

**EMC TEST REPORT**

**FOR**

**Green Smoke,Inc.**

**Green Smoke**

**Model: Green Smoke**

**Prepared for : Green Smoke,Inc.**

**3551 Magellan Circle #426 Aventura,FL 33180 USA.**

**Prepared By : UTS International Authentication Limited  
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**Report Number : UTS 09 04 0031**

**Date of Test : April 21, 2009**

**Date of Report : April 27, 2009**

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**TABLE OF CONTENTS**

**Description**

**Test Report Certification**

<b>1. TEST RESULTS.....</b>	<b>4</b>
<b>2. GENERAL INFORMATION.....</b>	<b>4</b>
<b>2.1. Description of EUT.....</b>	<b>4</b>
<b>2.2. Test Facility.....</b>	<b>4</b>
<b>3. TEST EQUIPMENT.....</b>	<b>5</b>
<b>3.1. Radiated Disturbance Test.....</b>	<b>5</b>
<b>3.2. Electrostatic Discharge Immunity Test.....</b>	<b>5</b>
<b>3.3. Radiated Electromagnetic Field Immunity test.....</b>	<b>5</b>
<b>4. RADIATED DISTURBANCE TEST.....</b>	<b>6</b>
<b>4.1. Block Diagram of Test Setup.....</b>	<b>6</b>
<b>4.2. Test Standard and Limit.....</b>	<b>6</b>
<b>4.3. Test Procedure.....</b>	<b>7</b>
<b>4.4. Operating Condition of EUT.....</b>	<b>7</b>
<b>4.5. Test Data.....</b>	<b>7</b>
<b>5. ELECTROSTATIC DISCHARGE IMMUNITY TEST.....</b>	<b>9</b>
<b>5.1. Block Diagram of Test Setup.....</b>	<b>9</b>
<b>5.2. Test Requirements.....</b>	<b>9</b>
<b>5.3. Test Procedure.....</b>	<b>10</b>
<b>5.4. Operating Condition of EUT.....</b>	<b>10</b>
<b>5.5. Test Data.....</b>	<b>10</b>
<b>6. RADIATED ELECTROMAGNETIC FIELD IMMUNITY TEST.....</b>	<b>12</b>
<b>6.1. Block Diagram of Test Setup.....</b>	<b>12</b>
<b>6.2. Test Requirements.....</b>	<b>12</b>
<b>6.3. Test Procedure.....</b>	<b>13</b>
<b>6.4. Operating Condition of EUT.....</b>	<b>13</b>
<b>6.5. Test Data.....</b>	<b>13</b>
<b>Photo 2 Inside of EUT.....</b>	<b>18</b>

**Appendix I**

**Appendix II**



## 1. TEST RESULTS

**Table 1 Test Result**

<b>Test Item</b>	<b>Test Result</b>
<b>Radiated disturbance</b>	<b>Pass</b>
<b>ESD Immunity</b>	<b>Pass</b>
<b>Radiated Electromagnetic Field Immunity</b>	<b>Pass</b>

## 2. GENERAL INFORMATION

### 2.1. Description of EUT

<b>Description:</b>	<b>Green Smoke</b>
<b>Model number:</b>	<b>Green Smoke</b>
<b>Applicant :</b>	<b>Green Smoke,Inc.</b>
<b>Manufacturer :</b>	<b>Green Smoke,Inc.</b>

### 2.2. Test Facility

<b>Name of Facility:</b>	<b>UTS International Authentication Limited</b>
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**3. TEST EQUIPMENT**

**3.1. Radiated Disturbance Test**

**Table 2 Radiated Disturbance Test Equipment**

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB3436	EMI Test Receiver	Rohde & Schwarz	ESI26	Jan.31,2009	1 Year
SB3440	Bilog Antenna	Chase	CBL6112B	Jan.31,2009	1 Year

**3.2. Electrostatic Discharge Immunity Test**

**Table 3 ESD Immunity Test Equipment**

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB2561	ESD tester	SCHNAFFNER	NSG435	Feb.13,2009	1 Year

**3.3. Radiated Electromagnetic Field Immunity test**

**Table 4 Radiated Electromagnetic Field Immunity Test Equipment**

No.	Equipment	Manufacturer	Model No.	Last Cal.	Cal. Interval
SB3433	Signal Generator	Rohde& Schwarz	SMT03	Jan.31,2009	1 Year
SB3437	Power Meter	Rohde& Schwarz	NRVD	Jan.31,2009	1 Year
SB3437/01	Voltage Probe	Rohde& Schwarz	URV5-Z2	Jan.31,2009	1 Year
SB3437/02	Voltage Probe	Rohde& Schwarz	URV5-Z2	Jan.31,2009	1 Year
SB3173	Power Amplifier	AR	150W1000	Jan.31,2009	1 Year
SB3172	Field Probe	Holaday	HI-6005	Jan.31,2009	1 Year
SB2622	Bilog Antenna	Chase	CBL6111C	Jan.31,2009	1 Year

## 4. RADIATED DISTURBANCE TEST

### 4.1. Block Diagram of Test Setup

#### 4.1.1. EUT setup



Figure 1 EUT Setup

#### 4.1.2. Test setup of Semi-anechoic chamber Test

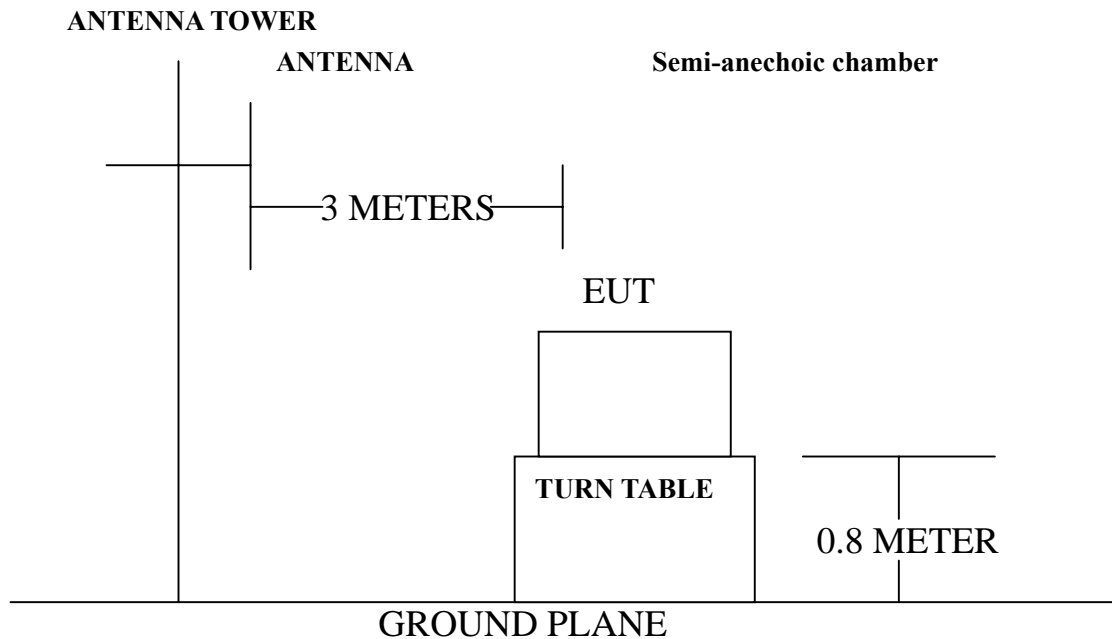


Figure 2 Test Setup(Semi-anechoic chamber)

### 4.2. Test Standard and Limit

#### 4.2.1. Test Standard

EN61000-6-3:2001(EN55022:1998 + A1:2000 + A2:2003)

#### 4.2.2. Test Limit

Table 5 Radiated Disturbance Test Limit(Class B)

Frequency	LimitdB( $\mu$ V/m)
	Quasi-peak Level
30MHz ~ 230MHz	40
230MHz ~ 1000MHz	47

\*The lower limit shall apply at the transition frequency.

\*The test distance is 3m.

**4.3. Test Procedure**

The EUT is placed on a turntable, which is 0.8 meter above ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. EUT is set 3 meters away from the receiving antenna, which is mounted on an antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

**4.4. Operating Condition of EUT**

**4.4.1. Setup the EUT and simulator as shown on section 4.1.**

**4.5. Test Data**

All emissions are too low against the limits. The test data refer to the test curve shown in the APPENDIX I.

**Table 6 Radiated Disturbance Test Data**

<b>EUT: Green Smoke</b>			
<b>Test Mode: ON</b>			
<b>Frequency MHz</b>	<b>Readings dB(<math>\mu</math>V/m)</b>	<b>Polarization</b>	<b>Limits dB(<math>\mu</math>V/m)</b>
<b>483.259</b>	<b>41.7</b>	<b>Horizontal</b>	<b>47</b>
<b>35.670</b>	<b>37.6</b>	<b>Horizontal</b>	<b>47</b>
<b>38.364</b>	<b>31.2</b>	<b>Vertical</b>	<b>40</b>
<b>932.651</b>	<b>35.3</b>	<b>Vertical</b>	<b>47</b>

## 5. ELECTROSTATIC DISCHARGE IMMUNITY TEST

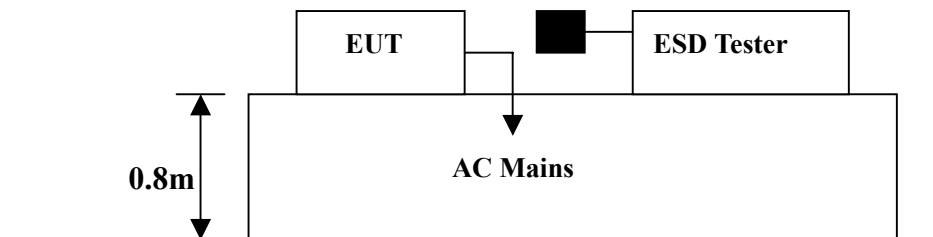
### 5.1. Block Diagram of Test Setup

#### 5.1.1. EUT setup



Figure 3 EUT Setup

#### 5.1.2. Block Diagram of ESD Test Setup



Remark:  is Discharge Electrode

Figure 4 ESD Test Setup

### 5.2. Test Requirements

#### 5.2.1. Test Standard

EN61000-6-1:2001(EN61000-4-2:1995+A1:1998+A2:2001)

#### 5.2.2. Test Level

Table 7 Test Level for ESD Test

Port	Test Specification
Enclosure Port	8kV air discharge 4kV contact discharge

#### 5.2.3. Performance criterion:B

### **5.3. Test Procedure**

#### **5.3.1. Contact Discharge:**

The ESD generator is held perpendicular to the surface to which the discharge is applied and the tip of the discharge electrode touch the surface of EUT. Then turn the discharge switch. 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 discharge completed

#### **5.3.2. Air Discharge:**

Air discharge is used where contact discharge can't be applied. 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.

#### **5.3.3. Indirect discharge for horizontal coupling plane**

At least 10 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT.

#### **5.3.4. Indirect discharge for vertical coupling plane**

At least 10 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.

### **5.4. Operating Condition of EUT**

**5.4.1. Setup the EUT as shown on section 5.1.**

**5.4.2. Let the EUT Working in mode.**

### **5.5. Test Data**

Table & ESD Test Data

<b>EUT: Green Smoke</b> <b>Model No.: Green Smoke</b> <b>Test Mode: ON</b> <b>Criterion: B</b>			<b>Date of Test: 2009.04.23</b>  <b>Temperature: 24°C</b>  <b>Humidity: 63%</b>	
<b>Location</b>	<b>Voltage</b>	<b>Amount of test points</b>	<b>Discharge Method</b>	<b>Results</b>
<b>Nonconductive Enclosure</b>	<b>±8kV</b>	<b>8</b>	<b>A</b>	<b>Pass</b>
<b>HCP</b>	<b>±4kV</b>	<b>4</b>	<b>C</b>	<b>Pass</b>
<b>VCP</b>	<b>±4kV</b>	<b>4</b>	<b>C</b>	<b>Pass</b>
<b>Metal</b>	<b>±4kV</b>	<b>4</b>	<b>C</b>	<b>Pass</b>

## 6. RADIATED ELECTROMAGNETIC FIELD IMMUNITY TEST

### 6.1. Block Diagram of Test Setup

#### 6.1.1. EUT setup



Figure 5 EUT Setup

#### 6.1.2. Block Diagram of Radiated Electromagnetic field Immunity Test Setup ANTENNA TOWER

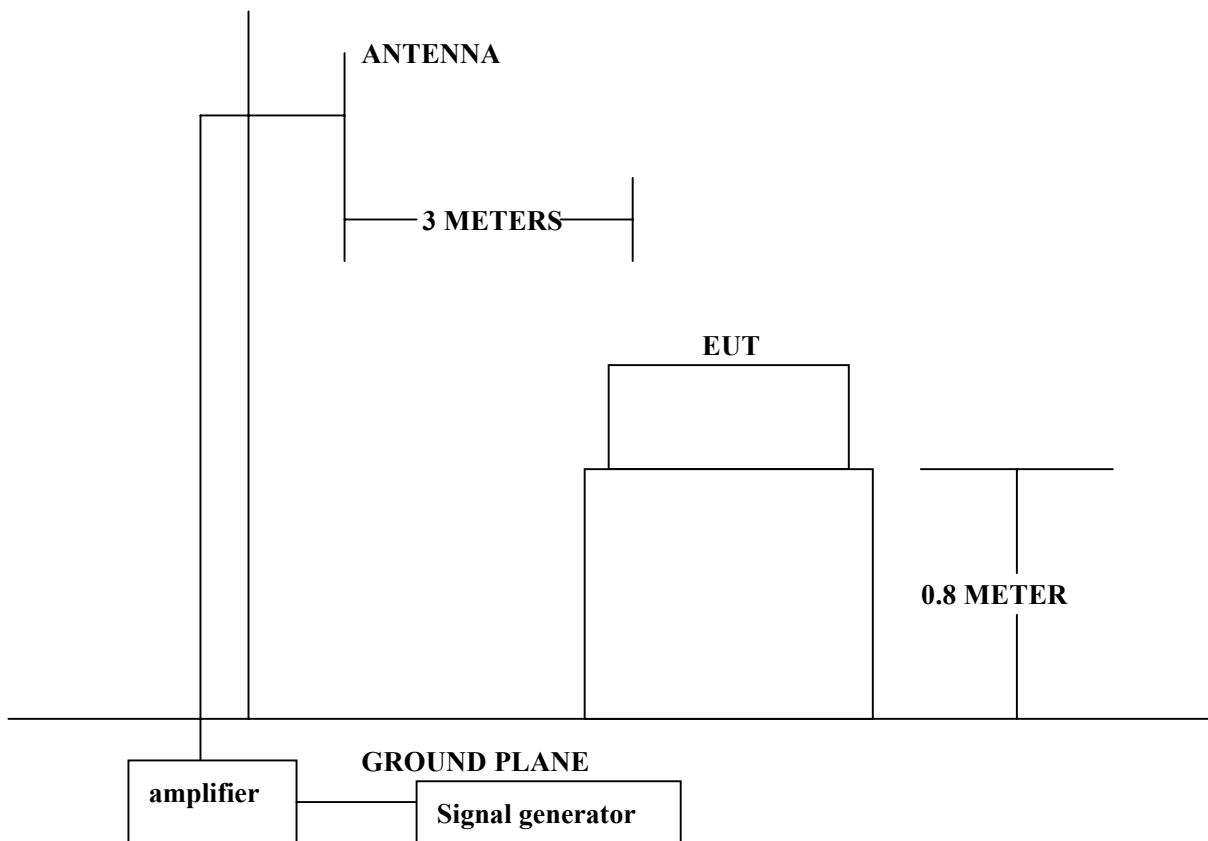


Figure 6 Radiated Electromagnetic Field Immunity Test Setup

## 6.2. Test Requirements

### 6.2.1. Test Standard

EN61000-6-1:2001(EN61000-4-3:2002 + A1:2003)

### 6.2.2. Test Level

**Table 9 Test Level for Radiated Electromagnetic Field Immunity Test**

<b>Port</b>	<b>Test Specification</b>
<b>Enclosure Port</b>	<b>80-1000MHz 3V/m 80%AM(1kHz)</b>

### 6.2.3. Performance criterion:A

## 6.3. Test Procedure

The EUT and its simulators are placed on a turntable, 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.

In order to judge the EUT performance,a CCD camera is used to monitor EUT screen.

## 6.4. Operating Condition of EUT

6.4.1. Setup the EUT as shown on section 6.1.

6.4.2. Let the EUT Working in mode

## 6.5. Test Data

**Table 10 Test Data**

<b>EUT: Green Smoke</b> <b>Model No: Green Smoke</b> <b>Test Mode: ON</b> <b>Criterion: A</b>	<b>Date of Test: 2009.04.24</b>	
	<b>Temperature: 25°C</b>	
	<b>Humidity: 65%</b>	
<b>Frequency Rang(MHz)</b>	<b>80-1000 MHz</b>	
<b>Field Strength(V/m)</b>	<b>3V/m</b>	
<b>Steps(%)</b>	<b>1%</b>	
	<b>Horizontal</b>	<b>Vertical</b>
<b>Front</b>	<b>Pass</b>	<b>Pass</b>
<b>Rear</b>	<b>Pass</b>	<b>Pass</b>
<b>Left</b>	<b>Pass</b>	<b>Pass</b>
<b>Right</b>	<b>Pass</b>	<b>Pass</b>

# APPENDIX I

**Radiated Disturbance**

**EN 55022B**

**EUT: Green Smoke**

**M/N: Green Smoke**

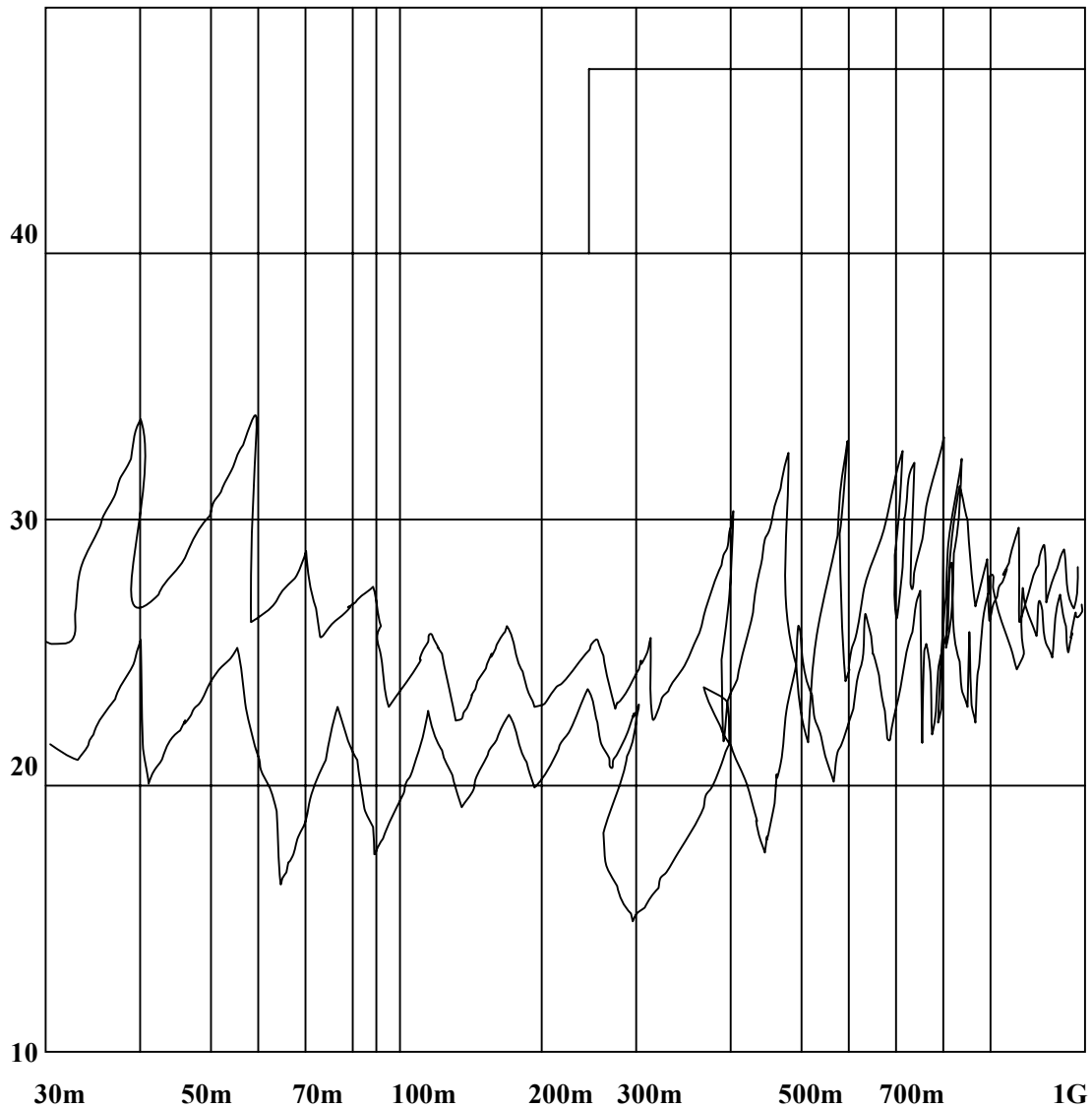
**Operating Condition: ON**

**Test Specification: Vertical & Horizontal**

**Comment:**

**Level [dB $\mu$ V/m]**

**50**



**Frequency[Hz]**

## **APPENDIX II**

**PHOTO ATTACHMENT :**

Figure 1

