



**EMC COMPLIANCE TEST REPORT
FOR
Electronic balance**

Trade Name : Tscale
Model Number : NB, NHB, TB, THB, EB, EHB, IHB
Report Number : GSI13091215001
Date : September 23, 2013
Regulations : See below

Standards	Results (Pass/Fail)
EN 55022: 2010	PASS
EN 61000-3-2: 2006+A2: 2009	N/A
EN 61000-3-3: 2008	PASS
EN 55024: 2010	
(EN 61000-4-2: 2009,	PASS
EN 61000-4-3: 2006/A2: 2010,	PASS
EN 61000-4-4: 2012,	PASS
EN 61000-4-5: 2006,	PASS
EN 61000-4-6: 2009,	PASS
EN 61000-4-8: 2010,	N/A
EN 61000-4-11: 2004)	PASS

Issued to:

**TSCALE ELECTRONICS MFG. (KUNSHAN) CO., LTD.
NO. 99 Shunchang Road, Kunshan, Jiangsu, China**

Issued by:

**Shenzhen GSI Technology Co., Ltd.
Room 406, Huashengda Building, BaGuaSi Road, Shenzhen, China**

**TEL: 86-755-25844177
FAX: 86-755-25844877**

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TEST REPORT DESCRIPTION

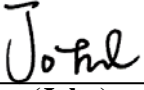
Equipment Under Test : Electronic balance
Trade Name : Tscale
Model Number : NB, NHB, TB, THB, EB, EHB, IHB
Applicant : TSCALE ELECTRONICS MFG. (KUNSHAN) CO., LTD.
Address : NO. 99 Shunchang Road, Kunshan, Jiangsu, China
Manufacturer : Tscale Electronics Mfg.(Kunshan) Co., Ltd
Address : No.99 Shunchang Road, Kunshan, Jiangsu, China
Technical Standards : EN55022: 2010
EN61000-3-3: 2008
EN55024: 2010
(EN61000-4-2: 2009, EN61000-4-3: 2006+A2:2010, EN61000-4-4:
2006+A1: 2010, EN61000-4-5: 2006, EN61000-4-6: 2009,
EN61000-4-11: 2004)

Report Number : GSI13091215001
Date of Test : September 12, 2013 to September 23, 2013
Deviation : None
Condition of Test Sample : Normal

The product described above is tested by Shenzhen Emtek Co., Ltd. The measurement results are contained in this test report and Shenzhen Emtek Co., Ltd assume full responsibility for the accuracy of the test results. Also, this report shows that the EUT (Equipment Under Test) technically complies with the council the EMC Directive 2004/108/EC requirements.


The test report is valid for above tested sample only and shall not be reproduced in part without written approval of Shenzhen GSI Technology Co., Ltd.

Prepared by :



(John)

Approved & Authorized Signer:



(Morris)



1. GENERAL INFORMATION

1.1 Description of Device (EUT)

Applicant	: TSCALE ELECTRONICS MFG. (KUNSHAN) CO., LTD.
Manufacturer	: TSCALE ELECTRONICS MFG. (KUNSHAN) CO., LTD.
Report Number	: GSI13091215001
Date of Test	: September 12, 2013 to September 23, 2013
Equipment under Test	: Electronic balance
Model Number	: NB, NHB, TB, THB, EB, EHB, IHB (Note: The samples are the same only except their appearance and model numbers. We take NB for EMC test.)
Power Supply	: 12V, 500mA from external adapter or DC6V from lead-acid accumulator
Test Voltage	: AC230V~50Hz and DC6V
Type of Test	: EMC Directive 2004/108/EC for CE Marking
Technical Standards	: EN 55022: 2010 EN 61000-3-3: 2008 EN 55024: 2010 (EN 61000-4-2: 2009, EN 61000-4-3: 2006/A2: 2010, EN 61000-4-4: 2012 EN 61000-4-5: 2006, EN 61000-4-6: 2009, EN 61000-4-11: 2004)
Frequency Range (EN55022)	: 150 kHz to 30MHz for Line Conducted Test 30MHz to 1000MHz for Radiated Emission Measurement.
Test Site	: Shenzhen Emtek Co., Ltd Bldg. 69, Majialong, Taipinyang Industry Zone, Nanshan District, Shenzhen, Guandong



1.2 Test Facility

Description:	There is one 3m semi-anechoic chamber(966) test sites and one line conducted labs for final test. There is one 3m semi-anechoic and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 1992 and CISPR 22/EN 55022 requirements.
Site Filing:	A site description is on file with the Federal Communications Commission, 7435 Oakland Mills Road, Columbia, MD 21046.
Site Accreditation:	Accredited by CNAS, 2012 Accredited by TUV. 2012
Instrument Tolerance:	All measuring equipment is in accord with ANSI C63.4 and EN55022 requirements that meet industry regulatory agency and accreditation agency requirement.

Ground Plane: Two conductive reference ground planes were used during the Line Conducted Emission, one in vertical and the other in horizontal. The dimensions of these ground planes are as below. The vertical ground plane was placed distancing 40 cm to the rear of the wooden test table on where the EUT and the support equipment were placed during test. The horizontal ground plane projected 50 cm beyond the footprint of the EUT system and distanced 80 cm to the wooden test table. For Radiated Emission Test, one horizontal conductive ground plane extended at least 1m beyond the periphery of the EUT and the largest measuring antenna, and covered the entire area between the EUT and the antenna. It has no holes or gaps having longitudinal dimensions larger than one-tenth of a wavelength at the highest frequency of measurement up to 1GHz.



2. TEST INSTRUMENT USED

2.1 For Conducted Emission Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100343	11-8-2013	11-8-2014
2	LISN	AFJ	LS16	16010222119	11-8-2013	11-8-2014

2.2 For Radiated Emission Measurement

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	11-8-2013	11-8-2014
2	Test Receiver	Rohde & Schwarz	ESCS30	828985/018	11-8-2013	11-8-2014
3	Bilog Antenna	Schwarzbeck	VULB9163	142	11-8-2013	11-8-2014
4	50 Coaxial Switch	Anritsu Corp	MP59B	6100237248	11-8-2013	11-8-2014
5	Cable	Schwarzbeck	AK9513(1m)	CR RX2	11-8-2013	11-8-2014
6	Spectrum Analyzer	ANRITSU	MS2661C	6200140915	11-8-2013	11-8-2014
7	Test Receiver	Rohde & Schwarz	ESCS30	828985/018	11-8-2013	11-8-2014

2.3 For Harmonic & Flicker Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	Power Frequency System	HAEFELY	PHF555	080419-03	11-8-2013	11-8-2014

2.4 For Electrostatic Discharge Immunity Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	HAEFELY ESD TESTER	EM Test	PESD 1600	302105	11-8-2013	11-8-2014



2.5 For RF EM Field Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	Signal Generator	Maconi	2022D	119246/003	11-8-2013	11-8-2014
2	Power Amplifier	M2S	A00181/ 1000	9801-112	11-8-2013	11-8-2014
3	Power Amplifier	M2S	AC8113 /800-25 0A	9801-179	11-8-2013	11-8-2014
4	Power Antenna	SCHAFFNER	CBL614 0A	1240	11-8-2013	11-8-2014

2.6 For Electrical Fast Transient /Burst Immunity Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	Fast Transients/Burst Generator	SCHAFFNER	Modula 6000	34354	11-8-2013	11-8-2014

2.7 For Surge Immunity Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	Surge Tester	HAEFELY	PSURGE4. 1	080107-04	11-8-2013	11-8-2014

2.8 For Injected Current Susceptibility Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	Simulator	EMTEST	CWS500C	0900-12	11-8-2013	11-8-2014
2	CDN	EMTEST	CDN-M2	5100100100	11-8-2013	11-8-2014
3	CDN	EMTEST	CDN-M3	0900-11	11-8-2013	11-8-2014
4	Injection Clamp	EMTEST	F-2031-23 MM	368	11-8-2013	11-8-2014
5	Attenuator	EMTEST	ATT6	0010222A	11-8-2013	11-8-2014

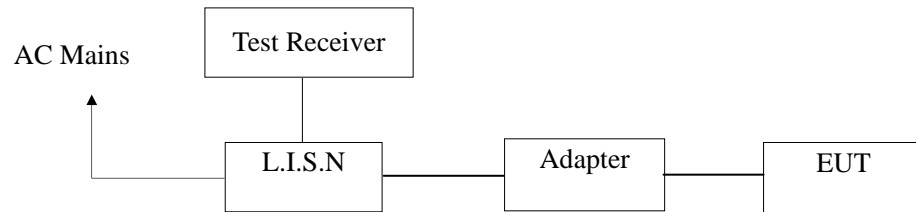


2.9 For Voltage Dips and Interruptions Test

Item	Test Equipment	Manufacturer	Model No	Serial NO.	Cal.Date	Due bate
1	Dips Tester	HAEFELY	Pline1610	083732-12	11-8-2013	11-8-2014

3. POWER LINE CONDUCTED EMISSION TEST

3.1 Block Diagram of Test Setup



3.2 Test Standard

EN 55022: 2010

3.3 Power Line Conducted Emission Limit

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

2. The lower limit shall apply at the transition frequencies.

3.4 EUT Configuration on Test

The equipments are installed on conducted emission test to meet EN55022 requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5 Operating Condition of EUT

3.5.1 Setup the EUT and simulators as shown in Section 3.1.

3.5.2 Turn on the power of all equipments.

3.5.3 Let the EUT work in test mode and test it.

3.6 Test Procedure

The EUT is put on the ground and connected to the AC mains through a Artificial Mains Network (AMN). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission levels according to the EN55022 regulations during conducted emission test.

The bandwidth of the test receiver is set at 9KHz.

The frequency range from 150 KHz to 30 MHz is investigated.

The test results are listed in Section 3.7 and the scanning waveforms of the test mode are attached within Appendix I.



3.7 Power Line Conducted Emission Test Results

PASS.

The frequency range 150KHz to 30MHz is investigated.
Please refer to Appendix I.

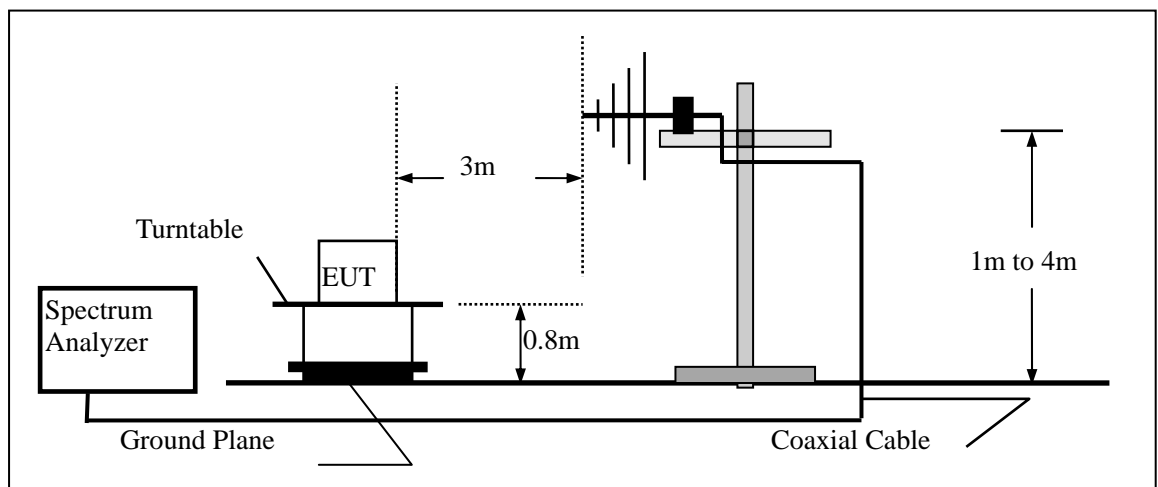
4. RADIATED EMISSION MEASUREMENT

4.1 Block Diagram of Test

4.1.1 Block diagram of connection between the EUT and simulators



4.1.2 Anechoic Chamber Test Setup Diagram



4.2 Radiated Emission Limit

EN55022 Limits:

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMIT (dB μ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

- Note: (1) The smaller limit shall apply at the combination point between two frequency bands.
(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.

4.3 EUT Configuration on Measurement

The equipments are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize its emission characteristics in normal application.



4.4 Operating Condition of EUT

- 4.4.1 Setup the EUT as shown in Section 4.1.
- 4.4.2 Let the EUT work in test mode and measure it.

4.5. Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3.0 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on measurement. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2003 on radiated emission measurement.

The bandwidth of the EMI test receiver is set at 120KHz.
The frequency range from 30MHz to 1000MHz is checked.

All the test modes are tested and all the scanning waveforms are attached in Appendix II.

4.6 Radiated Emission Noise Measurement Result

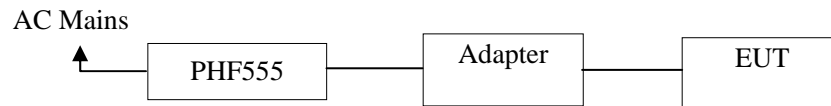
PASS.

The frequency range from 30MHz to 1000MHz is investigated.

Please reference to Appendix II.

5. HARMONIC CURRENT EMISSION TEST

5.1 Block Diagram of Test Setup



5.2 Test Standard

EN 61000-3-2: 2006+A2: 2009

5.3 Operating Condition of EUT

Same as Section 3.5 except the test setup replaced by Section 5.1.

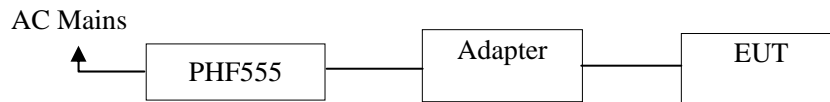
5.4 Test Results

PASS.

Because power of EUT is less than 75W, according standard EN61000-3-2, Harmonic current unnecessary to test.

6. VOLTAGE FLUCTUATIONS & FLICKER TEST

6.1 Block Diagram of Test Setup



6.2 Test Standard

EN 61000-3-3: 2008

6.3 Operating Condition of EUT

- 6.3.1 Setup the EUT and simulators as shown in Section 6.1.
- 6.3.2 Turn on the power of all equipments.
- 6.3.3 Let the EUT work in test modes and test it.

6.4 Test Results

PASS.

Please refer to the following pages.



Report title:	FLICKER
Standard used:	EN 61000-3-3 Flicker
Short time (Pst):	10 min
Observation time:	10 min (1 Flicker measurement)
Flickermeter:	230V / 50Hz
Flicker Impedance:	Zref (IEC 60725)
E. U. T.:	Electronic balance
M/N:	NB

Test Result	PASS
-------------	------

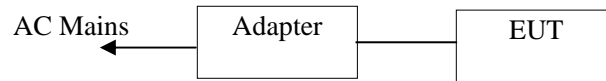
Maximum Flicker results

	EUT values	Limit	Result
Pst	0.026	1.00	PASS
dc [%]	0.005	3.30	PASS
dmax [%]	0.048	4.00	PASS
dt [s]	0.000	0.50	PASS

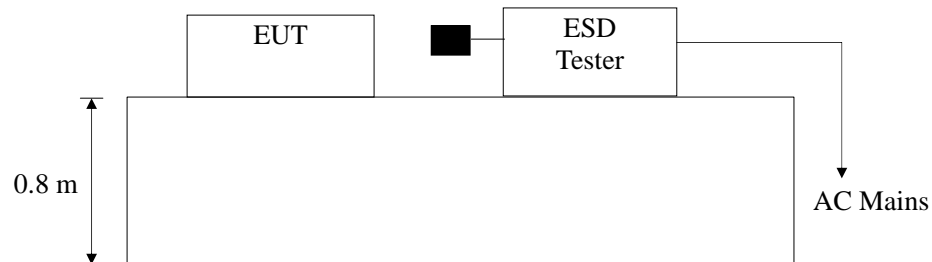
7. ELECTROSTATIC DISCHARGE IMMUNITY TEST

7.1 Block Diagram of Test Setup

7.1.1 Block Diagram of the EUT and the simulators



7.1.2 Test Setup



7.2 Test Standard

EN 55024: 2010,
(EN 61000-4-2: 2009 Severity Level: 3 / Air Discharge: $\pm 8\text{KV}$
Level: 2 / Contact Discharge: $\pm 4\text{KV}$)

7.3 Severity Levels and Performance Criterion

7.3.1 Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	± 2	± 2
2.	± 4	± 4
3.	± 6	± 8
4.	± 8	± 15
X	Special	Special

7.3.2 Performance criterion: B

7.4 EUT Configuration

The configurations of EUT is listed in Section 3.4.

7.5 Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 3.5 except the test set up was replaced by Section 7.1.



7.6 Test Procedure

7.6.1 Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

7.6.2 Contact Discharge:

All the procedure shall be same as Section 7.6.1. Except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

7.6.3 Indirect discharge for horizontal coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

7.6.4 Indirect discharge for vertical coupling plane

At least 10 single discharges (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

7.7 Test Results

PASS.

Please refer to the following pages.



ELECTROSTATIC DISCHARGE TEST RESULTS

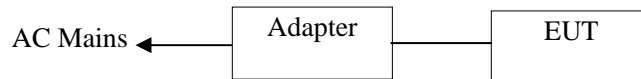
EUT	: Electronic balance	
Model Number	: NB	
Temperature	: 25°C	Humidity : 50%
Air Discharge: ± 8KV		
Contact Discharge: ± 4KV # For each point positive 10 times and negative 10 times discharge		
Location	Kind A-Air Discharge C-Contact Discharge	Result
Others Slot of the EUT	A	PASS
LCD	A	PASS
Button	A	PASS
Metal	C	PASS
Port	A/C	PASS
HCP	C	PASS
VCP of the front	C	PASS
VCP of the rear	C	PASS
VCP of the left	C	PASS
VCP of the right	C	PASS
Note:		

Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

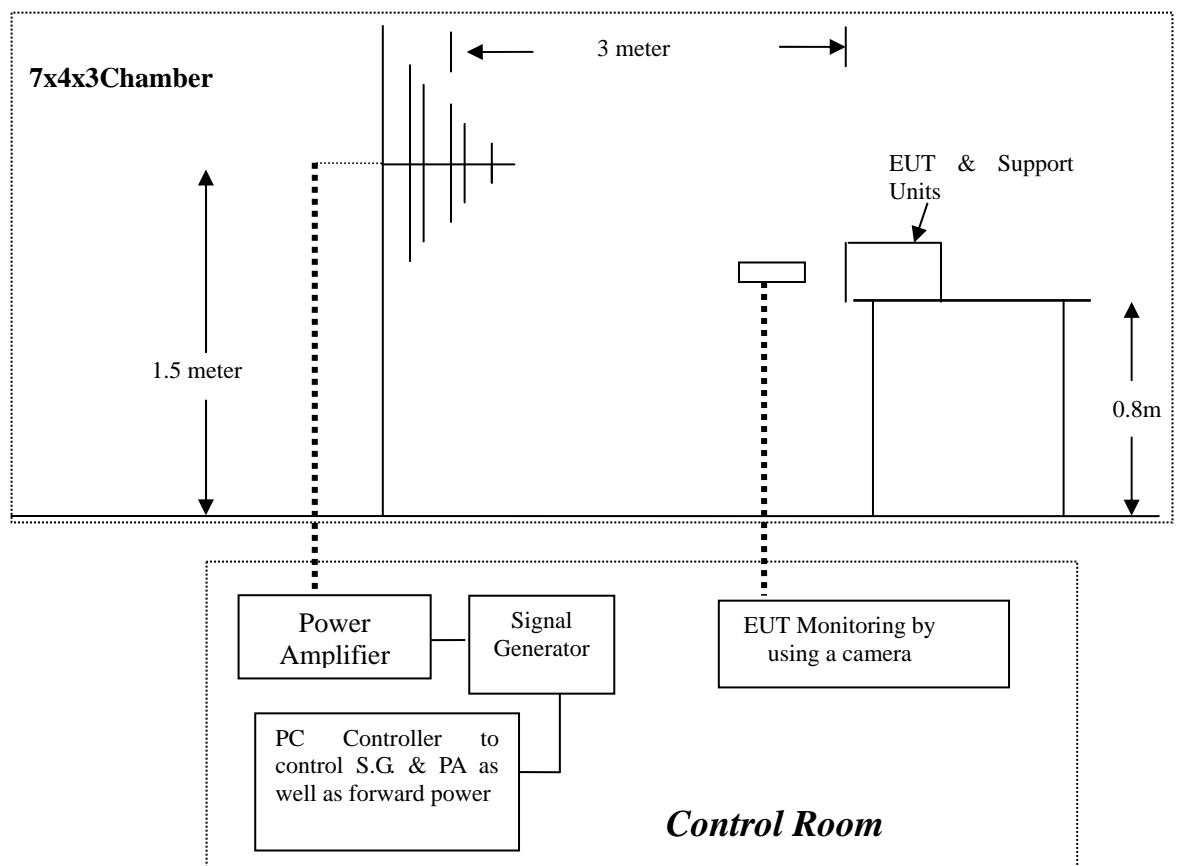
8. RF EM FIELD TEST

8.1 Block Diagram of Test Setup

8.1.1 Block Diagram of the EUT and the simulators



8.1.2 R/S Test Setup



8.2 Test Standard

EN 55024: 2010 (EN 61000-4-3: 2006+A2: 2010, Severity Level: 2, 3V / m)



8.3 Severity Levels and Performance Criterion

8.3.1 Severity level

Level	Field Strength V/m
1	1
2	3
3	10
X	Special

8.3.2 Performance criterion: A

8.4 EUT Configuration

The configurations of EUT are listed in Section 3.4.

8.5 Operating Condition of EUT

8.5.1 Setup the EUT as shown in Section 8.1.

8.5.2 Turn on the power of all equipments.

8.5.3 Let the EUT work in test modes and measure it.

8.6 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. EUT is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually.

All the scanning conditions are as follows:

Condition of Test	Remarks
1. Fielded Strength	3 V/m (Severity Level 2)
2. Radiated Signal	Modulated
3. Scanning Frequency	80 - 1000 MHz
4. Dwell time of radiated	0.0015 decade/s
5. Waiting Time	1 Sec.

8.7 Test Results

PASS.

Please refer to the following page.



RF EM FIELD TEST RESULTS

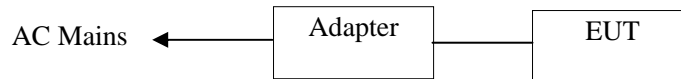
EUT	:	Electronic balance	
Model Number	:	NB	
Temperature	:	25°C	Humidity : 50%
Modulation: AM 1KHz 80%			
	Frequency Rang: 80-1000MHz		
Steps	1 %		
	Horizontal	Vertical	
Front	PASS	PASS	
Right	PASS	PASS	
Rear	PASS	PASS	
Left	PASS	PASS	
Note:			

9. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY

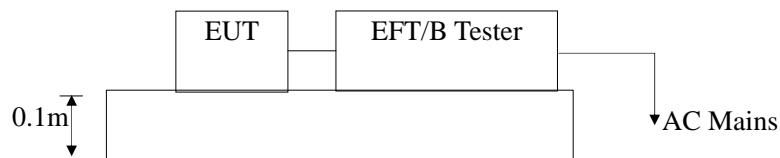
TEST

9.1 Block Diagram of Test Setup

9.1.1 Block Diagram of the EUT



9.1.2 Block Diagram of the AC Mains



9.2 Test Standard

EN 55024: 2010(EN 61000-4-4: 2012, Severity Level, Level 2: 1KV)

9.3 Severity Levels and Performance Criterion

9.3.1 Severity level

Level	Open Circuit Output Test Voltage $\pm 10\%$	
	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1	0.50 KV	0.25 KV
2	1.00KV	0.50 KV
3	2.00KV	1.00KV
4	4.00KV	2.00 KV
X	Special	Special

9.3.2 Performance criterion: B

9.4 EUT Configuration

The configurations of EUT are listed in Section 3.4.

9.5 Operating Condition of EUT

9.5.1 Setup the EUT as shown in Section 9.1.

9.5.2 Turn on the power of all equipments.

9.5.3 Let the EUT work in test modes and measure it.



9.6 Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

9.6.1 For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

9.6.2 For signal lines ports:

It's unnecessary to test.

9.6.3 For DC ports:

It's unnecessary to test.

9.7 Test Result

PASS.

Please refer to the following pages



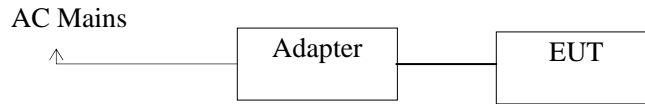
ELECTRICAL FAST TRANSIENT/BURST TEST RESULTS

Standard : EN 61000-4-4		Result : <input checked="" type="checkbox"/> PASS / <input type="checkbox"/> FAIL	
EUT : Electronic balance			
Model Number : NB			
Temperature : 25°C		Humidity: 50%	
Line : <input checked="" type="checkbox"/> AC Mains		Line : <input type="checkbox"/> Signal line <input type="checkbox"/> DC line	
Coupling : <input checked="" type="checkbox"/> Direct		Coupling : <input type="checkbox"/> Capacitive	
Test Time : 120s			
Line	Test Voltage	Result(+)	Result(-)
L	1KV	PASS	PASS
N	1KV	PASS	PASS
PE			
L、N	1KV	PASS	PASS
L、PE			
N、PE			
L、N、PE			
Signal line			
DC line			
Note:			

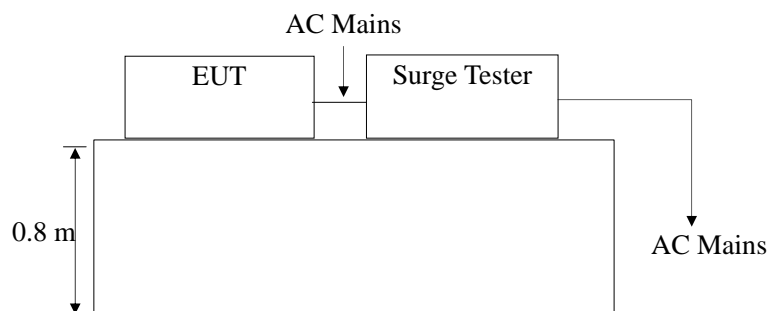
10. SURGE IMMUNITY TEST

10.1 Block Diagram of Test Setup

10.1.1 Block Diagram of the EUT



10.1.2 Surge Test Setup



10.2 Test Standard

EN 55024: 2010

Severity Level: Line to Line: Level 2, 1.0KV

10.3 Severity Levels and Performance Criterion

10.3.1 Severity level

Severity Level	Open-Circuit Test Voltage KV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

10.3.2 Performance criterion: B

10.4 EUT Configuration

The configuration of EUT is listed in Section 3.3.



10.5 Operating Condition of EUT

- 10.5.1 Setup the EUT as shown in Section 10.1.
- 10.5.2 Turn on the power of all equipments.
- 10.5.3 Let the EUT work in test mode and measure it.

10.6 Test Procedure

- 10.6.1 Set up the EUT and test generator as shown on Section 10.1.2.
- 10.6.2 For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge
(at open-circuit condition) and 8/20us current surge to EUT selected points.
- 10.6.3 At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 10.6.4 Different phase angles are done individually.
- 10.6.5 Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

10.7 Test Result

PASS.

Please refer to the following page.



SURGE IMMUNITY TEST RESULT

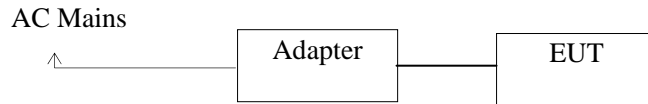
EUT : Electronic balance
 Model Number : NB
 Temperature : 22°C Humidity : 50%

Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Result
L-N	+	0°	5	1.0	PASS
	+	90°	5	1.0	PASS
	+	180°	5	1.0	PASS
	+	270°	5	1.0	PASS
	-	0°	5	1.0	PASS
	-	90°	5	1.0	PASS
	-	180°	5	1.0	PASS
	-	270°	5	1.0	PASS
L-PE					
N-PE					
Remark:	Test Equipment : Surge Tester P surge4.1				

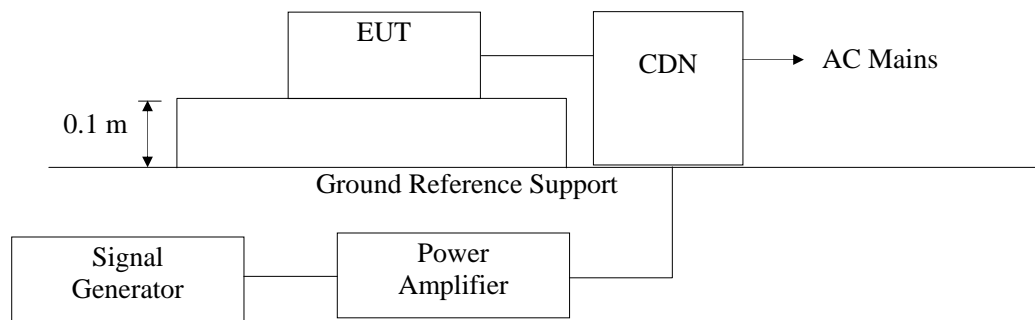
11. INJECTED CURRENTS SUSCEPTIBILITY TEST

11.1 Block Diagram of Test Setup

11.1.1 Block Diagram of the EUT



11.1.2 Block Diagram of Test Setup



11.2 Test Standard

EN 55024: 2010 (EN 61000-4-6: 2009, Severity Level: Level 2, 3V (rms), (0.15MHz ~ 80MHz)

11.3 Severity Levels and Performance Criterion

11.3.1 Severity level

Level	Field Strength V
1	1
2	3
3	10
X	Special

11.3.2 Performance criterion: A

11.4 EUT Configuration

The configuration of EUT is listed in Section 3.3.



11.5 Operating Condition of EUT

- 11.5.1 Setup the EUT as shown in Section 11.1.
- 11.5.2 Turn on the power of all equipments.
- 11.5.3 Let the EUT work in test mode and measure it.

11.6 Test Procedure

- 11.6.1 Set up the EUT, CDN and test generators as shown on Section 11.1.2.
- 11.6.2 Let the EUT work in test mode and measure it.
- 11.6.3 The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
- 11.6.4 The disturbance signal described below is injected to EUT through CDN.
- 11.6.5 The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 11.6.6 The frequency range is swept from 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
- 11.6.7 The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 11.6.8 Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

11.7 Test Results

PASS.

Please refer to the following page.



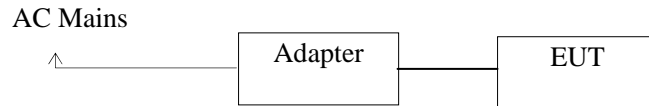
INJECTED CURRENTS SUSCEPTIBILITY TEST RESULTS

<p>EUT : Electronic balance</p> <p>Model Number : NB</p> <p>Temperature : 22°C Humidity : 50%</p>				
Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Result
0.15 ~ 80	AC Mains	3V	A	PASS
Test Mode: _____				
Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Result
<p>Remark : 1. Modulation Signal:1KHz 80% AM</p> <p>Measurement Equipment :</p> <p>Simulator: CWS 500 (SWITZERLAND EMTEST)</p> <p>CDN : <input checked="" type="checkbox"/> CDN-M2 (SWITZERLAND EMTEST)</p> <p style="padding-left: 20px;"><input type="checkbox"/> CDN-M3 (SWITZERLAND EMTEST)</p>			<p>Note:</p>	

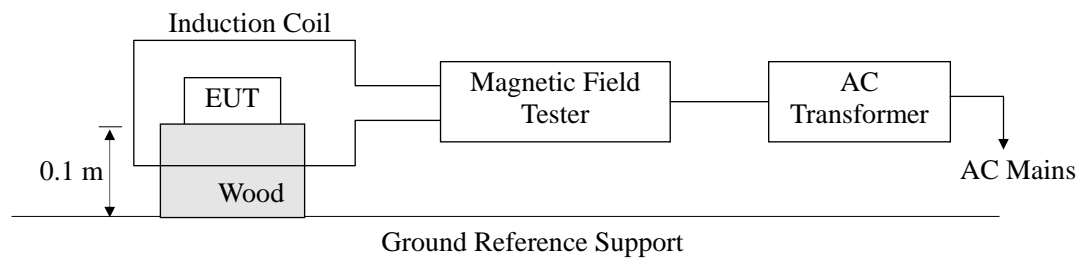
12. MAGNETIC FIELD SUSCEPTIBILITY TEST

12.1 Block Diagram of Test

12.1.1 Block diagram of test setup



12.1.2 Magnetic field test setup



12.2 Test Standard

EN 55024: 2010 (EN 61000-4-8: 2010, Severity Level: Level 1, 1A / m)

12.3 Severity Levels and Performance Criterion

12.3.1 Severity Levels

Level	Field Strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

12.3.2 Performance Criterion: A

12.4 EUT Configuration on Test

The configuration of the EUT is same as Section 3.3.



12.5 Test Procedure

The EUT is placed in the middle of a induction coil (1*1m), under which is a 1*1*0.1m (high) table, this small table is also placed on a larger table, 0.8 m above the ground. The X, Y and Z polarization of the induction coil is set on test, so that each side of the EUT is affected by the magnetic field. Also can reach the same aim by change the position of the EUT.

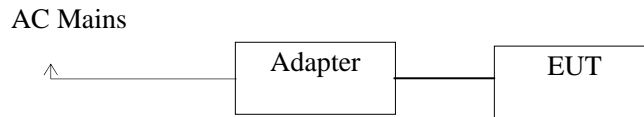
12.6 Test Results

Note: Not applicant, because no any component can be influenced by power magnetic field.

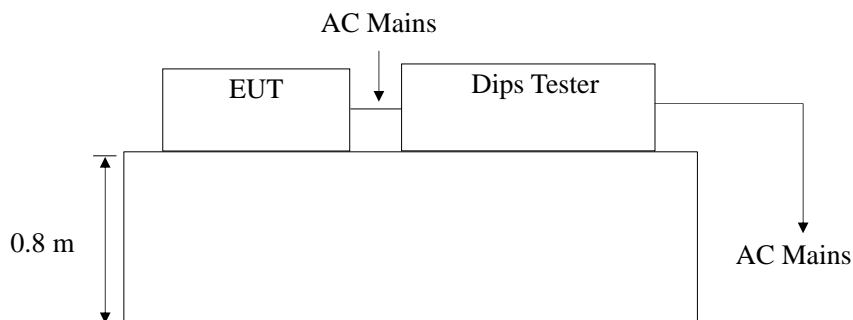
13. VOLTAGE DIPS AND INTERRUPTIONS TEST

13.1 Block Diagram of Test Setup

13.1.1 Block Diagram of the EUT



13.1.2 Dips Test Setup



13.2 Test Standard

EN 55024: 2010(EN 61000-4-11: 2004)

13.3 Severity Levels and Performance Criterion

13.3.1 Severity level

Test Level %UT	Voltage dip and short interruptions %UT	Duration (in period)
0	100	0.5 1 5 10 25 50 *
40	60	
70	30	

13.3.2 Performance criterion: B&C

13.4 EUT Configuration

The configuration of EUT is listed in Section 3.3.



13.5 Operating Condition of EUT

- 13.5.1 Setup the EUT as shown in Section 13.1.
- 13.5.2 Turn on the power of all equipments.
- 13.5.3 Let the EUT work in test mode and measure it.

13.6 Test Procedure

- 13.6.1 Set up the EUT and test generator as shown on Section 13.1.2.
- 13.6.2 The interruption is introduced at selected phase angles with specified duration.
- 13.6.3 Record any degradation of performance.

13.7 Test Result

PASS.

Please refer to the following page.



VOLTAGE DIPS AND INTERRUPTIONS TEST RESULTS

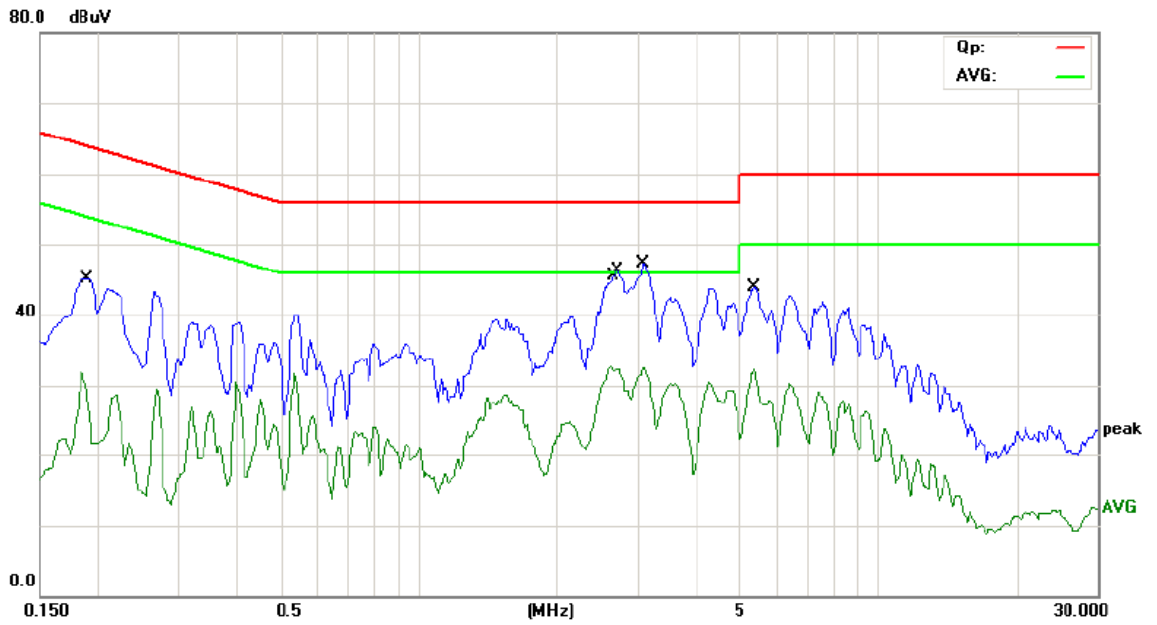
<p>EUT : Electronic balance</p> <p>Model Number : NB</p> <p>Temperature : 22°C Humidity : 50%</p>				
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in periods)	Criterion <input type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> D	Result P=PASS F=Fail
0	100	0.5P	B	P
70	30	25P	C	P
0	100	250P	C	P
Test Mode : _____				
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in periods)	Criterion <input type="checkbox"/> A <input type="checkbox"/> B <input type="checkbox"/> C <input type="checkbox"/> D	Result P=PASS F=FAIL
Note:				



APPENDIX I



Test Mode: ON



Site site #1

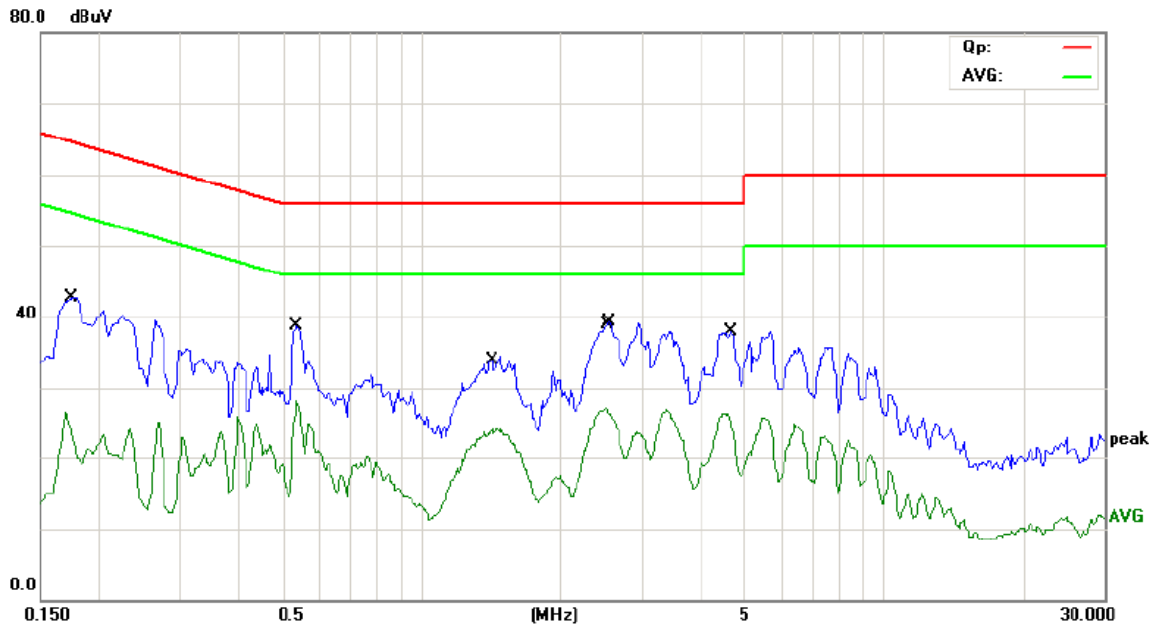
Phase: L1

Temperature: 22

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1900	36.50	0.00	36.50	64.04	-27.54	QP	
2	*	2.6100	32.60	0.00	32.60	46.00	-13.40	AVG	
3		2.7100	33.80	0.00	33.80	56.00	-22.20	QP	
4		3.0900	37.20	0.00	37.20	56.00	-18.80	QP	
5		5.3750	34.60	0.00	34.60	60.00	-25.40	QP	
6		5.3750	32.30	0.00	32.30	50.00	-17.70	AVG	



Test Mode: ON



Site site #1

Phase: N

Temperature: 22

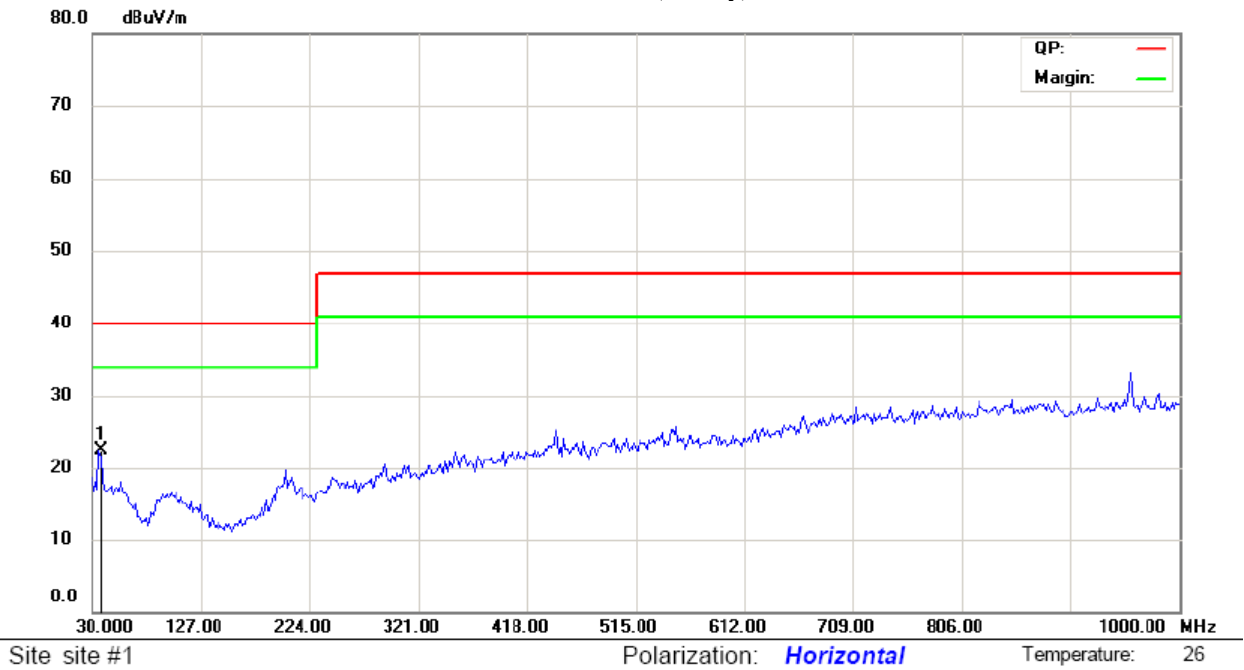
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1750	36.20	0.00	36.20	64.72	-28.52	QP	
2		0.5400	35.40	0.00	35.40	56.00	-20.60	QP	
3		1.4200	24.10	0.00	24.10	46.00	-21.90	AVG	
4	*	2.5000	27.00	0.00	27.00	46.00	-19.00	AVG	
5		2.5500	32.80	0.00	32.80	56.00	-23.20	QP	
6		4.6600	31.00	0.00	31.00	56.00	-25.00	QP	



APPENDIX II



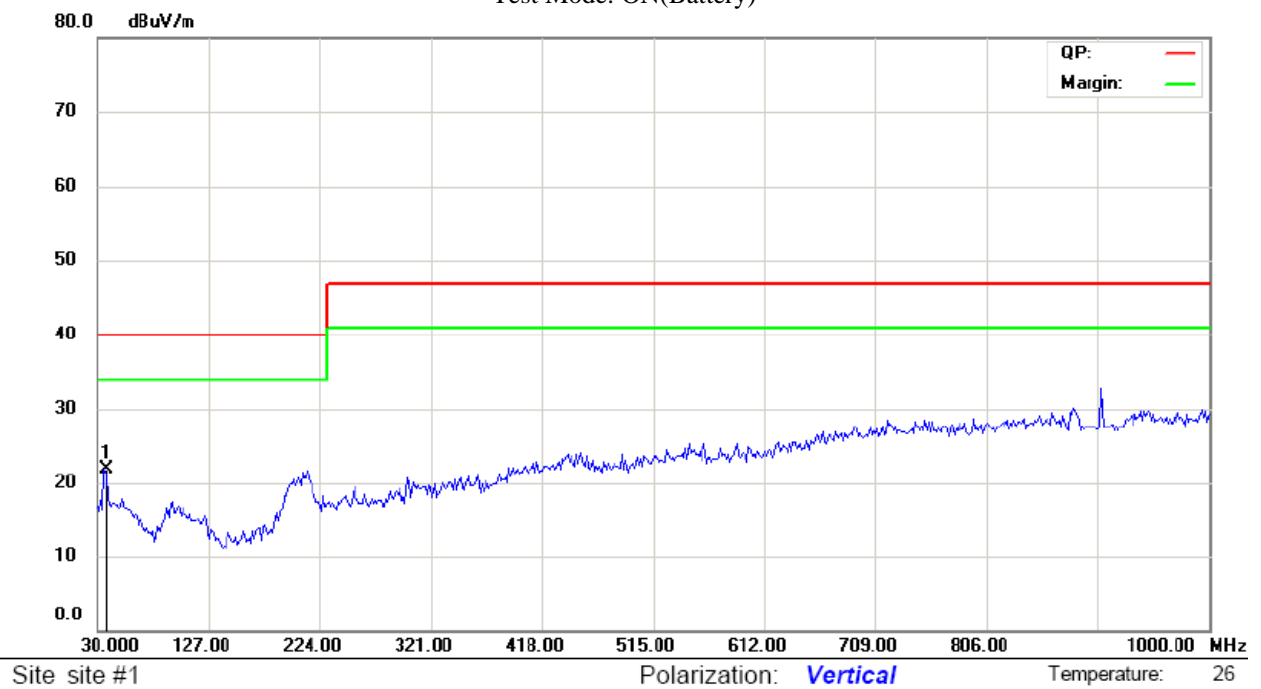
Test Mode: ON(Battery)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	36.2180	8.26	14.25	22.51	40.00	-17.49			QP



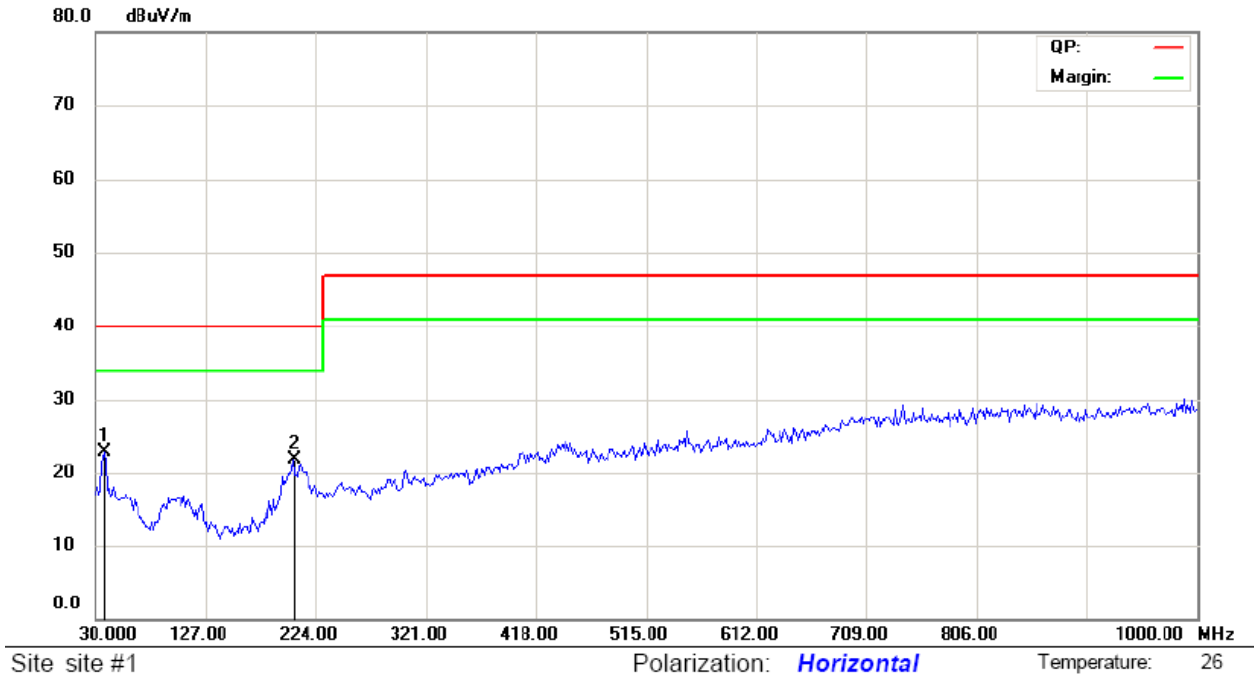
Test Mode: ON(Battery)



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1	*	36.2180	7.57	14.25	21.82	40.00	-18.18	QP		



Test Mode: ON(Adapter)



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	37.7724	8.69	14.24	22.93	40.00	-17.07	QP			
2		204.1026	10.37	11.55	21.92	40.00	-18.08	QP			



APPENDIX IV (PHOTOS OF EUT)



NB



NHB





TB



THB





EB\EHB







IHB

