

AUREX ELECTRONICS INDUSTRIES, INC

Ganpi Management Sec. Zhenlong Zhen, Hui Zhou City, Guangdong Prvince, China

PHONE : 0752-3956567, FAX : 0752-3956571

ACCORD EMC INSTRUCTION ASSESSMENT REPORT

1. Applicant Company: AUREX INDUSTRIES, INC

Address: 9FL., No.13, Sec.2, Beitou Rd., Beitou, Taipei ,11268, Taiwan

2. Manufacturer Name: AUREX ELECTRONICS INDUSTRIES, INC

Address: Ganpi Management Sec. Zhenlong Zhen, Hui Zhou City, Guangdong Province, China

3. Report Number: 07-04-MAS-160

Product Name: Motion Detector Light Control

Model Number: OS-181C OS-181A OS-181B

Trade Name: AX

4. Test Specification: This product is based on Electromagnetic Compatibility

Compatibility Directive: 2004/108/EC

And through the report number: 07-04-MAS-160 Assessment for

Standard: EN55015:2013 EN61547:2009

5. Test Result: Testing project on product without any effect, and accord with the requirements of EMC.

Signature: Huyongrong

Name: Yong Rong Hu

Date: 2015.06.04

4.2.2 RF Radiated Fields Immunity Test:**4.2.2.1 RF Radiated Fields Immunity Test Data:**A. Operating Conditions of the EUT: Operation ModeB. Operating Conditions of the EUT: Static Mode

Test Date: May. 04, 2015

Test Specification	IEC 61000-4-3		
Climatic Condition	Ambient Temperature: <u>22</u> °C		Relative Humidity: <u>58</u> % RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Frequency Range : <u>80</u> MHz ~ <u>1000</u> MHz		Field Strength : <u>3</u> V/m	Modulation (AM 1kHz 80%)
Sweep Rate : 1.5×10^{-3} decades/s	Step Size : 1 % of preceding frequency value		Dwell Time : <u>3.0</u> s
Frequency Range (MHz)	Test Axis	Polarization of Device	Test Result
80~1000	x-axis	Vertical	B
80~1000	y-axis	Vertical	B
80~1000	z-axis	Vertical	B

Note: “A” means the EUT function was correct during the test.

“B” means the EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.

A. Operating Conditions of the EUT: Operation ModeB. Operating Conditions of the EUT: Static Mode

Test Date: May. 04, 2015

Test Specification	IEC 61000-4-3		
Climatic Condition	Ambient Temperature: <u>22</u> °C		Relative Humidity: <u>58</u> %RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Frequency Range : <u>1400</u> MHz ~ <u>2000</u> MHz		Field Strength : <u>3</u> V/m	Modulation (AM 1kHz 80%)
Sweep Rate : 1.5×10^{-3} decades/s	Step Size : 1 % of preceding frequency value		Dwell Time : <u>3.0</u> s
Frequency Range (MHz)	Test Axis	Polarization of Device	Test Result
1400~2000	x-axis	Vertical	B
1400~2000	y-axis	Vertical	B
1400~2000	z-axis	Vertical	B

Note: “A” means the EUT function was correct during the test.

“B” means the EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.



**CONFORMANCE TEST REPORT
FOR
EN 55014-1 / EN 55014-2**

Report No.: 07-04-MAS-160




Client: AUREX INDUSTRIES, INC
Product: Motion Detector Light Control
Model No.: OS-181C
Manufacturer/supplier: AUREX ELECTRONICS INDUSTRIES, INC

Date test item received: 2007/04/24
Date test campaign completed: 2007/06/14
Date of issue: 2007/06/15

The test result only corresponds to the tested sample. It is not permitted to copy this report, in part or in full, without the permission of the test laboratory.

Total number of pages of this test report: 22 pages

Total number of pages of this test photos: 12 pages

Test Engineer	Checked By	Approved By
 Yi-Hone Cheng	 Terry Huang	 Tsung-Ching Lin

ELECTRONICS TESTING CENTER, TAIWAN
NO.8, LANE 29, WEN-MING RD.,
LO-SHAN TSUN, KUI-SHAN HSIANG,
TAOYUAN HSIEN 33383
TAIWAN, R.O.C.

TEL: (03) 3276170~4
INT: +886-3-3276170~4
FAX: (03) 3276188
INT: +886-3-3276188



Laboratory Introduction: Electronics Testing Center, Taiwan is recognized, filed and mutual recognition arrangement as following:

- ① ISO9001: TüV Product Service
- ② ISO/IEC 17025: BSMI, CNLA, DGT, NVLAP, CCIBLAC, UL, Compliance
- ③ Filing: FCC, Industry Canada, VCCI
- ④ MRA: Australia, Hong Kong, New Zealand, Singapore, USA, Japan, Korea, China, APLAC through CNLA
- ⑤ FCC Registration Number: 90588, 91094, 91095

CONTENTS

● EMC TEST REPORT.....	1
● CONTENTS	2
1 TEST REPORT CERTIFICATION.....	4
2 GENERAL INFORMATIONS.....	5
2.1 Description of EUT:	5
2.2 Related Information of EUT:.....	5
2.3 Tested Configuration:	5
2.4 Deviation Record:	5
2.5 Modification Record:	5
3 SUMMARY OF TEST RESULTS	6
3.1 Emissions:	6
3.1.1 Conducted Emissions	6
3.1.2 Disturbance Power	6
3.1.3 Harmonics Current Emissions	6
3.1.4 Voltage Fluctuations and Flicker	6
3.2 Immunity:	6
3.2.1 Immunity Criteria:.....	6
3.2.2 Electrostatic Discharge Immunity:	7
3.2.3 RF Radiated Fields Immunity:	7
3.2.4 EFT/Burst Immunity:	7
3.2.5 Surge Immunity:.....	7
3.2.6 RF Common Mode Immunity:	7
3.2.7 Power Frequency Magnetic Field Immunity:.....	7
3.2.8 Voltage Interruptions and Voltage Dips Immunity:.....	7
4 TEST DATA & RELATED INFORMATIONS.....	8
4.1 Emissions:	8
4.1.1 Conducted Emissions Test:	8
4.1.1.1 Conducted Emissions Test Data:.....	8
4.1.2 Disturbance Power Test:.....	10
4.1.2.1 Disturbance Power Test Data:.....	10
4.1.3 Harmonics Current Emissions Test:.....	11
4.1.3.1 Harmonics Current Emissions Test Data:	11
4.1.4 Voltage Fluctuations and Flicker Test:	13
4.1.4.1 Voltage Fluctuations and Flicker Test Data:.....	13
4.2 Immunity:	14
4.2.1 Electrostatic Discharge Immunity Test:	14
4.2.1.1 Electrostatic Discharge Immunity Test Data:.....	14

4.2.2	RF Radiated Fields Immunity Test:.....	16
4.2.2.1	RF Radiated Fields Immunity Test Data:.....	16
4.2.3	EFT/Burst Immunity Test:.....	17
4.2.3.1	EFT/Burst Immunity Test Data:.....	17
4.2.4	Surge Immunity Test:	18
4.2.4.1	Surge Immunity Test Data:.....	18
4.2.5	RF Common Mode Immunity Test:	19
4.2.5.1	RF Common Mode Immunity Test Data:.....	19
4.2.6	Power Frequency Magnetic Field Immunity Test:.....	20
4.2.6.1	Power Frequency Magnetic Field Immunity Test Data:	20
4.2.7	Voltage Interruptions and Voltage Dips Immunity Test:	21
4.2.7.1	Voltage Interruptions and Voltage Dips Immunity Test Data:.....	21
5	EQUIPMENTS LIST FOR TESTING.....	22
ANNEX A: PHOTOS.....		A1~A12
ANNEX B: DIFFERENCE INFORMATIONS OF SERIES MODEL		B1



1 TEST REPORT CERTIFICATION

Client	: AUREX INDUSTRIES, INC	
Address	: 1F, No. 2, Lane 75, Hwai-Teh St., Taipei, Taiwan, ROC	
Manufacturer	: AUREX ELECTRONICS INDUSTRIES, INC	
Address	: Ganpi Management Sec. Zhenlong Zhen, Hui Zhou City, Guangdong Prvince, China	
EUT	: Motion Detector Light Control	
Trade Name	: Aurex	
Model No.	: OS-181C	
Comment Issues	: OS-181A, OS-181B	
Test Standard	Emissions	Immunity
	EN 55014-1:2000/A1:2001/A2:2002	EN 55014-2:1997/A1:2001
	EN 61000-3-2:2005	IEC 61000-4-2:2001
	EN 61000-3-3:2005	IEC 61000-4-3:2006
		IEC 61000-4-4:2004
		IEC 61000-4-5:2005
		IEC 61000-4-6:2006
		IEC 61000-4-8:1993/A1:2000
		IEC 61000-4-11:2004

The testing described in this report has been carried out to the best of our knowledge and ability, and our responsibility is limited to the exercise of reasonable care. This certification is not intended to believe the sellers from their legal and/or contractual obligations.

2 GENERAL INFORMATION

2.1 Description of EUT:

The lighting is switched on automatically when the detector is triggered by the movements and the ambient light level reaches the pre-set switch-on value.

Contrarily, the lighting will be switched off automatically in the absence of movements and the pre-set switch-off time reached.

2.2 Related Information of EUT:

Power Supply	:	AC Power 230Vac, 50Hz		
Power Line	:	Nonshielded	Shielded	None , length: <u>1.8</u> m
Signal Line	:	Nonshielded	Shielded	None , length: _____ m
Control Line	:	Nonshielded	Shielded	None , length: _____ m
TEL. Line	:	Nonshielded	Shielded	None , length: _____ m
Data Line	:	Nonshielded	Shielded	None , length: _____ m

* For more detailed features, please refer to User's Manual.

2.3 Tested Configuration:

The EUT connected with the following peripheral devices.

Following peripheral devices and interface cables were connected during the measurement:

Product	Manufacturer	Model No.	I/O Cable
Lamp*3	N/A	N/A	0.7m, Unshielded Signal Line

2.4 Deviation Record:

(If any deviation from additions to or exclusions from test method must be stated)

N/A

2.5 Modification Record:

No modifications were required. (That is the EUT complied with the requirement as tested.)

3 SUMMARY OF TEST RESULTS

3.1 Emissions:

3.1.1 Conducted Emissions

-PASS

Peak EMI value to the limit: -26.4 dB at 0.150 MHz

3.1.2 Disturbance Power

-PASS

Peak EMI value to the limit: -17.6 dB at 33.420 MHz

3.1.3 Harmonics Current Emissions

-PASS

The harmonics current values were under the limits of the class A equipment of the EN 61000-3-2.

3.1.4 Voltage Fluctuations and Flicker

-PASS

The voltage fluctuations and flicker values were under the limits of the EN 61000-3-3 requirements.

3.2 Immunity:

3.2.1 Immunity Criteria:

The results of all of the immunity tests performed on the EUT were evaluated according to the following criteria, and according to the manufacturer's specifications for the EUT:

Performance criterion A: The EUT continued to operate as intended. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended.

Performance criterion B: The EUT continued to operate as intended after the test. No degradation of performance or loss of function was allowed below a performance level specified by the manufacturer, when the EUT was used as intended. During the test, degradation of performance was however allowed. No change of actual operating state or stored data was allowed.

Performance criterion C: Temporary loss of function was allowed, provided the function was self recoverable or could be restored by the operation of the controls.

3.2.2 Electrostatic Discharge Immunity:

- No Degradation of Function
- Distortion of Function
- Error of Function

Requirement: Criterion B (or better)

- Satisfies Criterion A
- Satisfies Criterion B
- Satisfies Criterion C

3.2.3 RF Radiated Fields Immunity:

- No Degradation of Function
- Distortion of Function
- Error of Function

Requirement: Criterion A

- Satisfies Criterion A
- Satisfies Criterion B
- Satisfies Criterion C

3.2.4 EFT/Burst Immunity:

- No Degradation of Function
- Distortion of Function
- Error of Function

Requirement: Criterion B (or better)

- Satisfies Criterion A
- Satisfies Criterion B
- Satisfies Criterion C

3.2.5 Surge Immunity:

- No Degradation of Function
- Distortion of Function
- Error of Function

Requirement: Criterion B (or better)

- Satisfies Criterion A
- Satisfies Criterion B
- Satisfies Criterion C

3.2.6 RF Common Mode Immunity:

- No Degradation of Function
- Distortion of Function
- Error of Function

Requirement: Criterion A

- Satisfies Criterion A
- Satisfies Criterion B
- Satisfies Criterion C

3.2.7 Power Frequency Magnetic Field Immunity:

- No Degradation of Function
- Distortion of Function
- Error of Function

Requirement: Criterion A

- Satisfies Criterion A
- Satisfies Criterion B
- Satisfies Criterion C

3.2.8 Voltage Interruptions and Voltage Dips Immunity:

- No Degradation of Function
- Distortion of Function
- Error of Function

Requirement: Criterion C (or better)

- Satisfies Criterion A
- Satisfies Criterion B
- Satisfies Criterion C

4 TEST DATA & RELATED INFORMATION

4.1 Emissions:

4.1.1 Conducted Emissions Test:

4.1.1.1 Conducted Emissions Test Data:

A. Operating Conditions of The EUT: Operation Mode

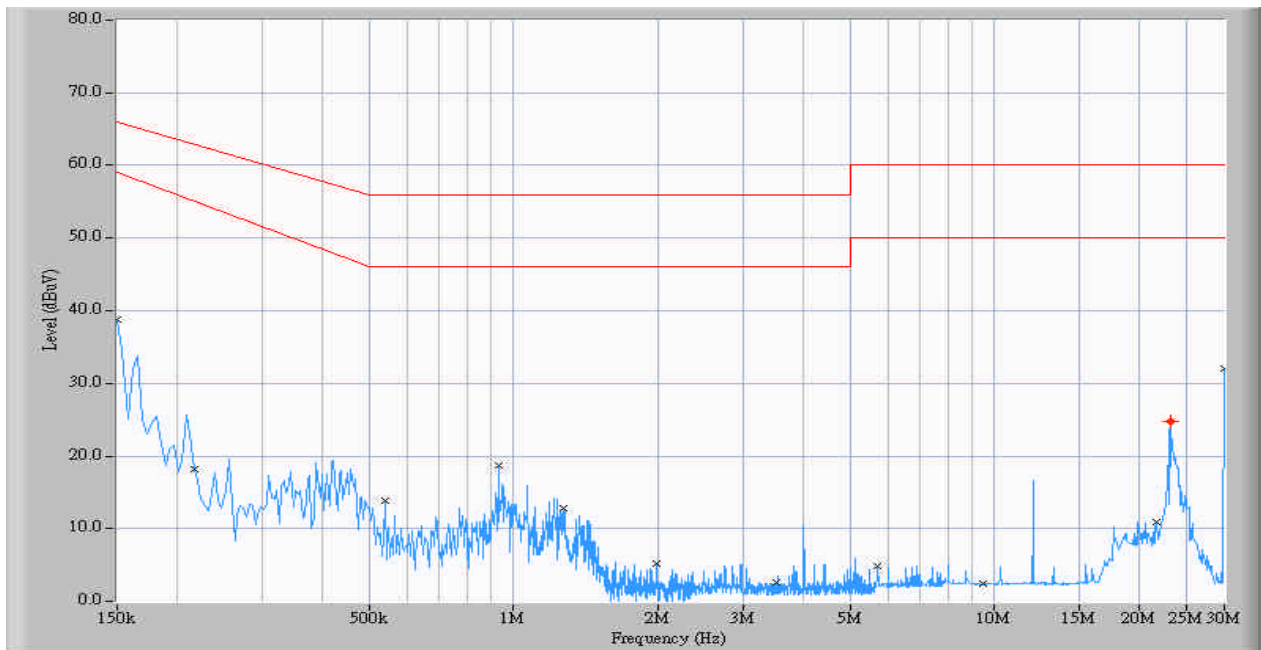
Test Date: Apr. 26, 2007

Test Specification	EN 55014-1:2000/A1:2001/A2:2002		
Climatic Condition	Ambient Temperature: <u>21°</u> C		Relative Humidity: <u>58%</u> RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

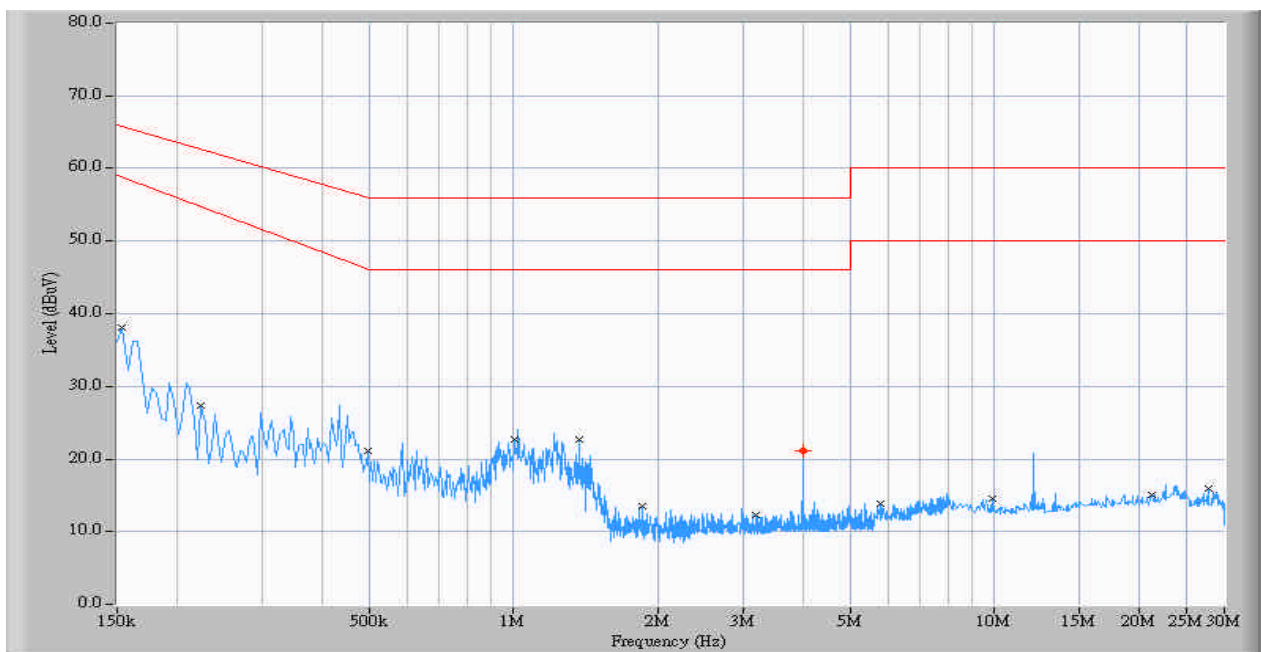
Freq. (MHz)	Meter Reading (dBuV)				Factor (dB)	Result (dBuV)				Limit (dBuV)		Margins (dB)
	Q.P Value		AVG. Value			Q.P Value		AVG. Value		Q.P Value	AVG Value	Q.P. or AVG
	L1	L2	L1	L2		L1	L2	L1	L2			
0.150	38.8	***	----	----	0.8	39.6	***	----	----	66.0	59.0	-26.4
0.154	***	38.1	----	----	0.8	***	38.9	----	----	65.8	58.7	-26.9
0.216	18.2	***	----	----	0.6	18.8	***	----	----	63.0	55.0	-44.2
0.224	***	27.3	----	----	0.6	***	27.9	----	----	62.7	54.7	-34.8
0.498	***	21.2	----	----	0.2	***	21.4	----	----	56.0	46.1	-34.6
0.541	13.8	***	----	----	0.2	14.0	***	----	----	56.0	46.0	-42.0
0.931	18.7	***	----	----	0.2	18.9	***	----	----	56.0	46.0	-37.1
1.002	***	22.6	----	----	0.2	***	22.8	----	----	56.0	46.0	-33.2
1.271	12.7	***	----	----	0.2	12.9	***	----	----	56.0	46.0	-43.1
1.369	***	22.7	----	----	0.2	***	22.9	----	----	56.0	46.0	-33.1
1.849	***	13.5	----	----	0.2	***	13.7	----	----	56.0	46.0	-42.3
1.982	5.1	***	----	----	0.2	5.3	***	----	----	56.0	46.0	-50.7
3.197	***	12.2	----	----	0.3	***	12.5	----	----	56.0	46.0	-43.5
3.509	2.5	***	----	----	0.3	2.8	***	----	----	56.0	46.0	-53.2
4.002	***	21.1	----	----	0.3	***	21.4	----	----	56.0	46.0	-34.6
5.705	4.8	***	----	----	0.3	5.1	***	----	----	60.0	50.0	-54.9
5.787	***	13.8	----	----	0.3	***	14.1	----	----	60.0	50.0	-45.9
9.423	2.5	***	----	----	0.4	2.9	***	----	----	60.0	50.0	-57.1
9.888	***	14.5	----	----	0.4	***	14.9	----	----	60.0	50.0	-45.1
21.154	***	15.1	----	----	0.3	***	15.4	----	----	60.0	50.0	-44.6
21.689	11.0	***	----	----	0.3	11.3	***	----	----	60.0	50.0	-48.7
23.154	24.8	***	----	----	0.3	25.1	***	----	----	60.0	50.0	-34.9
27.752	***	15.9	----	----	0.4	***	16.3	----	----	60.0	50.0	-43.7
30.000	32.1	***	----	----	0.5	32.6	***	----	----	60.0	50.0	-27.4

- Notes:
- 1) Place of measurement: EMC LAB. of the ETC (1F)
 - 2) The EUT was placed 0.8m above reference ground plane.
 - 3) Example calculation: result for 0.150 MHz: $38.8 + 0.8 = 39.6 \text{ dB } \mu\text{V}$
 - 4)① If the data table appeared symbol of "****" means the value was too low to be measured.
 ② If the data table appeared symbol of "----" means the Q.P. value is under the limit for AVG. so, the AVG. value doesn't need to be measured.
 ③ If the data table appeared symbol of “#” means the noise was low, so record the peak value.
 - 5) The estimated measurement uncertainty of the result measurement is $\pm 2.5\text{dB}$.

L1



L2



4.1.2 Disturbance Power Test:**4.1.2.1 Disturbance Power Test Data:****A. Operating Conditions of The EUT: Operation Mode**

Test Date: Apr. 26, 2007

Test Specification	EN 55014-1:2000/A1:2001/A2:2002
Climatic Condition	Ambient Temperature: <u>20°</u> C Relative Humidity: <u>60%</u> RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz

Freq. (MHz)	Factor (dB)	Meter Reading (dBpW)		Result (dBpW)		Limit (dBpW)		Margins (dBpW)
		Q.P. Value	AVG. Value	Q.P. Value	AVG. Value	Q.P. Value	AVG. Value	Q.P. or AVG.
33.420	3.50	24.0	----	27.5	----	45.1	35.1	-17.6
42.060	0.20	27.4	----	27.6	----	45.4	35.4	-17.8
63.120	0.40	25.0	----	25.4	----	46.2	36.2	-20.8
93.900	-0.40	24.3	----	23.9	----	47.4	37.4	-23.5
151.140	-1.70	25.7	----	24.0	----	49.5	39.5	-25.5
181.380	-1.90	26.2	----	24.3	----	50.6	40.6	-26.3
224.040	2.30	25.4	----	27.7	----	52.2	42.2	-24.5
298.020	-2.30	25.4	----	23.1	----	54.9	44.9	-31.8

Notes: 1) Place of Measurement: Measuring site of the ETC (2F)2) Measurement Equipment Used: Absorbing Clamp

3) ①If the data table appeared symbol of "****" means the value was too low to be measured.

②If the data table appeared symbol of "----" means the Q.P. value is under the limit for AVG. so, the AVG. value doesn't need to be measured.

③If the data table appeared symbol of “#” means the noise was low, so record the peak value.

4.1.3 Harmonics Current Emissions Test:**4.1.3.1 Harmonics Current Emissions Test Data:**A. Operating Conditions of the EUT: Operation Mode

Test Date: Apr. 24, 2007

Test Specification	EN 61000-3-2:2005	
Climatic Condition	Ambient Temperature: <u>20</u> °C	Relative Humidity: <u>67%</u> RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz	

Test data see the next page.

Current Test Result Summary (Run time)

EUT:
 Test category: Class-A per Ed. 2.2 (European limits)
 Test date: 4/24/2007
 Test duration (min): 3
 Comment:
 Customer:

Tested by:
 Test Margin: 100
 Start time: 3:52:18 PM
 End time: 3:55:29 PM
 Data file name: CTSMXL_H-000089.cts_data

Test Result: Pass
 Source qualification: Normal
 THC(A): 0.084 I-THD(pk%): 6.879 POHC(A): 0.003 POHC Limit(A): 0.251
 Highest parameter values during test:
 V_RMS (Volts): 229.96
 I_Peak (Amps): 12.476
 I_Fund (Amps): 1.315
 Power (Watts): 315.2
 Frequency(Hz): 50.00
 I_RMS (Amps): 1.460
 Crest Factor: 8.547
 Power Factor: 1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.003	1.080	0.3	0.051	1.620	3.17	Pass
3	0.007	2.300	0.3	0.033	3.450	0.96	Pass
4	0.001	0.430	0.3	0.026	0.645	4.05	Pass
5	0.004	1.140	0.4	0.023	1.710	1.34	Pass
6	0.001	0.300	0.4	0.018	0.450	4.00	Pass
7	0.003	0.770	0.4	0.017	1.155	1.48	Pass
8	0.001	0.230	0.4	0.014	0.345	3.95	Pass
9	0.001	0.400	0.3	0.013	0.600	2.18	Pass
10	0.001	0.184	0.4	0.011	0.276	4.05	Pass
11	0.002	0.330	0.6	0.011	0.495	2.19	Pass
12	0.001	0.153	0.7	0.010	0.230	4.29	Pass
13	0.002	0.210	1.0	0.009	0.315	2.94	Pass
14	0.001	0.131	0.6	0.008	0.197	4.23	Pass
15	0.001	0.150	0.6	0.008	0.225	3.59	Pass
16	0.001	0.115	0.6	0.007	0.173	4.20	Pass
17	0.001	0.132	0.8	0.007	0.199	3.60	Pass
18	0.001	0.102	0.8	0.007	0.153	4.30	Pass
19	0.001	0.118	1.2	0.007	0.178	3.66	Pass
20	0.001	0.092	0.8	0.006	0.138	4.28	Pass
21	0.001	0.107	0.8	0.006	0.161	3.69	Pass
22	0.001	0.084	0.8	0.005	0.125	4.35	Pass
23	0.001	0.098	1.0	0.006	0.147	3.76	Pass
24	0.001	0.077	0.9	0.005	0.115	4.35	Pass
25	0.001	0.090	1.2	0.005	0.135	3.76	Pass
26	0.001	0.071	0.9	0.005	0.106	4.34	Pass
27	0.001	0.083	1.1	0.005	0.125	3.72	Pass
28	0.001	0.066	1.0	0.004	0.099	4.21	Pass
29	0.001	0.078	0.9	0.004	0.116	3.71	Pass
30	0.001	0.061	1.2	0.004	0.092	4.40	Pass
31	0.001	0.073	1.3	0.004	0.109	3.69	Pass
32	0.001	0.058	1.1	0.004	0.086	4.50	Pass
33	0.001	0.068	1.3	0.004	0.102	3.86	Pass
34	0.001	0.054	1.2	0.004	0.081	4.37	Pass
35	0.001	0.064	1.2	0.004	0.096	3.84	Pass
36	0.001	0.051	1.9	0.004	0.077	4.68	Pass
37	0.001	0.061	1.5	0.004	0.091	3.86	Pass
38	0.001	0.048	2.2	0.004	0.073	5.22	Pass
39	0.001	0.058	1.9	0.004	0.087	4.15	Pass
40	0.001	0.046	2.7	0.003	0.069	4.64	Pass

4.1.4 Voltage Fluctuations and Flicker Test:**4.1.4.1 Voltage Fluctuations and Flicker Test Data:**A. Operating Conditions of the EUT: Operation Mode

Test Date: Apr. 24, 2007

Test Specification	EN 61000-3-3:2005		
Climatic Condition	Ambient Temperature: <u>20</u> °C		Relative Humidity: <u>67%</u> RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

	Test Data	Limit	Pass or Fail
Plt	0.070	0.65	Pass
Pst	0.160	1.00	Pass
dt	-0.59 %	3.3 %	Pass
dmax	-0.68 %	4.0 %	Pass
dc	-0.23 %	3.3 %	Pass

4.2 Immunity:

4.2.1 Electrostatic Discharge Immunity Test:

4.2.1.1 Electrostatic Discharge Immunity Test Data:

A. Operating Conditions of The EUT: Operation Mode

Test Date: Apr. 28, 2007

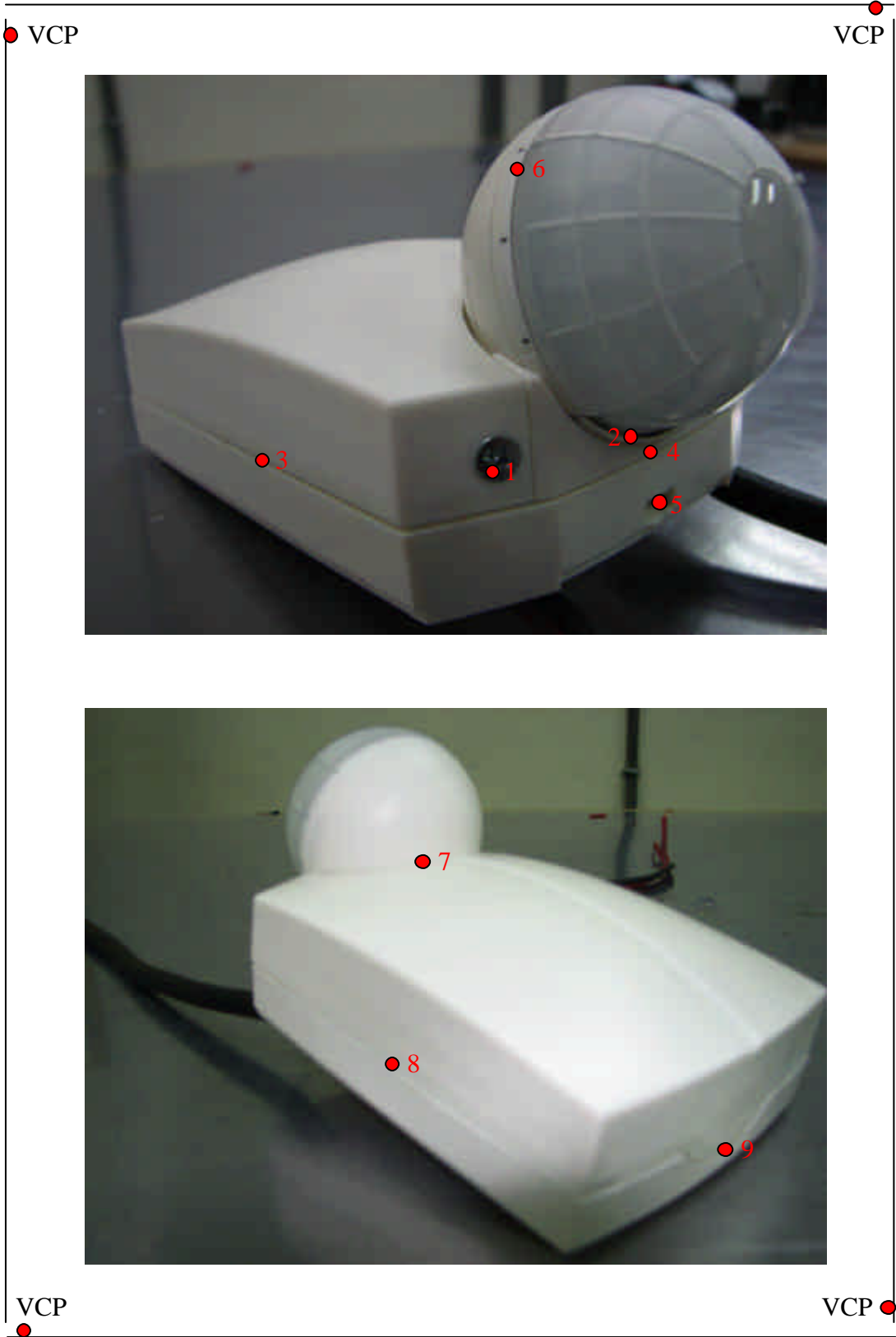
Test Specification	IEC 61000-4-2:2001		
Climatic Condition	Ambient Temperature: <u>26</u> °C Relative Humidity: <u>52%</u> RH Atmospheric Pressure: <u>985</u> mbar		
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Energy-Storage Capacitor : <u>150</u> pF Discharge Resistor : <u>330</u> Ω Discharge Times : <u>10</u> times/each condition																
\ Discharge Mode	Contact Discharge								Air Discharge							
\ESD Voltage	<u>2</u> kV		<u>4</u> kV		___ kV		___ kV		<u>2</u> kV		<u>4</u> kV		<u>8</u> kV		___ kV	
\Points\Result\Polarity	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+	-
VCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
HCP	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
1	A	A	A	A	--	--	--	--	--	--	--	--	--	--	--	--
2~9	--	--	--	--	--	--	--	--	A	A	A	A	A	A	--	--

Note: “ A ” means the EUT function was correct during the test.

“ -- ” means the test could not be carried out.

TEST POINTS



4.2.2 RF Radiated Fields Immunity Test:**4.2.2.1 RF Radiated Fields Immunity Test Data:**A. Operating Conditions of The EUT: Operation Mode

Test Date: Jun. 14, 2007

Test Specification	IEC 61000-4-3:2006		
Climatic Condition	Ambient Temperature: <u>21°</u> C		Relative Humidity: <u>56%</u> RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Frequency Range : <u>80</u> MHz ~ <u>1000</u> MHz		Field Strength : <u>3</u> V/m	Modulation (AM 1kHz 80%)
Sweep Rate : $\leq 1.5 \times 10^{-3}$ decades/s	Step Size : ≤ 1 % of preceding frequency value		Dwell Time : <u>2.9</u> s
Frequency Range (MHz)	Test Axis	Polarization of Device	Test Result
80~1000	x-axis	Vertical	A
80~1000	y-axis	Vertical	A
80~1000	z-axis	Vertical	A

Note: “ A ” means the EUT function was correct during the test.

4.2.3 EFT/Burst Immunity Test:**4.2.3.1 EFT/Burst Immunity Test Data:**A. Operating Conditions of The EUT: Operation Mode

Test Date: Apr. 24, 2007

Test Specification	IEC 61000-4-4:2004		
Climatic Condition	Ambient Temperature: <u>25°</u> C		Relative Humidity: <u>67%</u> RH
	Atmospheric Pressure: <u>986</u> mbar		
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Pulse: 5 /50ns Burst: 15ms /300ms		Repetition Rate: <u>2.5kHz</u> above 2.0kV <u>5kHz</u> below and equal 2.0kV		Test time: <u>1</u> min/each condition	
\Voltage\Polarity\		<u>1</u> kV		_____ kV	
\Test Point\Mode\Result\		+	-	+	-
Power Line	L	A	A	--	--
	N	A	A	--	--

Note: “ A ” means the EUT function was correct during the test.

“ -- ” means the test could not be carried out.

4.2.4 Surge Immunity Test:**4.2.4.1 Surge Immunity Test Data:**A. Operating Conditions of The EUT: Operation Mode

Test Date: Apr. 24, 2007

Test Specification	IEC 61000-4-5:2005		
Climatic Condition	Ambient Temperature: <u>25°</u> C Relative Humidity: <u>67%</u> RH Atmospheric Pressure: <u>986</u> mbar		
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Waveform: 1.2/50µs (8/20µs)		Repetition rate: <u>60</u> sec		Times: <u>5</u> times/each condition		
\Phase \Voltage \Mode \Polarity \Result			0°	90°	180°	270°
1.0 kV	L – N	+	A	A	A	A
		–	A	A	A	A

Note: “ A ” means the EUT function was correct during the test.

4.2.5 RF Common Mode Immunity Test:**4.2.5.1 RF Common Mode Immunity Test Data:**A. Operating Conditions of The EUT: Operation Mode

Test Date: Apr. 24, 2007

Test Specification	IEC 61000-4-6:2006		
Climatic Condition	Ambient Temperature: <u>23°</u> C		Relative Humidity: <u>71%</u> RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Frequency Range : <u>0.15</u> MHz ~ <u>230</u> MHz		Test Voltage : <u>3</u> V	Modulation (AM 1kHz 80%)
Sweep Rate : $\leq 1.5 \times 10^{-3}$ decades/s	Step Size : ≤ 1 % of preceding frequency value		Dwell Time : <u>2.9</u> s
Frequency Range (MHz)	Tested Line	Test Result	
0.15~230	Power Line (M2)	A	

Note: “ A ” means the EUT function was correct during the test.

4.2.6 Power Frequency Magnetic Field Immunity Test:**4.2.6.1 Power Frequency Magnetic Field Immunity Test Data:**A. Operating Conditions of The EUT: Operation Mode

Test Date: Jun. 14, 2007

Test Specification	IEC 61000-4-8:1993/A1:2000		
Climatic Condition	Ambient Temperature: <u>24</u> °C		Relative Humidity: <u>58%</u> RH
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Magnetic field frequency: <u>50</u> Hz		Continuous magnetic field strength: <u>3</u> A/m	
Magnetic field direction		Testing result	
X - Axis		A	
Y - Axis		A	
Z - Axis		A	

Note: "A" means the EUT function was correct during the test.

4.2.7 Voltage Interruptions and Voltage Dips Immunity Test:**4.2.7.1 Voltage Interruptions and Voltage Dips Immunity Test Data:**A. Operating Conditions of The EUT: Operation Mode

Test Date: Apr. 24, 2007

Test Specification	IEC 61000-4-11:2004		
Climatic Condition	Ambient Temperature: <u>20°</u> C		Relative Humidity: <u>67%</u> RH
	Atmospheric Pressure: <u>990</u> mbar		
Power Supply System	AC Power: <u>230</u> Vac <u>50</u> Hz		

Test mode	Voltage dips	Durations (ms)	Interval (s)	Times	Phase	Result
Voltage interruptions	100%	10	10	12	0° / 180°	B
Voltage dips in %U _T	60%	200	10	12	0° / 180°	B
	30%	1000	10	12	0° / 180°	B

Note: “B ” means the EUT function was not correct during the test, which was recovered by itself after test.

5 EQUIPMENTS LIST FOR TESTING

Item	Name	Manufacturer	Model	Calibration Date	Recommended Recal. Date
1	EMI Test Receiver	R&S	ESCS30	Jul. 17, 2006	Jul. 16, 2007
2	LISN	EMCO	37100/2M	Feb. 13, 2007	Feb. 12, 2008
3	Absorbing Clamp	R&S	MDS21	Jun. 29, 2006	Jun. 28, 2007
4	EMI Test Receiver	R&S	ESVS10	Apr. 20, 2007	Apr. 19, 2008
5	Power Analysis System	California Instruments	MX45-3PI-413 (PACS-3)	Aug. 11, 2006	Aug. 10, 2007
6	ESD Simulator	Noiseken	ESS-2000-G365	Nov. 27, 2006	Nov. 26, 2007
7	RF Generator	R&S	SMGL	Nov. 21, 2006	Nov. 20, 2007
8	Amplifier	IFI	M5540	Nov. 21, 2006	Nov. 20, 2007
9	EFT Generator / Clamp	Noiseken	FNS-AXII	Sep. 21, 2006	Sep. 20, 2007
10	Lighting Surge Simulator	Noiseken	LSS-15AX	Nov. 21, 2006	Nov. 20, 2007
11	Signal Generator	R&S	SMY02	Nov. 21, 2006	Nov. 20, 2007
12	RF Voltmeter	Boonton	9200B	Nov. 22, 2006	Nov. 21, 2007
13	-6dB Attenuator	RADIALL	R415706	Nov. 07, 2006	Nov. 06, 2007
14	801-6 Coupling Network-M2	FCC	4412-025	Nov. 06, 2006	Nov. 05, 2007
15	Digital Clamp Meter	TES	3050	Nov. 21, 2006	Nov. 20, 2007
16	EMC Immunity Test System	THERMO	EMCPRO PLUS	Aug. 25, 2006	Aug. 24, 2007