



MOTOROLA

PERSONAL COMMUNICATIONS SECTOR

**PRODUCT SAFETY AND COMPLIANCE
EMC LABORATORY**

EMC TEST REPORT

Test Report Number – 12268-1 Rev. 1

Report Date – October 20, 2003

Revised - October 31, 2003

The test results contained herein relate only to the model(s) identified. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical characteristics.

As the responsible EMC Engineer, I hereby declare that the equipment tested as specified in this report conforms to the requirements indicated.

A handwritten signature in blue ink that reads "Michael E. Hill".

Signature

Name: Michael Hill

Title: Senior Electrical Engineer

Date : 10/20/03

This report must not be reproduced, except in full, without written approval from this laboratory.

THIS REPORT MUST NOT BE USED TO CLAIM PRODUCT ENDORSEMENT BY A2LA OR ANY AGENCY OF THE U.S. GOVERNMENT.

A2LA Certificate Number: 1846-01



Table of Contents

Description	Page
Test Report Details	4
Applicable Standards	5
Summary of Testing	6
General and Special Conditions	6
Equipment and Cable Configurations	7
Measuring Equipment and Calibration Information	7
Measurement Procedures and Data	
RF Power Output	8
Radiated Power (ERP)	9
Modulation Characteristics	11
Transmit Audio Frequency Response	11
Post Limiter Filter Attenuation	11
Modulation Limiting vs. Modulation Input Voltage	12
Occupied Bandwidth	13
800 AMPS Unmodulated Carrier	14
800 AMPS Signal	15
800 AMPS Voice	16
800 AMPS Wide Band Data	17
800 AMPS Supervisory Audio Tone	18
800 CDMA Occupied Bandwidth Measurement	19
800 CDMA Reference Plot	20
800 CDMA Bandwidth Plot	21
800 CDMA Lower Band Edge	22
800 CDMA Upper Band Edge	23
1900 CDMA Occupied Bandwidth Measurement	24
1900 CDMA Reference Plot	25
1900 CDMA Occupied Band	26
1900 CDMA Lower Band Edge	27
1900 CDMA Upper Band Edge	28
Spurious Emissions at Antenna Terminals	29
AMPS Tabular and Graphical Data	30
CDMA 800 Tabular and Graphical Data	31
CDMA 1900 Tabular and Graphical Data	32
Field Strength of Spurious Emissions	33

AMPS Tabular and Graphical Data	34
CDMA 800 Tabular and Graphical Data	35
CDMA 1900 Tabular and Graphical Data	36
Frequency Stability	37
AMPS Tabular and Graphical Data	38
CDMA 800 Tabular and Graphical Data	39
CDMA 1900 Tabular and Graphical Data	40
Field Strength of Spurious Emissions From Unintentional Radiators	41
AMPS Tabular and Graphical Data	42
CDMA 800 Tabular and Graphical Data	43
CDMA 1900 Tabular and Graphical Data	44
Appendix A - Radiated Emissions Test Setup Photos	
Figure A.1 – Radiated Emissions Measurement	45
Figure A.2 – Substitution Measurement	45

Test Report Details

Field Strength
Tests Performed By: Underwriters Laboratory Inc.
333 Pfingsten Road
Northbrook, IL 60062-2096
PH (847) 272-8800 Fax (847) 272-8129
Test Firm Registration Number: 91044
Industry Canada Number: IC2180

Tests Performed By: Motorola Personal Communications Sector
Product Safety and Compliance Group
600 North US Hwy 45
Libertyville, IL 60048
PH (847) 523-3630 Fax (847) 523-4538
Motorola PCS FRN: 0004321311
FCC Registration Number: 316588
Industry Canada Number: IC3908

Tests Requested By: Motorola Inc.
Personal Communications Sector
600 North US Hwy 45
Libertyville, IL 60048

Product Type: Cellular Phone

Signaling Capability: AMPS, 800 CDMA, 1900 CDMA

Model Number: V810

Serial Numbers: 3D50A900, 3D50A90E, 3D50A912

Testing Complete Date: October 17, 2003

Applicable Standards

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-part J as well as the following parts:

- Part 15 Subpart B – Unintentional Radiators
- Part 22 Subpart H - Public Mobile Services
- Part 24 - Personal Communications Services
- Part 90 - Private Land Mobile Radio Service

Applicable Standards: TIA EIA 137-A, TIA EIA 98-C, ANSI 63.4 2001, RSS-118 (AMPS), RSS-128 (TDMA), RSS-129 (CDMA), RSS-133 (PCS)

Summary of Testing

Test #	Test Name	Pass/Fail
1	RF Power Output	NA
2	ERP (Effective Radiated Power)	NA
3	Modulation Characteristics	N/A
4	Occupied Bandwidth	Pass
5	Spurious Emissions at Antenna Terminal	Pass
6	Field Strength of Spurious Emissions	Pass
7	Frequency Stability	Pass
8	Field Strength of Spurious Emissions from Unintentional Radiators	Pass

Test #	Test Name	Margin with respect to the Limit
1	RF Power Output	NA
2	ERP (Effective Radiated Power)	NA
3	Modulation Characteristics	NA
4	Occupied Bandwidth	See Plots
5	Spurious Emissions at Antenna Terminal	7.8 dB
6	Field Strength of Spurious Emissions	7.2 dB
7	Frequency Stability	16 Hz
8	Field Strength of Spurious Emissions from Unintentional Radiators	11.3 dB

The margin with respect to the limit is the minimum margin for all modes and bands. () indicates the margin at which the product exceeds the limit.

General and Special Conditions

The EUT was tested using a fully charged battery when applicable. Where a battery could not be used due to the need for a controlled variation of input voltage, an external power supply was utilized.

All testing was done in an indoor controlled environment with an average temperature of 22° C and relative humidity of 50%.

Equipment and Cable Configurations

The EUT was tested in a stand-alone configuration that is representative of typical use.

Measuring Equipment and Calibration Information

Manufacturer Name	Item Name Description	Model #	Serial Number	Calibration Due Date
Agilent	EMC Analyzer	E7405A	US53944019	11/6/03
Hewlett Packard	QP Adapter	85650A	2811A01069	1/15/04
Hewlett Packard	S/A Display	8566B	2542A12974	1/15/04
Hewlett Packard	S/A	8566B	2637A03376	1/15/04
Hewlett Packard	RF Preselector	85685A	2810A00692	1/15/04
Rohde & Schwarz	S/A	FSEK20	DE2525315	1/14/04
EMCO	Horn Antenna 1-18GHz	3115	2638	7/10/04
EMCO	Horn Antenna 18-26.5GHz	3160-09	9904-1165	N/A*
Chase	Bi-Con Antenna 30-300MHz	VBA6106A	1246	6/23/04
Chase	Log-Periodic Antenna	UPA6108	1120	6/18/04
Weinschel	Attenuator Kit – 10, 6 dB	AS6	6675	10/12/04
Thermotron	Environmental Chamber	S-4	31580	12/19/03
Hewlett Packard	System DC Power Supply	66311B	US38447252	10/13/04
Rohde & Schwarz	Mobile Test Station	CMD80	DE29008	03/17/04
Giga-tronics	Universal Power Meter	8652A	8650494	01/07/04
Giga-tronics	Power Sensor	80701A	1833992	12/12/03

All equipment is on a one-year calibration cycle.

Measurement Procedures and Data

RF POWER OUTPUT

Measurement Procedure

The RF output port of the equipment under test is directly coupled to the input of the 8650 series Giga-Tronics power meter through a specialized RF connector. The power meter is set for Modulated Average Power (MAP) mode. The power output is measured for all channels.

CFR Part 2.1046

Measurement Results

* Data supplied by SAR Lab

AMPS

Frequency (MHz)	Power (dBm)
824.04	27.01
836.52	26.90
848.97	26.87

CDMA 800

Frequency (MHz)	Power (dBm)
824.70	24.44
836.52	24.49
848.31	24.58

CDMA 1900

Frequency (MHz)	Power (dBm)
1851.25	24.51
1880.00	24.48
1908.75	24.56

RADIATED (ERP)

Measurement Procedure

The phone was tested in a 16' cubical anechoic chamber with a 2-axis position system that permits taking complete spherical scans of the EUT's radiation patterns. For all tests, the phone was supported in a free space type environment, vertically oriented in the chamber. Tests were done for Analog three frequencies (824.04, 836.52, and 848.87), CDMA 800 three frequencies (824.70, 836.52, and 848.37 MHz), and CDMA 1900 three frequencies (1851.25, 1880.00, and 1908.75 MHz) with antenna stubby.

CDMA measurements were made with the phone placed in a call using the CMD80 mobile station test set. The phone was weakly coupled to the test set and configured to transmit in full data rate mode. Radiated power was measured at each 15 degree step. The radiated power was measured using a Gigatronics 8542C power meter in "Mod Avg" mode. From these measurements, the software calculates the angle at which maximum radiated power occurs for each case, and the radiated power at this angle was extracted from the data. The max radiated power results for the IHDT56DH1 follows, as EIRP in dBm. To get ERP (effective radiated power referenced to a half-wave dipole), subtract 2.1 dB from these numbers.

Measurement Results

* Data not supplied by EMC Lab
See attached.

AMPS:

824.04 MHz:	23.10 dBm
836.52 MHz:	24.03 dBm
848.97 MHz:	23.87 dBm

CDMA 800

824.70 MHz:	22.58 dBm
836.52 MHz:	23.63 dBm
848.37 MHz:	23.09 dBm

CDMA 1900

1851.25 MHz:	24.74 dBm
1880.0 MHz:	25.88 dBm
1908.75 MHz:	24.97 dBm

For all measurements, calibration was performed via gain substitution with a half-wave dipole.

Max EIRP in AMPS 800 is 24.03 dBm (**max ERP is 21.93 dBm**)

Max EIRP in CDMA 800 is 23.63 dBm (**max ERP is 21.53 dBm**)

Max EIRP in CDMA 1900 is 25.88 dBm

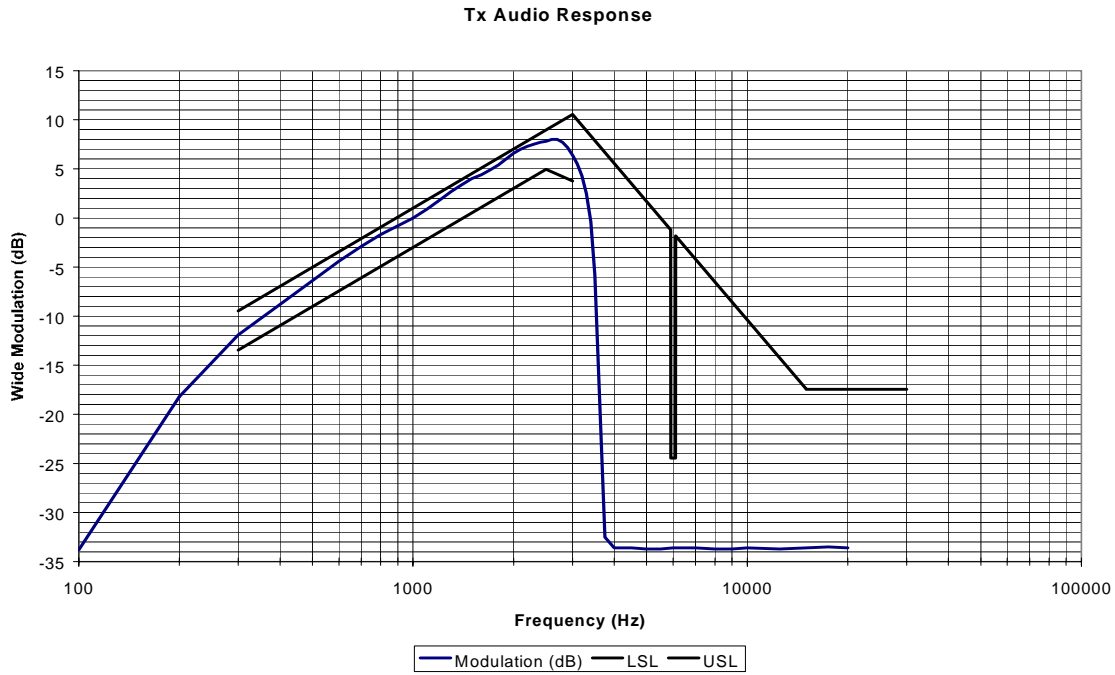
MODULATION CHARACTERISTICS

CFR Part 2.1047, 22.915

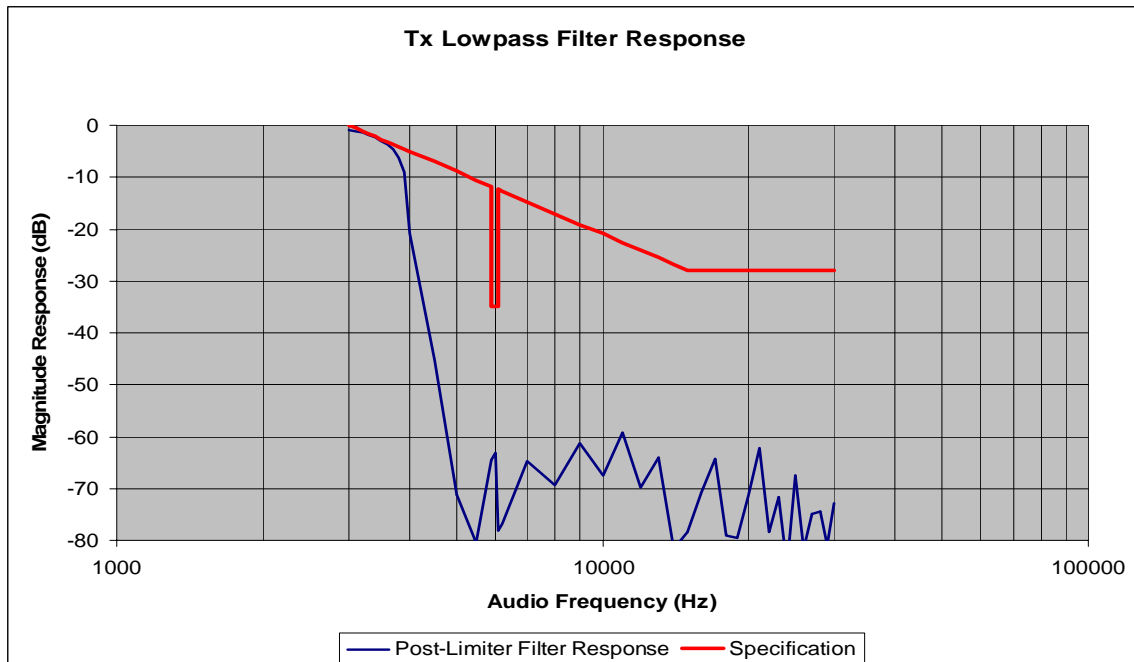
Measurement Results -AMPS

* Data supplied by product group

Transmit Audio Frequency Response

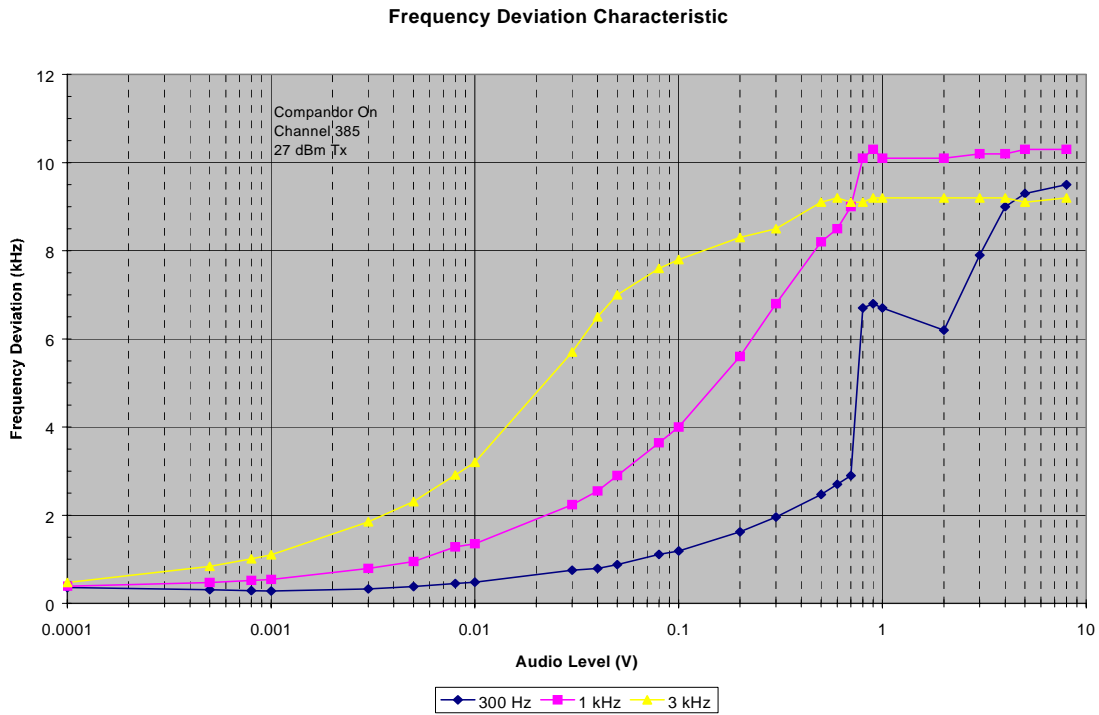


Post Limiter Filter Attenuation

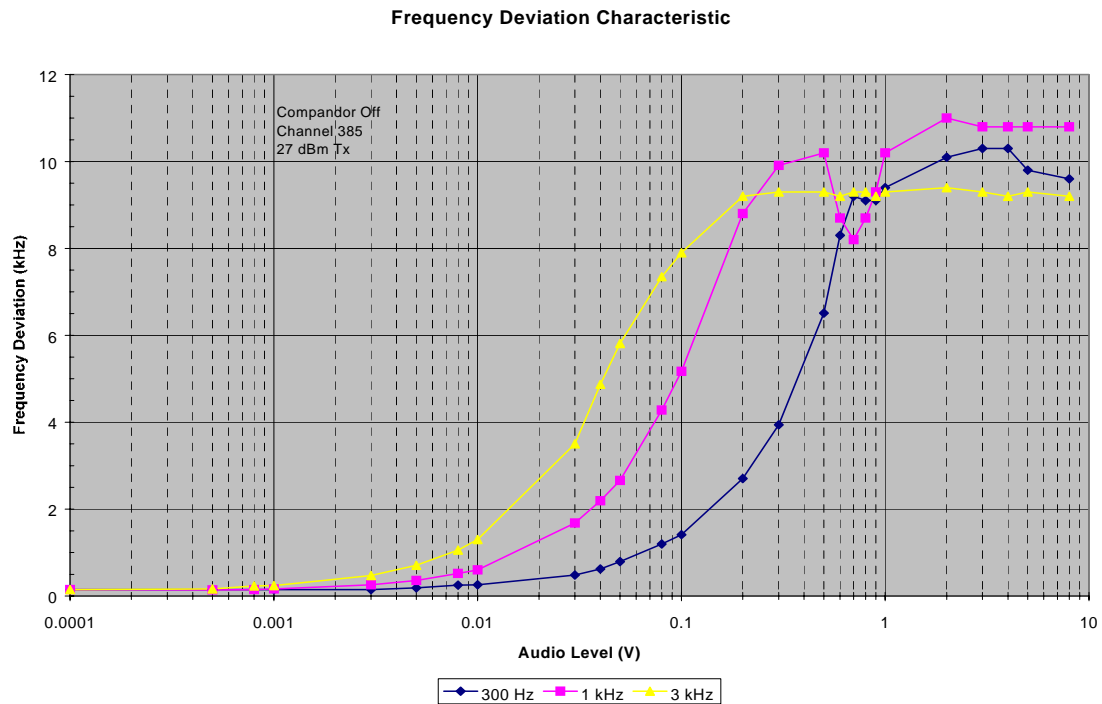


Modulation Limiting vs. Modulation Input Voltage

Compandor On



Compandor Off



OCCUPIED BANDWIDTH

CFR Part 2.1049, 24.238, 22.917

Measurement Procedure

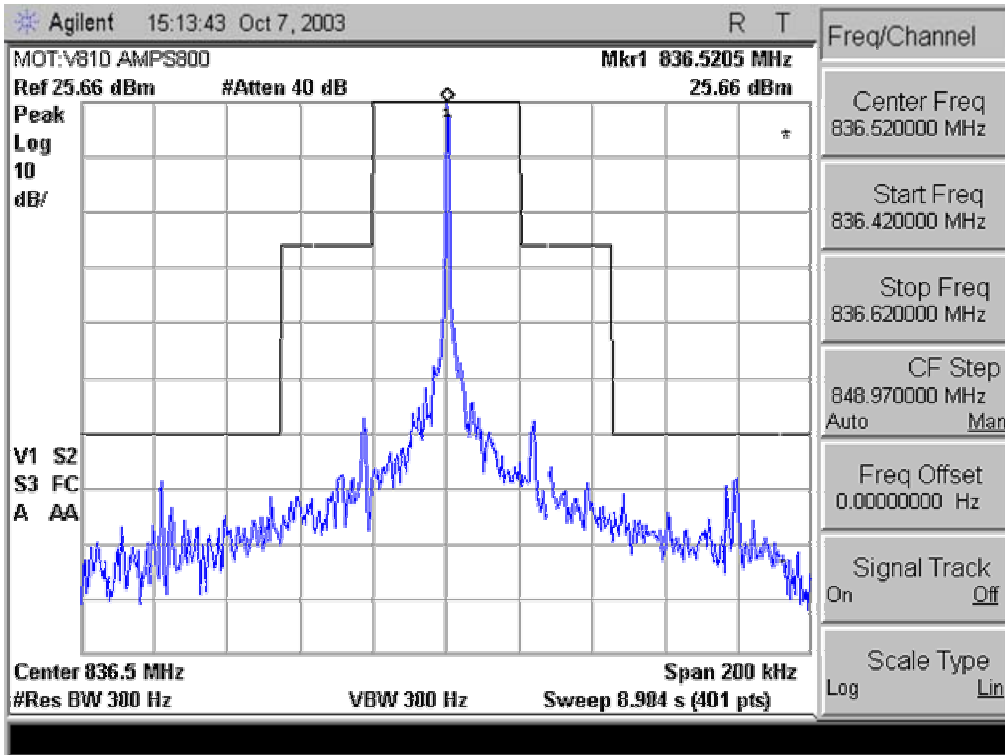
The RF output port of the equipment under test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. The amplitude of the spectrum analyzer is corrected for the attenuator and any other applicable losses. A fully charged battery was used for the supply voltage.

The middle channel within the designated frequency block was measured. For digital modulation, the lower and upper band edge plots are displayed.

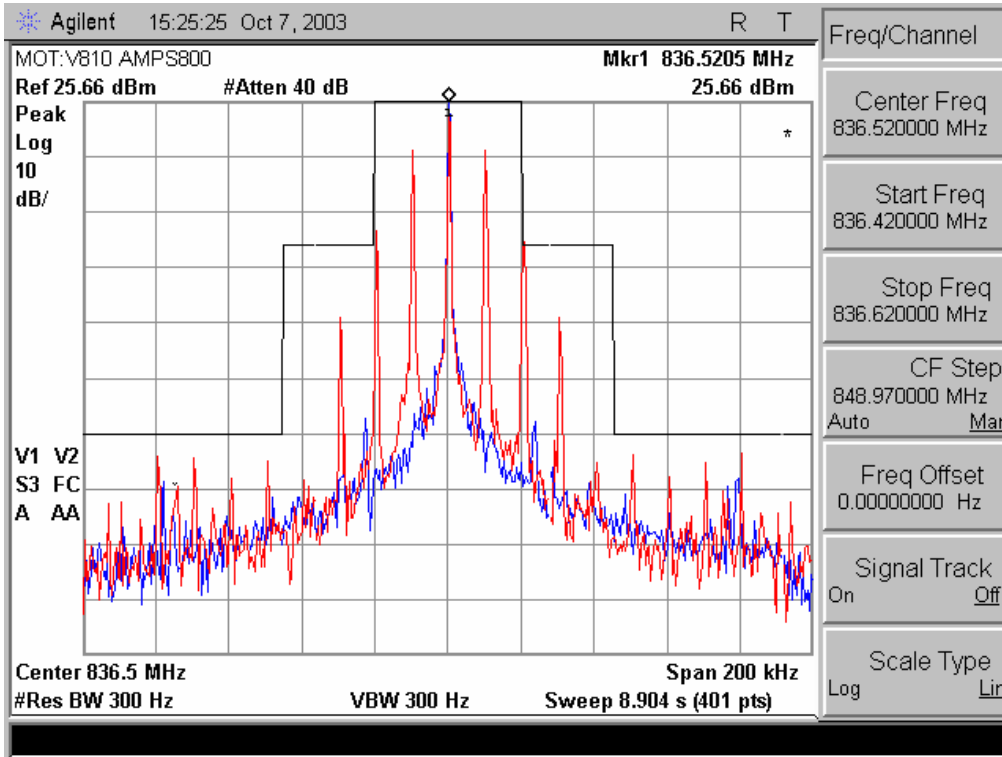
Measurement Results

See attached.

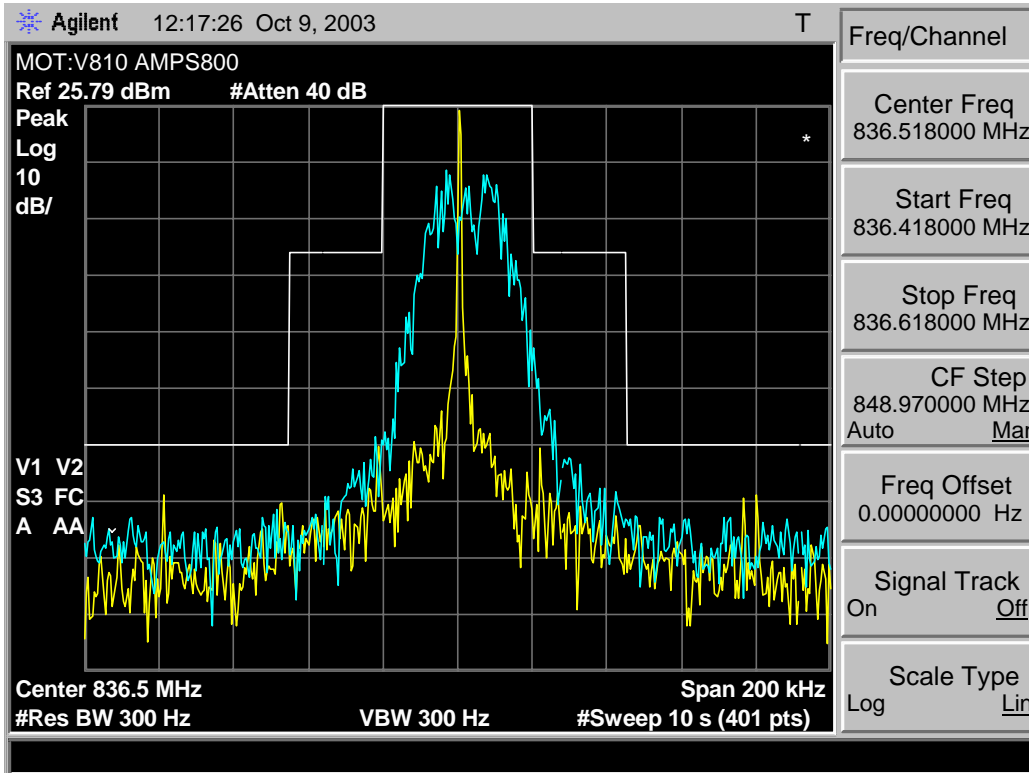
Measurement Results – AMPS



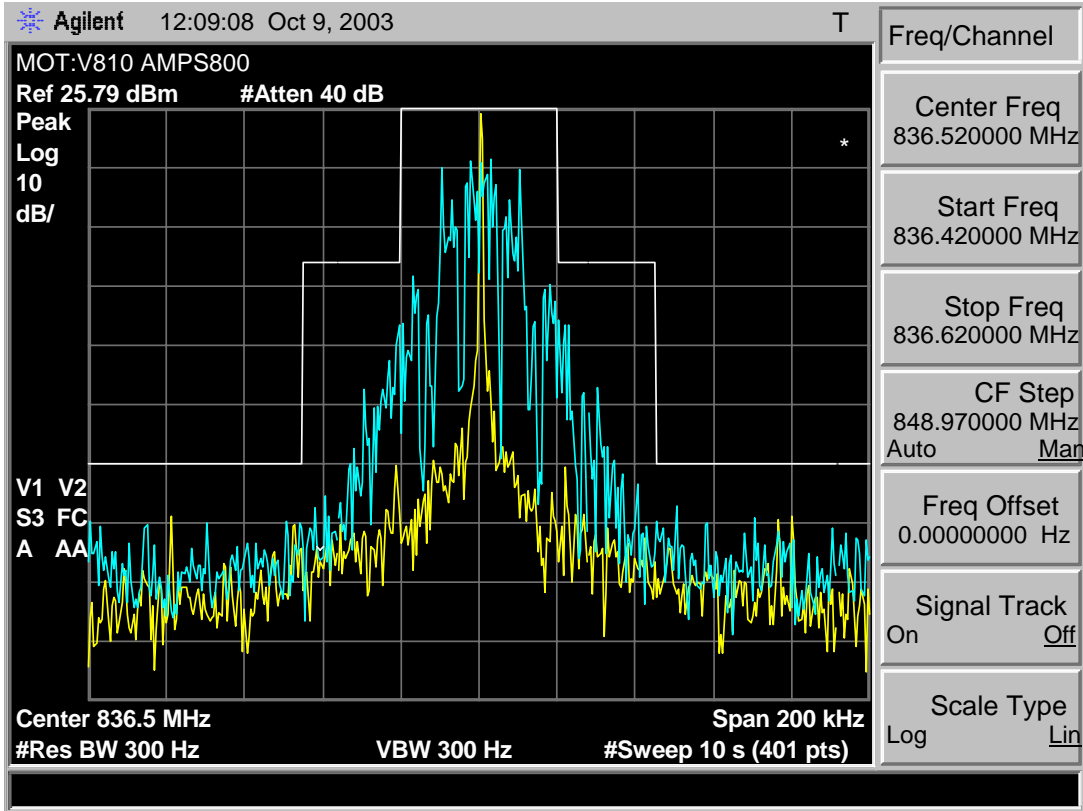
800 AMPS Unmodulated Carrier



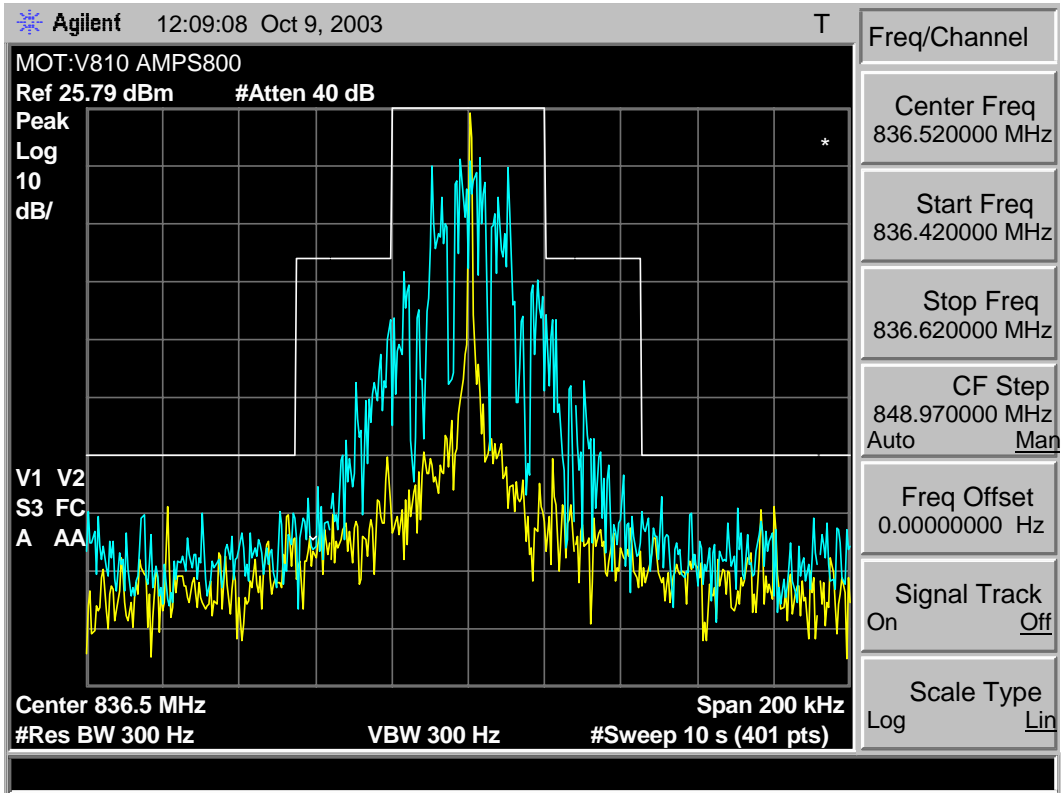
800 AMPS Signal



800 AMPS Voice

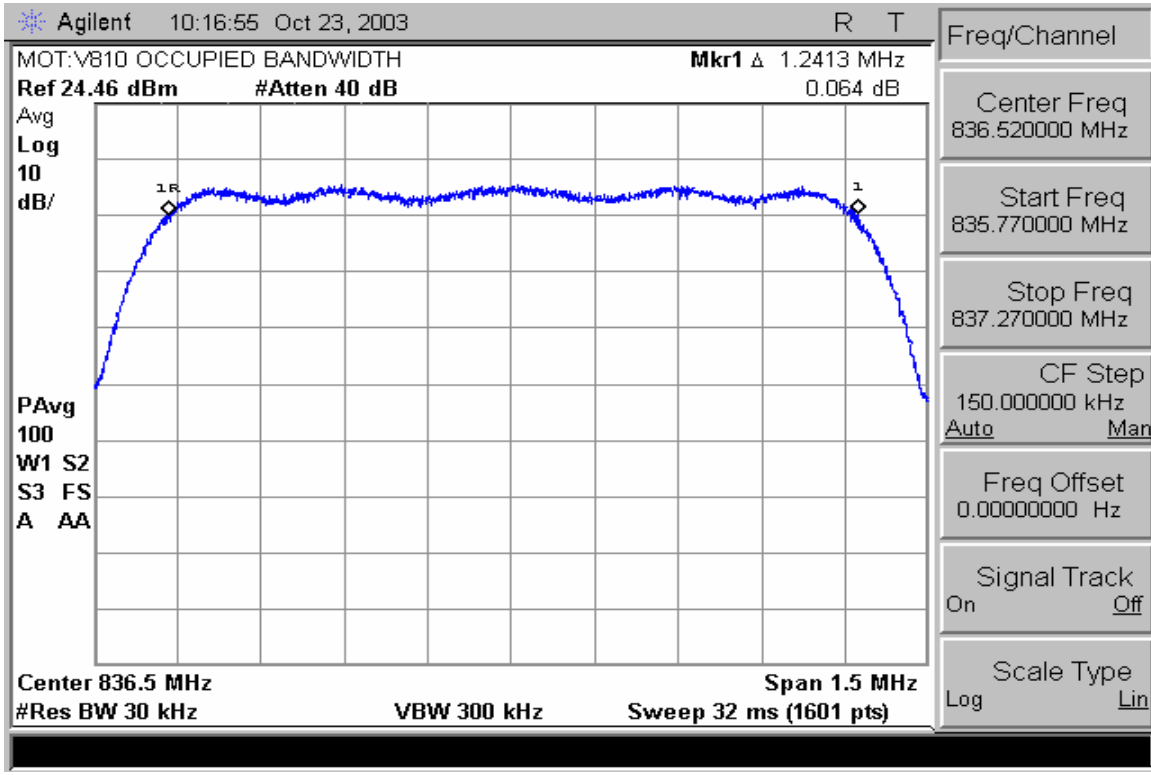


800 AMPS Wide Band Data

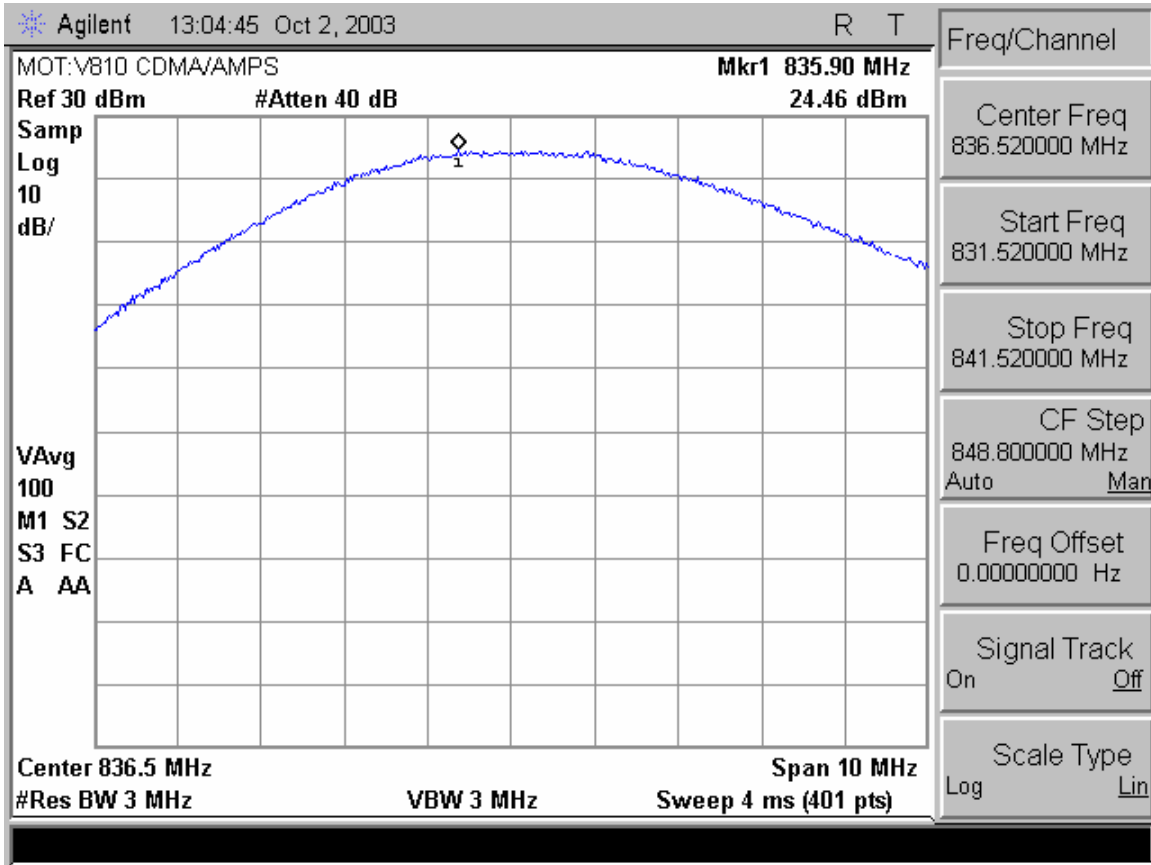


800 AMPS Supervisory Audio Tone

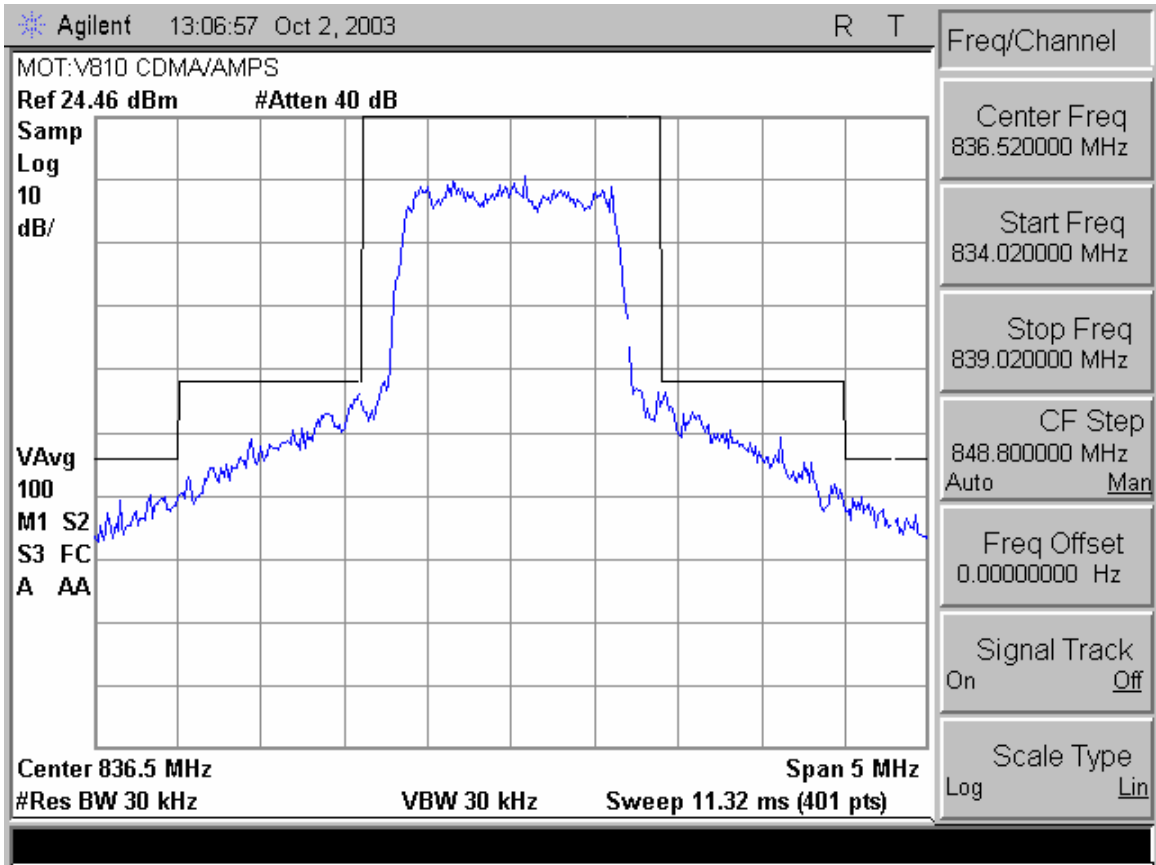
Measurement Results – CDMA 800



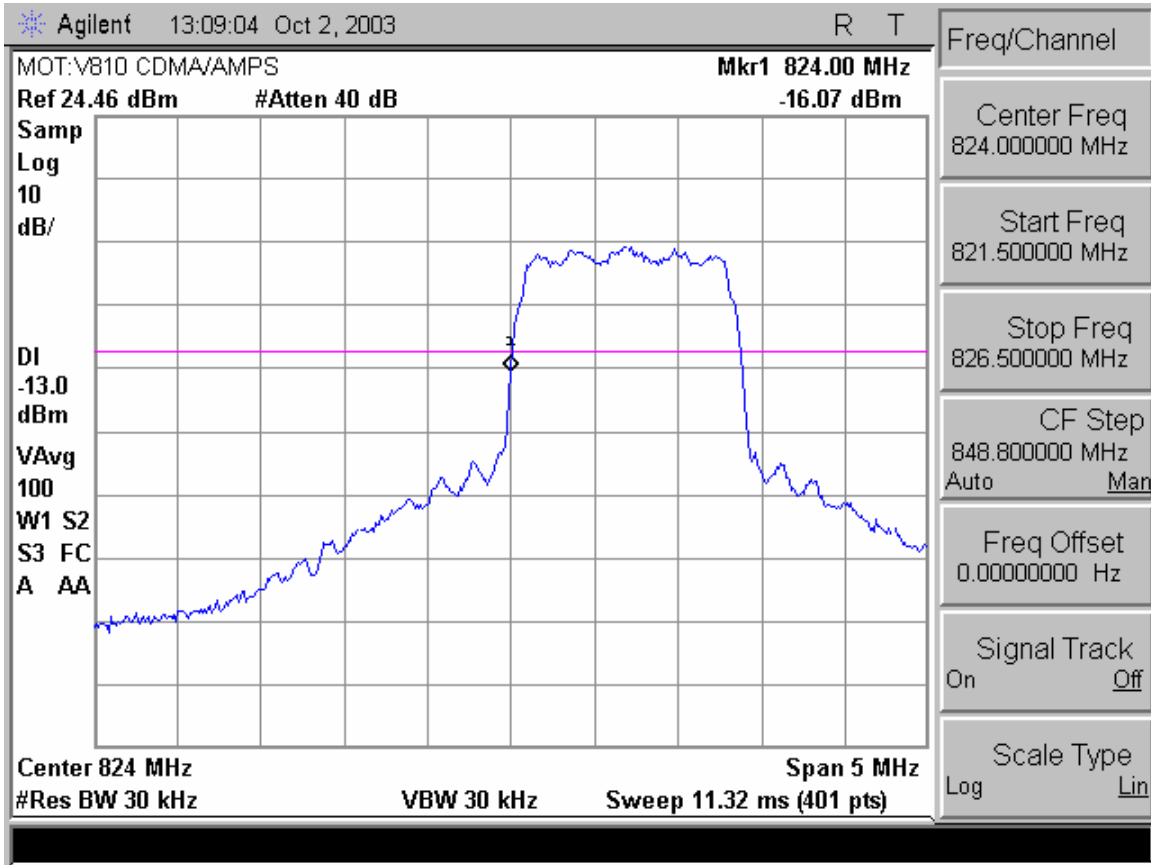
800 CDMA Occupied Bandwidth Measurement



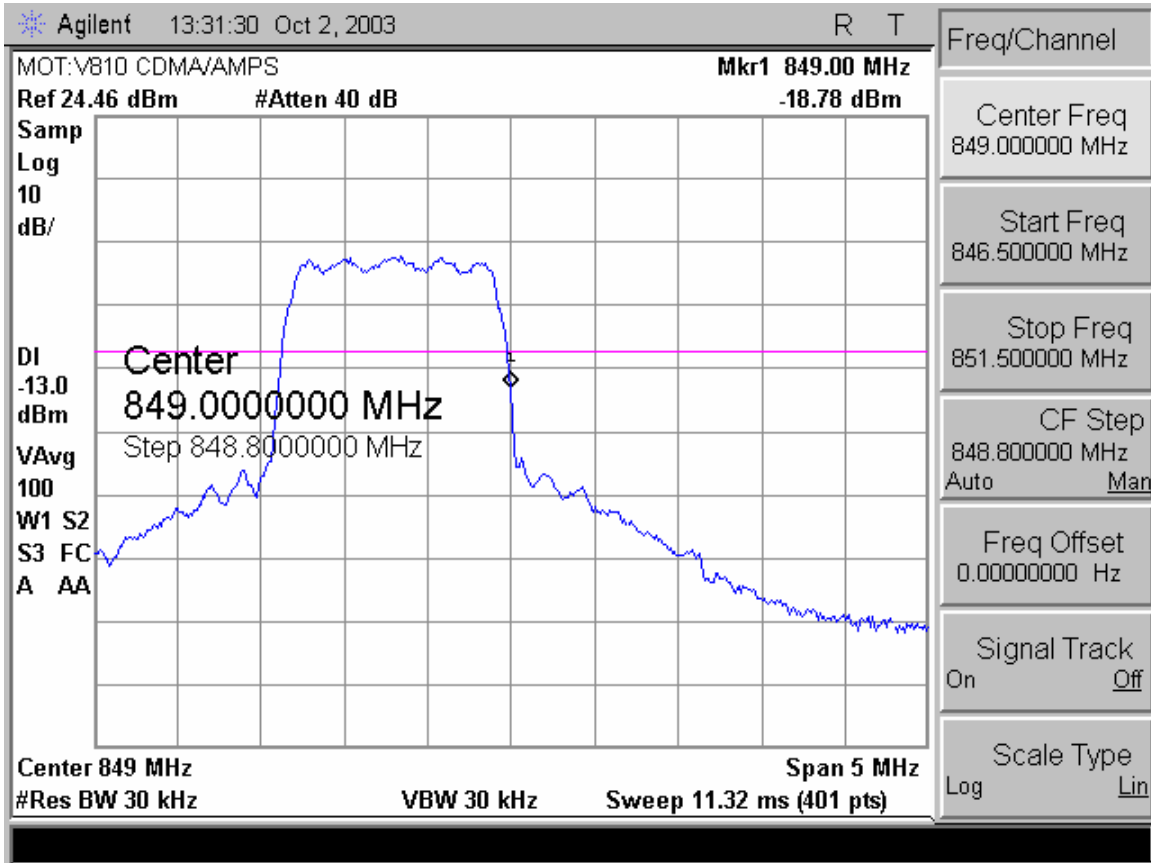
800 CDMA Reference Plot



800 CDMA Bandwidth Plot

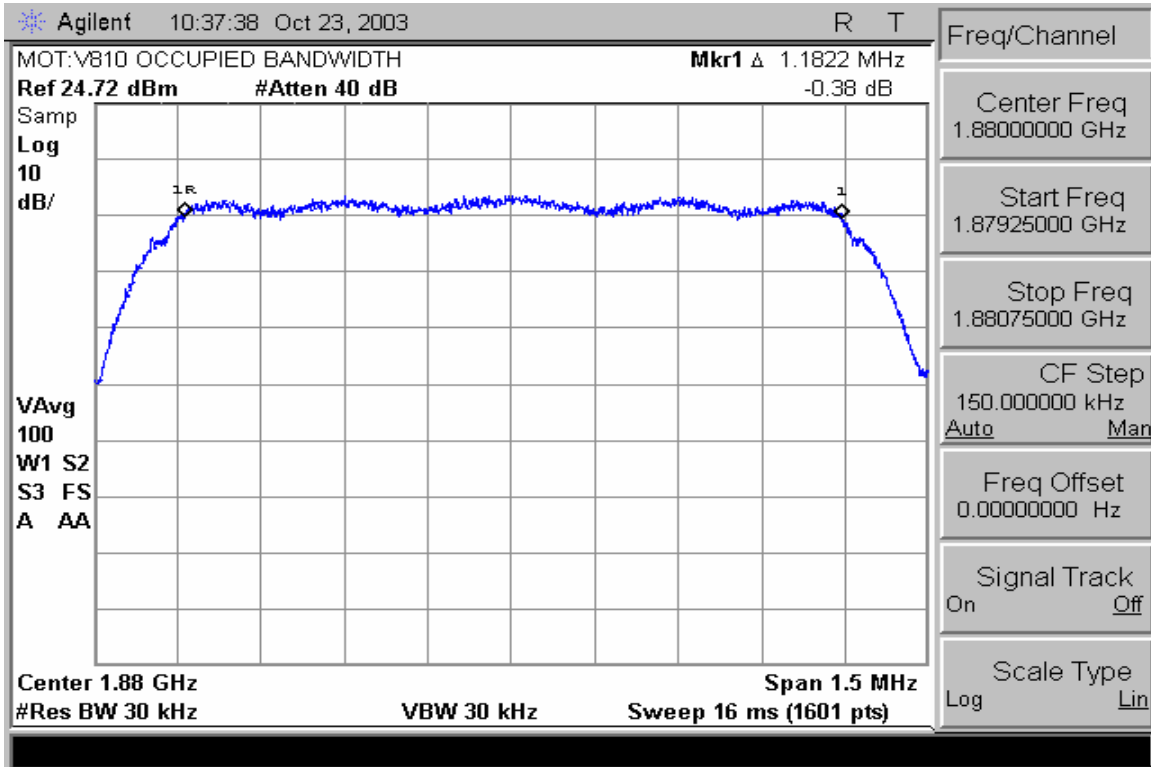


800 CDMA Lower Band Edge

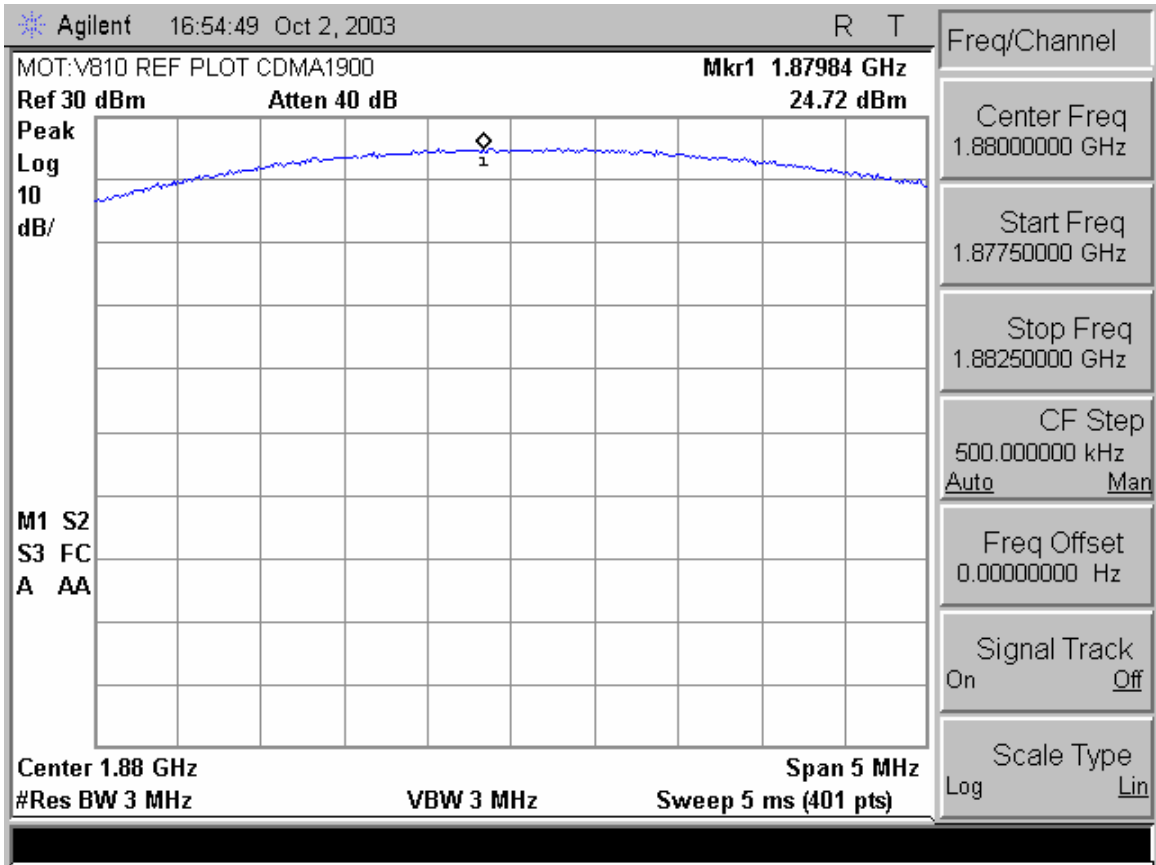


800 CDMA Upper Band Edge

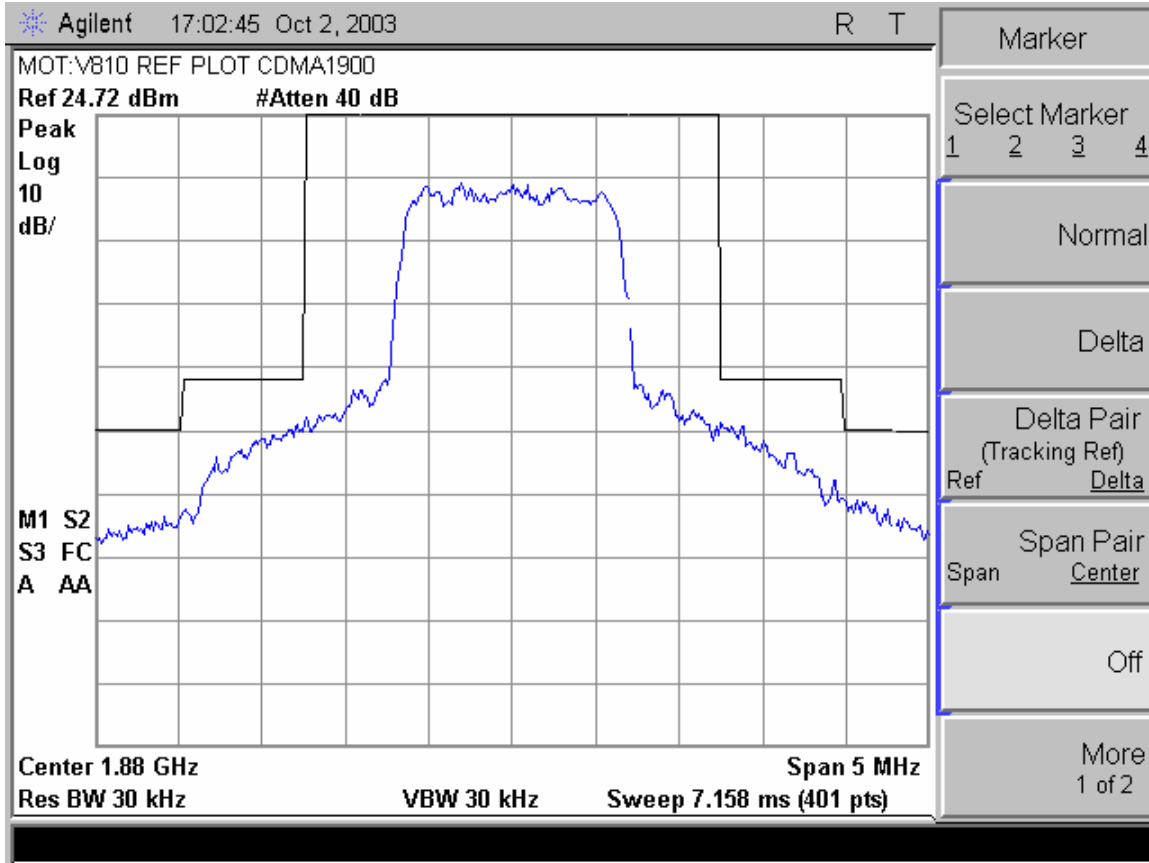
Measurement Results – CDMA 1900



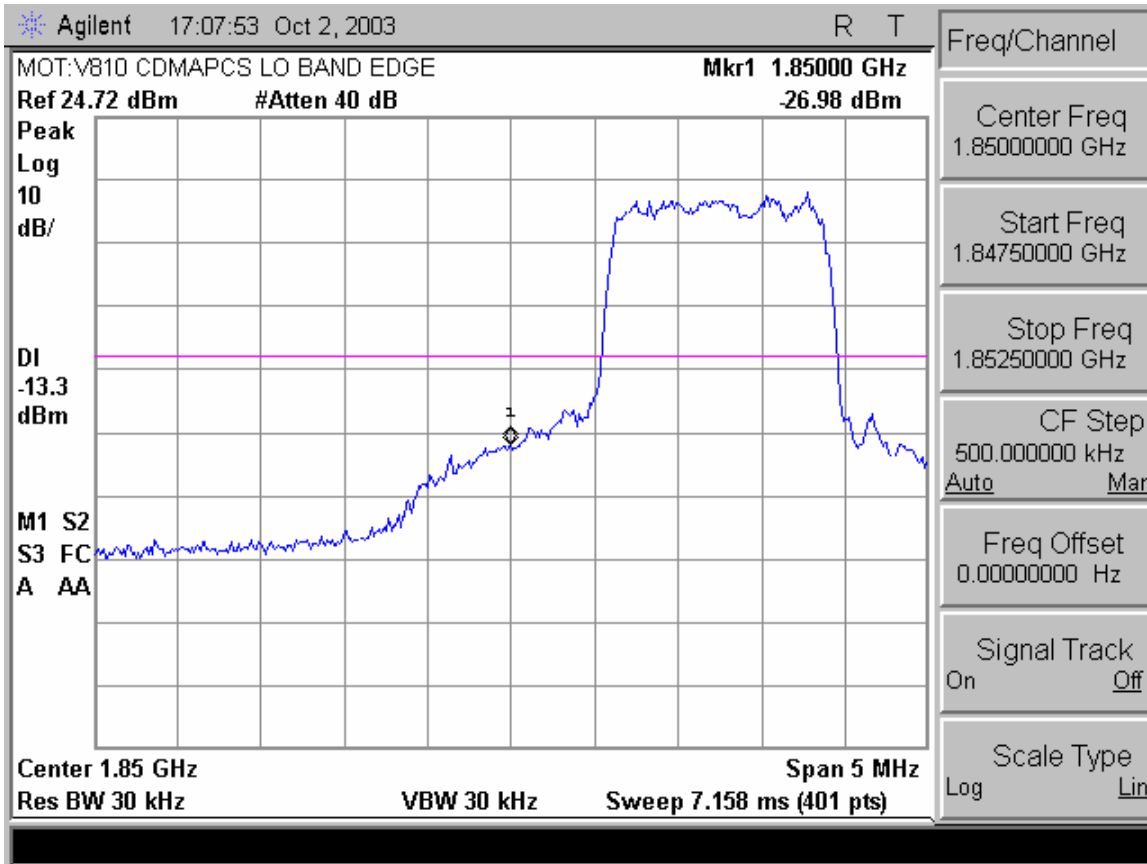
1900 CDMA Occupied Bandwidth Measurement



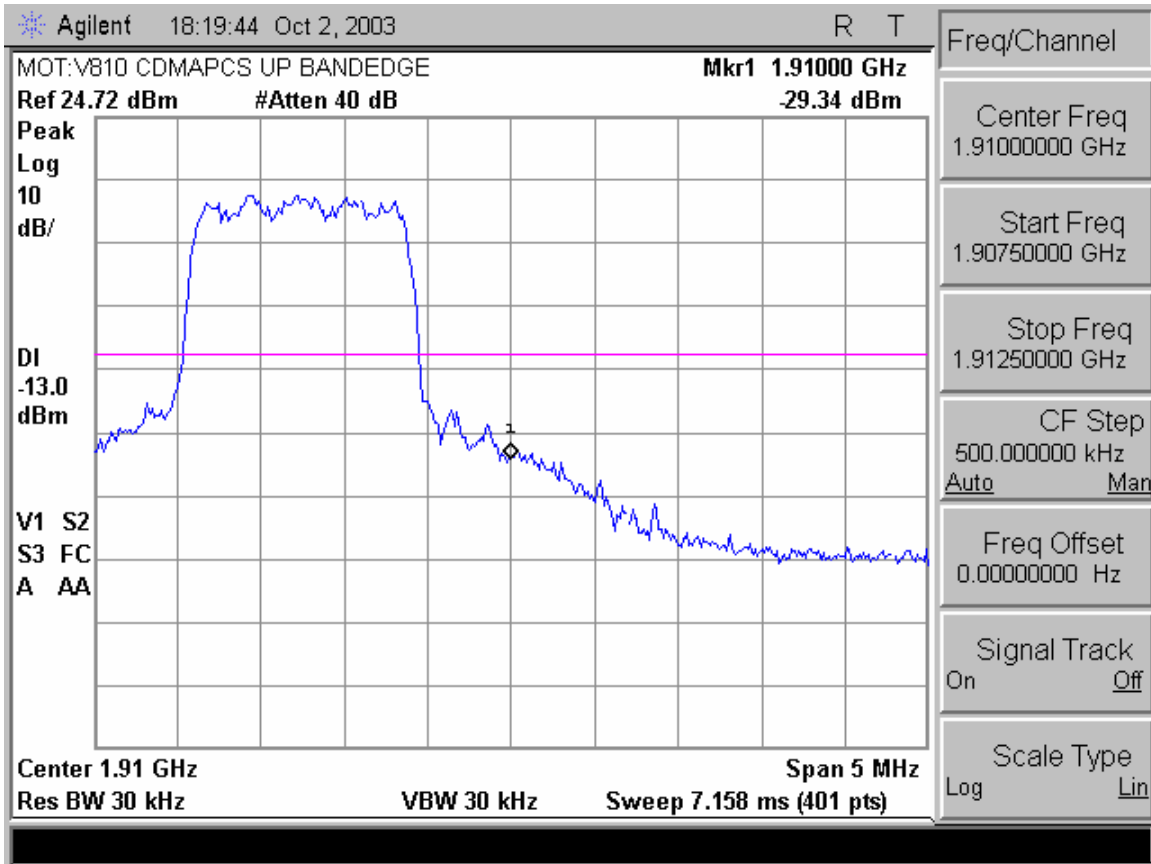
1900 CDMA Reference Plot



1900 CDMA Occupied Bandwidth Plot



1900 CDMA Lower Band Edge



1900 CDMA Upper Band Edge

SPURIOUS EMISSIONS AT ANTENNA TERMINALS

CFR Part 2.1051, 22.917, 24.238

Measurement Procedure

The RF output port of the Equipment Under Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10dB passive attenuator. A fully charged battery was used for the supply voltage.

The spectrum was investigated from the lowest frequency signal generated, without going below 9 kHz, up to at least the tenth harmonic of the fundamental or 40 GHz, whichever is lower.

Measurements were made at the middle channel within the frequency band and within the base station frequency range (869-894 MHz) for cellular.

Instrument Settings

Resolution Bandwidth: 1 MHz (PCS), 100 kHz (GSM 850)
Video Bandwidth: \geq RBW
Detector: Peak
Sweep: Auto – Cal
Trace: Max Hold

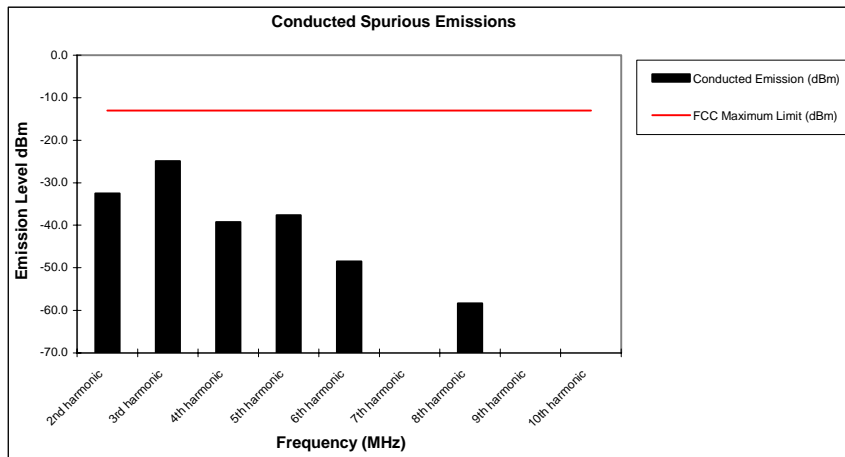
Measurement Results

Attached

Measurement Results
Modulation: AMPS

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-32.5
3rd harmonic	-13	-24.9
4th harmonic	-13	-39.3
5th harmonic	-13	-37.6
6th harmonic	-13	-48.5
7th harmonic	-13	*
8th harmonic	-13	-58.3
9th harmonic	-13	*
10th harmonic	-13	*



Notes:

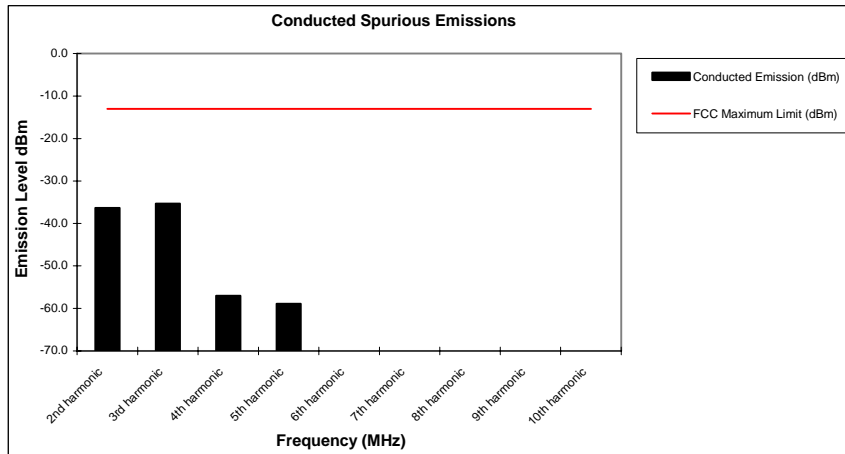
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

Measurement Results

Modulation: CDMA 800

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-36.4
3rd harmonic	-13	-35.3
4th harmonic	-13	-57.0
5th harmonic	-13	-58.9
6th harmonic	-13	*
7th harmonic	-13	*
8th harmonic	-13	*
9th harmonic	-13	*
10th harmonic	-13	*



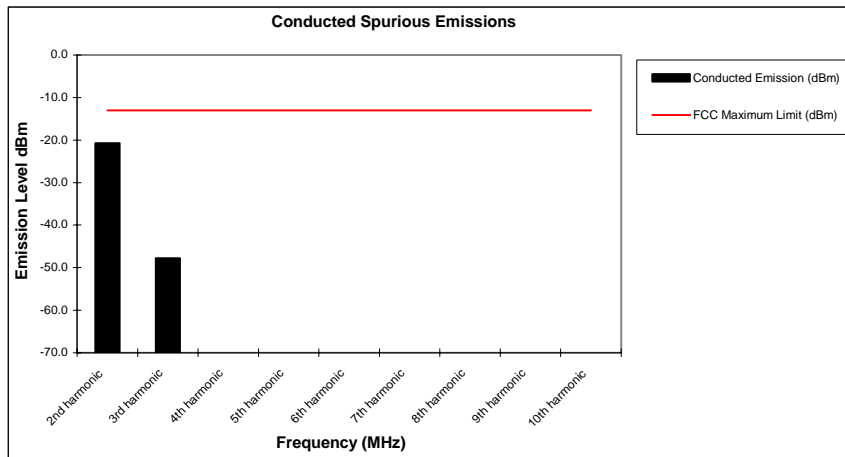
Notes:

1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

Measurement Results
Modulation: CDMA 1900

Conducted Spurious and Harmonic Emissions

Harmonic of Fundamental	FCC Maximum Limit (dBm)	Conducted Emission (dBm)
2nd harmonic	-13	-20.8
3rd harmonic	-13	-47.8
4th harmonic	-13	*
5th harmonic	-13	*
6th harmonic	-13	*
7th harmonic	-13	*
8th harmonic	-13	*
9th harmonic	-13	*
10th harmonic	-13	*



Notes:

- * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- The Spectrum was investigated from 9 kHz to the tenth harmonic of the fundamental.

FIELD STRENGTH OF SPURIOUS EMISSIONS

CFR Part 2.1053, 22.917, 24.238

Measurement Procedure

The equipment under test is placed inside the semi-anechoic chamber on a wooden table at the turntable center. For each spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum reading on the spectrum analyzer. This is repeated for both horizontal and vertical polarizations of the receive antenna.

The equipment under test is then replaced with a substitution antenna fed by a signal generator. With the signal generator tuned to a particular spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters to obtain a maximum reading at the spectrum analyzer. The output of the signal generator is then adjusted until a reading identical to that obtained with the actual transmitter is achieved.

The power in dBm of each spurious emission is calculated by correcting the signal generator level for cable loss and gain of the substitution antenna referenced to a dipole. A fully charged battery was used for the supply voltage.

Instrument Settings

Resolution Bandwidth: 1 MHz (PCS Band), 30 kHz (Cellular Band)
Video Bandwidth: \geq RBW
Detector: Peak
Sweep: Auto – Cal
Trace: Max Hold

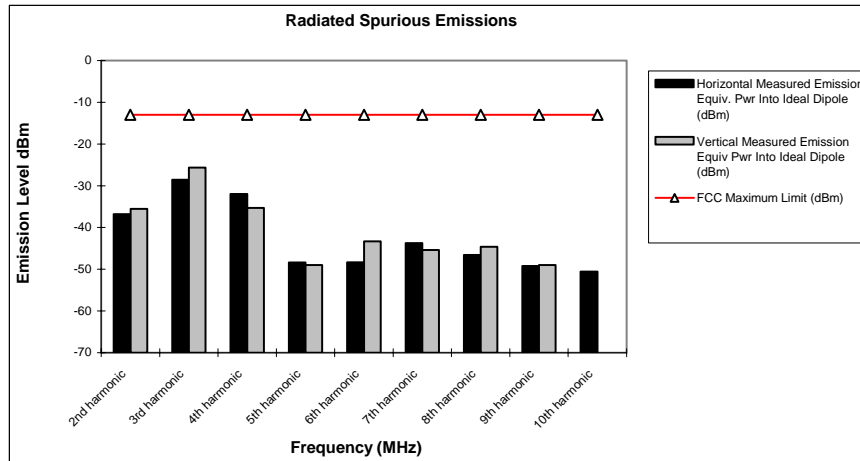
Measurement Results

Attached

Measurement Results
Modulation: AMPS

Radiated Spurious and Harmonic Emissions

Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-36.8	-35.6
3rd harmonic	-13	-28.6	-25.7
4th harmonic	-13	-32.0	-35.3
5th harmonic	-13	-48.4	-49.0
6th harmonic	-13	-48.3	-43.3
7th harmonic	-13	-43.7	-45.4
8th harmonic	-13	-46.6	-44.6
9th harmonic	-13	-49.2	-49.0
10th harmonic	-13	-50.6	*



Notes:

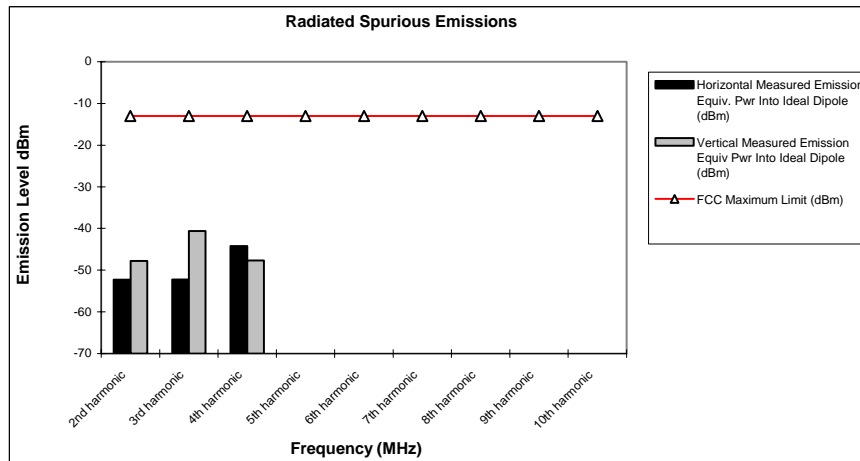
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.

Measurement Results

Modulation: CDMA 800

Radiated Spurious and Harmonic Emissions

Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-52.3	-47.8
3rd harmonic	-13	-52.2	-40.6
4th harmonic	-13	-44.2	-47.7
5th harmonic	-13	*	*
6th harmonic	-13	*	*
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*

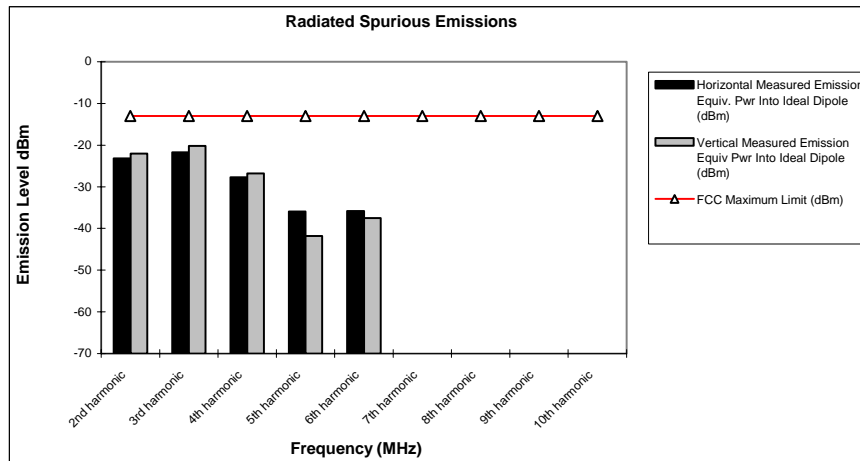


Notes:

- * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
- The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.

Measurement Results
Modulation: CDMA 1900
Radiated Spurious and Harmonic Emissions

Frequency (MHz)	FCC Maximum Limit (dBm)	Horizontal Measured Emission Equiv. Pwr Into Ideal Dipole (dBm)	Vertical Measured Emission Equiv Pwr Into Ideal Dipole (dBm)
2nd harmonic	-13	-23.2	-22.0
3rd harmonic	-13	-21.7	-20.2
4th harmonic	-13	-27.7	-26.8
5th harmonic	-13	-35.9	-41.8
6th harmonic	-13	-35.8	-37.5
7th harmonic	-13	*	*
8th harmonic	-13	*	*
9th harmonic	-13	*	*
10th harmonic	-13	*	*



Notes:

1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific harmonic for the low, mid, and high channels at maximum power.
3. The Spectrum was investigated from 30 MHz to the tenth harmonic of the fundamental.

FREQUENCY STABILITY

CFR Part 2.1055, 22.355, 24.235

Measurement Procedure

The equipment under test is placed in an environmental chamber. The antenna port of the Equipment Under Test is directly coupled to the input of the measurement equipment through a specialized RF connector. A power supply is attached as the primary voltage supply.

Frequency measurements are made at the extremes of the temperature range -30°C to $+60^{\circ}\text{C}$ and at intervals of 10°C with the primary supply voltage set to the nominal battery operating voltage. A period of time sufficient to stabilize all components of the equipment is allowed at each frequency measurement. The maximum variation of frequency is measured.

At room temperature, the primary supply voltage is reduced to the battery operating endpoint of the equipment under test. The maximum variation of frequency is measured. A battery eliminator was used for the input supply voltage.

Measurement Results

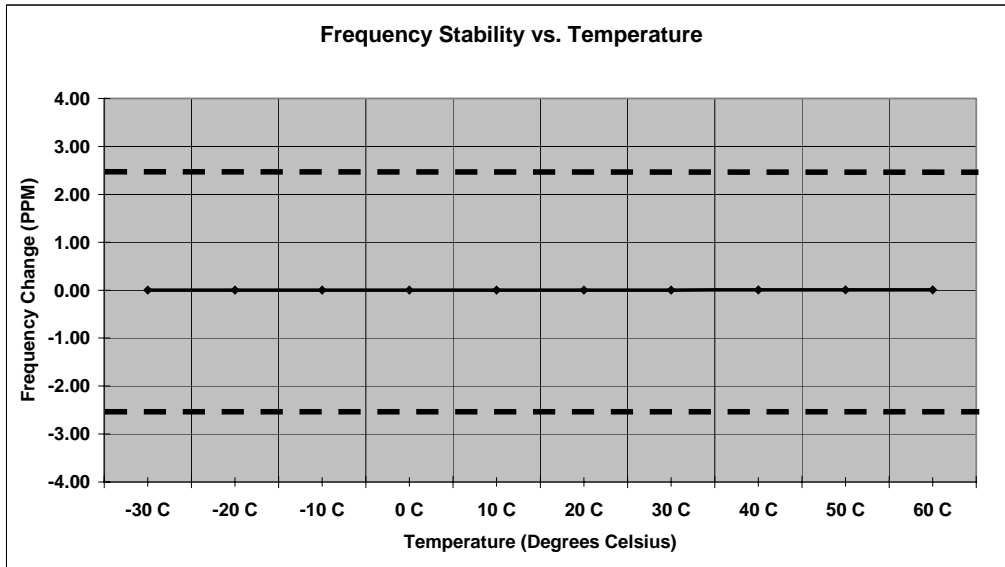
Attached

Measurement Results
Modulation: AMPS

Channel: 384

Deviation Limit (PPM): 2.5ppm

Temperature C	Frequency Error HZ	Frequency Error (PPM)	Voltage (%)	Voltage (VDC)
-30 C	3.00	0.004	100%	4.20
-20 C	3.00	0.004	100%	4.20
-10 C	1.00	0.001	100%	4.20
0 C	3.00	0.004	100%	4.20
10 C	3.00	0.004	100%	4.20
20 C	3.00	0.004	100%	4.20
30 C	3.00	0.004	100%	4.20
40 C	4.00	0.005	100%	4.20
50 C	5.00	0.006	100%	4.20
60 C	6.00	0.007	100%	4.20
20 C	3.00	0.004	Battery Endpoint	3.50



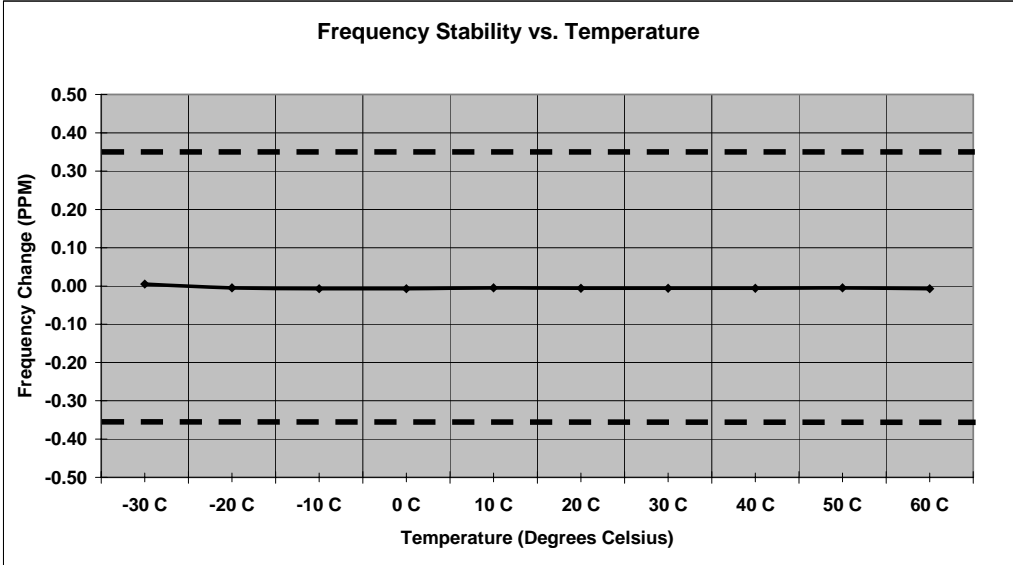
Technician: Mota/Lomax
 Date: 6-Oct-03
 Product Name: V810
 Submission #: 12268-1
 S/N: 3D50A90E

Measurement Results
Modulation: CDMA 800

Frequency Stability

Mode: CDMA 800 **Operating Frequency:** 836.52 MHz
Channel: 384 **Deviation Limit (PPM):** 0.359ppm (+/-300 Hz)

Temperature C	Frequency Error HZ	Frequency Error (PPM)	Voltage (%)	Voltage (VDC)
-30 C	4.00	0.005	100%	4.20
-20 C	-4.00	-0.005	100%	4.20
-10 C	-6.00	-0.007	100%	4.20
0 C	-6.00	-0.007	100%	4.20
10 C	-4.00	-0.005	100%	4.20
20 C	-5.00	-0.006	100%	4.20
30 C	-5.00	-0.006	100%	4.20
40 C	-5.00	-0.006	100%	4.20
50 C	-4.00	-0.005	100%	4.20
60 C	-6.00	-0.007	100%	4.20
20 C	-3.00	-0.004	Battery Endpoint	3.50



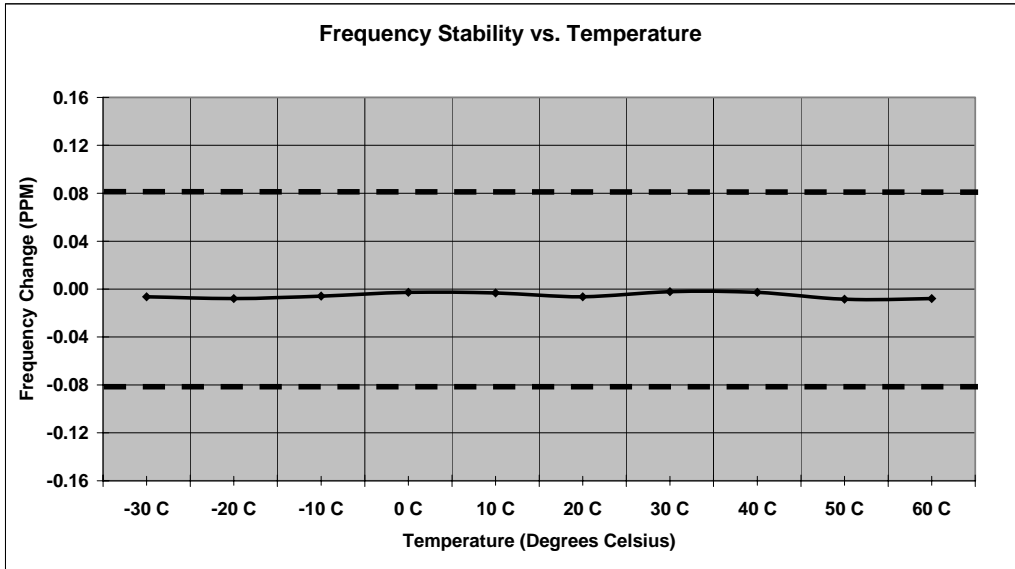
Technician: Mota/Lomax
 Date: 6-Oct-03
 Product Name: V810
 Submission #: 12268-1
 S/N: 3D50A90E

Measurement Results
Modulation: CDMA 1900

Frequency Stability

Mode: CDMA 1900 **Operating Frequency:** 1880.0 MHz
Channel: 600 **Deviation Limit (PPM):** 0.08ppm (+/-150Hz)

Temperature C	Frequency Error HZ	Frequency Error (PPM)	Voltage (%)	Voltage (VDC)
-30 C	-12.00	-0.006	100%	4.20
-20 C	-15.00	-0.008	100%	4.20
-10 C	-11.00	-0.006	100%	4.20
0 C	-5.00	-0.003	100%	4.20
10 C	-6.00	-0.003	100%	4.20
20 C	-12.00	-0.006	100%	4.20
30 C	-4.00	-0.002	100%	4.20
40 C	-5.00	-0.003	100%	4.20
50 C	-16.00	-0.009	100%	4.20
60 C	-15.00	-0.008	100%	4.20
20 C	-8.00	-0.004	Battery Endpoint	3.50



Technician: Mota/Lomax
 Date: 6-Oct-03
 Product Name: V810
 Submission #: 12268-1
 S/N: 3D50A90E

FIELD STRENGTH OF EMISSIONS FROM UNINTENTIONAL RADIATORS

CFR Part 15.109

Measurement Procedure

The equipment under test is placed inside the semi-anechoic chamber on a wooden table at the turntable center. For each radiated emission, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum peak reading on the spectrum analyzer. The radiated emissions are then measured using an EMI receiver employing a CISPR quasi-peak detector function below 1000 MHz and an average detector function above 1000 MHz. This is repeated for both horizontal and vertical polarizations of the receive antenna. A fully charged battery was used for the supply voltage.

The field strength of each radiated emission is calculated by correcting the EMI receiver level for cable loss, amplifier gain, and antenna correction factors.

Field Strength (dBuV/m) = EMI Receiver Level (dBuV) + Cable Loss (dB) -
Amplifier Gain (dB) + Antenna Correction Factor (1/m)

Instrument Settings

Resolution Bandwidth: 120 kHz (Below 1 GHz), 1 MHz (Above 1 GHz)
Video Bandwidth: \geq RBW
Detector: QP (30 MHz – 1 GHz), Ave (> 1GHz), Peak to scan
Sweep: Auto – Cal
Trace: Max Hold

Measurement Results

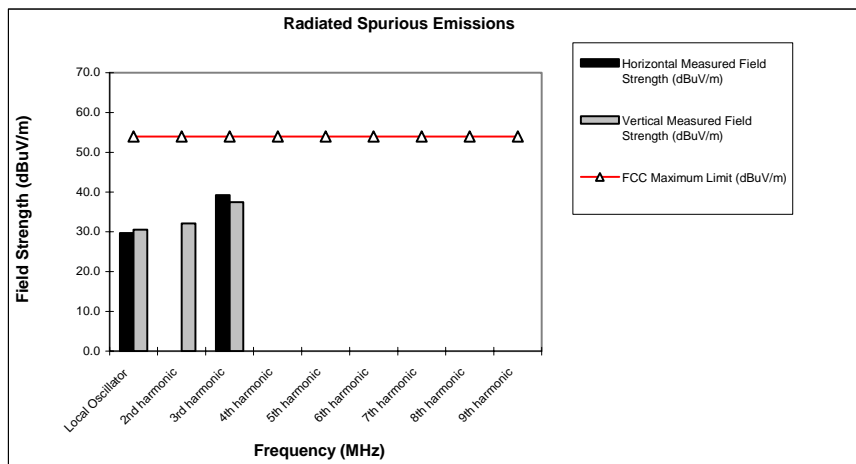
Attached

Measurement Results

Modulation: AMPS

Receiver Radiated Spurious Emissions

Frequency (MHz)	FCC Maximum Limit (dBuV/m)	Horizontal Measured Field Strength (dBuV/m)	Vertical Measured Field Strength (dBuV/m)
Local Oscillator	54	29.7	30.6
2nd harmonic	54	*	32.1
3rd harmonic	54	39.3	37.5
4th harmonic	54	*	*
5th harmonic	54	*	*
6th harmonic	54	*	*
7th harmonic	54	*	*
8th harmonic	54	*	*
9th harmonic	54	*	*
10th harmonic	54	*	*



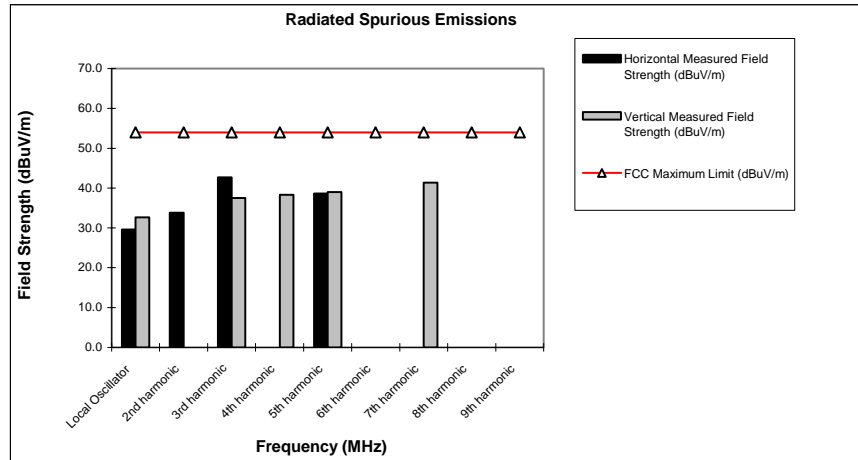
Notes:

1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
2. Each emission reported reflects the highest absolute level at the specific frequency for the low, mid, and high channels.

Measurement Results
Modulation: CDMA 800

Receiver Radiated Spurious Emissions

Frequency (MHz)	FCC Maximum Limit (dBuV/m)	Horizontal Measured Field Strength (dBuV/m)	Vertical Measured Field Strength (dBuV/m)
Local Oscillator	54	29.6	32.6
2nd harmonic	54	33.8	*
3rd harmonic	54	42.7	37.5
4th harmonic	54	*	38.3
5th harmonic	54	38.7	39.0
6th harmonic	54	*	*
7th harmonic	54	*	41.4
8th harmonic	54	*	*
9th harmonic	54	*	*
10th harmonic	54	*	*

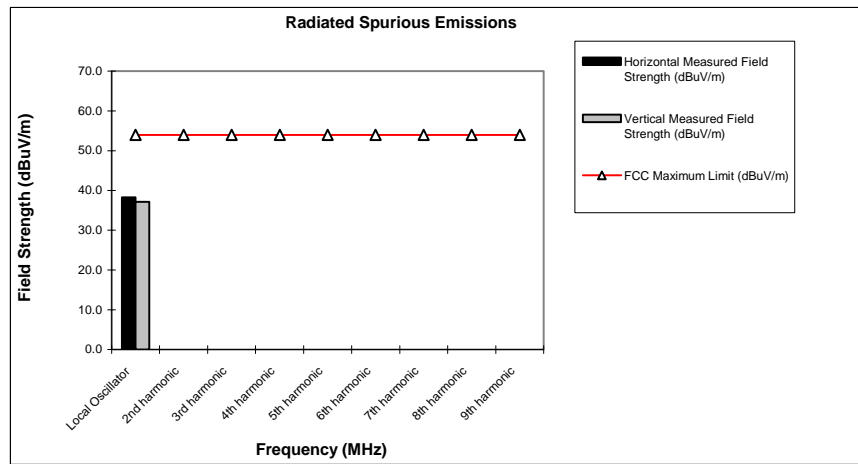


Notes:

- * Indicates the spurious emission could not be detected due to noise limitations or ambients.
- Each emission reported reflects the highest absolute level at the specific frequency for the low, mid, and high channels.

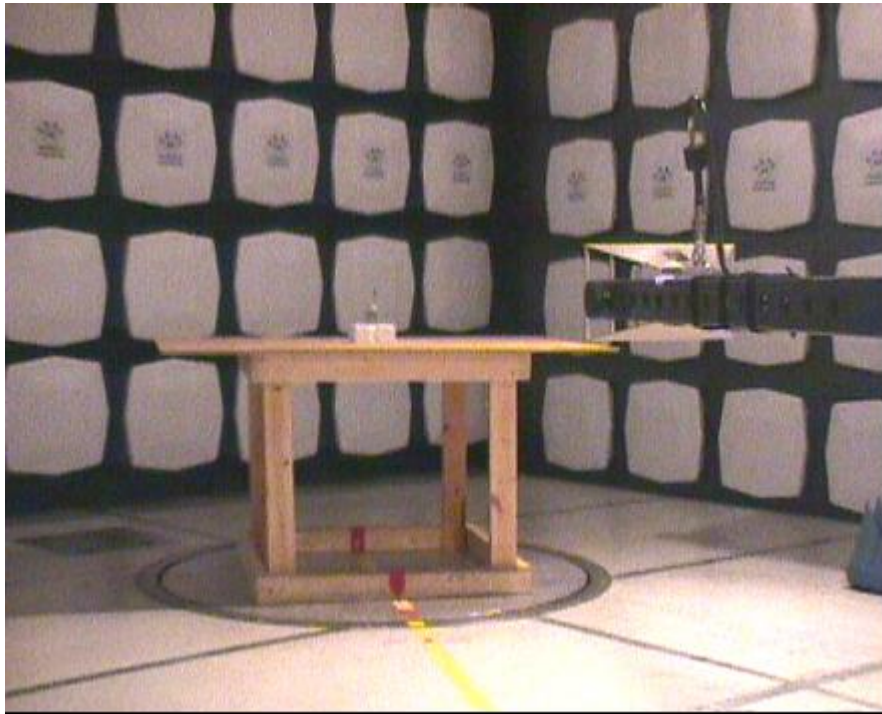
Measurement Results
Modulation: CDMA 1900
Receiver Radiated Spurious Emissions

Frequency (MHz)	FCC Maximum Limit (dBuV/m)	Horizontal Measured Field Strength (dBuV/m)	Vertical Measured Field Strength (dBuV/m)
Local Oscillator	54	38.2	37.2
2nd harmonic	54	*	*
3rd harmonic	54	*	*
4th harmonic	54	*	*
5th harmonic	54	*	*
6th harmonic	54	*	*
7th harmonic	54	*	*
8th harmonic	54	*	*
9th harmonic	54	*	*
10th harmonic	54	*	*

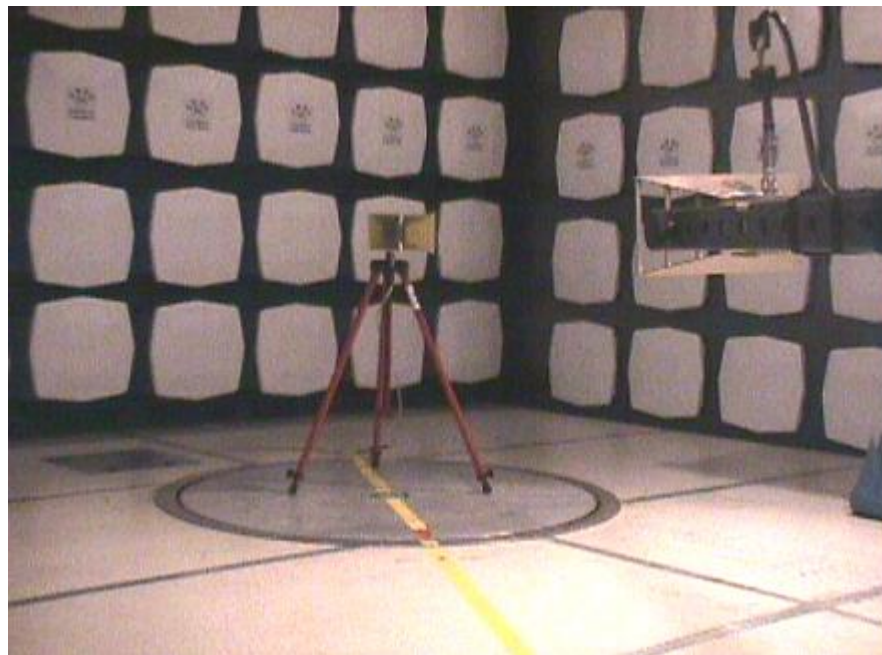


- Notes:
1. * Indicates the spurious emission could not be detected due to noise limitations or ambients.
 2. Each emission reported reflects the highest absolute level at the specific frequency for the low, mid, and high channels.

Appendix A – Radiated Emissions Test Setup Photos



A.1 Radiated Emissions Measurement



A.2 Substitution Measurement

End of Test Report