



**FCC CFR47 PART 15 SUBPART C  
INDUSTRY CANADA RSS-210 ISSUE 8**

**CERTIFICATION TEST REPORT**

**FOR**

**PHONE**

**MODEL SERIES: HSTNH-F30CV**

**REPORT NUMBER: 11U13622-8, Revision A**

**FCC ID: B94HHF30CV**

**IC: 3905A-HHF30CV**

**ISSUE DATE: APRIL 27, 2011**

*Prepared for*

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**NVLAP LAB CODE 200065-0**

Revision History

<u>Rev.</u>	<u>Issue Date</u>	<u>Revisions</u>	<u>Revised By</u>
--	03/22/11	Initial Issue	S. Leitner
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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** HEWLETT-PACKARD COMPANY, PALM GBU  
950 W. MAUDE AVENUE  
SUNNYVALE, CA 94085, U.S.A.

**EUT DESCRIPTION:** Phone

**MODEL:** HSTNH-F30CV

**SERIAL NUMBER:** 5151-5136

**DATE TESTED:** MARCH 9 and 12, 2011

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	Pass
INDUSTRY CANADA RSS-210 Issue 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

Compliance Certification Services (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

**Note:** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:

Tested By:



STEVE LEITNER  
ENGINEERING SUPERVISOR  
UL CCS

CHIN PANG  
EMC ENGINEER  
UL CCS

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-210 Issue 8.

## 3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at <http://www.ccsemc.com>.

## 4. CALIBRATION AND UNCERTAINTY

### 4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

### 4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

$$\begin{aligned} \text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB} &= 28.9 \text{ dBuV/m} \end{aligned}$$

### 4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

## 5. EQUIPMENT UNDER TEST

### 5.1. DESCRIPTION OF EUT

The EUT is a phone with CDMA/EvDO (850/1900), GSM(850/900/1800/1900), UMTS(900, 2100) + BT 2.1 + EDR, 802.11abgn 1×1, and includes the accessories listed below.

The accessory back cover receives on a frequency of approximately 118.5 kHz and transmits on a frequency of approximately 3.1 MHz.

#### ACCESSORIES

The EUT included the following accessories:

Accessories Description	Manufacturer/ Trademark	Part Number
AC Power Adapter source #1 Input Rating: 100–240 Vac, 50/60Hz, 0.2 A Output Rating: 5 Vdc, 1000 mA	HP/Palm	157-10124-00 157-10130-00
Inductive Charging Dock Input Rating: 5 Vdc, 1000 mA	HP/Palm	157-10123-00
Battery source Type: Rechargeable Li-Ion Polymer Rating: 3.7 Vdc, 1230 mAh (typical)	HP/Palm	157-10158-00 157-10145-00
Wired Stereo Headset	HP/Palm	180-10632-00

### 5.2. MAXIMUM FIELD STRENGTH

The transmitter has maximum radiated field strength as follows:

Frequency (MHz)	Field Strength (dBuV/m @ 30 m)	Field Strength (uV/m @ 30 m)
3.1	-9.03	0.354

### 5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes an integral loop antenna.

## 5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was MW2.0.30.

## 5.5. MODE(S) OF OPERATION

When the inductive back cover is within approximately 0.2 mm of, and properly aligned with, the base the transmitters on both the base and the cover will operate.

The base provides power for charging the battery and for operating the radio devices in both the base and the cover.

KDB 680106 "Client Device Considerations" was considered and the evaluation performed as applicable to this device. The inductive charger has been certified under FCC ID: O8F-TST1 and IC: 3905A-TST1. The EUT is working in charging mode with the inductive charger. The inductive back cover is not removable. For more information, please refer to this inductive charger FCC ID/IC ID.

## 5.6. TEST CONFIGURATIONS

The following configurations were investigated during preliminary testing. Both part numbers for AC adapters and batteries listed in Section 5.1 were tested.

EUT Configuration	Description
Standard	EUT was tested with a discharged battery, thereby drawing maximum current.

## 5.7. WORST-CASE CONFIGURATION AND MODE

Based on past experience, the EUT with discharged battery, inductive dock, and AC Adapter is considered the worst case. The combinations of battery p/n 157-10145-00 tested with AC adapter p/n 157-10130-00 and battery p/n 157-10158-00 tested with AC adapter p/n 157-10124-00 were considered worst-case.

## 5.8. MODIFICATIONS

No modifications were made during testing.

## 5.9. DESCRIPTION OF TEST SETUP

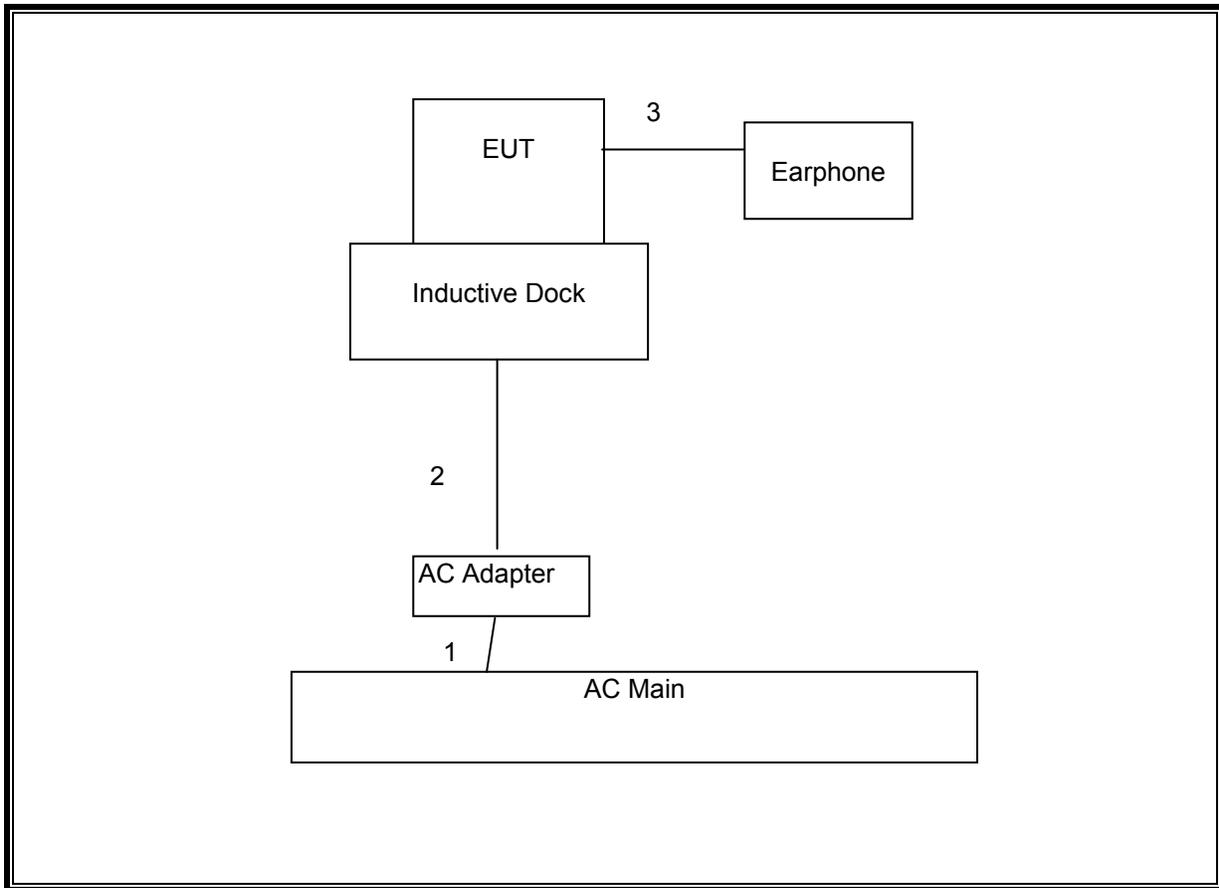
### SUPPORT EQUIPMENT

The EUT consisted of the phone and accessories identified above. No support equipment was required.

**I/O CABLES**

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	2	US 115V	Unshielded	2 m	No
2	DC	1	DC	Unshielded	1 m	No
3	Earphone	1	Earphone	Unshielded	1 m	No

**SETUP DIAGRAM FOR TEST CONFIGURATIONS**



## 6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	Asset or Serial Number	Cal Due
Antenna, Loop, 30 MHz	EMCO	6502	0035798	01/12/12
RF Filter Section, 2.9 GHz	Agilent / HP	85420E	C00958	03/24/11
EMI Test Receiver, 9 kHz-7 GHz	R&S	ESCI 7	C00957	07/02/11
EMI Test Receiver, 30 MHz	R&S	ESHS 20	N02396	05/06/11
Antenna, Bilog, 2 GHz	Sund Sciences	JB1	C01016	07/12/11
Spectrum Analyzer, 26.5 GHz	Agilent / HP	E4440A	C01179	04/19/12
Preampifier, 1300 MHz	Agilent / HP	8447D	C00580	01/27/12
EMI Test Receiver, 30 MHz	R&S	ESHS 20	N02396	05/06/11
LISN, 30 MHz	FCC	LISN-50/250-25-2	N02625	11/06/11

## 7. 99% BANDWIDTH

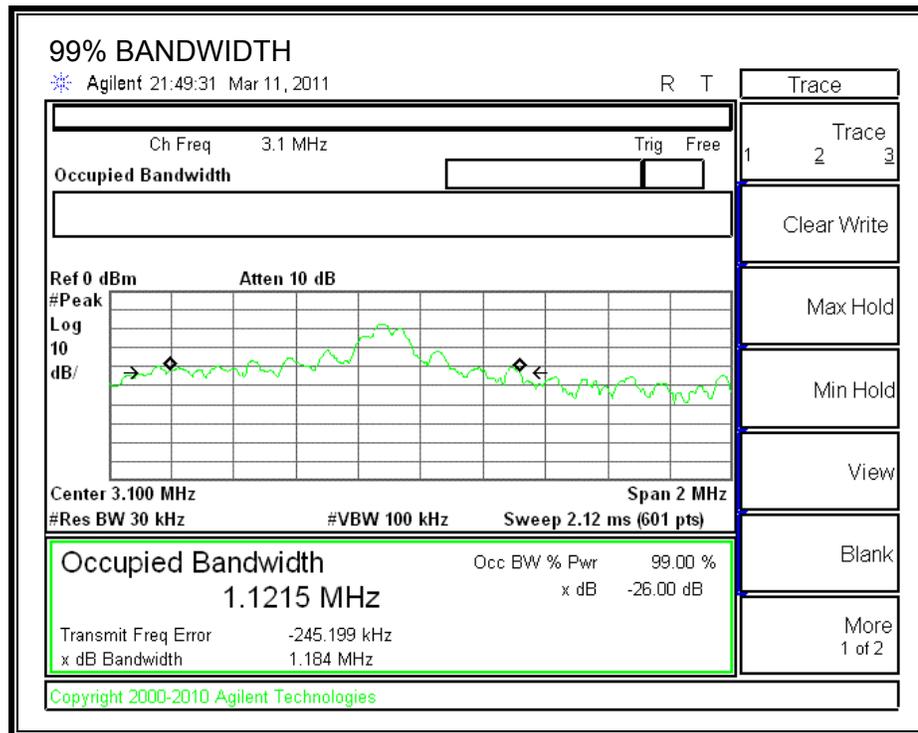
### LIMITS

None; for reporting purposes only.

### TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the measured bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal bandwidth function is utilized.

### RESULTS



## 8. RADIATED EMISSIONS

### 8.1. LIMITS AND PROCEDURE

#### LIMITS

FCC §15.209 (a)  
IC RSS-210, Section 2.6  
IC RSS-GEN, Section 6

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (m)
0.009–0.490	2400/F(kHz)	300
0.490–1.705	24,000/F(kHz)	30
1.705–30.0	30	30
30–88	100	3
88 to 216	150	3
216 to 960	200	3
Above 960 MHz	500	3

Note: The lower limit shall apply at the transition frequency.

#### TEST PROCEDURE

ANSI C63.4

The transmitter and receiver of the EUT are measured simultaneously.

## 8.2. RADIATED EMISSIONS 0.15 TO 30 MHz (WORST CASE CONFIGURATION)

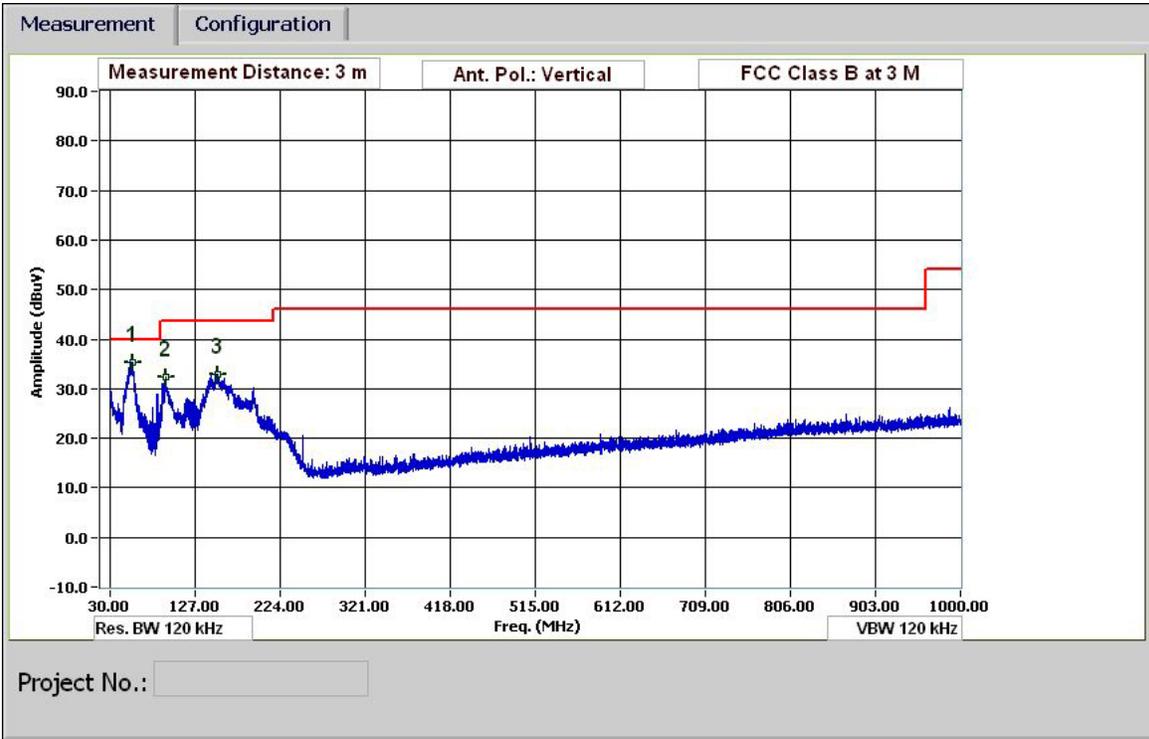
FCC Part 15.209										
Loop Antenna Measurement At Open Field below 30 MHz										
<b>Company:</b> Palm, Inc. <b>Project #:</b> 11U13622 <b>EUT :</b> NEMO Verizon WP on Inductive Dock and AC Adapter <b>Tester:</b> Chin Pang <b>Date:</b> 3/12/2011										
Frequency	Reading	Measurement	Field Strength	Antenna	Distance	Limit	Field Strength	Limit	Delta	Notes
(MHz)	(dBuV)	(m)	(dBuV/m)	Factor	Factor	Distance	At Limit Distance	(dBuV/m)	(dB)	(Pk/QP/AV, etc.)
					(dB/decade)	(m)				
Loop Antenna Maximized over Vertical and Horizontal:										
3.09	39.85	1	50.05	10.20	40.00	30	-9.03	29.54	-38.6	PK, Face-Off
3.09	36.51	1	46.71	10.20	40.00	30	-12.37	29.54	-41.9	PK, Face-On
No other emissions observed up to 30 MHz										
Notes: In accordance with 15.31 (f) (2): For each frequency at which a measurement is made at only one distance, the square of an inverse linear distance extrapolation factor (40 dB/decade) is applied. For each frequency at which measurements are made at two distances, the applied extrapolation factor is calculated from these two measurements.										

### 8.3. RADIATED EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)

#### EUT WITH 157-10124-00 AC ADAPTER



### VERTICAL PLOT



VERTICAL AND HORIZONTAL DATA

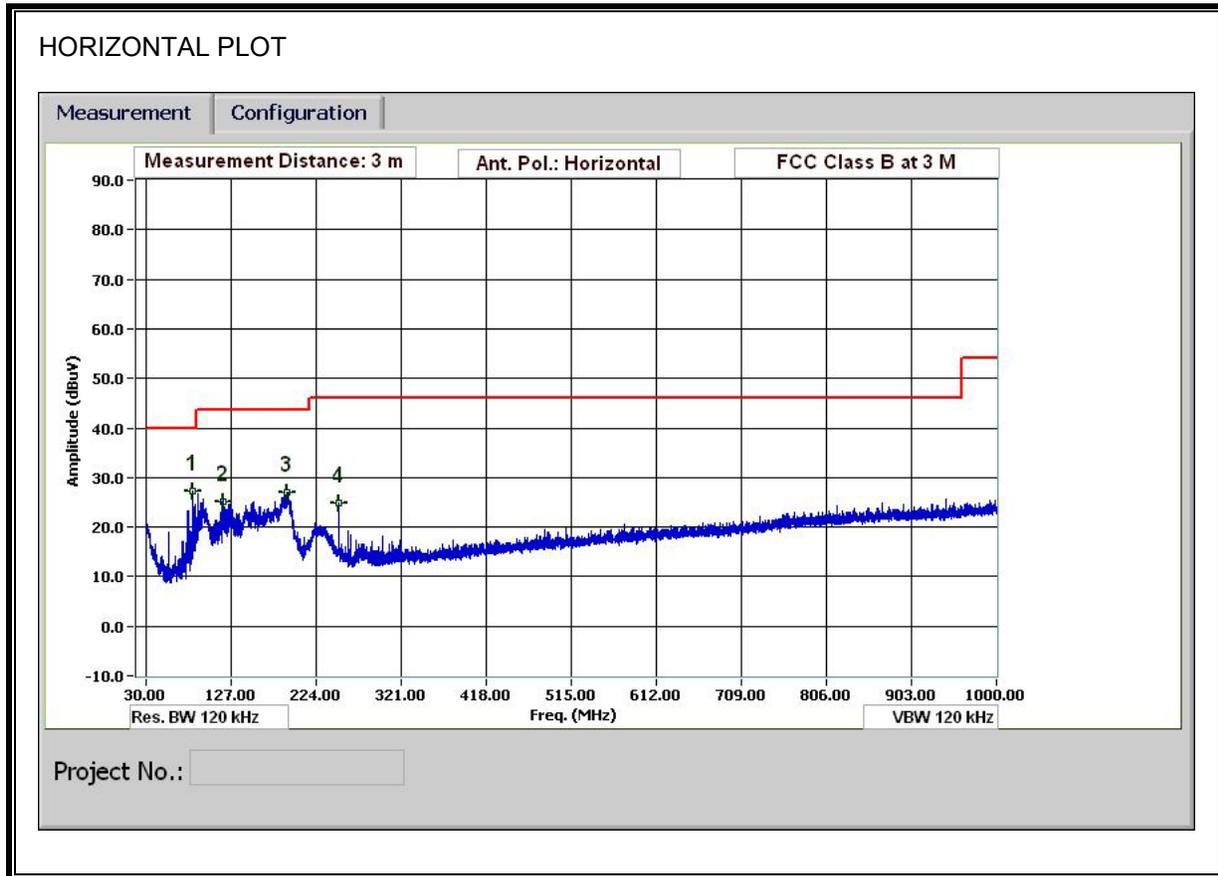
**30-1000MHz Frequency Measurement**  
**Compliance Certification Services, Fremont 5m Chamber**

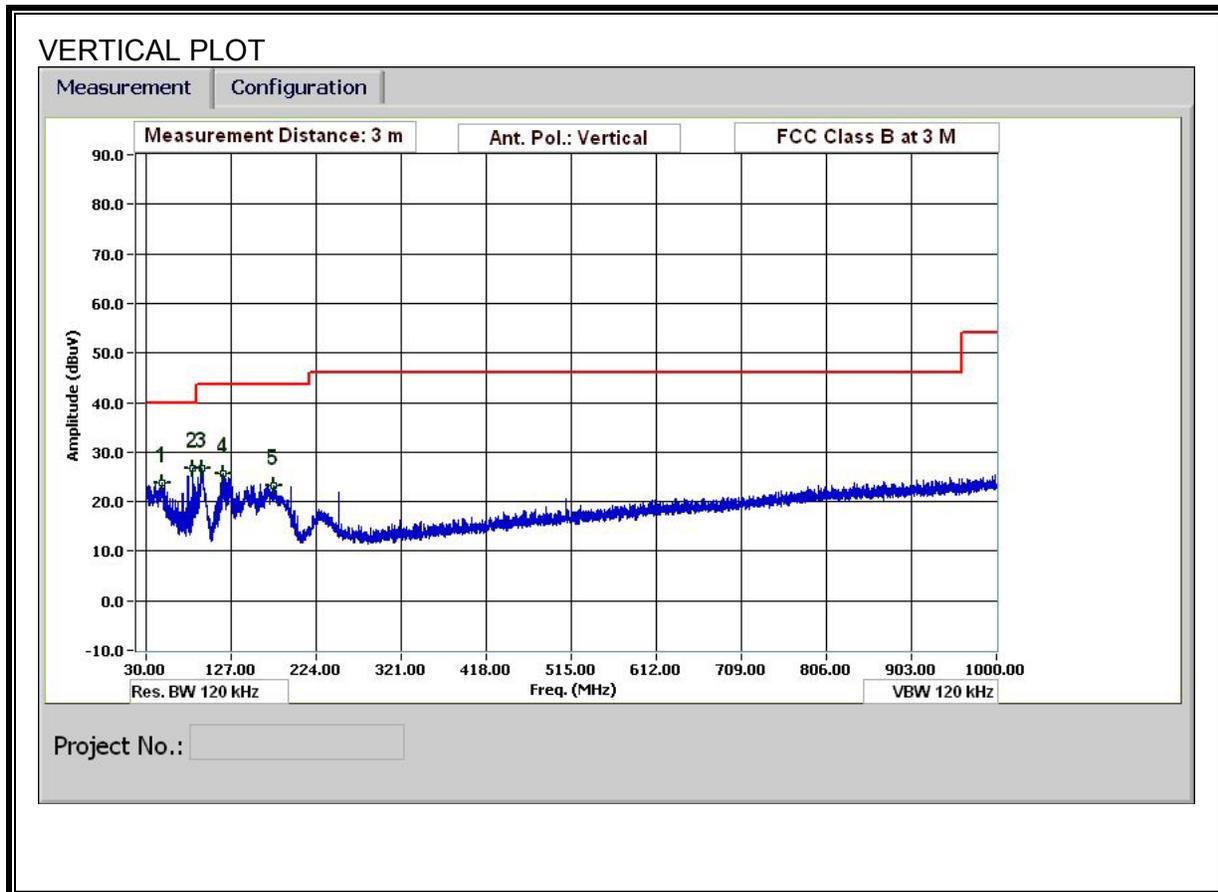
**Test Engr:** Chin Pang  
**Date:** 03/09/11  
**Project #:** 11U13622  
**Company:** Palm  
**Test Target:** FCC 15B  
**Mode Oper:** Charging  
**EUT Configuration:** EUT ( 5161-5136) on Inductive Dock and Earphone  
 AC Adapter SN: 157-10124-00  
 Battery SN:157-101-158-00

f Measurement Frequency Amp Preamp Gain Margin Margin vs. Limit  
 Dist Distance to Antenna D Corr Distance Correct to 3 meters  
 Read Analyzer Reading Filter Filter Insert Loss  
 AF Antenna Factor Corr. Calculated Field Strength  
 CL Cable Loss Limit Field Strength Limit

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Pad dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant. Pol V/H	Det. P/A/QP	Notes
55.081	3.0	56.4	7.9	0.6	29.6	0.0	0.0	35.4	40.0	-4.6	V	P	
93.603	3.0	52.6	8.4	0.9	29.6	0.0	0.0	32.4	43.5	-11.1	V	P	
152.285	3.0	48.9	12.2	1.1	29.3	0.0	0.0	32.9	43.5	-10.6	V	P	
84.002	3.0	48.4	7.6	0.8	29.6	0.0	0.0	27.2	40.0	-12.8	H	P	
91.323	3.0	53.1	7.9	0.9	29.6	0.0	0.0	32.2	43.5	-11.3	H	P	
143.885	3.0	50.9	13.0	1.1	29.3	0.0	0.0	35.6	43.5	-7.9	H	P	
193.927	3.0	46.2	11.5	1.2	29.0	0.0	0.0	30.0	43.5	-13.5	H	P	

**EUT WITH 157-10130-00 AC ADAPTER**





VERTICAL AND HORIZONTAL DATA

**30-1000MHz Frequency Measurement**  
**Compliance Certification Services, Fremont 5m Chamber**

**Test Engr:** Chin Pang  
**Date:** 03/09/11  
**Project #:** 11U13622  
**Company:** Palm  
**Test Target:** FCC 15B  
**Mode Oper:** Charging  
**EUT Configuration:** EUT on Inductive Dock and Earphone  
 AC Adapter SN: 157-10130-00  
 Battery SN:157-101-145-00

f Measurement Frequency Amp Preamp Gain Margin Margin vs. Limit  
 Dist Distance to Antenna D Corr Distance Correct to 3 meters  
 Read Analyzer Reading Filter Filter Insert Loss  
 AF Antenna Factor Corr. Calculated Field Strength  
 CL Cable Loss Limit Field Strength Limit

f MHz	Dist (m)	Read dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Pad dB	Corr. dBuV/m	Limit dBuV/m	Margin dB	Ant Pol V/H	Det P/A/QP	Notes
83.762	3.0	48.4	7.6	0.8	29.6	0.0	0.0	27.2	40.0	-12.8	H	P	
117.244	3.0	40.3	13.2	1.0	29.5	0.0	0.0	25.0	43.5	-18.5	H	P	
191.287	3.0	43.6	11.3	1.2	29.0	0.0	0.0	27.1	43.5	-16.4	H	P	
249.969	3.0	40.4	11.8	1.4	28.8	0.0	0.0	24.9	46.0	-21.1	H	P	
47.881	3.0	43.5	9.3	0.6	29.6	0.0	0.0	23.7	40.0	-16.3	V	P	
83.762	3.0	47.9	7.6	0.8	29.6	0.0	0.0	26.7	40.0	-13.3	V	P	
93.003	3.0	47.2	8.3	0.9	29.6	0.0	0.0	26.8	43.5	-16.7	V	P	
118.204	3.0	40.8	13.4	1.0	29.5	0.0	0.0	25.7	43.5	-17.8	V	P	
176.166	3.0	41.2	10.1	1.2	29.2	0.0	0.0	23.3	43.5	-20.2	V	P	

## 9. AC MAINS LINE CONDUCTED EMISSIONS

### 9.1. LIMITS

§15.207 (a)  
IC RSS-GEN, Section 7.2.2

Frequency of emission (MHz)	Conducted Limit (dB $\mu$ V)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56*	56 to 46*
0.50 to 5	56	46
5 to 30	60	50

\* Decreases with the logarithm of the frequency.

### TEST PROCEDURE

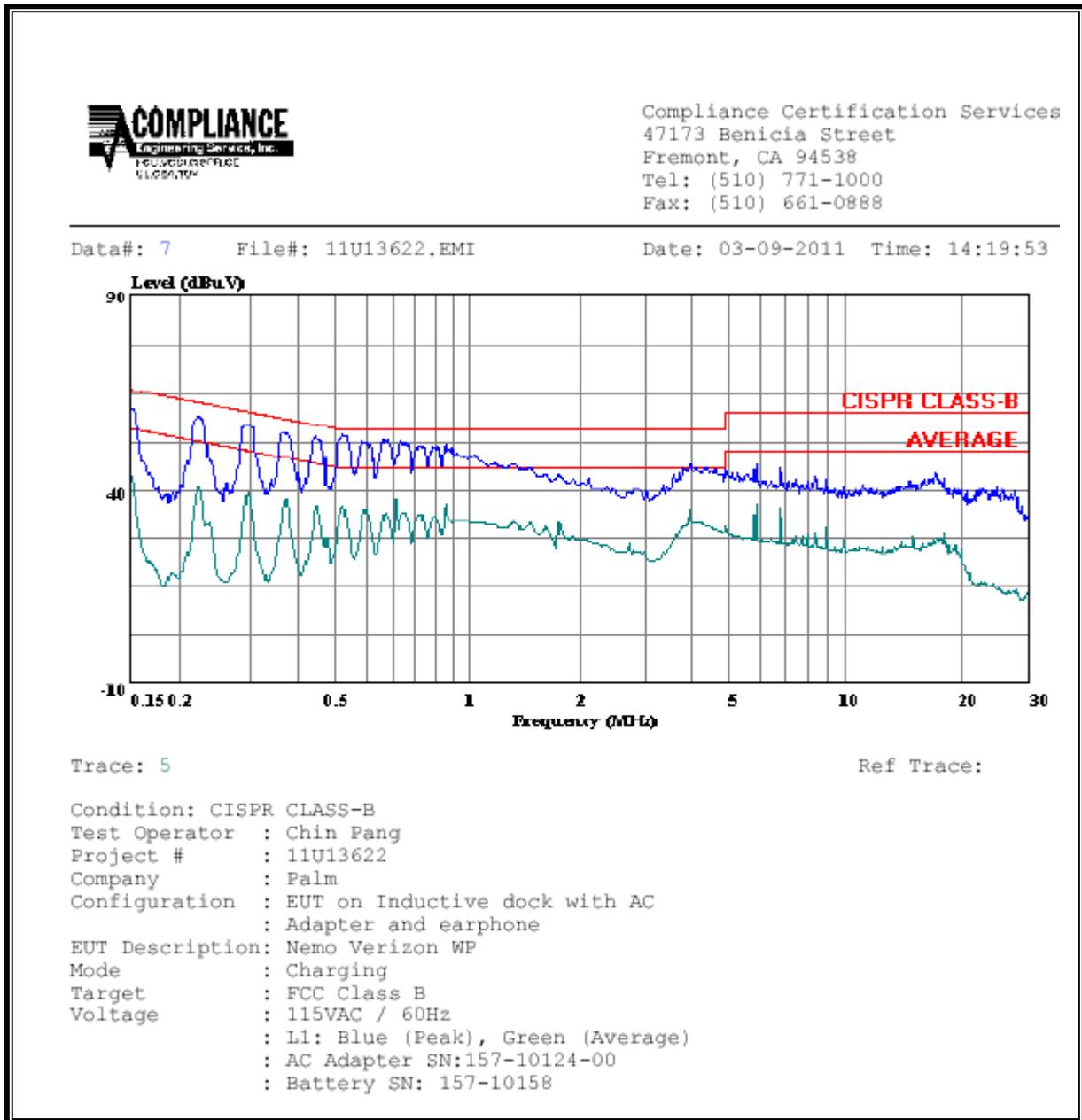
ANSI C63.4

**9.2. EUT WITH 157-10124-00 AC ADAPTER**

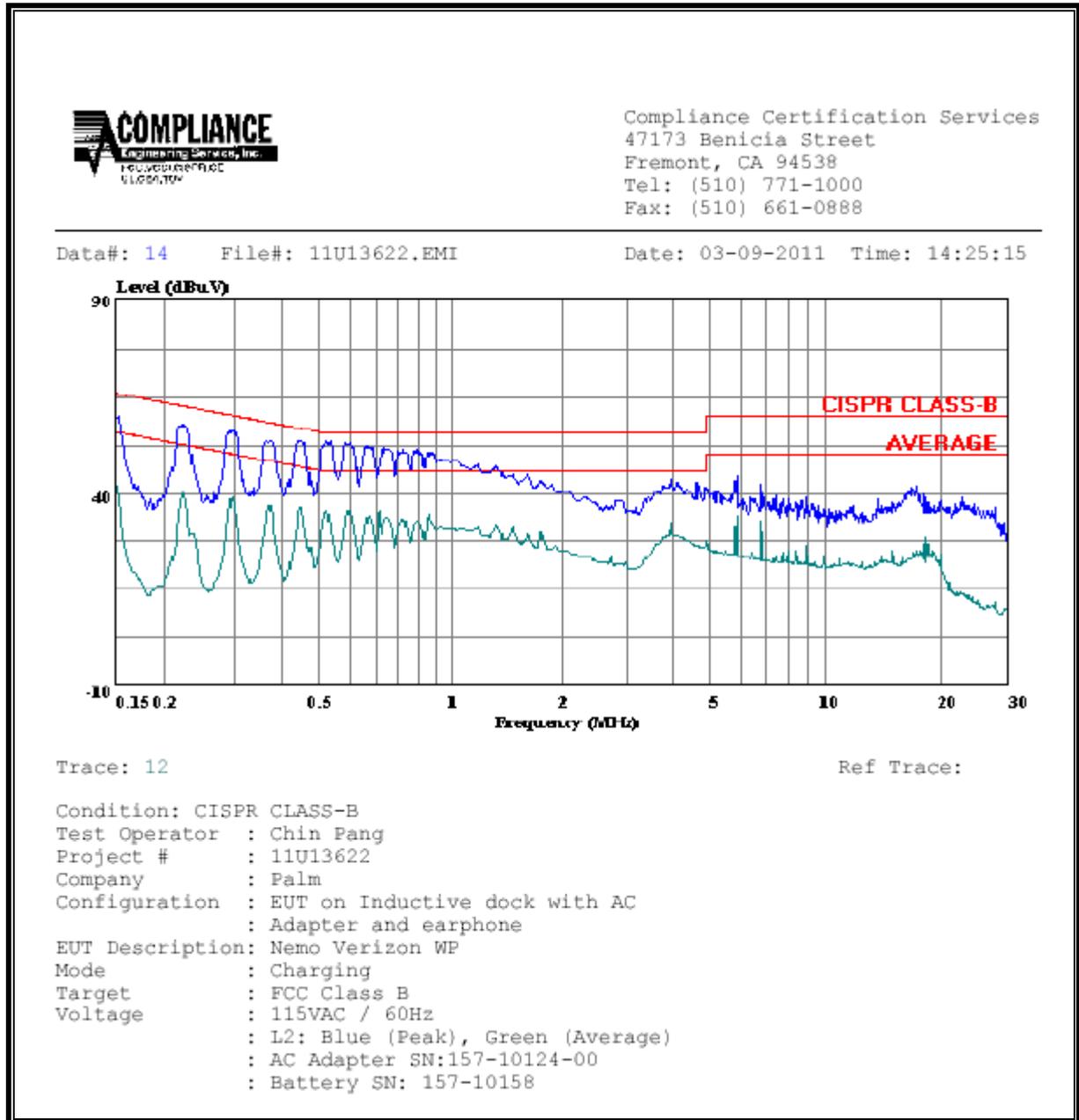
**6 WORST EMISSIONS**

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq. (MHz)	Reading			Class (dB)	Limit QP	EN B AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
0.15	60.98	--	43.70	0.00	66.00	56.00	-5.02	-12.30	L1
0.23	58.53	--	40.48	0.00	62.56	52.56	-4.03	-12.08	L1
0.67	52.98	--	37.46	0.00	56.00	46.00	-3.02	-8.54	L1
0.15	59.75	--	41.99	0.00	66.00	56.00	-6.25	-14.01	L2
0.22	57.72	--	39.35	0.00	62.67	52.67	-4.95	-13.32	L2
0.89	51.48	--	35.06	0.00	56.00	46.00	-4.52	-10.94	L2
6 Worst Data									

**LINE 1 RESULTS**



**LINE 2 RESULTS**

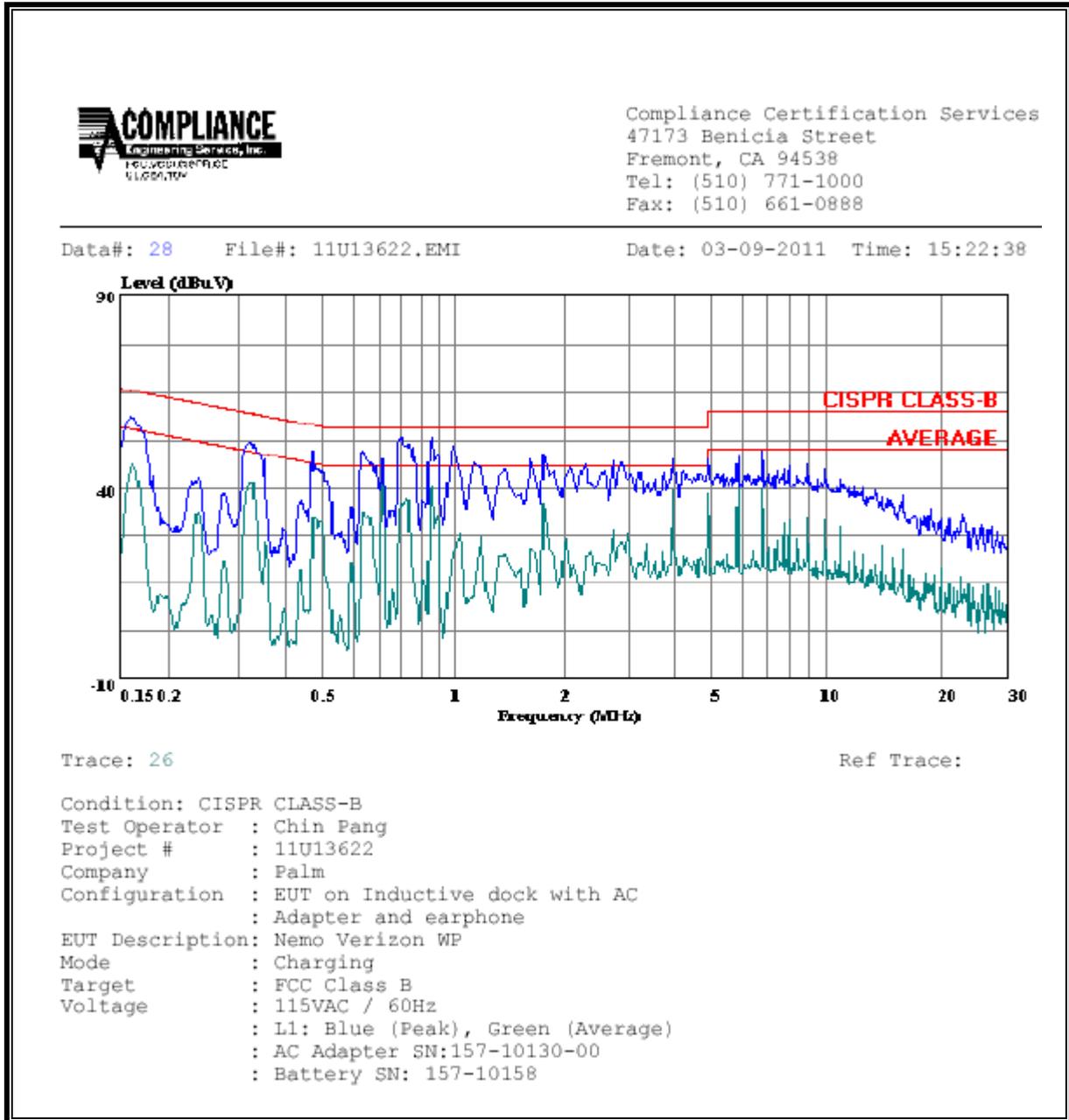


### 9.3. EUT WITH 157-10130-00 AC ADAPTER

#### 6 WORST EMISSIONS

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.16	58.63	--	46.19	0.00	65.41	55.41	-6.78	-9.22	L1
0.72	52.70	--	42.91	0.00	56.00	46.00	-3.30	-3.09	L1
4.03	47.53	--	39.30	0.00	56.00	46.00	-8.47	-6.70	L1
0.16	61.63	--	46.11	0.00	65.41	55.41	-3.78	-9.30	L2
0.72	50.50	--	41.45	0.00	56.00	46.00	-5.50	-4.55	L2
4.03	44.67	--	36.69	0.00	56.00	46.00	-11.33	-9.31	L2
6 Worst Data									

**LINE 1 RESULTS**

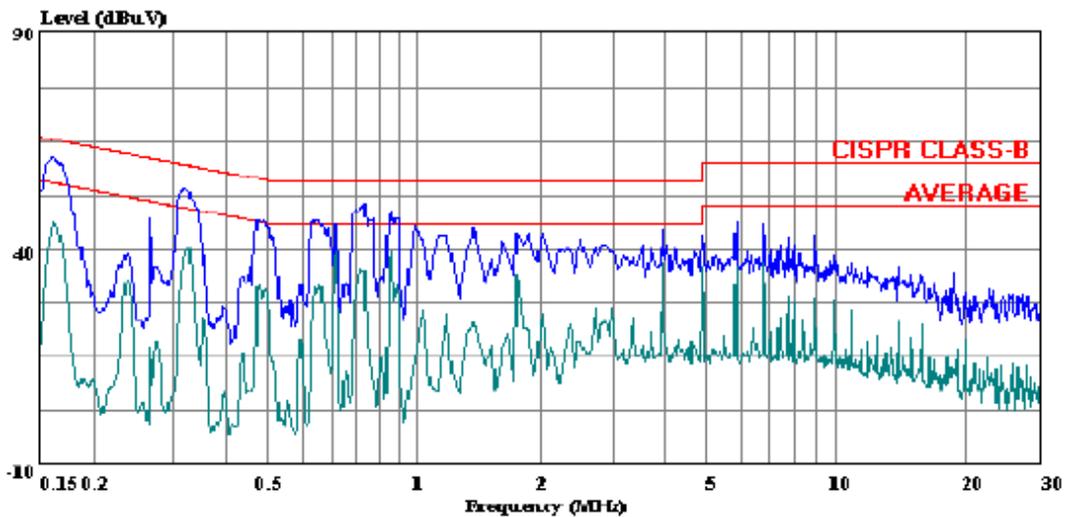


**LINE 2 RESULTS**



Compliance Certification Services  
47173 Benicia Street  
Fremont, CA 94538  
Tel: (510) 771-1000  
Fax: (510) 661-0888

Data#: 21 File#: 11U13622.EMI Date: 03-09-2011 Time: 15:17:00



Trace: 19

Ref Trace:

Condition: CISPR CLASS-B  
Test Operator : Chin Pang  
Project # : 11U13622  
Company : Palm  
Configuration : EUT on Inductive dock with AC  
: Adapter and earphone  
EUT Description: Nemo Verizon WP  
Mode : Charging  
Target : FCC Class B  
Voltage : 115VAC / 60Hz  
: L2: Blue (Peak), Green (Average)  
: AC Adapter SN:157-10130-00  
: Battery SN: 157-10158

## 10. MAXIMUM PERMISSIBLE EXPOSURE

### IC RULES

RSS-102 Clause 2.5.2 Exemption from Routine Evaluation Limits – RF Exposure Evaluation

RF exposure evaluation is required if the separation distance between the user and the device is greater than 20 cm, except when the device operates:

- below 1.5 GHz and its EIRP is equal to or less than 2.5 W;
- at or above 1.5 GHz and the EIRP of the device is equal to or less than 5 W.

In these cases, the information contained in the RF exposure technical brief may be limited to information that demonstrates how the EIRP was derived.

### RESULTS

The frequency of operation is below 1.5 GHz and the EIRP is less than 2.5 W (33.98 dBm), therefore this device is exempt from Routine Evaluation.

Frequency (MHz)	Reading A (dBuV)	Measurement Distance A (m)	Field Strength A (dBuV/m)	Antenna Factor (dB/m)	Distance Factor (dB/decade)	Extrapolated Distance (m)	Field Strength at 3 m Distance (dBuV/m)	EIRP (dBm)
3.0975	39.85	1	50.05	10.20	40.00	3	30.97	-64.23