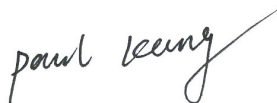


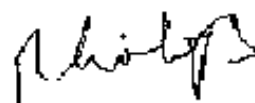
TEST REPORT
EMC requirements
Equipment for general lighting purposes

Report reference No.: 10110021 001

Tested by
(printed name and signature): Paul Kang



Approved by
(printed name and signature): Philips S.uar



Date of issue: 2010-11-02

Testing Laboratory Name: Hangzhou E & E Products Inspection Co., Ltd.

Testing location: Tofine Science & Technology Zone, No.48 Huanggushan Rd.,
Westlake District, Hangzhou, China 214411

Address: Same as above

Applicant's Name:

Address:

Test specification

Standard: EN 61000-6-1: 2007

EN 61000-6-3: 2007

Test procedure: CE-EMC

Non-standard test method: N/A

Test Report Form No.: IECENEMC_1B

TRF originator: E & E HZ_TUVAT

Master TRF: dated 2008-03

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Test item description: DIGITAL TIRE GAUGE

Trademark: --

Manufacturer.....: Yongjia Huihong Electronic Technology Co., Ltd.

Address: Wuniu Industry Area Yongjia, Wenzhou, Zhejiang, China

Model and/or type reference: 7763640 (MD-KF101024/86801), 86015, 8609

Rating(s) (V; Hz): --

.....:

Copy of marking plate:

DIGITAL TIRE GAUGE 7763640 (MD-KF101024/86801)

2 x LR03 alkaline batteries of 1,5 Vd.c.

Ningbo Mind Import& Export Co., Ltd.



Summary of testing

The submitted samples were found to be in compliance with below standards.

EN 61000-6-1: 2007

EN 61000-6-3: 2007

Tests performed (name of test and test clause):

See test report

Testing location:

Audix Technology (Shanghai) Co., Ltd.
3F., 34Bldg 680 Guiping Rd., Caohejing Hi-Tech Park,
Shanghai 200233, China

General product information:

The basic circuit diagrams between all the models are same, except that 7763640 has more additional functions. 7763640 was chosen for whole test as per the client request.

Test items particulars:	
Lamp cap	See p.4-p.5
Lamp identification	See p.4-p.5
Commission received from	Applicant
Date	2010-10-28
Test case verdicts	
Test case does not apply to the test object	N/A
Test item does meet the requirement	P(ass)
Test item does not meet the requirement	F(ail)
Testing	
Date of receipt of test item	2010-10-24
Date(s) of performance of test	2010-10-25 to 2010-11-02
General remarks	
<p>This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by a NCB in accordance with IEC 60730-2.</p> <p>This report shall not be reproduced except in full without the written approval of the testing laboratory. The test results presented in this report relate only to the item(s) tested.</p> <p>"(see enclosure #)" refers to additional information appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p>Throughout this report a comma (point) is used as the decimal separator.</p> <p>The test results obtained during witness test or with test specification required other than standard but by the applicant are for reference only. They are not official test reports for product compliance. All official test reports have to be reviewed and signed by the qualified reviewers based on the ISO 17025 requirement. Therefore, the testing lab or certificate body will not accept any liabilities if the customer or manufacturer decides produce the product based on unofficial test reports for product compliance.</p> <p>Unless otherwise stated: (a) the results shown in this document refer only to the sample(s) tested and (b) such sample(s) are retained for 30 days. This document cannot be reproduced except in full, without prior approval of the company. All should be subject to the terms and conditions specified by the testing lab and the certificate body.</p> <p>The certificate body or the testing laboratory will not take any responsibility for the testing data in the reports or the certificates provided by the client or performed by the other testing organization. This report and related certificates is only valid in combination with the related test reports and when the product is manufactured in consistence with the tested sample.</p> <p>Determination of the test result includes consideration of measurement uncertainty from the test equipment and methods.</p>	

Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Conducted Emission (150K to 30MHz)	EN 61000-6-3: 2007	EN 61000-6-3: 2007	N/A	N/A
Radiated disturbance 30 M to 1000 MHz	EN 61000-6-3: 2007	EN 61000-6-3: 2007	N/A	PASS
Harmonic Emission on AC, 50Hz to 2kHz	EN 61000-3-2: 2006	EN 61000-3-2: 2006	N/A	N/A
Flicker Emission on AC	EN 61000-3-3 :2008	EN 61000-3-3:2008	Clause 5 of EN61000-3-3	N/A
ESD	EN 61000-6-1: 2007	EN 61000-4-2	Contact ± 4 kV Air ± 8 kV	PASS
Radiated Immunity, 80MHz to 1 GHz	EN 61000-6-1: 2007	EN 61000-4-3	3V/m 80%, 1kHz, AM	PASS
Electrical Fast Transients (EFT) on AC	EN 61000-6-1: 2007	EN 61000-4-4	AC ± 1.0 kV	N/A
Surge Immunity on AC	EN 61000-6-1: 2007	EN 61000-4-5	± 1 kV D.M.†	N/A
Injected Currents on AC, 150kHz to 80MHz	EN 61000-6-1: 2007	EN 61000-4-6	3Vrms (emf), 80%, 1kHz Amp. Mod.	N/A
Voltage Dips and Interruptions on AC	EN 61000-6-1: 2007	EN 61000-4-11	0 % U_T^* for 0.5per 40 % U_T^* for 10per 70 % U_T^* for 50per	N/A

Remark:

* U_T is the nominal supply voltage.

† D.M. – Differential Mode.

General Information**Client Information**

Applicant: NingBo Mind Import & Export Co.,Ltd.
 Address of Applicant: 8/F, #3 & #4 Tower, North-Bank Fortune Centre, Jiang Bei District, NingBo City, Zhejiang Province, China

General Description of E.U.T.

EUT Name: 8 IN 1 DIGITAL TIRE GAUGE
 Model No.: 7763640 (MD-KF101024/86801), 86015, 8609
 Brand Name
 Serial No.:

Details of E.U.T.

Power Supply:
 Power Cord: N/A

Description of Support Units

Name / Function	Model No.	Remark
N/A	N/A	N/A

Standards Applicable for Testing

The customer requested EMC tests for 8 IN 1 DIGITAL TIRE GAUGE.

The standards used were EN 61000-6-3: 2007, EN 61000-3-2:2006, EN 61000-3-3:2008 and
 EN 61000-6-1: 2007.

Table 1 : Tests Carried Out Under EN 61000-6-3: 2007

Standard		Status
EN 61000-6-3: 2007	Radiated Disturbance	√
EN 61000-6-3: 2007	Conducted Emissions on AC	x

x Indicates that the test is not applicable
 √ Indicates that the test is applicable

Table 2: Tests Carried Out Under EN 61000-3-2: 2006 & EN 61000-3-3: 2008

Standard		Status
EN 61000-3-2: 2006	Harmonic Emissions on AC	x
EN 61000-3-3:2008	Flicker Emissions on AC	x

x Indicates that the test is not applicable

Table 3: Tests carried out under EN 61000-6-1: 2007

Standard		Status
EN 61000-4-2	Electrostatic discharge immunity test	√
EN 61000-4-3	Radiated, radio-frequency electromagnetic field electromagnetic field immunity test	√
EN 61000-4-4	Electrical fast transients/burst immunity test	x
EN 61000-4-5	Surge immunity test	x
EN 61000-4-6	Immunity to conducted disturbances, induced by radio-frequency fields	x
EN 61000-4-8	Power-frequency magnetic field immunity test	x
EN 61000-4-11	Voltage dips, short interruptions and voltage variations immunity tests	x

x Indicates that the test is not applicable

√ Indicates that the test is applicable

Note The EUT does not contain any component which is susceptible from the magnetic field.

Deviation from Standards

None.

Abnormalities from Standard Conditions

None.

Monitoring of EUT for All Immunity Test

Visual: Monitored the operation mode of the EUT.

Test Location

The Radiated Immunity test was performed at:

AUDIX EMC Laboratory, 3&4 F, #34, Building, No.680, GuiPing Road, Caohejing Hi-Tech Park, Shanghai, China, 200233

Test Confident level

NAME OF FIRM: AUDIX TECHNOLOGY (SHANGHAI) CO., LTD.

SITE LOCATION: 3F 34BLDG 680 GUIPING RD, CAOHEJING HI-TECH PARK, SHANGHAI 200233, CHINA

NVLAP LAB CODE: 200371-0

Equipments Used during Test**Radiated Electromagnetic Disturbance**

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date (yy-mm-dd)	Cal.Due date (yy-mm-dd)
1	3-DEMENSIONAL LARGE LOOP ANTENNA, DIAM,2M.	Rohde & Schwarz	HXYZ9170	HXYZ9170-136	2010.5.11	2011.5.10
2	EMI TEST RECEIVER	Rohde & Schwarz	ESCS30	100086	2010.5.11	2011.5.10

Radiated Immunity Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Dual Direction Coupler	AR	DC6180	19326	2010.09.19	2011.09.18
2	Field Monitor	AR	FM2000	19221	2010.09.18	2011.09.17
3	Log Periodic Antenna	AR	AT1080	19300	2010.09.19	2011.09.18
4	Power Amplifier	AR	100W1000M1	19343	2010.09.21	2011.09.20
5	Power Meter	HP	438A	2517A02731	2010.09.12	2011.09.11
6	Power Sensor	HP	8481D	3318A13765	2010.09.12	2011.09.11
7	Signal Generator	HP	8648A	3636A02106	2010.09.08	2011.09.07
8	Field Probe	AR	FP2000	19233	2010.09.18	2011.09.17

Electrostatic Discharge Test

Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date (yy-mm-dd)	Cal.Due date (yy-mm-dd)
1	EMC IMMUNITY TESTER	EMC PARTNER	TRANSIENT 1000	TRA1000-205	2010.8.1	2011.7.31

General Equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date (dd-mm-yy)	Cal.Due date (dd-mm-yy)
1	Temperature, Humidity & Barometer	Oregon Scientific	BA-888	EMC0001 to EMC0004	2010.08.25	2011.08.24
2	DMM	Fluke	73	70681569 or 70671122	2010.08.24	2011.08.23

Emission Test Results**Conducted Emissions Mains Terminals, 150kHz to 30MHz**

Test Requirement: EN 61000-6-3: 2007
Test Method: EN 61000-6-3: 2007
Test Date: 25 Oct 2010
Frequency Range: 150KHz to 30MHz
Class / Severity: N/A
Detector: Peak for pre-scan (200Hz Resolution Bandwidth for 0.009-0.15MHz; 9kHz Resolution Bandwidth for 0.15-30MHz)
Quasi-Peak if maximised peak within 10dB of Quasi-Peak limit

E.U.T. Operation**Operating Environment:**

Temperature: 24.0 °C Humidity: 42% RH Atmospheric Pressure: 1006 Mbar

EUT Operation: Test the EUT turned on.

Measurement Data

For battery operated appliances which cannot be connected to the mains, no emission limits in EN 61000-6-3 applied.

Radiated Disturbance, 30 MHz to 1000MHz

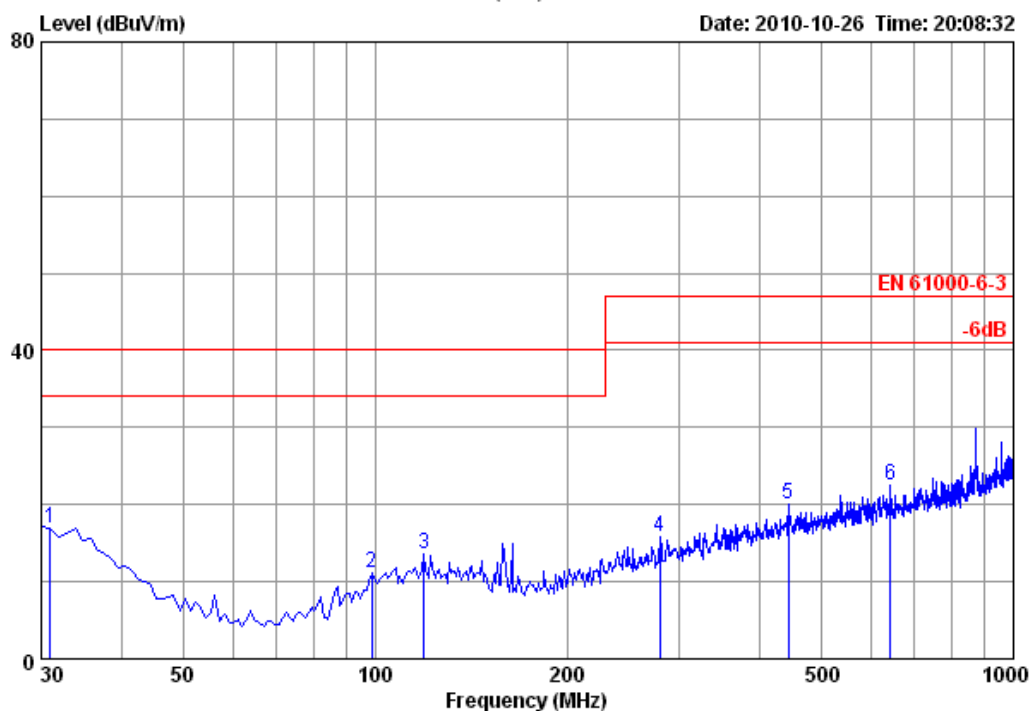
Standard	EN 61000-6-3
Measuring distance	3 meters

Frequency [MHz]	QP [dB(μV/m)] @ 3m
30 – 230	40
230 – 1000	47

Port	Enclosure
Mode	On mode

Test results**Horizontal**

Data: 918 File: D:\Test-Data\K\Kema.EM6 (919)



Site no : Audix ACI (3m Chamber) Data no. : 918
 Dis. / Ant. : 3m / CBL 6112D-2009.12.01
 Limit : EN 61000-6-3 Ant. pol. : HORIZONTAL
 Env. / Ins. : 22'C 55%RH / ESVS 10 Engineer : Raven
 EUT : 8 in 1 Digital tire gauge
 M/N : MD-KF 101024/86801
 S/N : 7763640
 Power Rating: DC 3V
 Test Mode : Lighting

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	30.970	19.03	0.64	-2.63	17.04	40.00	22.96
2	98.870	11.27	1.03	-1.05	11.25	40.00	28.75
3	119.240	12.97	1.12	-0.60	13.49	40.00	26.51
4	279.290	13.52	1.70	0.64	15.86	47.00	31.14
5	444.190	17.14	2.16	0.87	20.17	47.00	26.83
6	641.100	19.41	2.54	0.48	22.43	47.00	24.57

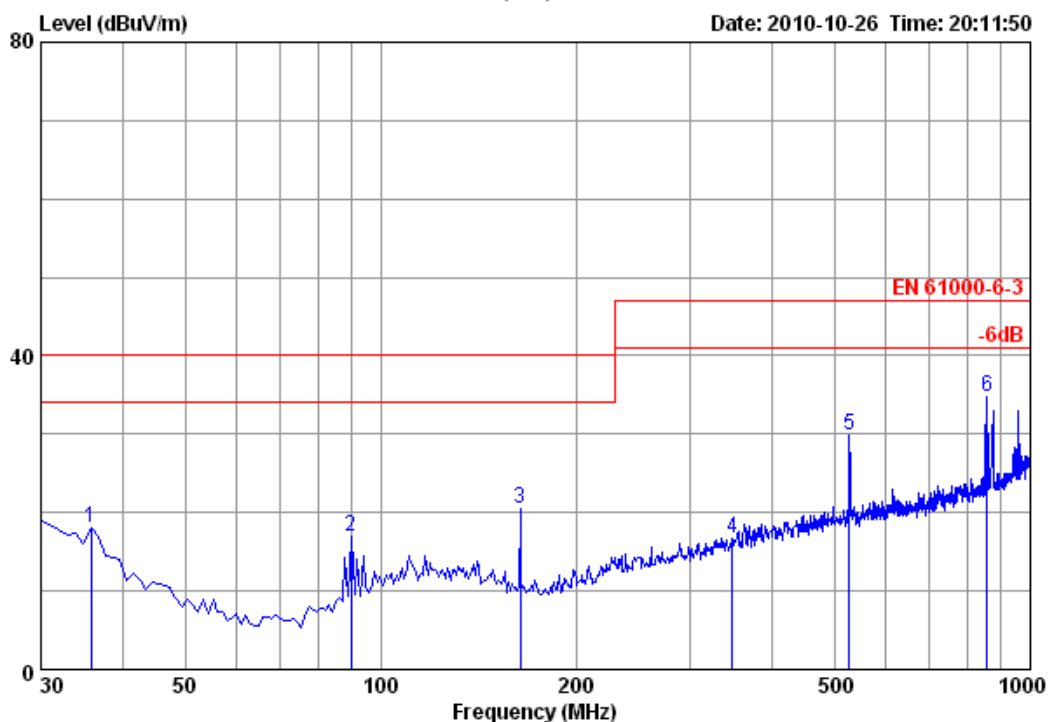
Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limits are not report.

Vertical

Data: 919

File: D:\Test-Data\K\Kema.EM6 (919)

Date: 2010-10-26 Time: 20:11:50



Site no : Audix ACI (3m Chamber)
 Dis. / Ant. : 3m / CBL 6112D-2009.12.01
 Limit : EN 61000-6-3
 Env. / Ins. : 22°C 55%RH / ESVS 10
 EUT : 8 in 1 Digital tire gauge
 M/N : MD-KF 101024/86801
 S/N : 7763640
 Power Rating: DC 3V
 Test Mode : Lighting

Data no. : 919
 Ant. pol. : VERTICAL
 Engineer : Raven

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
1	35.820	16.45	0.68	0.89	18.02	40.00	21.98
2	90.140	9.40	1.00	6.45	16.85	40.00	23.15
3	163.860	10.40	1.30	8.89	20.59	40.00	19.41
4	348.160	15.29	1.91	-0.40	16.80	47.00	30.20
5	526.640	18.24	2.32	9.28	29.84	47.00	17.16
6	859.350	21.31	2.97	10.43	34.71	47.00	12.29

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
 2. The emission levels that are 20dB below the official limits are not report.

6.3 Harmonics Test Results

Test Requirement: EN 61000-3-2
Test Method: EN 61000-3-2
Frequency Range: 100Hz to 2kHz
Test Date 25 Oct. 2010

Test Result	
E. U. T.:	PASS (Wave form of the input current PASS)
Power Source:	PASS

For battery operated appliances which cannot be connected to the mains, no emission limits in EN 61000-3-2 applied.

Flicker Test Result

Test Requirement: EN 61000-3-3
Test Method: EN 61000-3-3
Test Date: 25 Oct. 2010
Class/Severity: Clause 5 of EN 61000-3-3
Detector: As per EN 61000-3-3

Test Results: Pass

For battery operated appliances which cannot be connected to the mains, no emission limits in EN 61000-3-3 applied.

Immunity Test Results**Performance Criteria Description in EN 61000-6-1**

- Criterion A: During the test no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.
- Criterion B: During the test the luminous intensity may change to any value. After the test the luminous intensity shall be restored to its initial value within 1 min. Regulating controls need not function during the test, but after the test the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.
- Criterion C: During and after the test any change of the luminous intensity is allowed and the lamp(s) may be extinguished. After the test, within 30 min, all functions shall return to normal if necessary by temporary interruption of the mains supply and/or operating the regulating control. Additional requirement for lighting equipment incorporating a starting device: After the test the lighting equipment is switched off. After half an hour it is switched on again. The lighting equipment shall start and operate as intended.

ESD

Test Requirement:	EN 61000-6-1	
Test Method:	EN 61000-4-2	
Test Date:	26 Oct. 2010	
Discharge Impedance:	330 Ω / 150 pF	
Discharge Voltage:	Air Discharge:	± 8 kV
	Contact Discharge:	± 4 kV
	HCP:	± 4 kV
	VCP:	± 4 kV
Polarity:	Positive & Negative	
Number of Discharge:	Minimum 10 times at each test point for Contact and VCP Discharge;	
	Minimum 10 times at each test point for Air Discharge	
Discharge Mode:	Single Discharge	
Discharge Period:	1 second minimum	

E.U.T. Operation**Operating Environment:**

Temperature: 24.0 °C Humidity: 56% RH Atmospheric Pressure: 1019 mbar

EUT Test the EUT in On Mode (Keep the EUT Lighting)
Operation:

Direct Application Test Results

Observations: Test Point:

1. All insulated enclosure & seams around EUT.
2. All touchable metal material of EUT

Direct Application			Test Results	
Discharge Level (kV)	Polarity (+/-)	Test Points	Contact Discharge	Air Discharge
8	+/-	1	N/A	A
4	+/-	2	A	N/A

Indirect Application Test Results

Observations: Test Point: 1. All sides.

Indirect Application			Test Results	
Discharge Level (kV)	Polarity (+/-)	Test Point	Horizontal Coupling	Vertical Coupling
4	+/-	1	A	A

Results:

A: No degradation in the performance of the EUT was observed.

N/A: Not applicable (not required in the standard or floor mounted the EUT)

Pass

Electrical Fast Transients (EFT)

Test Requirement: EN 61000-6-1
Test Method: EN 61000-4-4
Test Date: 25 Oct. 2010
Test Level: 1.0kV on AC
Polarity: Positive & Negative
Repetition Frequency: 5kHz
Burst Duration: 300ms
Test Duration: 2 minute per level & polarity

E.U.T. Operation

Operating Environment:

Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1021 mbar

EUT Test the EUT in On Mode.
Operation:

Test Results On AC Supply:

For battery operated appliances which cannot be connected to the mains, no limits in EN 61000-4-4 applied.

Surge

Test Requirement: EN 61000-6-1
Test Method: EN 61000-4-5
Test Date: 25 Oct. 2010
Test Level: ± 1 kV Live to Neutral
Polarity: Positive & Negative
Generator source 2Ω
impedance:
Trigger Mode: Internal
No. of surges: 5 positive, 5 negative at 0°, 90°, 180°, 270°.

E.U.T. Operation

Operating Environment:
Temperature: 23.0 °C Humidity: 57 % RH Atmospheric Pressure: 1017 mbar
EUT Test the EUT in On Mode.
Operation:

Test Results:

For battery operated appliances which cannot be connected to the mains, no limits in EN 61000-4-5 applied.

Conducted Immunity 0.15MHz to 80MHz

Test Requirement: EN 61000-6-1
Test Method: EN 61000-4-6
Test Date: 20 June 2010
Frequency Range: 0.15MHz to 80MHz
Test level: 3V rms on AC Ports (unmodulated emf into 150 Ω)
Modulation: 80%, 1kHz Amplitude Modulation

E.U.T. Operation

Operating Environment:
Temperature: 24 °C Humidity: 56 % RH Atmospheric Pressure: 1021 mbar
EUT Test the EUT in On Mode.
Operation:

Test Results:

For battery operated appliances which cannot be connected to the mains, no limits in EN 61000-4-6 applied.

Voltage Dips and Interruptions

Test Requirement: EN 61000-6-1
Test Method: EN 61000-4-11

E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C Humidity: 56% RH Atmospheric Pressure: 1017 mbar

EUT Test the EUT in On Mode.
Operation:

Test Results:

For battery operated appliances which cannot be connected to the mains, no limits in EN 61000-4-11 applied.

Radiated Immunity (80MHz to 1GHz)

Test Requirement: EN 61000-6-1
Test Method: EN61000-4-3
Test Date: 25 Oct. 2010
Frequency Range: 80MHz to 1GHz
Test level: 3V/m on enclosure
Modulation: 80%, 1kHz Amplitude Modulation
Criteria Performance criteria A

E.U.T. Operation

Operating Environment:

Temperature: 24.0°C Humidity: 56% RH Atmospheric Pressure: 1012 mbar

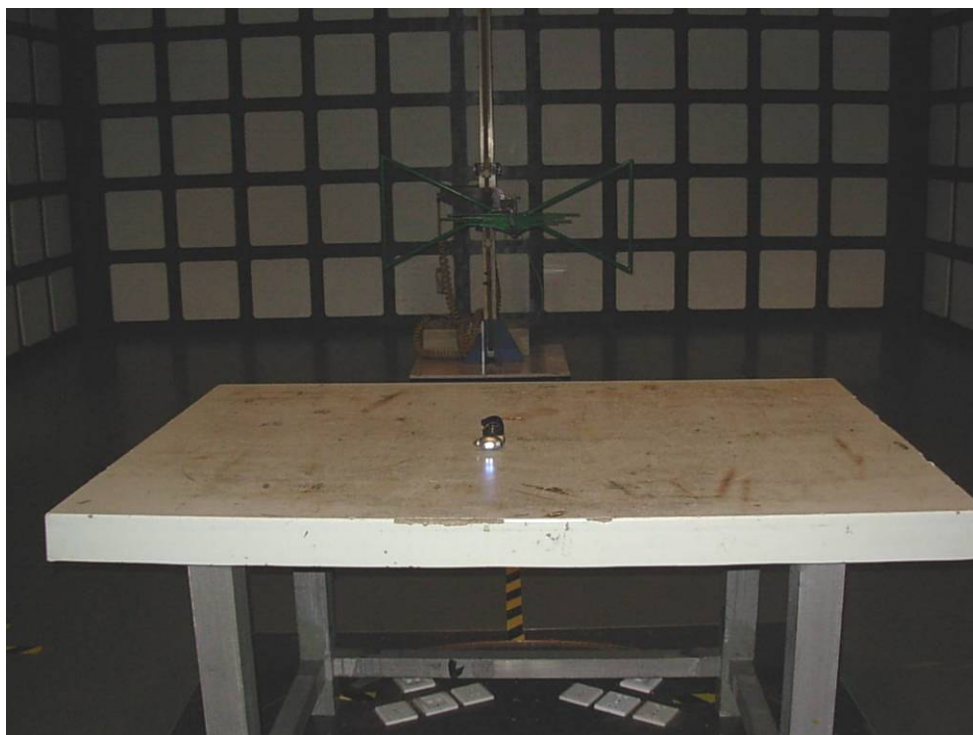
EUT Test the EUT in On Mode .

Operation:

Test Results

Pass

Photos:



Radiated disturbance test setup



Radiated Immunity test setup



ESD test setup

--- End of Report ---