

FCC PART 15.249

EMI MEASUREMENT AND TEST REPORT

For

MGA Entertainment (H.K.) Ltd.

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FCC ID: LU9305132

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: Wireless Telephone
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Report No.: <u>R0503215</u>	
Report Date: <u>2005-03-28</u>	
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GENERAL INFORMATION

Product Description for Equipment Under Test (EUT)

The *MGA Entertainment (H.K.) Ltd.* product, FCC ID: LU9305132, or the "EUT" as referred to in this report is a Wireless Telephone. The Base operates between frequency 2403.05-2406.95 MHz, the Handset operates between frequency 2472.00-2475.90. The Base is measured approximately 150mmL x 90mmW x 90mmH. The Handset is measured approximately 175mmL x 70mmW x 65mmH.

** The test data gathered are from production sample, serial number: NTP-6323, provided by the manufacturer.*

Objective

This document is a test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2003.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203 and 15.205, 15.207, 15.249, 15.203 and 15.209 rules.

Related Submittal(s)/Grant(s)

No Related Submittals

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4 - 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratory, Corp.

Test Facility

The Open Area Test site used by Bay Area Compliance Laboratory Corporation to collect radiated and conducted emission measurement data is located in the back parking lot of the building at 230 Commercial Street, Sunnyvale, California, USA.

Test site at Bay Area Compliance Laboratory Corporation has been fully described in reports submitted to the Federal Communication Commission (FCC) and Voluntary Control Council for Interference (VCCI). The details of these reports has been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 11 and December 10, 1997 and Article 8 of the VCCI regulations on December 25, 1997. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission and Voluntary Control Council for Interference has the reports on file and is listed under FCC file 31040/SIT 1300F2 and VCCI Registration No.: C-1298 and R-1234. The test site has been approved by the FCC and VCCI for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, BACL is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200167-0). The current scope of accreditations can be found at <http://ts.nist.gov/ts/hdocs/210/214/scopes/2001670.htm>

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to ANSI C63.4-2003.

Schematics and Block Diagram

Please refer to Appendix A.

Equipment Modifications

No modifications were made to the EUT.

Power Supply

Manufacturer	Description	Model	Serial Number	FCC ID
Kiec	AC Adapter	KA12D090030024U	KC0048036	N/A

Local Support Equipment

Manufacturer	Description	Model	Serial Number	FCC ID
Teltone	Line Simulator	TLS-3B-01	80071	N/A
Southern Telecom	Phone	N/A	N/A	N/A

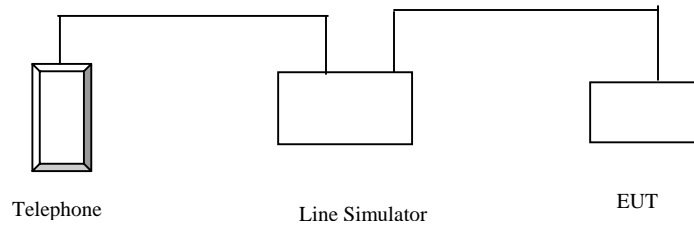
Printed Circuit Boards in EUT

Manufacturer/Description	Rev.	# of Layers	Crystals (MHz)
MGA	0.2	4	3.58
MGA	0.2	4	None

Interface Ports and Cabling

Cable Description	Length (M)	From	To
Phone Line	1.5	Line 1 Port / Line Simulator	Phone
Phone Line	1.5	Line 2 Port / Line Simulator	EUT

Test Setup Configuration



SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.203	Antenna Requirement	Compliant
§15.207(a)	Conducted Emission	Compliant
§15.209 (a), §15.249 (a)	Radiated Emission	Compliant*
§15.249 (c)	Band Edge Testing	Compliant

* Base was within the measurement of uncertainty at High Channel with the worst result of -3.0 dB

§15.203 - ANTENNA REQUIREMENT

Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Antenna Connected Construction

The antenna connector is designed with permanent attachment and no consideration of replacement.

§ 15.207 (a) - CONDUCTED EMISSIONS TEST DATA

Measurement Uncertainty

All measurements involve certain levels of uncertainties. These uncertainties are attributed to: Receiver, Cable loss, and LISN.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the estimated uncertainty of any conducted emission measurement at BACL is ± 2.4 dB.

EUT Setup

The measurement was performed in the shielded room, using the same setup per ANSI C63.4-2003 measurement procedure. The specification used was FCC 15 Subpart C limits.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The EUT was connected to an adapter, which connected to 120Vac/60Hz power source.

Receiver Setup

The receiver was set to investigate the frequency 150 kHz to 30MHz.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
Rohde & Schwarz	Artificial-Mains Network	ESH2-Z5	871884/039	2004-08-15
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2004-09-11
Fluke	Calibrated Voltmeter	189	18485-38	2004-07-18

* **Statement of Traceability:** BACL attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Test Procedure

During the conducted emission test, the adapter of EUT was connected to the main outlet of the LISN-1.

Maximizing procedure were performed on the six (6) highest emissions of the EUT.

All data was recorded in the peak detection mode, quasi-peak and average. Quasi-Peak readings are distinguished with an "QP". Average readings are distinguished with an "Ave".

Environmental Conditions

Temperature:	22 °C
Relative Humidity:	39%
ATM Pressure:	1018mbar

*Testing was performed by Jerry Wang on 2005-03-23.

Summary of Test Results

According to the recorded data in following table, the EUT complies with the FCC Conducted limit for a Class B device, with the *worst* margin reading of:

-30.1 dB at 0.810 MHz in the Neutral mode

Conducted Emissions Test Data

LINE CONDUCTED EMISSIONS				FCC CLASS B	
Frequency MHz	Amplitude dB μ V	Detector Qp/Ave/Peak	Phase Line/Neutral	Limit dB μ V	Margin dB
0.810	15.9	Ave	Neutral	46.00	-30.1
0.810	18.0	QP	Neutral	56.00	-38.0
14.200	11.6	Ave	Neutral	50.00	-38.4
20.100	10.0	Ave	LINE	50.00	-40.0
16.400	7.6	Ave	LINE	50.00	-42.4
0.150	9.7	Ave	Neutral	56.00	-46.3
14.200	12.7	QP	Neutral	60.00	-47.3
20.100	11.4	QP	LINE	60.00	-48.6
0.150	16.4	QP	Neutral	66.00	-49.6
0.160	4.8	Ave	LINE	55.46	-50.7
16.400	7.8	QP	LINE	60.00	-52.2
0.160	12.4	QP	LINE	65.46	-53.1

Plot of Conducted Emissions Test Data

Plot of Conducted Emissions test data was presented hereinafter as reference.

Jenny 205-3-2

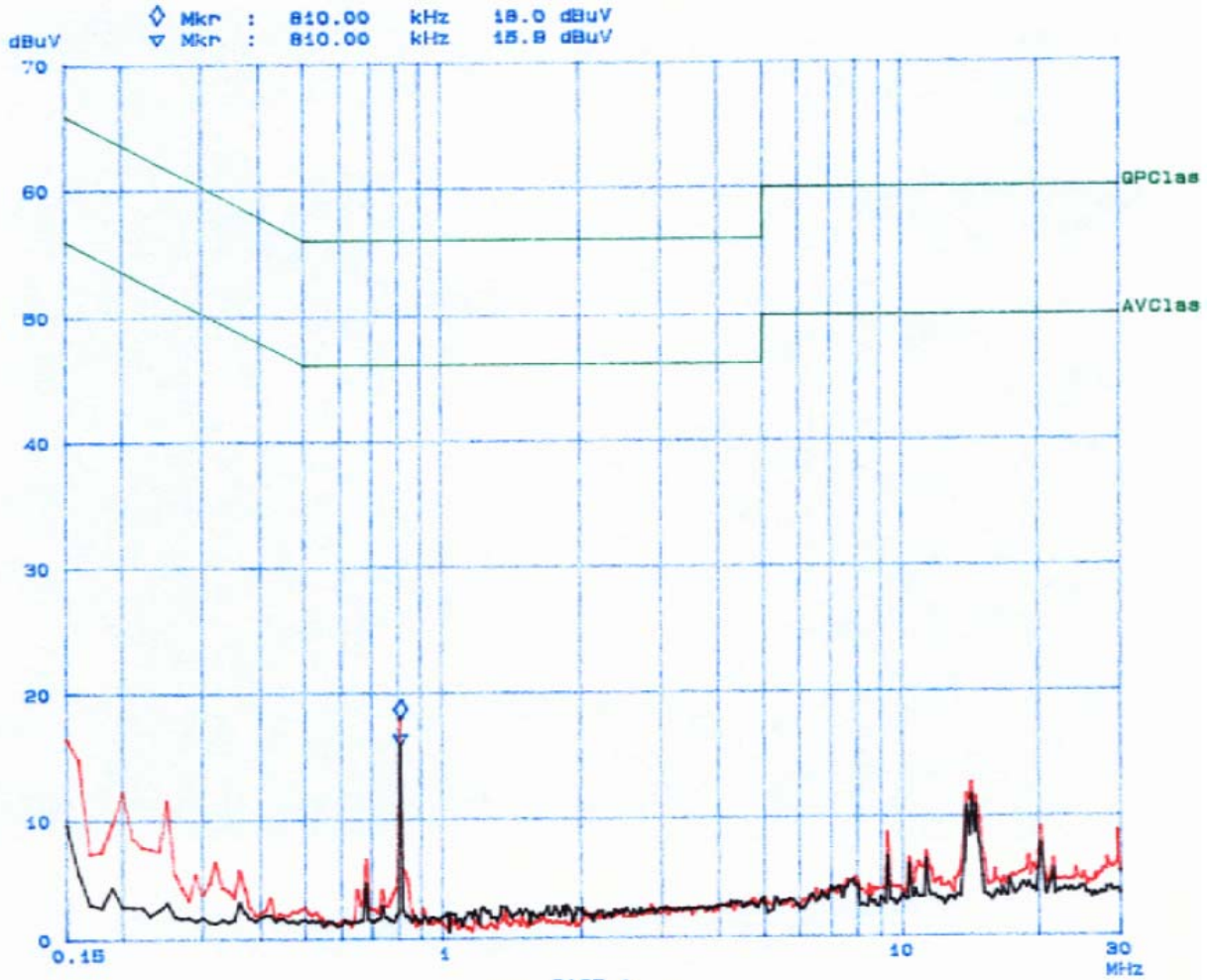
Bay Area Compliance Laboratory Corp FCC 15.249

23. Mar 05 17:08

EUT: Wireless Telephone
Manuf: MGA
Op Cond: Normal
Operator: Jenny
Comment: N

Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	1M	10k	9k	QP+AV	20ms	15dB LN	OFF
1M	5M	10k	9k	QP+AV	1ms	15dB LN	OFF
5M	30M	100k	9k	QP+AV	1ms	15dB LN	OFF



Jerry 2023-3-23

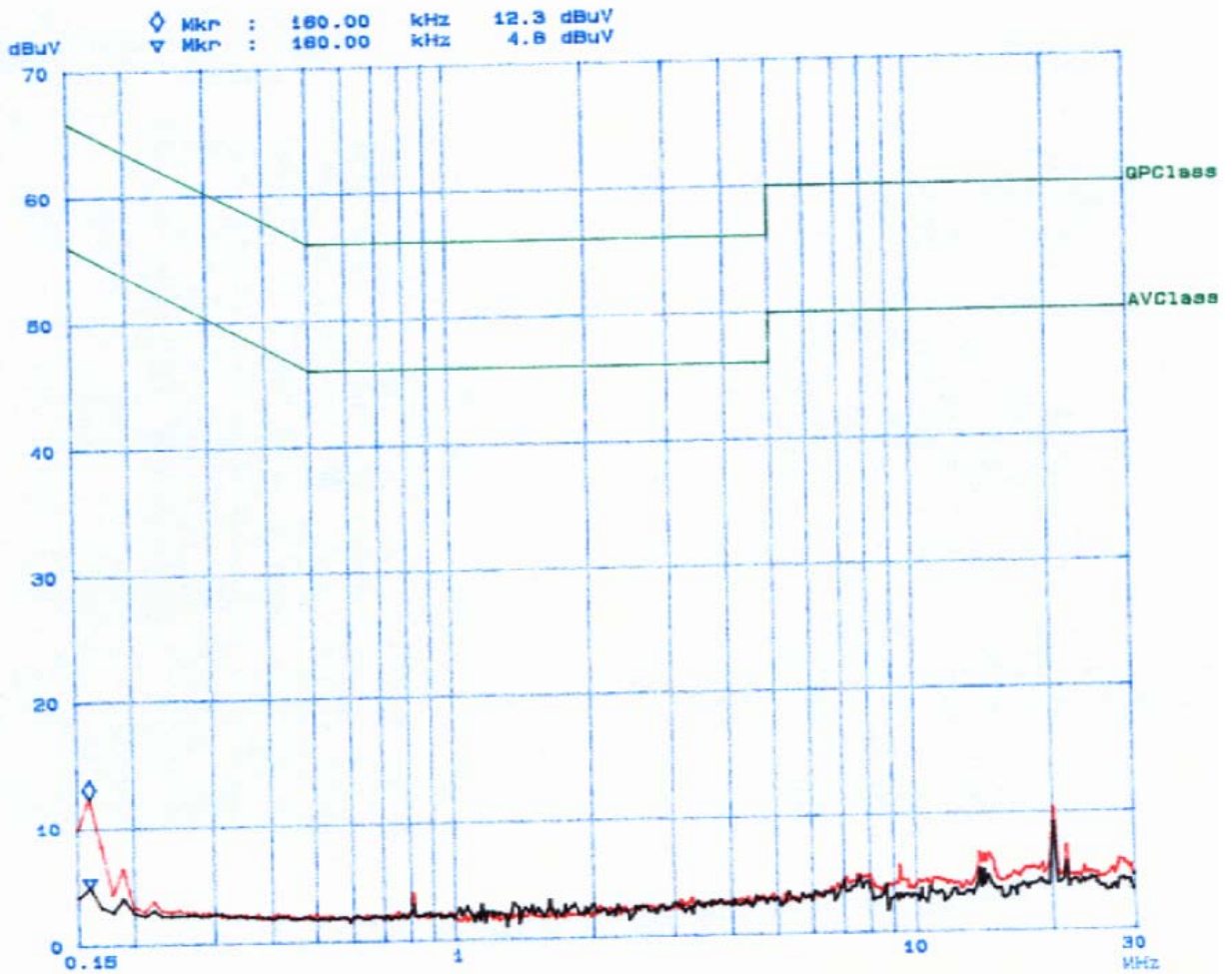
23. Mar 05 17:26

Bay Area Compliance Laboratory Corp FCC 15.249

EUT: Wireless Telephone
Manuf: MGA
Op Cond: Normal
Operator: Jerry
Comment: L

Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	
150k	1M	10k	9k	GP+AV	20ms	15dBLN	OFF	
1M	5M	10k	9k	GP+AV	1ms	15dBLN	OFF	
5M	30M	100k	9k	GP+AV	1ms	15dBLN	OFF	



§15.205 & §15.249 (a) (d) - RADIATED EMISSION DATA

Applicable Standard

According to §15.249 (a), the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of (millivolts/ meter)	Field strength of fundamental (microvolts/ meter)	harmonics
902-928 MHz.....	50	500	
2400-2483.5 MHz.....	50	500	
5725-5875 MHz.....	50	500	
24.0-24.25 GHz.....	250	2500	

According to §15.249 (d), emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at BAEL is ± 4.0 dB.

EUT Setup

The radiated emission tests were performed in the open area 3-meter test site, using the setup in accordance with ANSI C63.4-2003. The specification used was the FCC 15 Subpart C limits.

The spacing between the peripherals was 10 centimeters.

External I/O cables were draped along the edge of the test table and bundle when necessary.

The EUT was connected to the power adapter, which is connected with 120Vac/60Hz power source

Spectrum Analyzer Setup

According to FCC Rules, 47 CFR 15.33 (a) (1), the system was tested to 25GHz.

During the radiated emission test, the spectrum analyzer was set with the following configurations:

<i>Frequency Range</i>	<i>RBW</i>	<i>Video B/W</i>
Below 30MHz	10kHz	10kHz
30 – 1000MHz	100kHz	100kHz
Above 1000MHz	1MHz	1MHz

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
EMCO	Biconical Antenna	3110B	9309-1165	2004-10-11
EMCO	Log Periodic Antenna	3146	2101	2004-10-11
Agilent	Amplifier (0.1-1300MHz)	8447D	2944A10187	2004-09-23
Agilent	Spectrum Analyzer	E4446A	US44300386	2004-11-10
A. H. Systems	Antenna, Horn, DRG	SAS-200/571	261	2004-08-02
HP	Amplifier, Pre, Microwave	8449B	3147A00400	2004-06-14

* **Statement of Traceability:** BACL attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Environmental Conditions

Temperature:	22°C
Relative Humidity:	39%
ATM Pressure:	1018mbar

*Testing was performed by Jerry Wang on 2005-03-23.

Test Procedure

For the radiated emissions test, the power cord of the EUT was connected to the AC floor outlet.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limits), and are distinguished with a "Qp" in the data table.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of -7dB means the emission is 7dB below the maximum limit for applicable limits. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{Applicable Limit}$$

Summary of Test Results

According to the recorded data in following table, the EUT measured test data within the measurement uncertainty of ± 4.0 , and had the worst margin of:

Handset:

- 4.1 dB at 2472.00 MHz in the Vertical polarization at Low Channel
- 4.0 dB at 4947.82 MHz in the Vertical polarization at Mid Channel
- 6.5 dB at 4951.93 MHz in the Horizontal polarization at High Channel
- 12.1 dB at 500.00 MHz in the Vertical polarization at Unintentional Emission

Base:

- 7.8 dB at 2403.05 MHz in the Horizontal polarization at Low Channel
- 5.2 dB at 2404.97 MHz in the Vertical polarization at Mid Channel
- 3.0 dB at 2406.92 MHz in the Vertical polarization at High Channel*
- 4.4 dB at 801.20 MHz in the Horizontal polarization at Unintentional Emission

* Base was within the measurement of uncertainty at High Channel with the worst result of -3.0 dB

Radiated Emissions Test Result Data - Handset, 3Meter

Low Channel

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC	Comments
MHz	dBuV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
2472.0000	92.9	180	1.5	V	28.1	3.4	34.5	89.9	94	-4.1	Fund/Ave
4944.0000	48.3	0	1.4	H	32.5	2.4	35.5	47.7	54	-6.3	Ave
2472.0000	90.6	200	1.5	H	28.1	3.4	34.5	87.6	94	-6.4	Fund/Ave
7416.0000	43.3	180	1.5	V	36.3	1.9	36.3	45.2	54	-8.8	Ave
4944.0000	44.7	30	1.5	V	32.5	1.9	36.3	42.8	54	-11.2	Ave
7416.0000	36.6	0	1.5	H	36.3	3.7	35.0	41.6	54	-12.4	Ave
9888.0000	33.6	30	1.5	H	38.4	3.7	35.0	40.7	54	-13.3	Ave
9888.0000	33.7	180	1.5	V	38.4	2.4	35.5	39.0	54	-15.0	Ave
4944.0000	57.7	0	1.5	V	32.5	1.9	36.3	55.8	74	-18.2	Peak
7416.0000	48.7	30	1.5	H	36.3	3.7	35.0	53.7	74	-20.3	Peak
4944.0000	53.8	200	1.2	H	32.5	2.4	35.5	53.2	74	-20.8	Peak
2472.0000	95.2	200	1.5	V	28.1	3.4	34.5	92.2	114	-21.8	Fund/Peak
7416.0000	50.2	200	1.5	V	36.3	1.9	36.3	52.1	74	-21.9	Peak
2472.0000	94.7	180	1.5	H	28.1	3.4	34.5	91.7	114	-22.3	Fund/Peak
9888.0000	37.9	45	1.5	H	38.4	3.7	35.0	45.0	74	-29.0	Peak
9888.0000	38.2	200	1.5	V	38.4	2.4	35.5	43.5	74	-30.5	Peak

Mid Channel

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC	Comments
MHz	dBuV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
4947.8200	50.6	30	1.5	V	32.5	2.4	35.5	50.0	54	-4.0	Ave
2473.9000	92.1	180	1.5	H	28.1	3.4	34.5	89.1	94	-4.9	Fund/Ave
2473.9000	91.8	200	1.5	V	28.1	3.4	34.5	88.8	94	-5.2	Fund/Ave
4947.8200	49.9	180	1.5	H	32.5	1.9	36.3	48.0	54	-6.0	Ave
7421.7800	39.7	30	1.5	V	36.3	3.7	35.0	44.7	54	-9.3	Ave
9895.6800	33.5	200	1.2	V	38.4	3.7	35.0	40.6	54	-13.4	Ave
7421.7800	38.0	180	1.5	H	36.3	1.9	36.3	39.9	54	-14.1	Ave
4947.8200	59.7	45	1.2	V	32.5	2.4	35.5	59.1	74	-14.9	Peak
9895.6800	32.4	200	1.5	H	38.4	2.4	35.5	37.7	54	-16.3	Ave
4947.8200	56.2	200	1.5	H	32.5	1.9	36.3	54.3	74	-19.7	Peak
7421.7800	48.6	0	1.4	V	36.3	3.7	35.0	53.6	74	-20.4	Peak
2473.9000	95.3	200	1.5	H	28.1	3.4	34.5	92.3	114	-21.7	Fund/Peak
2473.9000	94.7	180	1.5	V	28.1	3.4	34.5	91.7	114	-22.3	Fund/Peak
7421.7800	44.7	200	1.5	H	36.3	1.9	36.3	46.6	74	-27.4	Peak
9895.6800	39.8	200	1.5	H	38.4	2.4	35.5	45.1	74	-28.9	Peak
9895.6800	37.4	200	1.2	V	38.4	3.7	35.0	44.5	74	-29.5	Peak

Radiated Emissions Test Result Data – Handset, 3M (Continued)

High Channel

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC	Comments
MHz	dBuV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
4951.9300	46.3	180	1.5	H	32.5	3.7	35.0	47.5	54	-6.5	Ave
2475.9000	89.9	180	1.2	H	28.1	3.4	34.5	86.9	94	-7.1	Fund/Ave
2475.9000	89.0	200	1.2	V	28.1	3.4	34.5	86.0	94	-8.0	Fund/Ave
4951.9300	47.8	200	1.5	V	32.5	1.9	36.3	45.9	54	-8.1	Ave
7427.7600	43.2	200	1.3	V	36.3	1.9	36.3	45.1	54	-8.9	Ave
9899.4700	35.6	200	1.2	V	38.4	3.7	35.0	42.7	54	-11.3	Ave
7427.7600	37.6	270	1.5	H	36.3	2.4	35.5	40.8	54	-13.2	Ave
9899.4700	33.4	120	1.5	H	38.4	2.4	35.5	38.7	54	-15.3	Ave
4951.9300	59.7	270	1.5	V	32.5	1.9	36.3	57.8	74	-16.2	Peak
4951.9300	51.4	200	1.5	H	32.5	3.7	35.0	52.6	74	-21.4	Peak
7427.7700	49.9	180	1.5	V	36.3	1.9	36.3	51.8	74	-22.2	Peak
2475.9000	94.6	200	1.4	V	28.1	3.4	34.5	91.6	114	-22.4	Fund/Peak
2475.9000	93.8	180	1.5	H	28.1	3.4	34.5	90.8	114	-23.2	Fund/Peak
7427.7700	44.8	300	1.5	H	36.3	2.4	35.5	48.0	74	-26.0	Peak
9899.4800	37.4	180	1.2	V	38.4	3.7	35.0	44.5	74	-29.5	Peak
9899.4800	36.8	200	1.5	H	38.4	2.4	35.5	42.1	74	-31.9	Peak

Unintentional Emission

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC
MHz	dBuV	Degree	Meter	H/V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB
500.00	43.4	200	1.2	V	18.6	0.2	28.3	33.9	46	-12.1
35.00	40.40	270	1.5	H	13.4	0.2	28.1	25.9	40	-14.1
75.10	42.30	270	1.2	V	9.4	0.2	28.1	23.8	40	-16.3
240.00	43.40	300	2.0	H	13.8	0.2	28.1	29.3	46	-16.7
75.02	41.20	180	1.5	H	9.4	0.2	28.1	22.7	40	-17.4
480.00	38.4	180	1.2	V	18.3	0.2	28.4	28.5	46	-17.5
240.00	42.10	270	1.2	V	13.8	0.2	28.1	28.0	46	-18.0
35.00	35.20	200	1.2	V	13.4	0.2	28.1	20.7	40	-19.3
300.00	39.40	300	1.5	H	14.4	0.2	28.1	25.9	46	-20.1

Note: The handset was tested in all three orthogonal

Radiated Emissions Test Result Data - Base, 3Meter

Low Channel

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC	Comments
MHz	dBuV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
2403.0500	91.5	90	1.0	H	28.1	2.0	35.4	86.2	94	-7.8	Fund/Ave
2403.0500	90.3	30	1.2	V	28.1	2.4	35.5	85.3	94	-8.7	Fund/Ave
7213.3000	32.7	0	1.5	V	36.3	2.7	34.8	36.9	54	-17.1	Ave
7213.3000	31.7	30	1.5	H	36.3	1.9	36.3	33.6	54	-20.4	Ave
4809.9600	33.1	35	1.2	V	32.5	2.4	35.5	32.5	54	-21.5	Ave
2403.0500	95.4	20	1.5	V	28.1	2.4	35.5	90.4	114	-23.6	Fund/Peak
2403.0500	94.8	45	2.5	H	28.1	2.0	35.4	89.5	114	-24.5	Fund/Peak
4809.9600	31.4	30	1.5	H	32.5	1.9	36.3	29.5	54	-24.5	Ave
7213.3000	42.7	50	1.2	V	36.3	2.7	34.8	46.9	74	-27.1	Peak
7213.3000	42.0	45	2.0	H	36.3	1.9	36.3	43.9	74	-30.1	Peak
4809.9600	43.2	20	1.2	V	32.5	2.4	35.5	42.6	74	-31.4	Peak
4809.9600	42.8	0	2.0	H	32.5	1.9	36.3	40.9	74	-33.1	Peak

Mid Channel

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC	Comments
MHz	dBuV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
2404.9700	94.5	180	1.2	V	28.1	2.0	35.8	88.8	94	-5.2	Fund/Ave
2404.97	94.3	100	1.2	H	28.1	2.0	35.8	88.6	94	-5.4	Fund/Ave
7214.9400	37.4	180	1.5	H	36.3	2.4	35.5	40.6	54	-13.4	Ave
7214.9400	36.8	300	1.2	h	36.3	2.4	35.5	40.0	54	-14.0	Ave
4809.9200	35.2	30	1.5	H	32.5	1.9	36.3	33.3	54	-20.7	Ave
4809.9200	33.6	90	1.2	V	32.5	1.9	36.3	31.7	54	-22.3	Ave
2404.9700	95.6	90	1.4	V	28.1	2.0	35.4	90.3	114	-23.7	Fund/Peak
2404.97	94.8	120	1.2	H	28.1	2.0	35.8	89.1	114	-24.9	Fund/Peak
7214.9400	38.4	180	1.5	V	36.3	2.4	35.5	41.6	74	-32.4	Peak
7214.9400	37.2	300	1.2	H	36.3	2.4	35.5	40.4	74	-33.6	Peak
4809.9200	36.5	30	1.5	V	32.5	1.9	36.3	34.6	74	-39.4	Peak
4809.9200	34.7	90	1.5	H	32.5	1.9	36.3	32.8	74	-41.2	Peak

Radiated Emissions Test Result Data - Base, 3M (Continued)

High Channel

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC	Comments
MHz	dBuV	Degree	Meter	H / V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB	
2406.9500	94.5	180	1.2	V	28.1	3.8	35.4	91.0	94	-3.0	Fund/Ave
2406.9500	91.4	120	1.5	H	28.1	2.4	35.5	86.4	94	-7.6	Fund/Ave
4813.8900	41.2	270	1.5	H	32.5	2.4	35.5	40.6	54	-13.4	Peak
7220.8600	32.5	200	1.2	V	36.3	1.9	36.3	34.4	54	-19.6	Ave
2406.9500	96.2	270	1.2	V	28.1	3.8	35.4	92.7	114	-21.3	Fund/Peak
4813.8900	31.8	120	1.5	H	32.5	2.4	35.5	31.2	54	-22.8	Ave
4813.8900	31.7	200	1.2	V	32.5	1.9	36.3	29.8	54	-24.2	Ave
2406.9500	92.8	270	1.5	H	28.1	2.4	35.5	87.8	114	-26.2	Fund/Peak
7220.8600	41.2	90	3.5	H	36.3	1.9	36.3	43.1	74	-30.9	Peak
7220.8600	40.6	120	1.2	V	36.3	1.9	36.3	42.5	74	-31.5	Peak
4813.8900	40.5	90	1.2	V	32.5	1.9	36.3	38.6	74	-35.4	Peak
7220.8600	32.6	180	3.5	H	36.3	1.9	36.3	34.5	74	-39.5	Ave

Unintentional Emission

Frequency	Reading	Direction	Height	Polar	Antenna Loss	Cable loss	Amplifier	Correction Factor	FCC	FCC
MHz	dBuV	Degree	Meter	H/V	dB	dB	dB	dBuV/m	Limit dBuV/m	Margin dB
801.20	47.50	180	3.0	H	22.3	0.5	28.7	41.6	46	-4.4
75.00	45.20	200	1.2	V	9.4	0.9	28.8	26.7	40	-13.4
801.2300	36.50	200	1.2	V	22.3	1.8	28.7	31.9	46	-14.1
35.00	40.8	200	2.0	H	13.4	0.2	28.7	25.7	40	-14.3
75.0000	43.20	180	1.5	H	9.4	1.8	28.8	25.6	40	-14.5
125.00	44.30	300	1.2	V	11.9	0.8	28.5	28.4	43.5	-15.1
35.0000	38.40	180	1.2	V	13.4	1.8	28.7	24.9	40	-15.1
125.0000	40.20	200	1.5	H	11.9	1.8	28.5	25.3	43.5	-18.2

§15.249(c) – BAND-EDGE TESTING

Standard Applicable

Requirements: FCC 15.249 (c), the emission power at the START and STOP frequencies shall be at least 50 dB below the level of the fundamental or to the general radiated emission limits in FCC 15.209, whichever is the lesser attenuation.

Test Procedure

With the EUT's antenna attached, the EUT's radiated emission power was received by the test antenna which was connected to the spectrum analyzer with the START and STOP frequencies set to the EUT's operation band.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Cal. Date
HP	Spectrum Analyzer	8565EC	3946A00131	2004-05-03

* **Statement of Traceability:** BACL attests that all calibrations have been performed per the NVLAP requirements, traceable to NIST.

Environmental Conditions

Temperature:	22°C
Relative Humidity:	39%
ATM Pressure:	1018mbar

*Testing was performed by Jerry Wang on 2005-03-23.

Test Results

Refer to the attached plots.

