Nemko-CCL, Inc.

1940 West Alexander Street
Salt Lake City, UT 84119
801-972-6146

Test Report

Certification

Test Of:

T1983AA, T1984AA,
T1987AA, and T1988AA

Test Specification:

FCC PART 15, Subparts B and C

Test Report Serial No: 158093-3.1

Applicant:

Hewlett Packard Company
11311 Chinden Blvd.
Boise, ID 83714

Date of Test: September 28, 2010

Issue Date: October 7, 2010

Accredited Testing Laboratory By:

NVLAP

NVLAP Lab Code 100272-0

CERTIFICATION OF ENGINEERING REPORT

This report has been prepared by Nemko-CCL, Inc. to document compliance of the device described below with the requirements of Federal Communications Commission (FCC) Part 15, Subparts B and C. This report may be reproduced in full. Partial reproduction may only be made with the written consent of the laboratory. The results in this report apply only to the sample tested.

- Applicant: Hewlett Packard Company
- Manufacturer: RF IDeas, Inc.
- Brand Name: Hewlett Packard
- Model Numbers: T1983AA, T1984AA, T1987AA, and T1988AA
- FCC ID Number: CNTFAT1983AA

On this 7th day of October 2010, I, individually, and for Nemko-CCL, Inc., certify that the statements made in this engineering report are true, complete, and correct to the best of my knowledge, and are made in good faith.

Although NVLAP has accredited the Nemko-CCL, Inc. EMC testing facilities, this report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

Nemko-CCL, Inc.

Tested by: Norman P. Hansen
EMC Technician

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SECTION 1.0 CLIENT INFORMATION

1.1 Applicant:

Company Name: Hewlett Packard Company
11311 Chinden Blvd.
Boise, ID 83714

Contact Name: Eric Hoffman
Title: Product Regulations Manager

1.2 Manufacturer:

Company Name: RF IDeas, Inc.
1250 South Grove Avenue, Suite 302
Barrington, IL 60010

Contact Name: Shiung Lo
Title: Engineering

SECTION 2.0 EQUIPMENT UNDER TEST (EUT)

2.1 Identification of EUT:

Brand Name:	Hewlett Packard
Model Numbers:	T1983AA, T1984AA, T1987AA, and T1988AA
Serial Number:	US083201535
Country of Manufacture:	U.S.A.

2.2 Description of EUT:

The EUT is a series of RFID readers operating at 125 khz for use in entry control systems. Data interface and power is provided using a USB port of the host system. All models are identical in hardware with changes in the software for the different applications.

2.3 EUT and Support Equipment:

The FCC ID numbers for all the EUT and support equipment used during the test are listed below:

Brand Name Model Number Serial No.	FCC ID Number	Description	Name of Interface Ports / Interface Cables
BN: Hewlett Packard MN: T1983AA (Note 1) SN: US083201535	CNTFAT1983AA	RFID Reader	See Section 2.4
BN: Samsung MN: N130 SN:ZLCM93HS900480Y	DoC	Computer	USB/USB cable (Note 2) Network/Cat 5e cable
BN: TRENDnet MN: TEG-S50TXE SN: None	DoC	5 port LAN switch	Ethernet/Cat 5 cable w/RJ45 connectors

Note: (1) EUT.
(2) Interface port connected to EUT (See Section 2.4)

The support equipment listed above was not modified in order to achieve compliance with this

standard.

2.4 Interface Ports on EUT:

Name of Port	No. of Ports Fitted to EUT	Cable Descriptions/Length
USB	1	USB cable/10 cm to 1.8 m

2.5 Modification Incorporated/Special Accessories on EUT:

There were no modifications or special accessories required to comply with the specification. This report is not complete without an accompanying signed attestation, included as Appendix 3, that the product will have all of the documented modifications incorporated into the product when manufactured and placed on the market.

SECTION 3.0 TEST SPECIFICATION, METHODS & PROCEDURES

3.1 Test Specification:

Title: FCC PART 15, Subpart B and C (47 CFR 15)

Limits and methods of measurement of radio interference characteristics of radio frequency devices.

Purpose of Test: The tests were performed to demonstrate initial compliance.

3.2 Methods & Procedures:

3.2.1 §15.203 Antenna Requirements

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

3.2.2 §15.207 Conducted Limits (also §15.107)

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHZ to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the band edges.

Frequency of Emission (MHz)	Conducted Limit (dBμV)	
	Quasi-peak	Average
0.15 – 0.5*	66 to 56*	56 to 46*
0.5 – 5	56	46
5 - 30	60	50

*Decreases with the logarithm of the frequency.

(b) The shown limit in paragraph (a) of this Section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 uV within the frequency band 535-1705 kHz, as measured using a 50 μH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits in Section 15.205 and Section 15.209, 15.221, 15.223, 15.225 or 15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through
another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limit

3.2.3 §15.209 Radiated Emission Limits, General Requirements (also §15.109)

(a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
1.009 – 0.490	2400/F(kHz)	300
0.490 – 1.705	24000/F(kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 – 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

(b) In the emission table above, the tighter limit applies at the band edges.

(c) The level of any unwanted emissions from an intentional radiator operating under these general provisions shall not exceed the level of the fundamental emission. For intentional radiators which operate under the provisions of other Sections within this Part and which are required to reduce their unwanted emissions to the limits specified in this table, the limits in this table are based on the frequency of the unwanted emission and not the fundamental frequency. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.

(d) The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

(e) The provisions in Sections 15.31, 15.33, and 15.35 for measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this Part.

(f) In accordance with Section 15.33(a), in some cases the emissions from an intentional radiator must be measured to beyond the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator because of the incorporation of a digital device. If measurements above the tenth harmonic are so required, the radiated emissions above the tenth harmonic shall comply with the general radiated emission limits applicable to the incorporated digital device, as shown in Section 15.109 and as based on the frequency of the emission being measured, or, except for emissions contained in the restricted frequency bands shown in Section 15.205, the limit on spurious emissions specified for the intentional radiator, whichever is the higher limit. Emissions which must be measured above the tenth harmonic of the highest fundamental frequency designed to be emitted by the intentional radiator and which fall within the restricted bands shall comply with the general radiated emission limits in Section 15.109 that are applicable to the incorporated digital device.

(g) Perimeter protection systems may operate in the 54-72 MHz and 76-88 MHz bands under the provisions of this section. The use of such perimeter protection systems is limited to industrial, business and commercial applications.

3.2.4 Test Procedure

The line conducted and radiated emission testing was performed according to the procedures in ANSI C63.4 (2003). Testing was performed at Nemko-CCL, Inc.'s Wanship open area test site #2, located at 29145 Old Lincoln Highway, Wanship, UT. This site has been fully described in a report submitted to the FCC, and was accepted in a letter dated March 11, 2009 (90504).

Nemko-CCL, Inc. participates in the National Voluntary Laboratory Accreditation

Program (NVLAP) and has been accredited under NVLAP Lab Code:100272-0, which is effective until September 30, 2011.

For radiated emission testing below 30 MHz that is performed at distances closer than the specified distance, an inverse proportionality factor of 40 dB per decade is used to normalize the measured data for determining compliance. For radiated emission testing at 30 MHz or above that is performed at distances closer than the specified distance, an inverse proportionality factor of 20 dB per decade is used to normalize the measured data for determining compliance.

SECTION 4.0 OPERATION OF EUT DURING TESTING

4.1 Operating Environment:

Power Supply: 120 VAC/60 Hz to Host, 5 VDC to EUT from USB port of host

4.2 Operating Modes:

The EUT was tested when placed on three orthogonal axes. The worst-case emissions were seen when the EUT was placed vertical on the table using the 1.8 meter cable and constantly transmitting, reading an RFID tag, and the serial number of the tag sent to the computer.

4.3 EUT Exercise Software:

No software was required to exercise the EUT.

SECTION 5.0 SUMMARY OF TEST RESULTS

5.1 FCC Part 15, Subparts B and C

5.1.1 Summary of Tests:

Paragraph	Requirement	Frequency Range (MHz)	Result
15.203	Antenna Requirements	N/A	Complied
15.207 (15.107)	Conducted Disturbance at Mains Ports	0.15 to 30	Complied
15.209 (15.109)	Radiated Disturbance	0.125 to 1000	Complied

5.2 Result

In the configuration tested, the EUT complied with the requirements of the specification.

SECTION 6.0 MEASUREMENTS, EXAMINATIONS AND DERIVED RESULTS

6.1 General Comments:

This section contains the test results only. Details of the test methods used and a list of the test equipment used during the measurements can be found in Appendix 1 of this report. Note that the limits of §15.107 and §15.207 are identical and that the limits of §15.09 and §15.209 are identical. The EUT had the transmitter and digital circuitry active during testing so the EUT may be compared to the limit and show compliance to Subpart B and C requirements.

6.2 Test Results:

6.2.1 Antenna Requirements

The antenna is internal to the EUT, soldered to the PCB, and is not user replaceable; therefore, the EUT complies with the requirements of this paragraph.

6.2.2 Conducted Disturbance at Mains Ports Data

Frequency (MHz)	Lead (Hot or Neutral)	Detector	Measured Level (dBµV)	Limit (dBµV)	Margin (dB)
0.16	Hot	Peak (Note 1)	51.9	55.7	-3.8
0.18	Hot	Peak (Note 1)	44.6	54.5	-9.9
0.23	Hot	Peak (Note 1)	41.0	52.5	-11.5
0.43	Hot	Peak (Note 1)	35.3	47.3	-12.0
9.88	Hot	Peak (Note 1)	37.6	50.0	-12.4
10.13	Hot	Peak (Note 1)	36.9	50.0	-13.1
0.15	Neutral	Quasi-Peak (Note 1)	49.6	56.0	-6.4
0.17	Neutral	Peak (Note 1)	48.3	55.0	-6.7
0.22	Neutral	Peak (Note 1)	41.6	52.9	-11.3
0.28	Neutral	Peak (Note 1)	38.7	50.8	-12.1
0.46	Neutral	Peak (Note 1)	35.9	46.7	-10.8
4.39	Neutral	Peak (Note 1)	34.8	46.0	-11.2
Note 1: The reference detector used for the measurements was Quasi-Peak or Peak and the data was compared to the average limit; therefore, the EUT was deemed to meet both the average and quasi-peak limits.					

Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was ± 3.3 dB.

RESULT

The EUT complied with the specification limit by a margin of 3.8 dB.

6.2.2 Radiated Disturbance Data (0.125 – 30 MHz)

Frequency(MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB/m)	Field Strength (dBμV/m)	10 m Limit (dBμV/m)	Margin (dB)
0.125	Peak (Note 1)	51.6	11.1	62.7	84.8	-22.1
0.250	Peak (Note 1)	41.2	11.1	52.3	78.7	-26.4
0.375	Peak (Note 1)	38.9	11.1	50.0	75.2	-25.2
0.500	Peak (Note 1)	37.9	11.0	48.9	52.7	-3.8
0.625	Peak (Note 1)	34.0	11.0	45.0	50.8	-5.8
0.750	Peak (Note 1)	32.6	11.0	43.6	49.2	-5.6
0.875	Peak (Note 1)	30.6	11.0	41.6	47.9	-6.3
1.000	Peak (Note 1)	27.2	11.1	38.3	46.7	-14.5
1.125	Peak (Note 1)	25.3	11.1	36.4	45.7	-9.3
1.250	Peak (Note 1)	24.8	11.2	36.0	44.8	-8.8
1.375	Peak (Note 1)	26.7	11.2	37.9	43.9	-6.0

Note 1: The reference detector used for the measurements was peak or quasi-peak and the data was compared to the quasi-peak limit.

RESULT

The EUT complied with the specification limit by a margin of 3.8 dB.

6.2.3 Radiated Disturbance Data 30 – 1000 MHz (Vertical Polarity)

Frequency (MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB/m)	Field Strength (dBμV/m)	3 m Limit (dBμV/m)	Margin (dB)
45.8	Peak (Note 1)	23.0	11.2	34.2	40.0	-5.8
58.6	Peak (Note 1)	25.4	8.5	33.9	40.0	-6.1
167.0	Peak (Note 1)	21.7	9.7	31.4	43.5	-12.1
181.5	Peak (Note 1)	24.4	10.3	34.7	43.5	-8.8
183.9	Peak (Note 1)	23.4	10.6	34.0	43.5	-9.5
724.8	Peak (Note 1)	7.2	25.4	32.6	46.0	-13.4
Note 1: The reference detector used for the measurements was peak or quasi-peak and the data was compared to the quasi-peak limit.						

Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was ± 4.3 dB from 30 MHz to 200 MHz and ± 6.0 dB from 200 MHz to 1 GHz at a 3 meter measurement distance.

Result

The EUT complied with the specification limit by a margin of 5.8 dB.

6.2.4 Radiated Disturbance Data 30 – 1000 MHz (Horizontal Polarity)

Frequency (MHz)	Detector	Receiver Reading (dBμV)	Correction Factor (dB/m)	Field Strength (dBμV/m)	3 m Limit (dBμV/m)	Margin (dB)
55.5	Peak (Note 1)	15.7	8.9	24.6	40.0	-15.4
156.3	Peak (Note 1)	18.4	10.0	28.4	43.5	-15.1
177.9	Peak (Note 1)	18.9	10.0	28.9	43.5	-14.6
181.3	Peak (Note 1)	18.3	10.3	28.6	43.5	-14.9
216.0	Peak (Note 1)	17.8	12.0	29.8	43.5	-13.7
724.8	Peak (Note 1)	7.2	25.4	32.6	46.0	-13.4
Note 1: The reference detector used for the measurements was peak or quasi-peak and the data was compared to the quasi-peak limit.						

Measurement Uncertainty

The measurement uncertainty (with a 95% confidence level) for this test was ± 4.3 dB from 30 MHz to 200 MHz and ± 6.0 dB from 200 MHz to 1 GHz at a 3 meter measurement distance.

RESULT

The EUT complied with the specification limit by a margin of 13.4 dB.

6.3 Sample Field Strength Calculation:

The field strength is calculated by adding the Correction Factor (Antenna Factor + Cable Factor), to the measured level from the receiver. The receiver amplitude reading is compensated for any amplifier gain. The basic equation with a sample calculation is shown below:

FS = RA + CF Where

FS = Field Strength
RA = Receiver Amplitude Reading (Receiver Reading - Amplifier Gain)
CF = Correction Factor (Antenna Factor + Cable Factor)

Assume a receiver reading of 42.5 dBμV is obtained from the receiver, an amplifier gain of 26.5 dB and a correction factor of 8.5 dB/m. The field strength is calculated by subtracting the amplifier gain and adding the correction factor, giving a field strength of 24.5 dBμV/m, FS = (42.5 - 26.5) + 8.5 = 24.5 dBμV/m.

6.4 Emission Bandwidth

There is no emission bandwidth requirement under §15.209, however, the emission 20 dB bandwidth was measured and is reported as 3.4 kHz.

APPENDIX 1 TEST PROCEDURES AND TEST EQUIPMENT

A1.1 Conducted Disturbance at Mains Ports:

The conducted disturbances at mains and telecommunications ports from the EUT were measured using a spectrum analyzer with a quasi-peak adapter for peak, quasi-peak and average readings. The quasi-peak adapter uses a bandwidth of 9 kHz, with the spectrum analyzer's resolution bandwidth set at 100 kHz, for readings in the 150 kHz to 30 MHz frequency ranges.

The conducted disturbance at mains ports measurements are performed in a screen room using a (50 Ω/50 μH) Line Impedance Stabilization Network (LISN).

Where mains flexible power cords are longer than 1 m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4 m in length.

Where the EUT is a collection of devices with each device having its own power cord, the point of connection for the LISN is determined from the following rules:

a) Each power cord, which is terminated in a mains supply plug, shall be tested separately.
b) Power cords, which are not specified by the manufacturer to be connected via a host unit, shall be tested separately.
c) Power cords which are specified by the manufacturer to be connected via a host unit or other power supplying equipment shall be connected to that host unit and the power cords of that host unit connected to the LISN and tested.
d) Where a special connection is specified, the necessary hardware to effect the connection is supplied by the manufacturer for the testing purpose.
e) When testing equipment with multiple mains cords, those cords not under test are connected to an artificial mains network (AMN) different than the AMN used for the mains cord under test.

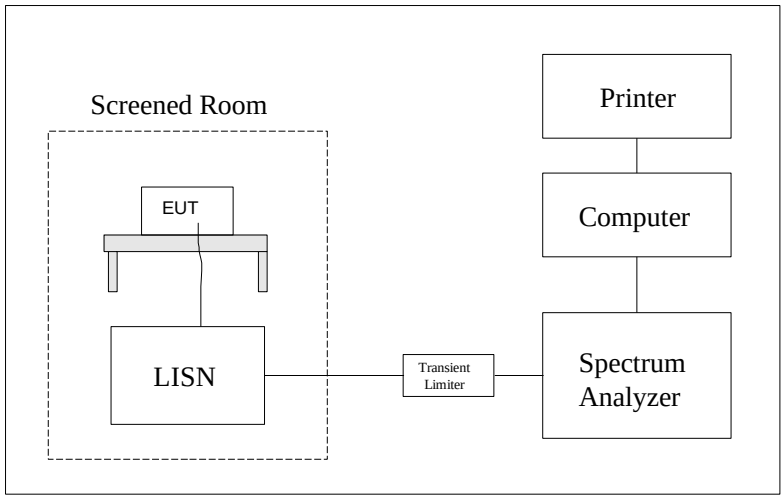
For testing, desktop EUT are placed on a non-conducting table at least 0.8 meters from the metallic floor and placed 40 cm from the vertical coupling plane (copper plating in the wall behind EUT table). Floor standing equipment is placed directly on the earth grounded floor.

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Wanship Open Area Test Site #2	Nemko-CCL, Inc.	N/A	N/A	10/08/2009
Test Software	Nemko-CCL, Inc.	Conducted Emissions	Revision 1.2	N/A
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711	11/06/2009
Quasi-Peak Detector	Hewlett Packard	85650A	2043A00137	11/06/2009

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
LISN	EMCO	3825/2	9305-2099	03/08/2010
Conductance Cable Wanship Site #2	Nemko-CCL, Inc.	Cable J	N/A	12/31/2009
Transient Limiter	Hewlett Packard	11947A	3107A02266	12/31/2009

An independent calibration laboratory or Nemko-CCL, Inc. personnel calibrates all the equipment listed above at intervals defined in ANSI C63.4:2003 Section 4.4 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

Conducted Emissions Test Setup



A1.2 Radiated Disturbance:

The radiated disturbance from the EUT was measured using a spectrum analyzer with a quasi-peak adapter for peak and quasi-peak readings. A preamplifier with a fixed gain of 26 dB and a power amplifier with a fixed gain of 22 dB were used to increase the sensitivity of the measuring instrumentation. The quasi-peak adapter uses a bandwidth of 120 kHz, with the spectrum analyzer's resolution bandwidth set at 1 MHz, for readings in the 30 to 1000 MHz frequency ranges.

A biconilog antenna was used to measure the frequency range of 30 to 1000 MHz, at a distance of 3 meters from the EUT. The readings obtained by these antennas are correlated to the levels obtained with a tuned dipole antenna by adding antenna factors. An active loop antenna was used to measure frequencies below 30 MHz at a 10 meters measurement distance.

The configuration of the EUT was varied to find the maximum radiated emission. The EUT was connected to the peripherals listed in Section 2.3 via the interconnecting cables listed in Section 2.4. A technician manually manipulated these interconnecting cables to obtain worst-case radiated disturbance. The EUT was rotated 360 degrees, and the antenna height was varied from 1 to 4 meters to find the maximum radiated emission. Where there was multiple interface ports all of the same type, cables are either placed on all of the ports or cables added to these ports until the emissions do not increase by more than 2 dB.

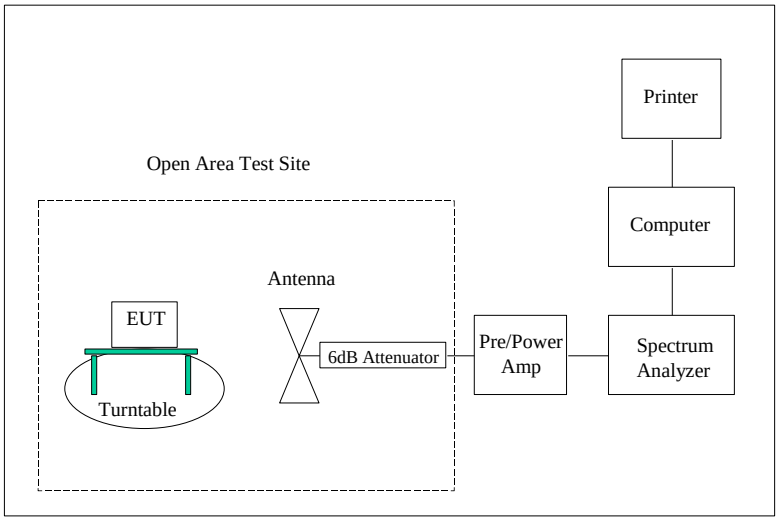
Desktop EUT are measured on a non-conducting table 0.8 meters above the ground plane. The table is placed on a turntable, which is level with the ground plane. For equipment normally placed on floors, the equipment shall be placed directly on the turntable.

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
Wanship Open Area Test Site #2	Nemko-CCL, Inc.	N/A	N/A	10/08/2009
Test Software	Nemko-CCL, Inc.	Radiated Emissions	Revision 1.3	N/A
Spectrum Analyzer/Receiver	Rohde & Schwarz	1302.6005.40	100064	07/30/2010
Spectrum Analyzer	Hewlett Packard	8566B	2230A01711	11/06/2009
Quasi-Peak Detector	Hewlett Packard	85650A	2043A00137	11/06/2009
Loop Antenna	EMCO	6502	9111-2675	03/12/2009
Biconilog Antenna	EMCO	3142	9601-1008	9/26/2008
High Frequency Amplifier	Miteq	AFS4-01001800-43-10P-4	1096455	06/04/2009

Type of Equipment	Manufacturer	Model Number	Serial Number	Date of Last Calibration
20' Cable	Utiflex	UFA210A-1-2400-30050U	1175	03/04/2010
3 Meter Radiated Emissions Cable Wanship Site #2	Nemko-CCL, Inc.	Cable K	N/A	12/31/2009
10 Meter Radiated Emissions Cable Wanship Site #2	Nemko-CCL, Inc.	Cable L	N/A	12/31/2009
Pre/Power-Amplifier	Hewlett Packard	8447F	3113A05161	08/25/2010
6 dB Attenuator	Hewlett Packard	8491A	32835	12/31/2009

An independent calibration laboratory or Nemko-CCL, Inc. personnel calibrates all the equipment listed above at intervals defined in ANSI C63.4:2003 Section 4.4 following outlined calibration procedures. All measurement instrumentation is traceable to the National Institute of Standards and Technology (NIST). Supporting documentation relative to tractability is on file and is available for examination upon request.

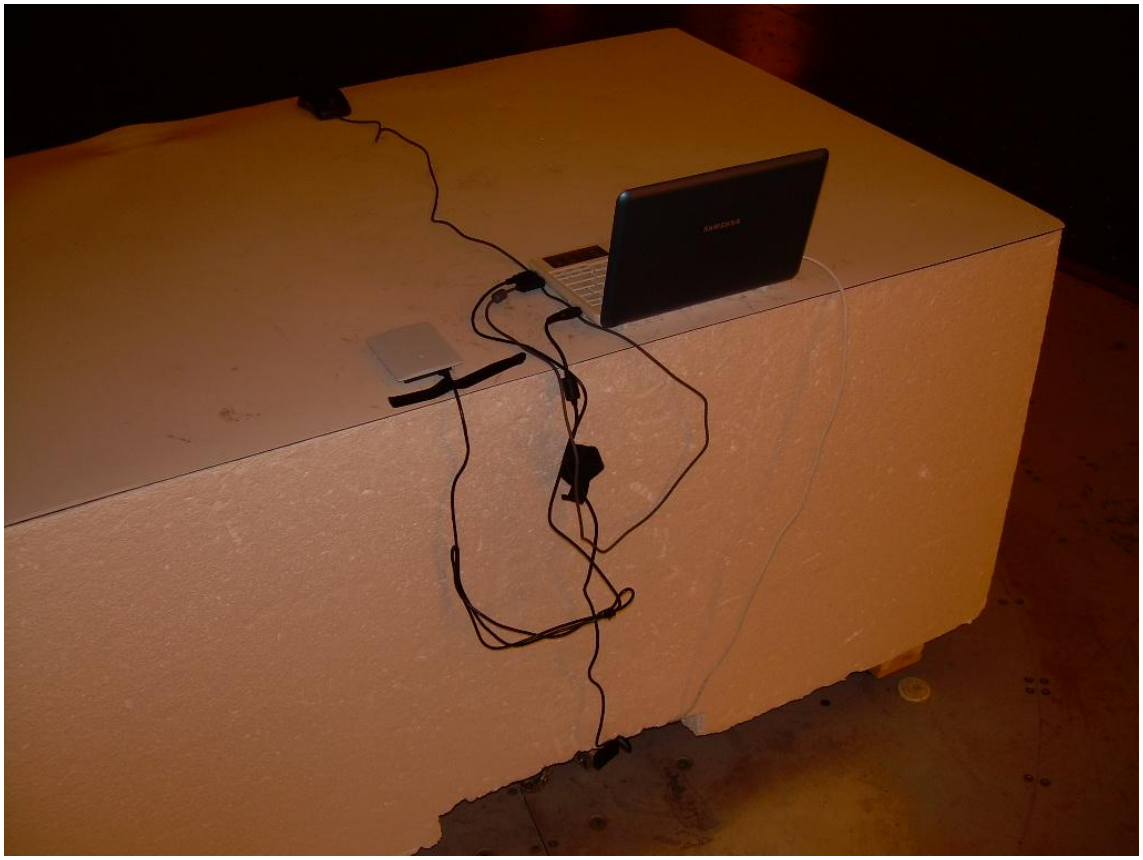
Radiated Emissions Test Setup



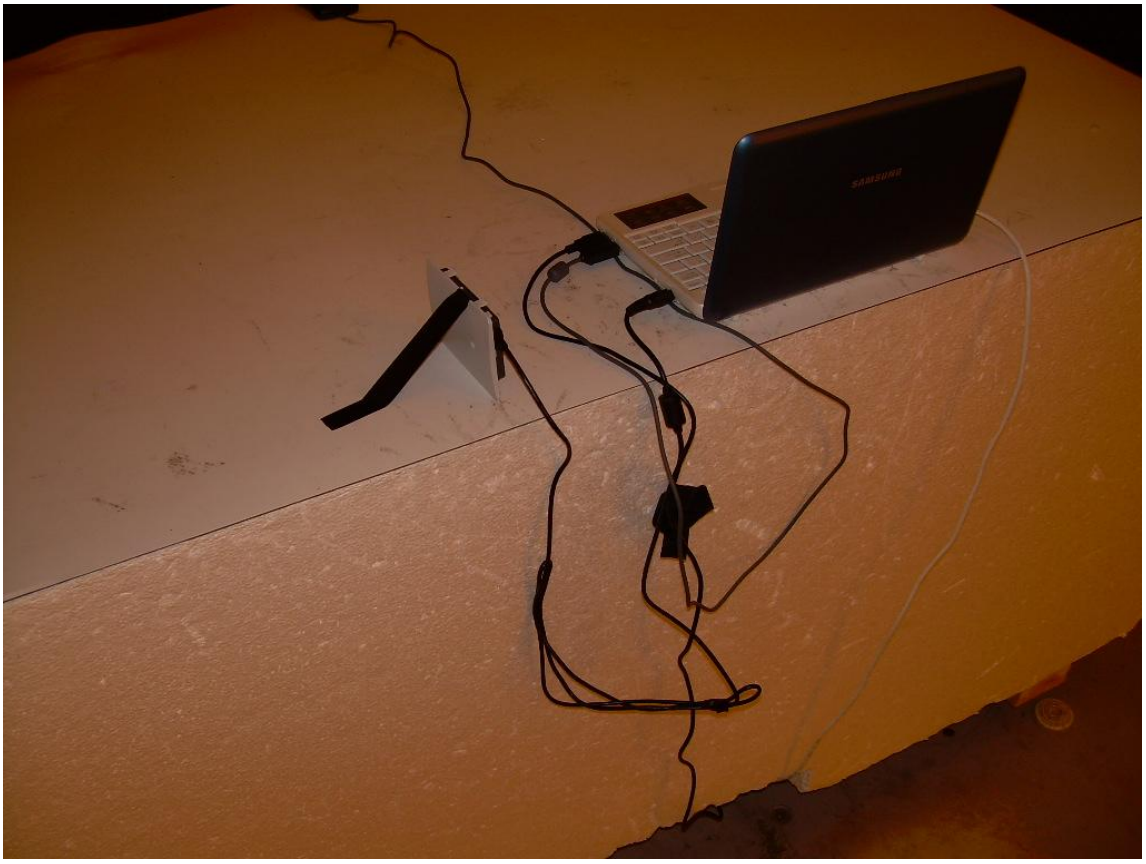
APPENDIX 2 PHOTOGRAPHS

Photograph 1 – Front View Radiated Emission Setup – Horizontal Placement

Photograph 2 – Back View Radiated Emission Setup – Horizontal Placement



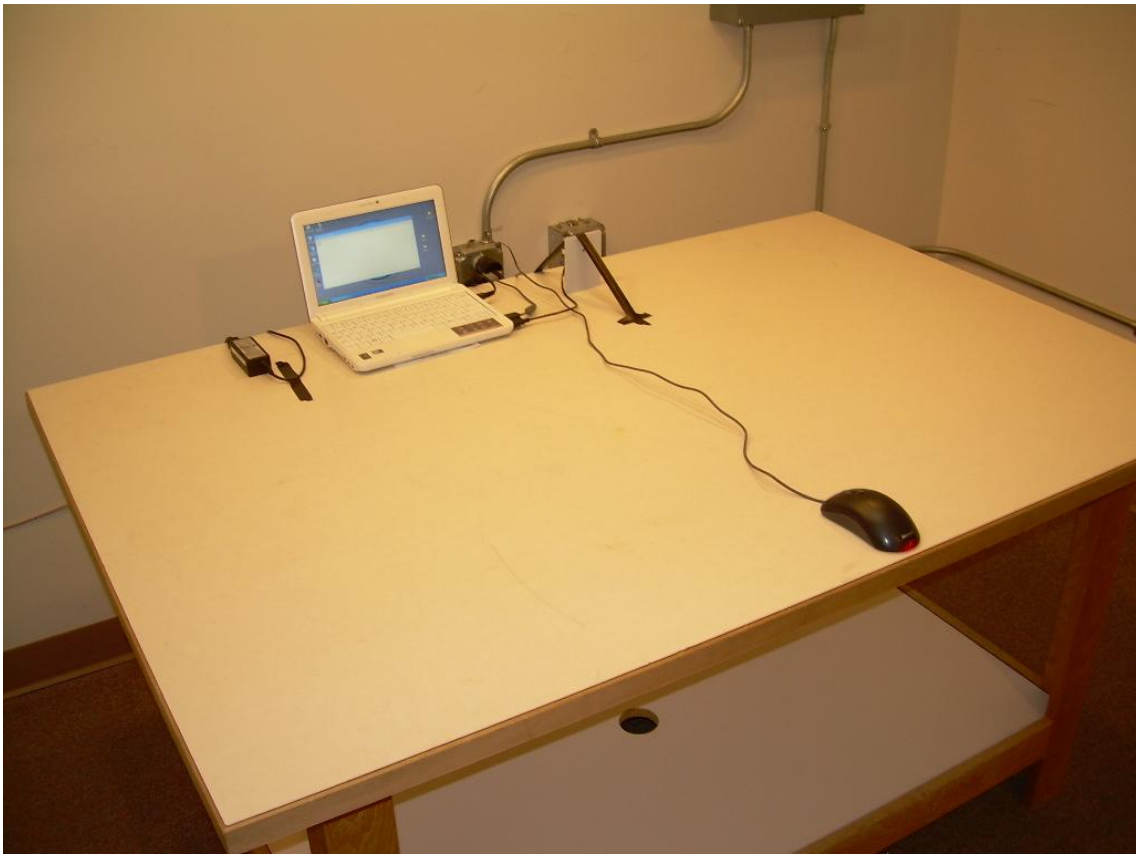
Photograph 3 – Back View Radiated Emission Setup – On Edge Placement



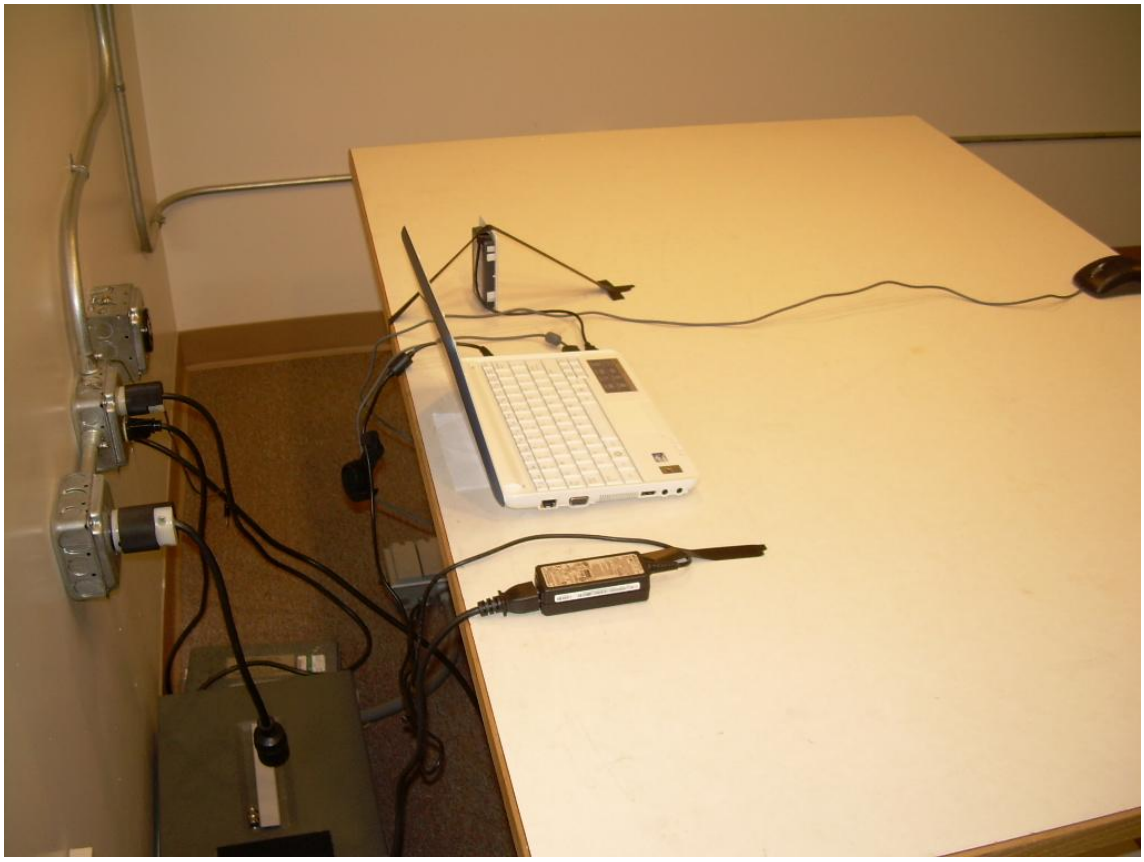
Photograph 4 – Front View Radiated Emission Setup – Vertical Placement Using Longest Cable
Worst-Case Radiated Emission Configuration

Photograph 5 – Front View Radiated Emission Setup – Vertical Placement Using Short Cable

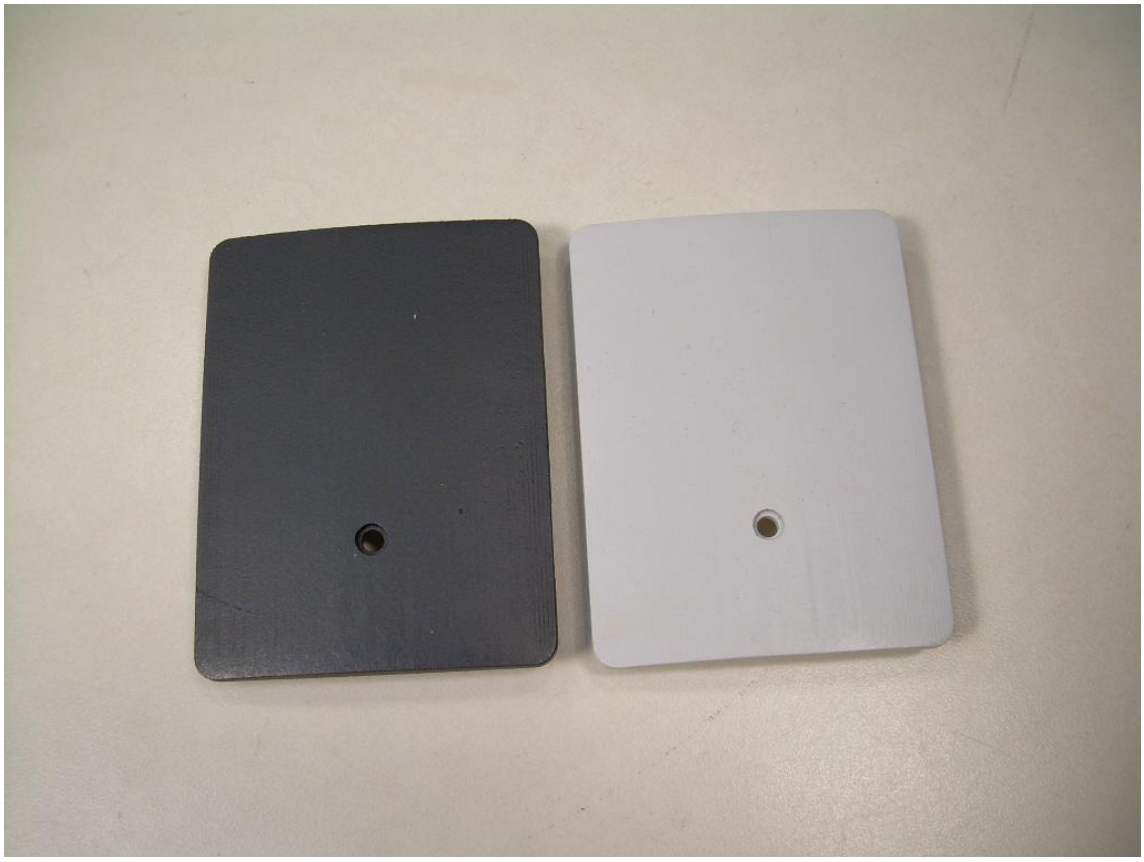
Photograph 6 – Front View Conducted Emission Setup



Photograph 7 – Back View Conducted Emission Setup



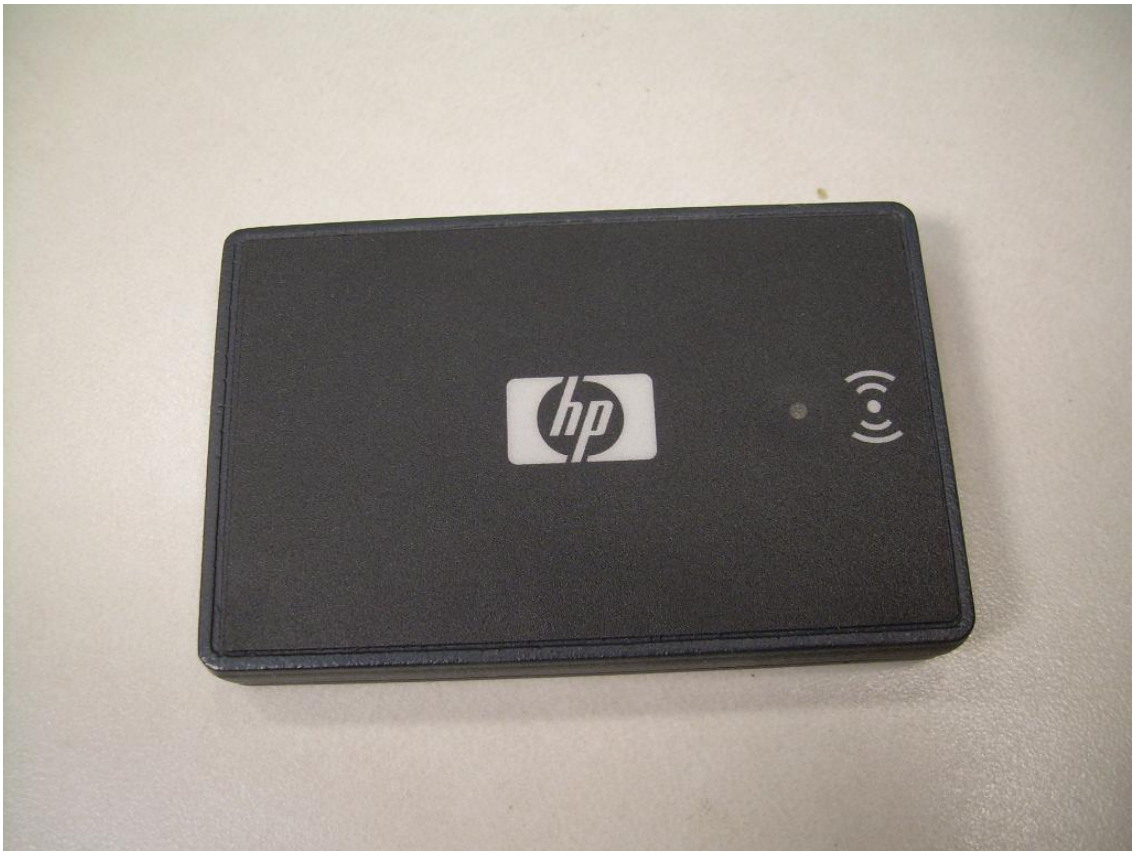
Photograph 8 – Front View of the Plastic Faceplates



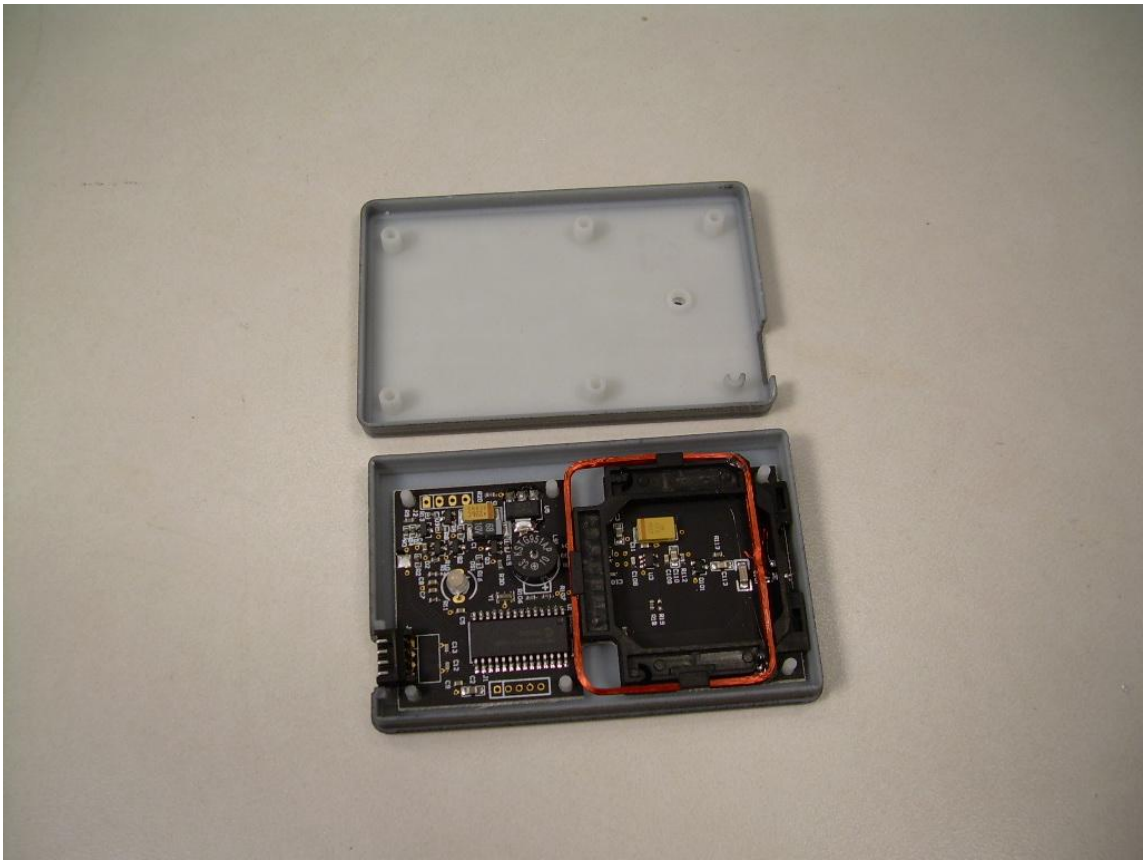
Photograph 9 – Back View of the Plastic Faceplates

Photograph 10 – Back View of the EUT In Plastic Faceplate

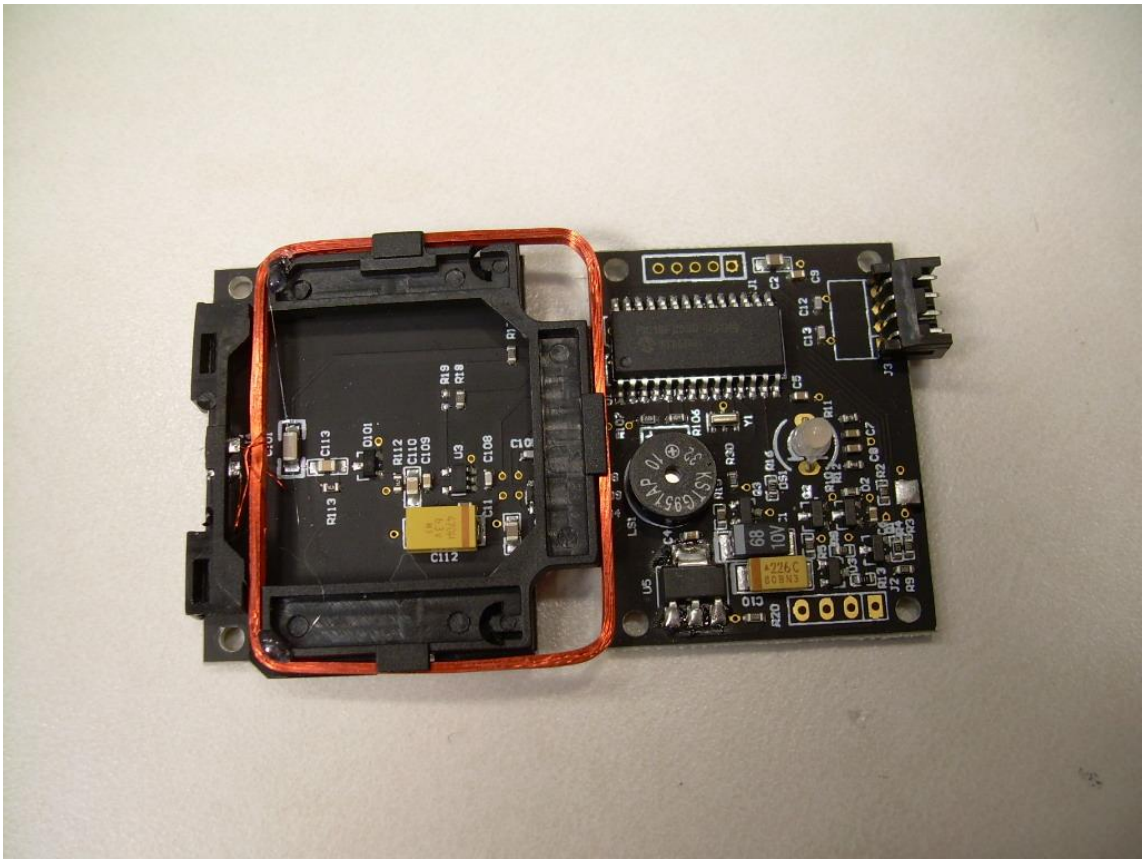
Photograph 11 – Front View of the EUT without Faceplate



Photograph 12 – View of the EUT with the Housing Opened



Photograph 13 – View of the Component Side of the PCB



Photograph 14 – View of the Trace Side of the PCB

Photograph 15 – View of the EUT Cables

APPENDIX 3 MANUFACTURER'S STATEMENT/ATTESTATION

The manufacturer or responsible party for the equipment tested hereby affirms:

a) That he/she has reviewed and concurs that the tests shown in this report are reflective of the operational characteristics of the device for which certification is sought;
b) That the device in this test report will be representative of production units;
c) That the product will have all of the documented modifications incorporated into the product when manufactured and placed on the market;
d) That all changes in hardware and software/firmware to the subject device will be reviewed.
e) That any changes impacting the attributes, functionality or operational characteristics documented in this report will be communicated to the body responsible for approving or certifying the subject equipment.

Printed name of official	Signature of official	Date

NOTE—This affirmation must be signed by the responsible party before it is submitted to a regulatory body for approval.