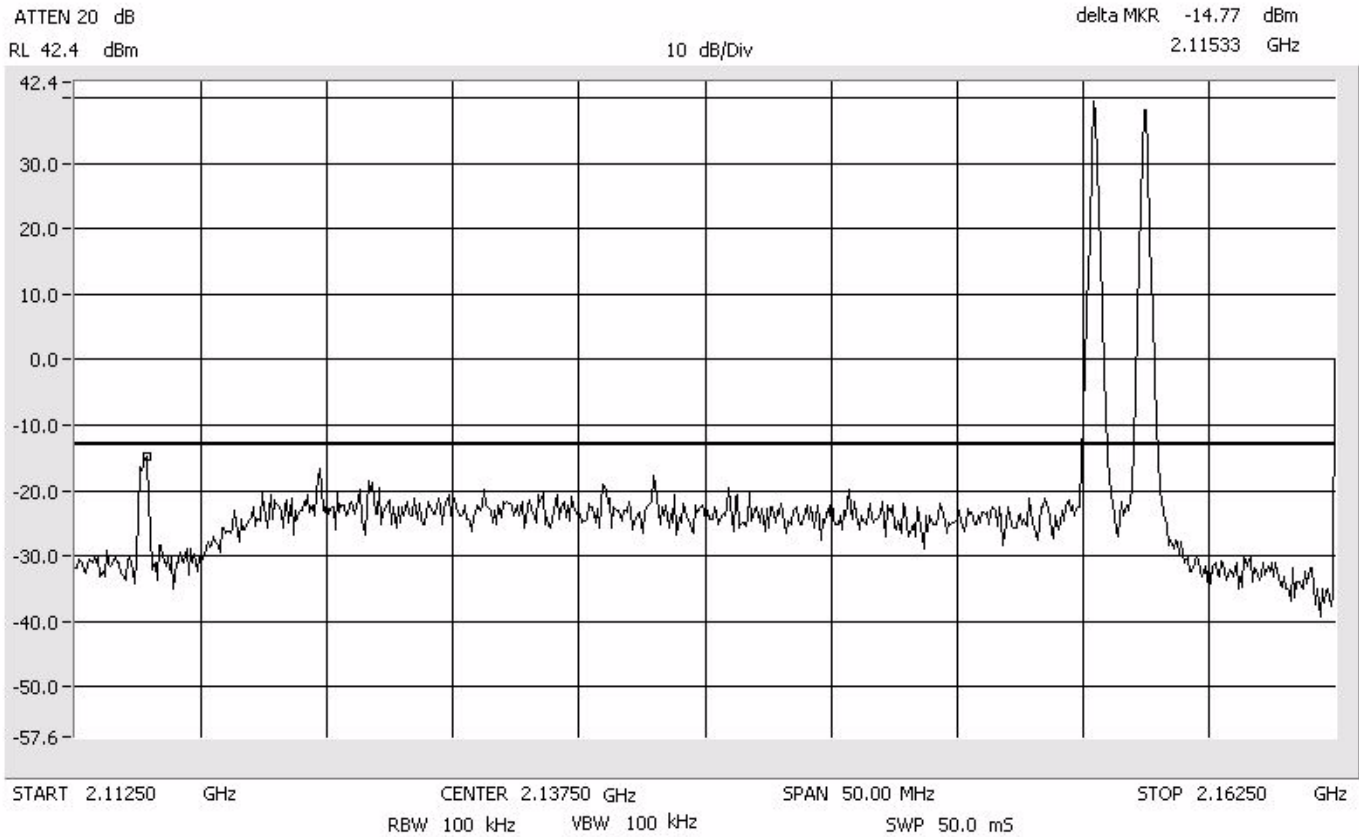


**TDMA
Upper Band**

**Intermodulation
Close - Upper
AWS**

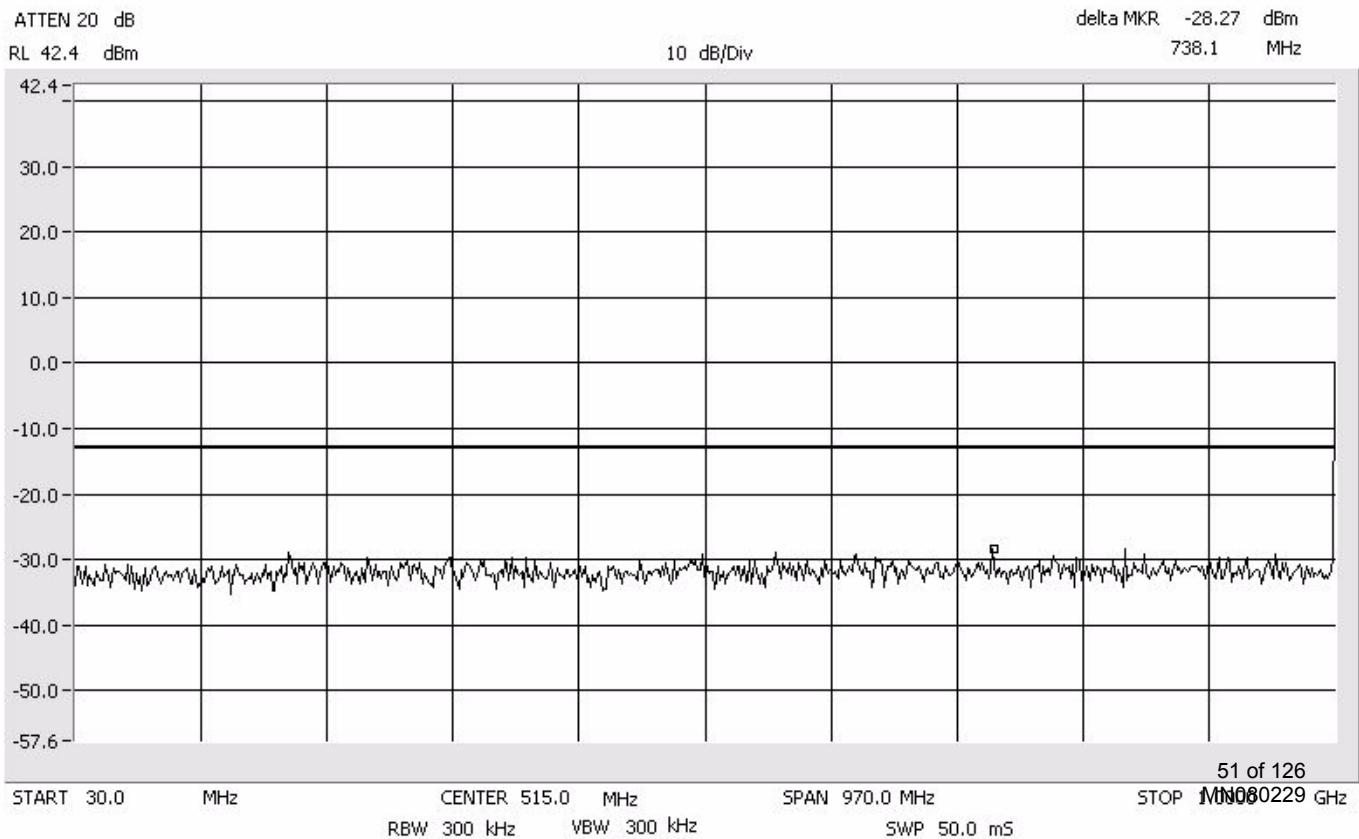
Center: 2137.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

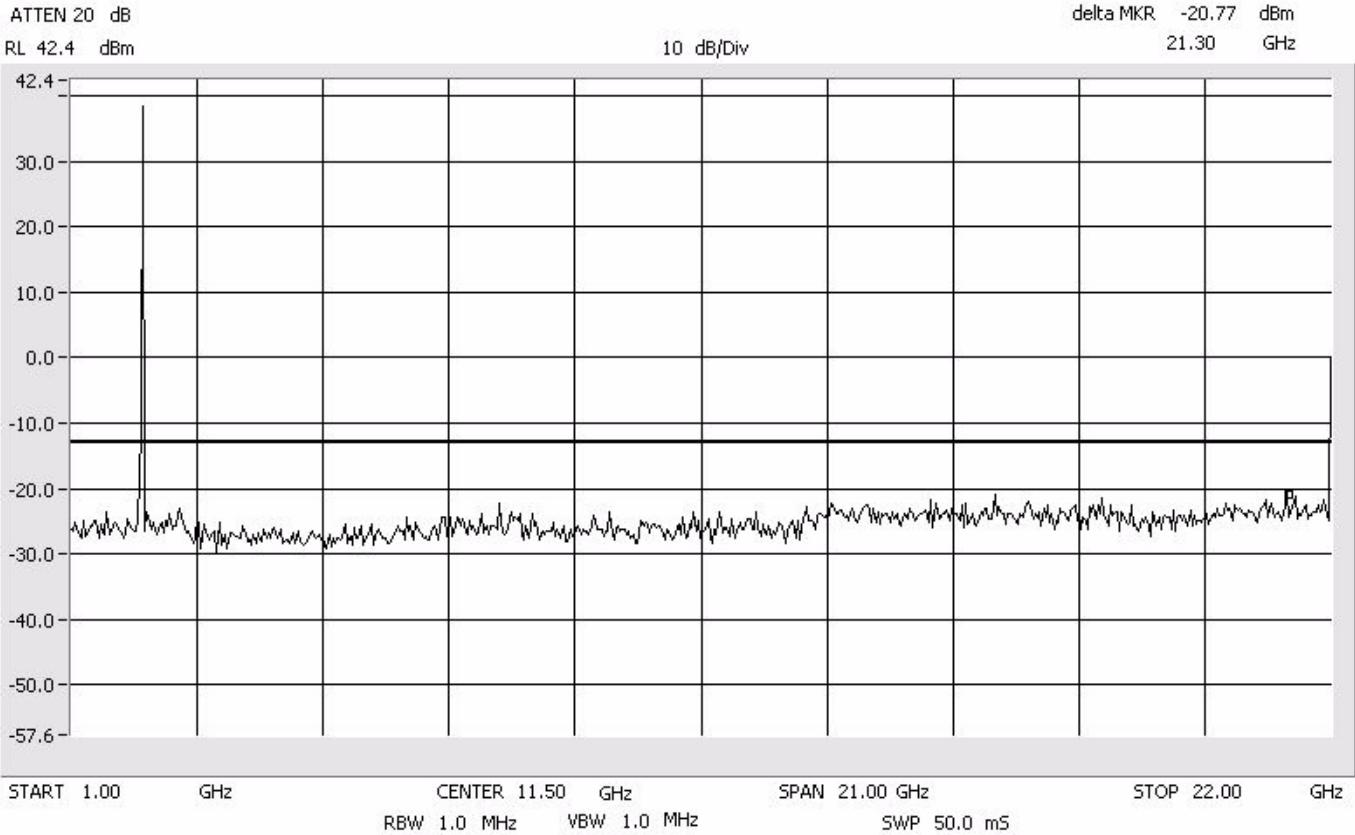


**TDMA
Upper Band**

**Intermodulation
Close - Upper
AWS**

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

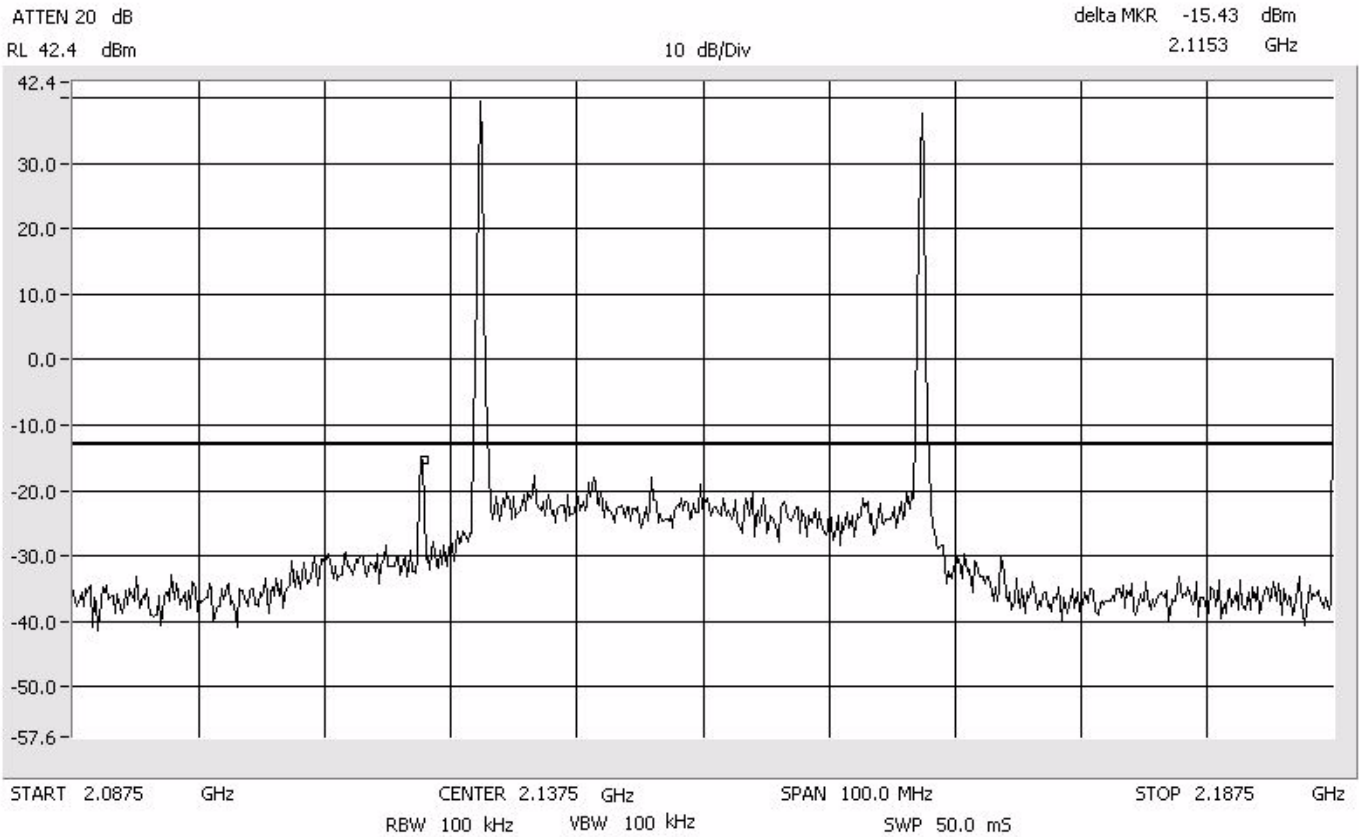




**TDMA
Upper Band**

**Intermodulation
Apart
AWS**

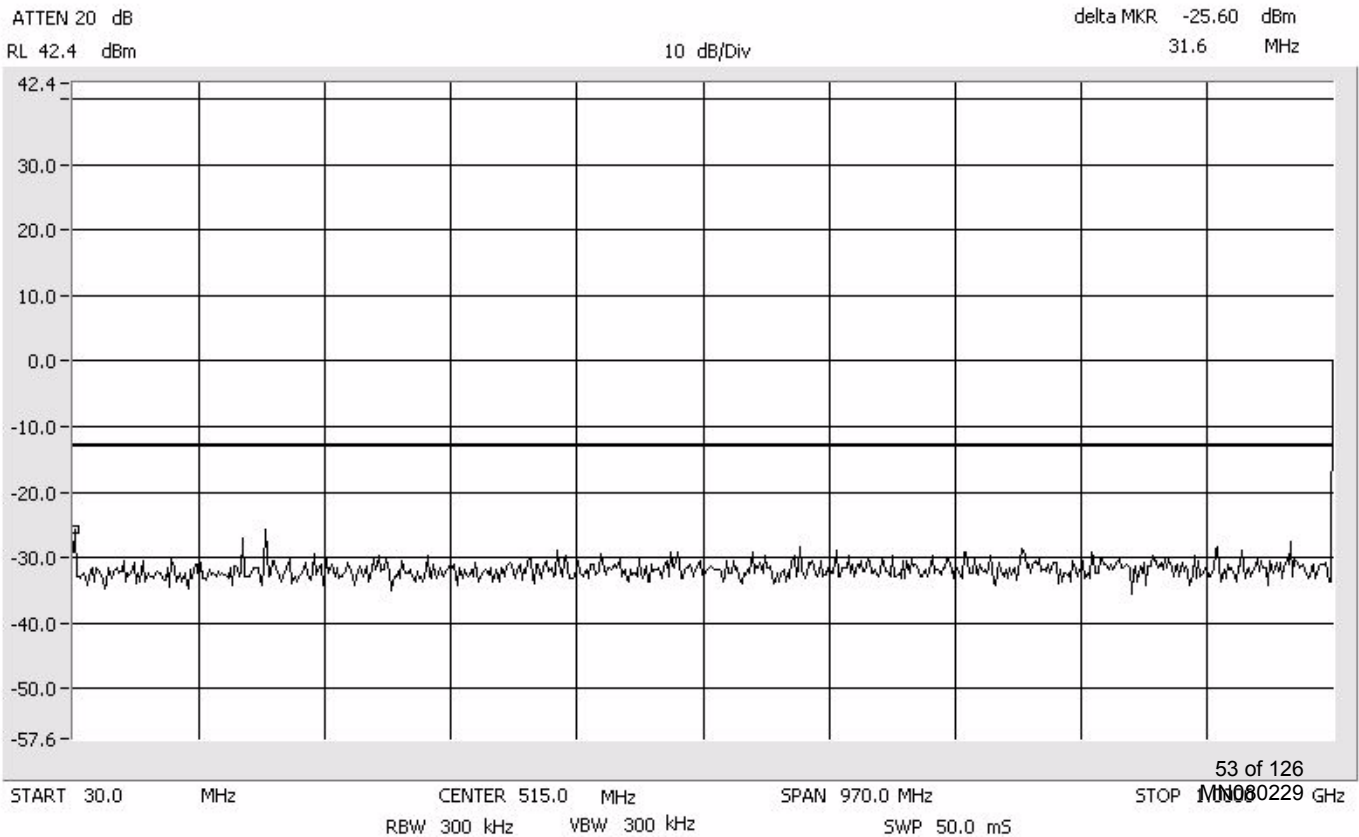
Center: 2137.5 MHz
Span: 100 MHz
RBW/VBW: 100 kHz

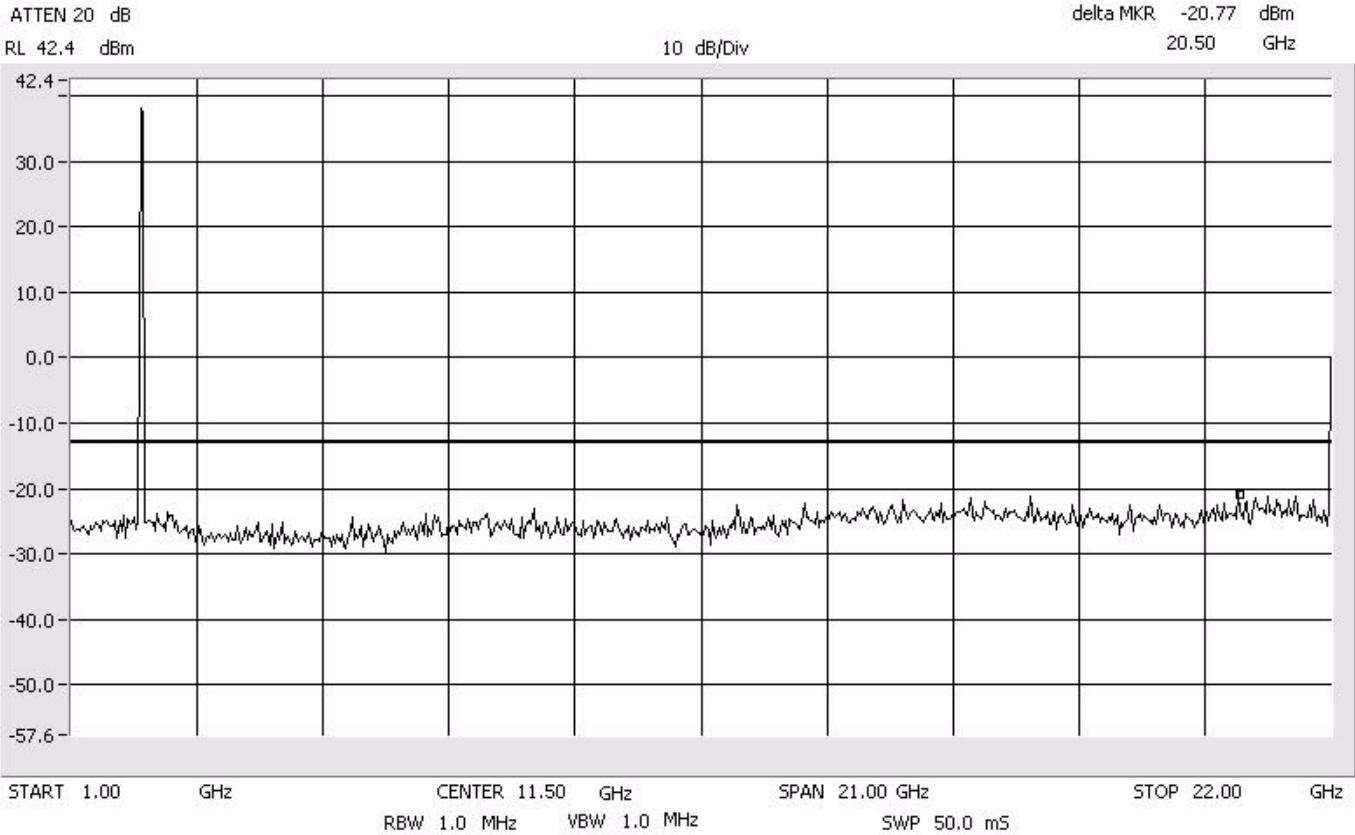


**TDMA
Upper Band**

**Intermodulation
Apart
AWS**

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

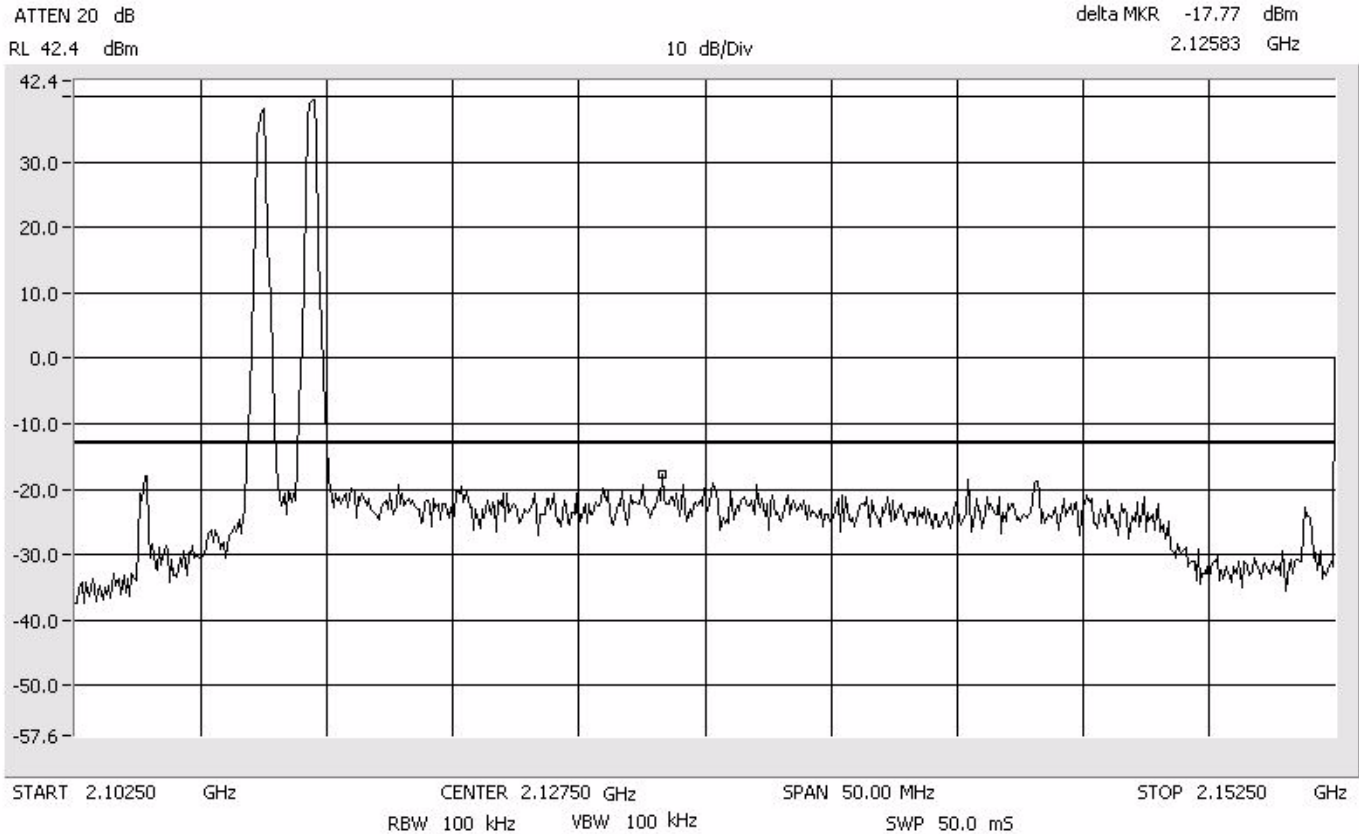




GSM
Lower Band

Intermodulation
Close - Lower
AWS

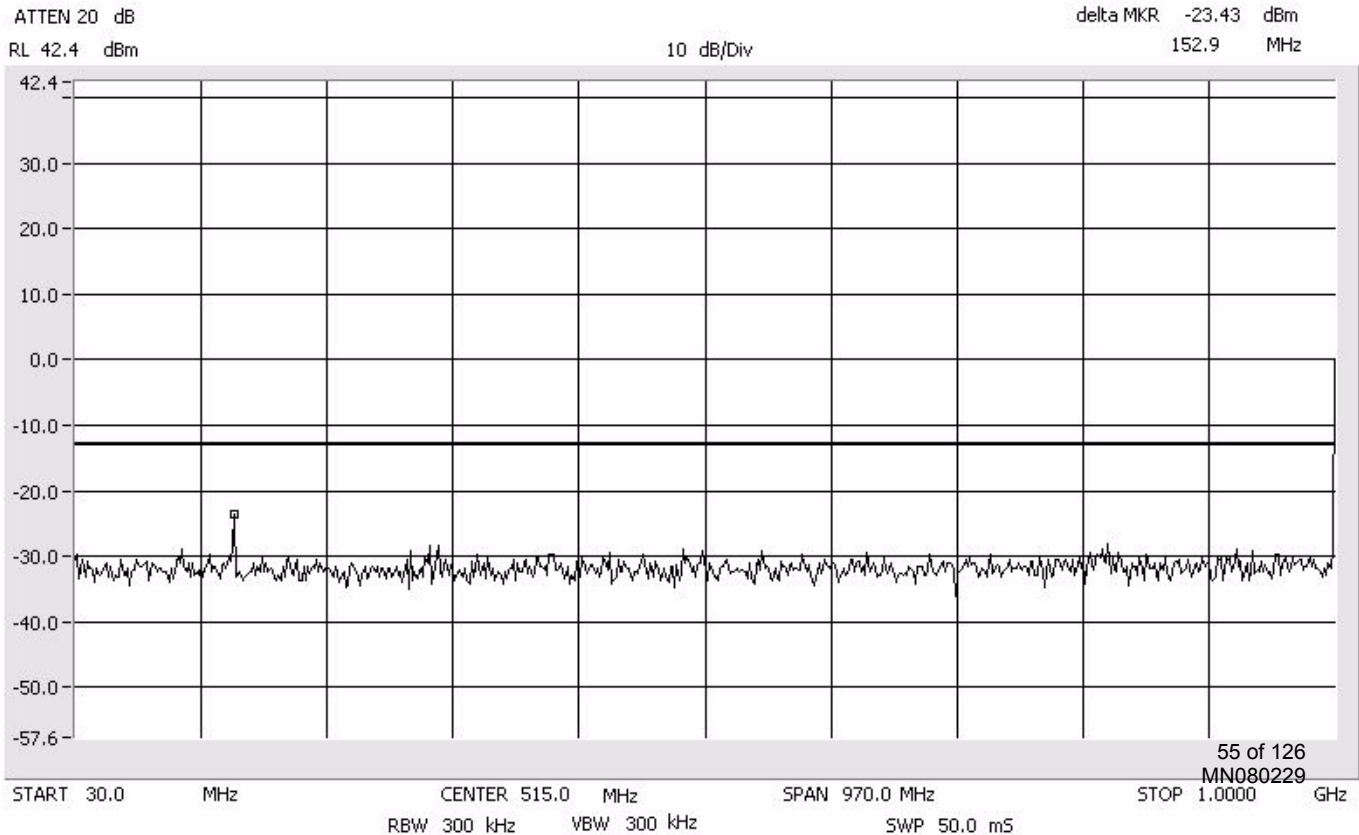
Center: 2127.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

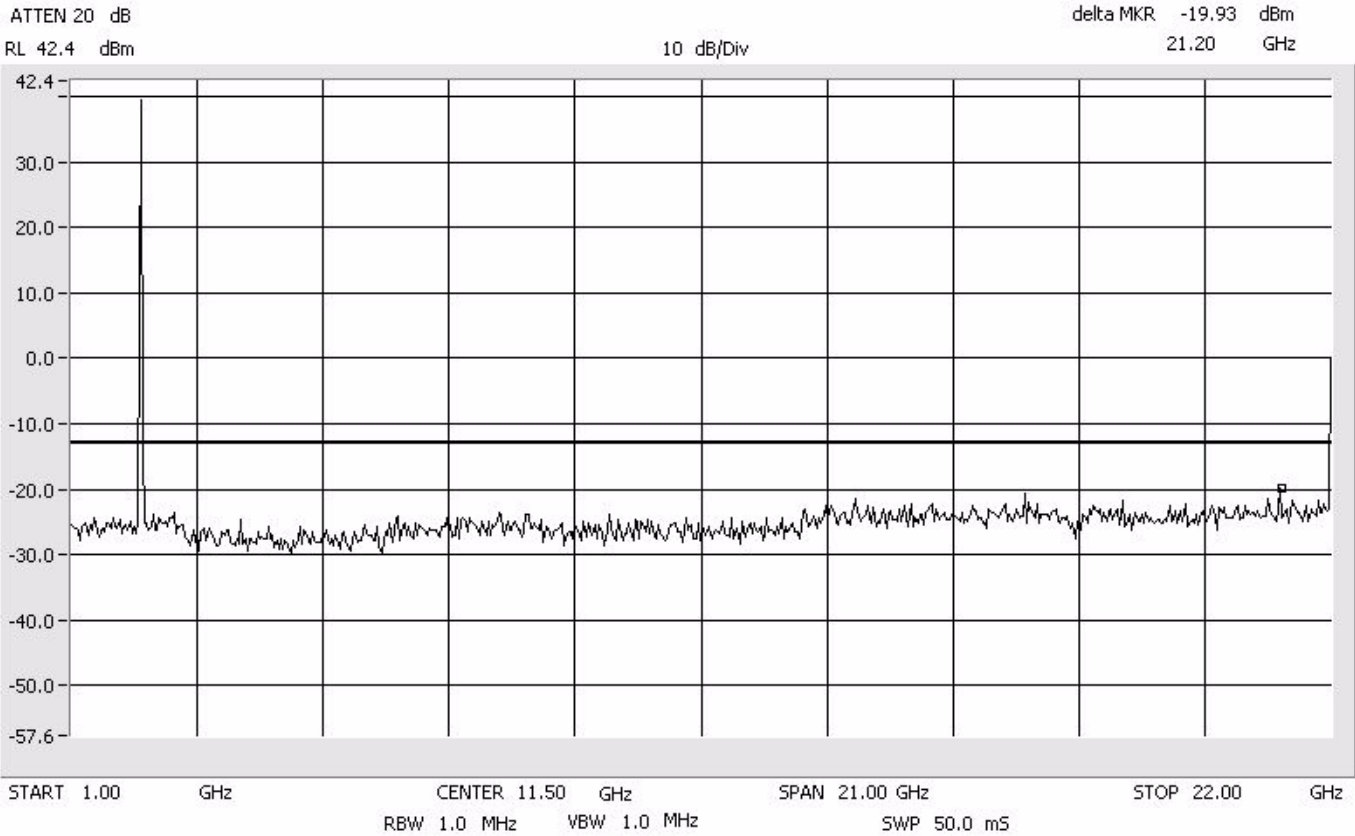


GSM
Lower Band

Intermodulation
Close - Lower
AWS

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

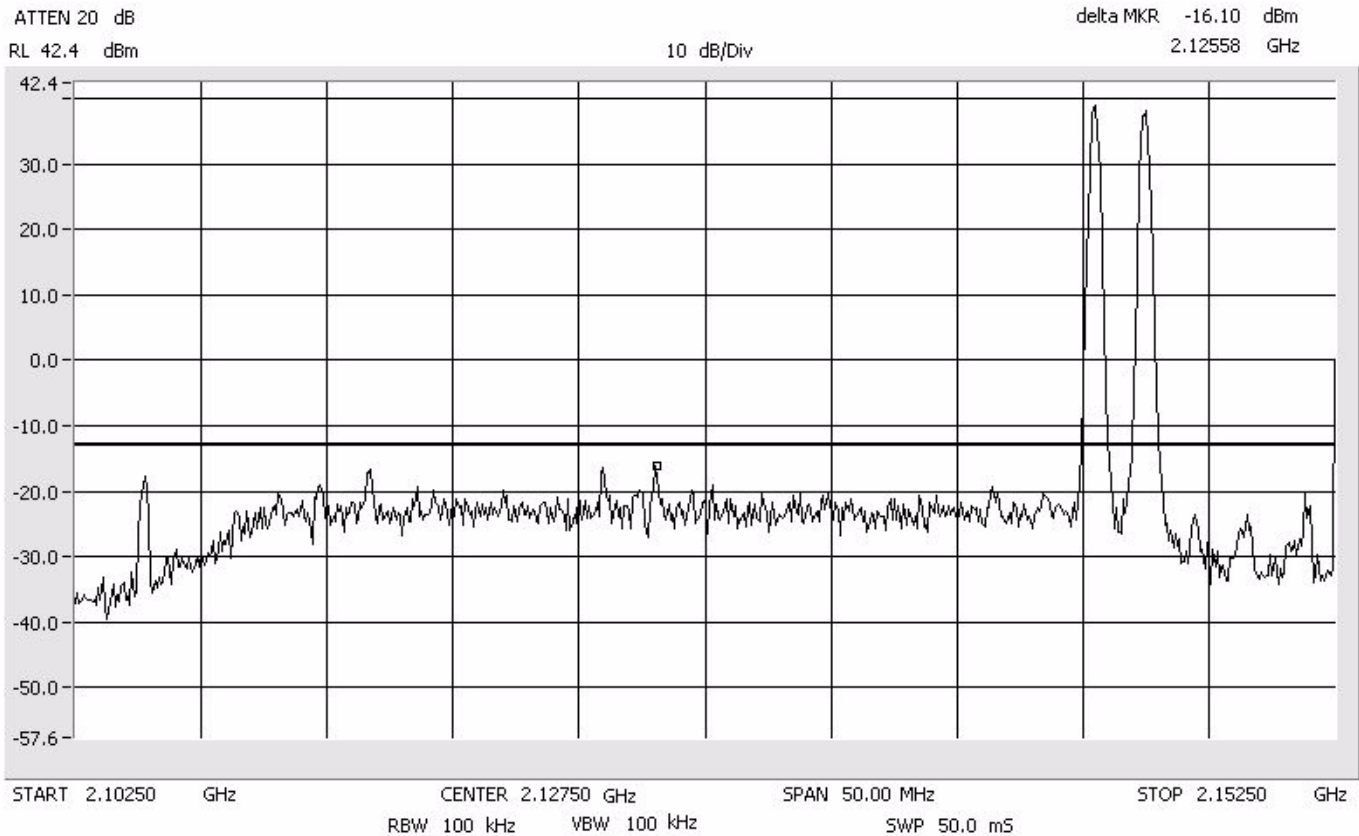




GSM
Lower Band

Intermodulation
Close - Upper
AWS

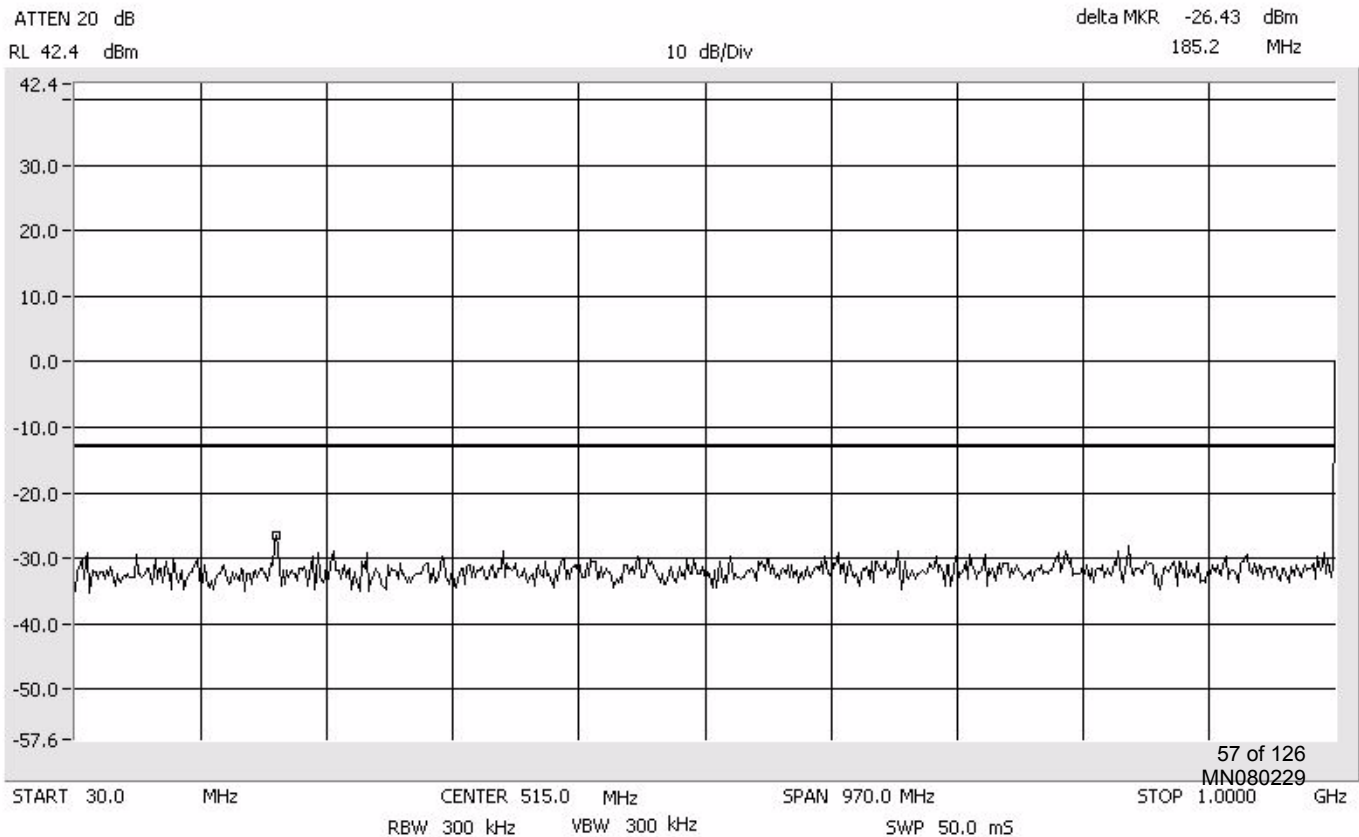
Center: 2127.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

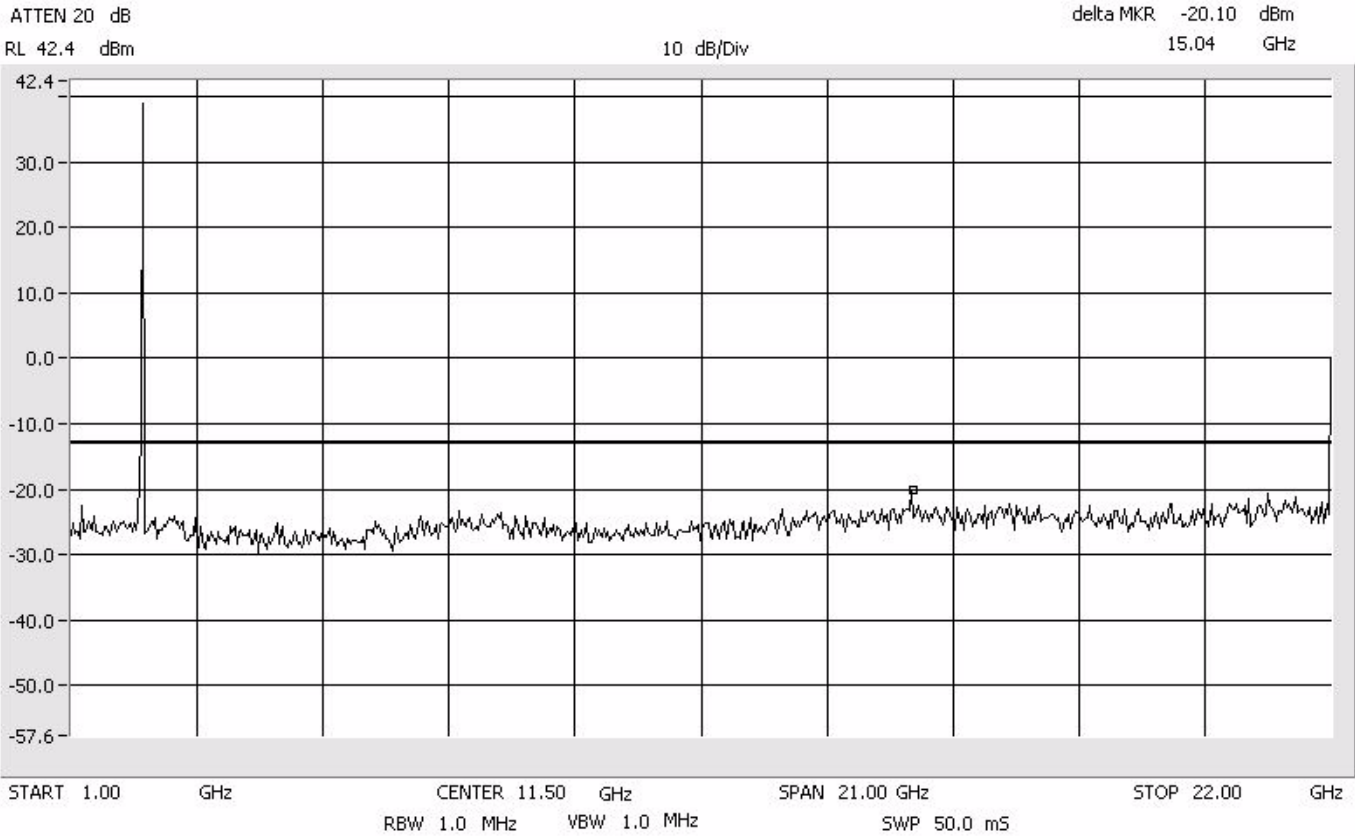


GSM
Lower Band

Intermodulation
Close - Upper
AWS

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

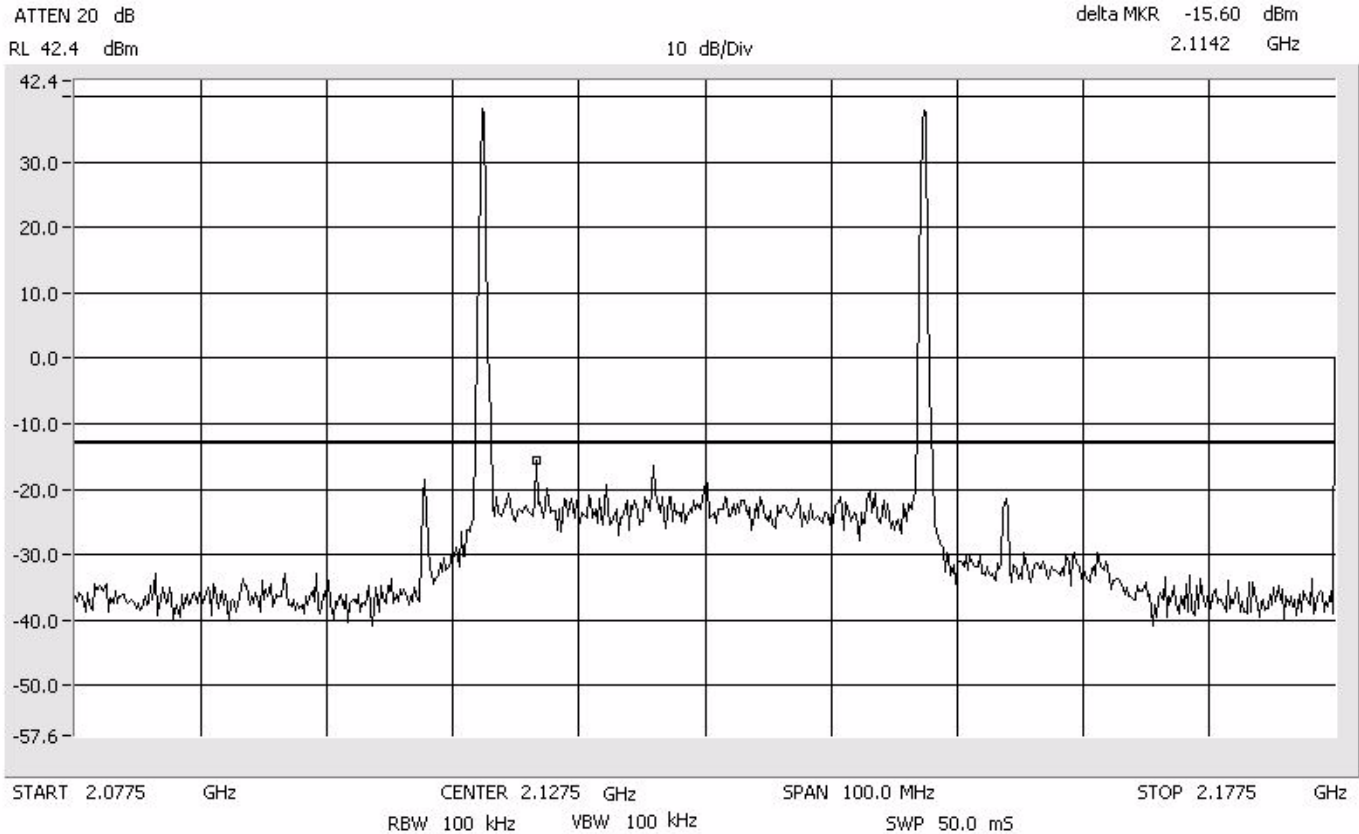




GSM
Lower Band

Intermodulation
Apart
AWS

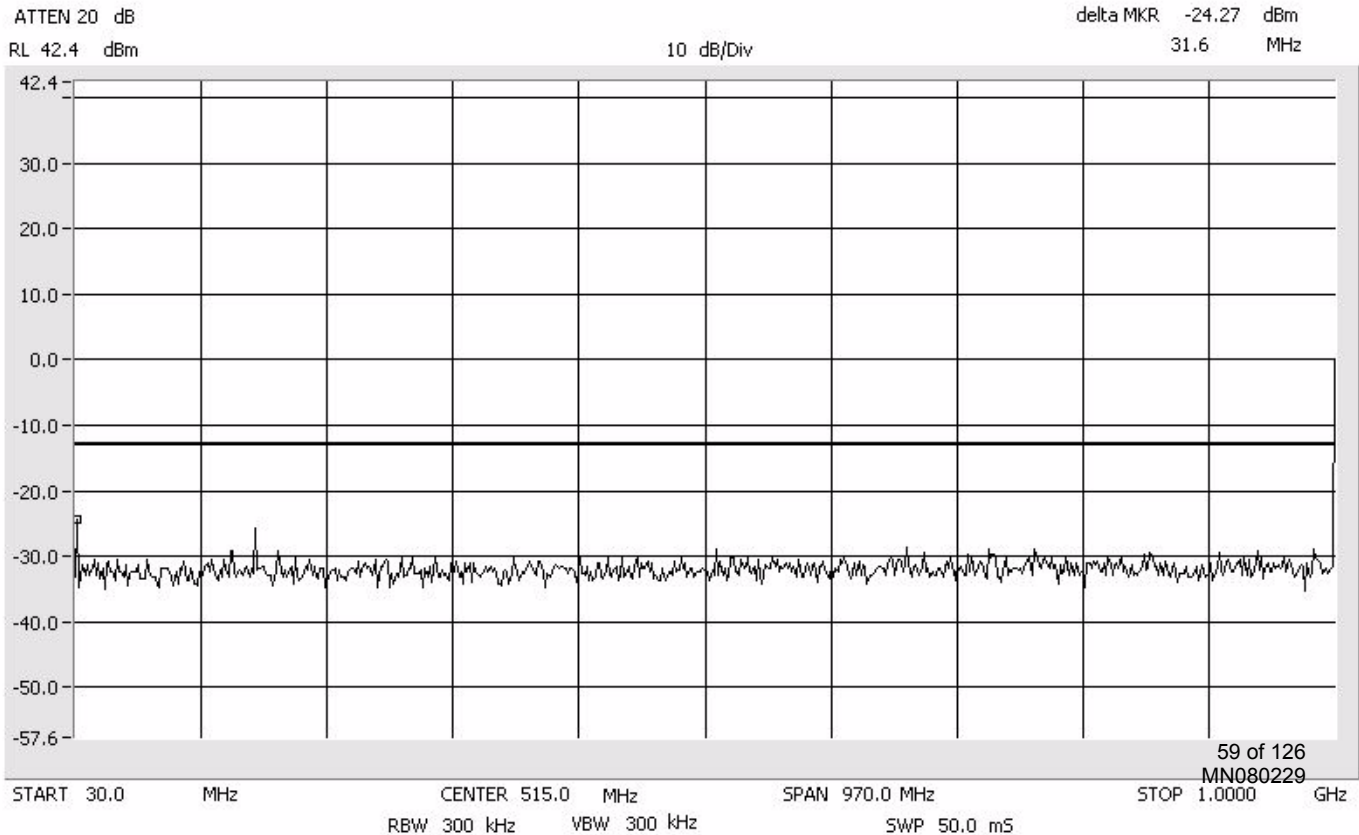
Center: 2127.5 MHz
Span: 100 MHz
RBW/VBW: 100 kHz

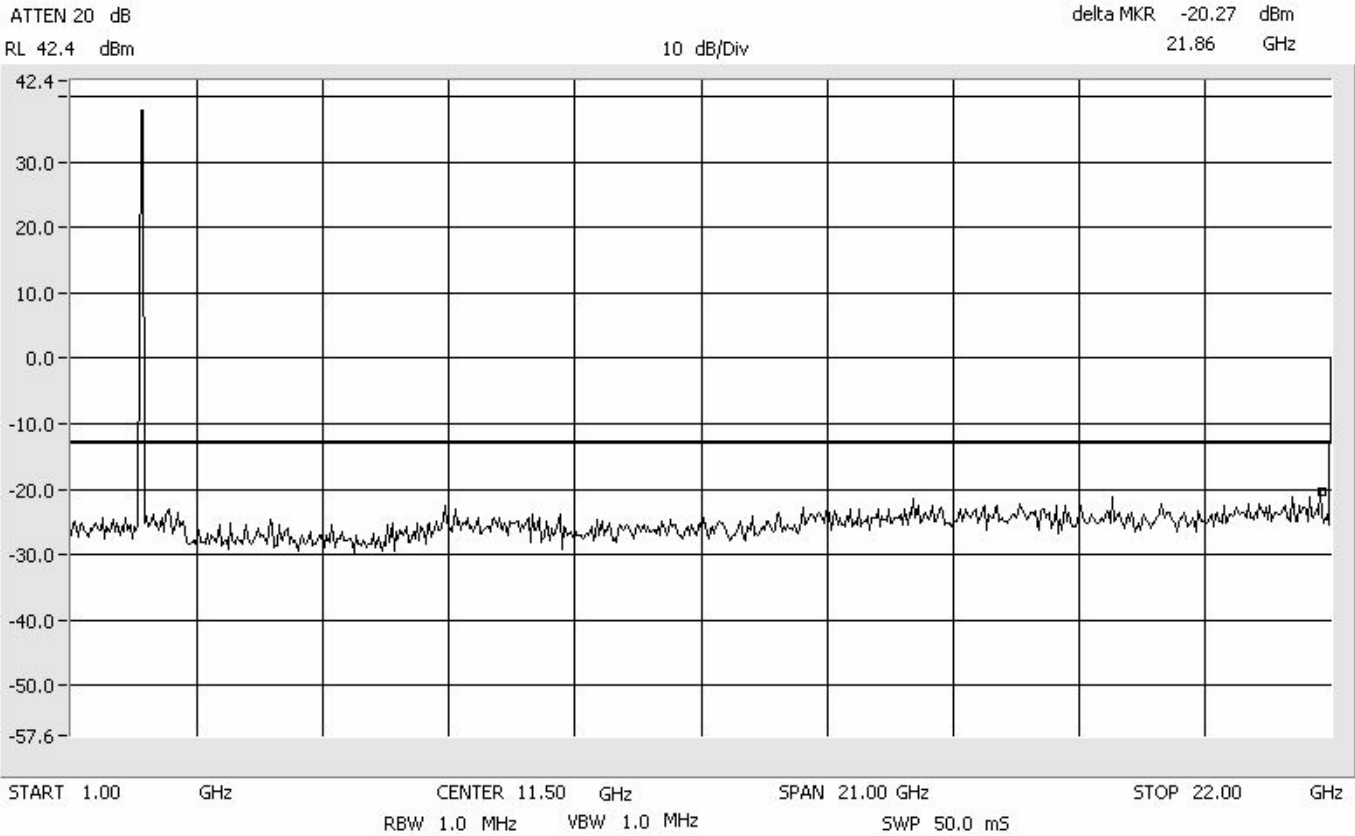


GSM
Lower Band

Intermodulation
Apart
AWS

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

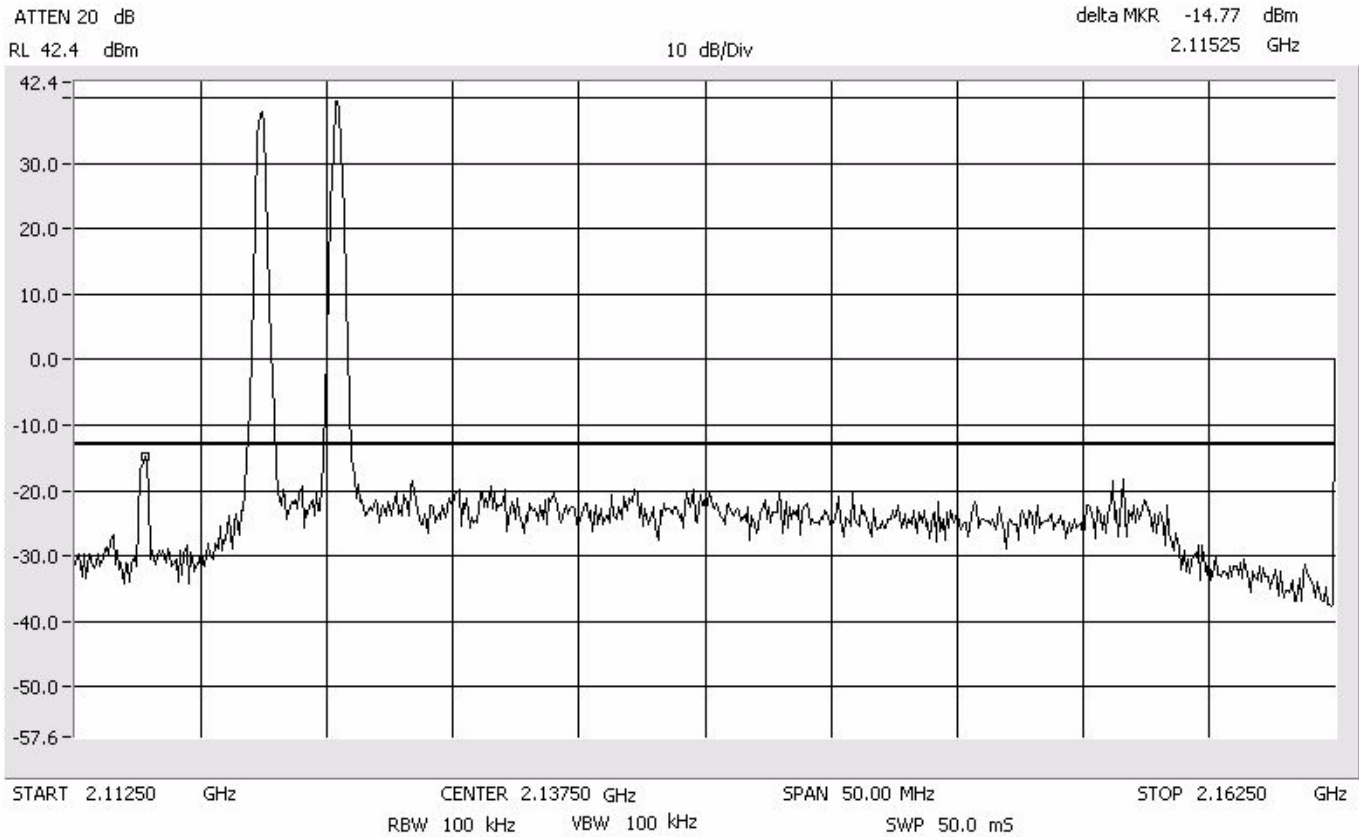




GSM
Upper Band

Intermodulation
Close - Lower
AWS

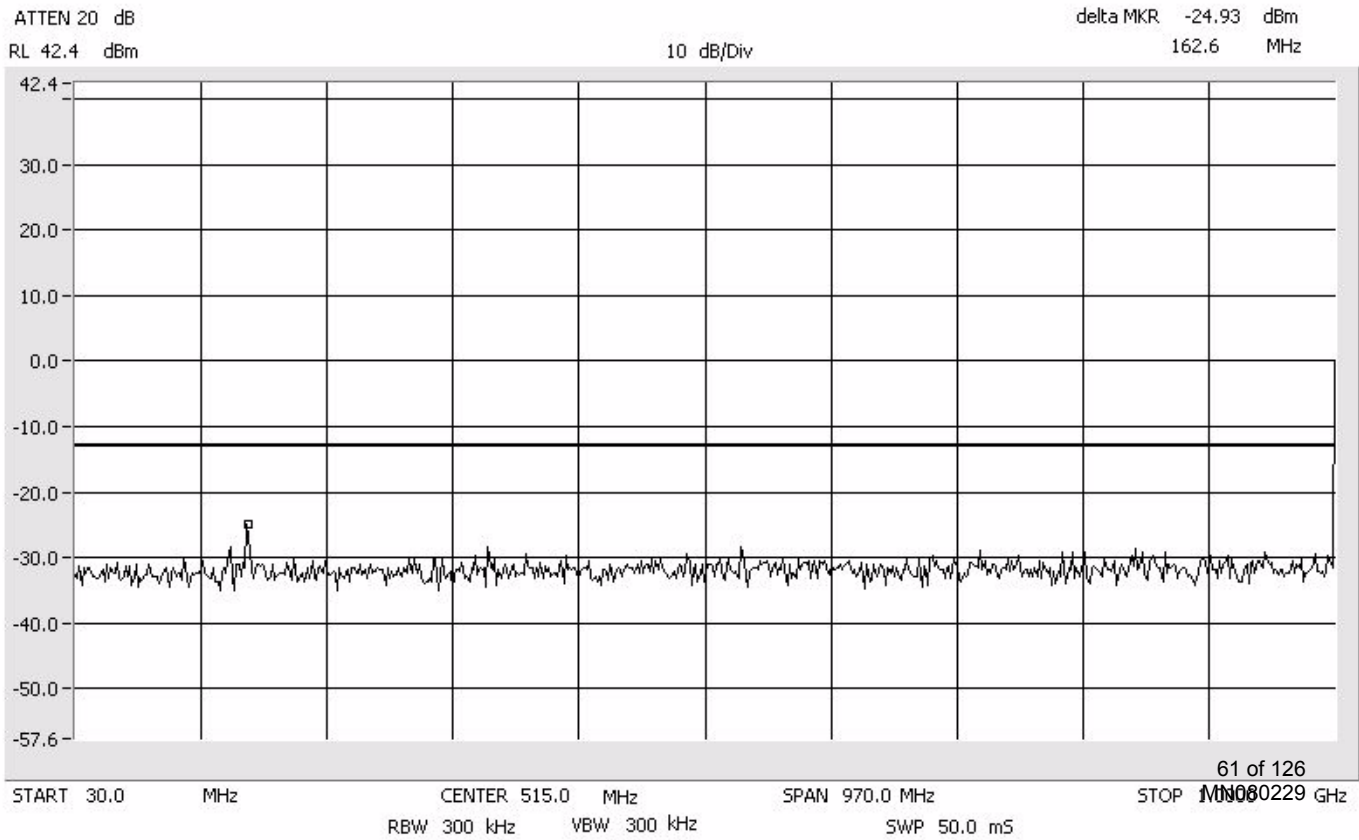
Center: 2137.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

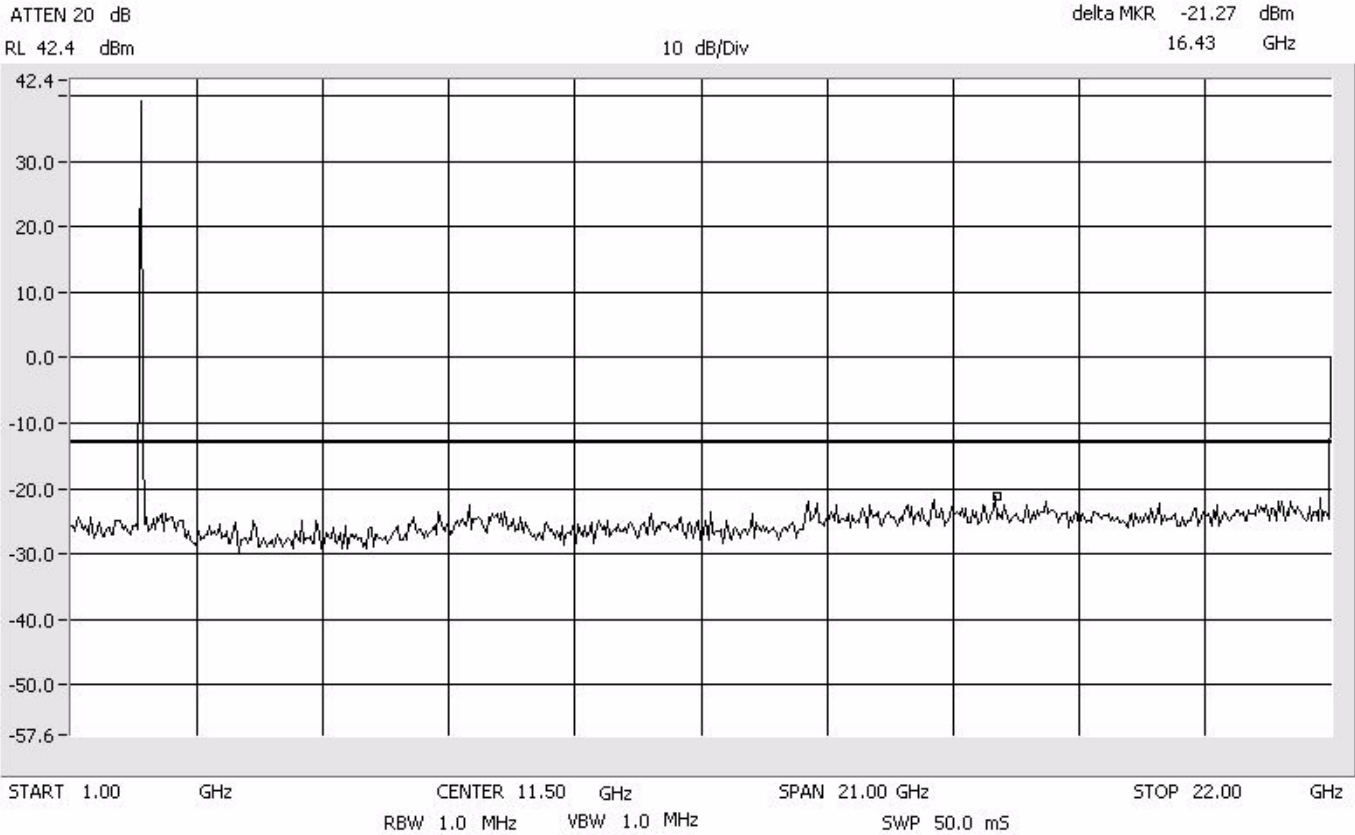


GSM
Upper Band

Intermodulation
Close - Lower
AWS

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

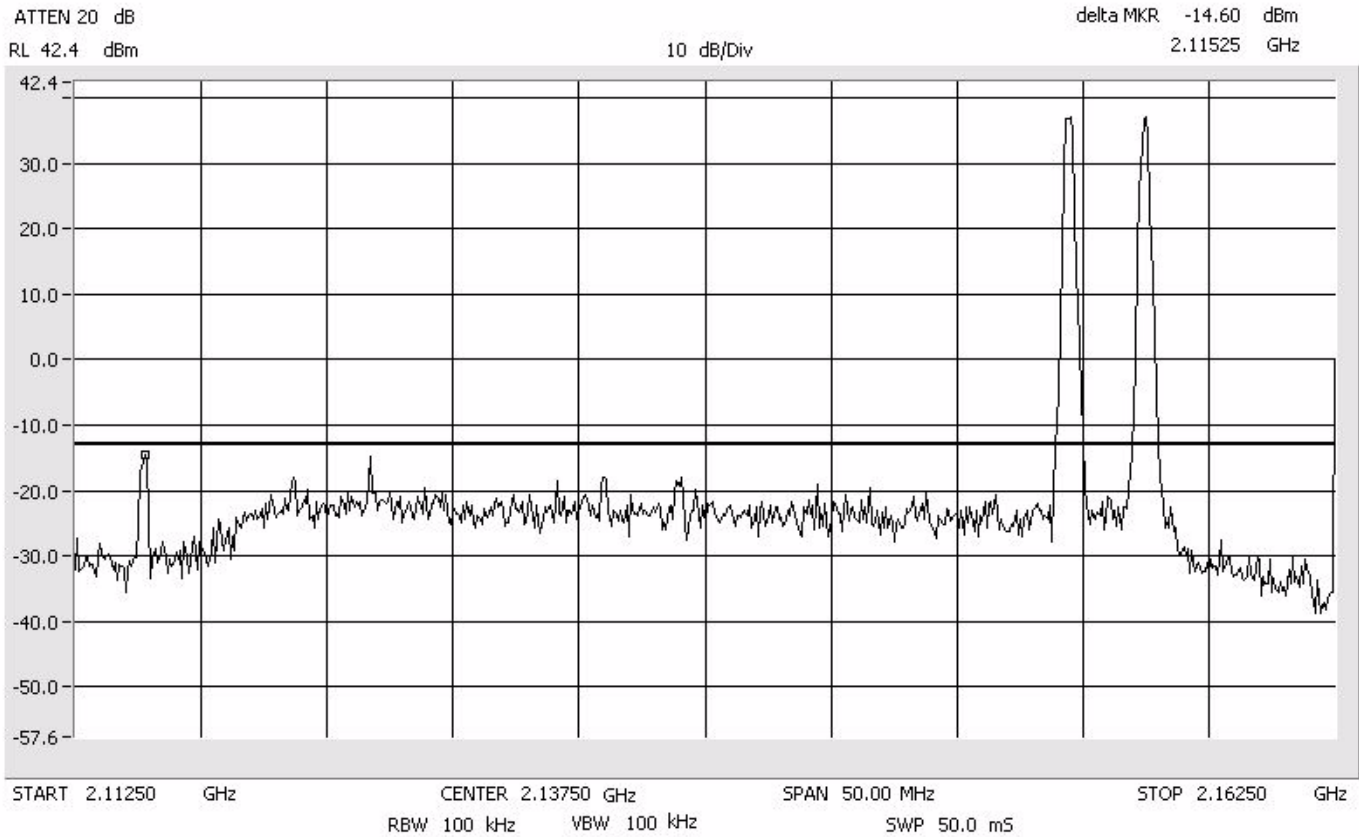




GSM
Upper Band

Intermodulation
Close - Upper
AWS

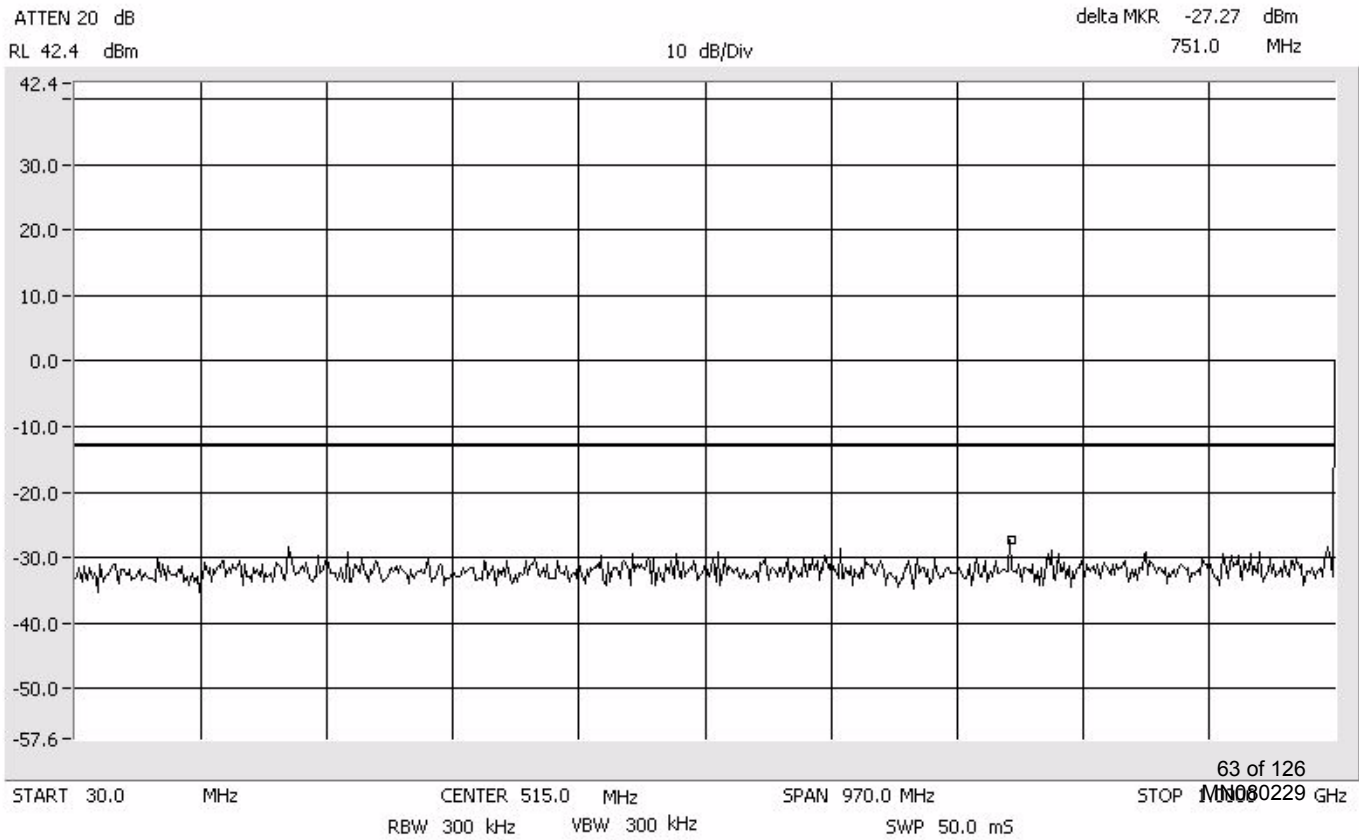
Center: 2137.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

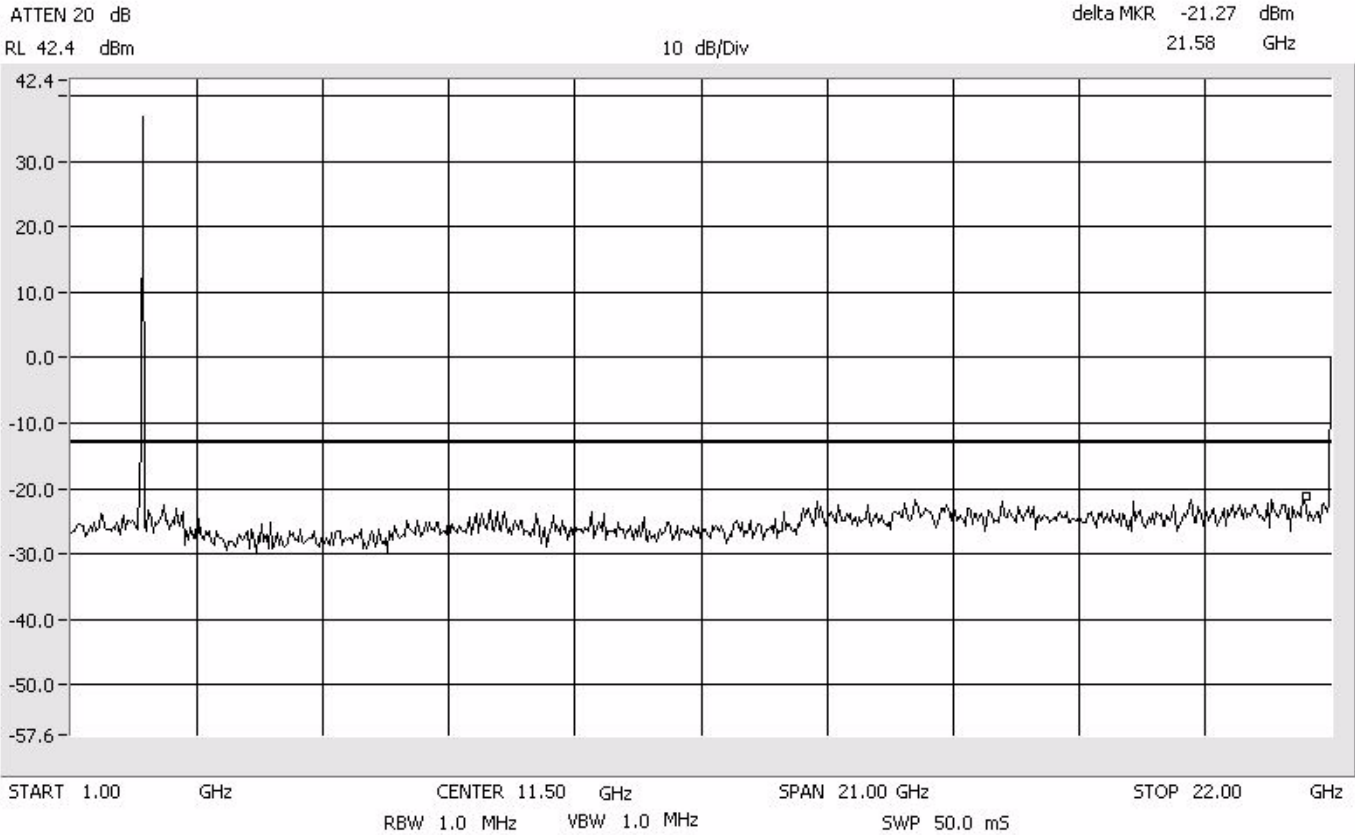


GSM
Upper Band

Intermodulation
Close - Upper
AWS

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

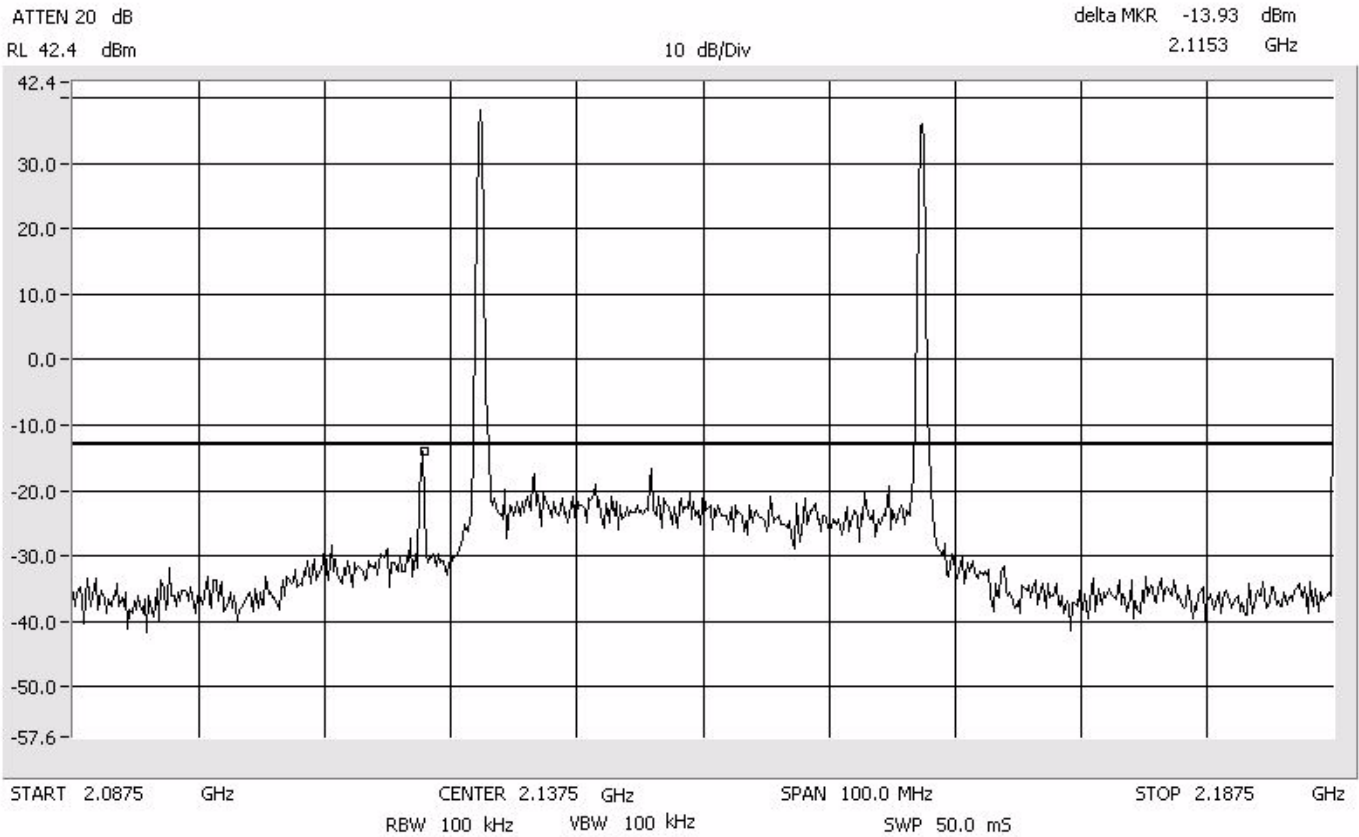




GSM
Upper Band

Intermodulation
Apart
AWS

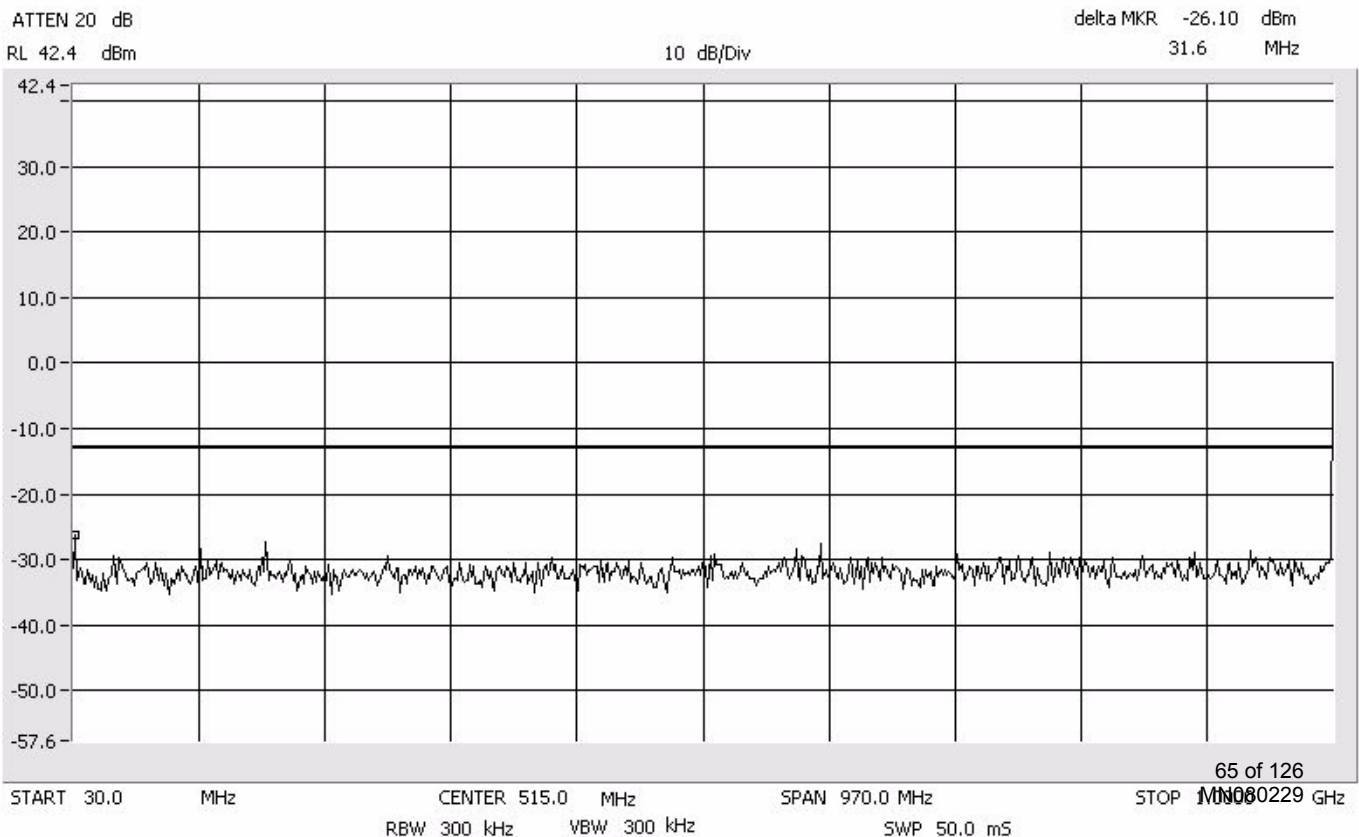
Center: 2137.5 MHz
Span: 100 MHz
RBW/VBW: 100 kHz



GSM
Upper Band

Intermodulation
Apart
AWS

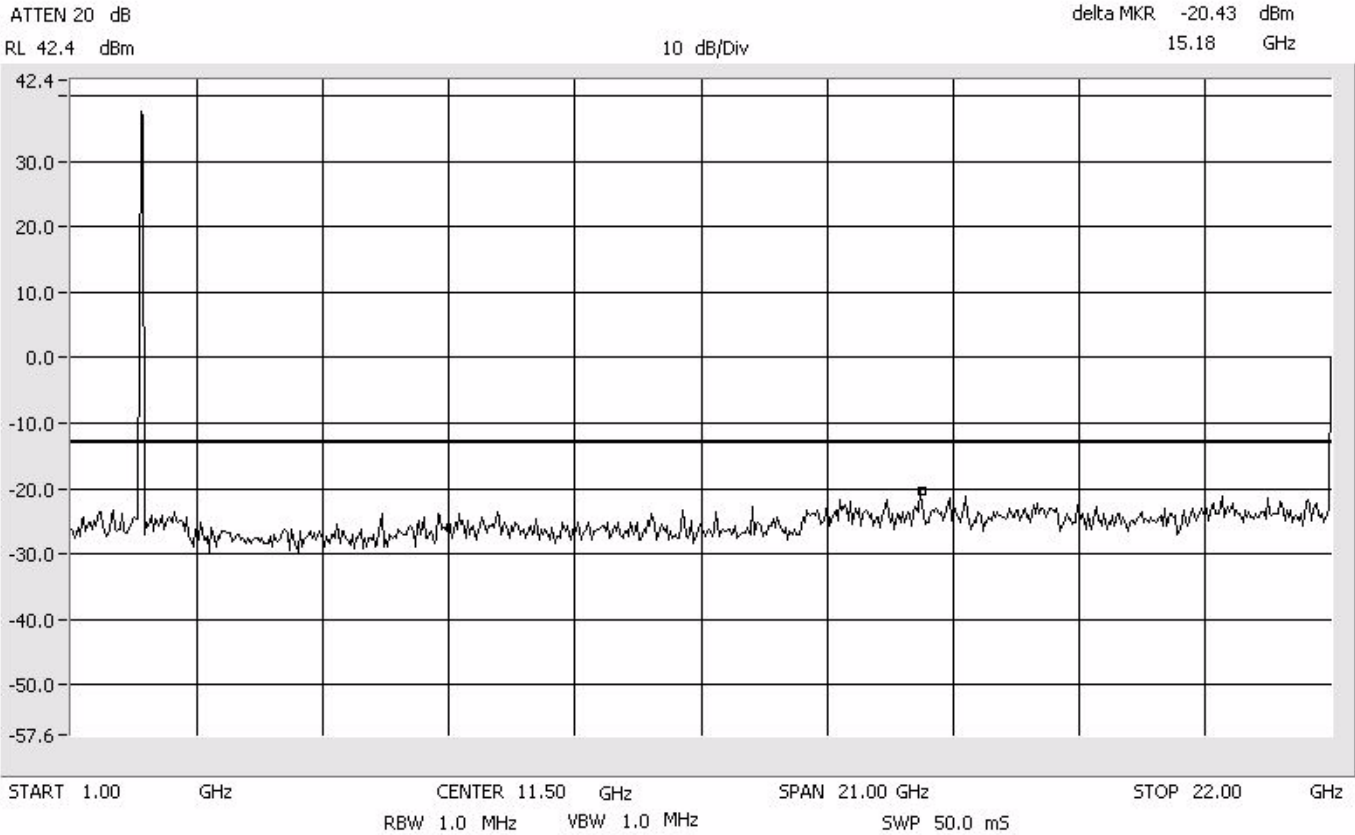
Span: 30 MHz to 1 GHz
RBW/VBW: 300 kHz



GSM
Upper Band

Intermodulation
Apart
AWS

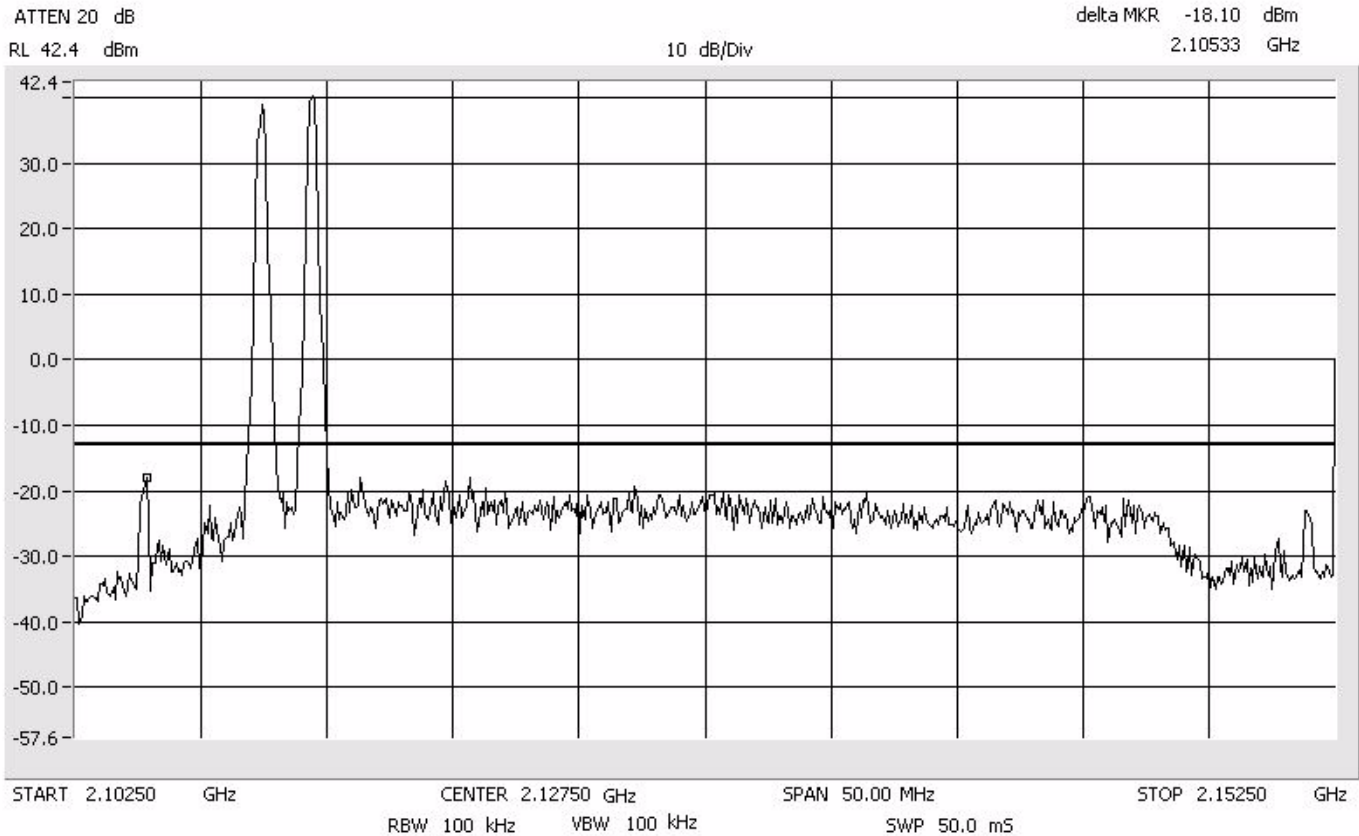
Span: 1 GHz to 22 GHz
RBW/VBW: 1 MHz



EDGE
Lower Band

Intermodulation
Close - Lower
AWS

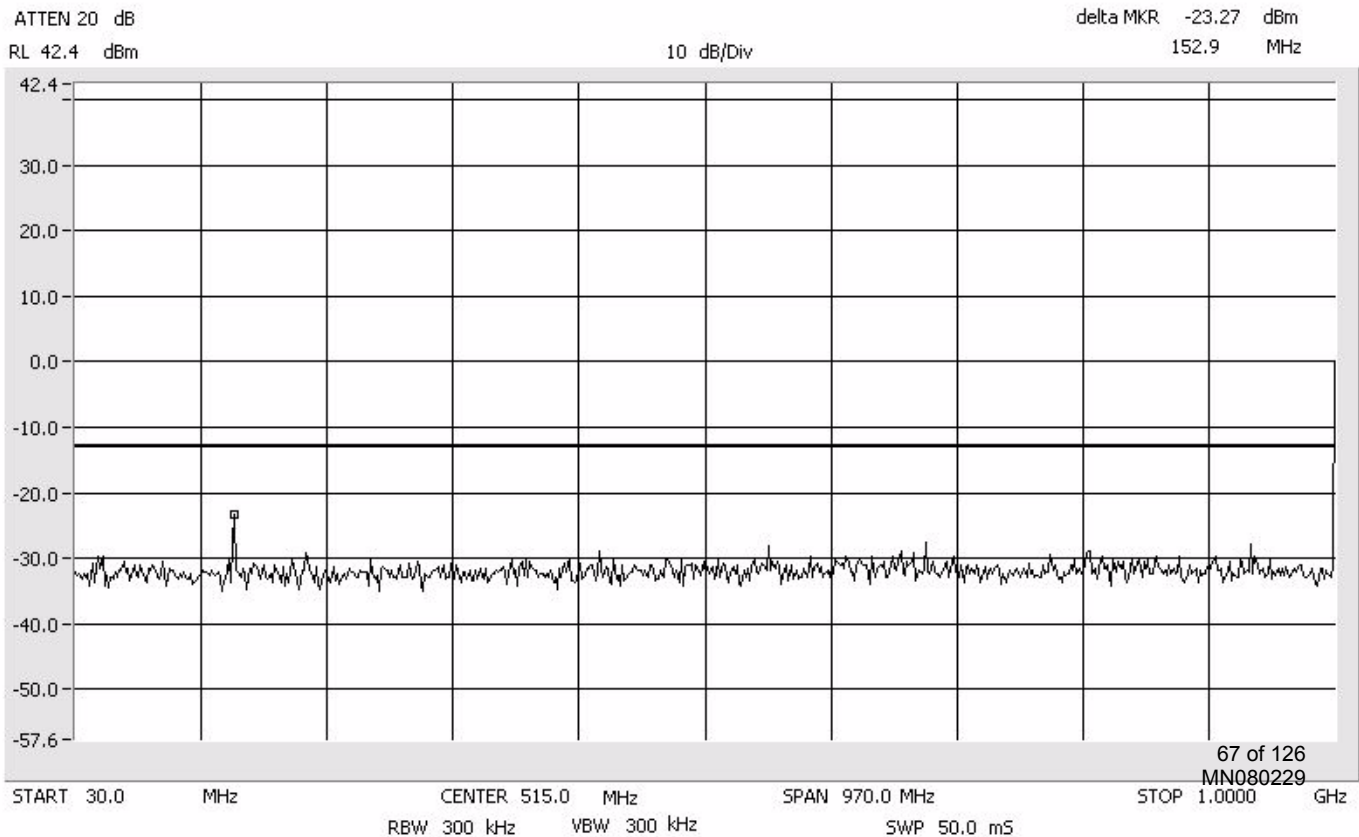
Center: 2127.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

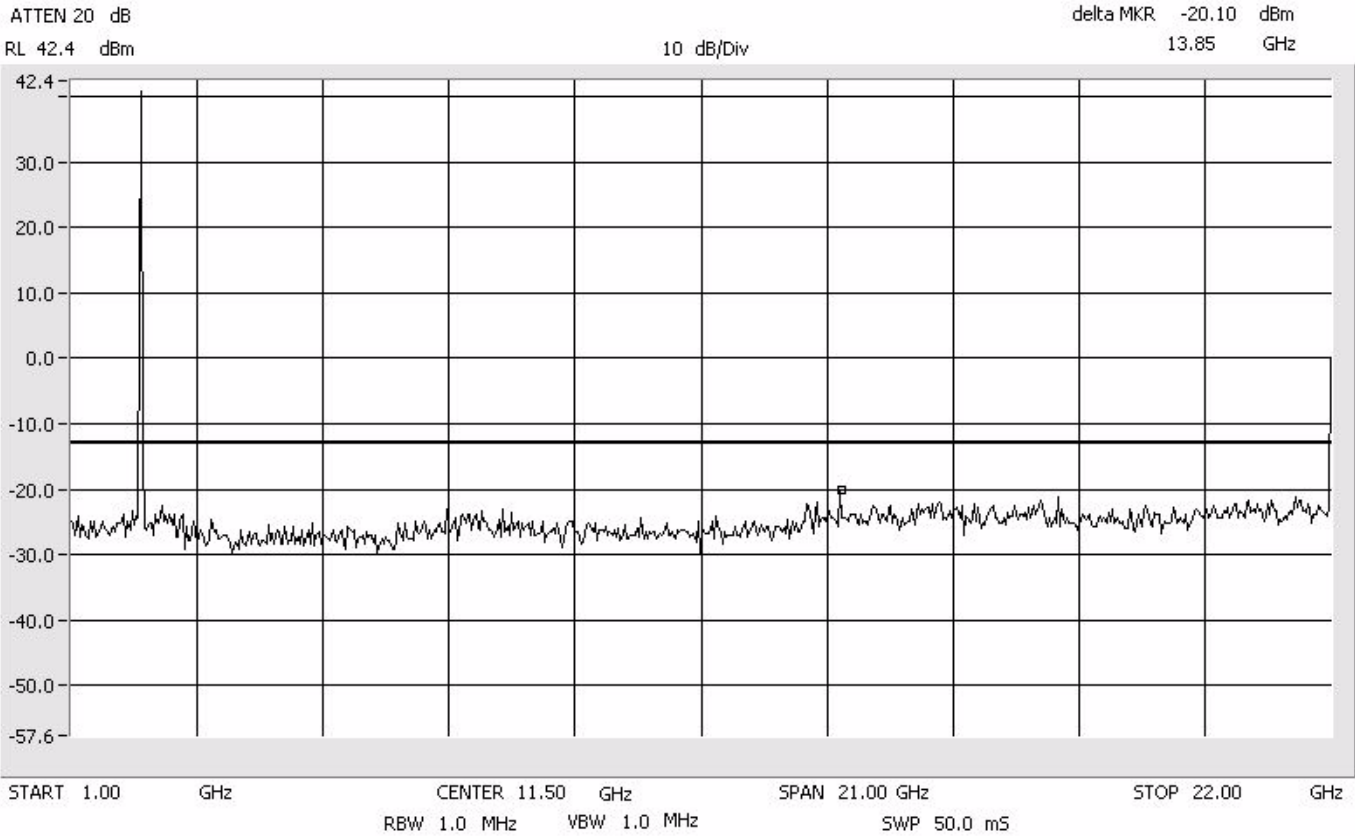


EDGE
Lower Band

Intermodulation
Close - Lower
AWS

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

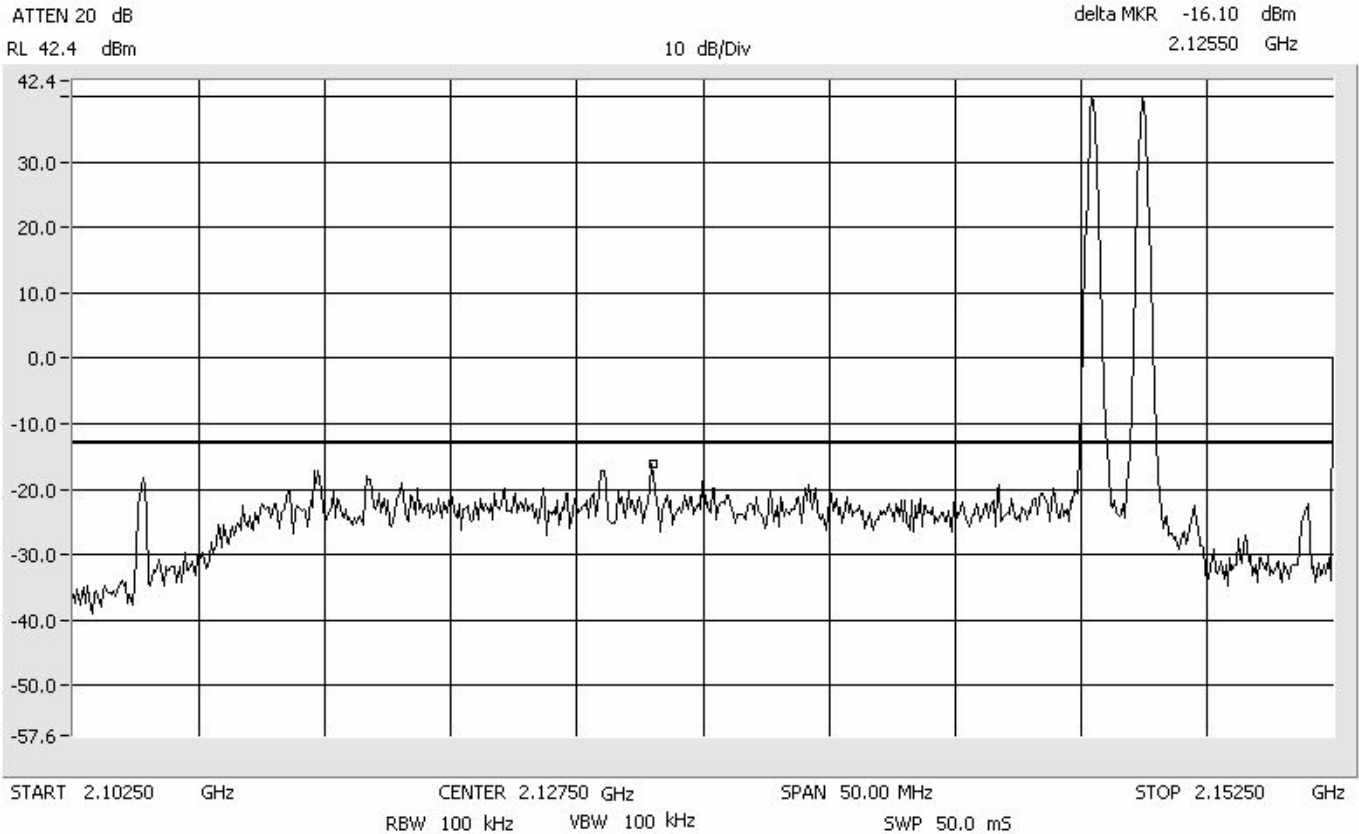




EDGE
Lower Band

Intermodulation
Close - Upper
AWS

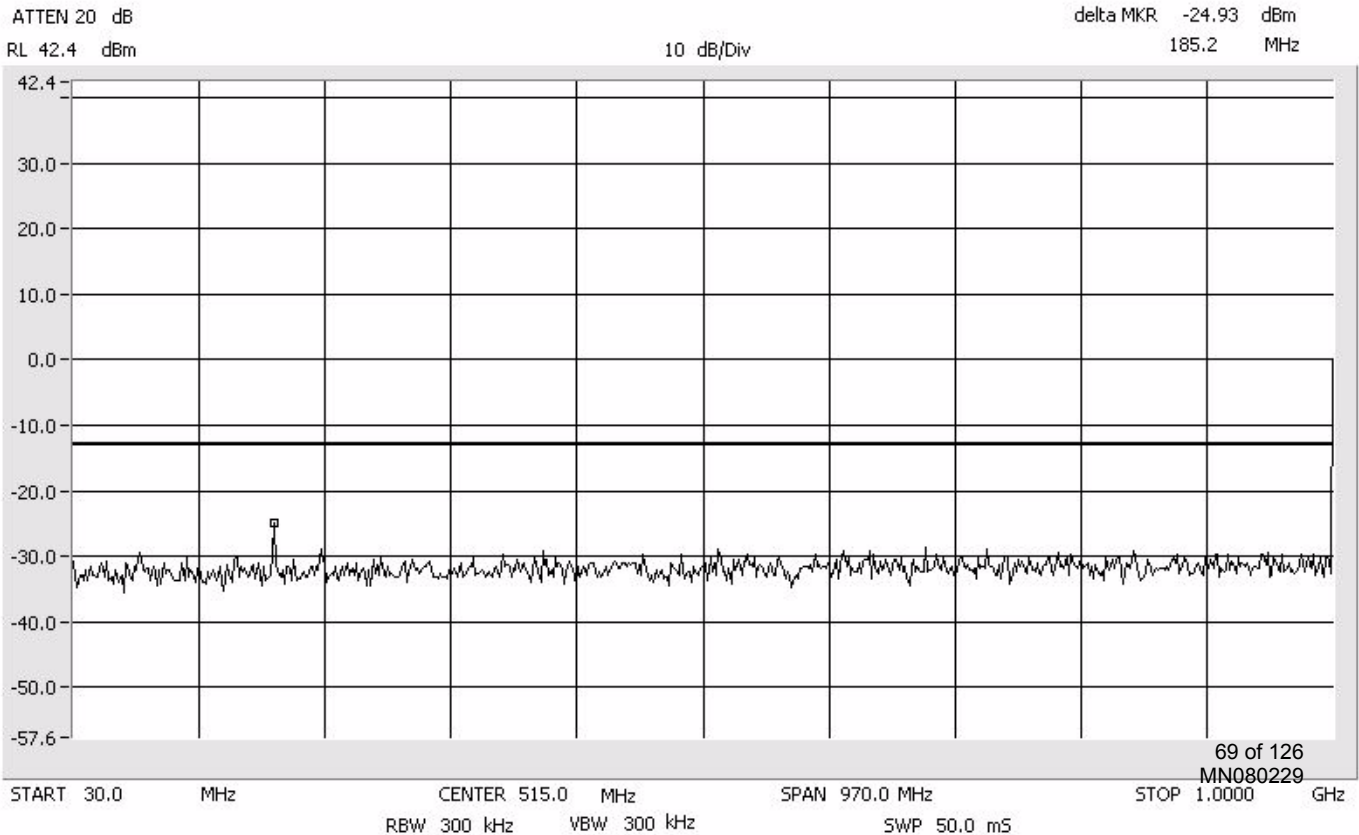
Center: 2127.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

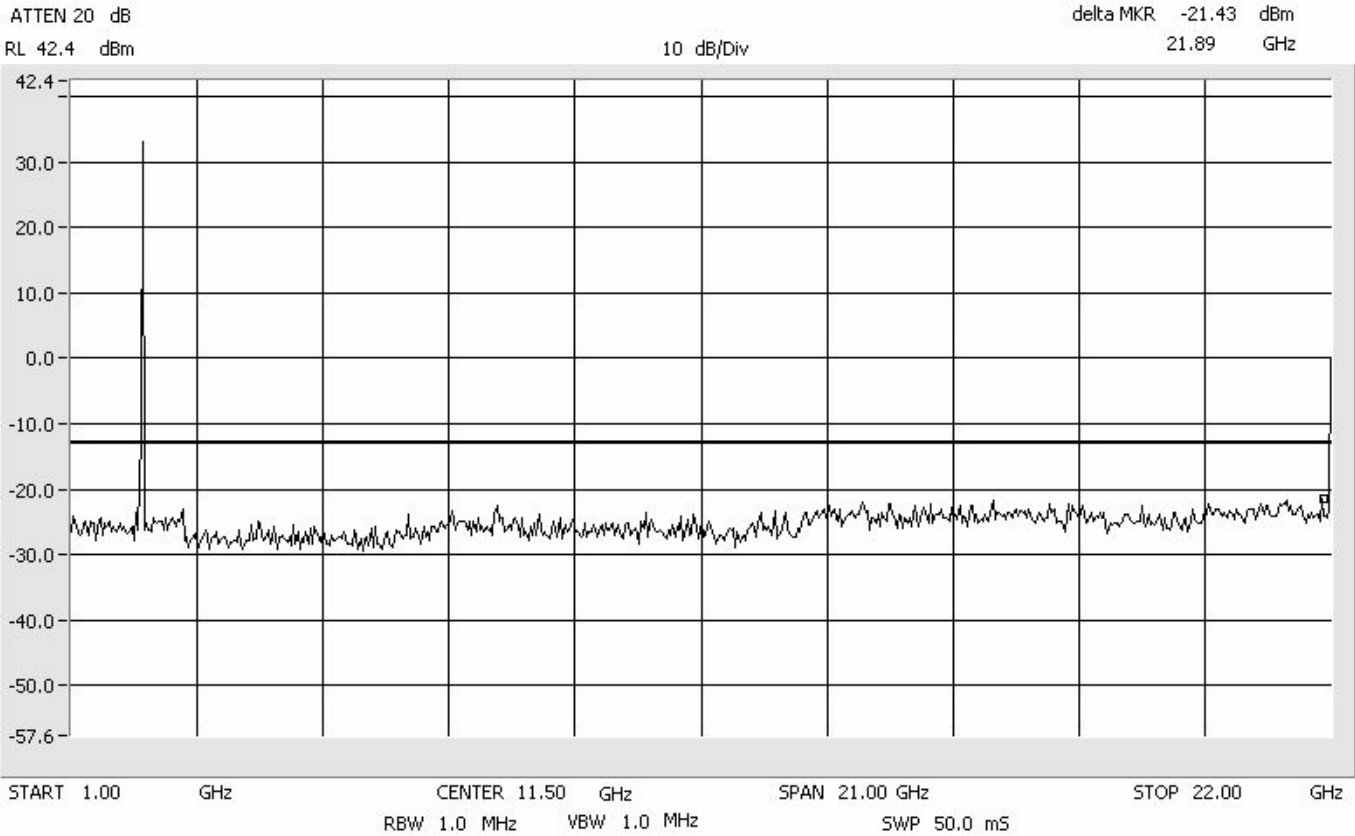


EDGE
Lower Band

Intermodulation
Close - Upper
AWS

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

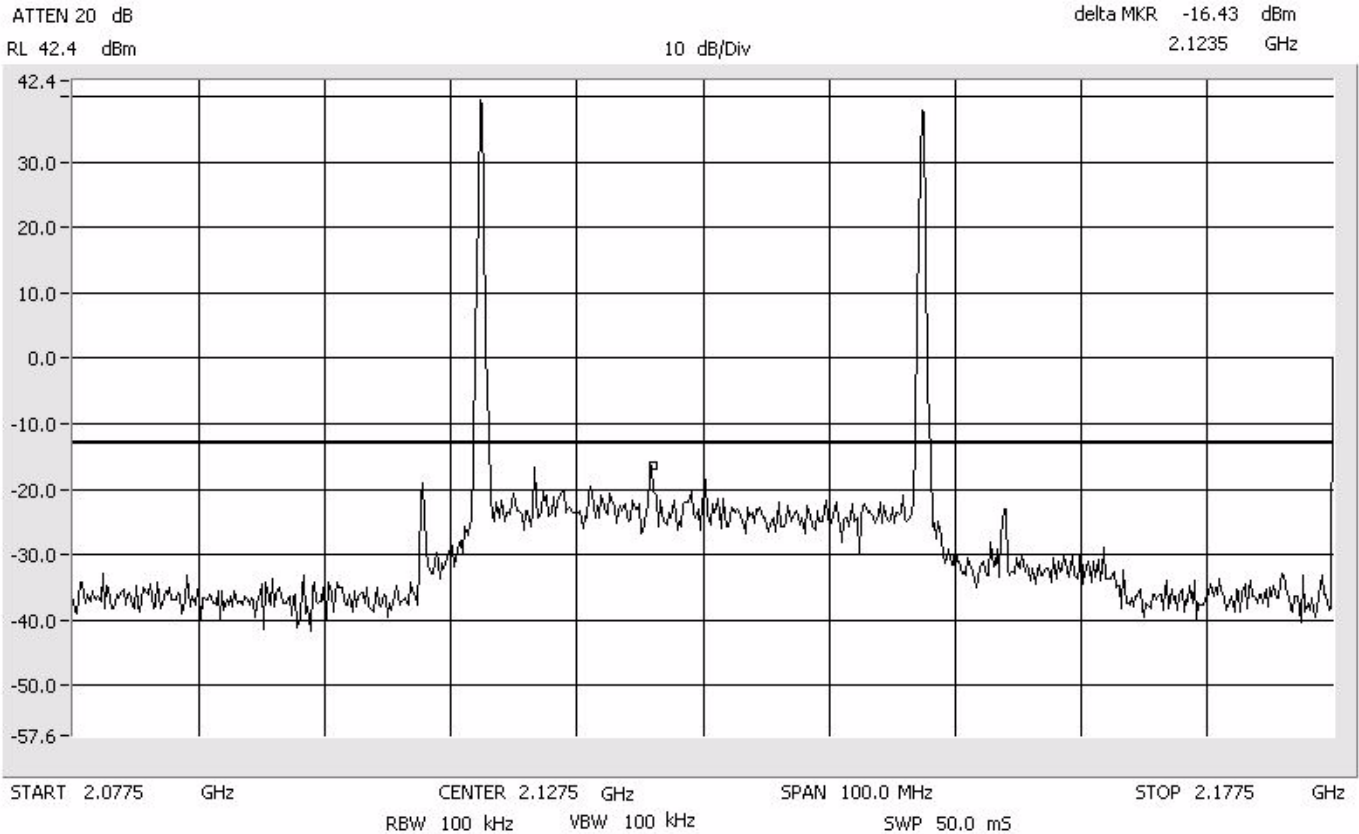




EDGE
Lower Band

Intermodulation
Apart
AWS

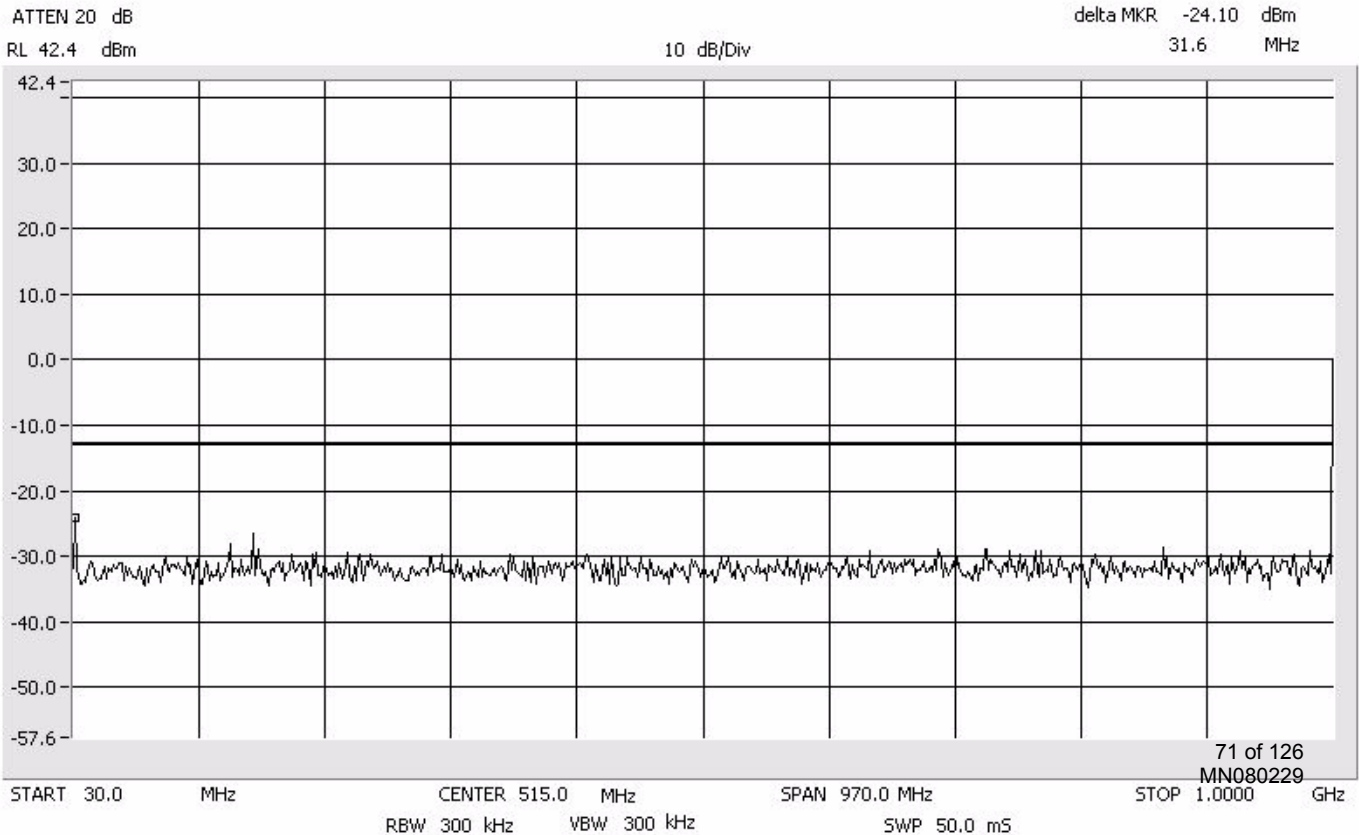
Center: 2127.5 MHz
Span: 100 MHz
RBW/VBW: 100 kHz

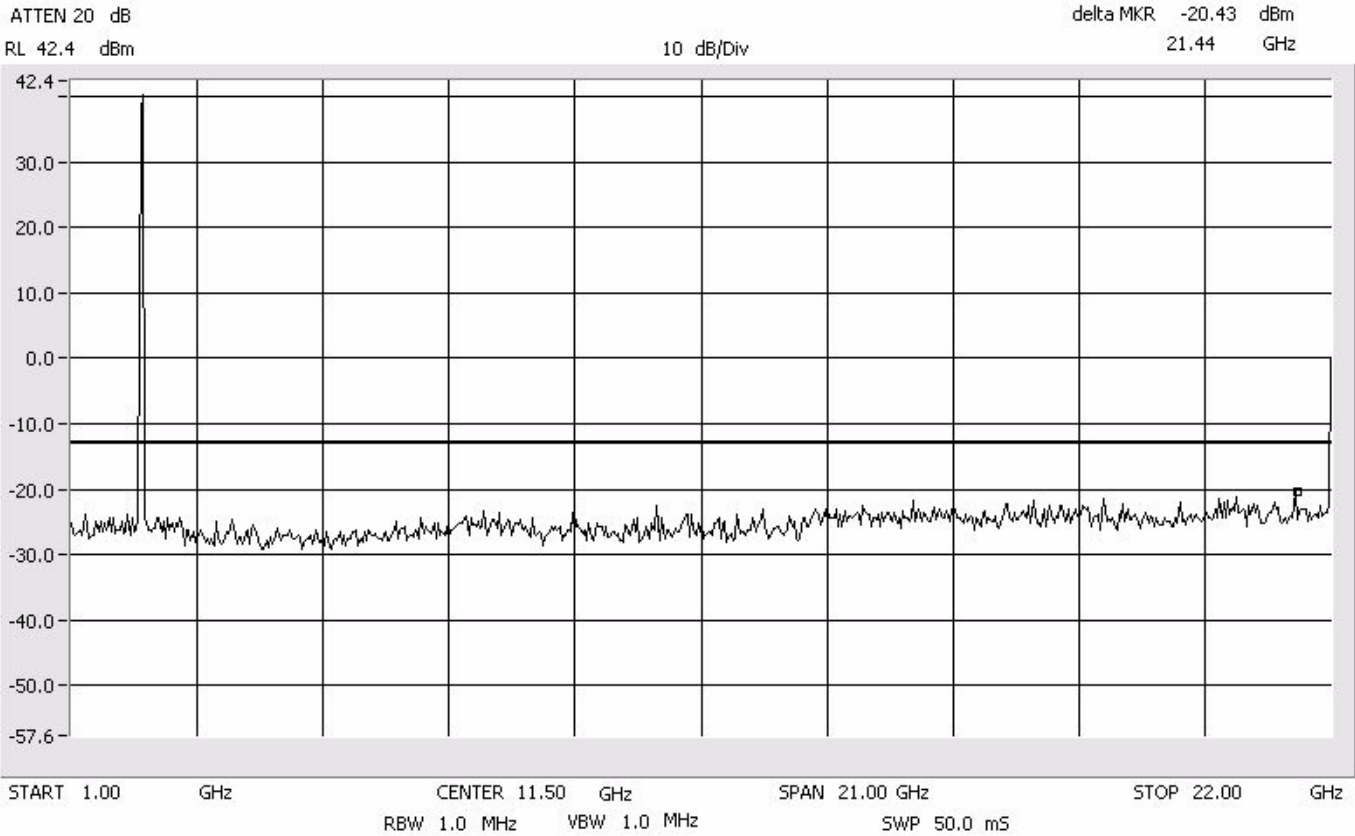


EDGE
Lower Band

Intermodulation
Apart
AWS

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

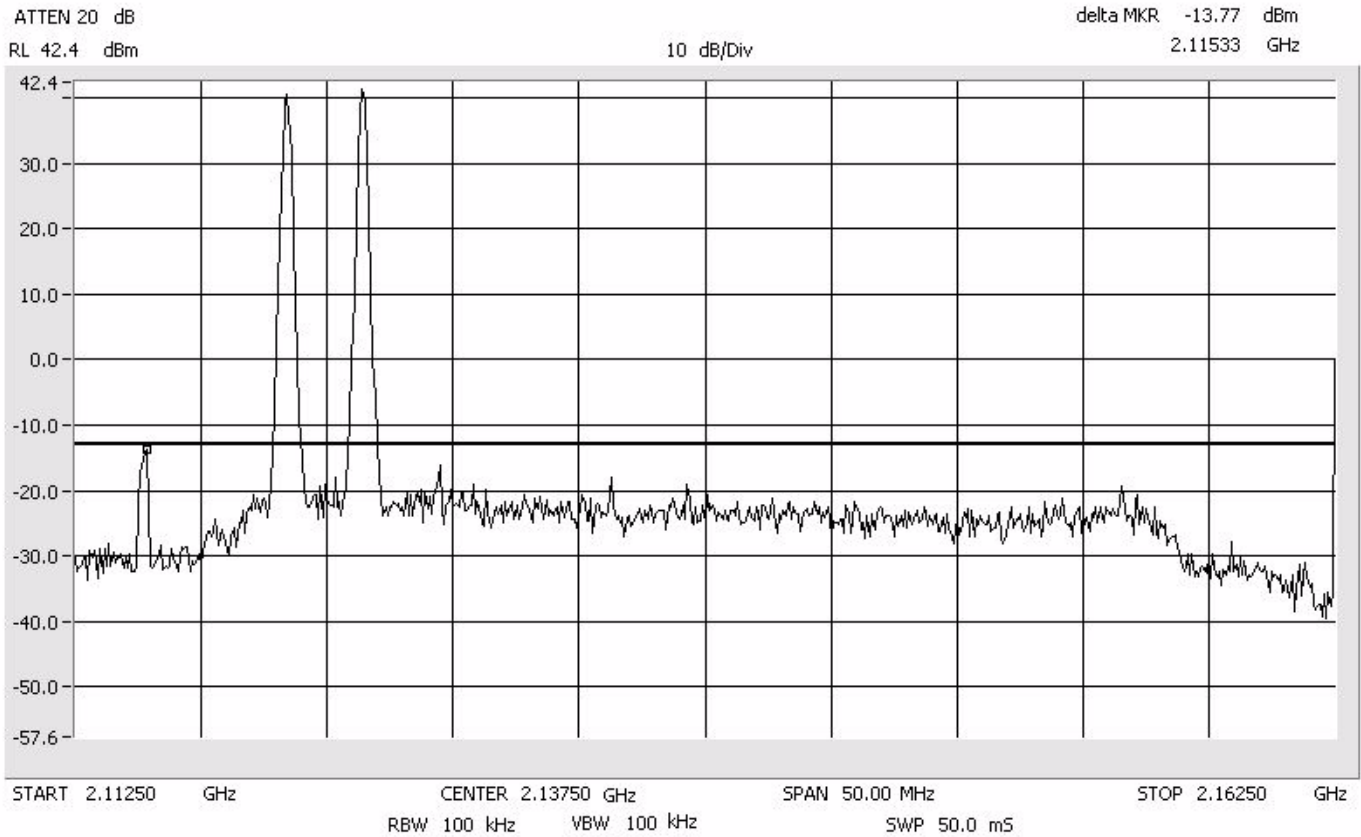




EDGE
Upper Band

Intermodulation
Close - Lower
AWS

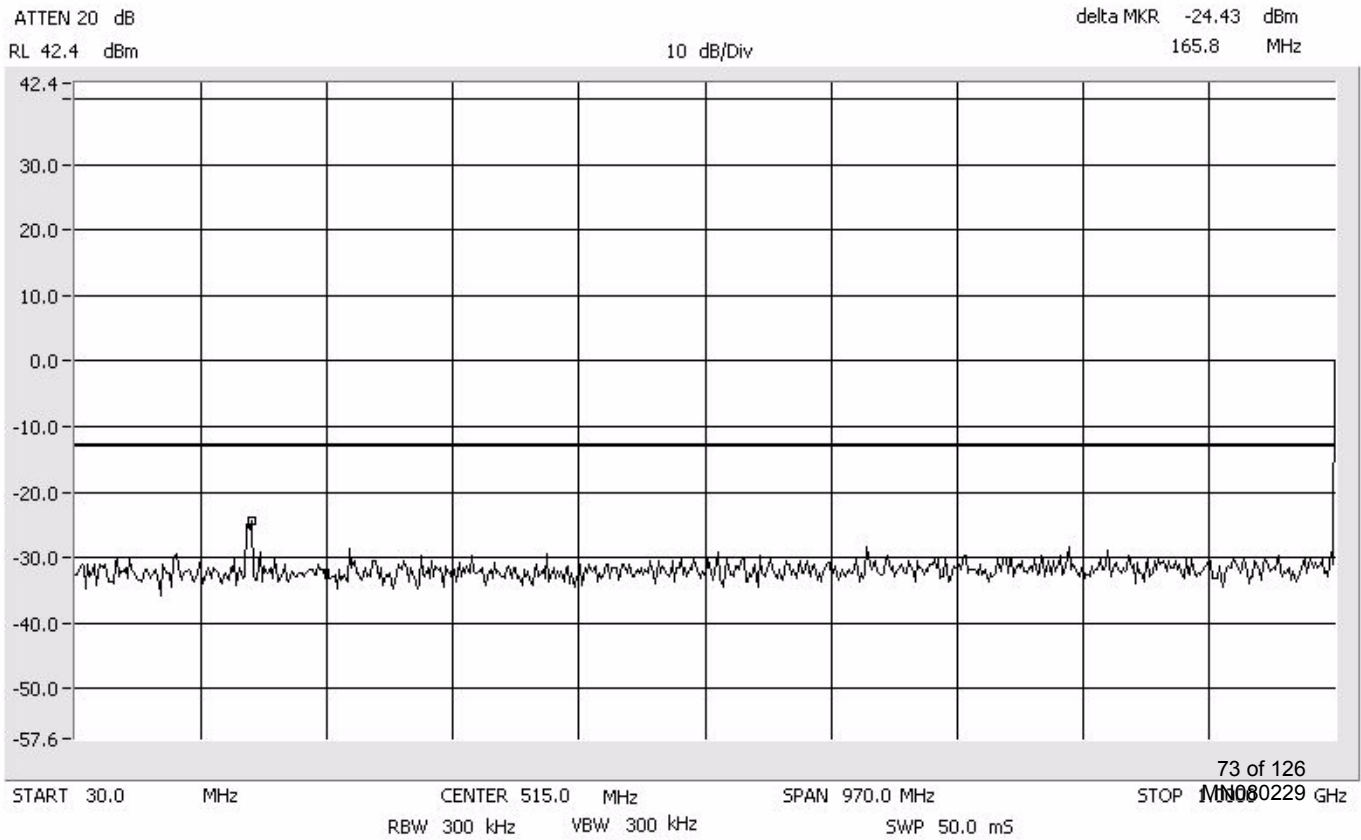
Center: 2137.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

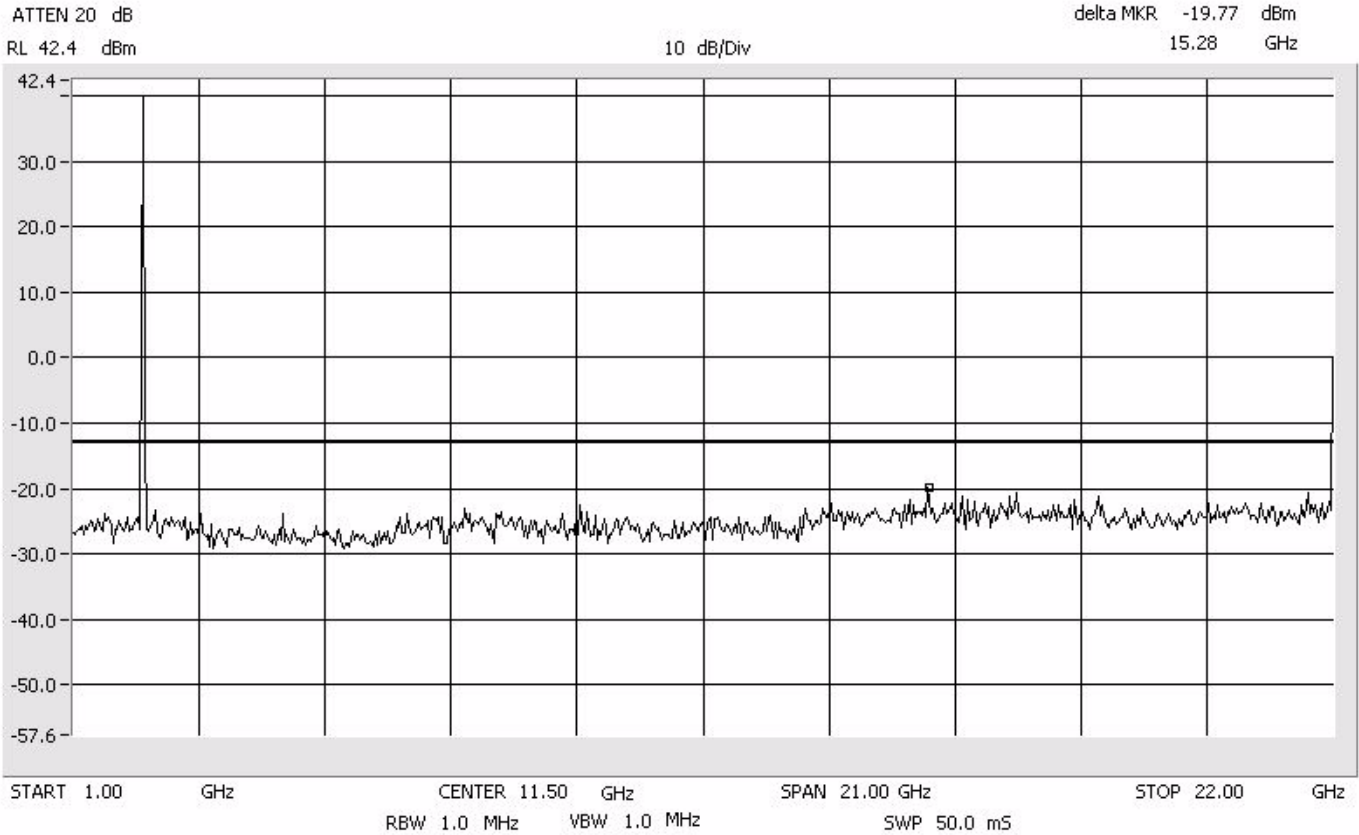


EDGE
Upper Band

Intermodulation
Close - Lower
AWS

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

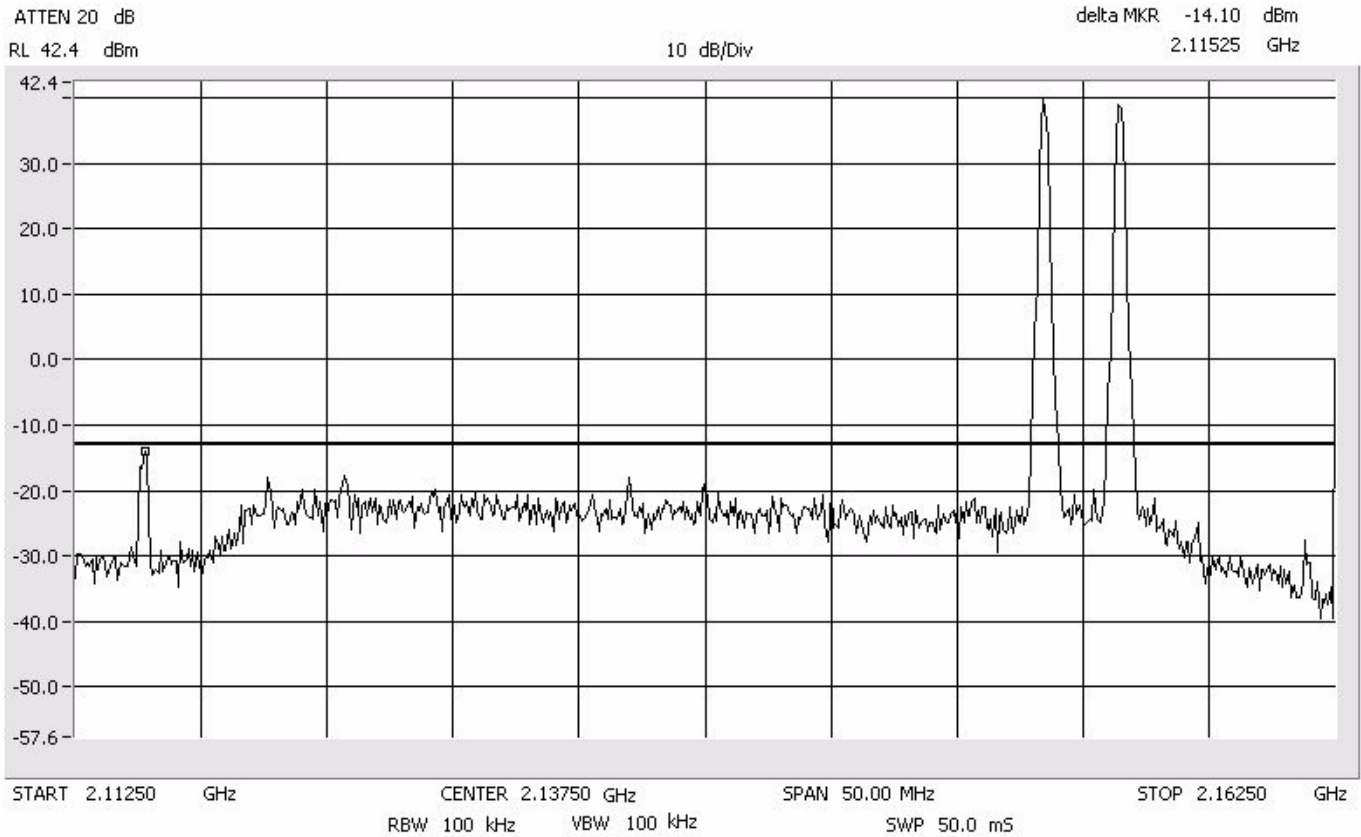




EDGE
Upper Band

Intermodulation
Close - Upper
AWS

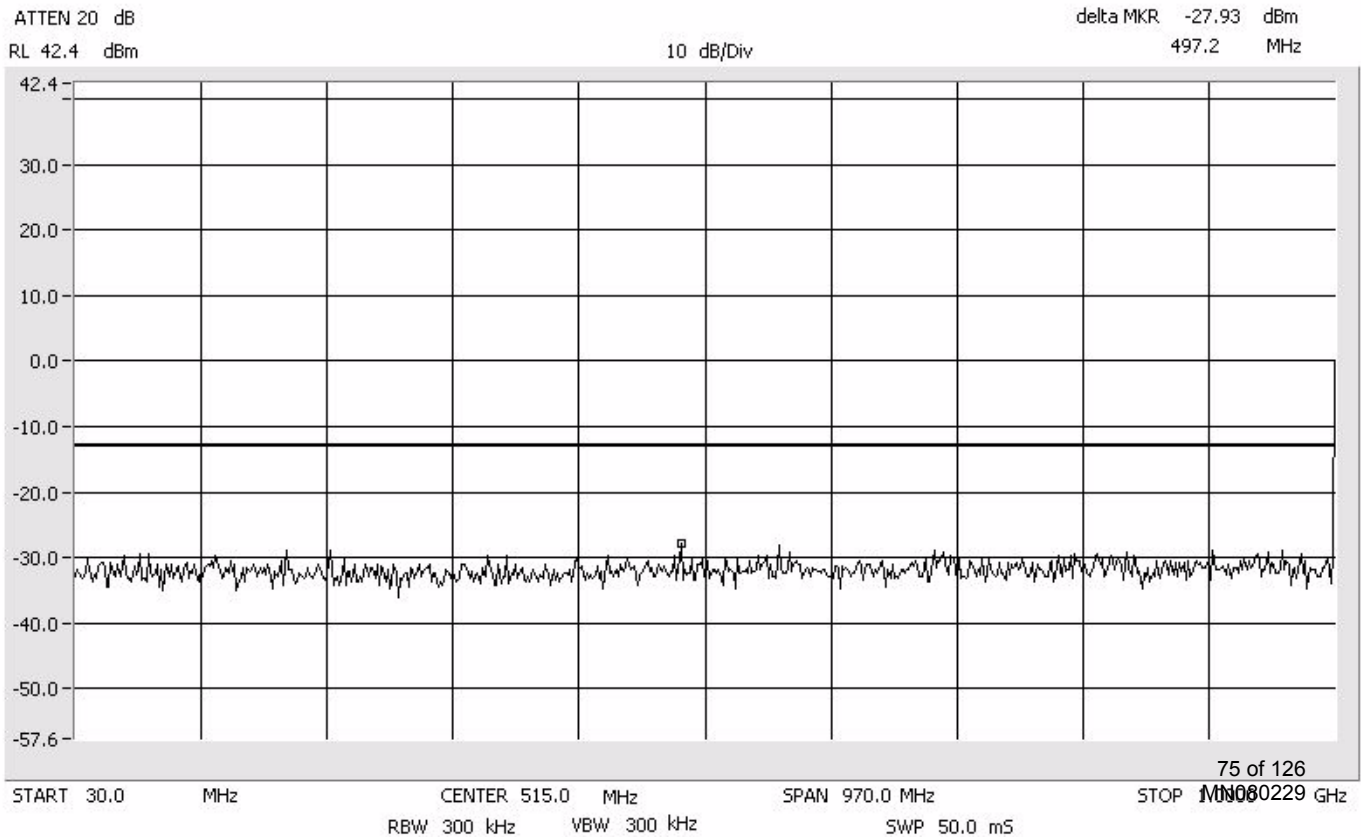
Center: 2137.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

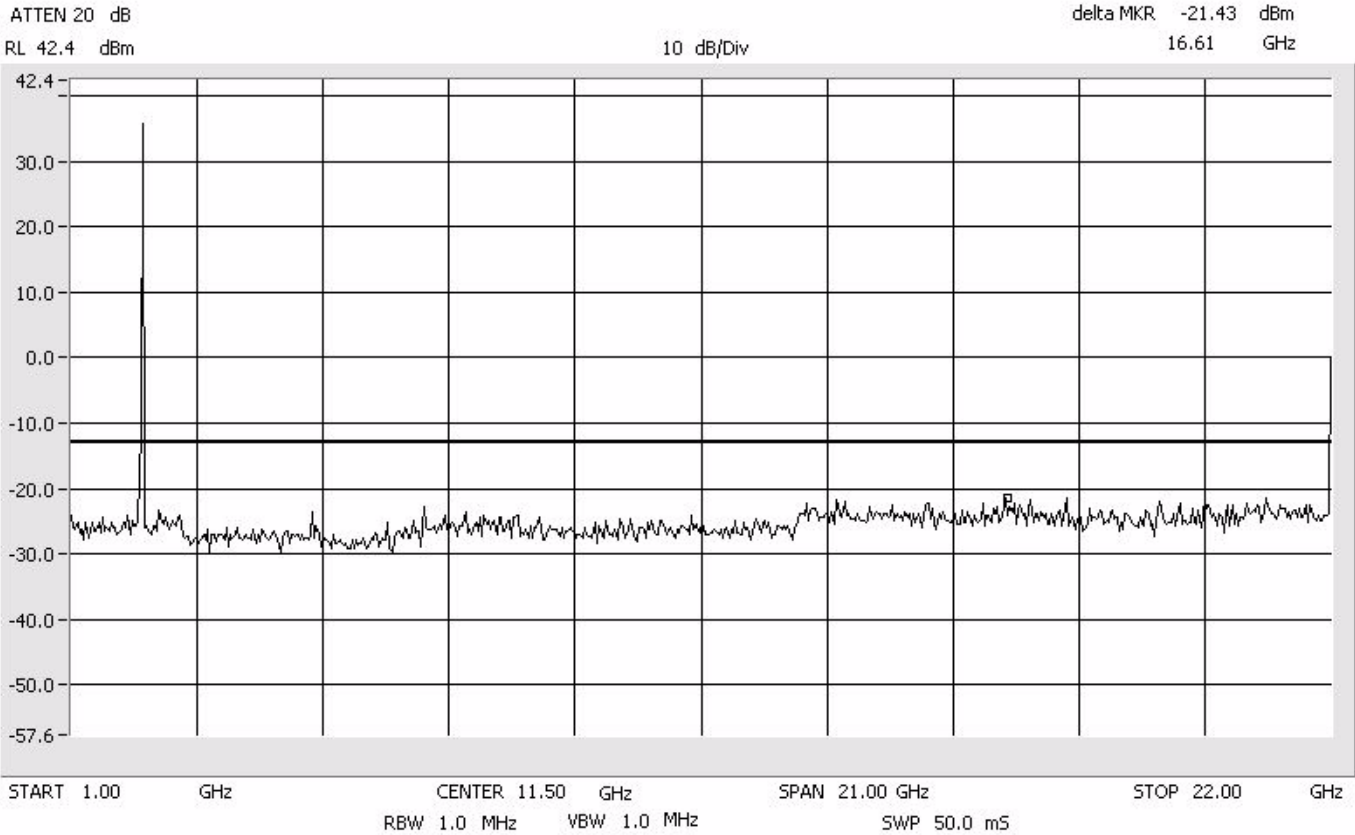


EDGE
Upper Band

Intermodulation
Close - Upper
AWS

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

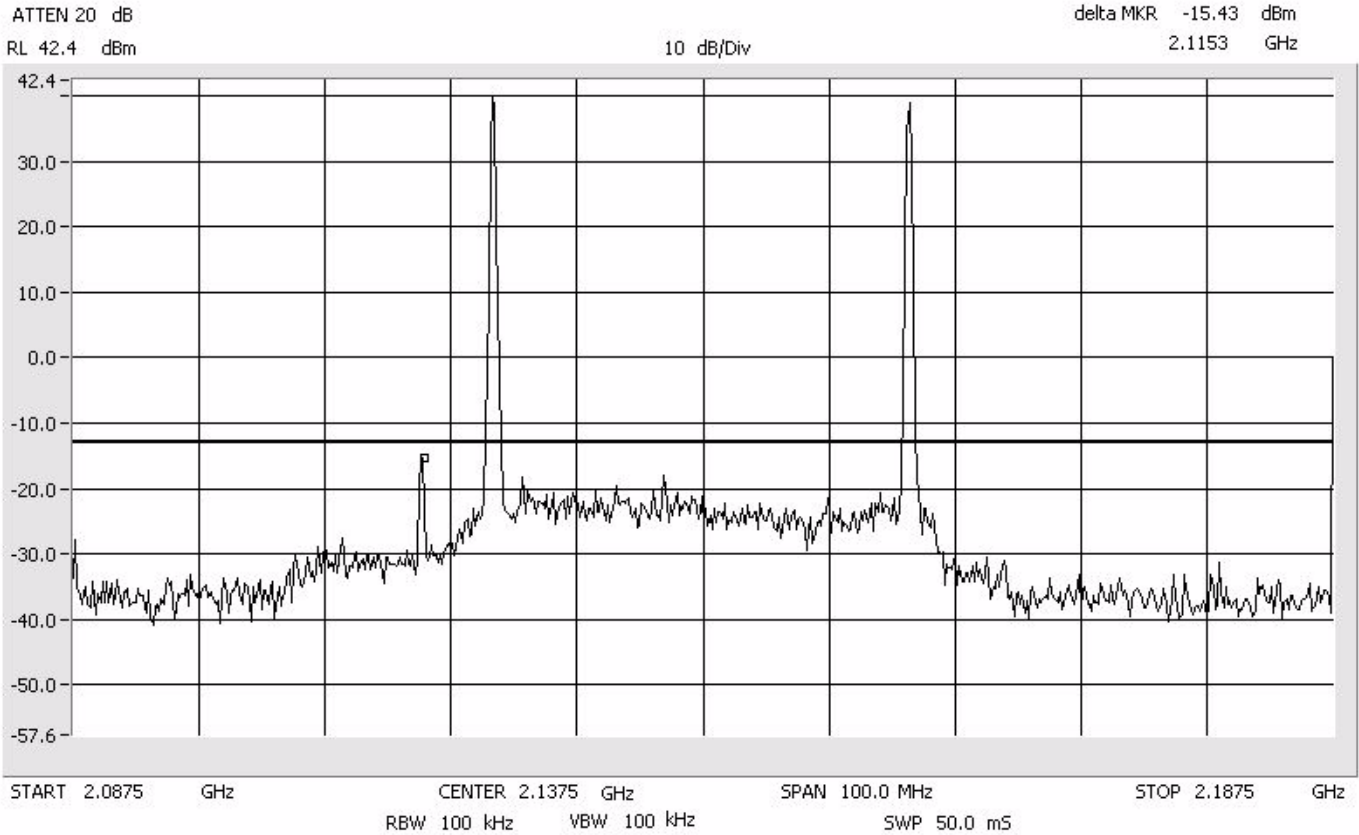




EDGE
Upper Band

Intermodulation
Apart
AWS

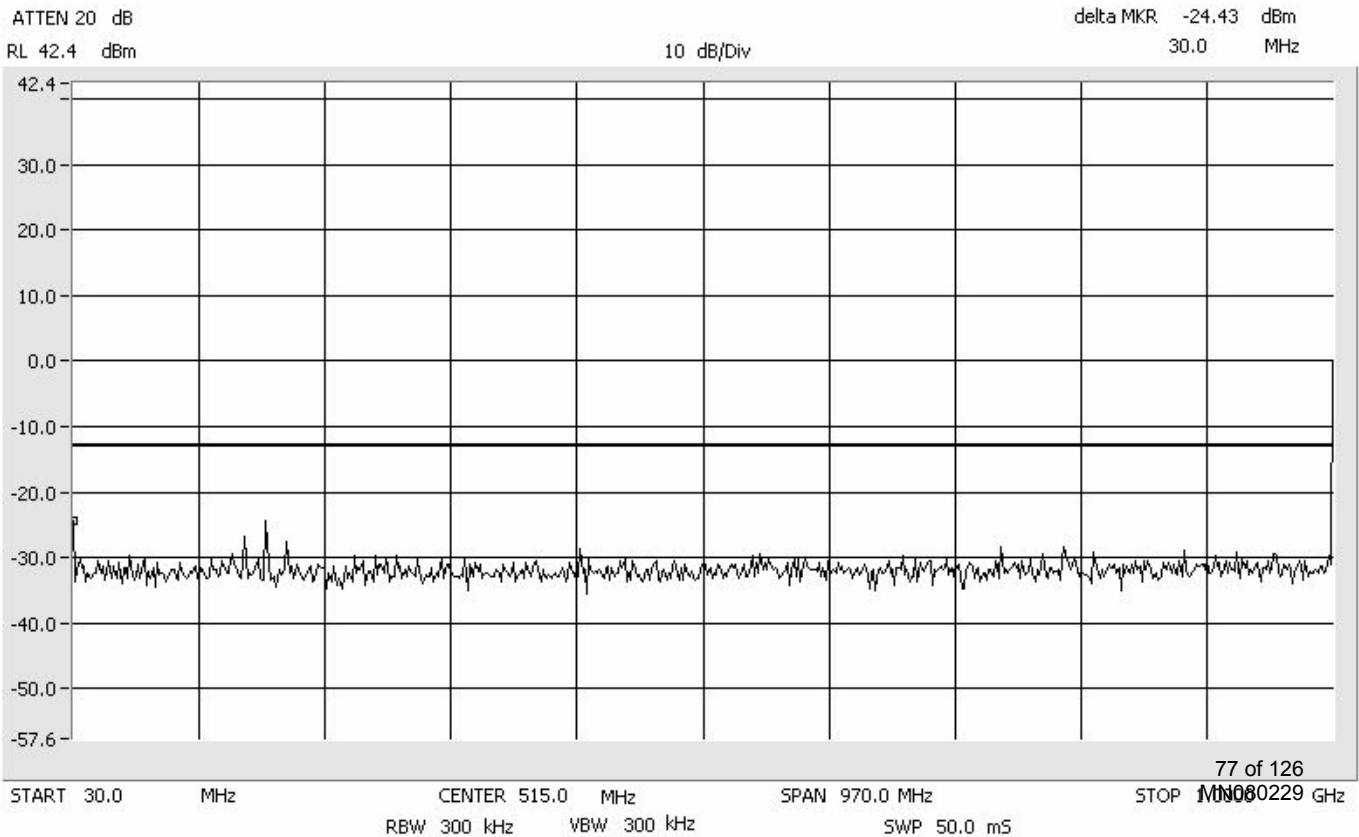
Center: 2137.5 MHz
Span: 100 MHz
RBW/VBW: 100 kHz

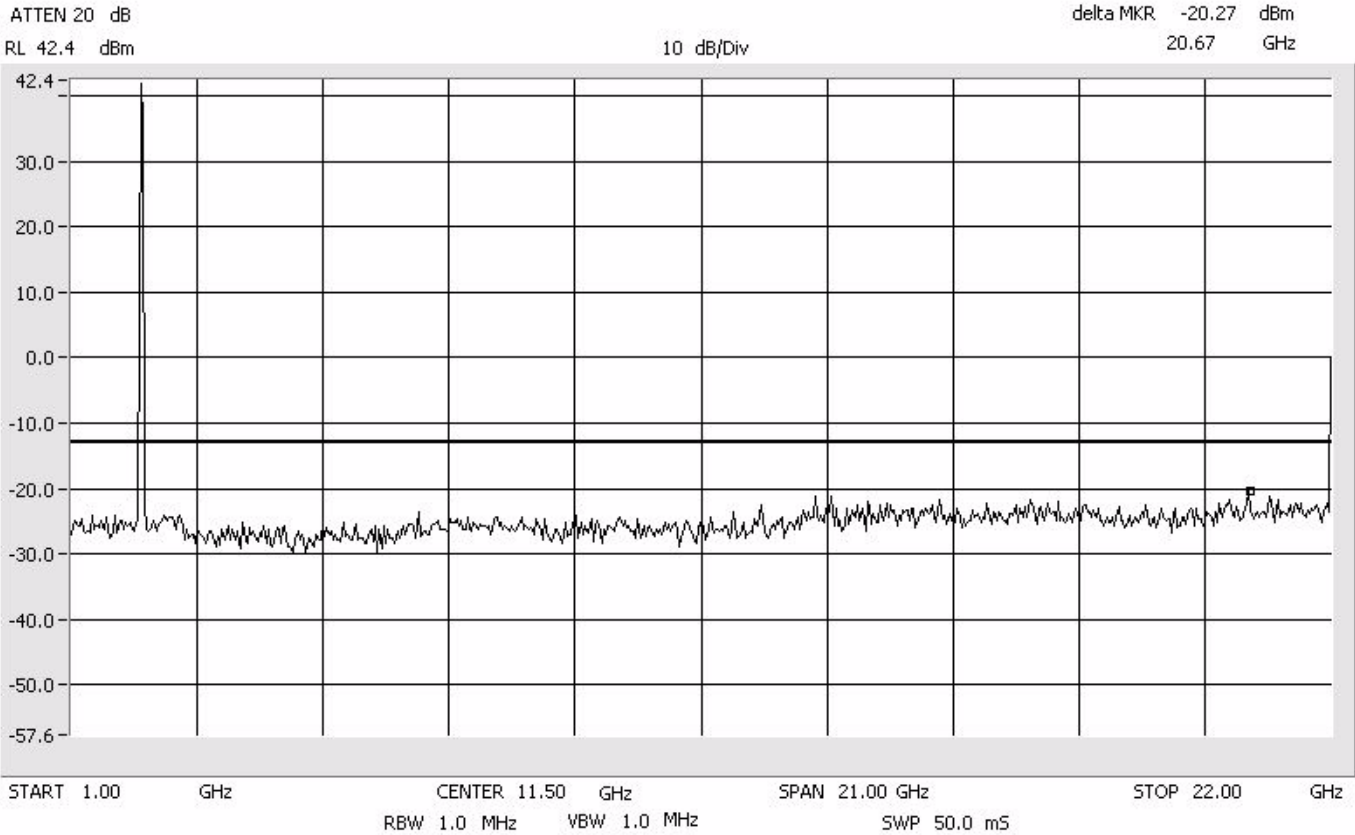


EDGE
Upper Band

Intermodulation
Apart
AWS

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

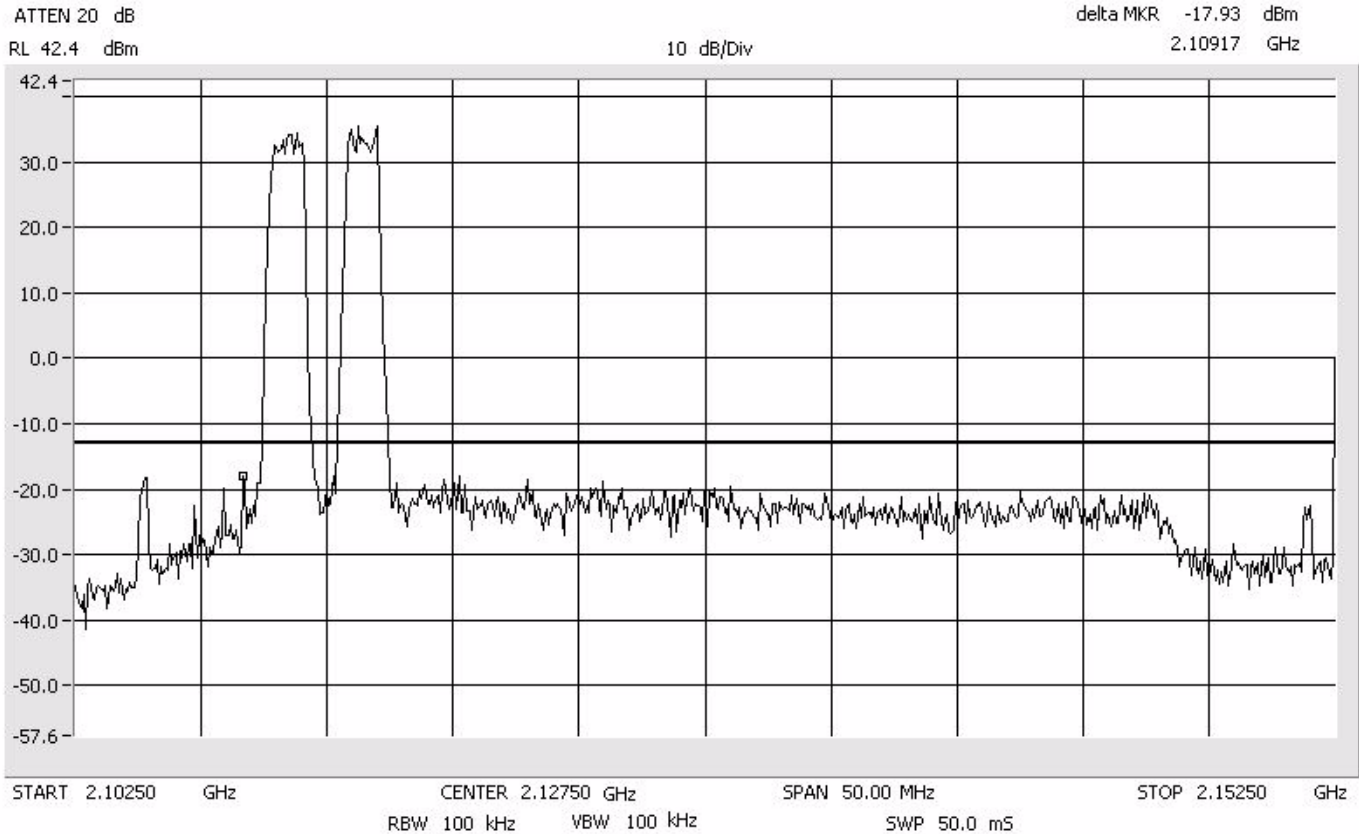




CDMA
Lower Band

Intermodulation
Close - Lower
AWS

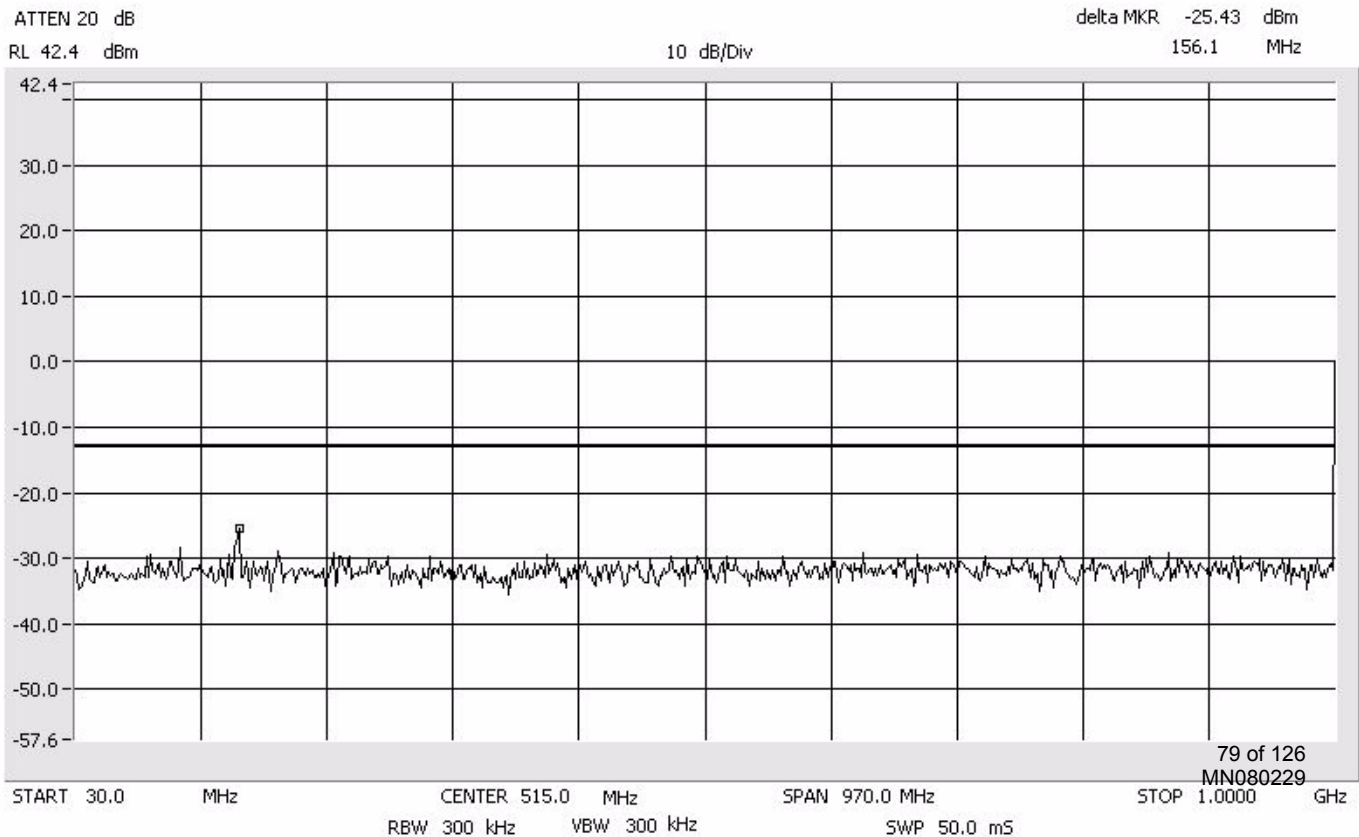
Center: 2127.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

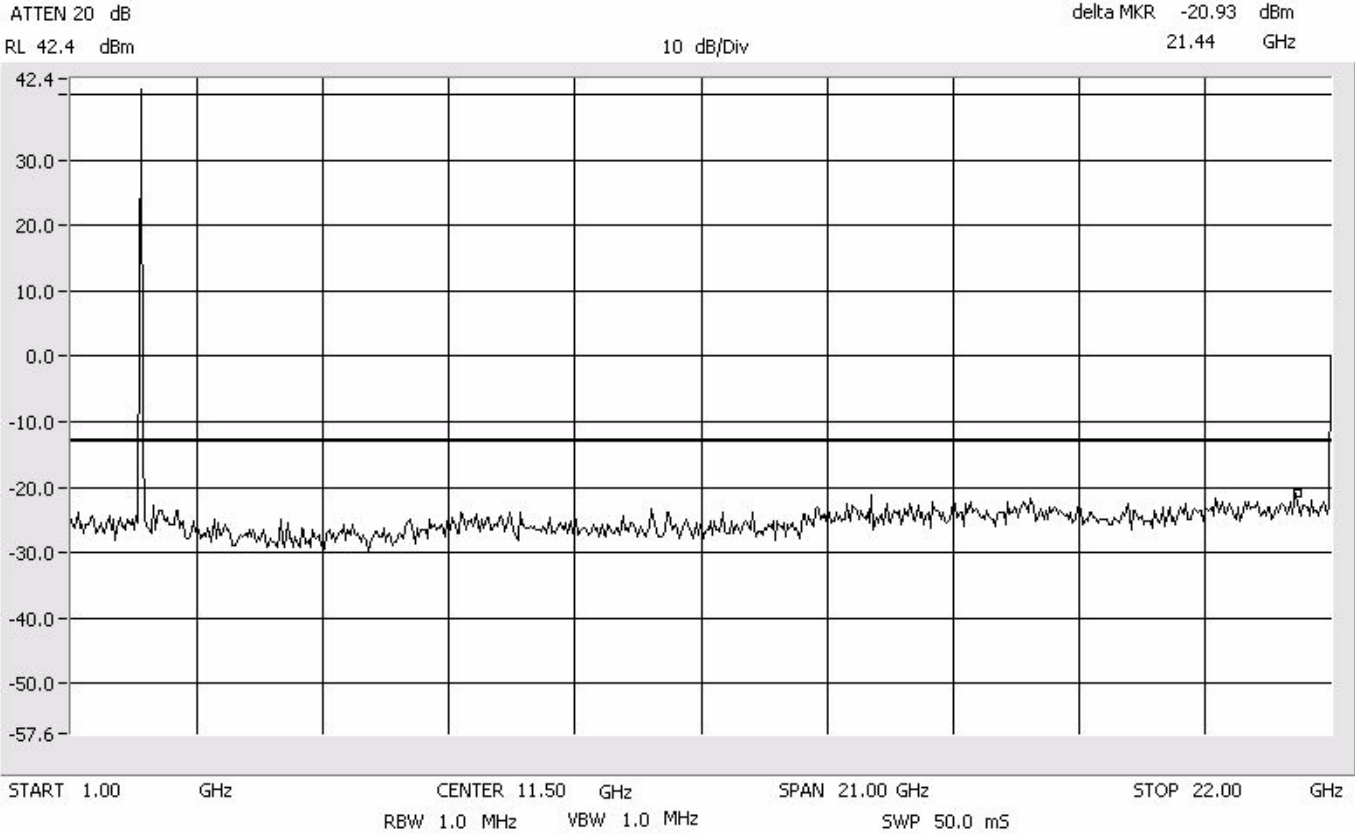


CDMA
Lower Band

Intermodulation
Close - Lower
AWS

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

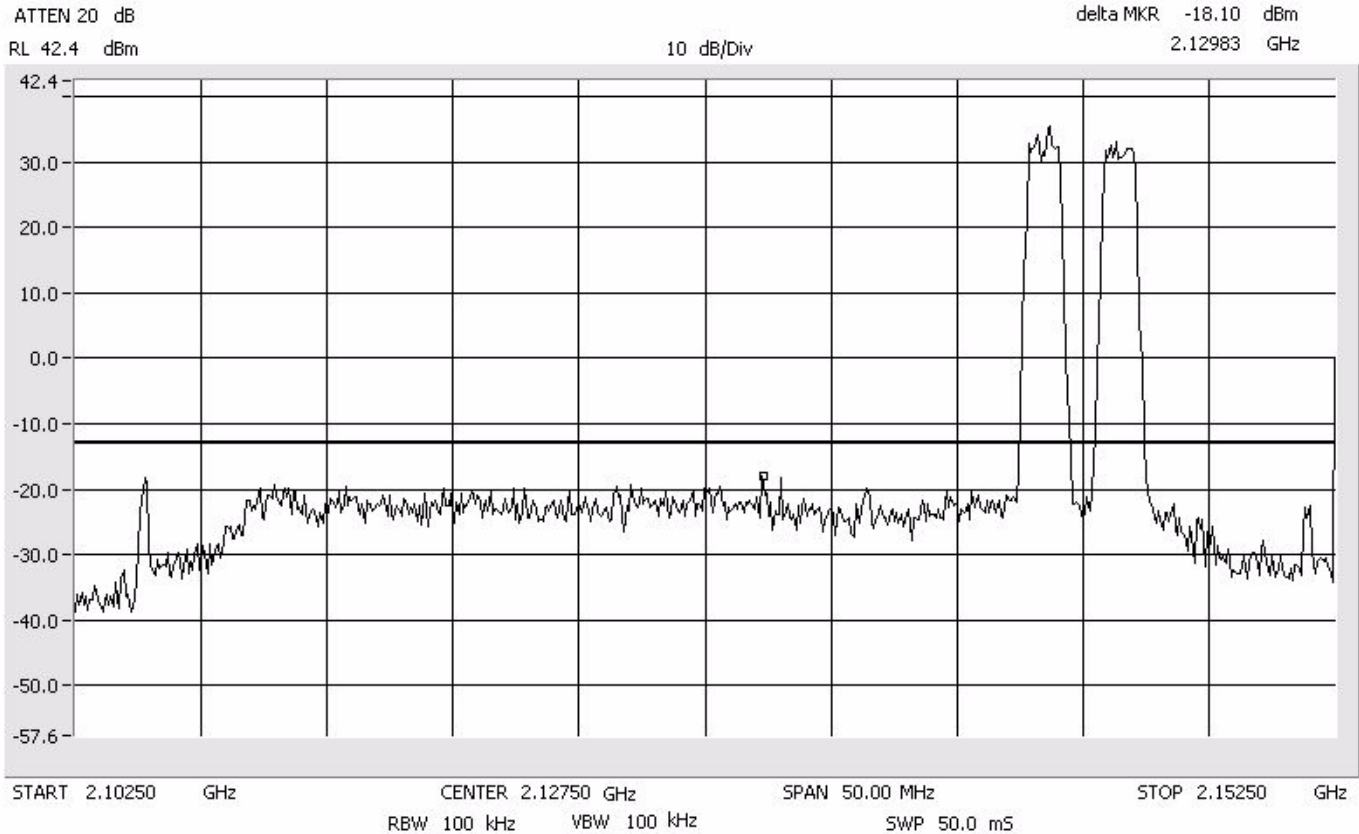




CDMA
Lower Band

Intermodulation
Close - Upper
AWS

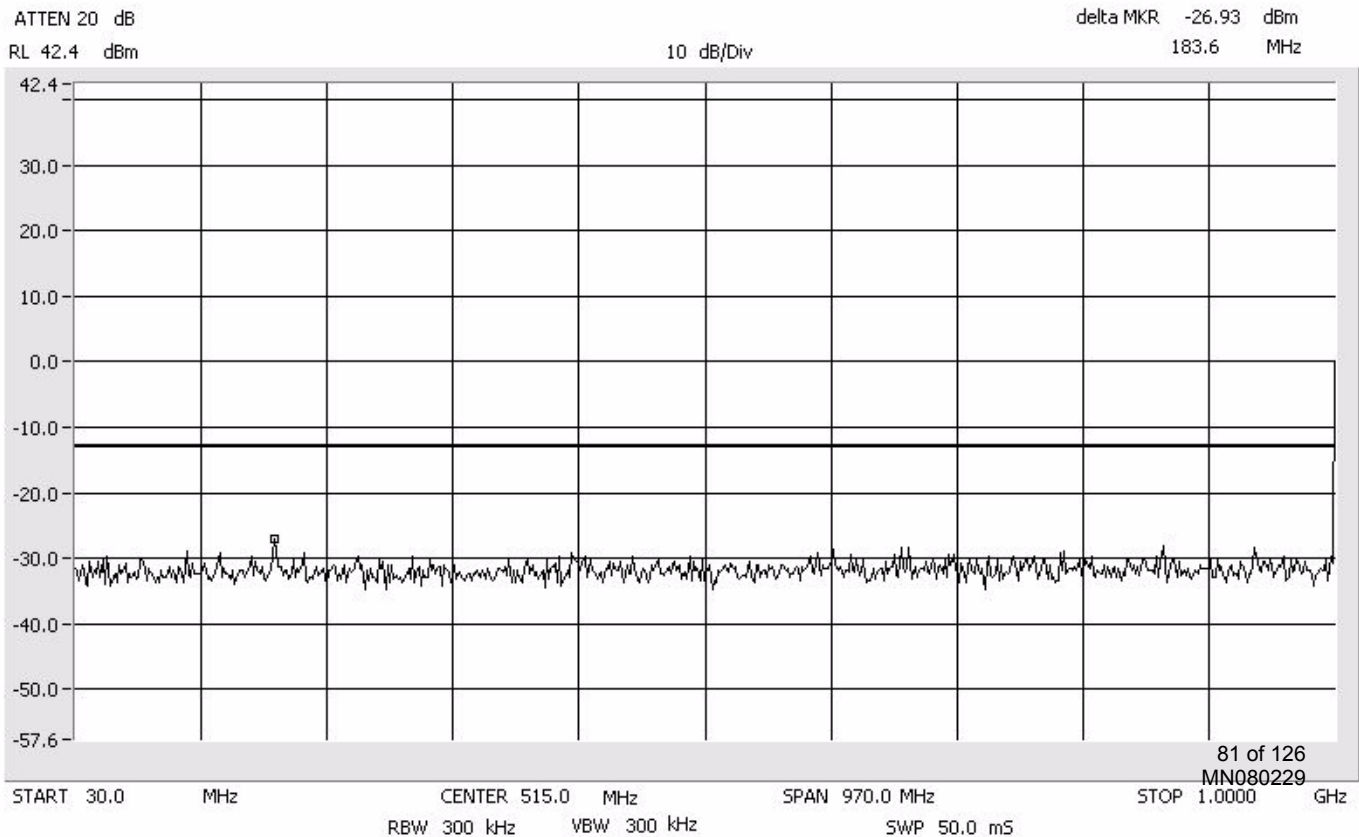
Center: 2127.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

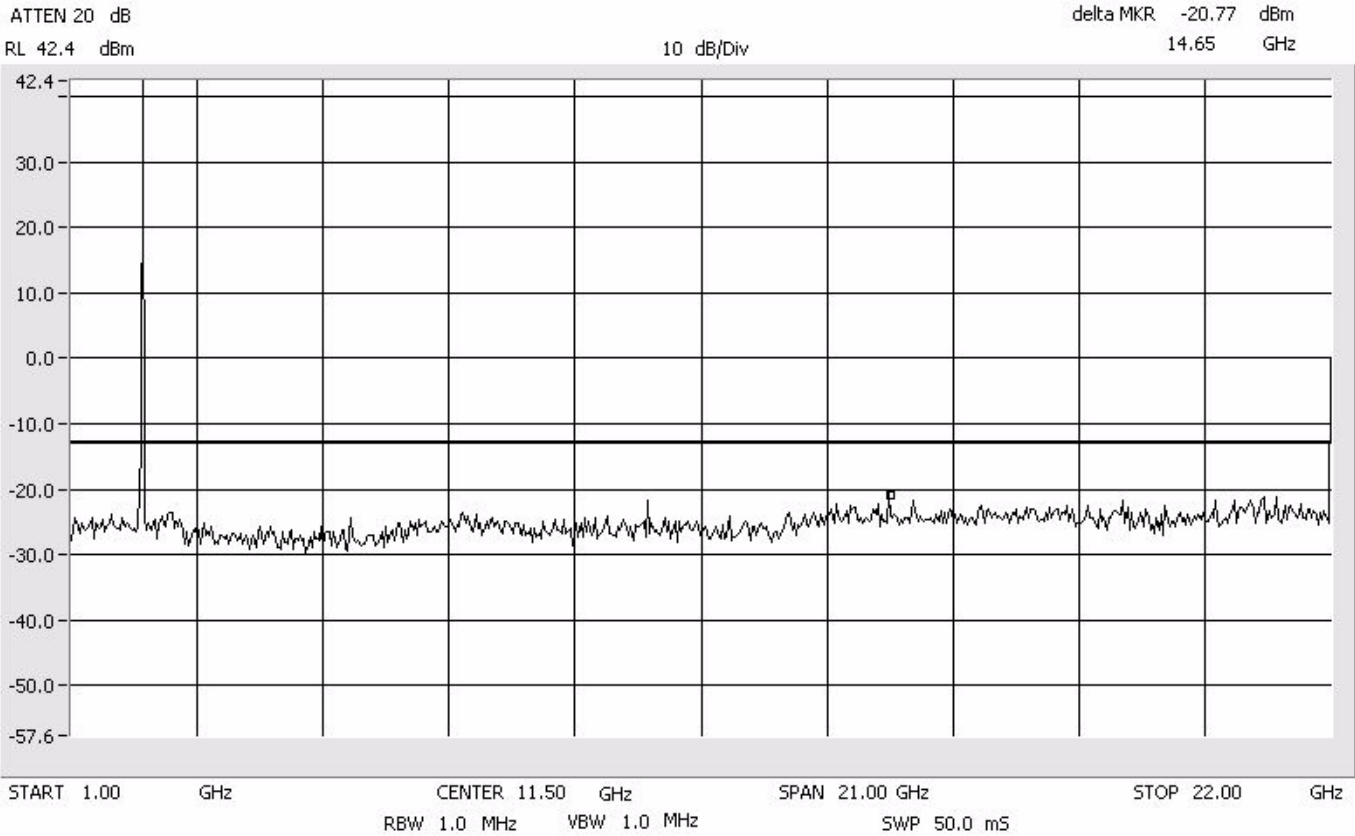


CDMA
Lower Band

Intermodulation
Close - Upper
AWS

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

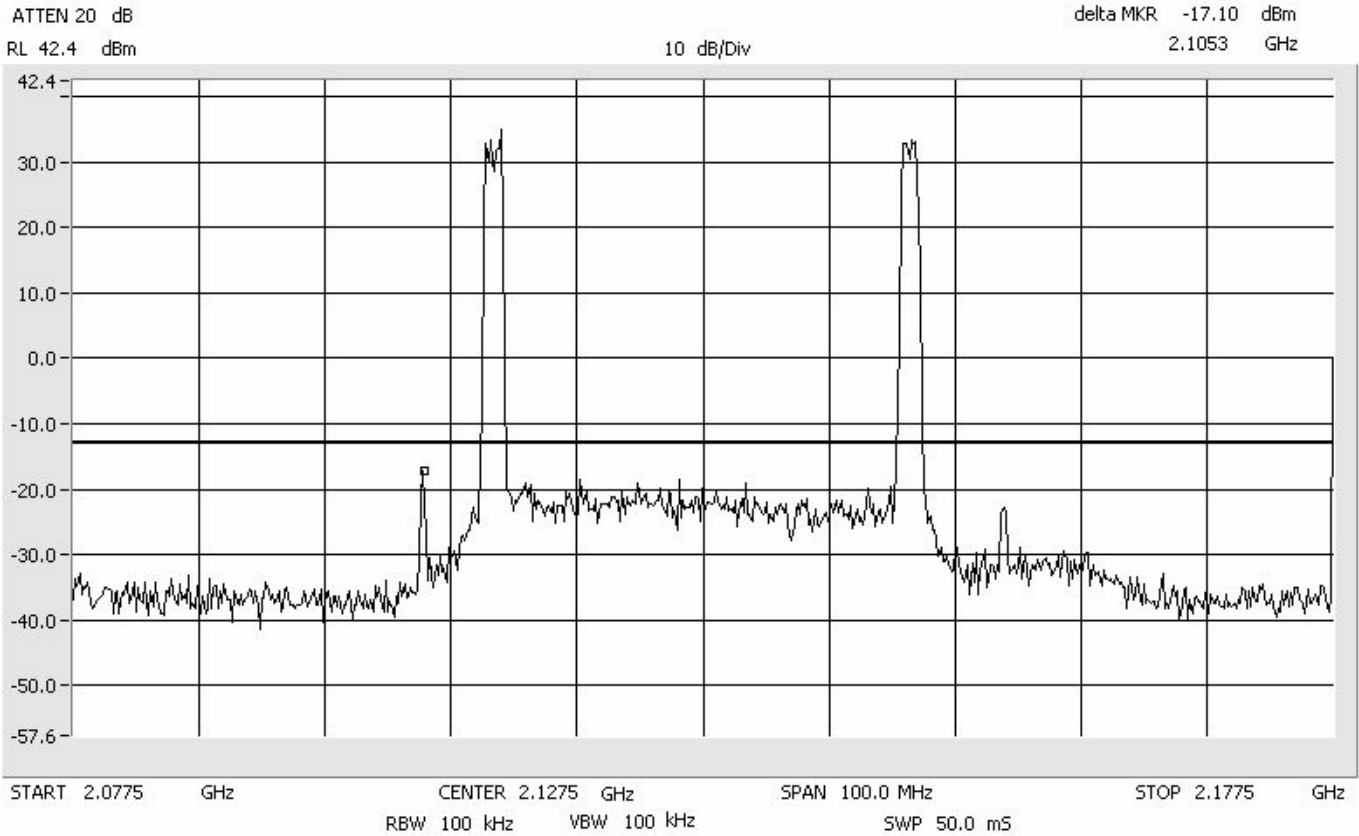




CDMA
Lower Band

Intermodulation
Apart
AWS

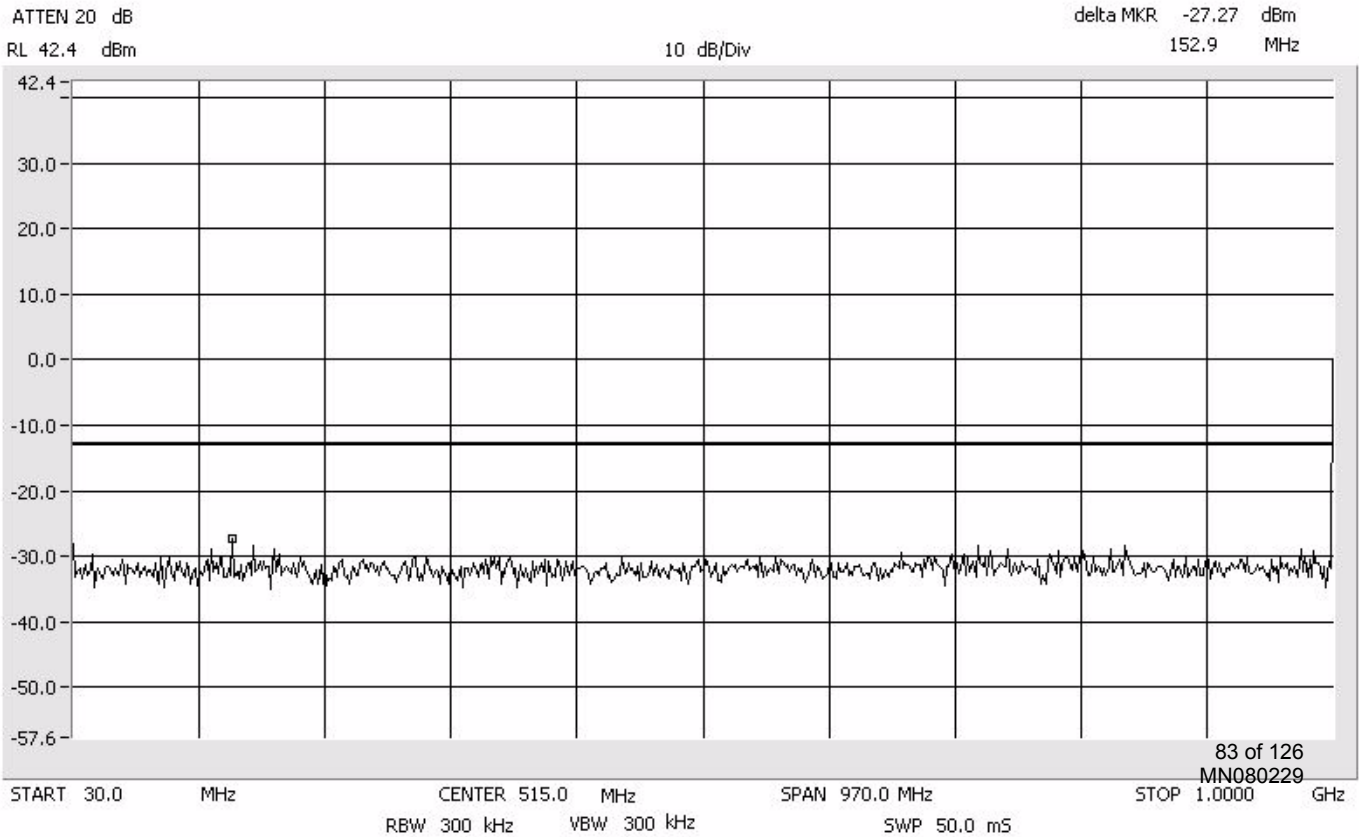
Center: 2127.5 MHz
Span: 100 MHz
RBW/VBW: 100 kHz

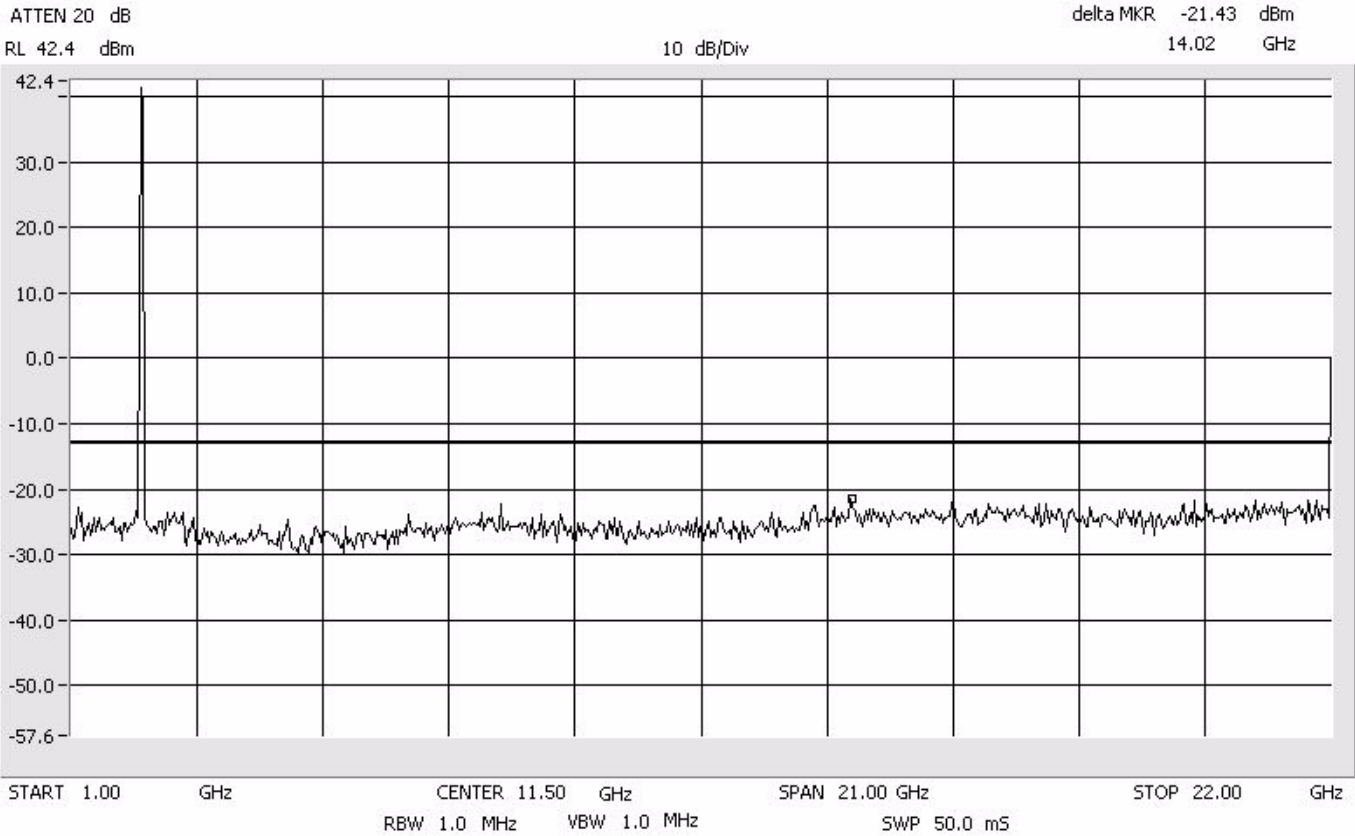


CDMA
Lower Band

Intermodulation
Apart
AWS

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

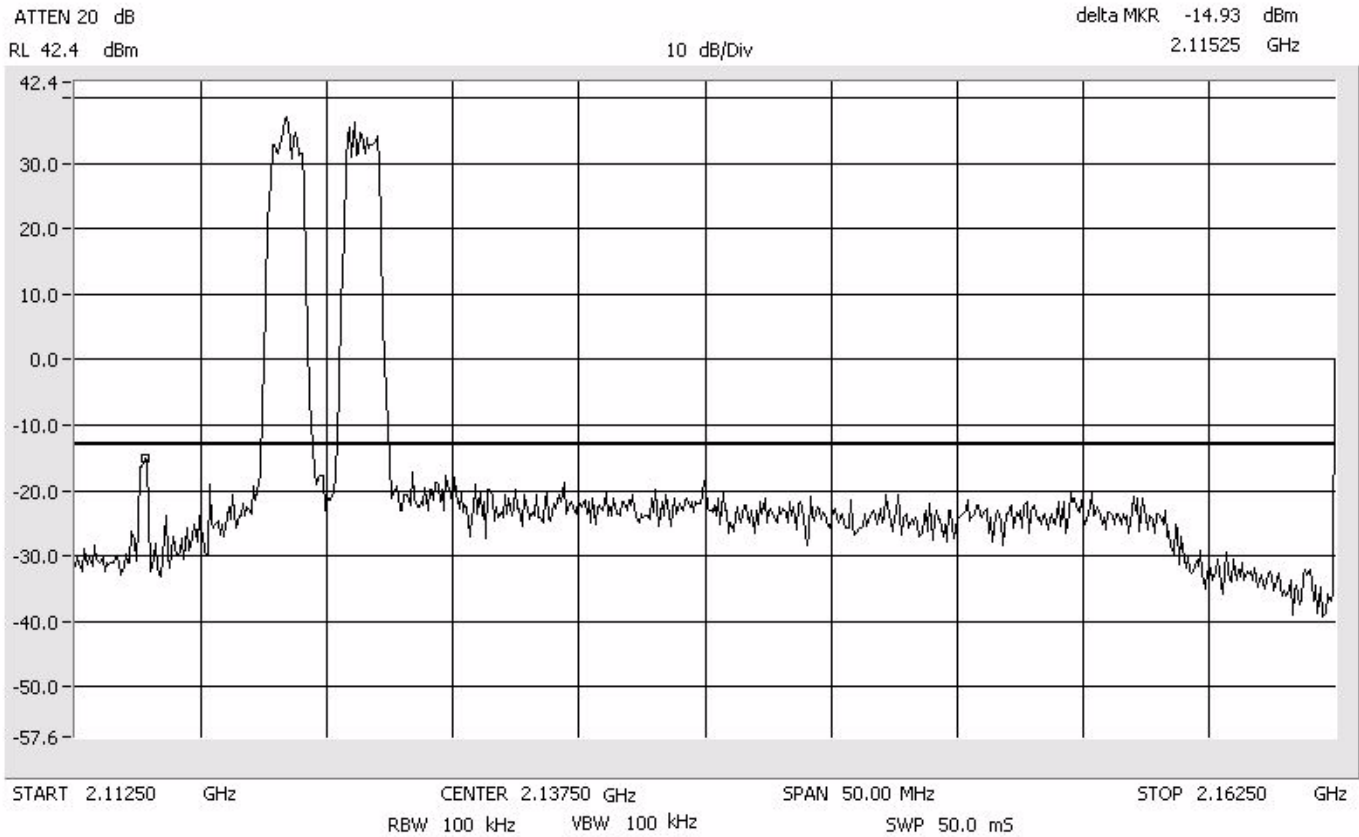




CDMA
Upper Band

Intermodulation
Close - Lower
AWS

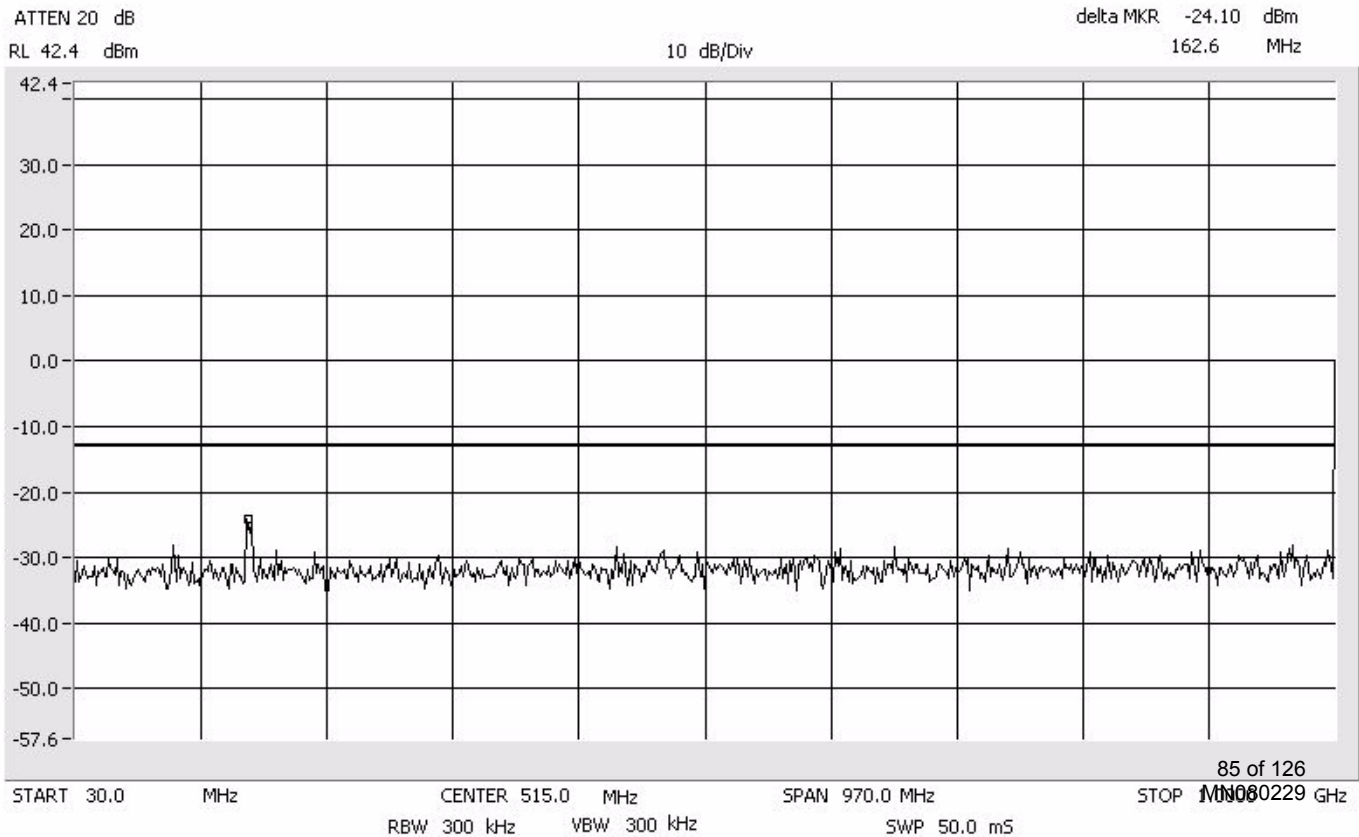
Center: 2137.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

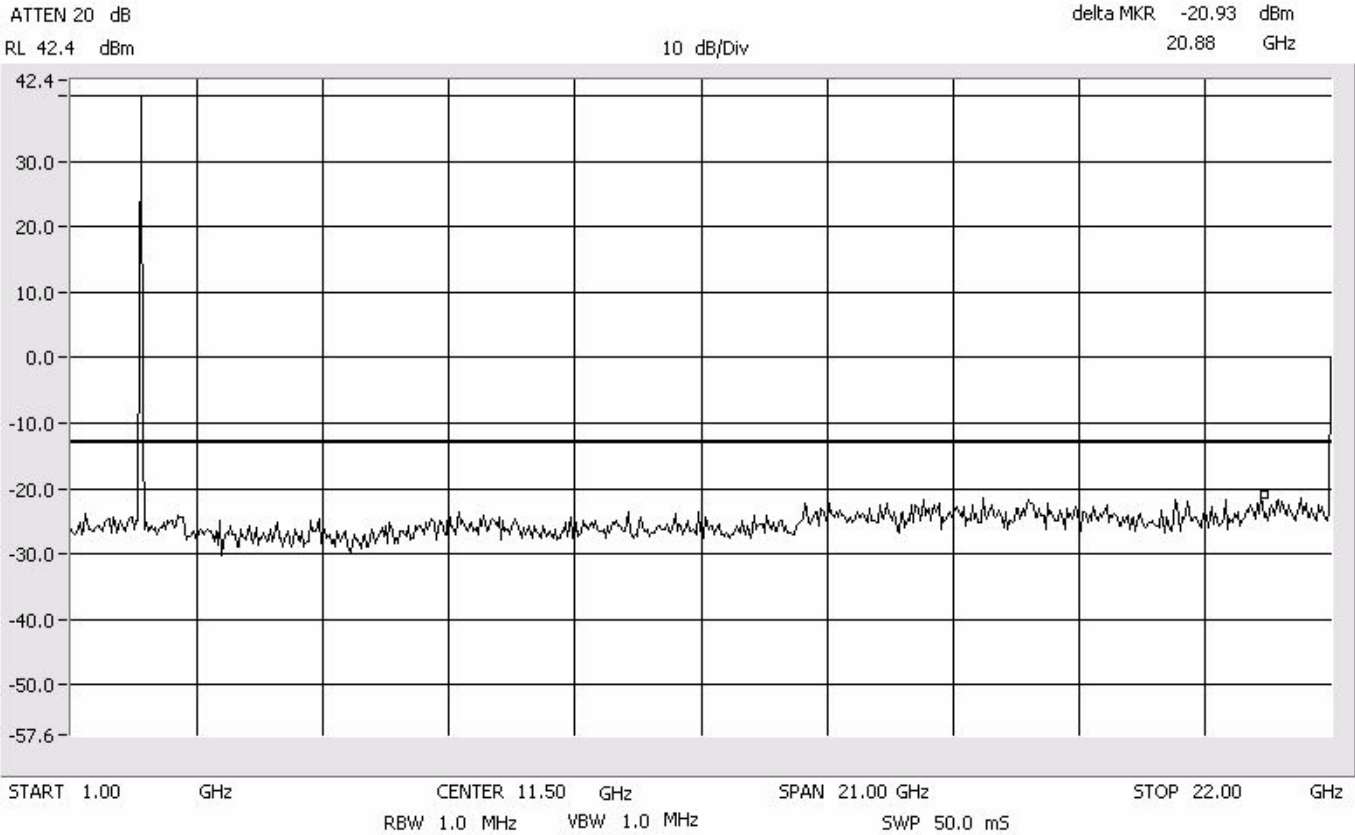


CDMA
Upper Band

Intermodulation
Close - Lower
AWS

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

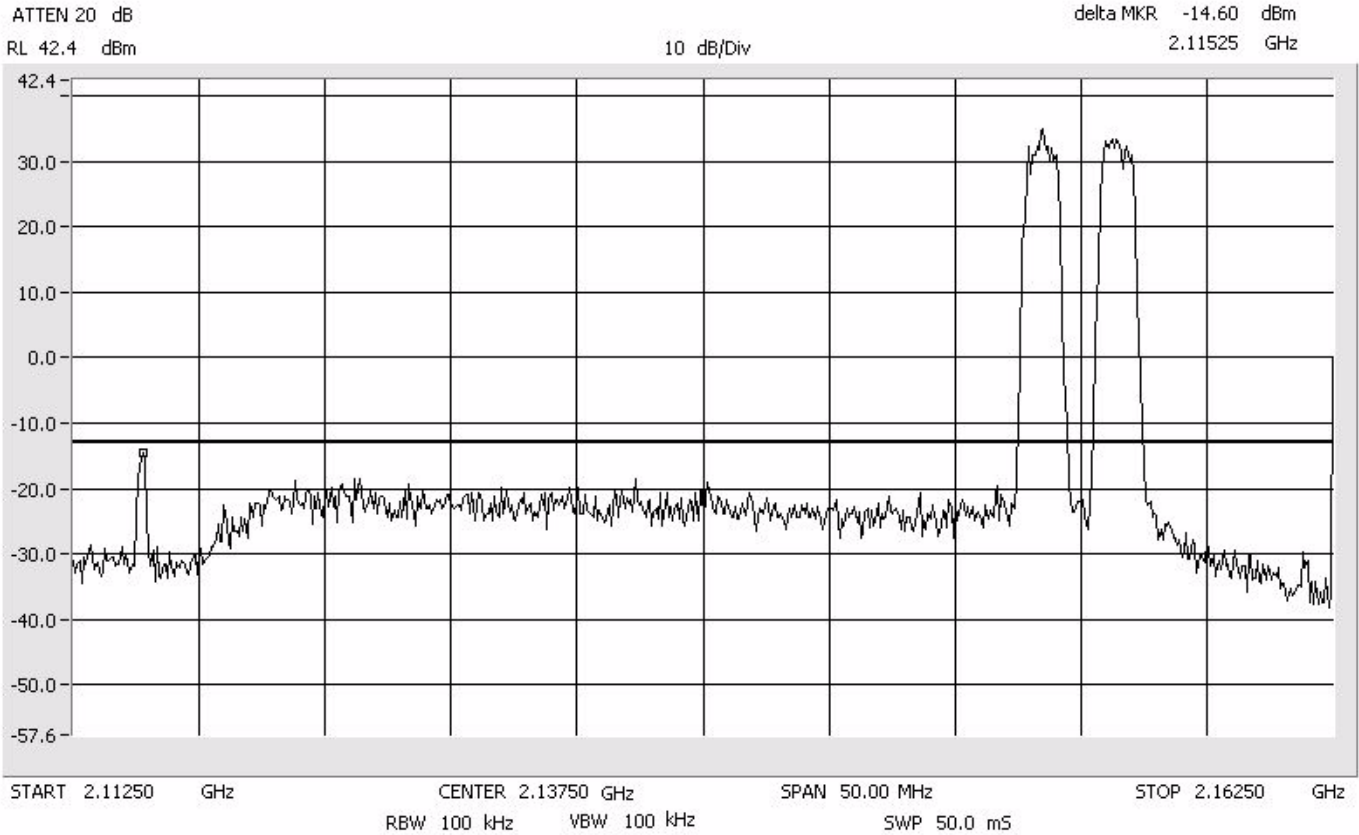




CDMA
Upper Band

Intermodulation
Close - Upper
AWS

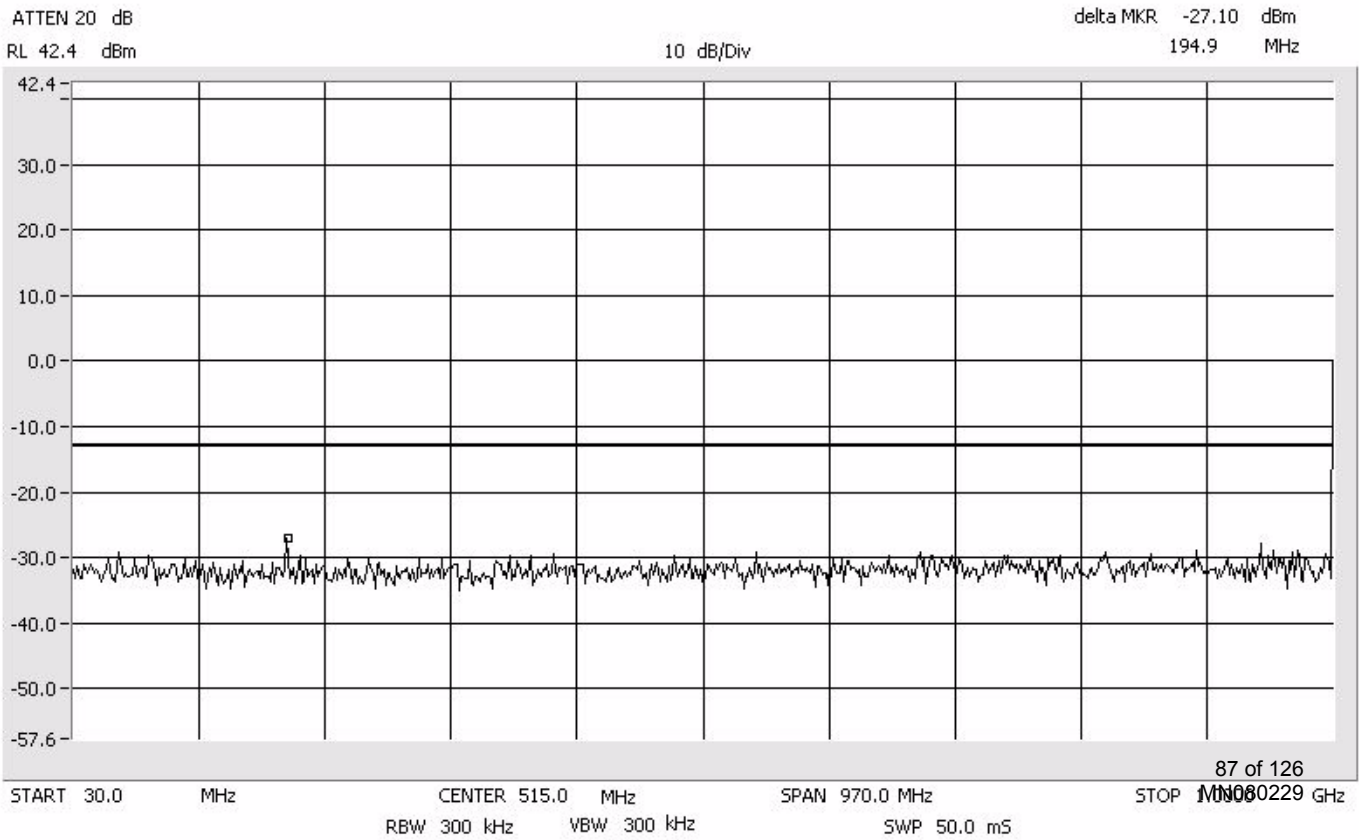
Center: 2137.5 MHz
Span: 50 MHz
RBW/VBW: 100 kHz

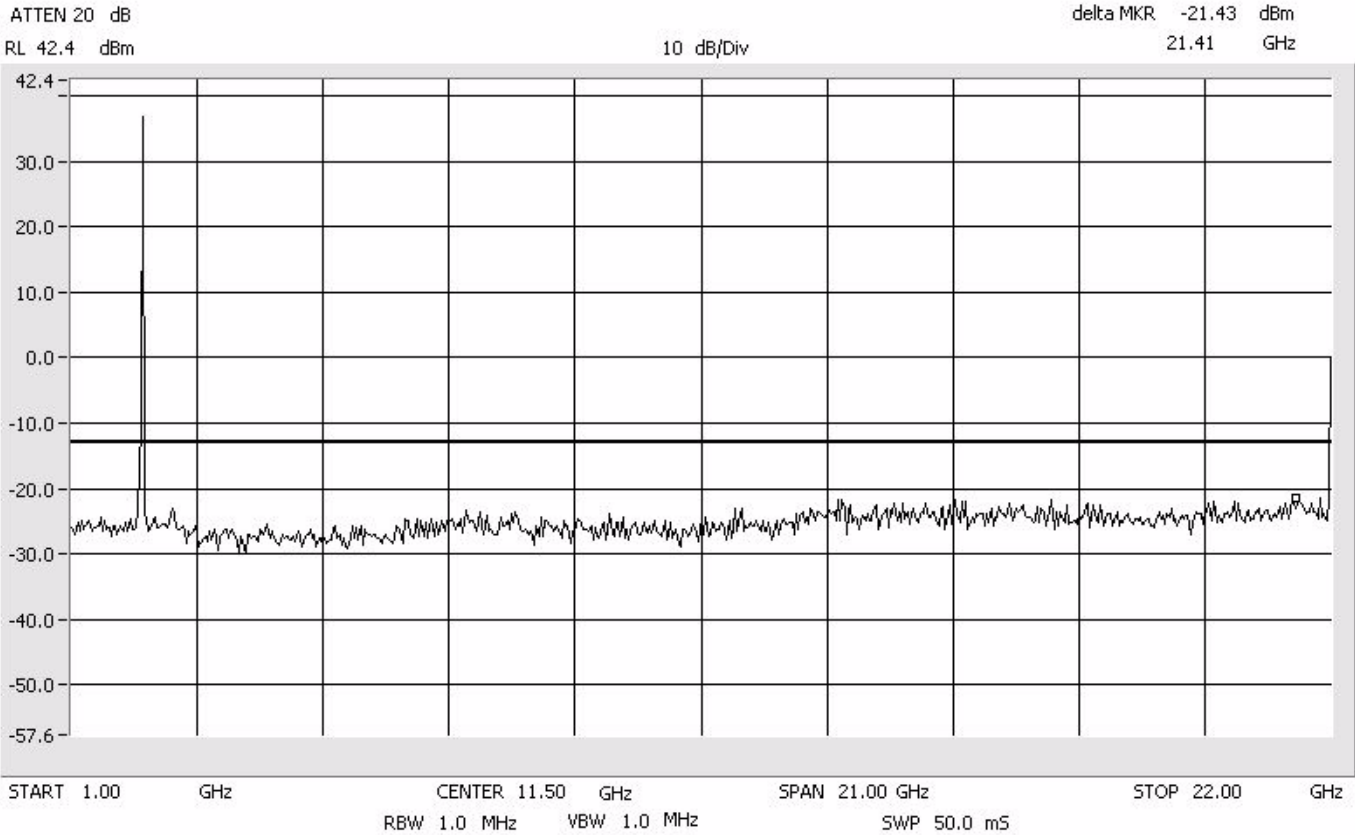


CDMA
Upper Band

Intermodulation
Close - Upper
AWS

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

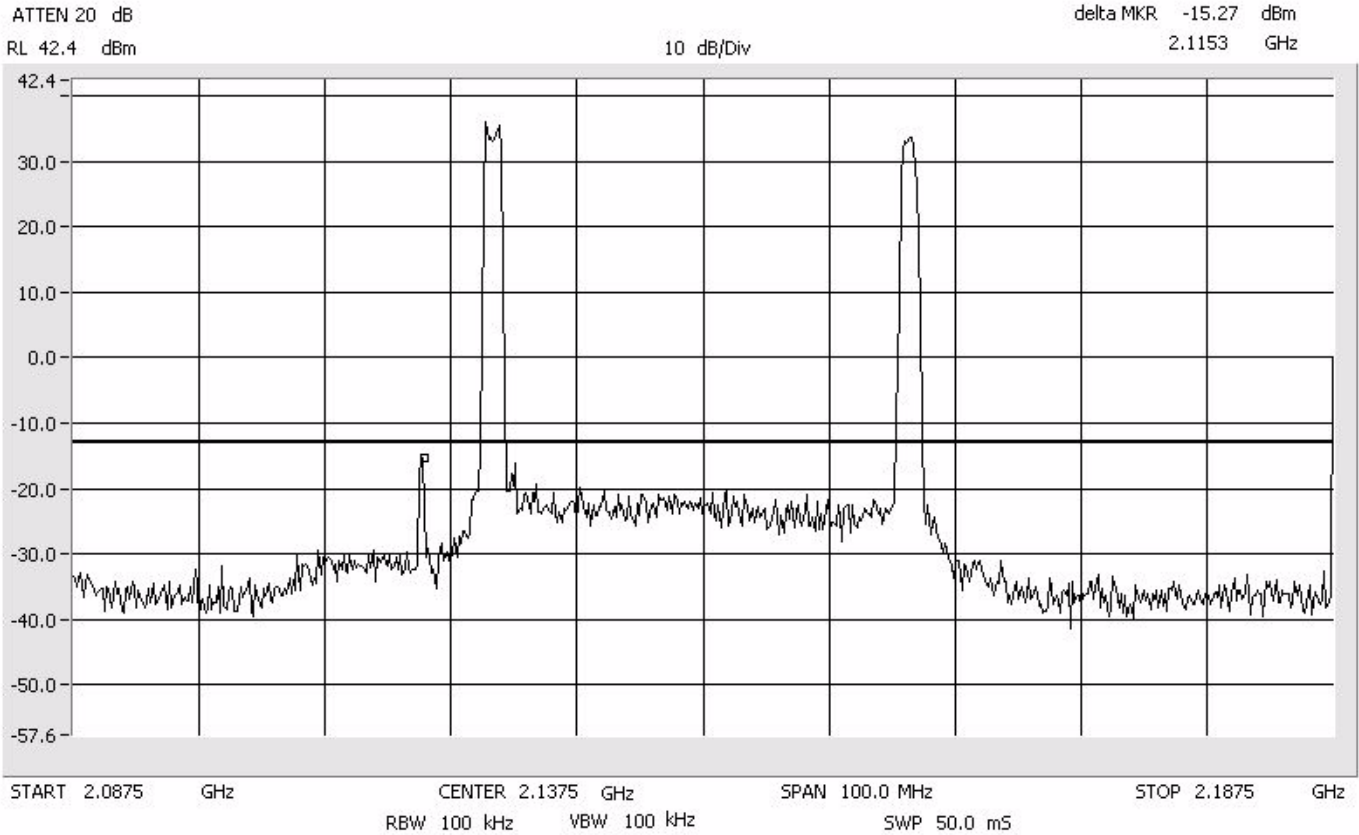




CDMA
Upper Band

Intermodulation
Apart
AWS

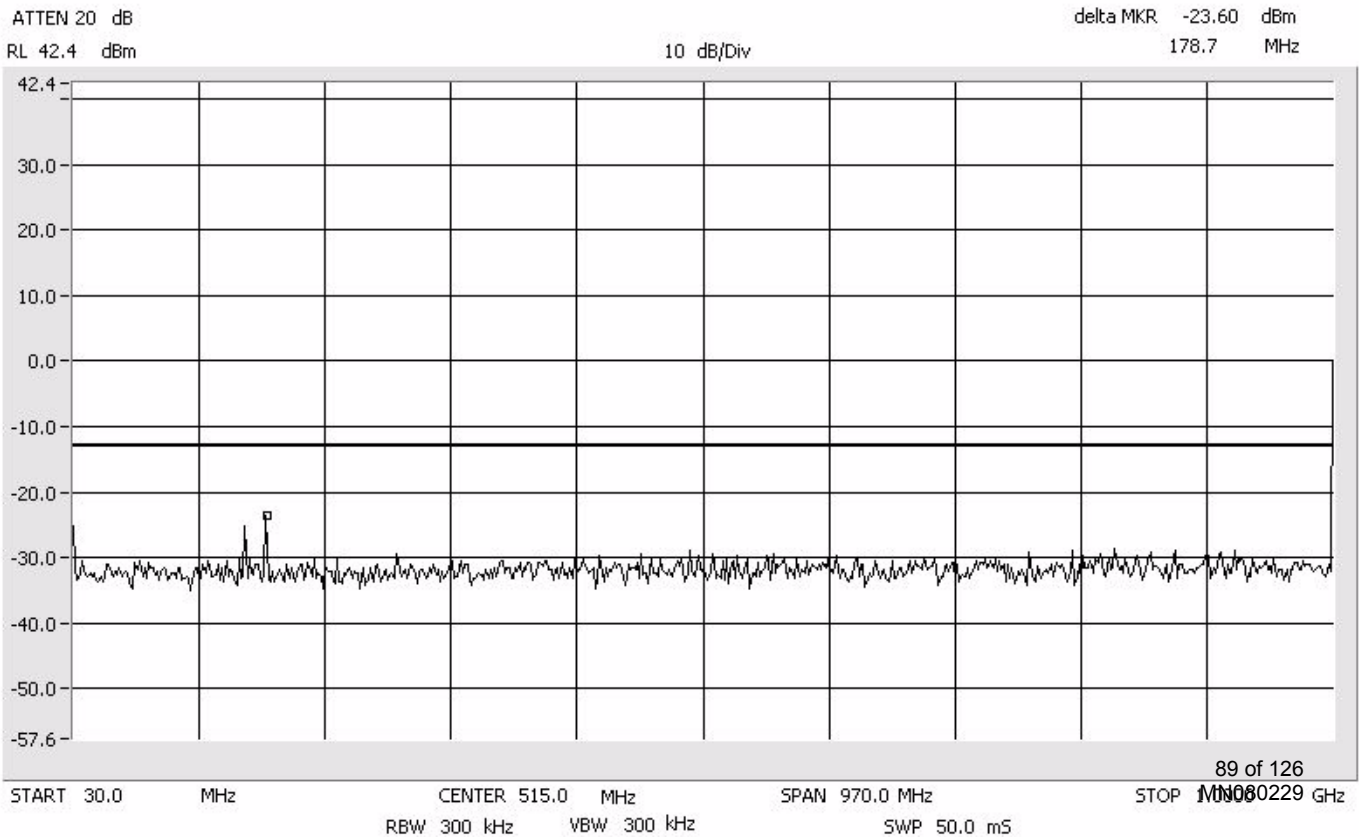
Center: 2137.5 MHz
Span: 100 MHz
RBW/VBW: 100 kHz

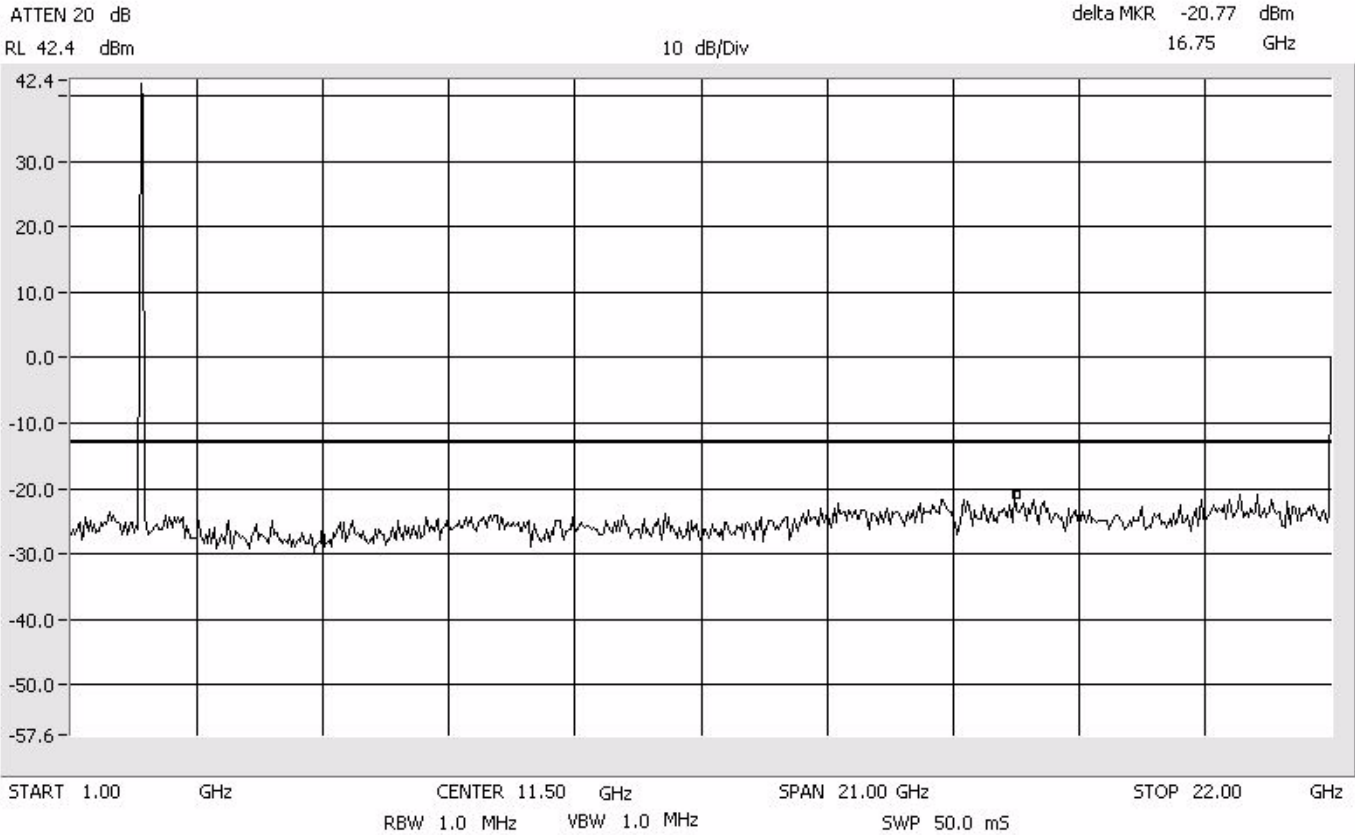


CDMA
Upper Band

Intermodulation
Apart
AWS

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





Occupied Bandwidth Modulation Test for ADC Inc

FlexWave™ URH - AWS

Model Number FWU-A40000002110RU

[Back](#)

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.

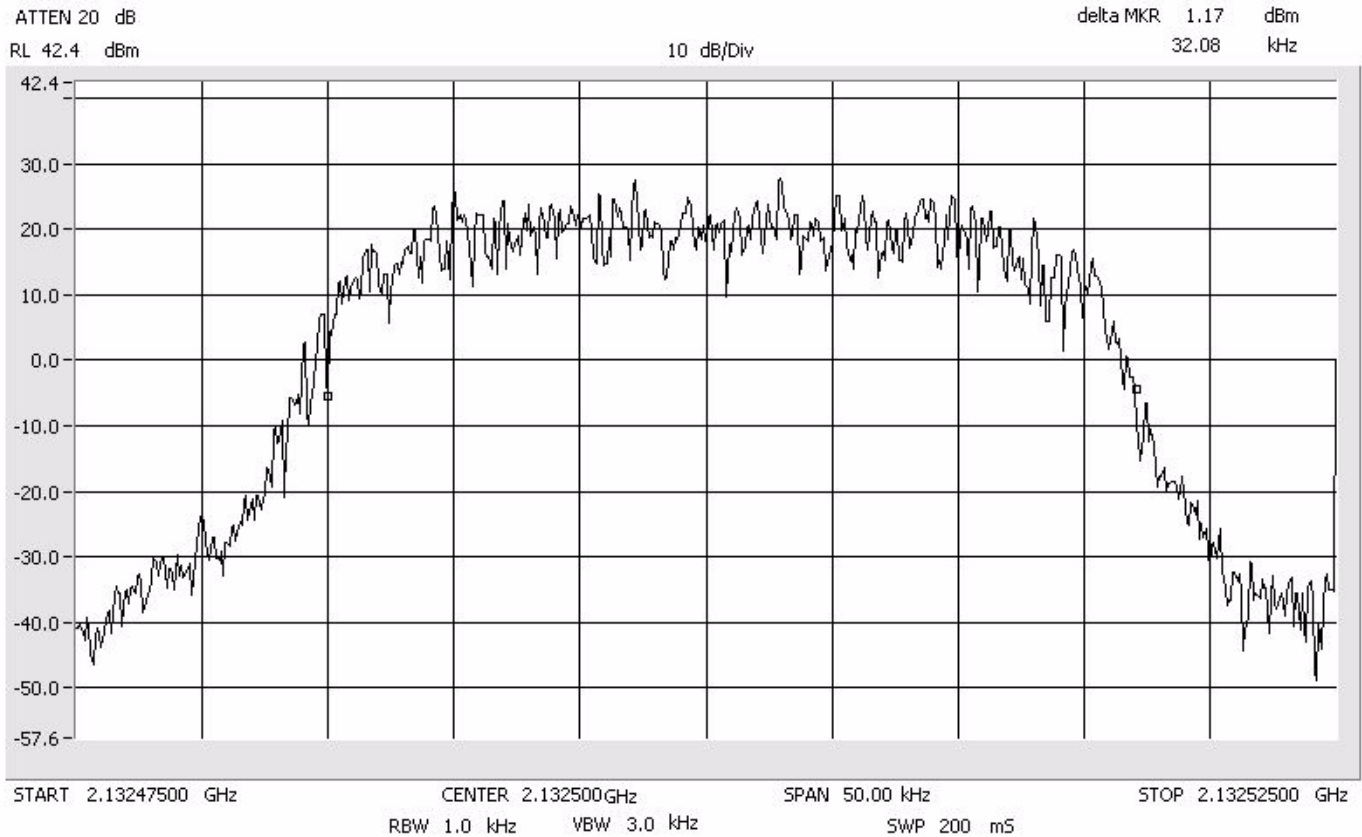
The resolution bandwidth is reduced to 1% of the estimated emission bandwidth and the video bandwidth is set to 3 times the resolution bandwidth. The markers are moved to the -20 dB points (from the previously established center frequency level) on either side of center frequency.

Results:

Pass (see plots)

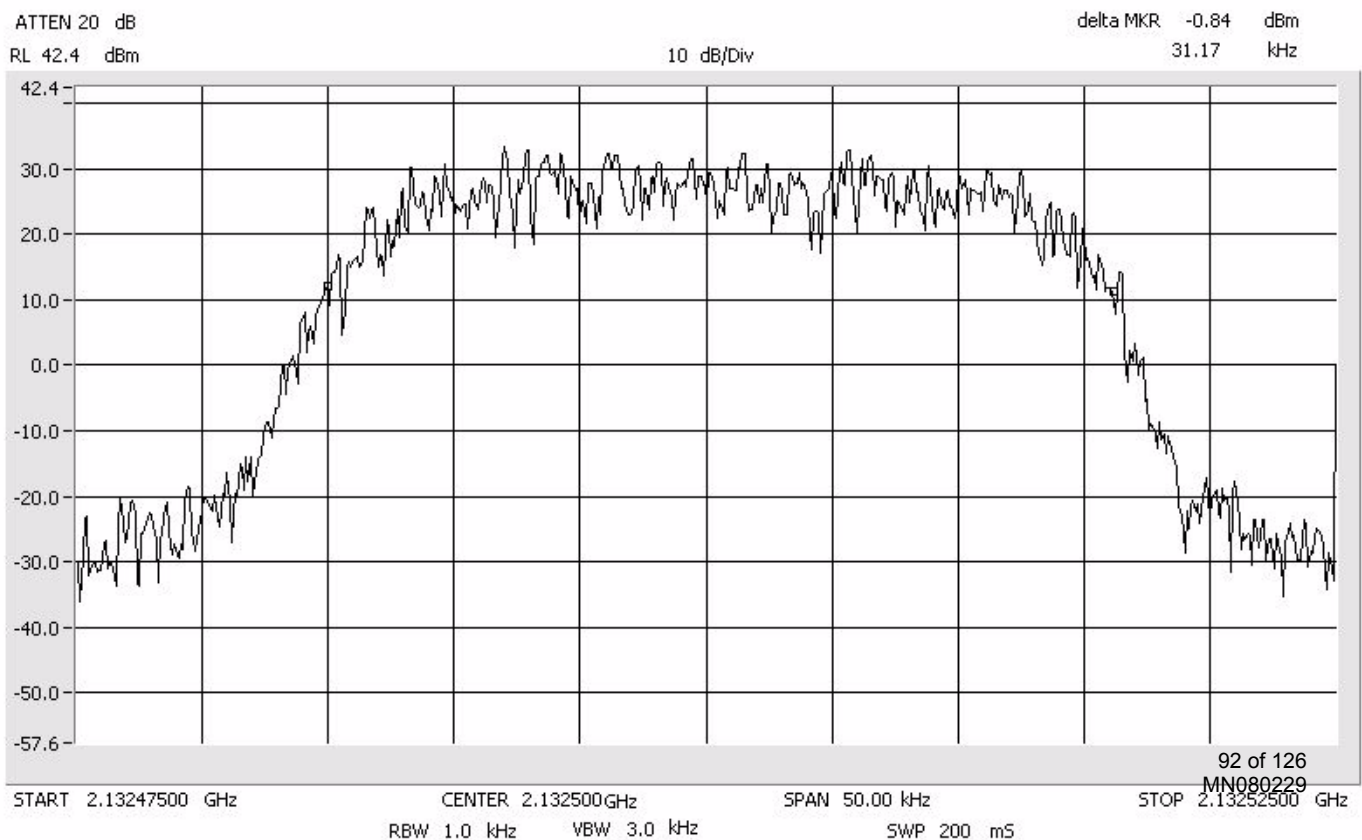
Occupied Bandwidth TDMA Signal In

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



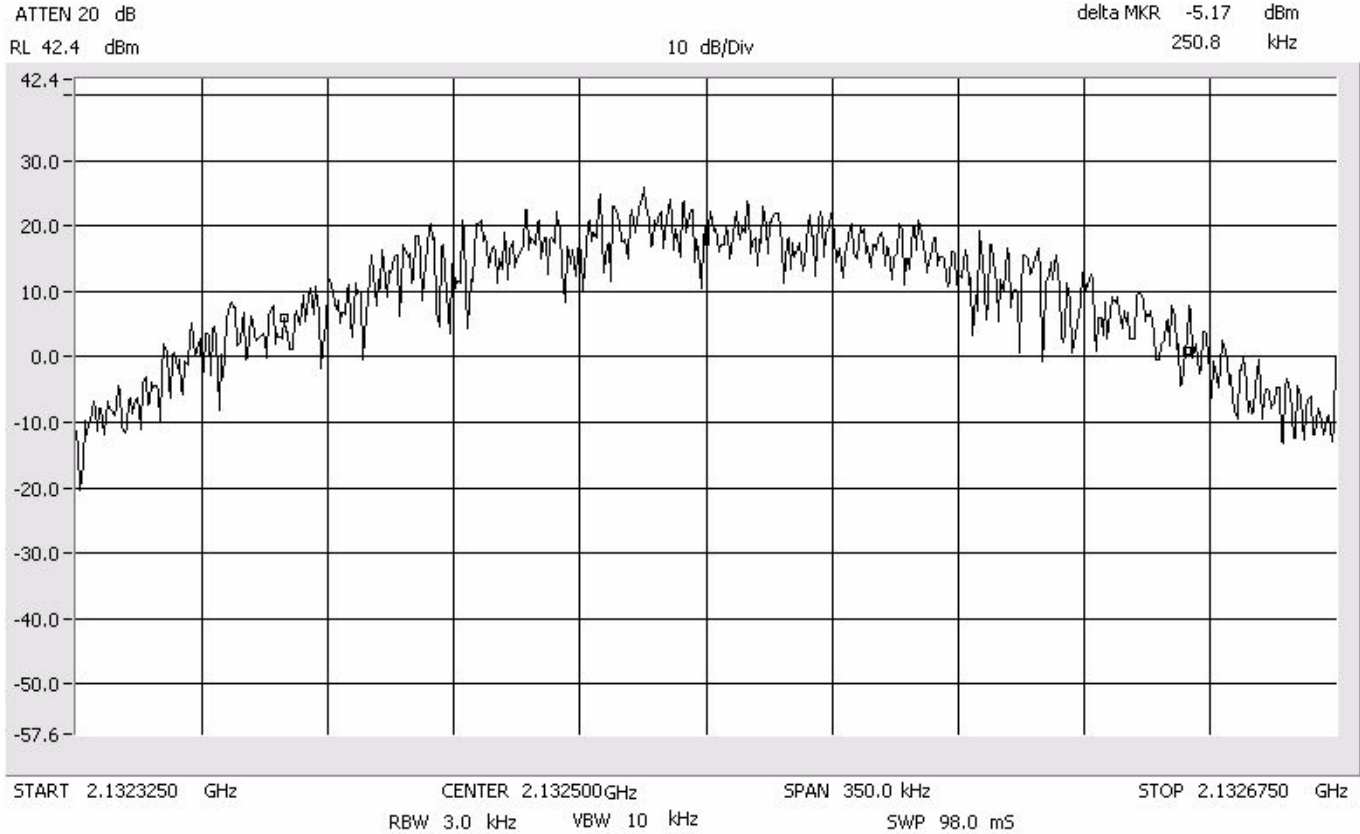
Occupied Bandwidth TDMA Signal Out

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



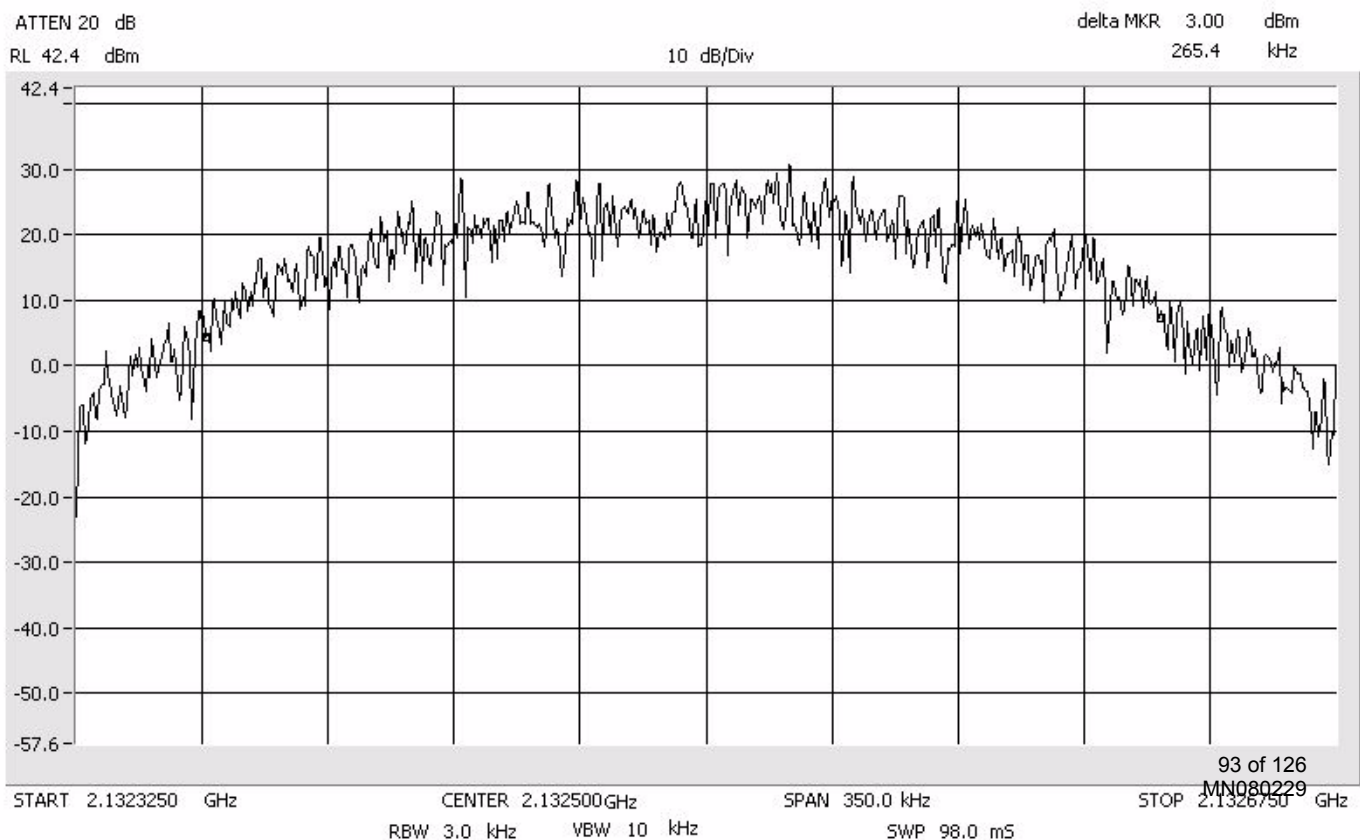
Occupied Bandwidth GSM Signal In

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



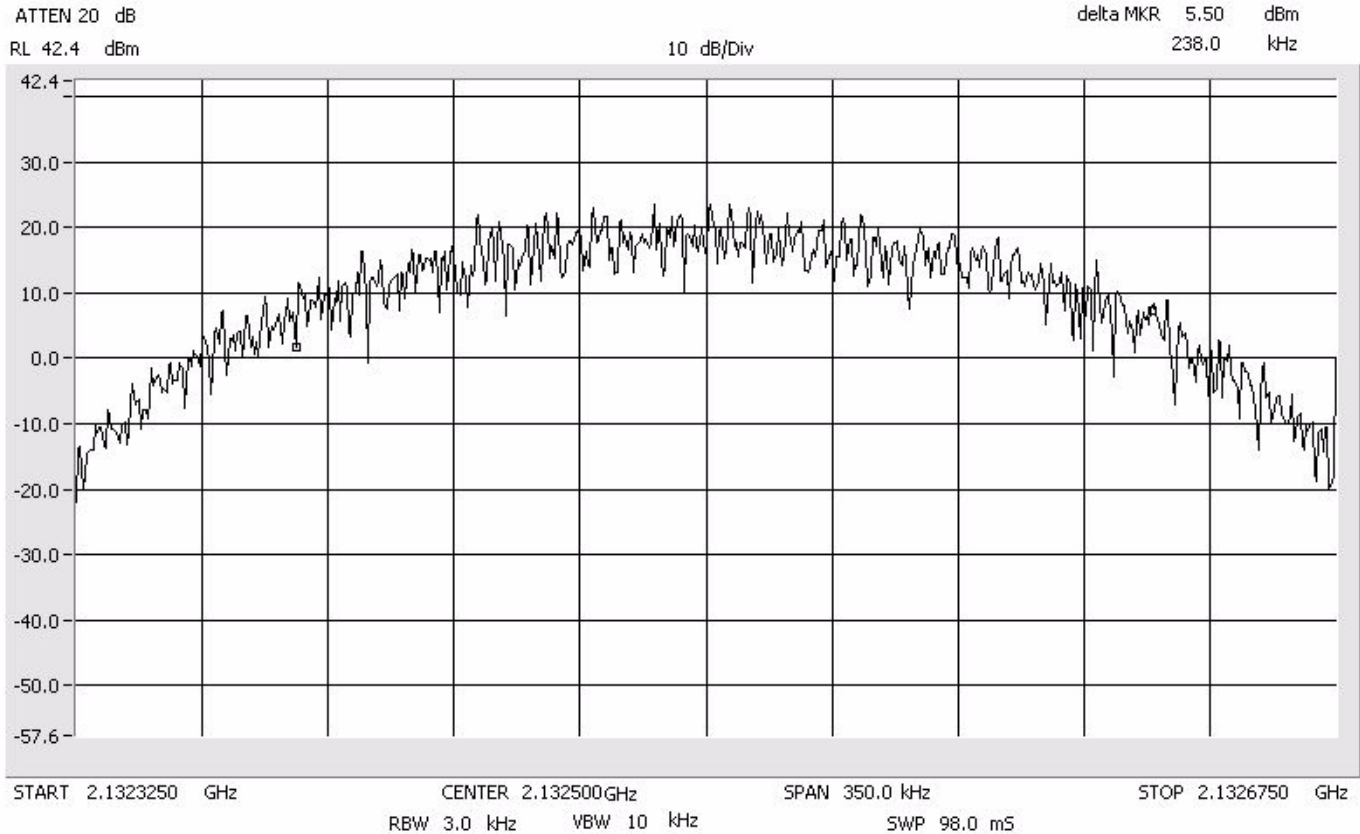
Occupied Bandwidth GSM Signal Out

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



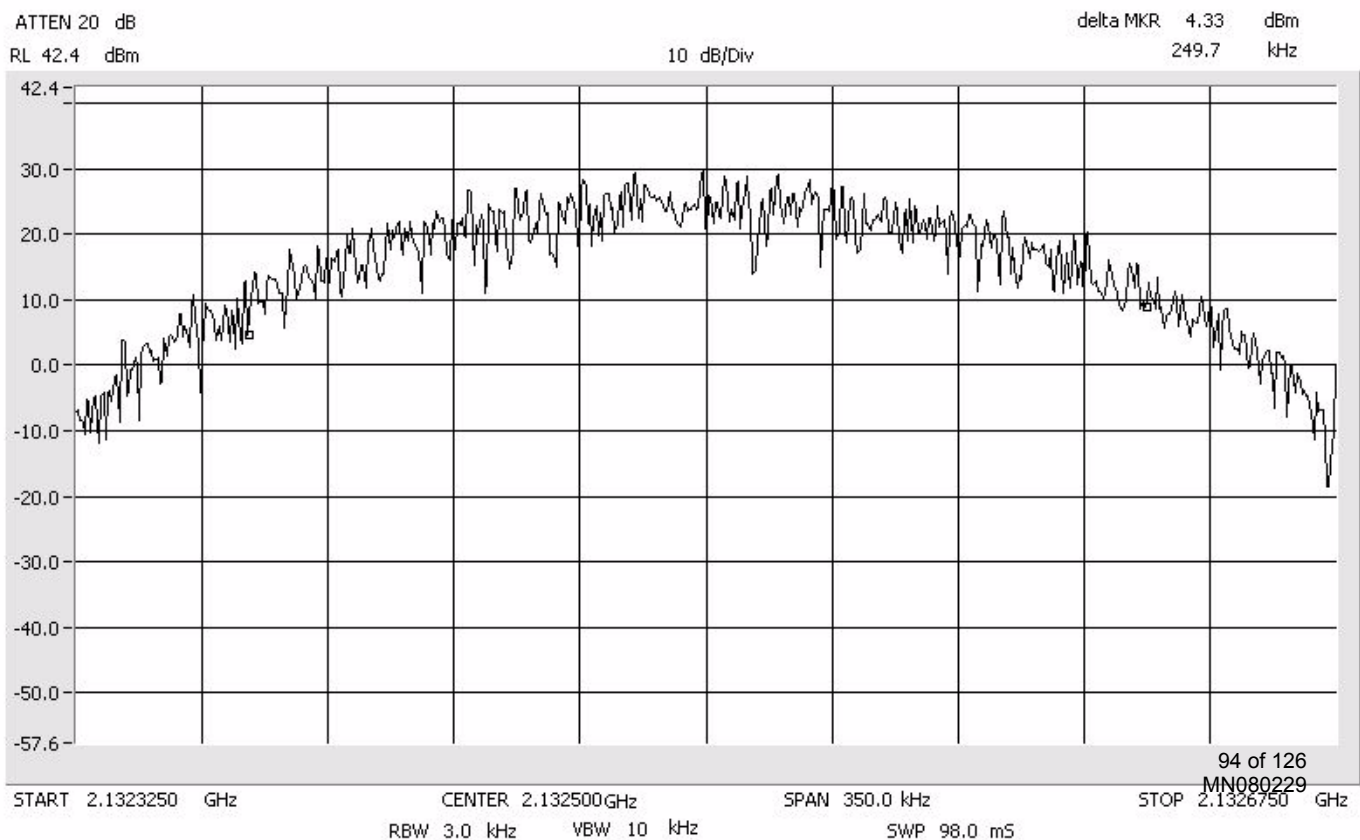
Occupied Bandwidth EDGE Signal In

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



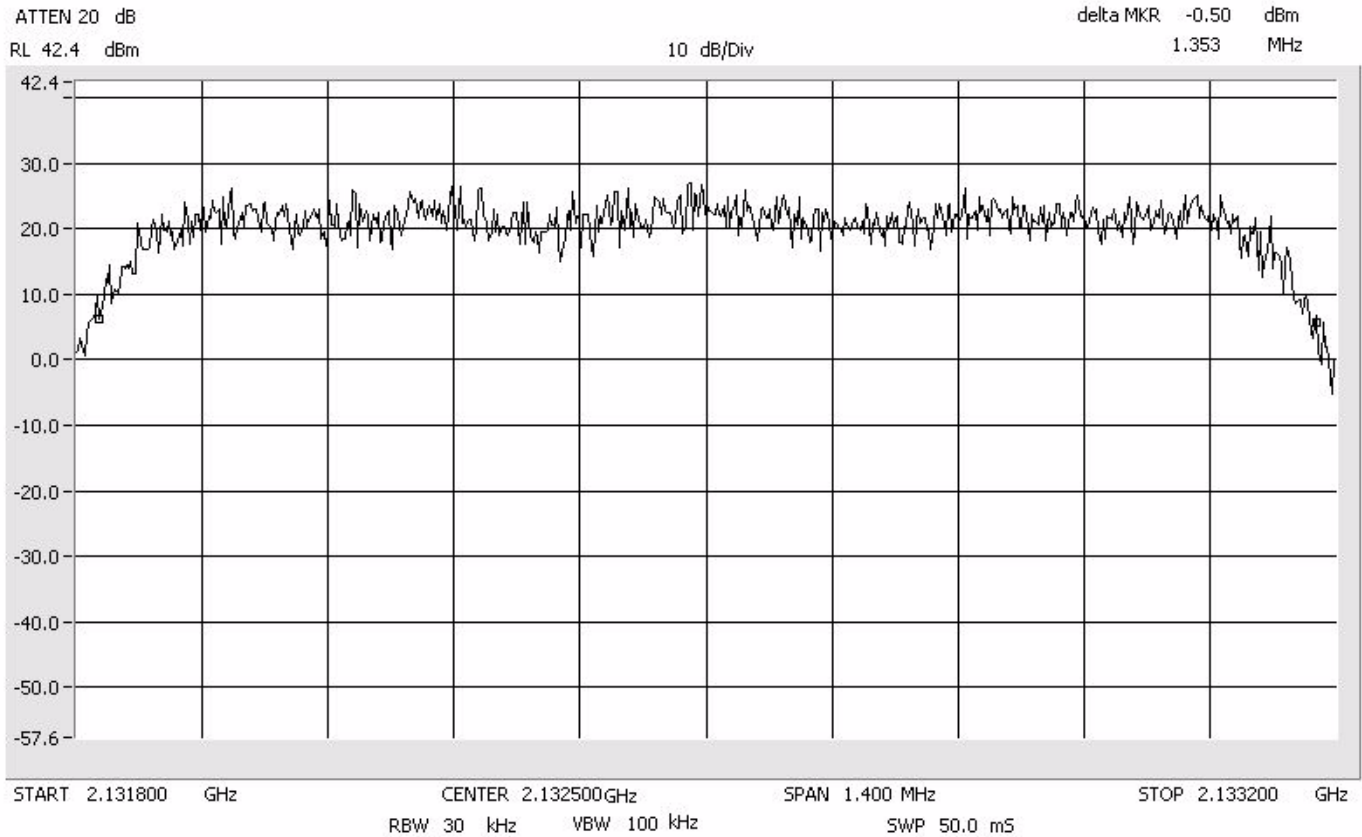
Occupied Bandwidth EDGE Signal Out

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



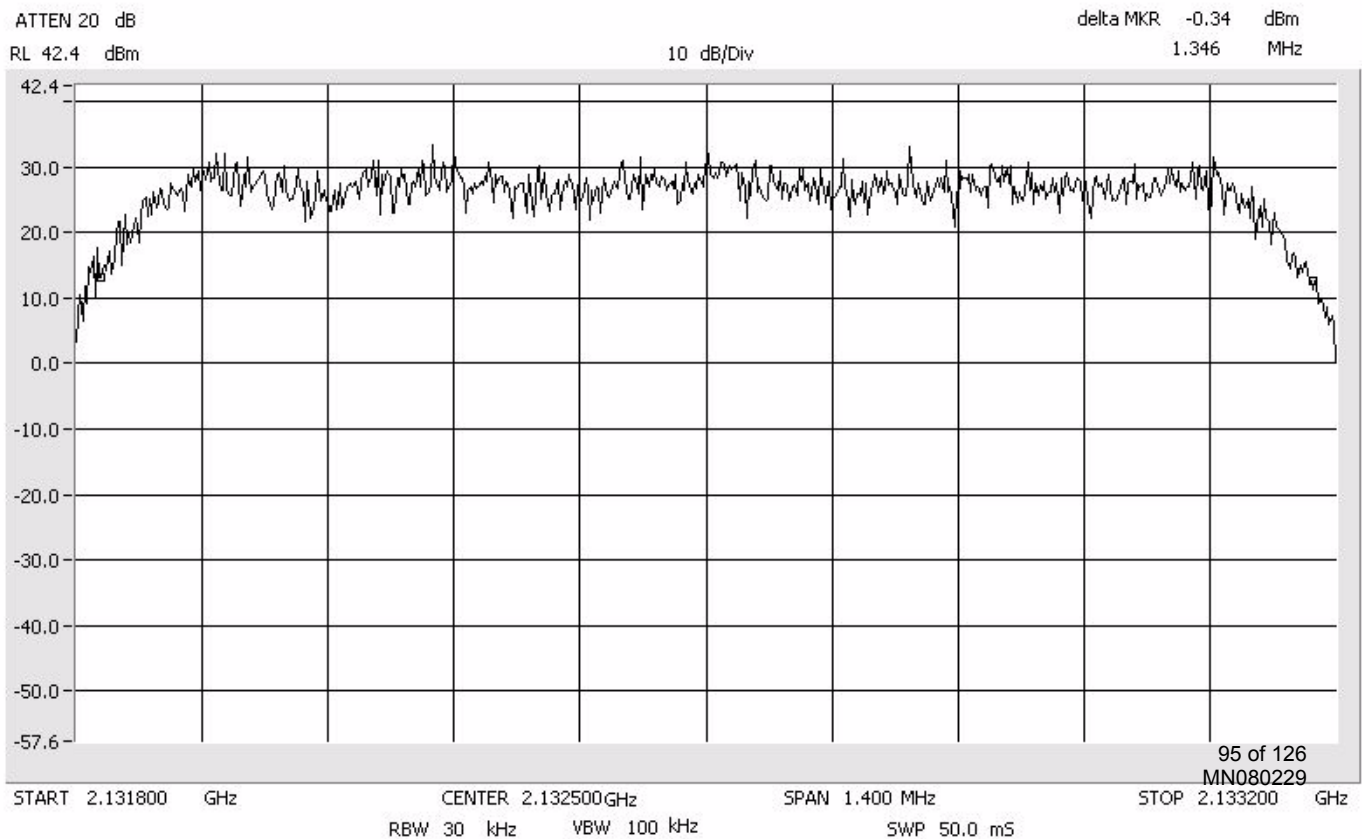
Occupied Bandwidth CDMA Signal In

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



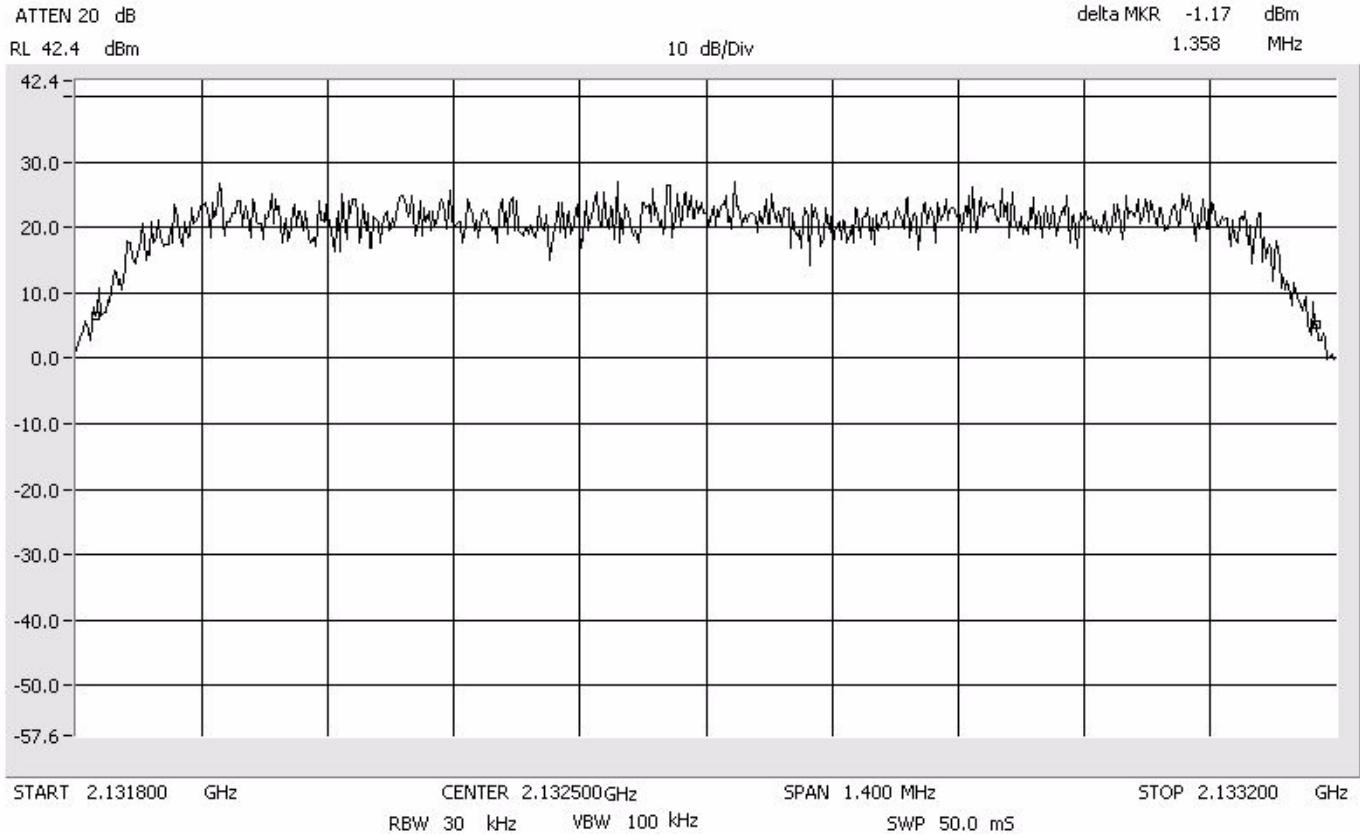
Occupied Bandwidth CDMA Signal Out

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



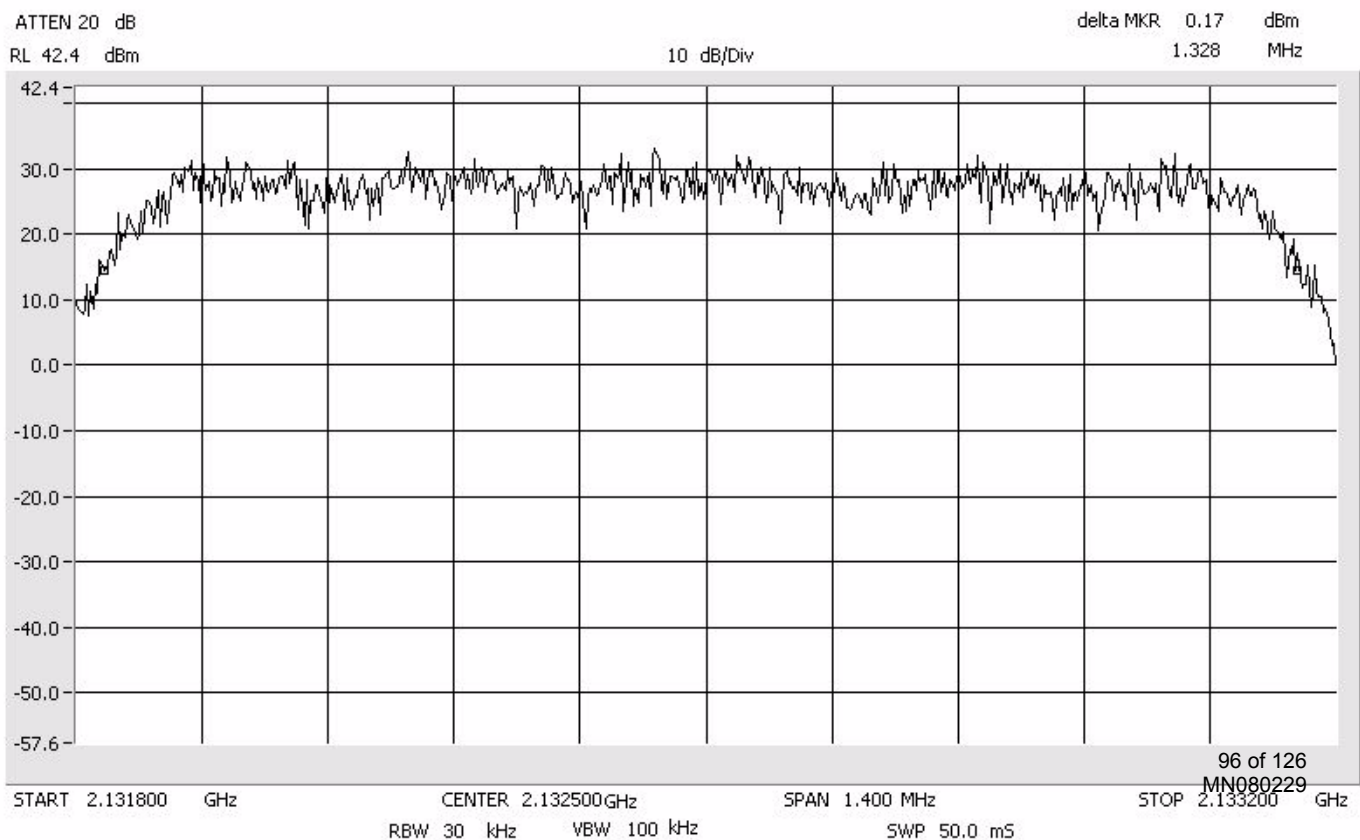
Occupied Bandwidth EVDO Signal In

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



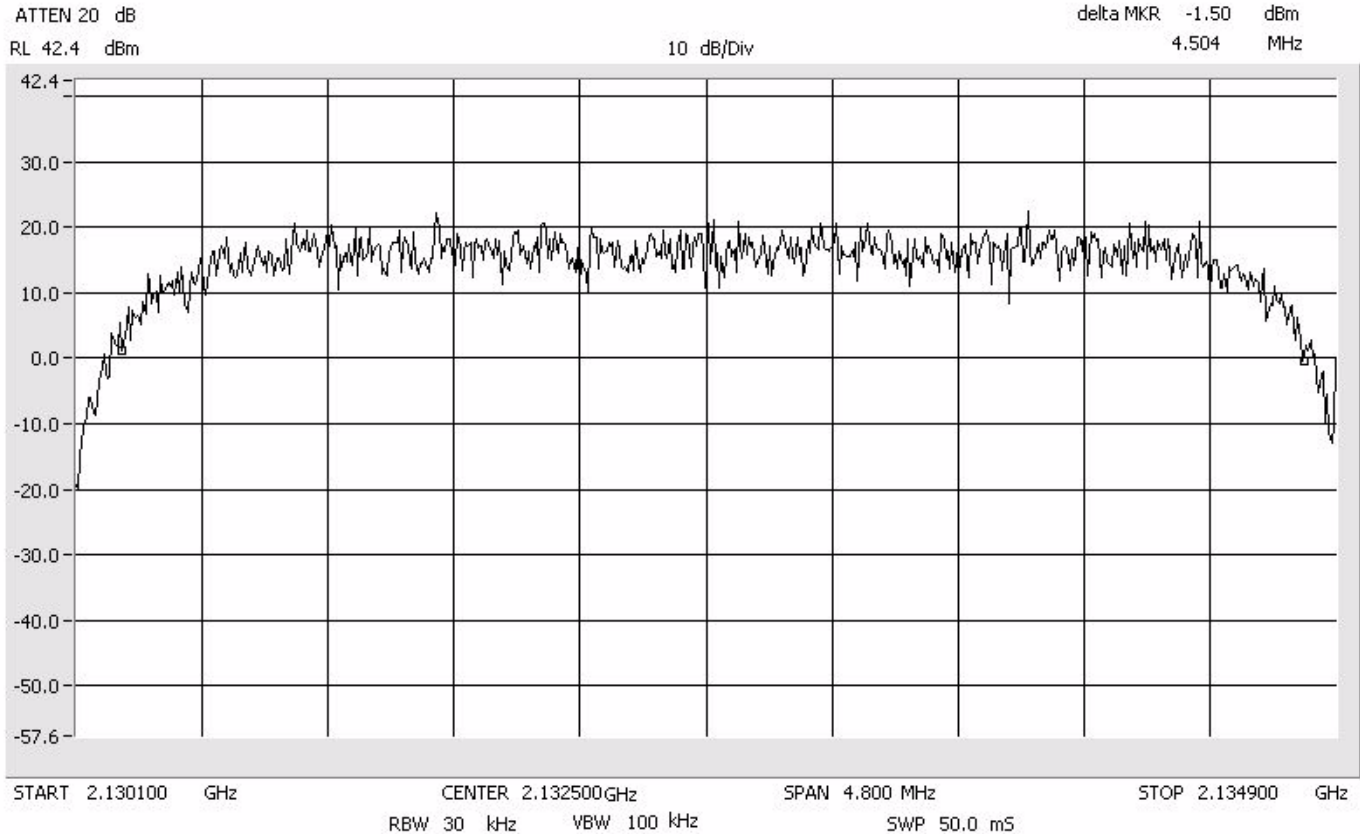
Occupied Bandwidth EVDO Signal Out

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



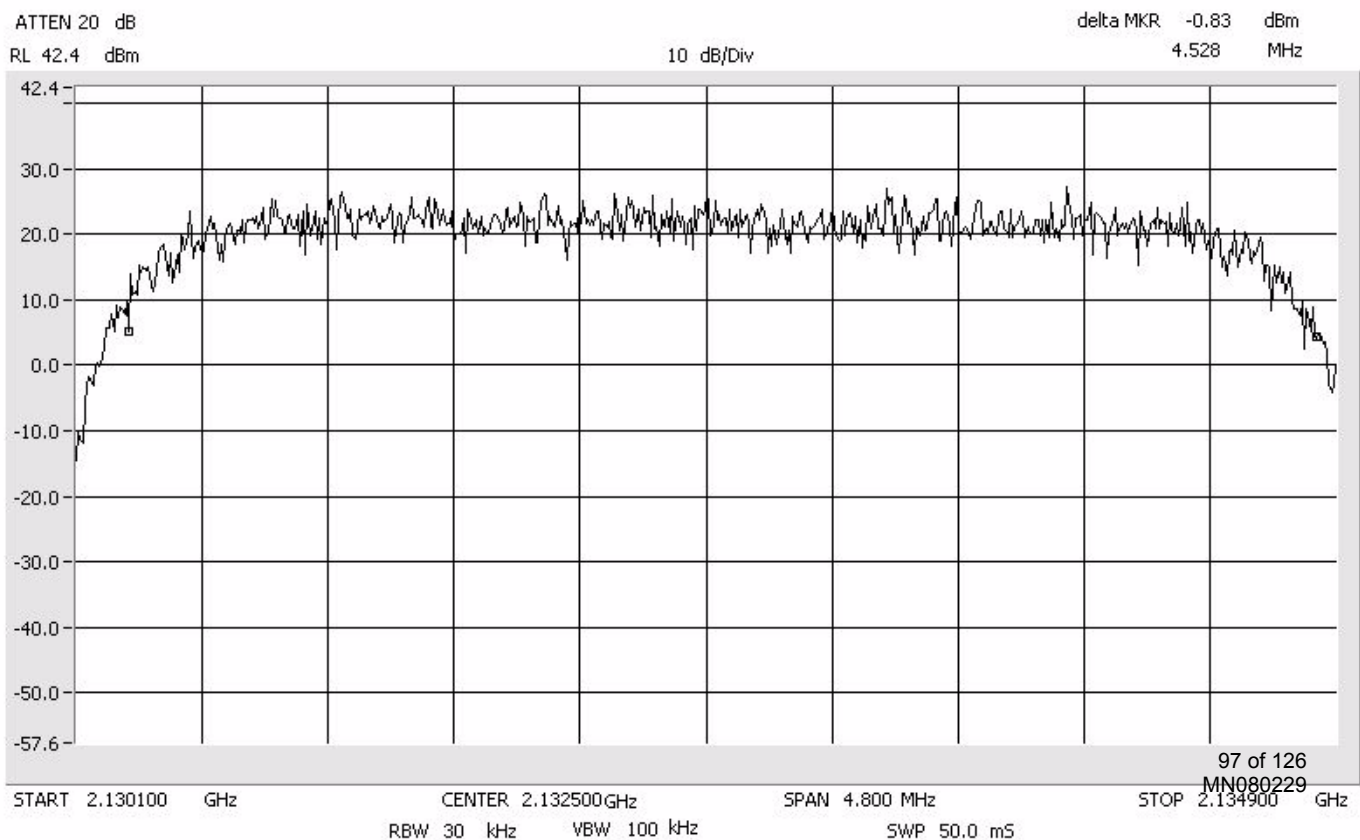
Occupied Bandwidth W-CDMA Signal In

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

FlexWave™ URH - AWS

Model Number FWU-A40000002110RU

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EUT AWS (2100 MHz)

HOST	REMOTE			
Input Voltage	Input Voltage	Carrier Frequency	Measured Frequency	Meets Requirements?
21 VDC	100 VAC	2110.200 MHz	2110.200 MHz	Yes
48 VDC	170 VAC	2110.200 MHz	2110.200 MHz	Yes
60 VDC	240 VAC	2110.200 MHz	2110.200 MHz	Yes
21 VDC	100 VAC	2132.500 MHz	2132.500 MHz	Yes
48 VDC	170 VAC	2132.500 MHz	2132.500 MHz	Yes
60 VDC	240 VAC	2132.500 MHz	2132.500 MHz	Yes
21 VDC	100 VAC	2154.800 MHz	2154.800 MHz	Yes
48 VDC	170 VAC	2154.800 MHz	2154.800 MHz	Yes
60 VDC	240 VAC	2154.800 MHz	2154.800 MHz	Yes
Temperature		Carrier Frequency	Measured Frequency	Meets Requirements?
-30 Deg. C		2110.200 MHz	2110.200 MHz	Yes
-20 Deg. C		2110.200 MHz	2110.200 MHz	Yes
-10 Deg. C		2110.200 MHz	2110.200 MHz	Yes
0 Deg. C		2110.200 MHz	2110.200 MHz	Yes
10 Deg. C		2110.200 MHz	2110.200 MHz	Yes
20 Deg. C		2110.200 MHz	2110.200 MHz	Yes
30 Deg. C		2110.200 MHz	2110.200 MHz	Yes
40 Deg. C		2110.200 MHz	2110.200 MHz	Yes
50 Deg. C		2110.200 MHz	2110.200 MHz	Yes
-30 Deg. C		2132.500 MHz	2132.500 MHz	Yes
-20 Deg. C		2132.500 MHz	2132.500 MHz	Yes
-10 Deg. C		2132.500 MHz	2132.500 MHz	Yes
0 Deg. C		2132.500 MHz	2132.500 MHz	Yes
10 Deg. C		2132.500 MHz	2132.500 MHz	Yes
20 Deg. C		2132.500 MHz	2132.500 MHz	Yes
30 Deg. C		2132.500 MHz	2132.500 MHz	Yes
40 Deg. C		2132.500 MHz	2132.500 MHz	Yes
50 Deg. C		2132.500 MHz	2132.500 MHz	Yes
-30 Deg. C		2154.800 MHz	2154.800 MHz	Yes
-20 Deg. C		2154.800 MHz	2154.800 MHz	Yes
-10 Deg. C		2154.800 MHz	2154.800 MHz	Yes
0 Deg. C		2154.800 MHz	2154.800 MHz	Yes
10 Deg. C		2154.800 MHz	2154.800 MHz	Yes
20 Deg. C		2154.800 MHz	2154.800 MHz	Yes
30 Deg. C		2154.800 MHz	2154.800 MHz	Yes
40 Deg. C		2154.800 MHz	2154.800 MHz	Yes
50 Deg. C		2154.800 MHz	2154.800 MHz	Yes

Intertek Test Data

[Back to Test Data:](#)[Back to Table of Contents:](#)**Test Engineer:** Uri Spector**Date:** 19 February, 2008**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: 3145093MIN-001
Project Number: 3145093

Testing performed on the
URH-AWS

to
47 CFR, Part 27

For
ADC Telecommunications Inc.

Test Performed by:
Intertek Testing Services NA, Inc.
7250 Hudson Blvd., Suite 100
Oakdale, MN 55128

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

Prepared by: U. Spector
Uri Spector

Date: February 20, 2008

Reviewed by: N. Shpilsher
Norman Shpilsher

Date: February 20, 2008