

EMC TEST REPORT
for
yuyao arjextools packing co., ltd

Auto cigarette lighter
Model No.: 80505-1, 80505-2, 80495, 80505-3

Prepared for : yuyao arjextools packing co., ltd
Address : NO.51 SHUNCHUANG ROAD, YANGMING
INDUSTRIAL ZONE, YUYAO CITY, ZHEJIANG
PROVINCE, CHINA
Fax: 0574-62612026

Prepared by : Anbotek Compliance Laboratory Limited
Address : 1/F, 1 /Building, SEC Industrial Park, No.4 Qianhai Road,
Nanshan District, Shenzhen, 518054, China
Tel: (86) 755-26066544
Fax: (86) 755-26014772

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Date of Test : Apr. 11~16, 2013
Date of Report : Apr. 17, 2013

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TEST REPORT VERIFICATION

Applicant : yuyao arjextools packing co., ltd
Manufacturer : yuyao arjextools packing co., ltd
EUT : Auto cigarette lighter
Model No. : 80505-1, 80505-2, 80495, 80505-3
Rating : DC 12V
Trade Mark : N.A.

Measurement Procedure Used:
EN 61000-6-3: 2007+A1:2011;
EN 61000-6-1: 2007;
(IEC 61000-4-2: 2008; IEC 61000-4-3: 2010)

The device described above is tested by Anbotek Compliance Laboratory Limited 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 Anbotek Compliance Laboratory Limited is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the EN 61000-6-3 and EN 61000-6-1 requirements. The Project in IEC 61000-4-3 was tested in Shenzhen EMTEK Co., Ltd.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Anbotek Compliance Laboratory Limited.

Date of Test : Apr. 11~16, 2013

Barak Ban

Prepared by : _____
(Engineer/ Barak Ban)

Amy Ding

Reviewer : _____
(Project Manager/ Amy Ding)

Tom. Chen

Approved & Authorized Signer : _____
(Manager/ Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

EUT	:	Auto cigarette lighter
Model Number	:	80505-1, 80505-2, 80495, 80505-3 (Note: All samples are the same except the model number & Shape of appliances, so we prepare “80495” for EMC test only.)
Test Power Supply	:	DC 12V
Applicant Address	:	yuyao arjextools packing co., ltd NO.51 SHUNCHUANG ROAD, YANGMING INDUSTRIAL ZONE, YUYAO CITY, ZHEJIANG PROVINCE, CHINA
Manufacturer Address	:	yuyao arjextools packing co., ltd NO.51 SHUNCHUANG ROAD, YANGMING INDUSTRIAL ZONE, YUYAO CITY, ZHEJIANG PROVINCE, CHINA
Date of Sample	:	Apr. 11, 2013
Date of Test	:	Apr. 11~16, 2013

1.2. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

FCC-Registration No.: 752021

Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, August 20, 2010.

IC-Registration No.: 8058A-1

Anbotek Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, February 22, 2013.

CNAS - LAB Code: L3503

Anbotek Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

Test Location

All Emissions tests were performed
Anbotek Compliance Laboratory Limited. at 1/F, 1 /Building, SEC Industrial Park, No.4 Qianhai Road, Nanshan District, Shenzhen, 518054, China

1.3. Measurement Uncertainty

Radiation Uncertainty	:	Ur = 4.3dB
Conduction Uncertainty	:	Uc = 3.4dB

1.4. Test Summary

For the EUT described above. The standards used were EN 61000-6-3 for Emissions & EN 61000-6-1 for Immunity.

Table 1 : Tests Carried Out Under EN 61000-6-3: 2007+A1:2011

Standard	Test Items	Status
EN 61000-6-3: 2007+A1:2011	Power Line Conducted Emission Test (150KHz To 30MHz)	x
EN 61000-6-3: 2007+A1:2011	Radiated Emission Test (30MHz To 1000MHz)	√

Table 2 : Tests Carried Out Under EN 61000-6-1: 2007

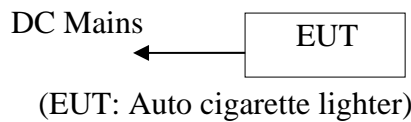
Standard	Test Items	Status
EN 61000-6-1: 2007	Electrostatic Discharge immunity Test	√
EN 61000-6-1: 2007	RF Field Strength susceptibility Test	√
EN 61000-6-1: 2007	Electrical Fast Transient/Burst Immunity Test	x
EN 61000-6-1: 2007	Surge Immunity Test	x
EN 61000-6-1: 2007	Injected Currents Susceptibility Test	x
EN 61000-6-1: 2007	Magnetic Field Susceptibility Test	x
EN 61000-6-1: 2007	Voltage Dips and Interruptions Test	x

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

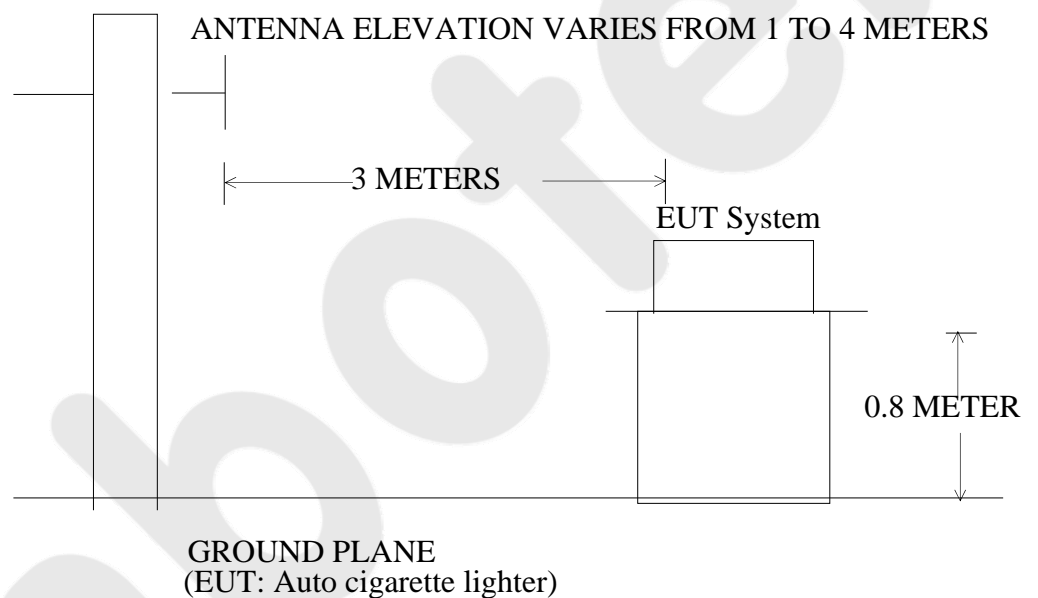
2. RADIATED EMISSION TEST

2.1. Block Diagram of Test

2.1.1. Block diagram of connection between the EUT and simulators



2.1.2. Block diagram of test setup (In chamber)



2.2. Measuring Standard

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

2.3. Radiated Emission Limits

2.3.1. EN 61000-6-3: 2007+A1:2011

Radiated Emission Limits

All emanations from a EN 61000-6-3 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.

2.4. EUT Configuration on Test

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

2.5. Operating Condition of EUT

2.5.1. Turn on the power.

2.5.2. Let the EUT work in test mode (On) and measure it.

2.6. 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 meters to find out the maximum emission level. Bilog antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

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

The EUT is tested in 9*6*6 Chamber.

The test results are listed in Section 2.8.

2.7. Test Equipment

The following test equipments are used during the radiated emission measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Nov. 12, 2012	1 Year
2.	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	May 17, 2012	1 Year
3.	Pre-amplifier	Compliance Direction	PAP-0203	22008	May 19, 2012	1 Year
4.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A

2.8. Measuring Results

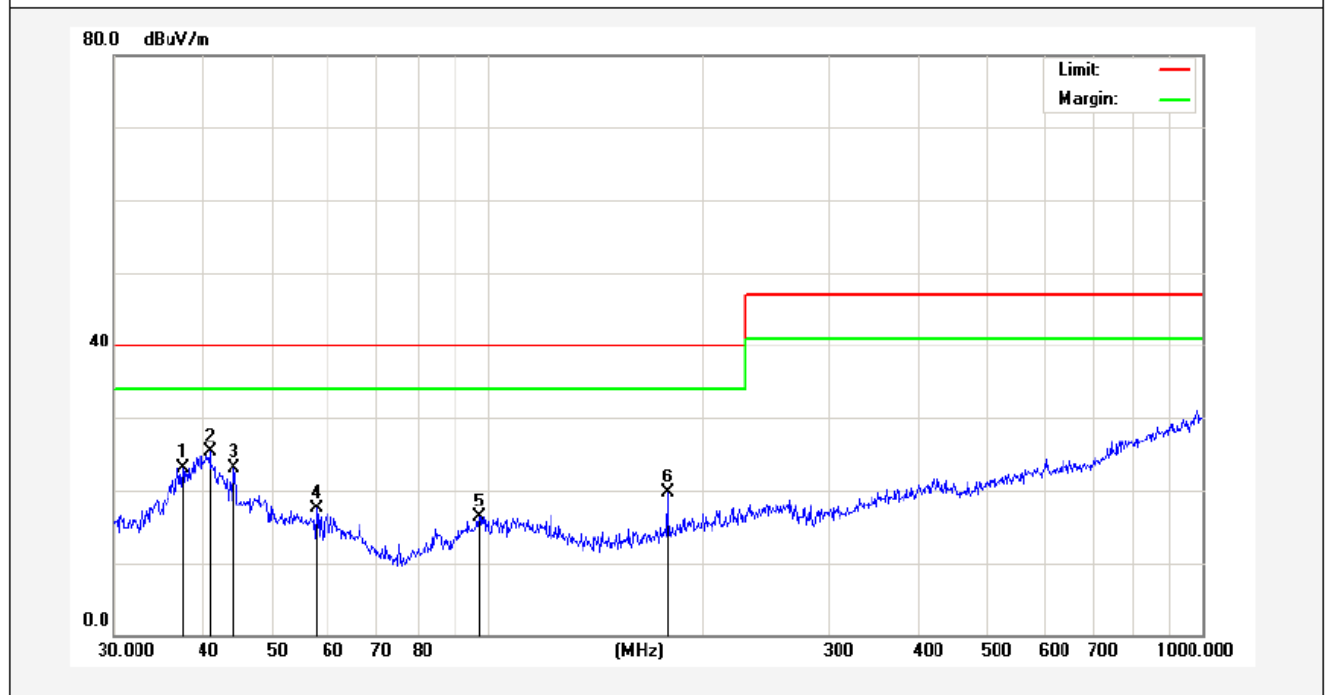
PASS.

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

The test curves are shown in the following pages.

Job No.:	AT1304702E	Polarization:	Vertical
Standard:	(RE)EN61000-6-3_3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2013/04/13
Temp.(C)/Hum.(%RH):	24.3(C)/55%RH	Time:	08:47:54
EUT:	Auto cigarette lighter	Test By:	Jimly Chen
Model:	80495	Distance:	3m

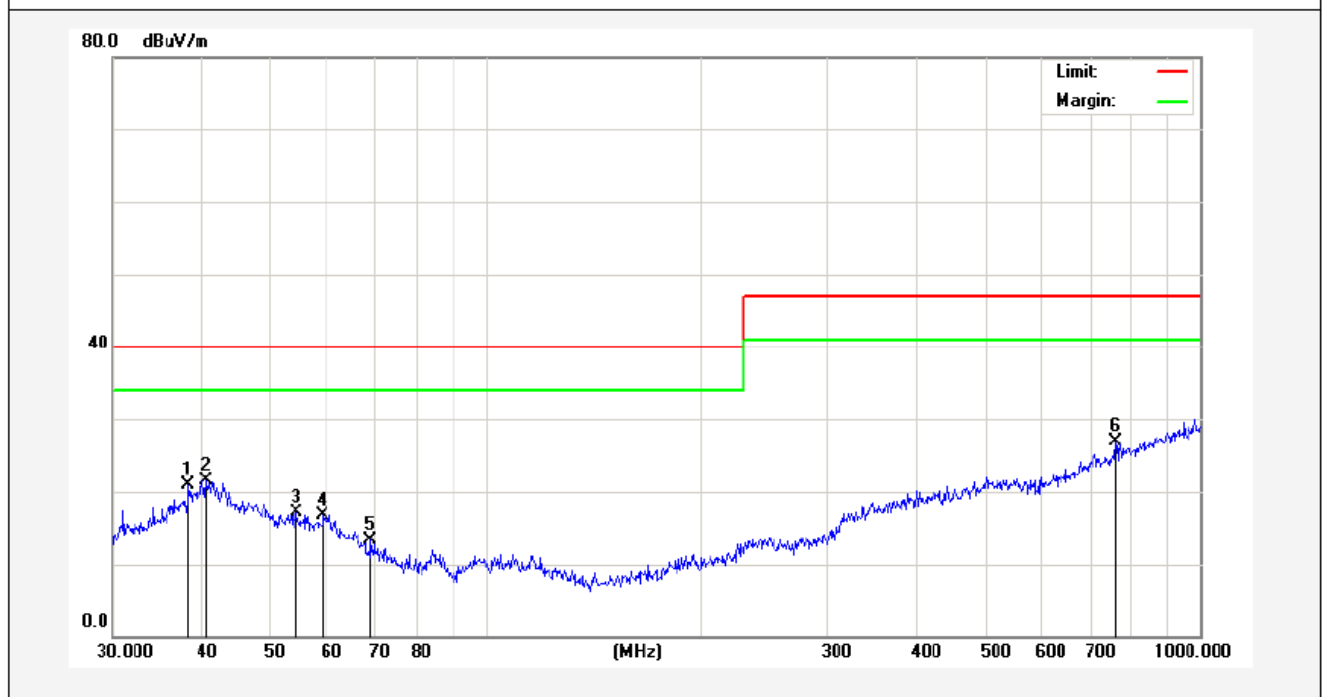
Note: On



No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	37.4165	35.53	-12.39	23.14	40.00	-16.86	peak			
2	40.8446	36.11	-10.71	25.40	40.00	-14.60	peak			
3	44.1202	35.08	-11.98	23.10	40.00	-16.90	peak			
4	57.5939	32.69	-15.17	17.52	40.00	-22.48	peak			
5	97.1148	32.30	-15.91	16.39	40.00	-23.61	peak			
6	178.1327	36.62	-16.98	19.64	40.00	-20.36	peak			

Job No.:	AT1304702E	Polarization:	Horizontal
Standard:	(RE)EN61000-6-3_3m	Power Source:	DC 12V
Test item:	Radiation Test	Date:	2013/04/13
Temp.(C)/Hum.(%RH):	24.3(C)/55%RH	Time:	08:49:38
EUT:	Auto cigarette lighter	Test By:	Jimly Chen
Model:	80495	Distance:	3m

Note: On

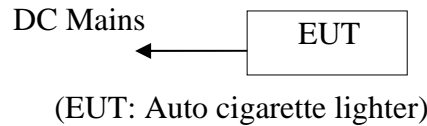


No.	Freq. (MHz)	Reading (dBuV/m)	Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/)	Over Limit (dB)	Detector	Height (cm)	degree (deg)	Remark
1	38.2120	32.68	-11.77	20.91	40.00	-19.09	peak			
2	40.5591	32.06	-10.58	21.48	40.00	-18.52	peak			
3	54.0711	31.88	-14.87	17.01	40.00	-22.99	peak			
4	59.0251	31.98	-15.31	16.67	40.00	-23.33	peak			
5	68.8721	32.36	-19.14	13.22	40.00	-26.78	peak			
6	760.7036	34.15	-7.26	26.89	47.00	-20.11	peak			

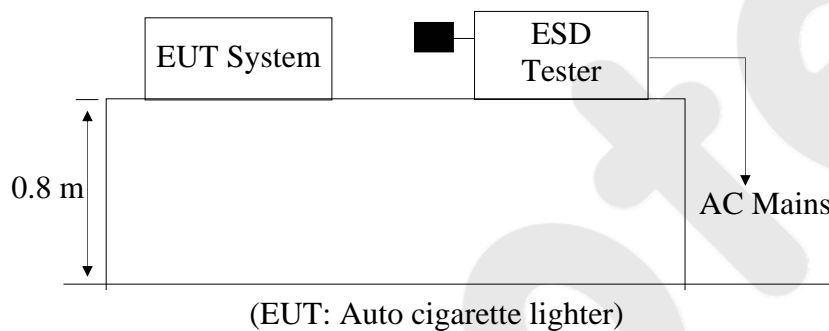
3. ELECTROSTATIC DISCHARGE IMMUNITY TEST

3.1. Block Diagram of Test Setup

3.1.1. Block diagram of connection between the EUT and simulators



3.1.2. Block diagram of test setup



3.2. Measuring Standard

EN 61000-6-1: 2007

IEC 61000-4-2: 2008

Severity Level: 3 / Air Discharge: ± 8 kV Level: 2 / Contact Discharge: ± 4 kV

3.3. Severity Levels and Performance Criterion

3.3.1. 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

3.3.2. Performance criterion: **B**

3.4. EUT Configuration

3.4.1. Auto cigarette lighter

Model Number : 80495
Serial Number : N/A
Applicant : yuyao arjextools packing co., ltd

3.5. Operating Condition of EUT

See the block diagram

3.6. Test Procedure

3.6.1. 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 100 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

3.6.2. Contact Discharge:

All the procedure shall be same as Section 3.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

3.6.3. Indirect discharge for horizontal coupling plane

At least 50 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.

3.6.4. Indirect discharge for vertical coupling plane

At least 50 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.

3.7. Test Equipment

The following test equipments are used during the electrostatic discharge immunity measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	ESD Simulators	KIKUSUI	KES4021	LJ003477	May 25, 2012	1 Year

3.8. Measuring Results

PASS

Please refer to the following pages

Electrostatic Discharge Test Results

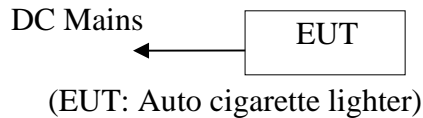
Anbotek Compliance Laboratory Limited

Applicant : yuyao arjextools packing co., ltd	Test Date : Apr. 15, 2013	
EUT : Auto cigarette lighter	Temperature : 25°C	
M/N : 80495	Humidity : 54%	
Air discharge : ±8.0kV	Criterion : B	
Contact discharge: ±4.0kV	Test Engineer: Jimly Chen	
Test Mode : On		
Location	Kind A-Air Discharge C-Contact Discharge	Result
Slot of the EUT 6 points	A	PASS
Others 6 points	A	PASS
HCP 6 points	C	PASS
VCP of front 4 points	C	PASS
VCP of rear 4 points	C	PASS
VCP of left 4 points	C	PASS
VCP of right 4 points	C	PASS
Note:		

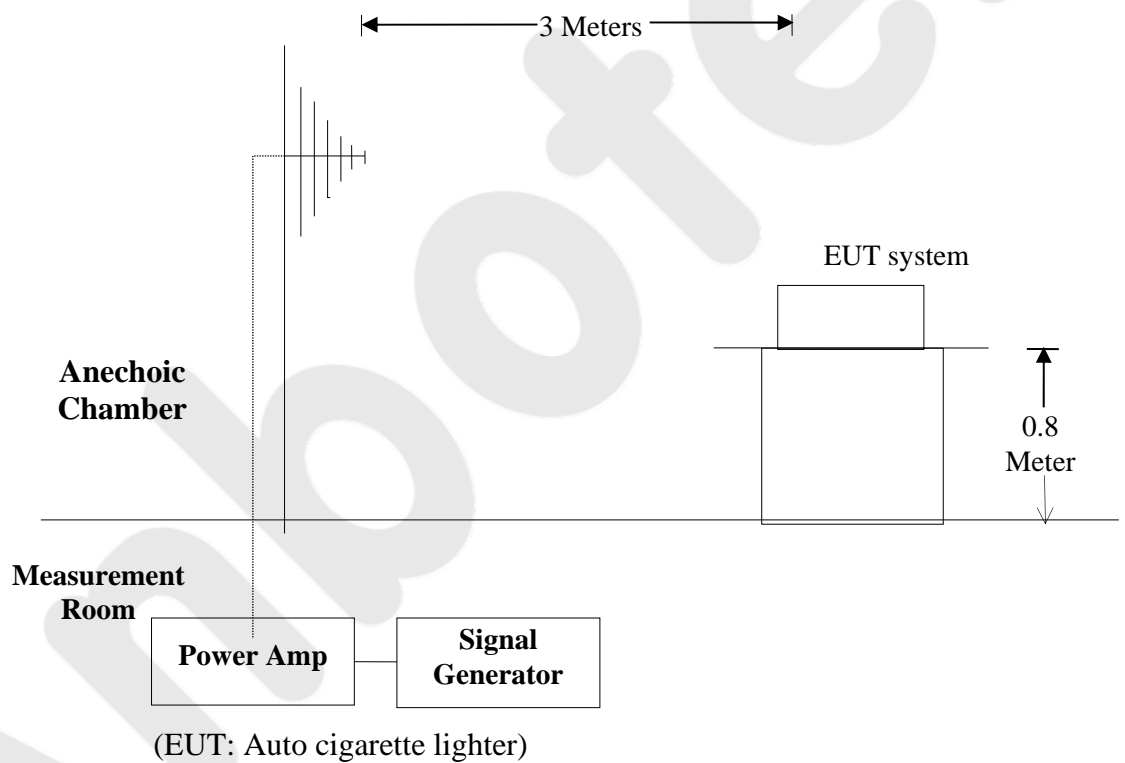
4. RF FIELD STRENGTH SUSCEPTIBILITY TEST

4.1. Block Diagram of Test

4.1.1. Block diagram of connection between the EUT and simulators



4.1.2. Block diagram of RS test setup



4.2. Measuring Standard

EN 61000-6-1: 2007
IEC 61000-4-3: 2010
Severity Level: 2, 3V / m

4.3. Severity Levels and Performance Criterion

4.3.1. Severity Levels

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

4.3.2. Performance Criterion: A

4.4. EUT Configuration on Test

4.4.1. Auto cigarette lighter

Model Number : 80495
 Serial Number : N/A
 Applicant : yuyao arjextools packing co., ltd

4.5. Operating Condition of EUT

See the block diagram

4.6. Test Procedure

The EUT are placed on a table which is 0.8 meter high above the ground. The EUT is set 3 meters 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 the EUT must be faced this transmitting antenna and measured individually.

In order to judge the EUT performance, a CCD camera is used to monitor its screen. All the scanning conditions are as following:

Condition of Test	Remark
1. Fielded Strength	3V/m (Severity Level 2)
2. Radiated Signal	Unmodulated
3. Scanning Frequency	80-1000MHz
4. Sweep time of radiated	0.0015 Decade/s
2. Dwell Time	1 Sec.

4.7. Test Equipment

The following test equipments are used during the RF Field Strength susceptibility measurement:

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 29, 2012	1 year
2.	50ohm Diode Power Sensor	BOONTON	51011EMC	34236/34238	May 29, 2012	1 year
3.	Broad-Band Horn Antenna	SCHWARZBECK	BBHA9120 L3F	332	May 29, 2012	1 year
4.	Power Amplifier	PRANA	AP32MT215	N/A	May 29, 2012	1 year
5.	Power Amplifier	MILMEGA	AS0102-55	N/A	May 29, 2012	1 year
6.	Signal Generator	AEROFLEX	2023B	N/A	May 29, 2012	1 year
7.	Field Strength Meter	HOLADAY	HI-6005	N/A	May 29, 2012	1 year
8.	RS232 Fiber Optic Modem	HOLADAY	HI-4413P	N/A	May 29, 2012	1 year
9.	Log.-Per. Antenna	SCHWARZBECK	VULP 9118E	N/A	May 29, 2012	1 year

4.8. Measuring Results

PASS.

Please refer to the following page.

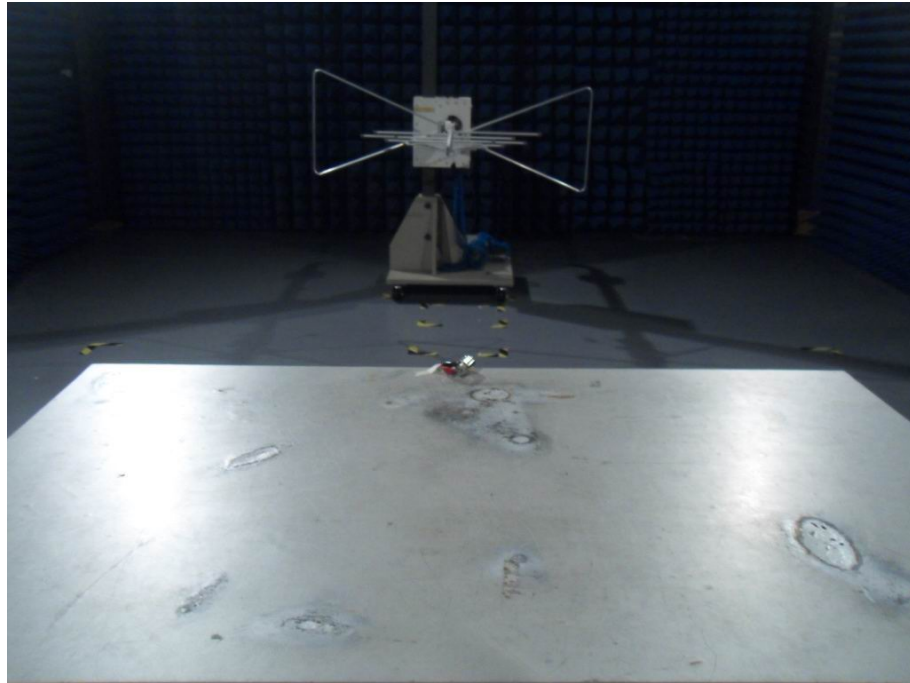
RF Field Strength Susceptibility Test Results

Anbotek Compliance Laboratory Limited

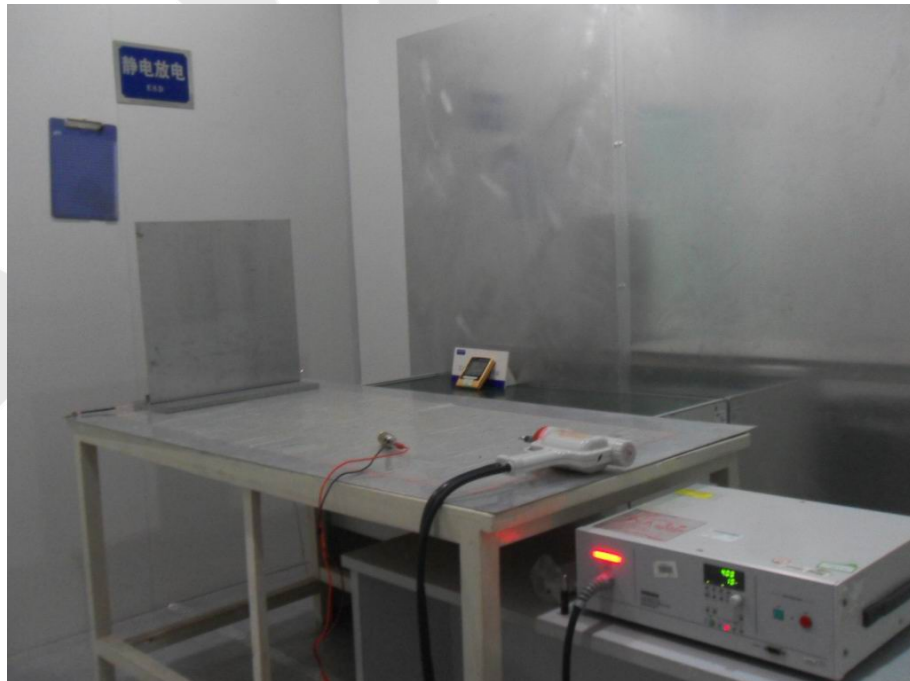
Applicant : yuyao arjextools packing co., ltd	Test Date : Apr. 15, 2013
EUT : Auto cigarette lighter	Temperature : 25°C
M/N : 80495	Humidity : 54%
Field Strength : 3 V/m	Criterion : A
Test Mode : On	Test Engineer : Jimly Chen
Frequency Range: 80 MHz to 1000 MHz	
Modulation: <input type="checkbox"/> None <input type="checkbox"/> Pulse <input checked="" type="checkbox"/> AM 1KHz 80%	
	Frequency Rang 1: 80~ 1000MHz
	Frequency Rang 2:
Steps	# / %
	Horizontal Vertical Horizontal Vertical
Front	PASS PASS
Right	PASS PASS
Rear	PASS PASS
Left	PASS PASS
Test Equipment :	
Note: Tested by EMTEK.	

5 PHOTOGRAPHS

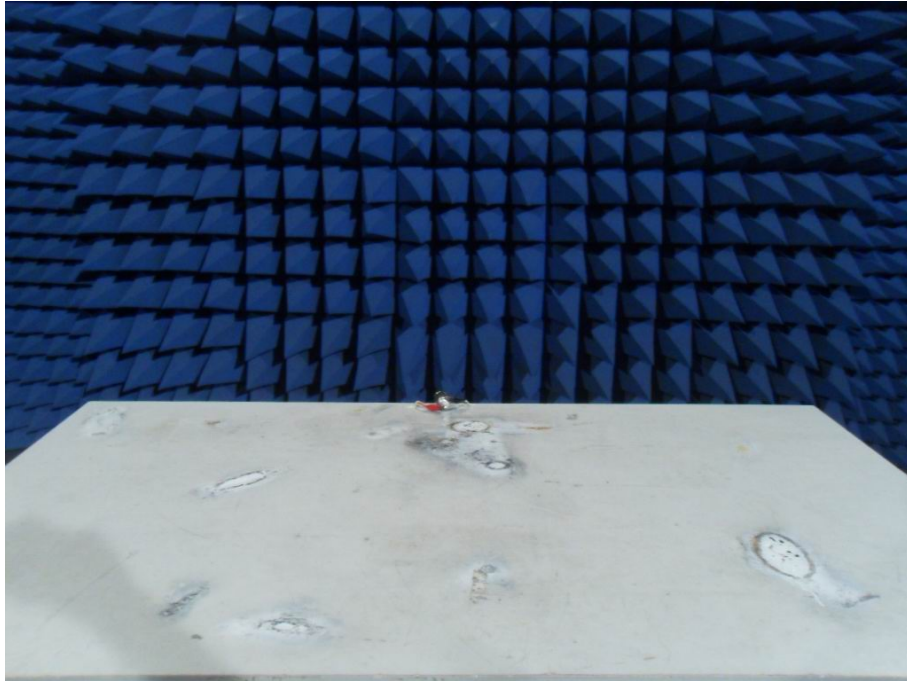
5.1. Photo of Radiated Emission Test



5.2. Photo of Electrostatic Discharge Test



5.3. Photo of RF Field Strength susceptibility Test



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APPENDIX I
(Photos of EUT)

Figure 1
The EUT-Outside View

80505-1



Figure 2
The EUT-Outside View

80505-2

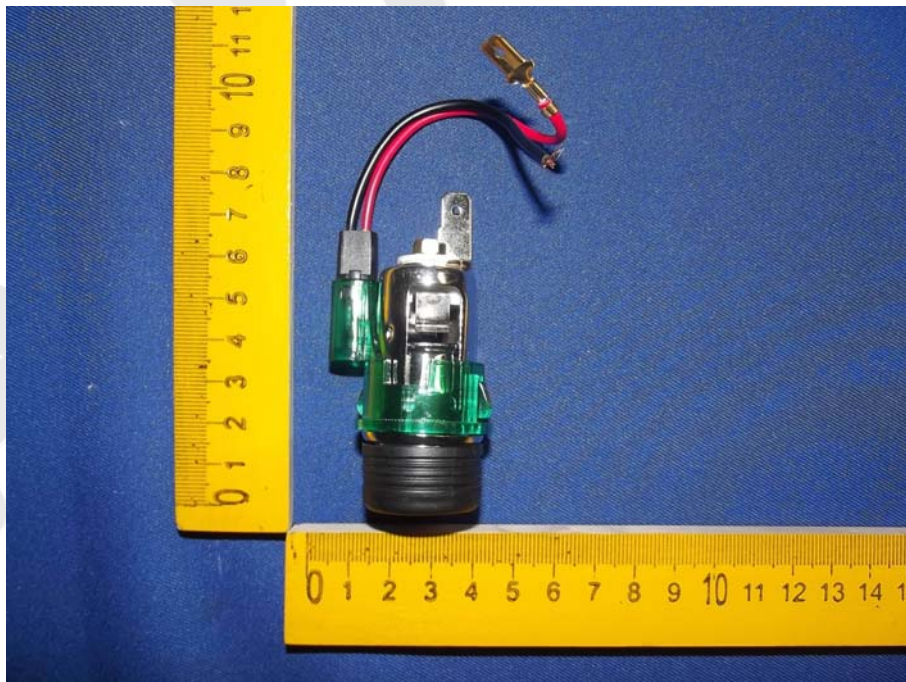


Figure 3
The EUT-Outside View

80505-3



Figure 4
The EUT-Outside View

80495

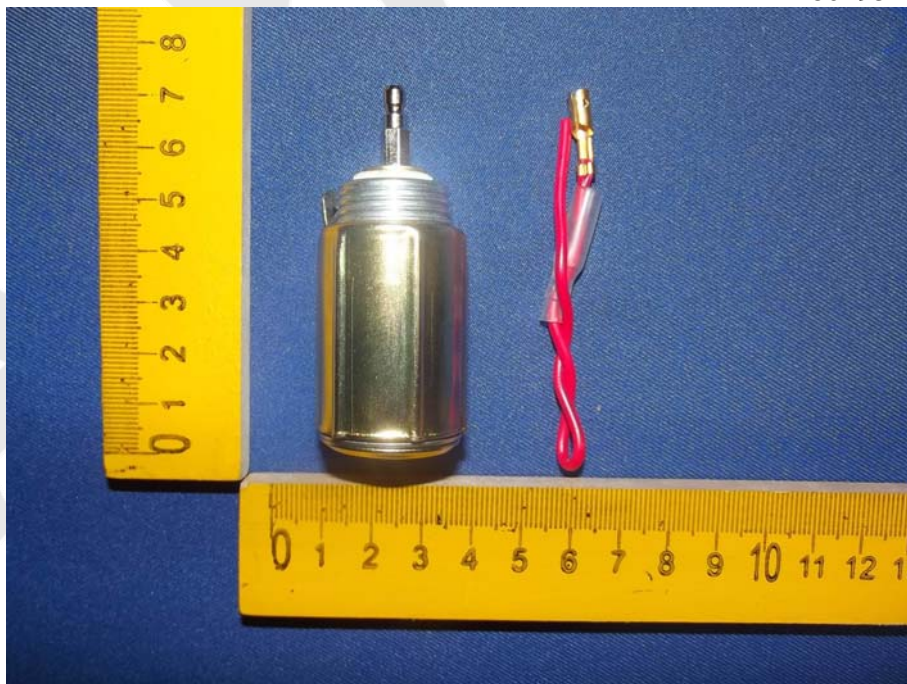


Figure 5
The EUT- Side View

80495

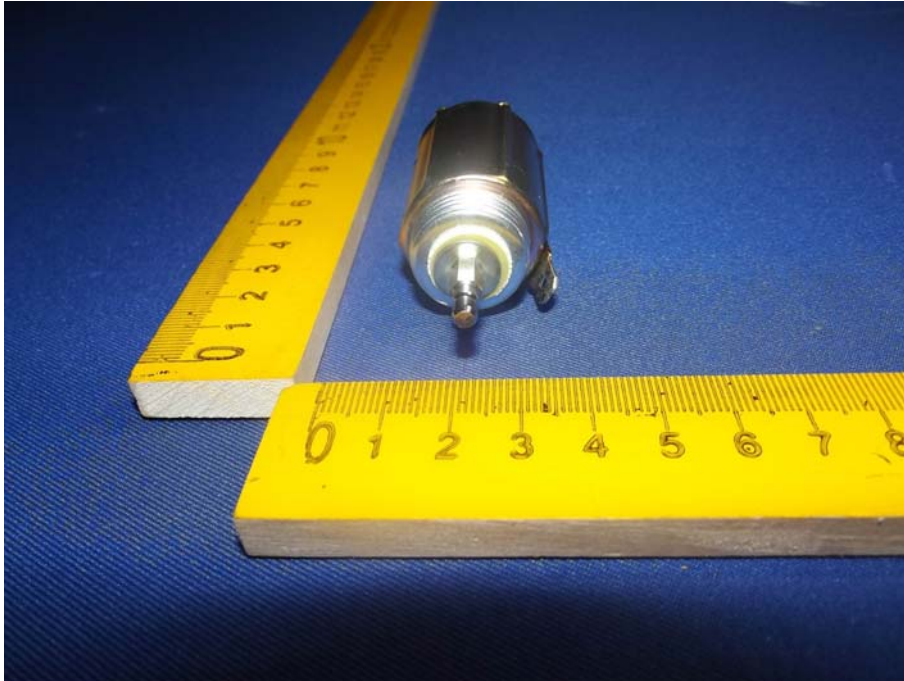


Figure 6
The EUT- Inside View

80495



Figure 7
The EUT- Inside View

80495



APPENDIX II
(CE Label)

CE Label

1. The CE conformity marking must consist of the initials 'CE' taking the following form:
If the CE marking is reduced or enlarged, the proportions given in the above graduated drawing must be respected.
2. The CE marking must have a height of at least 5 mm except where this is not possible on account of the nature of the apparatus.
3. The CE marking must be affixed to the product or to its data plate. Additionally it must be affixed to the packaging, if any, and to the accompanying documents.
4. The CE marking must be affixed visibly, legibly and indelibly.
It must have the same height as the initials 'CE'

Proposed Label Location on EUT

The EUT- Outside View /proposed CE Mark Location

