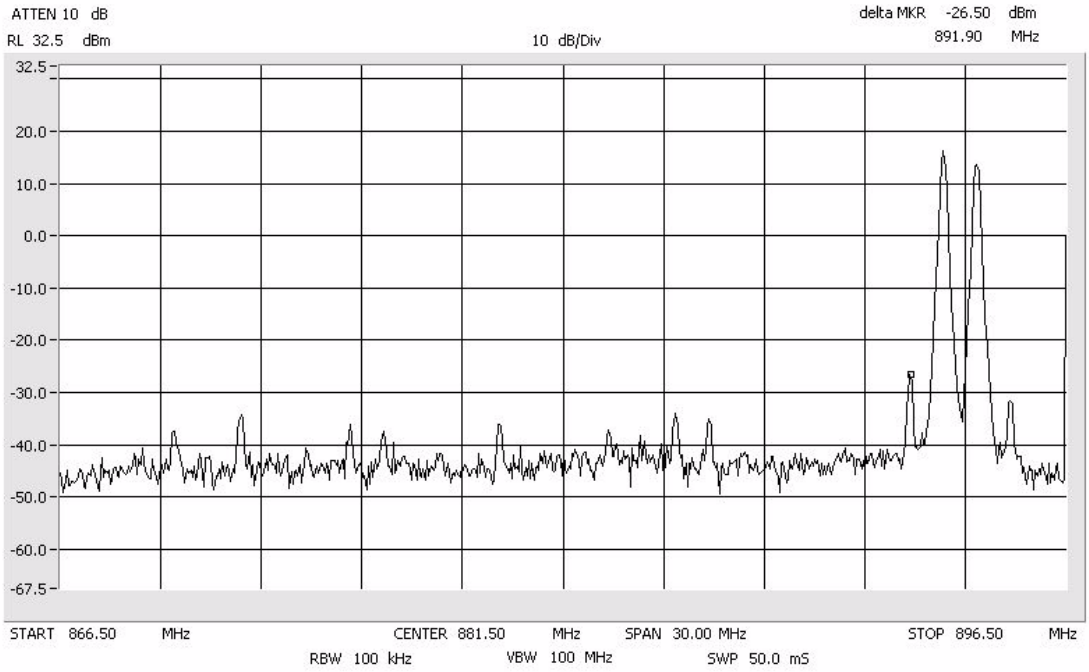
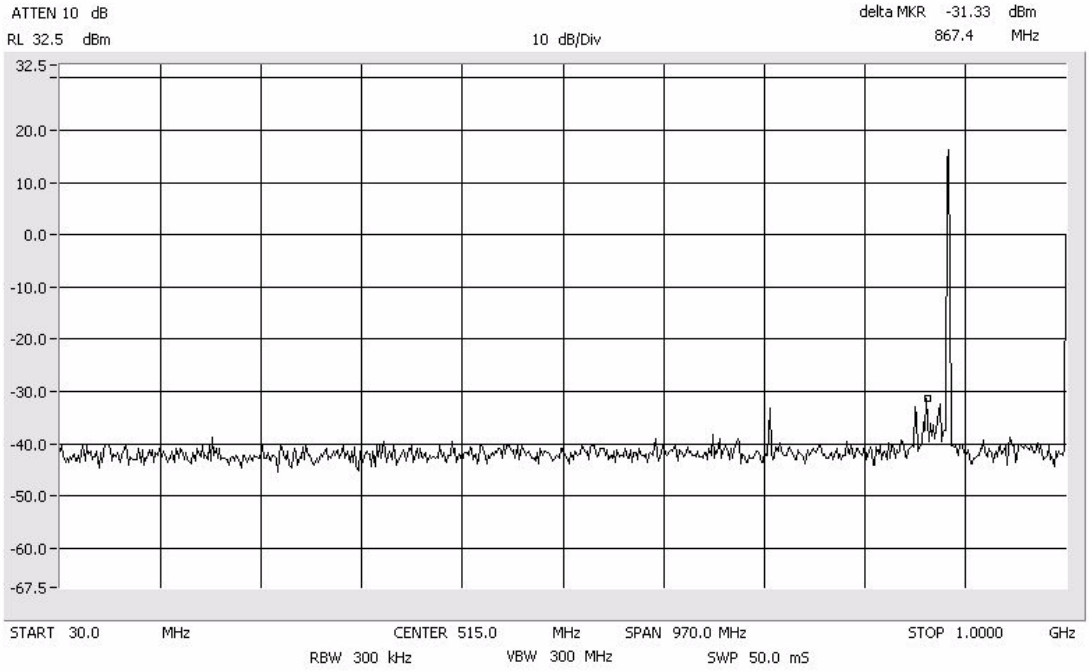


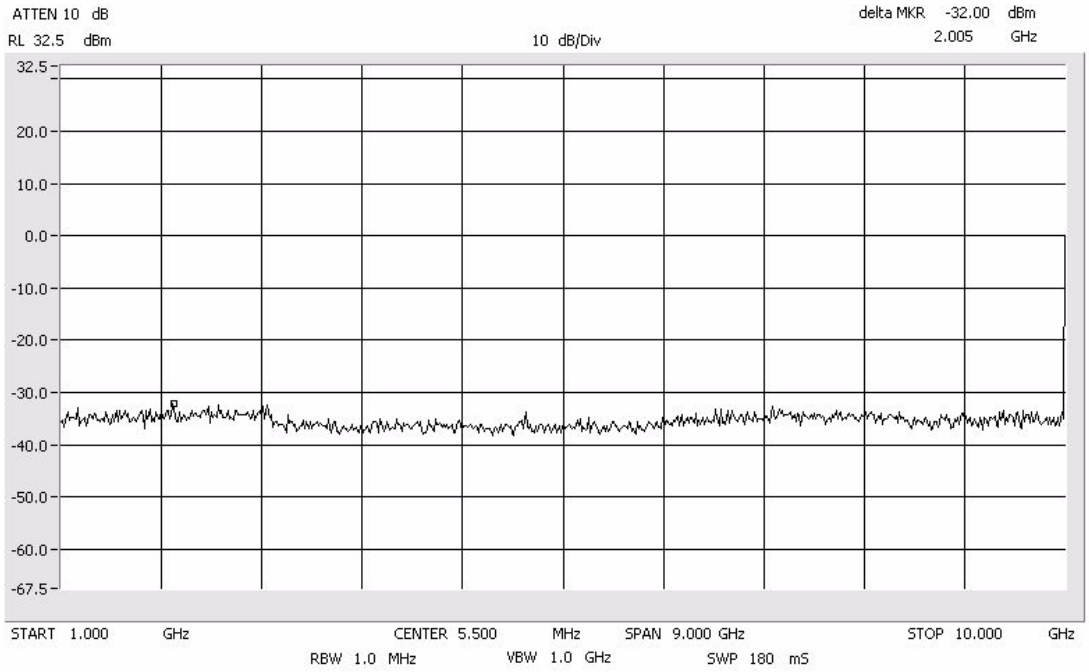
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Close
Upper
TDMA
Cellular 800 MHz



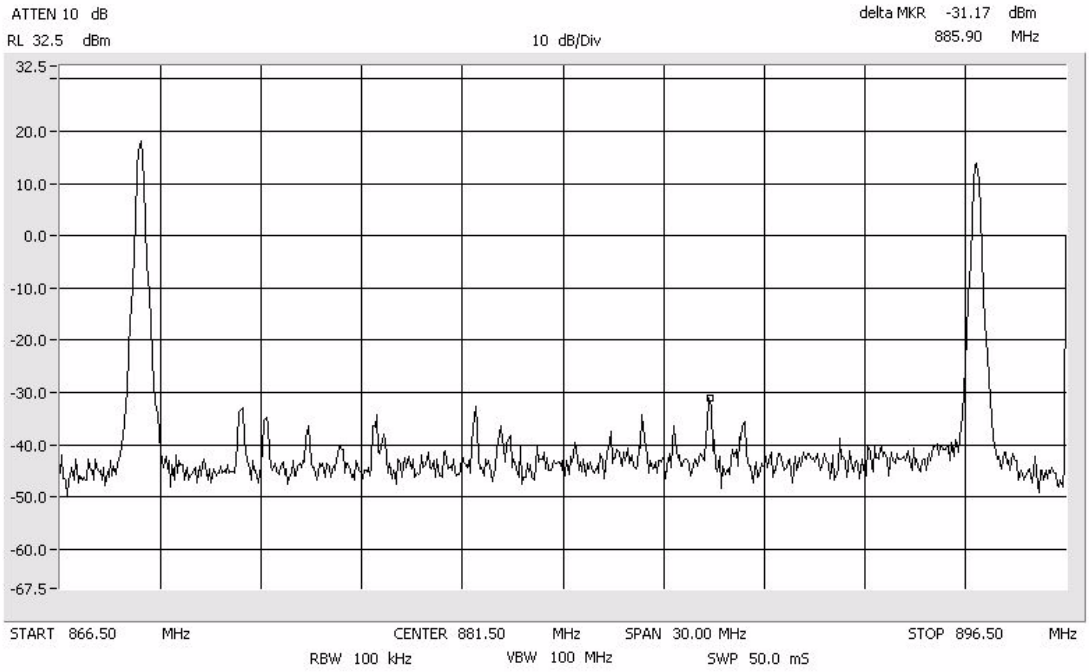
Intermodulation
Close
Upper
TDMA
Cellular 800 MHz

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



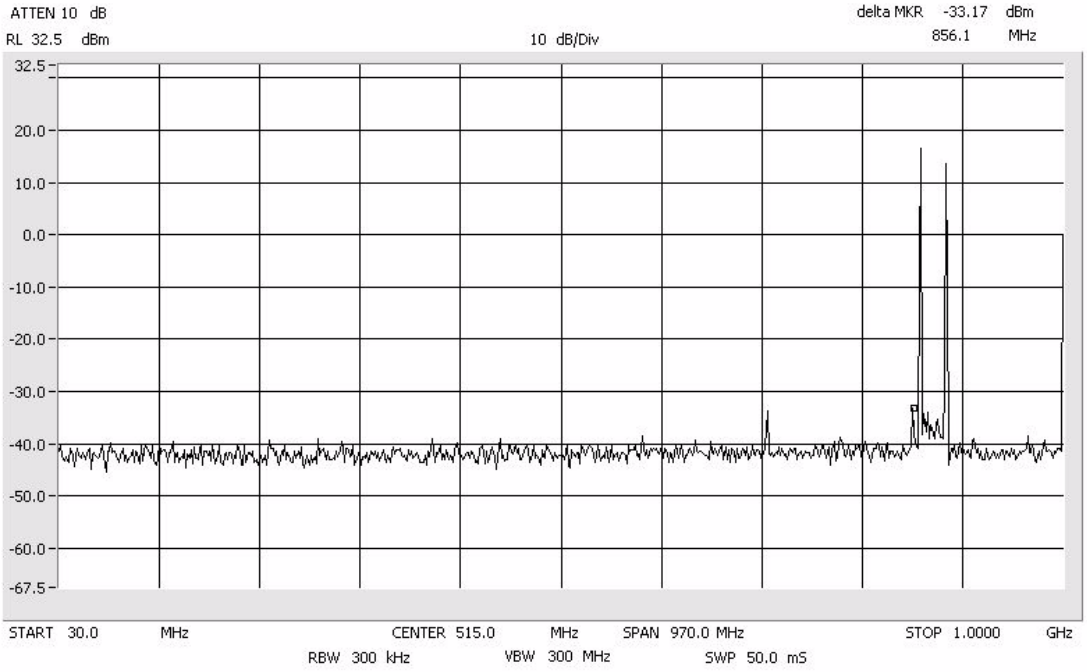
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Close
Upper
TDMA
Cellular 800 MHz



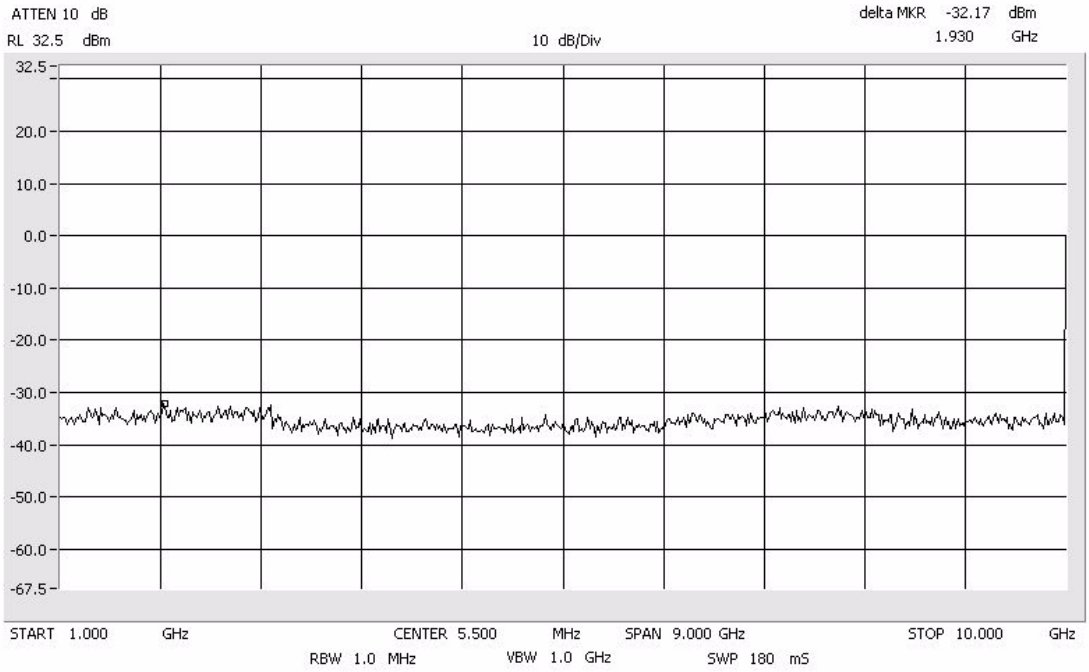
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Apart
TDMA
Cellular 800 MHz



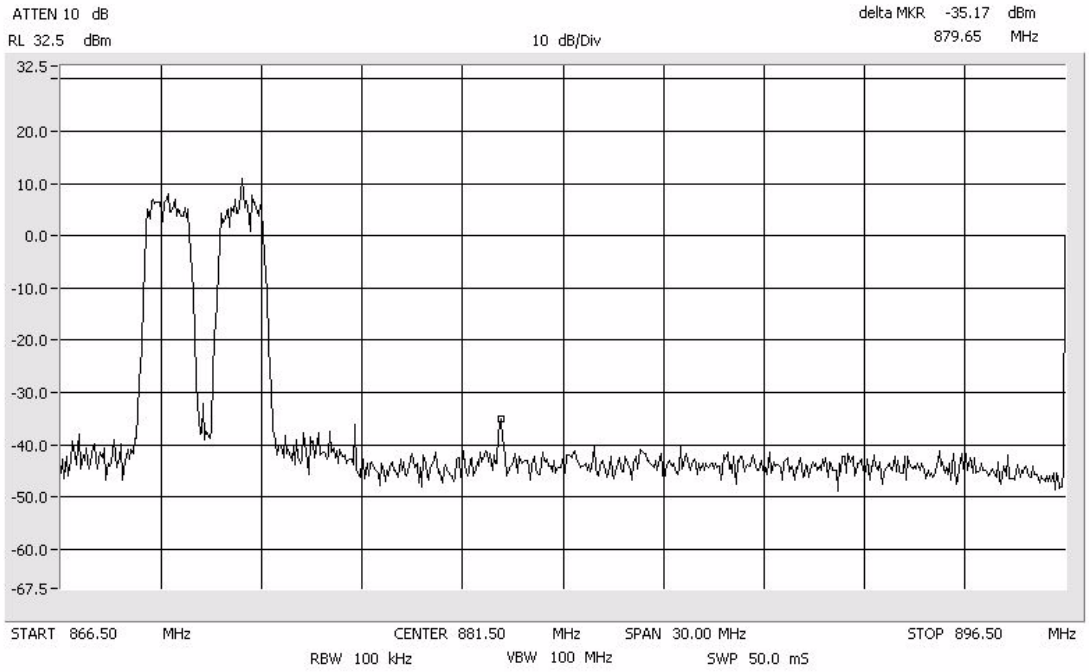
Intermodulation
Apart
TDMA
Cellular 800 MHz

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



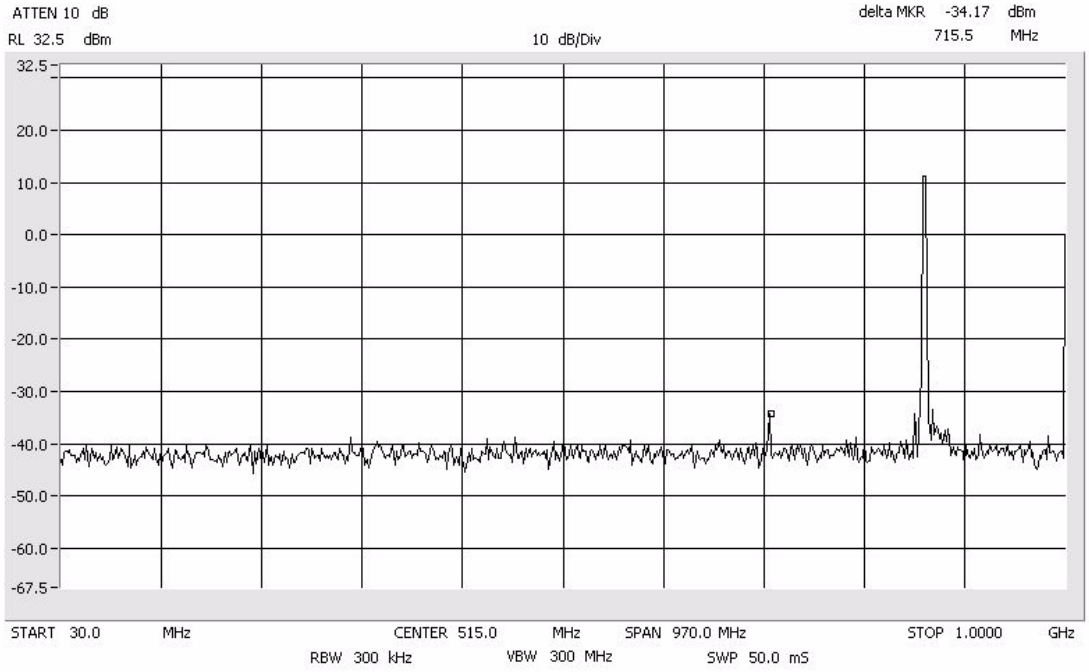
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Apart
TDMA
Cellular 800 MHz



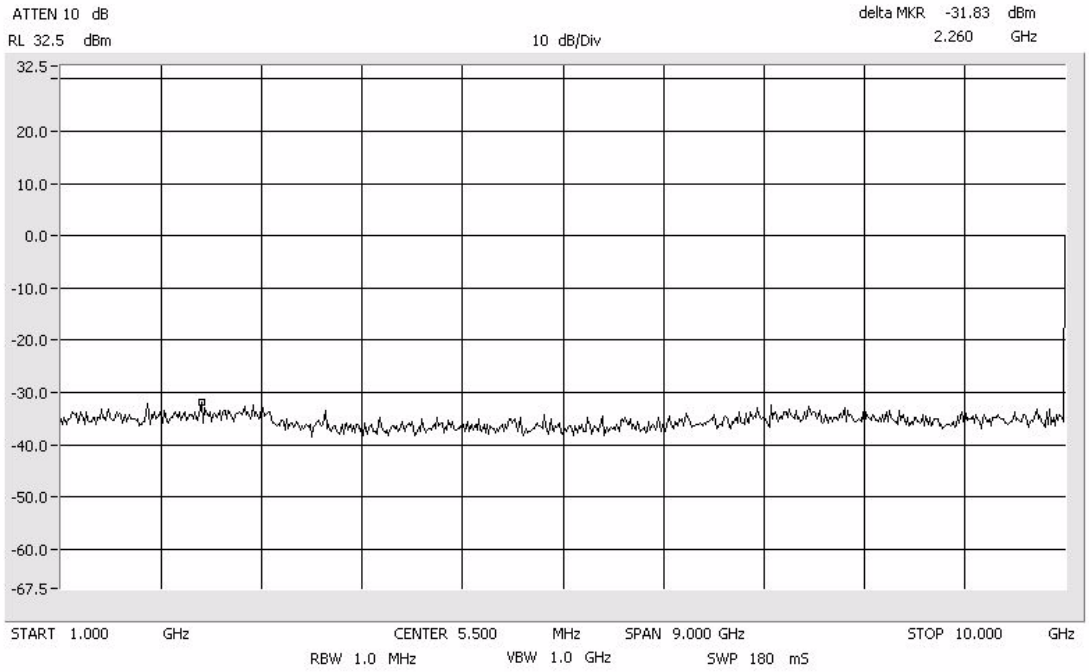
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Close
Lower
CDMA
Cellular 800 MHz



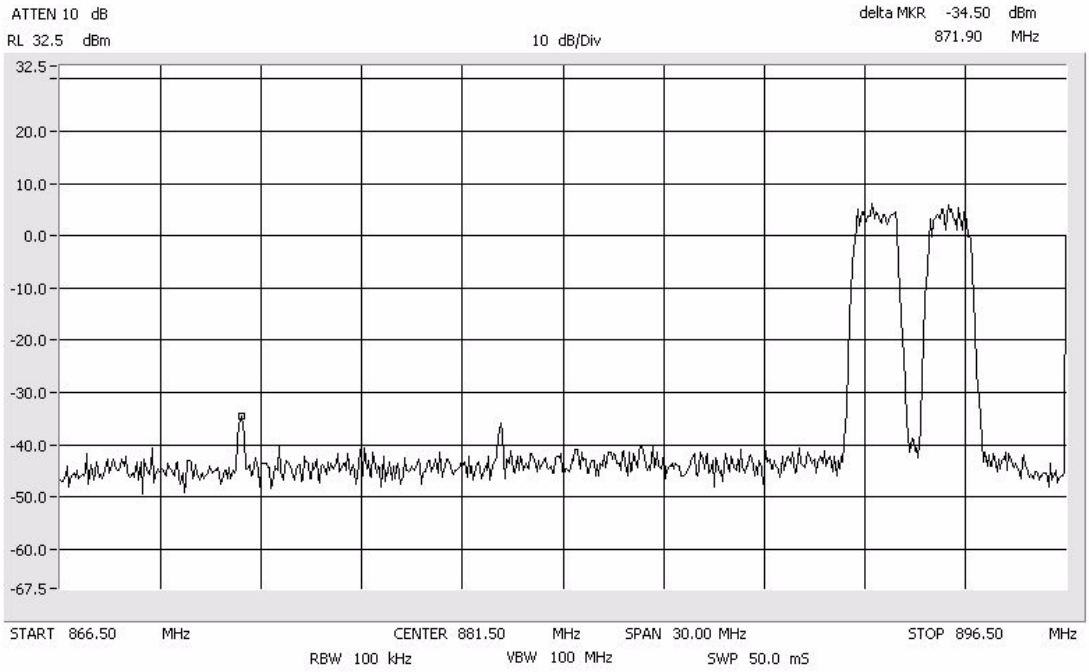
Intermodulation
Close
Lower
CDMA
Cellular 800 MHz

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



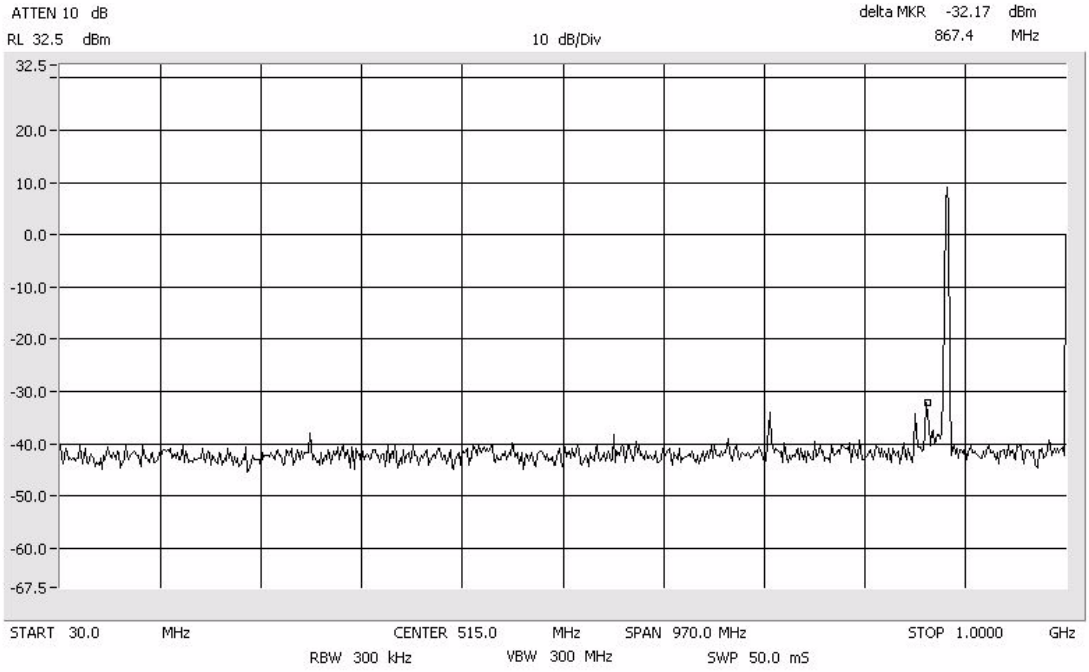
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Close
Lower
CDMA
Cellular 800 MHz



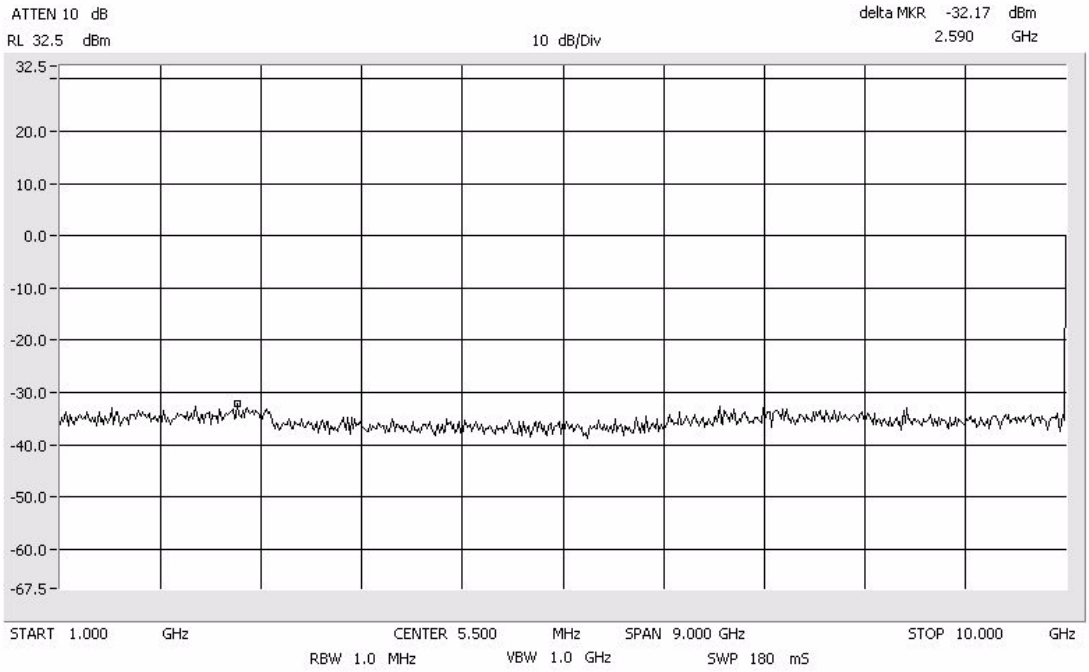
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Close
Upper
CDMA
Cellular 800 MHz



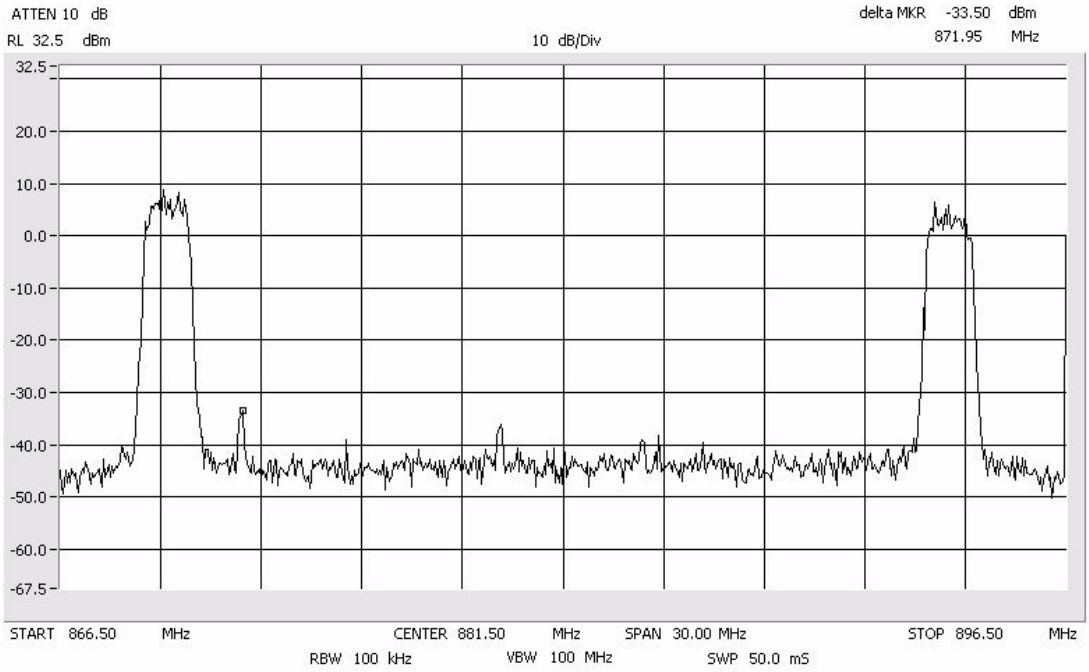
Intermodulation
Close
Upper
CDMA
Cellular 800 MHz

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



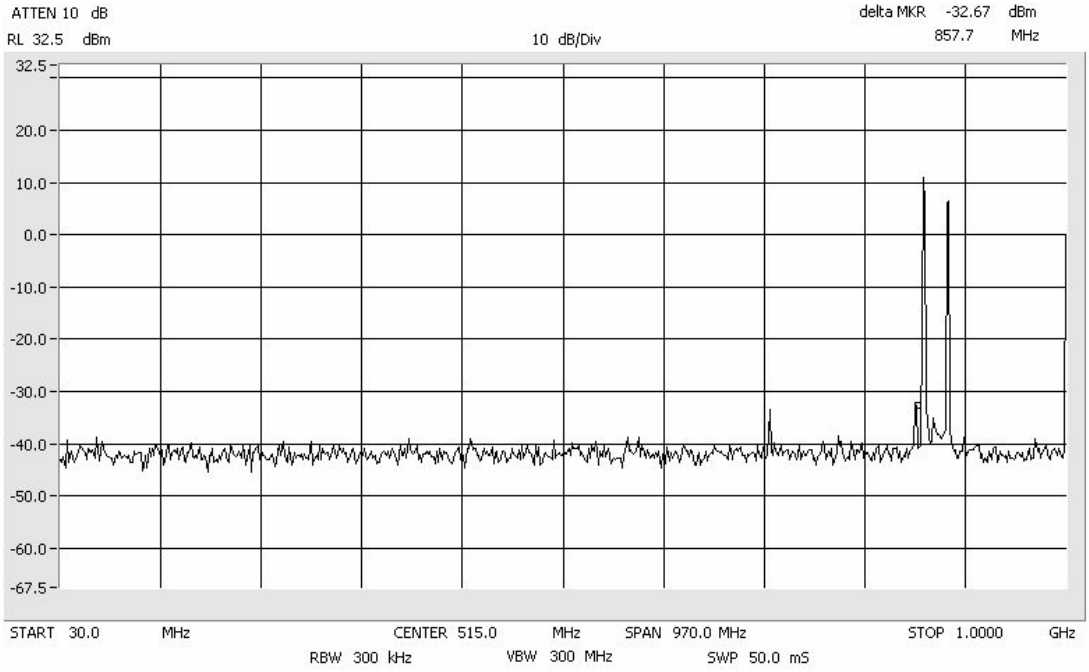
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Close
Upper
CDMA
Cellular 800 MHz



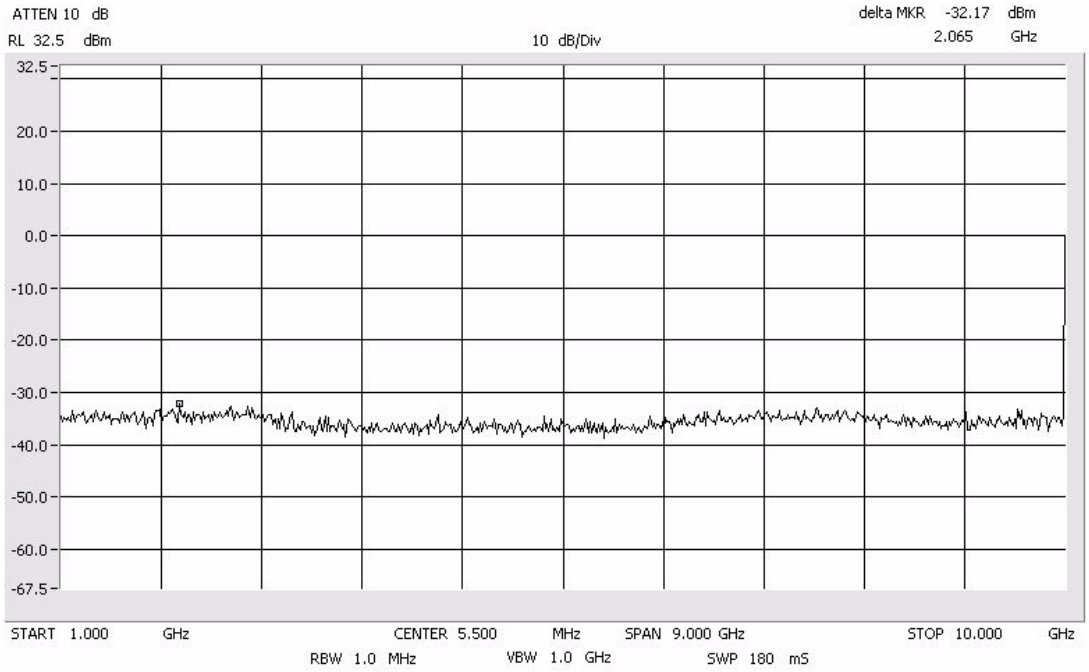
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Apart
CDMA
Cellular 800 MHz



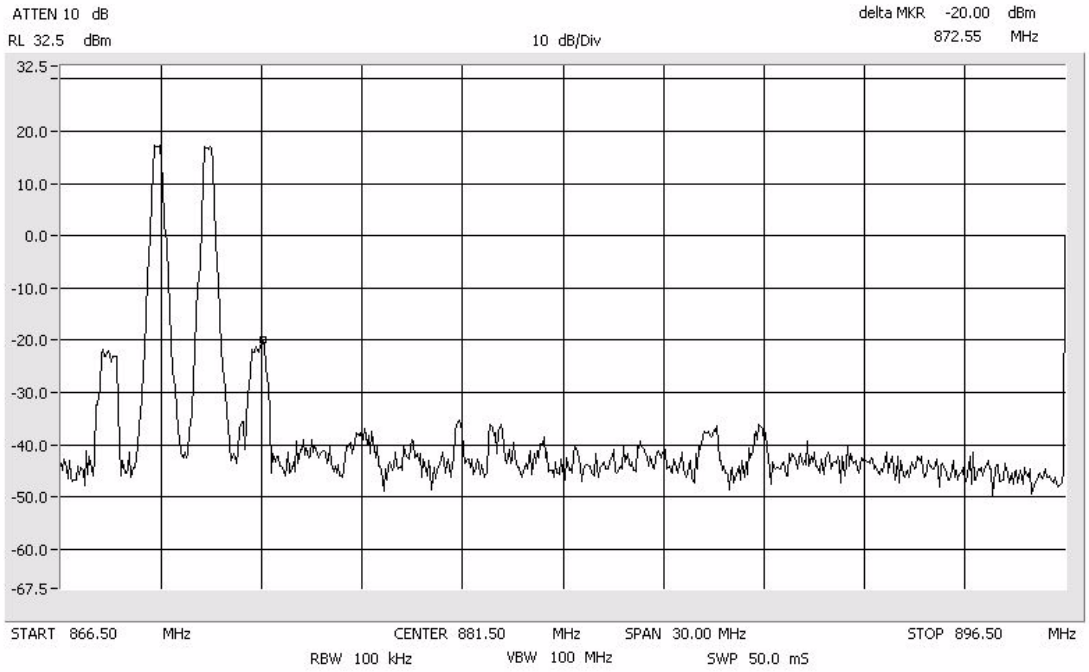
Intermodulation
Apart
CDMA
Cellular 800 MHz

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



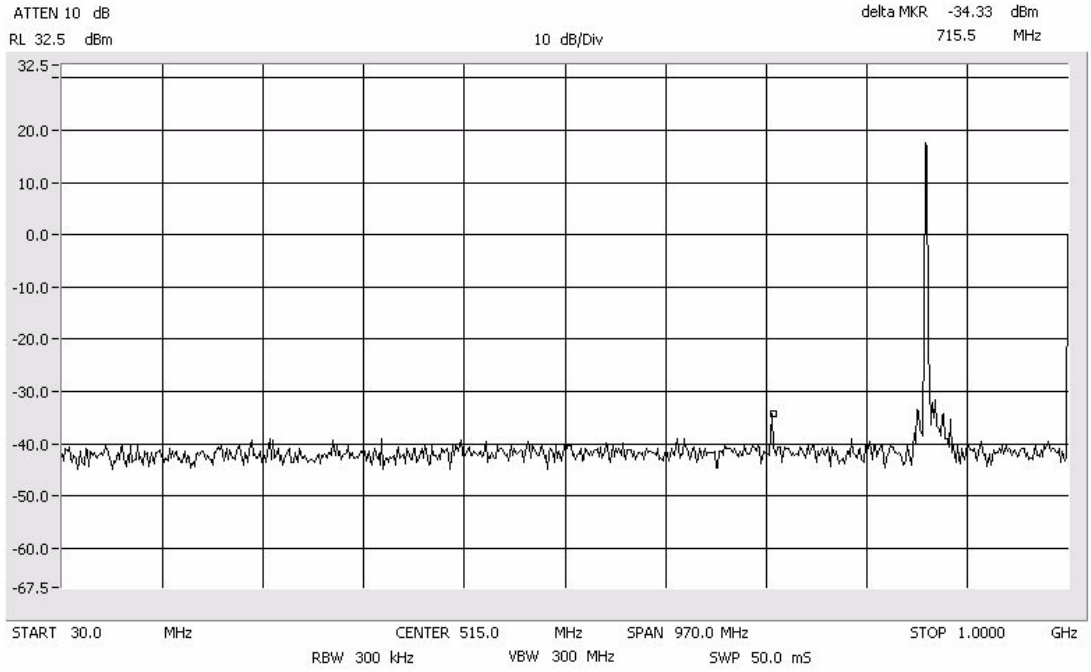
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation Apart CDMA Cellular 800 MHz



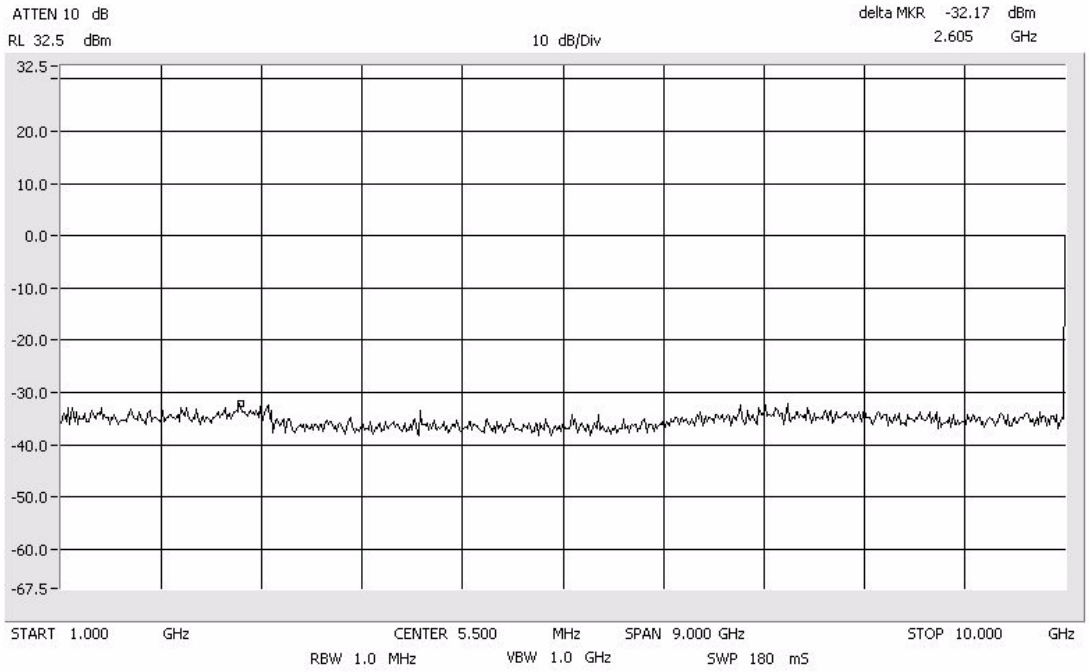
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Close
Lower
GSM
Cellular 800 MHz



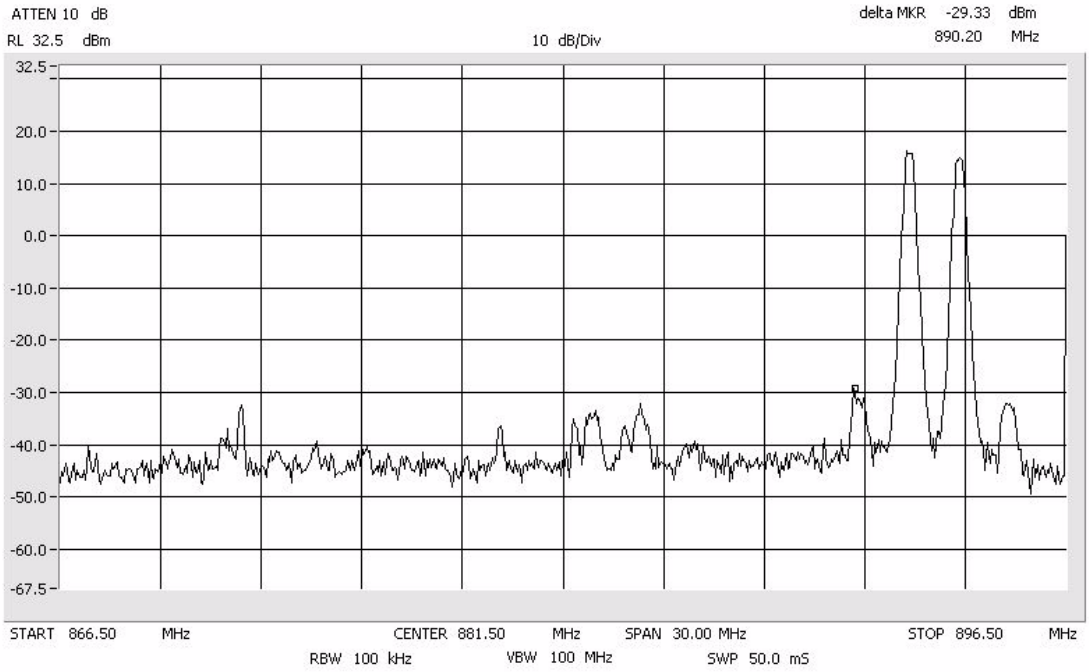
Intermodulation
Close
Lower
GSM
Cellular 800 MHz

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



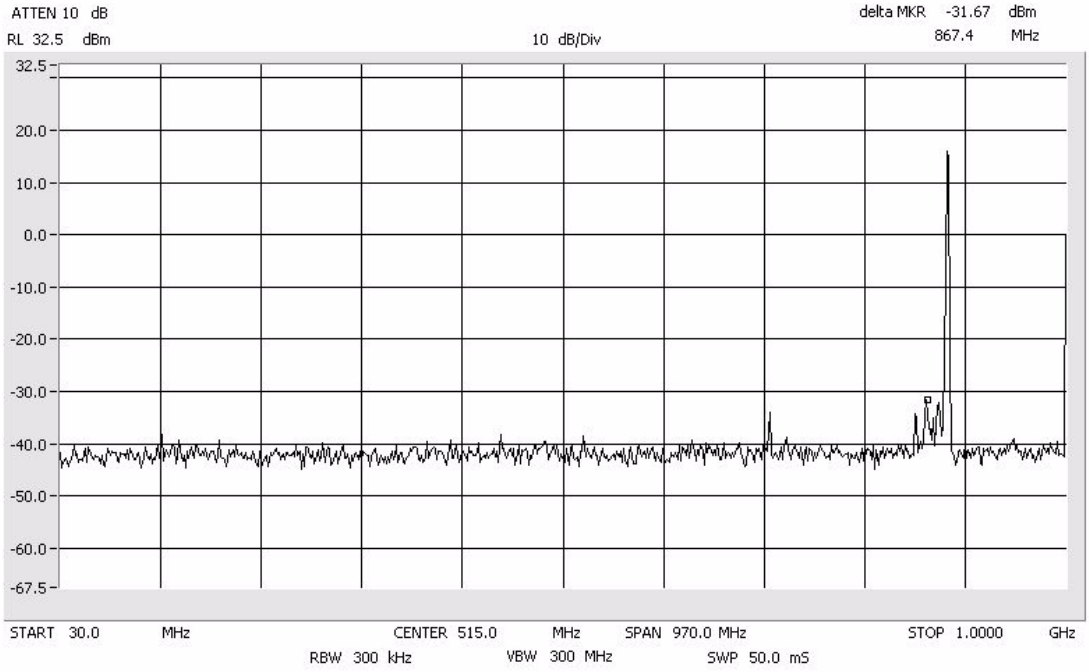
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Close
Lower
GSM
Cellular 800 MHz



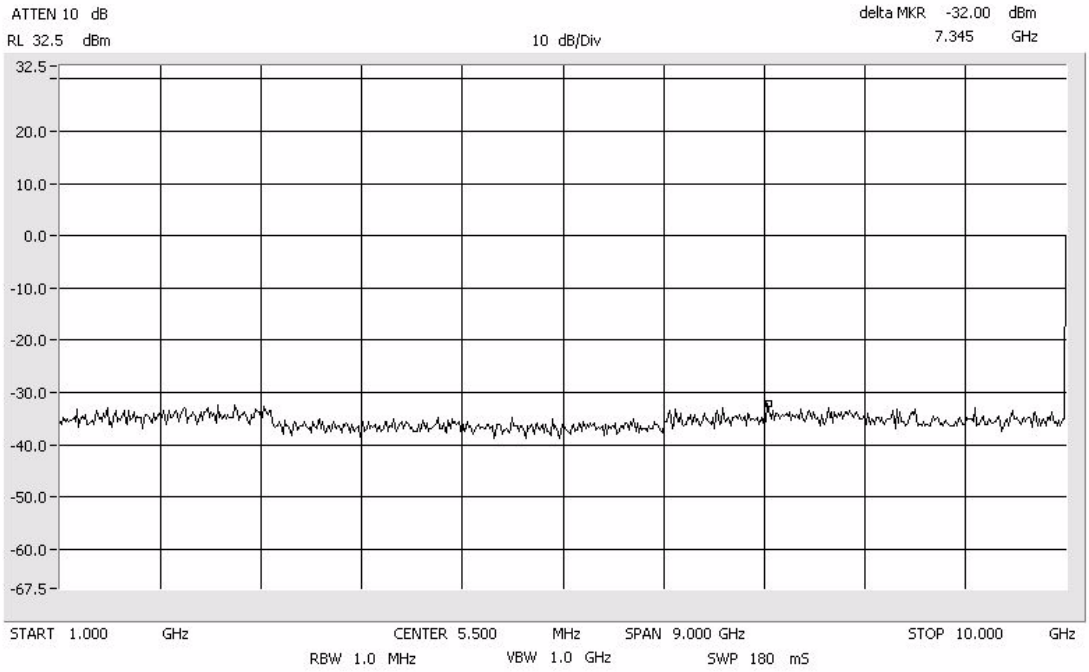
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Close
Upper
GSM
Cellular 800 MHz



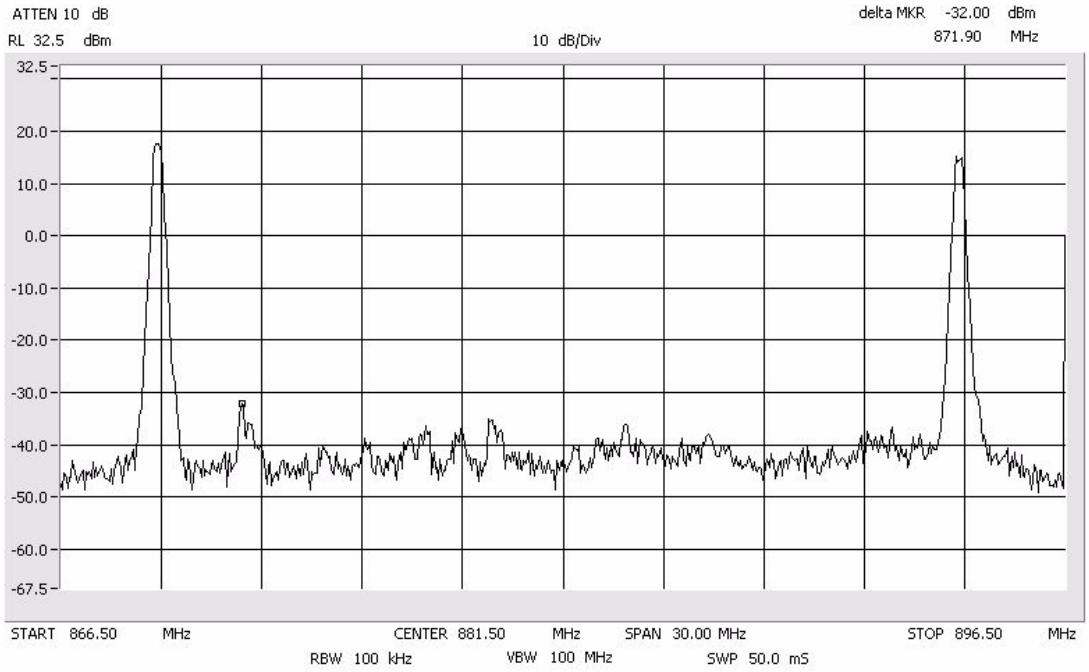
Intermodulation
Close
Upper
GSM
Cellular 800 MHz

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



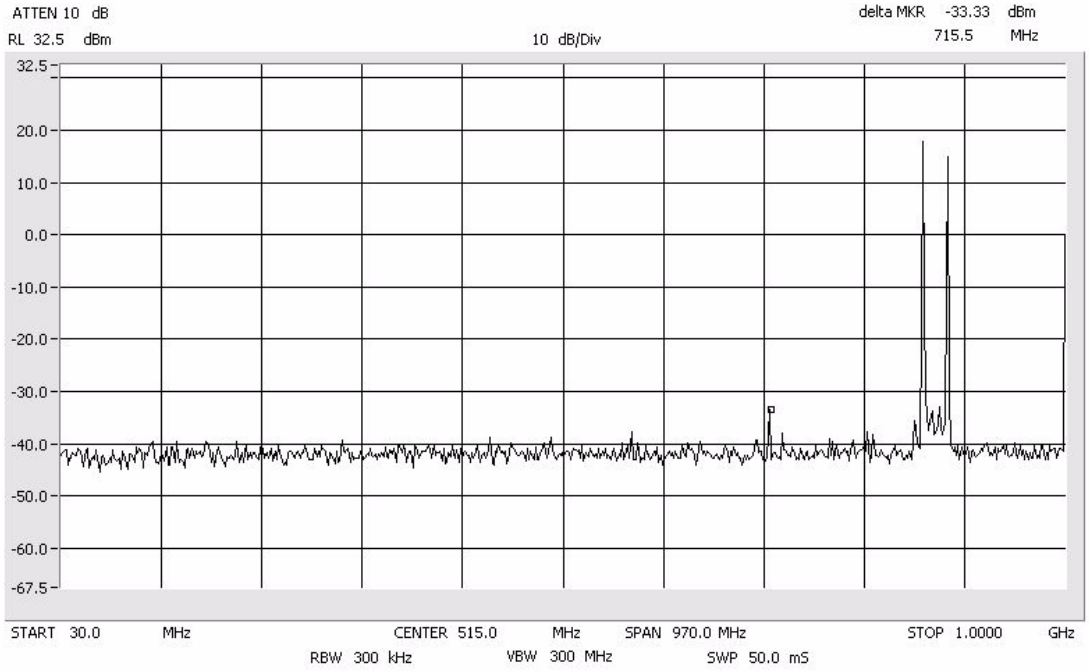
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Close
Upper
GSM
Cellular 800 MHz



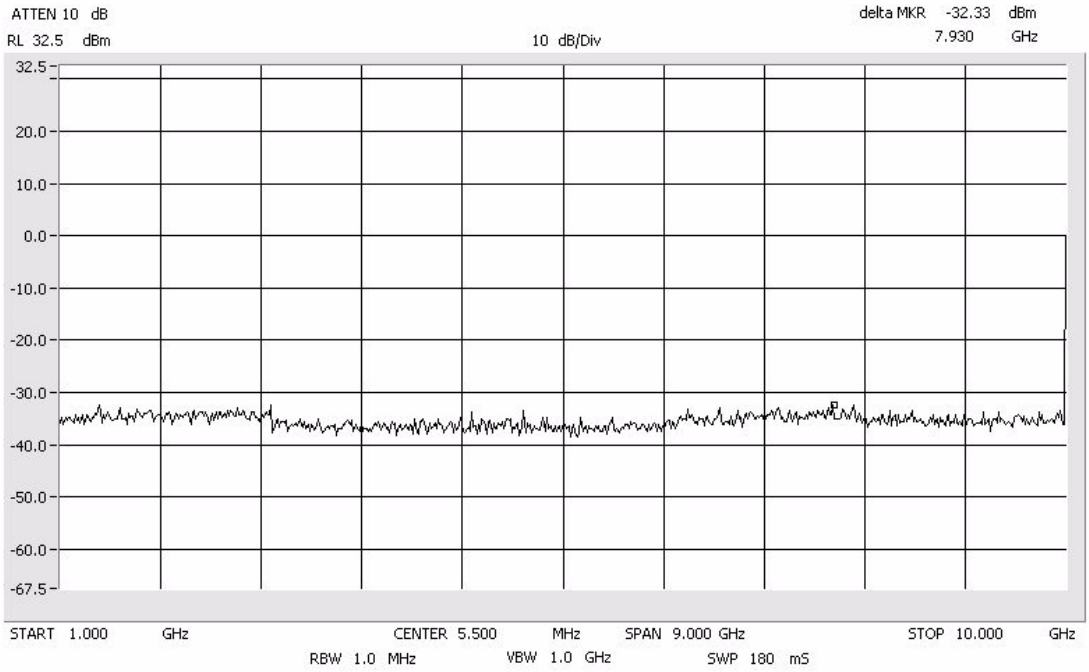
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Apart
GSM
Cellular 800 MHz



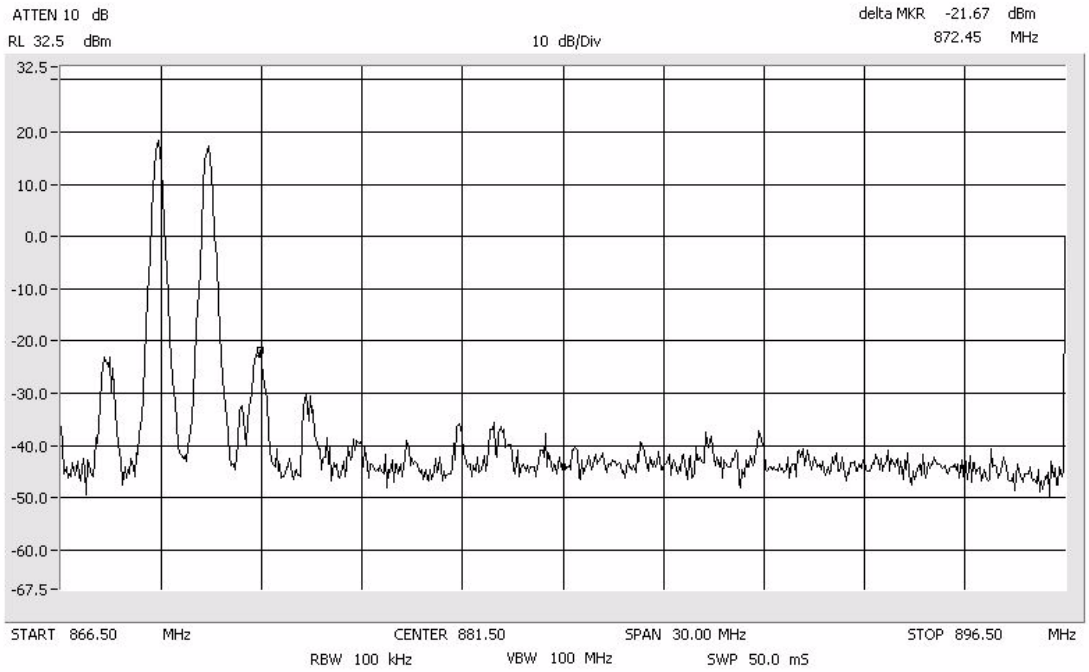
Intermodulation
Apart
GSM
Cellular 800 MHz

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



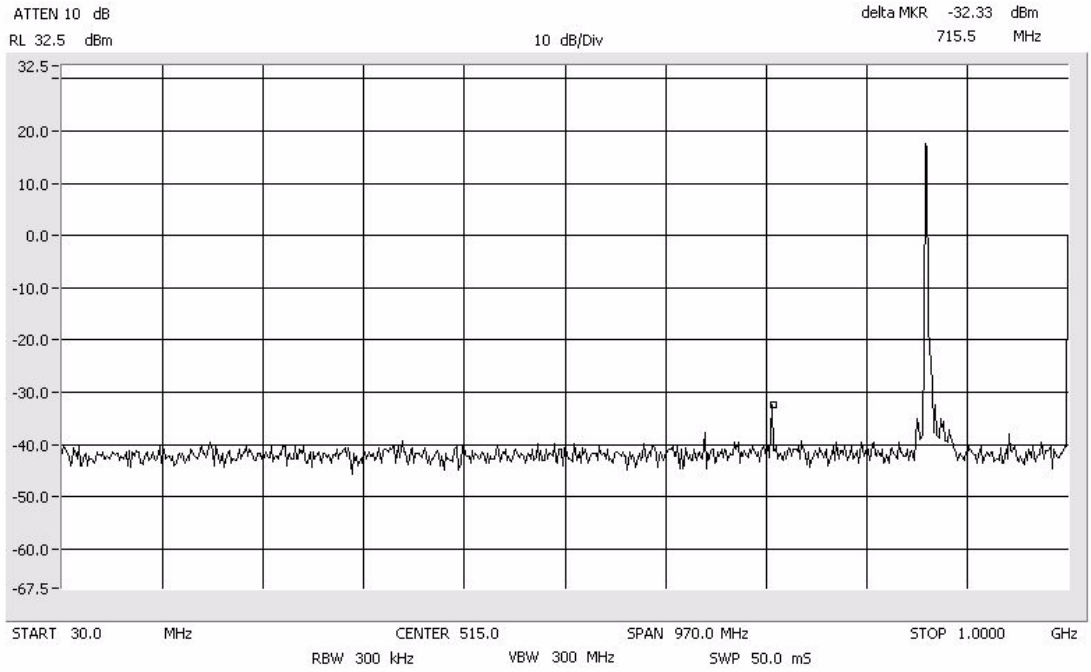
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Apart
GSM
Cellular 800 MHz



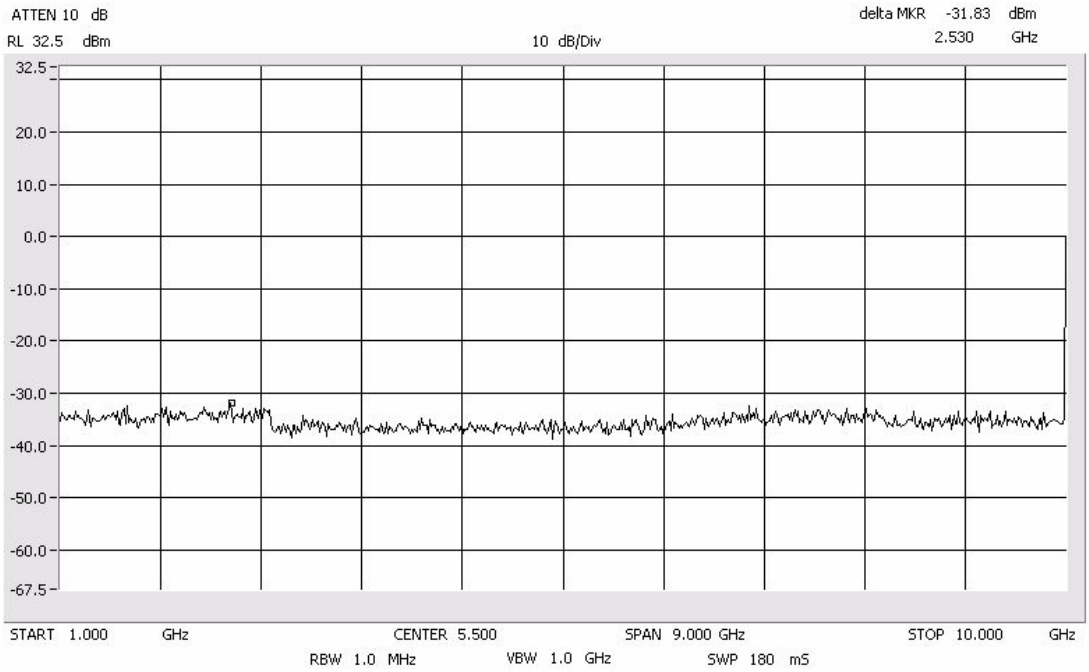
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Close
Lower
EDGE
Cellular 800 MHz



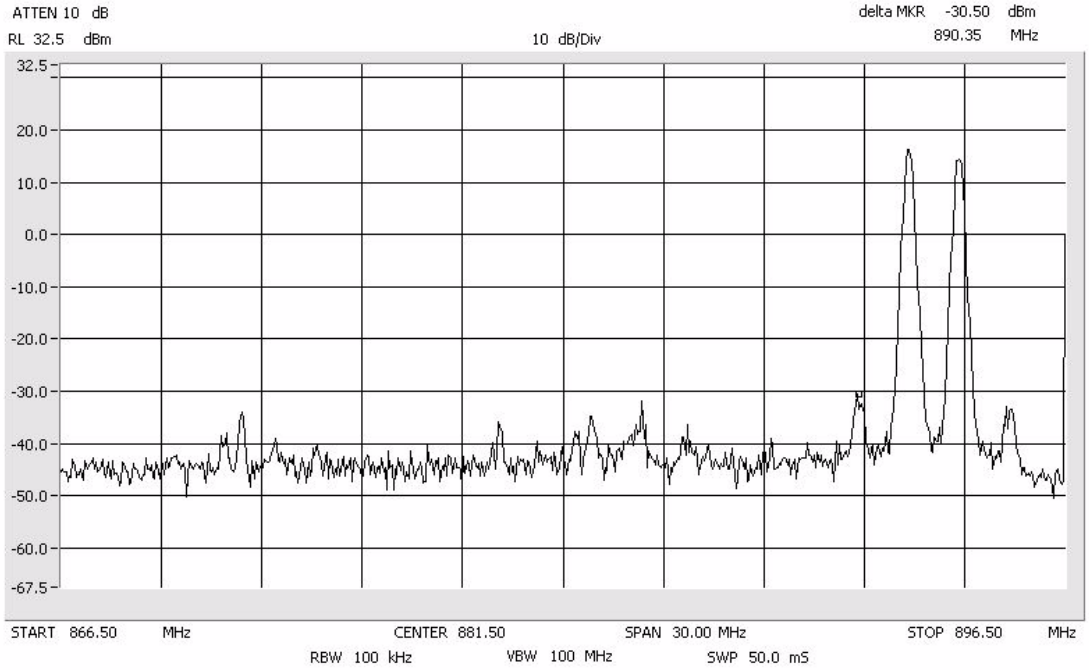
Intermodulation
Close
Lower
EDGE
Cellular 800 MHz

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



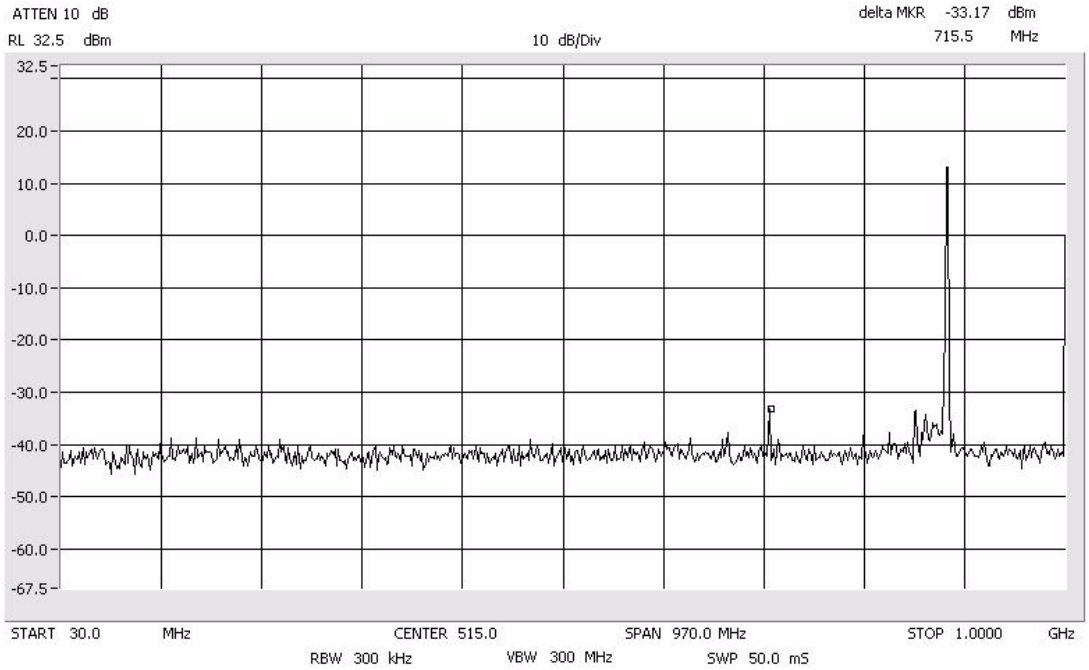
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Close
Lower
EDGE
Cellular 800 MHz



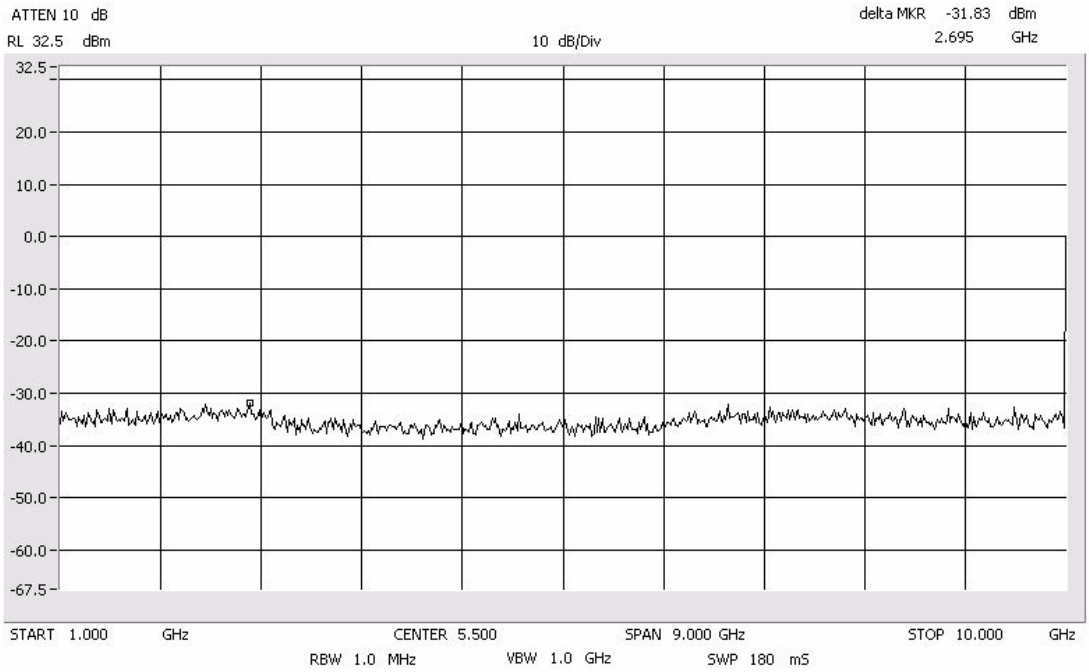
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Close
Upper
EDGE
Cellular 800 MHz



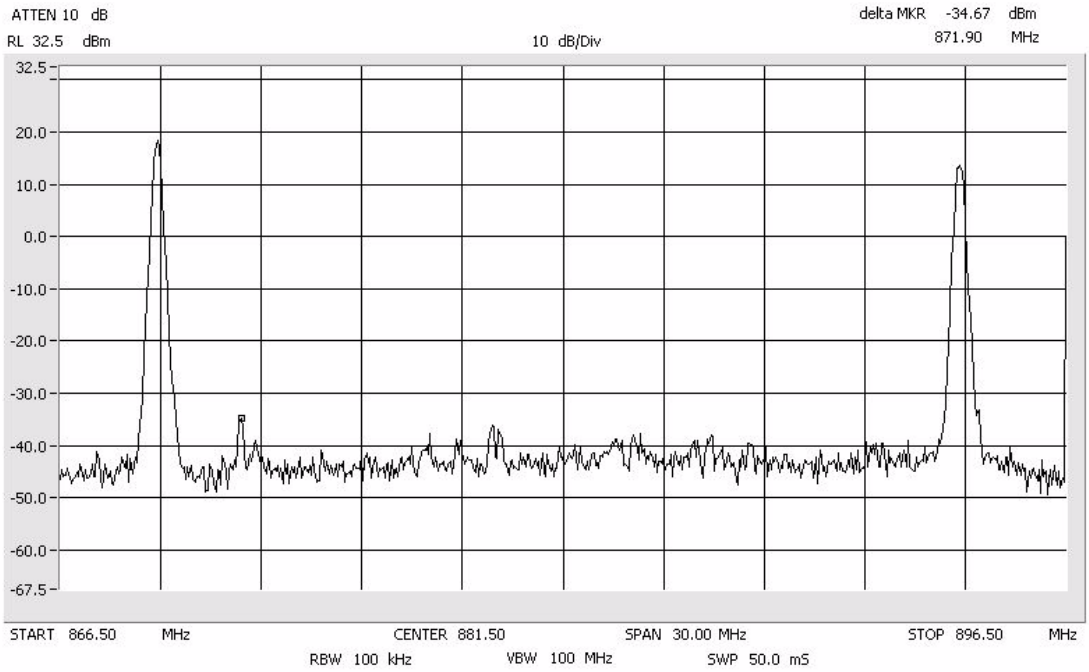
Intermodulation
Close
Upper
EDGE
Cellular 800 MHz

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



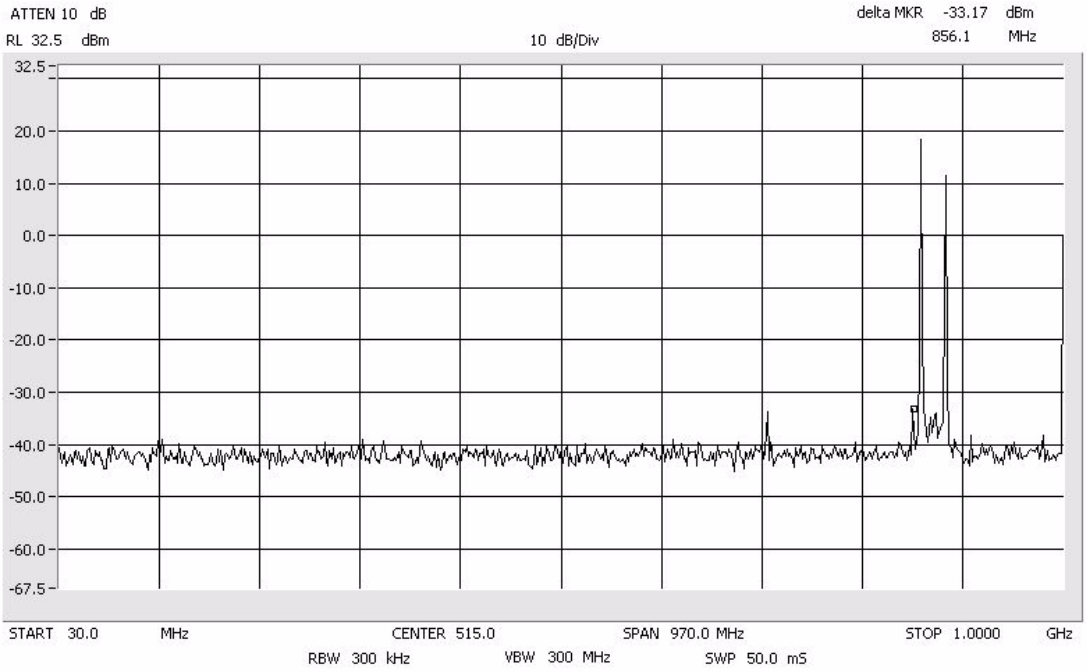
Span: 1 GHz to 10 GHz
RBW/VBW: 1 MHz

Intermodulation
Close
Upper
EDGE
Cellular 800 MHz



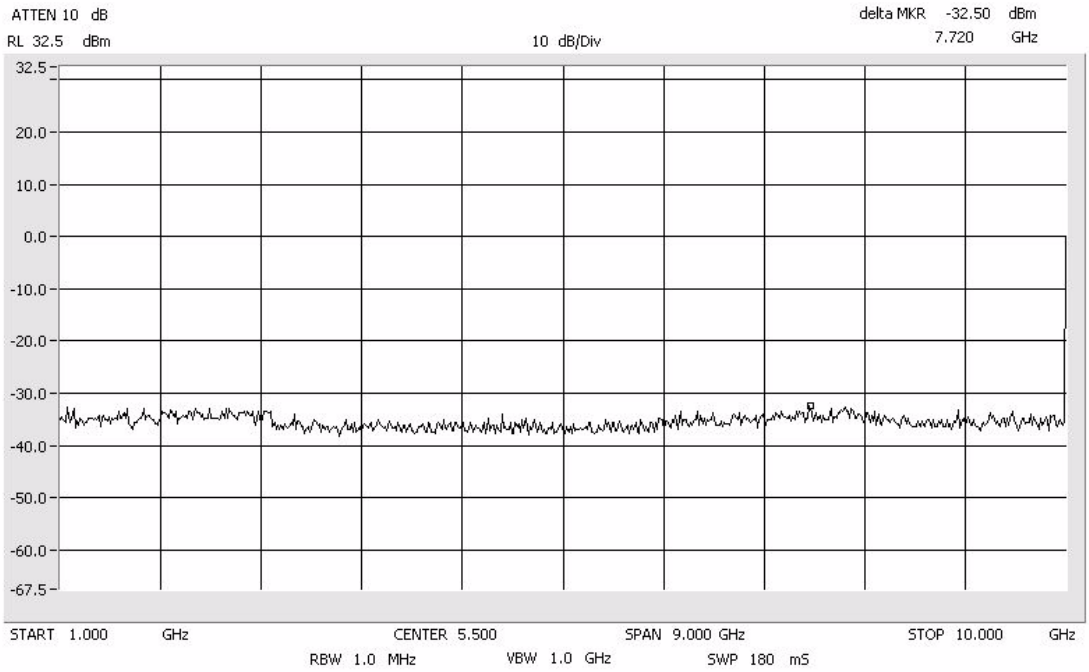
Center: 881.5 MHz
Span: 30 MHz
RBW/VBW: 100 kHz

Intermodulation
Apart
EDGE
Cellular 800 MHz



Intermodulation
Apart
EDGE
Cellular 800 MHz

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



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

Intermodulation
Apart
EDGE
Cellular 800 MHz

Occupied Bandwidth Modulation Test for ADC Inc. Digivance® Indoor Coverage Solution Model Numbers DGVIH1110000000000 and DGVIR1300000000000

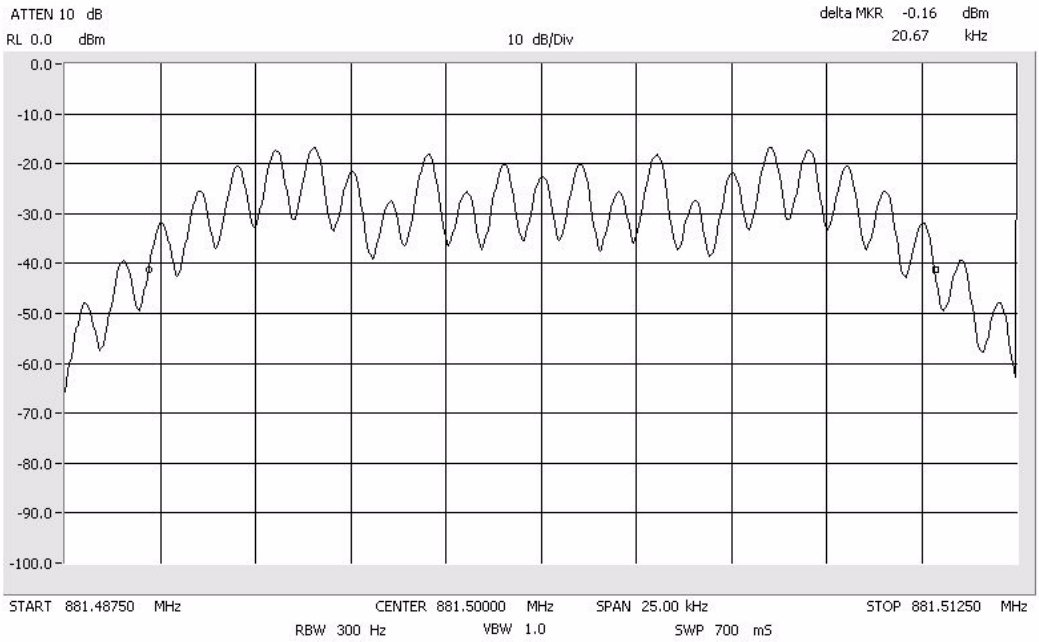
Back

An input/output Occupied Bandwidth test was done with modulation types: FM, 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.

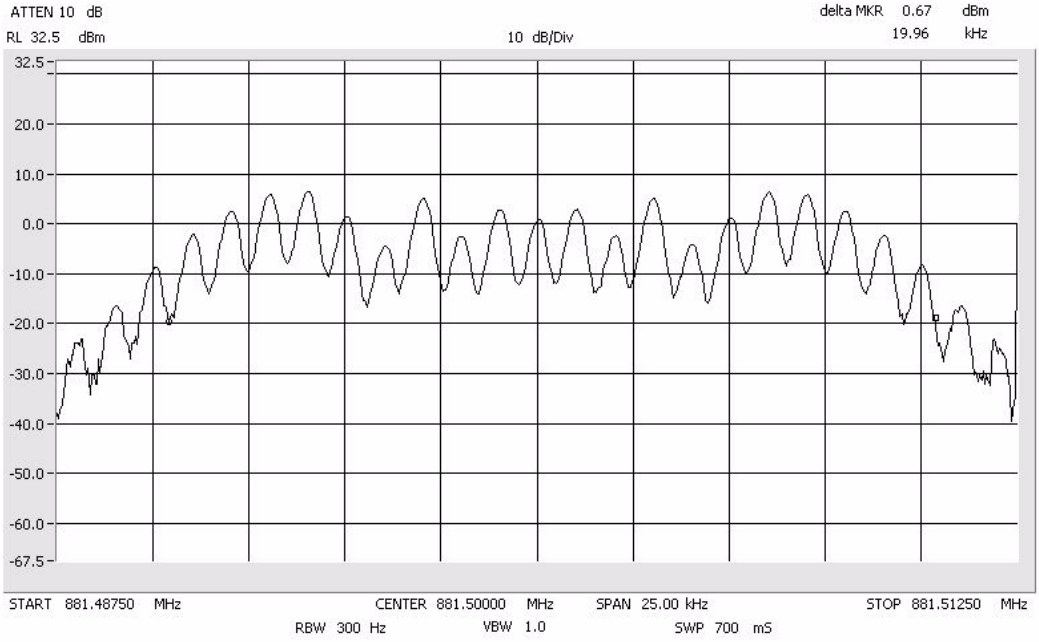
Results:

Pass (see plots)



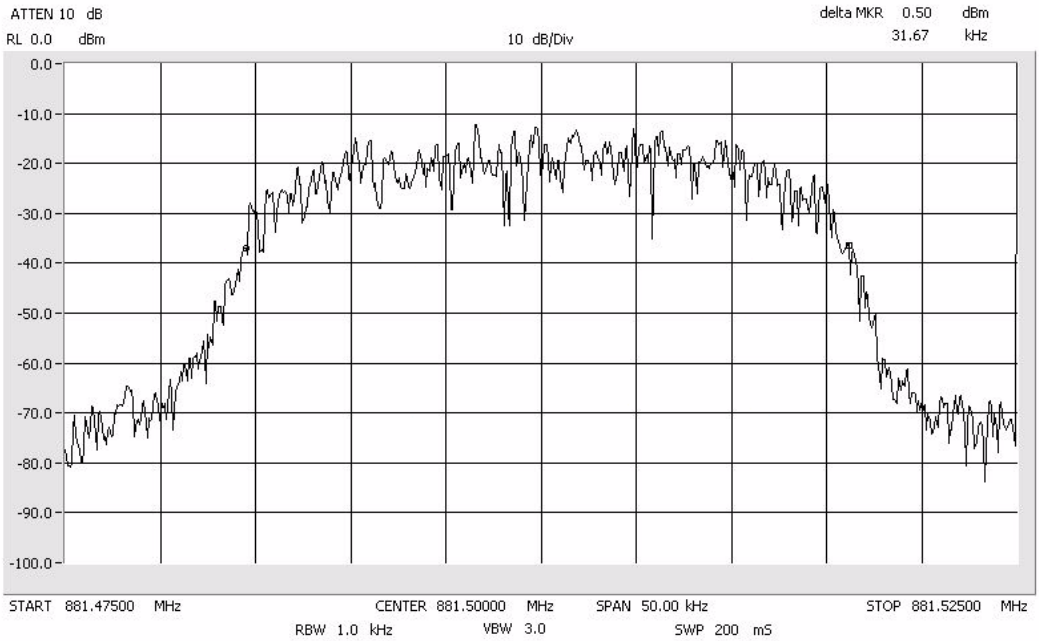
Span: 25 kHz
RBW: 300 kHz
VBW: 1.0 kHz

Occupied Bandwidth
FM
Signal In



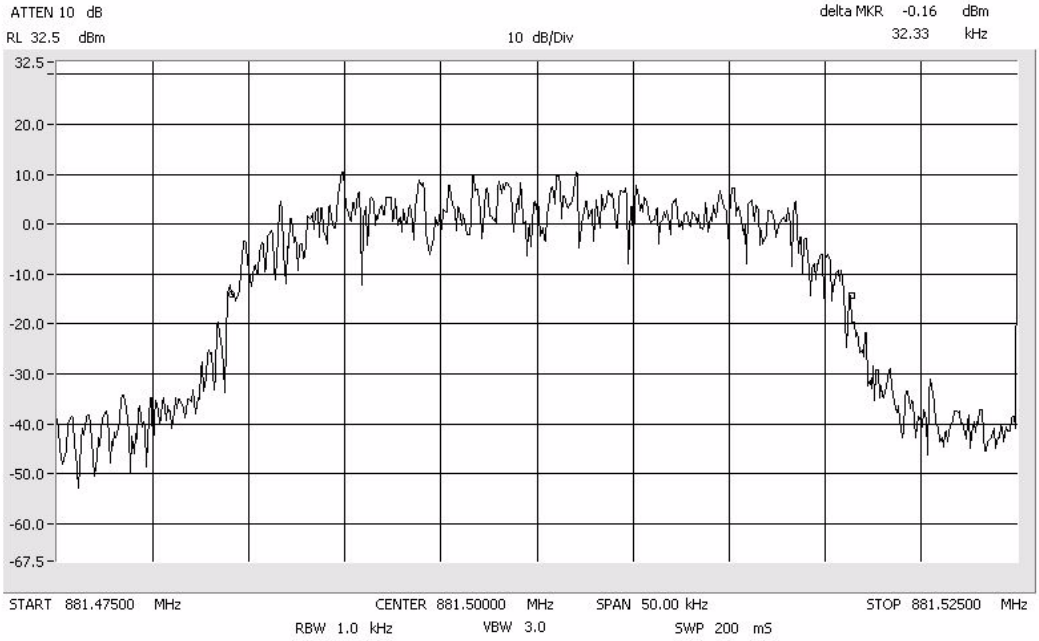
Occupied Bandwidth
FM
Signal Out

Span: 25 kHz
RBW: 300 kHz
VBW: 1.0 kHz



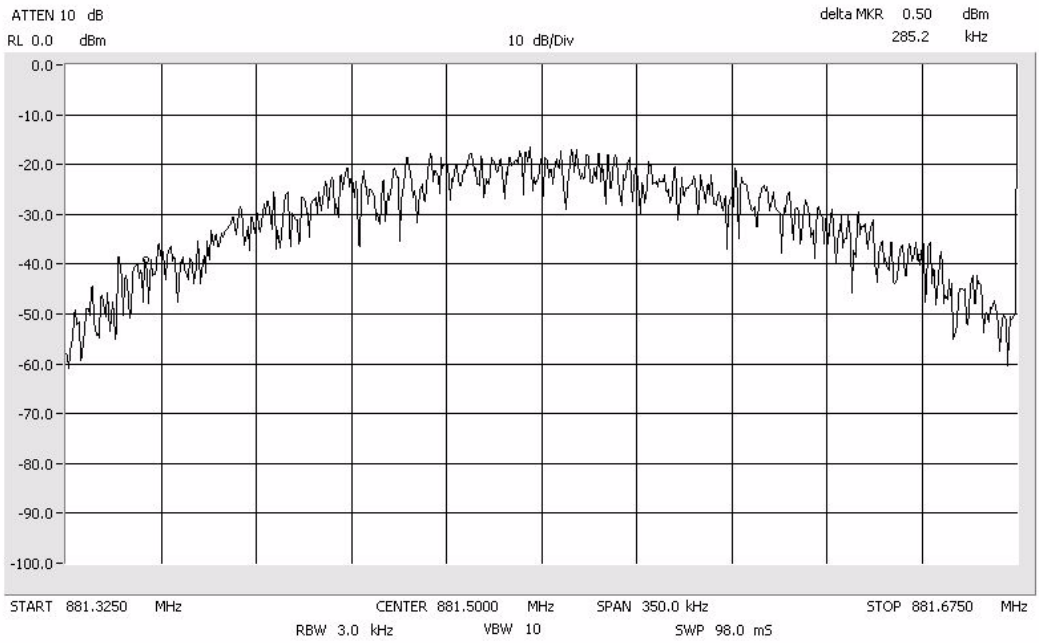
Span: 50 kHz
RBW: 1 kHz
VBW: 3.0 kHz

Occupied Bandwidth
TDMA
Signal In



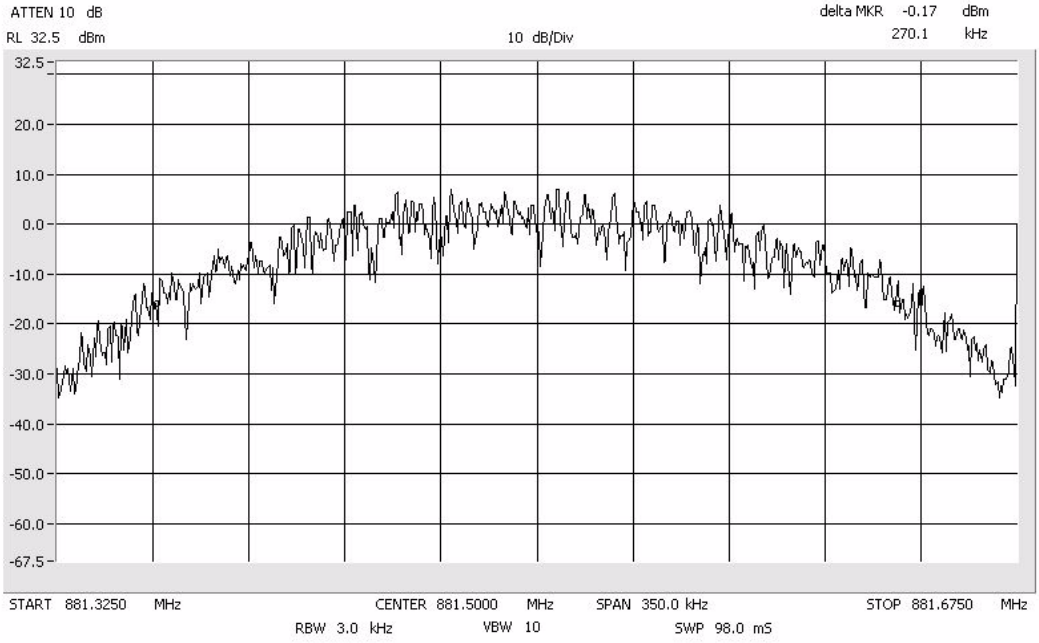
Occupied Bandwidth
TDMA
Signal Out

Span: 50 kHz
RBW: 1 kHz
VBW: 3.0 kHz



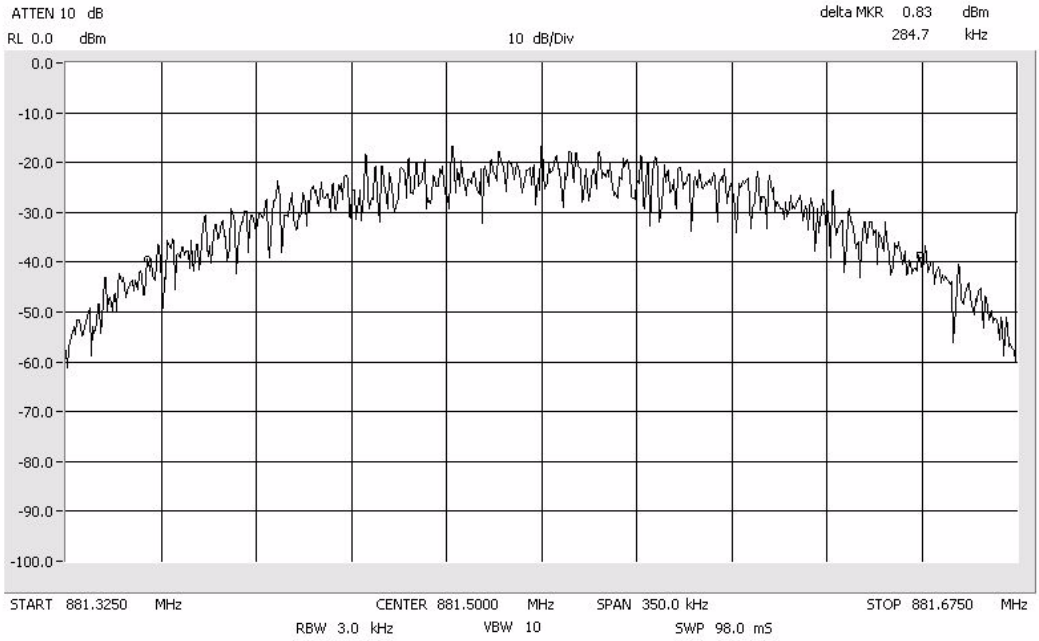
Span: 350 kHz
RBW: 3 kHz
VBW: 10 kHz

Occupied Bandwidth
GSM
Signal In



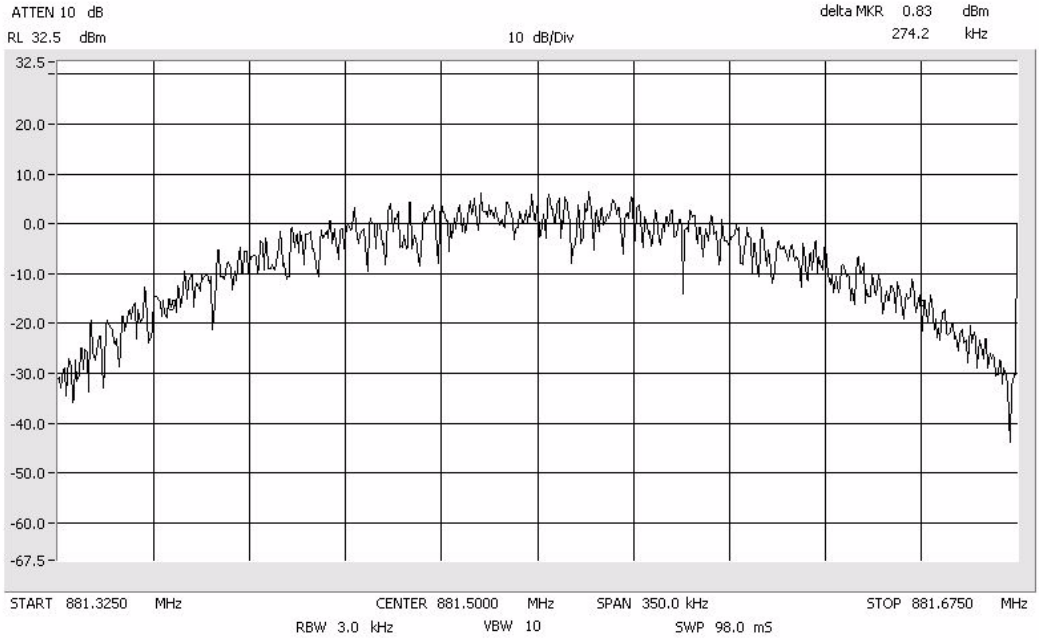
Occupied Bandwidth
GSM
Signal Out

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



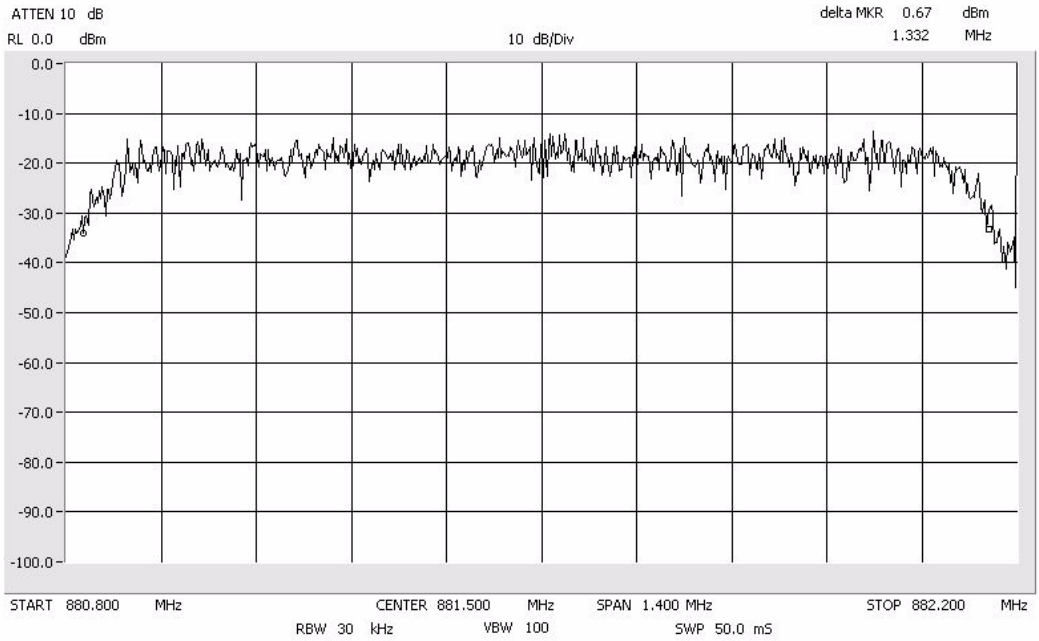
Span: 350 kHz
RBW: 3 kHz
VBW: 10 kHz

Occupied Bandwidth
EDGE
Signal In



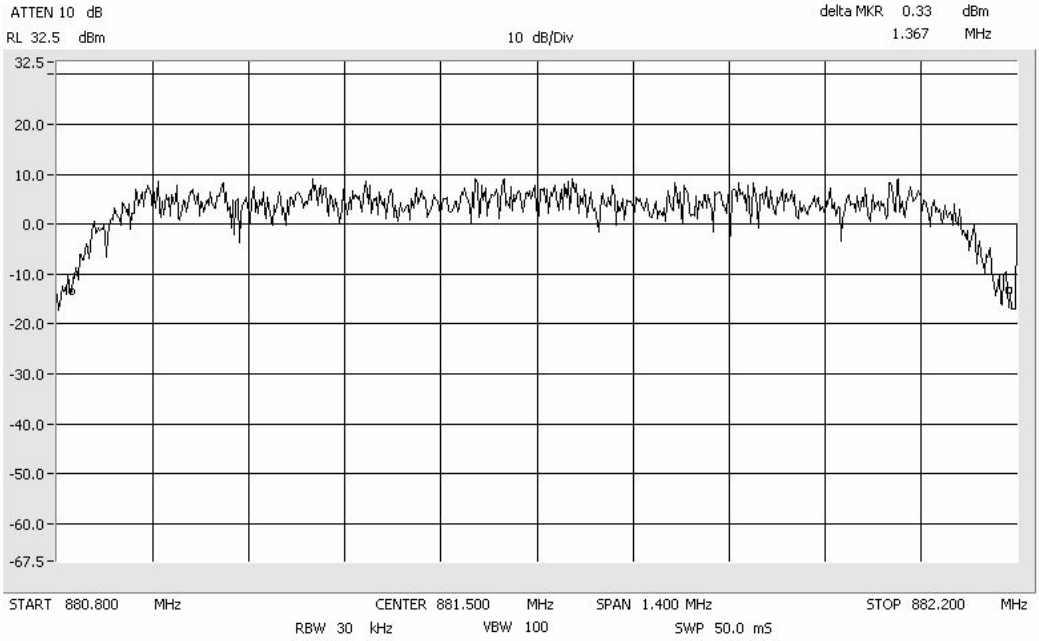
Occupied Bandwidth
EDGE
Signal Out

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



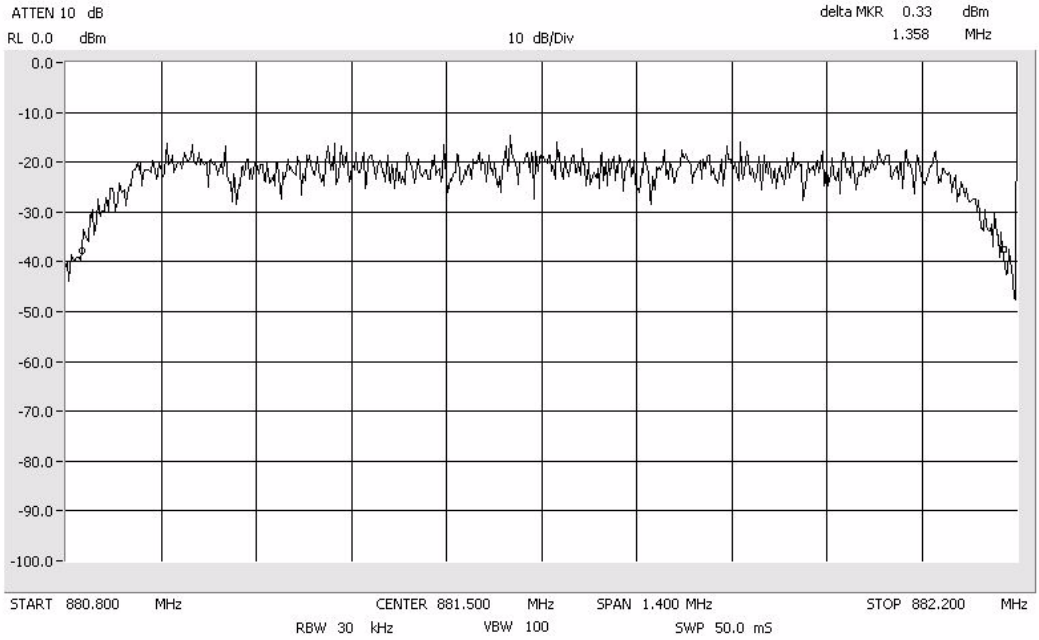
Span: 1.4 MHz
RBW: 30 kHz
VBW: 100 kHz

Occupied Bandwidth
CDMA
Signal In



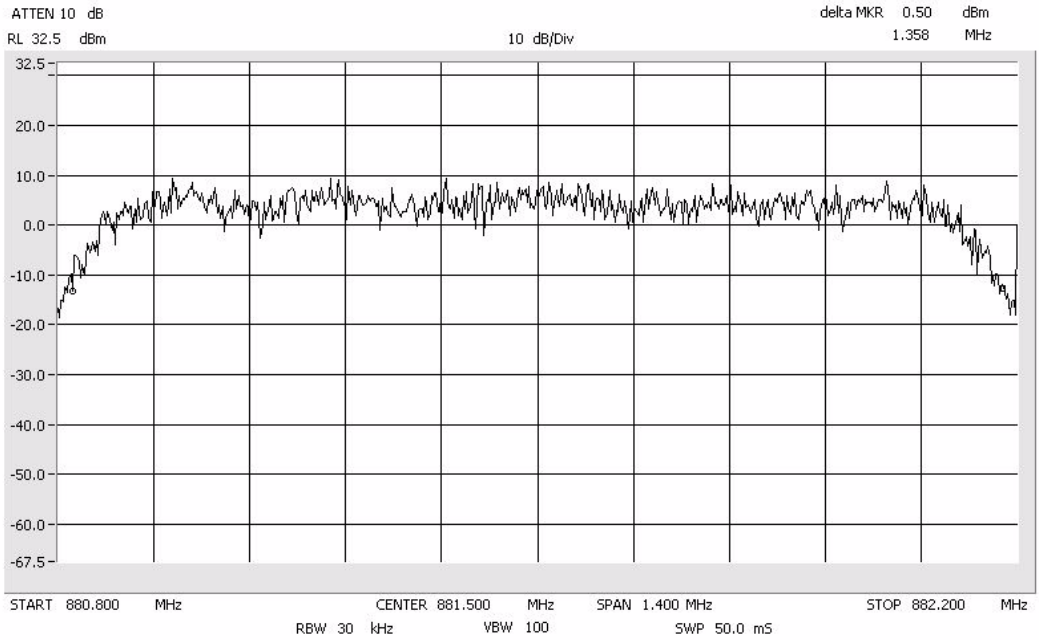
Occupied Bandwidth
CDMA
Signal Out

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



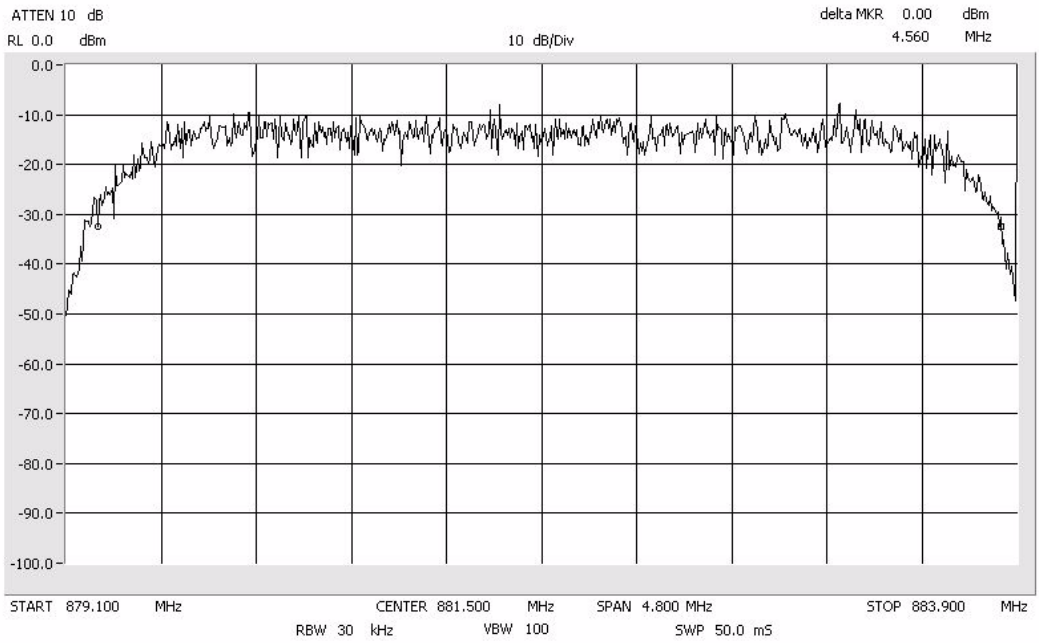
Span: 1.4 MHz
RBW: 30 kHz
VBW: 100 kHz

Occupied Bandwidth
EVDO
Signal In



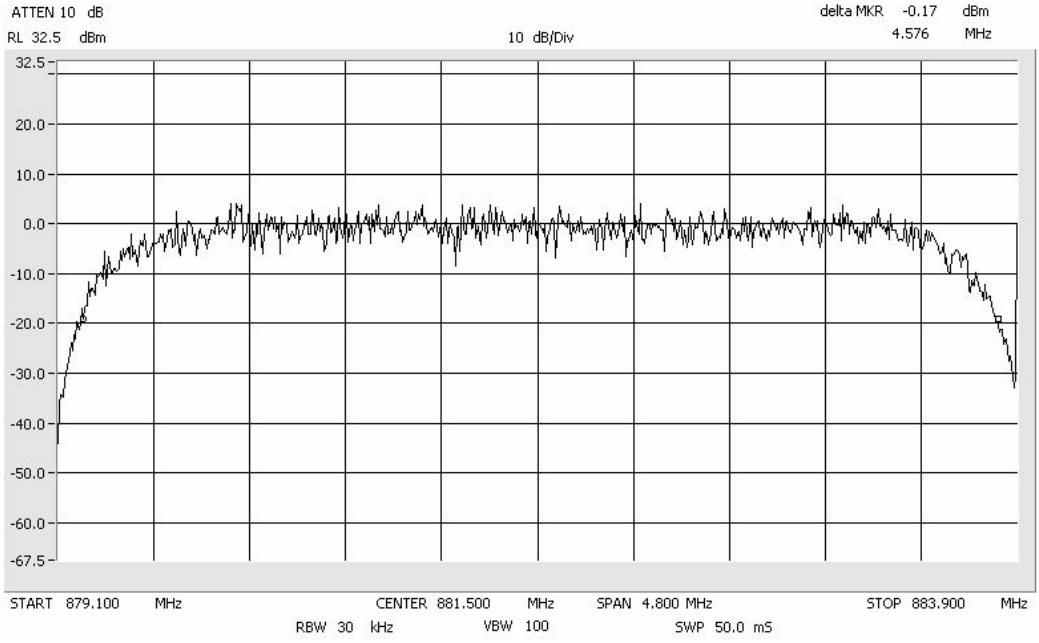
Occupied Bandwidth
EVDO
Signal Out

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



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

Occupied Bandwidth
W-CDMA
Signal In



Occupied Bandwidth
W-CDMA
Signal Out

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

Frequency Tolerance Test for ADC Inc.
Digivance® Indoor Coverage Solution
Model Numbers DGVIH1110000000000 and DGVIR1300000000000

Back

EUT Cellular 800 MHz

HOST	REMOTE			
Input Voltage	**Input Voltage**	**Carrier Frequency**	**Measured Frequency**	**Meets Requirements?**
24 VDC	100 VAC	869.200 MHz	869.200 MHz	Yes
36 VDC	175 VAC	869.200 MHz	869.200 MHz	Yes
48 VDC	250 VAC	869.200 MHz	869.200 MHz	Yes
24 VDC	100 VAC	881.500 MHz	881.500 MHz	Yes
36 VDC	175 VAC	881.500 MHz	881.500 MHz	Yes
48 VDC	250 VAC	881.500 MHz	881.500 MHz	Yes
24 VDC	100 VAC	893.800 MHz	893.800 MHz	Yes
36 VDC	175 VAC	893.800 MHz	893.800 MHz	Yes
48 VDC	250 VAC	893.800 MHz	893.800 MHz	Yes
Temperature		**Carrier Frequency**	**Measured Frequency**	**Meets Requirements?**
-30 Deg. C		869.200 MHz	869.200 MHz	Yes
-20 Deg. C		869.200 MHz	869.200 MHz	Yes
-10 Deg. C		869.200 MHz	869.200 MHz	Yes
0 Deg. C		869.200 MHz	869.200 MHz	Yes
10 Deg. C		869.200 MHz	869.200 MHz	Yes
20 Deg. C		869.200 MHz	869.200 MHz	Yes
30 Deg. C		869.200 MHz	869.200 MHz	Yes
40 Deg. C		869.200 MHz	869.200 MHz	Yes
50 Deg. C		869.200 MHz	869.200 MHz	Yes
-30 Deg. C		881.500 MHz	881.500 MHz	Yes
-20 Deg. C		881.500 MHz	881.500 MHz	Yes
-10 Deg. C		881.500 MHz	881.500 MHz	Yes
0 Deg. C		881.500 MHz	881.500 MHz	Yes
10 Deg. C		881.500 MHz	881.500 MHz	Yes
20 Deg. C		881.500 MHz	881.500 MHz	Yes
30 Deg. C		881.500 MHz	881.500 MHz	Yes
40 Deg. C		881.500 MHz	881.500 MHz	Yes
50 Deg. C		881.500 MHz	881.500 MHz	Yes
-30 Deg. C		893.800 MHz	893.800 MHz	Yes
-20 Deg. C		893.800 MHz	893.800 MHz	Yes
-10 Deg. C		893.800 MHz	893.800 MHz	Yes
0 Deg. C		893.800 MHz	893.800 MHz	Yes
10 Deg. C		893.800 MHz	893.800 MHz	Yes
20 Deg. C		893.800 MHz	893.800 MHz	Yes
30 Deg. C		893.800 MHz	893.800 MHz	Yes
40 Deg. C		893.800 MHz	893.800 MHz	Yes
50 Deg. C		893.800 MHz	893.800 MHz	Yes

6.0 APPENDIX B

Intertek Test Data

Back to Test Data:

Substitution Results:
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Back to Table of Contents:

Test Engineer: Norman Shpilsher **Date:** 01 December, 2006

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: 3110938MIN-001
Project Number: 3110938
December 4, 2006

Testing performed on the
DGIR1300000000000

to
FCC Part 22

For
ADC Telecommunications

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

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

Prepared by: _____ Date: December 4, 2006
Norman Shpilsher

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1.0 JOB DESCRIPTION

Equipment:	DGIR1300000000000
Equipment Description:	Digivance Indoor Coverage Solutions (ICS)
Transmitter Operating Range:	869 to 894MHz
Customer:	Mr. Mark F. Miska ADC Telecommunications 5341 12th Avenue East Shakopee, MN 55379
Test Standards:	FCC Part 22
Date Sample Submitted:	December 1, 2006
Test Work Started:	December 1, 2006
Test Work Completed:	December 1, 2006
Test Sample Conditions:	Good

2.0 TEST RESULTS

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

TEST STANDARD	TEST	COMMENTS
FCC Part 22	Spurious Enclosure Radiated Emissions	Pass

The EUT was tested at low (869.2MHz), middle (881.5MHz), and upper (893.8MHz) operating frequency.
Testing was performed in frequency range from 30MHz to 10GHz.
Spurious Radiated Emissions in frequency range from 30MHz to 1GHz does not vary with the transmitter operating frequency and are shown in Table 1 and Graphs 1 to 3.
Spurious Radiated Emissions in frequency range from 1 to 10GHz are shown in Tables 2 to 4 and Graphs 4 to 6.
Spurious Radiated Emissions Power (substitution measurements) is shown in Table 5.

Spuriuos Radiated Emissions from 30MHz to 1GHz **Date:** 12-01-2006

Company: ADC Telecommunications
Model: DGIR1300000000000
Test Engineer: Norman Shpilsher
Special Info:
Standard: FCC Part 22
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
Emissions at fundamental frequency removed from the Table
All measurements were taken using a Peak detector

Table # 1

Frequency	Ant. Polarity	Reading dBμV	Ant & Cable CF (dB1/m)	Total at 3m dBμV/m	Reference Limit dBμV/m	Margin dB
70.901 MHz	V	36.9	7.3	44.2	94.0	-49.8
141.82 MHz	V	50.8	12.8	63.6	94.0	-30.4
212.87 MHz	V	33.1	12.0	45.1	94.0	-48.9
284.25 MHz	V	50.0	15.5	65.5	94.0	-28.5
354.72 MHz	V	32.2	17.7	49.9	94.0	-44.1
426.06 MHz	V	46.8	19.7	66.5	94.0	-27.5
568.06 MHz	V	32.8	22.1	54.9	94.0	-39.1
639.4 MHz	V	25.5	22.8	48.2	94.0	-45.8
780.72 MHz	V	24.4	24.0	48.4	94.0	-45.6
852.17 MHz	V	30.3	24.8	55.1	94.0	-38.9
881.87 MHz	V	35.5	25.2	60.7	94.0	-33.3
994.34 MHz	V	19.2	26.2	45.4	94.0	-48.7
141.82 MHz	H	48.5	12.8	61.3	94.0	-32.7
284.25 MHz	H	50.0	15.5	65.4	94.0	-28.6
336.71 MHz	H	27.7	16.8	44.6	94.0	-49.4
354.72 MHz	H	35.1	17.7	52.8	94.0	-41.2
426.06 MHz	H	51.0	19.7	70.7	94.0	-23.4
568.06 MHz	H	29.3	22.1	51.3	94.0	-42.7
639.4 MHz	H	23.1	22.8	45.9	94.0	-48.1
780.72 MHz	H	20.1	24.0	44.1	94.0	-49.9
852.17 MHz	H	31.1	24.8	55.9	94.0	-38.1
881.87 MHz	H	41.9	25.2	67.1	94.0	-27.0
922.9 MHz	H	22.2	25.4	47.5	94.0	-46.5
994.34 MHz	H	22.0	26.2	48.2	94.0	-45.8
998.59 MHz	H	19.3	26.2	45.5	94.0	-48.5

Spuriuous Radiated Emissions Field Strength from 1 to 10GHz **Date:** 12-01-2006

Company: ADC Telecommunications
Model: DGIR1300000000000
Test Engineer: Norman Shpilsher
Special Info: 869.2MHz Opearaing Frequency.
Standard: FCC Part 22
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
All measurements were taken using a Peak detector

Table # 2

Frequency MHz	Antenna Polarity	Reading dBμV	Ant & Cable CF (dB1/m)	Pre-Amp. Gain (dB)	Total at 3m dBμV/m	Reference Limit dBμV/m	Margin dB
1.018 GHz	V	53.0	26.0	39.8	39.3	94.0	-54.7
1.064 GHz	V	55.7	26.2	39.7	42.1	94.0	-51.9
1.136 GHz	V	50.0	26.5	39.7	36.8	94.0	-57.2
1.74 GHz	V	51.5	28.9	39.0	41.4	94.0	-52.6
1.894 GHz	V	49.8	29.6	38.8	40.6	94.0	-53.4
2.458 GHz	V	45.5	31.2	37.9	38.8	94.0	-55.2
2.608 GHz	V	64.6	31.6	37.8	58.4	94.0	-35.6
3.6 GHz	V	46.1	34.9	37.6	43.3	94.0	-50.7
4.346 GHz	V	45.2	36.4	37.6	44.1	94.0	-49.9
5.066 GHz	V	45.7	37.5	37.6	45.6	94.0	-48.4
5.216 GHz	V	51.5	37.8	37.5	51.8	94.0	-42.2
6.084 GHz	V	44.3	38.8	36.5	46.6	94.0	-47.4
6.956 GHz	V	44.0	40.0	37.1	46.9	94.0	-47.1
9.722 GHz	V	37.4	44.1	34.8	46.7	94.0	-47.3
1.018 GHz	H	58.4	26.0	39.8	44.7	94.0	-49.3
1.064 GHz	H	57.6	26.2	39.7	44.1	94.0	-49.9
1.136 GHz	H	51.2	26.5	39.7	38.0	94.0	-56.0
1.208 GHz	H	47.6	26.8	39.6	34.7	94.0	-59.3
1.74 GHz	H	60.8	28.9	39.0	50.7	94.0	-43.3
2.608 GHz	H	62.4	31.6	37.8	56.2	94.0	-37.8
3.6 GHz	H	47.3	34.9	37.6	44.6	94.0	-49.4
4.346 GHz	H	46.3	36.4	37.6	45.1	94.0	-48.9
5.216 GHz	H	48.5	37.8	37.5	48.8	94.0	-45.2
6.956 GHz	H	44.5	40.0	37.1	47.4	94.0	-46.6
9.694 GHz	H	37.5	44.0	34.8	46.7	94.0	-47.3

Spuriuous Radiated Emissions Field Strength from 1 to 10GHz **Date:** 12-01-2006

Company: ADC Telecommunications
Model: DGIR1300000000000
Test Engineer: Norman Shpilsher
Special Info: 881.5MHz Opearaing Frequency.
Standard: FCC Part 22
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
All measurements were taken using a Peak detector

Table # 3

Frequency MHz	Antenna Polarity	Reading dBµV	Ant & Cable CF (dB1/m)	Pre-Amp. Gain (dB)	Total at 3m dBµV/m	Reference Limit dBµV/m	Margin dB
1.064 GHz	V	55.4	26.2	39.7	41.9	94.0	-52.1
1.136 GHz	V	51.0	26.5	39.7	37.9	94.0	-56.1
1.764 GHz	V	54.3	29.0	39.0	44.3	94.0	-49.7
1.894 GHz	V	60.7	29.6	38.8	51.4	94.0	-42.6
2.484 GHz	V	46.1	31.2	37.8	39.5	94.0	-54.5
2.646 GHz	V	68.6	31.8	37.9	62.5	94.0	-31.5
3.526 GHz	V	49.6	34.6	37.6	46.7	94.0	-47.3
3.6 GHz	V	46.2	34.9	37.6	43.4	94.0	-50.6
4.408 GHz	V	53.7	36.5	37.5	52.7	94.0	-41.3
5.288 GHz	V	46.4	38.0	37.4	46.9	94.0	-47.1
6.17 GHz	V	52.0	38.9	36.5	54.4	94.0	-39.6
9.774 GHz	V	37.5	44.1	34.7	46.9	94.0	-47.1
1.042 GHz	H	59.7	26.1	39.8	46.1	94.0	-47.9
1.064 GHz	H	58.1	26.2	39.7	44.6	94.0	-49.4
1.136 GHz	H	50.7	26.5	39.7	37.6	94.0	-56.4
1.208 GHz	H	48.0	26.8	39.6	35.2	94.0	-58.8
1.764 GHz	H	50.6	29.0	39.0	40.6	94.0	-53.4
2.646 GHz	H	62.7	31.8	37.9	56.6	94.0	-37.4
3.526 GHz	H	47.8	34.6	37.6	44.8	94.0	-49.2
3.6 GHz	H	47.4	34.9	37.6	44.7	94.0	-49.3
4.408 GHz	H	49.0	36.5	37.5	48.0	94.0	-46.0
6.17 GHz	H	50.9	38.9	36.5	53.3	94.0	-40.7
9.976 GHz	H	37.2	44.5	34.6	47.1	94.0	-46.9

Spuriuous Radiated Emissions Field Strength from 1 to 10GHz **Date:** 12-01-2006

Company: ADC Telecommunications
Model: DGIR1300000000000
Test Engineer: Norman Shpilsher
Special Info: 893.8MHz Opearaing Frequency.
Standard: FCC Part 22
Test Site: 3m Anechoic Chamber, 3m measurement distance
Note: The table shows the worst case radiated emissions
All measurements were taken using a Peak detector

Table # 4

Frequency MHz	Antenna Polarity	Reading dBμV	Ant & Cable CF (dB1/m)	Pre-Amp. Gain (dB)	Total at 3m dBμV/m	Reference Limit dBμV/m	Margin dB
1.064 GHz	V	55.5	26.2	39.7	42.0	94.0	-52.0
1.136 GHz	V	51.2	26.5	39.7	38.0	94.0	-56.0
1.788 GHz	V	48.5	29.1	38.9	38.7	94.0	-55.3
1.884 GHz	V	49.5	29.5	38.8	40.2	94.0	-53.8
1.894 GHz	V	60.7	29.6	38.8	51.5	94.0	-42.5
2.682 GHz	V	46.0	31.9	37.9	40.0	94.0	-54.0
3.6 GHz	V	47.1	34.9	37.6	44.4	94.0	-49.6
9.984 GHz	V	37.0	44.5	34.6	46.9	94.0	-47.1
1.064 GHz	H	57.8	26.2	39.7	44.2	94.0	-49.8
1.136 GHz	H	51.2	26.5	39.7	38.0	94.0	-56.0
1.208 GHz	H	47.5	26.8	39.6	34.6	94.0	-59.4
1.852 GHz	H	48.4	29.4	38.8	39.0	94.0	-55.0
1.896 GHz	H	47.2	29.6	38.8	38.0	94.0	-56.0
3.6 GHz	H	47.3	34.9	37.6	44.6	94.0	-49.4
9.706 GHz	H	37.8	44.0	34.8	47.0	94.0	-47.0

Spurious Radiated Emissions Power **Date:** 12-01-2006

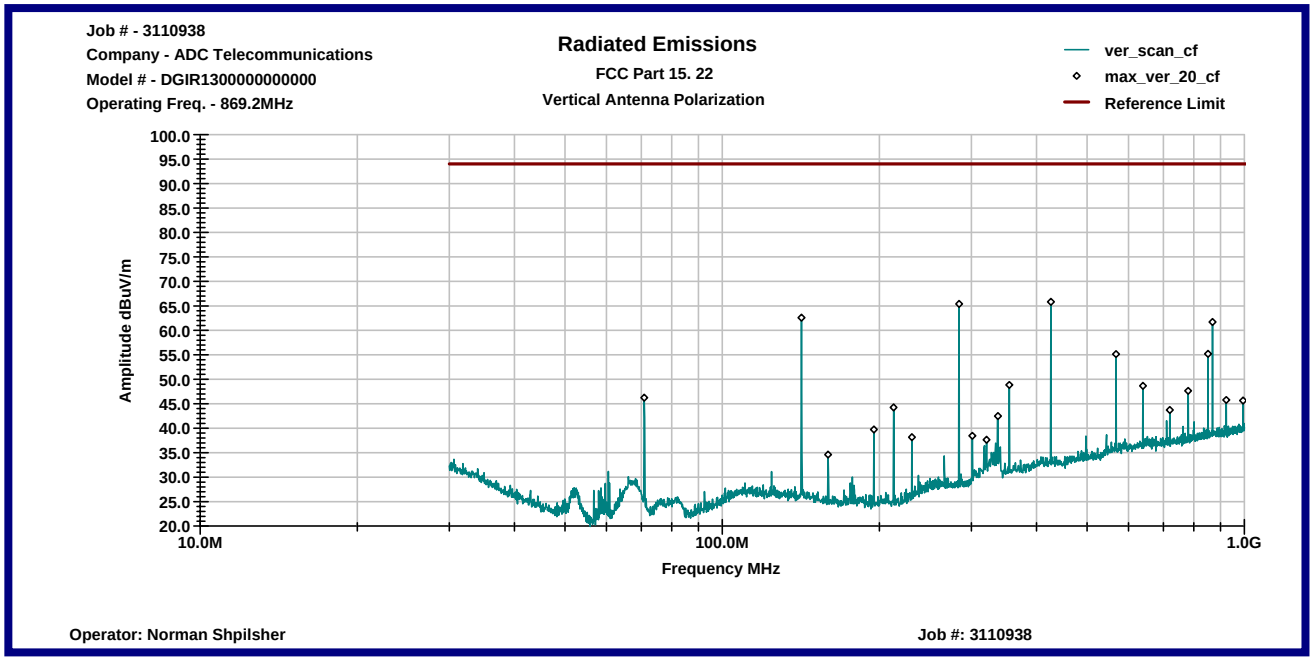
Company: ADC Telecommunications
Model: DGIR1300000000000
Test Engineer: Norman Shpilsher
Special Config. Info: Sabstitution Method
Standard: FCC Part 22
Frequency Range: 30MHz to 10GHz
Test Site: 3m Anechoic Chamber
Note: The table shows the worst case radiated emissions
Emissions at fundamental frequency removed from the Table

Table # 5

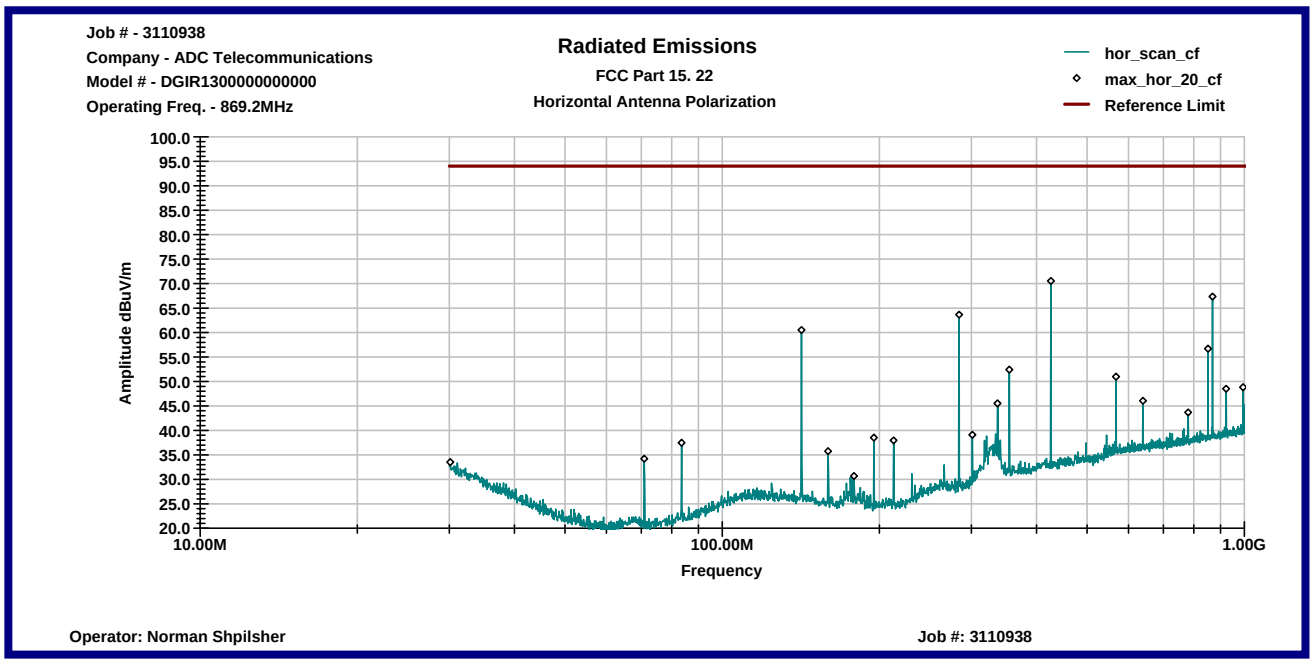
Frequency of Emissions MHz	Operating Frequency MHz	Antenna Polarity	Measured Emissions dBμV	Substitution Generator Power dBm	Substitution Antenna Gain dBi	Cable Loss dB	ERP Spur. Emissions dBm	Limit dBm	Margin dB
426.00	881.5	V	48.6	-29.5	0.0	0.1	-29.6	-13.0	-16.6
2607.61	869.2	V	68.2	-41.0	10.0	0.3	-31.3	-13.0	-18.3
2644.50	881.5	V	69.7	-39.2	10.0	0.3	-29.5	-13.0	-16.5
2681.45	893.8	V	49.2	-61.6	10.0	0.3	-51.9	-13.0	-38.9
426	881.5	H	49.0	-29.5	0.0	0.1	-29.6	-13.0	-16.6
2607.61	869.2	H	62.5	-49.4	9.9	0.3	-39.8	-13.0	-26.8
2644.5	881.5	H	65.1	-45.8	9.9	0.3	-36.2	-13.0	-23.2
2681.45	893.8	H	47.0	-65.5	9.9	0.3	-55.9	-13.0	-42.9

Graph # 1
Radiated Emissions from 30MHz to 1GHz, 869.2MHz Channel

Vertical Antenna Polarization

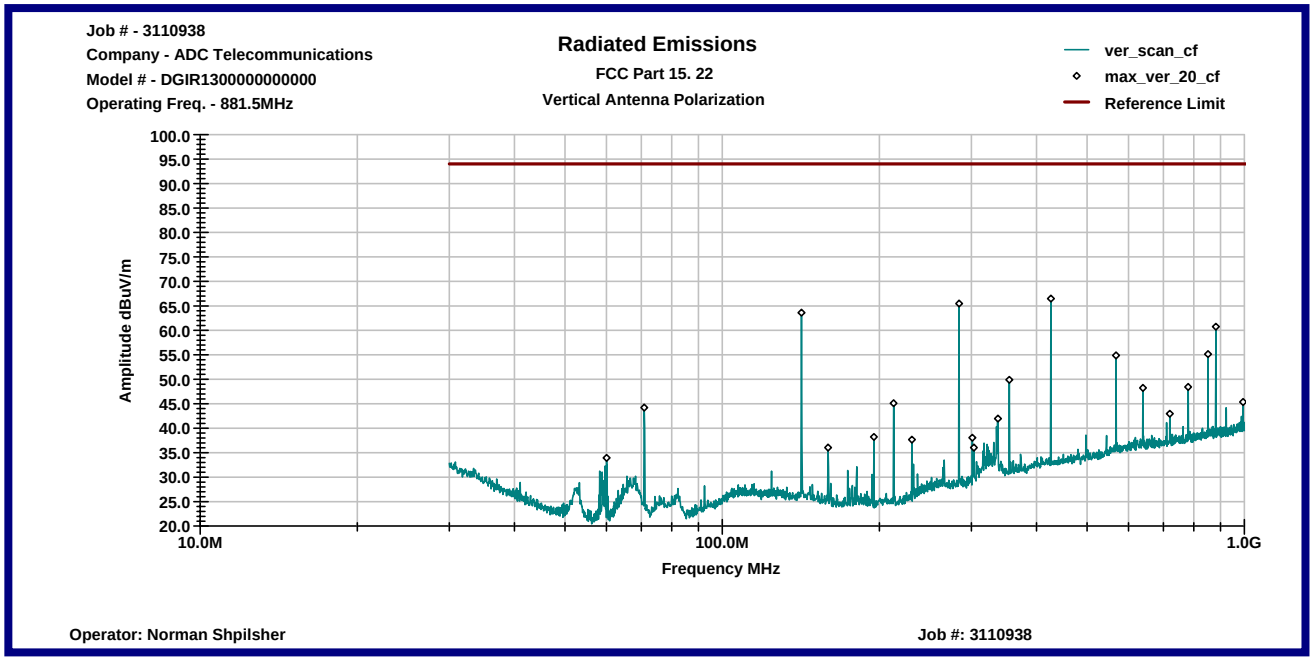


Horizontal Antenna Polarization

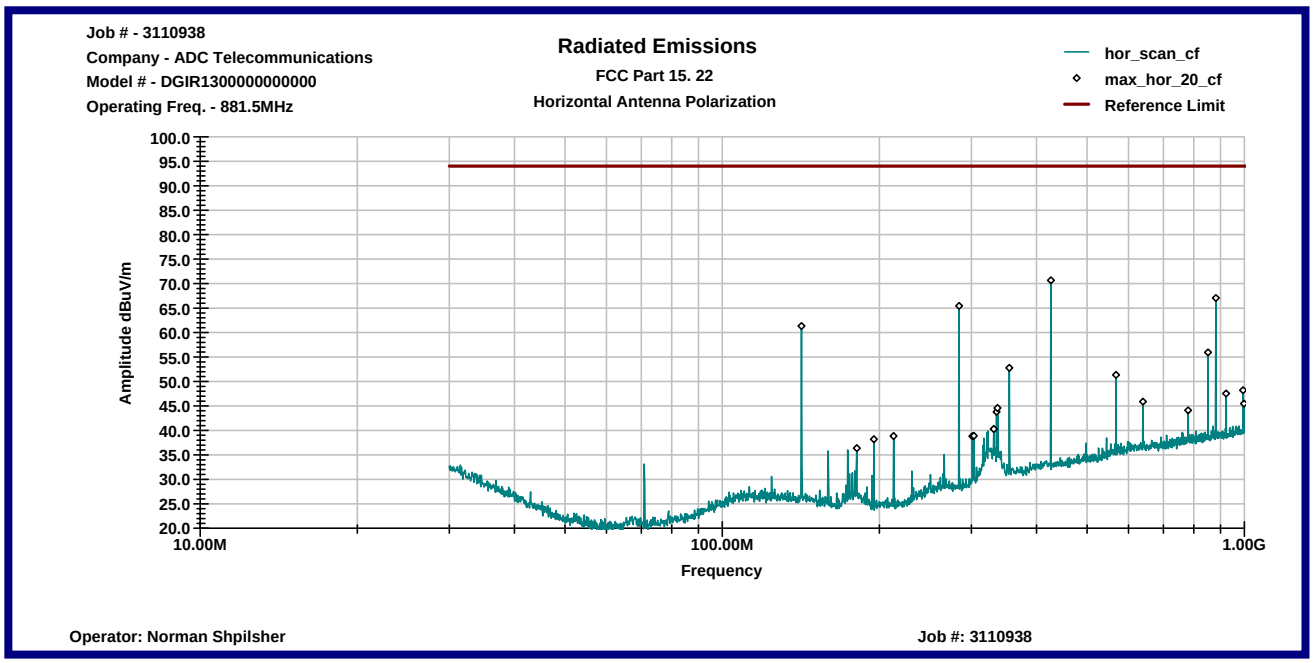


Graph # 2
Radiated Emissions from 30MHz to 1GHz, 881.5MHz Channel

Vertical Antenna Polarization

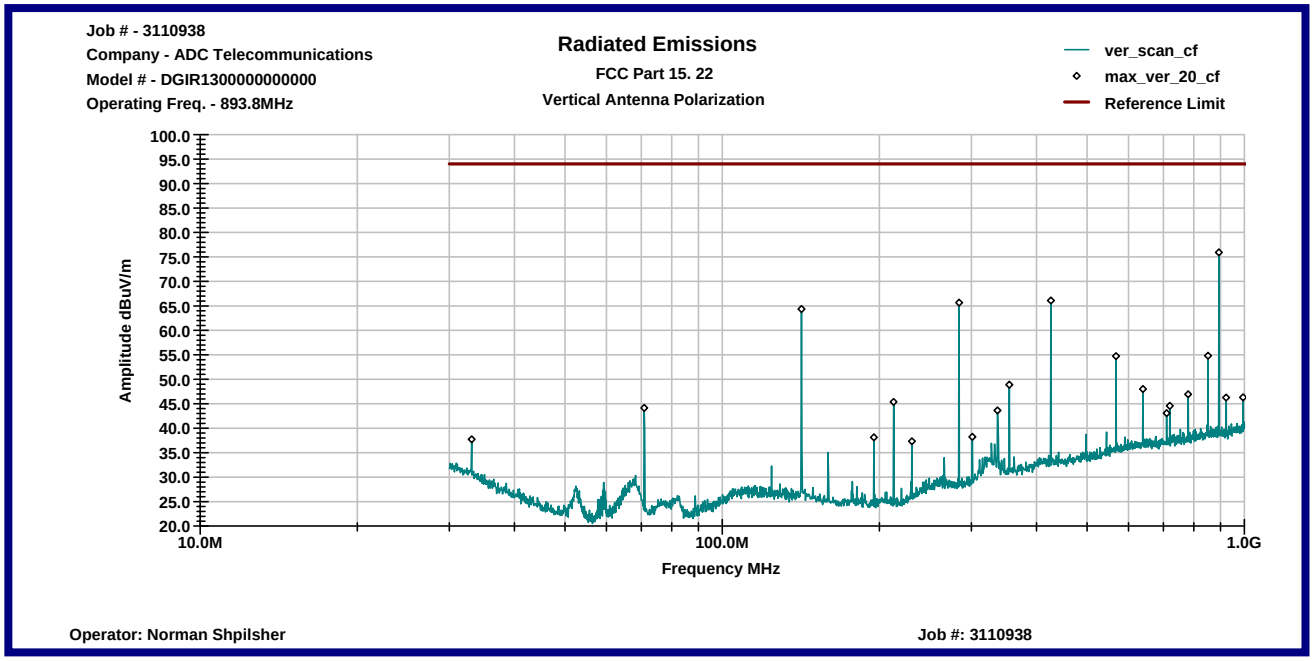


Horizontal Antenna Polarization

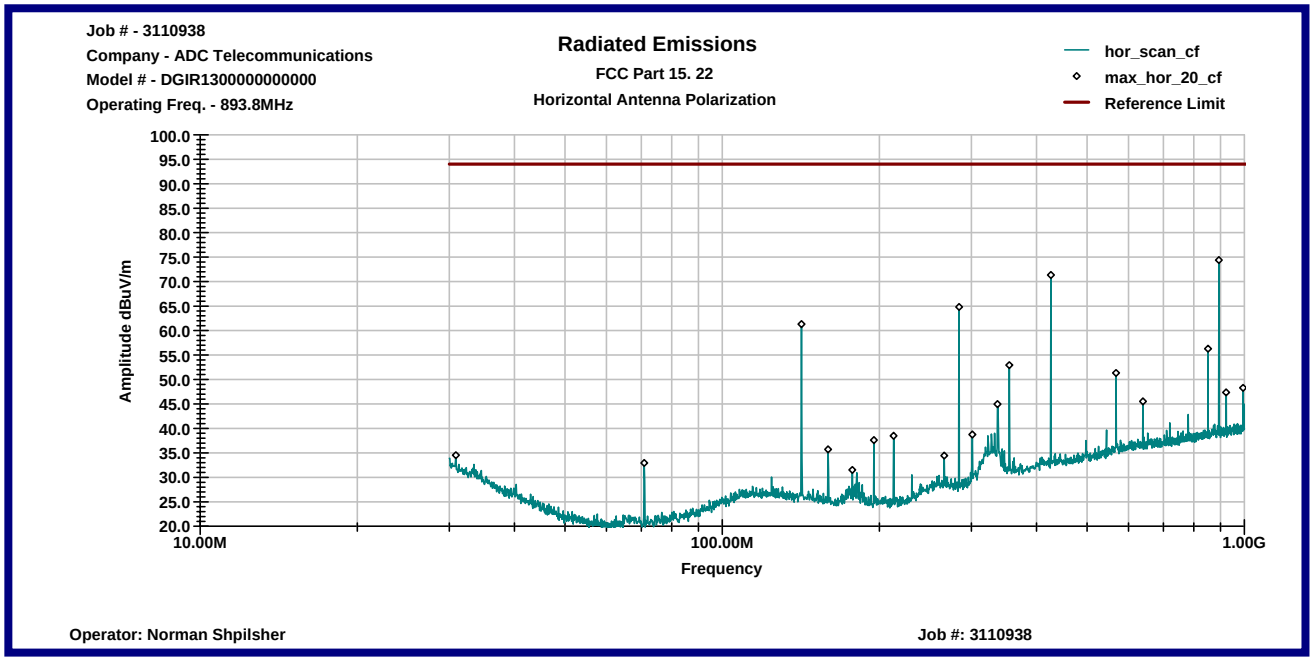


Graph # 3
Radiated Emissions from 30MHz to 1GHz, 893.5MHz Channel

Vertical Antenna Polarization

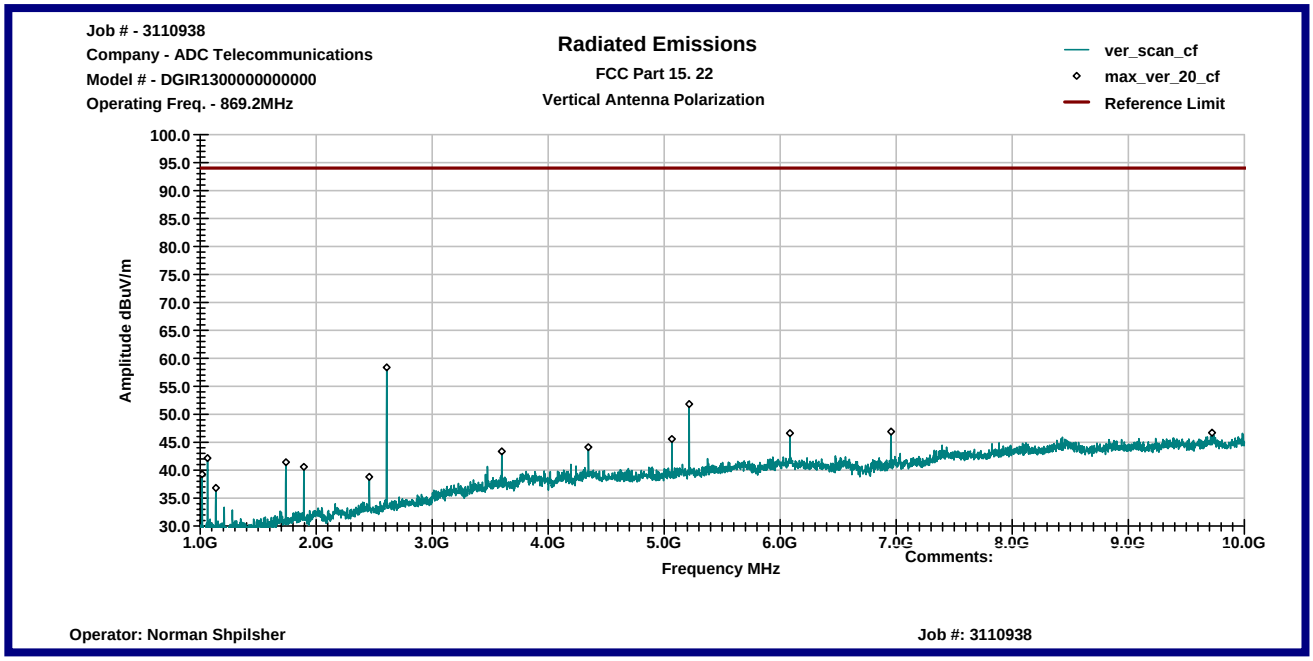


Horizontal Antenna Polarization

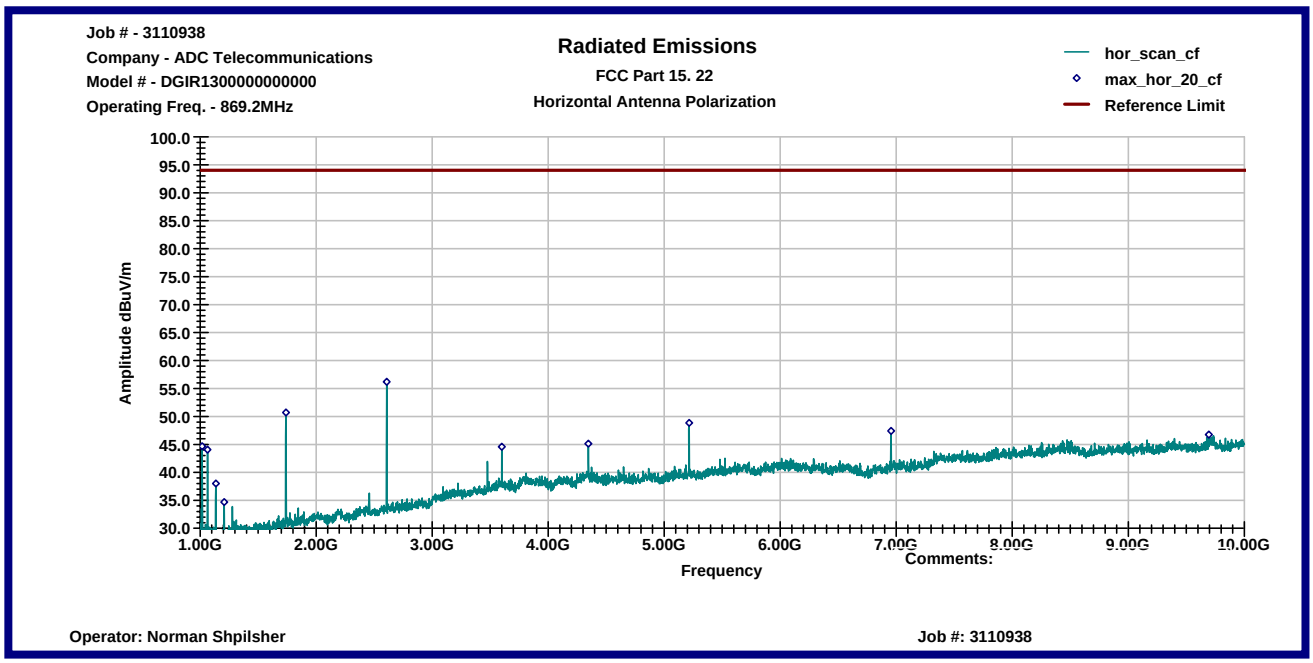


Graph # 4
Radiated Emissions from 1 to 10GHz, 869.2MHz Channel

Vertical Antenna Polarization

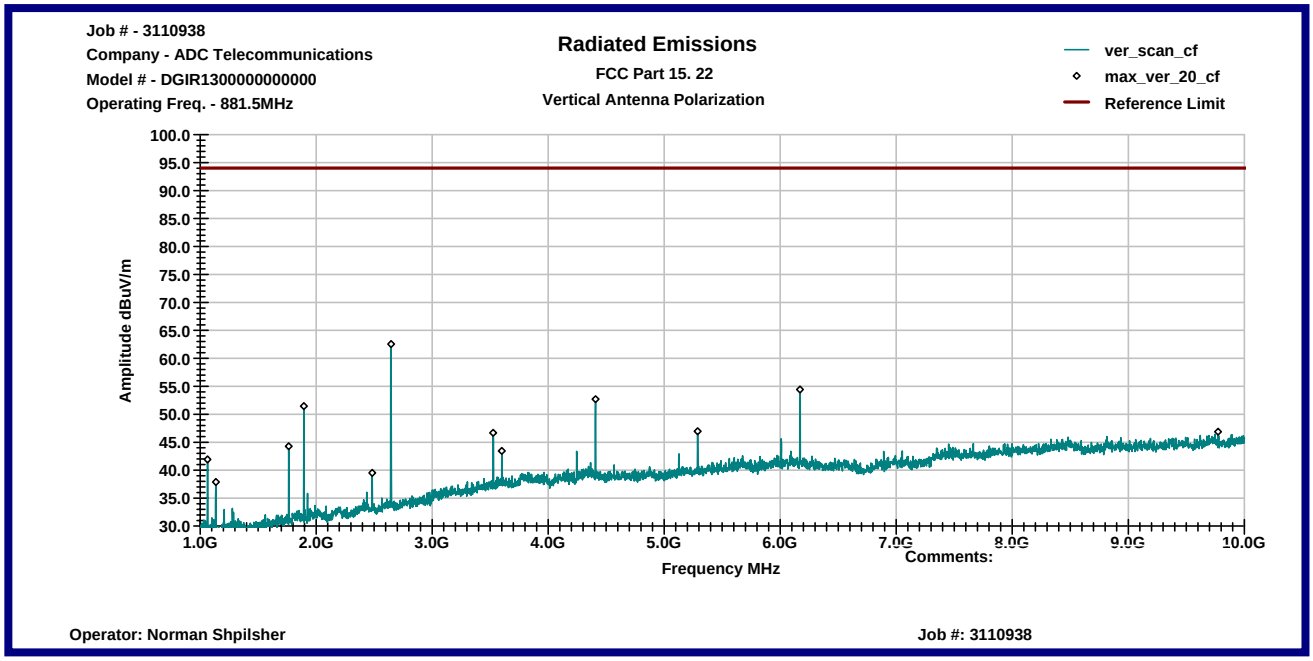


Horizontal Antenna Polarization

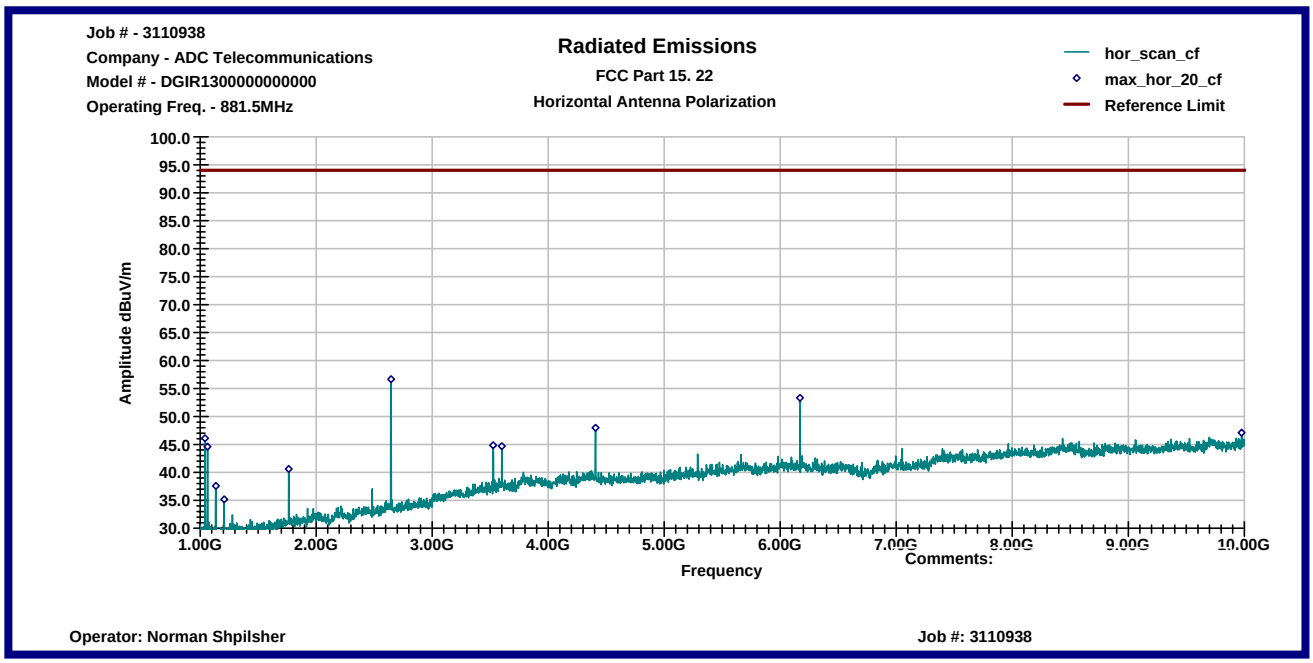


Graph # 5
Radiated Emissions from 1 to 10GHz, 881.5MHz Channel

Vertical Antenna Polarization

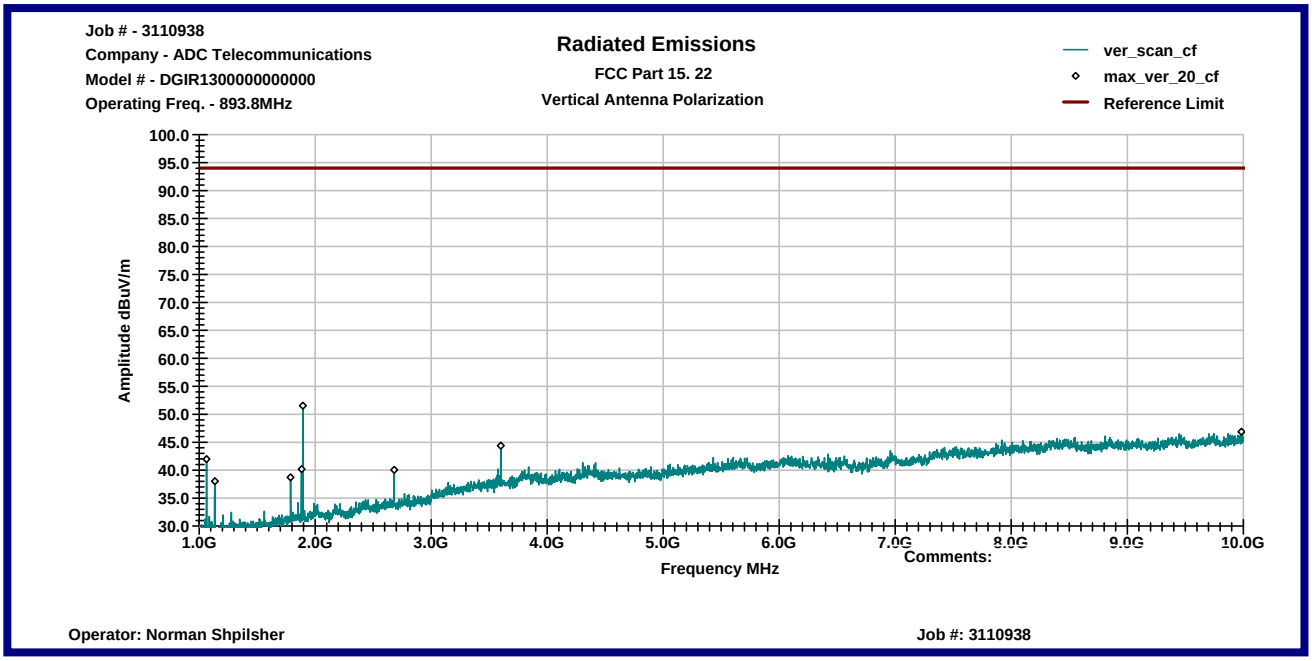


Horizontal Antenna Polarization

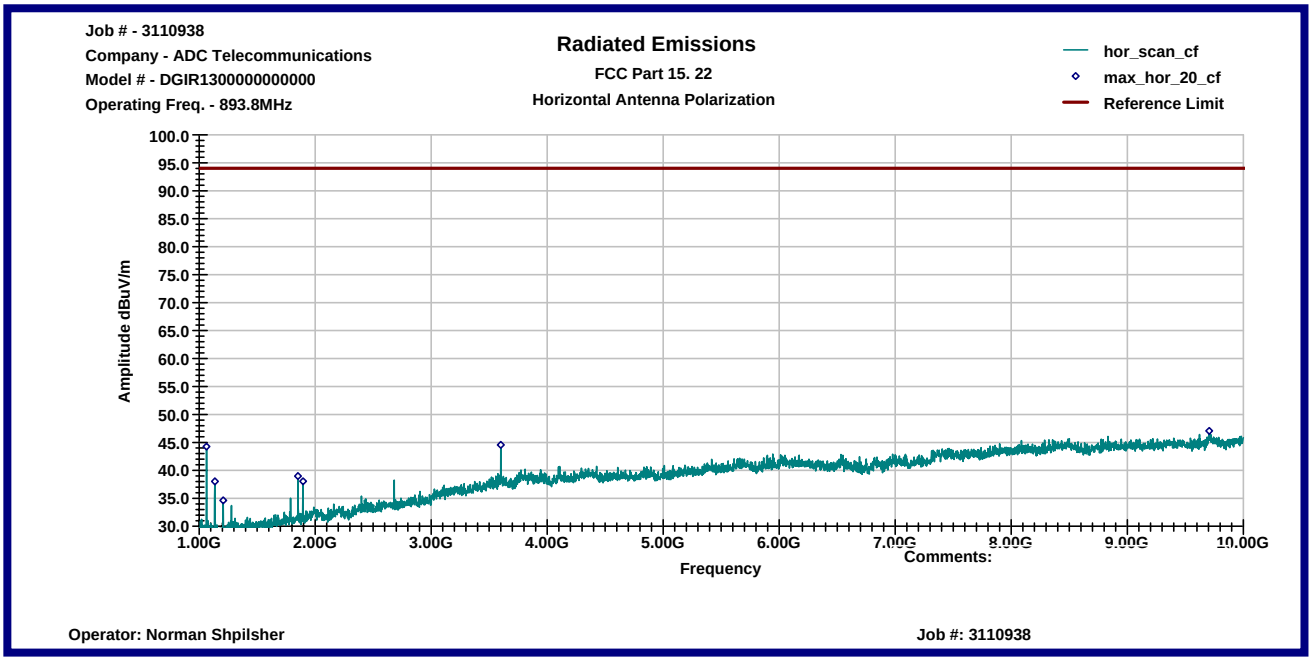


Graph # 6
Radiated Emissions from 1 to 10GHz, 893.8MHz Channel

Vertical Antenna Polarization



Horizontal Antenna Polarization



3.0 TEST EQUIPMENT / ENVIRONMENTAL CONDITIONS

Receivers/Spectrum Analyzers and Test Software

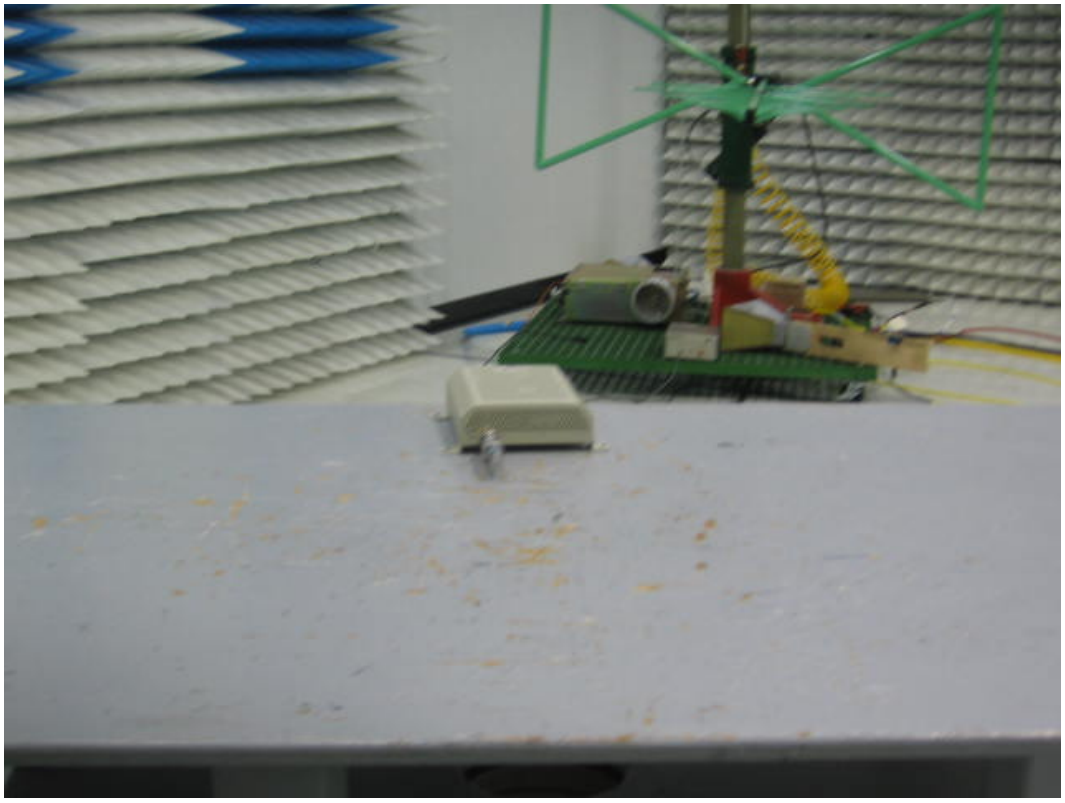
DESCRIPTION	SERIAL NO.	LAST CAL	CAL DUE	USED
HP85462A Receiver RF Section	3325A00106	04/06	04/07	
HP85460A RF Filter Section	3330A00109	04/06	04/07	
HP85462A Receiver RF Section	3549A00306	02/06	02/07	
HP85460A RF Filter Section	3448A00276	02/06	02/07	
Rohde & Schwarz FSP 40 Spectrum Analyzer	100024	07/06	07/07	X
Rohde & Schwarz ESCI Spectrum Analyzer	100358	04/06	04/07	X
Advantest R3271A Spectrum Analyzer	55050084	10/06	10/07	
Agilent E7402A Spectrum Analyzer	MY44212200	10/06	10/07	
TILE! Instrument Control System	Ver. 3.4 K.15	N/A	N/A	X

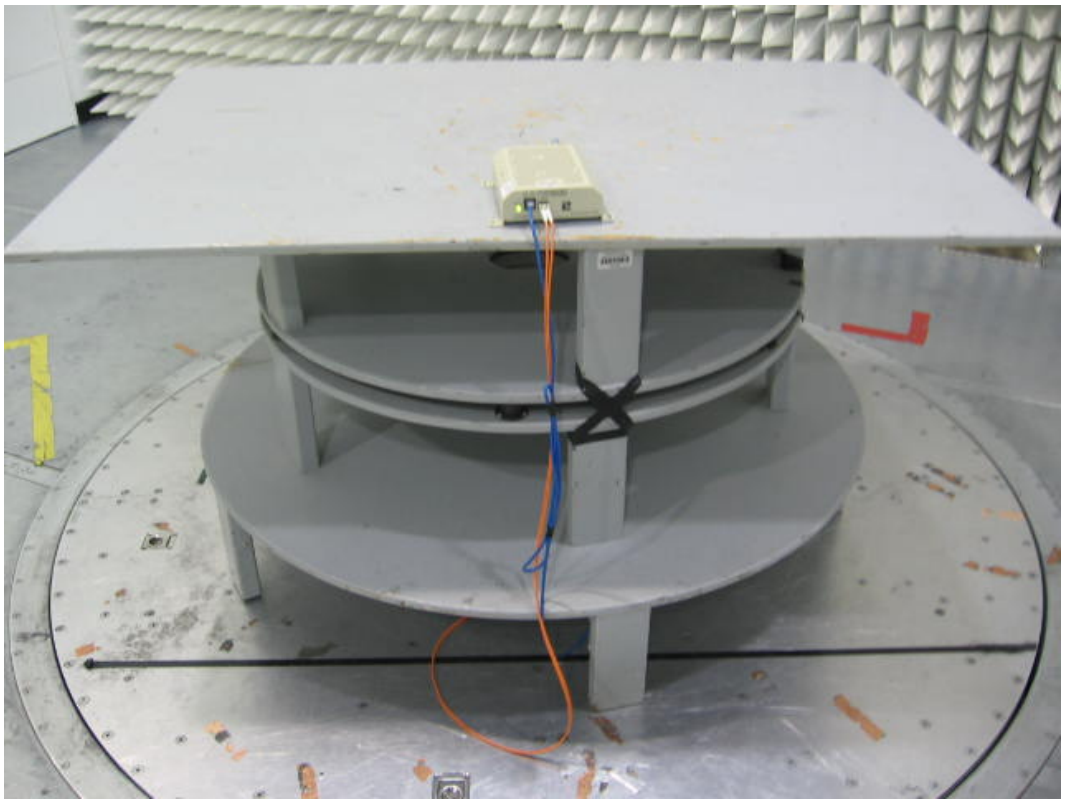
Antennas/Generators/Pre-Amps

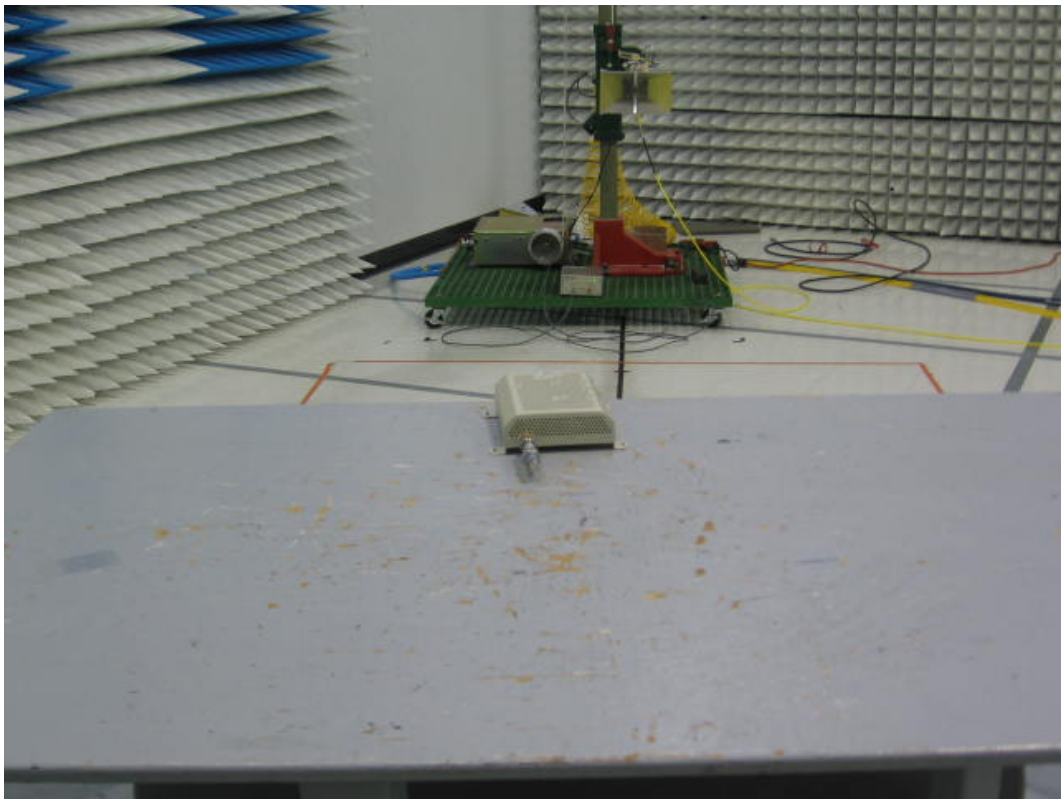
DESCRIPTION	SERIAL NO.	LAST CAL	CAL DUE	USED
Schaffner-Chase Bicono-Log Antenna	2468	01/06	01/07	X
Schaffner-Chase Bicono-Log Antenna	2630	08/06	08/07	
EMCO Horn Antenna 3115	9507-4513	01/06	01/07	X
EMCO Horn Antenna 3115	6579	02/06	02/07	X
Roberts Antenna 4 400-1000MHz	00599	N/A	N/A	X
A.H. System Loop Antenna SAS-200/562	215	05/06	05/07	
MITEQ AMF-5D Pre-Amplifier	1122951	02/06	02/07	X
MITEQ AMF-6F-16002600-25-10P Pre-Amplifier	1222383	09/06	09/07	
Rohde & Schwarz SMT 03, Signal Generator	DE12157	07/06	07/07	X
HP 8447F Pre-Amplifier	3113A04974	02/06	02/07	

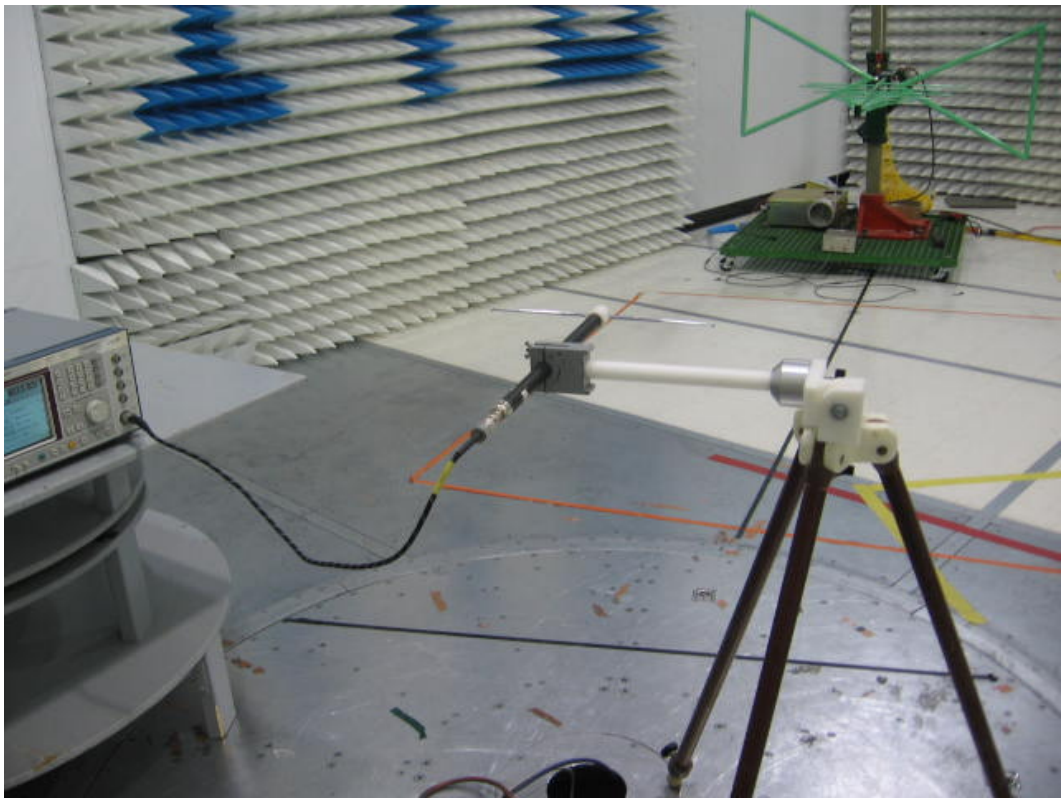
Temperature: 23° C
Relative Humidity: 17%
Atmospheric pressure: 99.1 kPa

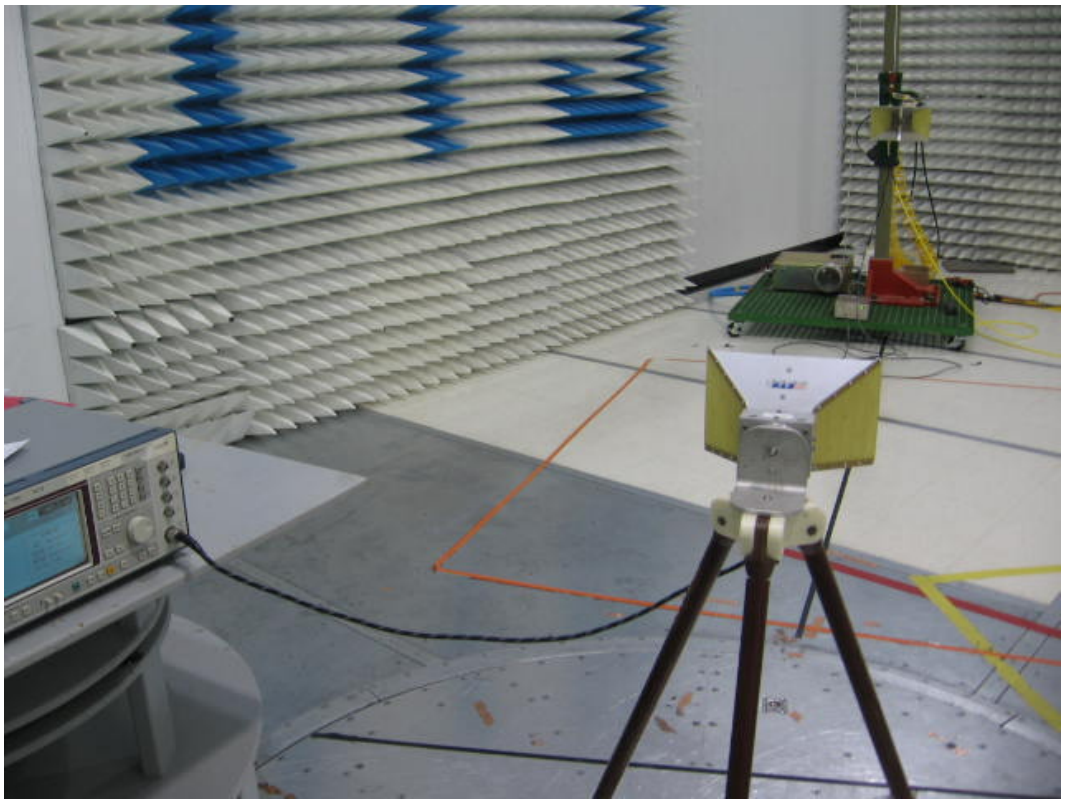
4.0 CONFIGURATION PHOTOGRAPHS











7.0 APPENDIX C

Measurement Protocol

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Measurement Protocol

Environmental conditions of the lab, (ADC)
Temperature: 21 - 26º C
Relative Humidity: 21 - 24 %
Atmospheric Pressure: 97.8 - 100.0 kPa

Test Methodology:
Emission testing is performed according to the procedures in ANSI C63.4-2003.

Measurement Uncertainty
The test system for conducted emissions is defined as the signal generator(s), the power meter, the spectrum analyzer and the coaxial cable. The equipment comprising the test systems is calibrated prior to testing the EUT.

Justification
The Equipment Under Test (EUT) is configured in a typical user arrangement in accordance with the manufacturer's instructions. A cable is connected to each available port and either terminated with a peripheral into its characteristic impedance or left un-terminated. When appropriate, the cables are manually manipulated with respect to each other to obtain maximum emissions from the unit.

Radiated Emissions
The final level, in dBuV/m, equals the reading from the spectrum analyzer (Level dBuV), adding the antenna correction factor and cable loss factor (Factor dB) to it, and subtracting the preamp gain (and duty cycle correction factor, if applicable). This result then has the limit subtracted from it to provide the Delta, which gives the tabular data as shown in the data sheets in Appendix B.

Example:

FREQ (MHz)	LEVEL (dBuV)	CABLE/ANT/PREAMP FINAL (dB) (dB/m) (dB) (dBuV/m)	POL/HGT/AZ (m) (deg)	DELTA1
60.80	42.5Qp +	1.2 + 10.9 - 25.5 = 29.1	V 1.0 0.0	-10.9

Substitution Method
A cabinet (or enclosure) radiated emission scan was also made, at Intertek, with the EUT's antenna replaced with a termination to demonstrate case radiation compliance to the –13 dBm requirement. Radiated emissions from the EUT are measured in the frequency range of 30 to 20,000 MHz using a spectrum analyzer and appropriate broadband linearly polarized antennas. Table top equipment is placed on a 1.0 X 1.5 meter non-conducting table 80 centimeters above the ground plane. Floor standing equipment is place directly on the turntable/ground plane. Interface cable that are closer than 40 centimeters to the ground plane are bundled in the center in a serpentine fashion so they are at least 40 centimeters from the ground plane. Cables to simulators/testers (if used in this test) are routed through the center of the table and to a screen room located outside the test area. The antenna is positioned 3 meters horizontally from the EUT. To locate maximum emissions from the test sample the antenna is varied in height from 1 to 4 meters, measurement scans are made with both horizontal and vertical antenna polarizations and the EUT are rotated 360 degrees. The field strength levels were measured per ANSI C63.4. The EUT is then replaced with a tuned dipole antenna (below 1GHz) or horn antenna (above 1 GHz). The substitute antenna was placed in the same polarization as the test antenna. A signal generator was used to generate a signal level that matched the highest level measured from the EUT. The signal generator level minus the cable loss from the signal generator to the substitute antenna plus the substitute antenna gain equals the spurious power level.

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