Test Report Summary

FCC CFR 47, Part 24
Subpart E Broadband PCS

Manufacturer: ADC Telecommunications

Name of Equipment: FlexWave™ URH Host

Model Number(s): FWU-28400000HU

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

Test Report Number: MN080828_PCS

Test Date(s): 13-15 August, 2008 (ETL)
25 August, 2008 (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: 28 August, 2008

Location:

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

ADC Telecommunications
1187 Park Place
Shakopee, MN 55379
Phone: (952) 403-8340

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: MN080828_PCS **Date of Issue:** 28 August, 2008

Model Number(s): FWU-28400000HU

Product Name: FlexWave™ URH Host

Product Type: 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: 3158189MIN-001

Reference(s)

Total pages including Appendices: 103

1.0 TABLE OF CONTENTS

2.0 REVISION DESCRIPTION

Rev	Total Pages	Date	Description
A	103	28 August, 2008	Original Release

3.0 DOCUMENTATION

3.1 Test Regulations

24.232 Power and Antenna Height Limits
24.235 Frequency Stability
24.238 Emission Limits for Broadband PCS Equipment

The emissions tests were performed according to the following regulations:

☐ FCC Part 22

■ **FCC Part 24**

☐ FCC Part 90

☐ IC RSS-131 Issue 2

Environmental Conditions in the lab:

ADC	**ETL**
Temperature: 29º C	15-35º C
Relative Humidity: 29%	30-60%
Atmospheric Pressure: 98.4 kPa	86-106 kPa

Power Supply Utilized:
Power Supply System : 48 VDC

3.2 Test Operation Mode

☐ Standby

☐ Test Program

☐ Practice Operation

■ **Max composite out**

3.3 Configuration of the Device Under Test:

Normal Operation – PCS - 1850 to 1910 MHz

3.4 Product Options:

None

3.5 EUT Specifications and Requirements:

Length: 9.0”
Width: 17.5”
Height: 5.25”
Weight: 17.0 pounds

3.6 Cables:

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

3.7 Power Requirements:

Voltage: 48 VDC
Amps: 3.5 A

3.8 Typical Installation and/or Operating Environment:

Indoor. System is typically employed as an indoor repeater.

3.9 Other Special Requirements:

None

3.10 EUT Software:

Revision Level: Version V.6 or greater
Description: Internet Explorer

3.11 EUT System Components

Description	Model #	Serial #	FCC ID #
URH	FWU-84D323002110RU	None	

3.12 Support Equipment

Description	Manufacturer	Model #	FCC ID #
Power Meter	HP	EPM-441A	
Signal Generator	Agilent	E4438C	

3.13 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**

3.14 General Remarks:

None.

3.15 Summary:

The requirements according to the technical regulations are

■ **met**

☐ not Met

The equipment under test does

■ **fulfill the general approval requirements mentioned in Section 3.1.**

☐ not fulfill the general approval requirements mentioned in Section 3.1.

4.0 TEST SET-UP DRAWINGS AND PHOTOS

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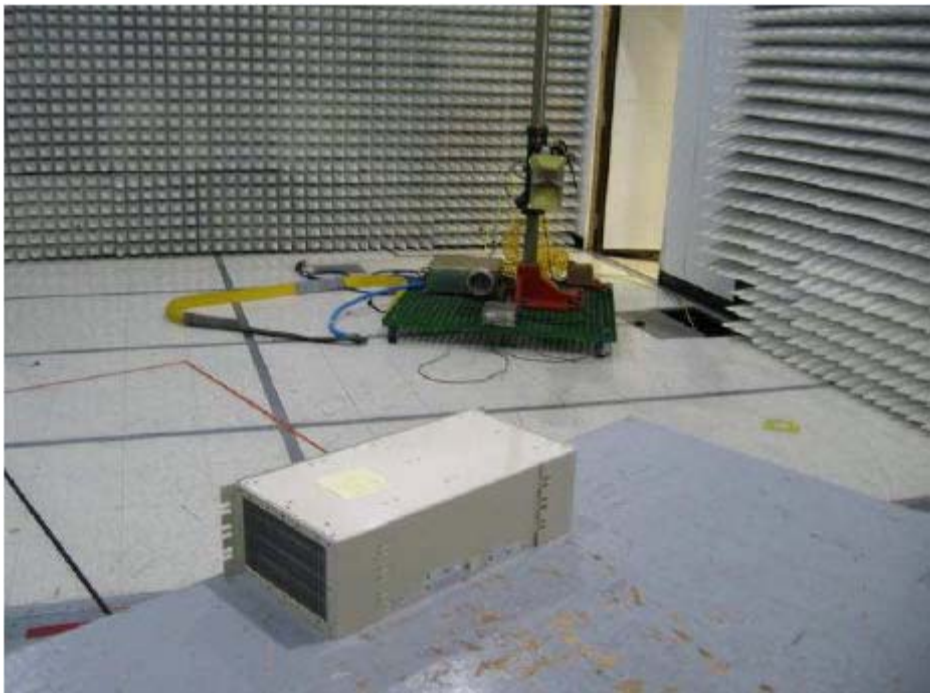
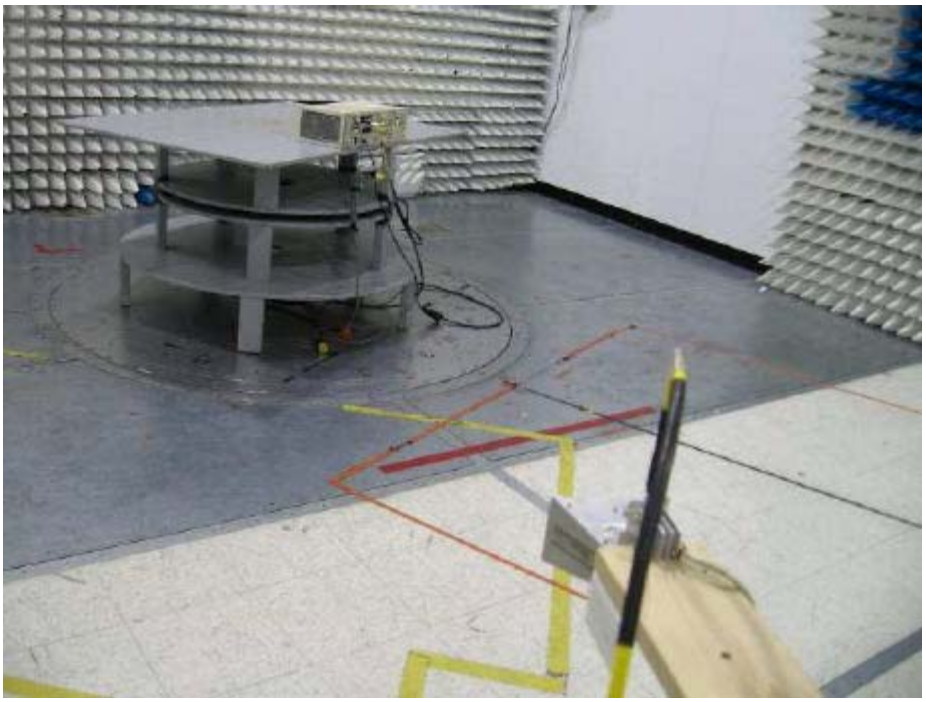
4.1 Test Set-up Photo, Radiated Emissions



4.2 Test Set-up Photo, Radiated Emissions



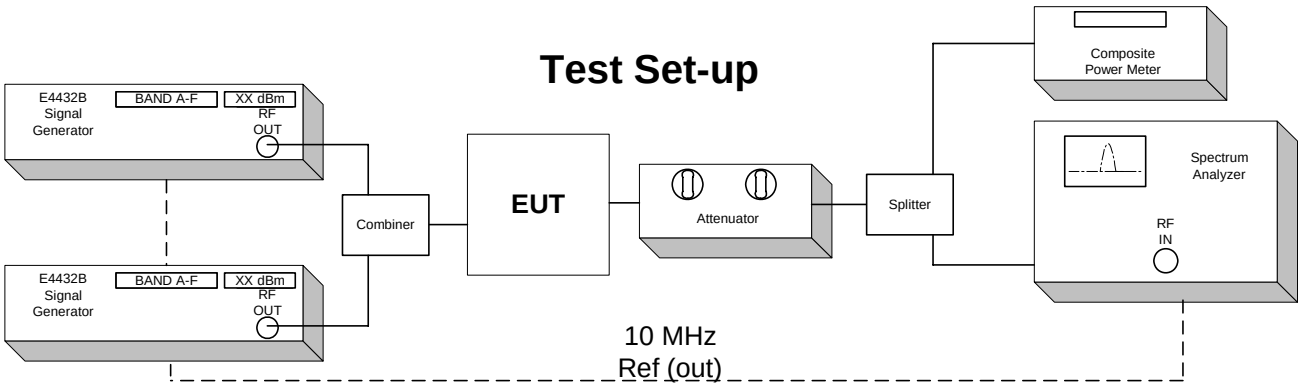
4.3 Test Set-up Drawings

Conducted and Radiated Emission Limits Test

Conducted Output Power Test

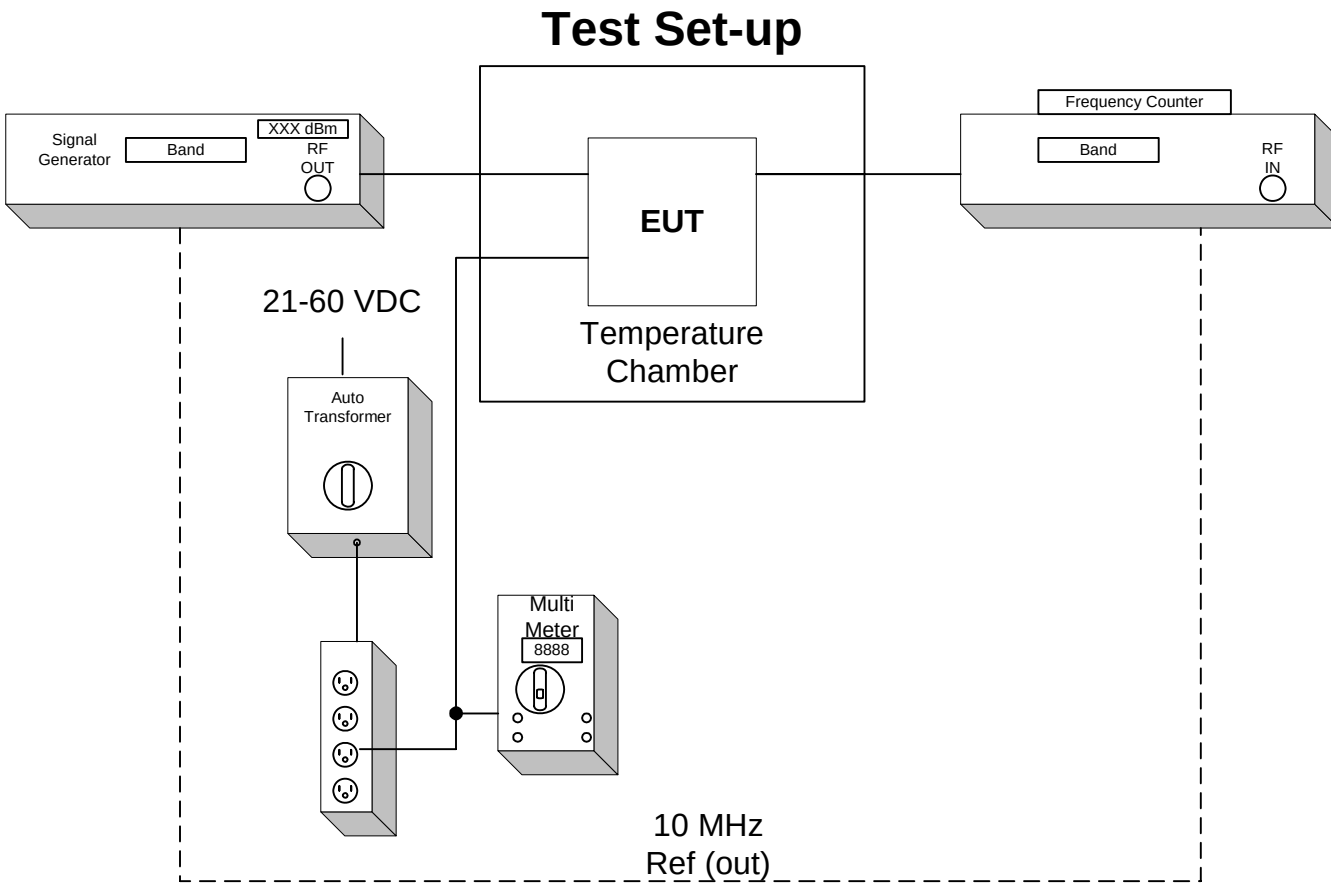
Inter-Modulation Test

Occupied Bandwidth Modulation Test



Frequency Tolerance Test

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



5.0 TEST RESULTS

5.1.1 24.232 Power and Antenna Height Limits

Test Summary:

- The requirements are: ■ **MET** □ NOT MET
- Minimum margin of compliance is 50.07 dB at 1909.8 MHz (TDMA)

Test Location:

□ ETL (Oakdale, MN)

■ **ADC facility (Shakopee, MN)**

Test Distance:

□ 3 Meters

□ 10 Meters

■ **Conducted measurement**

Test Equipment (ADC):
1, 2, 6, 7, 13

Test Limit:
100 Watts or 50 dBm Limit

Test Data:
Conducted Output Power; Section 7.2

Test Engineer: Mark F. Miska
Date: 25 August, 2008

Table of Contents; Section 1.0

5.1.2 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 0 to 50º C and an input voltage range of 21 to 60 VDC.

Test Location:

□ ETL (Oakdale, MN)

■ **ADC facility (Shakopee, MN)**

Test Equipment (ADC):
3, 4, 5, 6, 9, 13

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

Test Data:
Frequency Stability; Section 7.3

Test Engineer: Mark F. Miska
Date: 25 August, 2008

Table of Contents; Section 1.0

5.1.3 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):
1, 2, 6, 7, 13

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

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

Test Data:
Conducted Emissions; Section 7.1
Intermodulation; Section 7.4
Occupied Bandwidth; Section 7.5
Radiated Emissions; (Appendix B)

Test Engineer: Mark F. Miska
Date: 25 August, 2008
Date: 25 August, 2008
Date: 25 August, 2008

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6.0 TEST EQUIPMENT

Table of Contents; Section 1.0

Number	Description	Manufacturer	Model	ADC Serial Number	Cal Due	Used
1	Spectrum Analyzer	HP	8563E	MC27690	6-5-09	☒
2	Power Meter	HP	EPM-441A	MC27670	10-9-08	☒
3	Multimeter	Fluke	79III	MC34730	6-24-10	☒
4	Frequency Counter	HP	5347A	MC27548	1-16-09	☒
5	Temperature Chamber	Thermotron	SM-32C	MC18966	4-8-09	☒
6	Signal Generator	Agilent	E4437B	967974	1-15-10	☒
7	Signal Generator	Agilent	E4438C	1013210	2-9-09	☒
8	Attenuator	Huber Suhner	6810.17.A	N/A	CNR	☐
9	Variable Auto Transformer	Staco	1520CT	MC44655	CNR	☒
10	Digital Barometer	Fisher Scientific	02-403	MC50719	10-28-09	☒
11	Data Acquisition Unit	Fluke	Hydra	MC27549	10-8-08	☐
12	Attenuator	Aeroflex	49-30-33	N/A	CNR	☐
13	Attenuator	Aeroflex	86-30-12	N/A	CNR	☒
14	LNA	Lucix Corp	C020200L 1603	N/A	CNR	☐

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

7.0 APPENDIX A

Conducted Emissions Test Data

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Test Engineer: Mark F. Miska

7.1 Conducted Emission Limits Test

Table of Contents; Section 1.0
Back to Emission Limits; Section 5.1.3

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 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 FM, TDMA, GSM, EDGE, CDMA 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 ≈ -30 dBm input to DHU. Industry practice has generally set the output signal power level.

Universal Radio Head (URH):
Range: 100 - 240 VAC
Tested @: 120 VAC
Tested @: 5.8 A

Digital Host Unit (DHU):
Range: 21-60 VDC
Tested @: 48 VDC
Tested @: 3.5 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.

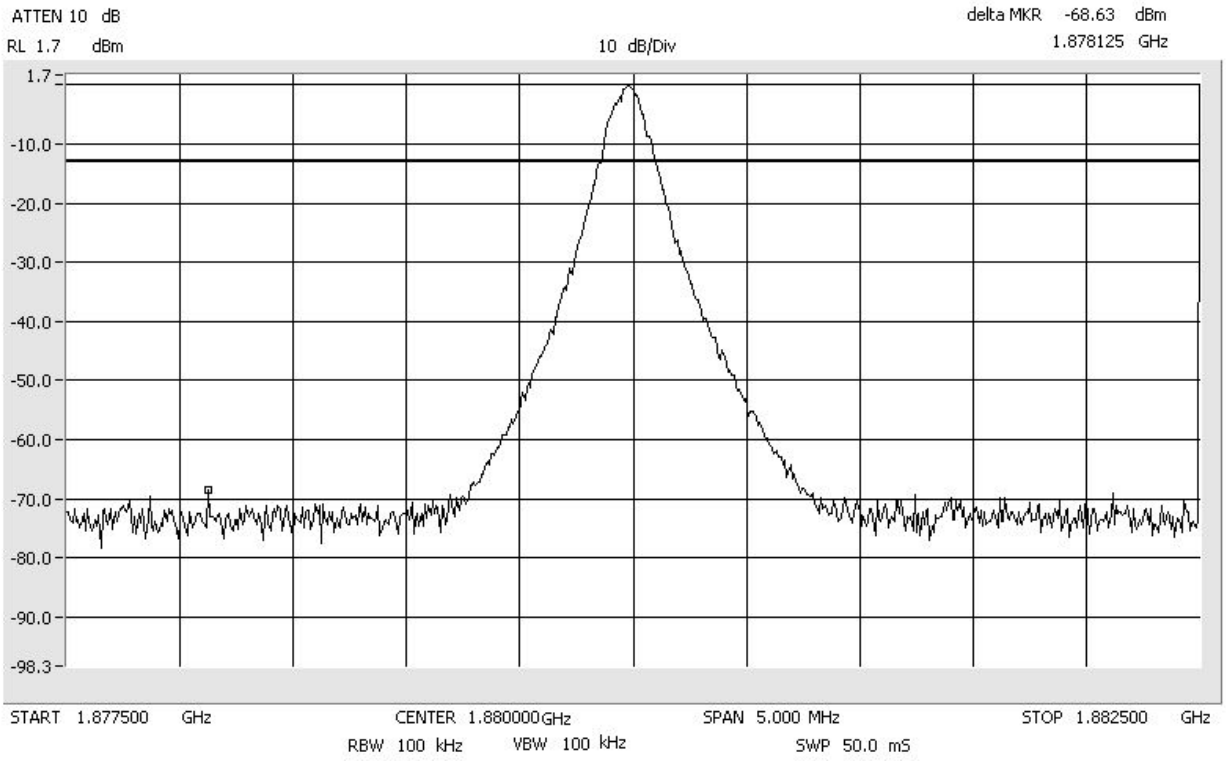
The spurious limitation is completed with the duplexer. The ALC also suppresses in-band spurious by preventing PA overdrive, while the duplexer suppresses out-of-band spurious. Internal to the electronics, the use of SAW filters provides for higher Q roll-off at band edges.

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.

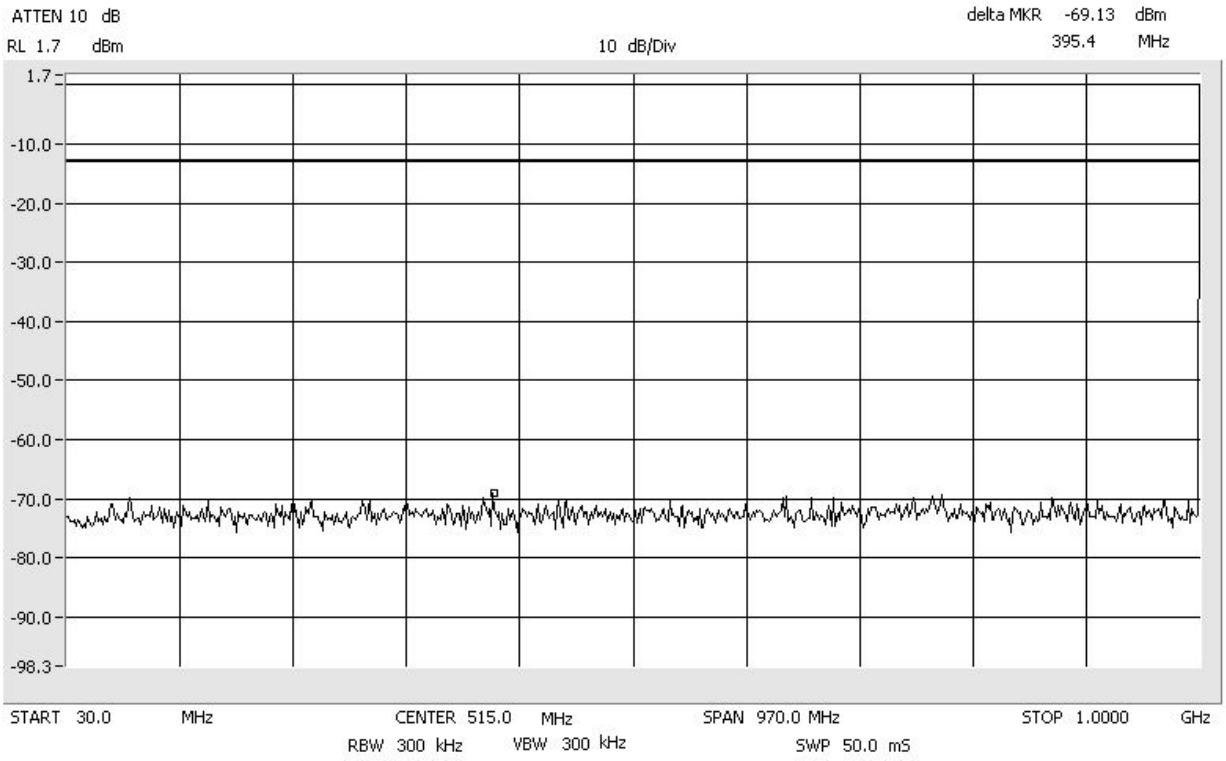
This is a constant gain device, so the setup controls the output. There is an overdrive and overpower limit control that prevents excess power.

Results:
Pass (See plots)

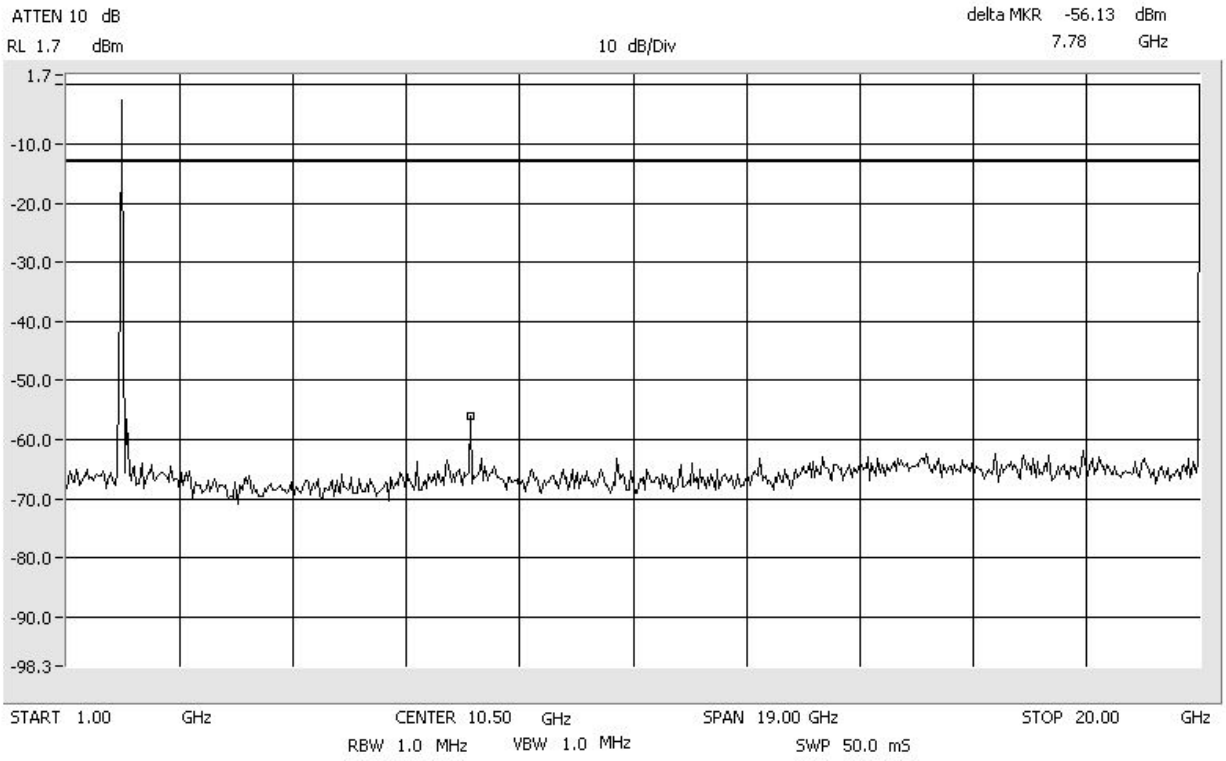
Conducted Emissions TDMA PCS
Center: 1880 MHz Span: 5 MHz RBW/VBW: 100 kHz



Conducted Emissions TDMA PCS
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz

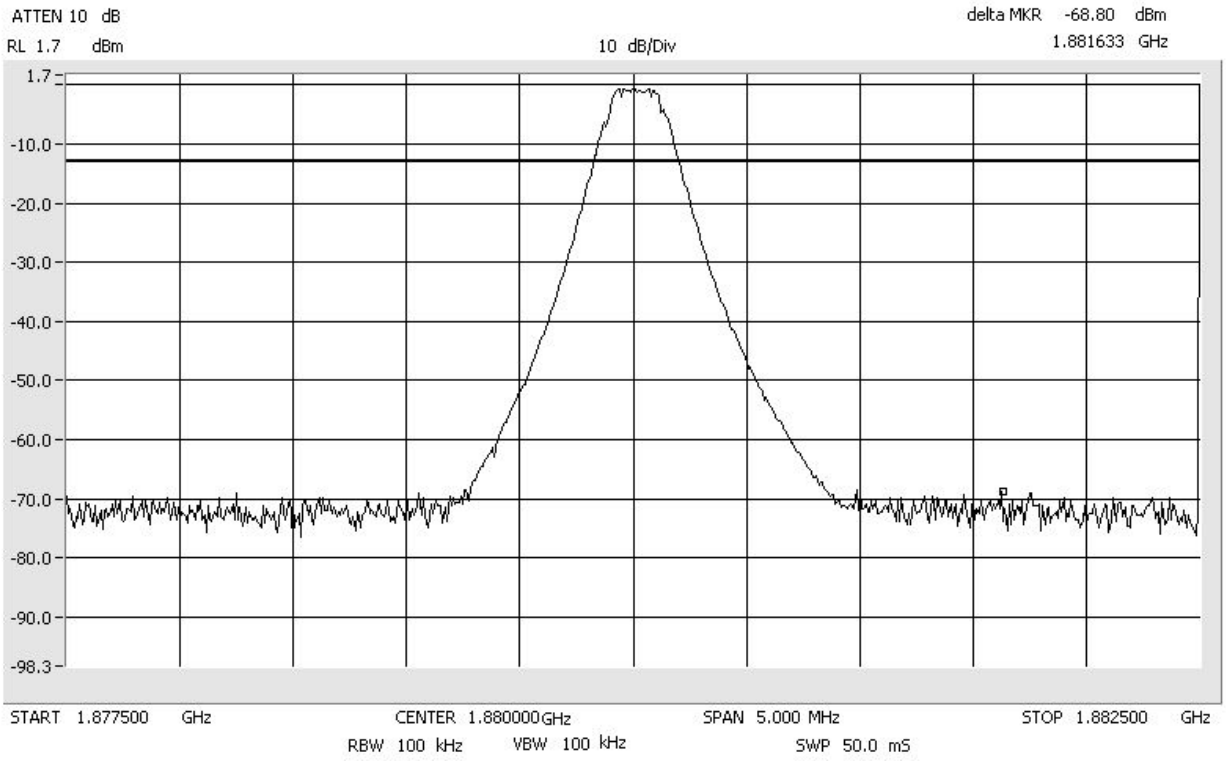


Conducted Emissions TDMA PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



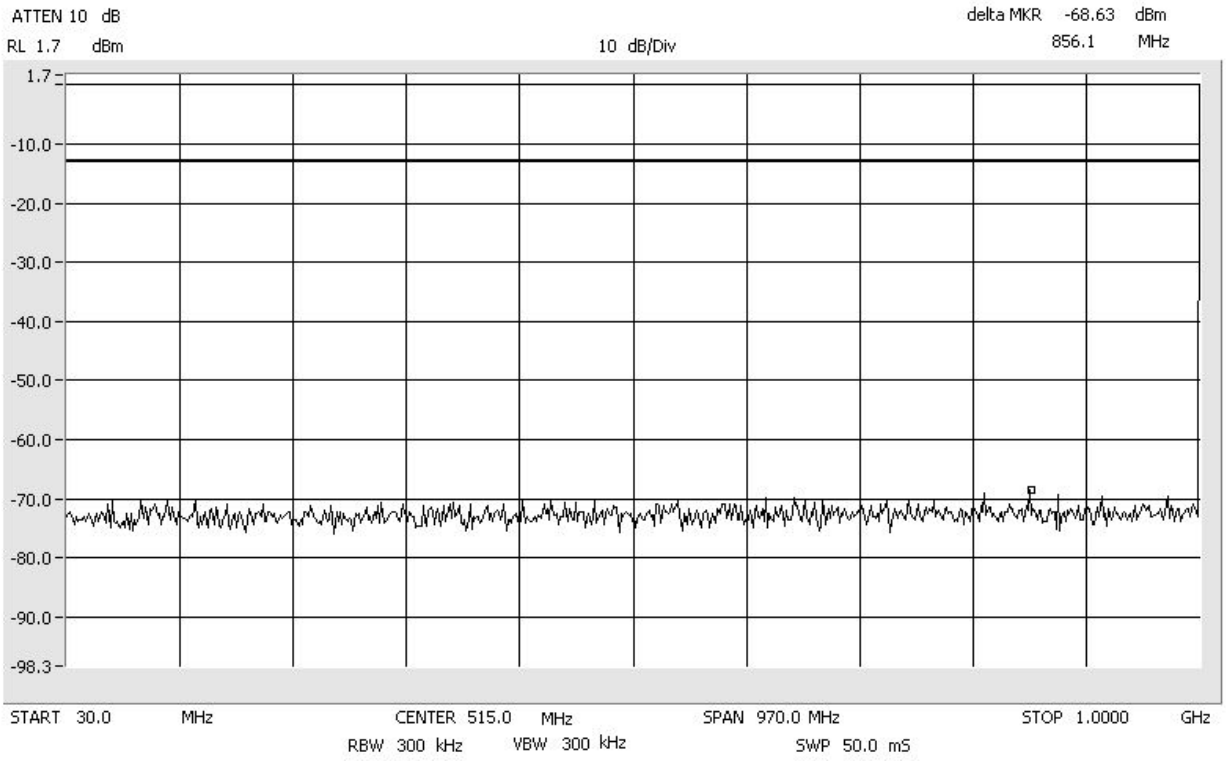
Conducted Emissions GSM PCS

Center: 1880 MHz Span: 5 MHz RBW/VBW: 100 kHz

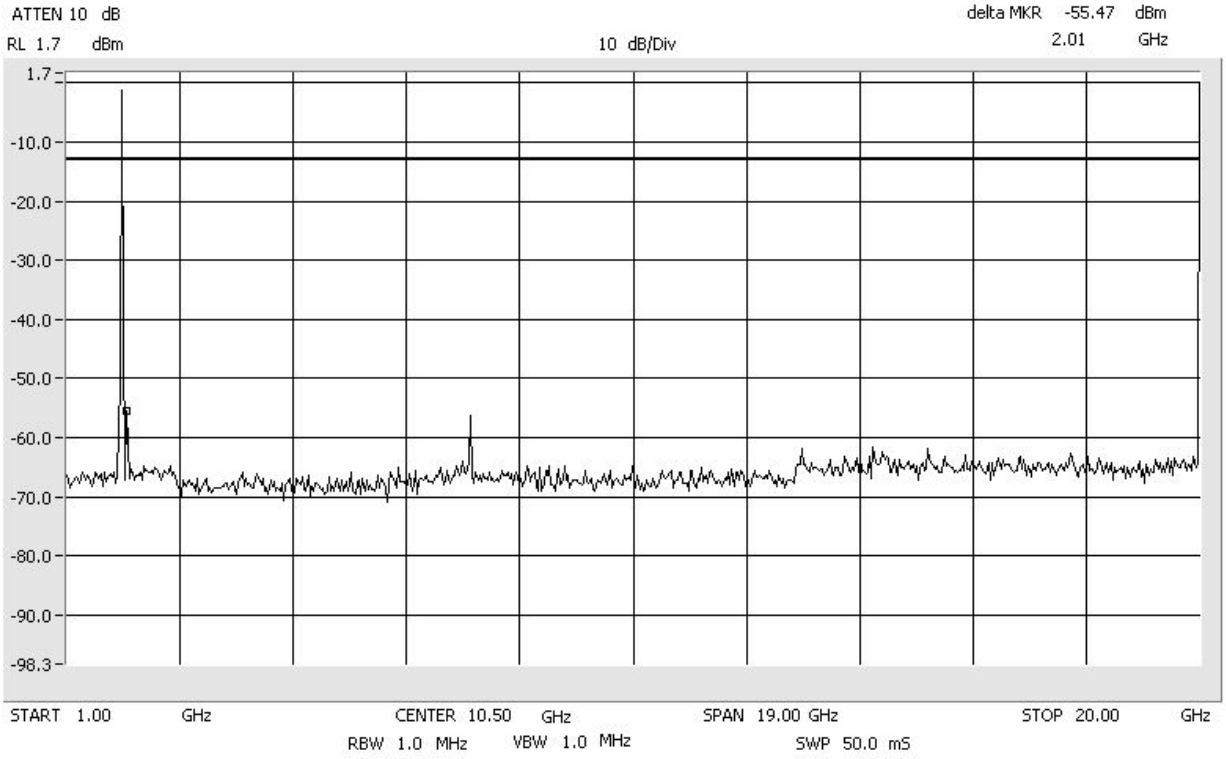


Conducted Emissions GSM PCS

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

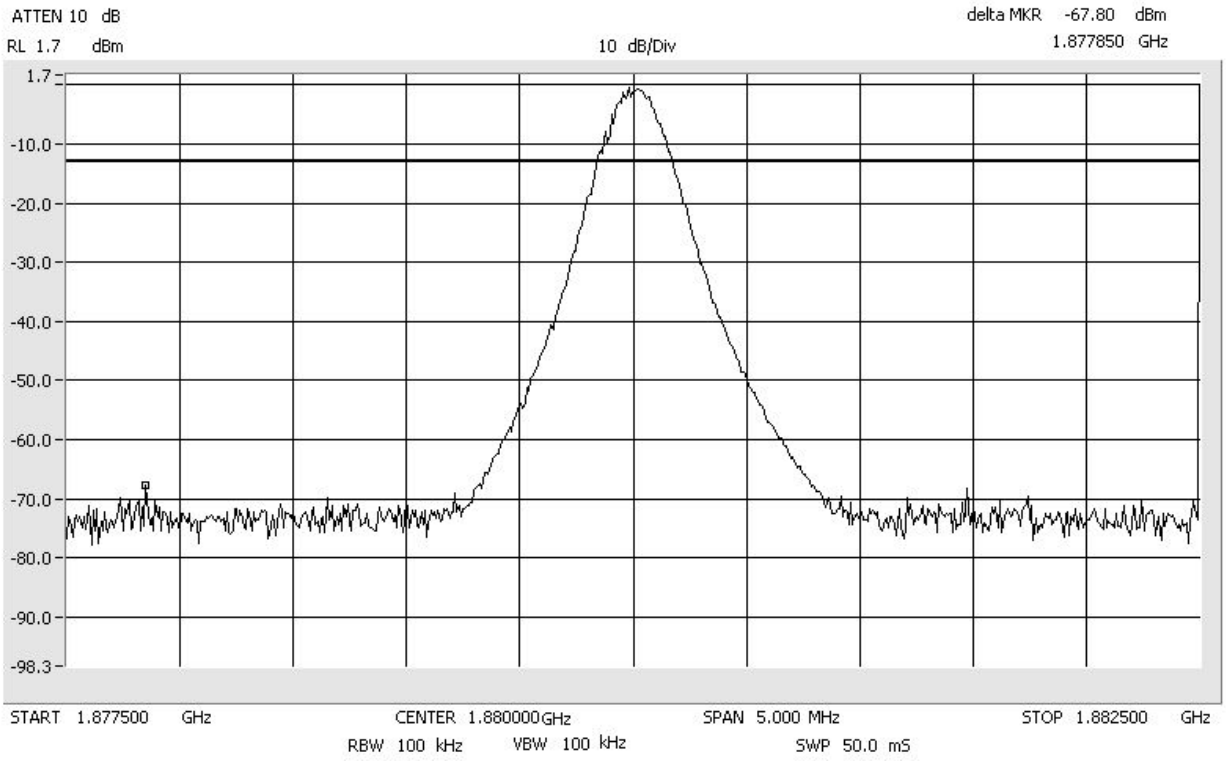


Conducted Emissions GSM PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



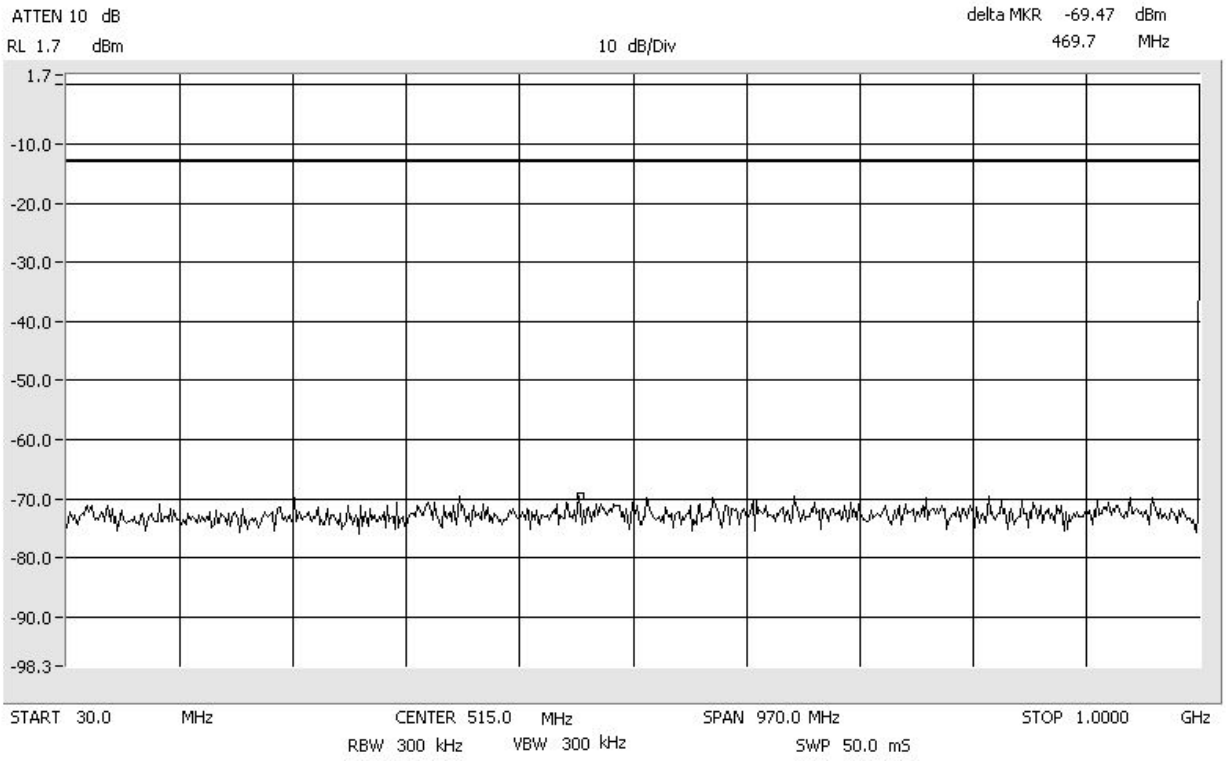
Conducted Emissions EDGE PCS

Center: 1880 MHz Span: 5 MHz RBW/VBW: 100 kHz

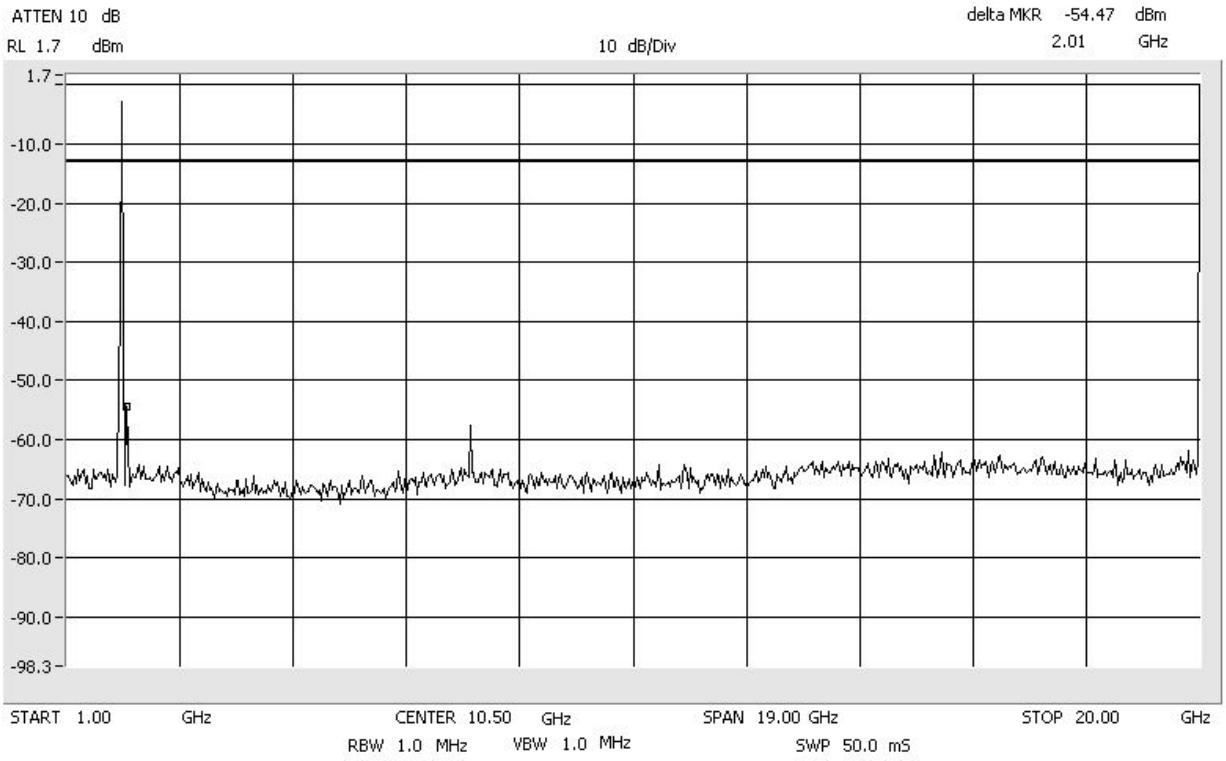


Conducted Emissions EDGE PCS

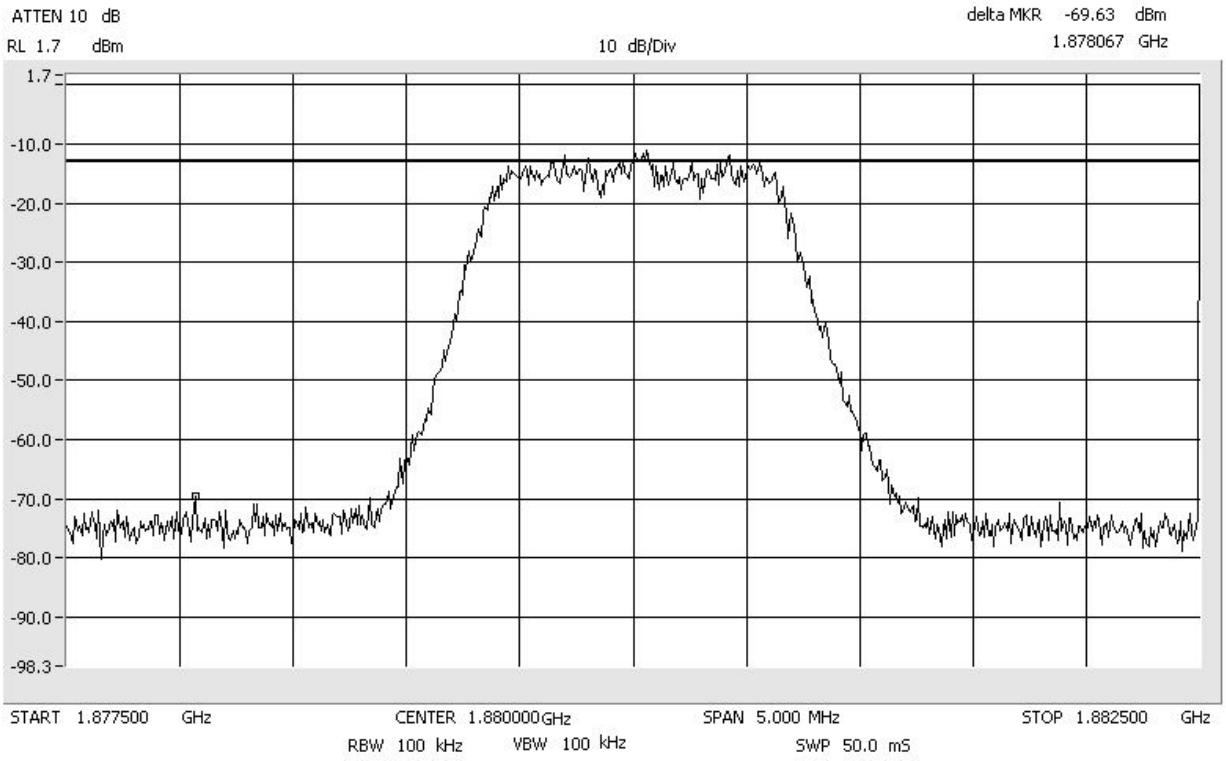
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz



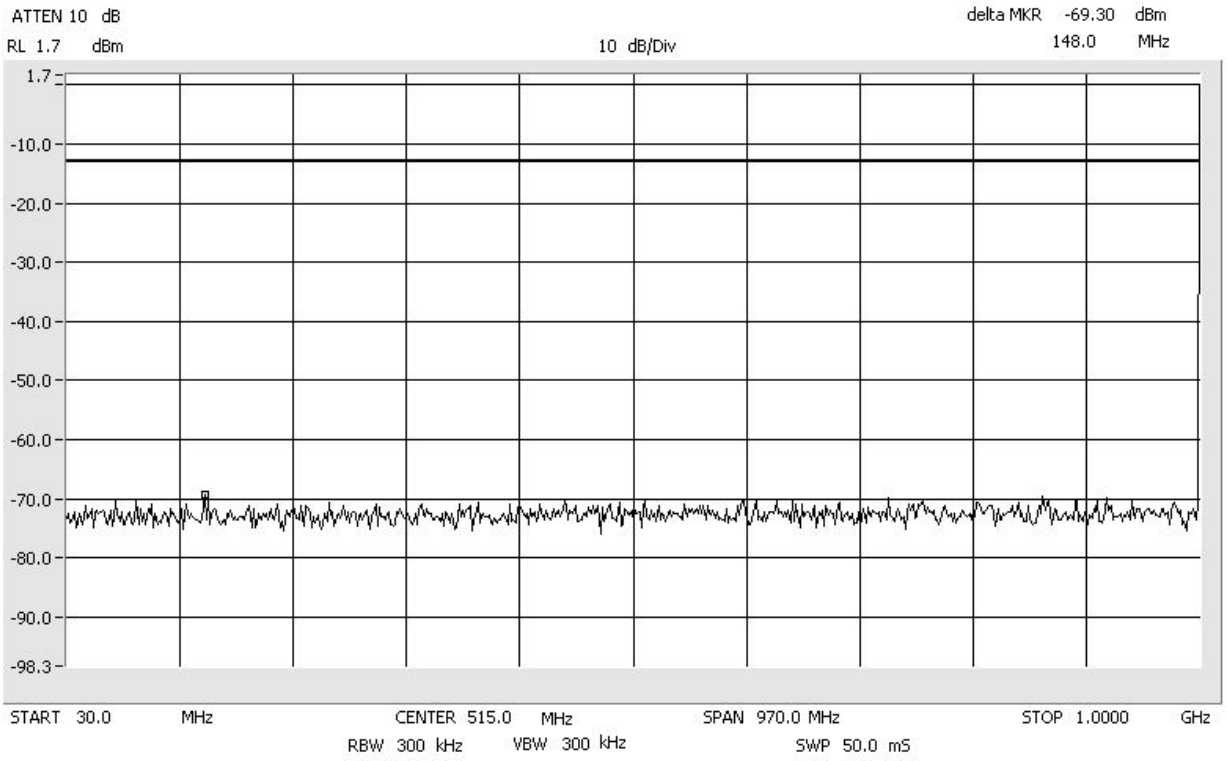
Conducted Emissions EDGE PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



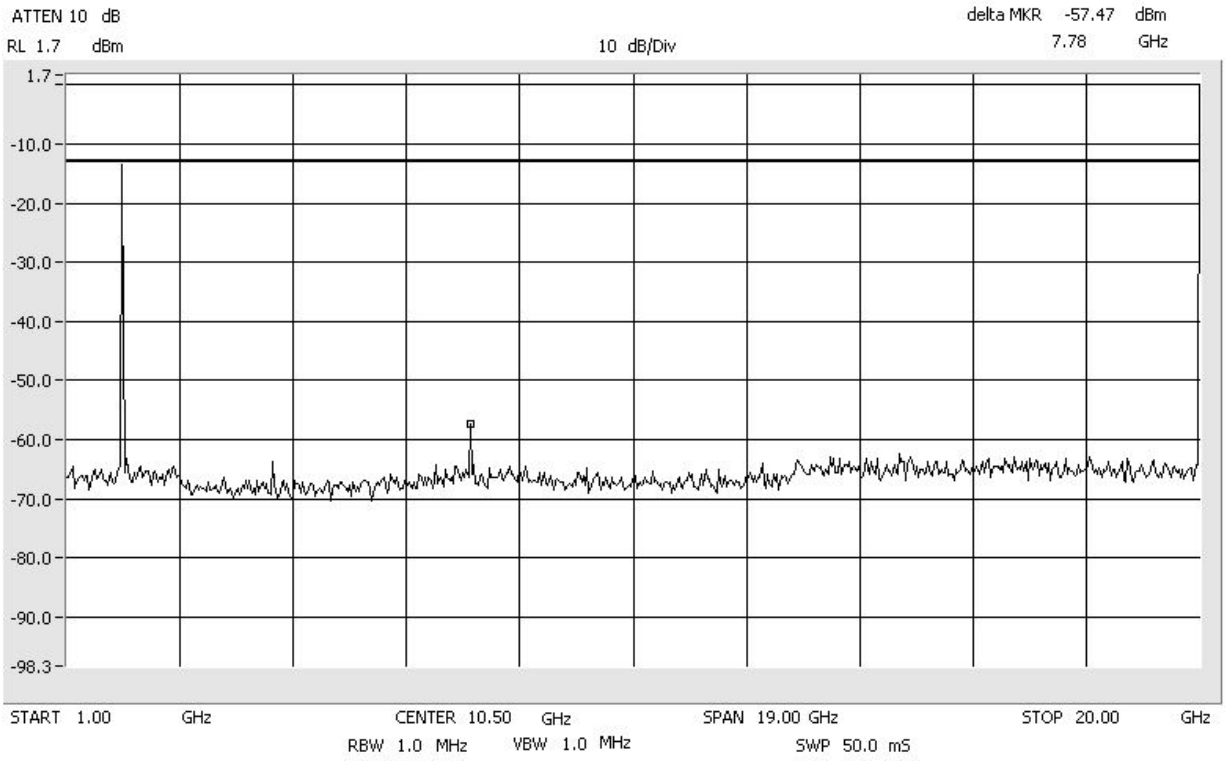
Conducted Emissions CDMA PCS
Center: 1880 MHz Span: 5 MHz RBW/VBW: 100 kHz



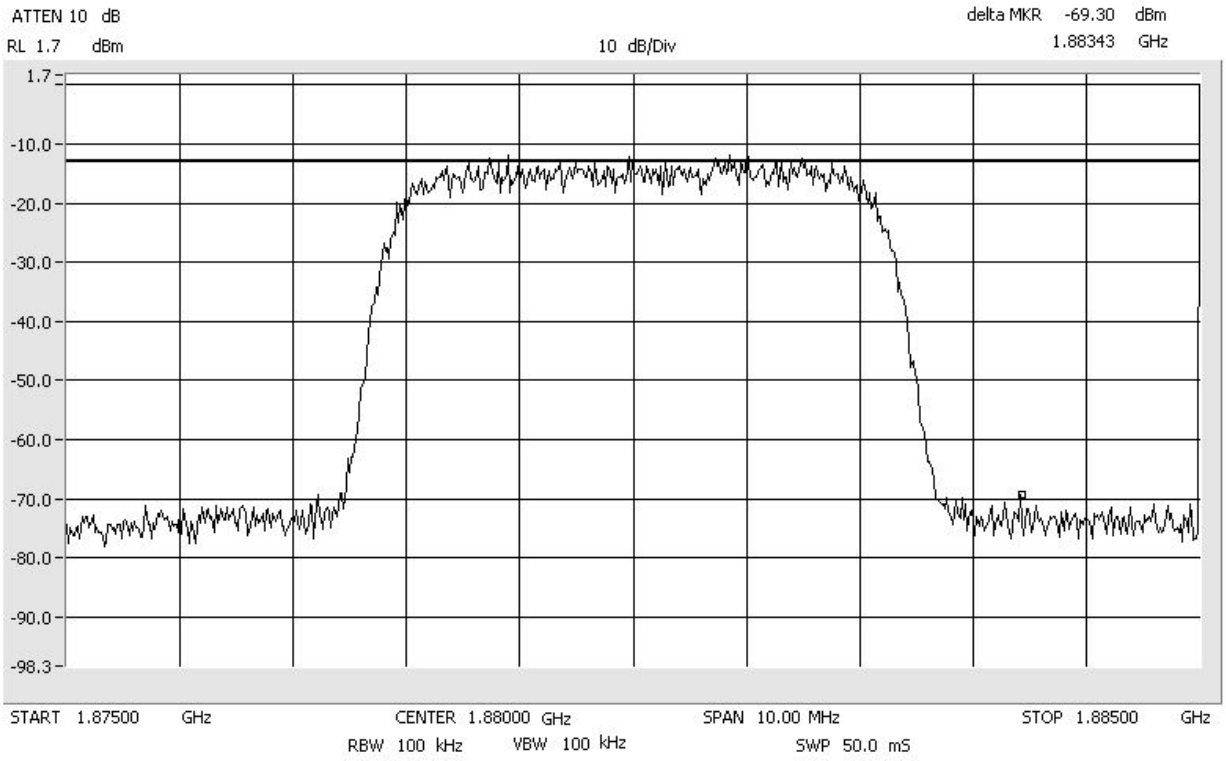
Conducted Emissions CDMA PCS
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz



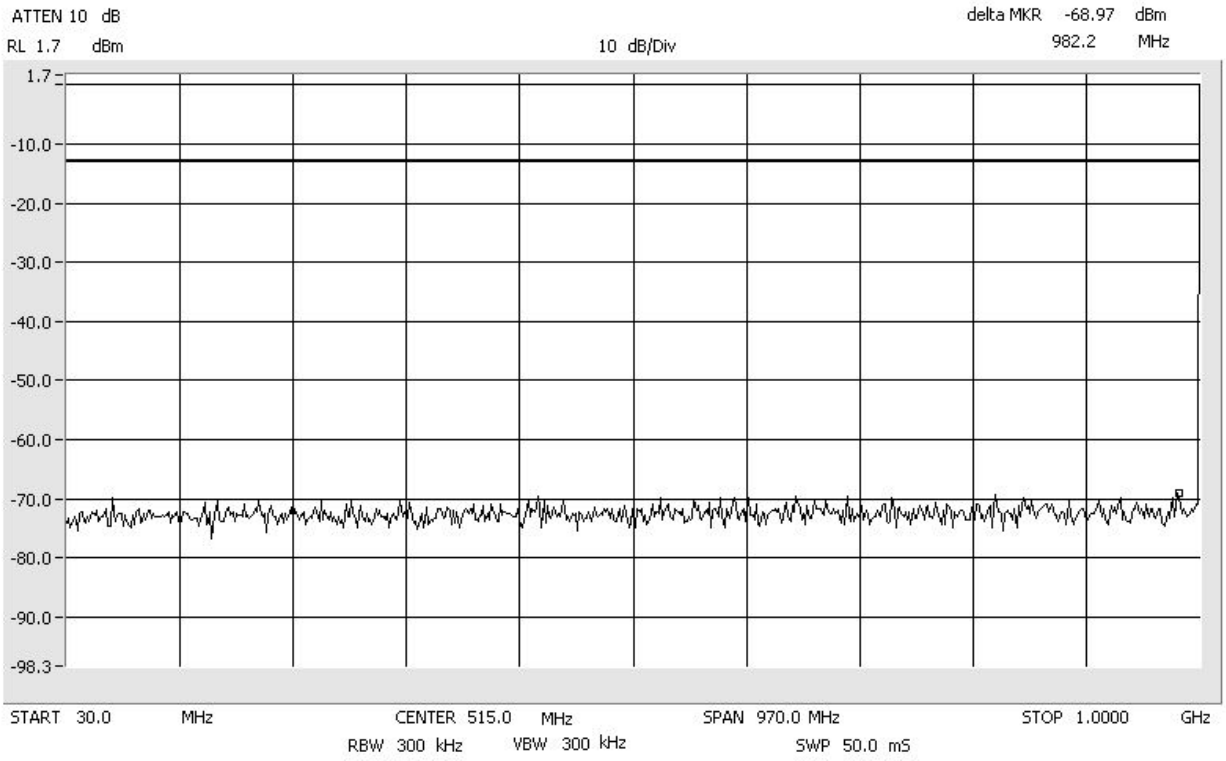
Conducted Emissions CDMA PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



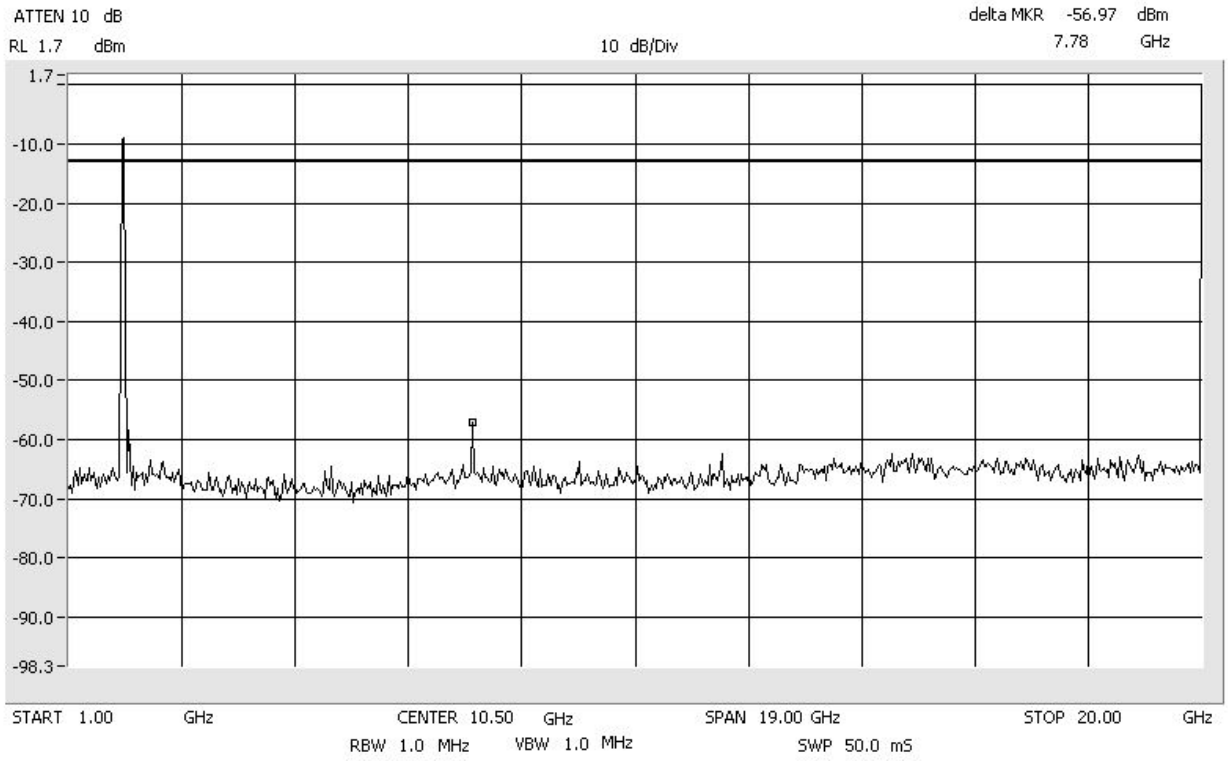
Conducted Emissions WCDMA PCS
Center: 1880 MHz Span: 10 MHz RBW/VBW: 100 kHz



Conducted Emissions WCDMA PCS
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz

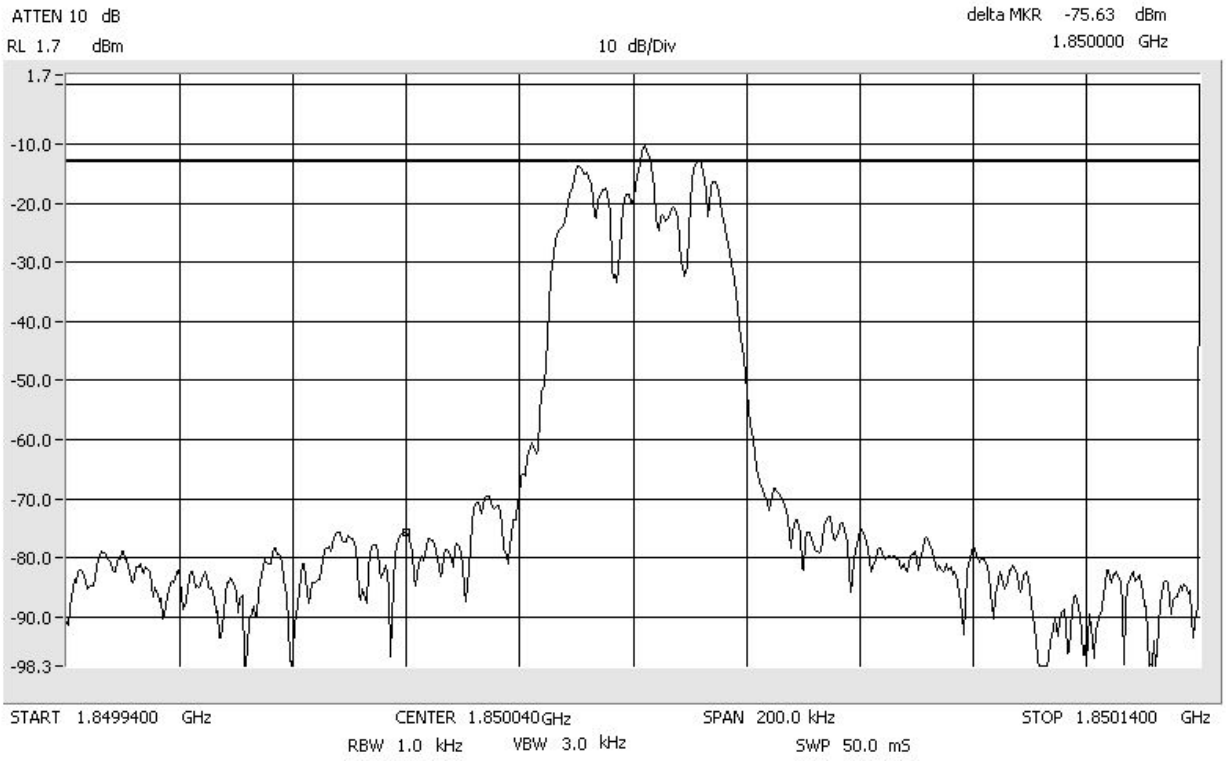


Conducted Emissions WCDMA PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



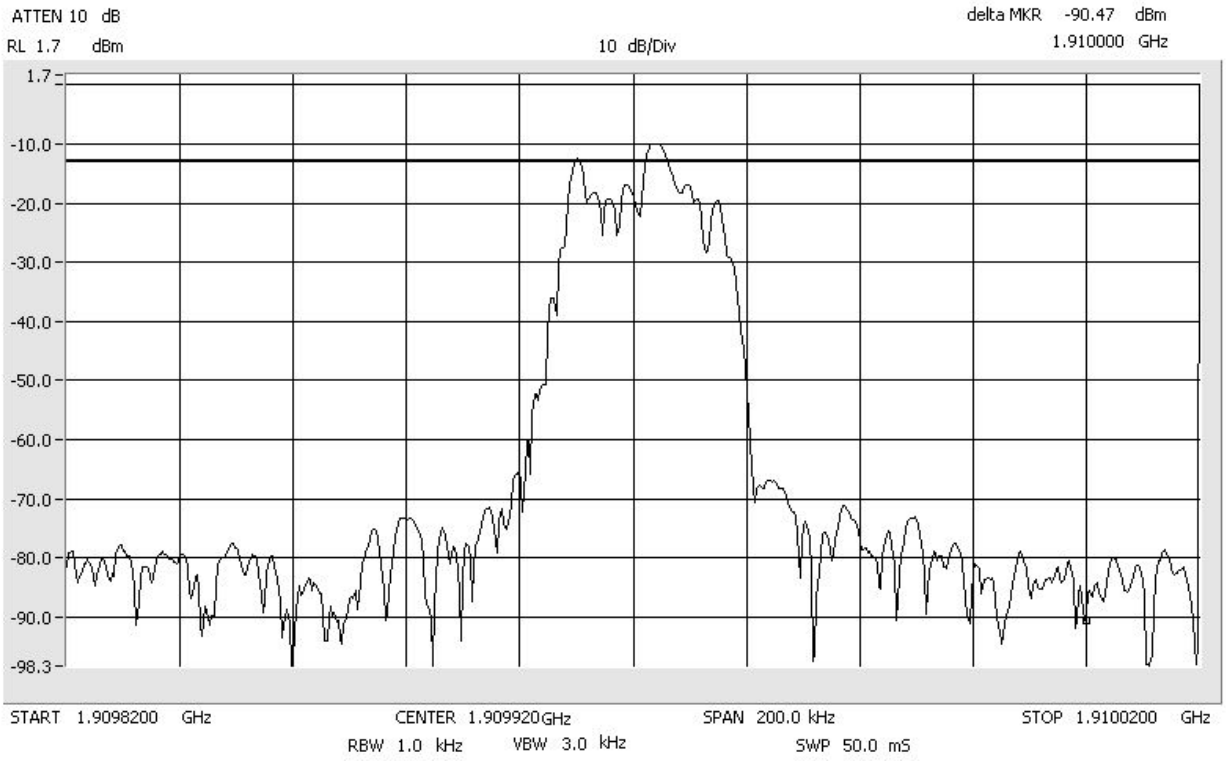
Band_Edge TDMA

Center: 1850.04 MHz Span: 200 kHz RBW: 1 kHz VBW: 3 kHz



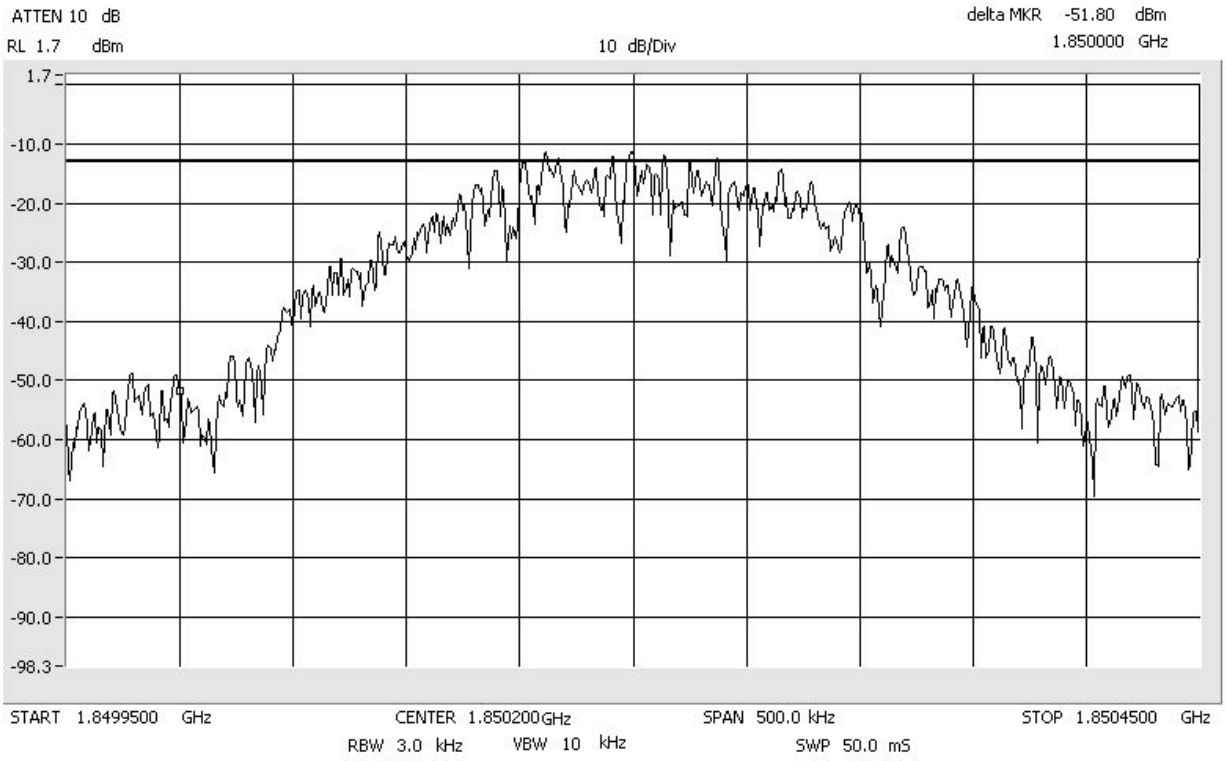
Band_Edge TDMA

Center: 1909.92 MHz Span: 200 kHz RBW: 1 kHz VBW: 3 kHz



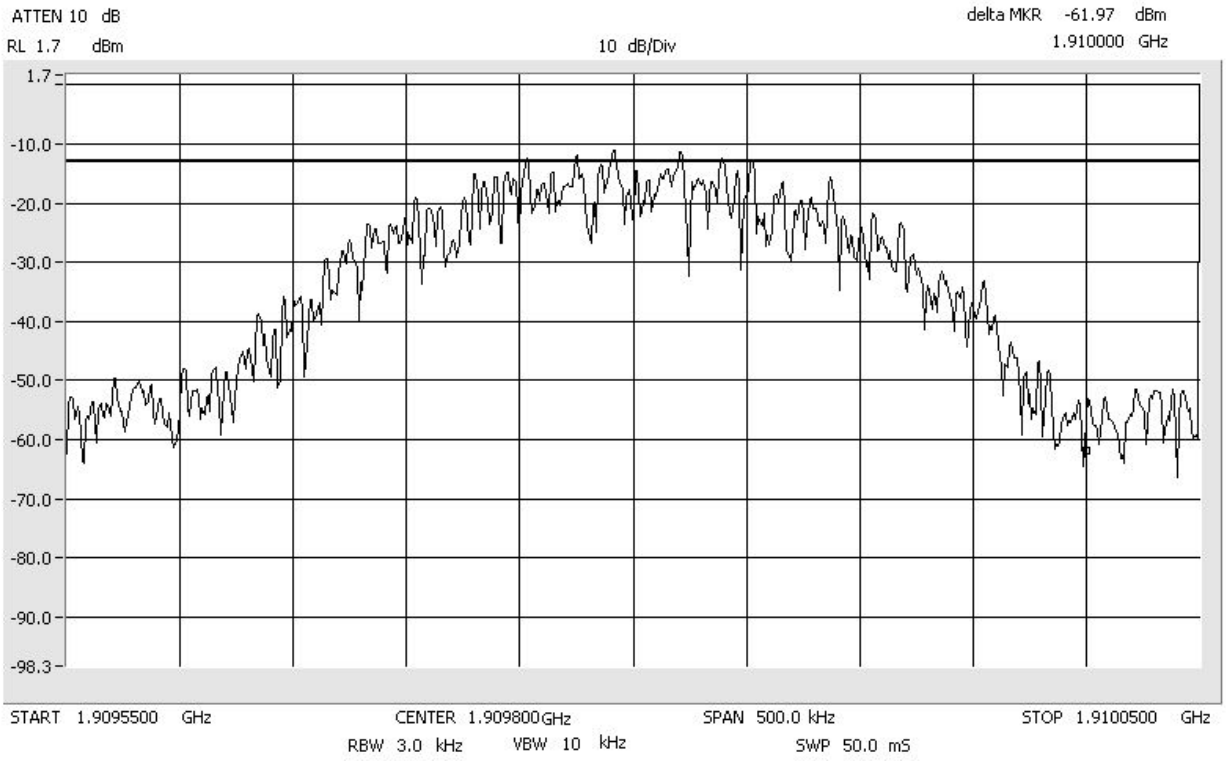
Band_Edge GSM

Center: 1850.2 MHz Span: 500 kHz RBW: 3 kHz VBW: 10 kHz



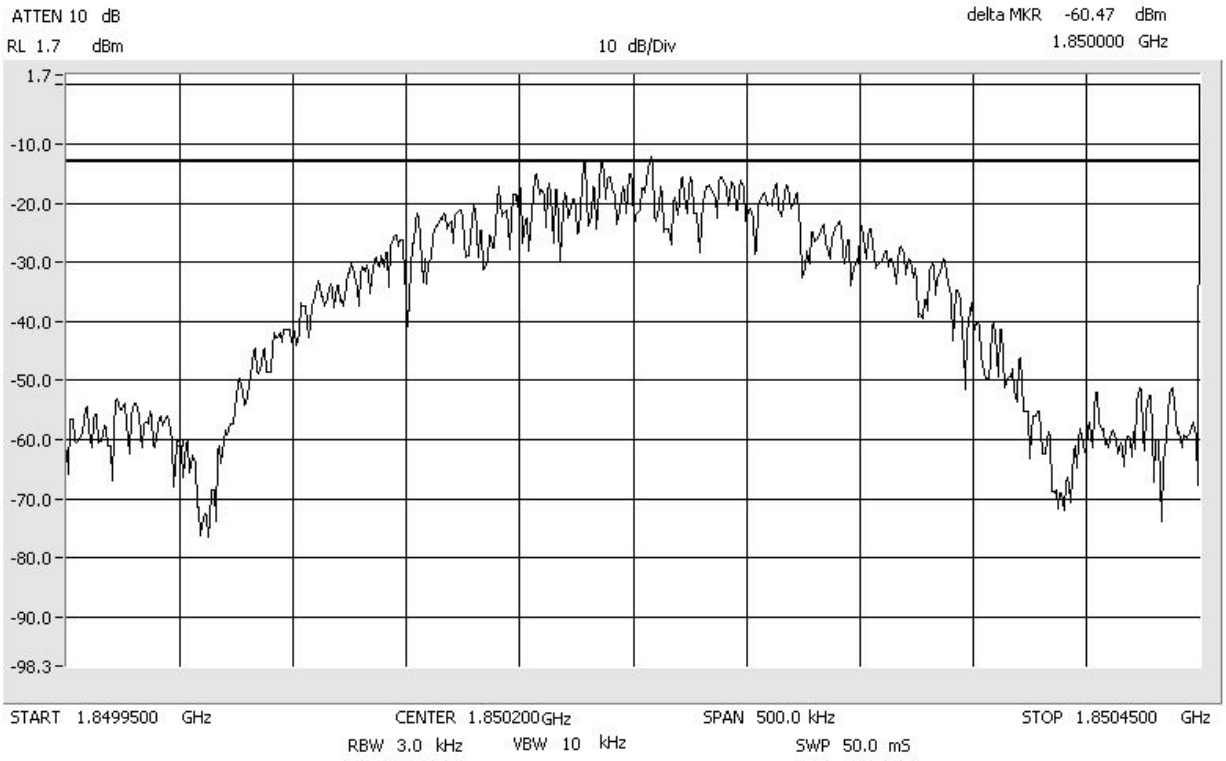
Band_Edge GSM

Center: 1909.8 MHz Span: 500 kHz RBW: 3 kHz VBW: 10 kHz



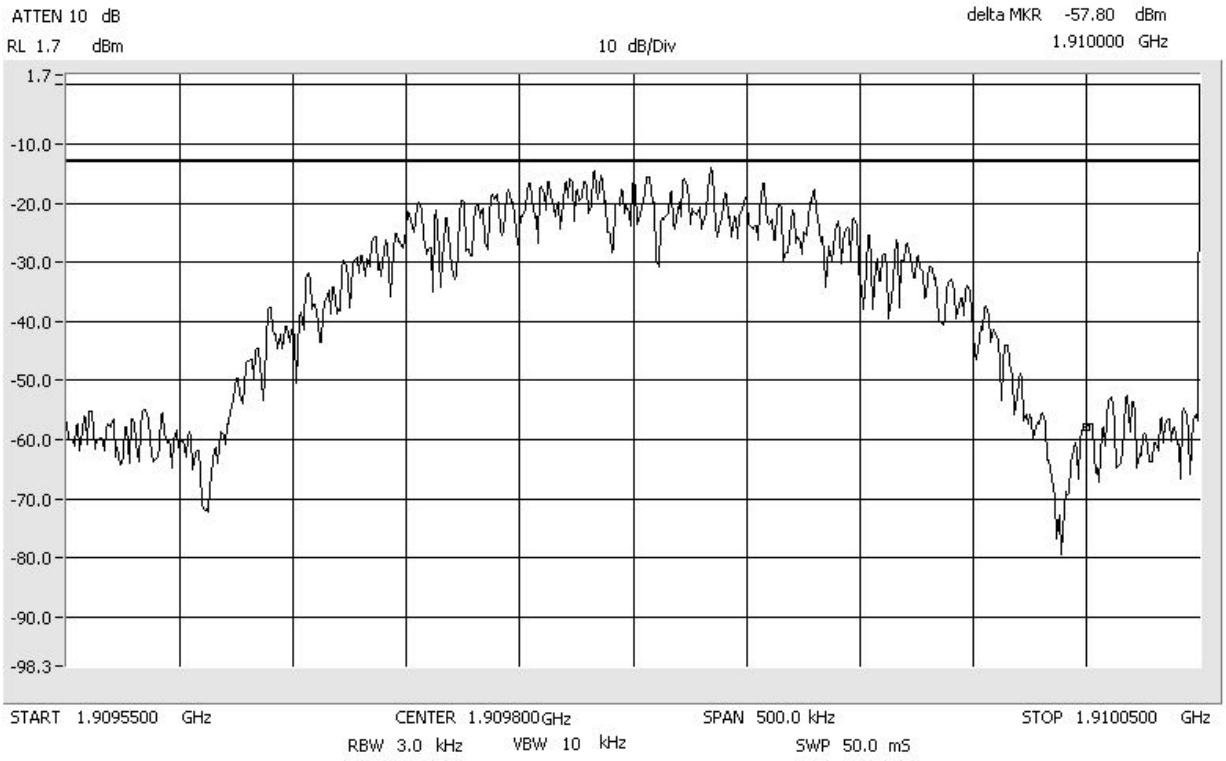
Band_Edge EDGE

Center: 1850.2 MHz Span: 500 kHz RBW: 3 kHz VBW: 10 kHz



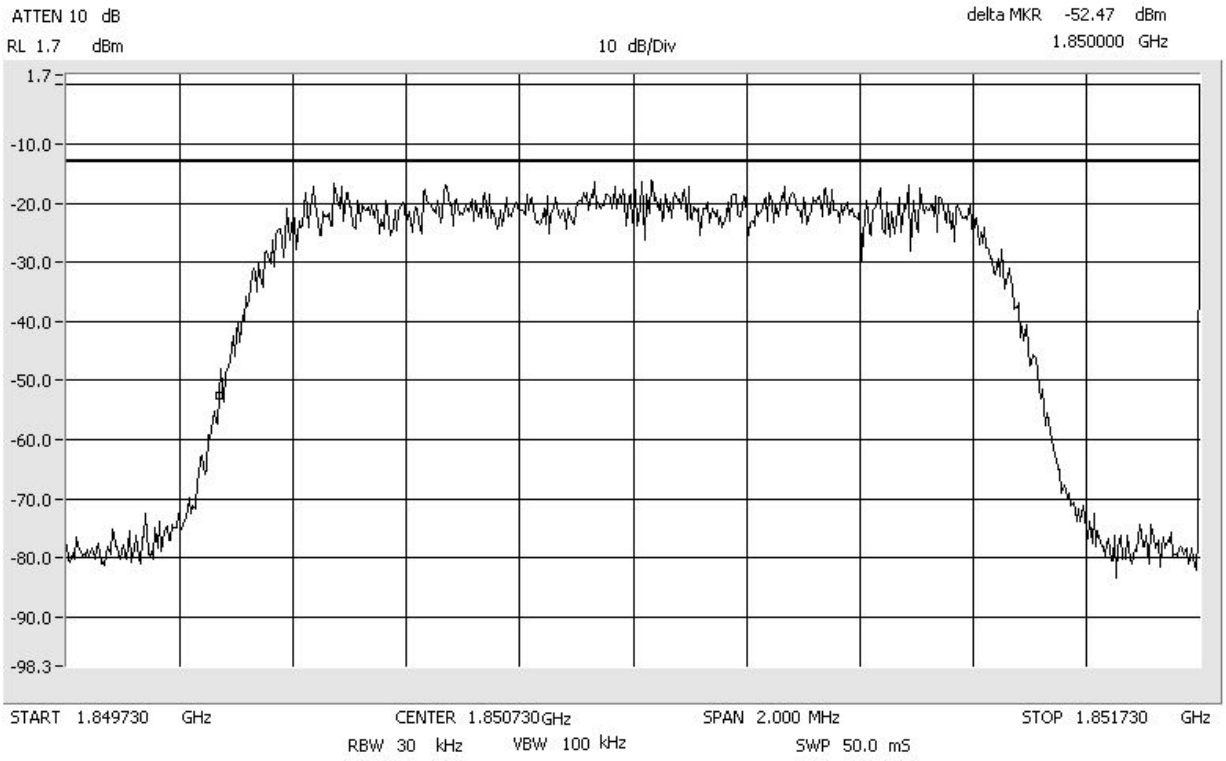
Band_Edge EDGE

Center: 1909.8 MHz Span: 500 kHz RBW: 3 kHz VBW: 10 kHz



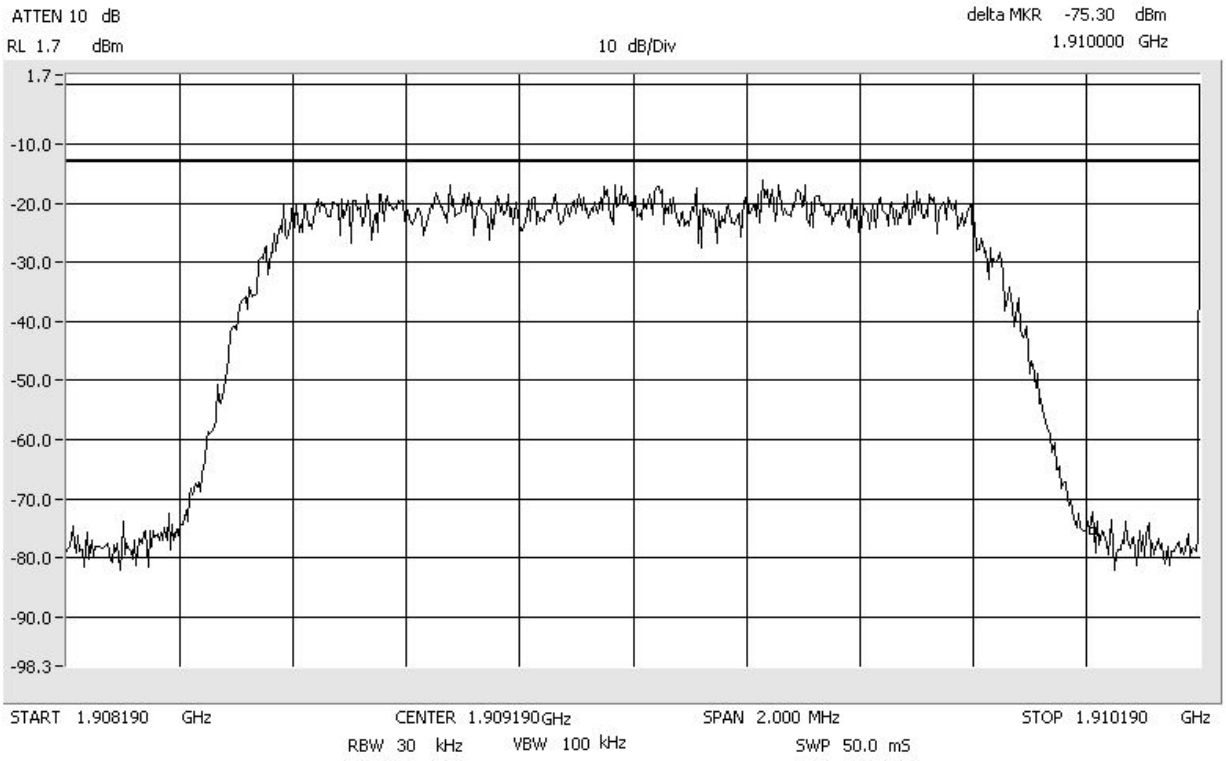
Band_Edge CDMA

Center: 1850.73 MHz Span: 2 MHz RBW: 30 kHz VBW: 100 kHz



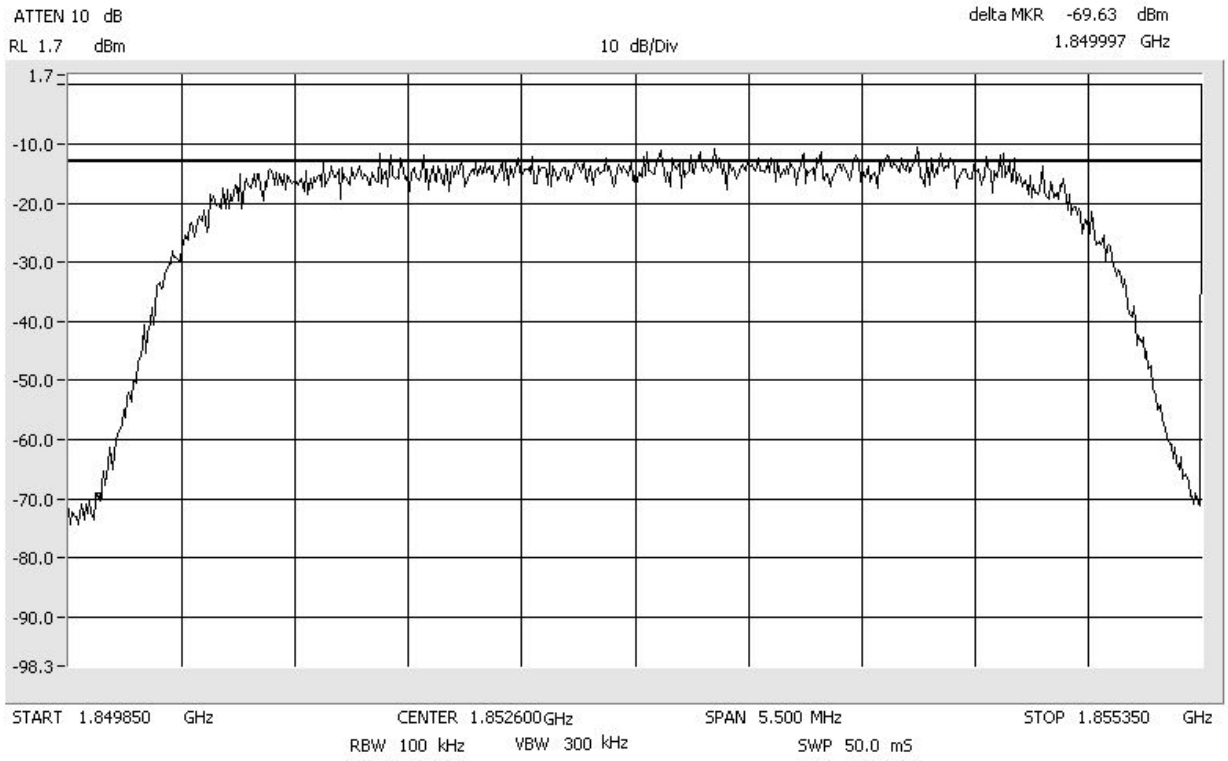
Band_Edge CDMA

Center: 1909.19 MHz Span: 2 MHz RBW: 30 kHz VBW: 100 kHz



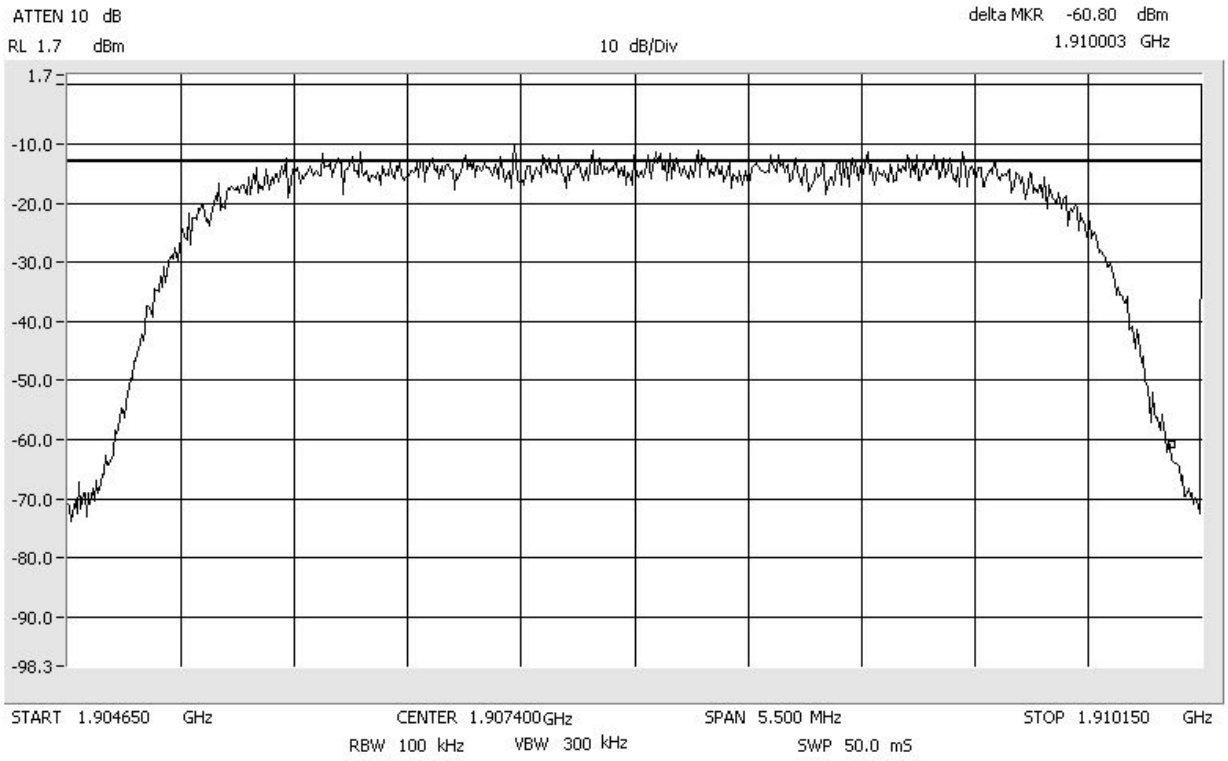
Band_Edge WCDMA

Center: 1852.6 MHz Span: 5.5 MHz RBW: 100 kHz VBW: 300 kHz



Band_Edge WCDMA

Center: 1907.4 MHz Span: 5.5 MHz RBW: 100 kHz VBW: 300 kHz



7.2 Conducted Output Power Test

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Back to Conducted Output Power; Section 5.1.1

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 and W-CDMA signal. 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 1.7 dB to compensate for cable loss between the EUT and the power meter.

TDMA	0.984 mWatts
Carrier Frequency	Carrier Output
1850.2 MHz	-0.10 dBm
1860.0 MHz	-0.68 dBm
1909.8 MHz	-0.07 dBm

GSM	0.944 mWatts
Carrier Frequency	Carrier Output
1850.2 MHz	-0.25 dBm
1860.0 MHz	-0.83 dBm
1909.8 MHz	-0.87 dBm

EDGE	0.839 mWatts
Carrier Frequency	Carrier Output
1850.2 MHz	-0.87 dBm
1860.0 MHz	-0.76 dBm
1909.8 MHz	-0.98 dBm

CDMA	0.879 mWatts
Carrier Frequency	Carrier Output
1850.8 MHz	-0.85 dBm
1860.0 MHz	-0.77 dBm
1909.2 MHz	-0.56 dBm

W-CDMA	0.938 mWatts
Carrier Frequency	Carrier Output
1852.6 MHz	-0.55 dBm
1860.0 MHz	-0.28 dBm
1907.4 MHz	-0.87 dBm

7.3 Frequency Stability Test

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Back to Frequency Stability; Section 5.1.2

HOST	REMOTE			
Input Voltage	**Input Voltage**	**Carrier Frequency**	**Measured Frequency**	**Meets Requirements?**
21 VDC	100 VAC	1850.200 MHz	1850.200 MHz	Yes
48 VDC	170 VAC	1850.200 MHz	1850.200 MHz	Yes
60 VDC	240 VAC	1850.200 MHz	1850.200 MHz	Yes
21 VDC	100 VAC	1880.000 MHz	1880.000 MHz	Yes
48 VDC	170 VAC	1880.000 MHz	1880.000 MHz	Yes
60 VDC	240 VAC	1880.000 MHz	1880.000 MHz	Yes
21 VDC	100 VAC	1909.800 MHz	1909.800 MHz	Yes
48 VDC	170 VAC	1909.800 MHz	1909.800 MHz	Yes
60 VDC	240 VAC	1909.800 MHz	1909.800 MHz	Yes
Temperature		**Carrier Frequency**	**Measured Frequency**	**Meets Requirements?**
0 Deg. C		1850.200 MHz	1850.200 MHz	Yes
10 Deg. C		1850.200 MHz	1850.200 MHz	Yes
20 Deg. C		1850.200 MHz	1850.200 MHz	Yes
30 Deg. C		1850.200 MHz	1850.200 MHz	Yes
40 Deg. C		1850.200 MHz	1850.200 MHz	Yes
50 Deg. C		1850.200 MHz	1850.200 MHz	Yes
0 Deg. C		1880.000 MHz	1880.000 MHz	Yes
10 Deg. C		1880.000 MHz	1880.000 MHz	Yes
20 Deg. C		1880.000 MHz	1880.000 MHz	Yes
30 Deg. C		1880.000 MHz	1880.000 MHz	Yes
40 Deg. C		1880.000 MHz	1880.000 MHz	Yes
50 Deg. C		1880.000 MHz	1880.000 MHz	Yes
0 Deg. C		1909.800 MHz	1909.800 MHz	Yes
10 Deg. C		1909.800 MHz	1909.800 MHz	Yes
20 Deg. C		1909.800 MHz	1909.800 MHz	Yes
30 Deg. C		1909.800 MHz	1909.800 MHz	Yes
40 Deg. C		1909.800 MHz	1909.800 MHz	Yes
50 Deg. C		1909.800 MHz	1909.800 MHz	Yes

7.4 Intermodulation Test

Table of Contents; Section 1.0
Back to Emission Limits; Section 5.1.3

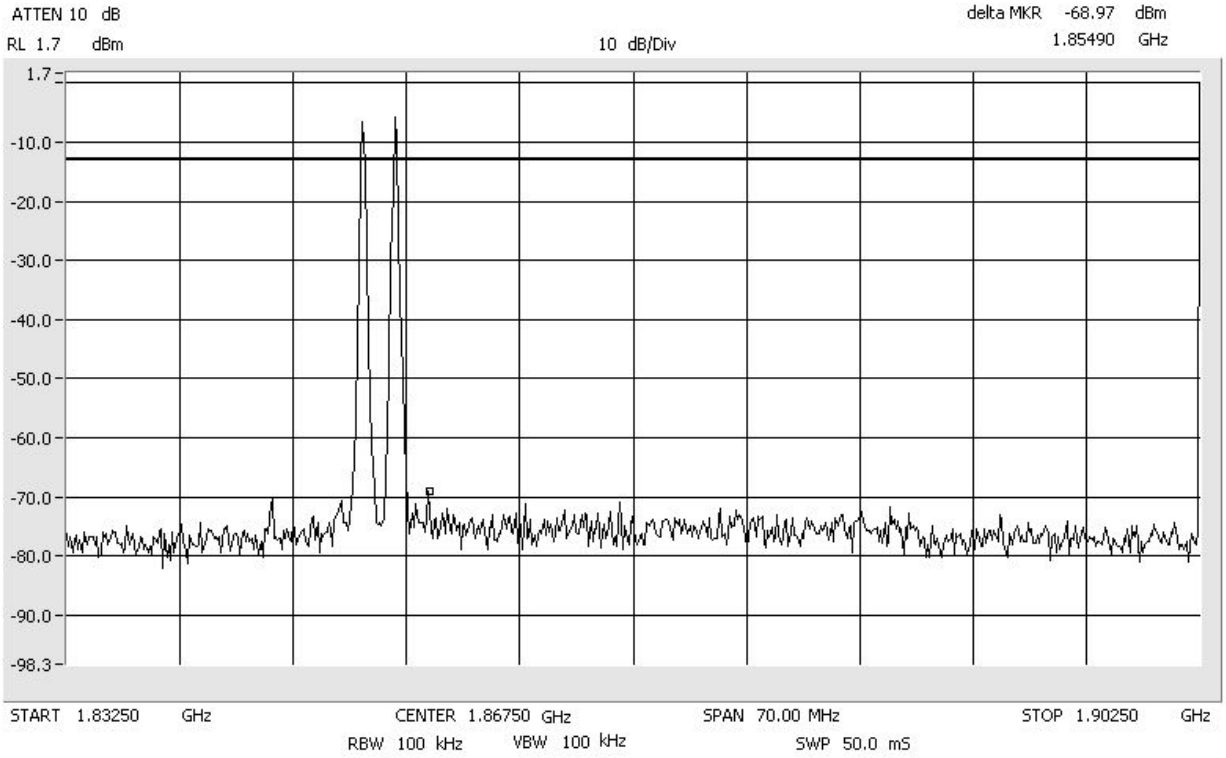
The inter-modulation products test was performed for the EUT. Three tests were preformed with the modulation type. Test 1 was with 2 signals input to the EUT at lower end channels. Test 2 was with 2 signals input to the EUT at upper end channels. Test 3 was with 2 signals input to the EUT at upper and lower end channels. The modulation types tested were TDMA, GSM, EDGE, CDMA 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.

The system can be operated up to 35 MHz bandwidth. Inter-modulation products were tested at the lower 35 MHz band (1850 to 1885 MHz) and the higher 25 MHz band (1885 to 1910 MHz) to show out-of-band compliance.

Results:
(See Plots)

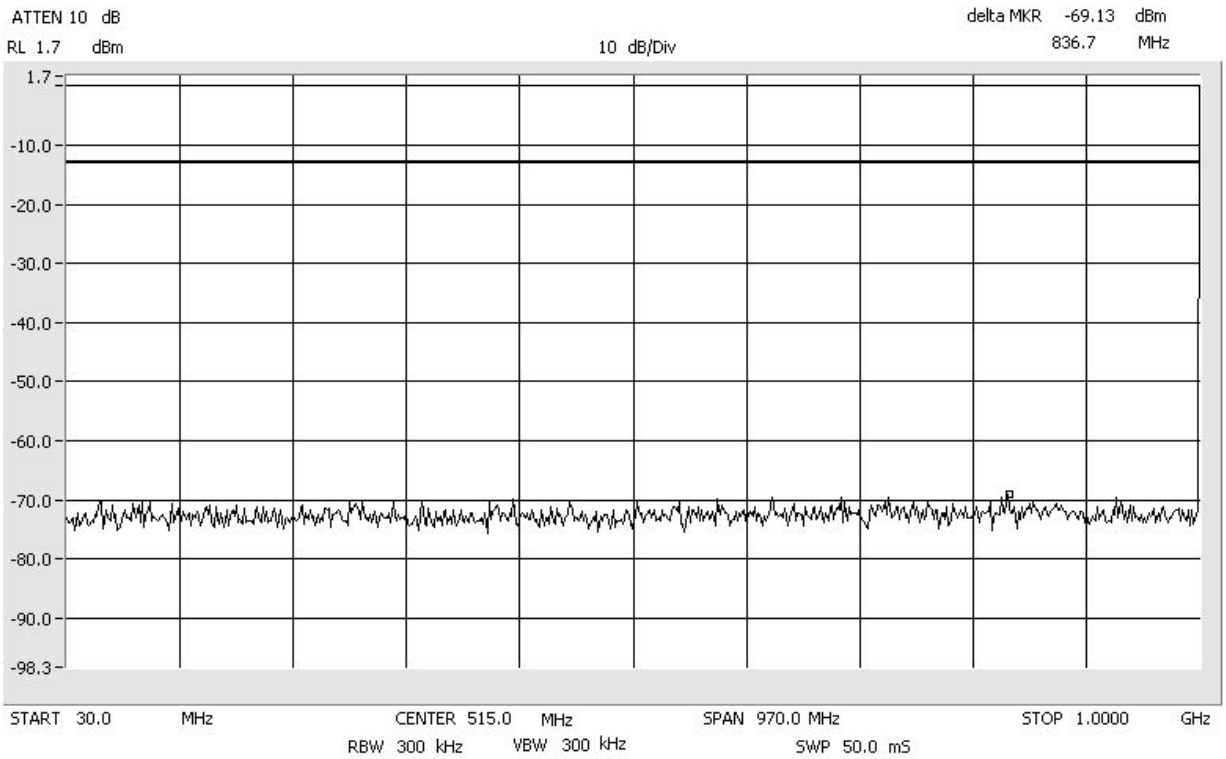
Intermodulation_LowTDMA_Low PCS

Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

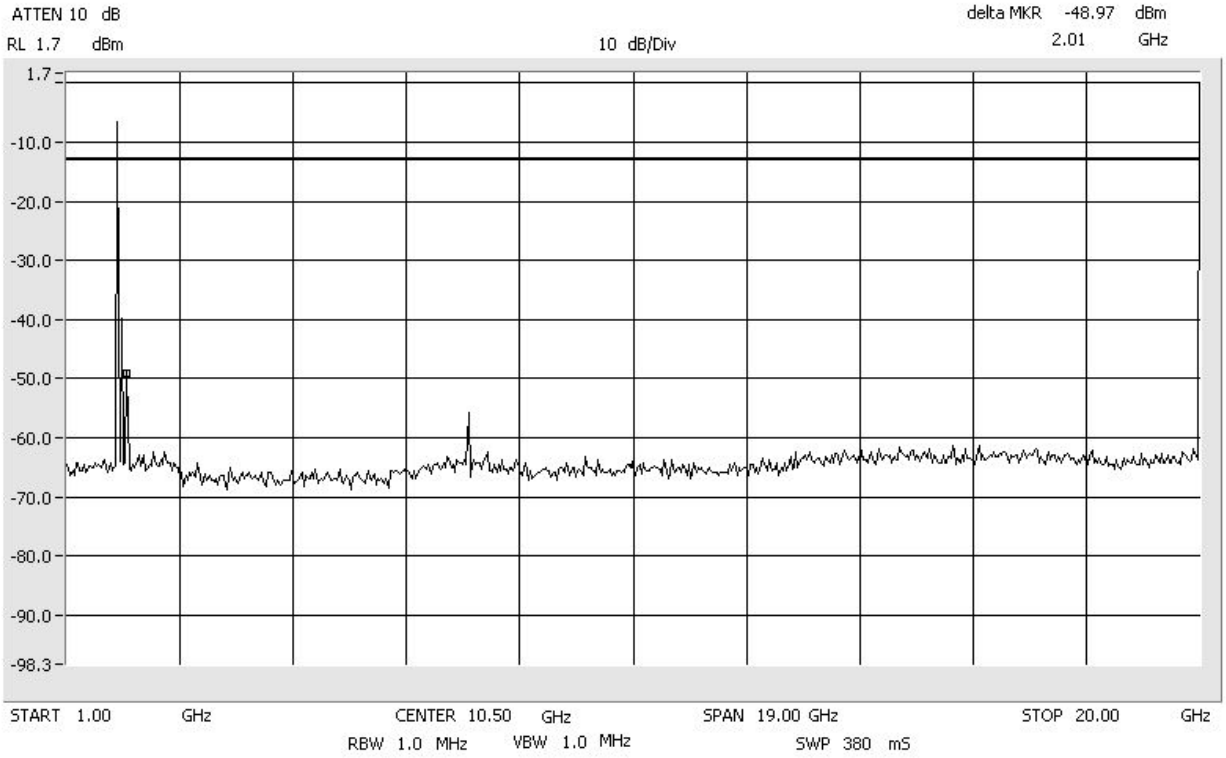


Intermodulation_Low TDMA_Low PCS

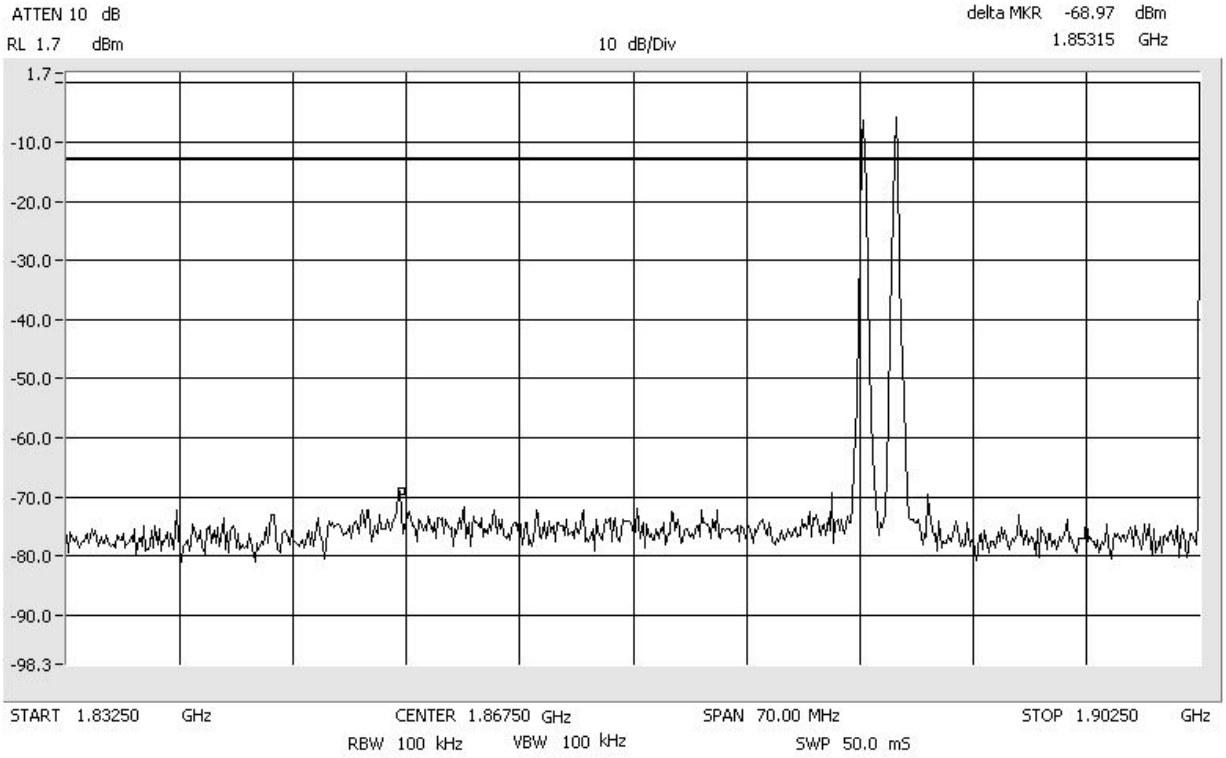
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz



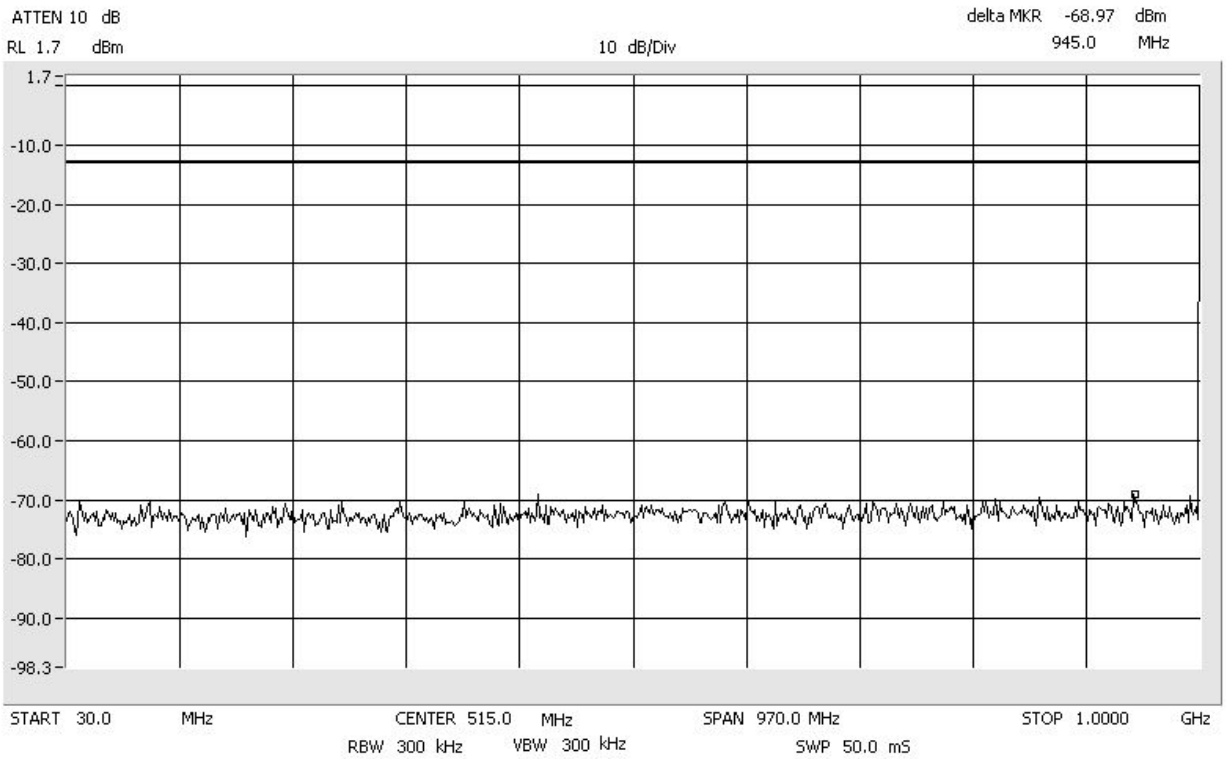
Intermodulation_Low TDMA_Low PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



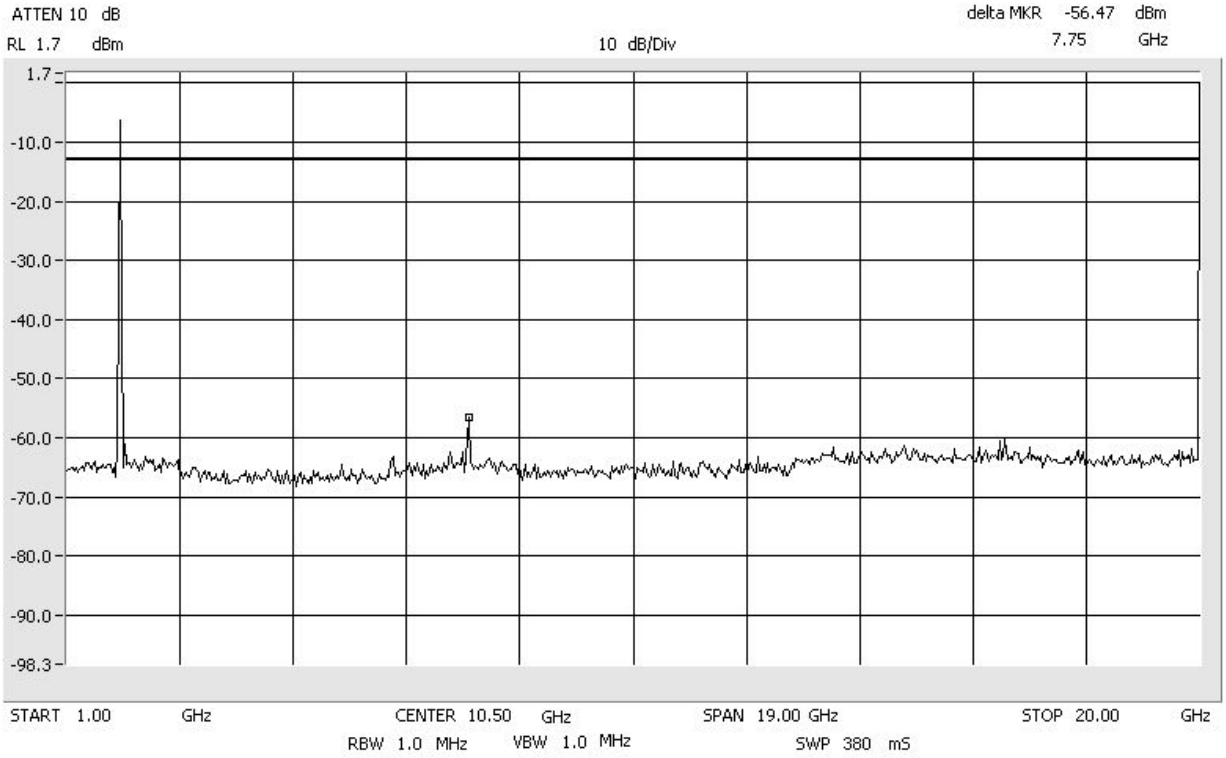
Intermodulation_Low TDMA_High PCS
Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz



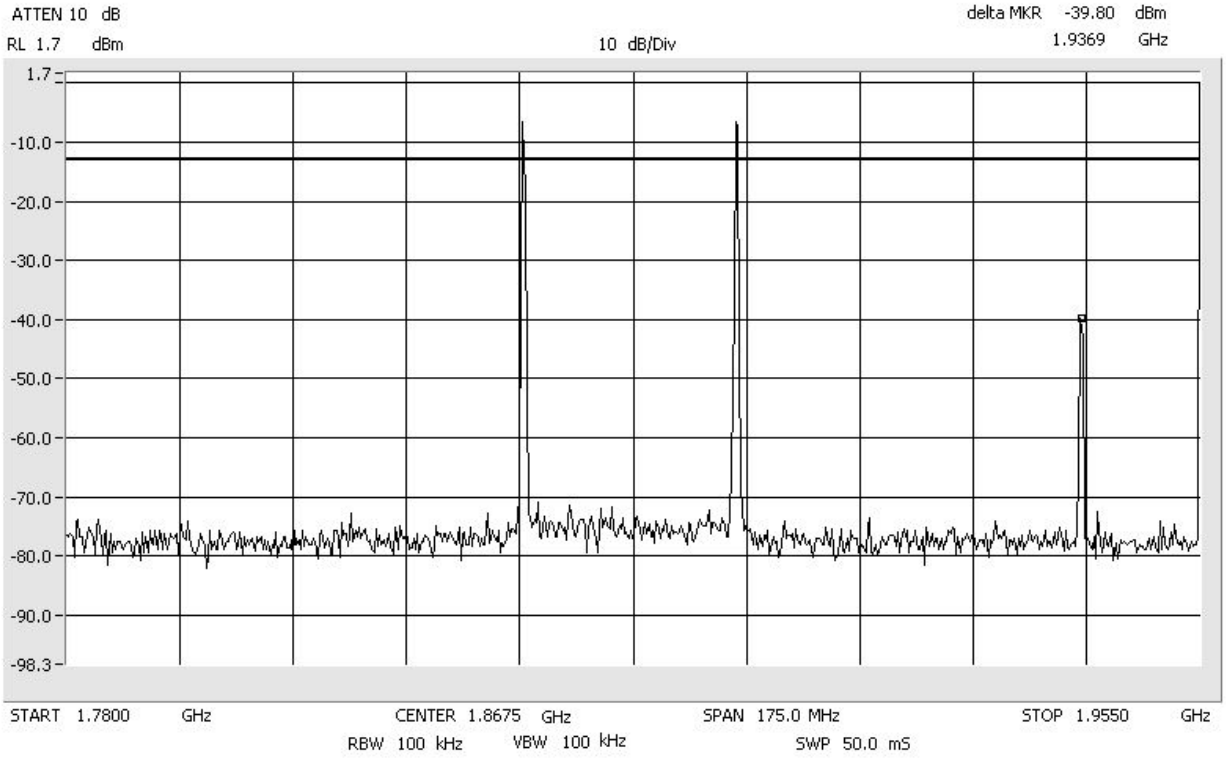
Intermodulation_Low TDMA_High PCS
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz



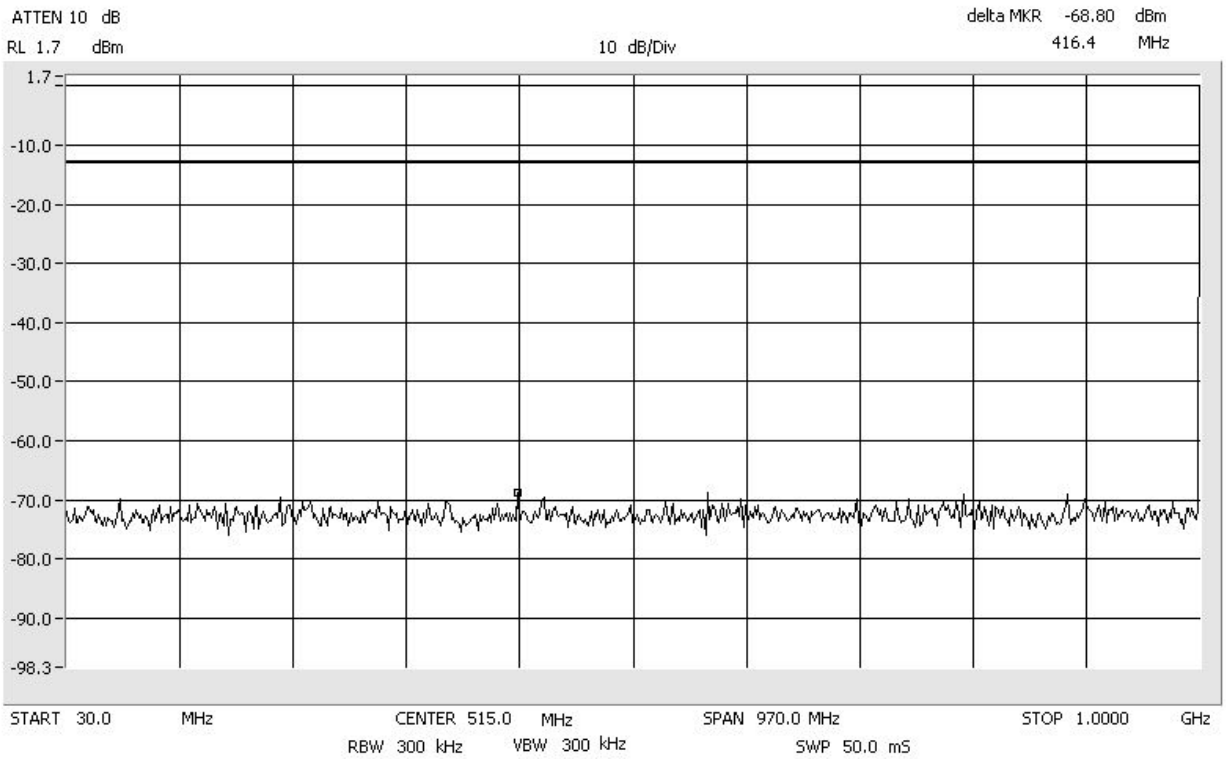
Intermodulation_Low TDMA_High PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



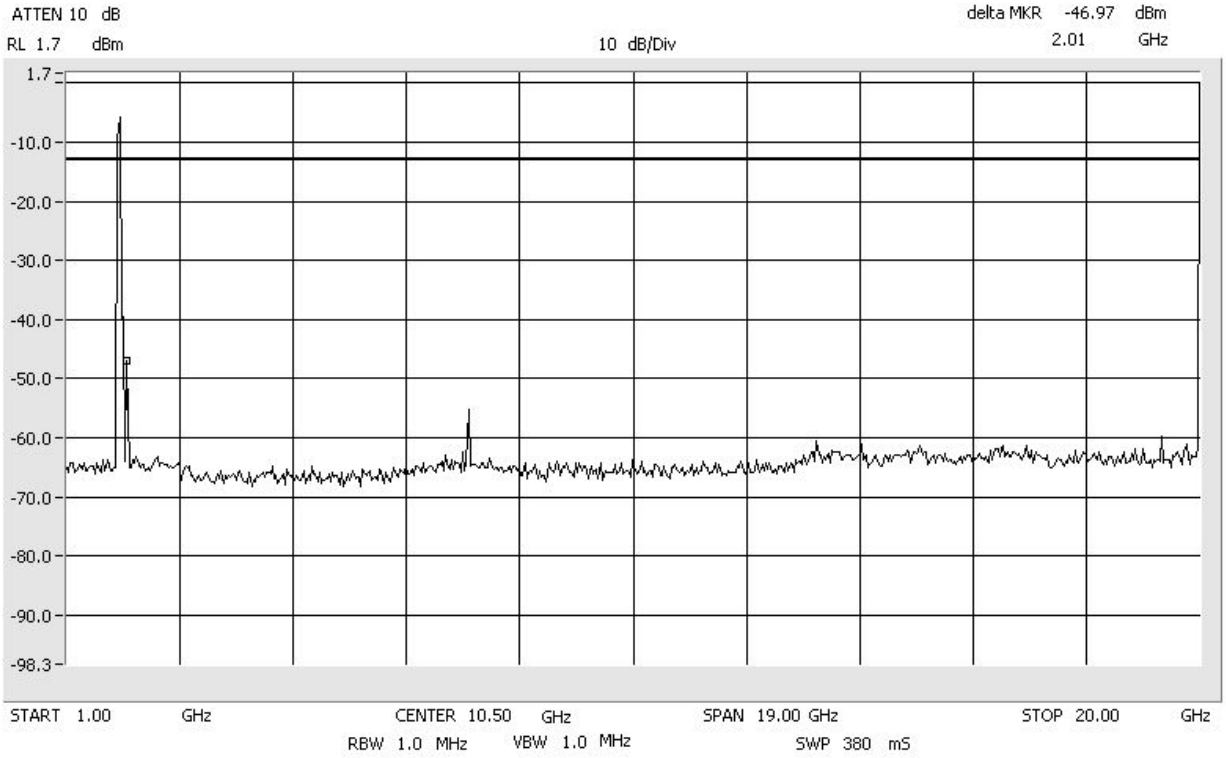
Intermodulation_Low TDMA_Apart PCS
Center: 1867.5 MHz Span: 175 MHz RBW/VBW: 100 kHz



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

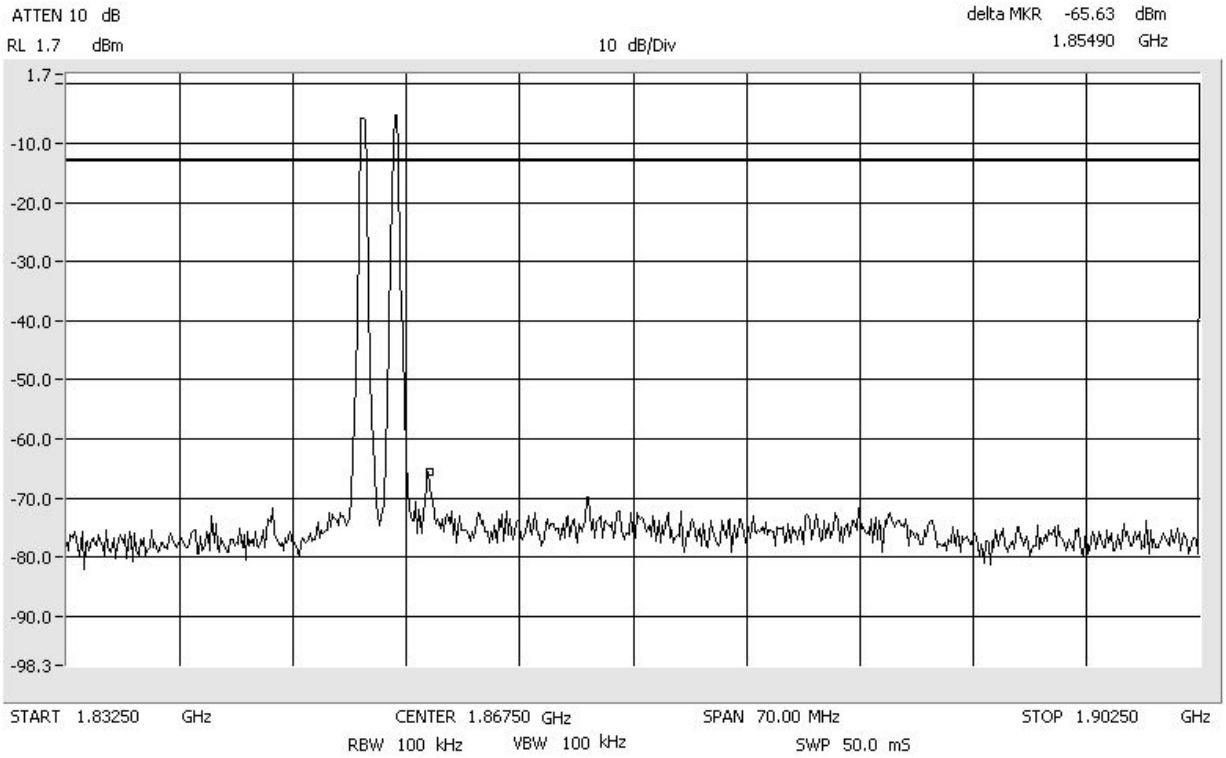


Intermodulation_Low TDMA_Apart PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



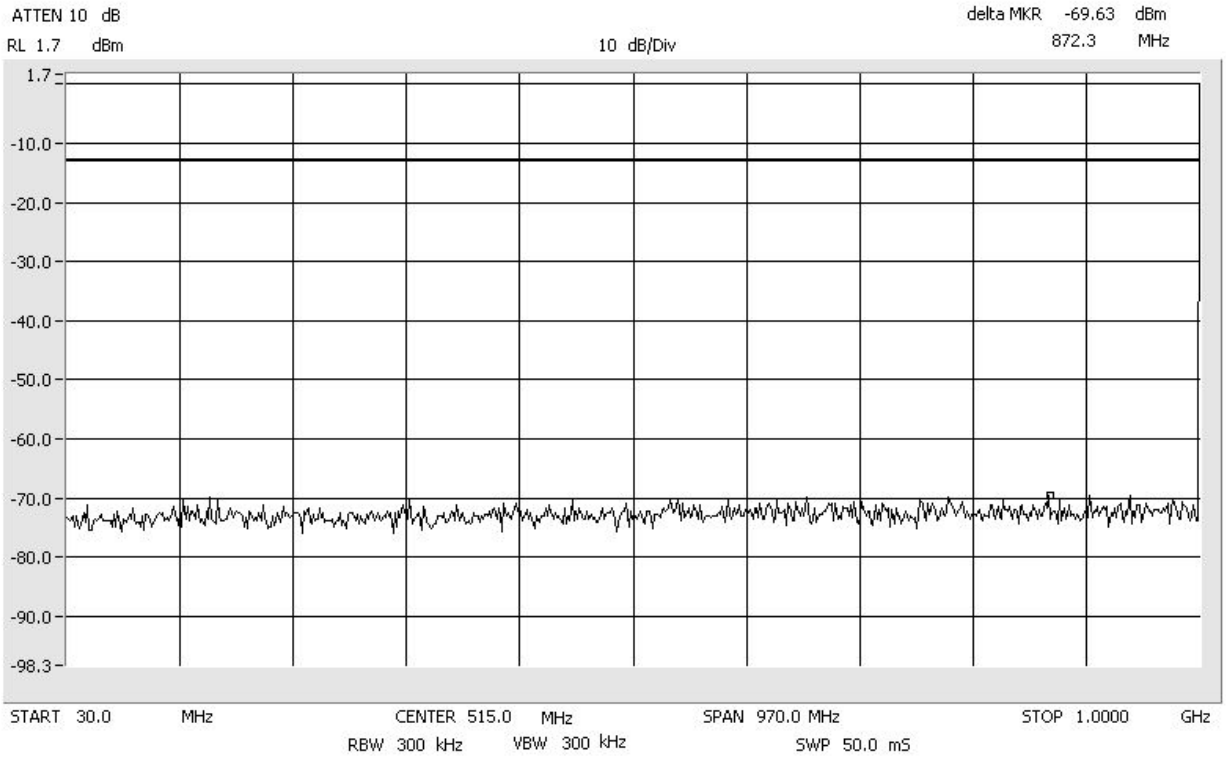
Intermodulation_LowGSM_Low PCS

Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

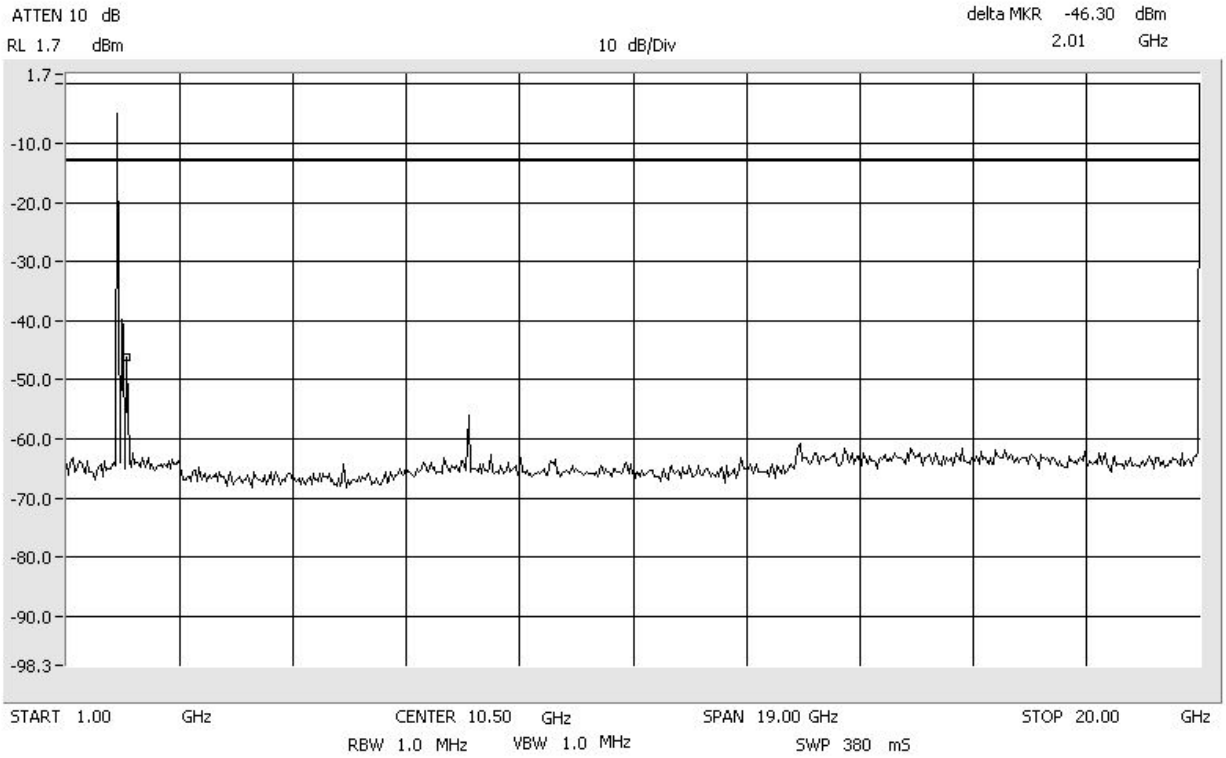


Intermodulation_LowGSM_Low PCS

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

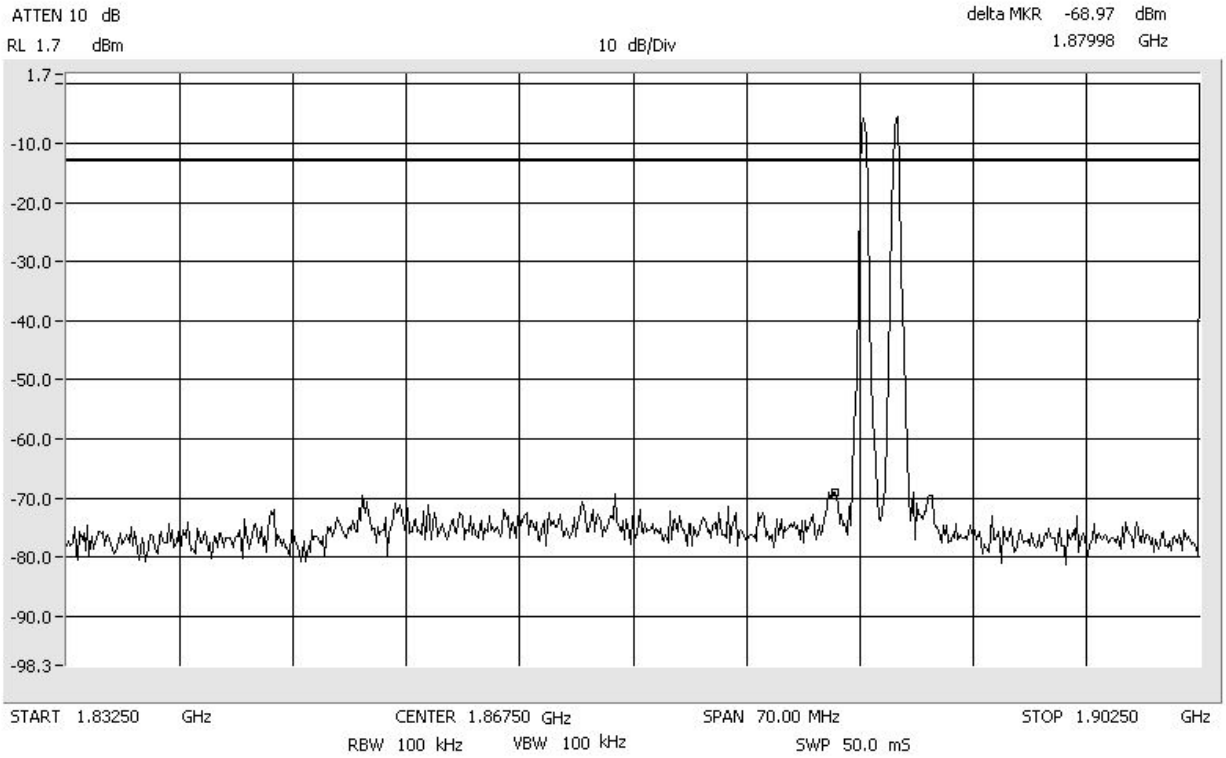


Intermodulation_LowGSM_Low PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



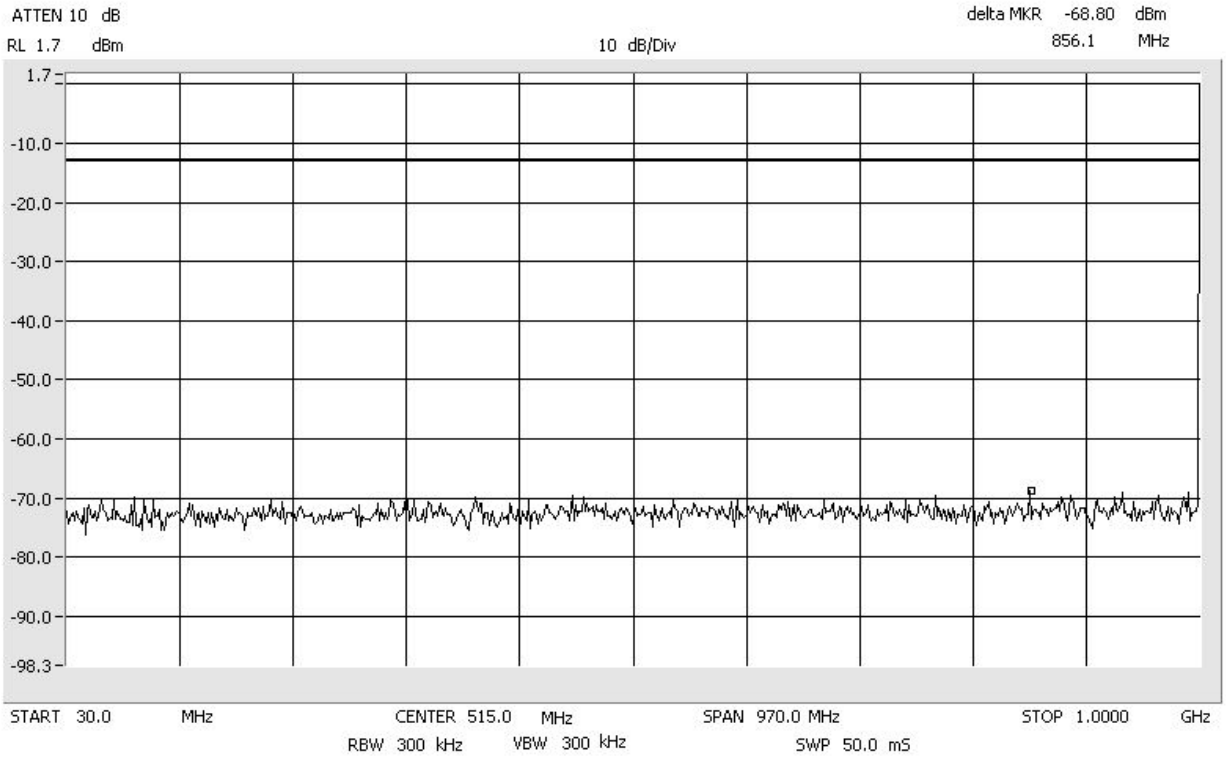
Intermodulation_LowGSM_High PCS

Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

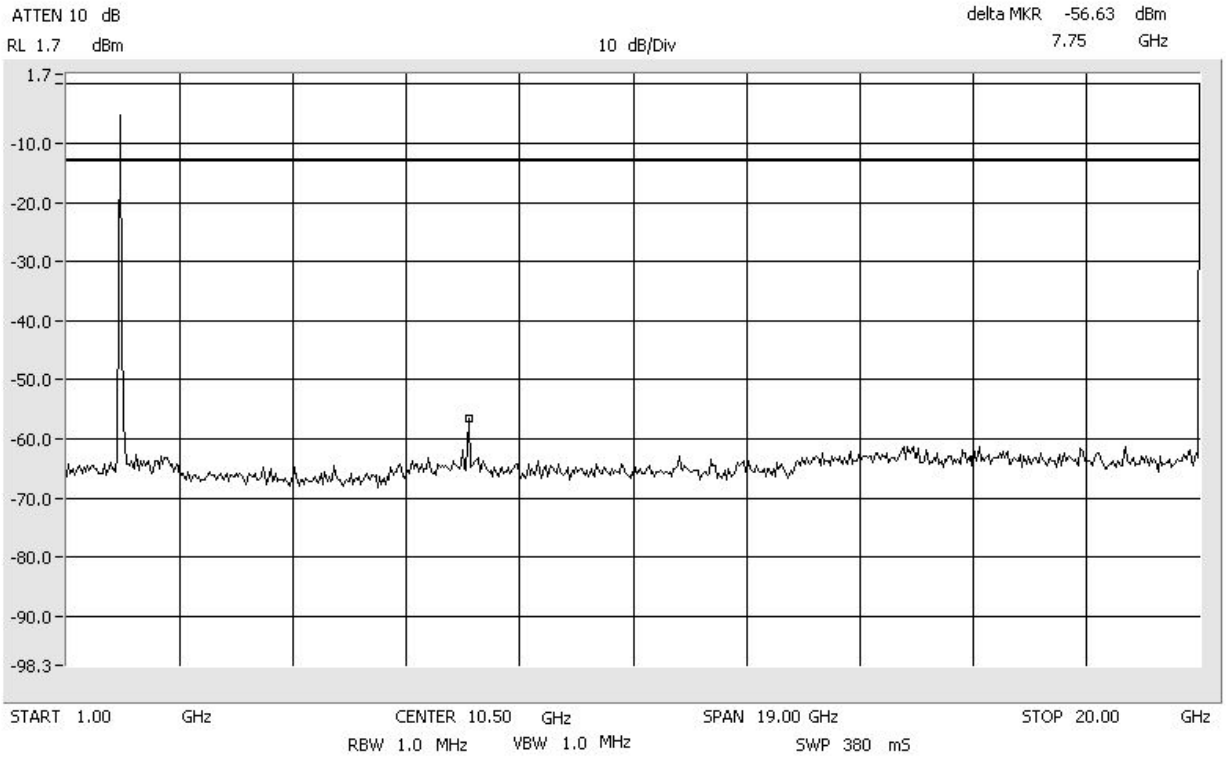


Intermodulation_LowGSM_High PCS

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

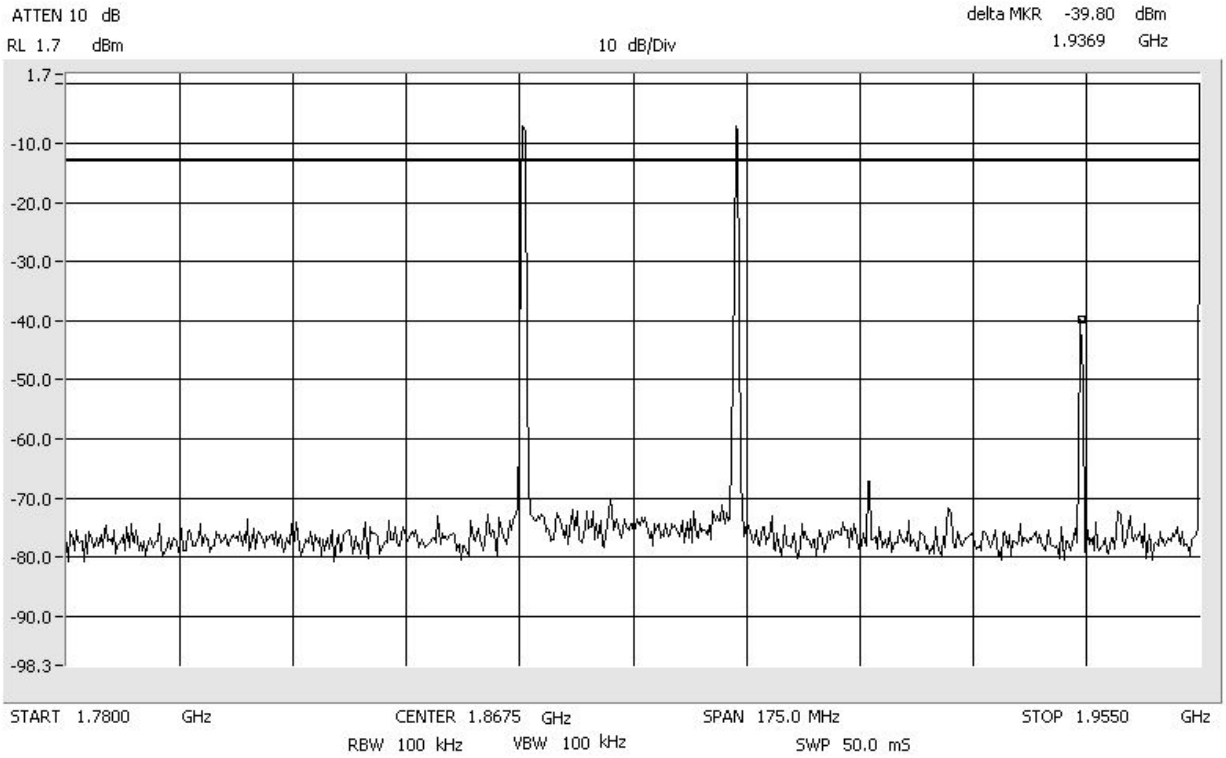


Intermodulation_LowGSM_High PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



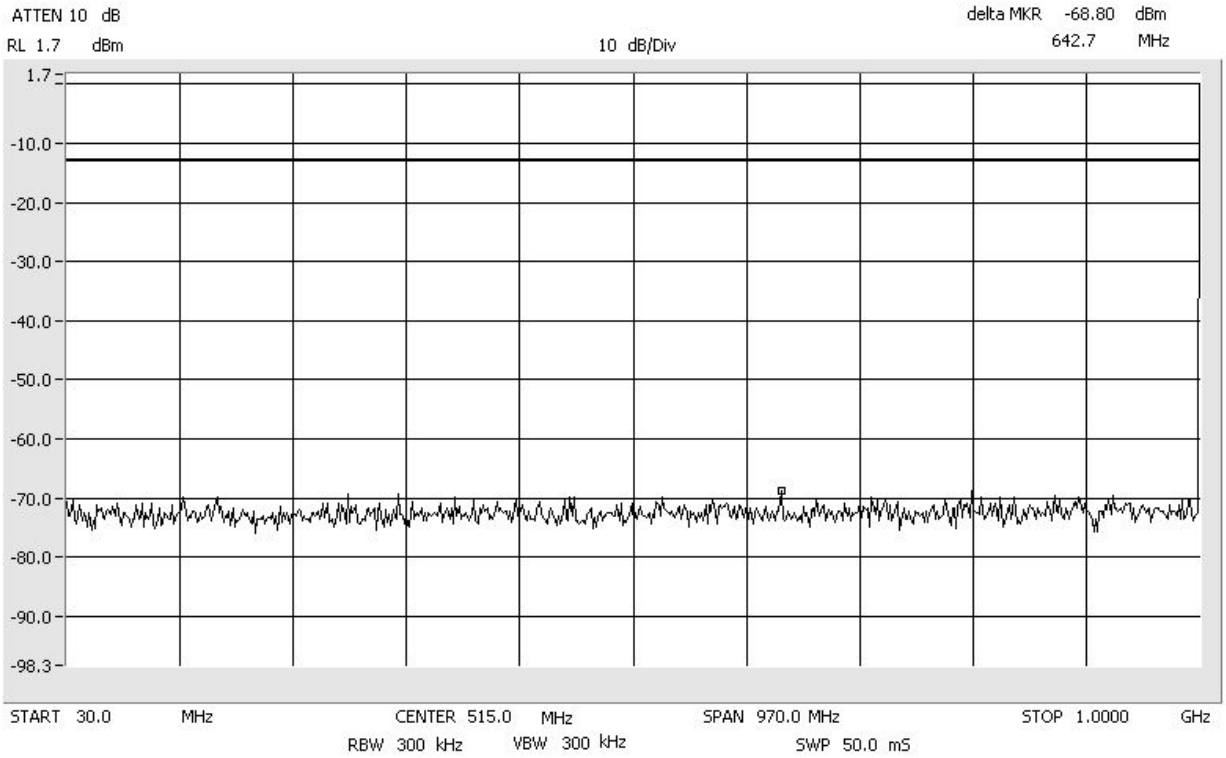
Intermodulation_LowGSM_Apart PCS

Center: 1867.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

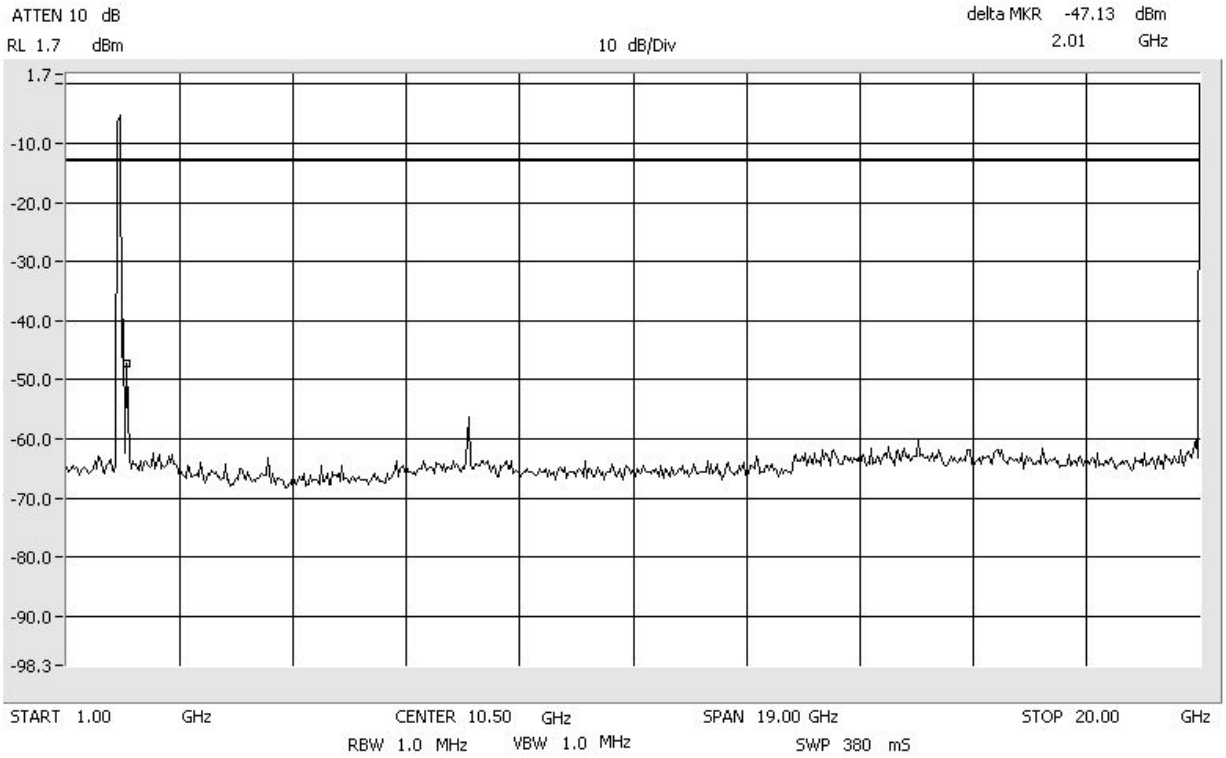


Intermodulation_LowGSM_Apart PCS

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

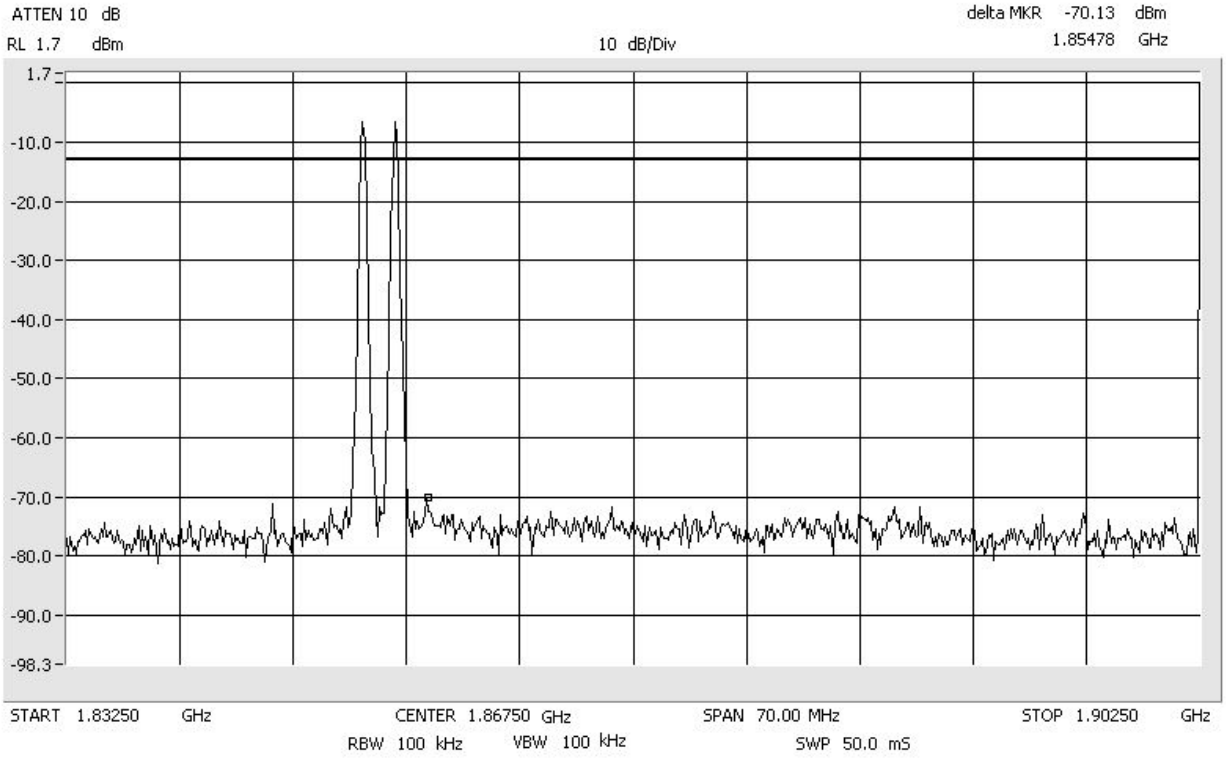


Intermodulation_LowGSM_Apart PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



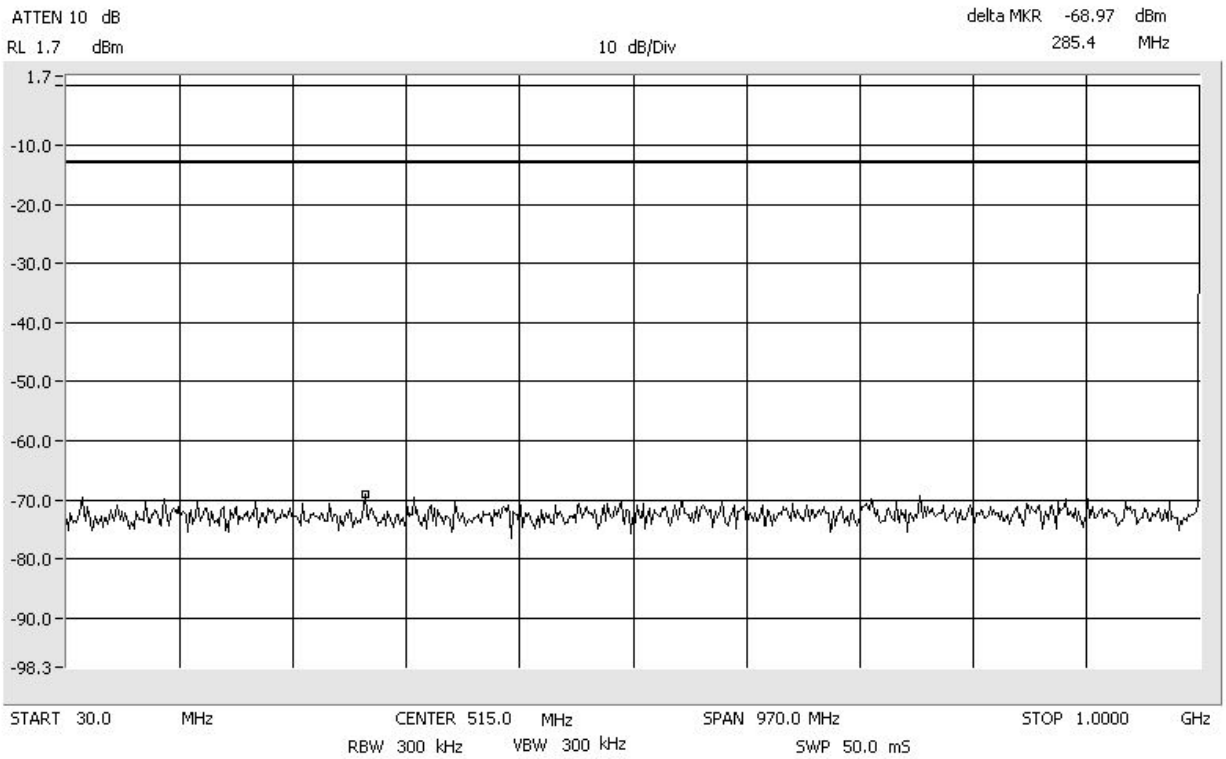
Intermodulation_LowEDGE_Low PCS

Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

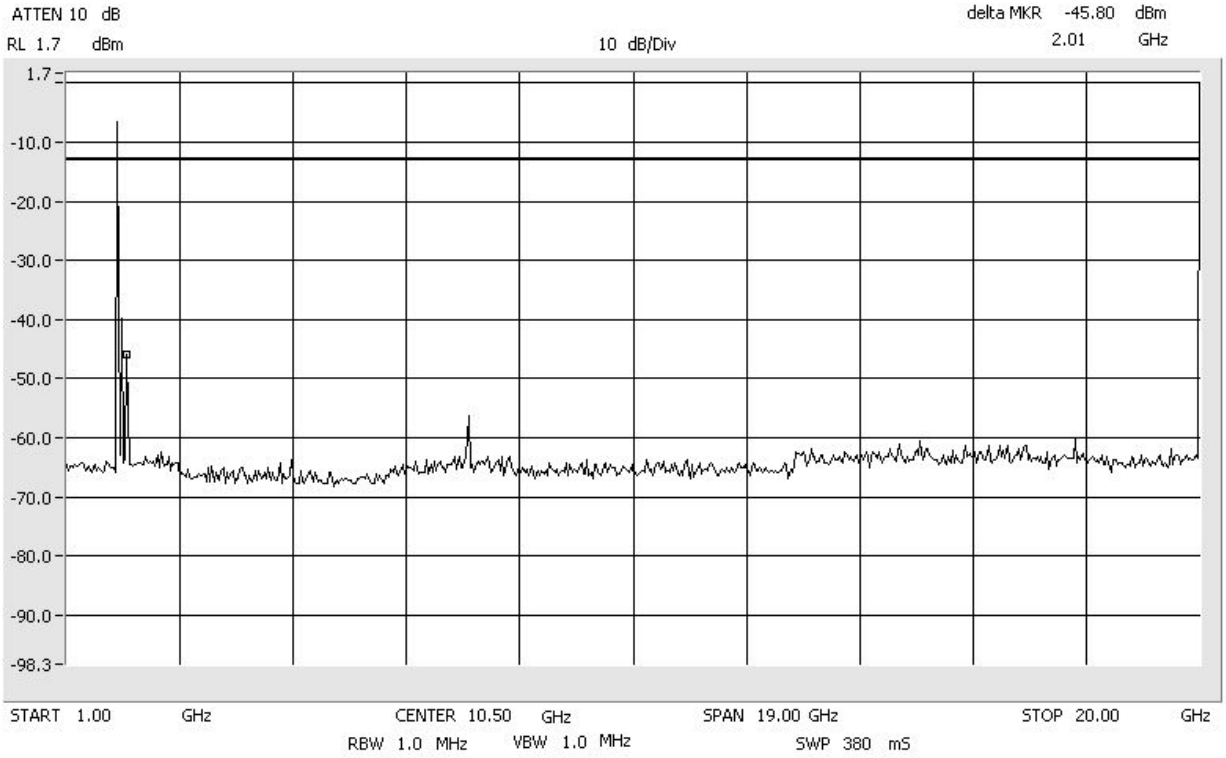


Intermodulation_LowEDGE_Low PCS

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

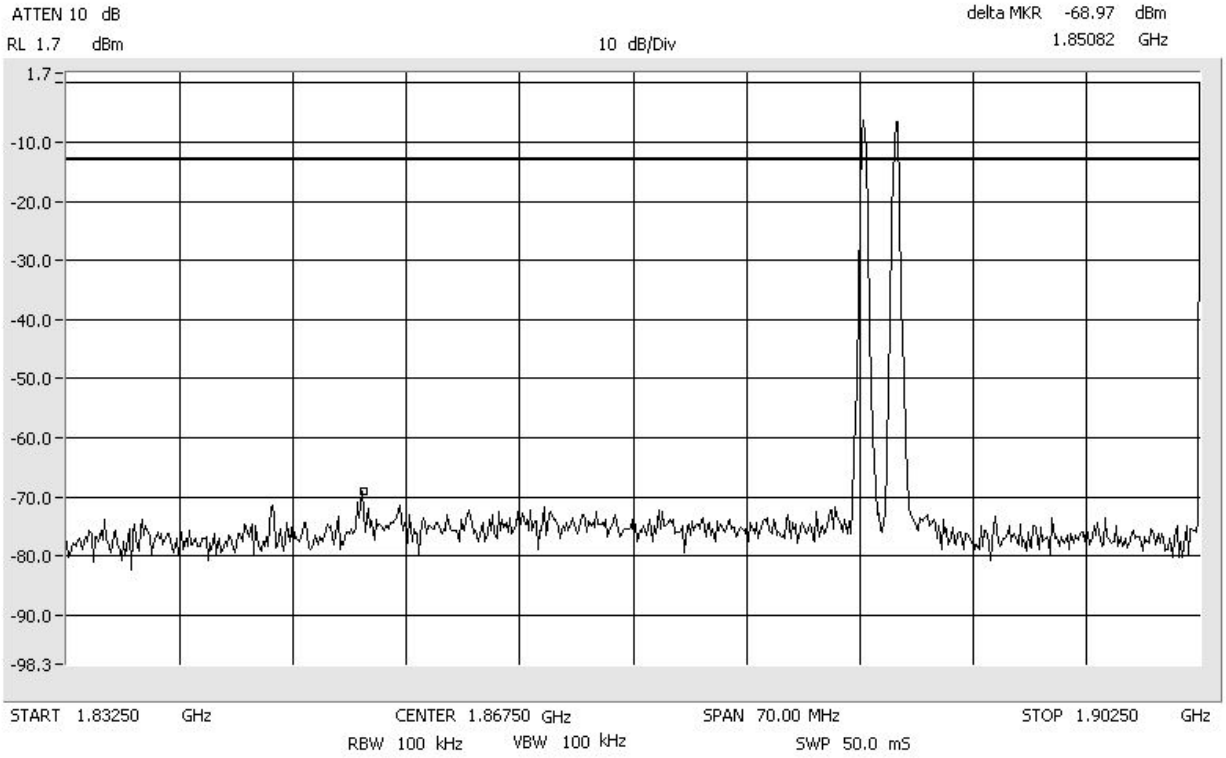


Intermodulation_LowEDGE_Low PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



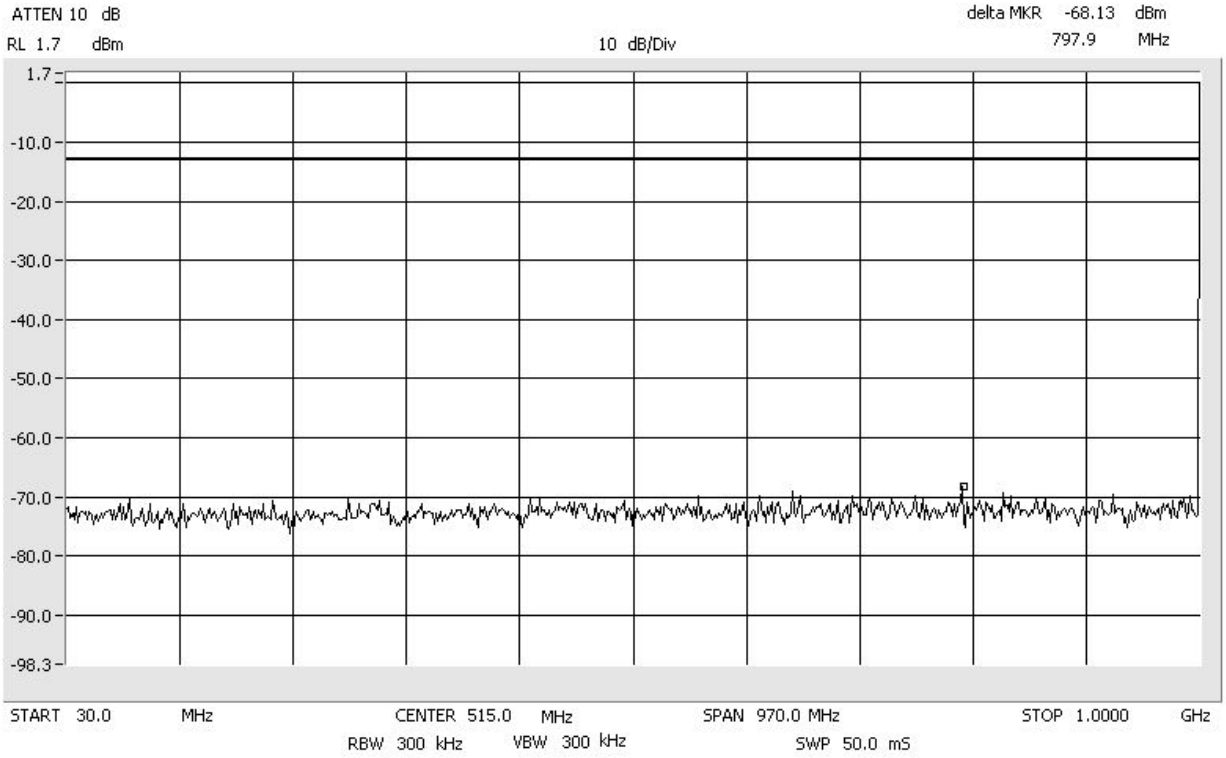
Intermodulation_LowEDGE_High PCS

Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz

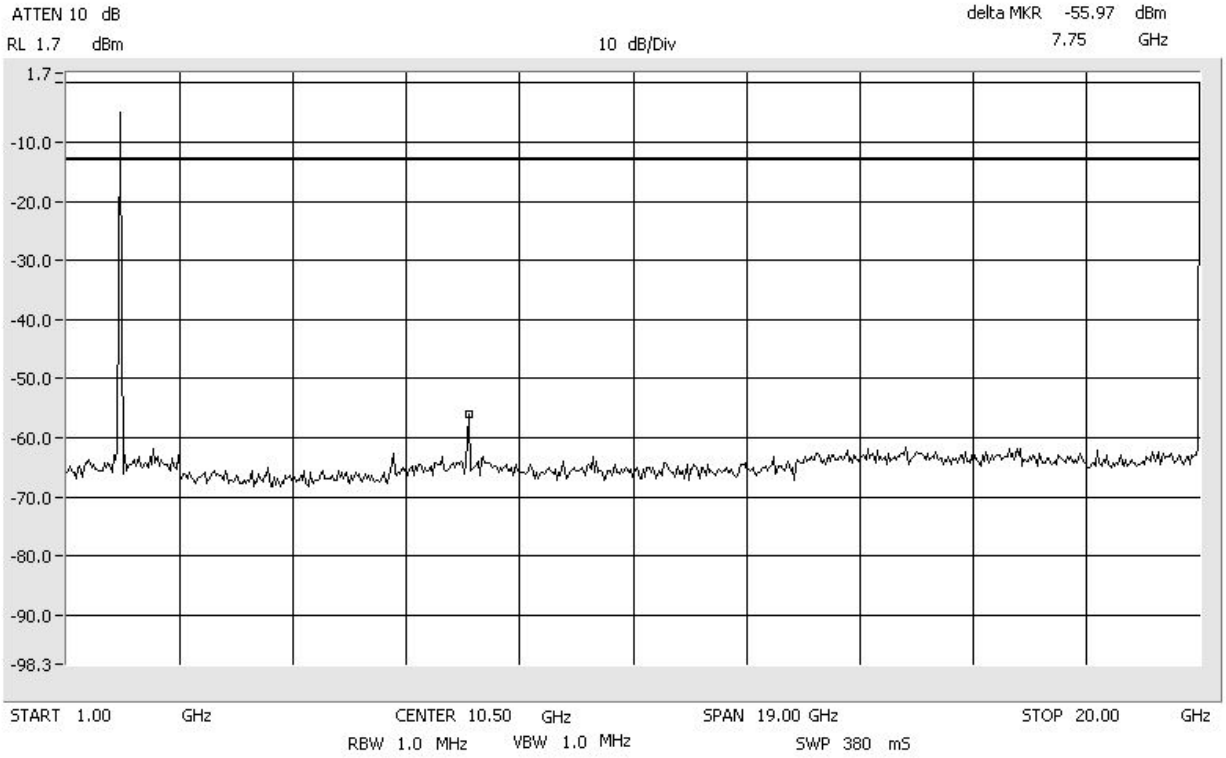


Intermodulation_LowEDGE_High PCS

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

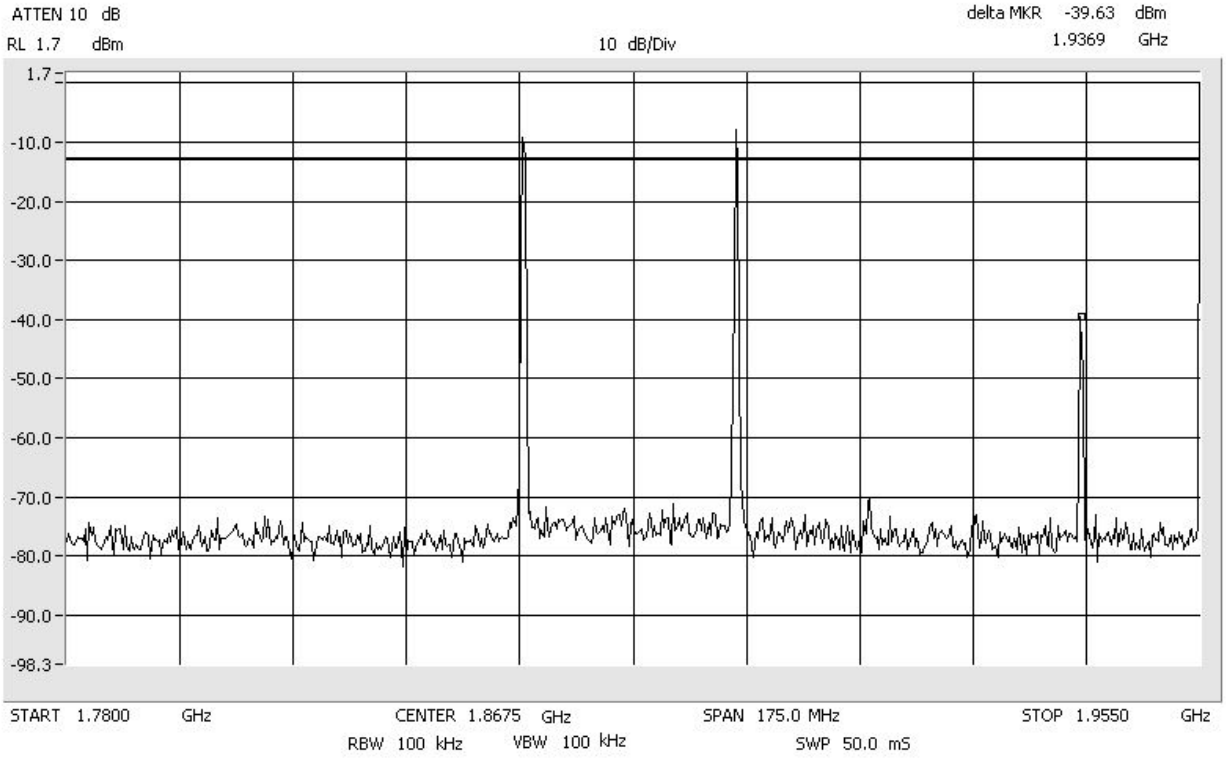


Intermodulation_LowEDGE_High PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



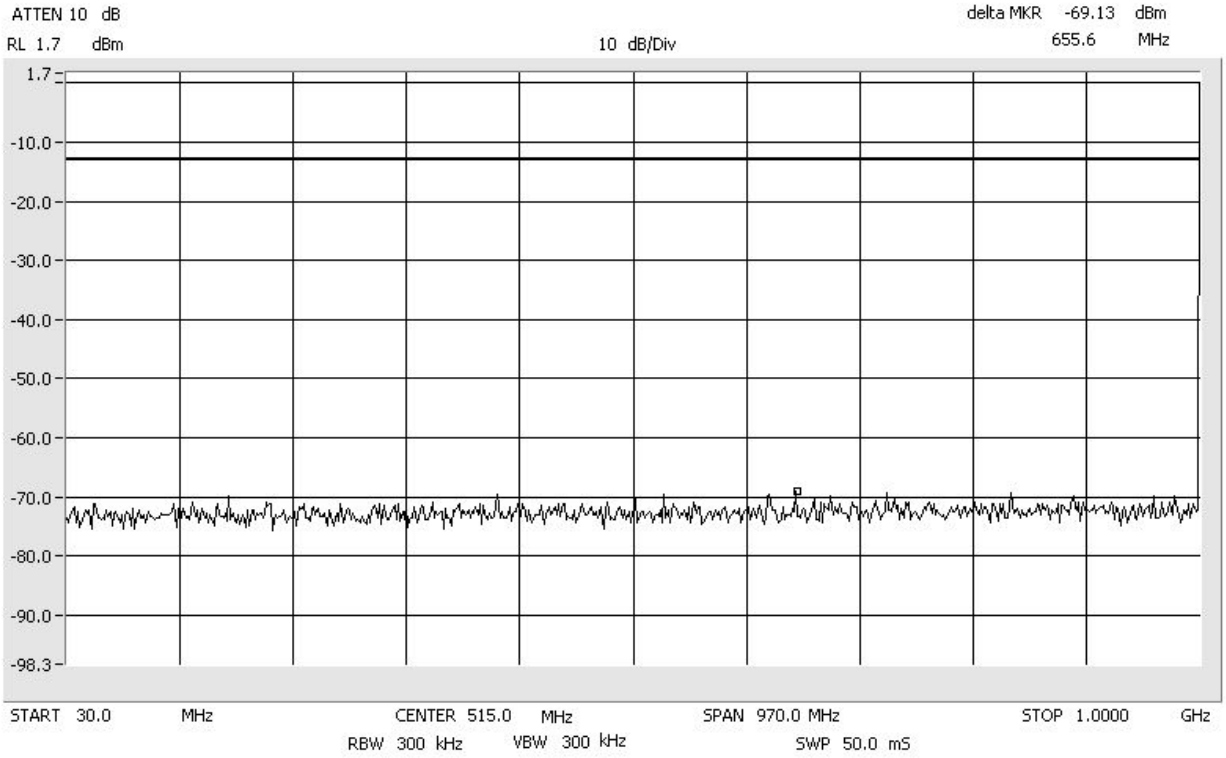
Intermodulation_LowEDGE_Apart PCS

Center: 1867.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

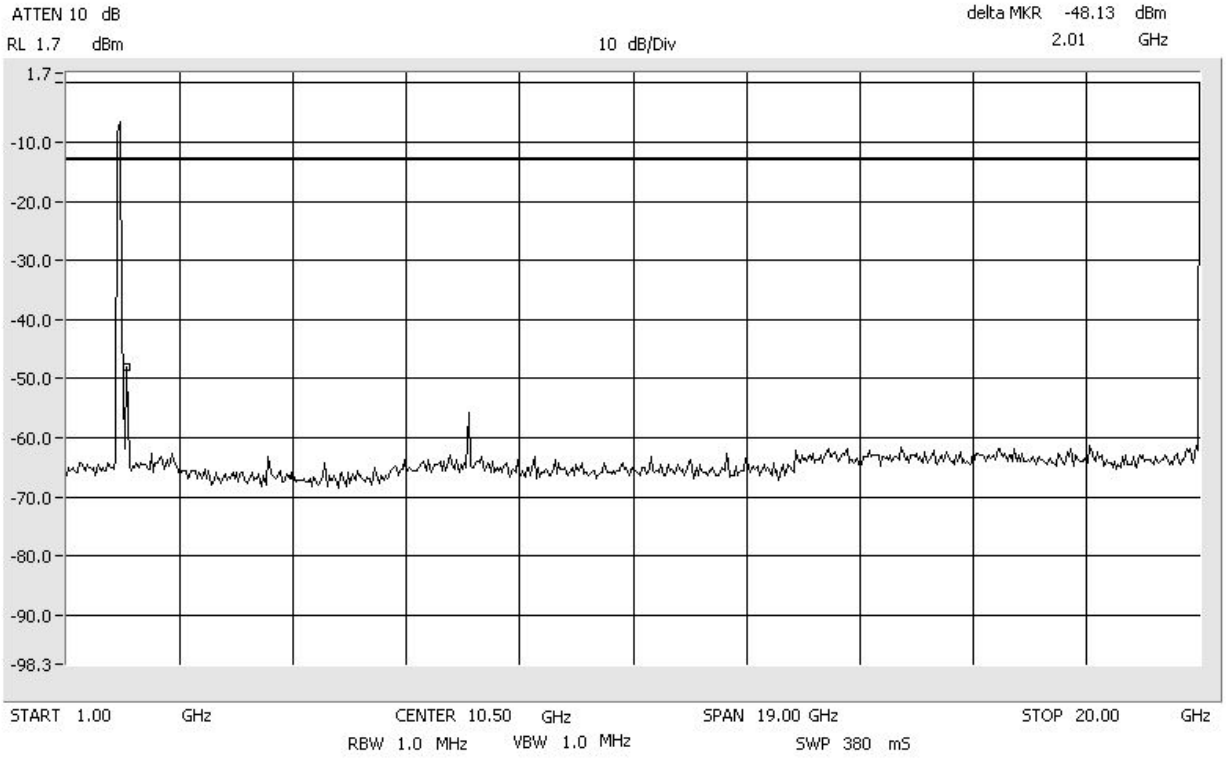


Intermodulation_LowEDGE_Apart PCS

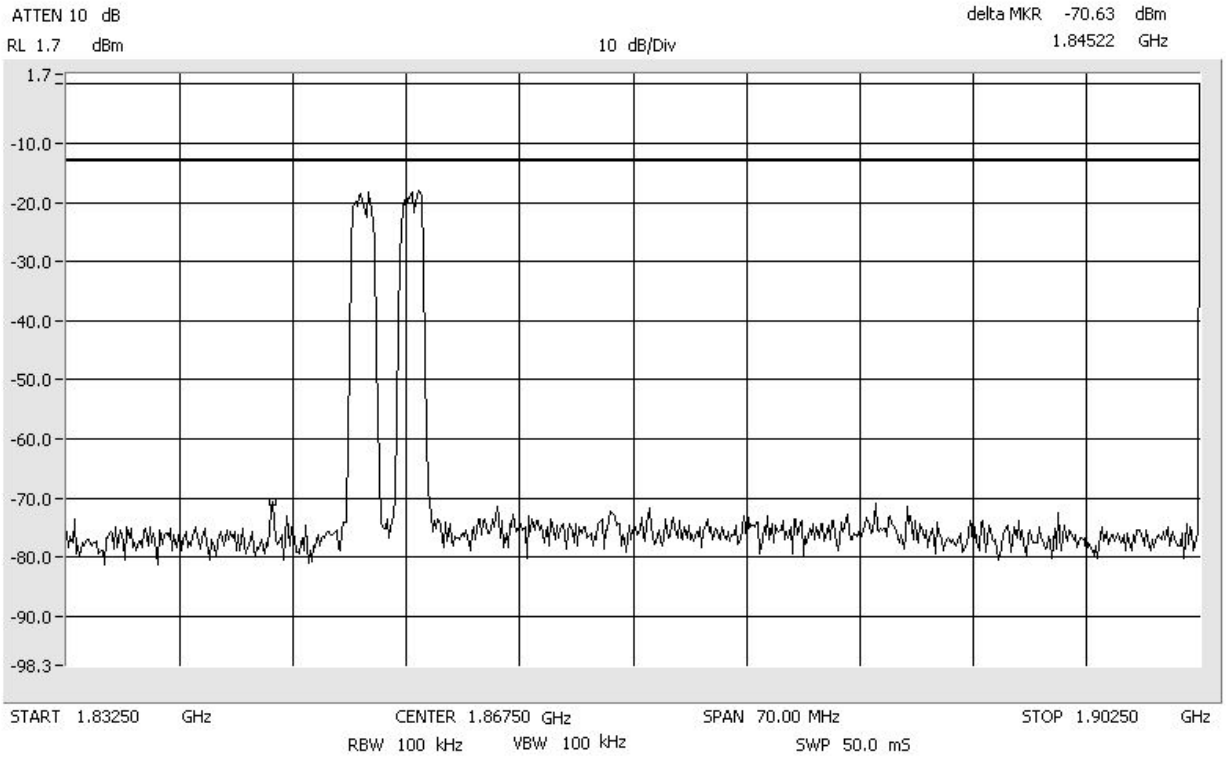
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz



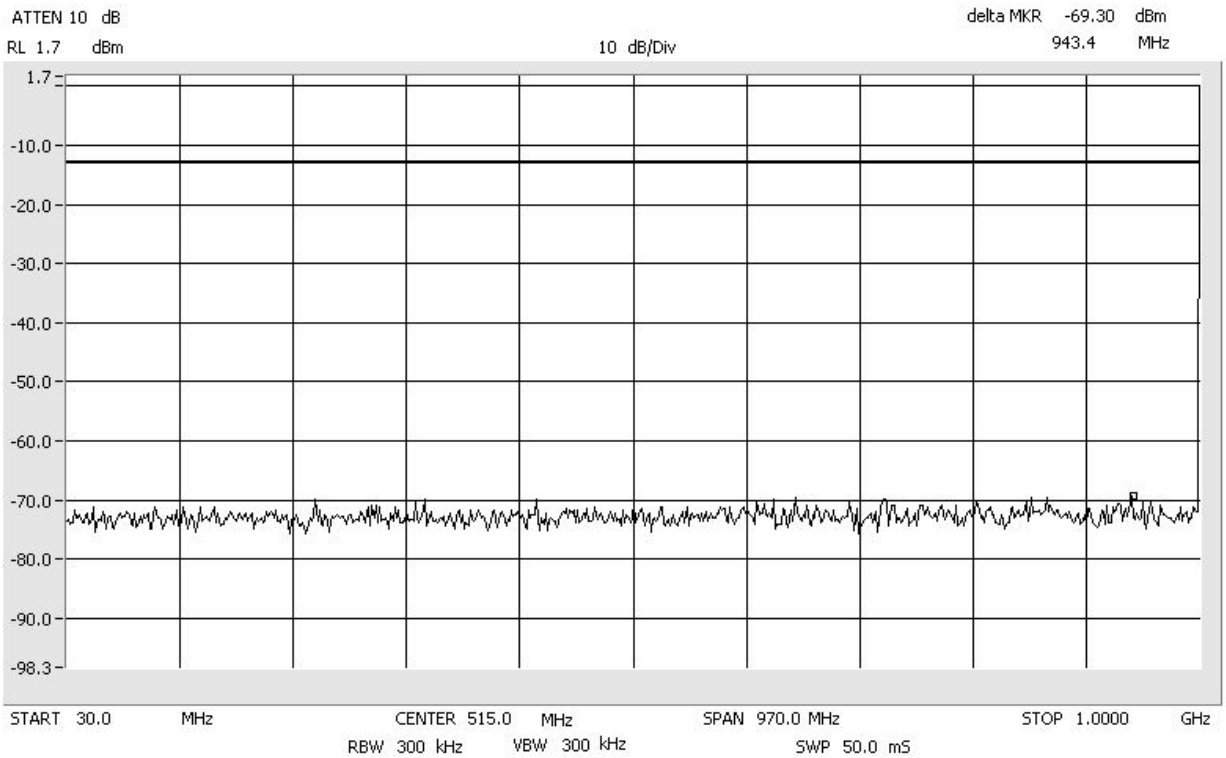
Intermodulation_LowEDGE_Apart PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



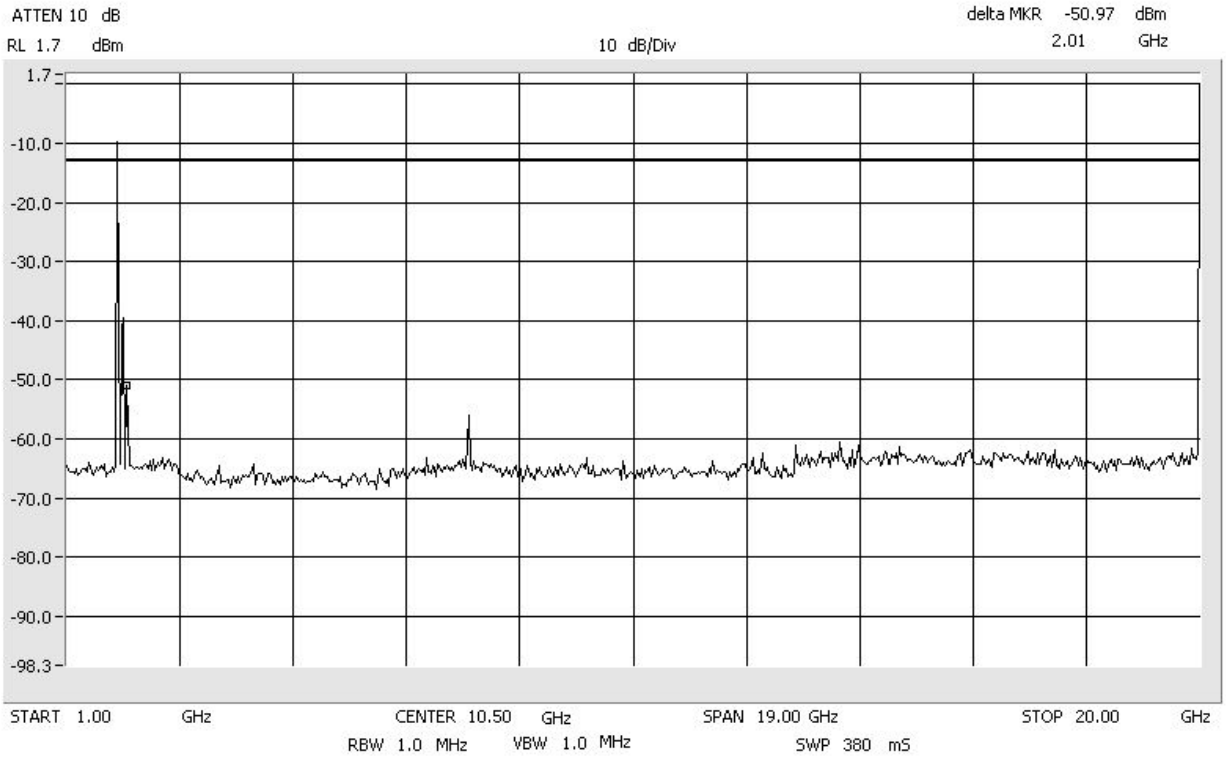
Intermodulation_LowCDMA_Low PCS
Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz



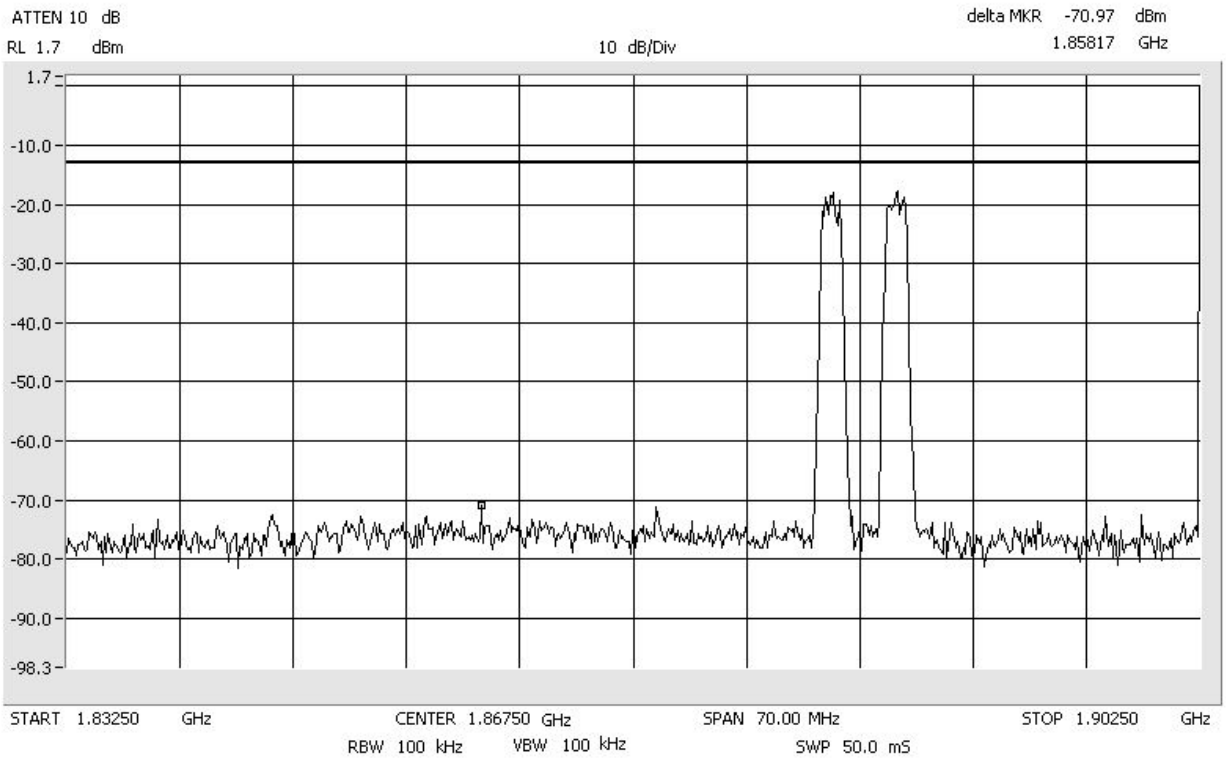
Intermodulation_LowCDMA_Low PCS
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz



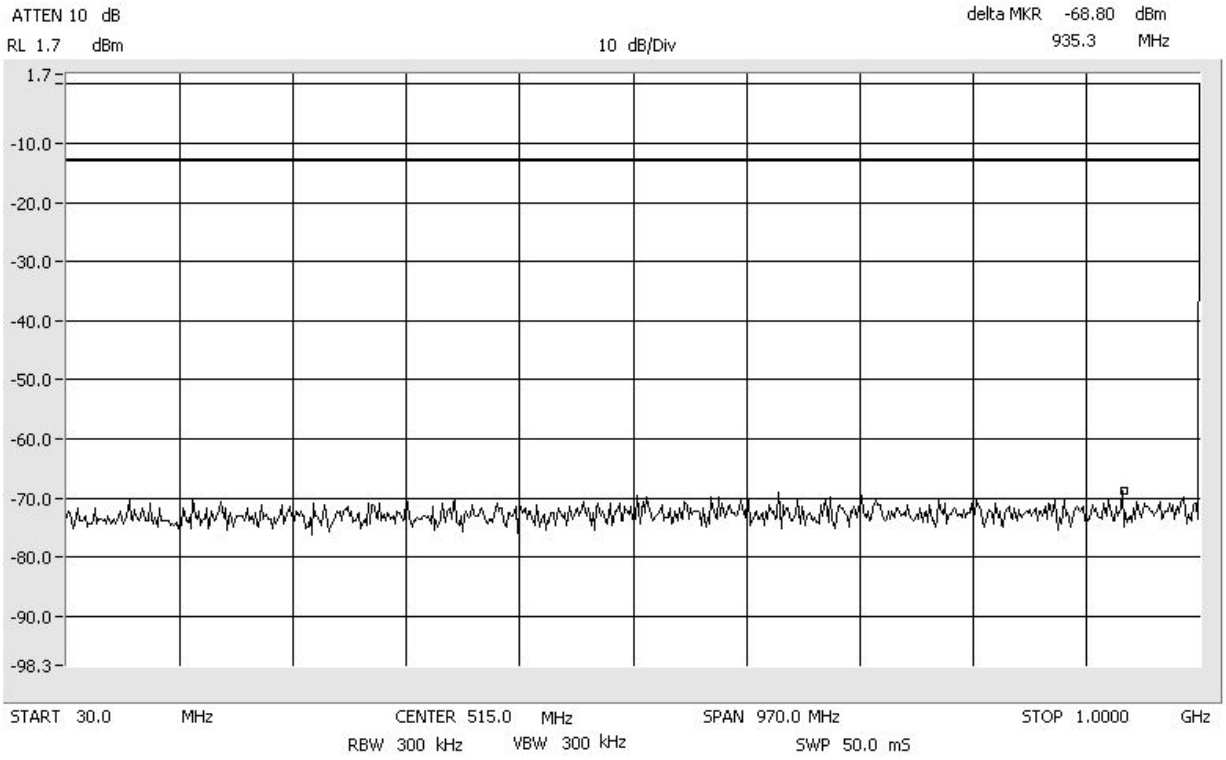
Intermodulation_LowCDMA_Low PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



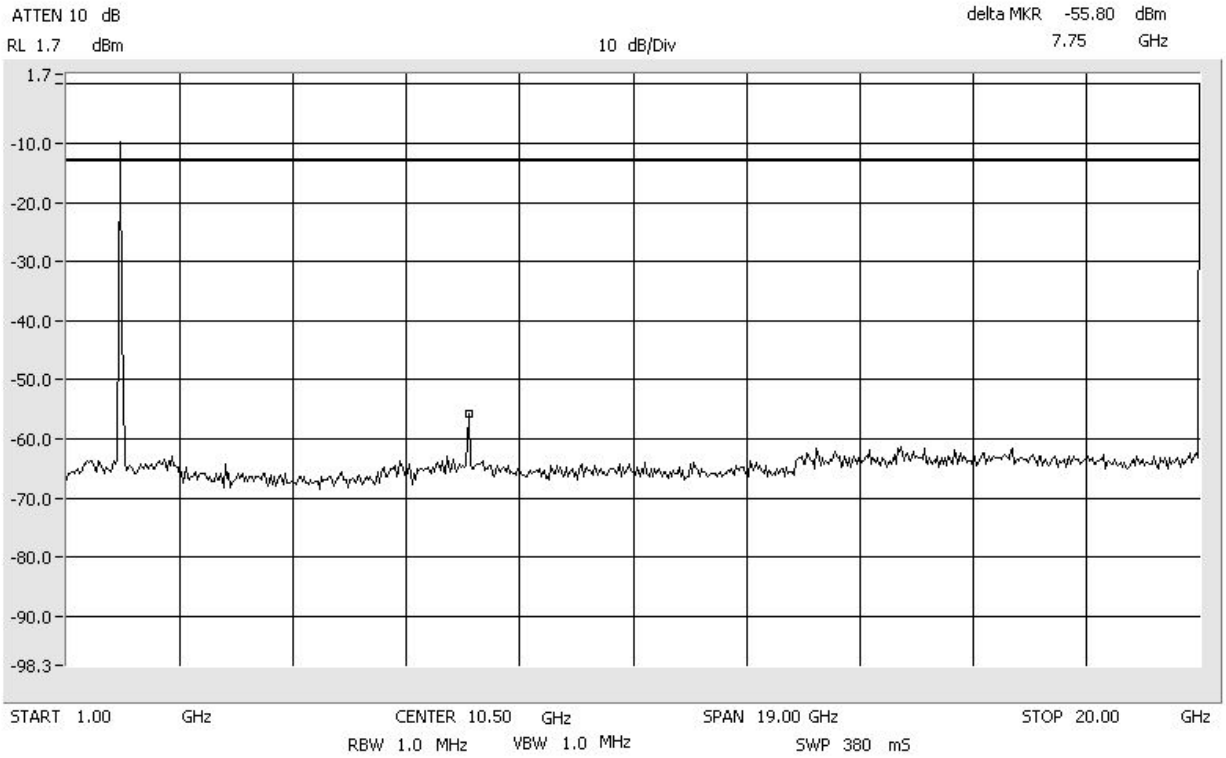
Intermodulation_LowCDMA_High PCS
Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz



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

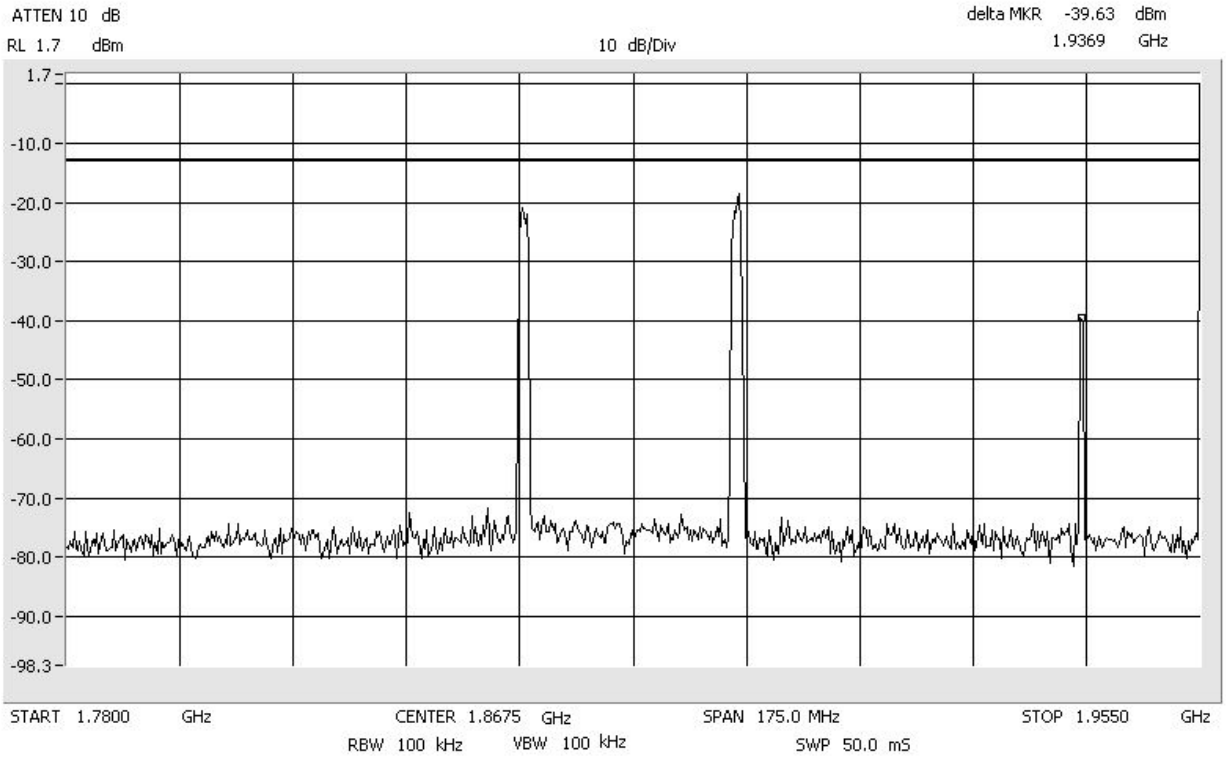


Intermodulation_LowCDMA_High PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



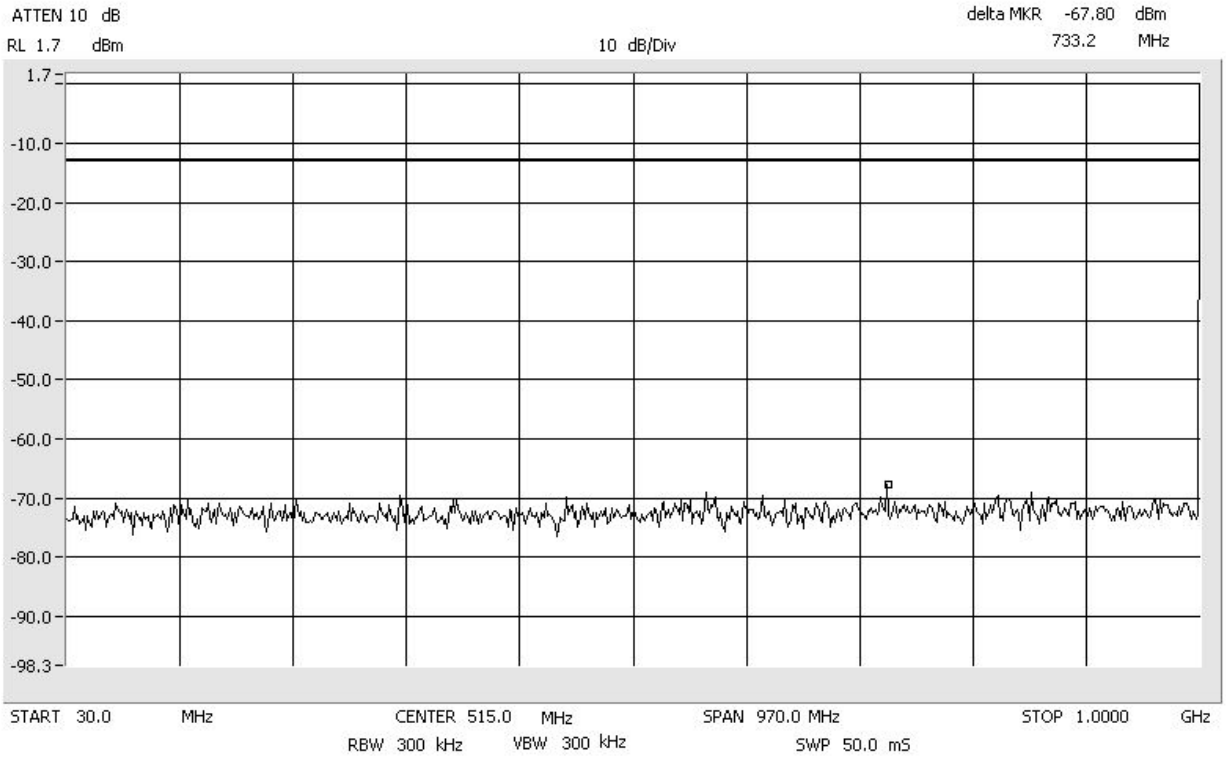
Intermodulation_LowCDMA_Apart PCS

Center: 1867.5 MHz Span: 175 MHz RBW/VBW: 100 kHz

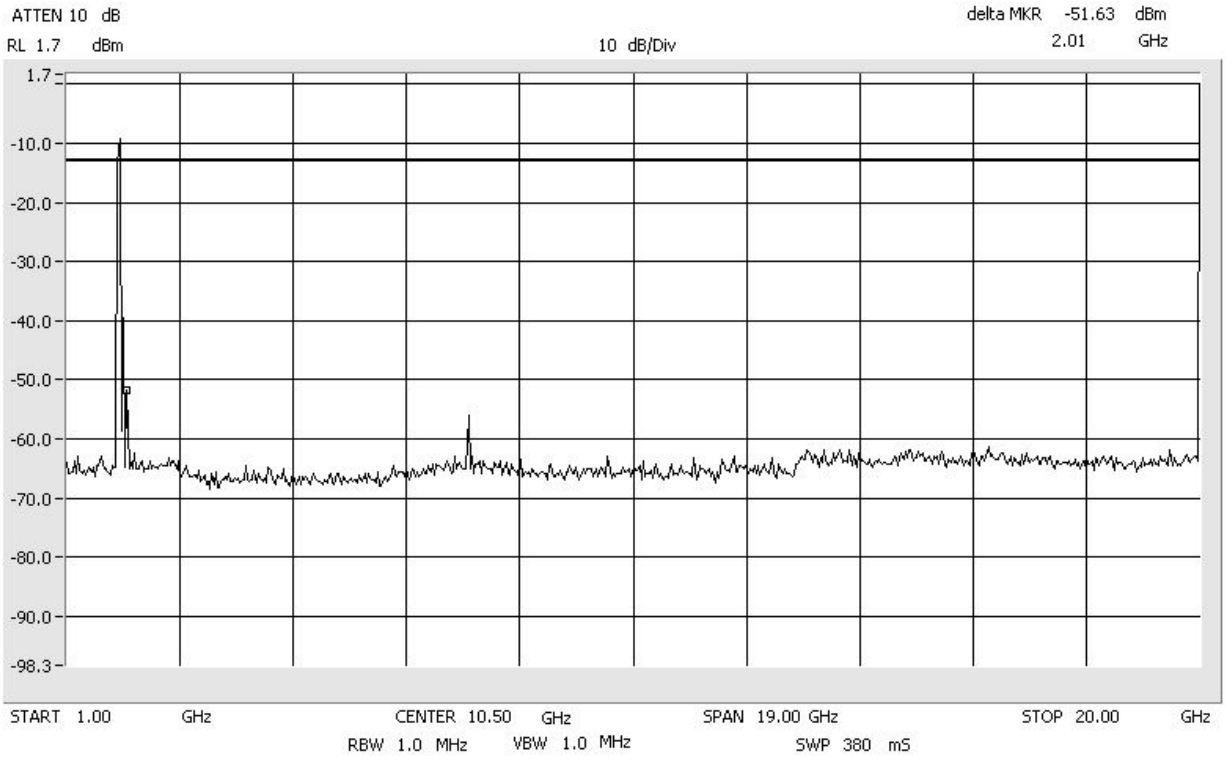


Intermodulation_LowCDMA_Apart PCS

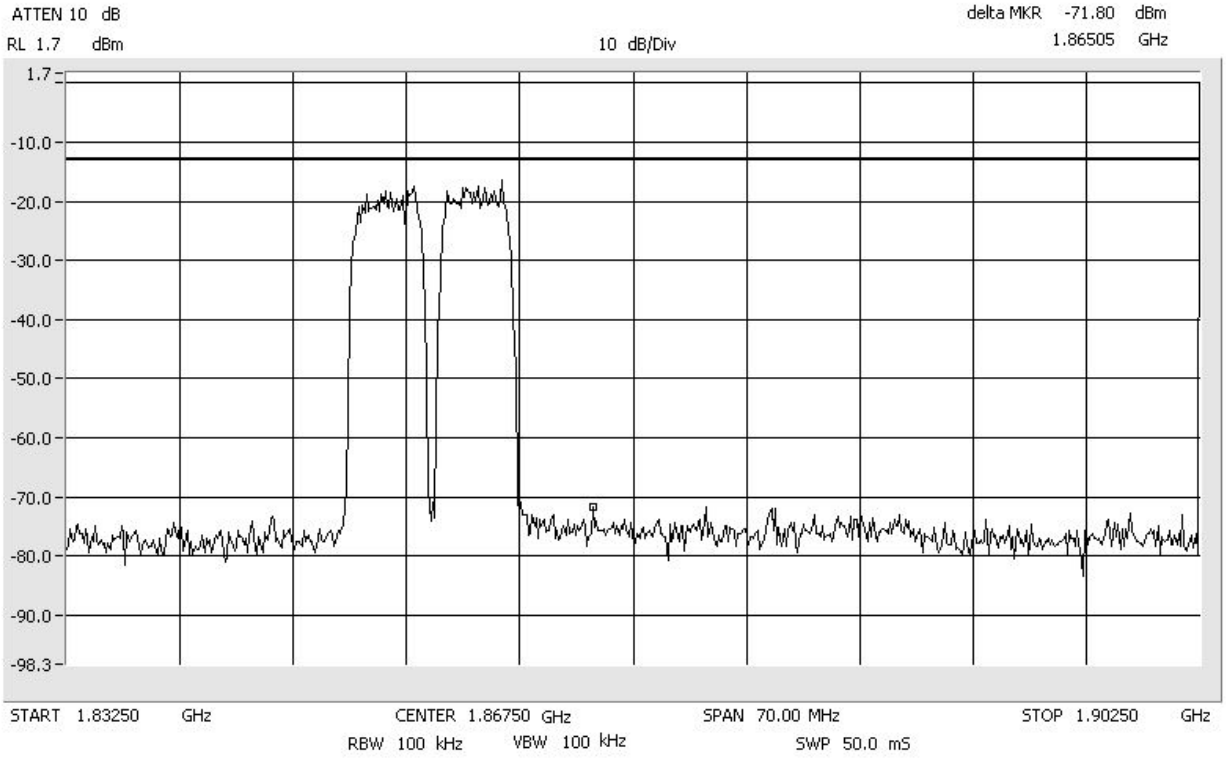
Span: 30 MHz to 1 GHz RBW/VBW: 300 kHz



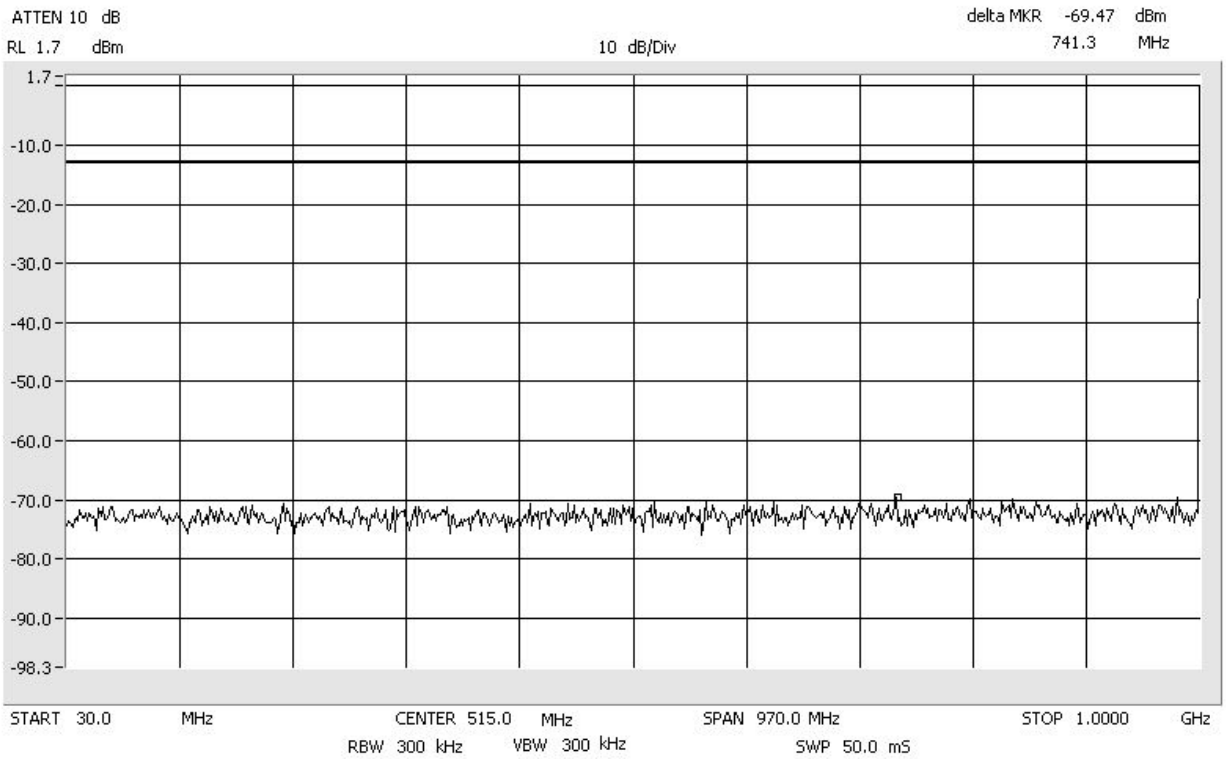
Intermodulation_LowCDMA_Apart PCS
Span: 1 GHz to 20 GHz RBW/VBW: 1 MHz



Intermodulation_LowWCDMA_Low PCS
Center: 1867.5 MHz Span: 70 MHz RBW/VBW: 100 kHz



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



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