



Test Report Summary

FCC CFR 47, Part 90

Private Land Mobile Radio Service

Manufacturer: ADC Telecommunications

Name of Equipment: Digivance® Street Coverage Flexibility "SCX"

Model Number(s): DGVC-901000RU

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

Test Report Number: MN070425

Test Date(s): 23 March, 2007 (ETL)
18 April, 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 90.

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 90 and the EUT fulfills the requirements of the Federal Communications Commission's CFR 47 Part 90.

Date: 25 April, 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
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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: MN070425 **Date of Issue:** 25 April, 2007

Model Number(s): DGVC-901000RU

Product Name: Digivance® Street Coverage FleXibility "SCX"

Product Type: Outdoor Repeater

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: 3118541MIN-001
Reference(s)

Total pages including Appendices: 106



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1.0 REVISION DESCRIPTION

Rev	Total Pages	Date	Description
A	106	April 25, 2007	Original Release

2.0 DOCUMENTATION

2.1 Test Regulations

- 90.213 Frequency stability
- 90.635 Limitations on power and antenna height
- 90.669 Emission limits

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: 26° C
Relative Humidity: 22%
Atmospheric Pressure: 98.6 kPa

ETL

23° C
17%
99.1 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 – SMR - 851 to 869 MHz and 935 to 940 MHz

2.4 Product Options:

None

2.5 EUT Specifications and Requirements:

Length: 8"
Width: 8"
Height: 19"
Weight: 26.0 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

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 7.01.00.04
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-900000HU	None	
Remote Unit	DGVC-901000RU	None	

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

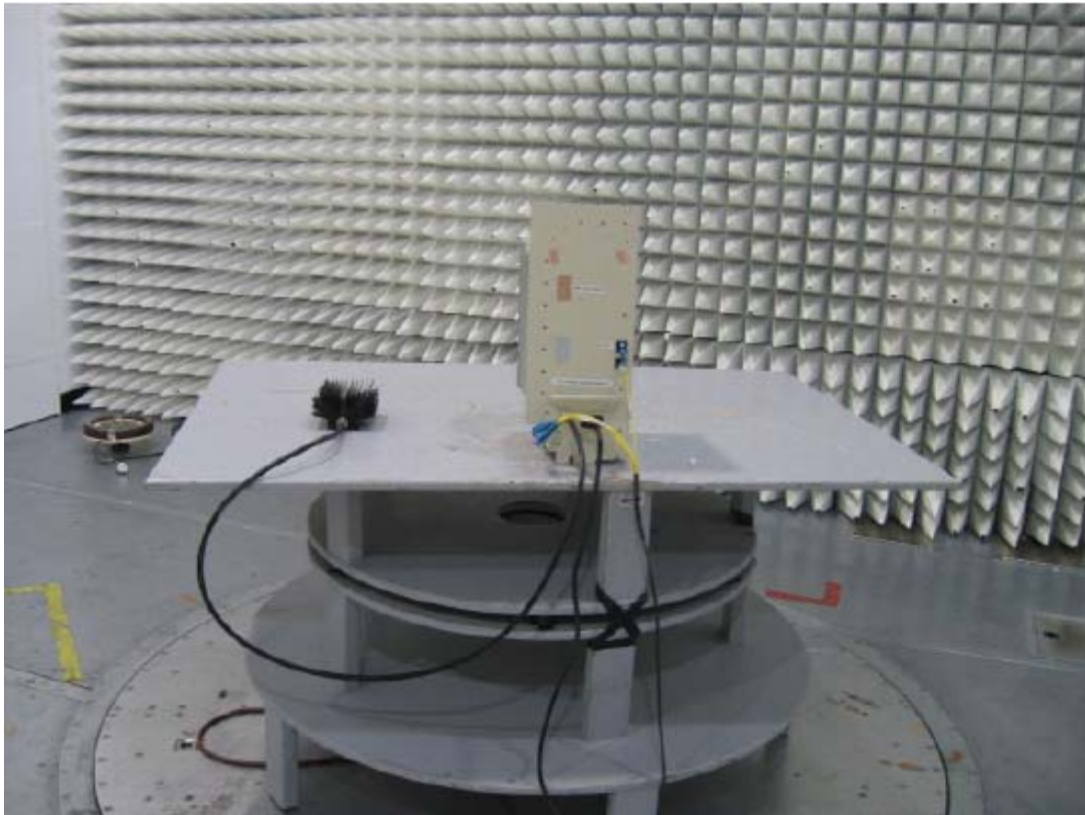
■ **fulfill the general approval requirements mentioned on page 4.**

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

3.0 TEST SET-UP DRAWINGS AND PHOTOS

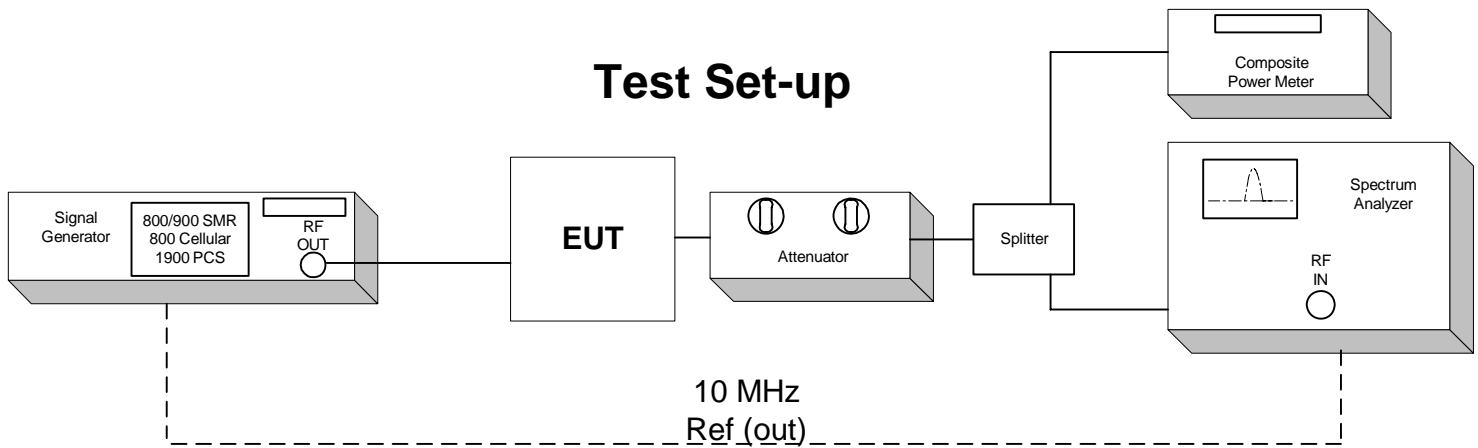
[Back to Table of Contents:](#)

3.1 Test set-up photo, radiated emissions

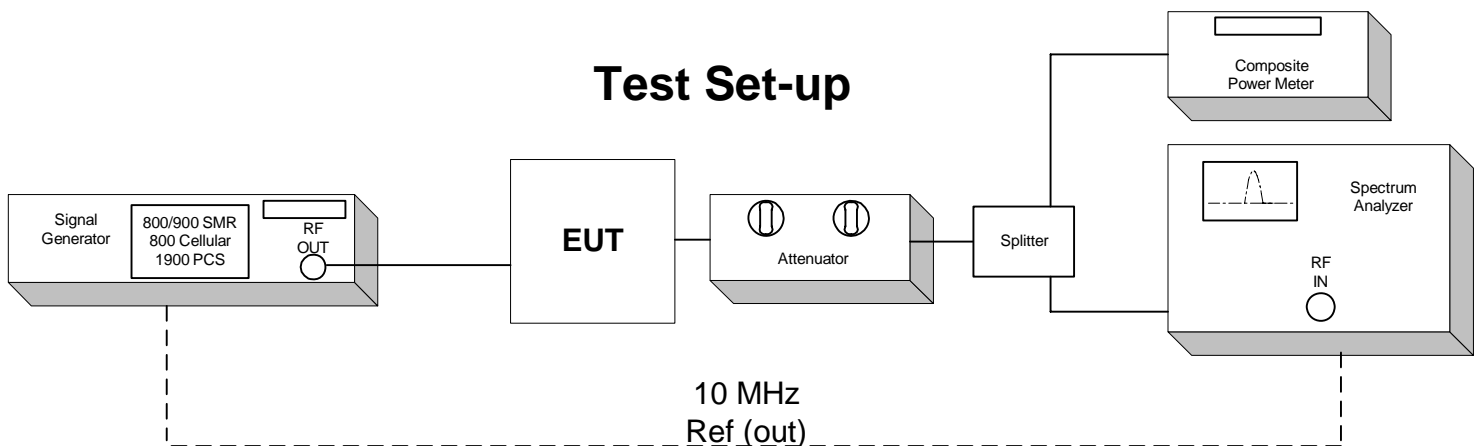


3.2 Test Set-up Drawings

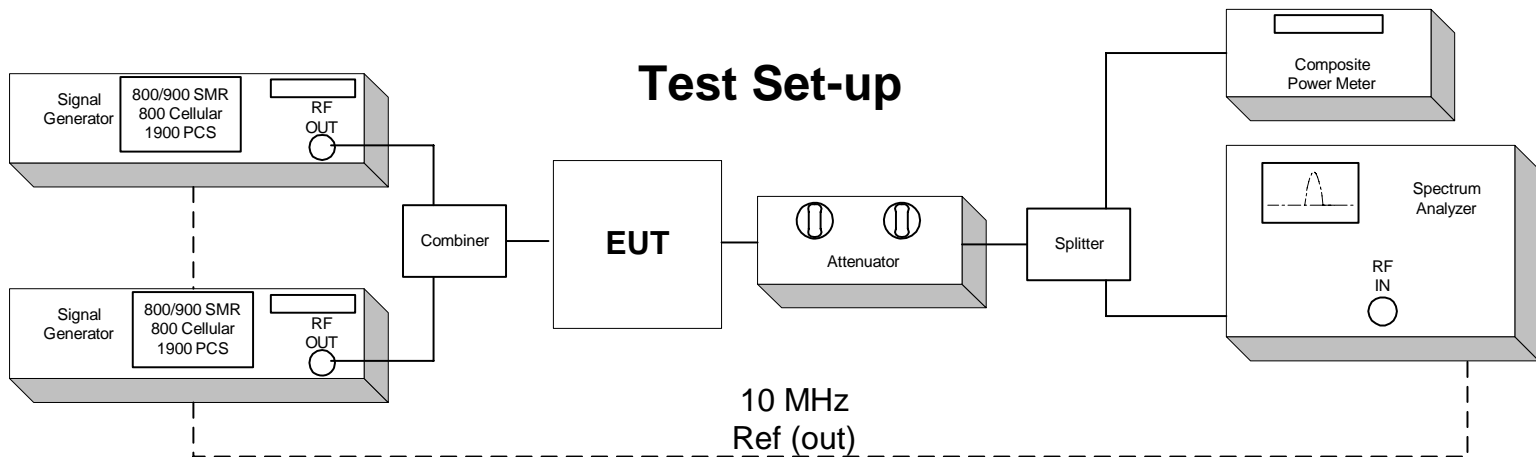
Conducted and Radiated Emission Limits Test for ADC Inc. Digivance® SCX Model Number DGVC-901000RU



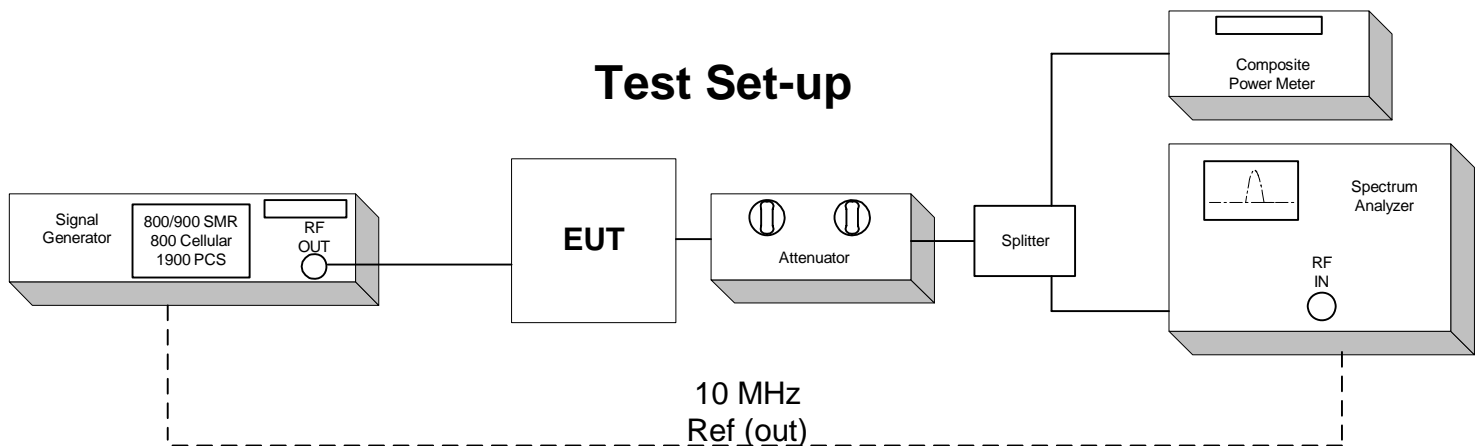
Conducted Output Power Test for ADC Inc. Digivance® SCX Model Number DGVC-901000RU



**Inter-Modulation Test for ADC Inc.
Digivance® SCX
Model Number DGVC-901000RU**



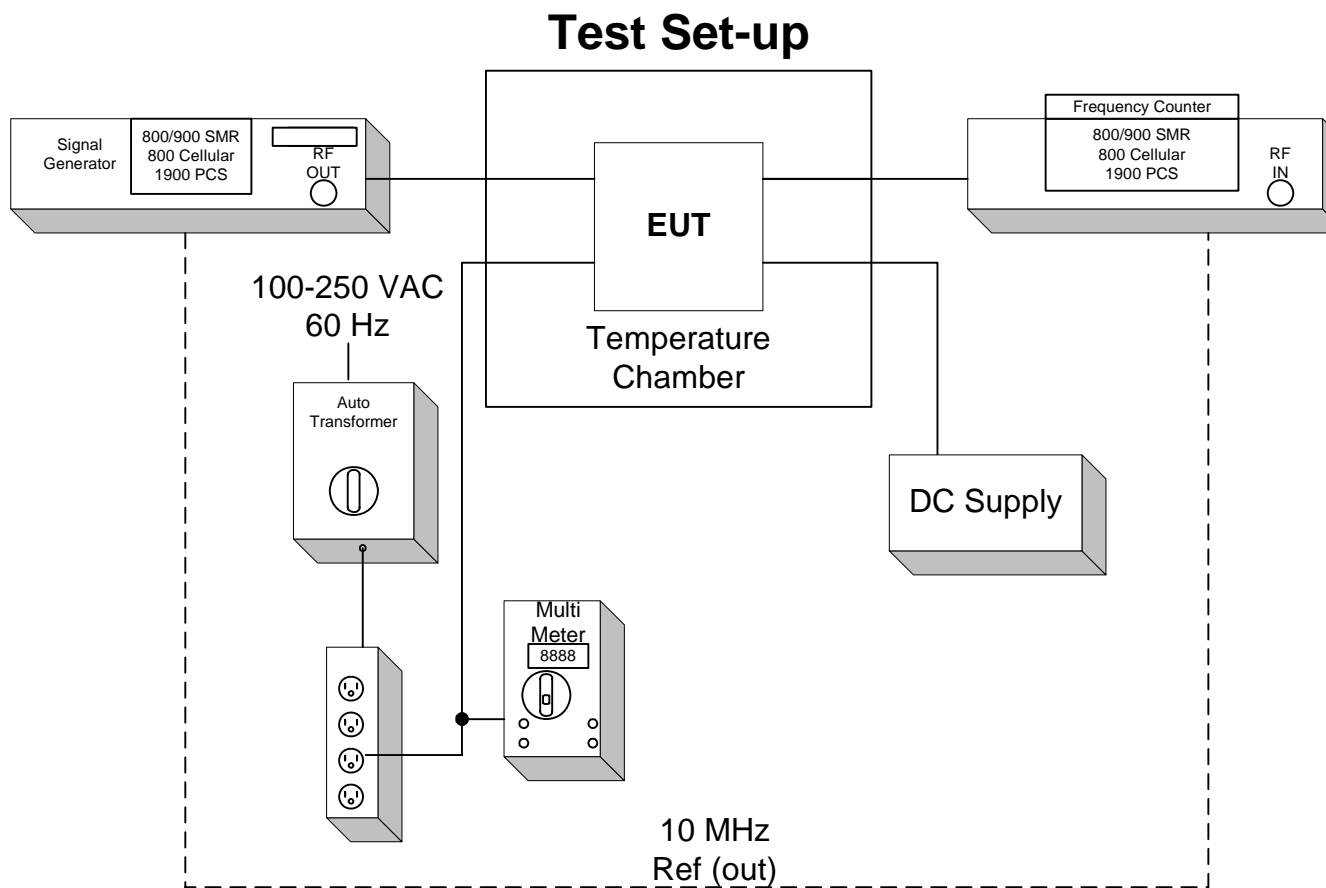
**Occupied Bandwidth Modulation Test for ADC Inc.
Digivance® SCX
Model Number DGVC-901000RU**



Frequency Tolerance Test for ADC Inc. Digivance® SCX Model Number DGVC-901000RU

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.



4.0 TEST RESULTS

4.1.1 90.635 Limitations on power and antenna height

Test Summary:

- The requirements are: **MET** NOT MET
- Minimum margin of compliance is 18.67 dB at 935.2 MHz (FM)

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	86-30-12	N/A	CNR
Spectrum Analyzer	HP	8563E	MC27690	7-22-07
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:

500 Watts or 57 dBm Limit

Test Data:

[See page 40](#)

Test Engineer: Mark F. Miska

Date: 18 April, 2007

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4.1.2 90.213 Frequency stability

Test Summary:

- The requirements are: **MET** NOT MET
- The fundamental emission stays within the limit.
- Frequency measured over a temperature range of -30 to 50° C and an input voltage range of 100 to 250 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	MC17932	8-1-08
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:

MINIMUM FREQUENCY STABILITY

[Parts per million (ppm)]

Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	^{1,2,3} 100	100	200
25-50	20	20	50
72-76	5	50
150-174	^{5,11} 5	⁸ 5	^{4,6} 50
220-222 ¹²	0.1	1.5	1.5
421-512	^{7,11,14} 2.5	⁸ 5	⁸ 5
806-821	¹⁴ 1.5	2.5	2.5
821-824	¹⁴ 1.0	1.5	1.5
851-866	1.5	2.5	2.5
866-869	1.0	1.5	1.5
896-901	¹⁴ 0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928 ¹³	2.5	2.5	2.5
929-930	1.5
935-940	0.1	1.5	1.5
1427-1435	⁹ 300	300	300
Above 2450 ¹⁰

Test Data:

[See pages](#) 82-83

Test Engineer: Mark F. Miska

Date: 18 April, 2007

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4.1.3 90.669 Emission limits

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.
Attenuator	Aeroflex	86-30-12	N/A	CNR
Spectrum Analyzer	HP	8563E	MC27690	7-22-07
Power Meter	HP	EPM-441A	MC27670	9-20-07
Multimeter	Fluke	87	MC17932	8-1-08
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
Digital Barometer	Fisher Scientific	02-403	MC50719	6-28-07

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.20	N/A	N/A
Antenna	Schaffner-Chase	Bicono-Log	2630	08/07
Antenna	EMCO	Horn 3115	9507-4513	01/07
Antenna	EMCO	Horn 3115	6579	02/07
Antenna	Roberts	4 400-1000 MHz	00599	N/A
Pre-Amp	MITEQ	AMF-5D	1122951	02/08
Generator	HP	8340B	2819A01098	09/07

Test Limit:

Out of band emissions:

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

Outside of the carrier emissions bandwidth:

26 dB below the transmitter power

Test Data:

[Conducted Emissions](#), pages 15 – 39

[Intermodulation Test](#), pages 41 – 77

[Occupied Bandwidth](#), pages 78 – 81

Radiated Emissions, pages 84 – 106 ([Appendix B](#))

Test Engineer: Mark F. Miska

Date: 18 April, 2007

Date: 18 April, 2007

Date: 18 April, 2007

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5.0

APPENDIX A

Test Data

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Test Engineer: Mark F. Miska **Date:** 18 April, 2007

Conducted Emission Limits Test for ADC Inc.

Digivance® SCX

Model Number DGVC-901000RU

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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 FM, iDEN, and CDMA. The different signals were input one at a time to the EUT. In all cases, the out of band emissions were less than -13 dBm from the equation
(19dBm - [43 + 10log(0.08W)])

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

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

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

Digital Host Unit (DHU):

Range: 24-48 VDC

Tested @: 48 VDC

Tested @: 1.2 A

Remote Unit (including LPA):

Range: 100 - 250 VAC

Tested @: 120 VAC

Tested @: 4.8 A

The LPA requires a constant input voltage supply of 28 VDC 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)

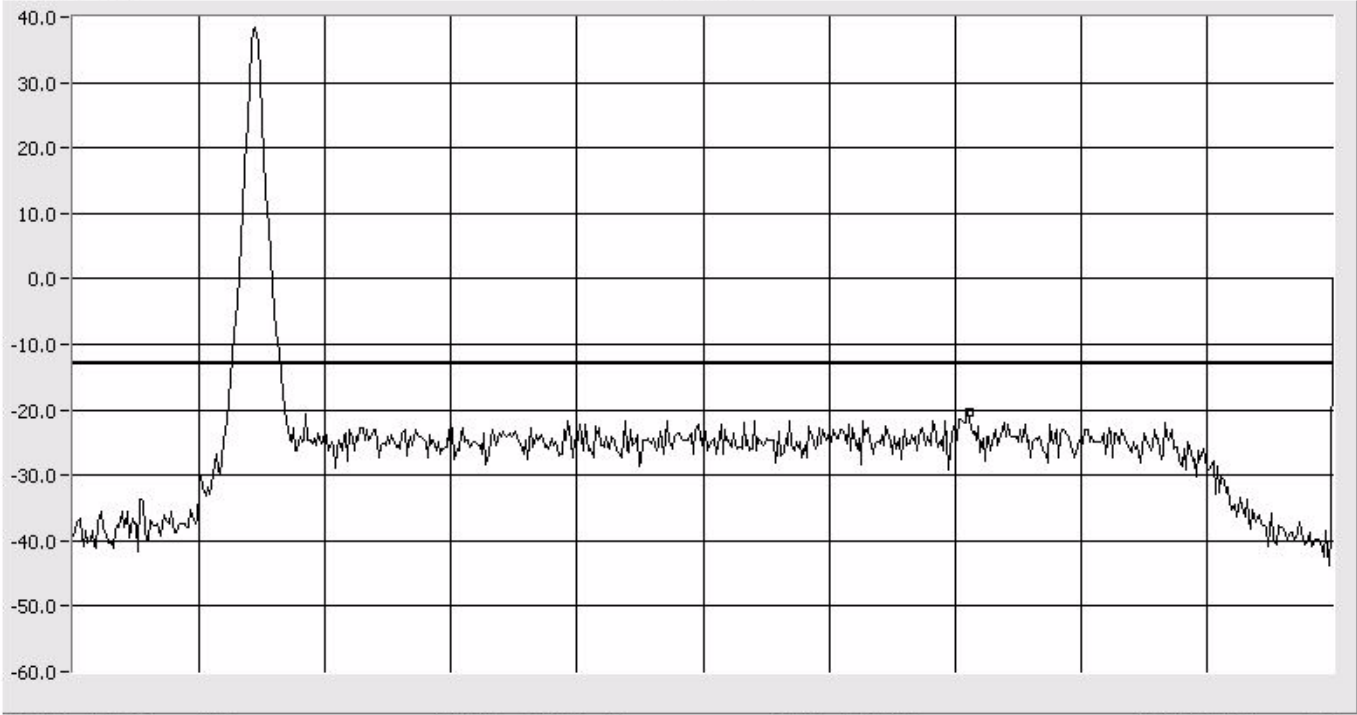
Conducted Emissions Low SMR 800 MHz

Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -20.50 dBm
865.29 MHz

10 dB/Div



START 847.50 MHz CENTER 860.00 MHz SPAN 25.00 MHz STOP 872.50 MHz
RBW 100 kHz VBW 100 kHz SWP 50.0 mS

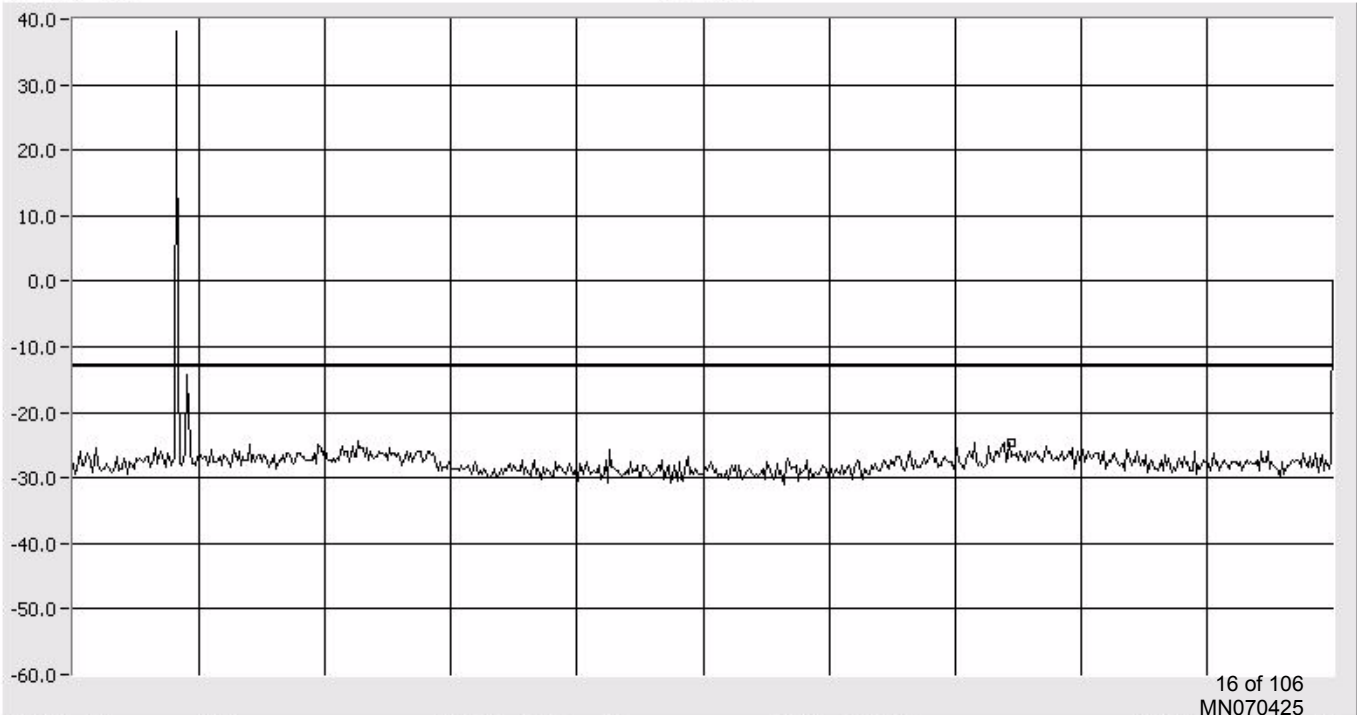
Conducted Emissions Low SMR 800 MHz

Span: 30 MHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.50 dBm
7.458 GHz

10 dB/Div



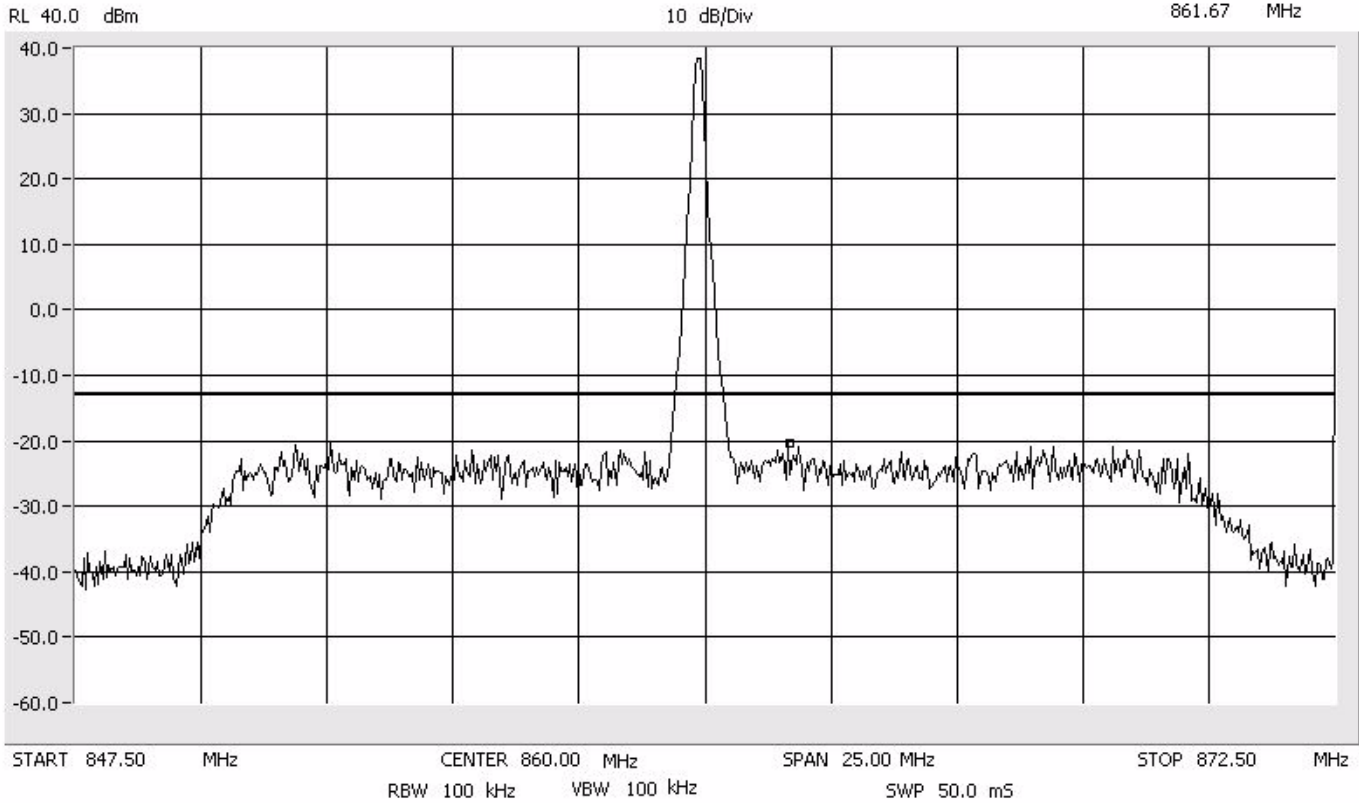
START 30 MHz CENTER 5.015 GHz SPAN 9.970 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 200 mS

Conducted Emissions Mid SMR 800 MHz

Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -20.33 dBm
861.67 MHz

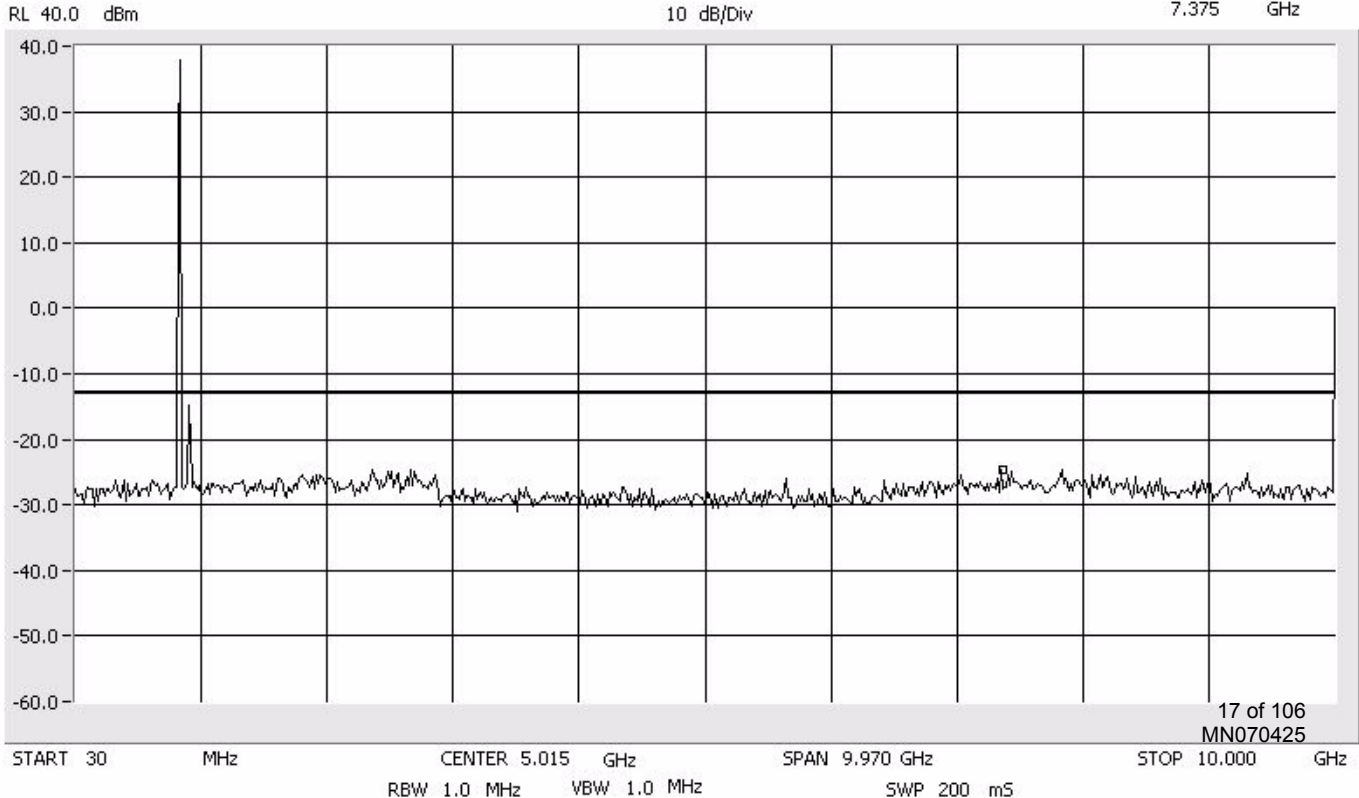


Conducted Emissions Mid SMR 800 MHz

Span: 30 MHz to 10 GHz
RBW/VBW: 1 MHz

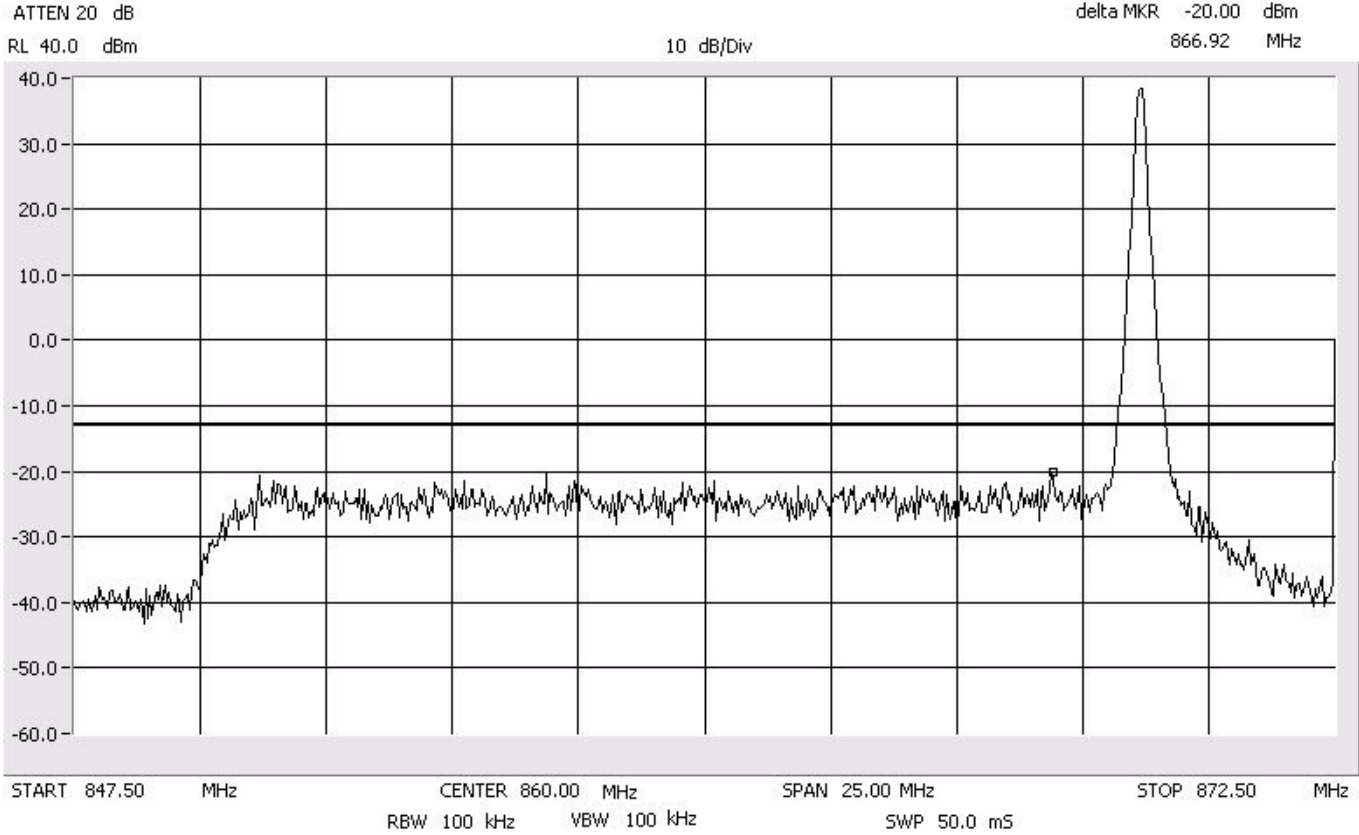
ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.67 dBm
7.375 GHz



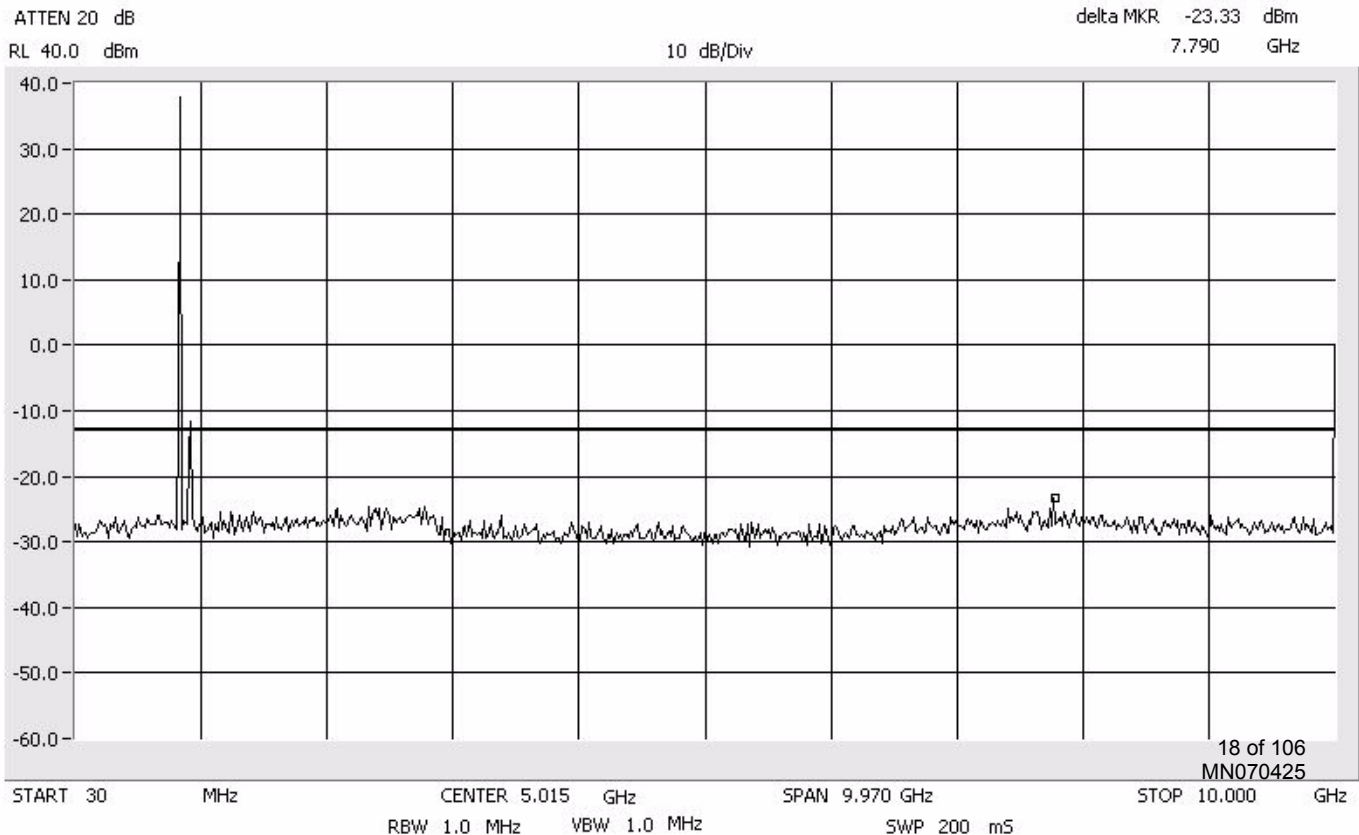
Conducted Emissions High SMR 800 MHz

Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



Conducted Emissions High SMR 800 MHz

Span: 30 MHz to 10 GHz
RBW/VBW: 1 MHz



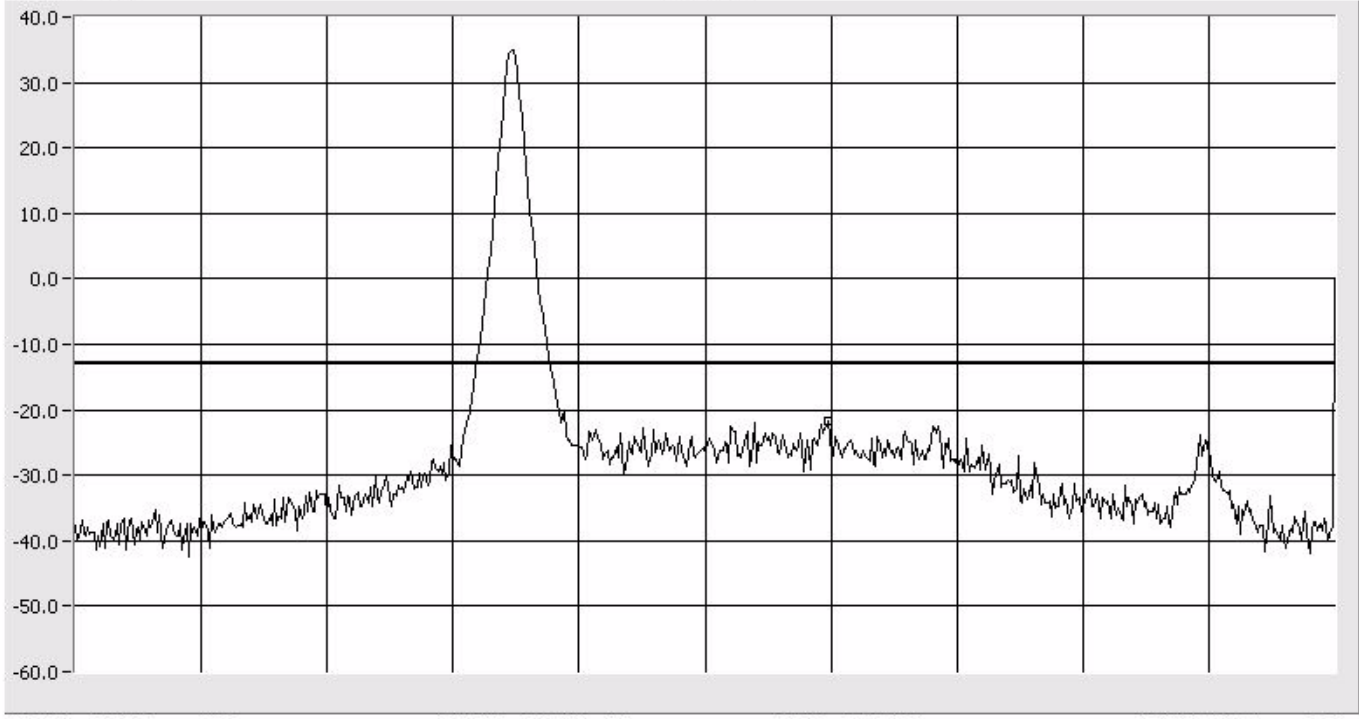
Conducted Emissions Low SMR 900 MHz

Center: 937.5 MHz
Span: 15 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -21.83 dBm
938.98 MHz

10 dB/Div



RBW 100 kHz VBW 100 kHz SWP 50.0 mS

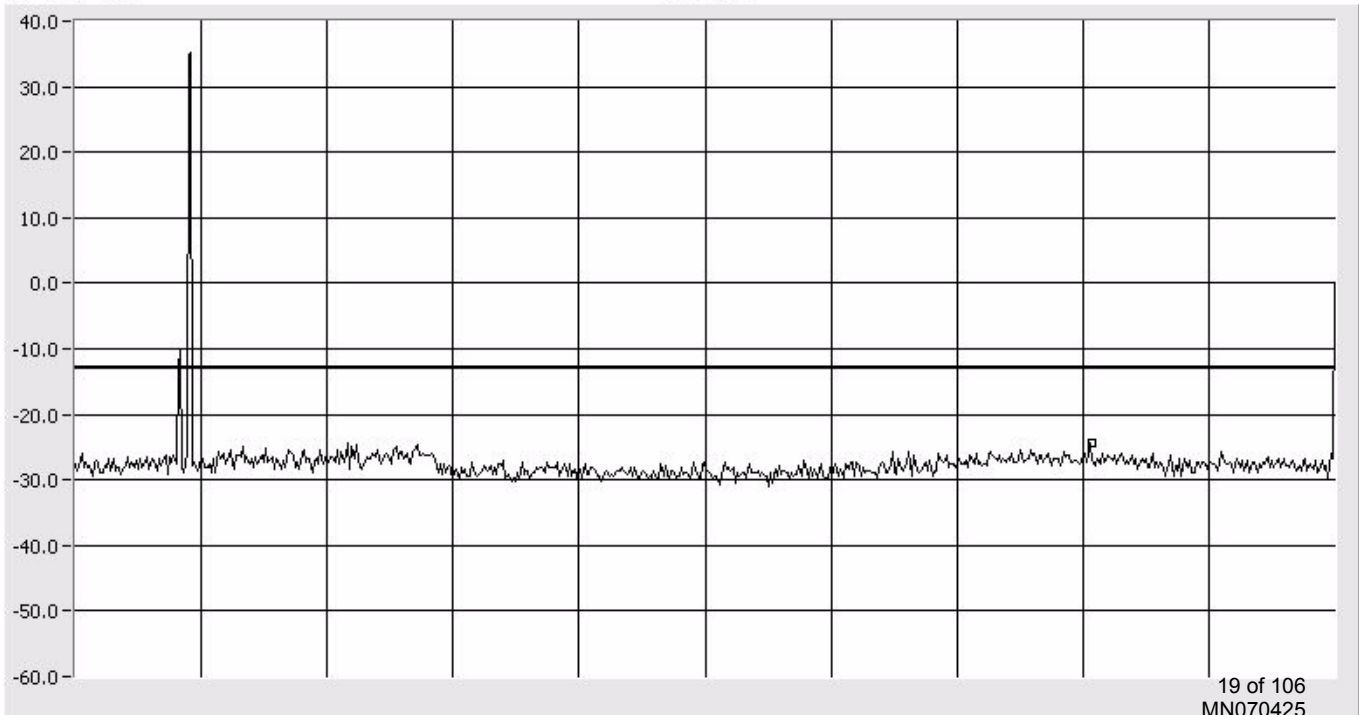
Conducted Emissions Low SMR 900 MHz

Span: 30 MHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.33 dBm
8.072 GHz

10 dB/Div



RBW 1.0 MHz VBW 1.0 MHz SWP 200 mS

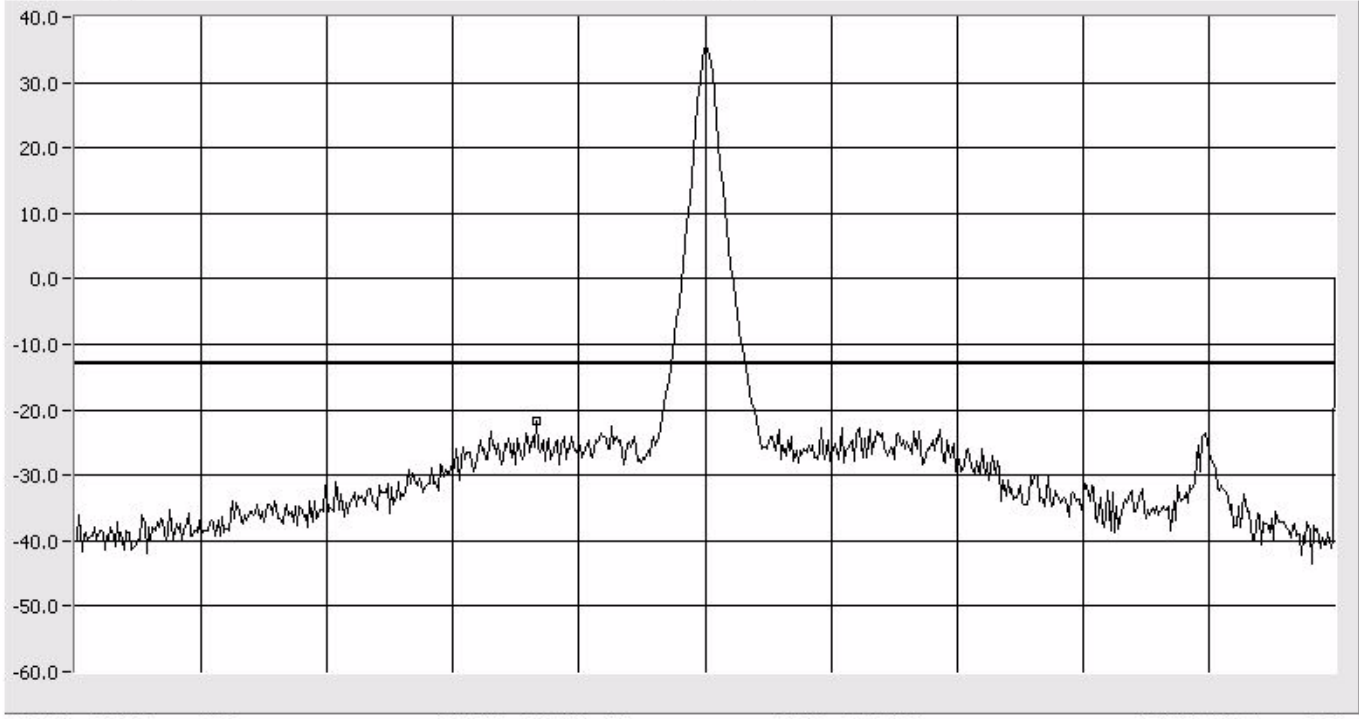
Conducted Emissions Mid SMR 900 MHz

Center: 937.5 MHz
Span: 15 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -21.83 dBm
935.50 MHz

10 dB/Div



START 930.00 MHz CENTER 937.50 MHz SPAN 15.00 MHz STOP 945.00 MHz
RBW 100 kHz VBW 100 kHz SWP 50.0 mS

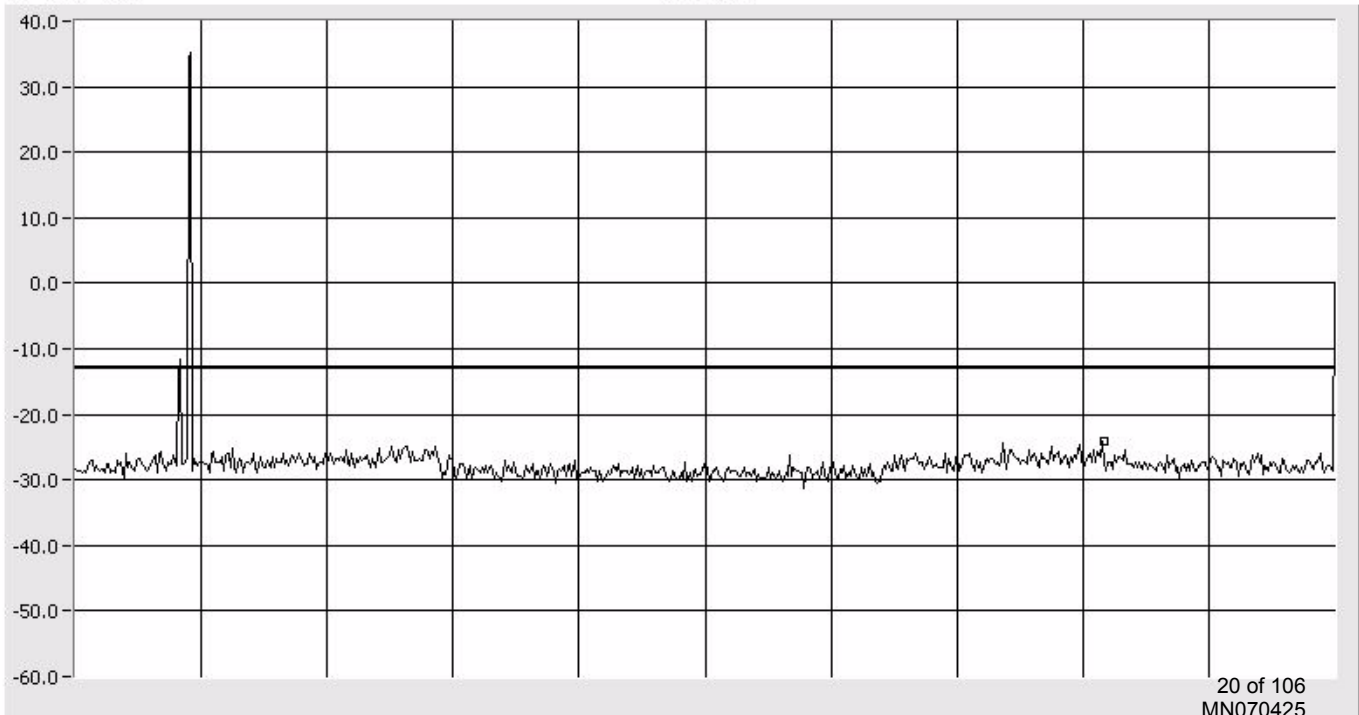
Conducted Emissions Mid SMR 900 MHz

Span: 30 MHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.17 dBm
8.172 GHz

10 dB/Div



START 30 MHz CENTER 5.015 GHz SPAN 9.970 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 200 mS

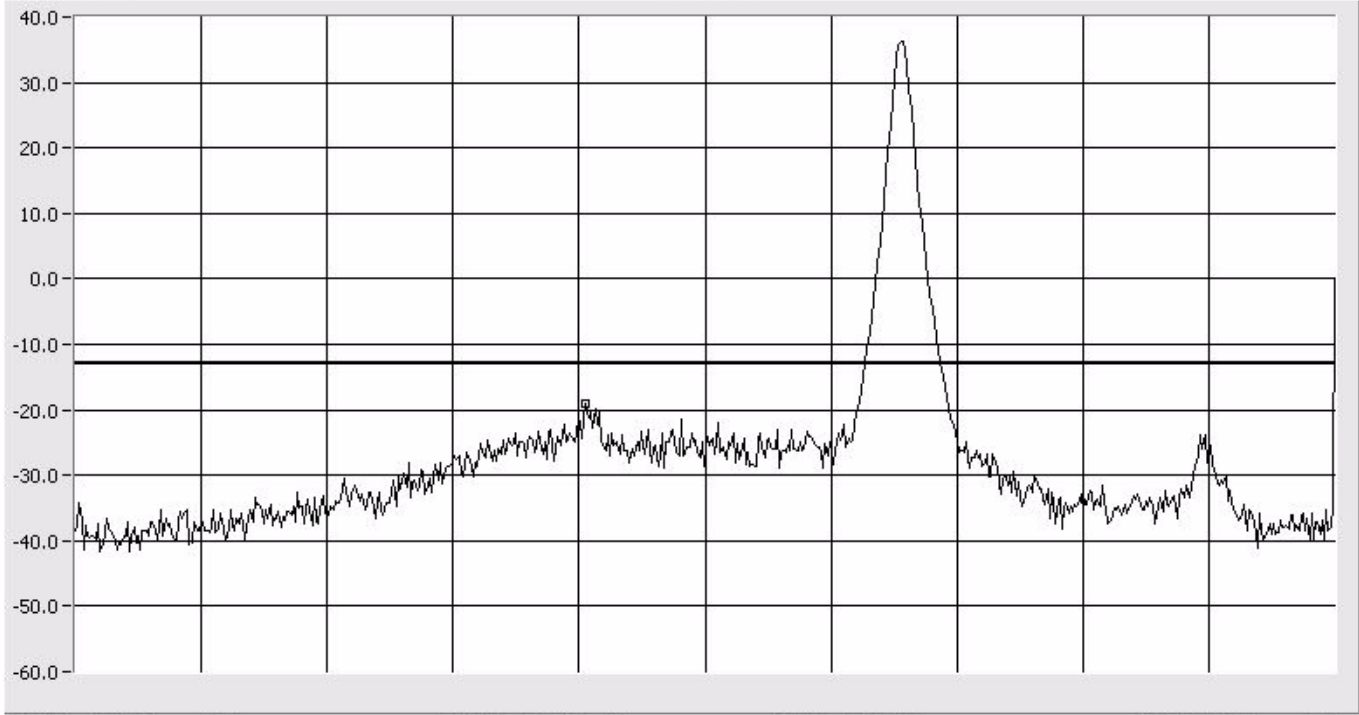
Conducted Emissions High SMR 900 MHz

Center: 937.5 MHz
Span: 15 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -19.17 dBm
936.08 MHz

10 dB/Div



START 930.00 MHz CENTER 937.50 MHz SPAN 15.00 MHz STOP 945.00 MHz
RBW 100 kHz VBW 100 kHz SWP 50.0 mS

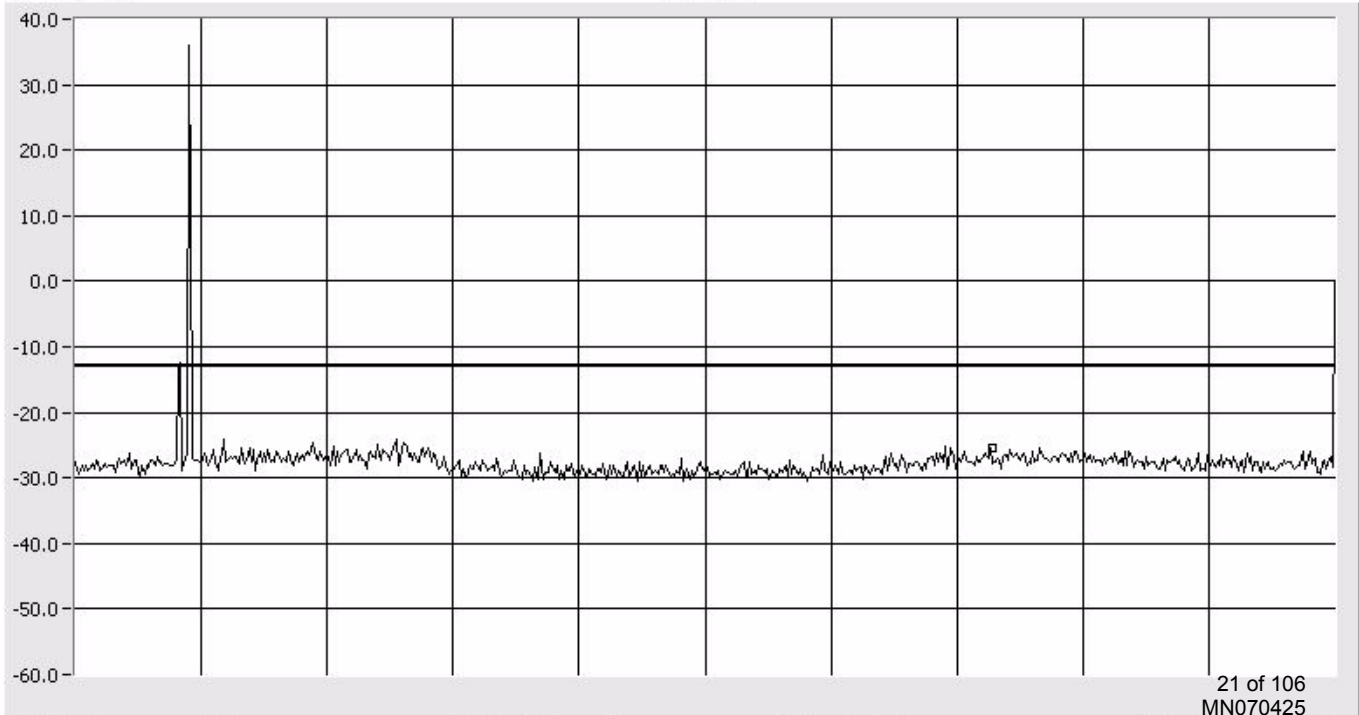
Conducted Emissions High SMR 900 MHz

Span: 30 MHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -25.50 dBm
7.291 GHz

10 dB/Div



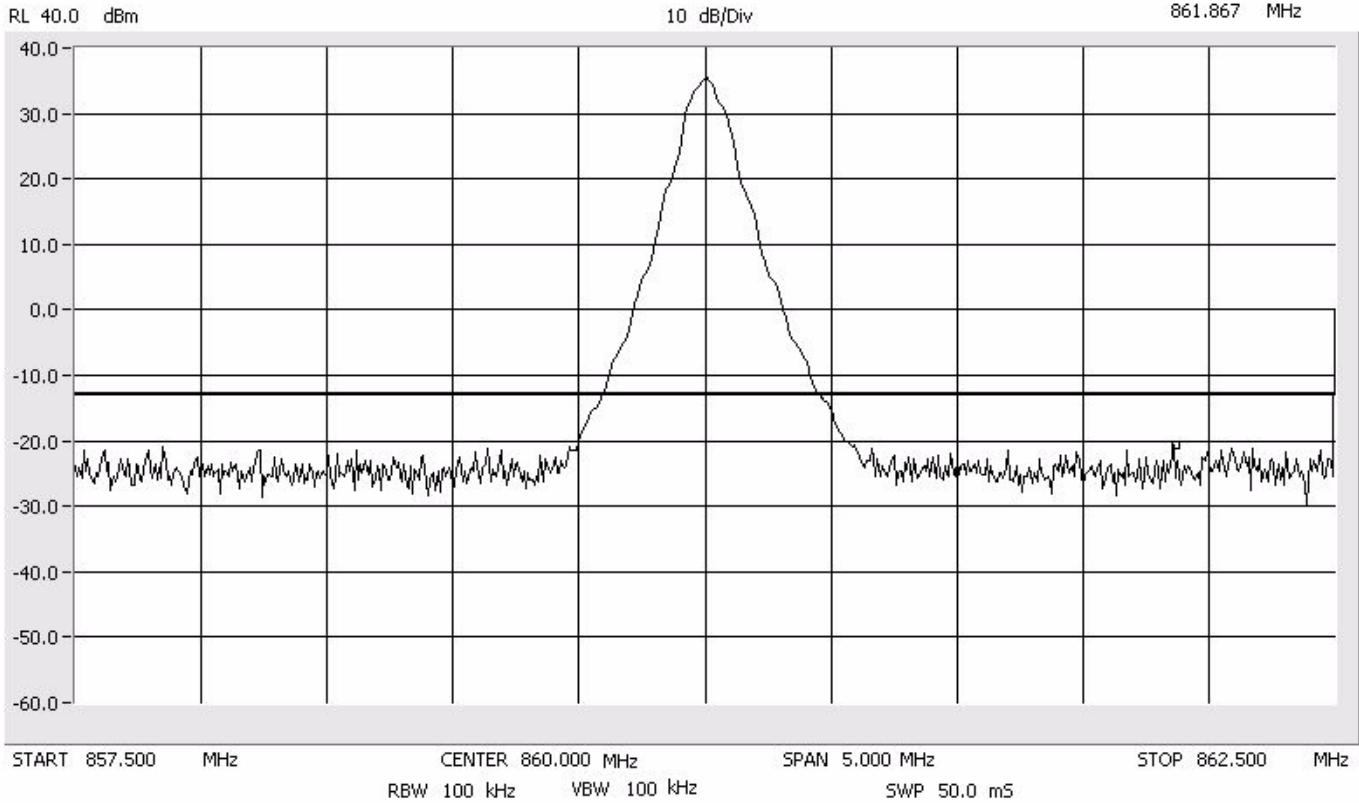
START 30 MHz CENTER 5.015 GHz SPAN 9.970 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 200 mS

Conducted Emissions FM SMR 800 MHz

Center: 860.0 MHz
Span: 5 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -20.67 dBm
861.867 MHz

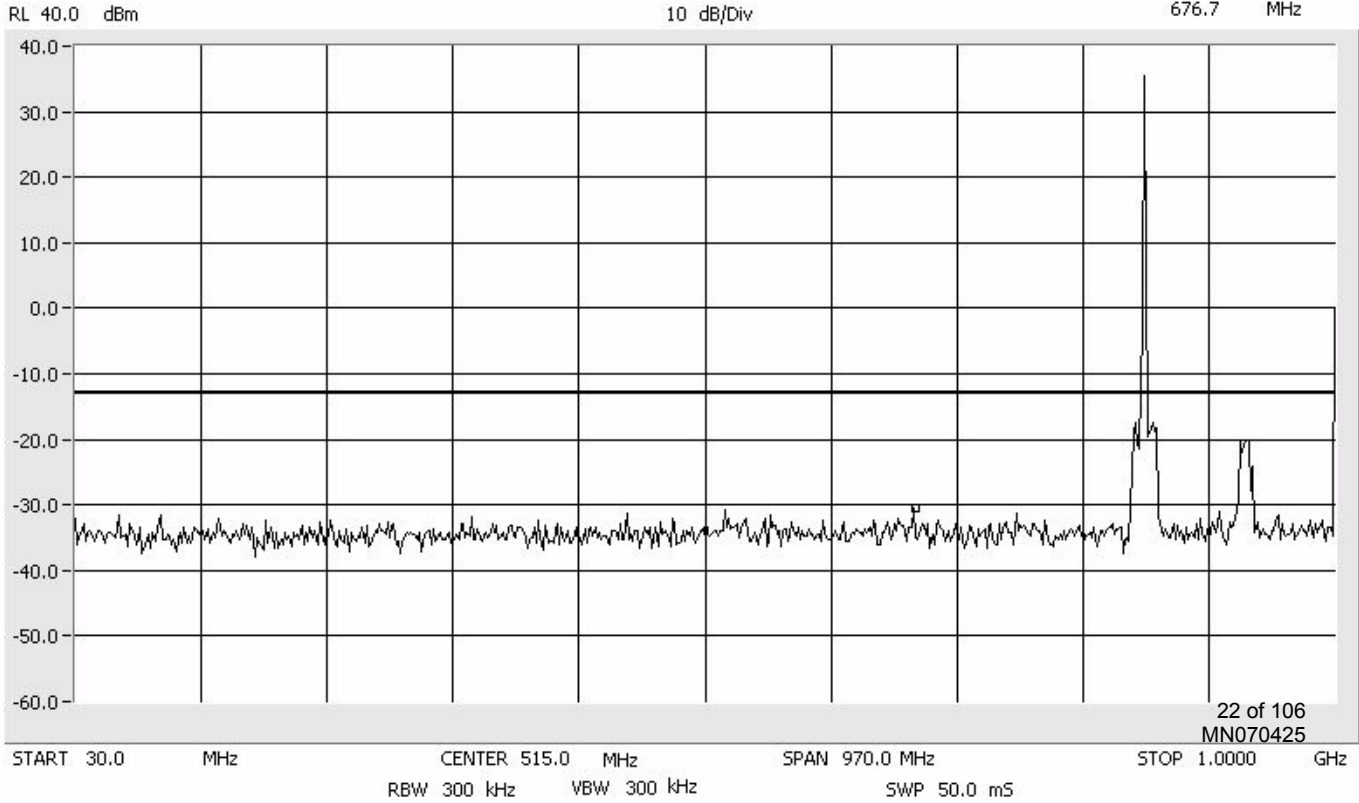


Conducted Emissions FM SMR 800 MHz

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

ATTEN 20 dB
RL 40.0 dBm

delta MKR -30.50 dBm
676.7 MHz



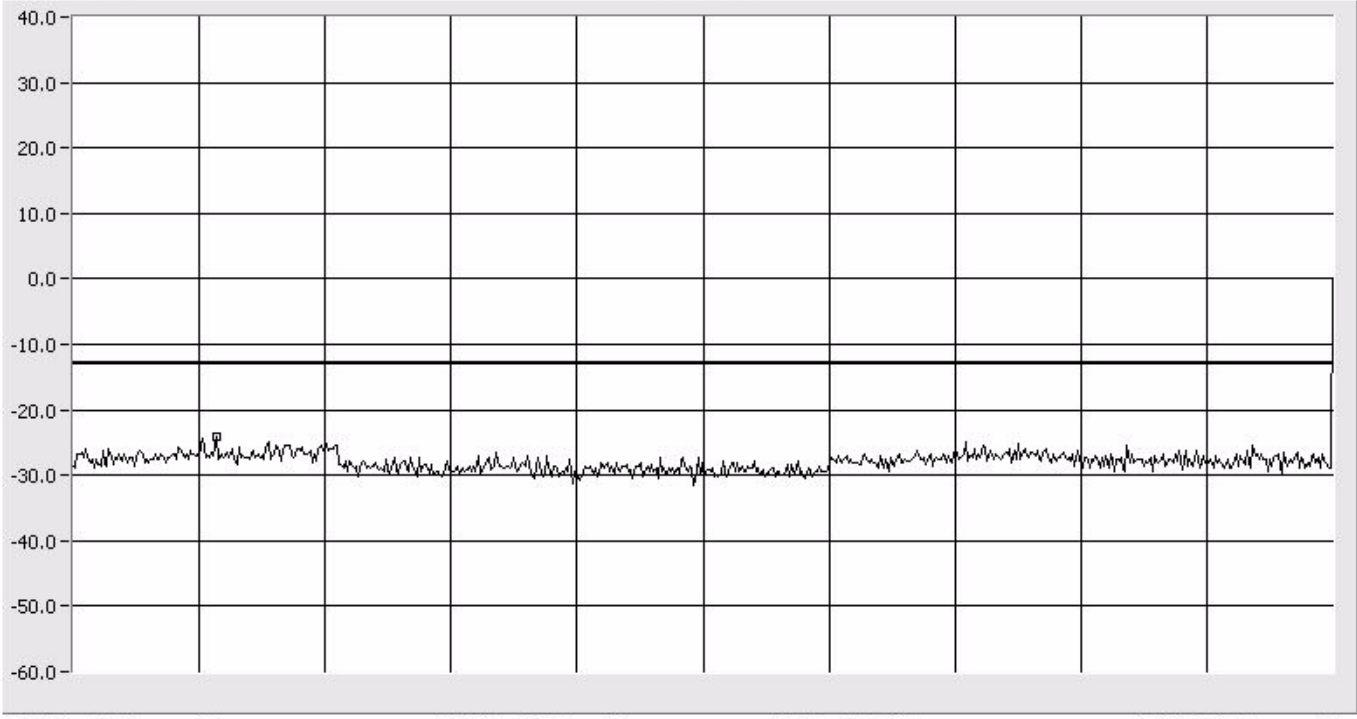
Conducted Emissions FM SMR 800 MHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.17 dBm
2.020 GHz

10 dB/Div



START 1.000 GHz CENTER 5.500 GHz SPAN 9.000 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 180 mS

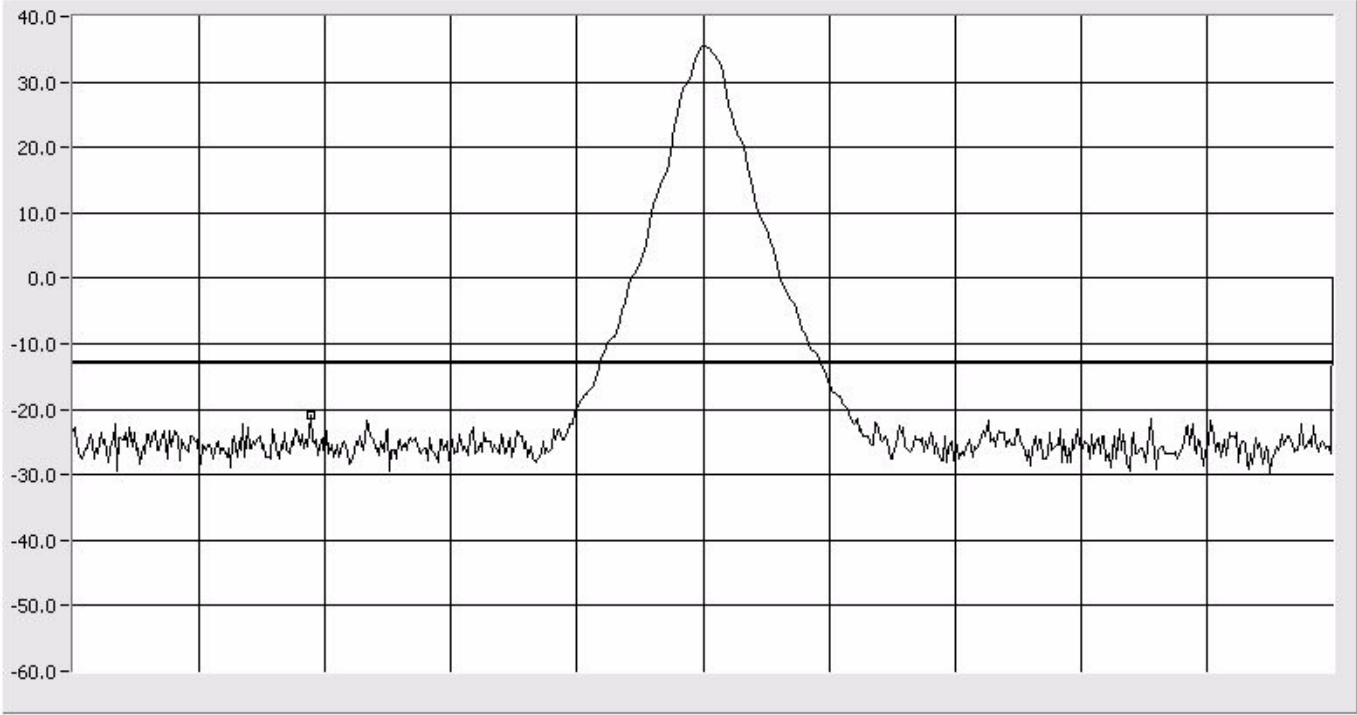
Conducted Emissions FM SMR 900 MHz

Center: 937.5 MHz
Span: 5 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -21.00 dBm
935.942 MHz

10 dB/Div



START 935.000 MHz CENTER 937.500 MHz SPAN 5.000 MHz STOP 940.000 MHz
RBW 100 kHz VBW 100 kHz SWP 50.0 mS

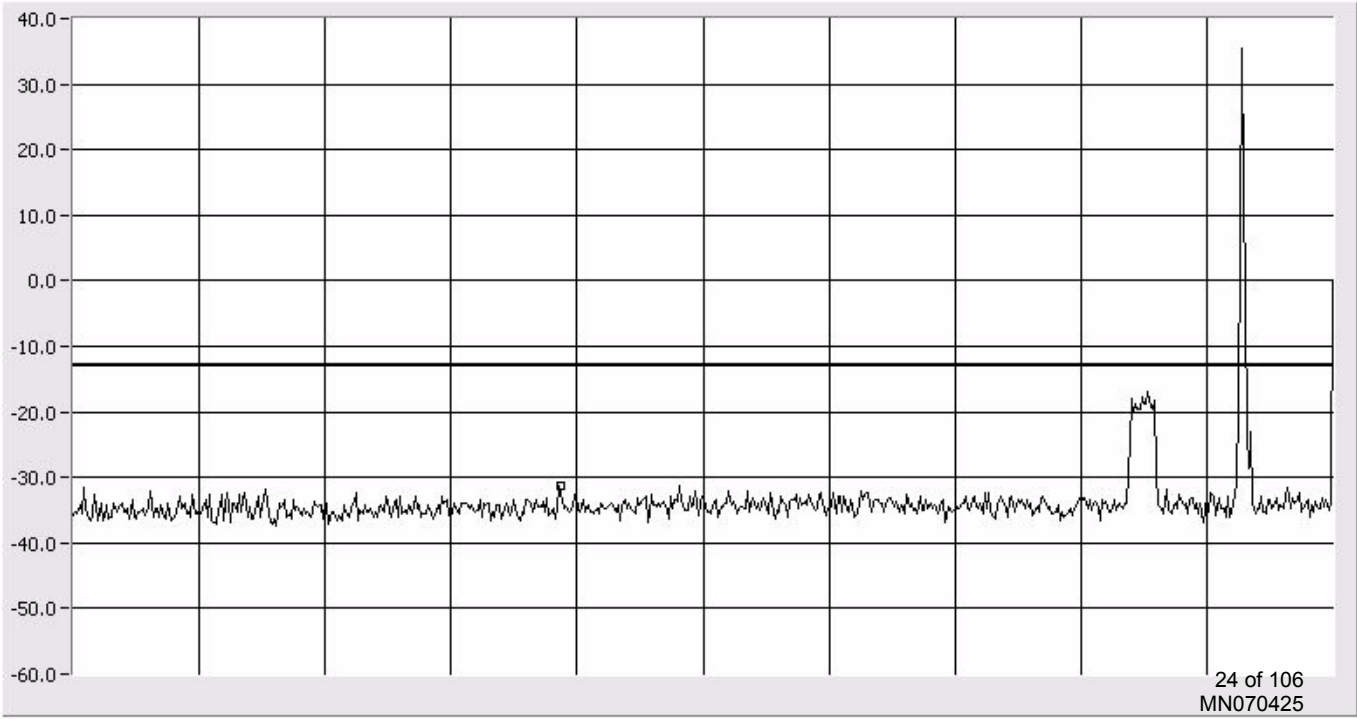
Conducted Emissions FM SMR 900 MHz

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

ATTEN 20 dB
RL 40.0 dBm

delta MKR -31.17 dBm
405.1 MHz

10 dB/Div



START 30.0 MHz CENTER 515.0 MHz SPAN 970.0 MHz STOP 1.000 GHz
RBW 300 kHz VBW 300 kHz SWP 50.0 mS

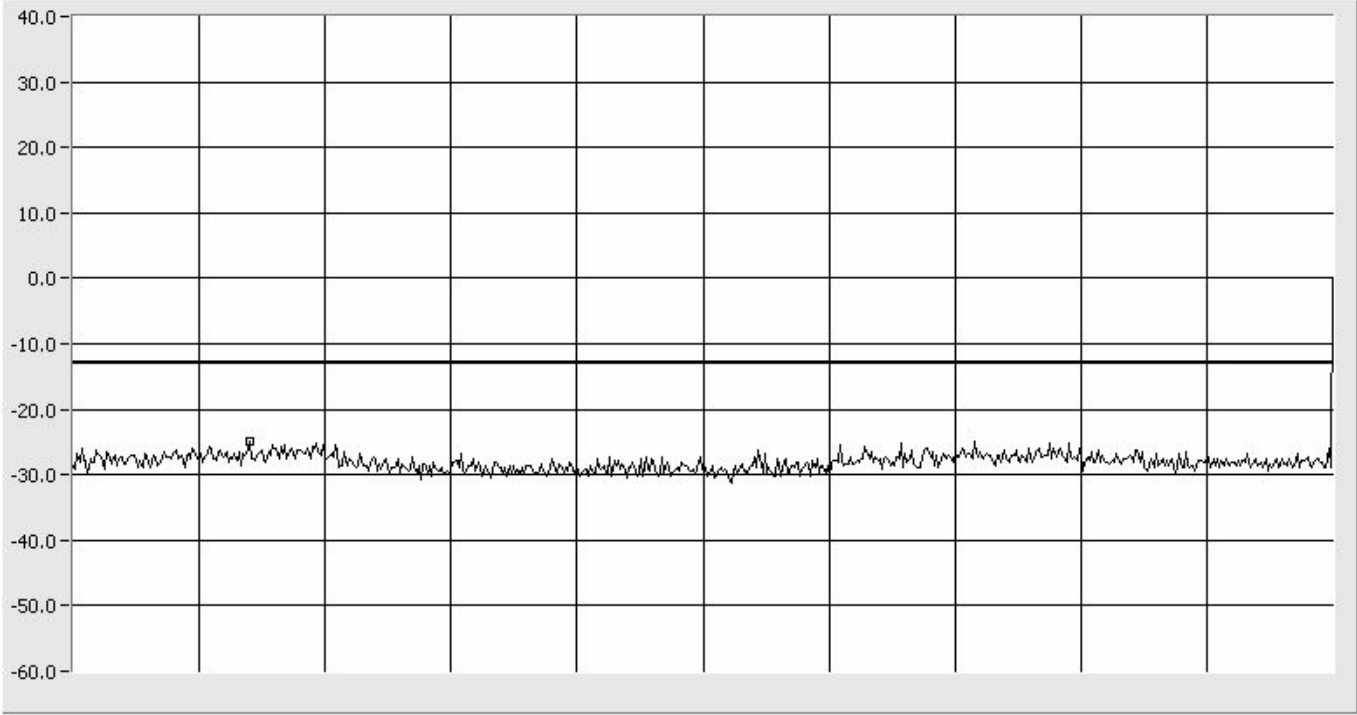
Conducted Emissions FM SMR 900 MHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.83 dBm
2.260 GHz

10 dB/Div



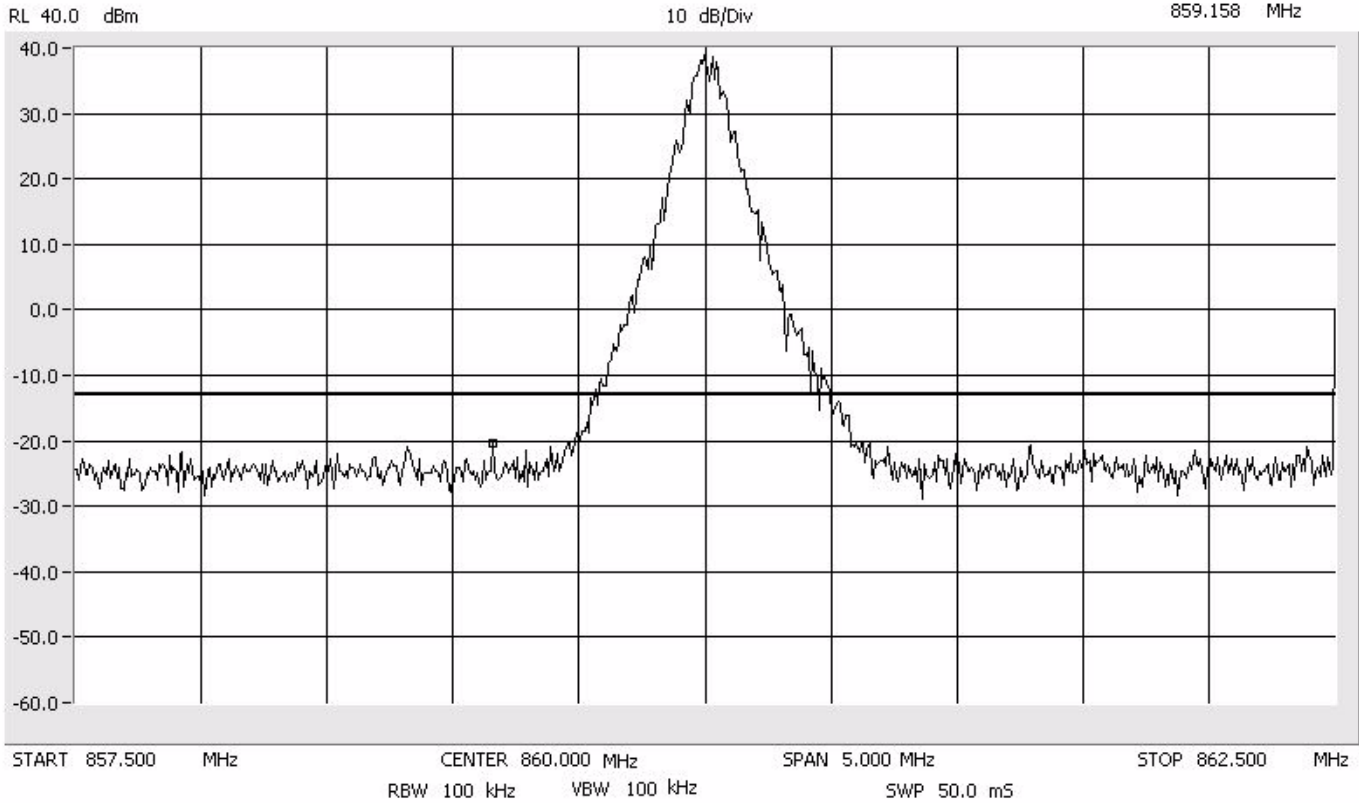
START 1.000 GHz CENTER 5.500 GHz SPAN 9.000 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 180 mS

Conducted Emissions iDEN SMR 800 MHz

Center: 860.0 MHz
Span: 5 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -20.50 dBm
859.158 MHz

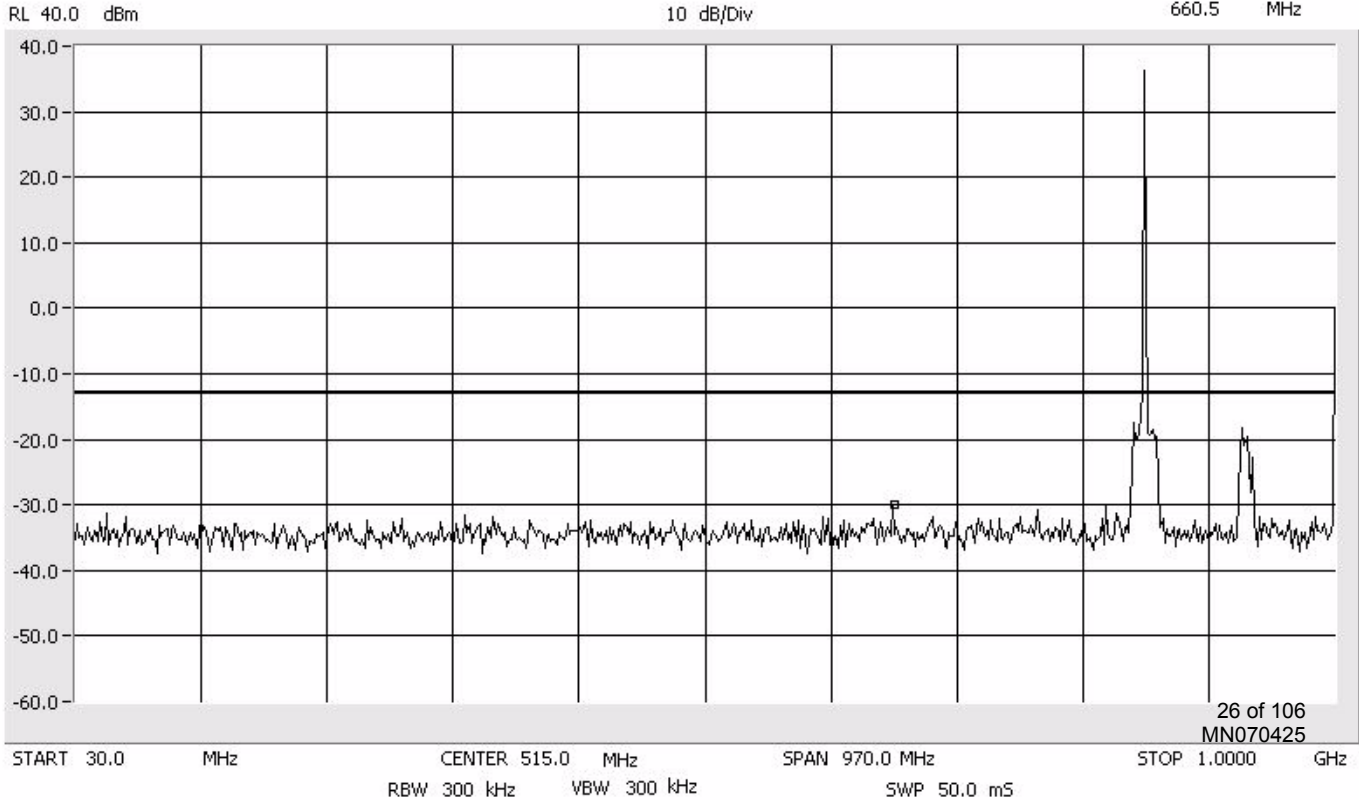


Conducted Emissions iDEN SMR 800 MHz

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

ATTEN 20 dB
RL 40.0 dBm

delta MKR -29.83 dBm
660.5 MHz



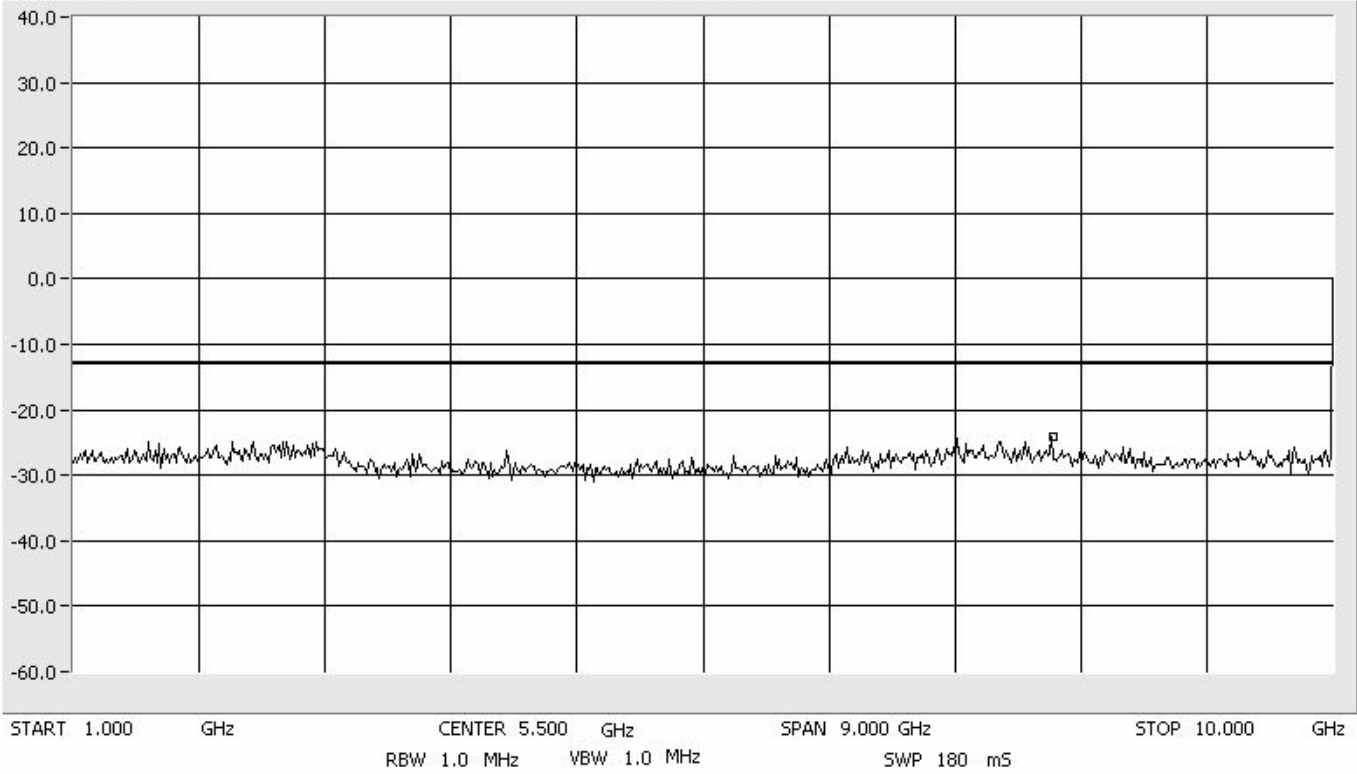
Conducted Emissions iDEN SMR 800 MHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.00 dBm
8.005 GHz

10 dB/Div

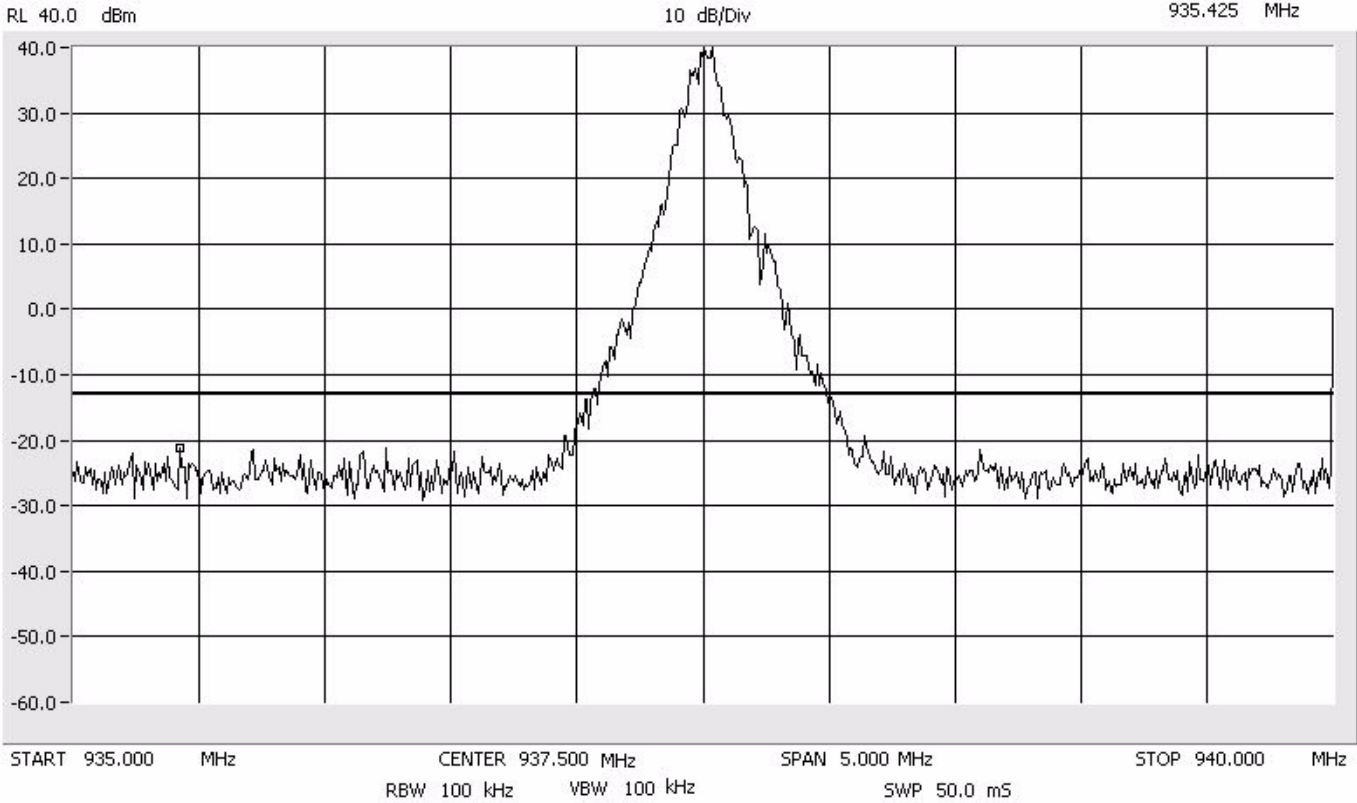


Conducted Emissions iDEN SMR 900 MHz

Center: 937.5 MHz
Span: 5 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -21.17 dBm
935.425 MHz

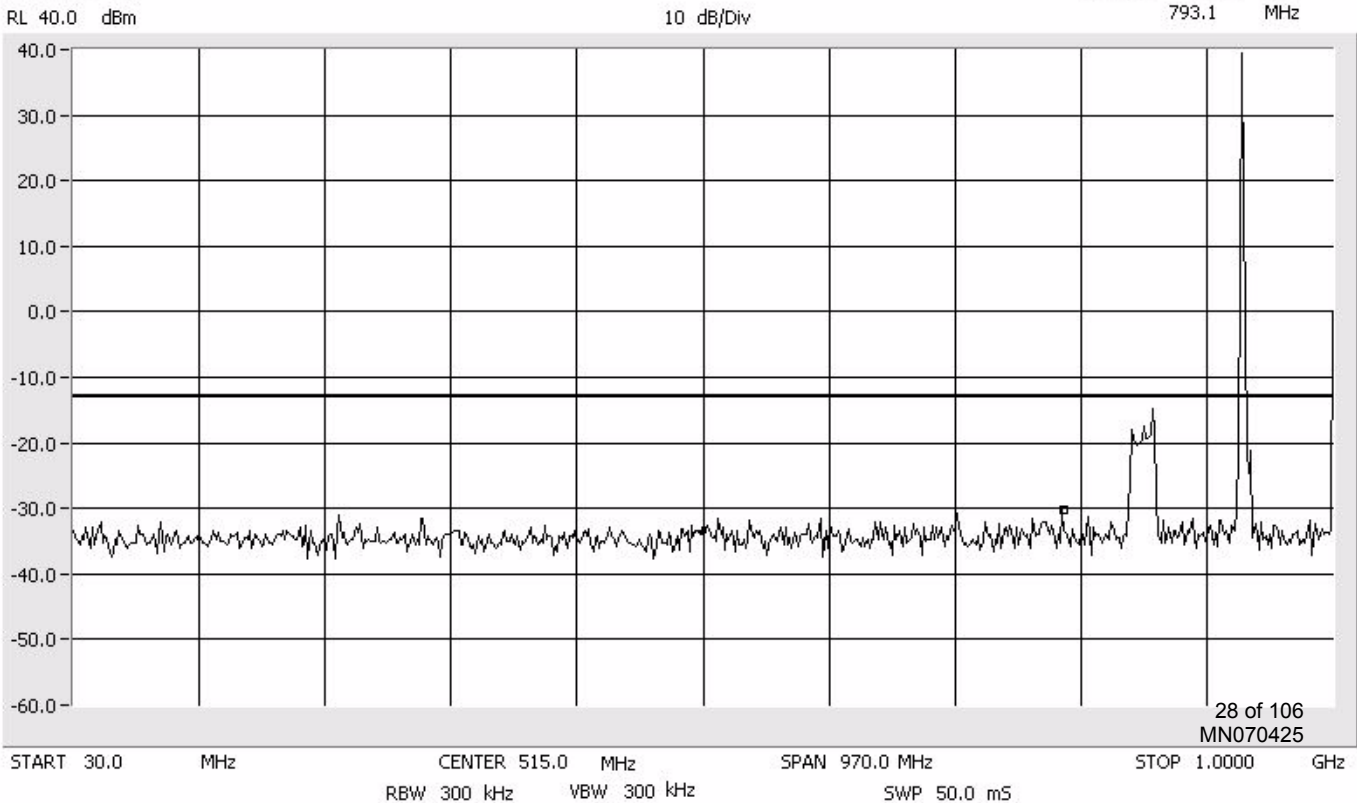


Conducted Emissions iDEN SMR 900 MHz

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

ATTEN 20 dB
RL 40.0 dBm

delta MKR -30.33 dBm
793.1 MHz



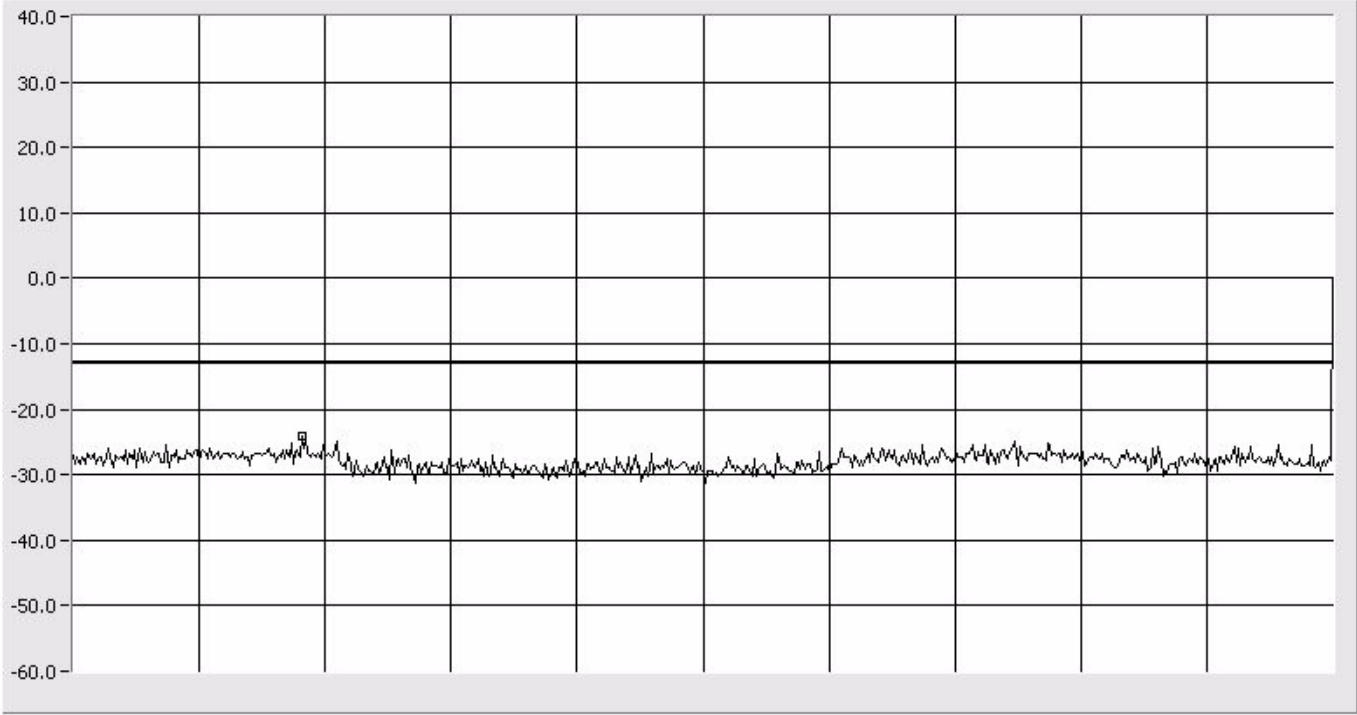
Conducted Emissions iDEN SMR 900 MHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.17 dBm
2.635 GHz

10 dB/Div



START 1.000 GHz CENTER 5.500 GHz SPAN 9.000 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 180 mS

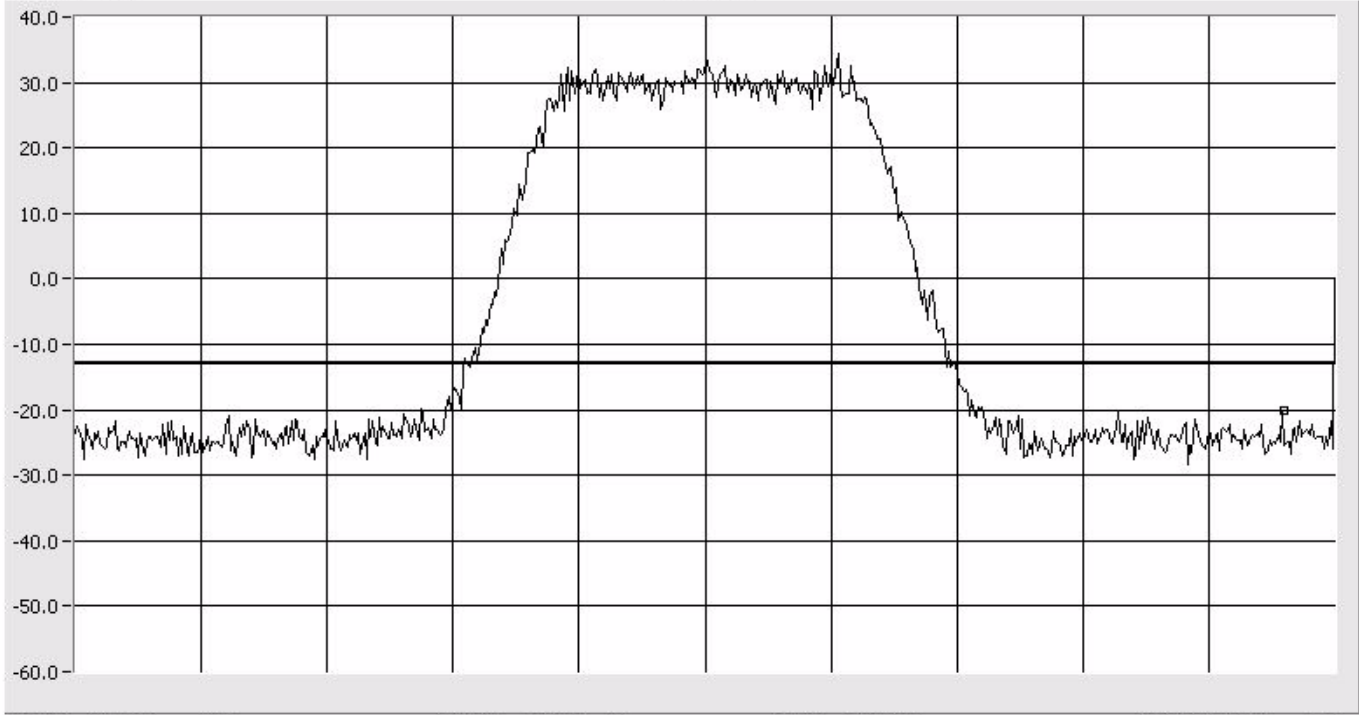
Conducted Emissions CDMA SMR 800 MHz

Center: 860.0 MHz
Span: 5 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -20.17 dBm
862.300 MHz

10 dB/Div



RBW 100 kHz VBW 100 kHz SWP 50.0 mS

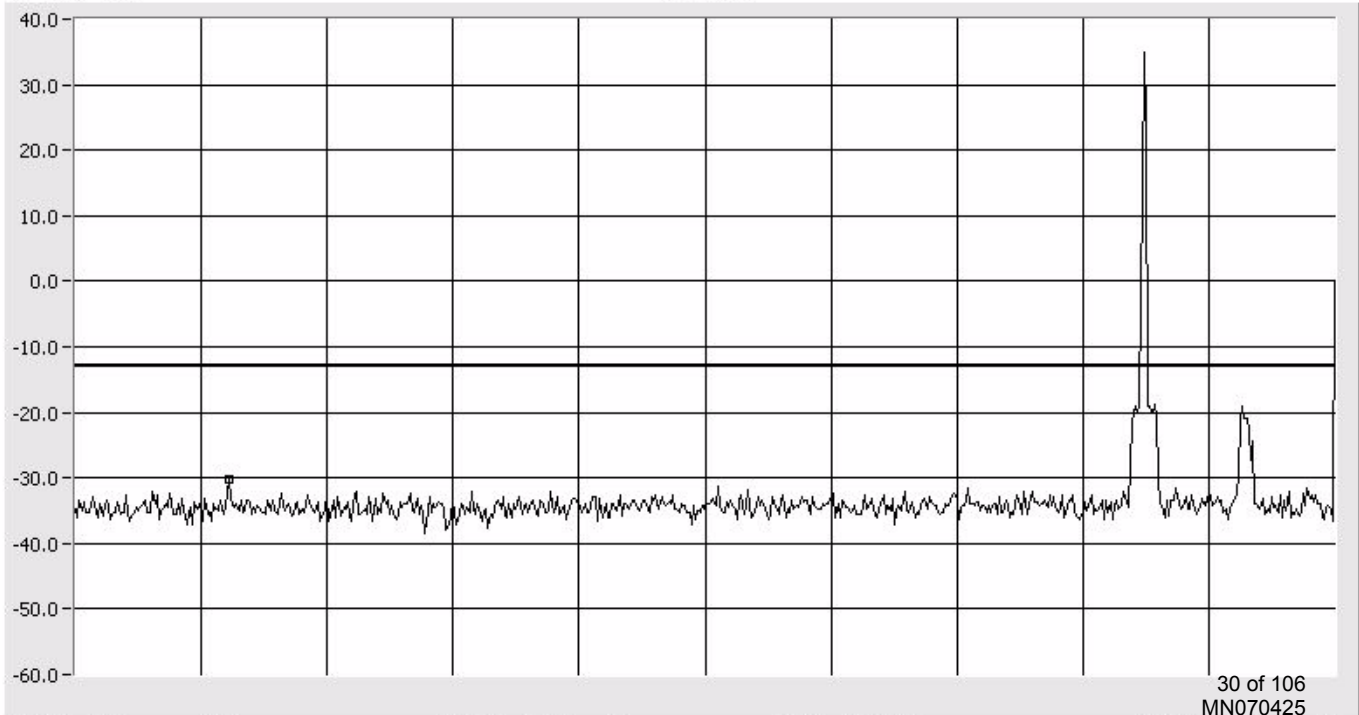
Conducted Emissions CDMA SMR 800 MHz

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

ATTEN 20 dB
RL 40.0 dBm

delta MKR -30.17 dBm
148.0 MHz

10 dB/Div



RBW 300 kHz VBW 300 kHz SWP 50.0 mS

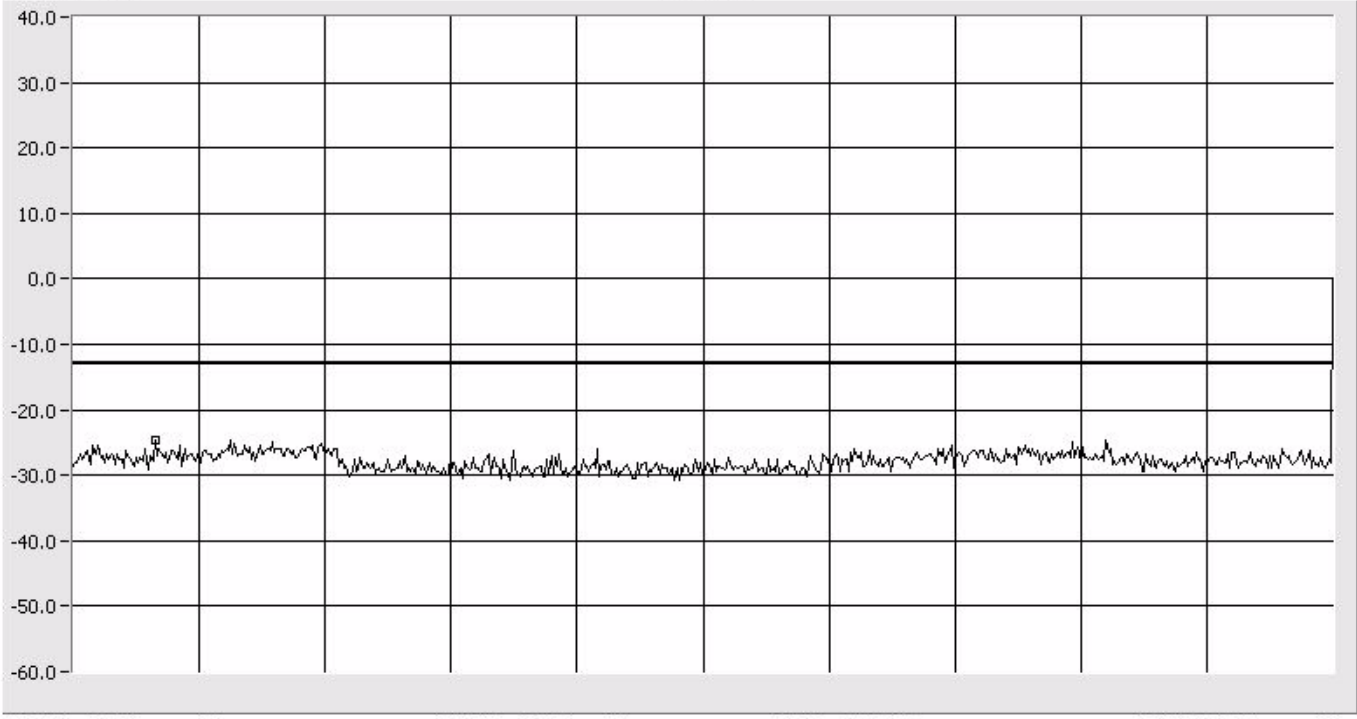
Conducted Emissions CDMA SMR 800 MHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.50 dBm
1.585 GHz

10 dB/Div



START 1.000 GHz CENTER 5.500 GHz SPAN 9.000 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 180 mS

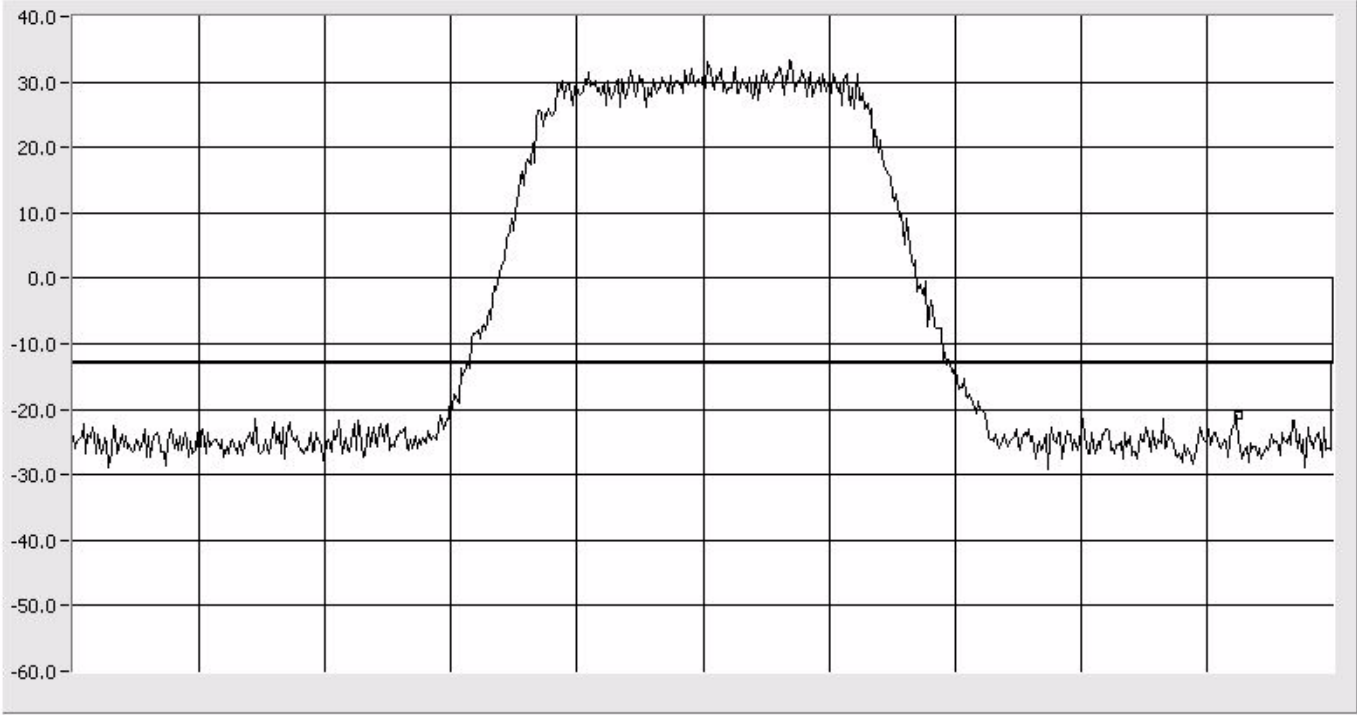
Conducted Emissions CDMA SMR 900 MHz

Center: 937.5 MHz
Span: 5 MHz
RBW/VBW: 100 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -21.00 dBm
939.625 MHz

10 dB/Div



RBW 100 kHz VBW 100 kHz SWP 50.0 mS

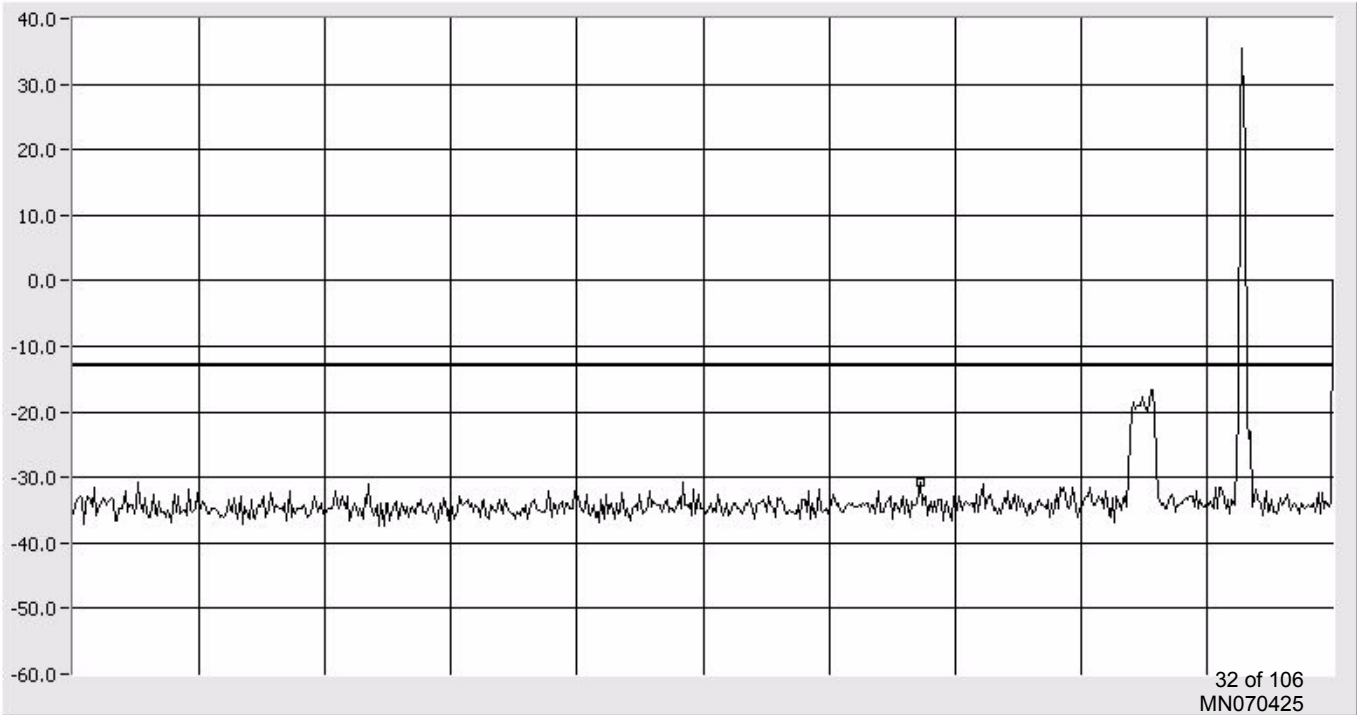
Conducted Emissions CDMA SMR 900 MHz

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

ATTEN 20 dB
RL 40.0 dBm

delta MKR -30.67 dBm
683.1 MHz

10 dB/Div



RBW 300 kHz VBW 300 kHz SWP 50.0 mS

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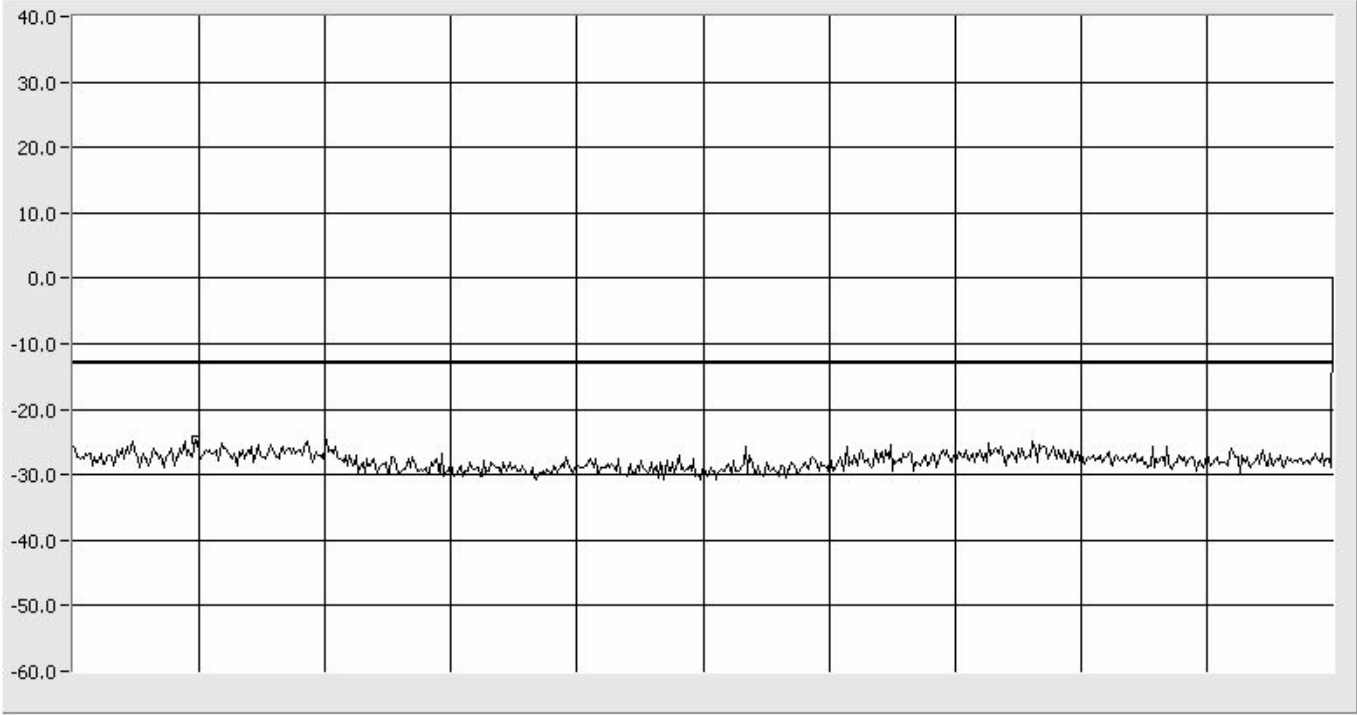
Conducted Emissions CDMA SMR 900 MHz

1 GHz to 10 GHz
RBW/VBW: 1 MHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -24.50 dBm
1.870 GHz

10 dB/Div



START 1.000 GHz CENTER 5.500 GHz SPAN 9.000 GHz STOP 10.000 GHz
RBW 1.0 MHz VBW 1.0 MHz SWP 180 mS

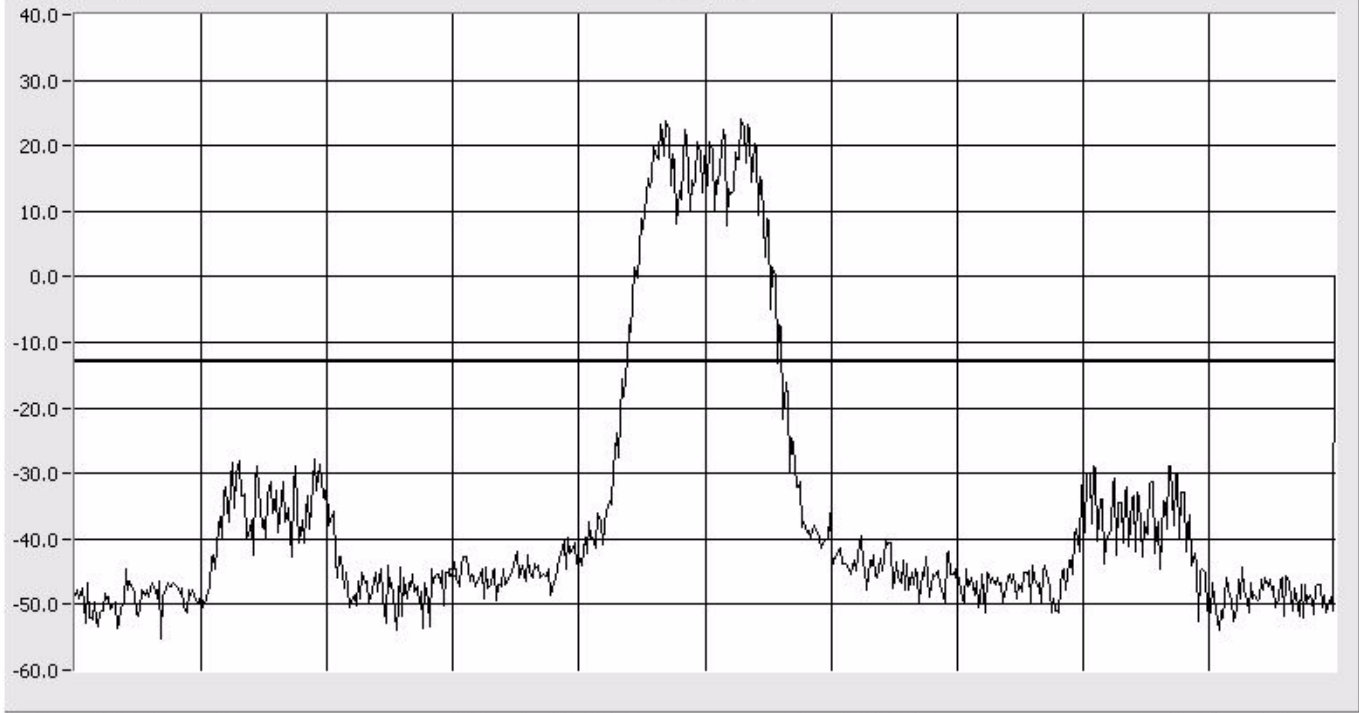
Band Edge FM

Center: 851.04 MHz
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -45.00 dBm
851.0000 MHz

10 dB/Div



START 850.9400 MHz CENTER 851.0400MHz SPAN 200.0 kHz STOP 851.1400 MHz
RBW 300 Hz VBW 1.0 kHz SWP 5.60 Sec

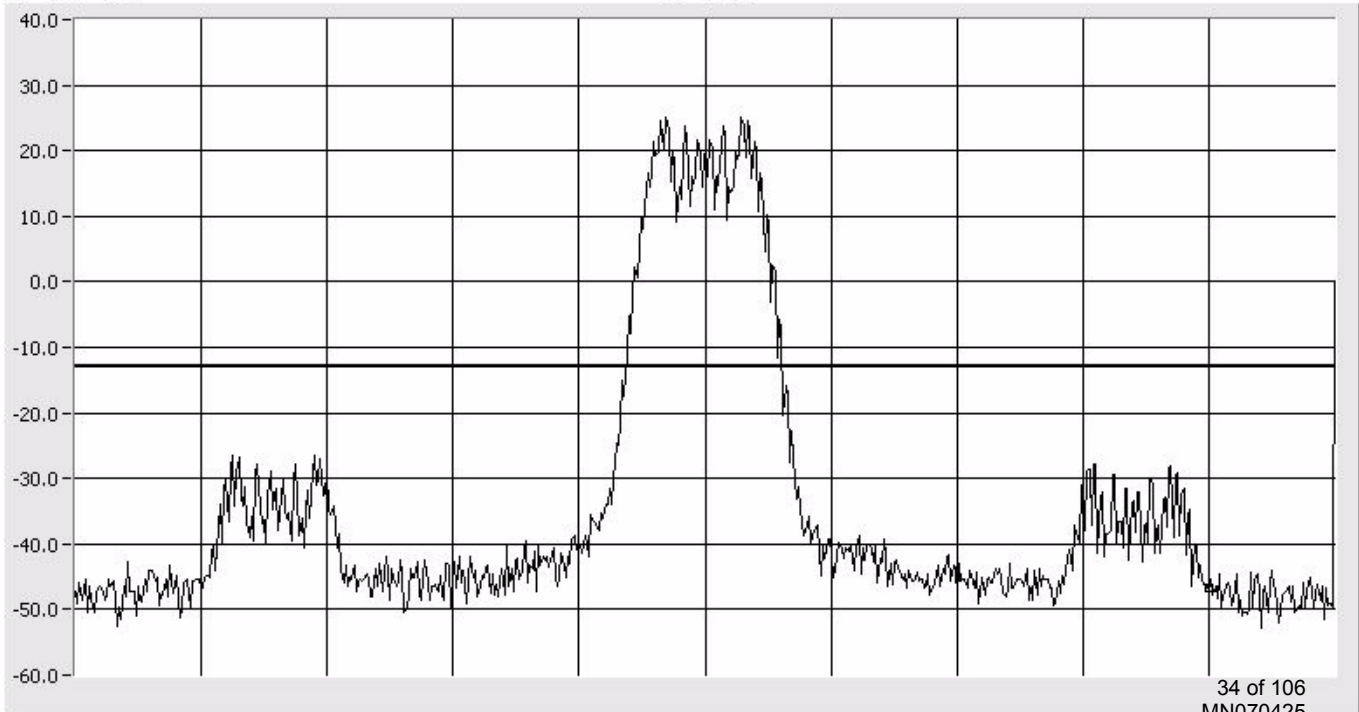
Band Edge FM

Center: 868.92 MHz
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz

ATTEN 20 dB
RL 40.0 dBm

delta MKR -46.67 dBm
869.0000 MHz

10 dB/Div

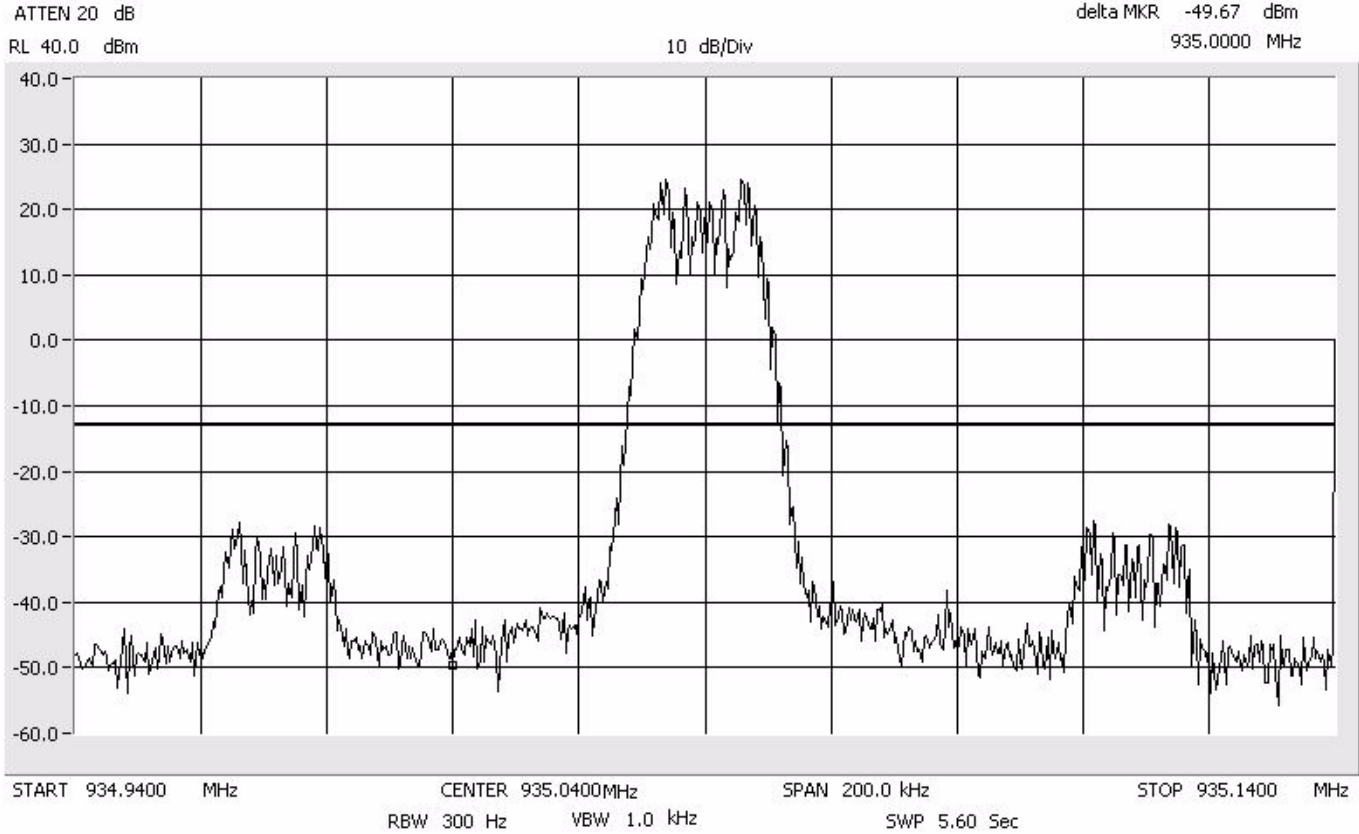


START 868.8200 MHz CENTER 868.9200MHz SPAN 200.0 kHz STOP 869.0200 MHz
RBW 300 Hz VBW 1.0 kHz SWP 5.60 Sec

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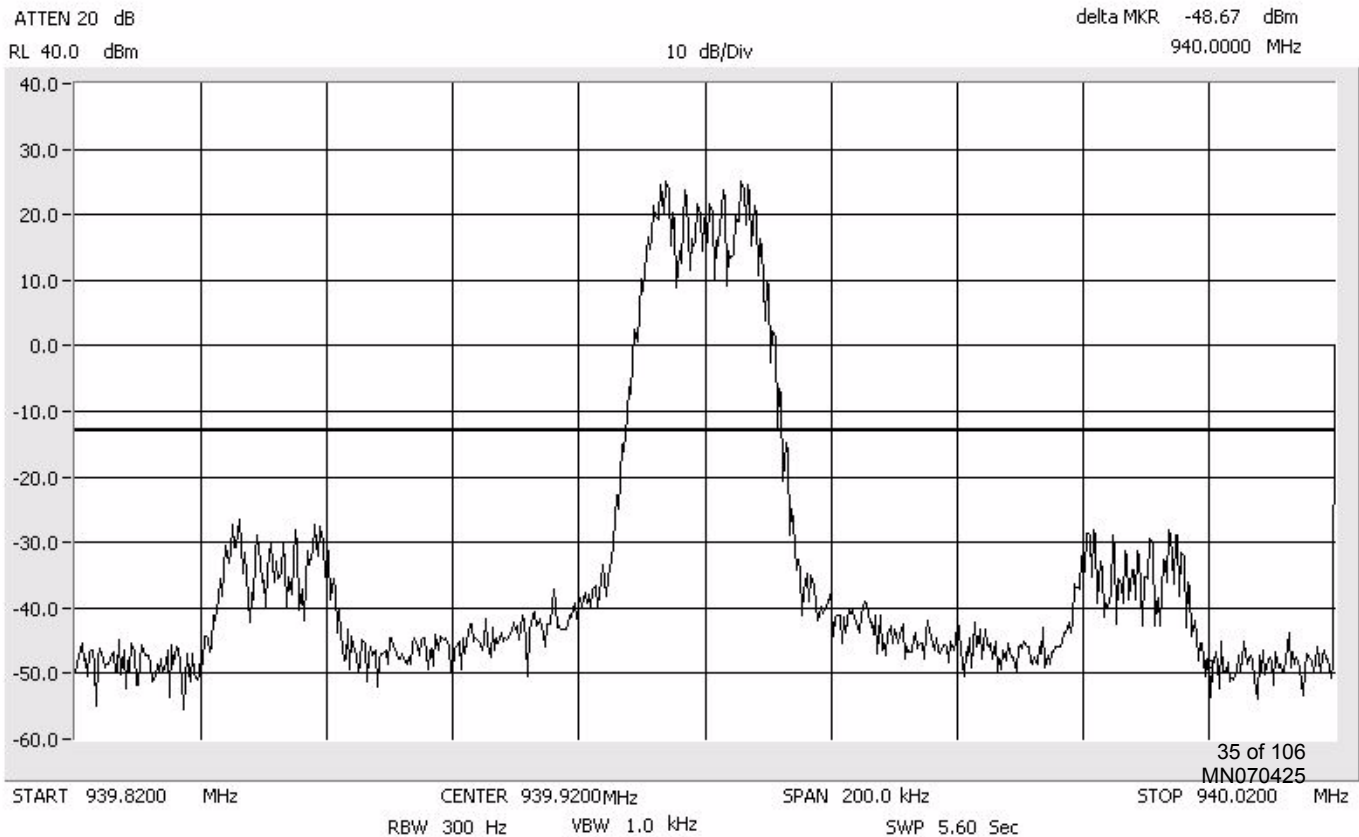
Band Edge FM

Center: 935.04 MHz
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz



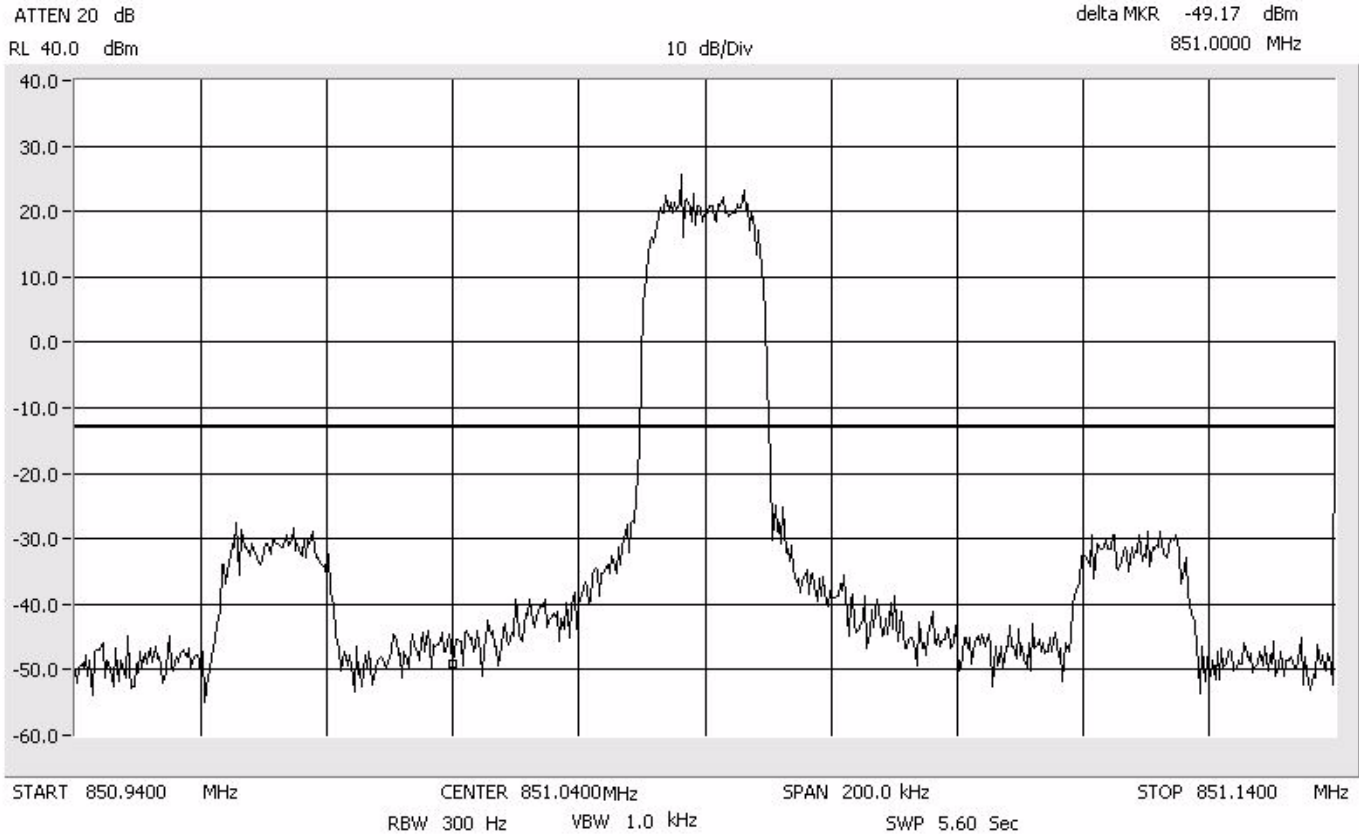
Band Edge FM

Center: 939.92 MHz
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz



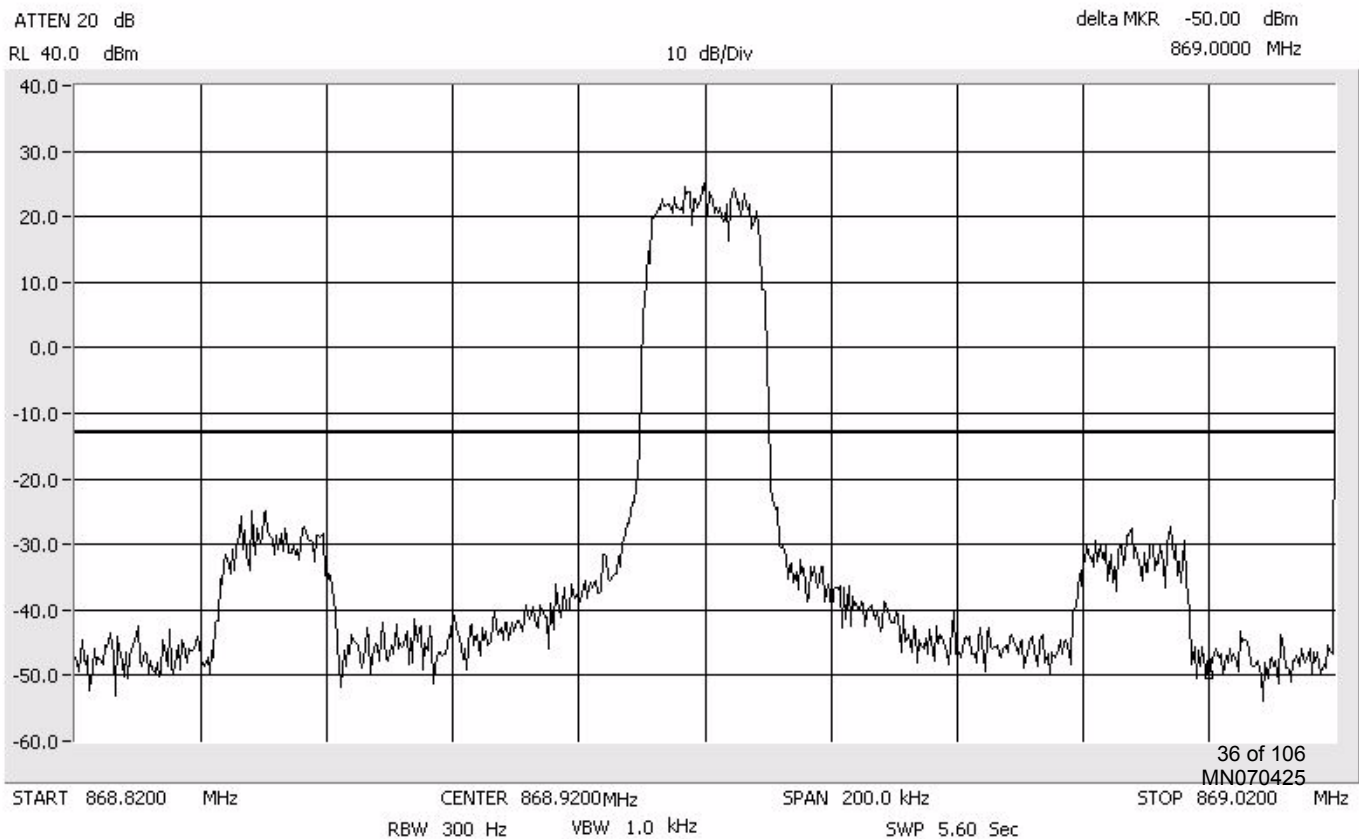
Band Edge iDEN

Center: 851.04
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz



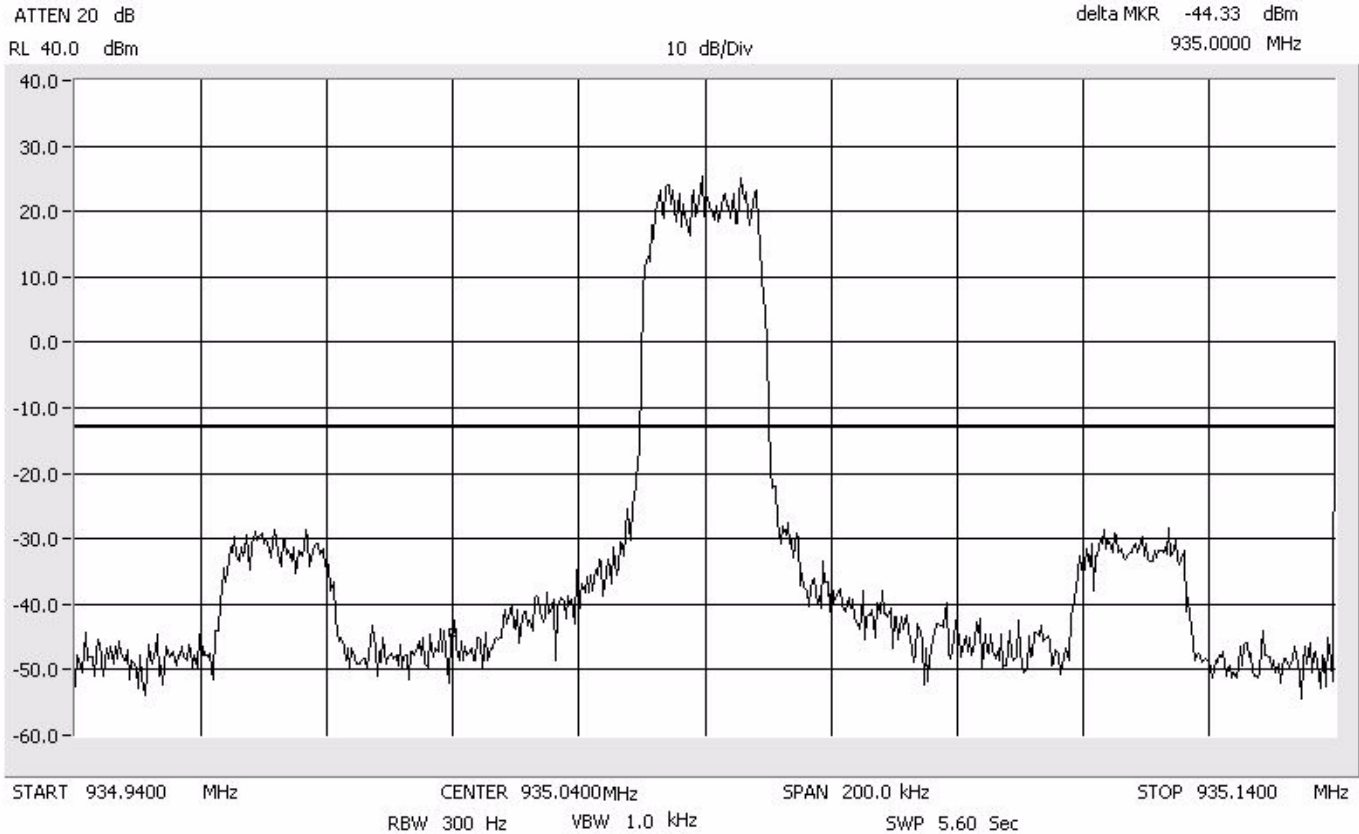
Band Edge iDEN

Center: 868.92 MHz
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz



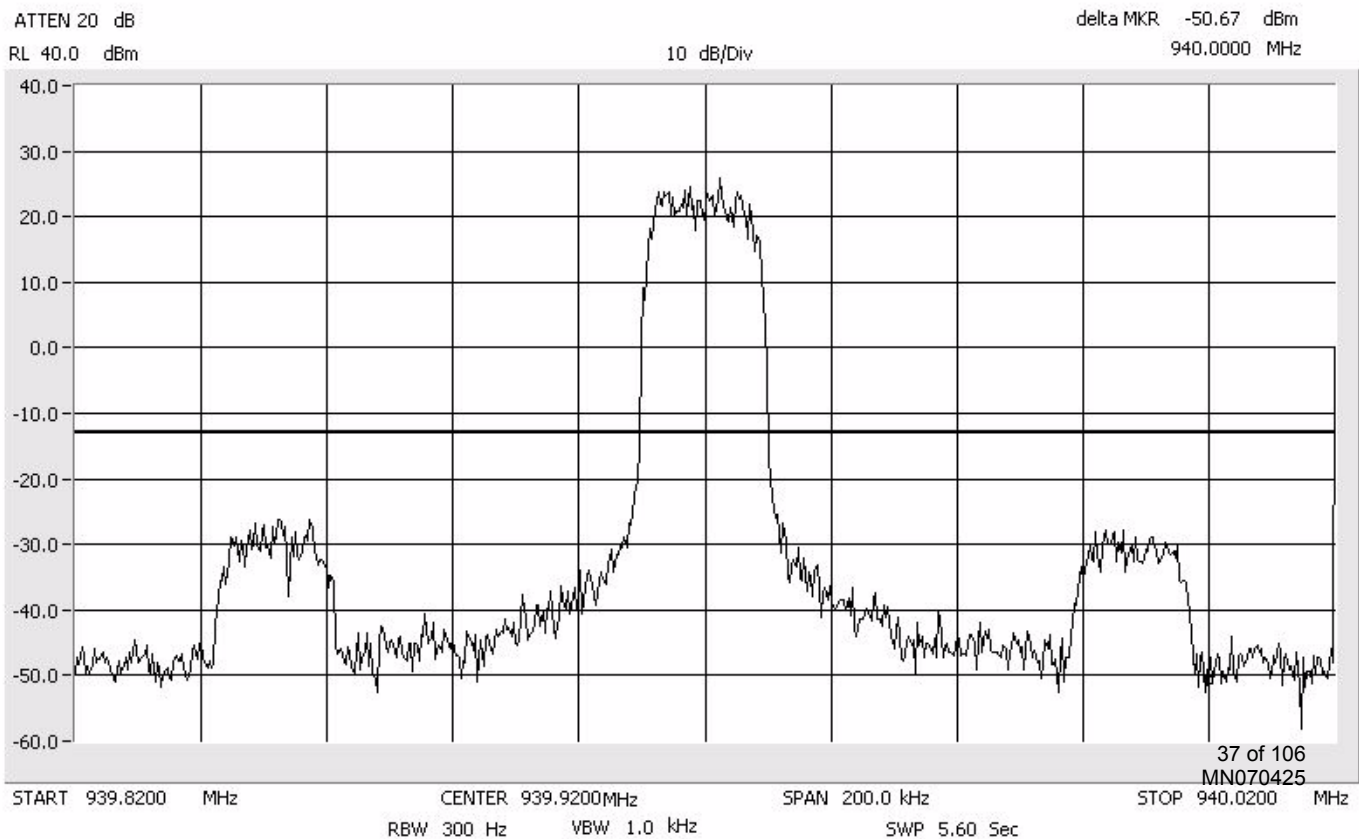
Band Edge iDEN

Center: 935.04
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz



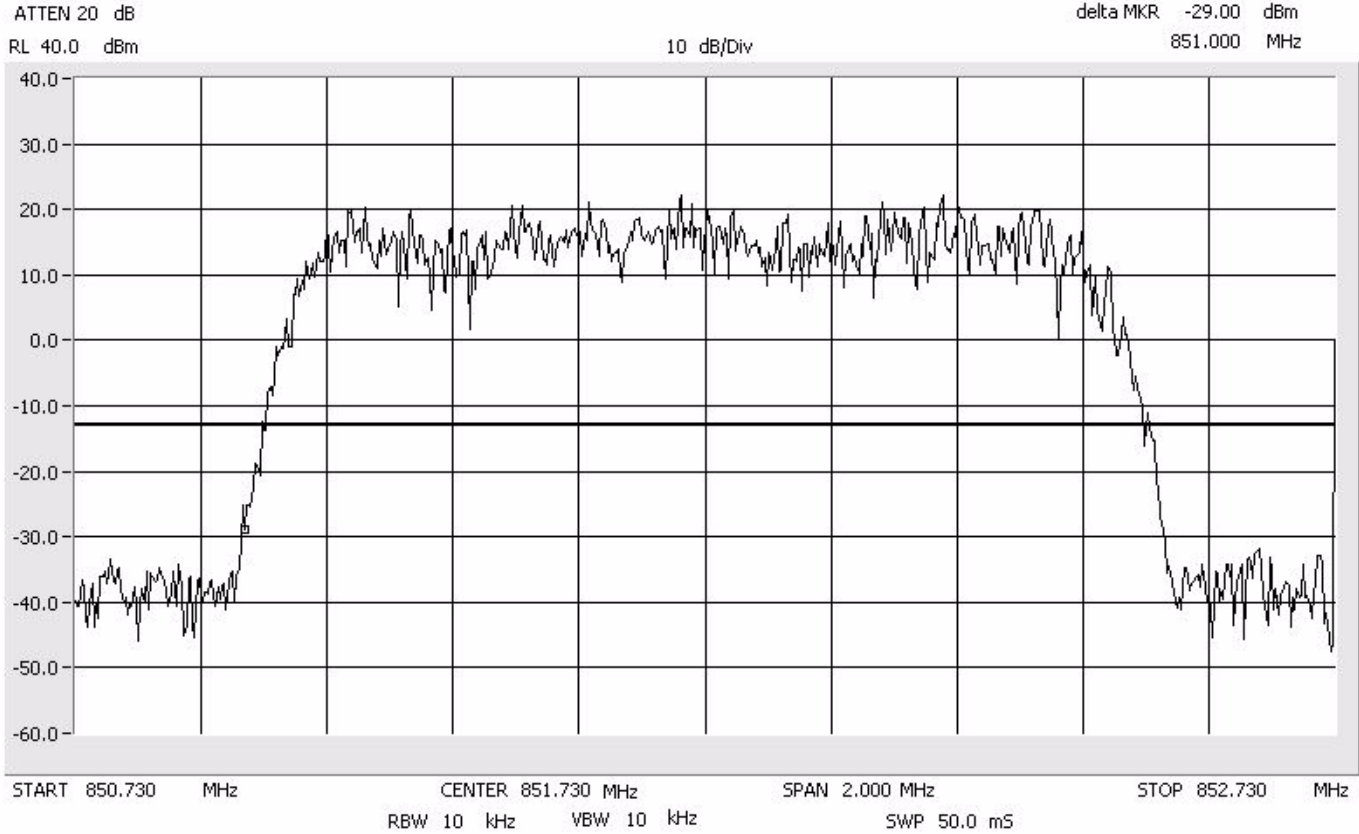
Band Edge iDEN

Center: 939.92 MHz
Span: 200 kHz
RBW: 300 Hz
VBW: 1 kHz



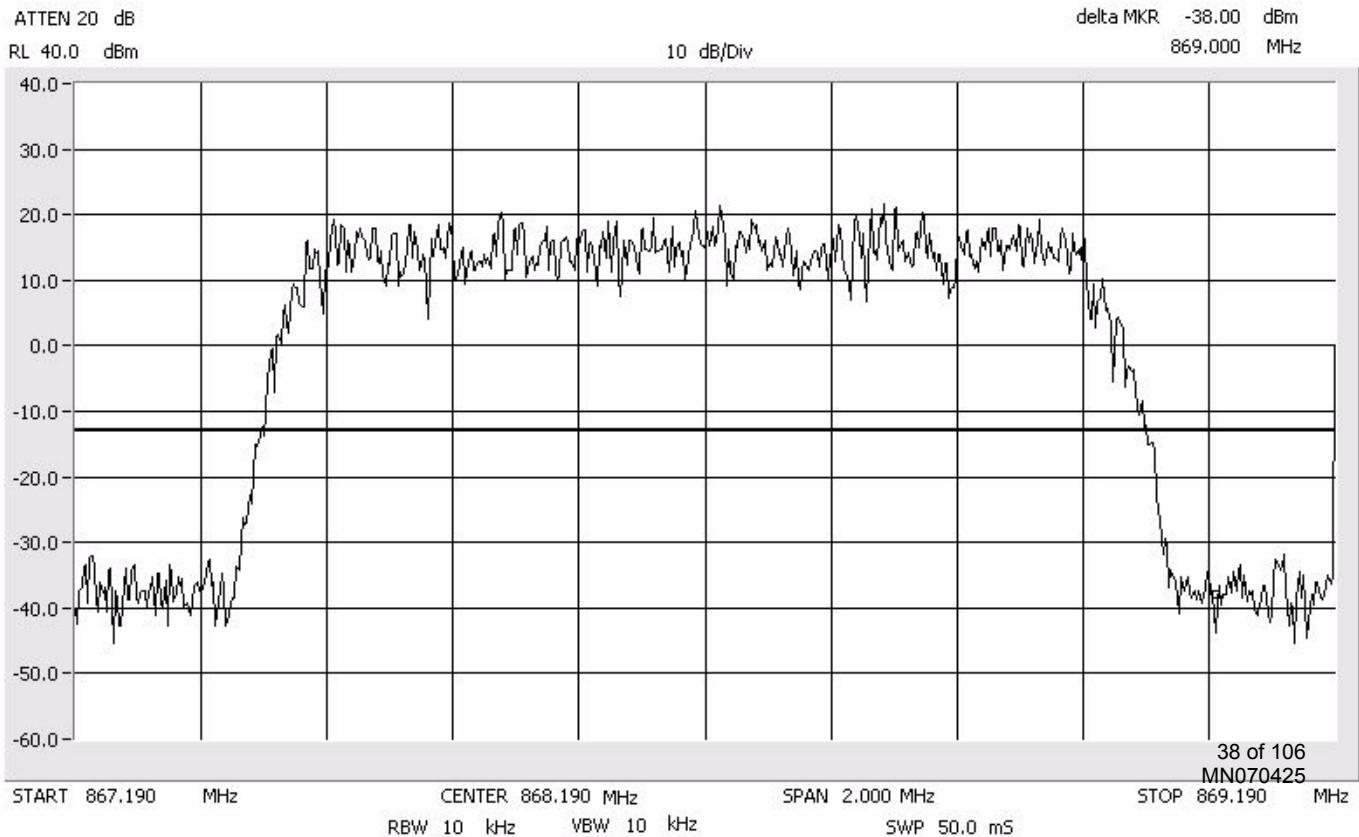
Band Edge CDMA

Center: 851.73
Span: 2 MHz
RBW: 10 kHz
VBW: 10 kHz



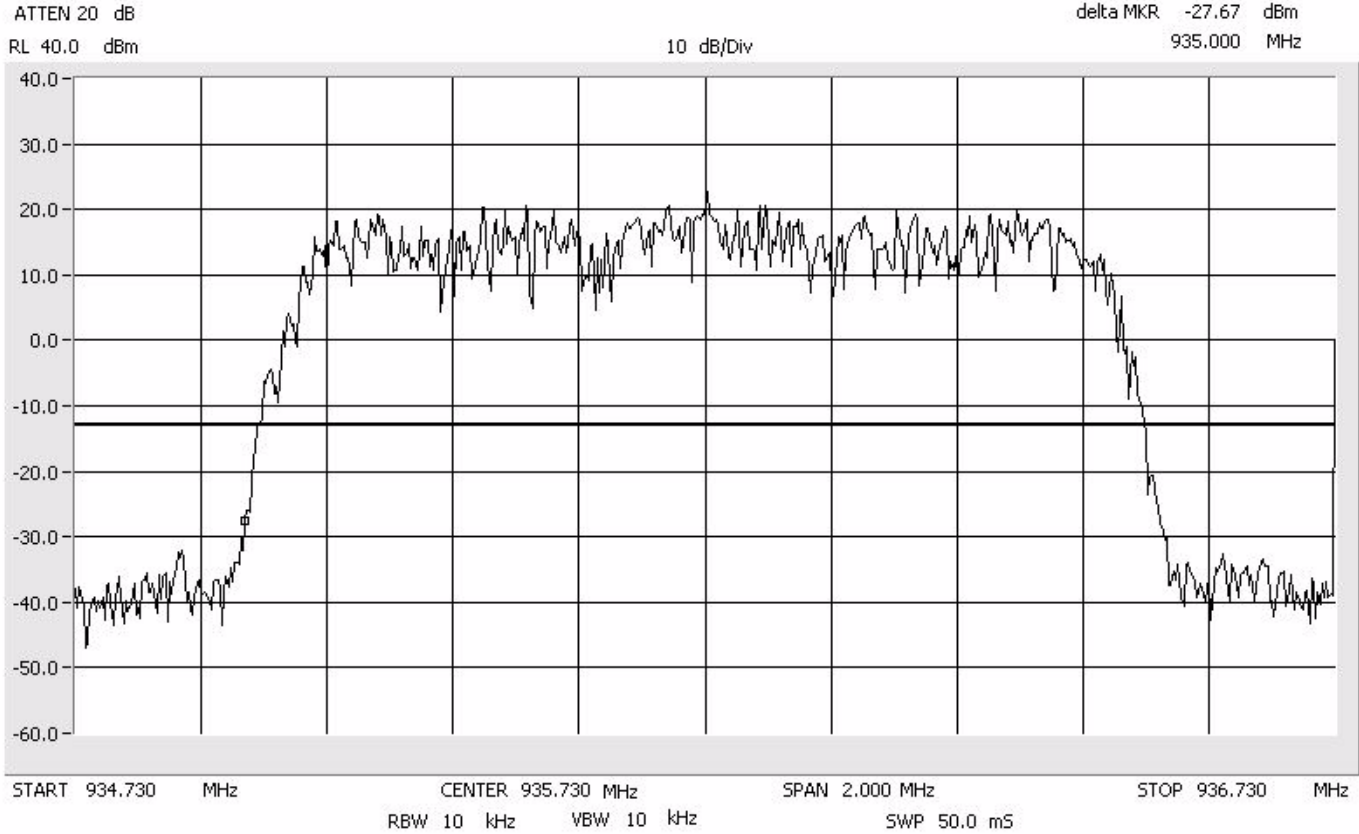
Band Edge CDMA

Center: 868.19 MHz
Span: 2 MHz
RBW: 10 kHz
VBW: 10 kHz



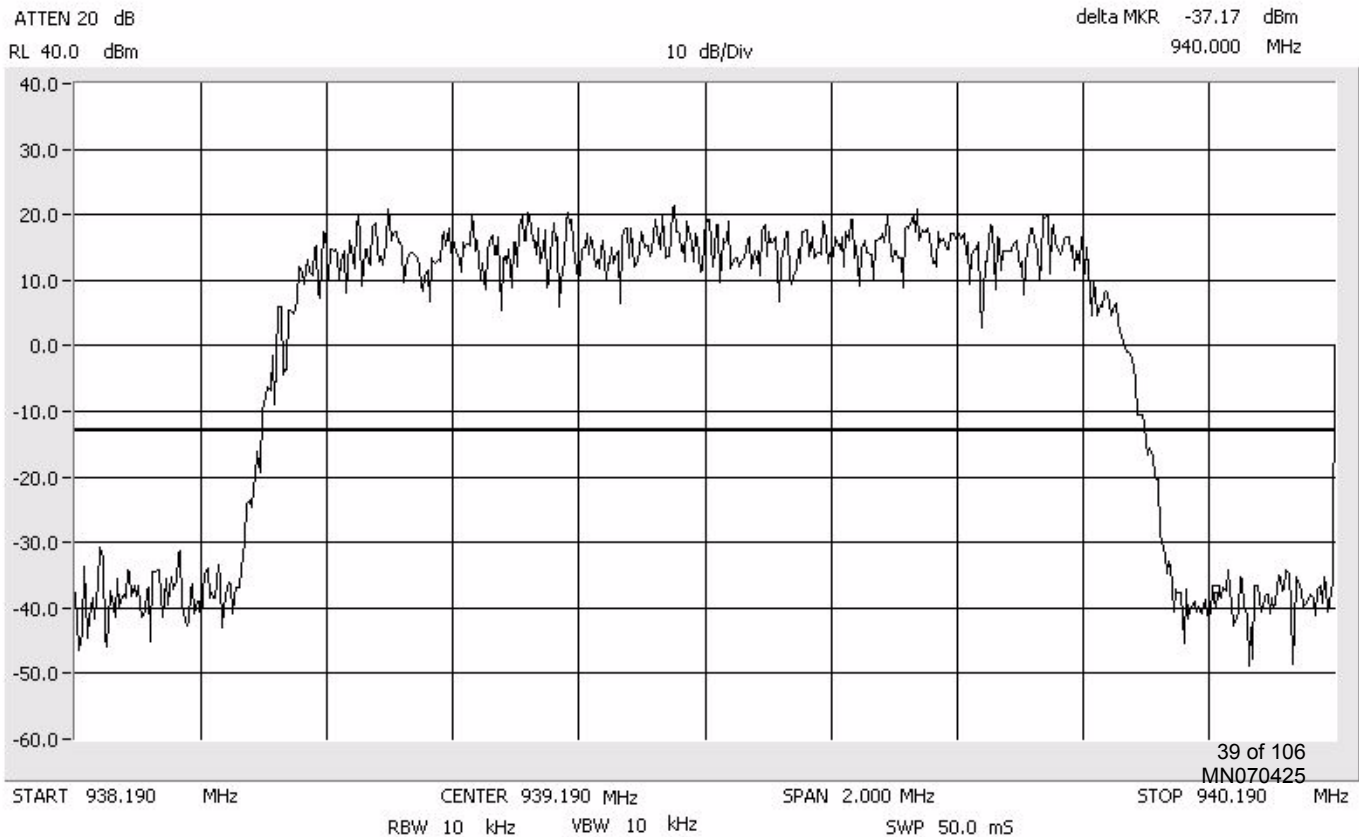
Band Edge CDMA

Center: 935.73
Span: 2 MHz
RBW: 10 kHz
VBW: 10 kHz



Band Edge CDMA

Center: 939.19 MHz
Span: 2 MHz
RBW: 10 kHz
VBW: 10 kHz



Conducted Output Power Test for ADC Inc. Digivance® SCX Model Number DGVC-901000RU

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*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 FM, iDEN, and CDMA signal generator. The power meter level was offset to compensate for attenuators and cable loss between the EUT and the power meter.

A signal was used at the low, mid and high parts of the selected band. The power meter level was offset by 30.00 dB to compensate for attenuators and cable loss between the EUT and the power meter.

FM		iDEN	
12.62 Watts		12.59 Watts	
Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output
851.2 MHz	<u>40.92</u> dBm	851.2 MHz	<u>40.94</u> dBm
860.0 MHz	<u>41.01</u> dBm	860.0 MHz	<u>41.00</u> dBm
868.8 MHz	<u>40.37</u> dBm	868.8 MHz	<u>40.85</u> dBm

CDMA	
11.78 Watts	
Carrier Frequency	Carrier Output
851.75 MHz	<u>40.25</u> dBm
860.0 MHz	<u>40.71</u> dBm
868.25 MHz	<u>40.61</u> dBm

FM		iDEN	
13.58 Watts		13.09 Watts	
Carrier Frequency	Carrier Output	Carrier Frequency	Carrier Output
935.2 MHz	<u>41.33</u> dBm	935.2 MHz	<u>41.03</u> dBm
937.5 MHz	<u>40.98</u> dBm	937.5 MHz	<u>41.17</u> dBm
939.8 MHz	<u>41.10</u> dBm	939.8 MHz	<u>40.94</u> dBm

CDMA	
11.40 Watts	
Carrier Frequency	Carrier Output
935.75 MHz	<u>40.57</u> dBm
937.5 MHz	<u>40.25</u> dBm
939.25 MHz	<u>40.03</u> dBm

Intermodulation Test for ADC Inc
Digivance® SCX
Model Number DGVC-901000RU

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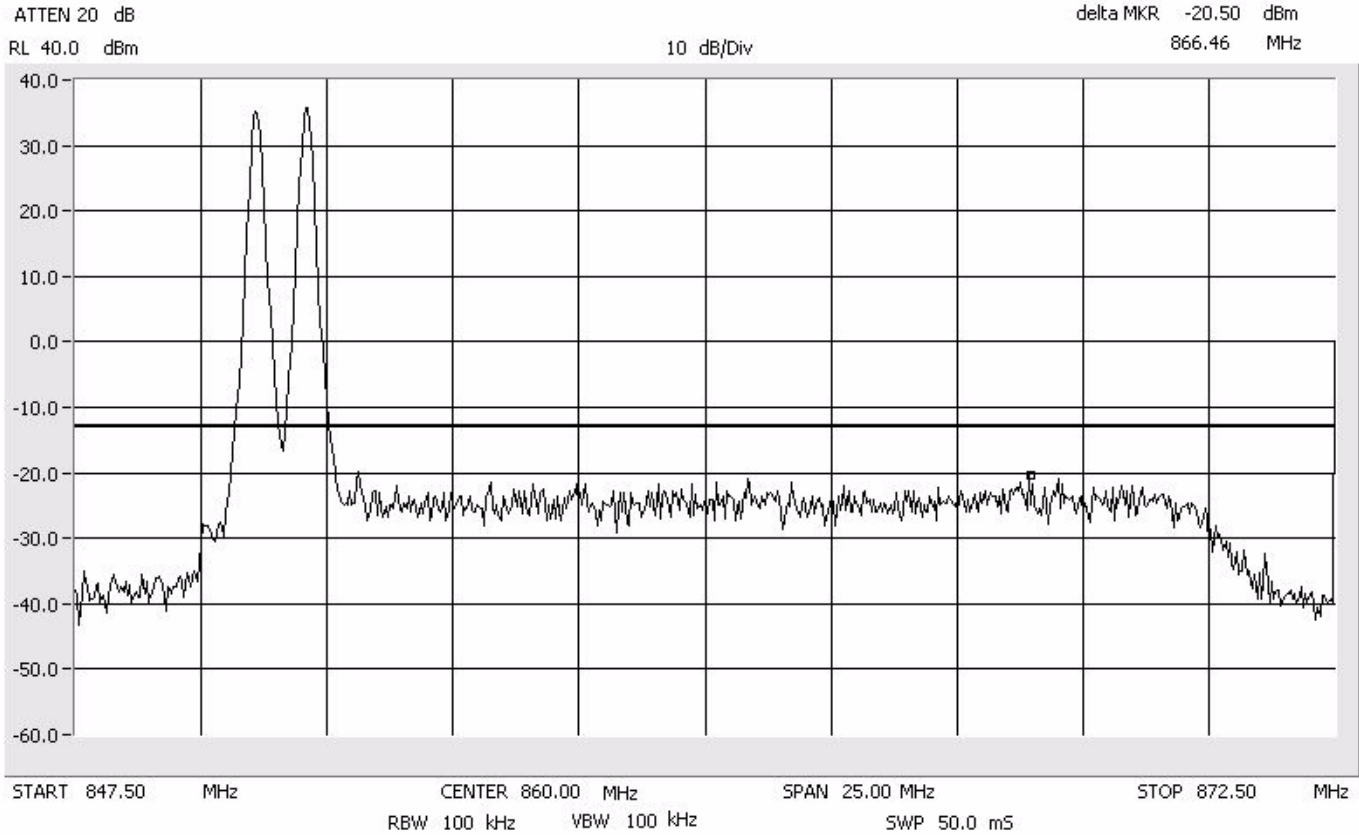
The inter-modulation products test was performed for the EUT. Three tests were performed with the modulation type. Test 1 was with 2 signals input to the EUT at lower end channels. Test 2 was with 2 signals input to the EUT at upper end channels. Test 3 was with 2 signals input to the EUT at upper and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

Results:
(See Plots)

FM

Intermodulation Close - Lower SMR 800 MHz

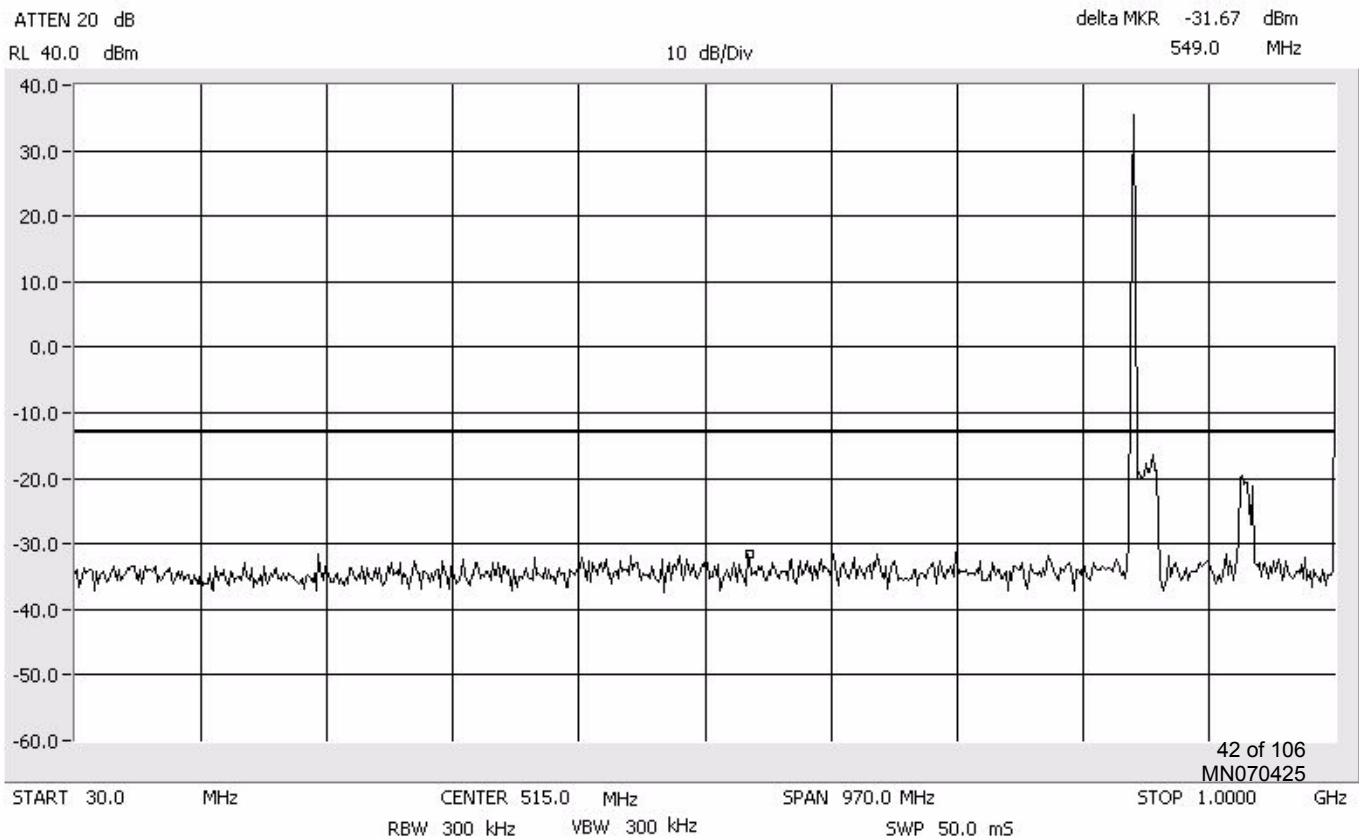
Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



FM

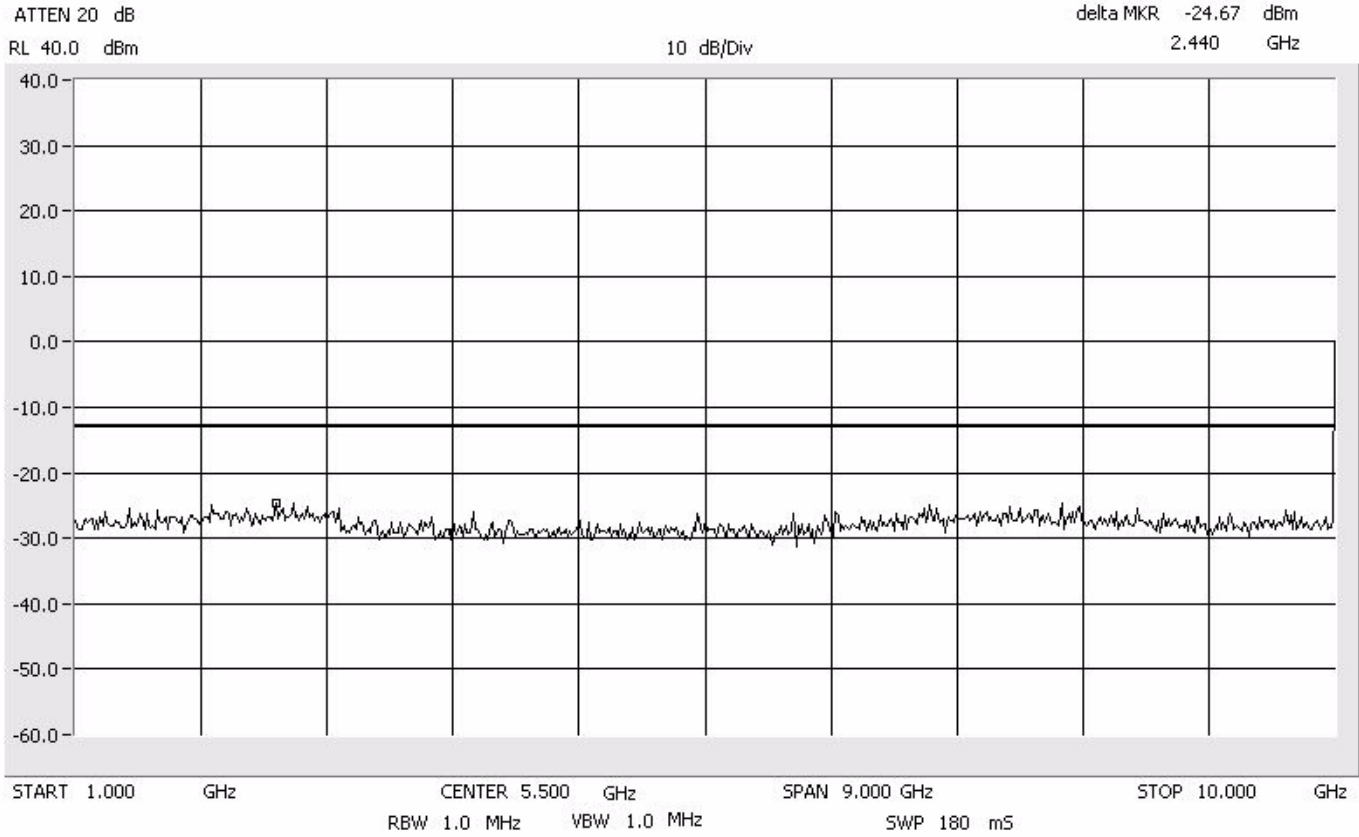
Intermodulation Close - Lower SMR 800 MHz

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



Intermodulation Close - Lower SMR 800 MHz

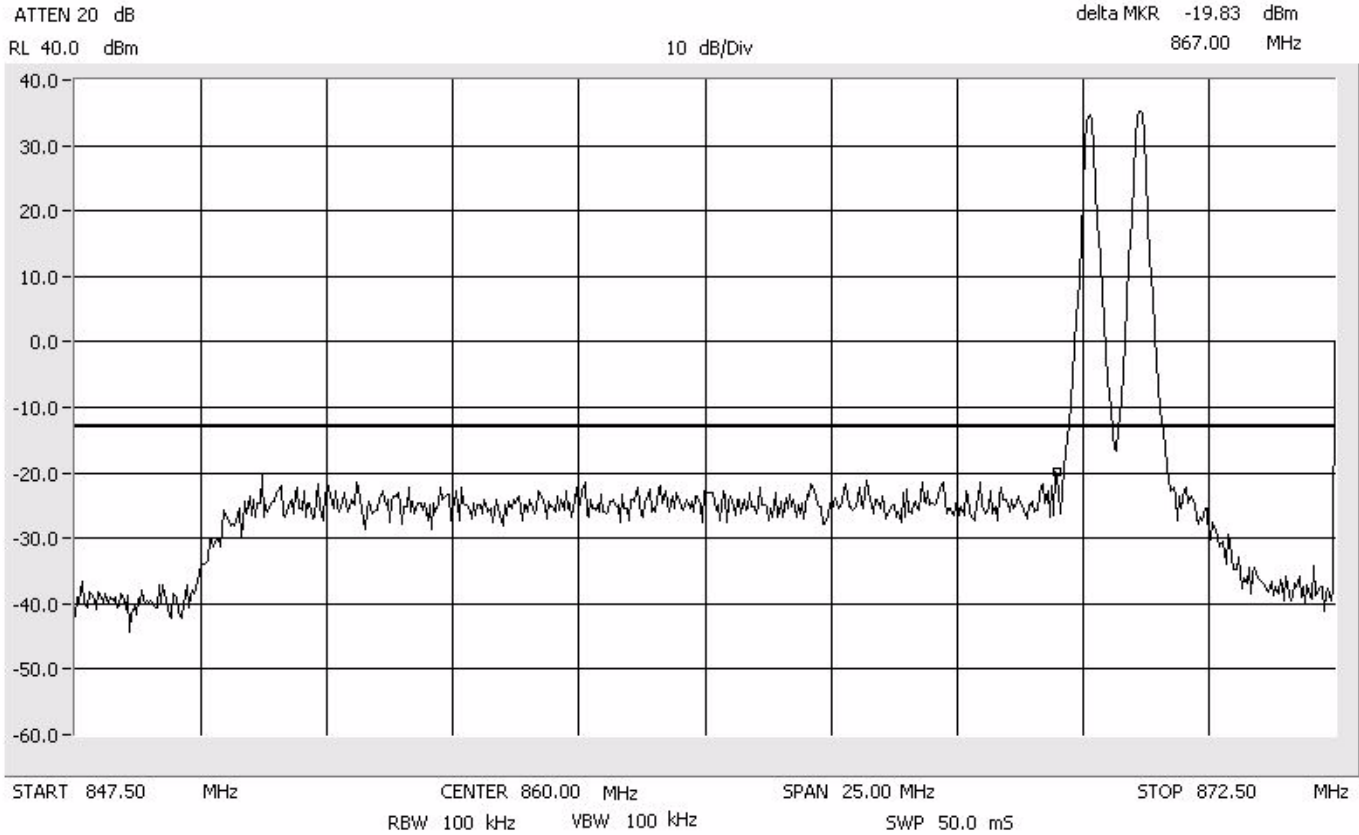
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz



FM

Intermodulation Close - Upper SMR 800 MHz

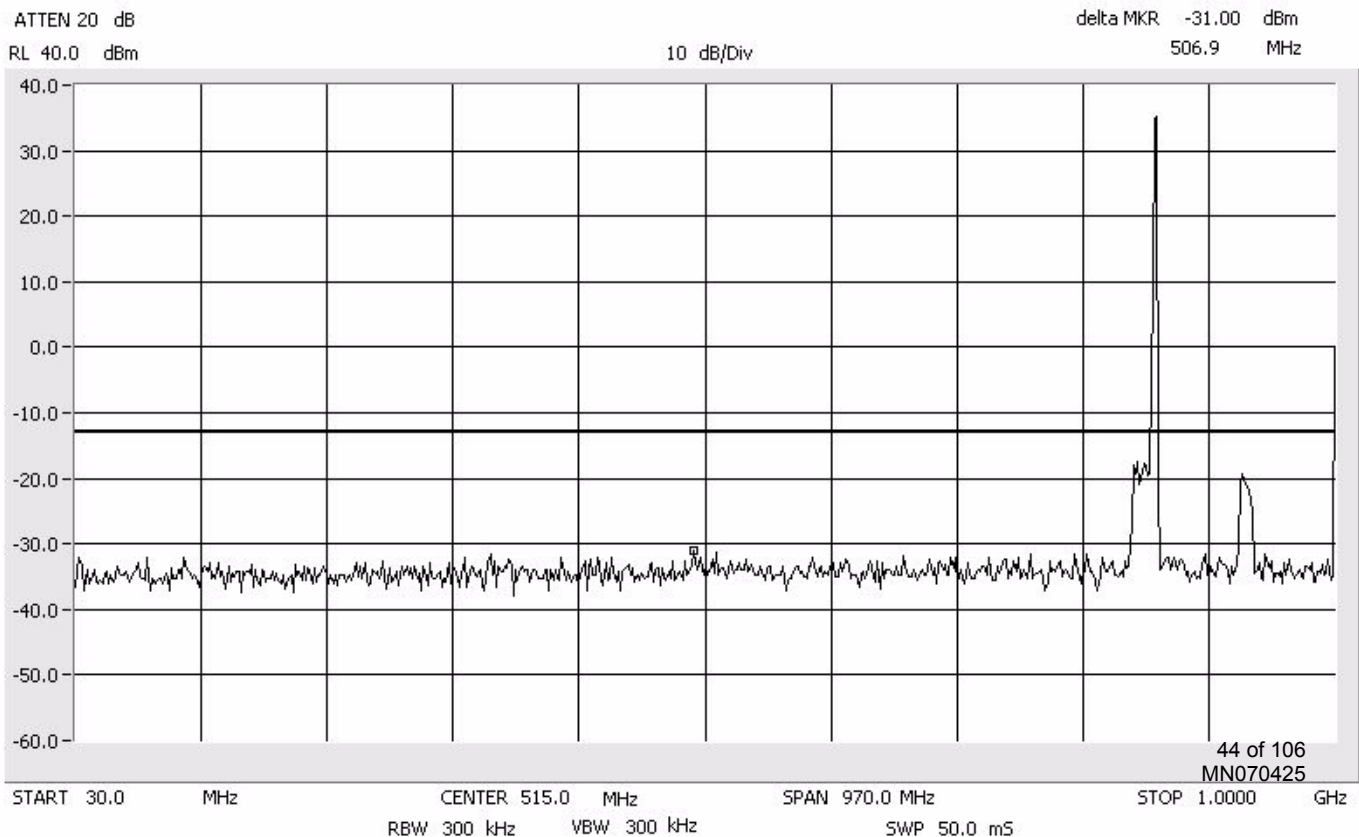
Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



FM

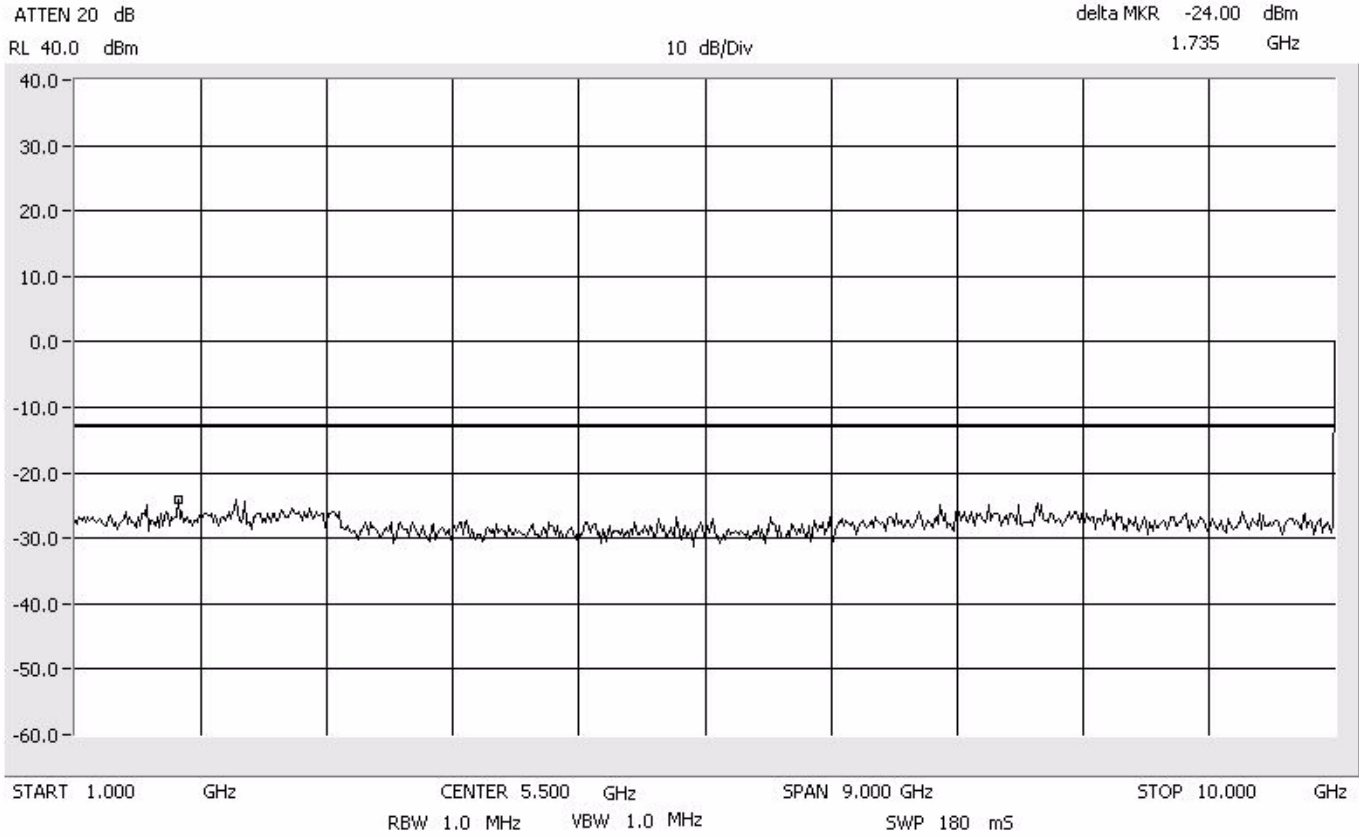
Intermodulation Close - Upper SMR 800 MHz

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



Intermodulation Close - Upper SMR 800 MHz

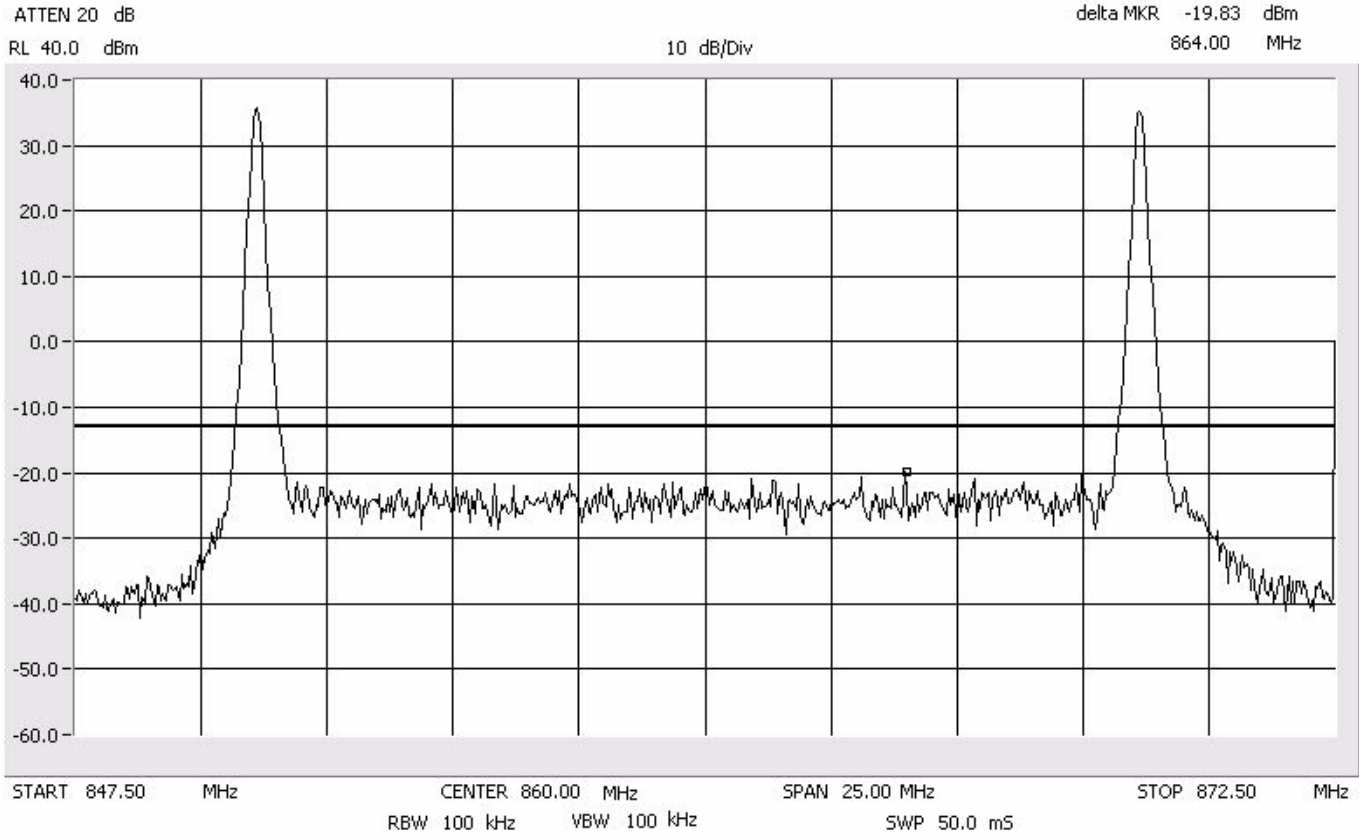
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz



FM

Intermodulation Apart SMR 800 MHz

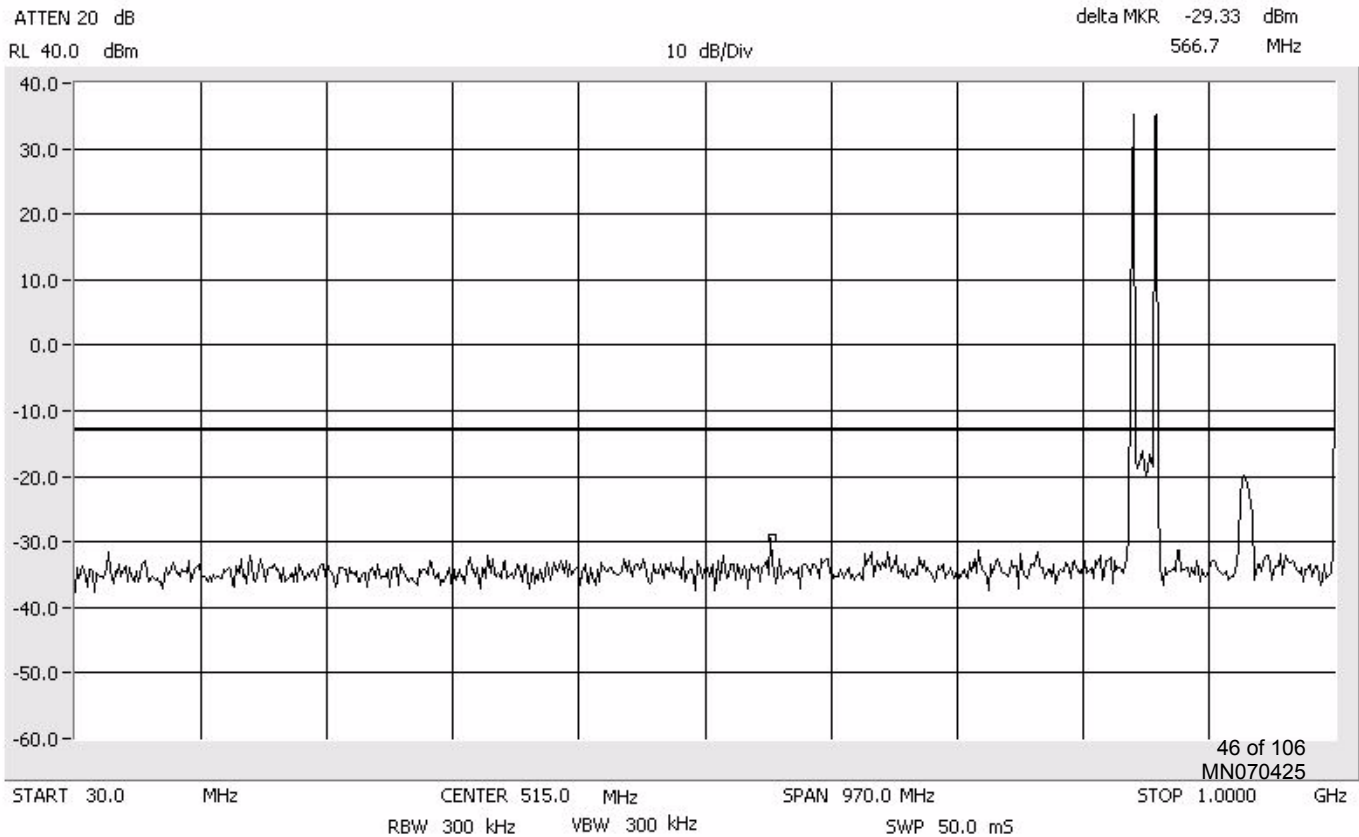
Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



FM

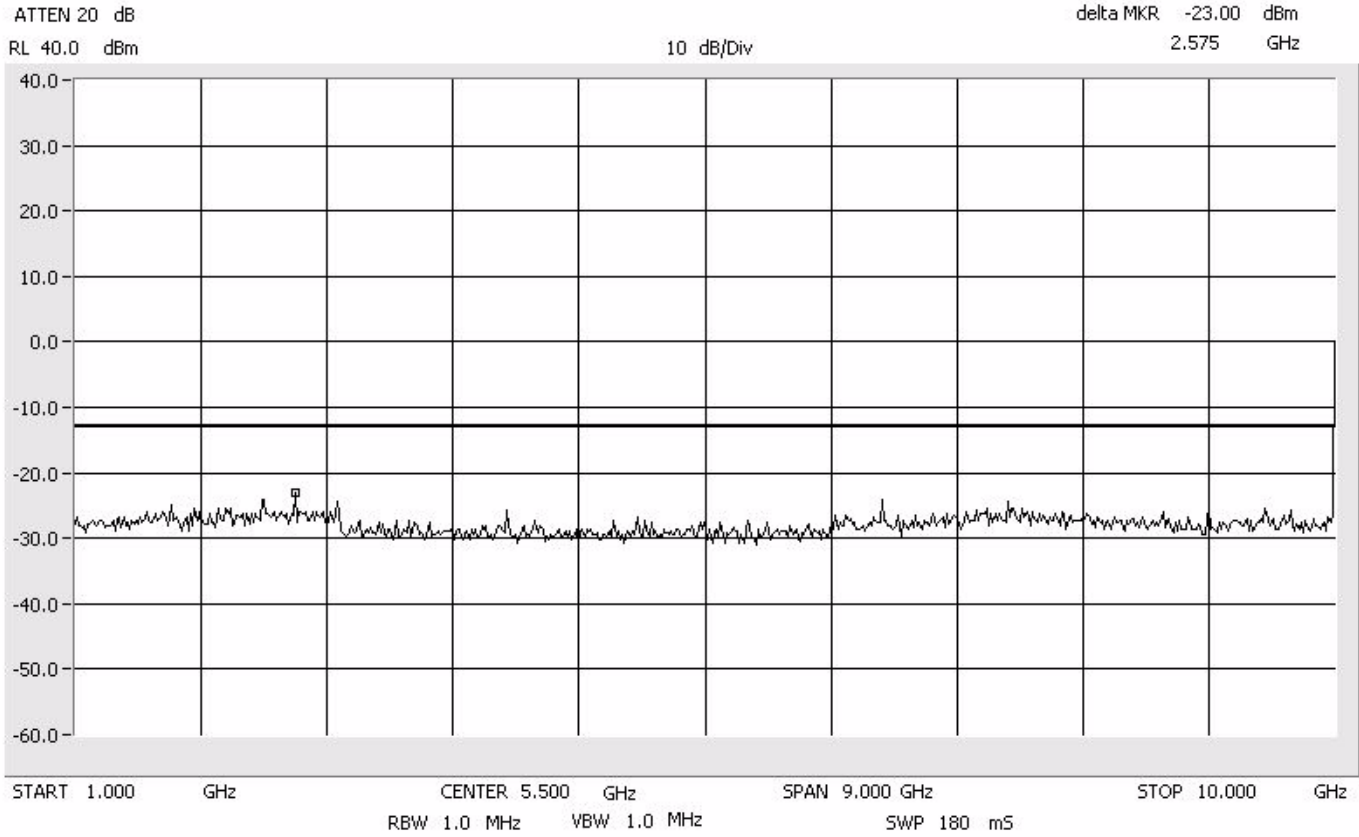
Intermodulation Apart SMR 800 MHz

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



Intermodulation Apart SMR 800 MHz

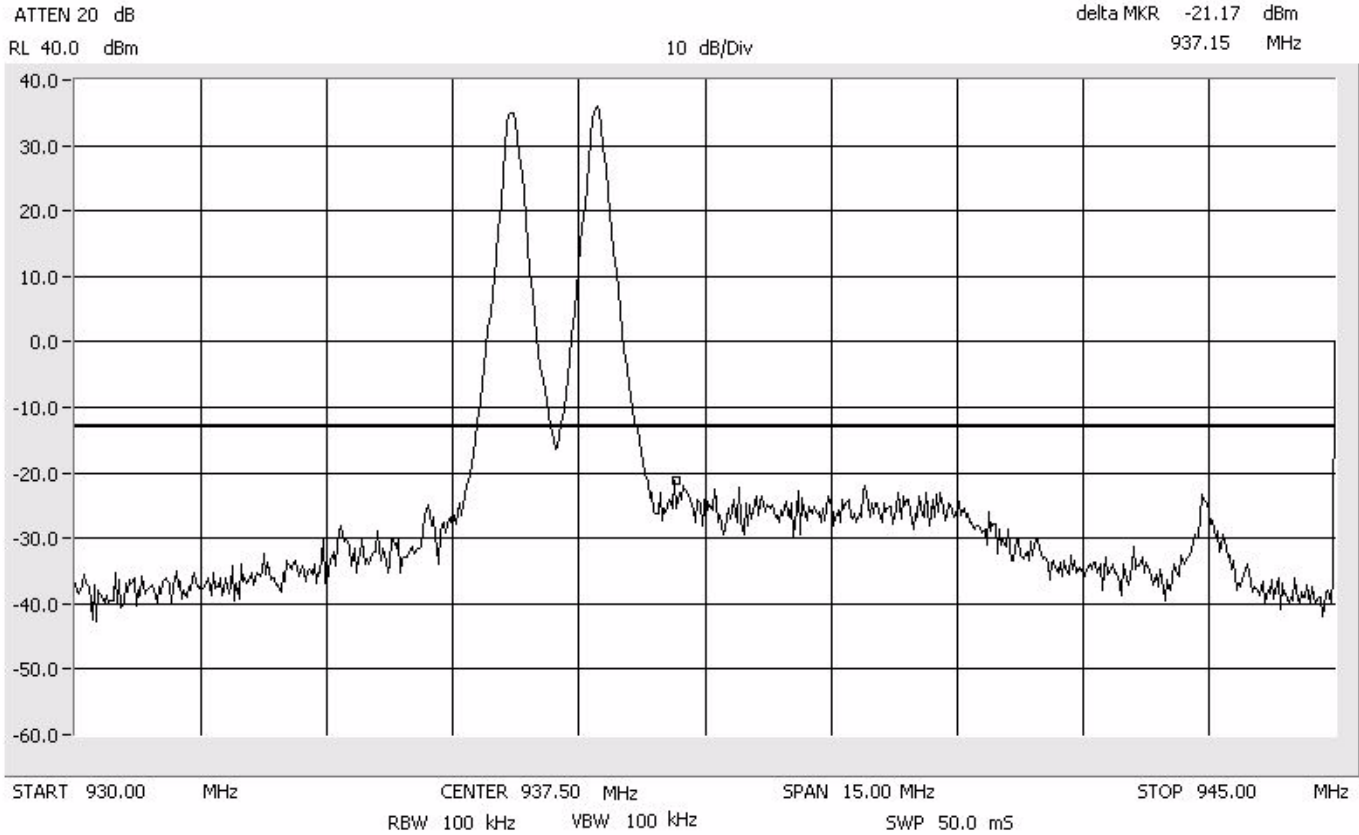
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz



FM

Intermodulation Close - Lower SMR 900 MHz

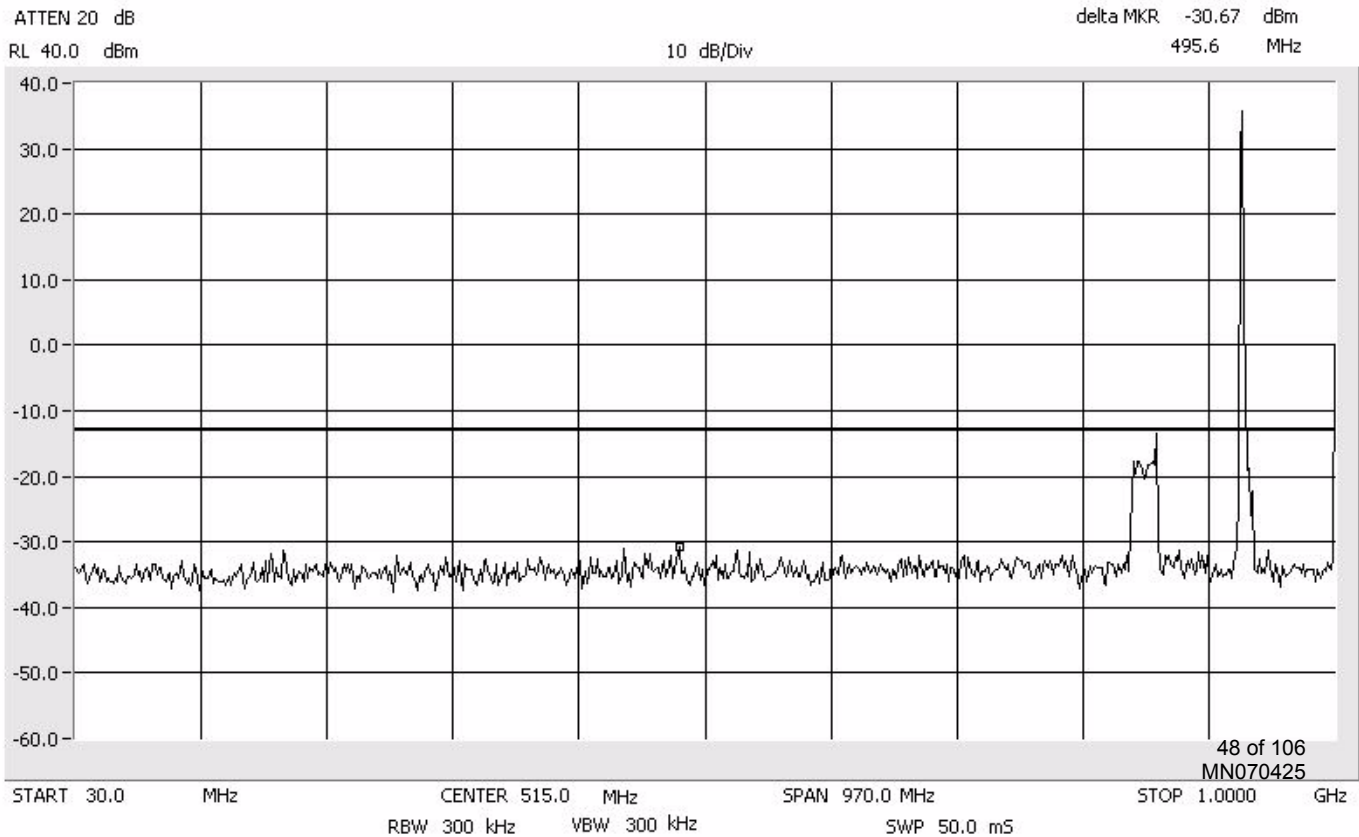
Center: 937.5 MHz
Span: 15 MHz
RBW/VBW: 100 kHz



FM

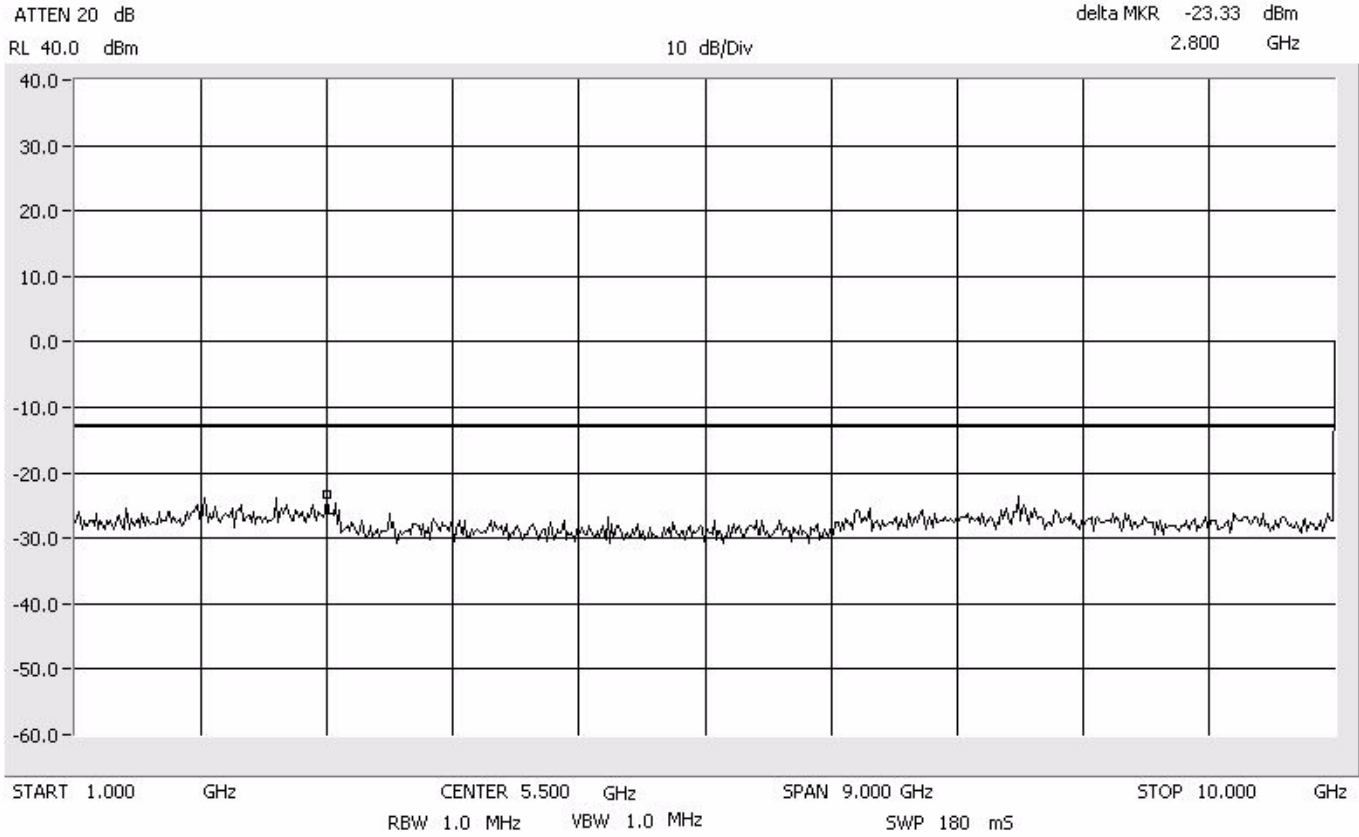
Intermodulation Close - Lower SMR 900 MHz

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



Intermodulation Close - Lower SMR 900 MHz

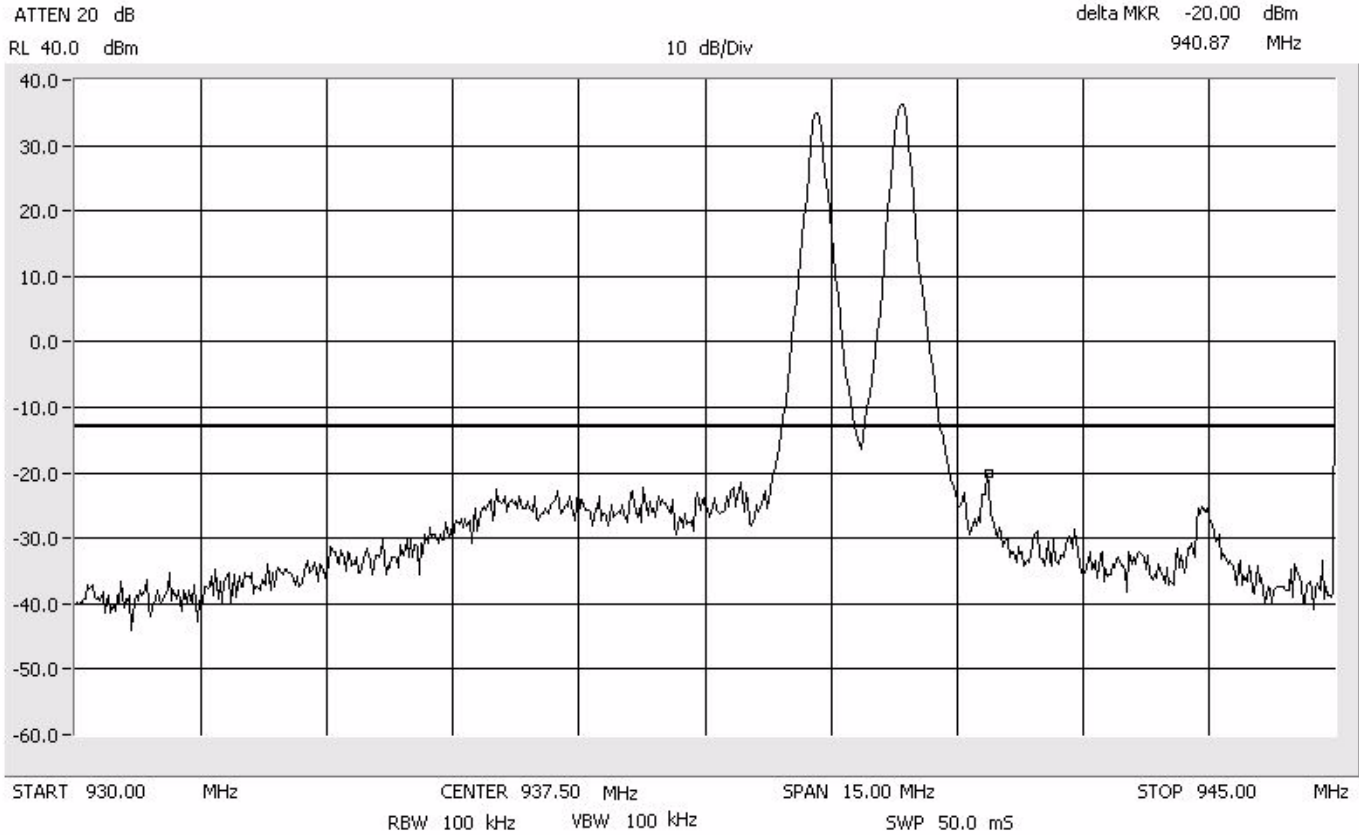
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz



FM

Intermodulation Close - Upper SMR 900 MHz

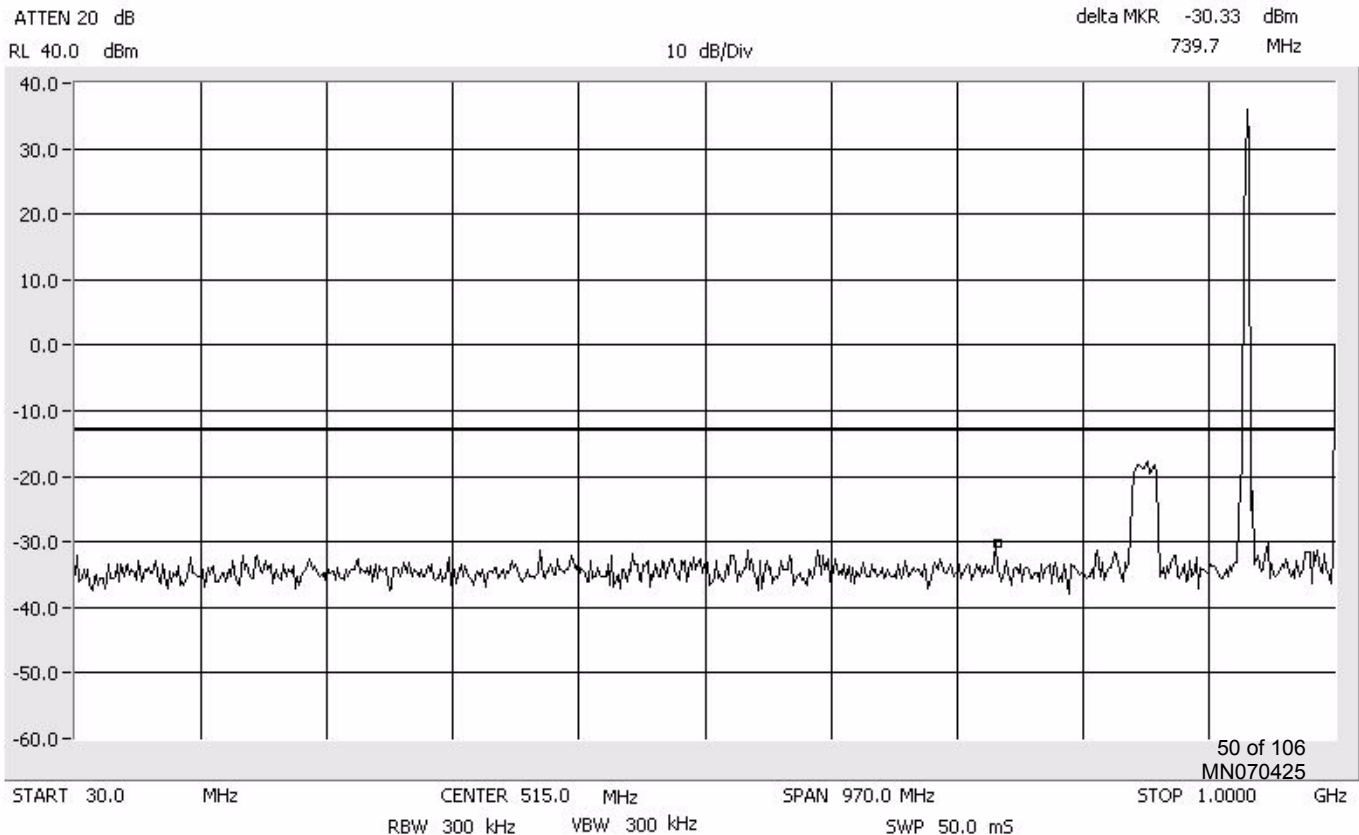
Center: 937.5 MHz
Span: 15 MHz
RBW/VBW: 100 kHz



FM

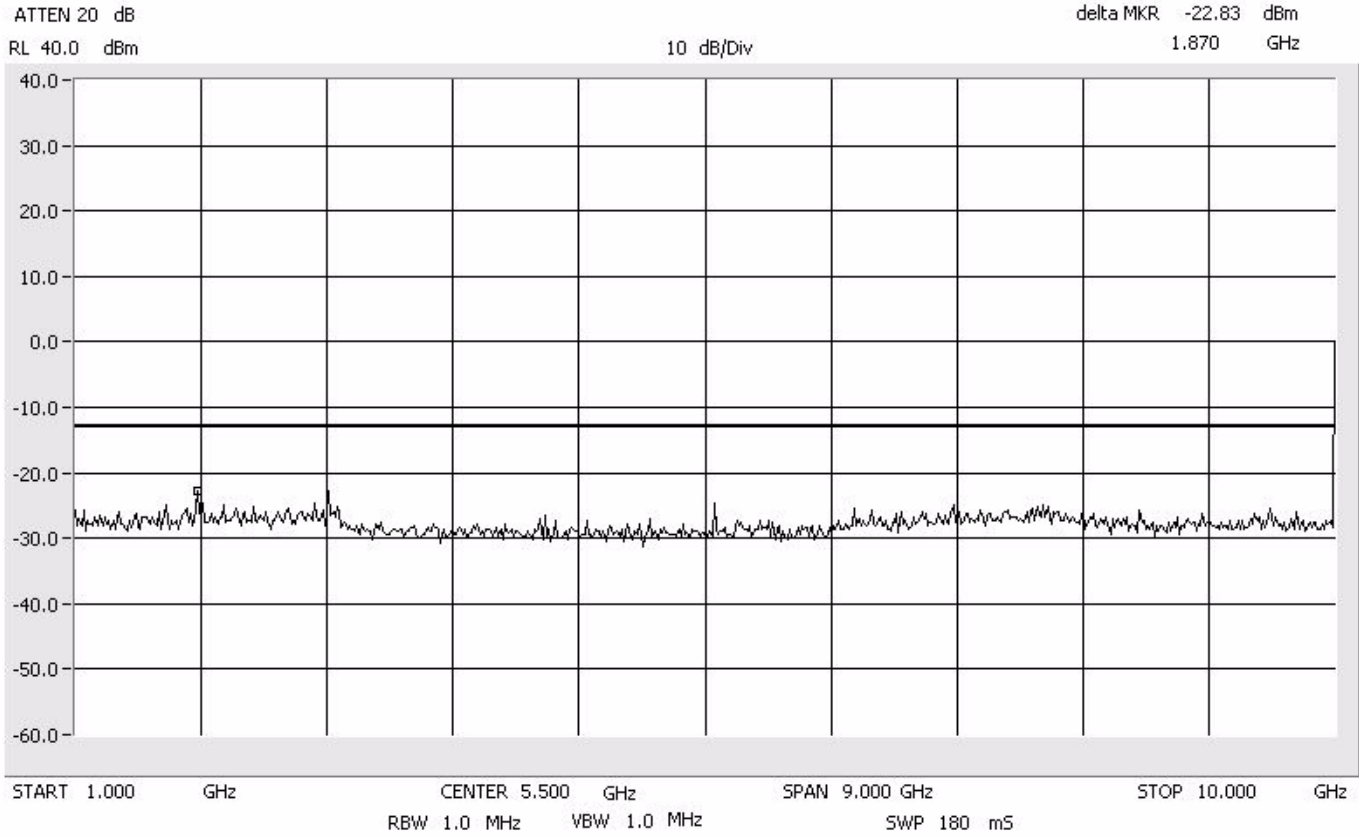
Intermodulation Close - Upper SMR 900 MHz

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



Intermodulation Close - Upper SMR 900 MHz

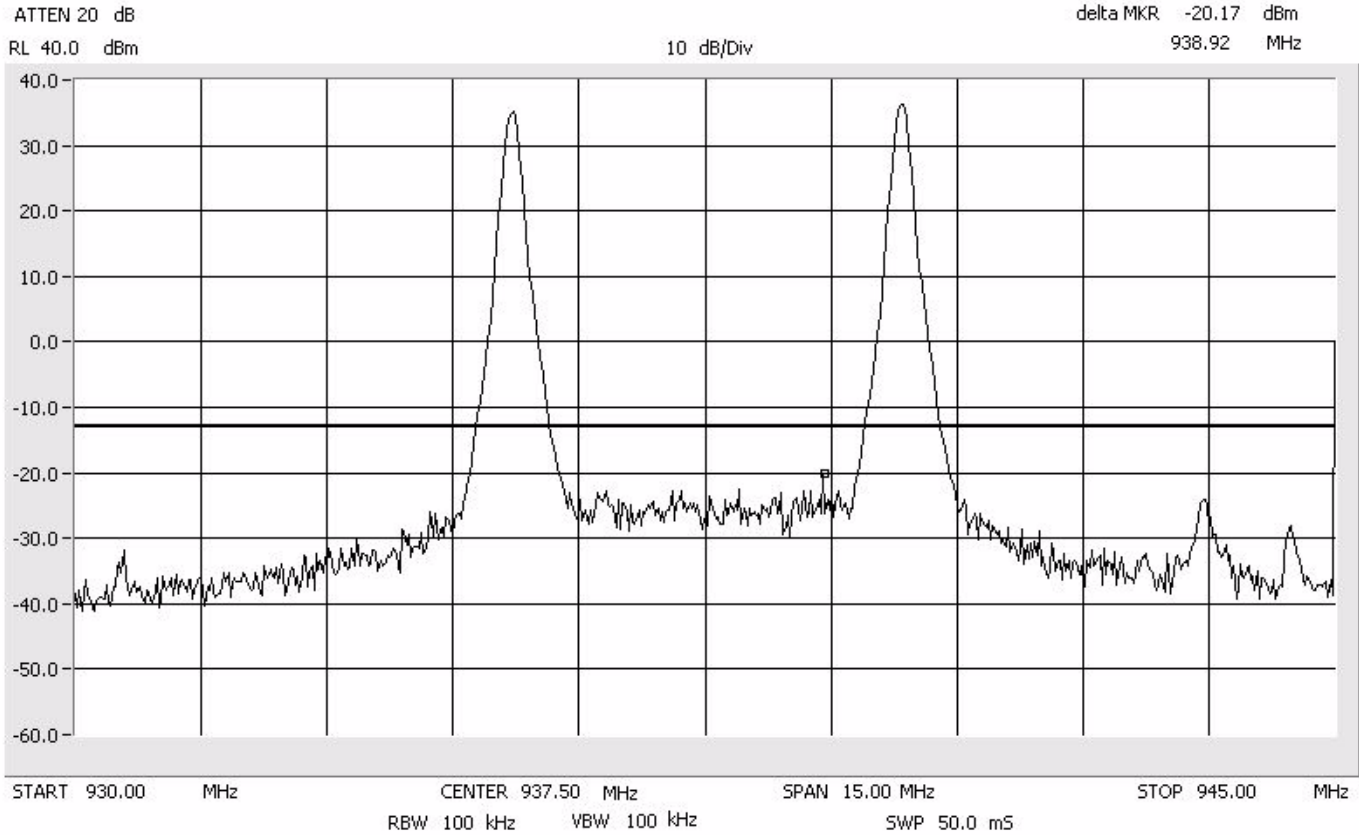
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz



FM

Intermodulation Apart SMR 900 MHz

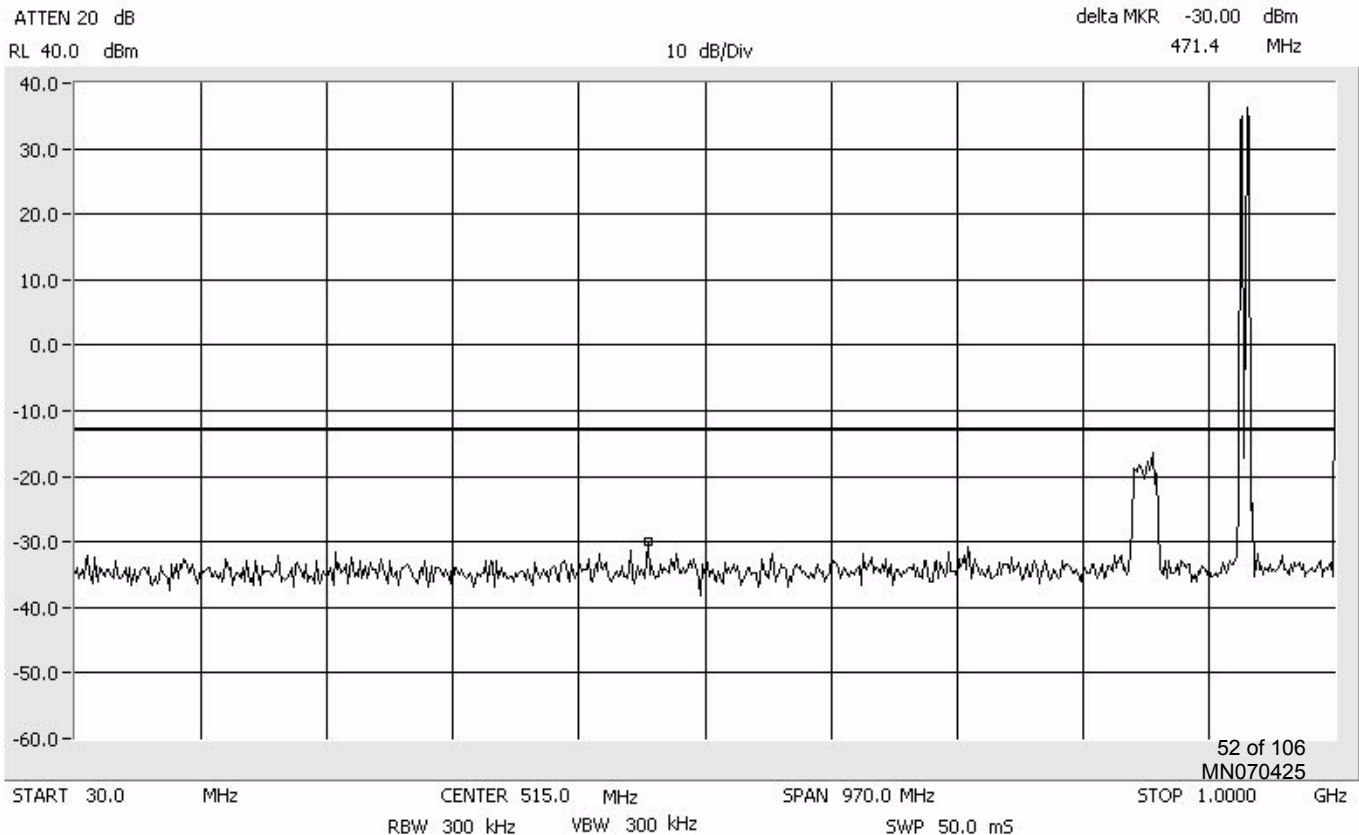
Center: 937.5 MHz
Span: 15 MHz
RBW/VBW: 100 kHz



FM

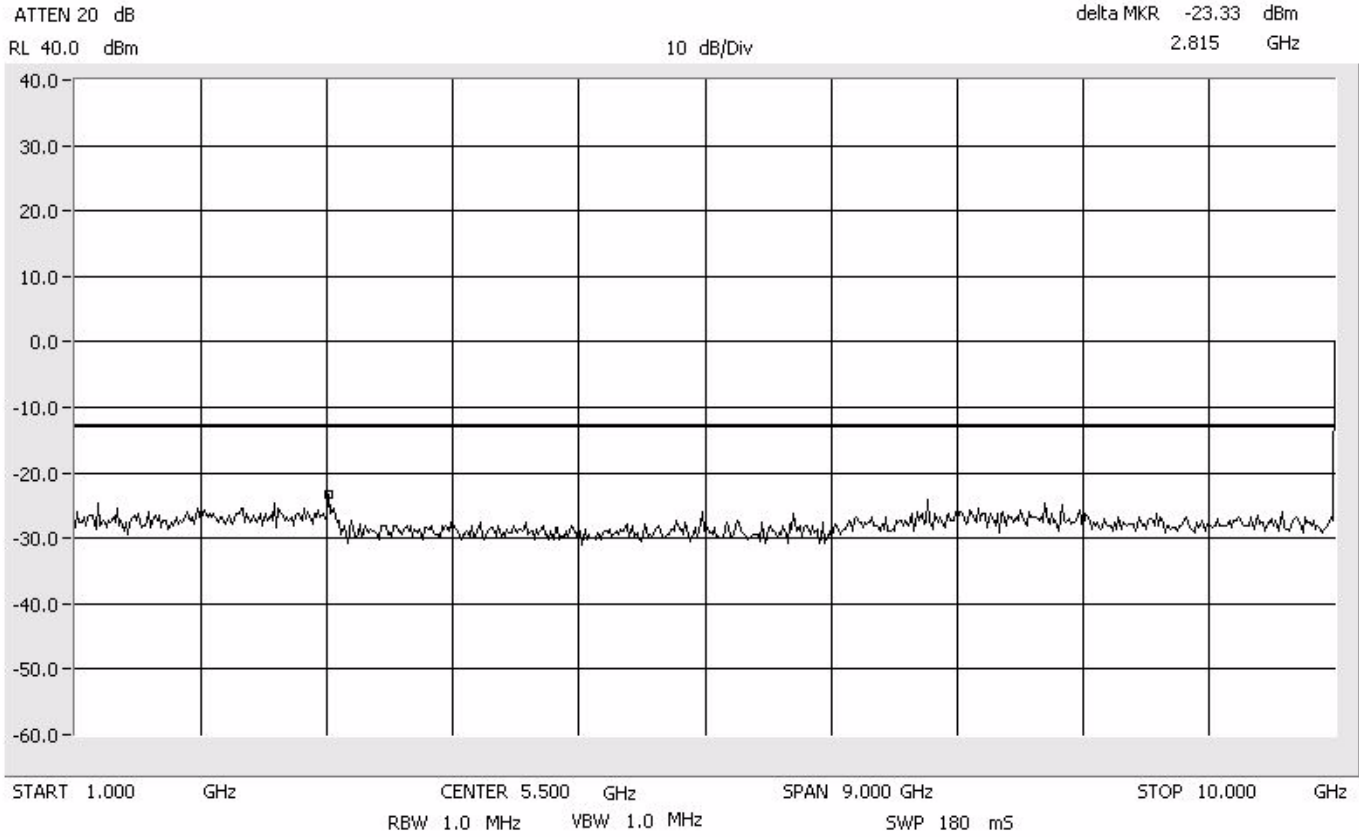
Intermodulation Apart SMR 900 MHz

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



Intermodulation Apart SMR 900 MHz

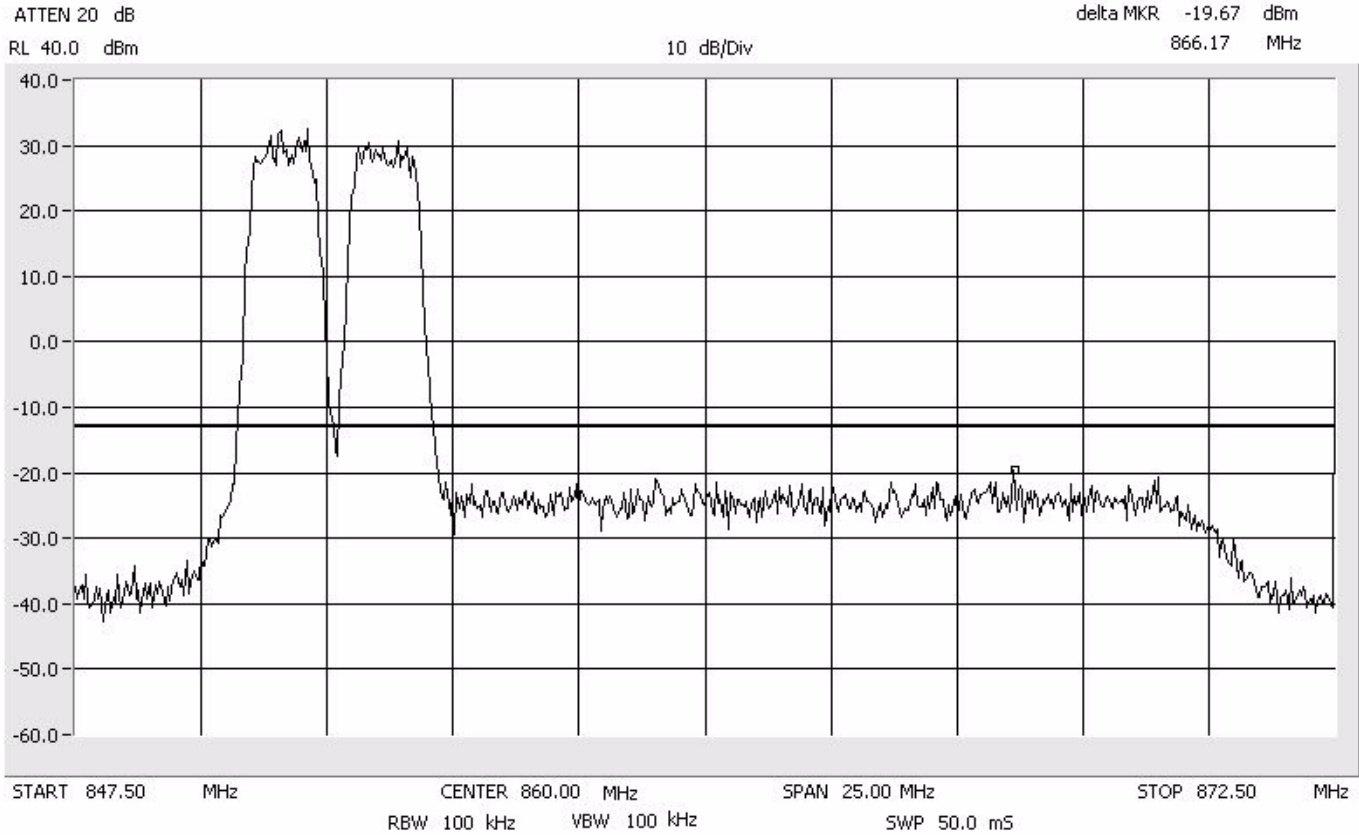
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz



CDMA

Intermodulation Close - Lower SMR 800 MHz

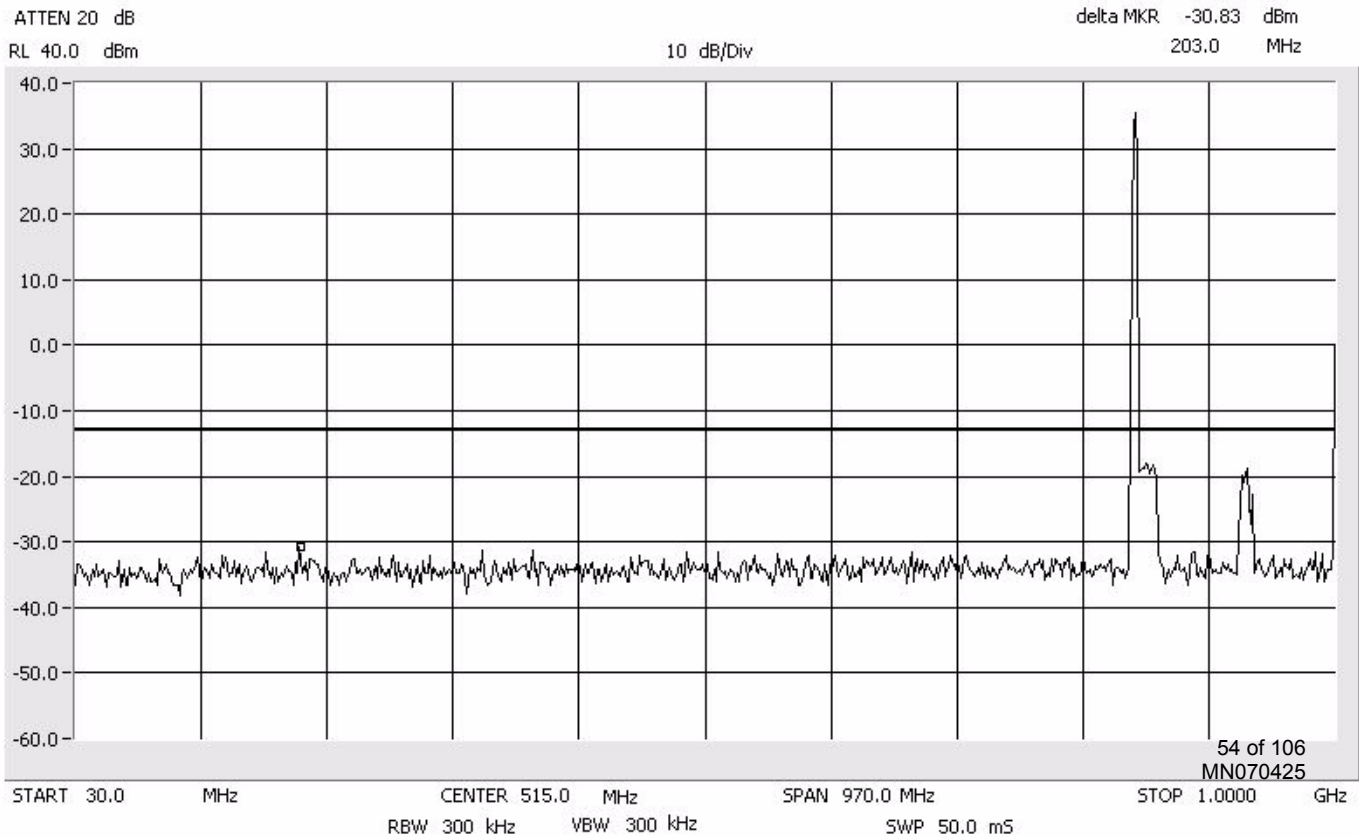
Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



CDMA

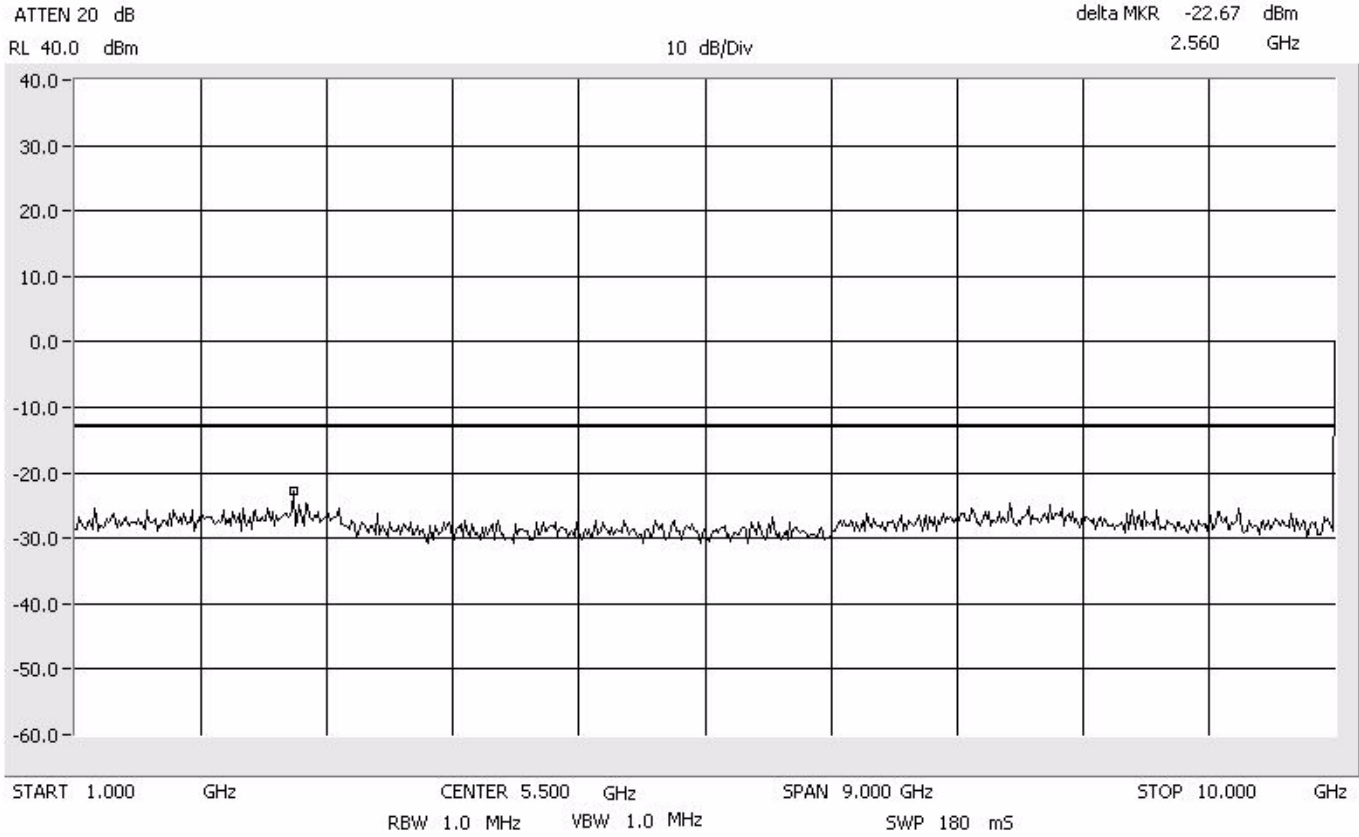
Intermodulation Close - Lower SMR 800 MHz

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



Intermodulation Close - Lower SMR 800 MHz

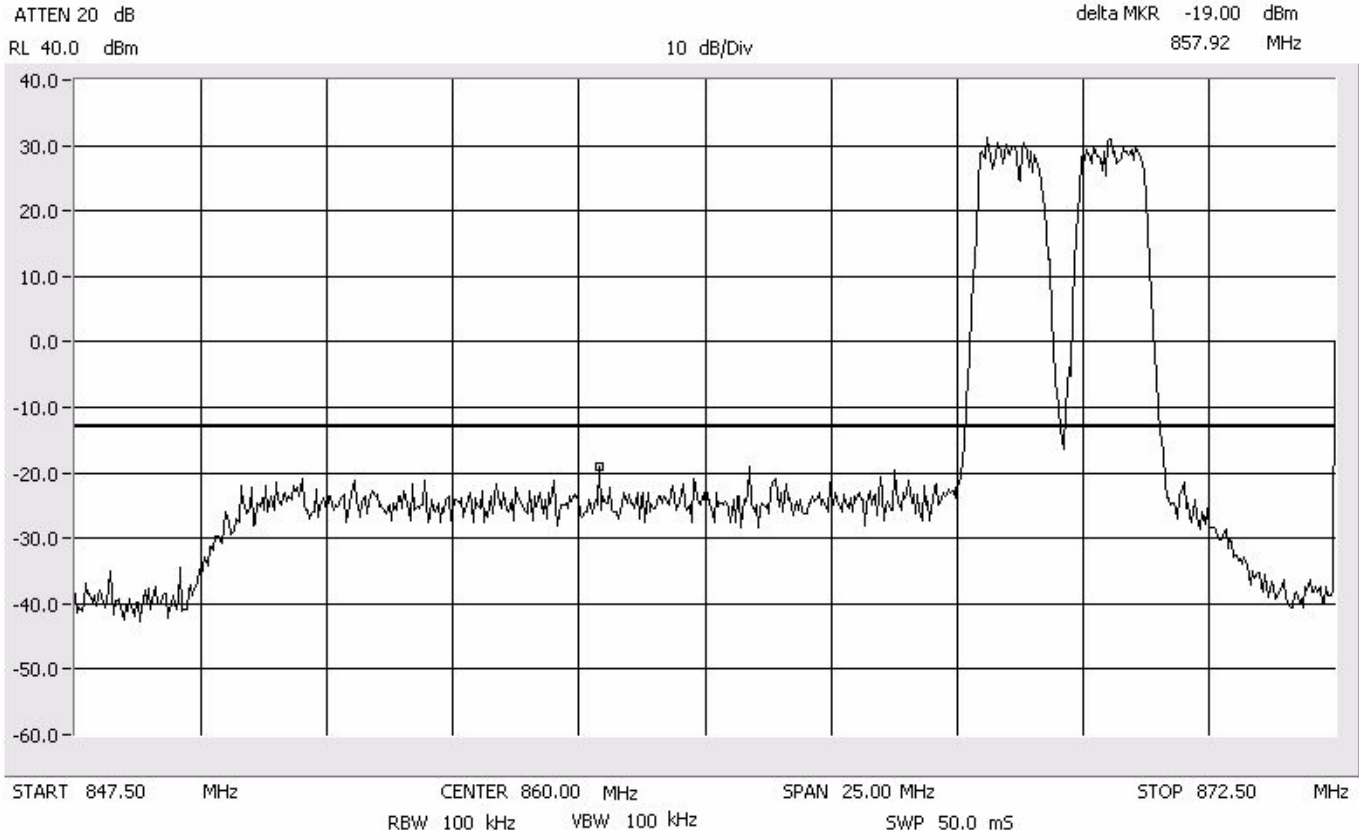
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz



CDMA

Intermodulation Close - Upper SMR 800 MHz

Center: 860.0 MHz
Span: 25 MHz
RBW/VBW: 100 kHz



CDMA

Intermodulation Close - Upper SMR 800 MHz

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

