ENGINEERING TEST REPORT

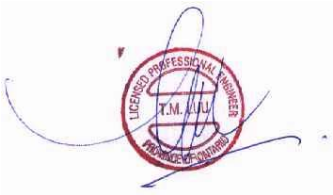
Portable Safety Outlet
Model No.: 1200
FCC ID: S9C-1200

Applicant:
OFI, Inc.
194 Erb Street West
Waterloo, Ontario
Canada N2L 1V7

In Accordance With

FEDERAL COMMUNICATIONS COMMISSION (FCC)
Part 15, Subpart C
Unlicensed Low Power Transmitter
Operating in the band 13.110-14.010 MHz

UltraTech's File No.: OFI-005F15C225

This Test report is Issued under the Authority of Tri M. Luu, Professional Engineer, Vice President of Engineering UltraTech Group of Labs Date: April 10, 2007	
Report Prepared by: Dan Huynh Issued Date: April 10, 2007	Tested by: Mr. Hung Trinh, RFI Technician Test Dates: January 22, 2007; February 9, 2007 April 4, 2007

- *The results in this Test Report apply only to the sample(s) tested, and the sample tested is randomly selected.*
- *This report must not be used by the client to claim product endorsement by NVLAP or any agency of the US Government.*

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EXHIBIT 1. INTRODUCTION

1.1. SCOPE

Reference:	FCC Part 15, Subpart C, Sec. 15.225 - Operation within the band 13.110 – 14.010 MHz.
Title:	Telecommunication - Code of Federal Regulations, CFR 47, Part 15, Subpart C
Purpose of Test:	Class II Permissive Change as specified below: 1) The antenna resonant and coupling circuitry changed. - Antenna resonant circuit changed to improve reliability with RF tags in very close proximity (i.e. <2mm from the reader antenna) - Antenna coupling circuit revised to match new antenna resonant circuit. 2) The other changes not related to the RF section are: a) add 2 more LEDs (only 1 is populated) b) improve line voltage surge withstand capability c) improve reliability and/or reduce costs (i.e. changing component package size etc.)
Test Procedures:	Both conducted and radiated emissions measurements were conducted in accordance with American National Standards Institute 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 9 kHz to 40 GHz.
Environmental Classification:	Residential Commercial, industrial or business environment

1.2. RELATED SUBMITTAL(S)/GRANT(S)

None.

1.3. NORMATIVE REFERENCES

Publication	Year	Title
FCC CFR Parts 0-19	2006	Code of Federal Regulations – Telecommunication
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
CISPR 22 +A1 EN 55022	2003-04-10 2004-10-14 2003	Limits and Methods of Measurements of Radio Disturbance Characteristics of Information Technology Equipment
CISPR 16-1-1	2003	Specification for radio disturbance and immunity measuring apparatus and methods. Part 1-1: Measuring Apparatus
CISPR 16-2-1	2003	Specification for radio disturbance and immunity measuring apparatus and methods. Part 2-1: Conducted disturbance measurement
CISPR 16-2-3	2003	Specification for radio disturbance and immunity measuring apparatus and methods. Part 2-3: Radiated disturbance measurement

EXHIBIT 2. PERFORMANCE ASSESSMENT

2.1. CLIENT INFORMATION

APPLICANT	
Name:	OFI, Inc.
Address:	194 ERB Street West, Waterloo, ON Canada N2L 1V7
Contact Person:	Mr. Nick Jones, V.P. Technology Phone #: 519-884-3100 Fax #: 519-884-9800 Email Address: njones@oficfi.com

MANUFACTURER	
Name:	OFI, Inc.
Address:	194 ERB Street West, Waterloo, ON Canada N2L 1V7
Contact Person:	Mr. Steve Montgomery, C.O.O. and Executive V.P. Phone #: 519-884-3100 Fax #: 519-884-9800 Email Address: smontgomery@oficfi.com

2.2. EQUIPMENT UNDER TEST (EUT) INFORMATION

The following information (with the exception of the Date of Receipt) has been supplied by the applicant.

Brand Name:	SafePlug
Product Name:	Portable Safety Outlet
Model Name or Number:	1200
Serial Number:	Test sample
Type of Equipment:	Low Power Transmitters
Input Power Supply Type:	Integral non-isolated off-line switching supply
Operating Voltage:	90VAC – 130VAC
Operating Temperature Range:	0ºC - 40ºC
Primary User Functions of EUT:	The SafePlug system protects against fires caused by overloaded wires via an Overload Fault Interrupter™ (also called OFI™). Damaged and defective appliances including lamps and electronics as well as misuse can draw excessive electricity and overheat wires. OFI continuously monitors the electricity flowing to appliances, 24 hours per day, 7 days a week, and automatically turns it off when it exceeds safe limits. It reads the safe limit for each appliance from the RightPlug technology in its cord-set plug.

2.3. EUT'S TECHNICAL SPECIFICATIONS

Transmitter	
Equipment Type:	▪ Mobile
Intended Operating Environment:	▪ Residential ▪ Commercial, light industry & heavy industry
Power Supply Requirement:	120 VAC 60 Hz
Field Strength:	40.11 dBµV/m at 10 m
Operating Frequency Range:	13.553-13.567 MHz
RF Output Impedance:	50 Ohms
26 dB Bandwidth:	10.30 kHz
Modulation Type:	AM
Oscillator Frequencies:	8 MHz (microprocessor)
Antenna Connector Type:	Integral inductive loops, one at each receptacle, multiplexed
Channel access protocol:	Simplex
Mode of operation:	Non-continuous, repeat rate = 15Hz (7.5Hz at each antenna)

2.4. LIST OF EUT'S PORTS

Port Number	EUT's Port Description	Number of Identical Ports	Connector Type	Cable Type (Shielded/Non-shielded)
1	Receptacle	2	3 Prong	Non Shielded

2.5. ANCILLARY EQUIPMENT

The EUT was tested while connected to the following representative configuration of ancillary equipment necessary to exercise the ports during tests:

Ancillary Equipment # 1	
Description:	Desk top lamp with RightPlug compliant Tag
Brand name:	Generic
Model Name or Number:	n/a
FCC Certification:	n/a
Serial Number:	n/a
Connected to EUT's Port:	Receptacle

Ancillary Equipment # 2	
Description:	Desk top lamp with RightPlug compliant Tag
Brand name:	Generic
Model Name or Number:	n/a
FCC Certification:	n/a
Serial Number:	n/a
Connected to EUT's Port:	Receptacle

2.6. GENERAL TEST SETUP

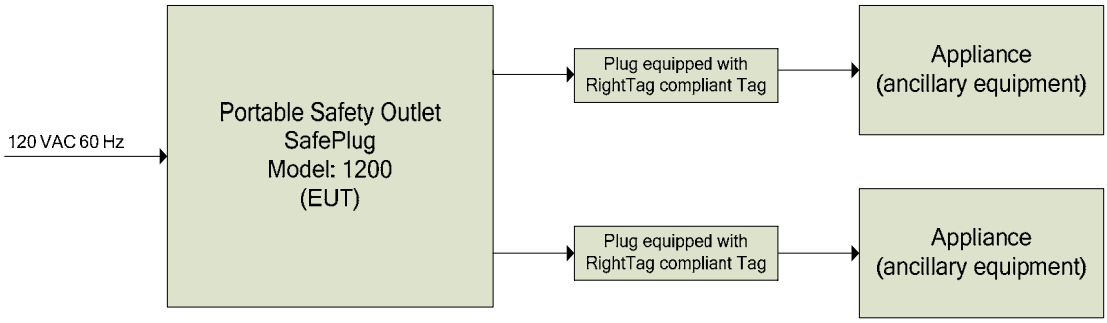


EXHIBIT 3. EUT OPERATING CONDITIONS AND CONFIGURATIONS DURING TESTS

3.1. CLIMATE TEST CONDITIONS

The climate conditions of the test environment are as follows:

Temperature:	21°C
Humidity:	51%
Pressure:	102 kPa
Power input source:	120 VAC 60 Hz

3.2. OPEPERATIONAL TEST CONDITIONS & ARRANGEMENT FOR TESTS

Operating Modes:	Normal
Special Test Software:	None
Special Hardware Used:	None
Transmitter Test Antenna:	Integral

Transmitter Test Signals:	
Frequency:	13.56 MHz
Transmitter Wanted Output Test Signals:	
▪ RF Power Output (measured maximum output power):	40.11 dBµV/m at 10 m
▪ Normal Test Modulation:	AM
▪ Modulating signal source:	Internal

EXHIBIT 4. SUMMARY OF TEST RESULTS

4.1. LOCATION OF TESTS

All of the measurements described in this report were performed at Ultratech Group of Labs located in the city of Oakville, Province of Ontario, Canada.

- AC Power Line Conducted Emissions were performed in UltraTech's shielded room, 24'(L) by 16'(W) by 8'(H).

- Radiated Emissions were performed at the Ultratech's 3-10 TDK Semi-Anechoic Chamber situated in the Town of Oakville, province of Ontario. This test site been calibrated in accordance with ANSI C63.4, and found to be in compliance with the requirements of Sec. 2.948 of the FCC Rules. The descriptions and site measurement data of the Oakville 3-10 TDK Semi-Anechoic Chamber has been filed with FCC office (FCC File No.: 31040/SIT 1300B3) and Industry Canada office (Industry Canada File No.: IC2049-1). Last Date of Site Calibration: June 20, 2006.

4.2. APPLICABILITY & SUMMARY OF EMC EMISSION TEST RESULTS

FCC Regulations	Test Requirements	Compliance (Yes/No)
15.203 & 15.204	The transmitter shall use a transmitting antenna that is an integral part of the device	Yes
	26 dB & 99% Bandwidth	Yes
15.225(a) – (d)	Field Strength of Emissions Inside and Outside the Permitted Band 13.110 - 14.010 MHz	Yes
15.225(c)	Frequency Stability	n/a
15.107 & 15.207	Class B - AC Power Line Conducted Emissions	Yes
15.109(b)	Class B - Radiated Emissions from Unintentional Radiators	Yes.

4.3. MODIFICATIONS INCORPORATED IN THE EUT FOR COMPLIANCE PURPOSES

The modifications for compliance were a new revision of the main circuit board part number 4028, revision changed from 1.4 to 1.5. The assembly part number 3012 (circuit board with components) changed from rev. 1.41 to rev 1.5.

Changes to Achieve Compliance:
- Antenna resonant circuit adjusted
- C9, C10 changed from 100p to 120p
- C1, C15 changed from "not populated" to 4p7
- Added filter to RF drive signal
- L1 changed from "not populated" to 1u5
- C5 (120p) and L4 (1u5) added

Other changes between rev. 1.4 and 1.5 (made for reasons other than EM compliance)
- Decoupling strategy changed from bulk 10uF electrolytic and two pairs of 470n / 22n to three 4u7 ceramic chips (C11, C13, C16, C19, C20 and C22 affected)

No changes to the power supply or relay board were made, both remain at rev 1.1.

EXHIBIT 5. MEASUREMENTS, EXAMINATIONS & TEST DATA FOR EMC EMISSIONS

5.1. TEST PROCEDURES

This section contains test results only. Details of test methods and procedures can be found in ANSI C63.4 and ULTR-P001-2004.

5.2. MEASUREMENT UNCERTAINTIES

The measurement uncertainties stated were calculated in accordance with requirements of UKAS Document LAB 34 with a confidence level of 95%. Please refer to Exhibit 6 for Measurement Uncertainties.

5.3. MEASUREMENT EQUIPMENT USED

The measurement equipment used complied with the requirements of the Standards referenced in the Methods & Procedures ANSI C63.4 and CISPR 16-1-1.

5.4. COMPLIANCE WITH FCC PART 15 – GENERAL TECHNICAL REQUIREMENTS

FCC Section	FCC Rules	
15.203	Described how the EUT complies with the requirement that either its antenna is permanently attached, or that it employs a unique antenna connector, for every antenna proposed for use with the EUT. The exception is in those cases where EUT must be professionally installed. In order to demonstrate that professional installation is required, the following 3 points must be addressed: • The application (or intended use) of the EUT • The installation requirements of the EUT • The method by which the EUT will be marketed	Integral inductive loops permanently mounted on the PCB, one at each receptacle, multiplexed
15.204	Provided the information for every antenna proposed for use with the EUT: (a) type (e.g. Yagi, patch, grid, dish, etc…), (b) manufacturer and model number (c) gain with reference to an isotropic radiator	N/A

5.5. OCCUPIED BANDWIDTH

5.5.1. Limits

The bandwidth shall show bandedge compliance.

5.5.2. Method of Measurements

Refer to Ultratech Test Procedures, File # ULTR P001-2004 and ANSI C63.4 for measurement methods

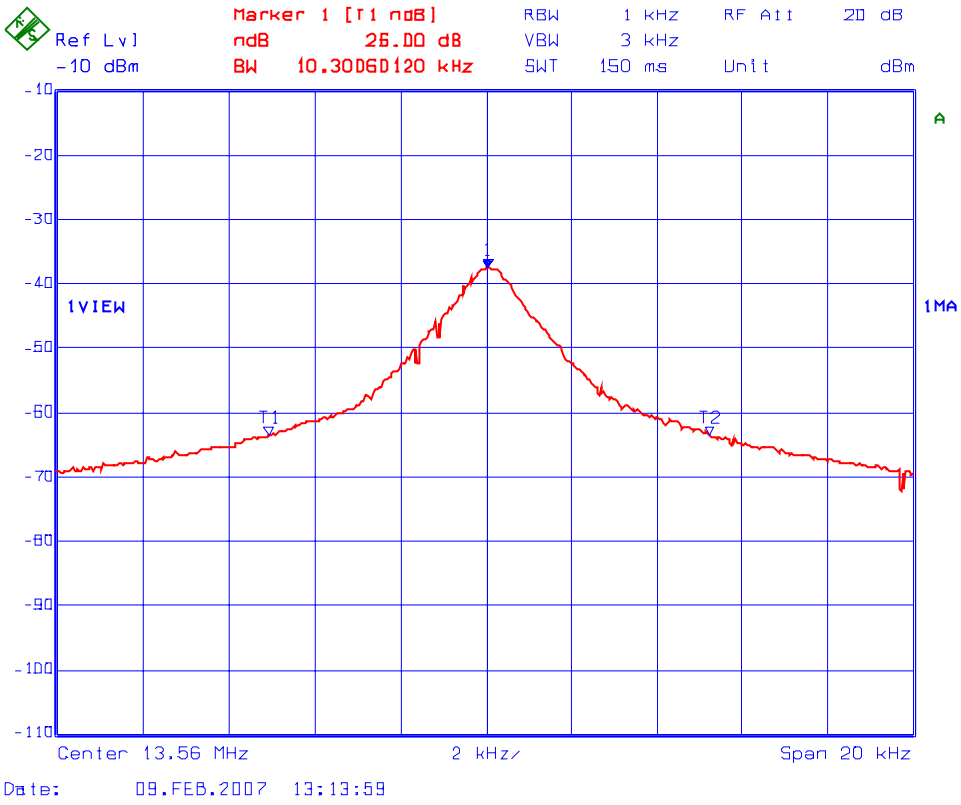
5.5.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Rohde & Schwarz	FSEK20/B4/B21	834157/005	9 kHz – 40 GHz
Loop Antenna	EMCO	6502	2611	10 kHz - 30 MHz

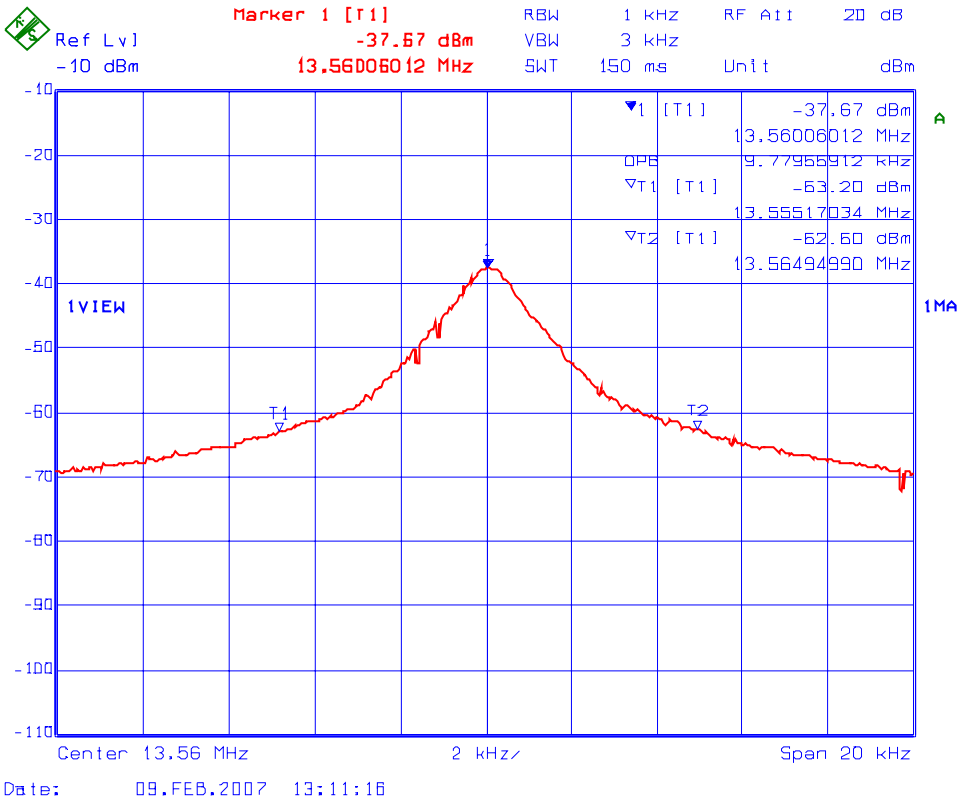
5.5.4. Test Data

Test Frequency (MHz)	Occupied Bandwidth (kHz)	
	26 dB BW	99 % BW
13.56	10.30	9.78

Plot 5.5.4.1 26dB Bandwidth
Test Frequency: 13.56 MHz



Plot 5.5.4.2 99% Occupied Bandwidth
Test Frequency: 13.56 MHz



5.6. FIELD STRENGTH OF EMISSIONS INSIDE & OUTSIDE THE PERMITTED BAND 13.110-14.010 MHz [47 CFR 15.225 (a) to (d)]

5.6.1. Limits

(a) The field strength of any emissions within the band 13.553-13.567 MHz shall not exceed 15,848 microvolts/meter at 30 meters.
(b) Within the bands 13.410-13.553 MHz and 13.567-13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.
(c) Within the bands 13.110-13.410 MHz and 13.710-14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.
(d) The field strength of any emissions appearing outside of the 13.110 – 14.010 MHz band shall not exceed the general radiated emission limits in § 15.209.

Remarks:

FCC CFR 47, Part 15, Subpart C, Para. 15.205(a) - Restricted Frequency Bands

MHz	MHz	MHz	GHz
0.090 - 0.110	162.0125 - 167.17	2310 - 2390	9.3 - 9.5
0.49 – 0.51	167.72 - 173.2	2483.5 - 2500	10.6 - 12.7
2.1735 - 2.1905	240 - 285	2655 - 2900	13.25 - 13.4
8.362 - 8.366	322 - 335.4	3260 - 3267	14.47 - 14.5
13.36 - 13.41	399.9 - 410	3332 - 3339	14.35 - 16.2
25.5 – 25.67	608 - 614	3345.8 - 3358	17.7 - 21.4
37.5 – 38.25	960 - 1240	3600 - 4400	22.01 - 23.12
73 - 75.4	1300 - 1427	4500 - 5250	23.6 - 24.0
108 – 121.94	1435 - 1626.5	5350 - 5460	31.2 - 31.8
123 – 138	1660 - 1710	7250 - 7750	36.43 - 36.5
149.9 – 150.05	1718.8 - 1722.2	8025 - 8500	Above 38.6
156.7 – 156.9	2200 - 2300	9000 - 9200	

FCC CFR 47, Part 15, Subpart C, Para. 15.209(a)
-- Field Strength Limits within Restricted Frequency Bands --

FREQUENCY (MHz)	FIELD STRENGTH LIMITS (microvolts/m)	DISTANCE (Meters)
0.009 - 0.490	2,400 / F (KHz)	300
0.490 - 1.705	24,000 / 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

5.6.2. Method of Measurements

Refer to Ultratech Test Procedures, File # ULTR P001-2004 and ANSI C63.4 for measurement methods

Applies to harmonics/spurious that fall in the restricted bands listed in Section 15.205. the maximum permitted average field strength is listed in Section 15.209. A Pre-Amp and high-pass filter are used for this measurement.

- For measurements from 9 KHz to 150 KHz, set RBW = 200 Hz, VBW $\geq$ RBW, SWEEP=AUTO.
- For measurements from 150 KHz to 30 MHz, set RBW = 10 KHz, VBW $\geq$ RBW, SWEEP=AUTO.
- For measurements from 30 MHz to 1 GHz, set RBW = 100 KHz, VBW $\geq$ RBW, SWEEP=AUTO.
- For measurement above 1 GHz, set RBW = 1 MHz, VBW = 1 MHz, SWEEP=AUTO.

If the emission is pulsed, modified the unit for continuous operation, then use the settings above for measurements, then correct the reading by subtracting the peak-average correction factor derived from the appropriate duty cycle calculation. See Section 15.35(b) and (c).

5.6.3. Test Equipment List

Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
EMI Receiver System/ Spectrum Analyzer with built-in Amplifier	Hewlett Packard	HP 8546A	3520A00248	9KHz-5.6GHz, 50 Ohms
Active Loop Antenna	EMCO	6507	8906-1167	1 kHz – 30 MHz
Log Periodic/Bow-Tie Antenna	EMCO	3143	1029	20 - 1000 MHz

5.6.4. Test Data

Remarks:

- Radiated spurious emissions measurements were performed at 10 m distance, from 10 MHz – 1 GHz and all spurious emissions that are in excess of 20 dB below the specified limit shall be recorded.
- For frequencies below 30 MHz, the results measured at 10 m distance shall be extrapolated to 30 m distance using an extrapolation factor of 40 dB/decade (40*log(10/30)).
- For frequencies at or above 30 MHz, the results measured at 10 m distance shall be extrapolated to 3 m distance using an extrapolation factor of 20 dB/decade (20*log(10/3)).

5.6.4.1. Field Strength of Emissions Inside the Permitted Band

Frequency (MHz)	Measured Field Strength @ 10m (dBµV/m)	Detector Used (Peak/QP)	Antenna Plane (H/V)	Field Strength Extrapolated Value (dBµV/m)	§ 15.225 Field Strength Limits	Margin (dB)
13.56	40.11	Peak	V	21.0	84.0	-63.0
13.56	31.80	Peak	H	12.7	84.0	-71.3

5.6.4.2. Field Strength of Emissions Outside the Permitted Band

Frequency (MHz)	Measured Field Strength @ 10m (dBµV/m)	Detector Used (Peak/QP)	Antenna Plane (H/V)	Field Strength Extrapolated Value (dBµV/m)	§ 15.209 Field Strength Limits	Margin (dB)
40.68	24.43	QP	V	34.9	40.0	-5.1
67.80	16.38	QP	V	26.8	40.0	-13.2
94.92	23.37	Peak	V	33.8	43.5	-9.7
94.92	17.27	Peak	H	27.7	43.5	-15.8
151.00	19.85	Peak	V	30.3	43.5	-13.2
176.38	25.72	Peak	V	36.2	43.5	-7.3
176.38	24.97	Peak	H	35.4	43.5	-8.1
189.88	27.08	Peak	V	37.5	43.5	-6.0
189.88	26.17	Peak	H	36.6	43.5	-6.9
203.80	29.91	Peak	V	40.4	43.5	-3.1
217.30	16.48	Peak	H	26.9	46.0	-19.1
231.00	30.86	Peak	V	41.3	46.0	-4.7
231.00	22.55	Peak	H	33.0	46.0	-13.0
244.50	22.53	Peak	V	33.0	46.0	-13.0
271.30	28.00	Peak	V	38.5	46.0	-7.5
271.30	26.90	Peak	H	37.4	46.0	-8.6
325.80	26.94	Peak	V	37.4	46.0	-8.6
325.80	24.02	Peak	H	34.5	46.0	-11.5

Frequency (MHz)	Measured Field Strength @ 10m (dBµV/m)	Detector Used (Peak/QP)	Antenna Plane (H/V)	Field Strength Extrapolated Value (dBµV/m)	§ 15.209 Field Strength Limits	Margin (dB)
339.30	28.51	Peak	V	39.0	46.0	-7.0
339.30	23.70	Peak	H	34.2	46.0	-11.8
353.00	31.04	Peak	V	41.5	46.0	-4.5
353.00	29.15	Peak	H	39.6	46.0	-6.4
386.50	27.52	Peak	V	38.0	46.0	-8.0
386.50	26.00	Peak	H	36.5	46.0	-9.5
407.00	27.56	Peak	V	38.0	46.0	-8.0
407.00	30.79	Peak	H	41.2	46.0	-4.8
420.80	26.48	Peak	V	36.9	46.0	-9.1
420.80	24.84	Peak	H	35.3	46.0	-10.7
474.50	28.91	Peak	V	39.4	46.0	-6.6
474.50	30.21	Peak	H	40.7	46.0	-5.3
502.00	28.49	Peak	V	38.9	46.0	-7.1
502.00	30.24	Peak	H	40.7	46.0	-5.3

5.7. AC POWERLINE CONDUCTED EMISSIONS [47 CFR 15.107(a) & 15.207]

5.7.1. Limits

The equipment shall meet the limits of the following table:

Test Frequency Range (MHz)	Class B Limits (dBμV)		Measuring Bandwidth
	Quasi-Peak	Average	
0.15 to 0.5	66 to 56*	56 to 46*	RBW = 9 kHz VBW ≥ 9 kHz for QP VBW = 1 Hz for Average
0.5 to 5	56	46	RBW = 9 kHz VBW ≥ 9 kHz for QP VBW = 1 Hz for Average
5 to 30	60	50	RBW = 9 kHz VBW ≥ 9 kHz for QP VBW = 1 Hz for Average

* Decreasing linearly with logarithm of frequency

5.7.2. Method of Measurements

Refer to Ultratech Test Procedures, File # ULTR P001-2004 and ANSI C63.4 for measurement methods

5.7.3. Test Equipment List

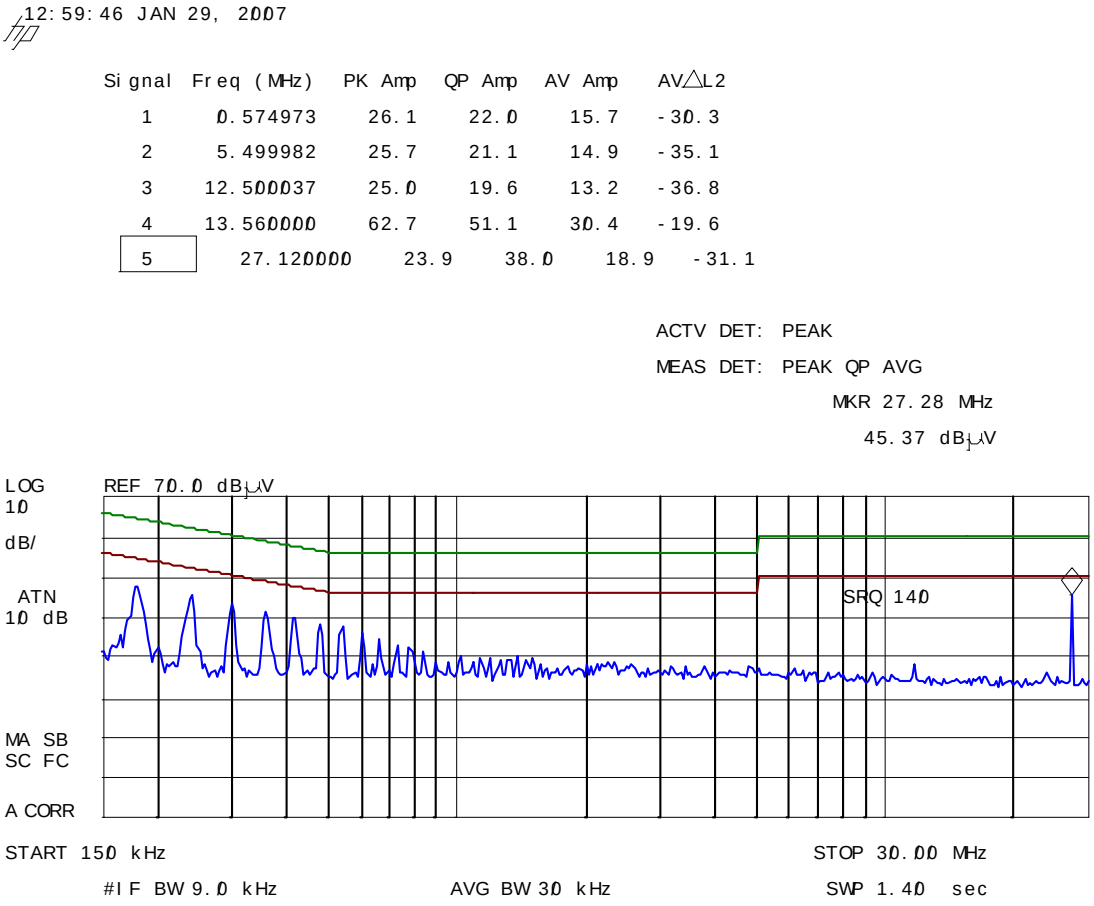
Test Instruments	Manufacturer	Model No.	Serial No.	Frequency Range
Spectrum Analyzer/ EMI Receiver	Hewlett Packard	HP 8593EM	3412A00103	9 kHz – 26.5 GHz
Transient Limiter	Hewlett Packard	11947A	*310701998*	9 kHz – 200 MHz 10 dB attenuation
L.I.S.N.	EMCO	3825/2	*89071531*	9 kHz – 200 MHz 50 Ohms / 50 μH
RF Shielded Chamber	RF Shielding	--	--	--

5.7.4. Test Data

Frequency (MHz)	RF Level (dBµV)	Receiver Detector (QP/AVG)	QP Limit (dBµV)	AVG Limit (dBµV)	Margin (dB)	Pass/ Fail	Line Tested (L1/L2)
0.574973	22.0	QP	56.0	46.0	-34.0	Pass	L1
0.574973	15.7	AVG	56.0	46.0	-30.3	Pass	L1
5.499982	21.1	QP	60.0	50.0	-38.9	Pass	L1
5.499982	14.9	AVG	60.0	50.0	-35.1	Pass	L1
12.500037	19.6	QP	60.0	50.0	-40.4	Pass	L1
12.500037	13.2	AVG	60.0	50.0	-36.8	Pass	L1
13.560000	51.1	QP	60.0	50.0	-8.9	Pass	L1
13.560000	30.4	AVG	60.0	50.0	-19.6	Pass	L1
27.120000	38.0	QP	60.0	50.0	-22.0	Pass	L1
27.120000	18.9	QP	60.0	50.0	-41.1	Pass	L1
0.181938	48.6	QP	64.4	54.4	-15.8	Pass	L2
0.181938	47.6	AVG	64.4	54.4	-6.8	Pass	L2
0.303249	43.7	QP	60.2	50.2	-16.5	Pass	L2
0.303249	42.7	AVG	60.2	50.2	-7.5	Pass	L2
13.561250	52.8	QP	60.0	50.0	-7.2	Pass	L2
13.561250	30.8	AVG	60.0	50.0	-19.2	Pass	L2
27.120000	37.3	QP	60.0	50.0	-22.7	Pass	L2
27.120000	16.7	QP	60.0	50.0	-43.3	Pass	L2

See the following plots for details.

Plot 5.7.4.1 AC Power Line Conducted Emission
Line Tested: L1
Line Voltage 120 VAC 60 Hz



Plot 5.7.4.2 AC Power Line Conducted Emission
Line Tested: L1
Line Voltage 120 VAC 60 Hz

13:37:57 JAN 29, 2007

Signal	Freq (MHz)	PK Amp	QP Amp	AV Amp	AV△L2
1	0.181938	49.5	48.8	47.6	-6.9
2	0.303249	47.6	43.7	42.7	-7.4
3	13.561250	24.8	52.8	30.8	-19.2
4	27.120000	43.0	37.3	16.7	-33.3

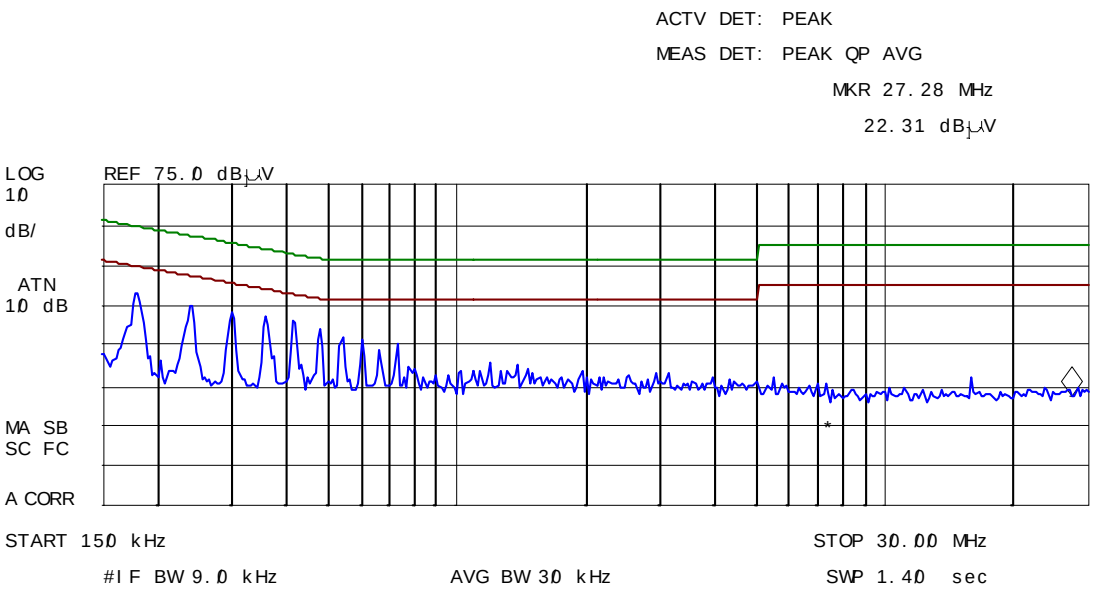


EXHIBIT 6. MEASUREMENT UNCERTAINTY

The measurement uncertainties stated were calculated in accordance with the requirements of NIST Technical Note 1297 and LAB 34.

6.1. LINE CONDUCTED EMISSION MEASUREMENT UNCERTAINTY

CONTRIBUTION (Line Conducted)	PROBABILITY DISTRIBUTION	UNCERTAINTY (dB)	
		9-150 kHz	0.15-30 MHz
EMI Receiver specification	Rectangular	±1.5	±1.5
LISN coupling specification	Rectangular	±1.5	±1.5
Cable and Input Transient Limiter calibration	Normal (k=2)	±0.3	±0.5
Mismatch: Receiver VRC Γ_1 = 0.03 LISN VRC Γ_R = 0.8(9 kHz) 0.2 (30 MHz) Uncertainty limits 20Log(1±$\Gamma_1\Gamma_R$)	U-Shaped	±0.2	±0.3
System repeatability	Std. deviation	±0.2	±0.05
Repeatability of EUT	--	--	--
Combined standard uncertainty	Normal	±1.25	±1.30
Expanded uncertainty U	Normal (k=2)	±2.50	±2.60

Sample Calculation for Measurement Accuracy in 450 kHz to 30 MHz Band:

$u_c(y) = \sqrt{\sum_{I=1}^{m} u_i^2(y)} = \pm \sqrt{(1.5^2 + 1.5^2)/3 + (0.5/2)^2 + (0.05/2)^2 + 0.35^2} = \pm 1.30$ dB

$U = 2u_c(y) = \pm 2.6$ dB

6.2. RADIATED EMISSION MEASUREMENT UNCERTAINTY

CONTRIBUTION (Radiated Emissions)	PROBABILITY DISTRIBUTION	UNCERTAINTY (± dB)	
		3 m	10 m
Antenna Factor Calibration	Normal (k=2)	±1.0	±1.0
Cable Loss Calibration	Normal (k=2)	±0.3	±0.5
EMI Receiver specification	Rectangular	±1.5	±1.5
Antenna Directivity	Rectangular	+0.5	+0.5
Antenna factor variation with height	Rectangular	±2.0	±0.5
Antenna phase center variation	Rectangular	0.0	±0.2
Antenna factor frequency interpolation	Rectangular	±0.25	±0.25
Measurement distance variation	Rectangular	±0.6	±0.4
Site imperfections	Rectangular	±2.0	±2.0
Mismatch: Receiver VRC Γ_1 = 0.2 Antenna VRC Γ_R = 0.67(Bi) 0.3 (Lp) Uncertainty limits 20Log(1±$\Gamma_1\Gamma_R$)	U-Shaped	+1.1 -1.25	±0.5
System repeatability	Std. Deviation	±0.5	±0.5
Repeatability of EUT		-	-
Combined standard uncertainty	Normal	+2.19 / -2.21	+1.74 / -1.72
Expanded uncertainty U	Normal (k=2)	+4.38 / -4.42	+3.48 / -3.44

Calculation for maximum uncertainty when 3m biconical antenna including a factor of k = 2 is used:

$U = 2u_c(y) = 2x(+2.19) = +4.38$ dB And $U = 2u_c(y) = 2x(-2.21) = -4.42$ dB