TEST REPORT

Report Number: 100216904MPK-001
Project Number: G100216904
November 2, 2010

Testing performed on the
Pulse Treatment System
Model Number: PER2000HD
to

EN 60601-1-2:2007
IEC 60601-1-2:2007

Class A

For
Pulsed Energy Technologies, LLC.

Test Performed by:	Test Authorized by:
Intertek	Pulsed Energy Technologies, LLC.
1365 Adams Court	8217 Lankershim Blvd #35
Menlo Park, CA 94025	North Hollywood, 91605

Prepared by: _____ **Date:** November 2, 2010
Marcos Rodriguez

Reviewed by: _____ **Date:** November 2, 2010
Ollie Moyrong

Report No. 100216904MPK-001

Equipment Under Test:	Pulse Treatment System
Trade Name:	Pulsed Energy Techlogies, LLC.
Model No.:	PER2000HD
Serial No.:	EMCMPK1
Applicant:	Pulsed Energy Technologies, LLC.
Contact:	Mr. Josh Silver
Address:	8217Lankershim Blvd #35 North Hollywood, 91605
Country	USA
Tel. number:	(818) 504-9507
Email:	josh@pulsedenergytech.com
Applicable Regulation:	EN 60601-1-2:2007 IEC 60601-1-2:2007
Equipment Class:	Class A
Date of Test:	October 20 - November 2, 2010

We attest to the accuracy of this report:

Marcos Rodriguez
Test Engineer

Ollie Moyrong
Engineering Manager

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TEST PLAN

The model: PER2000HD shall be tested according to the table below:

EN 60601-1-2:2007 and IEC 60601-1-2:2007 Proposed Tests			
Basic Standard	**Test Specifications**	**Applicable Ports**	**Test Mode and Configuration**
CISPR 11	Radiated Emission	-	120VAC 60Hz and 230VAC, 50Hz*
CISPR 11	Conducted Emission	-	120VAC 60Hz and 230VAC, 50Hz
IEC 61000-4-2	Electrostatic Discharge, 8 kV air discharge	Enclosure	230VAC 50Hz
	Electrostatic Discharge, 6 kV contact discharge	Enclosure	
IEC 61000-4-3	RF Electromagnetic Fields, 80% AM (2 Hz) 3 V/m, 80 MHz - 2.5 GHz	Enclosure	230VAC 50Hz
IEC 61000-4-4	Fast Transient/Burst 2 kV, 5/50 nsec pulse, 5 kHz repetition freq.	AC Power	120VAC 60Hz and 230VAC 50Hz
	Fast Transient/Burst (Capacitive clamp) 1 kV, 5/50 nsec pulse, 5 kHz repetition freq.	Input/Output Lines	230VAC 50Hz
IEC 61000-4-5	Surges, 1.2/50 (8/20) µS 2 kV (line to earth) 1 kV (line to line)	AC Power	120VAC 60Hz and 230VAC 50Hz
IEC 61000-4-6	Continuous Conducted RF, 80% AM (1 kHz) 3 V, 0.15-80 MHz	Input/Output Lines, AC/ DC Power	230VAC 50Hz
IEC 61000-4-8	Power Frequency Magnetic Field 3A(rms)/m at 50 Hz / 60Hz	Enclosure	230VAC 50Hz

1 The EUT does not contain signal and interconnecting cables greater than 3 meters.

* ONLY worse case test data is provided.

EN 60601-1-2:2007 and IEC 60601-1-2:2007 Proposed Tests			
Basic Standard	**Test Specifications**	**Applicable Ports**	**Test Mode and Configuration**
IEC 61000-4-11	Voltage Dips 30% reduction, 500 ms	AC Power	120VAC 60Hz and 230VAC 50Hz
	Voltage Dips 60% reduction, 100 ms	AC Power	120VAC 60Hz and 230VAC 50Hz
	Voltage Dips > 95% reduction, 10 ms	AC Power	120VAC 60Hz and 230VAC 50Hz
	Voltage Interruptions > 95% reduction, 5000 ms	AC Power	120VAC 60Hz and 230VAC 50Hz
IEC 61000-3-2	Emissions: Harmonics Disturbances	AC Power	230VAC 50Hz
IEC 61000-3-3	Emissions: Voltage Fluctuation	AC Power	230VAC 50Hz

EXECUTIVE SUMMARY

Test Description	Test Parameter	Pass/Fail Comments
IEC 60601-1-2		
IEC 61000-4-2 Electrostatic Discharge	±6 contact discharge ±8 kV air discharge	Complies
IEC 61000-4-3 Radiated, Radio-Frequency, Electromagnetic Field Immunity	Radiated Immunity, 3 V/m, 80 –2500 MHz, 80% AM at 1 kHz	Complies
IEC 61000-4-4 Electrical Fast Transient/Burst	AC power ports, ±2 kV	Complies
	Input/output lines, ±1.0 kV	Complies
IEC 61000-4-5 Surge Immunity	AC power ports, ±1 and ±2 kV	Complies
IEC 61000-4-6 Immunity to Conducted Disturbances, induced by Radio-Frequency Fields	AC power ports 0.15-80MHz, 3 V_{rms}, 80% AM at 1 kHz	Complies
	Input/output lines 0.15-80MHz, 3 V_{rms}, 80% AM at 1 kHz	Complies
IEC 61000-4-8 Power Frequency Magnetic Field Immunity	3 A_{rms}/m	Complies
IEC 61000-4-11 Voltage Dips and Short Interruptions Immunity	AC power lines Reduction 30%, 25 periods Reduction 60%, 5 periods Reduction 100%, 0.5 period Reduction 100%, 250 periods	Complies

EXECUTIVE SUMMARY – CONTINUED

Test Description	Class	Pass/Fail Comments
Radiated Emissions		
• CISPR 11	A	Complies
Conducted Emissions (AC Mains)		
• CISPR 11	A	Complies
Harmonic Current Emissions		
• IEC 61000-3-2	-	Complies
Voltage Fluctuations and Flicker		
• IEC 61000-3-3	-	Complies

1.0 Job Description

1.1 Client Information

The Pulse Treatment System has been tested at the request of:

Company: Pulsed Energy Technologies, LLC.
8217 Lankershim Blvd #35
North Hollywood, CA 91605
Name of contact: Mr. Josh Silver,
Telephone: (818) 504-9507
Email: josh@pulsedenergytech.com

1.2 Test Plan Reference:

Tests were performed to the following standards:

- EN 60601-1-2:2007
- IEC 60601-1-2:2007

1.3 Equipment Under Test (EUT)

Equipment Under Test		
Description	**Model Number**	**Serial Number**
Pulse Treatment System	PER 2000 HD	EMCMPK1

EUT receive date: October 20, 2010

EUT receive condition: The EUT was received in good condition with no apparent damage.

Test start date: October 22, 2010

Test completion date: November 2, 2010

The test results in this report pertain only to the item tested.

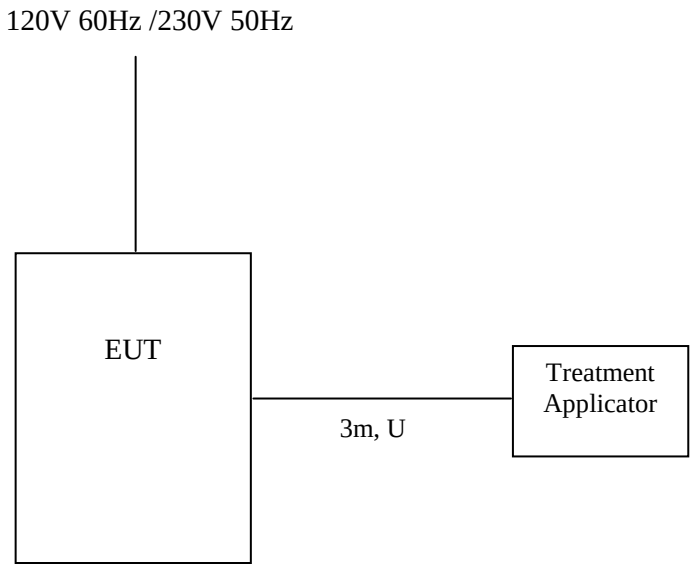
Pulsed Energy Technologies, LLC. supplied the following description of the EUT:

The PER2000HD is a High Power Pulsed Electro Magnetic Field Therapy machine.

1.4 System Components

None. The EUT was a stand-alone system.

1.5 System Block Diagram



NOTE: For 120V use, the power cord runs directly to the system.
For 230V use, the AC power cord is connected to an external step down transformer.

S = Shielded **U** = Unshielded	**F** = With Ferrite **m** = Length in Meters

1.6 Justification

The EUT was configured for testing in a typical configuration, as specified by Pulsed Energy Technologies, LLC. The EUT was evaluated in floor standing configuration. External I/O cables, which represented typical usage were connected for the purpose of testing.

1.7 Mode(s) of operation

Continuously applying treatment to treatment applicator.

1.8 Modifications required for compliance

No modifications were made during compliance testing in order to bring the product into compliance.

1.9 Performance Criteria

The following observations are considered as failures:

If the system stops applying treatment a failure has occurred.

2.0 Test Environment for Immunity Testing

2.1 Test Facility

The test facility is located at 1365 Adams Court, Menlo Park, California. The site meets the characteristics of CISPR 16-1 and ANSI C63.4. Ambient temperature is maintained at 20° C, with an approximate relative humidity of 50%.

The immunity test site is a controlled environment lab with ground planes and copper top tables as specified in IEC 61000-4-2, IEC 61000-4-4, and IEC 61000-4-6.

Radiated RF immunity testing is performed in a calibrated anechoic chamber. This room meets the field uniformity requirements of IEC 61000-4-3.

The A2LA certificate number for this site is 1755-01.

2.2 Test Equipment

Table 2-1 contains a list of the test equipment used during the testing.

Table 2-1 List of Test Equipment

Equipment	Manufacturer	Model/Type	Serial #	Cal Int	Cal Due
ESD Simulator	Schaffner	NSG 435	005045	12	09/07/11
Power Amplifier	IFI	SMX100	0994-4505	#	#
Power Amplifier	Milmega	AS0104-30R	992995	#	#
Yellow YORK Antenna	Schaffner	CBL6140A	1147	#	#
Horn Antenna	EMCO	3115	9509-3712	12	11/03/10
Signal Generator	HP	8663A	2416A06846	12	07/29/11
Signal Generator	Rohde & Schwarz	SMU 200A	102499	12	04/28/11
Directional Coupler	IFI	CDD1000805	204A	12	09/08/11
Directional Coupler	Krytar	101020020	70799	12	05/25/11
Power Meter	HP	437B	3125U24637	12	05/28/11
Signal Generator	HP	8656A	2416A06846	12	07/29/11
Coupling/Decoupling Network	FCC	801-M3-25A	43	12	04/22/11
Directional Couple Dual	IFI	CDD250-01-50	8520	12	07/16/11
Current Injection Probe	Solar Electronic	9108	956422	12	07/17/11
Current Probe	Solar Electronic	6741-1	973532	12	06/07/11
Burst Tester	Haefely	PEFT 4010	148400	12	07/22/11
Surge Generator	Haefely	PSURGE 4010	170857	12	03/09/11
Universal Power Analyzer	Voltech Instruments	PM6000	100006700037	12	03/22/11
Power Supply	Behlman	ACP Series	1245	*	*
Loop Antenna	ITS	MLA-01	001	*	*

* Calibration performed by ITS prior to the test. # Calibration not required

3.0 Immunity Test Results

3.1 Electrostatic Discharge Immunity

3.1.1 Test Parameters

Environmental phenomenon	Test Specification	Basic Standard	Remarks
Electrostatic discharge	±6 kV (contact discharge) ±8 kV (air discharge)	IEC 61000-4-2	

3.1.2 Test Procedure

Diagram 3-1 shows the test configuration for tabletop and floor standing EUT. The ESD test level is set and discharges of positive and negative polarization are applied to the following locations:

1. The horizontal ground plane
2. The vertical coupling plane
3. The conductive surfaces under the test sample,
4. Along all seams and control surfaces of the EUT, that are accessible to user during normal usage

Inside the EUT, only the points and/or surfaces that have to be accessed to perform user's maintenance are included in the test unless the manufacturer prescribes clear instructions for the use of ESD precautions (e.g. changing the print cartridge for inkjet printers). ESD discharges are not applied to any point of the EUT which are accessible only for maintenance purposes, excluding customer's maintenance, unless different instruction is given.

If a discharge occurs and an error is caused, the type of error, discharge level and location is recorded.

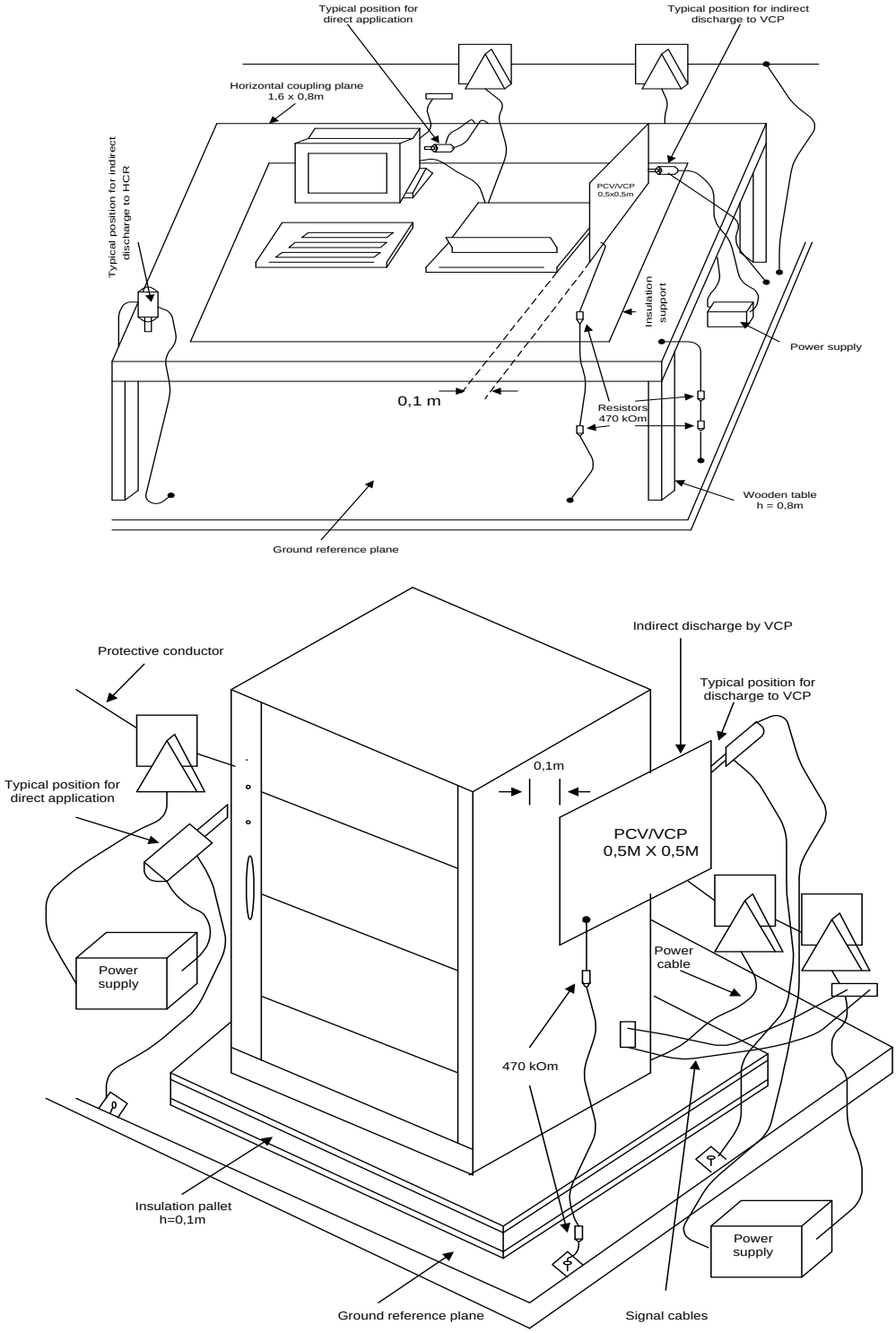


Diagram 3-1 ESD Test Setup – Tabletop and Floor Standing Equipment

3.1.3 Test Results

Tested By:	Marcos Rodriguez
Test Date:	October 28, 2010

Temp/RH: 20°C/50%

Electrostatic Discharge Immunity Test Direct Contact Discharge on Metallic Surfaces IEC 61000-4-2		
Location of Discharge	**Voltage +/- kV**	**Event**
Conductive surfaces on all parts of the chassis (top, front, back, left and right)	2, 4 & 6	No susceptibility was observed
Exposed conductive nuts and screws	2, 4 & 6	No susceptibility was observed

Electrostatic Discharge Immunity Test Direct Air Discharge on Insulated Surfaces IEC 61000-4-2		
Location of Discharge	**Voltage +/- kV**	**Event**
Insulated surfaces on all parts of the chassis including seams (top, front, back, left and right) of the controller and hand wand	2, 4, & 8	No susceptibility was observed
Insulated external I/O cables including power	2, 4, & 8	No susceptibility was observed

Note: Discharge points are indicated by X's, Green=Air Discharge and Blue=Direct Contact.

Electrostatic Discharge Immunity Test Discharges to Coupling Planes IEC 61000-4-2		
Location of Discharge	**Voltage +/- kV**	**Event**
HCP – front side of EUT	2, 4 & 6	No susceptibility was observed
HCP - back side of EUT	2, 4 & 6	No susceptibility was observed
HCP - left side of EUT	2, 4 & 6	No susceptibility was observed
HCP - right side of EUT	2, 4 & 6	No susceptibility was observed
VCP - front side of EUT	2, 4 & 6	No susceptibility was observed
VCP - back side of EUT	2, 4 & 6	No susceptibility was observed
VCP - left side of EUT	2, 4 & 6	No susceptibility was observed
VCP - right side of EUT	2, 4 & 6	No susceptibility was observed

HCP indicates Horizontal Coupling Plane
VCP indicates Vertical Coupling Plane

Results	**Complies**

3.1.4 Test Configuration Photographs

The following photographs show the testing configurations used.

Electrostatic Discharge Immunity Setup Photograph

3.1.4 Test Configuration Photographs

Electrostatic Discharge Immunity Setup Photograph

3.2 Radiated, Radio-Frequency, Electromagnetic Field Immunity

3.2.1 Test Parameters

Environmental phenomenon	Test Specification	Basic Standard	Remarks
Radio-frequency electromagnetic field Amplitude modulated	80 to 2500 MHz 3 V/m (unmodulated, r.m.s.) 80 % AM (1 kHz)	IEC 61000-4-3	

3.2.2 Test Procedure

Diagram 3-2 shows the test configuration. The test sample is set into operation and then monitored for degradations in performance. The RF test signal is set by a PC controlled process that automates the signal power leveling for field uniformity as the test signal is swept through the testing range. The sweep rate is $1.5x10^{-3}$ decades per second. The step size is no larger than 1% of the fundamental. The dwell time is at least 3 seconds. The EUT to transmit antenna distance is 3 meters, unless otherwise indicated.

If an error is detected during testing, the field strength is manually reduced until the error corrects, then increased until the error begins to occur again. This RF level, the frequency, and the error effects created are hence noted before continuing. The procedure is performed in both in both horizontal and vertical antenna polarities.

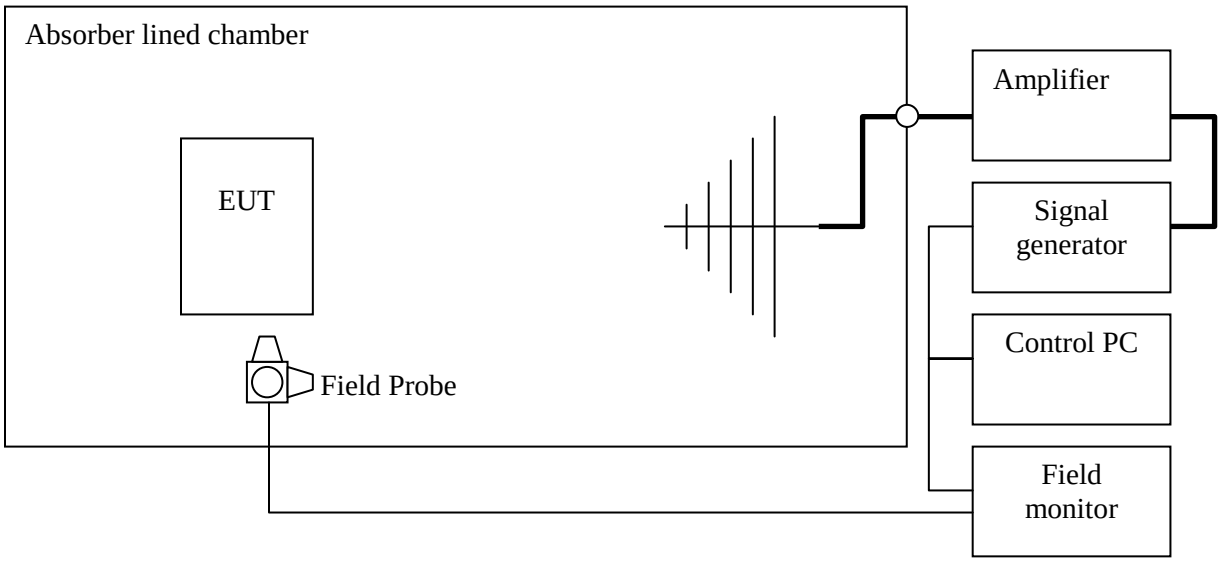


Diagram 3-2 Radiated, Radio-Frequency, Electromagnetic Field Immunity Test Setup

3.2.3 Test Results

Tested By:	Marcos Rodriguez
Test Date:	October 23, 2010

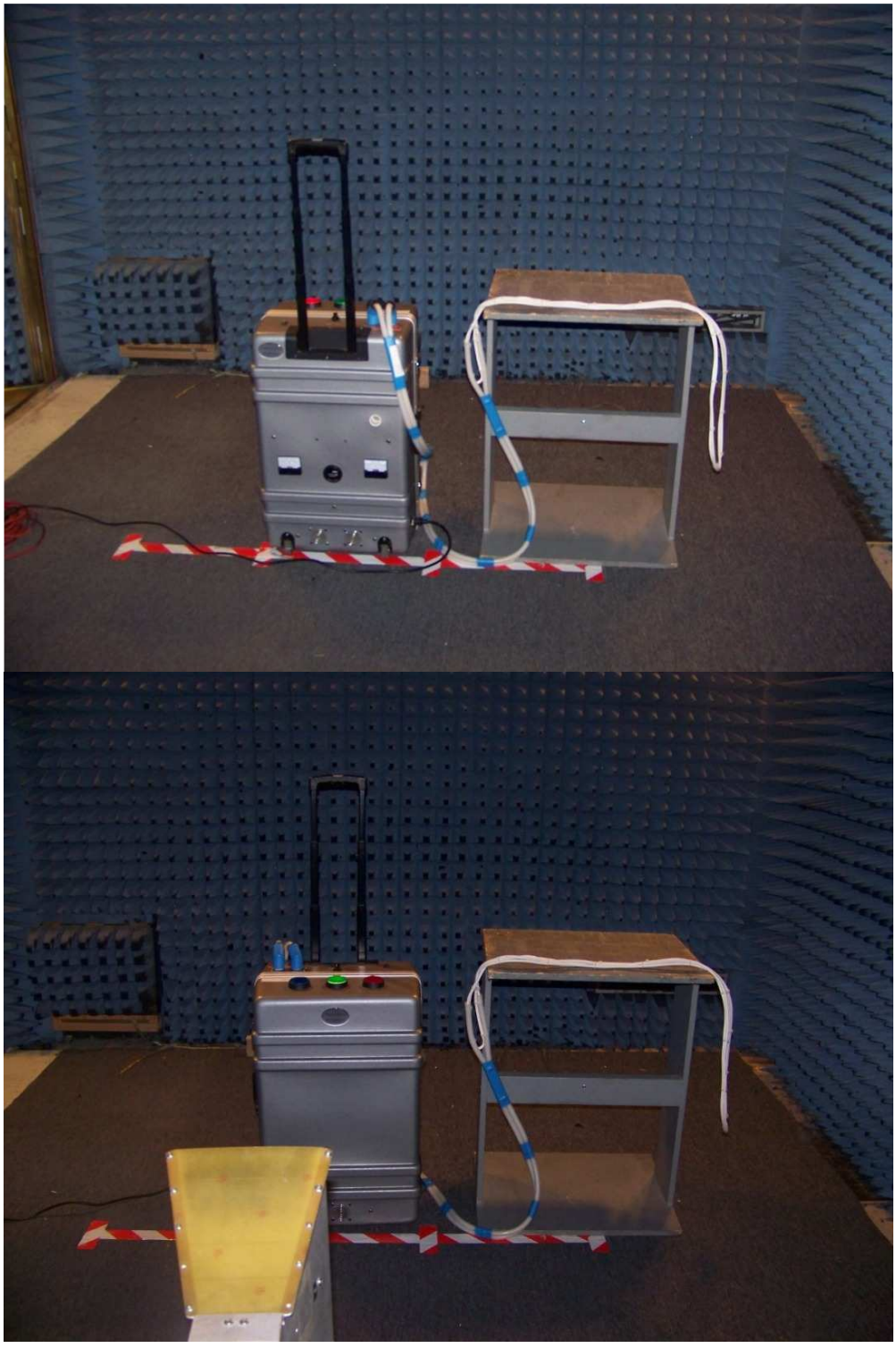
Temp/RH: 20°C/50%

Radiated, Radio-Frequency, Electromagnetic Field Immunity Test IEC 61000-4-3				
Frequency (MHz)	**Field Strength (V/m)**	**Polarity (H/V)**	**Location**	**Description of Susceptibility**
80-2500	3	H & V	Front side of the EUT	No susceptibility was observed.
80-2500	3	H & V	Back side of the EUT	No susceptibility was observed.
80-2500	3	H & V	Right side of the EUT	No susceptibility was observed.
80-2500	3	H & V	Left side of the EUT	No susceptibility was observed.

Results	**Complies**

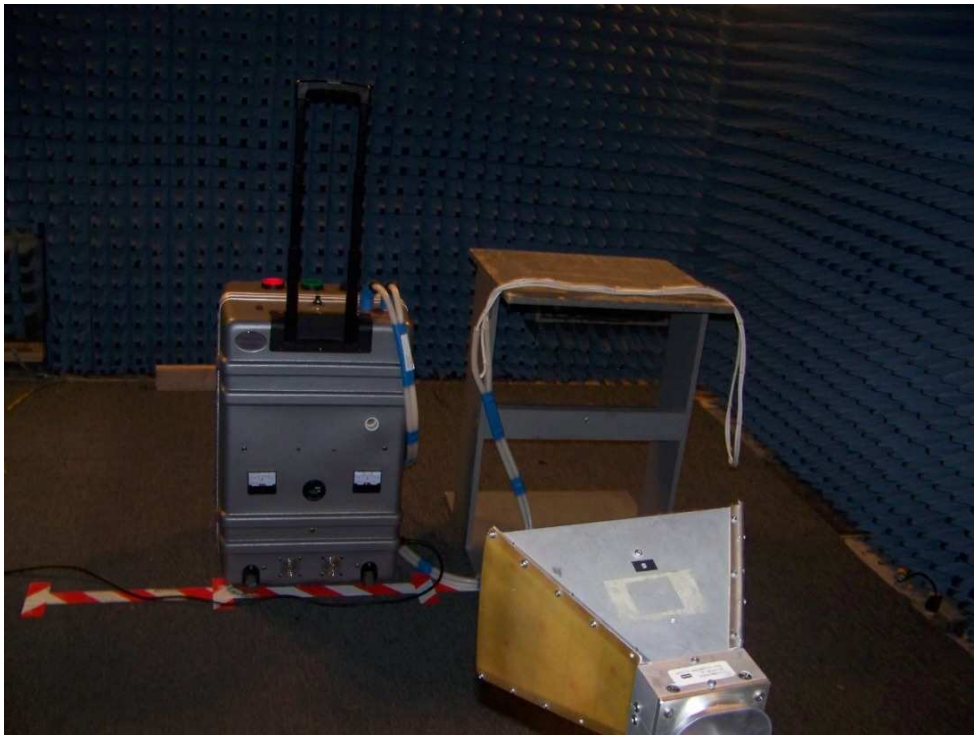
3.2.4 Test Configuration Photographs

The following photographs show the testing configurations used.



Radiated, Radio-Frequency, Electromagnetic Field Immunity Setup Photograph

3.2.4 Test Configuration Photograph (Continued)



Radiated, Radio-Frequency, Electromagnetic Field Immunity Setup Photograph

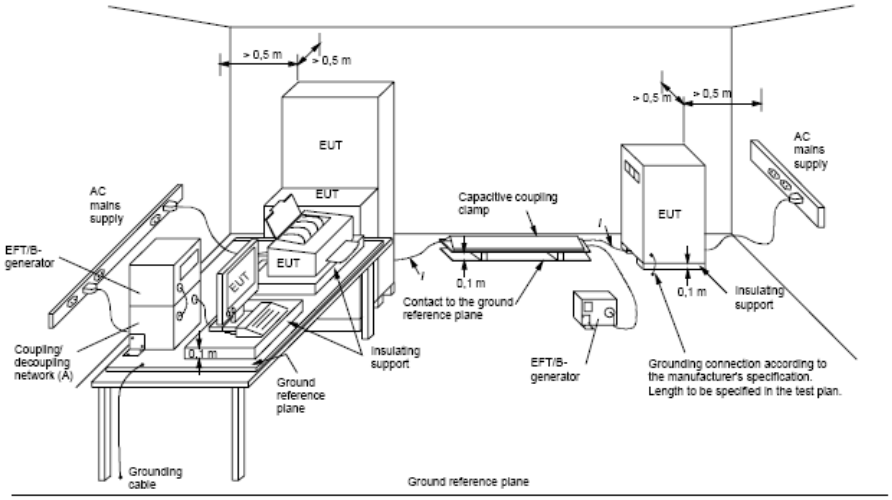
3.3 Electrical Fast Transient/Burst Immunity

3.3.1 Test Parameters

Environmental phenomenon	Test Specification	Basic Standard	Remarks
Fast transients on Input/output lines	±1.0 kV 5/50 Tr/Th ns 5 kHz repetition	IEC 61000-4-4	
Fast transients on input ac power ports[i]	±2.0 kV 5/50 Tr/Th ns 5 kHz repetition	IEC 61000-4-4	

3.3.2 Test Procedure

The test sample was connected to the test equipment, as shown in Diagram 3-3 and monitored for performance. The test level is set, and the test signal of positive and negative polarization is applied for the required time to one side of the line (L). If an error occurs, the test level is reduced until the EUT recovers. The level is then increased until the threshold level is reached. This threshold and the error conditions are noted. This procedure is repeated while injecting into Neutral (N), and then ground. Using a capacitive coupling plate as called out in IEC 61000-4-4; the procedure is then repeated on signal and I/O lines whenever this is applicable.

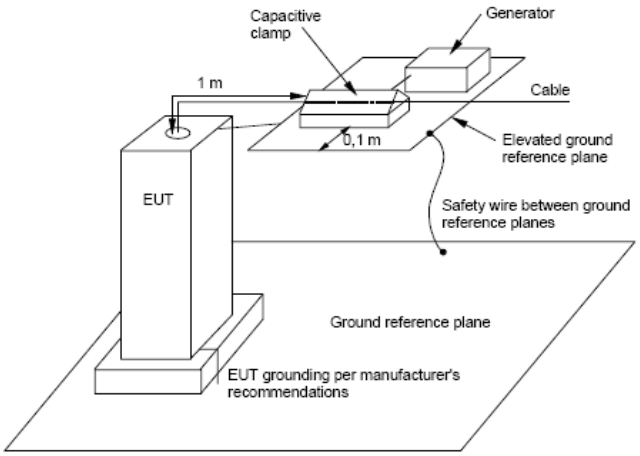


Key

l length between clamp and the EUT to be tested (should be 0,5 m ± 0,05 m)

(A) location for supply line coupling

(B) location for signal lines coupling



NOTE The clamp may be mounted on the wall of a shielded room or any other grounded surface and bonded to the EUT. For large, floor standing systems with cables exiting at the top, the clamp could also be centred 10 cm above the EUT and have cables drop through the centre of the plane.

Diagram 3-3 Electrical Fast Transient/Burst Immunity Test Setup – Tabletop and Floor Standing Equipment

3.3.3 Test Results

Tested By:	Marcos Rodriguez
Test Date:	October 24, 2010

Temp/RH: 20°C/50%

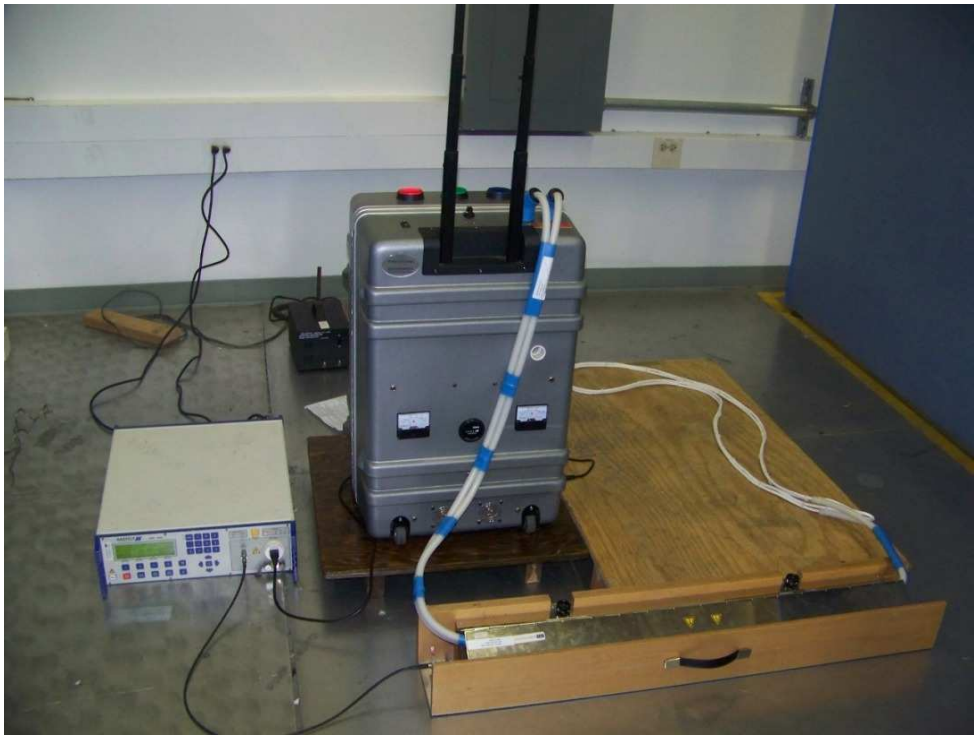
Electrical Fast Transient/Burst Immunity Test AC Power Port IEC 61000-4-4		
Cable Under Test	**Level and Polarity (+/- kV)**	**Description of Susceptibility**
120VAC 60Hz and 230VAC 50Hz		
L1-L2-PE to GND	0.5, 1.0 & 2	No susceptibility observed

Electrical Fast Transient/Burst Immunity Test Signal Lines EN61000-4-4		
Cable Under Test	**Level and Polarity (+/- kV)**	**Description of Susceptibility**
Treatment Cable	0.5 & 1.0	No susceptibility observed

Results	**Complies**

3.3.4 Test Configuration Photographs

The following photographs show the testing configurations used.



Electrical Fast Transient/Burst Setup Photograph

3.4 Surge Immunity

3.4.1 Test Parameters

Environmental phenomenon	Test Specification	Basic Standard	Remarks
Surge on input ac power ports	±1.0 kV line to line ±2.0 kV line to earth 1.2/50 (8/20) Tr/Th µs	IEC 61000-4-5	

3.4.2 Test Procedure

Diagram 3-4 shows the test configuration. The test sample is connected to the test equipment and monitored for performance. The test level is set and the test signal of positive and negative polarization is applied between one side of the Line (L1) and ground. When an error occurs, the test level is reduced until the error recovers. The test level is then increased until the threshold level is reached. This threshold and any error conditions are noted. If no error is detected, the injected voltage is increased to the next test level. This procedure was then repeated while injecting into Line 2 (L2). The pulse is then applied between L1 and L2.

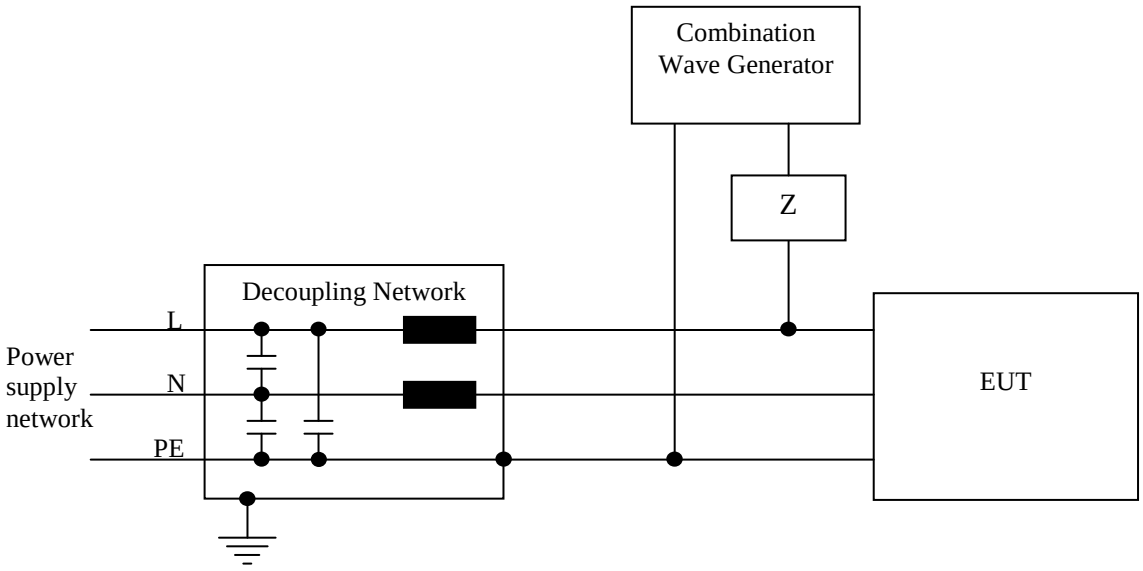


Diagram 3-4 Surge Immunity Test Setup

3.4.3 Test Results

Tested By:	Marcos Rodriguez
Test Date:	October 29, 2010

Temp/RH: 20°C/50%

Surge Immunity IEC 61000-4-5 AC Line to Ground (Common Mode)			
Line	**Polarity & Level (+/- kV)**	**Phase angle (Degree)**	**Description of Susceptibility**
120VAC 60Hz and 230VAC 50Hz			
L1 - GND	0.5, 1 & 2	0°, 90°, 180°, 270°	No susceptibility was observed
L2 - GND	0.5, 1 & 2	0°, 90°, 180°, 270°	No susceptibility was observed

Surge Immunity IEC 61000-4-5 AC Line to Line (Differential Mode)			
Line	**Polarity & Level (+/- kV)**	**Phase angle (Degree)**	**Description of Susceptibility**
120VAC 60Hz and 230VAC 50Hz			
L1 - L2	0.5 & 1	0°, 90°, 180°, 270°	No susceptibility was observed

Results	**Complies**

3.4.4 Test Configuration Photographs

The following photographs show the testing configurations used.

Surge Immunity Setup Photograph

3.5 Immunity to Conducted Disturbances, induced by Radio-Frequency Fields

3.5.1 Test Parameters

Environmental phenomenon	Test Specification	Basic Standard	Remarks
RF continuous conducted on Input/output lines	0.15 to 80 MHz 3 V_{rms} (unmodulated) 80% AM (1 kHz)	IEC 61000-4-6	
RF continuous conducted on input ac power ports	0.15 to 80 MHz 3 V_{rms} (unmodulated) 80% AM (1 kHz)	IEC 61000-4-6	

3.5.2 Test Procedure

Diagram 3-5 shows the test configuration. The test field is calibrated for field uniformity verifications using calibration fixtures. RF energy from a power amplifier is coupled to one of two types of coupling devices, a CDN or an EM Clamp and outputs to an RF Power meter. The frequency range is swept incrementally from 150 kHz to 80 MHz with an incremental step size of 1%. When the desired test voltage level is attained, that drive level is saved in the file. In the test mode, the stored voltage levels at each frequency are regenerated with a modulation depth of 80% (1kHz sine wave) while the EUT is monitored for failures.

The RF test signal is set by a PC controlled process that automates the signal power leveling as the test signal is swept through the testing range.

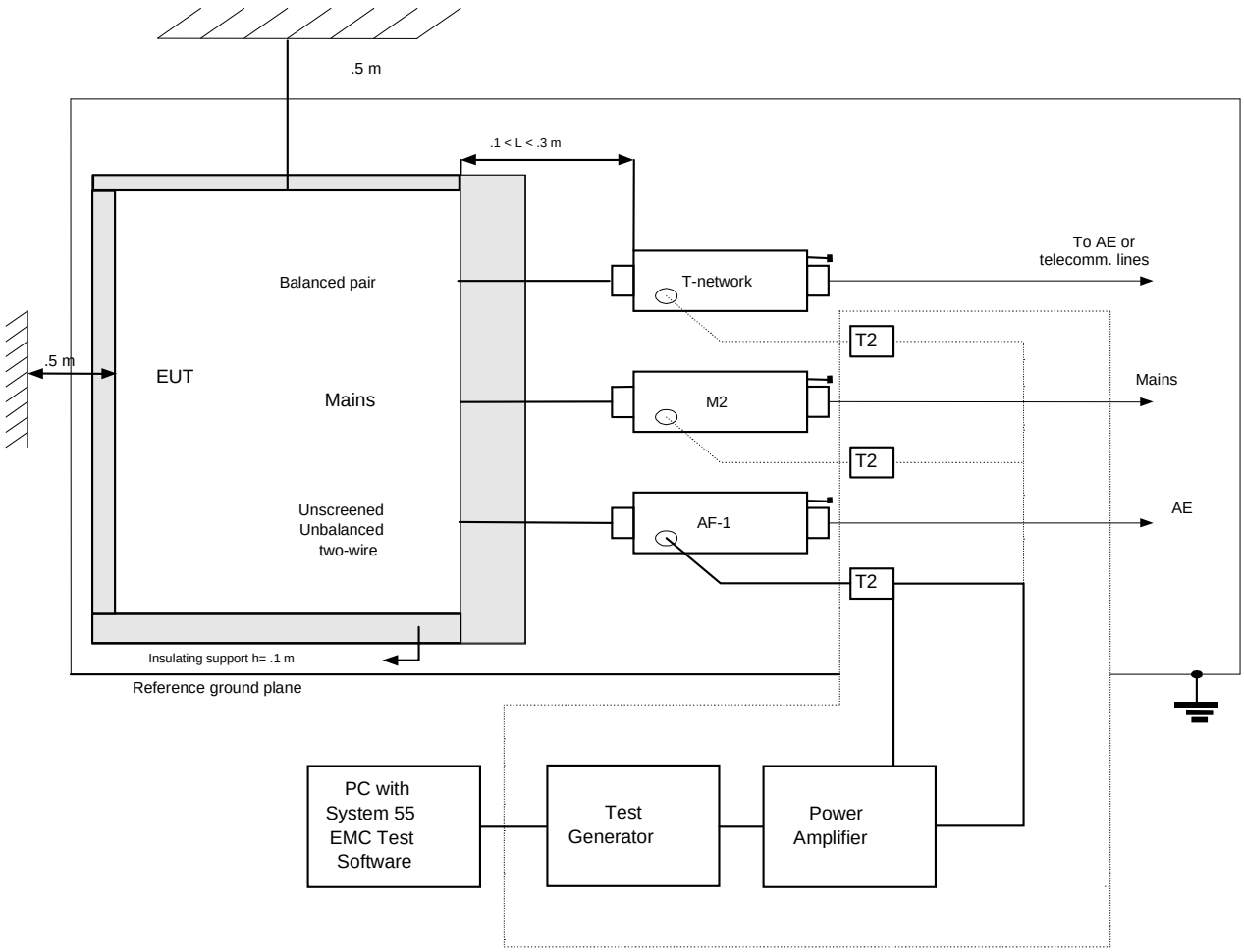


Diagram 3-5 Immunity to Conducted Disturbances, induced by Radio-Frequency Fields Test Setup

3.5.3 Test Results

Tested By:	Marcos Rodriguez
Test Date:	October 24, 2010

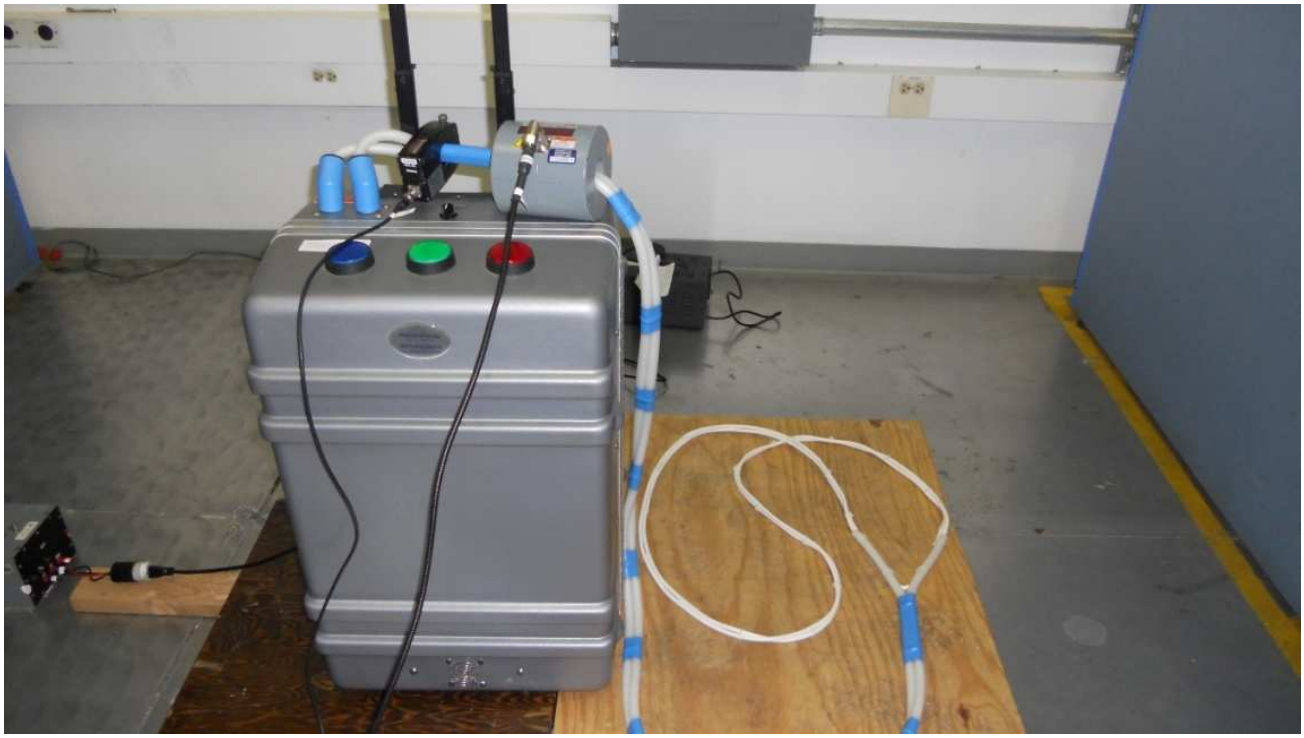
Temp/RH: 20°C/50%

Immunity to Conducted Disturbances, induced by Radio-Frequency Fields Test IEC 61000-4-6			
Frequency MHz	**Port Under Test**	**Level (V)**	**Description of Susceptibility**
0.15 - 80.0	AC Mains	3	No susceptibility was observed
0.15 - 80.0	Treatment Cable	3	No susceptibility was observed

Results	**Complies**

3.5.4 Test Configuration Photographs

The following photographs show the testing configurations used.



Immunity to Conducted Disturbances, induced by Radio-Frequency Fields Setup Photograph

3.6 Power-Frequency Magnetic Field Immunity

3.6.1 Test Parameters

Environmental phenomenon	Test Specification	Basic Standard	Remarks
Power-frequency magnetic field	3 A/m (rms), 50 and 60 Hz	IEC 61000-4-8	

3.6.2 Test Procedure

Diagram 3-6 shows the test configuration. A calibration is performed before testing is started. A loop of 1-meter diameter wire envelops the EUT with a minimum distance of 10 cm from the EUT to the loop. The resulting magnetic field is monitored with a Magnetic field sensor, which acts as the EUT in a calibration run, while placed in the center of the test loop. The output current necessary to generate the proper field in each configuration is then recorded. The EUT is then placed in the loop; the calibrated output current is set and monitored for performance. If an error occurs, the test level is reduced until the test system recovers. The test level is then increased until the threshold level is reached. This threshold and any error conditions are noted.

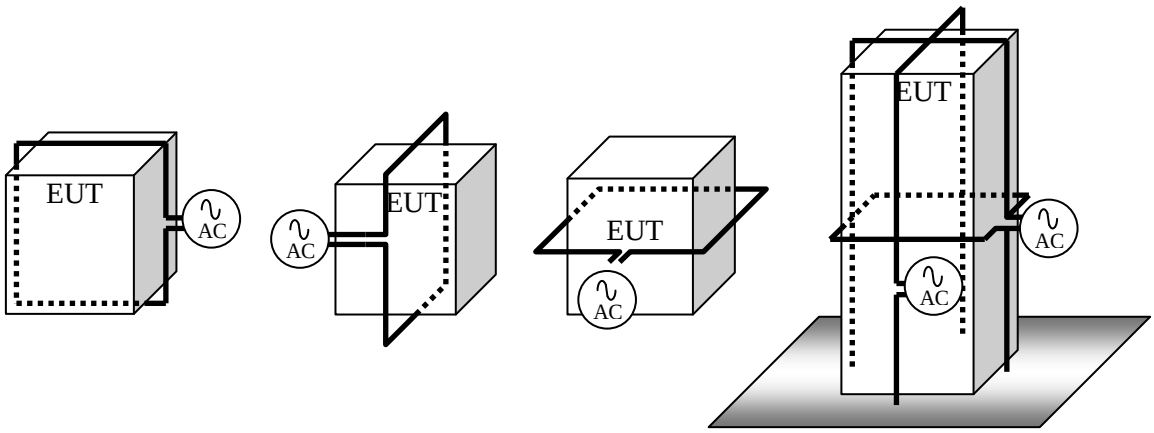


Diagram 3-6 Power-Frequency Magnetic Field Test Setup

3.6.3 Test Results

Tested By:	Marcos Rodriguez
Test Date:	October 28, 2010

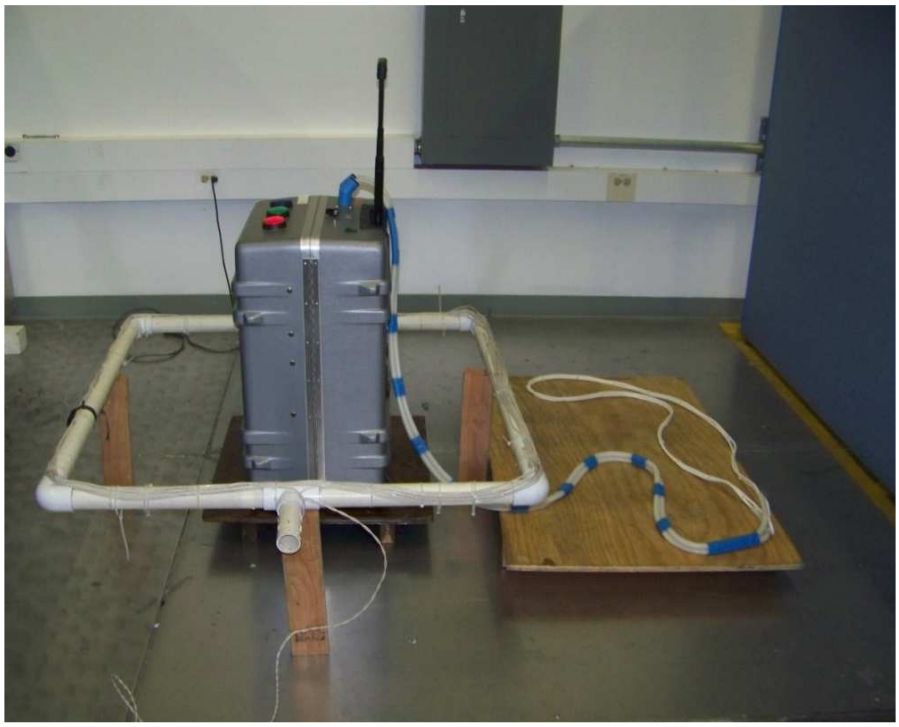
Temp/RH: 20°C/50%

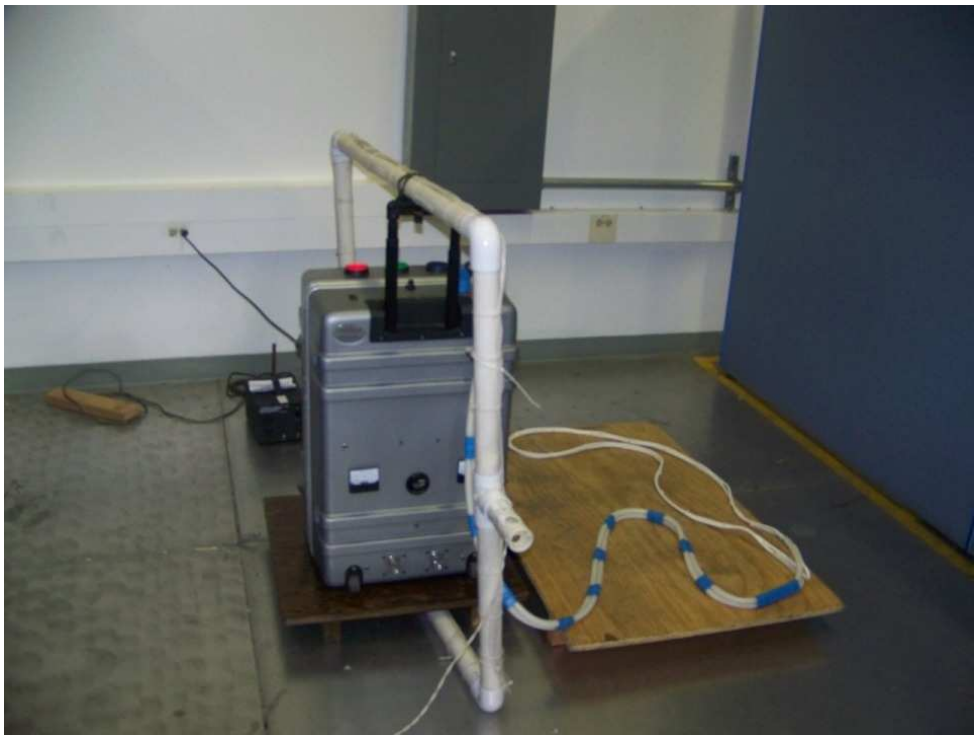
Power Frequency Magnetic Field Immunity IEC 61000-4-8		
Loop Location	**Field Strength (A/m)**	**Description of Susceptibility**
Vertical, X-axis	3	No susceptibility was observed
Vertical, Y-axis	3	No susceptibility was observed
Horizontal, Z-axis	3	No susceptibility was observed

Results	**Complies**

3.6.4 Test Configuration Photographs

The following photographs show the testing configurations used.





Power-Frequency Magnetic Field Immunity Setup Photograph

3.7 Voltage Dips and Short Interruptions Immunity

3.7.1 Test Parameters

Environmental phenomenon	Test Specification	Basic Standard	Remarks
Voltage dips	>95% reduction 0.5 period	IEC 61000-4-11	
Voltage dips	30% reduction 25 periods	IEC 61000-4-11	
Voltage dips	60% reduction 5 periods	IEC 61000-4-11	
Voltage interruptions	>95% reduction 250 periods	IEC 61000-4-11	

3.7.2 Test Procedure

The test sample is connected to the mains dropout and voltage variation simulator as shown Diagram 3-7, and monitored for performance.

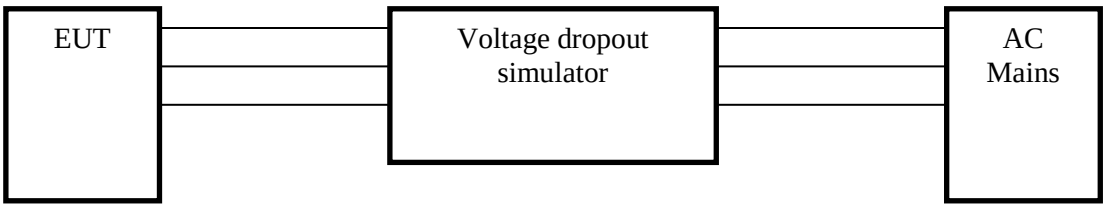


Diagram 3-7 Voltage Dips and Short Interruptions Immunity Test Setup

3.7.3 Test Results

Tested By:	Marcos Rodriguez
Test Date:	October 22, 2010

Temp/RH: 20°C/50%

AC Voltage Dips IEC 61000-4-11			
Test Ports	**Level (% drop)**	**Duration (ms)**	**Results**
120VAC 60Hz and 230VAC 50Hz			
AC Mains	100	10	No susceptibility was observed
AC Mains	30	500	No susceptibility was observed
AC Mains	60	100	No susceptibility was observed

AC Voltage Interruptions IEC 61000-4-11			
Test Ports	**Level (% drop)**	**Duration (ms)**	**Results**
120VAC 60Hz and 230VAC 50Hz			
AC Mains	100	5000	The EUT cycled power and returned to normal operation once power was restored

Results	**Complies**

3.7.4 Test Configuration Photographs

The following photographs show the testing configurations used.

Voltage Dips and Short Interruptions Immunity Setup Photograph

4.0 Test Environment for Emissions Testing

4.1 Test Facility

The test facility is located at 1365 Adams Court, Menlo Park, California. The test site is a 10-meter semi-anechoic chamber. The site meets the characteristics of CISPR 16-1 and ANSI C63.4. For measurements, a remotely controlled flush-mount metal-top turntable is used to rotate the EUT a full 360 degrees. A remote controlled non-conductive antenna mast is used to scan the antenna height from one to four meters.

The A2LA certificate number for this site is 1755-01.

4.2 Test Equipment

Table 4-1 contains a list of the test equipment used during the testing.

Table 4-1 List of Test Equipment

Equipment	Manufacturer	Model/Type	Serial #	Cal Int	Cal Due
RF Filter Section	Hewlett Packard	85460A	3448A00267	12	12/04/10
EMI Receiver	Hewlett Packard	8546A	3710A00373	12	12/04/10
BI-Log Antenna	Antenna Research	LPB-2513/A	1154	12	06/23/11
Pre-Amplifier	Sonoma	310N	185634	12	11/19/10
LISN	FCC	FCC-LISN-50-50-M-H	2011	12	09/07/11

4.3 Example Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor. Then by subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF – PA

Where FS = Field Strength in dB (μV/m)
RA = Receiver Amplitude (including preamplifier) in dB (μV)
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB (1/m)
PA= Preamplifier Factor in dB

Assume a receiver reading of 52.0 dB (μV) is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving field strength of 32 dB (μV/m).

RA = 52.0 dB (μV)
AF = 7.4 dB (1/m)
CF = 1.6 dB
PA = 29.0 dB
FS = RF + AF + CF – PA
FS = 52.0 + 7.4 + 1.6 – 29.0
FS = 32 dB (μV/m)

4.4 Measurement Uncertainty

Compliance of the product is based on the measured value. However, the measurement uncertainty is included for informational purposes.

Radiated Emission:
The uncertainty in the measured field strength is estimated as follows, for a minimum confidence probability of 95 %

Freq. Range	Detection Mode	Uncertainty
30 MHz to 200 MHz	Quasi-peak	± 4.4 dB
200 MHz to 1000 MHz	Quasi-peak	+ 5.0 / - 3.6 dB

Conducted Emission:
The uncertainty in the measured voltage is estimated as follows, for a minimum confidence probability of 95 %

Freq. Range	Detection Mode	Uncertainty
9 kHz to 150 kHz	Average	± 2.1 dB
	Quasi-peak	± 2.5 dB
150 kHz to 30 MHz	Average	± 2.4 dB
	Quasi-peak	± 2.6 dB

5.0 Emissions Test Results

5.1 Electromagnetic Radiated Disturbance

5.1.1 Test Limits

The following radiated emission limits apply to Group 2 Class A devices:

1.1.1.1 Class A Radiated Emission Limits, 10m Measuring Distance	
Frequency (MHz)	**On a test site (dBµV/m)**
0.15 to 0.49	95
0.49 to 1.705	85
1.705 to 2.194	90
2.194 to 3.95	85
3.95 to 20	70
20 to 30	60
30 to 47	68
47 to 68	50
68 to 80.872	63
80.872 to 81.848	78
81.848 to 87	63
87 to 134.786	60
134.786 to 136.414	70
136.414 to 156	60
156 to 174	74
174 to 188.7	50
188.7 to 190.979	60
190.979 to 230	50
230 to 400	60
400 to 470	63
470 to 1000	60

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

5.2 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor. Then by subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG
Where FS = Field Strength in dB (µV/m)
RA = Receiver Amplitude (including preamplifier) in dB (µV)
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in dB (1/m)
AG = Amplifier Gain in dB

Assume a receiver reading of 52.0 dB (µV) is obtained. The antennas factor of 7.4-dB and cable factor of 1.6 dB is added. The amplifier gain of 29 dB is subtracted, giving field strength of 32 dB (µV/m). This value in dB (µV/m) was converted to its corresponding level in µV/m.

RA = 52.0 dB (µV) AF = 7.4 dB (1/m)
CF = 1.6 dB AG = 29.0 dB

FS = 52 + 7.4 + 1.6 - 29 = 32 dB (µV/m)

Level in µV/m = Common Antilogarithm [{32 dB (µV/m)}/20] = 39.8 µV/m

5.1.2 Test Procedure

Measurements are conducted with a quasi-peak detector instrument in the frequency range of 30 MHz to 1000 MHz and with the average detector instrument in the frequency range above 1000 MHz. The measuring receiver meets the requirements of Section One of CISPR 16 and the measuring antenna correlates to a balanced dipole.

Measurements of the radiated field are made with the antenna located at a distance of 10 meters from the EUT. If the field-strength measurements at 10m cannot be made because of high ambient noise level or for other reasons, measurements of Class B equipment may be made at a closer distance, for example 3m. An inverse proportionality factor of 20 dB per decade should be used to normalize the measured data to the specified distance for determining compliance.

The antenna is adjusted between 1m and 4m in height above the ground plane for maximum meter reading at each test frequency.

The antenna-to-EUT azimuth is varied during the measurement to find the maximum field-strength readings.

The antenna-to-EUT polarization (horizontal and vertical) is varied during the measurements to find the maximum field-strength readings.

The EUT, where intended for tabletop use, is placed on a table whose top is 0.8m above the ground plane. The table is constructed of non-conductive materials. Its dimensions are 1m by 1.5m, but may be extended for a larger EUT.

Floor standing EUTs are placed on a horizontal metal ground plane and isolated from the ground plane by 3 to 12 mm of insulating material.

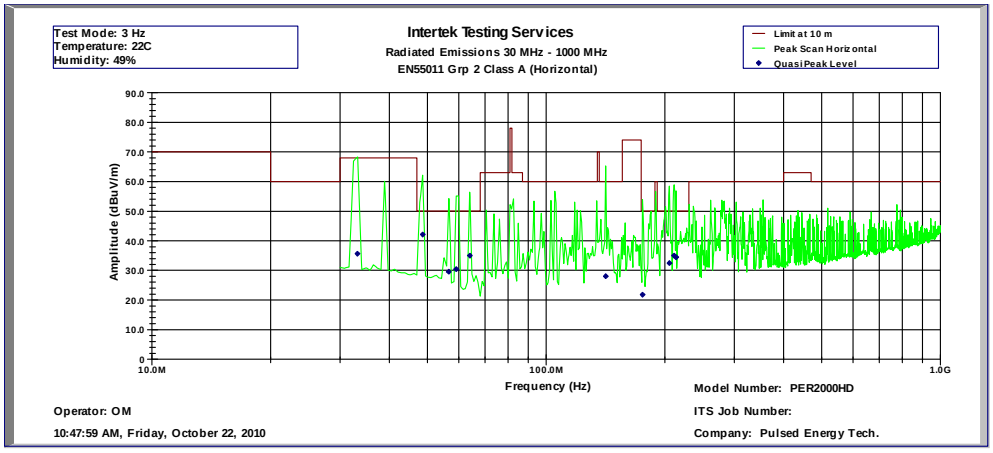
Equipment setup for radiated disturbance tests followed the guidelines of EN 55011.

Tested By:	Ollie Moyrong
Test Date:	October 22, 2010

5.1.3 Test Results

The EUT met the radiated disturbance requirements of EN 55011 for a Class A device.

EN 55011 Radiated Disturbance



Intertek Testing Services
Radiated Emissions 30 MHz - 1000 MHz
EN55011 Grp 2 Class A (QP-Horizontal)

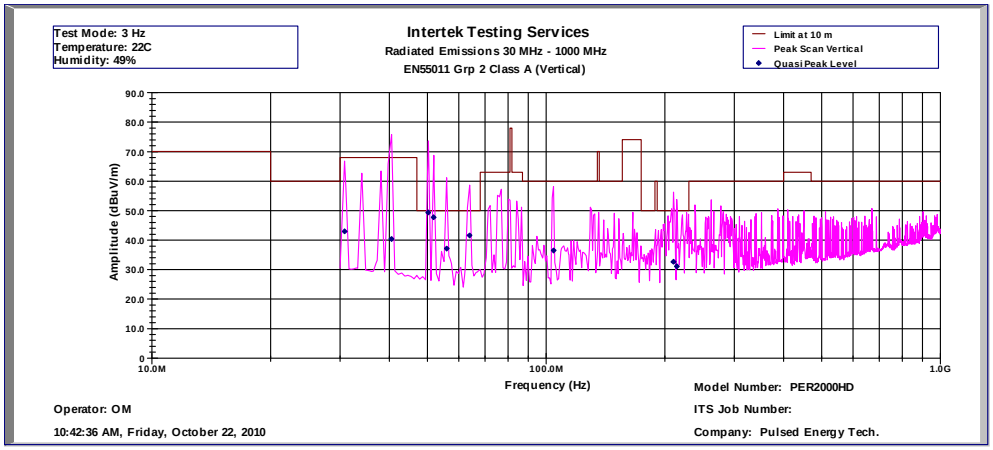
Operator: OM — Model Number: PER2000HD

10:47:59 AM, Friday, October 22, 2010 — Company: Pulsed Energy Tech.

Frequency	Quasi Pk FS	Limit@10m	Margin	RA	CF	AG	AF
Hz	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	(dB)	(dB)
2.135E+08	34.4	50.0	-15.6	54.0	1.7	32.0	10.7
2.111E+08	35.0	50.0	-15.0	54.7	1.7	32.0	10.6
2.054E+08	32.4	50.0	-17.6	52.8	1.7	32.0	9.9
1.755E+08	21.8	50.0	-28.2	42.8	1.5	32.0	9.4
1.416E+08	28.0	60.0	-32.0	50.1	1.4	32.0	8.5
6.400E+07	35.0	50.0	-15.0	57.2	0.9	32.1	8.9
5.910E+07	30.4	50.0	-19.6	50.9	0.9	32.1	10.7
5.660E+07	29.5	50.0	-20.5	49.0	0.9	32.1	11.7
4.860E+07	42.1	50.0	-7.9	58.6	0.8	32.1	14.8
3.320E+07	35.6	68.0	-32.4	49.7	0.7	32.1	17.3

Test Mode: 3 Hz
Temperature: 22C
Humidity: 49%

5.1.3 Test Results (Continued)



Intertek Testing Services
Radiated Emissions 30 MHz - 1000 MHz
EN55011 Grp 2 Class A (QP-Vertical)

Operator: OM — Model Number: PER2000HD

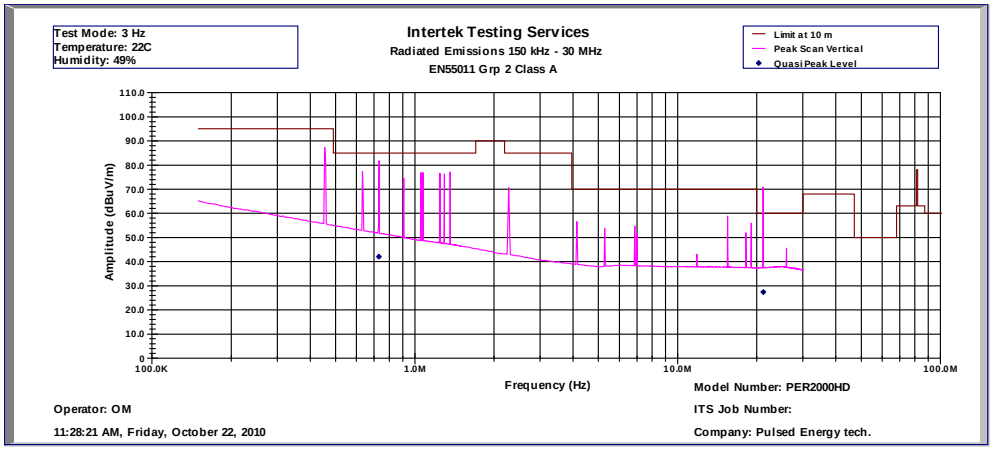
10:42:36 AM, Friday, October 22, 2010 — Company: Pulsed Energy Tech.

Frequency	Quasi Pk FS	Limit@10m	Margin	RA	CF	AG	AF
Hz	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	(dB)	(dB)
2.143E+08	31.1	50.0	-18.9	50.1	1.7	32.0	11.3
2.103E+08	32.6	50.0	-17.4	51.9	1.7	32.0	11.0
1.044E+08	36.5	60.0	-23.5	56.4	1.2	32.0	10.9
6.390E+07	41.6	50.0	-8.4	63.2	0.9	32.1	9.5
5.590E+07	37.1	50.0	-12.9	57.5	0.9	32.1	10.8
5.180E+07	47.7	50.0	-2.3	66.4	0.8	32.1	12.5
5.020E+07	49.4	50.0	-0.6	67.5	0.8	32.1	13.1
4.050E+07	40.4	68.0	-27.6	56.4	0.7	32.1	15.3
3.080E+07	43.0	68.0	-25.0	57.3	0.6	32.1	17.1

Test Mode: 3 Hz
Temperature: 22C
Humidity: 49%

Results: **Complies** by 0.6dB between 30MHz to 1GHz

5.1.3 Test Results (Continued)



Intertek Testing Services
Radiated Emissions 150 kHz - 30 MHz
EN55011 Grp 2 Class A (QP)

Operator: OM

Model Number: PER2000HD

11:27:40 AM, Friday, October 22, 2010

Company: Pulsed Energy tech.

Frequency	Quasi Pk FS	Limit@10m	Margin	RA	CF	AG	AF
Hz	(dBuV/m)	(dBuV/m)	(dB)	(dBuV)	(dB)	(dB)	(dB)
730000	42.0	85.0	-43.0	24.8	0.1	32.1	49.2
2.120E+07	27.4	60.0	-32.6	24.4	0.5	32.1	34.5

Test Mode: 3 Hz
Temperature: 22C
Humidity: 49%

Results:	**Complies** by 22.2dB between 150kHz to 30MHz

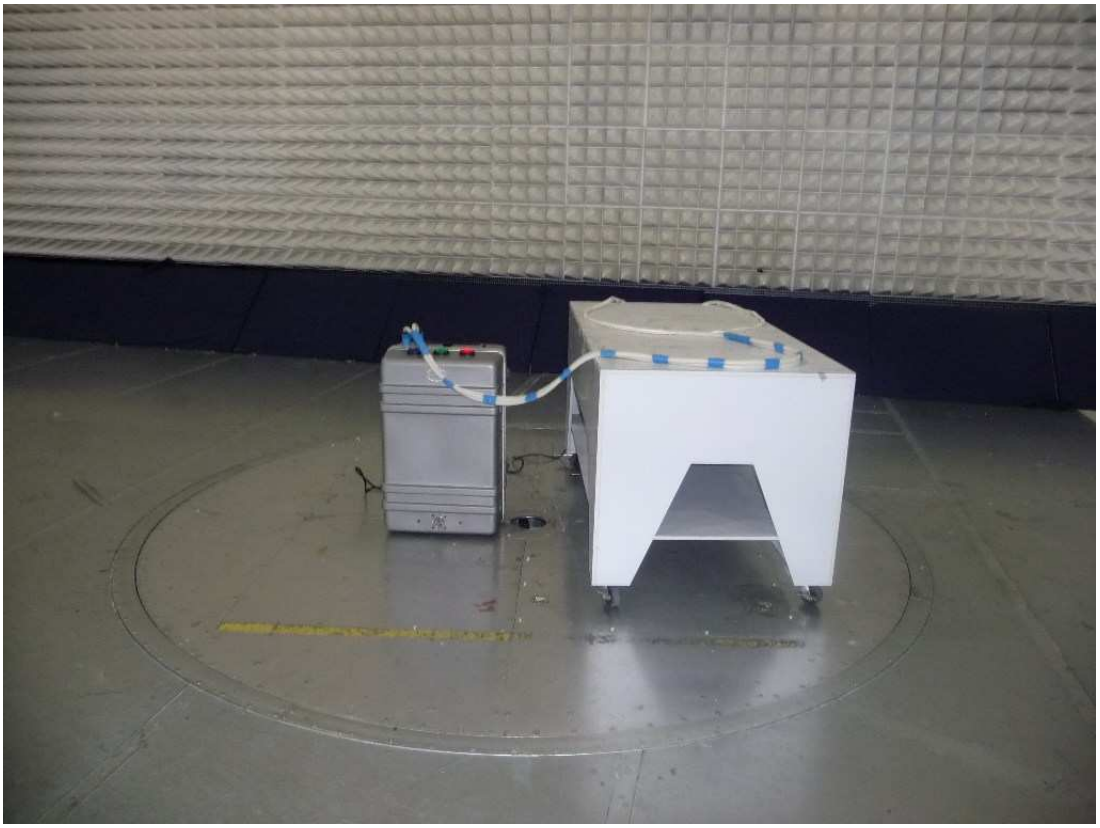
Note: Investigation was performed at 120V 60Hz and 230V 50Hz. The worst-case data was reported. 230V AC is the worse case configuration.

5.1.4 Test Configuration Photographs

The following photographs show the testing configurations used.

Electromagnetic Radiated Disturbance Setup Photograph

5.1.4 Test Configuration Photograph (Continued)



Electromagnetic Radiated Disturbance Setup Photograph

5.2 AC Mains Line-Conducted Disturbance

5.2.1 Test Limits

Table 6-1 EN 55011 Limits for Conducted Disturbance at the Mains Ports

Group 2 Class A ***AC Line Conducted Emission***		
Frequency band (MHz)	**Quasi-Peak (dBµV)**	**Average (dBµV)**
0.15 to 0.50	100	90
0.50 to 5	86	76
5 to 30	90 to 70 (decreases linearly with logarithm of frequency)	80 to 60 (decreases linearly with logarithm of frequency)

Note: At the transition frequency the lower limit applies.

5.2.2 Test Procedure

Measurements are carried out using quasi-peak and average detector receivers in accordance with CISPR 16. An AMN is required to provide a defined impedance at high frequencies across the power feed at the point of measurement of terminal voltage and also to provide isolation of the circuit under test from the ambient noise on the power lines. An AMN as defined in CISPR 16 shall be used.

The EUT is located so that the distance between the boundary of the EUT and the closest surface of the AMN is 0.8m.

Where a flexible mains cord is provided by the manufacturer, this shall be 1m long or if in excess of 1m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4m in length.

The EUT is arranged and connected with cables terminated in accordance with the product specification.

Conducted disturbance is measured between the phase lead and the reference ground, and between the neutral lead and the reference ground. Both measured values are reported.

The EUT, where intended for tabletop use, is placed on a table whose top is 0.8m above the ground plane. A vertical, metal reference plane is placed 0.4m from the EUT. The vertical metal reference-plane is at least 2m by 2m. The EUT shall be kept at least 0.8m from any other metal surface or other ground plane not being part of the EUT. The table is constructed of non-conductive materials. Its dimensions are 1m by 1.5m, but may be extended for larger EUT.

Floor standing EUT's are placed on a horizontal metal ground plane and isolated from the ground plane by 3 to 12 mm of insulating material. The metal ground plane extends at least 0.5m beyond the boundaries of the EUT and has minimum dimensions of 2m by 2m.

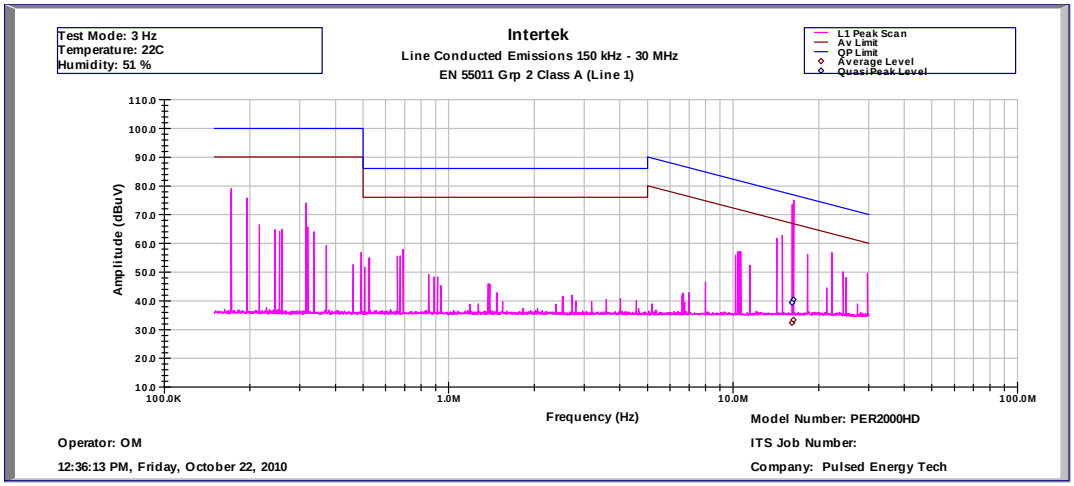
Equipment setup for conducted disturbance tests followed the guidelines of EN 55011.

Tested By:	Ollie Moryong & Jhory Albayde
Test Date:	October 22 & November 2, 2010

5.2.3 Test Results

The EUT met the conducted disturbance requirement of EN 55011 for a Class A device.

EN 55011 Conducted Disturbance at AC Mains



Intertek
Line Conducted Emissions 150 kHz - 30 MHz
EN 55011 Group 2 Class A (Line 1)

Operator: OM — Model Number: PER2000HD

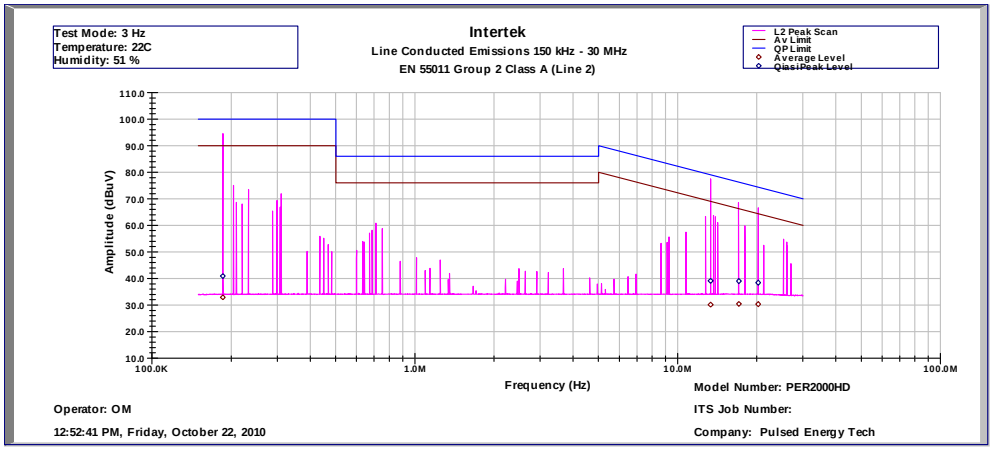
12:36:13 PM, Friday, October 22, 2010 — Company: Pulsed Energy Tech

Frequency	Av Level	QP Level	Av Limit	QP Limit	Av Margin	QP Margin
Hz	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)
1.610E+07	32.4	39.4	71.1	81.1	-38.7	-41.7
1.630E+07	33.4	40.4	71.0	81.0	-37.6	-40.6

Test Mode: 3 Hz
Temperature: 22C
Humidity: 51 %

NOTE: 120V AC 60Hz

EN 55011 Conducted Disturbance at AC Mains



Intertek
Line Conducted Emissions 150 kHz - 30 MHz
EN 55011 Group 2 Cass A (Line 2)

Operator: OM — Model Number: PER2000HD

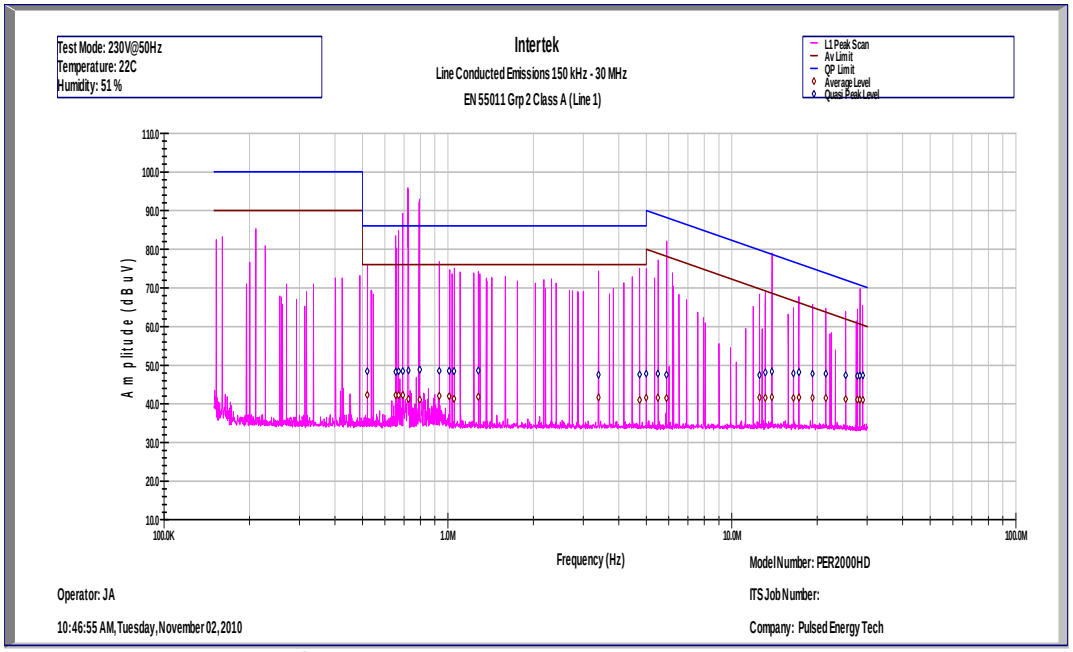
12:52:41 PM, Friday, October 22, 2010 — Company: Pulsed Energy Tech

Frequency	Av Level	QP Level	Av Limit	QP Limit	Av Margin	QP Margin
Hz	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)
186000	32.9	40.9	90.0	100.0	-57.1	-59.1
1.335E+07	30.1	39.1	73.3	83.3	-43.2	-44.2
1.710E+07	30.4	39.0	70.3	80.3	-39.9	-41.3
2.025E+07	30.3	38.4	67.8	77.8	-37.5	-39.4

Test Mode: 3 Hz
Temperature: 22C
Humidity: 51 %

NOTE: 120V AC 60Hz

EN 55011 Conducted Disturbance at AC Mains



Intertek

Line Conducted Emissions 150 kHz - 30 MHz

EN 55011 Group 2 Class A (Line 1)

Operator: JA

Model Number: PER2000HD

ITS Job Number:

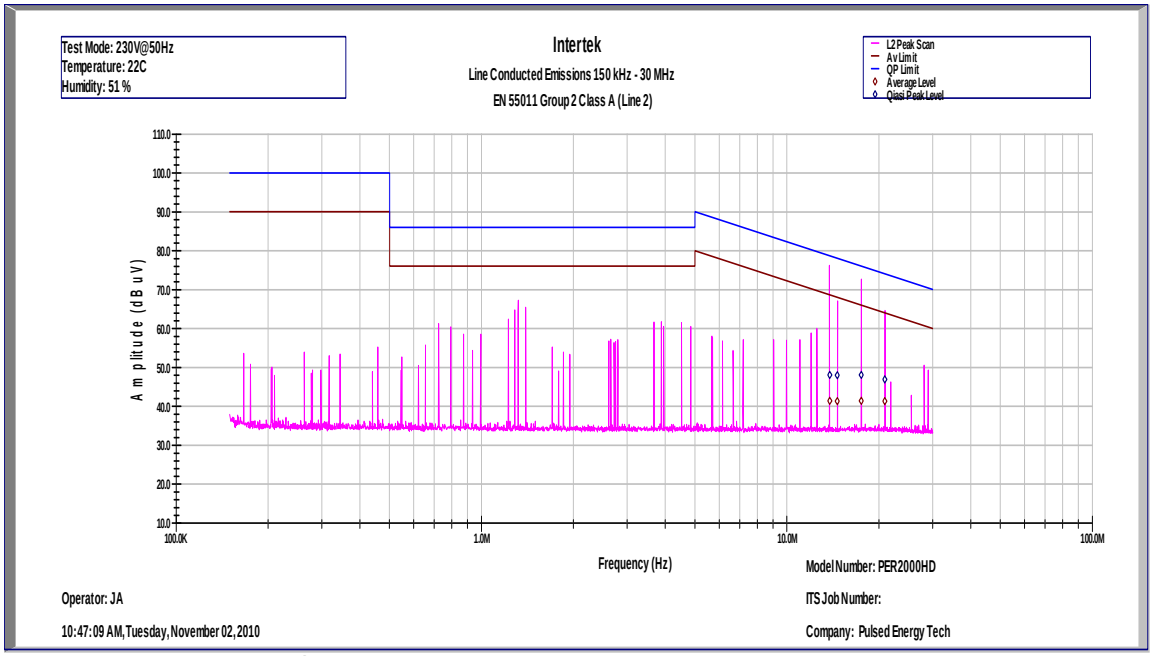
Company: Pulsed Energy Tech

10:46:55 AM, Tuesday, November 02, 2010

Frequency	Av Level	QP Level	Av Limit	QP Limit	Av Margin	QP Margin
MHz	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)
520000	42.3	48.4	76	86	-33.7	-37.6
655000	42.2	48.3	76	86	-33.8	-37.7
693000	42.2	48.5	76	86	-33.8	-37.5
1.25E+07	41.6	47.4	74	84	-32.4	-36.6
1.31E+07	41.6	48.1	73.5	83.5	-31.9	-35.4
1.38E+07	41.7	48.3	72.9	82.9	-31.2	-34.6
1.65E+07	41.5	47.8	70.8	80.8	-29.3	-33
1.72E+07	41.6	48.2	70.2	80.2	-28.6	-32.1
1.92E+07	41.6	47.8	68.6	78.6	-27.1	-30.8
2.14E+07	41.5	47.8	66.9	76.9	-25.4	-29.1
2.52E+07	41.2	47.4	63.9	73.9	-22.7	-26.5
2.77E+07	41.1	47.2	61.9	71.9	-20.8	-24.6
2.82E+07	41.1	47.3	61.4	71.4	-20.4	-24.2
2.89E+07	41	47.3	60.9	70.9	-19.9	-23.5

Test Mode: 230V@50Hz
Temperature: 22C
Humidity: 51 %

EN 55011 Conducted Disturbance at AC Mains



Intertek
Line Conducted Emissions 150 kHz - 30 MHz
EN 55011 Group 2 Cass A (Line 2)

Operator: JA

Model Number: PER2000HD
ITS Job Number:

10:47:09 AM, Tuesday, November 02, 2010

Company: Pulsed Energy Tech

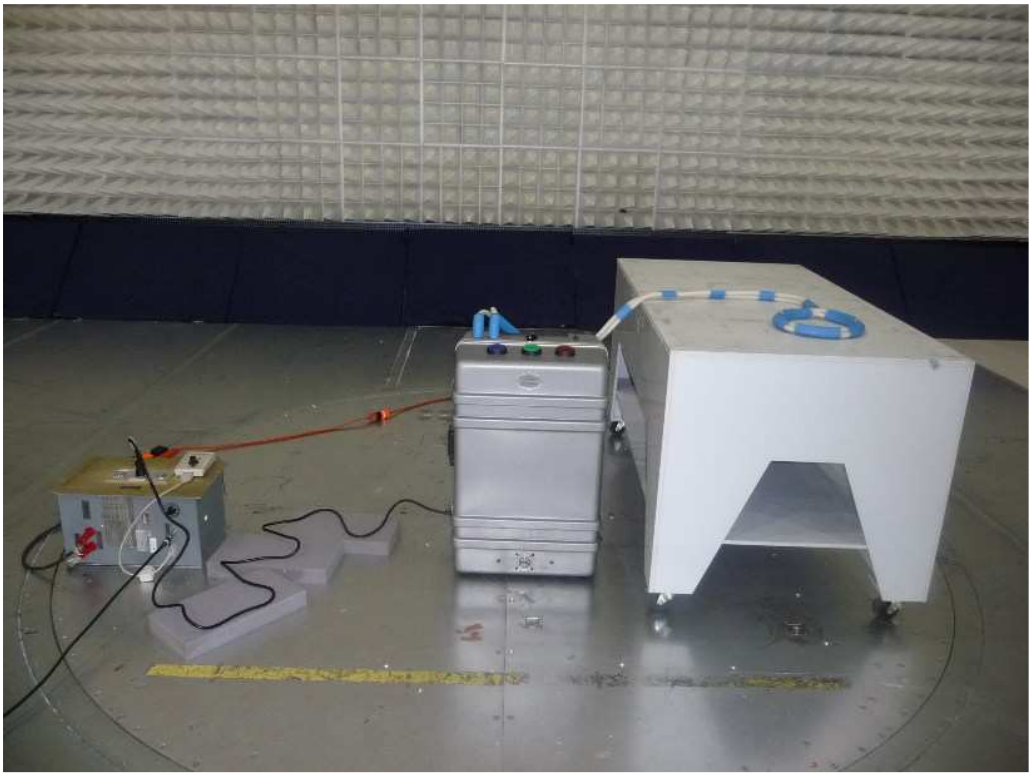
Frequency	Av Level	QP Level	Av Limit	QP Limit	Av Margin	QP Margin
MHz	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)
1.38E+07	41.4	48.1	73	83	-31.6	-34.9
1.46E+07	41.3	48	72.3	82.3	-31	-34.3
1.75E+07	41.4	48.1	70	80	-28.6	-31.9
2.09E+07	41.3	46.9	67.3	77.3	-25.9	-30.4

Test Mode: 230V@50Hz
Temperature: 22C
Humidity: 51 %

Results:	**Complies** by 37.5 dB at 120V/60Hz **Complies** by 19.9 dB at 230V/50Hz

5.2.4 Test Configuration Photographs

The following photographs show the testing configurations used.



AC Mains Line-Conducted Disturbance Setup Photograph

5.3 Harmonic Current Emissions

5.3.1 Test Limits

IEC 61000-3-2 Harmonic Currents Limits					
Harmonic Order (n)	Class A Maximum Permissible Harmonic Current (Amp)	Class B Maximum Permissible Harmonic Current (Amp)	Class C Maximum Permissible Harmonic Current (%)	Class D Maximum Permissible Harmonic Current (Amp)	
Odd Harmonics					
3	2.30	3.45	30*λ	3.4	2.30
5	1.14	1.71	10	1.9	1.14
7	0.77	1.155	7	1.0	0.77
9	0.40	0.6	5	0.5	0.40
11	0.33	0.495	3	0.35	0.33
13	0.21	0.315	3	--	0.15*(15/n)
15 ≤ n ≤ 39	0.15*(15/n)	0.225	3	--	0.15*(15/n)
Even Harmonics					
2	1.08	1.62	2	--	--
4	0.43	0.645	--	--	--
6	0.30	0.45	--	--	--
8 ≤ n ≤ 40	0.23*(8/n)	0.345	--	--	--

λ The Circuit Power Factor
-- Requirements not specified

5.3.2 Classification of equipment

For the purpose of harmonic current limitation, equipment is classified as follows:

Class A:
- Balanced three-phase equipment
- Household appliances excluding equipment identified as Class D
- Tools excluding portable tools
- Dimmers for incandescent lamps
- Audio equipment

Equipment not specified in one of the other three categories shall be considered Class A equipment.

Class B:
- Portable tools
- Arc welding equipment which is not professional equipment

Class C:
- Lighting equipment

Class D:
- Personal computers and personal computer monitors
- Television receivers

5.3.3 Test Procedure

The EUT is connected to the Behlman AC power source. Harmonics of the fundamental current were measured up to 2 kHz using the Voltech 3000A harmonic analyzer under control of Voltech PM3000A version 3.03.04 Windows Software. The equipment classification was determined using methods specified in the standard.

5.3.4 Test Results

Results:	**Complies**

Product:	REV 08	Oct 28 2010 10:40pm
Serial no:	MPK1010221357-003	Page 1 of 1
Description:	PULSE TREATMENT UNIT	
Test Date:	Oct 28 2010 8:22pm	
Result Name:	HARMONICS	

Type of Test:	EN61000:2006 Harmonics inc. interharmonics to EN61000-4-7:2002
Limits:	Class A
Power Analyzer:	Voltech PM6000 SN: 200006700319 Firmware version: v1.20.06RC4 Channel(s): 1. SN: 090015501173, 28 Adjusted Date: 17 FEB 2009. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None Shunt(s): 1. SN: 091024300962, 4 Adjusted Date: 17 FEB 2009. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None
AC Source:	Mains / Manual Source

Harmonic Results Against Chosen Limits:	**Notes:**
PASS	

Test Parameter Details	**User Entered**	**Measured**
Operating Frequency:	50	49.9840
Operating Voltage:	230	229.1836
Specified Power:	0.0000	164.5217
Fundamental Current:	0.0000	1.2142
Power Factor:	0.0000	0.5673
Average Input Current:		1.0561
Maximum POHC:		0.0179
POHC Limit:		0.2514
Maximum THC:		0.3027
Minimum Power:	75	
Class Multiplier:	1.0000	
Test Duration:	00:02:30	

Product:	REV 08	Oct 28 2010 10:41pm
Serial no:	MPK1010221357-003	Page 1 of 1
Description:	PULSE TREATMENT UNIT	
Result Name:	HARMONICS	
Voltech IEC61000-3 Windows Software 1.12.05RC1		Test Date: Oct 28 2010 8:22pm
Type of Test:	Fluctuating Harmonics Test - Worst Case Table (2006)	
Power Analyzer:	Voltech PM6000 SN: 200006700319 Firmware version: v1.20.06RC4 Channel(s): 1. SN: 090015501173, 28 Adjusted Date: 17 FEB 2009. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None Shunt(s): 1. SN: 091024300962, 4 Adjusted Date: 17 FEB 2009. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
AC Source:	Mains / Manual Source	
Overall Result: **PASS**		

Class	Class A
Class Multiplier	1

Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL	Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL
2	1.080mA	1.620mA	51.66mA	✓ ✓	102.9mA	✓	Pass	3	2.300mA	3.450mA	202.5mA	✓ ✓	238.8mA	✓	Pass
4	430.0mA	645.0mA	23.98mA	✓ ✓	46.22mA	✓	Pass	5	1.140mA	1.710mA	72.47mA	✓ ✓	80.78mA	✓	Pass
6	300.0mA	450.0mA	8.299mA	✓ ✓	16.84mA	✓	Pass	7	770.0mA	1.155mA	110.4mA	✓ ✓	113.0mA	✓	Pass
8	230.0mA	345.0mA	5.077mA	✓ ✓	12.24mA	✓	N/A	9	400.0mA	600.0mA	51.25mA	✓ ✓	53.94mA	✓	Pass
10	184.0mA	276.0mA	4.606mA	✓ ✓	9.707mA	✓	N/A	11	330.0mA	495.0mA	41.84mA	✓ ✓	44.10mA	✓	Pass
12	153.3mA	230.0mA	4.013mA	✓ ✓	7.825mA	✓	N/A	13	210.0mA	315.0mA	29.18mA	✓ ✓	31.42mA	✓	Pass
14	131.4mA	197.1mA	3.137mA	✓ ✓	6.005mA	✓	N/A	15	150.0mA	225.0mA	14.50mA	✓ ✓	16.62mA	✓	Pass
16	115.0mA	172.5mA	2.579mA	✓ ✓	5.020mA	✓	N/A	17	132.3mA	198.5mA	8.238mA	✓ ✓	10.08mA	✓	Pass
18	102.2mA	153.3mA	2.281mA	✓ ✓	5.144mA	✓	N/A	19	118.4mA	177.6mA	7.679mA	✓ ✓	9.190mA	✓	Pass
20	92.00mA	138.0mA	2.012mA	✓ ✓	4.252mA	✓	N/A	21	107.1mA	160.7mA	8.039mA	✓ ✓	9.603mA	✓	Pass
22	83.63mA	125.4mA	2.144mA	✓ ✓	4.194mA	✓	N/A	23	97.82mA	146.7mA	6.608mA	✓ ✓	8.496mA	✓	Pass
24	76.66mA	115.0mA	2.155mA	✓ ✓	4.324mA	✓	N/A	25	90.00mA	135.0mA	5.226mA	✓ ✓	6.713mA	✓	N/A
26	70.78mA	106.1mA	1.973mA	✓ ✓	3.933mA	✓	N/A	27	83.33mA	125.0mA	3.690mA	✓ ✓	5.188mA	✓	N/A
28	65.71mA	98.57mA	1.942mA	✓ ✓	3.548mA	✓	N/A	29	77.58mA	116.3mA	2.138mA	✓ ✓	3.899mA	✓	N/A
30	61.33mA	92.00mA	1.891mA	✓ ✓	3.574mA	✓	N/A	31	72.58mA	108.8mA	2.444mA	✓ ✓	4.024mA	✓	N/A
32	57.50mA	86.25mA	1.835mA	✓ ✓	3.534mA	✓	N/A	33	68.18mA	102.3mA	2.700mA	✓ ✓	4.073mA	✓	N/A
34	54.11mA	81.17mA	1.537mA	✓ ✓	3.059mA	✓	N/A	35	64.28mA	96.42mA	2.281mA	✓ ✓	3.673mA	✓	N/A
36	51.11mA	76.66mA	1.130mA	✓ ✓	2.593mA	✓	N/A	37	60.81mA	91.21mA	1.789mA	✓ ✓	3.195mA	✓	N/A
38	48.42mA	72.63mA	1.184mA	✓ ✓	2.655mA	✓	N/A	39	57.69mA	86.53mA	1.231mA	✓ ✓	2.634mA	✓	N/A
40	46.00mA	69.00mA	1.248mA	✓ ✓	2.647mA	✓	N/A								

5.3.5 Configuration Photographs

The following photographs show the testing configurations used.

Harmonic Current Emissions Setup Photograph

5.4 Voltage Fluctuations and Flicker

5.4.1 Test Limits

IEC 61000-3-3 Voltage Fluctuations and Flickers Limits				
Short Term Flicker Value, P_{st}	**Short Term Flicker Value, P_{lt}**	**Relative Steady-State Voltage Change, d_c**	**Maximum Relative Voltage Change, d_{max}**	**Voltage Change, d(T)**
< 1.00	<0.65	<3%	<4%	< 3% for more than 200ms

5.4.2 Test Procedure

The EUT is connected to the Behlman AC power source. Voltage fluctuations and flicker were measured using the Voltech 3000A analyzer under control of Voltech PM3000A version 3.03.04 Windows Software. During tests, external reference impedance was used.

5.4.3 Test Results

Results:	**Complies**

Product:	REV 08	Oct 28 2010 10:40pm
Serial no:	MPK1010221357-003	Page 1 of 1
Description:	PULSE TREATMENT UNIT	
Result Name:	FLICKER	
Voltech IEC61000-3 Windows Software 1.12.05RC1		Test Date: Oct 28 2010 8:29pm
Type of Test:	Flickermeter Test - Table	
Power Analyzer:	Voltech PM6000 SN: 200006700319 Firmware Version: v1.20.06RC4 Channel(s): 1. SN: 090015601173, 28 Adjusted Date: 17 FEB 2009. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None Shunt(s): 1. SN: 091024300962, 4 Adjusted Date: 17 FEB 2009. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
AC Source:	Mains / Manual Source	
Overall Result: **PASS**	Notes: Plt test duration 120 minutes Measurement method - Voltage	

	Plt
Limit	0.650
Reading	0.294

	Pst	dc (%)	dmax (%)	d(t) > 3.3%(ms)
Limit	1.000	3.300	4.000	500
Reading 1	0.299	0.153	0.932	0
Reading 2	0.295	0.150	0.932	0
Reading 3	0.294	0.162	0.896	0
Reading 4	0.291	0.151	0.934	0
Reading 5	0.294	0.156	0.879	0
Reading 6	0.294	0.162	0.917	0
Reading 7	0.291	0.163	0.925	0
Reading 8	0.295	0.171	0.917	0
Reading 9	0.296	0.169	0.932	0
Reading 10	0.293	0.153	1.279	0
Reading 11	0.293	0.159	1.083	0
Reading 12	0.292	0.168	0.912	0

5.4.4 Configuration Photographs

The following photographs show the testing configurations used.

Voltage Fluctuations and Flicker Setup Photograph

6.0 Document History

Revision/ Job Number	Writer Initials	Date	Change
1.0 / G100216904	MR	October 30, 2010	Original document