CFR 47 Part 2, 22,24 Test Report

Test Report Number: WR 1045.003

Terminal device: FCC ID: QMNRM-66 Model: 6265 Type: RM-66 HW: 6000 SW: HL100VD400.nep
(Detailed information is listed in section 4).

Originator:	Viet Do
Function:	TCC - Dallas – EMC
Version/Status:	2.0 Approved
Location:	TCC Directories
Date:	28-Feb-06

Change History:

Version	*Date*	*Status*	*Handled By*	*Comments*
0.1	17-Feb-06	Draft	Viet Do	
0.2	17-Feb-06	Proposal	Viet Do	
0.3	17-Feb-06	Reviewed	Hai To	
1.0	17-Feb-06	Approved	Hai To	
1.1	28-Feb-06	Reviewed	Viet Do	
2.0	28-Feb-06	Approved	Hai To	

Testing laboratory:
Test & Certification Center (TCC) Dallas
Nokia Inc
6021 Connection Drive
Irving, Texas 75039
U.S.A.

Tel. 972-894-5000

Client:
Nokia Inc.
San Diego
12278 Scripps Summit Dr.
San Diego, CA 92131
USA
Tel. +1858 831 5000
Fax. +1 858 831 6500

Date and signatures: **28-Feb-2006**

For the contents:

Viet Do
Test Operator

Hai To
Technical Review

TABLE OF CONTENTS

1. GENERAL

1.1 Quality System

The quality system in place for TCC-Dallas conforms to ISO/IEC 17025 and has been audited to the standard by A2LA (American Association of Laboratory Accreditation). TCC - Dallas has also been audited using the ISO 9000 Quality System, as part of Nokia Mobile Phones, Inc., by ABS (American Bureau of Shipping) Quality Evaluations Inc.

TCC-Dallas is a recognized laboratory with the Federal Communications Commission in filing applications for Certification under Parts 15 and 18, Registration Number 100060, and Industry Canada, Registration Number IC 661N.

1.2 Objective

All tests and measurement data shown was performed to determine whether the selected handset was in compliance as specified in FCC: CFR47 Parts 2.947, 2.1033(c), 2.1041, 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057, Part 22.

1.3 Test Summary

Test Results: *The test result relates only to those tested devices mentioned in Section 4 of this test report.*

Test Performed	Reference	Section of Report	Complies / Does not comply / Not Tested
Spurious Emissions at Antenna Terminals	FCC Part 2.1051	6	Complies
Frequency Stability (Temperature Variation)	FCC Part 2.1055(a)(1)(b)	7	Complies
Frequency Stability (Voltage Variation)	FCC Part 2.1055(d)(1)(2)	8	Complies

2. STANDARDS BASIS

Testing has been carried out in accordance with:

REF.	Code of the standard	Name of the standard
1	ANSI C63.4	American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz.
2	FCC: CFR 47 Part 2	Code of Federal Regulations (CFR) Title 47, Part 2 – Frequency Allocations and Radio Treaty Matters; General Rules and Regulations: Subpart J – Equipment Authorization Procedures
3	FCC: CFR 47 Part 22	Code of Federal Regulations (CFR) Title 47, Part 22 – Public Mobile Services: Subpart H – Cellular Radiotelephone Service
4	FCC: CFR 47 Part 24	Code of Federal Regulations (CFR) Title 47, Part 24 – Personal Communications Services: Subpart E – Broadband PCS
5	RSS-129	800 MHz Dual-Mode CDMA Cellular Telephones
6	RSS-132	800 MHz Cellular Telephones Employing New Technologies
7	RSS-133	2 GHz Personal Communications Services, Industry Canada
8	RSS-212	Test Facilities and Test Methods for Radio Equipment, Industry Canada (Provisional)
9	RSP-100	Radio Equipment Certification Procedure

Note: Unless otherwise stated, (by reference to a version number and a publication date), the latest version of the above documents applies.

Deviations:

Not Applicable.

3. LIST OF ABBREVIATIONS, ACRONYMS AND TERMS

3.1 Abbreviations

dB - decibel

dBc - decibels from carrier

dBm - decibels per milliwatt (absolute measurement)

GHz - gigahertz or 1000000000 hertz

kHz - kilohertz or 1000 hertz

MHz - megahertz or 1000000 hertz

3.2 Acronyms

AMPS - Advanced Mobile Phone System

BSS - Base Station Simulator

CDMA - Code Division Multiple Access

EDRP - Effective Dipole Radiated Power

EIRP - Effective Isotropic Radiated Power

EMC - Electromagnetic Compatibility

EMI - Electromagnetic Interference

ERP - Effective Radiated Power

EUT - Equipment under Test

GSM - Global System for Mobile communications

PCS - Personal Communications Services

RF - Radio Frequency

TDMA - Time Division Multiple Access

3.3 Terms

Base Station Simulator (BSS) - simulates all the necessary signals that a phone would experience while on a live network. There are many types of base station simulators catering for all current protocols, i.e., GSM, AMPS, TDMA, and CDMA.

Cellular - refers to a frequency in the 800MHz band.

PCS - refers to a frequency in the 1900MHz band.

4. EQUIPMENT-UNDER-TEST (EUT)

The results in this report relate only to the items listed below:

4.1 Description of Tested Device(s):

Test Performed	Mode of Operation	Date of Receipt	Condition of Sample	Item	Identifying Information
FCC Part 2.1051 FCC Part 2.1055(a) FCC Part 2.1055(d)	CDMA 800/1900 AMPS	17-Feb-06	Working	Phone	FCC ID: QMNRM-66 Type: RM-66 HW: 6000 SW: HL100VD400.nep ESN: 02601681657
FCC Part 2.1051 FCC Part 2.1055(a) FCC Part 2.1055(d)	CDMA 800/1900 AMPS	N/A	Working	Battery	Type: BL-6C

4.2 Photograph of Tested Device(s):

Refer to attached Appendix A

5. TEST EQUIPMENT LIST

The listing below indicates the test equipment utilized for the test (s). Calibration interval on all items listed can be obtained from the Engineering Services Group within NMP, Product Creation - Dallas. Where relevant, measuring equipment is subjected to in-service checks between testing. TCC - Dallas shall notify clients promptly, in writing, of identification of defective measuring equipment that casts doubt on the validity of results given in this report.

Section of Report	NMP#	Test Equipment	Mfr. #	Model #	Calibration Due Date	Calibration Interval
6,7,8,	02666	Base Station	R&S	CMU200	25 Jun 06	12 months
N/A	N/A	Power Splitter	HP	33120A	N/A	N/A
6,7,8	02679	Spectrum Analyzer	Agilent	E7405A	01-Jun-06	12 months
6,7,8	02672	Power Sensor	Agilent	E9304A	06-May-06	12 months
7,8	00837	Temperature Chamber	Tenney Environmental	N/A	20 Mar 06	12 months
7,8	00485	Multi-Meter	Fluke	87III	12 May 06	12 Months

6. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

Specification: FCC Part 2.1051

6.1 Setup

Testing was performed with the EUT connected to a 6dB attenuator, 6dB splitter, filter bank and then to the EMI receiver. The base station simulator was connected to the other port of the splitter to establish a call. Filters were introduced to reduce or eliminate spurious emission, which could be generated internally in the EMI receiver.

6.2 Pass/Fail Criteria

Band	Frequency Range (MHz)	FCC Limits (dBm)
Cellular / PCS	30 – 20000 *	-13

* Frequency to be investigated up to the 10th harmonic of the highest clock or frequency used.

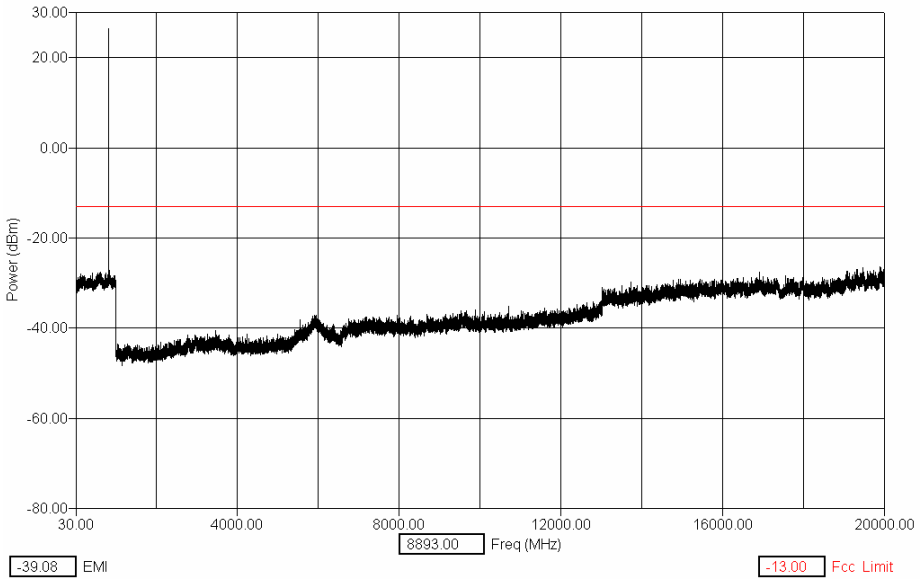
6.3 Detailed Test Results

Test Technician / Engineer	Viet Do
Date of Measurement	17-Feb-06
Temperature	23 °C
Humidity	47 %RH
Test Result	Complies with FCC Part 2.1051

Note 1: EMI (dBm) = trace (dBuV) + cable loss (dB) + filter loss (dB).

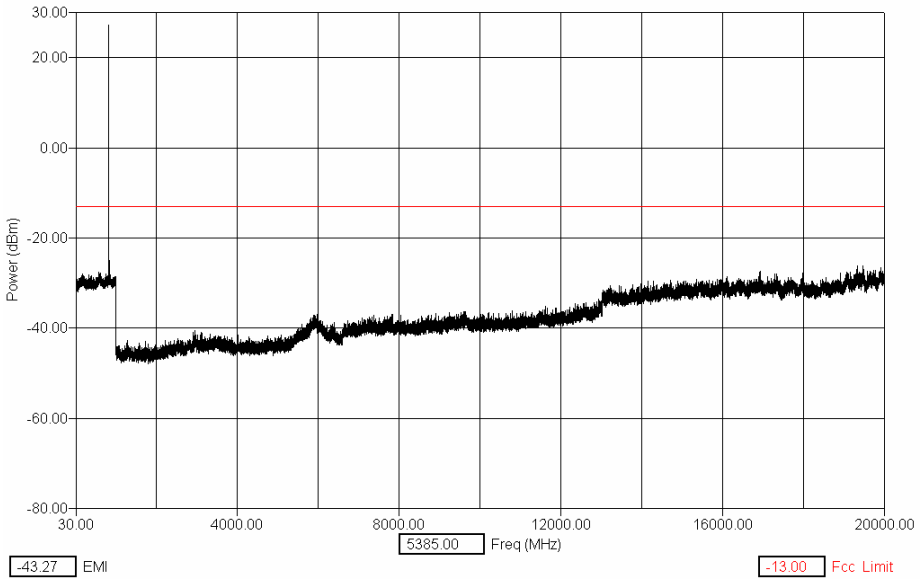
Note 2: measurements were performed with 3MHz RBW/VBW.

CDMA 800 - Channel 1013, 824.70 MHz



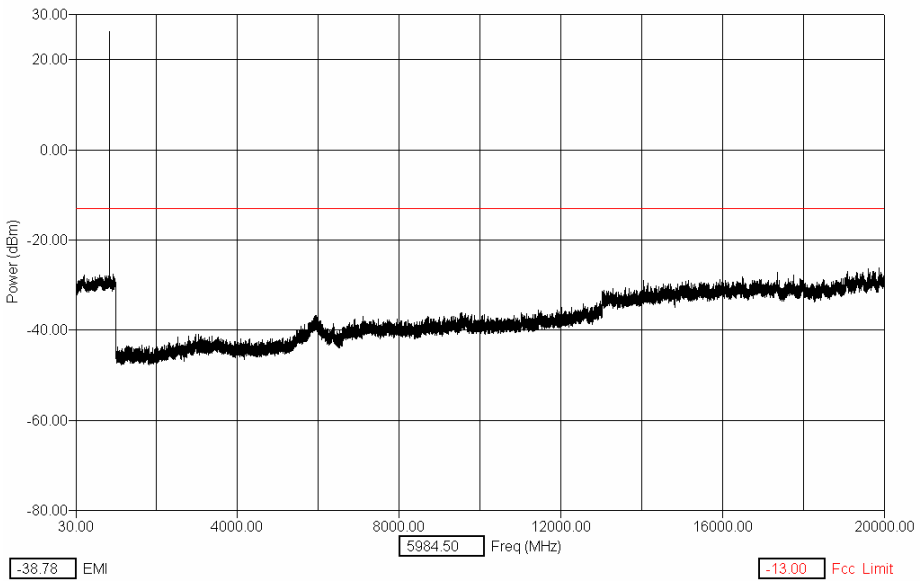
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1651.1	-65.6	0.4	14.67	-50.5	-13.0
2474.3	-63.8	0.6	15.46	-47.7	-13.0
3299.8	-62.1	0.8	15.98	-45.3	-13.0
4124.4	-64.5	0.9	16.09	-47.5	-13.0
4948.3	-64.9	1.1	17.03	-46.9	-13.0
5774.6	-65.4	1.2	19.98	-44.3	-13.0
6597.3	-65.5	1.2	18.06	-46.2	-13.0
7423.1	-62.7	1.3	17.98	-43.4	-13.0
8246.1	-62.1	1.4	18.97	-41.8	-13.0

CDMA 800 - Channel 384, 836.52 MHz



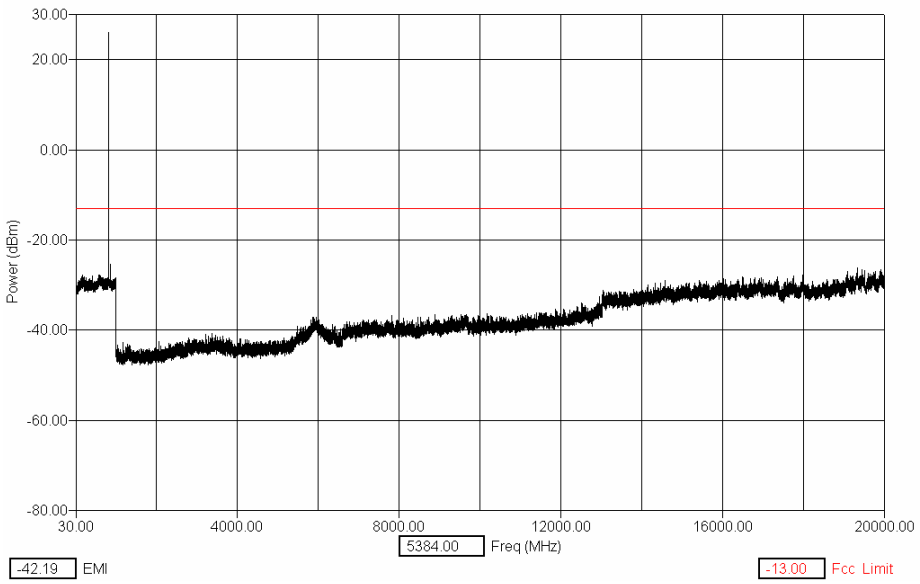
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1671.4	-64.8	0.4	14.60	-49.9	-13.0
2510.1	-62.3	0.6	15.65	-46.1	-13.0
3346.4	-61.8	0.8	16.10	-44.9	-13.0
4184.4	-64.5	0.9	16.12	-47.5	-13.0
5017.2	-65.8	1.1	17.16	-47.6	-13.0
5857.4	-66.0	1.2	21.33	-43.5	-13.0
6691.6	-65.4	1.3	17.75	-46.4	-13.0
7527.3	-62.8	1.3	18.06	-43.4	-13.0
8364.6	-63.1	1.4	19.00	-42.7	-13.0

CDMA 800 - Channel 777, 848.31 MHz



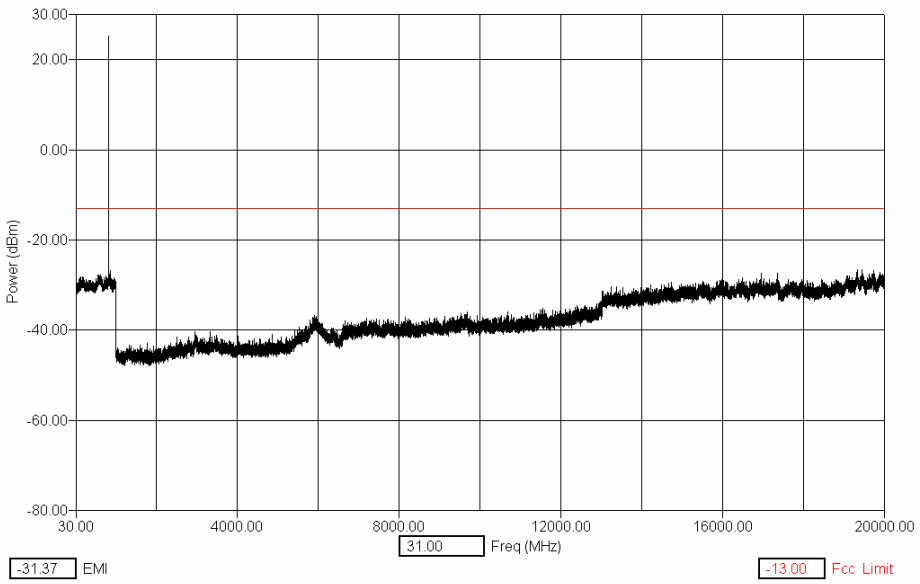
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1695.8	-65.7	0.4	14.59	-50.7	-13.0
2545.8	-61.6	0.6	15.53	-45.5	-13.0
3393.3	-61.1	0.8	16.05	-44.3	-13.0
4242.8	-65.5	0.9	16.35	-48.2	-13.0
5090.0	-64.9	1.1	17.26	-46.5	-13.0
5936.7	-67.0	1.2	22.09	-43.7	-13.0
6785.1	-62.0	1.3	17.96	-42.8	-13.0
7636.0	-62.6	1.3	17.98	-43.2	-13.0
8482.7	-62.3	1.4	18.53	-42.4	-13.0

AMPS - Channel 991, 824.04 MHz



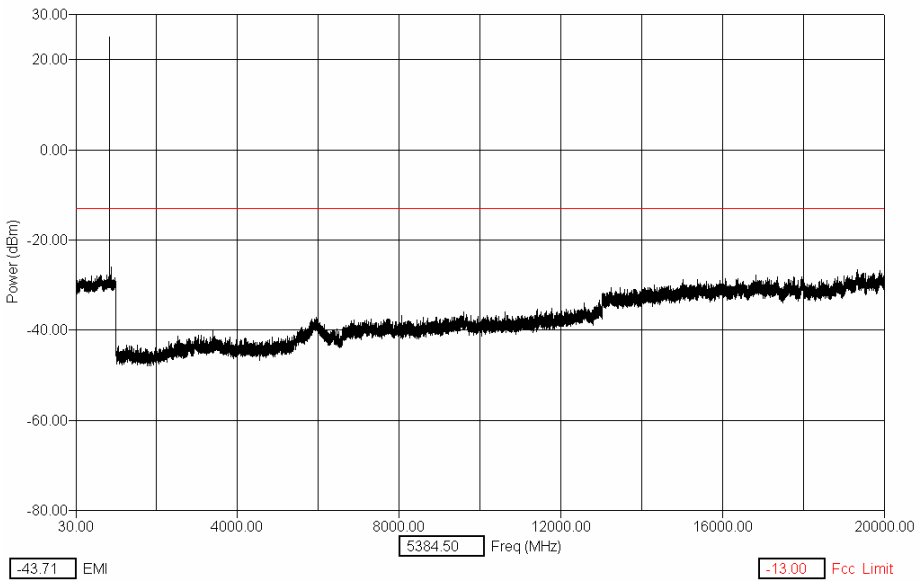
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1649.5	-63.5	0.4	14.67	-48.4	-13.0
2472.1	-61.9	0.6	15.45	-45.9	-13.0
3296.4	-60.7	0.8	16.01	-43.9	-13.0
4120.9	-65.8	0.9	16.13	-48.7	-13.0
4946.1	-66.1	1.1	17.03	-48.0	-13.0
5767.5	-64.8	1.2	19.93	-43.8	-13.0
6592.1	-62.1	1.2	18.06	-42.8	-13.0
7416.0	-61.5	1.3	18.11	-42.0	-13.0
8240.3	-61.0	1.4	18.93	-40.7	-13.0

AMPS - Channel 384, 836.52 MHz



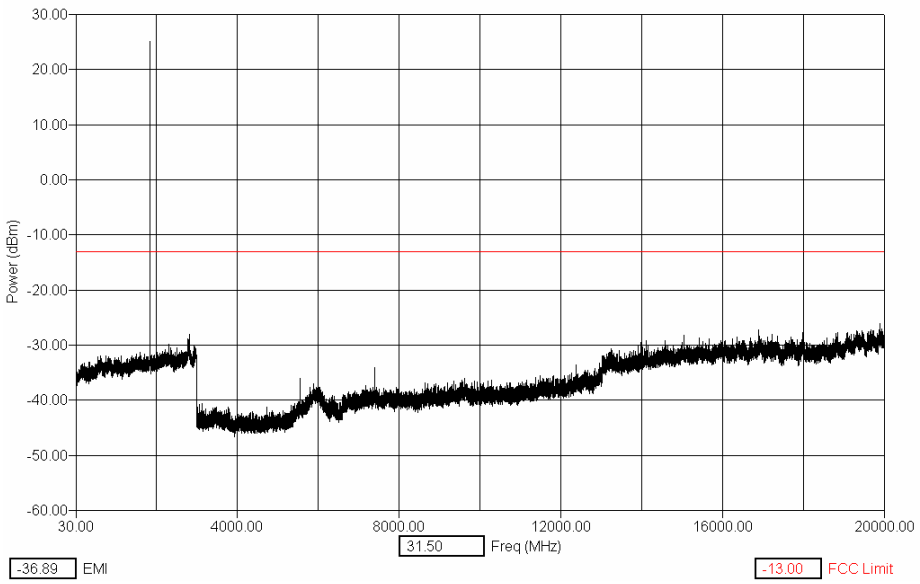
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1672.8	-65.2	0.4	14.60	-50.3	-13.0
2509.5	-61.6	0.6	15.65	-45.4	-13.0
3346.1	-60.8	0.8	16.10	-43.9	-13.0
4182.4	-65.0	0.9	16.12	-48.0	-13.0
5019.1	-66.1	1.1	17.16	-47.8	-13.0
5856.3	-65.5	1.2	21.33	-43.0	-13.0
6692.0	-64.9	1.3	17.75	-45.9	-13.0
7528.4	-61.5	1.3	18.06	-42.1	-13.0
8365.5	-62.5	1.4	19.00	-42.1	-13.0

AMPS - Channel 799, 848.97 MHz



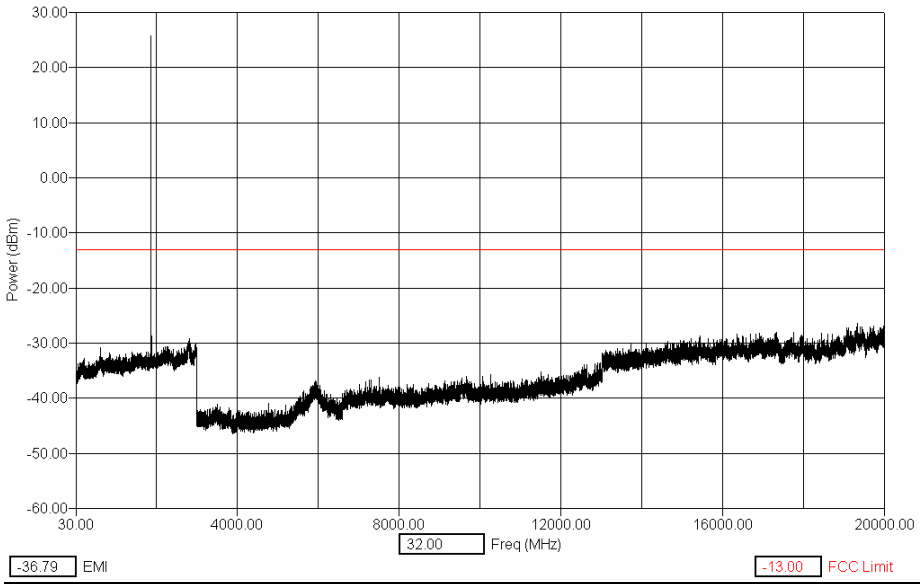
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
1696.8	-64.8	0.4	14.59	-49.9	-13.0
2546.8	-59.2	0.6	15.49	-43.1	-13.0
3396.1	-58.3	0.8	16.02	-41.4	-13.0
4244.1	-64.4	0.9	16.39	-47.0	-13.0
5093.6	-66.2	1.1	17.25	-47.9	-13.0
5941.5	-64.9	1.2	22.11	-41.6	-13.0
6791.3	-60.7	1.3	17.87	-41.6	-13.0
7640.6	-62.2	1.3	17.97	-42.9	-13.0
8489.4	-63.0	1.4	18.55	-43.0	-13.0

CDMA 1900 - Channel 25, 1851.25 MHz



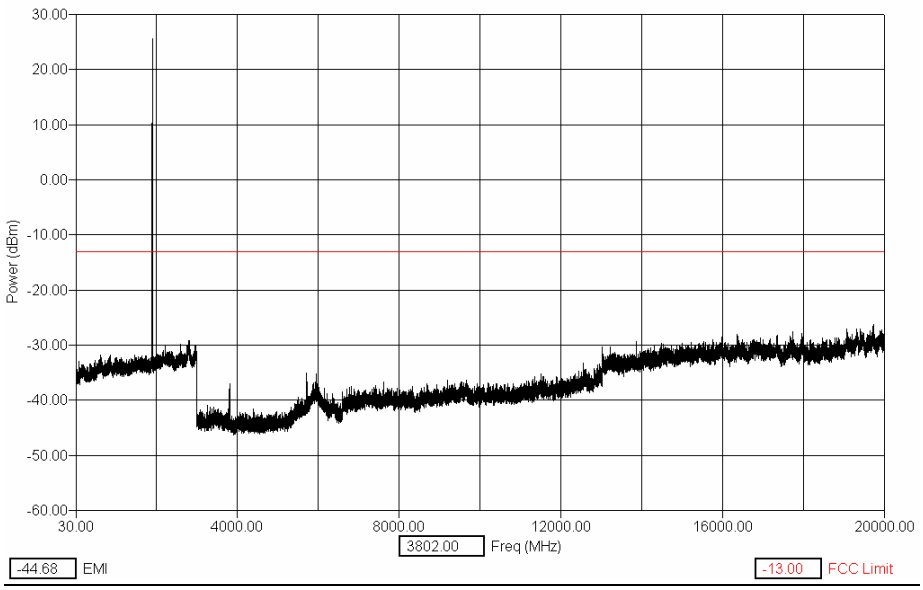
Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
3702.7	-63.0	0.85	16.2	-45.9	-13.0
5554.1	-60.6	1.13	18.4	-41.1	-13.0
7404.1	-56.7	1.32	18.4	-37.1	-13.0
9257.4	-64.1	1.48	19.5	-43.0	-13.0
11107.9	-63.0	1.60	20.2	-41.2	-13.0
12959.8	-60.8	1.71	22.6	-36.4	-13.0
14810.3	-59.8	1.80	22.8	-35.3	-13.0
16659.7	-59.3	1.88	23.8	-33.6	-13.0
18512.5	-60.3	1.95	24.9	-33.5	-13.0

CDMA 1900 - Channel 600, 1880.00 MHz



Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
3759.5	-62.9	0.86	16.8	-45.3	-13.0
5640.3	-59.8	1.14	18.5	-40.2	-13.0
7520.0	-58.4	1.34	18.1	-39.0	-13.0
9398.7	-62.1	1.49	18.9	-41.7	-13.0
11281.2	-62.4	1.61	20.2	-40.6	-13.0
13159.0	-63.1	1.72	21.8	-39.6	-13.0
15040.3	-59.0	1.81	23.7	-33.5	-13.0
16919.9	-60.9	1.89	25.0	-34.0	-13.0
18799.1	-61.5	1.96	25.1	-34.4	-13.0

CDMA 1900 – Channel 1175, 1908.75 MHz



Freq (Max) (MHz)	(PEAK) Trace (dBm)	Cable (dB)	Filter (dB)	(PEAK) EMI (dBm)	Limit (dBm)
3818.3	-57.7	0.87	16.7	-40.1	-13.0
5725.4	-59.5	1.15	19.4	-39.0	-13.0
7634.6	-58.6	1.35	18.0	-39.3	-13.0
9544.7	-63.2	1.50	20.3	-41.4	-13.0
11452.1	-63.1	1.62	20.5	-41.0	-13.0
13361.9	-60.4	1.73	22.0	-36.7	-13.0
15268.2	-59.1	1.82	23.3	-34.0	-13.0
17179.6	-60.0	1.90	24.3	-33.8	-13.0
19087.7	-58.2	1.97	26.3	-29.9	-13.0

7. FREQUENCY STABILITY (TEMPERATURE VARIATION)

Specification: FCC Part 2.1055(a)(1)(b)

7.1 Setup

The EUT was connected to the base station simulator to measure the RF power output.

7.2 Pass/Fail Criteria

Not Applicable

7.3 Detailed Test Results

Test Technician / Engineer	Viet Do
Date of Measurement	17-Feb-06
Temperature	23°C
Humidity	43%RH
Test Result	Tested in accordance with 2.1055(a)(1)(b)

Temp. (°C)	CDMA 800, Channel 384	AMPS, Channel 384	CDMA 1900, Channel 600
	Change (Hz)	Change (Hz)	Change (Hz)
-30	11	232	31
-20	13	231	28
-10	12	209	29
0	13	229	27
10	12	252	27
20	14	239	26
30	13	219	31
40	13	226	26
50	13	219	27

8. FREQUENCY STABILITY (VOLTAGE VARIATION)

Specification: FCC Part 2.1055(d)(1)(2)

8.1 Setup

The EUT was connected to the base station simulator to measure the RF power output.

8.2 Pass/Fail Criteria

Not Applicable

8.3 Detailed Test Results

Test Technician / Engineer	Viet Do
Date of Measurement	17-Feb-06
Temperature	23°C
Humidity	43%RH
Test Result	Tested in accordance with 2.1055(d)(1)(2)

CDMA 800, Call Mode, Channel 384

% of STV	Voltage	Change (Hz)
100 (Nominal)	3.7	9
115	4.2	13
Battery End Point	3.2	10

AMPS, Call Mode, Channel 384

% of STV	Voltage	Change (Hz)
100 (Nominal)	3.7	156
115	4.2	175
Battery End Point	3.2	148

CDMA 1900, Call Mode, Channel 600

% of STV	Voltage	Change (Hz)
100 (Nominal)	3.7	34
115	4.2	35
Battery End Point	3.2	41