

Certificate of Conformity

NO.: ED170324031E

The following product has been tested by us with the listed standards and found in conformity with the council EMC directive 2014/30/EU. It is possible to use CE marking to demonstrate the conformity with this EMC Directive.

Applicant :

Address :

Manufacturer :

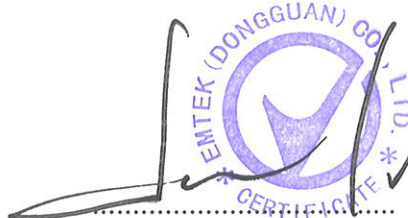
Address :

EUT Pedometer

Trade Mark : N/A

M/N : P410.551/P410.552/P410.555/P410.557/P410.558

Test Standards : EN 61000-6-3: 2007+A1: 2011+AC: 2012
EN 61000-6-1: 2007



(Manager)

March 29, 2017

The certificate is based on a single evaluation of one sample of above-mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo.

EMC TEST REPORT

For

SHENZHEN C-STAR ELECTRONIC TECH. CO., LTD

Pedometer

Model No.: P410.551/P410.552/P410.555/P410.557/P410.558

Prepared for :
Address :

Prepared By : EMTEK(DONGGUAN) CO., LTD.
Address : No.281, Guantai Road, Nancheng District, Dongguan,
Guangdong, China.
Tel : +86-769-22807078
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Report Number : ED170324031E
Date of Test : March 24, 2017 to March 29, 2017
Date of Report : March 29, 2017

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TEST REPORT DESCRIPTION

Applicant :
Manufacturer :
EUT : Pedometer
Model No. : P410.551/P410.552/P410.555/P410.557/P410.558
Input Rating : DC 1.5V Battery

Measurement Procedure Used:

EN 61000-6-3: 2007+A1: 2011+AC: 2012
EN 61000-6-1: 2007
(IEC 61000-4-2: 2008, IEC 61000-4-3: 2006+A1: 2007+A2: 2010)

The device described above is tested by EMTEK(DONGGUAN) CO., LTD. and EMTEK(SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK(DONGGUAN) CO., LTD. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the EN 61000-6-3 and EN 61000-6-1 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK(DONGGUAN) CO., LTD.

Date of Test : March 24, 2017 to March 29, 2017

Prepared by :

Lizzy Li
Lizzy Li/ Editor

Reviewer :

Alan He
Alan He/ Supervisor

Approved & Authorized Signer :

Sam Lv
Sam Lv/Manager

Modified Information

Version	Summary	Revision Date	Report No.
Ver.1.0	Original Report	/	ED170324031E

1. DESCRIPTION OF STANDARDS AND RESULTS (EUT)

EMISSION			
Description of Test Item	Standard	Limits	Results
Disturbance Voltage at the Mains Terminal	EN 61000-6-3: 2007+A1: 2011+AC: 2012	Table 2,3,4	N/A
Radiated Disturbance	EN 61000-6-3: 2007+A1: 2011+AC: 2012	Table 1	Pass
Harmonic Current Emissions	EN 61000-3-2: 2014	Class A	N/A
Voltage Fluctuation and Flicker	EN 61000-3-3: 2013	Clause 5	N/A
IMMUNITY			
Description of Test Item	Basic Standard	Performance Criteria	Results
Electrostatic Discharge (ESD)	IEC 61000-4-2: 2008	B	Pass
RF Strength Susceptibility Test	IEC 61000-4-3: 2006: A1: 2007+A2: 2010	A	Pass
Electro Fast Transient (EFT)	IEC 61000-4-4: 2012	B	N/A
Surge (Input AC Power Port)	IEC 61000-4-5: 2014	B	N/A
Radio-Frequency, Continuous Conducted Disturbance	IEC 61000-4-6: 2013	A	N/A
Power Frequency Magnetic Field	IEC 61000-4-8: 2009	A	N/A
Voltage Dips, 100%	IEC 61000-4-11: 2004	B	N/A
Voltage Dips, 30%		C	N/A
Voltage Interruptions, 100%		C	N/A
Note: N/A is an abbreviation for Not Applicable.			

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	Pedometer
Model Number	:	P410.551/P410.552/P410.555/P410.557/P410.558
Trade Mark	:	N/A
Operate Mode	:	ON
Power Supply for Test	:	DC 1.5V Battery
Applicant	:	
Address	:	
Manufacturer	:	
Address	:	
Date of sample receiver	:	March 24, 2017
Date of Test	:	March 24, 2017 to March 29, 2017

2.2. Description of Test Facility

Site Description

EMC Lab : Accredited by CNAS, 2015.09.24
The certificate is valid until 2018.07.03
The Laboratory has been assessed and proved to be in compliance with CNAS/CL01:2006
The Certificate Registration Number is L3150

Accredited by TUV Rheinland, 2016.02.02
The certificate is valid until 2017.02.01
The Laboratory has been assessed according to the requirements ISO/IEC 17025: 2005

Registered on FCC, June 18, 2014
The Certificate Number is 247565.

Registered on Industry Canada, February 19, 2014
The Certificate Number is 9444A.

Name of Firm : EMTEK(DONGGUAN) CO., LTD.
Site Location : No.281, Guantai Road, Nancheng District, Dongguan, Guangdong, China.

2.3. Measurement Uncertainty

Test Item	Uncertainty
Conducted Emission Uncertainty	: 2.42dB
Radiated Emission Uncertainty (3m Chamber)	: 3.34dB (30M~1GHz Polarize: H) 3.32dB (30M~1GHz Polarize: V)
Magnetic Emission Uncertainty	2.8dB
Uncertainty for Flicker test	: 0.25%
Uncertainty for Harmonic test	: 0.014%
Uncertainty for C/S Test	: 1.45(Using CDN Test) 2.37(Using EM Clamp Test)
Uncertainty for R/S Test	: 2.10dB(80MHz-200MHz) 1.76dB(200MHz-1000MHz) 1.82 dB(1.4GHz-2.0GHz) 1.87 dB(2.0GHz-2.7GHz)
Uncertainty for test site temperature and humidity	: 0.6℃ 4%

3. MEASURING DEVICES AND TEST EQUIPMENT

3.1. For Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI	1166.5950.03	May 16, 2016	1 Year
2.	Bilog Antenna	Schwarzbeck	VULB9163	000141	May 16, 2016	1 Year
3.	Power Amplifier	CDS	RSU-M352	818	May 16, 2016	1 Year
4.	Power Amplifier	HP	8447F	OPT H64	May 16, 2016	1 Year
5.	Color Monitor	SUNSPO	SP-140A	N/A	May 16, 2016	1 Year
6.	Single Line Filter	JIANLI	XL-3	N/A	May 16, 2016	1 Year
7.	Single Phase Power Line Filter	JIANLI	DL-2X100B	N/A	May 16, 2016	1 Year
8.	3 Phase Power Line Filter	JIANLI	DL-4X100B	N/A	May 16, 2016	1 Year
9.	DC Power Filter	JIANLI	DL-2X50B	N/A	May 16, 2016	1 Year
10.	Cable	Schwarzbeck	PLF-100	519489	May 19, 2016	1 Year
11.	Cable	Rosenberger	CIL02	A0783566	May 19, 2016	1 Year
12.	Cable	Rosenberger	RG 233/U	525178	May 19, 2016	1 Year

3.2. For Electrostatic Discharge Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	ESD Tester	TESEQ AG	NSG437	EE166	May 16, 2016	1 Year

3.3. For RF Strength Susceptibility Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 17, 2016	1 Year
2.	50ohm Diode Power Sensor	BOONTON	51011EMC	34236/34238	May 17, 2016	1 Year
3.	Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120 L3F	332	May 17, 2016	1 Year
4.	Power Amplifier	PRANA	AP32MT215	N/A	May 17, 2016	1 Year
5.	Power Amplifier	MILMEGA	AS0102-55	N/A	May 17, 2016	1 Year
6.	Signal Generator	AEROFLEX	2023B	N/A	May 17, 2016	1 Year
7.	Field Strength Meter	HOLADAY	HI-6005	N/A	May 17, 2016	1 Year

4. RADIATED EMISSION MEASUREMENT

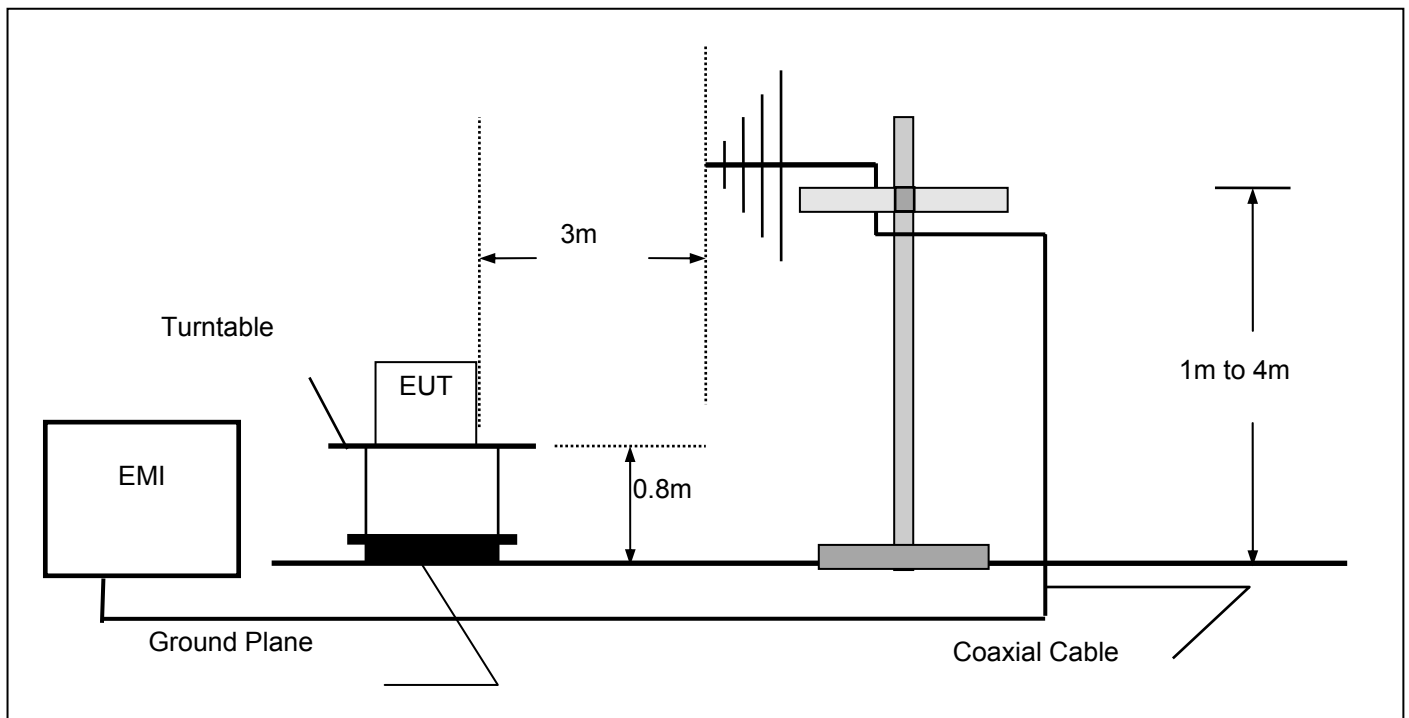
4.1. Block Diagram of Test

4.1.1 Block diagram of connection between the EUT and simulators



(EUT: Pedometer)

4.1.2 Block diagram of test setup (In chamber)



(EUT: Pedometer)

4.2. Measuring Standard

EN 61000-6-3: 2007+A1: 2011+AC: 2012

4.3. Radiated Emission Limits

All device or system 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.

4.4. EUT Configuration on Test

The EN 61000-6-3 regulations test method must be used to find the maximum emission during radiated emission measurement.

EUT : Pedometer
Model No. : P410.551/P410.552/P410.555/P410.557/P410.558

4.5. Operating Condition of EUT

4.5.1 Turn on the power.

4.5.2 Let the EUT work in test mode (ON) and measure it

4.6. Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meter to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) is used as a receiving antenna. Both horizontal and vertical polarizations of the antenna are set on test.

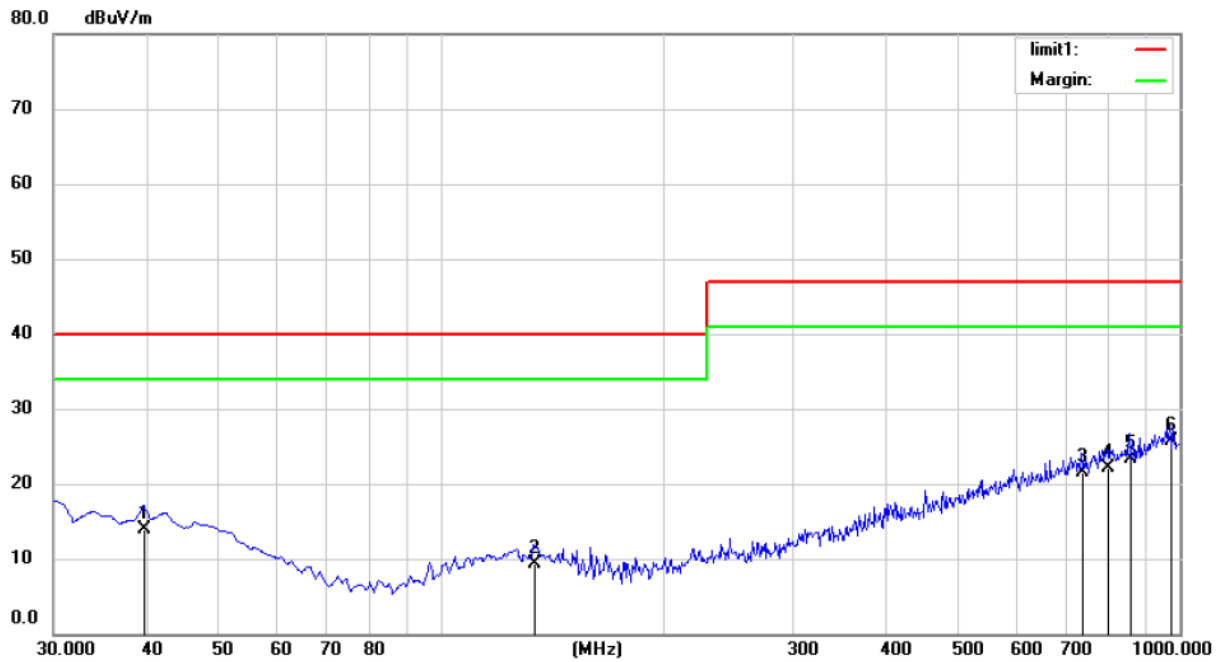
The bandwidth of the Receiver (ESCI) is set at 120kHz.

4.7. Test Results

PASS.

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

The data of the test mode (ON) are attached in the following page.



Site Chamber #1

Polarization: **Horizontal**

Temperature: 26

Limit: (RE)EN61000-6-3 3m

Power: Battery 1.5V

Humidity: 55 %

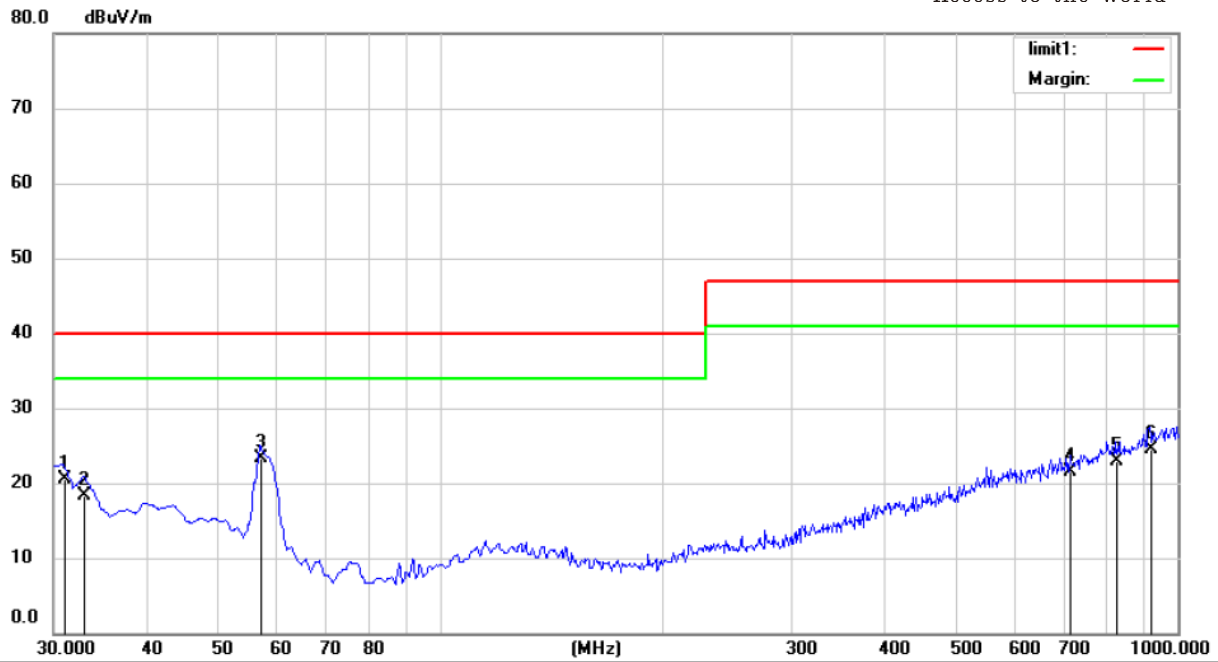
Mode: ON

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree	Comment
1		39.7000	27.35	-13.41	13.94	40.00	-26.06	QP		
2		133.7900	26.85	-17.61	9.24	40.00	-30.76	QP		
3		738.1000	27.32	-5.78	21.54	47.00	-25.46	QP		
4		799.2100	26.53	-4.45	22.08	47.00	-24.92	QP		
5		855.4700	27.59	-4.29	23.30	47.00	-23.70	QP		
6	*	971.8700	27.85	-2.18	25.67	47.00	-21.33	QP		

*:Maximum data x:Over limit !:over margin

Operator: W



Site Chamber #1

Polarization: **Vertical**

Temperature: 26

Limit: (RE)EN61000-6-3 3m

Power: Battery 1.5V

Humidity: 55 %

Mode: ON

Note:

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		30.9700	35.20	-14.63	20.57	40.00	-19.43	QP		
2		32.9100	32.56	-14.30	18.26	40.00	-21.74	QP		
3	*	57.1600	41.35	-18.08	23.27	40.00	-16.73	QP		
4		714.8200	28.12	-6.70	21.42	47.00	-25.58	QP		
5		825.4000	27.23	-4.39	22.84	47.00	-24.16	QP		
6		918.5200	27.35	-2.78	24.57	47.00	-22.43	QP		

*:Maximum data x:Over limit !:over margin

Operator: W

5. ELECTROSTATIC DISCHARGE TEST

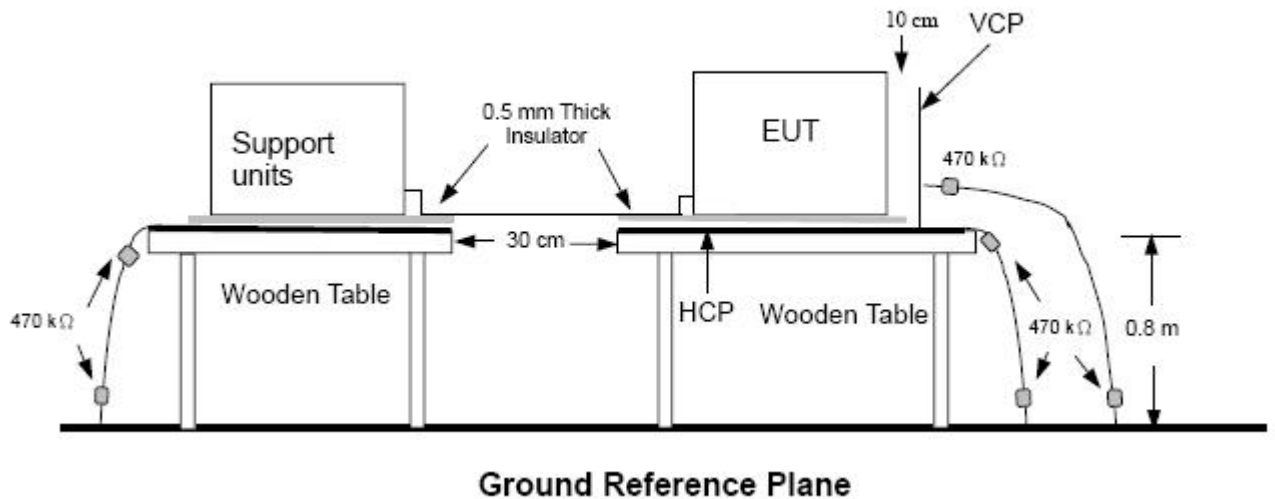
5.1. Block Diagram of Test Setup

5.1.1 Block Diagram of connection between the EUT and simulators



(EUT: Pedometer)

5.1.2 Block Diagram of ESD Test Setup



(EUT: Pedometer)

5.2. Test Standard

EN 61000-6-1: 2007

(IEC 61000-4-2: 2008 (Severity Level: 2 / Contact Discharge: $\pm 4\text{KV}$
Severity Level: 3 / Air Discharge: $\pm 8\text{KV}$))

5.3. Severity Levels and Performance Criterion

5.3.1 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

5.3.2 Performance criterion: **B**

According to the applicant's requirement, we test the EUT on the basis of the following performance criteria which are declared by the applicant.

Criterion A: Whilst being subjected to outside interference, some fluctuation of the display and change in the display is permitted.

Criterion B: Whilst being subjected to outside interference, any abnormal display including non-numerical numbers is permitted. However, once the interference is removed, the product should work correctly as normal condition.

Criterion C: Whilst being subjected to outside interference, any abnormal display and power off is permitted. However, once the interference is removed, the product should turn on and work correctly as normal when activated.

5.4. EUT Configuration

The configuration of EUT is listed in Section 4.4.

5.5. Operating Condition of EUT

5.5.1 Setup the EUT as shown in Section 5.1.

5.5.2 Turn on the power of all equipments.

5.5.3 Let the EUT work in test mode (ON) and measure it.

5.6. Test Procedure

5.6.1 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.

5.6.2 Contact Discharge:

All the procedure shall be same as Section 5.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

5.6.3 Indirect discharge for horizontal coupling plane:

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

5.6.4 Indirect discharge for vertical coupling plane:

At least 20 single discharge 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.

5.7. Test Results

PASS.

Please refer to the following page.

EMTEK(DONGGUAN) CO., LTD.

Remark :	Test Equipment : ESD Tester (TESEQ AG, NSG437)
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Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

6. RF FIELD STRENGTH SUSCEPTIBILITY TEST

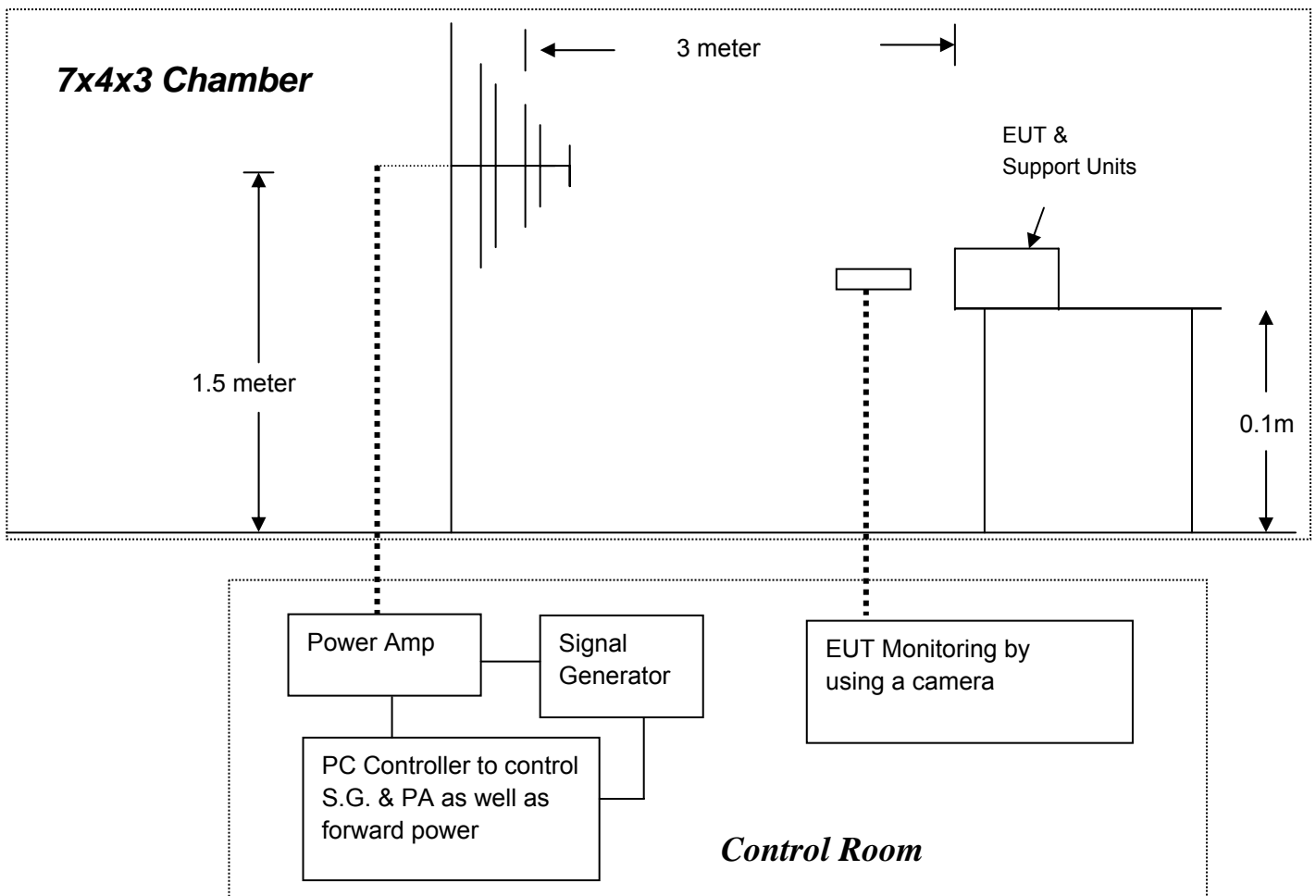
6.1. Block Diagram of Test Setup

6.1.1 Block diagram of connection between the EUT and simulators



(EUT: Pedometer)

6.1.2 Block diagram of R/S test set up



(EUT: Pedometer)

6.2. Test Standard

EN 61000-6-1: 2007

(IEC 61000-4-3: 2006+A1: 2007+A2: 2010 (Severity Level: 1, 1V/m; Severity Level: 2, 3V/m))

6.3. Severity Levels and Performance Criterion

6.3.1 Severity level

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

6.3.2 Performance criterion: **A**

According to the applicant's requirement, we test the EUT on the basis of the following performance criteria which are declared by the applicant.

Criterion A: Whilst being subjected to outside interference, some fluctuation of the display and change in the display is permitted.

Criterion B: Whilst being subjected to outside interference, any abnormal display including non-numerical numbers is permitted. However, once the interference is removed, the product should work correctly as normal condition.

Criterion C: Whilst being subjected to outside interference, any abnormal display and power off is permitted. However, once the interference is removed, the product should turn on and work correctly as normal when activated.

6.4. EUT Configuration

The configurations of EUT are listed in Section 4.4.

6.5. Operating Condition of EUT

6.5.1 Setup the EUT as shown in Section 6.1.

6.5.2 Turn on the power of all equipments.

6.5.3 Let the EUT work in test mode (ON) and measure it.

6.6. 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 polarizations of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor EUT screen. All the scanning conditions are as follows:

Condition of Test	Remarks
1. Fielded Strength	3 V/m and 1V/m
2. Radiated Signal	Unmodulated
3. Scanning Frequency	80 - 1000 MHz, 1.4-2.7GHz
4. Dwell time of radiated	0.0015 decade/s
5. Waiting Time	1 Sec.

6.7. Test Results

PASS.

These test result outsourced to EMTEK(SHENZHEN) CO., LTD.

Please refer to the following page.

RF Field Strength Susceptibility Test Results

EMTEK(SHENZHEN) CO., LTD.

Applicant: _____

Test Date : March 28, 2017

EUT : Pedometer

Temperature : 24°C

M/N : P410.551/P410.552/P410.555/P410.557/P410.558

Humidity : 55%

Field Strength: 3 V/m

Criterion: A

Power Supply: DC 1.5V Battery

Frequency Range: 80 MHz to 2700 MHz

Test Engineer: Lin

Modulation: ☒ AM ☐ Pulse ☐ none 1 KHz 80%

Test Mode : ON

	Frequency Rang : 80-2700MHz	
Steps	1 %	
	Horizontal	Vertical
Front	PASS	PASS
Right	PASS	PASS
Rear	PASS	PASS
Left	PASS	PASS

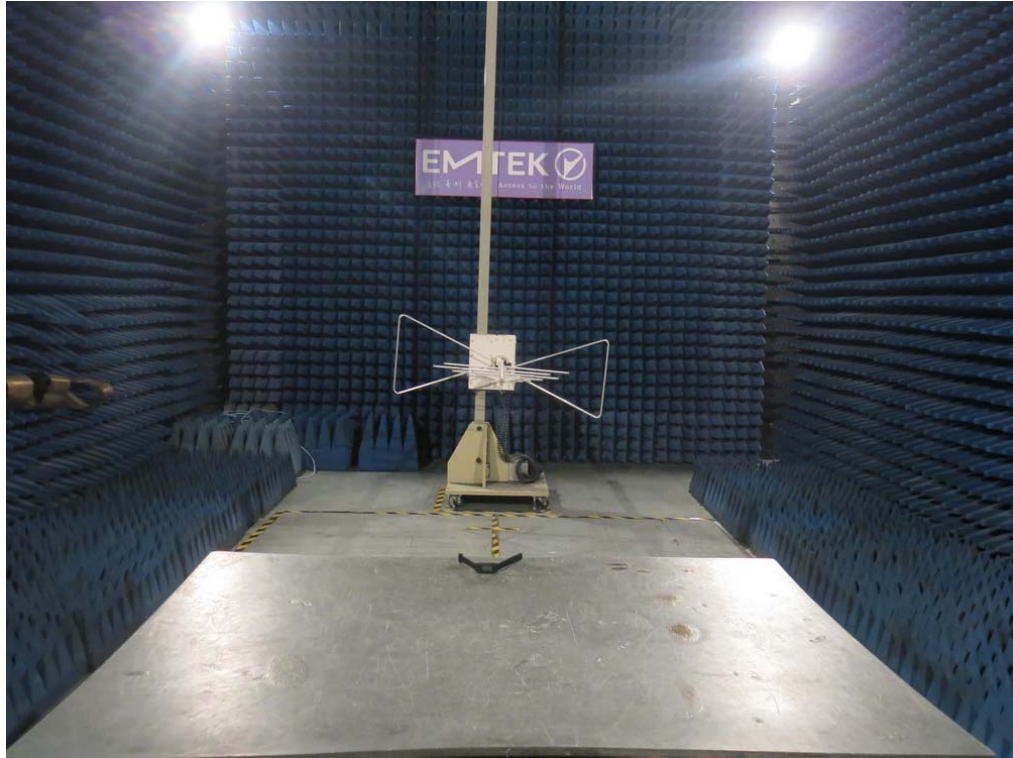
Test Equipment :

1. Signal Generator : 2023B (AEROFLEX)
2. Power Amplifier : AS0102-55 (MILMEGA)& AP32MT215 (PRANA)
3. Log.-Per. Antenna: VULP 9118E(SCHWARZBECK)
4. Broad-Band Horn Antenna: BBHA9120L3F (SCHWARZBECK)
5. RF Power Meter. Dual Channel : 4232A (BOONTON)
6. Field Strength Meter: HI-6005(HOLADAY)

Note:

7. PHOTOGRAPH

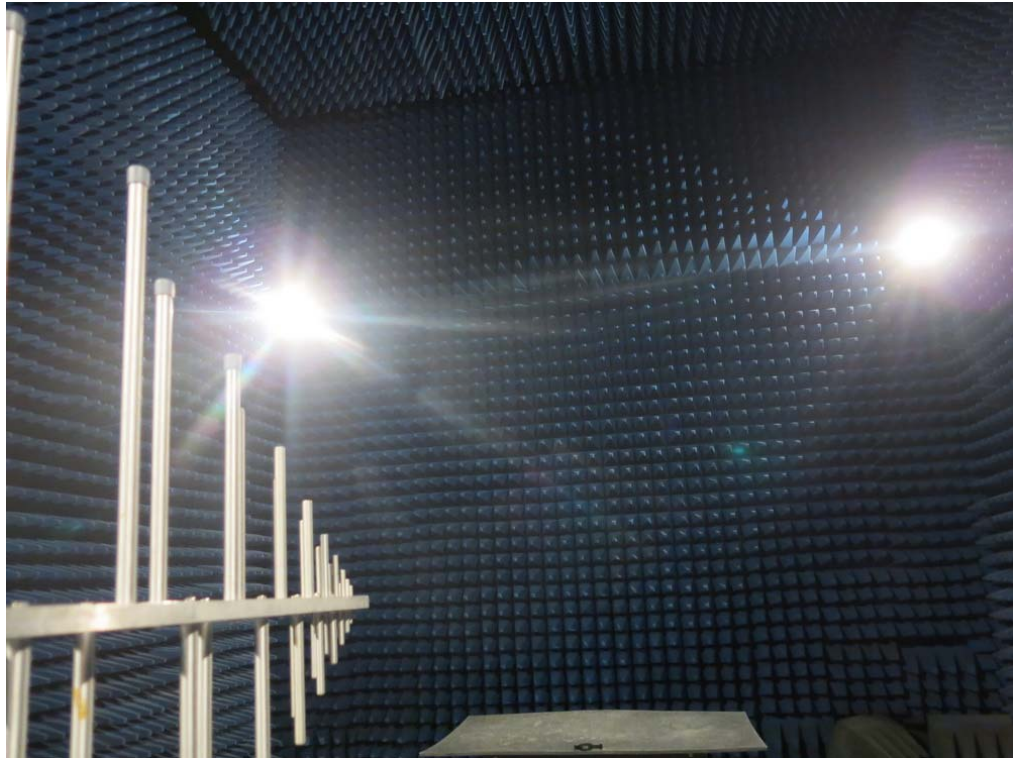
7.1. Photo of Radiation Emission Measurement



7.2. Photo of Electrostatic Discharge Test



7.3. Photo of RF Field Strength susceptibility Test



APPENDIX (Photos of EUT)



