



# REPORT

For

## **Industrial System Electronics Inc.**

815 - East 13th Ave.  
Vancouver, B.C.  
V5T 2L4, Canada

Date: May 20, 2008  
Report No.: 9122-1E  
Revision No.: 0  
Project No.: 9122  
Equipment: H.I.D. Ballast(s)  
Model No.: ISE-400-DLN and ISE-600-DLN




### ONE STOP GLOBAL CERTIFICATION SOLUTIONS



3133-20800 Westminster Hwy, Richmond, BC  
V6V 2W3, Canada  
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[www.labtestcert.com](http://www.labtestcert.com)

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<b>FCC Part 18 and ICES-001</b>	
<b>Report reference No.</b> .....	9122-1E
<b>Report Revision History:</b>	- Rev. 0: May 20, 2008
Tested by (printed name and signature) .....	Jeremy LEE 
Approved by (printed name and signature) .....	Kavinder Dhillon, Eng.L. 
Date of issue .....	May 20, 2008
<p><b>Note: By signing this report, both the Testing Technician and the Reviewer hereby declare to abide by the applicable LabTest policies:</b>                      1.) Statement of Independence # 3014 (LabTest Employees),                      2.) Independence, Impartiality, and Integrity #1039, clause 11 (Engineering Service Subcontractors), or                      3.) Independence, Impartiality, and Integrity #1019, clause 3.5 (Testing Subcontractors).</p>	
<b>FCC Site Registration No.:</b>	552549
<b>IC Site Registration No.:</b>	5970A
<b>Testing Laboratory Name</b> .....	LabTest Certification Inc.
Address .....	3133 – 20800 Westminster Hwy, Richmond, B.C. V6V-2W3
<b>OATS Test Location Name</b> .....	LabTest Certification Inc.
Address .....	5340 – 164 Street, Surrey, BC, Canada
<b>Applicant's Name</b> .....	Industrial System Electronics Inc.
Address .....	815 - East 13th Ave., Vancouver, B.C. V5T 2L4, Canada
<b>Manufacturer's Name</b> .....	PCM Electronics(DONGGUAN) Co. Ltd.
Address .....	HongLi Industrial Area, MiaoBian, LiaoBu Town, DongGuan City, GuangDong Province, China
<b>Test specification</b>	
Standards .....	47CFR18 (revised Oct. 1, 2007) and ICES-001, Issue 4 (June 2006)
Date Test sample received .....	May 02, 2008
Date of Testing .....	May 05 to 16, 2008
<b>Test item description</b> .....	
Trademark .....	
Manufacturer .....	Industrial System Electronics Inc.
Model and/or type reference .....	ISE-400-DLN and ISE-600-DLN
Serial numbers .....	ISE-400-DLN: ISE100 400081100001 ISE-600-DLN: ISE100 600081100001
Rating(s) .....	120-240VAC, 60Hz, Single Phase

<b>Particulars: test item vs. test requirements</b>	
Equipment mobility .....	N/A
Operating condition.....	<b>Temp Operating Range:</b> -35 to +85 °C <b>Humidity Operating Range:</b> 0 to 100% RH
Electrical Ratings .....	120-240VAC, 60Hz, Single Phase
Class of equipment .....	Industrial
Mass of equipment (kg) .....	2
Intended Application (Class) .....	RF Lighting Device
<b>Test case verdicts</b>	
Test case does not apply to the test object :	N/A
Test item does meet the requirement .....	Pass
Test item does not meet the requirement ...:	Fail
<b>Testing</b>	
Date of receipt of test item .....	May 02, 2008
Date(s) of performance of test .....	May 05 to 16, 2008
General remarks <b>"This report is not valid as a CB Test Report unless appended by an approved CB Testing Laboratory and appended to a CB Test Certificate.</b> The test result presented in this report relate only to the object(s) tested. This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory. "(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. <input type="checkbox"/> Throughout this report a comma is used as the decimal separator. <input checked="" type="checkbox"/> Throughout this report a period is used as the decimal separator.	
<b>General product information:</b>	
A versatile new standard in electronic high intensity discharge (HID) ballast technology, electronic ballasts 400W/600W metal halide and high pressure sodium lamps offer users the powerful combination of bright light and enhanced energy efficiency. Through their electronic circuitry and the inclusion of exclusive multiple-voltage technology delivers the benefits of consistent color rendering and wattage, longer life, and efficient cost of ownership and represents an optimal choice for retail, institutional, and commercial users within a broad range of applications.	

## Markings

A device subject to certification, or verification shall be labeled as follows:

**This device complies with part 18 of the FCC Rules.**

**Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.**

## Test Summary

When configured and operated as specified in this report, the product was found to comply with the requirements as indicated below.

Test Type	Reglation	Measurement Method	Results
<b>FCC Part 18 &amp; ICES-001</b>			
<b>Radiated Emissions – Unintentional Radiator</b>	47CFR18.305 (Oct. 1, 2007) ICES-001, Issue 4(June 2006)	ANSI C63.4:2003	<b>Pass</b>
<b>Conducted Emissions</b>	47CFR15.307 (Oct. 1, 2007) ICES-001, Issue 4(June 2006)	ANSI C63.4:2003	<b>Pass</b>

## Test of Radiated Emission

FINAL TEST RESULT	PASS
Basic Standard	47CFR18.305 (revised October 1, 2007)
Detecting Method	Quasi Peak
IF Bandwidth	120kHz
Temperature	17.6 °C
Relative Humidity	69 %
Barometric Pressure	101.68 kPa
Test Date	May 05 to 16, 2008
Calibrated Test Equipment (ID)	058, 106, 112, 124, 225, 233
Reference Equipment (ID) (Calibration not required)	059. 235
Electrical Rating	120-240VAC, 60Hz, Single Phase
Tested By	Jeremy LEE

Use the barometric pressure reported at: <http://www.theweathernetwork.com/weather/CABC0308>

## Test Limits

### FCC 18.305:

(c) The field strength limits for RF lighting devices shall be the following:

Frequency (MHz)	Field strength limit at 30 meters ( $\mu\text{V}/\text{m}$ )
Non-consumer equipment:	
30–88 .....	30
88–216 .....	50
216–1000 .....	70
Consumer equipment:	
30–88 .....	10
88–216 .....	15
216–1000 .....	20

## Test Setup

The test was performed in accordance with **FCC 15.31, 15.33, 15.35, 15.109:2007 and ANSI C63.4, 2003.**

The setup for pre-scan the radiated emissions in a GTEM cell is shown in Figure - 1. The EUT was placed inside the GTEM and its radiation was measured with a receiver - spectrum analyzer. The receiver was software controlled.

The EUT was turned it on with the proper bulbs, 400W or 600W.

Measurements were made with a Quasi-Peak detecting in the frequency range 30 MHz to 1,000 MHz. To reduce the testing time, a Peak detecting was used instead of the Quasi-Peak detecting. The receiver IF bandwidth was 120 kHz and scan step was about 120 kHz. Of those disturbances above  $(L - 10 \text{ dB})$ , where  $L$  is the limit level in logarithmic units, record at least the disturbance levels and the frequencies of the six highest disturbances.

### Test Result of pre-scan

Emission level (dBuV/m) = Detected level (dBuV) + Cable Loss (dB) +Antenna Factor (dB/m)-Pre-Amplifier's Gain (dB)

There are some signals within 10dB of the limit line.

Radiated Emission Setup

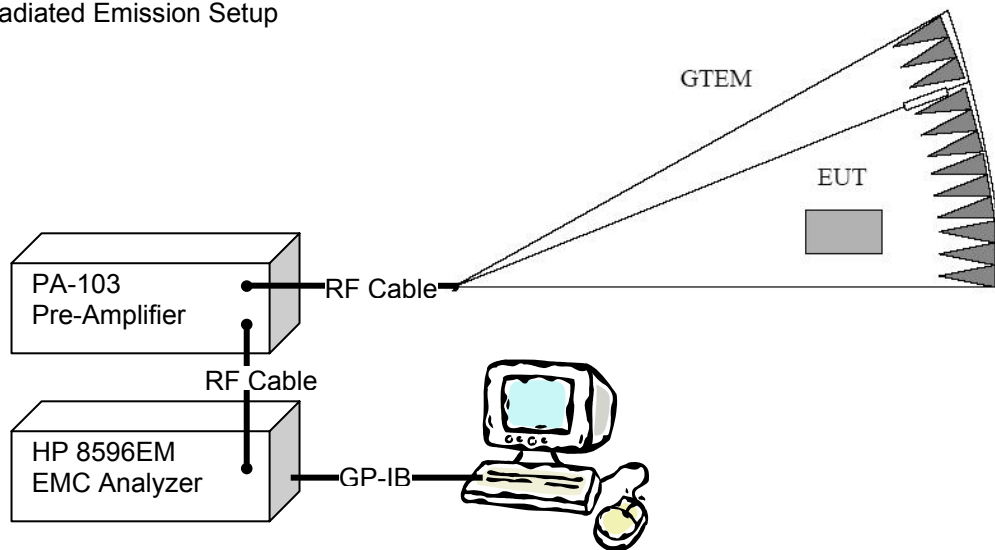
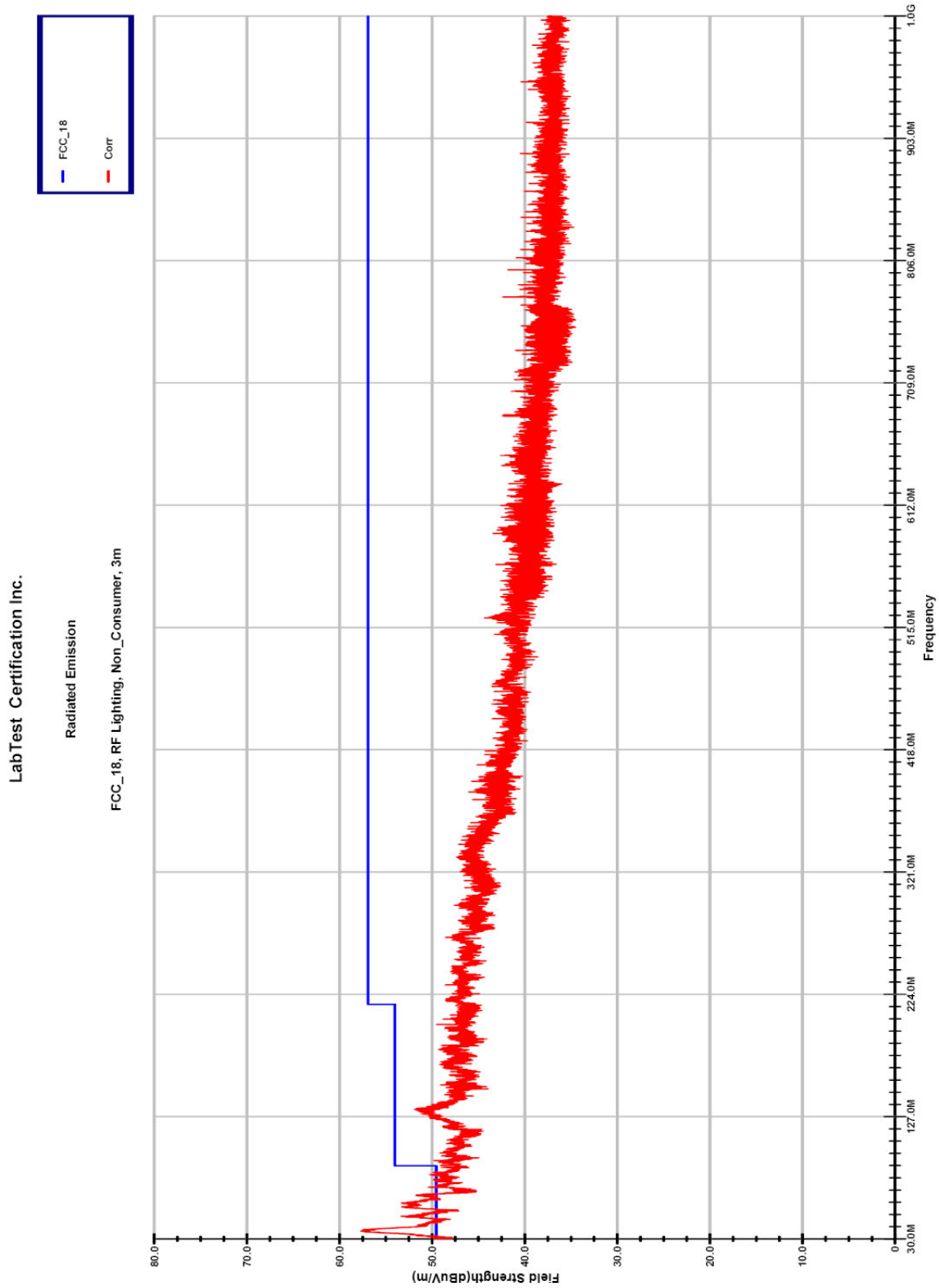


Figure – 1 The setup for Radiated emission test



- Pre-scan test results of Radiated Emission; ISE-400-DLN

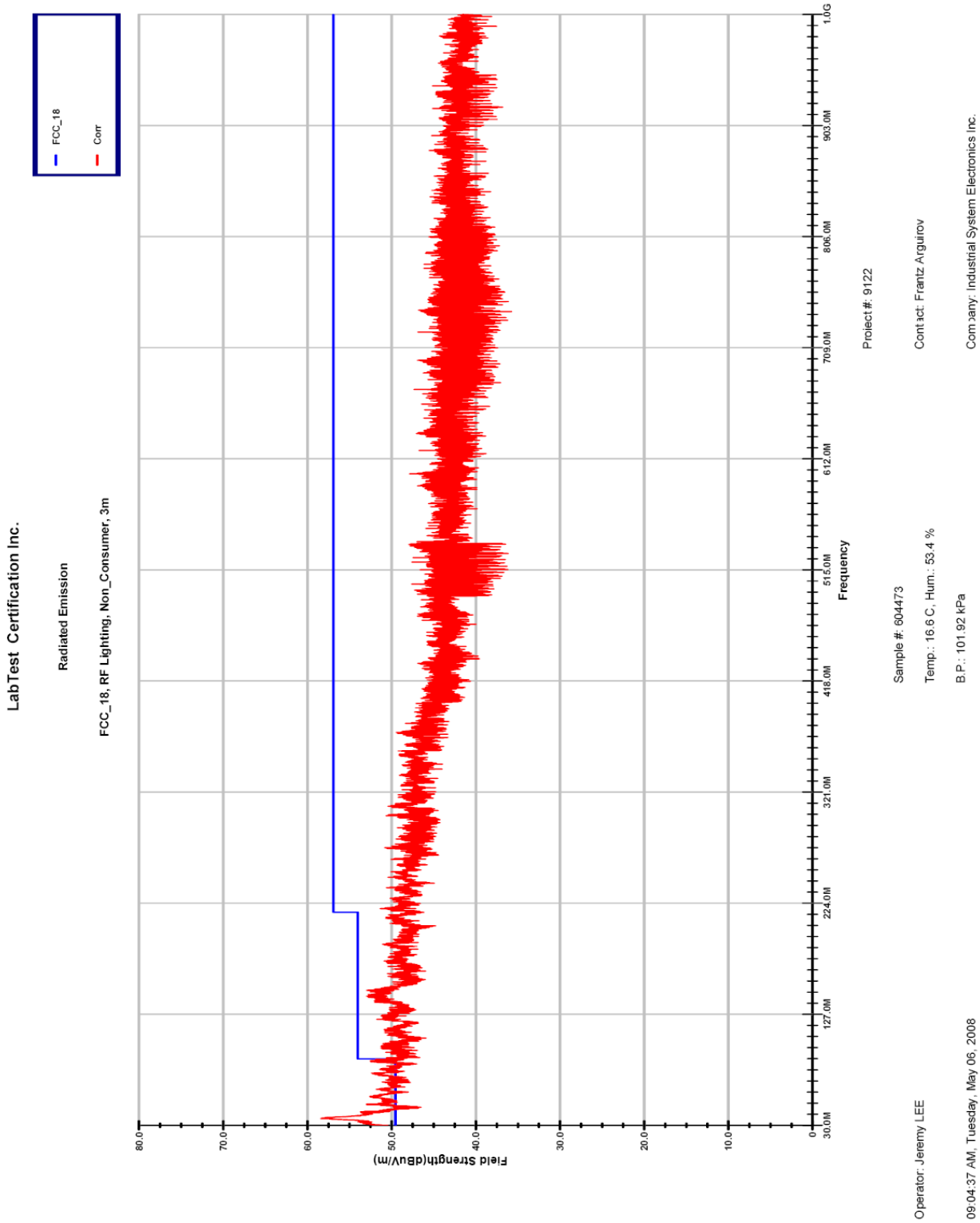


Project #: 9122  
Contact: Frantz Arguirov  
Company: Industrial System Electronics Inc.

Sample #: 604472  
Temp.: 16.9 C, Hum.: 54.2 %  
B.P.: 101.94 kPa

Operator: Jeremy LEE  
10:59:15 AM, Tuesday, May 06, 2008

- Pre-scan test results of Radiated Emission; ISE-600-DLN



## Test Setup for Open Area Test Site(OATS)

The test was performed in accordance with **FCC 15.31, 15.33, 15.35, 15.109:2007 and ANSI C63.4, 2003.**

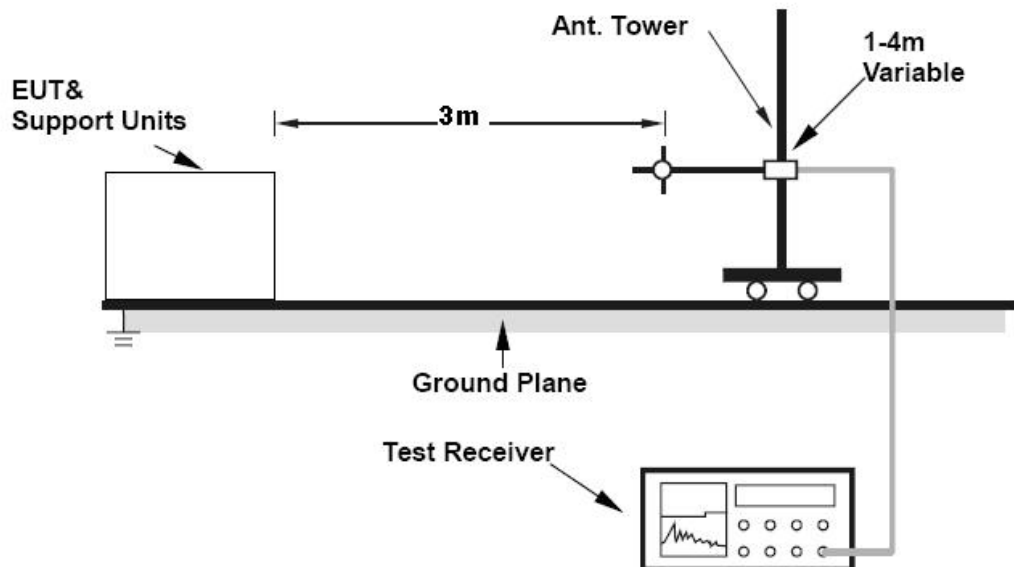
The setup for Radiated emission measurements at OATS is shown in Figure - 2.

- a) The EUT was placed on a wooden table, and it was put on the turning ground plate.
- b) The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna supporter.
- c) It is measured with a receiver - spectrum analyzer, was software controlled.
- d) Test frequencies were detected by the results of pre-scan, when the peak readings were within 10dB of the limit line.
- e) The antennas were balanced dipoles. For frequencies of 80 MHz or above, the antennas were resonant in length, and for frequencies below 80 MHz it had a length equal to the 80 MHz resonant length.
- f) The EUT was turned it on with the proper bulbs, 400W or 600W.

## Test Result

Emission level (dBuV/m) = Quasi-Peak detected level (dBuV) +Cable Loss (dB)  
+ Antenna Factor (dB/m) - Pre-amplifier's Gain (dB)

**The EUT passed this test.**



**Figure – 2 Test setup for radiated emission at OATS**

**- Table of Radiated Ambient Emission-Horizontal; ISE-400-DLN**

LabTest Certification Inc.  
 Radiated Spurious Emissions  
 Horizontal, Ambients, 3 meters

Operator: Jeremy Lee

Proj #: 9122

12:53:19 PM, Friday, May 16, 2008

Contact: Frantz Arquiroy

Company: Industrial System Electronics Inc.

Frequency MHz	LIMIT	QP_RESULTS	MARGIN	POL
30.000 MHz	49.54			
36.164 MHz	49.54	29.61	19.93	H
47.923 MHz	49.54	32.60	16.94	H
58.625 MHz	49.54	31.90	17.64	H
71.048 MHz	49.54	37.63	11.91	H
81.039 MHz	49.54	30.38	19.16	H
88.000 MHz	53.98		12.99	
88.000 MHz	53.98		12.99	
92.122 MHz	53.98	44.65	9.33	H
132.946 MHz	53.98	21.17	32.81	H
168.452 MHz	53.98	27.72	26.26	H
180.278 MHz	53.98	47.40	6.58	H
200.019 MHz	53.98	39.56	14.42	H
216.000 MHz	53.98			
216.000 MHz	53.98			
1.000 GHz	56.90			
Sample #: 604472				
Temp.: 18.3 C, Hum.: 67 %				
Barometer Pres.:102.07 kPa				

**- Table of Radiated Emission-Horizontal; ISE-400-DLN**

LabTest Certification Inc.  
 Radiated Spurious Emissions  
 FCC\_18, 3 meters

Operator: Jeremy Lee

Proj #: 9122

07:53:07 PM, Friday, May 16, 2008

Contact: Frantz Arquiroy

Company: Industrial System Electronics Inc.

Frequency MHz	LIMIT	QP_RESULTS	MARGIN	TOWER	T/T	POL
30.000 MHz	49.54					
36.205 MHz	49.54	28.49	21.05	1.50	112.60	H
47.980 MHz	49.54	40.15	9.39	1.50	109.10	H
58.584 MHz	49.54	35.58	13.96	1.50	348.30	H
71.074 MHz	49.54	38.00	11.54	1.50	202.90	H
80.992 MHz	49.54	31.61	17.93	1.50	341.10	H
88.000 MHz	53.98		11.40	1.50	175.48	
88.000 MHz	53.98		11.40	1.50	175.48	
92.171 MHz	53.98	46.47	7.51	1.50	76.90	H
132.875 MHz	53.98	26.75	27.23	1.50	332.10	H
168.542 MHz	53.98	27.89	26.09	1.50	13.30	H
180.282 MHz	53.98	46.69	7.29	1.50	134.90	H
200.029 MHz	53.98	39.02	14.96	1.50	316.60	H
216.000 MHz	53.98					
216.000 MHz	53.98					
1.000 GHz	56.90					
Sample #: 604472						
Temp.: 17.6C, Hum.: 69 %						
Barometer Pres.:101.68 kPa						

**- Table of Radiated Ambient Emission-Vertical; ISE-400-DLN**

LabTest Certification Inc.  
 Radiated Spurious Emissions  
 Vertical, Ambients, 3 meters

Operator: Jeremy Lee

Proj #: 9122

12:53:19 PM, Friday, May 16, 2008

Contact: Frantz Arquiroy

Company: Industrial System Electronics Inc.

Frequency MHz	LIMIT	QP_RESULTS	MARGIN	POL
30.000 MHz	49.54			
36.326 MHz	49.54	29.89	19.65	V
47.996 MHz	49.54	34.56	14.98	V
58.634 MHz	49.54	36.37	13.17	V
70.952 MHz	49.54	38.98	10.56	V
80.924 MHz	49.54	31.92	17.62	V
88.000 MHz	53.98		7.33	
88.000 MHz	53.98		7.33	
92.116 MHz	53.98	52.64	1.34	V
132.889 MHz	53.98	27.65	26.33	V
168.544 MHz	53.98	29.10	24.88	V
180.287 MHz	53.98	42.82	11.16	V
200.000 MHz	53.98	40.66	13.32	V
216.000 MHz	53.98			
216.000 MHz	53.98			
1.000 GHz	56.90			

Sample #: 604472  
 Temp.: 18.3 C, Hum.: 67 %  
 Barometer Pres.:102.07 kPa

**- Table of Radiated Emission-Vertical; ISE-400-DLN**

LabTest Certification Inc.  
 Radiated Spurious Emissions  
 FCC\_18, 3 meters

Operator: Jeremy Lee

Proj #: 9122

07:53:07 PM, Friday, May 16, 2008

Contact: Frantz Arquiroy

Company: Industrial System Electronics Inc.

Frequency MHz	MARGIN	QP_RESULTS	MARGIN	TOWER	T/T	POL
30.000 MHz	49.54					
36.323 MHz	49.54	28.31	21.23	1.50	21.30	V
48.000 MHz	49.54	39.13	10.41	1.50	77.40	V
58.522 MHz	49.54	43.57	5.97	1.50	296.30	V
71.036 MHz	49.54	38.61	10.93	1.50	300.50	V
81.091 MHz	49.54	0.00	49.54	1.50	284.70	V
88.000 MHz	53.98		19.76	1.50	272.29	
88.000 MHz	53.98		19.76	1.50	272.29	
92.113 MHz	53.98	51.94	2.04	1.50	264.90	V
132.902 MHz	53.98	25.10	28.88	1.50	44.00	V
168.417 MHz	53.98	26.90	27.08	1.50	168.60	V
180.277 MHz	53.98	41.89	12.09	1.50	311.80	V
200.013 MHz	53.98	39.90	14.08	1.50	321.80	V
216.000 MHz	53.98					
216.000 MHz	53.98					
1.000 GHz	56.90					

Sample #: 604472  
 Temp.: 17.6C, Hum.: 69 %  
 Barometer Pres.:101.68 kPa

**- Table of Radiated Ambient Emission-Horizontal; ISE-600-DLN**

LabTest Certification Inc.  
 Radiated Spurious Emissions  
 Horizontal, Ambients, 3 meters

Operator: Jeremy Lee

Proj #: 9122

10:11:02 AM, Tuesday, May 20, 2008

Contact: Frantz Arquiroy

Company: Industrial System Electronics Inc.

Frequency MHz	LIMIT	QO_RESULTS	MARGIN	POL
30.000 MHz	49.54			
35.920 MHz	49.54	30.06	19.48	H
48.603 MHz	49.54	34.66	14.88	H
55.319 MHz	49.54	64.00	-14.46	H
75.645 MHz	49.54	37.22	12.32	H
85.464 MHz	49.54	31.92	17.62	H
86.653 MHz	49.54	33.16	16.38	H
87.415 MHz	49.54	34.55	14.99	H
88.000 MHz	53.98		15.08	
88.000 MHz	53.98		15.08	
137.453 MHz	53.98	31.09	22.89	H
142.881 MHz	53.98	24.63	29.35	H
148.022 MHz	53.98	24.60	29.38	H
216.000 MHz	53.98			
216.000 MHz	53.98			
1.000 GHz	56.90			
Sample #: 604473				
Temp.: 17.6 C, Hum.: 69 %				
Barometer Pres.: 101.68 kPa				

**- Table of Radiated Emission-Horizontal; ISE-600-DLN**

LabTest Certification Inc.  
 Radiated Spurious Emissions  
 FCC\_18, 3 meters

Operator: Jeremy Lee

Proj #: 9122

06:46:13 PM, Friday, May 16, 2008

Contact: Frantz Arquiroy

Company: Industrial System Electronics Inc.

Frequency MHz	LIMIT	QP_RESULTS	MARGIN	TOWER	T/T	POL
30.000 MHz	49.54					
35.892 MHz	49.54	29.48	20.06	1.50	273.50	H
48.647 MHz	49.54	42.64	6.90	1.50	318.90	H
55.433 MHz	49.54	53.18	-3.64	1.50	336.00	H
75.568 MHz	49.54	37.48	12.06	1.50	159.30	H
85.587 MHz	49.54	34.13	15.41	1.50	74.40	H
86.613 MHz	49.54	35.75	13.79	1.50	256.80	H
87.508 MHz	49.54	36.00	13.54	1.50	212.00	H
88.000 MHz	53.98		13.58	1.50	210.68	
88.000 MHz	53.98		13.58	1.50	210.68	
137.456 MHz	53.98	35.70	18.28	1.50	78.20	H
142.807 MHz	53.98	28.10	25.88	1.50	349.30	H
147.987 MHz	53.98	33.80	20.18	1.50	108.30	H
216.000 MHz	53.98					
216.000 MHz	53.98					
1.000 GHz	56.90					
Sample #: 604473						
Temp.: 17.6 C, Hum.: 69 %						
Barometer Pres.: 101.68 kPa						



### Test of Conducted Emission (Powerline)

FINAL TEST RESULT	PASS
Basic Standard	47CFR18.307 (Revised Oct. 1, 2007)
Temperature	17.5 °C
Relative Humidity	52.8 %
Barometric Pressure:	102.31 kPa
Test Date	May 12, 2008
Calibrated Test Equipment (ID)	058, 106, 112, 127, 128
Reference Equipment (ID) (Calibration not required)	059
Electrical Rating	120 & 240VAC, 60Hz, Single Phase
Tested By	Jeremy LEE

Use the barometric pressure reported at: <http://www.theweathernetwork.com/weather/CABC0308>

### Test Limits

FCC 18.305:

For the following equipment, when 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 shall not exceed the limits in the following tables. 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 using a 50 µH/50 ohms line impedance stabilization network (LISN).

(c) RF lighting devices:

Frequency (MHz)	Maximum RF line voltage measured with a 50 uH/50 ohm LISN (uV)
Non-consumer equipment:	
0.45 to 1.6 .....	1,000
1.6 to 30 .....	3,000
Consumer equipment:	
0.45 to 2.51 .....	250
2.51 to 3.0 .....	3,000
3.0 to 30 .....	250

### Test Setup

The test was performed in accordance with **FCC 15.31, 15.33, 15.35, 15.109:2007 and ANSI C63.4, 2003.**

The EUT was placed on a desk 0.8 meters above a metal ground plane and 0.4 meters from the conducting wall which is shown Figure-3 with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

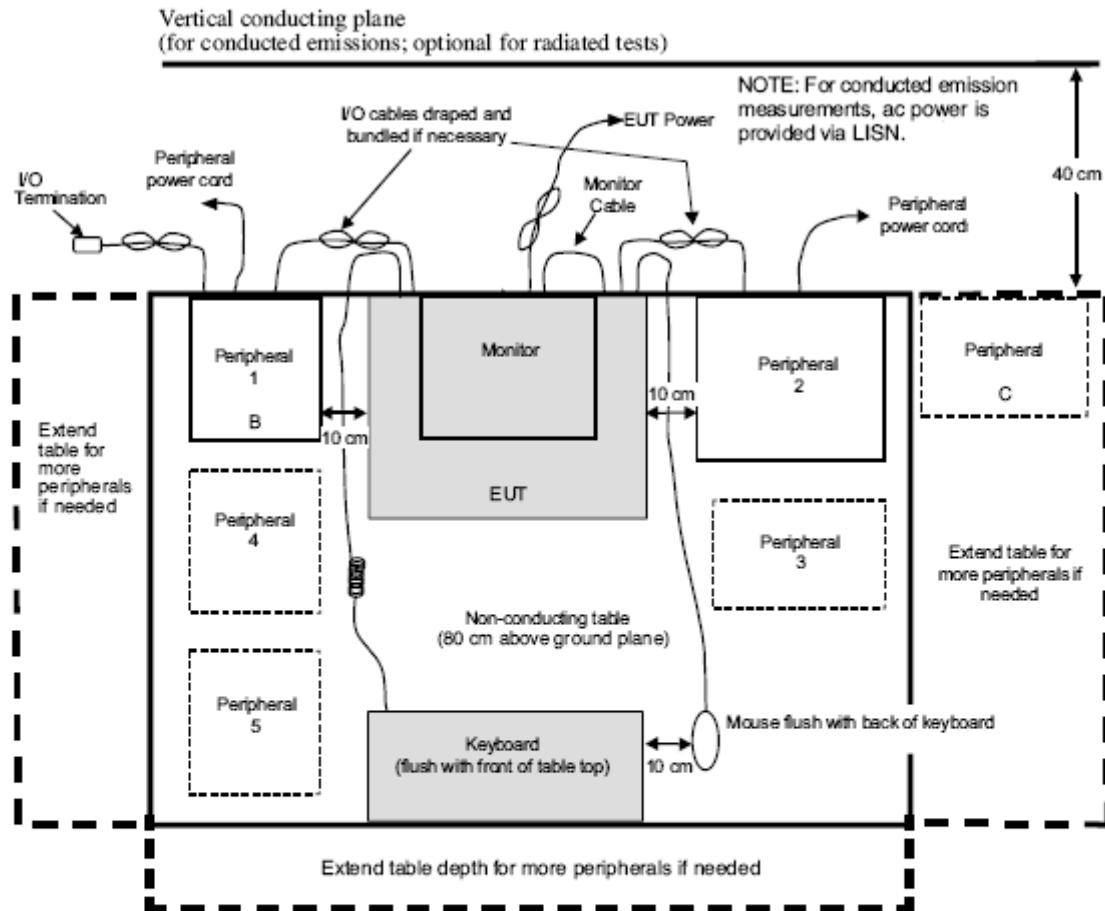


The EUT was turned it on with the proper bulbs, 400W or 600W. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

Initially a scan was made with a Spectrum Analyzer from 150 kHz to 30 MHz on each phase with the receiver in the peak mode. The receiver IF bandwidth was 9 kHz and scan step was about 9 kHz. Measurements were then made using CISPR quasi peak and average detectors when the peak readings were within 10dB of the lower average limit line.

## **Test Result**

**The EUT passed this test.**



**LEGEND:**

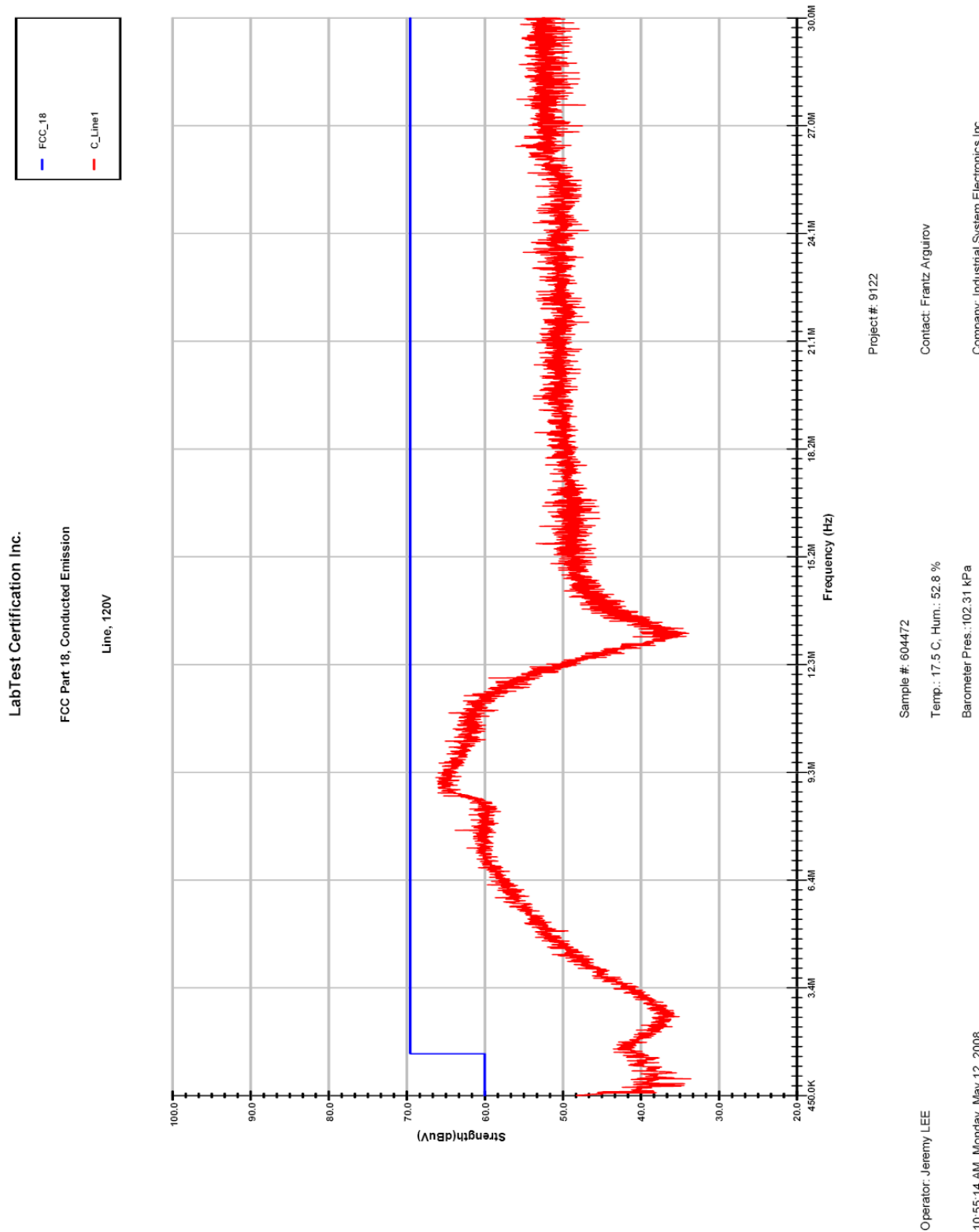
A— LISN(s) may have to be positioned to the side of the table to meet the criterion that the LISN receptacle shall be 80 cm away from the EUT. LISN(s) may be above groundplane only for conducted emission measurements.

B— Accessories, such as ac power adapter, if typically table-mounted, shall occupy peripheral positions as is applicable. Accessories, which are typically floor-mounted, shall occupy a floor position directly below the portion of the EUT to which they are typically connected (see 6.2.1.2).

C— Table length may be extended beyond 1.5 m with peripherals aligned with the back edge. Additional peripherals may be placed as shown. The table depth may be extended beyond 1 m. The 40 cm distance to the vertical conducting plane shall be maintained for conducted emission testing (see 6.2.1 and 5.2.2).

**Figure 3—Test setup for Conducted emission**

- Graph of Conducted Emission-Line; ISE-400-DLN, 120VAC



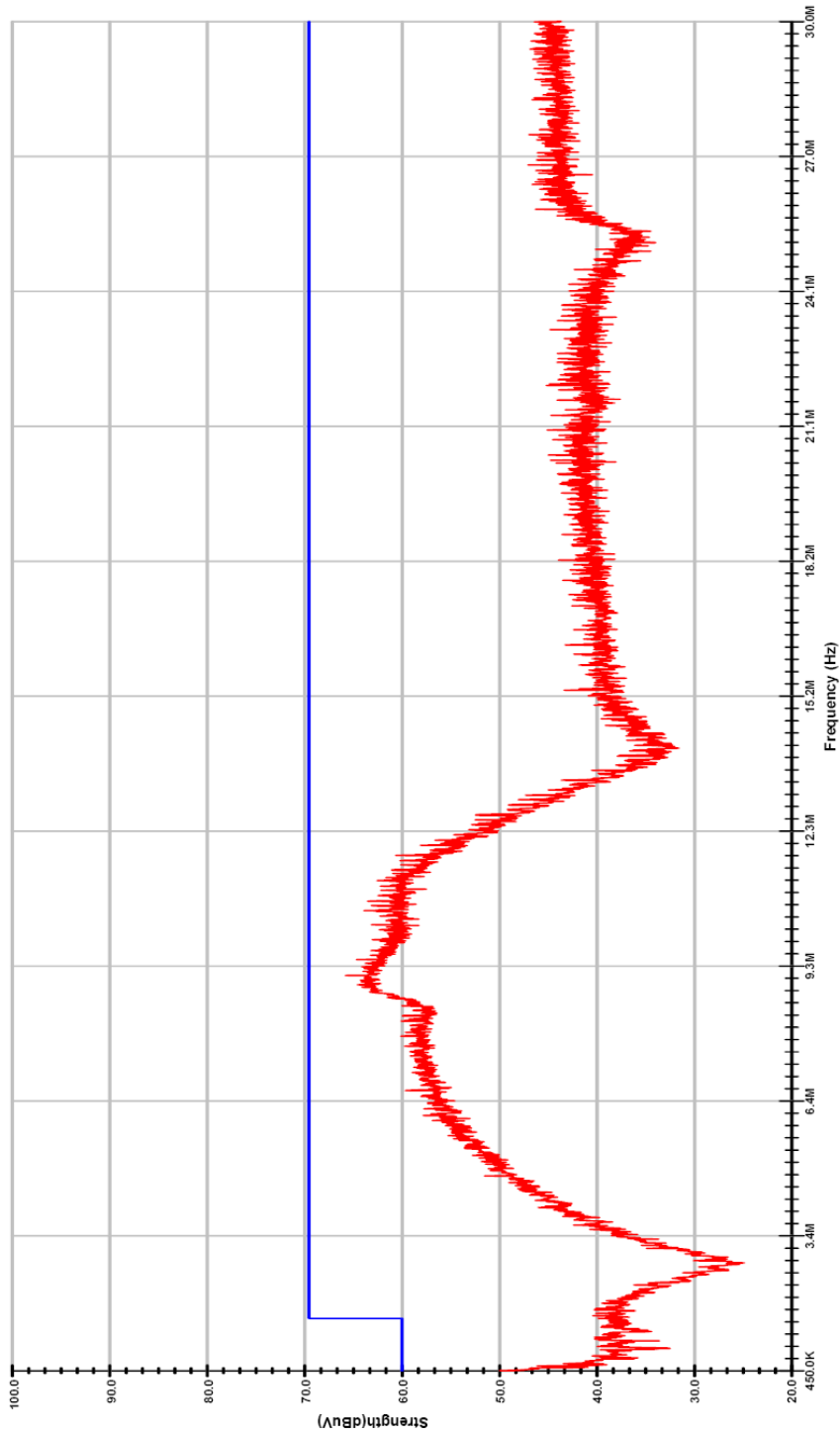
**- Graph of Conducted Emission-Neutral; ISE-400-DLN, 120VAC**



LabTest Certification Inc.

FCC Part 18, Conducted Emission

Neutral, 120V



Project#: 9122

Contact: Frantz Arguirov

Company: Industrial System Electronics Inc.

Sample #: 604472

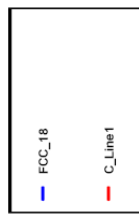
Temp.: 17.5 C, Hum.: 52.8 %

Barometer Pres.:102.31 kPa

Operator: Jeremy LEE

11:39:31 AM, Monday, May 12, 2008

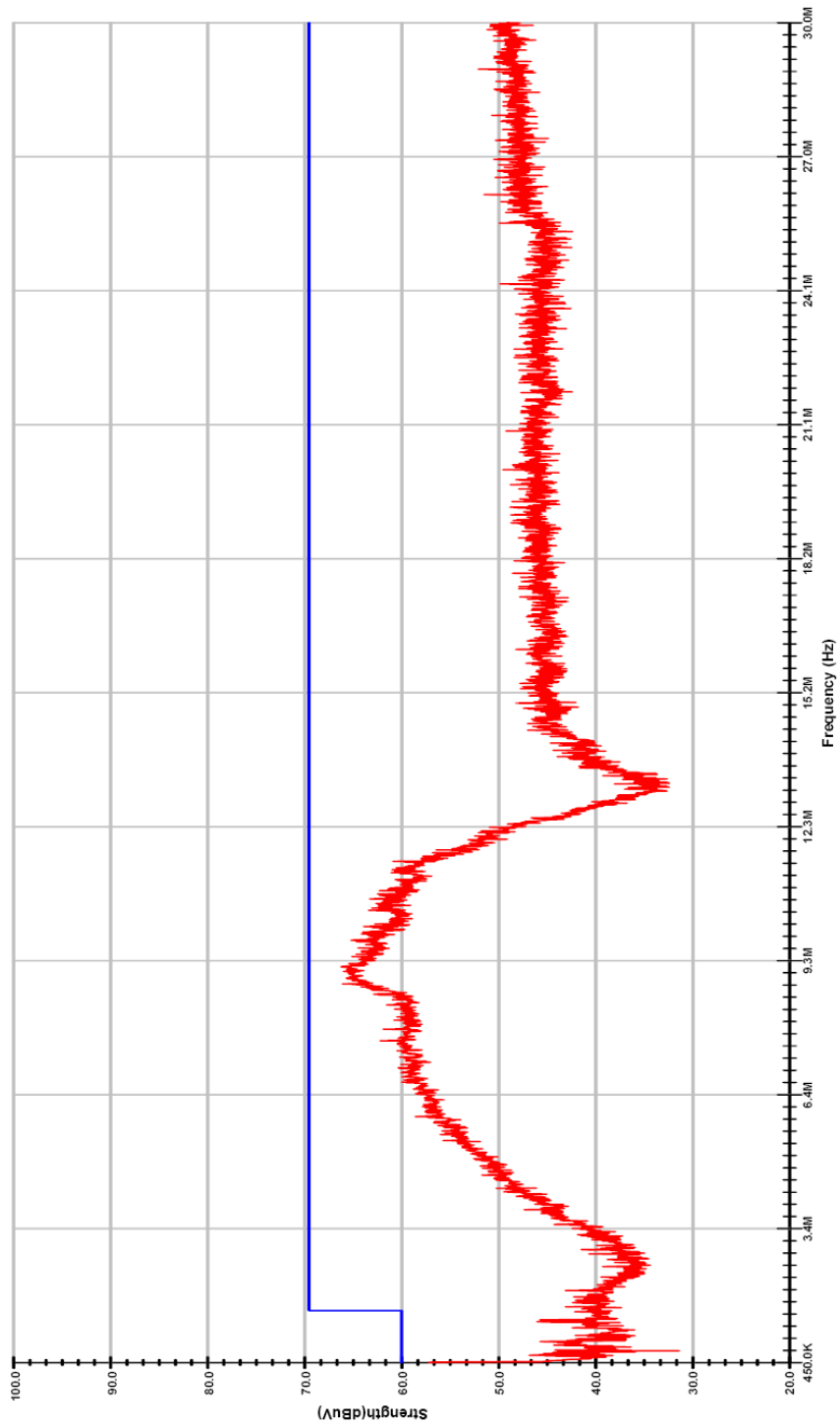
- Graph of Conducted Emission-Line; ISE-400-DLN, 240VAC



LabTest Certification Inc.

FCC Part 18, Conducted Emission

Line, 240V



Project #: 9122

Contact: Frantz Argurov

Company: Industrial System Electronics Inc.

Sample #: 604472

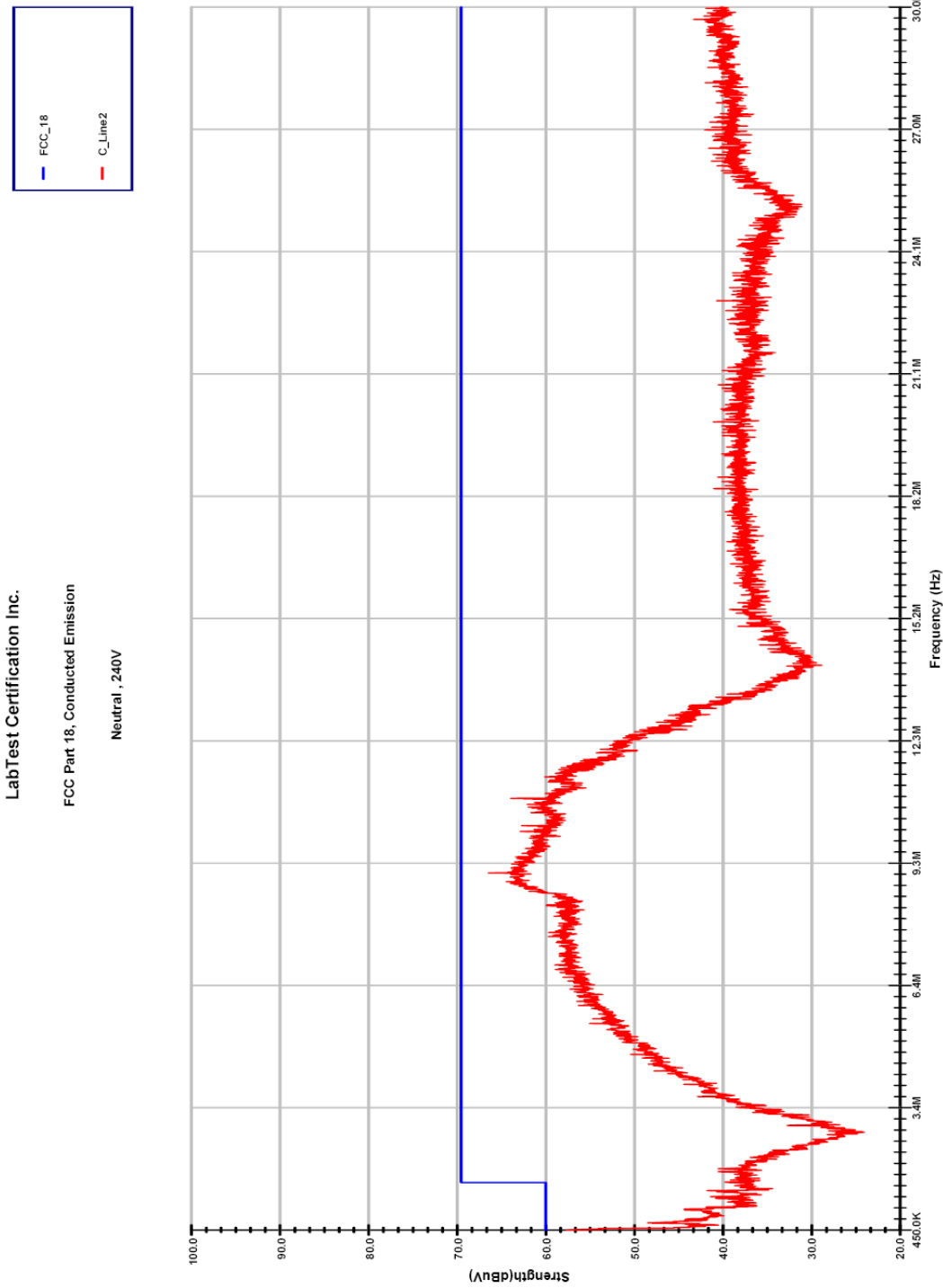
Temp.: 17.5 C, Hum.: 52.8 %

Barometer Pres.: 102.31 kPa

Operator: Jeremy LEE

10:58:26 AM, Monday, May 12, 2008

- Graph of Conducted Emission-Neutral; ISE-400-DLN, 240VAC



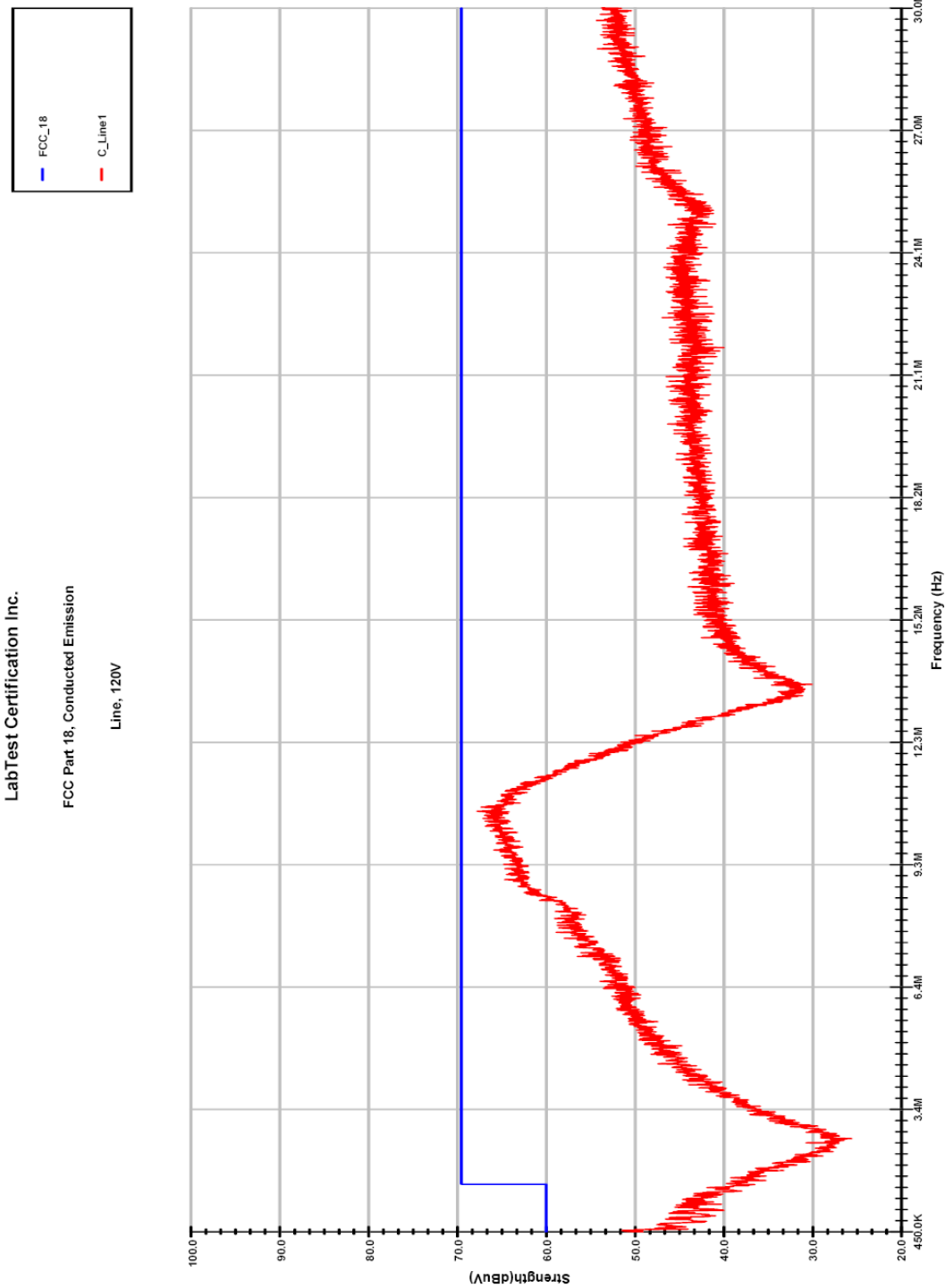
LabTest Certification Inc.  
FCC Part 18, Conducted Emission  
Neutral, 240V

Project #: 9122  
Contact: Frantz Arguirov  
Company: Industrial System Electronics Inc.

Sample #: 604472  
Temp.: 17.5 C, Hum.: 52.8 %  
Barometer Pres.: 102.31 kPa

Operator: Jeremy LEE  
11:42:18 AM, Monday, May 12, 2008

- Graph of Conducted Emission-Line; ISE-600-DLN, 120VAC

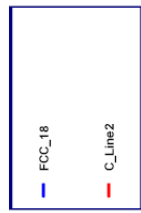


Project #: 9122  
Contact: Frantz Arguirov  
Company: Industrial System Electronics Inc.

Sample #: 604473  
Temp.: 20.8 C, Hum.: 51.1 %  
Barometer Pres.: 102.27 kPa

Operator: Jeremy LEE  
12:31:53 PM, Monday, May 12, 2008

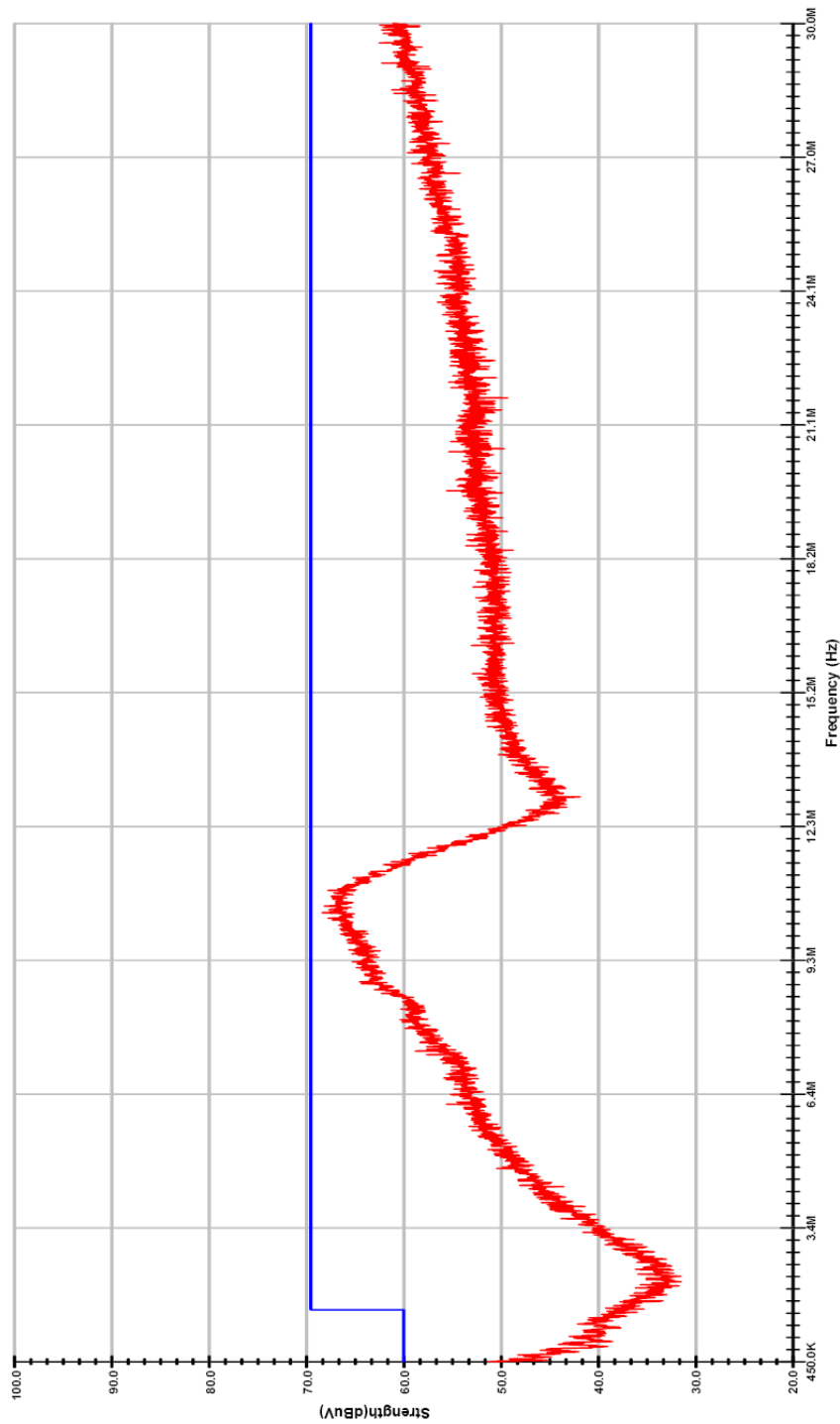
- Graph of Conducted Emission-Neutral; ISE-600-DLN, 120VAC



LabTest Certification Inc.

FCC Part 18, Conducted Emission

Neutral , 120V



Project #: 9122

Contact: Frantz Arguirov

Company: Industrial System Electronics Inc.

Sample #: 604473

Temp.: 20.8 C, Hum.: 51.1 %

Barometer Pres.: 102.27 kPa

Operator: Jeremy LEE

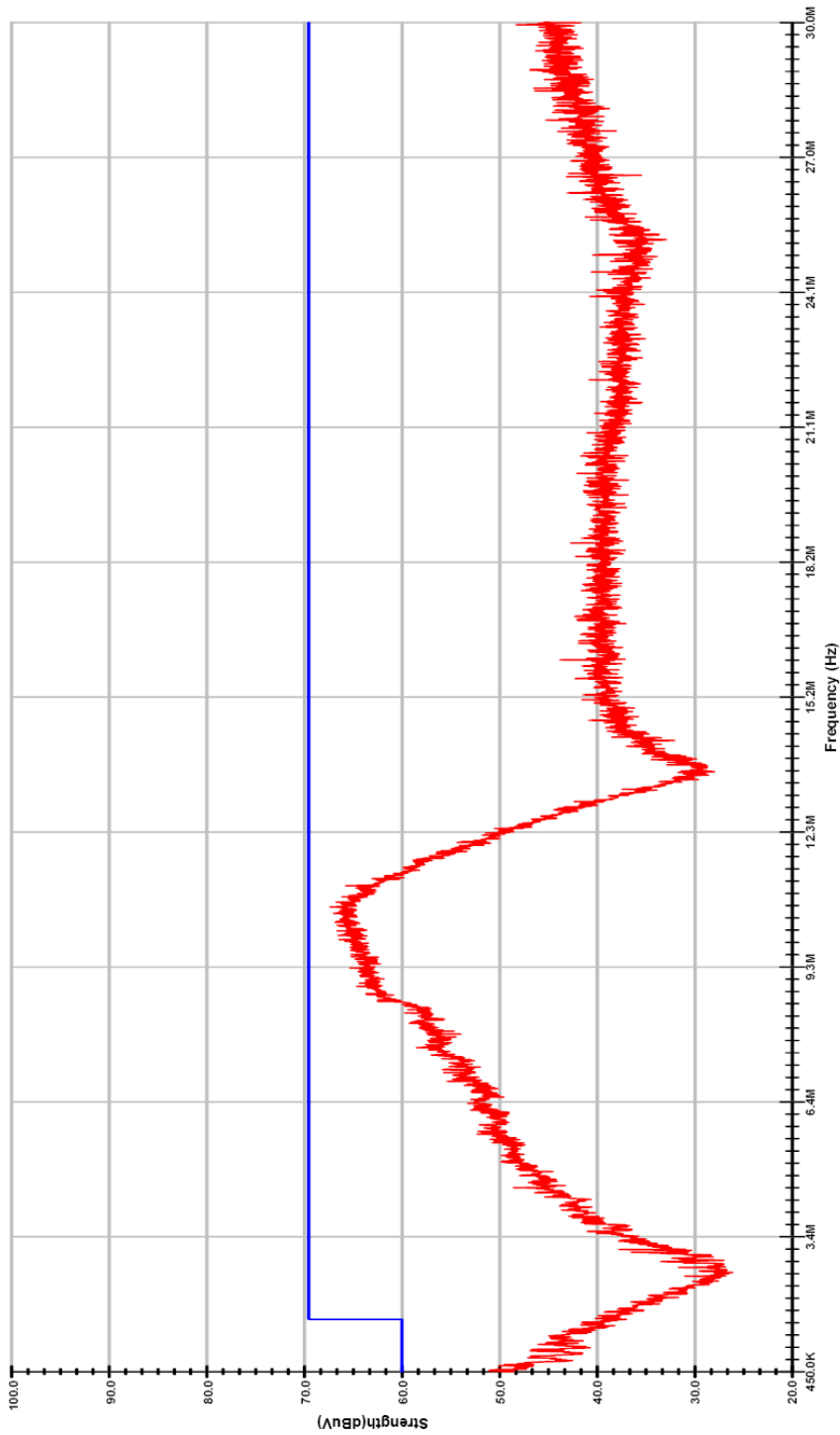
12:06:24 PM, Monday, May 12, 2008



- Graph of Conducted Emission-Line; ISE-600-DLN, 240VAC



LabTest Certification Inc.  
FCC Part 18, Conducted Emission  
Line, 240V

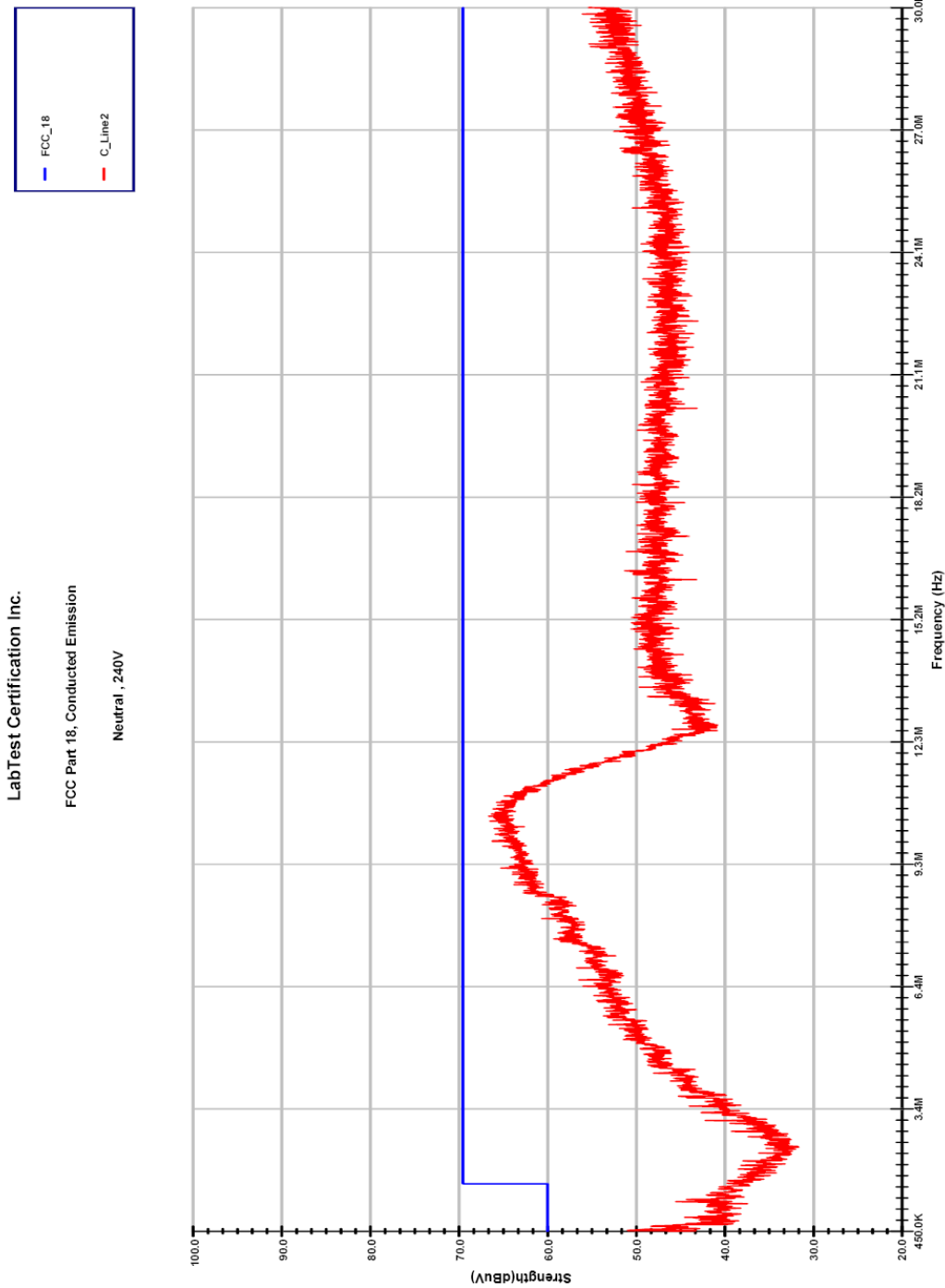


Project #: 9122  
Contact: Frantz Arguirov  
Company: Industrial System Electronics Inc.

Sample #: 604473  
Temp.: 20.8 C, Hum.: 51.1 %  
Barometer Pres.:102.26 kPa

Operator: Jeremy LEE  
12:34:42 PM, Monday, May 12, 2008

- Graph of Conducted Emission-Neutral; ISE-600-DLN, 240VAC



LabTest Certification Inc.  
FCC Part 18, Conducted Emission  
Neutral, 240V

Project #: 9122  
Contact: Frantz Argurov  
Company: Industrial System Electronics Inc.

Sample #: 604473  
Temp.: 20.8 C, Hum.: 51.1 %  
Barometer Pres.: 102.26 kPa

Operator: Jeremy LEE  
12:37:47 PM, Monday, May 12, 2008

## APPENDIX A: Test equipment used for tests

### - Emission Test

ID No.	Description	Manufacturer	Model	Serial No.	Calibration Date	Calibration Due Date	Calibration Certificate No:	Calibration Laboratory
058	Humidity/ Temperature Logger	Veriteq	SP-2000	04032164	13-Sep-2007	13-Sep-2008	0125372	Veriteq
059	AC power source	California Instrument	5000i	HK51870	N/A	N/A	N/A	N/A
106	Spectrum analyzer	HP	8596EM	3536A00113	15-Sep-2007	13-Sep-2008	CX19712	CMC
112	GTEM EMC Chamber	Emco	5317	N/A	04-Oct-2005	04-Oct-2010	1000082343	Wescan
124	Pre-Amplifier	Com-Power	PA-103	161118	29-Nov-2007	29-Nov-2008	269525	Wescan
127	LISN (I)	Com-Power	LI-200	12054	31-Aug-2007	29-Aug-2008	CX19714	CMC
128	LISN (II)	Com-Power	LI-200	12216	31-Aug-2007	29-Aug-2008	CX19713	CMC
225	Biconical Antenna	EMCO	3110B	9211-1595	28-Apr-2008	28-Apr-2009	S000013015	ETS-Lindgren
233	Coaxial RF Cable	N/A	LCI-001	N/A	15 Oct 2007	15 Oct 2009	268190	Wescan
235	Turn table System	Sunol Sciences Co.	SC104V	031407-1	N/A	N/A	N/A	N/A

## APPENDIX B: EUT photos

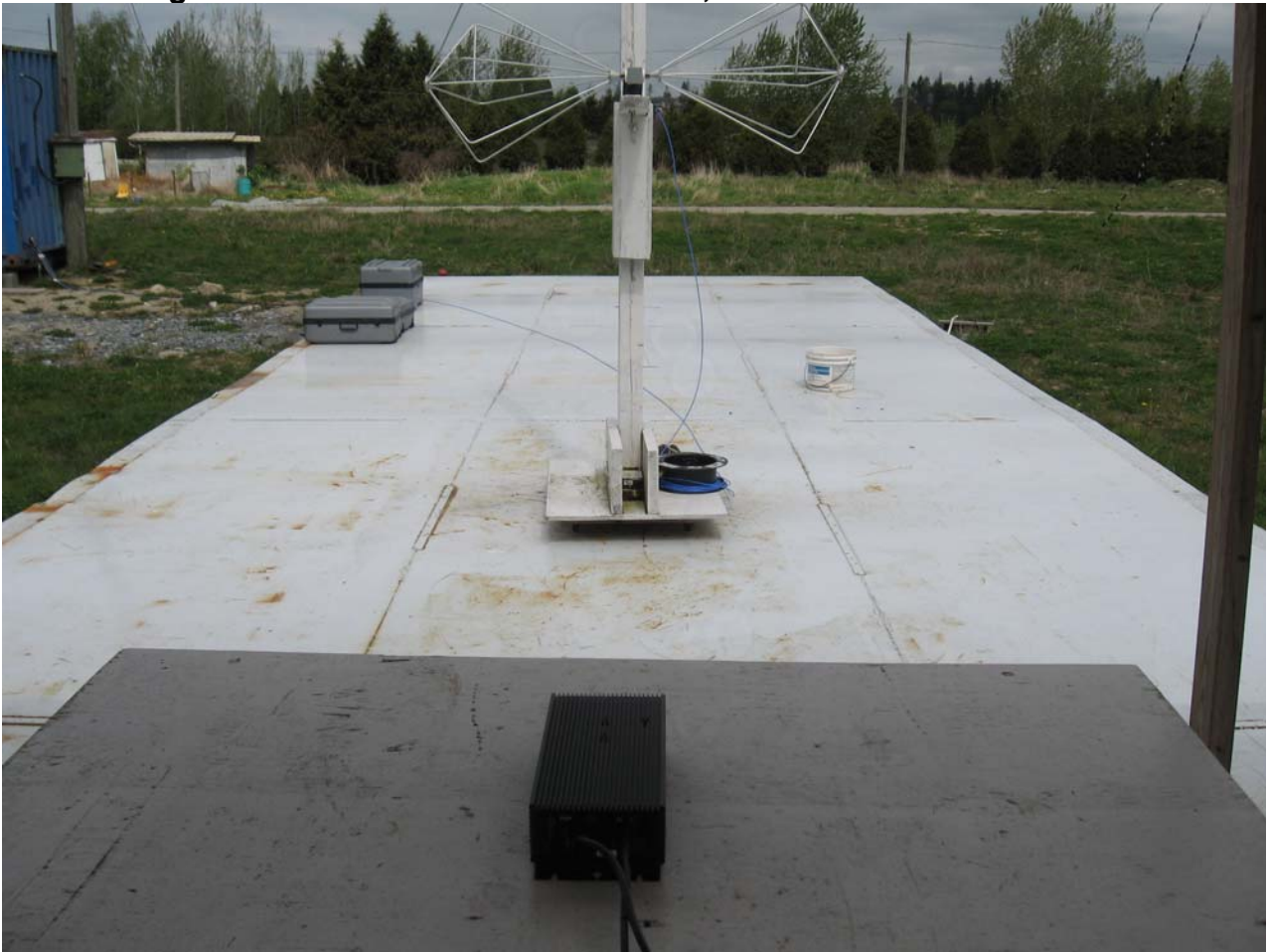
### - EUT; ISE-400-DLN



### - EUT; ISE-600-DLN



**- The Configuration of Radiated Emission Test; at OATS**



## - The Configuration of Conducted Emission Test



## APPENDIX C: Accreditation Certificate (ISO 17025)

**International Accreditation Service, Inc.**  
**CERTIFICATE OF ACCREDITATION**

*This is to signify that*

**LABTEST CERTIFICATION, INC.**  
3 133-20800 WESTMINSTER HIGHWAY  
RICHMOND, BC V6V 2W8 CANADA

Testing Laboratory TL-367

has demonstrated compliance with ANSI/ISO/IEC Standard 17025:2005, *General criteria for the competence of testing and calibration laboratories*, and has been accredited, commencing February 1, 2008, for the test methods listed in the approved scope of accreditation.



*Patrick V. McCullen*  
Patrick V. McCullen  
Vice President

*C. P. Ramani*  
C. P. Ramani, P.E.  
President

*(see attached scope of accreditation for fields of testing and accredited test methods)*

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation, or revocation of accreditation. See the IAS Accreditation Listings on the web at [www.iasonline.org](http://www.iasonline.org) for current accreditation information, or contact IAS directly at (562) 699-0541. Print Date : 02/21/2008

Page 1 of 4

## International Accreditation Service, Inc.

### SCOPE OF ACCREDITATION

LabTest Certification, Inc. TL-367

Lab Test Certification, Inc.  
 3133-20800 Westminster Highway  
 Richmond, BC V6V 2W3  
 Canada

Kavinder Dhillon  
 President and CEO  
 604-247-0444

FIELDS OF TESTING	ACCREDITED TEST METHODS
Gas and plumbing	ANSI Z21.1; ANSI Z21.19/1.6; ANSI Z21.57; ANSI Z21.89/CGA1.18; B45 series; B125; B140.0; B140.1; B140.3; B140.4; B140.8; B140.9.3; CGA 1.16
Electrical, EMC, and electro-mechanical	AS 4268.1, 4268.2; AS/NZS 1044, 1053, 2064, 3548, 3652, 4051, 4251.1, 4251.2, 62040.2; CISPR 11 / EN55011; CISPR 14 / EN55014; CISPR 15 / EN55015; CISPR 22 / EN55022; CISPR 24 / EN55024; EN 12895, 301 489, 300 386, 50083-2, 50090-2-2, 50091-2, 50121-1, 50121-2, 50121-3-1, 50121-3-2, 50121-4, 50121-5, 50130-4, 50263, 50270, 50293, 50295, 50370-1, 50370-2, 50428, 50470-1, 55012, 55013, 55103-1, 55103-2, 55103-3, 55103-4, 60204-31, 60439-1, 60669-2-1, 60669-2-2, 60669-2-3, 60730-1, 60730-2-11, 60730-2-13, 60730-2-14, 60730-2-18, 60730-2-5, 60730-2-6, 60730-2-7, 60730-2-8, 60730-2-9, 60870-2-1, 60945, 61204-3, 61326, 61543, 61547, 61547, 617:2001, 618, 619, 620, 62040.2; FCC Part 15, 18; GB 13837 (CISPR 13); GB 4943, 9254, 7000.1, 7000.10, 7000.11, 7000.12, 2313, 8898, 15143, 14045, 17743, 13836, 13837; GB/T 9383; GB/T 17618; GB 17625.1, 2; GB/T 17625.2, 17626.4, 17626.5; GB/T 17626.6, 17626.8, 17626.11; GB 4343.1 (CISPR 14.1), 4343.2 (CISPR 14.2); GB 4824; HKTA 1001, 1005, 1007, 1022; ICES-001, 003; JIS T 0601-1-2; IEC/EN/AS/KN: 60601-1-2; IEC/EN/AS/KN/JIS C: 61000-3-2, 61000-3-3, 61000-4-2, 61000-4-3, 61000-4-4, 61000-4-5, 61000-4-6, 61000-4-8, 61000-4-9, 61000-4-11, 61000-4-12, 61000-4-13, 61000-6-1, 61000-6-2, 61000-6-3, 61000-6-4; IEC/EN/AS/KN: 61326;

February 1, 2008  
 Commencement Date

  
 C. P. Ramani, P.E.  
 President

This accreditation certificate supersedes any IAS accreditation certificate bearing an earlier date. The certificate becomes invalid upon suspension, cancellation, or revocation of accreditation. See the IAS Accreditation Listings on the web at [www.iasonline.org](http://www.iasonline.org) for current accreditation information, or contact IAS directly at (562) 699-0541. Print Date: 02/21/2008 Page 2 of 4



## International Accreditation Service, Inc.

### SCOPE OF ACCREDITATION

LabTest Certification, Inc. TL-367

FIELDS OF TESTING	ACCREDITED TEST METHODS
Electrical, EMC, and electro-mechanical cont.	RSS-130, 136, 138, 182, 187, 210, 213, 245, 243, 310; MIL-STD-461E; MIL-STD-462D; KN60601-1-2; KN301489; KN22, 24; YD 1032; YD/T 965, 968, 993, 1103; C222 No. 0, .1, .17, 4, 6, 8, 9, 10, 12, 14, 15, 18, 24, 36, 37, 40, 43, 53, 61, 63, 64, 68, 71.1, 71.2, 72, 73, 81, 85, 89, 94, 99, 100, 101, 104, 107.1, 107.2, 108, 109, 110, 112, 113, 114, 117, 122, 125, 139, 141, 147, 149, 156, 157, 158, 164, 166, 167, 168, 169, 173, 177, 184, 187, 191, 195, 205, 207, 213, 217, 218.1, 218.2, 223, 224, 225, 231, 234, 236, 243, 247, 250, 60065; CSA-E60079-0, -6, -11, -15; CSA-E60335-1, -2; CSA-E60730-1, -2; CSA-E60745-1, -2; CSA-E61010-1, -2; CSA E742; IEC/EN 60335-1, -2; IEC/EN 60730-1, -2; IEC/EN 60745-1, -2; IEC/EN 61010-1, -2; IEC/EN 60601-1, -2; IEC/EN 60065; IEC/EN 60079-0, -6, -11, -15; IEC/EN 60950-1, -2; IEC/EN 60529; IEC/EN 60945; IEC/EN 60698-1, -2; IEC/EN 61347-1; UL 48, 50, 73, 197, 499, 507, 508, 508A, 745-1, 751, 763, 778, 858, 867, 875, 924, 935, 982, 987, 998, 1004, 1012, 1026, 1261, 1310, 1431, 1472, 1563, 1564, 1585, 1598, 1647, 1795, 1993, 1995, 6500, 60079-0, 60079-6, 60079-11, 60079-15, 60335-1, 60335-2, 60601-1, 60601-2, 60730-1, 60730-2, 60745-1, 60745-2, 60950-1, 61010-1, 61010-2
Environmental and Energy	IEC/EN 60068-2-1, 2-2, 2-6, 2-30; IEC/EN 60092-10-1; IEC/EN 60695-2-2; MIL-STD-810: Method 500.4, 501.4, 502.4, 503.4, 506.4, 507.4, 510.4, 512.4, 514.5; RTCA-DO-160E: Section 4, 5, 6, 7.2, 8, 10, 12, 16, 17, 25; CAN/CSA C-300; CAN/CSA C-814; Qualification Criteria for Bottled Water Cooler Version 1.1 - May 2004; Qualification Criteria for Compact Fluorescent Lamps Version 3.0 - October 2003; Qualification Criteria for Decorative Light Strings Version 1.3 - March 9, 2007; Qualification Criteria for Residential Light Fixtures Version 4.0; Qualification Criteria for Home Audio and DVD Equipment

February 1, 2008

Commencement Date



C. P. Ramani, P.E.  
 President

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Page 3 of 4

## International Accreditation Service, Inc.

### SCOPE OF ACCREDITATION

LabTest Certification, Inc. TL-367

FIELDS OF TESTING	ACCREDITED TEST METHODS
Maritime	A-3, 7, 26, 27, 28, 30, 31; E-2, 11; H-22; P-14, 17, 18, 21, 22, 24, 27; EN 28846, 28848, 28849, 29775, 60092-507; EN ISO 10133, 12216, 13297, 13929, 14895, 15083, 8847, 8849, 10239, 10240, 10592; 1995/A1, 11105, 11192, 9097:1994/A1; IACS E1 – E21

February 1, 2008  
Commencement Date

  
C. P. Ramani, P.E.  
President

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**END OF REPORT**