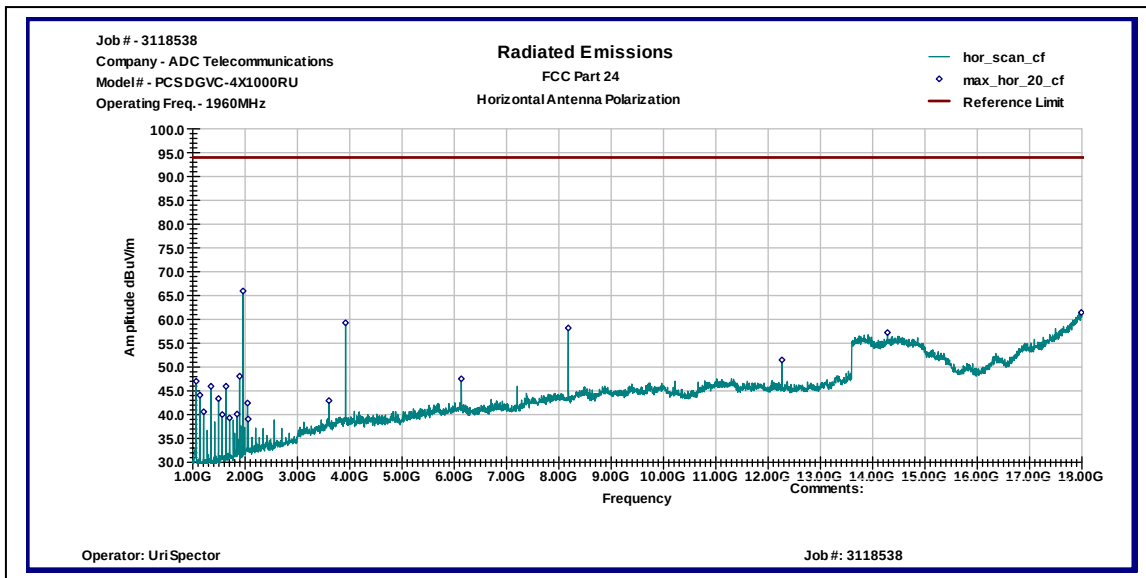
Graph # 5

Radiated Emissions from 1 to 20GHz, 1960MHz Channel

Vertical Antenna Polarization



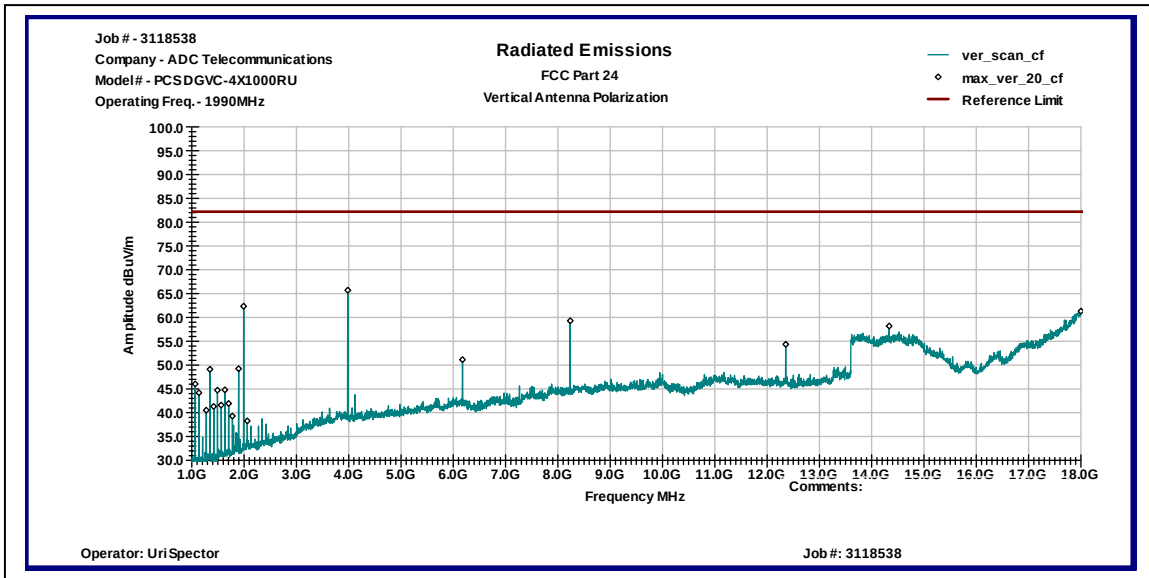
Horizontal Antenna Polarization



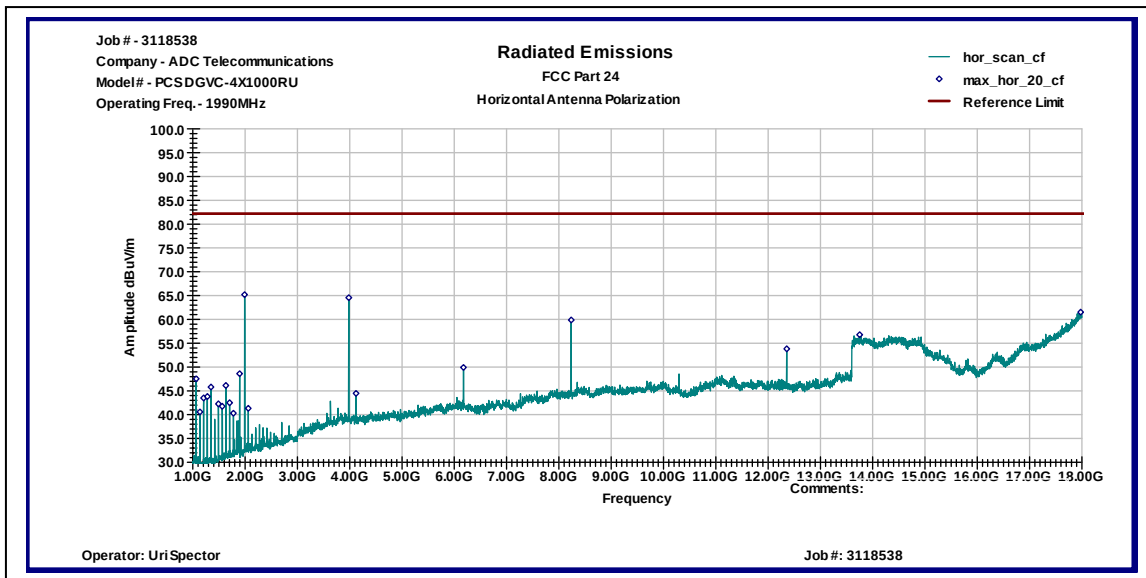
Graph # 6

Radiated Emissions from 1 to 20GHz, 1990MHz Channel

Vertical Antenna Polarization



Horizontal Antenna Polarization



3.0 TEST EQUIPMENT / ENVIRONMENTAL CONDITIONS

Receivers/Spectrum Analyzers and Test Software

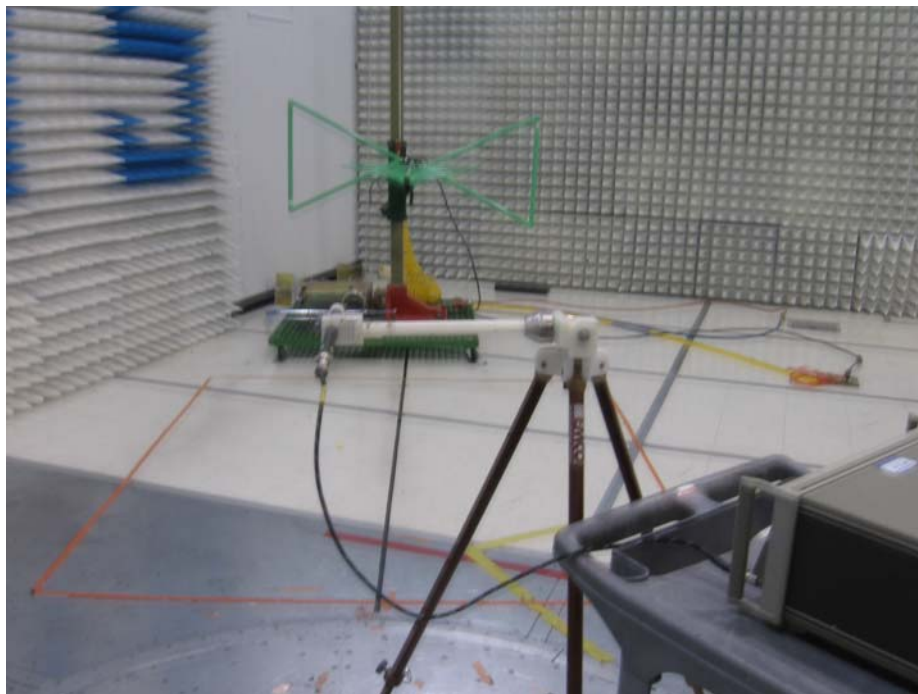
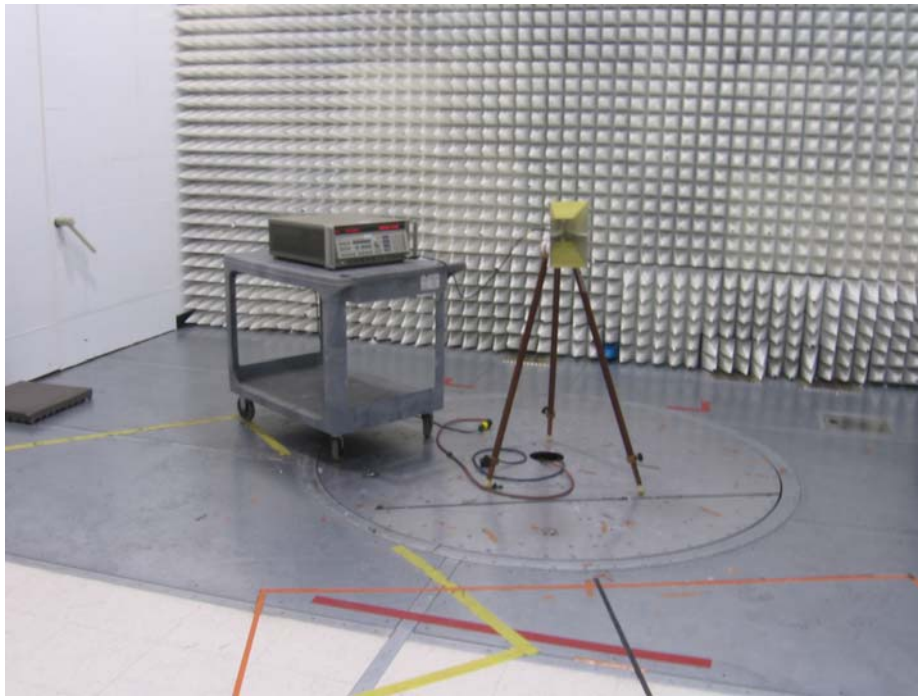
DESCRIPTION	SERIAL NO.	LAST CAL	CAL DUE	USED
Rohde & Schwarz FSP 40 Spectrum Analyzer	100024	07/06	07/07	X
Rohde & Schwarz ESCI Spectrum Analyzer	100358	04/06	04/07	X
TILE! Instrument Control System	Ver. 3.4 K.20	N/A	N/A	X

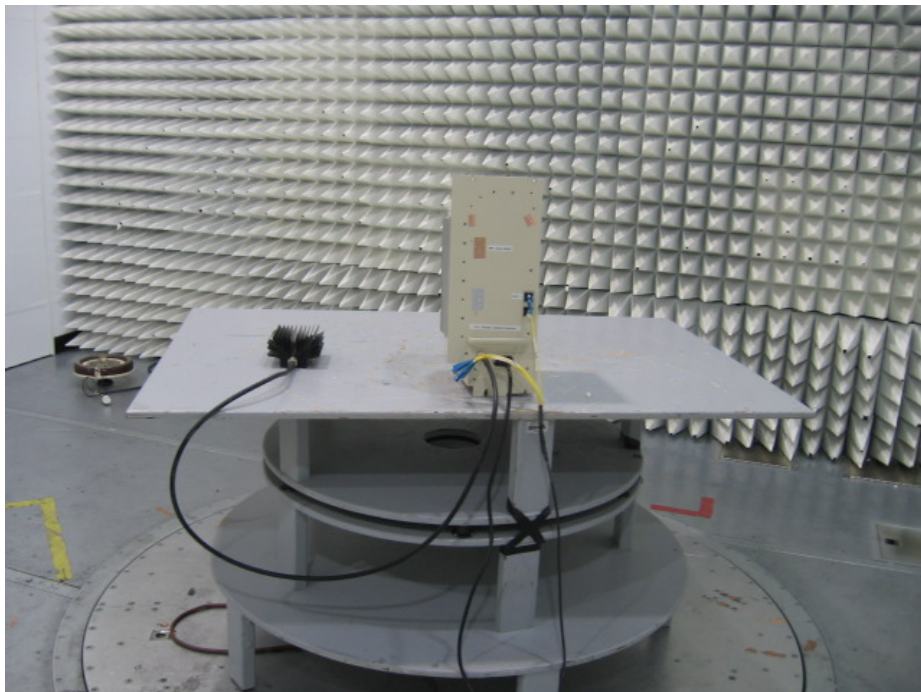
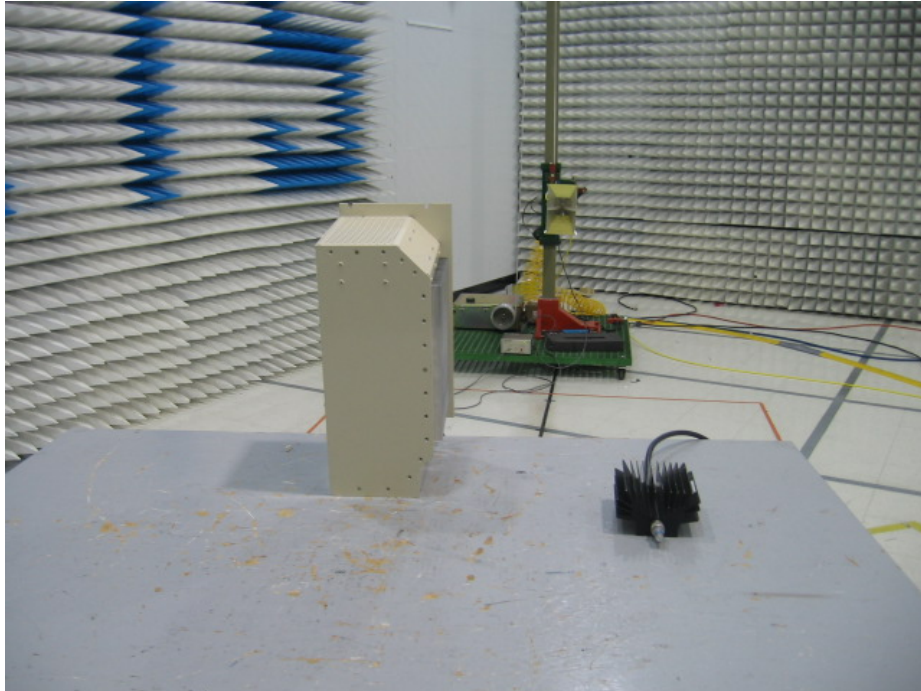
Antennas/Generators/Pre-Amps

DESCRIPTION	SERIAL NO.	LAST CAL	CAL DUE	USED
Schaffner-Chase Bicono-Log Antenna	2630	08/06	08/07	X
EMCO Horn Antenna 3115	9507-4513	01/07	01/08	X
EMCO Horn Antenna 3115	6579	03/06/07	03/06/08	X
Roberts Antenna 4 400-1000MHz	00599	N/A	N/A	X
MITEQ AMF-5D Pre-Amplifier	1122951	02/07	02/08	X
HP 8340B Synthesized Sweeper	2819A01098	09/06	09/07	X

Temperature: 23° C
Relative Humidity: 17%
Atmospheric pressure: 99.1 kPa

4.0 CONFIGURATION PHOTOGRAPHS





7.0

APPENDIX C

Measurement Protocol

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Measurement Protocol

Environmental conditions of the lab, (ADC)

Temperature: 21 - 26° C

Relative Humidity: 21 - 24 %

Atmospheric Pressure: 97.8 - 100.0 kPa

Test Methodology:

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 signal generator(s), the power meter, the spectrum analyzer and the coaxial cable. The equipment comprising the test systems is calibrated prior to testing the EUT.

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 un-terminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

Radiated Emissions

The final level, in dBuV/m, equals the reading from the spectrum analyzer (Level dBuV), 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 Appendix B.

Example:

FREQ (MHz)	LEVEL (dBuV)	CABLE/ANT/PREAMP (dB) (dB/m) (dB)	FINAL (dBuV/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

Substitution Method

A cabinet (or enclosure) radiated emission scan was also made, at Intertek, 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 20,000 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 1GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the highest level measured from the EUT. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level.

Test Equipment

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