



Test Report Summary

FCC CFR 47, Part 24

Subpart E Broadband PCS

Manufacturer: ADC Telecommunications

Name of Equipment: Bi-Directional Amplifier – PCS

Model Number(s): RPT-SHAAA12000

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

Test Report Number: MN070803

Test Date(s): 12, 13 July, 2007 (ETL)
19 July, 2007 (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: 03 August, 2007

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: MN070803 **Date of Issue:** 3 August, 2007

Model Number(s): RPT-SHAAA12000

Product Name: Bi-Directional Amplifier – PCS

Product Type: Amplifier

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: 3128314MIN-001R
Reference(s)

Total pages including Appendices: 101



Table of Contents

1.0	Revision Description	4
2.0	Documentation	4
2.1	Test Regulations	4
2.2	Test Operation Mode	5
2.3	Configuration of the device under test:	5
2.4	Product Options:	5
2.5	EUT Specifications and Requirements:	5
2.6	Cables:	5
2.7	Power Requirements:	5
2.8	Typical Installation and/or Operating Environment:	5
2.9	Other Special Requirements:	5
2.10	EUT Software:	5
2.11	EUT System Components	6
2.12	Support Equipment.....	6
2.13	Deviations from standard:	6
2.14	General Remarks:	6
2.15	Summary:	6
3.0	Test set-Up drawings and Photos	7
3.1	Test set-up photo, radiated emissions.....	7
3.2	Test set-up photo, radiated emissions.....	8
3.3	Test Set-up Drawings	9
4.0	Test Results	11
4.1.1	24.232 Power and antenna height limits	11
4.1.2	24.235 Frequency Stability	12
4.1.3	24.238 Emission limitations for broadband PCS equipment	13
5.0	Appendix A	14
6.0	Appendix B	79
7.0	Appendix C	100



1.0 REVISION DESCRIPTION

Rev	Total Pages	Date	Description
A	101	August 03, 2007	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

Temperature: 25° C
Relative Humidity: 23%
Atmospheric Pressure: 97.7 kPa

ETL

15-35° C
30-60%
86-106 kPa

Power Supply Utilized:

Power Supply System : 1 phase, 60 Hz, 120 VAC

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: 8.75"

Width: 8.0"

Height: 2.5"

Weight: 7.85 pounds

2.6 Cables:

Cable Type	Length	From	To
RF	> 3M	Ancillary Equip	EUT
RF	< 3M	EUT	50 Ohm Load
Power	< 3M	Power	Input Power

2.7 Power Requirements:

Voltage: 120 VAC

Amps: 0.8 A

2.8 Typical Installation and/or Operating Environment:

Indoor only. System is typically employed as an indoor repeater.

2.9 Other Special Requirements:

None

2.10 EUT Software:

Revision Level: Version 1.0.0

Description: Repeater PC Program. System Management Software

2.11 EUT System Components

Description	Model #	Serial #	FCC ID #
BDA	RPT-SHAAA12000	None	

2.12 Support Equipment

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

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

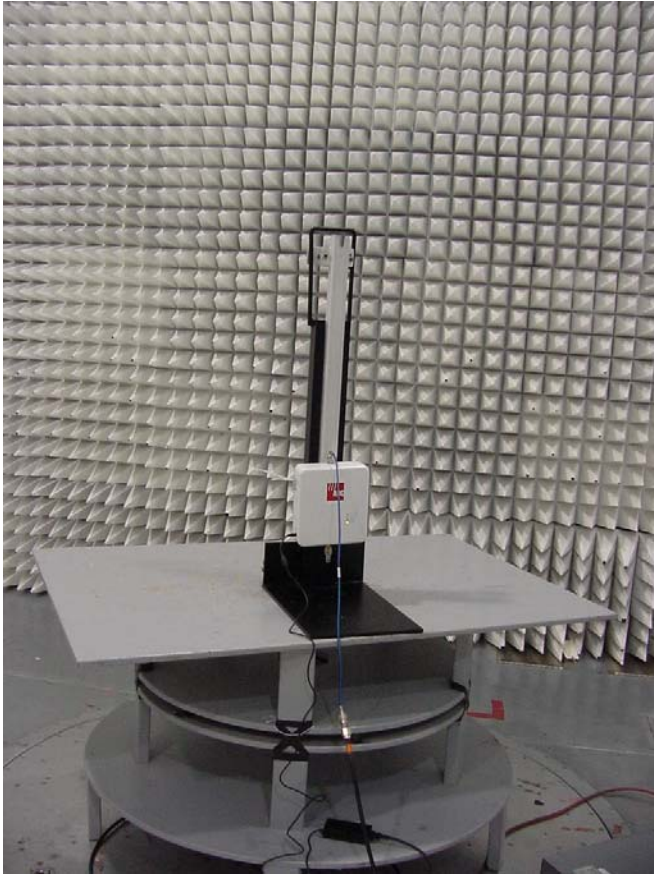
■ **fulfill the general approval requirements mentioned on page 4.**

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

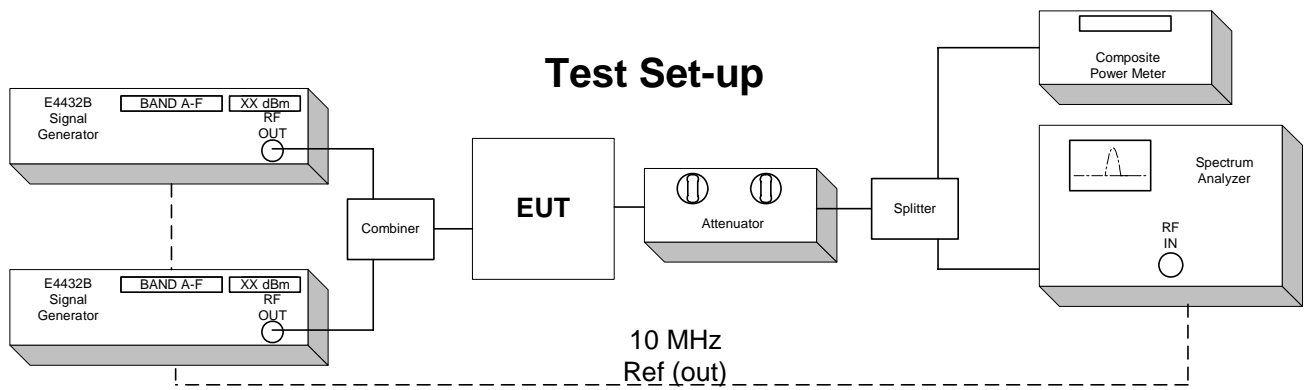
Conducted and Radiated Emission Limits Test for ADC Inc.

Conducted Output Power Test for ADC Inc

Inter-Modulation Test for ADC Inc.

Occupied Bandwidth Modulation Test for ADC Inc.

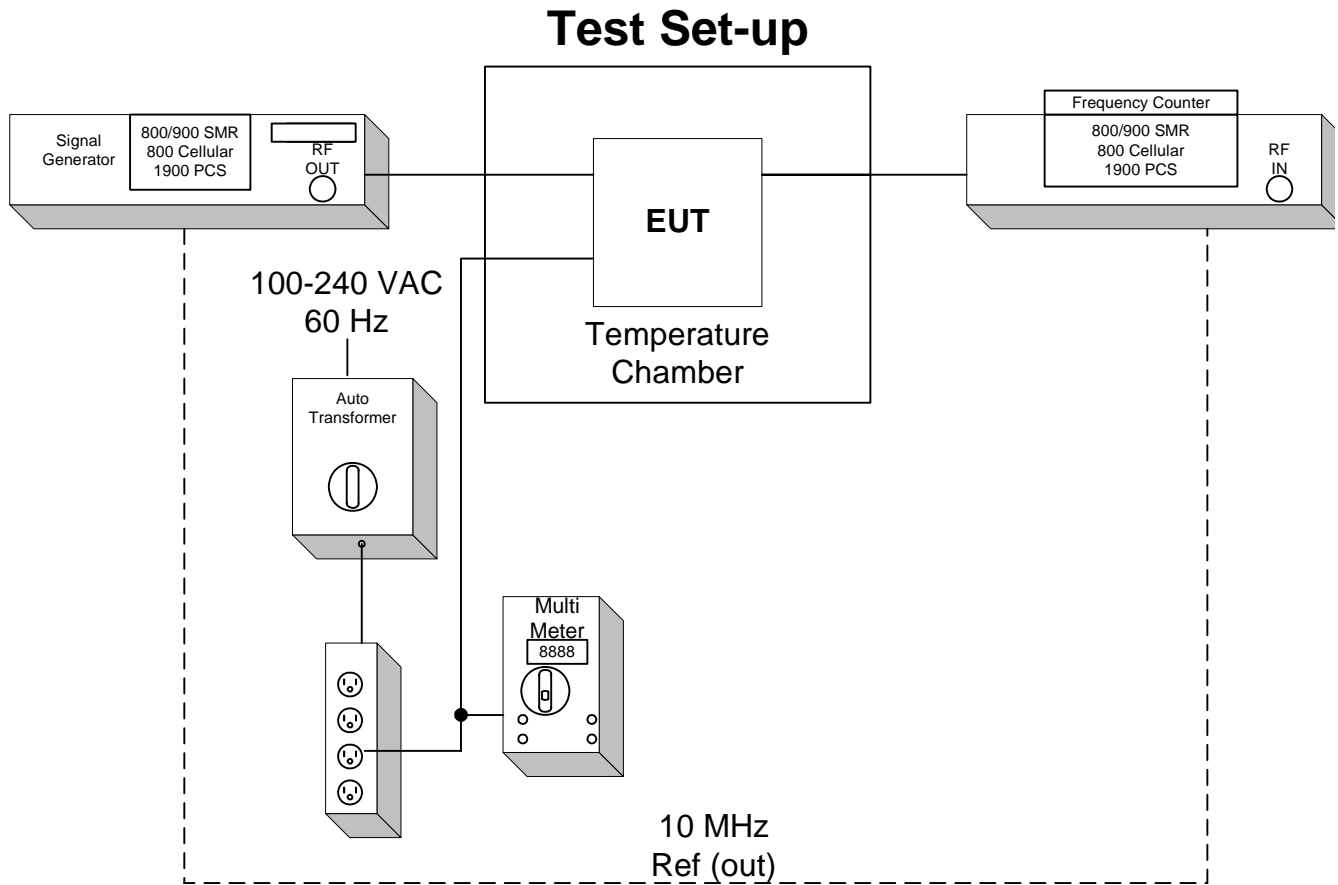
Bi-Directional Amplifier – PCS Model Number RPT-SHAAA12000



Frequency Tolerance Test for ADC Inc.

Bi-Directional Amplifier – PCS Model Number RPT-SHAAA12000

EUT is specified for indoor use only with temperature range of -5° to $+45^{\circ}$ C, and was tested with its range.



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 29.38 dB at 1930.2 MHz (TDMA)

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	11-22-07
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 37](#)

Test Engineer: Mark F. Miska

Date: 13 July, 2007

[Back to Table of Contents:](#)

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 -5 to 45° C and an input voltage range of 100 to 240 VAC.

Test Location:

ETL (Oakdale, MN)

ADC facility (Shakopee, MN)

Test Equipment (ADC):

Equipment	Manufacturer	Model	ADC Serial Number	Calibration Due.
Multimeter	Fluke	87	MC19056	8-20-08
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 page 78](#)

Test Engineer: Mark F. Miska

Date: 12 July, 2007

[Back to Table of Contents:](#)

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	11-22-07
Power Meter	HP	EPM-441A	MC27670	9-20-07
Multimeter	Fluke	87	MC19056	8-20-08
Frequency Counter	HP	5347A	MC27548	8-18-07
Temperature Chamber	Ecosphere		MC21679	1-11-08
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	04/08
Instrument Control	TILE!	Ver. 3.4 K.15	N/A	N/A
Antenna	Schaffner-Chase	Bicono-Log CBL 6112 B	2630	08/07
Antenna	EMCO	Horn 3115	9507-4513	01/08
Antenna	EMCO	Horn 3115	6579	03/08
Pre-Amp	MITEQ	AMF-5D	1122951	04/08
Pre-Amp	MITEQ	AMF-6F-16002600-25-10P	1222383	09/07

Test Limit:

Out of band emissions:

Attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB, or -13 dBm.

Outside of the carrier emissions bandwidth:

26 dB below the transmitter power

Test Data:

[Conducted Emissions](#), pages 15 – 36

[Intermodulation Test](#), pages 38 – 70

[Occupied Bandwidth](#), pages 71 – 77

Radiated Emissions, pages 79 – 99 ([Appendix B](#))

Test Engineer: Mark F. Miska

Date: 12 July, 2007

Date: 12 July, 2007

Date: 12 July, 2007

[Back to Table of Contents:](#)

5.0

APPENDIX A

Test Data

[Back to Table of Contents:](#)

Test Engineer: Mark F. Miska

Date: 12 July, 2007

Conducted Emission Limits Test for ADC Inc. Bi-Directional Amplifier – PCS Model Number RPT-SHAAA12000

[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.

Industry practice has generally set the input signal power level. Test signal used was ≈ -47 dBm input to EUT. Industry practice has generally set the output signal power level.

EUT:
Range: 100 - 240 VAC
Tested @: 120 VAC
Tested @: 0.8 A

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

The input to the unit has a digital attenuation chip (ALC) to provide protection from overdrive. The circuit detects the power level of the final stage amplifier and compares with the pre-set value. If the detected value is bigger than the pre-set, ALC will increase the attenuation until the detect value is on level with pre-set value. If the detected value is smaller than the pre-set, ALC will decrease the attenuation until the detect value is on level with pre-set value. With above mentioned functions, the ALC circuit maintains the output power level at +13dBm (pre-set value). Single channel operation, or multi-channel operation will not exceed nominal gain of the system.

The frequency stability is derived from two 13MHz TCVCXOs (RTVS-104), separate for the Forward and Reverse paths. These each feed two PLLs for the IF down conversion.

The spurious limitation uses ALC to help suppress in-band spurious by preventing final stage amplifier overdrive, while the duplex filter suppresses out-of-band spurious. Internal to the electronics, the use of SAW filters provides for higher Q roll-off at band edges.

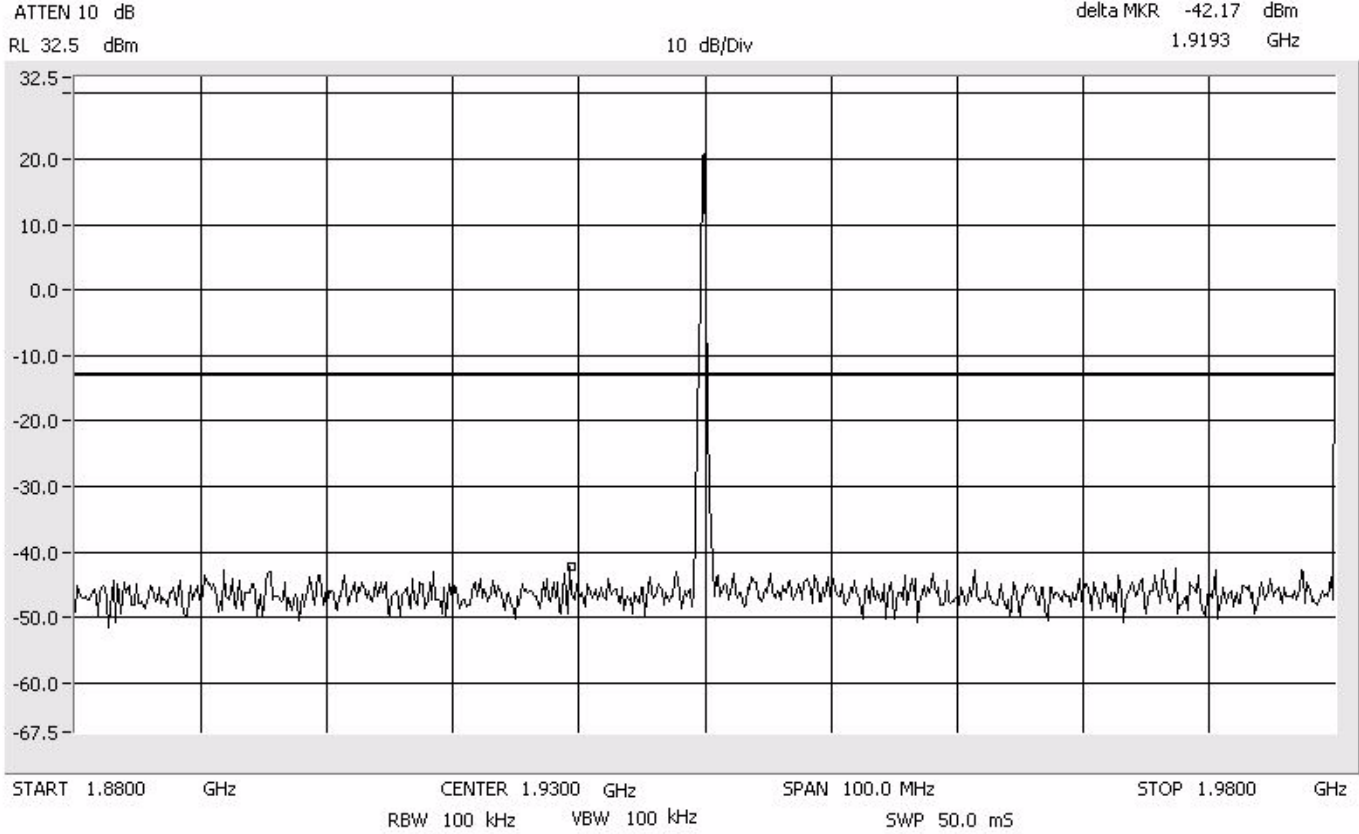
This equipment does not modulate the RF, so there is no modulation limiter. This equipment does not change the modulation of the RF or the occupied bandwidth of any channel. It transports the signal, as is, over an optical link. The RF input is not changed in the RF output.

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)

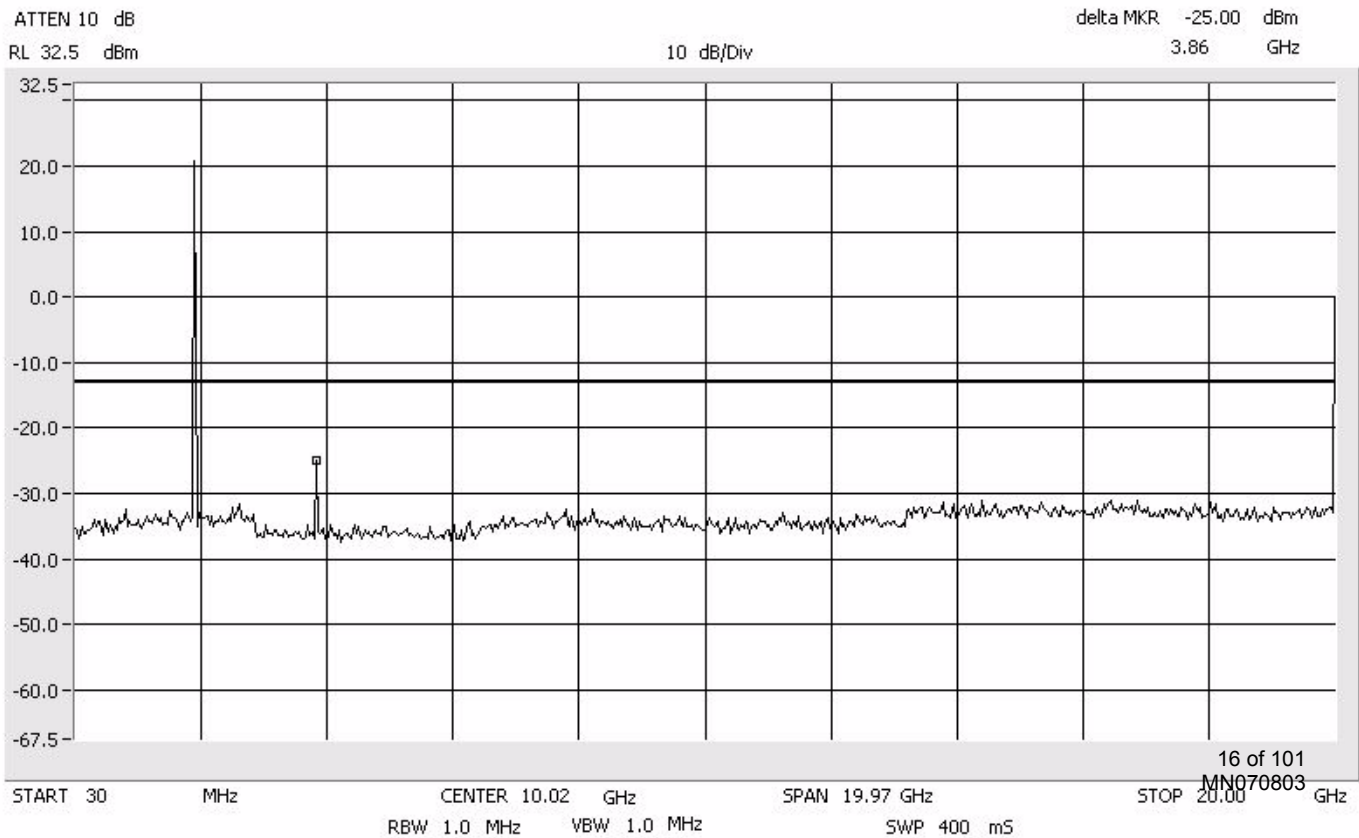
Conducted Emissions Low PCS 1900 MHz

Center: 1930.0 MHz
Span: 100 MHz
RBW/VBW: 100 kHz



Conducted Emissions Low PCS 1900 MHz

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



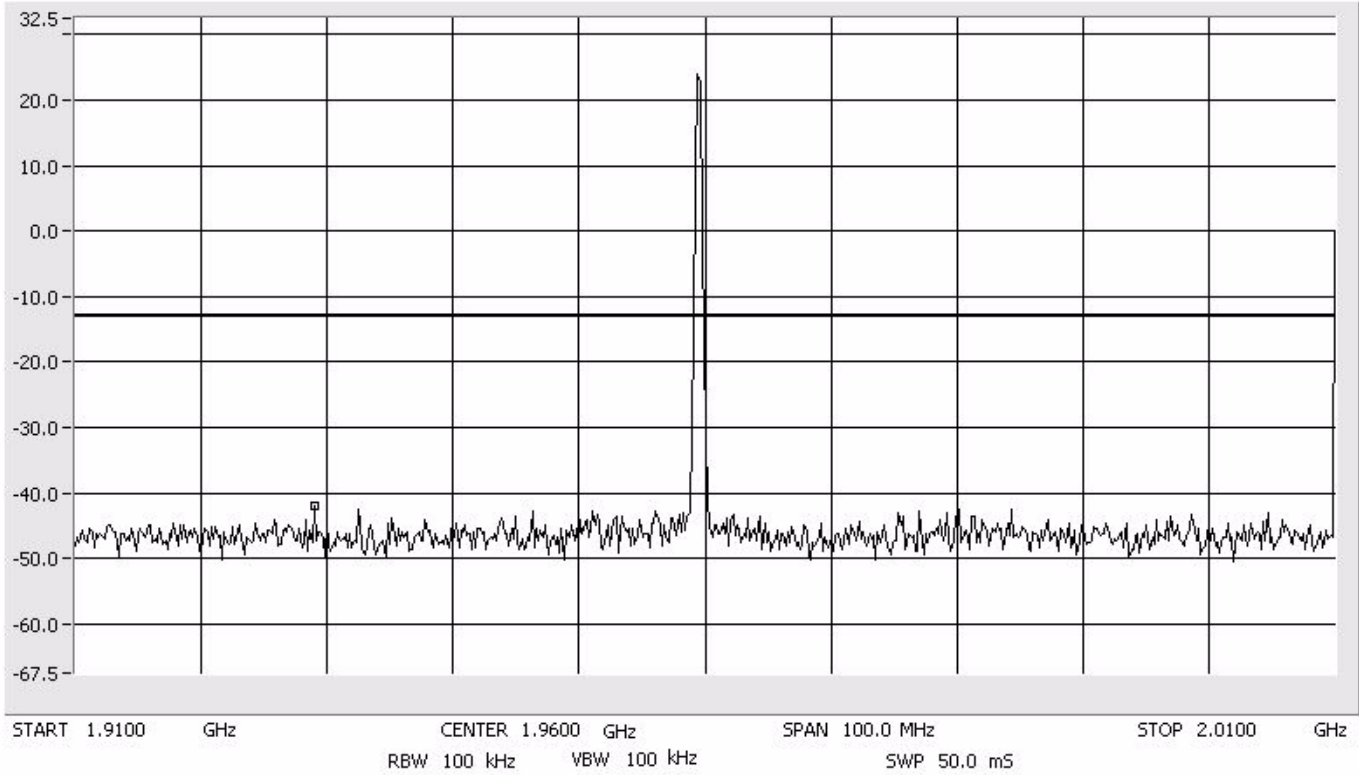
Conducted Emissions Mid PCS 1900 MHz

Center: 1960.0 MHz
Span: 100 MHz
RBW/VBW: 100 kHz

ATTEN 10 dB
RL 32.5 dBm

delta MKR -42.00 dBm
1.9290 GHz

10 dB/Div



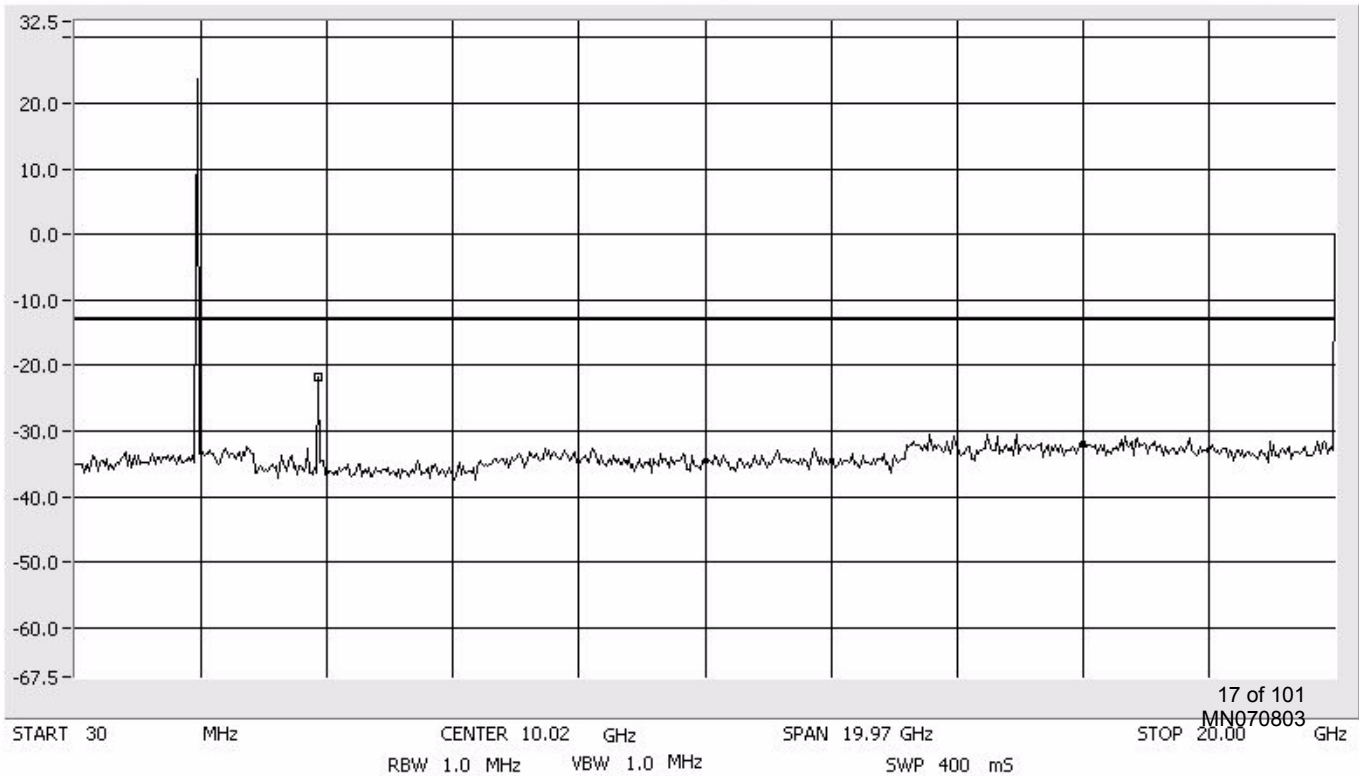
Conducted Emissions Mid PCS 1900 MHz

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

ATTEN 10 dB
RL 32.5 dBm

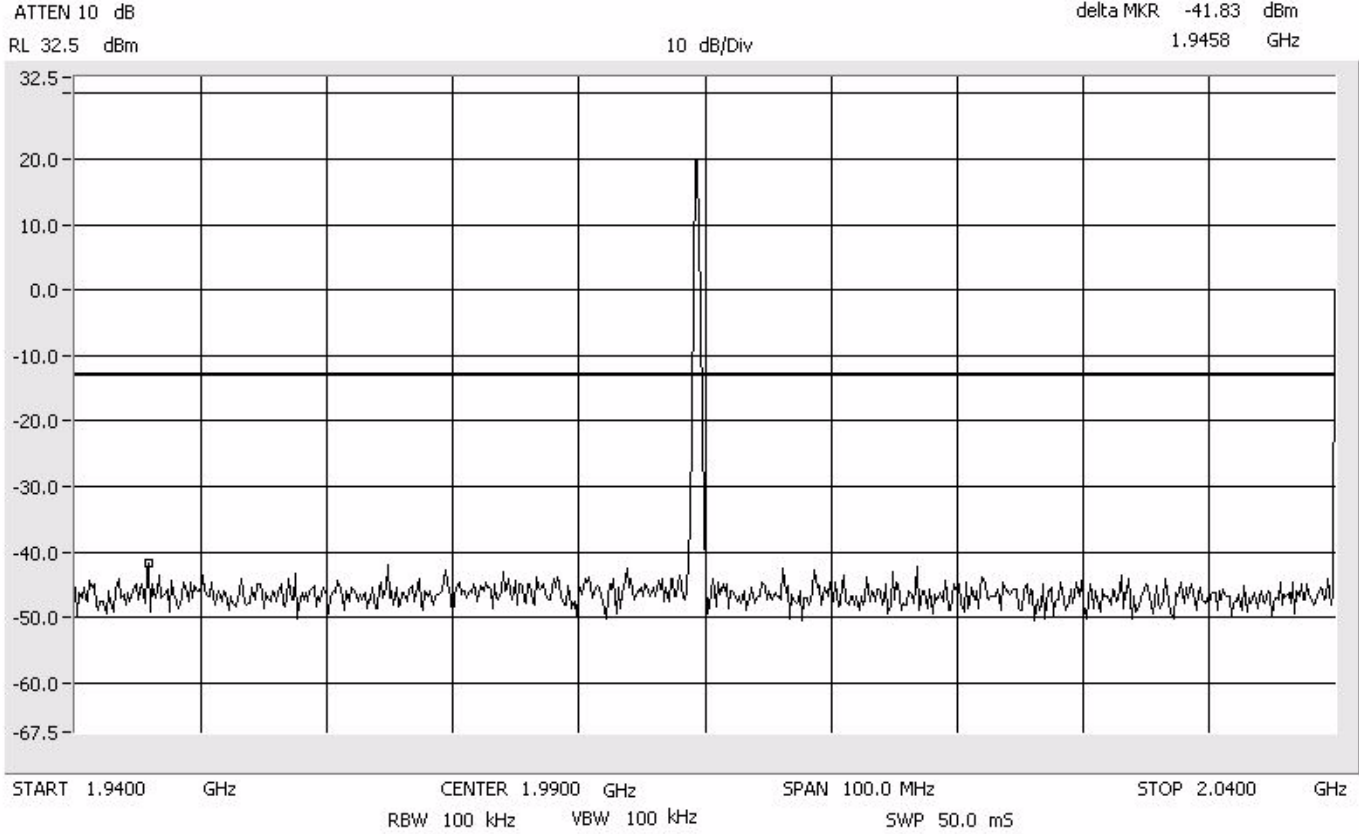
delta MKR -21.67 dBm
3.89 GHz

10 dB/Div



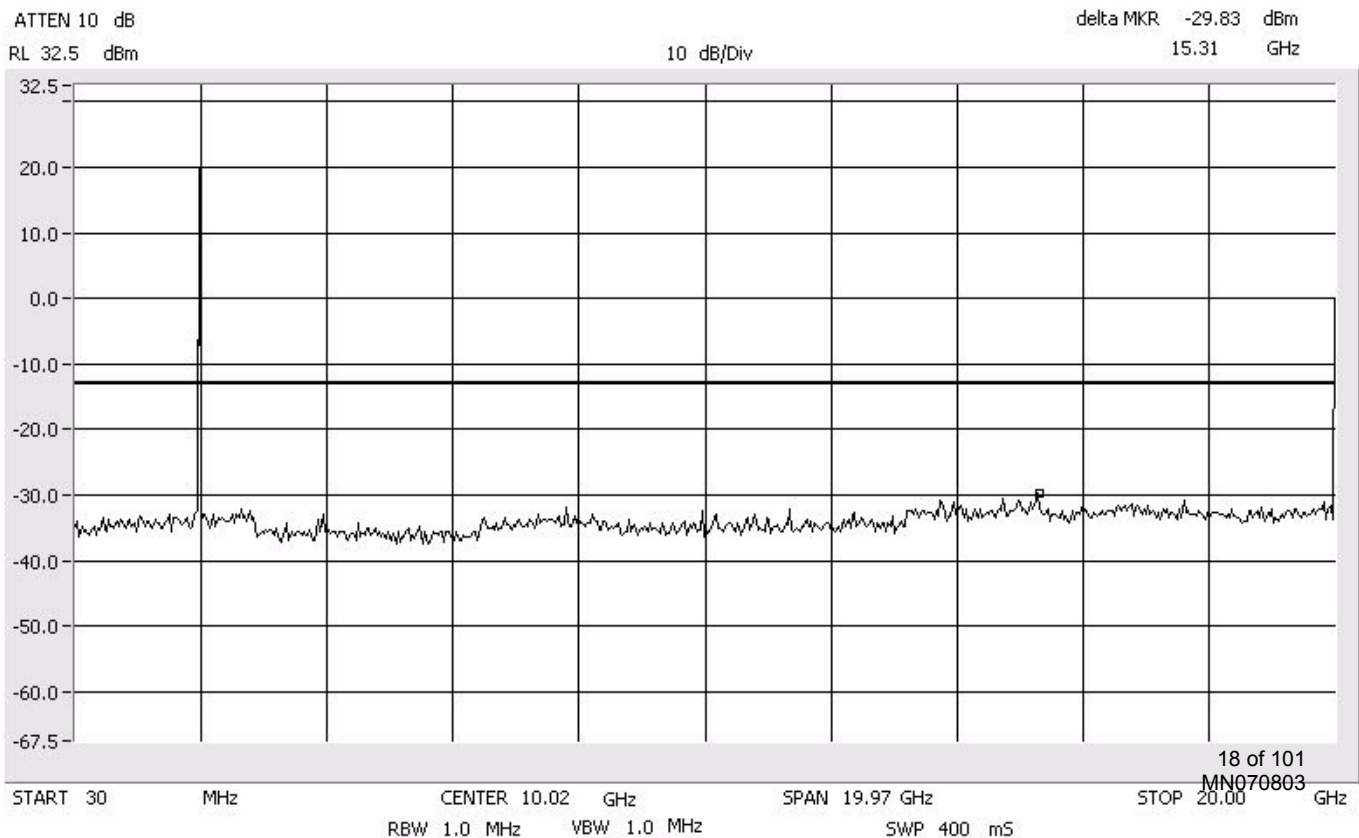
Conducted Emissions High PCS 1900 MHz

Center: 1990.0 MHz
Span: 100 MHz
RBW/VBW: 100 kHz



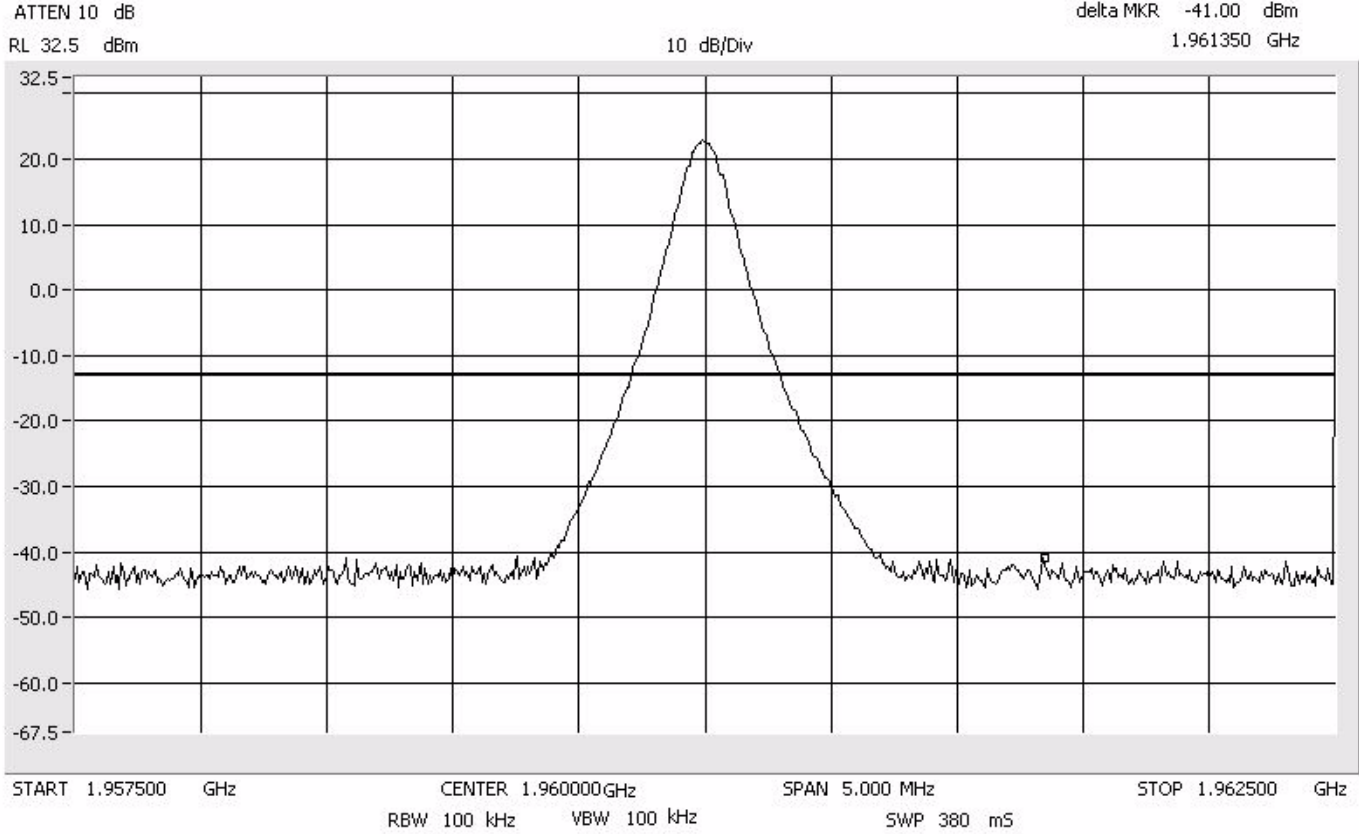
Conducted Emissions High PCS 1900 MHz

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



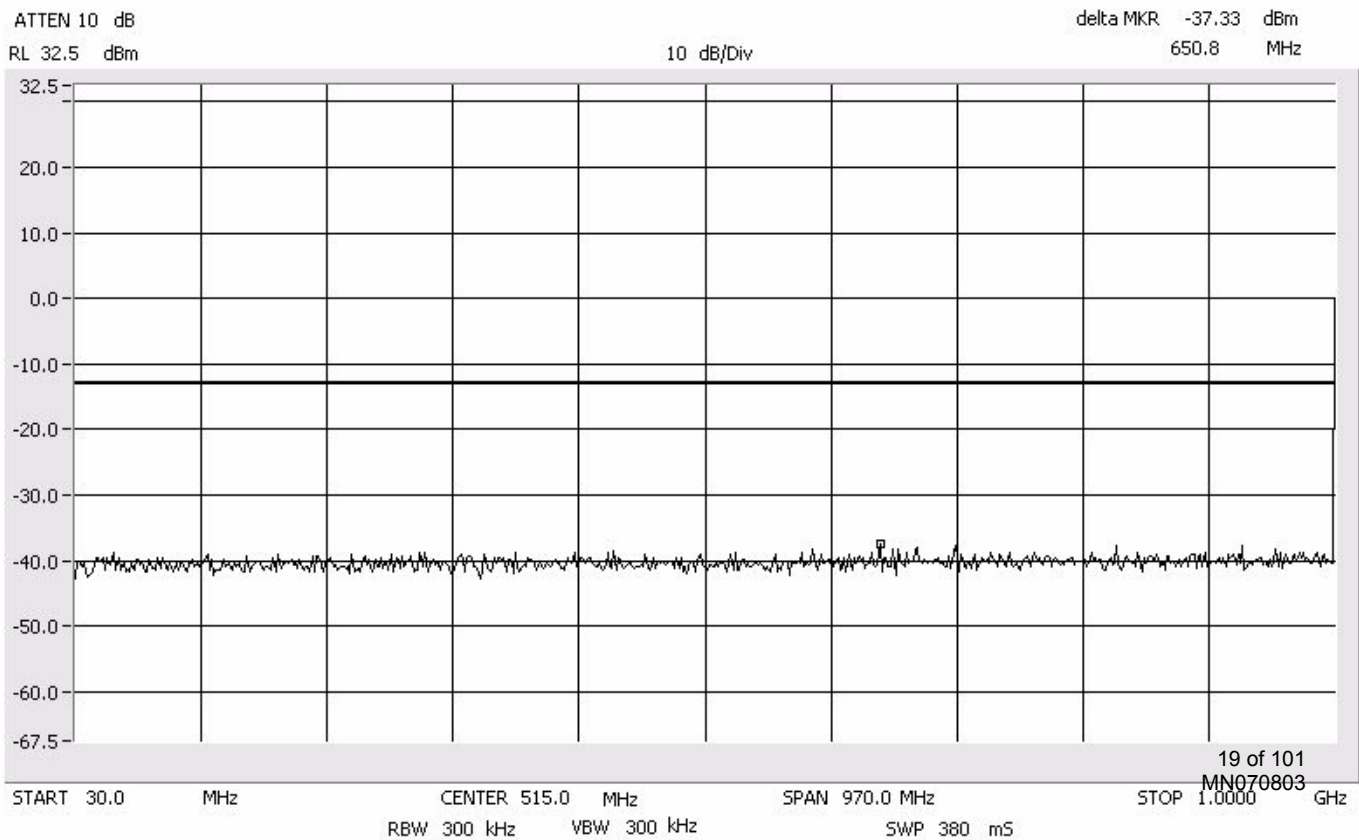
Conducted Emissions TDMA 1900 MHz

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



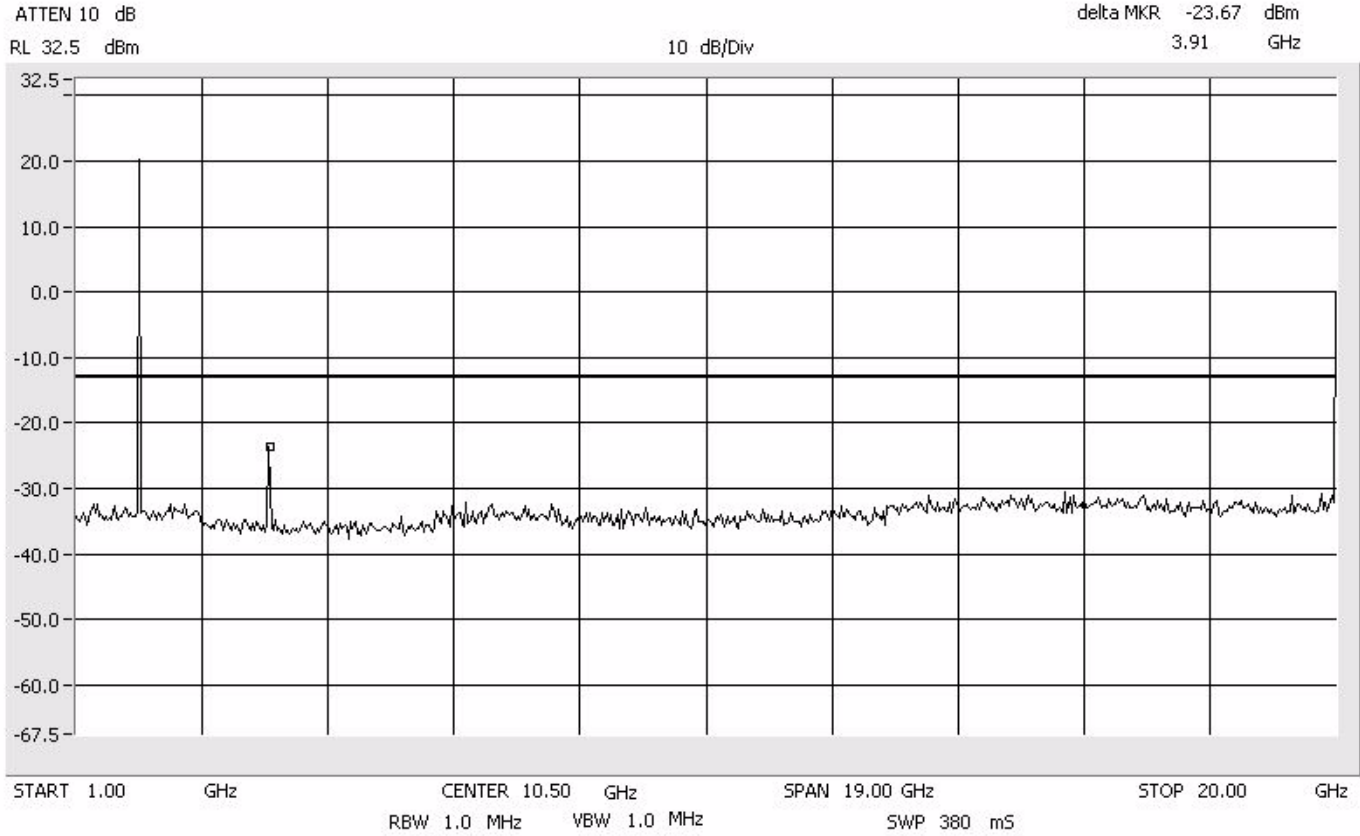
Conducted Emissions TDMA 1900 MHz

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



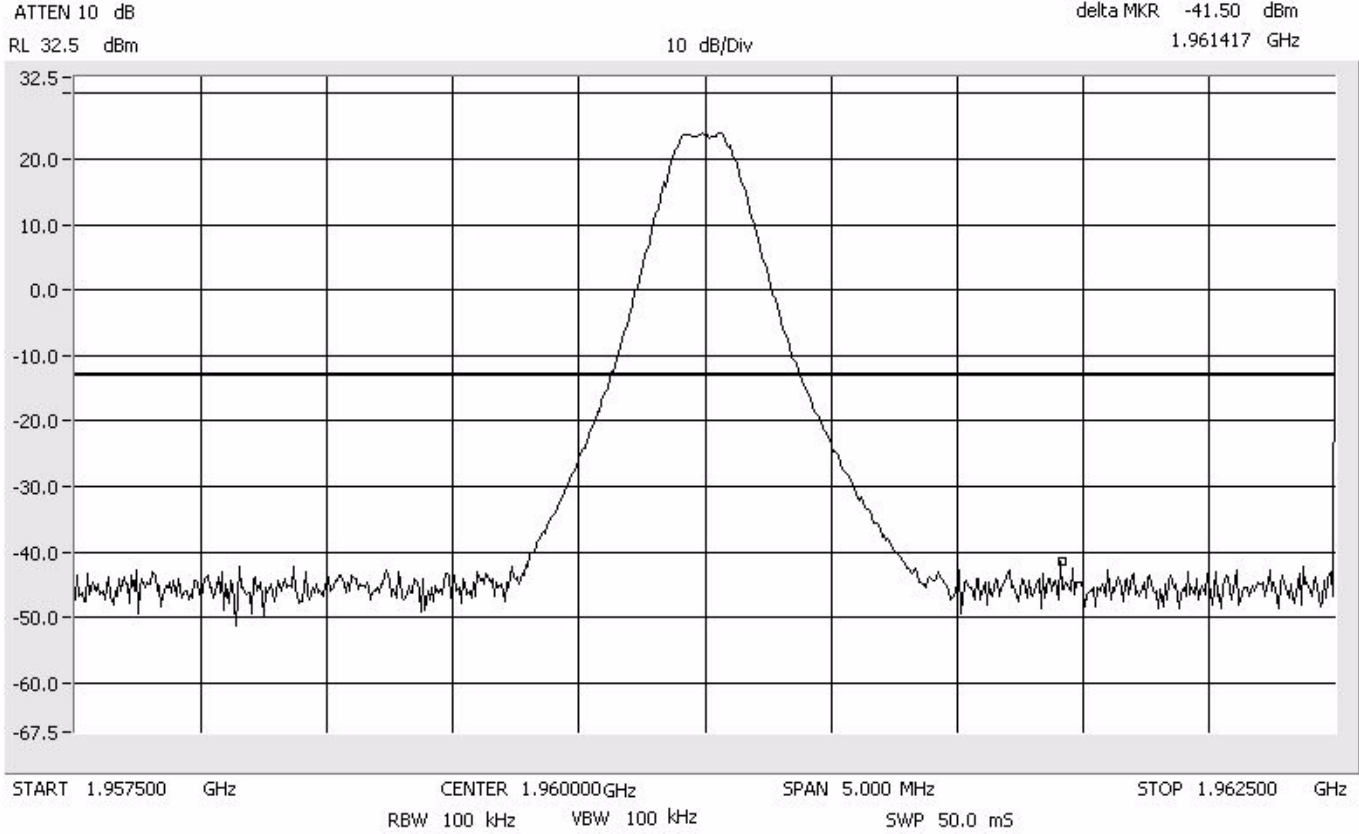
Conducted Emissions TDMA 1900 MHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz



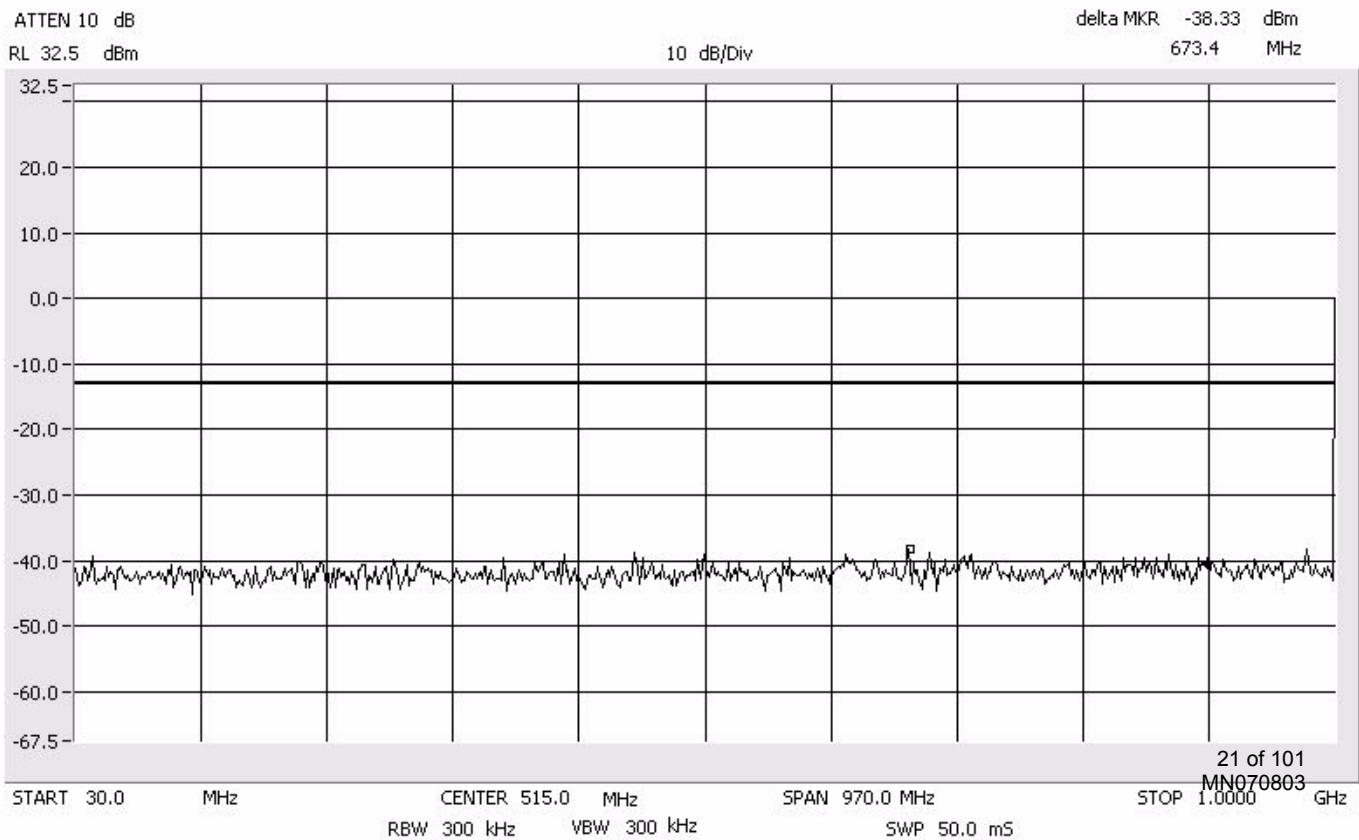
Conducted Emissions GSM 1900 MHz

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



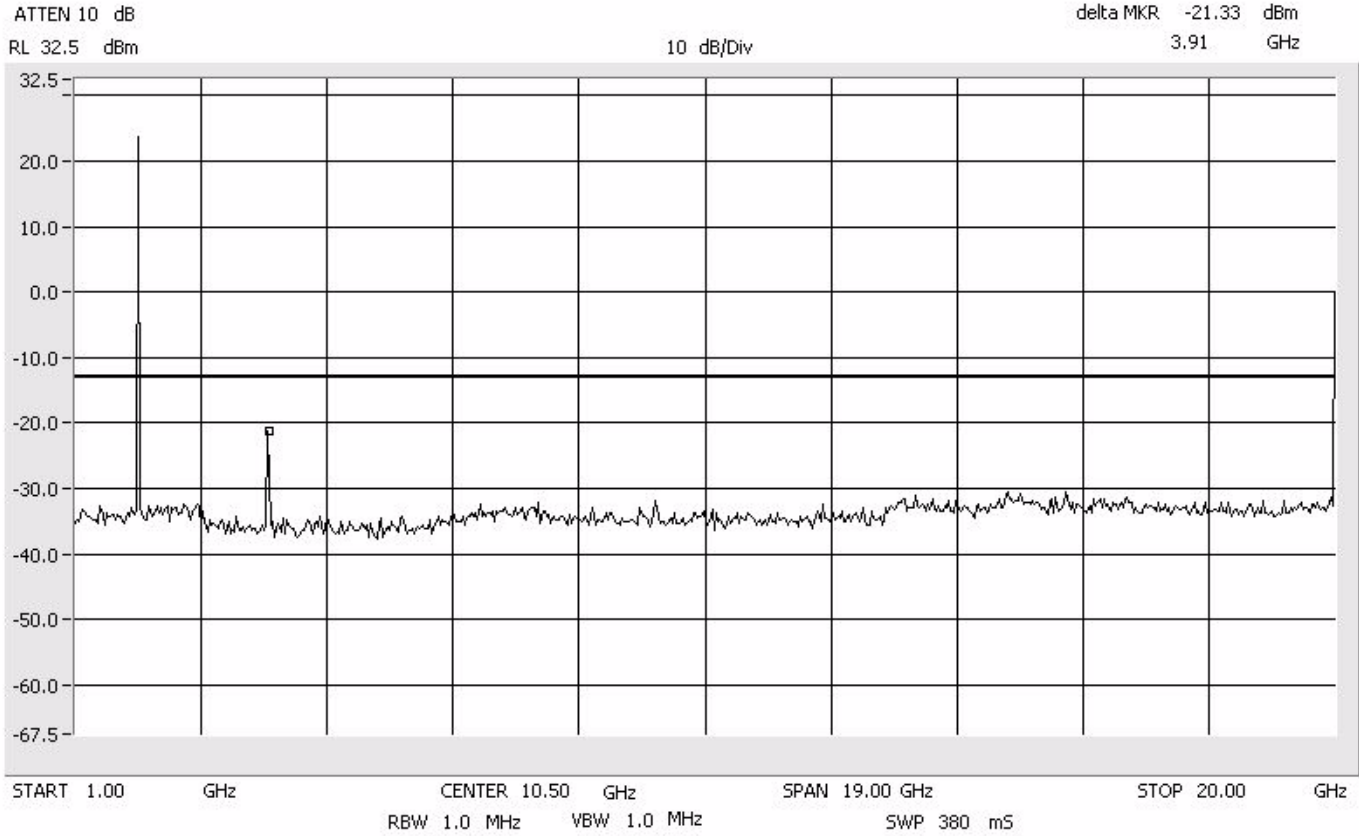
Conducted Emissions GSM 1900 MHz

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



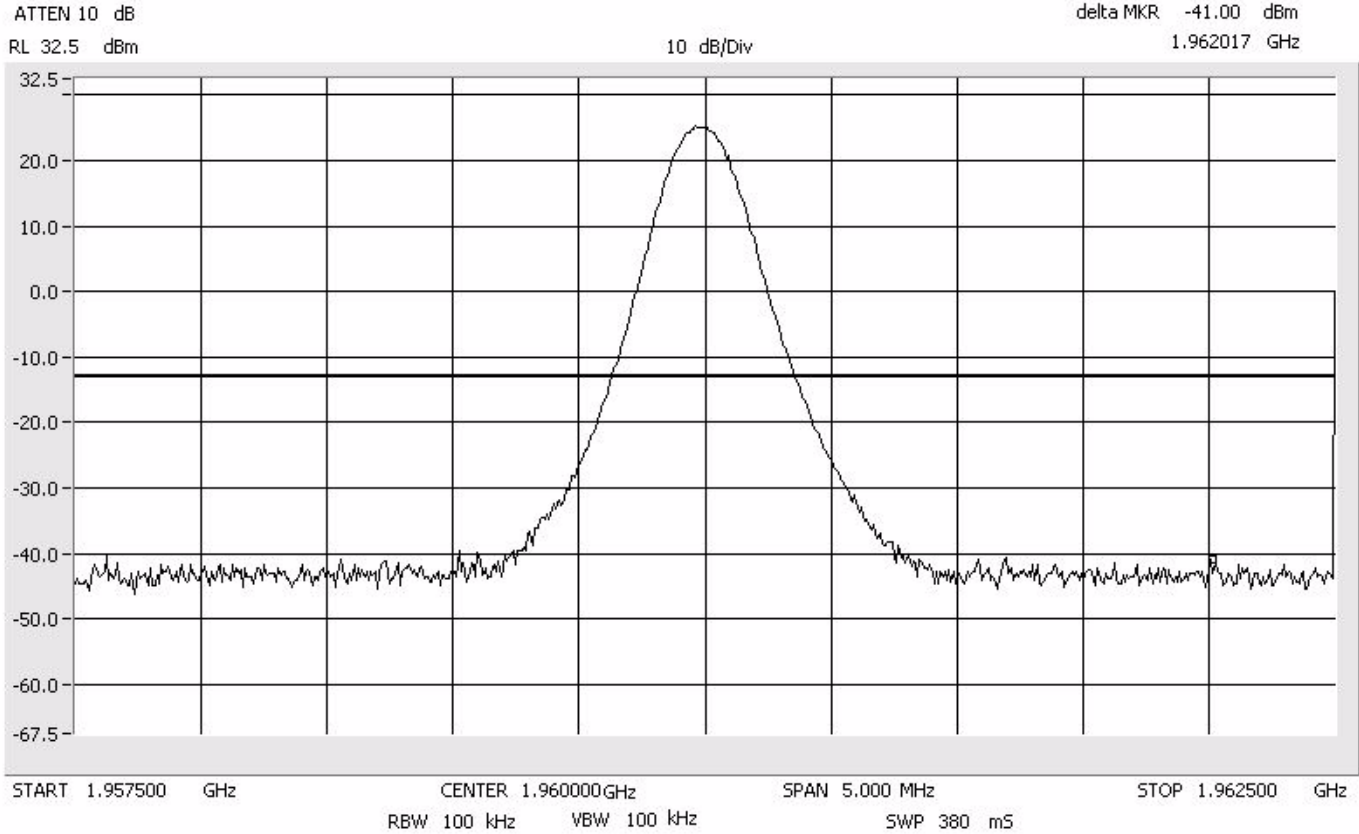
Conducted Emissions GSM 1900 MHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz



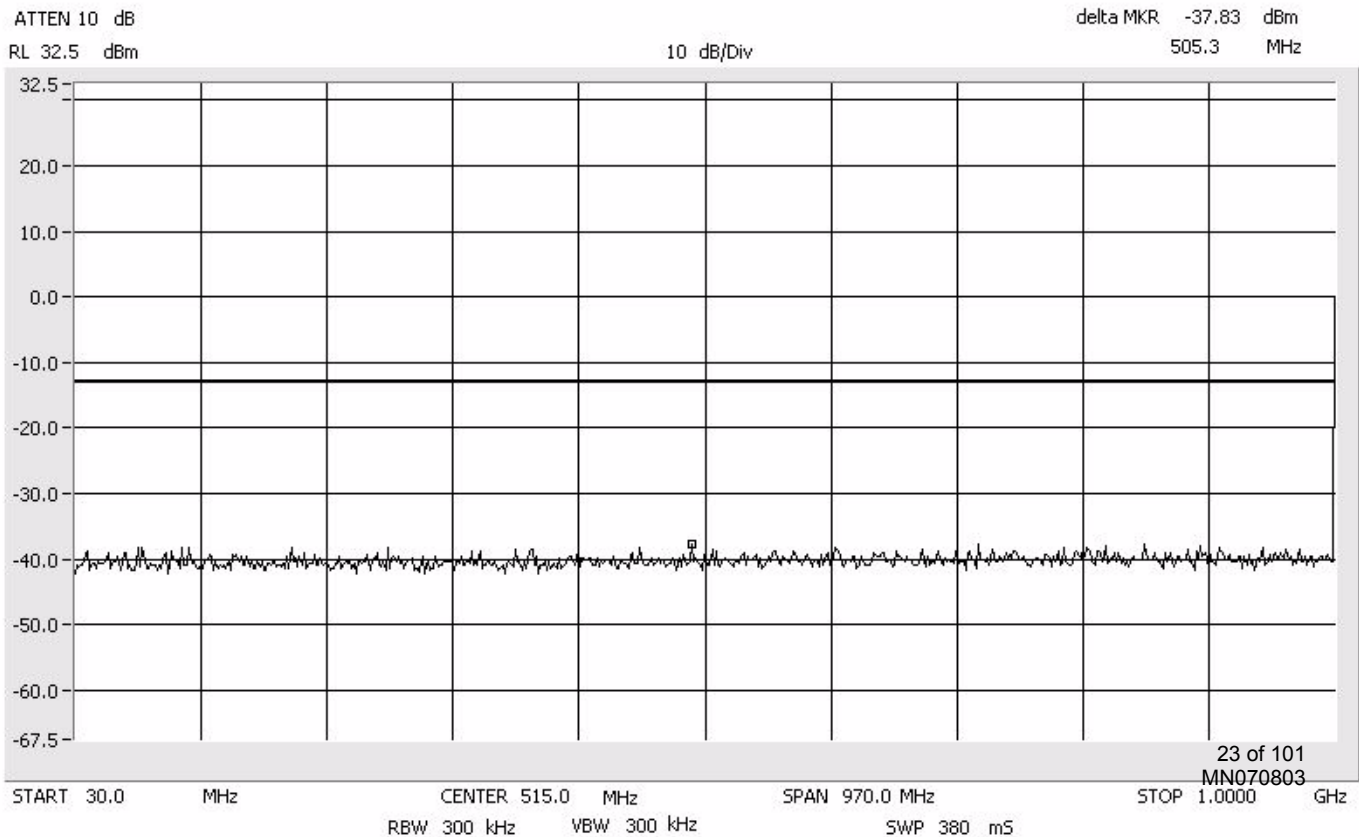
Conducted Emissions EDGE 1900 MHz

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



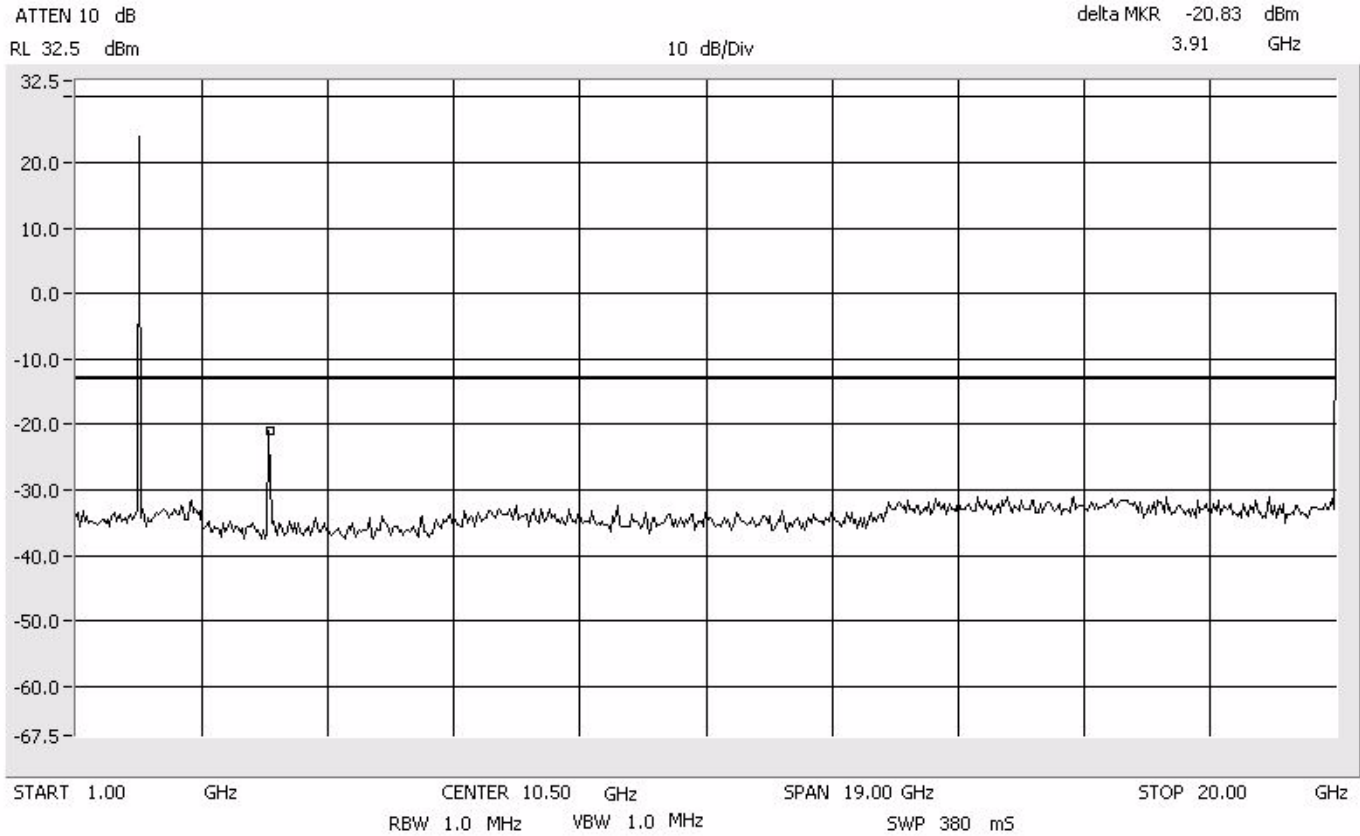
Conducted Emissions EDGE 1900 MHz

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



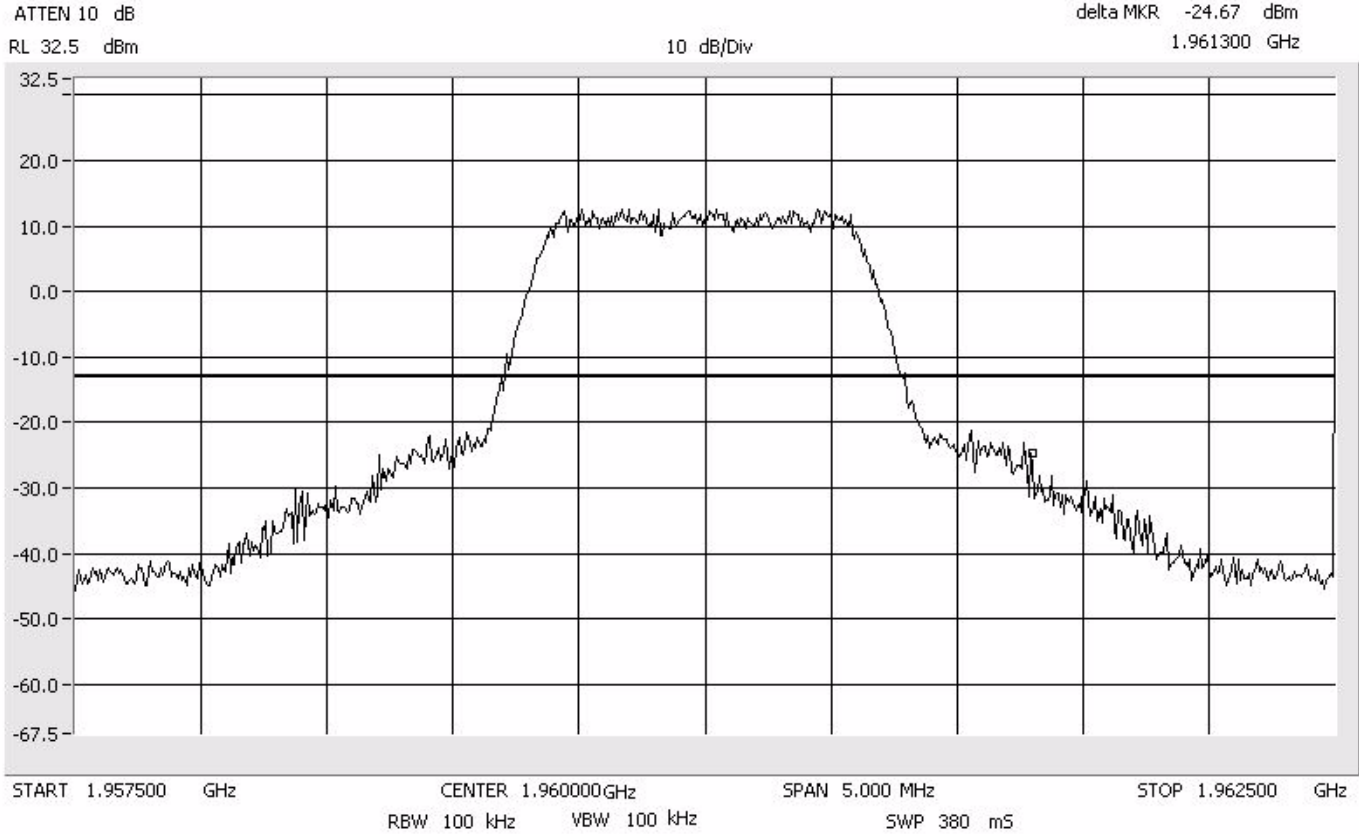
Conducted Emissions EDGE 1900 MHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz



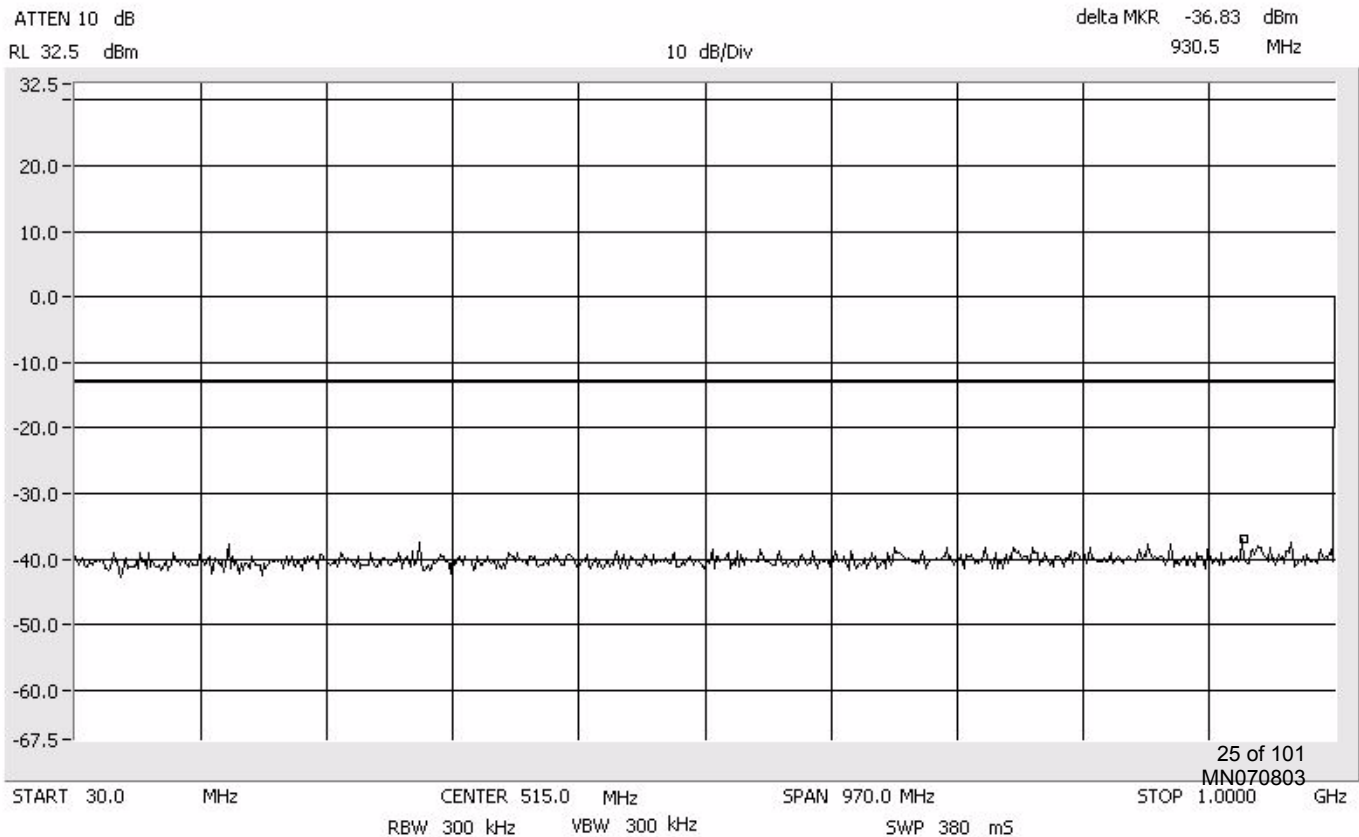
Conducted Emissions CDMA 1900 MHz

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



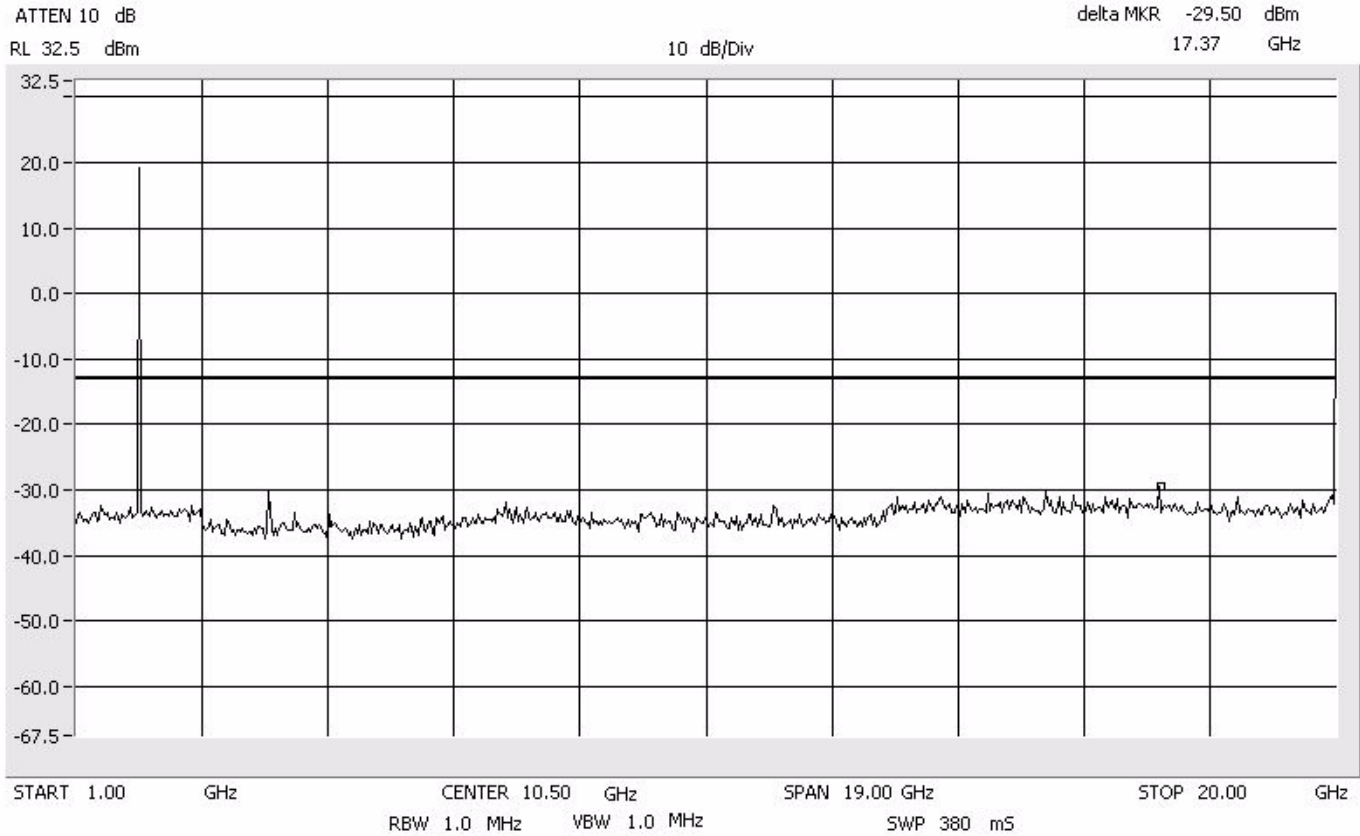
Conducted Emissions CDMA 1900 MHz

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



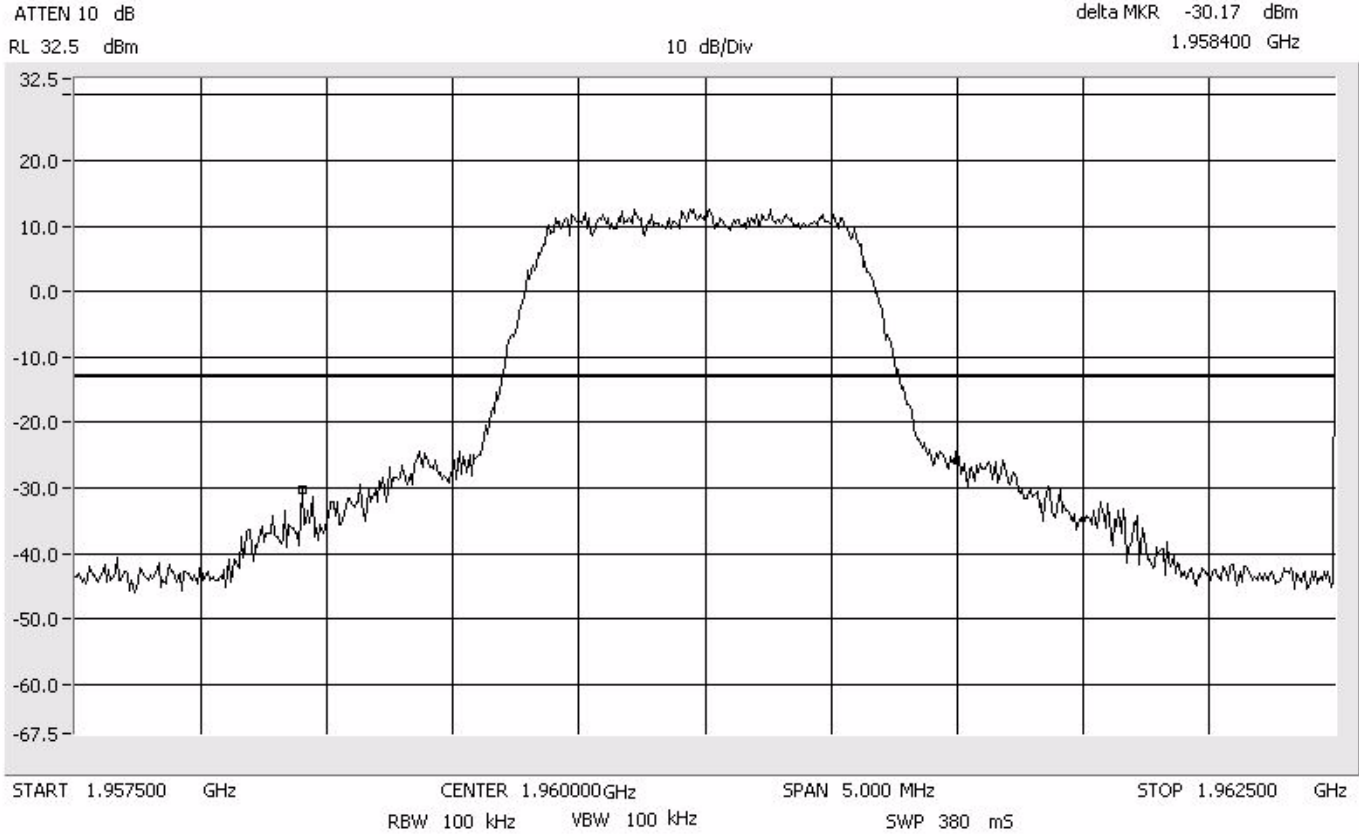
Conducted Emissions CDMA 1900 MHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz



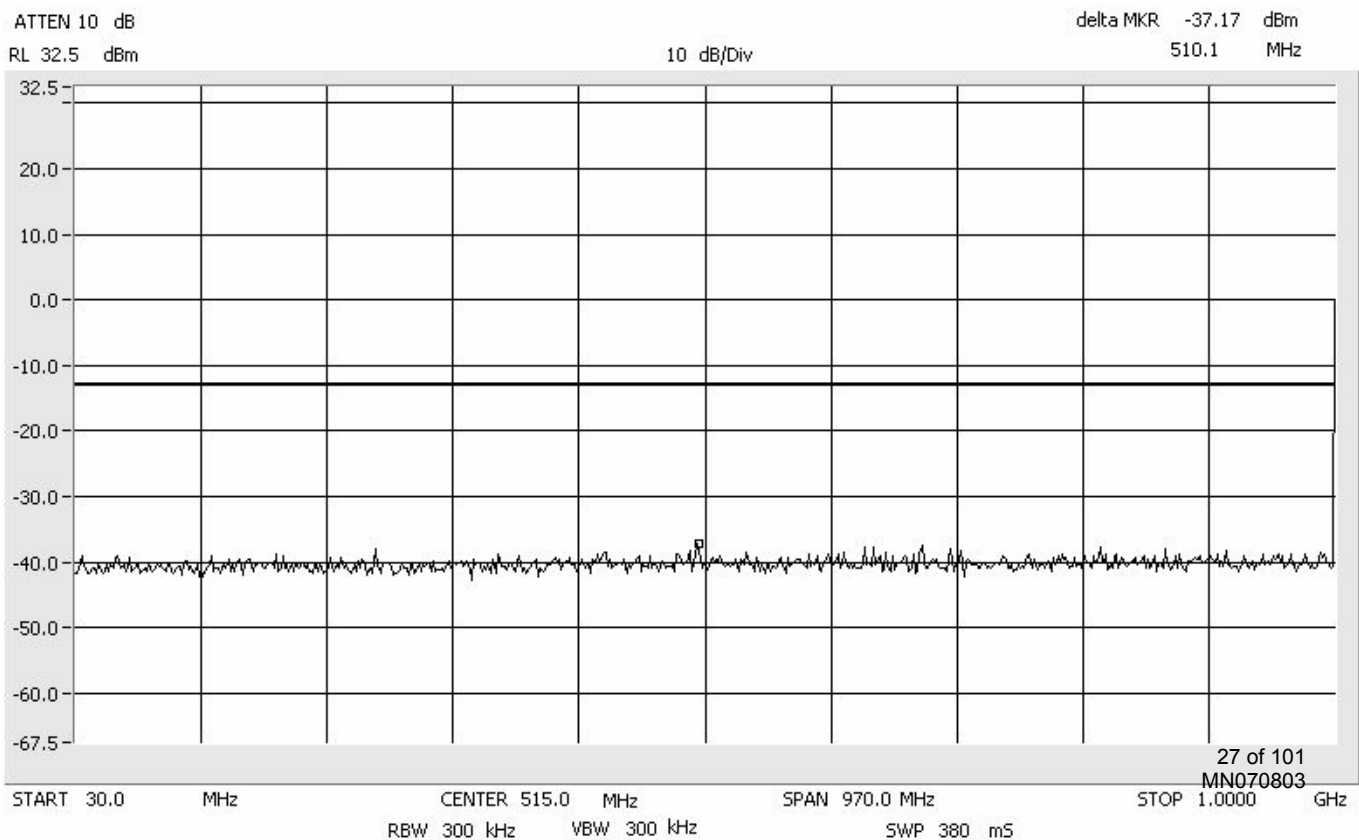
Conducted Emissions EVDO 1900 MHz

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



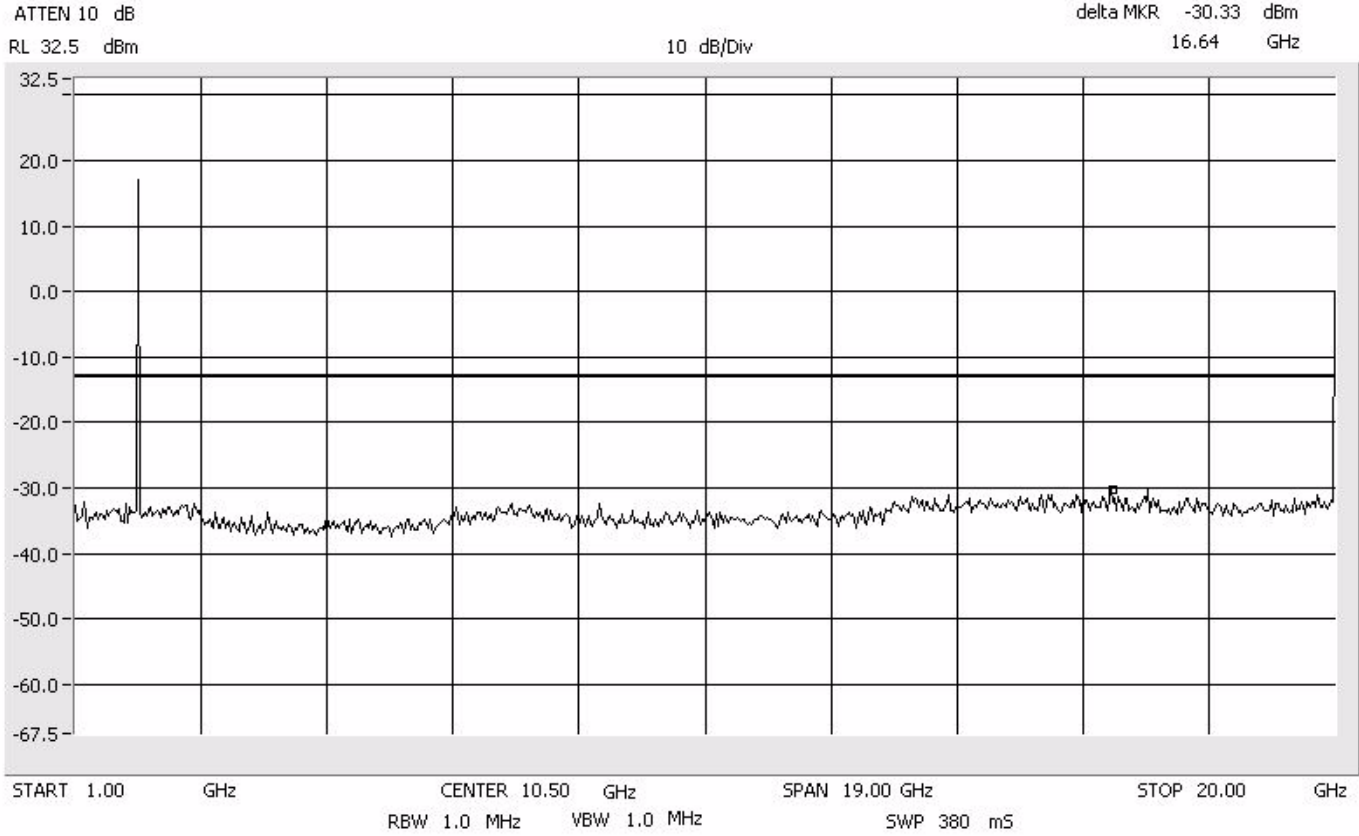
Conducted Emissions EVDO 1900 MHz

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



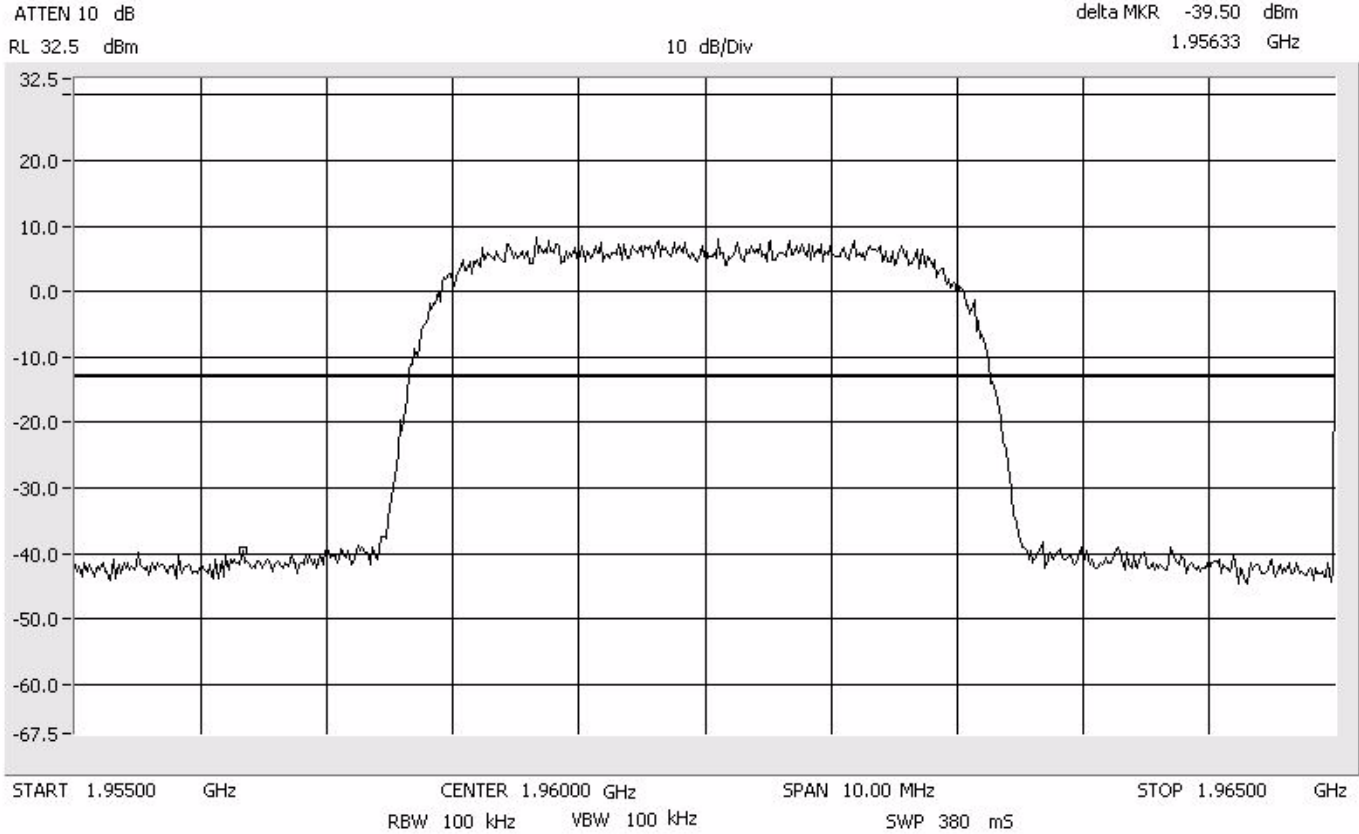
Conducted Emissions EVDO 1900 MHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz



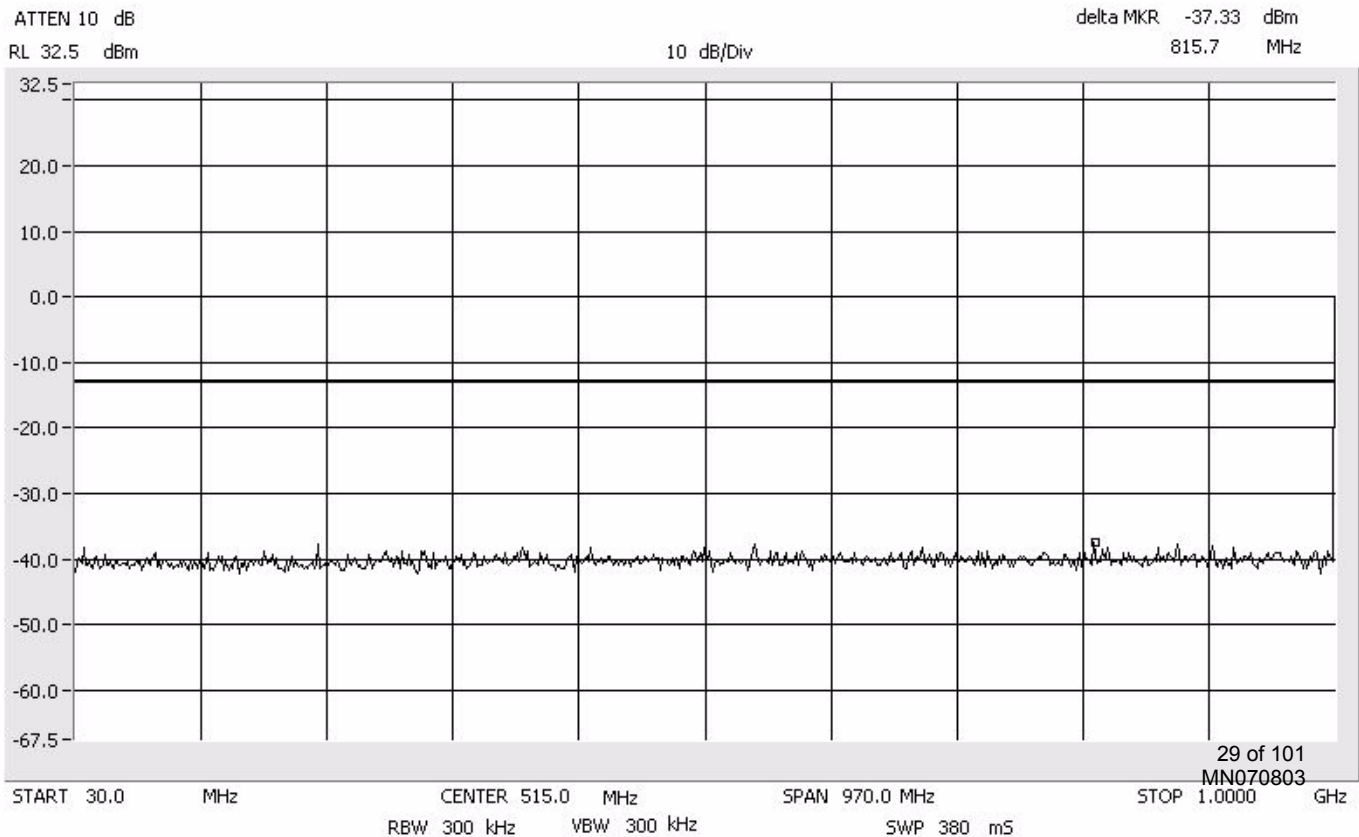
Conducted Emissions W-CDMA 1900 MHz

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



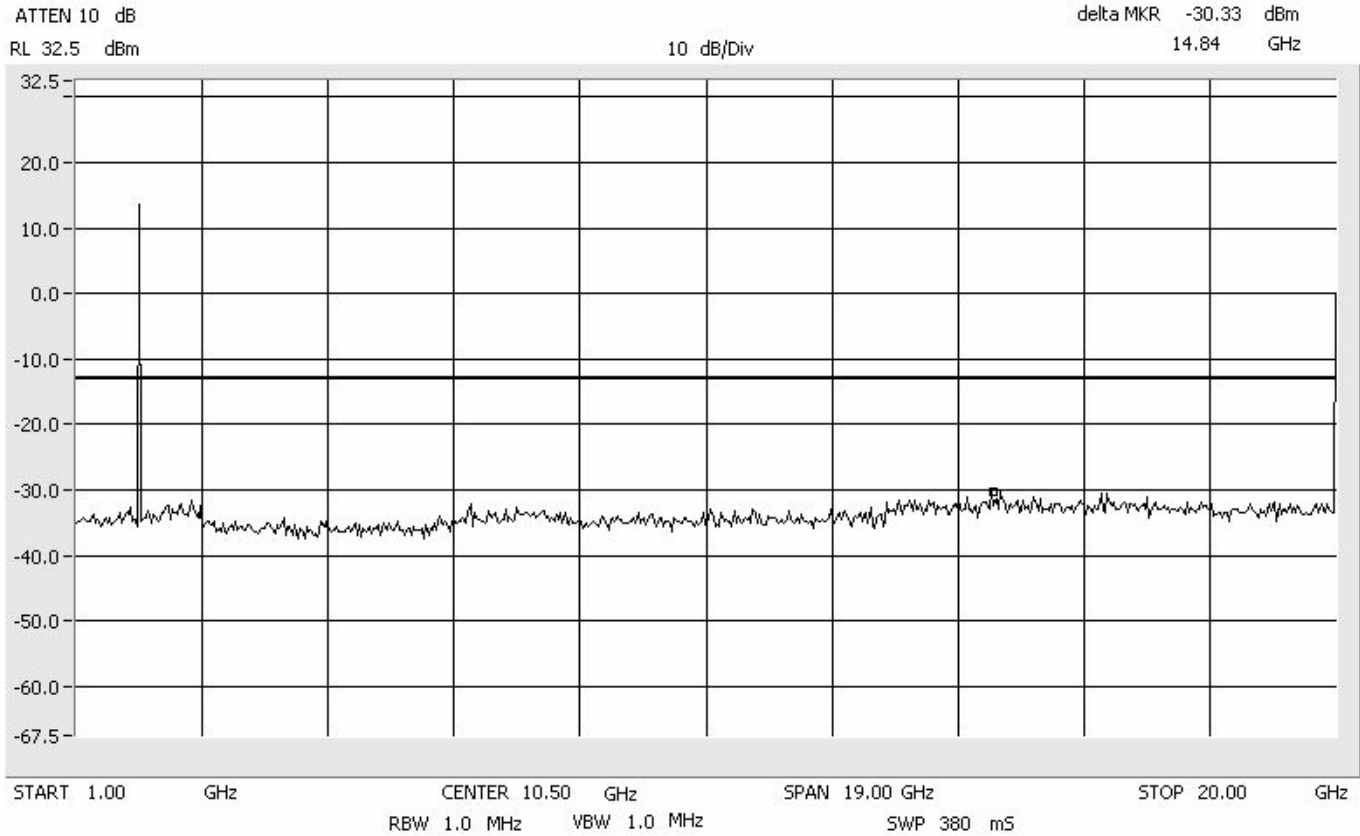
Conducted Emissions W-CDMA 1900 MHz

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



Conducted Emissions W-CDMA 1900 MHz

1 GHz to 20 GHz
RBW/VBW: 1 MHz



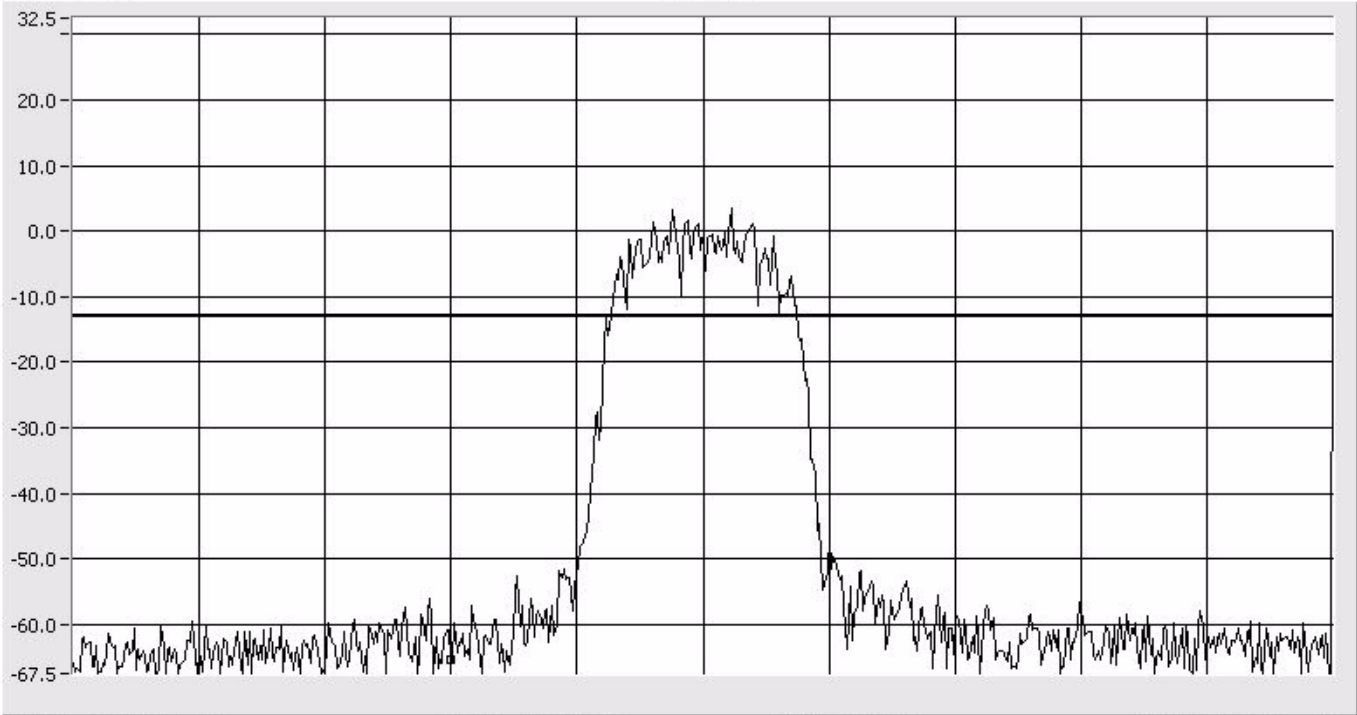
Band Edge TDMA

Center: 1930.04
Span: 200 kHz
RBW: 1 kHz
VBW: 3 kHz

ATTEN 10 dB
RL 32.5 dBm

delta MKR -65.33 dBm
1.930000 GHz

10 dB/Div



START 1.9299400 GHz CENTER 1.930040GHz SPAN 200.0 kHz STOP 1.9301400 GHz
RBW 1.0 kHz VBW 3.0 kHz SWP 380 mS

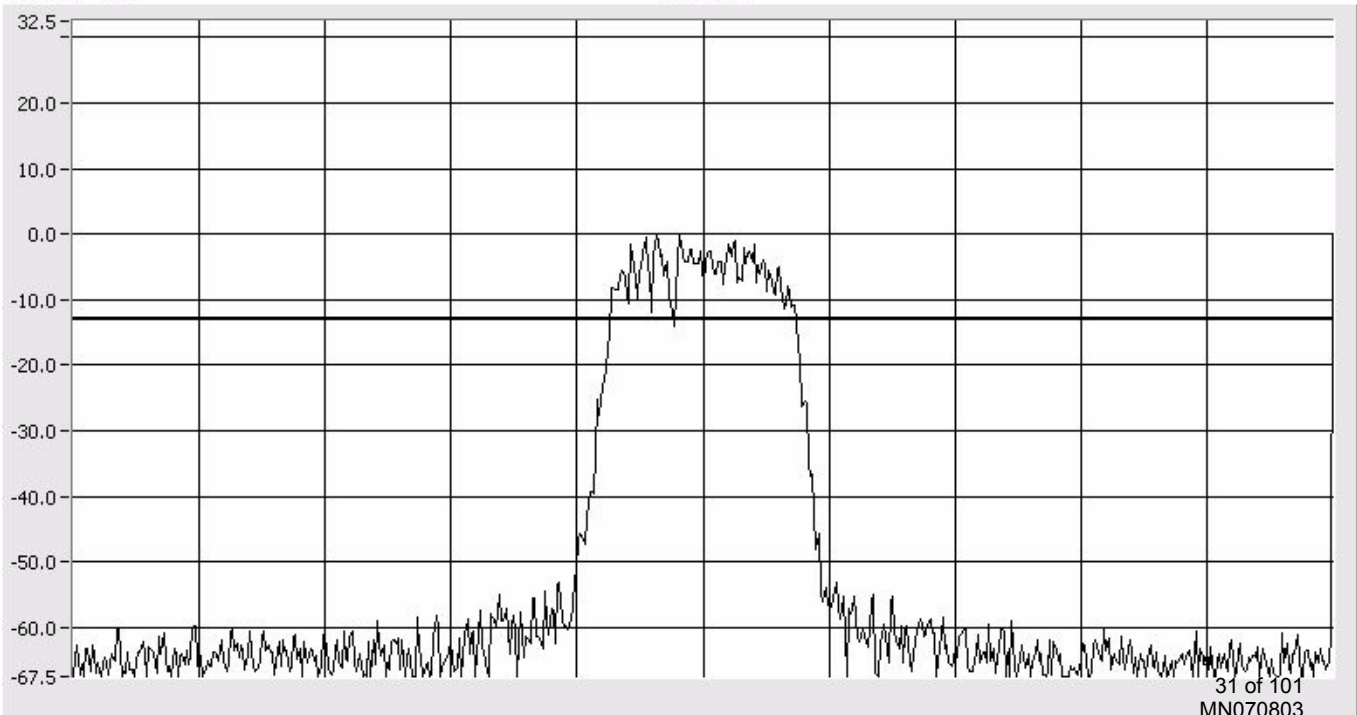
Band Edge TDMA

Center: 1989.92 MHz
Span: 200 kHz
RBW: 1 kHz
VBW: 3 kHz

ATTEN 10 dB
RL 32.5 dBm

delta MKR -65.00 dBm
1.990000 GHz

10 dB/Div



START 1.9898201 GHz CENTER 1.989920GHz SPAN 200.0 kHz STOP 1.9900201 GHz
RBW 1.0 kHz VBW 3.0 kHz SWP 380 mS

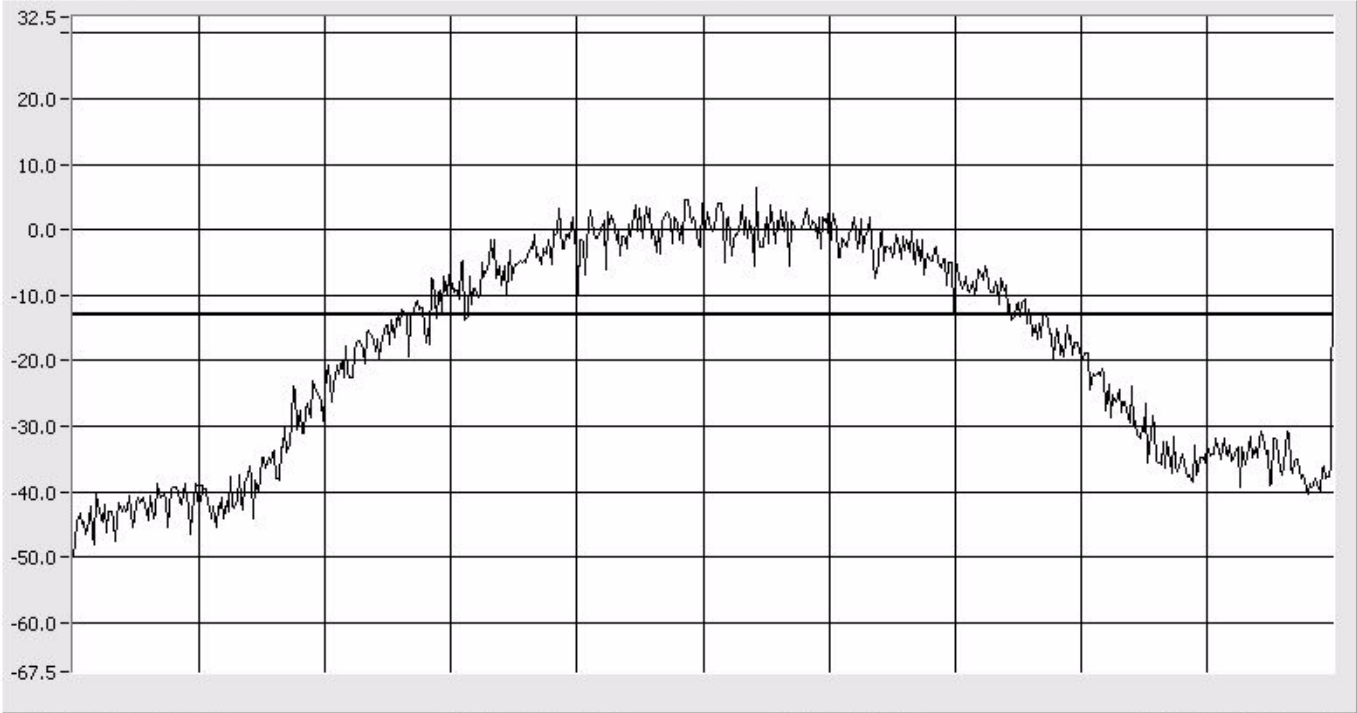
Band Edge GSM

Center: 1930.20
Span: 500 kHz
RBW: 3 kHz
VBW: 10 kHz

ATTEN 10 dB
RL 32.5 dBm

delta MKR -39.67 dBm
1.930000 GHz

10 dB/Div



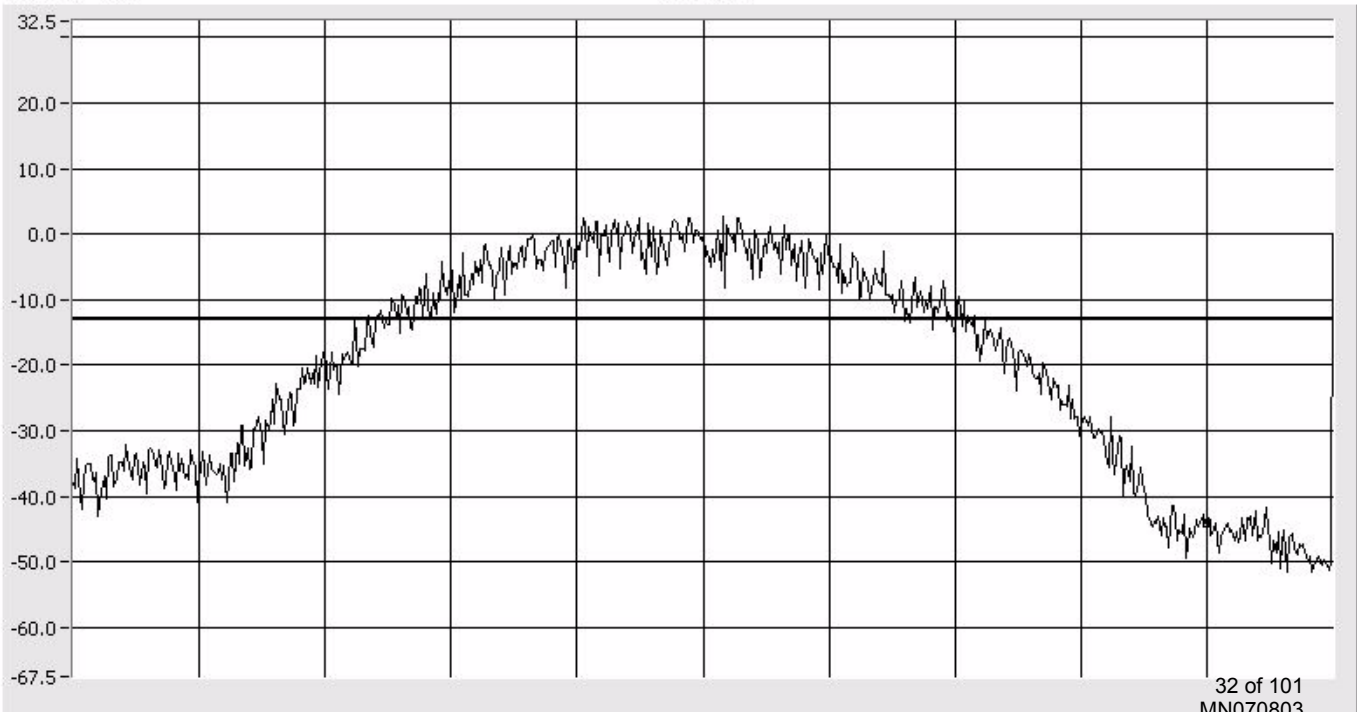
Band Edge GSM

Center: 1989.80 MHz
Span: 500 kHz
RBW: 3 kHz
VBW: 10 kHz

ATTEN 10 dB
RL 32.5 dBm

delta MKR -44.00 dBm
1.990000 GHz

10 dB/Div



32 of 101
MN070803

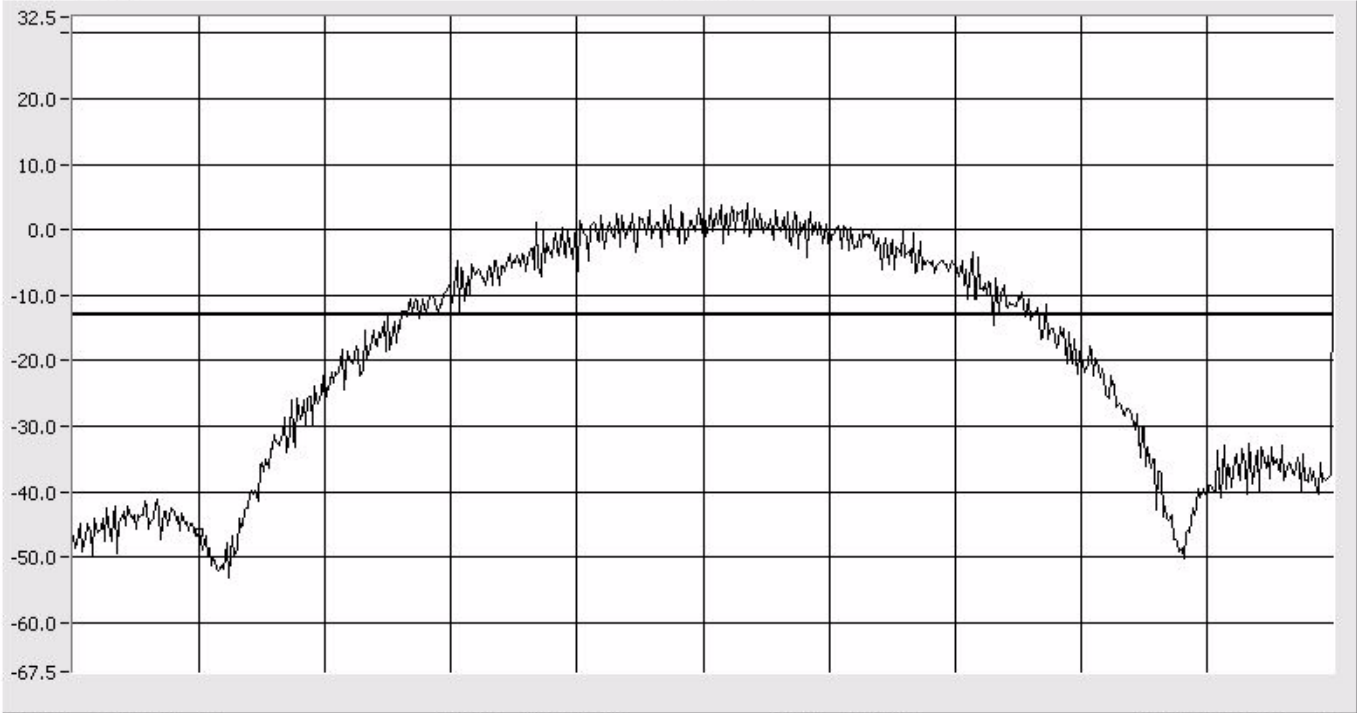
Band Edge EDGE

Center: 1930.20
Span: 500 kHz
RBW: 3 kHz
VBW: 10 kHz

ATTEN 10 dB
RL 32.5 dBm

delta MKR -46.17 dBm
1.930000 GHz

10 dB/Div



RBW 3.0 kHz VBW 10 kHz SWP 380 mS

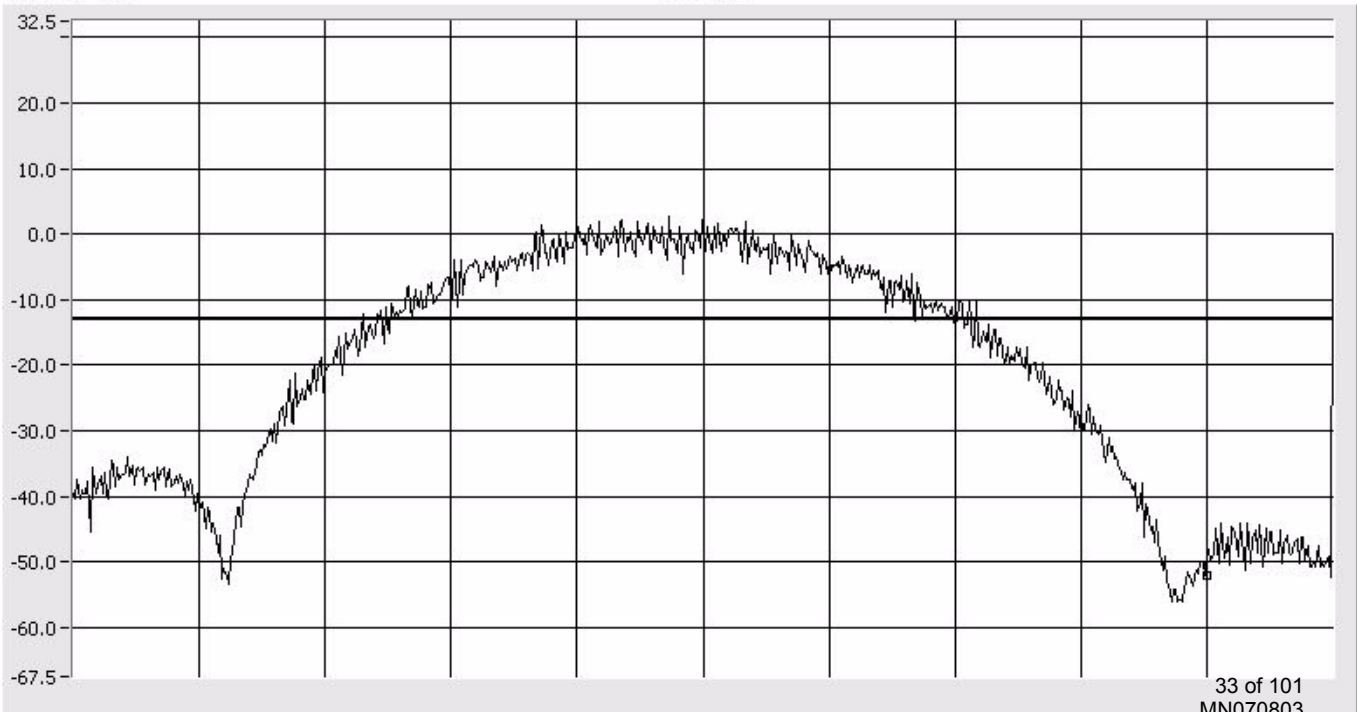
Band Edge EDGE

Center: 1989.80 MHz
Span: 500 kHz
RBW: 3 kHz
VBW: 10 kHz

ATTEN 10 dB
RL 32.5 dBm

delta MKR -52.00 dBm
1.990000 GHz

10 dB/Div



RBW 3.0 kHz VBW 10 kHz SWP 380 mS

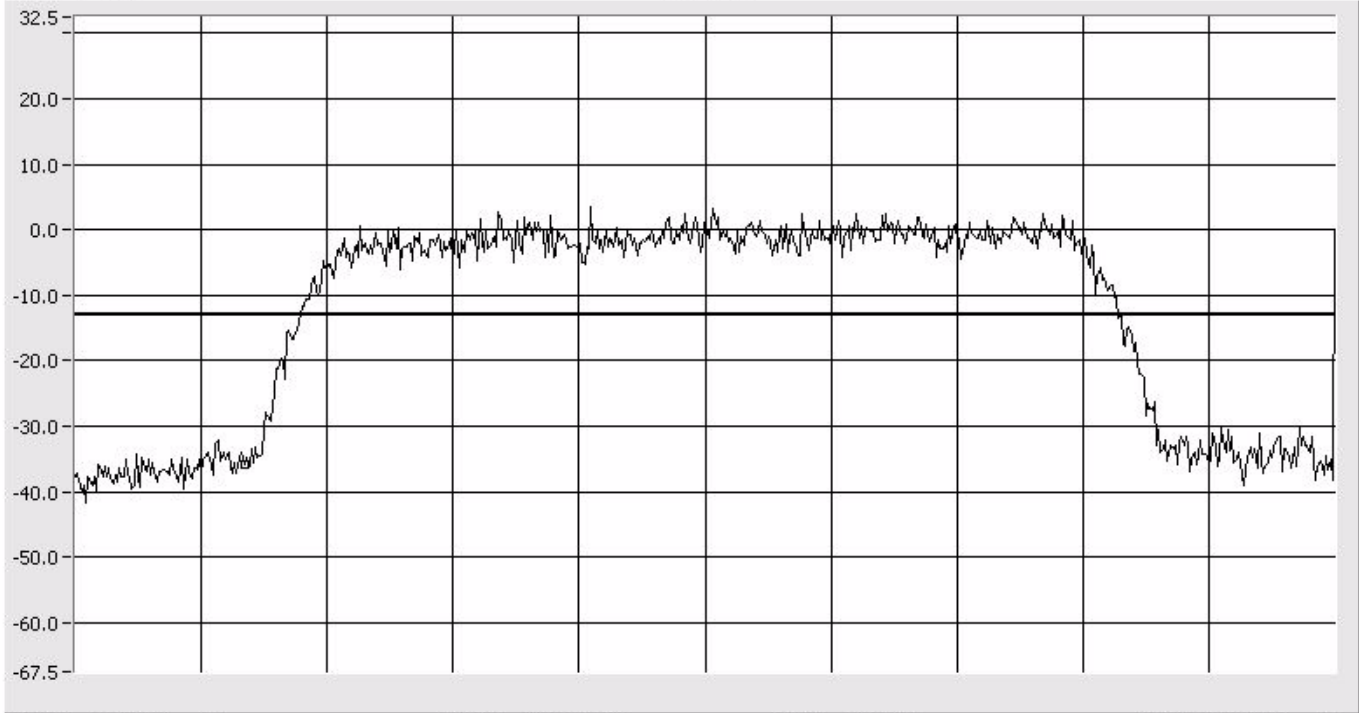
Band Edge CDMA

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

ATTEN 10 dB
RL 32.5 dBm

delta MKR -35.83 dBm
1.930000 GHz

10 dB/Div



RBW 10 kHz VBW 10 kHz SWP 380 mS

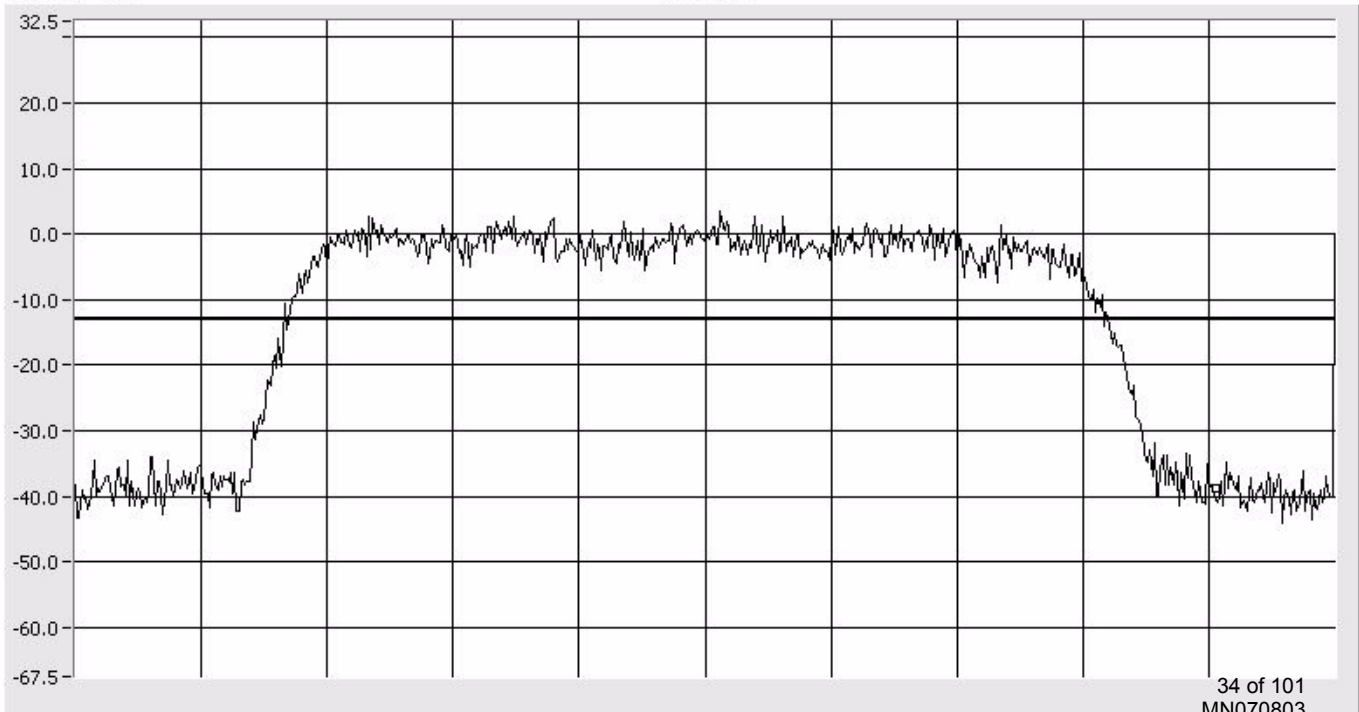
Band Edge CDMA

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

ATTEN 10 dB
RL 32.5 dBm

delta MKR -38.83 dBm
1.990000 GHz

10 dB/Div



RBW 10 kHz VBW 10 kHz SWP 380 mS

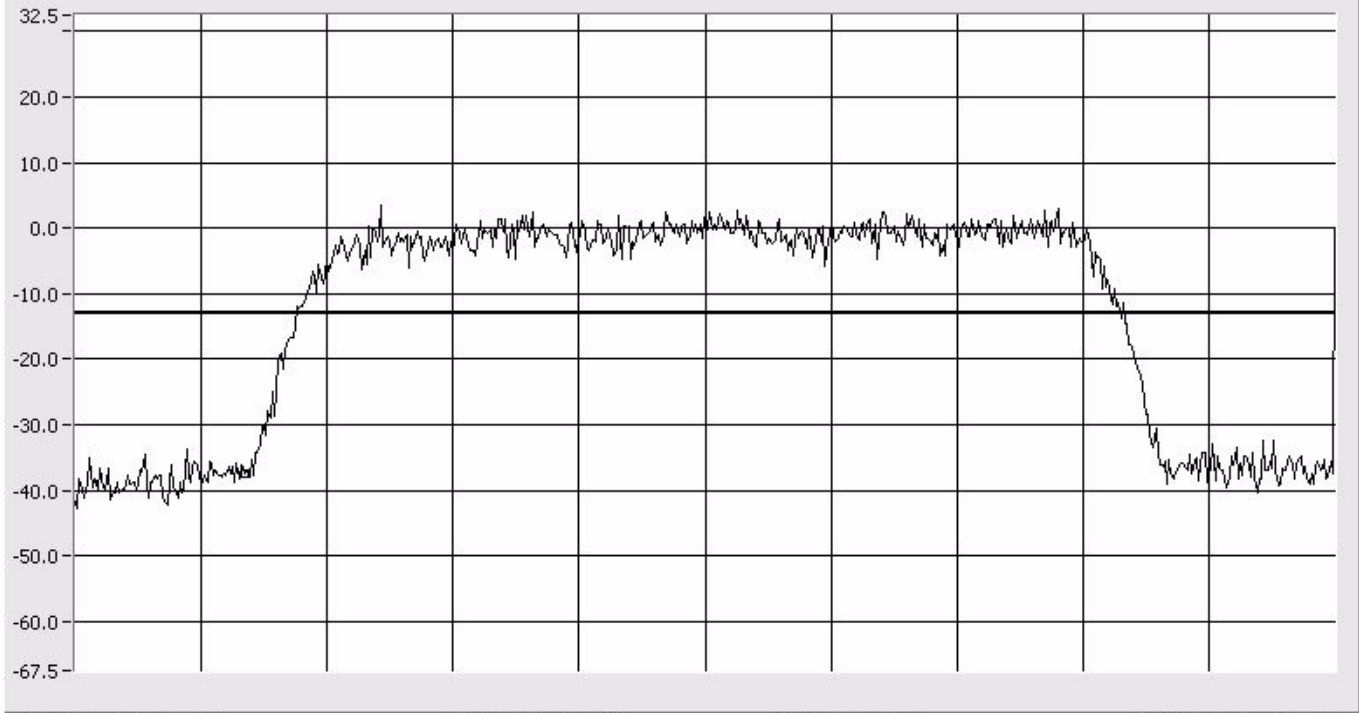
Band Edge EVDO

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

ATTEN 10 dB
RL 32.5 dBm

delta MKR -37.50 dBm
1.930000 GHz

10 dB/Div



START 1.929730 GHz CENTER 1.930730 GHz SPAN 2.000 MHz STOP 1.931730 GHz
RBW 10 kHz VBW 10 kHz SWP 380 mS

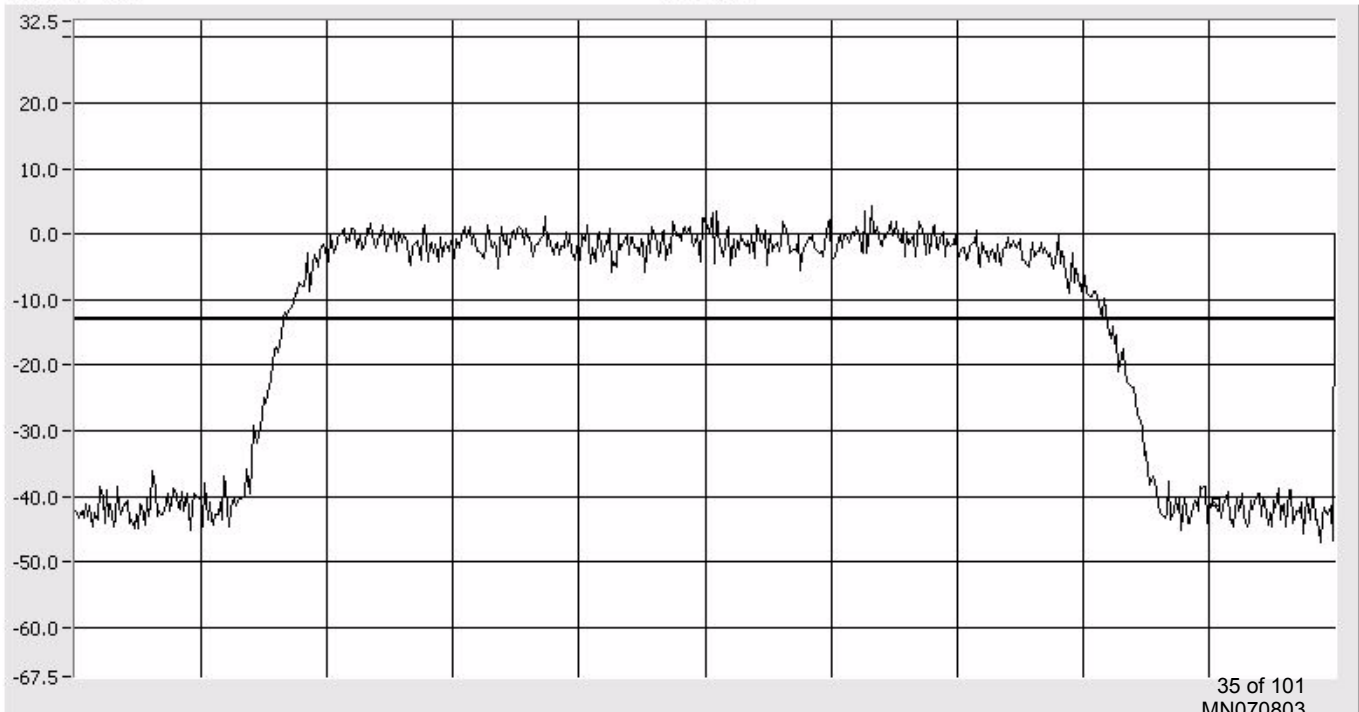
Band Edge EVDO

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

ATTEN 10 dB
RL 32.5 dBm

delta MKR -40.83 dBm
1.990000 GHz

10 dB/Div



START 1.988190 GHz CENTER 1.989190 GHz SPAN 2.000 MHz STOP 1.990190 GHz
RBW 10 kHz VBW 10 kHz SWP 380 mS

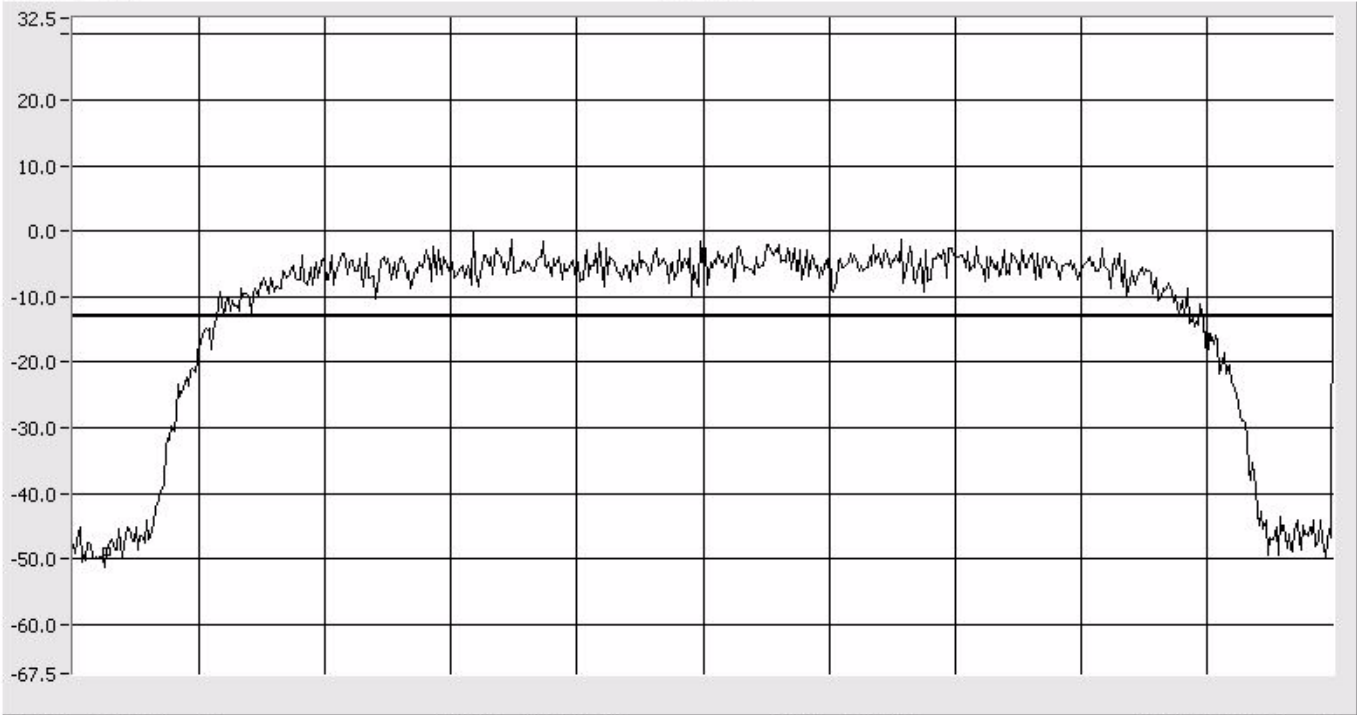
Band Edge W-CDMA

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

ATTEN 10 dB
RL 32.5 dBm

delta MKR -49.00 dBm
1.929997 GHz

10 dB/Div



RBW 10 kHz VBW 10 kHz SWP 380 mS

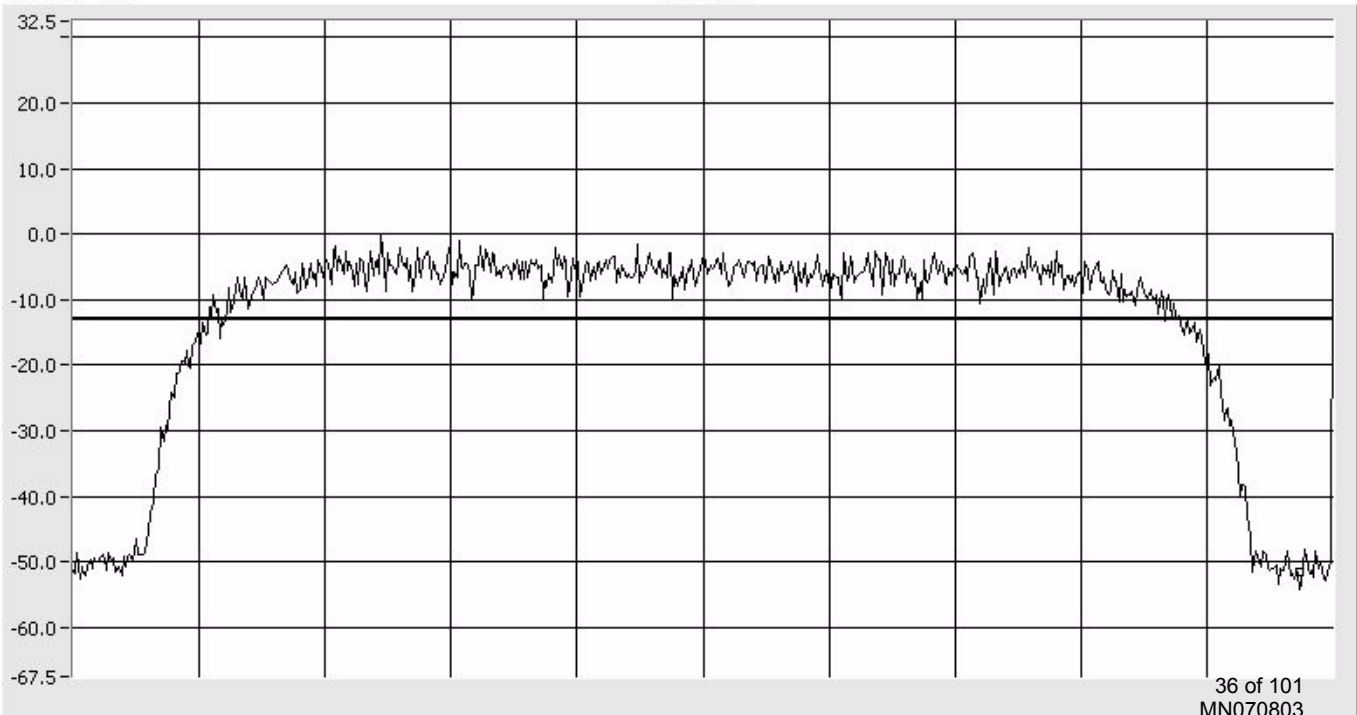
Band Edge W-CDMA

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

ATTEN 10 dB
RL 32.5 dBm

delta MKR -51.67 dBm
1.990003 GHz

10 dB/Div



RBW 10 kHz VBW 10 kHz SWP 380 mS

Conducted Output Power Test for ADC Inc. Bi-Directional Amplifier – PCS Model Number RPT-SHAAA12000

[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 32.5 dB to compensate for attenuators and cable loss between the EUT and the power meter.

TDMA **115.35 mWatts**

Carrier Frequency	Carrier Output
1930.2 MHz	<u>20.62</u> dBm
1960.0 MHz	<u>20.10</u> dBm
1989.8 MHz	<u>20.07</u> dBm

GSM **106.17 mWatts**

Carrier Frequency	Carrier Output
1930.2 MHz	<u>19.83</u> dBm
1960.0 MHz	<u>20.26</u> dBm
1989.8 MHz	<u>19.87</u> dBm

EDGE **105.93 mWatts**

Carrier Frequency	Carrier Output
1930.2 MHz	<u>20.25</u> dBm
1960.0 MHz	<u>19.76</u> dBm
1989.8 MHz	<u>19.98</u> dBm

CDMA **113.76 Watts**

Carrier Frequency	Carrier Output
1930.8 MHz	<u>19.85</u> dBm
1960.0 MHz	<u>19.77</u> dBm
1989.2 MHz	<u>20.56</u> dBm

EVDO **111.43 Watts**

Carrier Frequency	Carrier Output
1930.8 MHz	<u>19.88</u> dBm
1960.0 MHz	<u>20.34</u> dBm
1989.2 MHz	<u>20.47</u> dBm

W-CDMA **106.66 Watts**

Carrier Frequency	Carrier Output
1932.6 MHz	<u>19.55</u> dBm
1960.0 MHz	<u>20.28</u> dBm
1987.4 MHz	<u>19.87</u> dBm

Intermodulation Test for ADC Inc Bi-Directional Amplifier – PCS Model Number RPT-SHAAA12000

[Back](#)

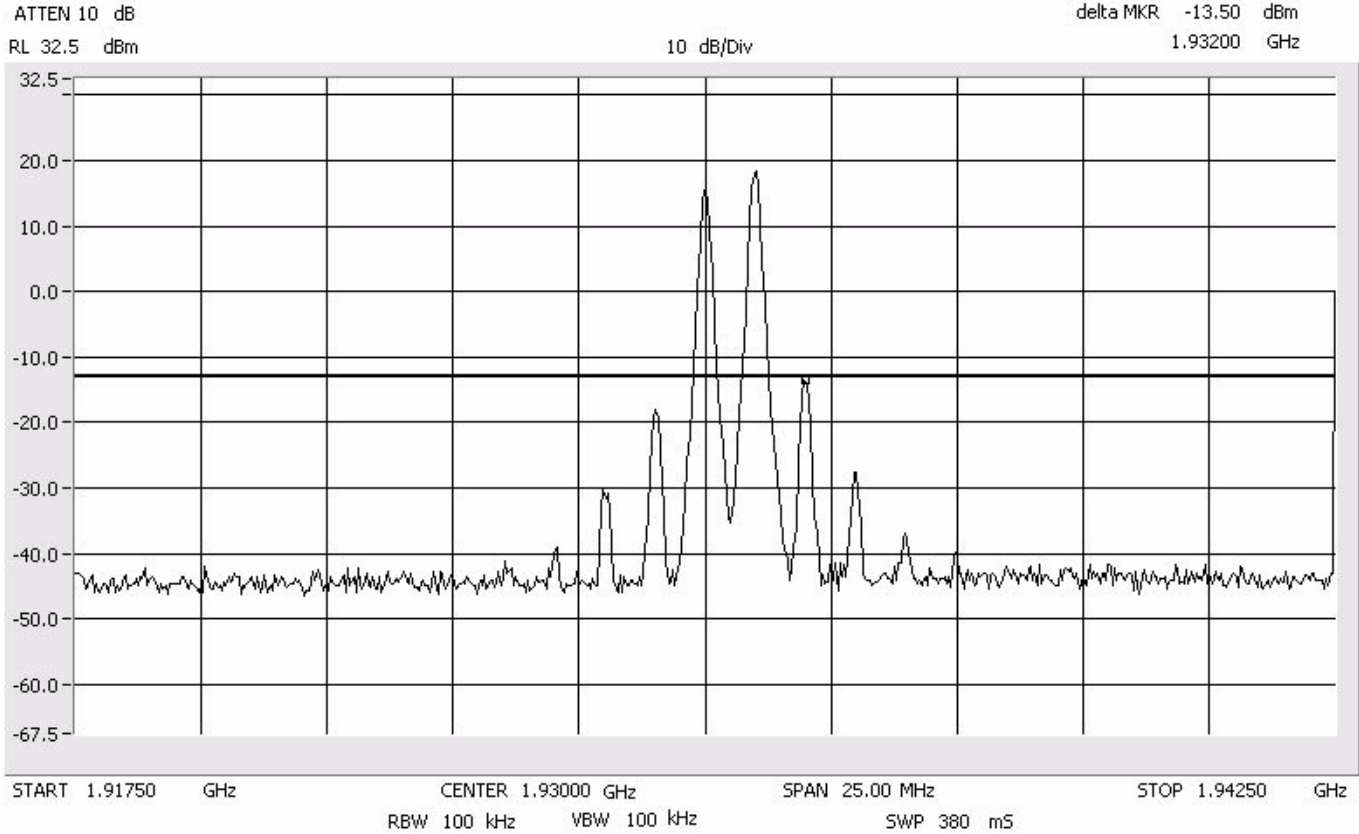
The inter-modulation products test was performed for the EUT. Three tests were performed with the modulation type. Test 1 was with 2 signals input to the EUT at lower end channels. Test 2 was with 2 signals input to the EUT at upper end channels. Test 3 was with 2 signals input to the EUT at upper and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

TDMA

Intermodulation Close - Lower PCS 1900 MHz

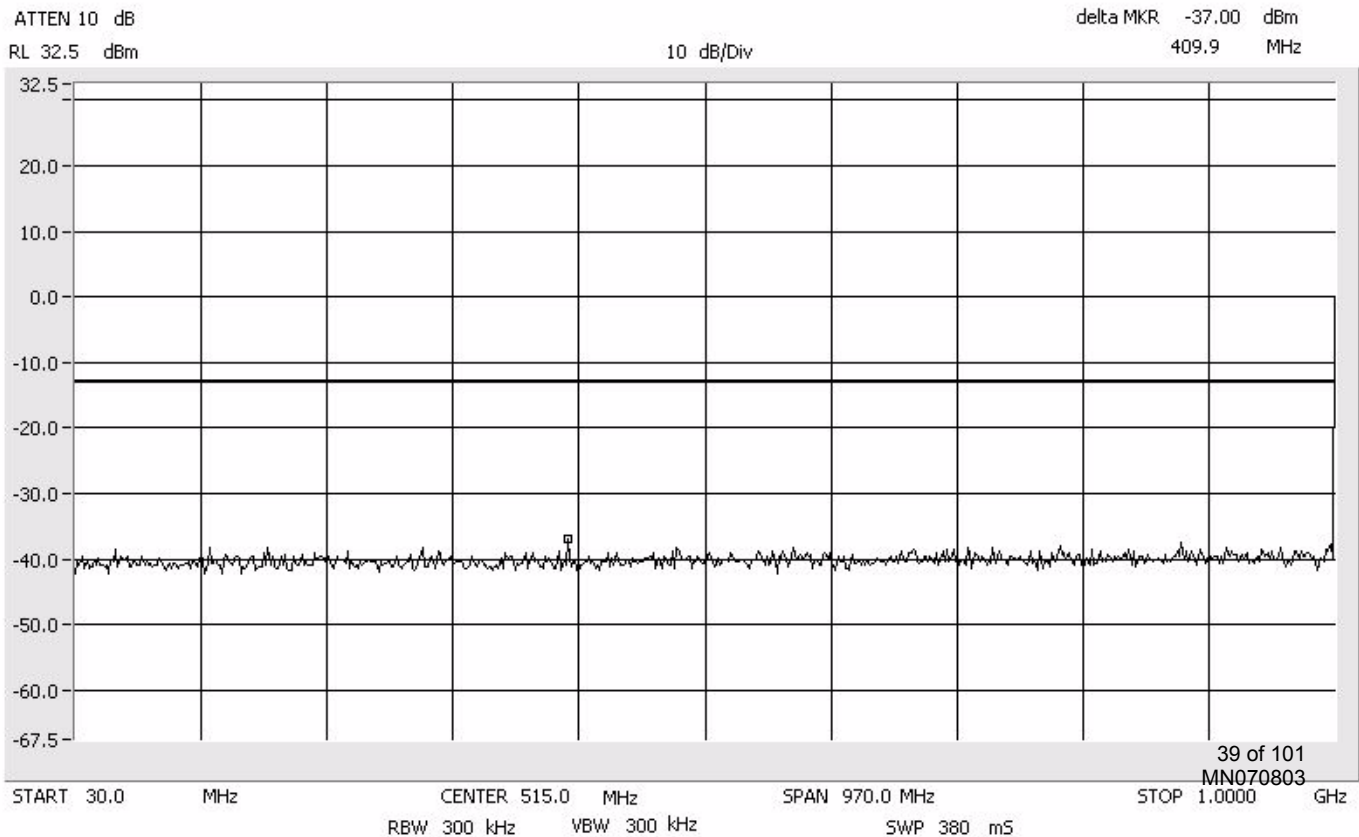
Center: 1930.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



TDMA

Intermodulation Close - Lower PCS 1900 MHz

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



Intermodulation Close - Lower PCS 1900 MHz

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

