# FCC TEST REORT

For

Jabadoo Denmark

FCC ID: XZ6TS-001

Track Speaker

Model No.: TS-001

| | | |
|---|---|---|
| Prepared for | : | Jabadoo Denmark |
| Address | : | Metalgangen 19b, 2690 Karlslunde, Denmark |
| Prepared by | : | SHENZHEN EMTEK CO., LTD. |
| Address | : | Bldg 69, Majialong Industry Zone,<br>Nanshan District, Shenzhen, Guangdong, China<br><br>Tel: (0755) 26954280<br>Fax: (0755) 26954282 |

| | | |
|---|---|---|
| Report Number | : | E0911077F |
| Date of Test | : | November 17, 2009 to November 30, 2009 |
| Date of Report | : | December 01, 2009 |

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# TEST REPORT DESCRIPTION

| | | |
|---|---|---|
| Applicant | : | Jabadoo Denmark |
| Manufacturer | : | Shenzhen Beauty Electronics Co., Ltd. |
| EUT | : | Track Speaker |
| Model No. | : | TS-001 |
| Receiver frequency | : | 925.8MHz, 926.6MHz, 927.4MHz |
| Input Voltage | : | DC5V with external adapter |

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart B Class B August 2008 & FCC / ANSI C63.4-2003

The device described above is tested by SHENZHEN EMTEK CO., LTD. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart Class B limits both radiated and conducted emissions. The measurement results are contained in this test report and SHENZHEN EMTEK CO., LTD. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.
This report applies to above tested sample only. This report shall not be reproduced in part without written approval of SHENZHEN EMTEK CO., LTD.

Date of Test: November 17, 2009 to November 30, 2009

Prepared by: _____
(Engineer)

Reviewer: _____
(Quality Manager)

Approved & Authorized Signer: _____
(Manager)

# 1. GENERAL INFORMATION

## 1.1. Description of Device (EUT)

| | | |
|---|---|---|
| EUT | : | Track Speaker |
| Model Number | : | TS-001 |
| Trade Mark | : | Jabadoo |
| Adapter | : | Model Number: ZDA120050<br>Input: 100V-240V~50/60Hz, 0.15A<br>Output: 12VDC, 500mA |
| Test Voltage | : | AC120V/60Hz |
| Receiving Frequency | : | 925.8MHz, 926.6MHz, 927.4MHz |
| Applicant | : | Jabadoo Denmark |
| Address | : | Metalgangen 19b, 2690 Karlslunde, Denmark |
| Manufacturer | : | Shenzhen Beauty Electronics Co., Ltd. |
| Address | : | Bldg 4 Xiangxiang Inds.Zone, Ying Ren Shi Village, Shiyan Town, Baoan District, Shenzhen, China |
| Date of receiver | : | November 17, 2009 |
| Date of Test | : | November 17, 2009 to November 30, 2009 |

## 1.2. Support Device

| | | |
|---|---|---|
| iPod Player | : | Manufacturer: Apple<br>M/N: A1136<br>CE, FCC |

## 1.3.Test Facility

Site Description

EMC Lab. : Accredited by CNAS, 2005.11.02
The certificate is valid until 2010.11
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01: 2006 (identical to ISO/IEC17025: 2005)
The Certificate Registration Number is L2291

Accredited by TUV Rheinland Shenzhen, 2008.3
The Laboratory has been assessed according to the requirements ISO/IEC 17025

Accredited by FCC, March 18, 2008
The Certificate Registration Number is 709623.

Accredited by Industry Canada, May 24, 2008
The Certificate Registration Number is 46405-4480

Name of Firm : SHENZHEN EMTEK CO., LTD.

Address : Bldg 69, Majialong Industry Zone,
Nanshan District, Shenzhen, Guangdong, China

## 1.4. Measurement Uncertainty

Radiation Emission Uncertainty : Ur = 3.3

Conduction Emission Uncertainty : Uc = 2.8

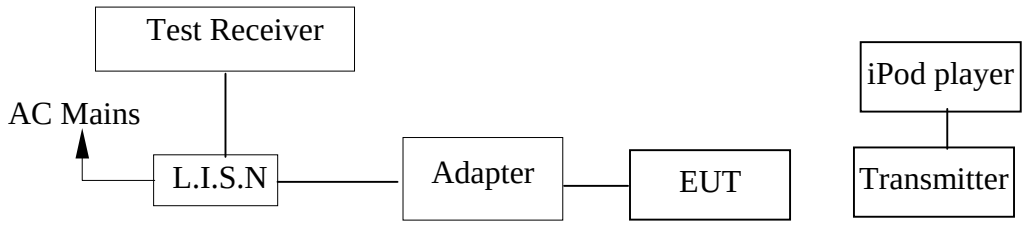
# 2. POWER LINE CONDUCTED MEASUREMENT

## 2.1.Test Equipment

The following test equipments are used during the power line conducted measurement:

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Test Receiver | Rohde & Schwarz | ESCS30 | 828985/018 | May 29, 2009 | 1 Year |
| 2. | L.I.S.N | Rohde & Schwarz | ESH2-Z5 | 834549/005 | May 29, 2009 | 1 Year |
| 3. | 50" Coaxial Switch | Anritsu | MP59B | M20531 | N/A | N/A |
| 4. | Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100006 | May 29, 2009 | 1 Year |
| 5. | Voltage Probe | Rohde & Schwarz | TK9416 | N/A | May 29, 2009 | 1 Year |

## 2.2 Block diagram of test setup




(EUT: Track Speaker)

## 2.3Power Line Conducted Emission Measurement Limits (Class B)

| 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.

## 2.4.Configuration of EUT on Measurement

The following equipments are installed on Power Line Conducted Emission Measurement to meet the commission requirement and operating regulations in a manner which tends to maximize its emission characteristics in a normal application.

| | | |
|---|---|---|
| EUT | **:** | Track Speaker |
| Model Number | **:** | TS-001 |

## 2.5.Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown as Section 2.2.
2.5.2. Turn on the power of all equipment.
2.5.3. Let the EUT work in test mode (Receiving Mode) and measure it.

## 2.6.Test Procedure

The EUT system is connected to the power mains through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm coupling impedance for the EUT system. Please refer the block diagram of the test setup and photographs. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC ANSI C63.4-2003 on Conducted Emission Measurement.

The bandwidth of test receiver (R & S ESCS30) is set at 9KHz.

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

The test result is reported on Section 2.7. The test data is attached in the following page.

## 2.7.Power Line Conducted Emission Measurement Results

**PASS.**

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

| | | | |
|---|---|---|---|
| Date of Test: | November 18, 2009 | Temperature: | 22℃ |
| Frequency Detector: | 0.15~30MHz | Humidity: | 50% |
| Test Result: | PASS | Test Mode: | Receiving Mode |

| Test Line | Frequency MHz | Emission Level QP dB(μV) | Emission Level AV dB(μV) | Limits QP dB(μV) | Limits AV dB(μV) | Margin QP dB(μV) | Margin AV dB(μV) |
|---|---|---|---|---|---|---|---|
| Neutral | 0.150 | 58.00 | 40.78 | 66.60 | 56.60 | -8.60 | -15.82 |
| | 0.175 | 57.10 | 37.36 | 64.72 | 54.72 | -7.62 | -17.36 |
| | 0.205 | 52.10 | 33.97 | 63.41 | 53.41 | -11.31 | -19.44 |
| | 0.502 | 37.51 | 25.49 | 56.00 | 46.00 | -18.49 | -20.51 |
| | 1.189 | 30.96 | 18.53 | 56.00 | 46.00 | -25.04 | -27.47 |
| | 28.310 | 30.02 | 20.01 | 60.00 | 50.00 | -29.98 | -29.99 |
| Line | 0.1550 | 57.10 | 42.03 | 65.73 | 55.73 | -8.63 | -13.70 |
| | 0.180 | 57.30 | 37.97 | 64.49 | 54.49 | -7.19 | -16.52 |
| | 0.205 | 52.60 | 33.97 | 63.41 | 53.41 | -10.81 | -19.44 |
| | 0.507 | 37.29 | 26.72 | 56.00 | 46.00 | -18.71 | -19.28 |
| | 0.792 | 32.57 | 18.06 | 56.00 | 46.00 | -23.43 | -27.94 |
| | 28.315 | 30.08 | 21.36 | 60.00 | 50.00 | -29.92 | -28.64 |

# 3. RADIATED EMISSION MEASUREMENT

## 3.1.Test Equipment

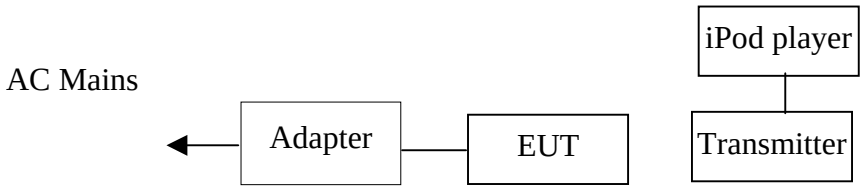
The following test equipments are used during the radiated emission measurement:

3.1.1. For Anechoic Chamber

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | EMI Test Receiver | Rohde & Schwarz | ESU | 1302.6005.26 | May 29, 2009 | 1 Year |
| 2. | Pre-Amplifier | HP | 8447D | 2944A07999 | May 29, 2009 | 1 Year |
| 3. | Bilog Antenna | Schwarzbeck | VULB9163 | 142 | May 29, 2009 | 1 Year |
| 4. | Loop Antenna | ARA | PLA-1030/B | 1029 | May 29, 2009 | 1 Year |
| 5. | Horn Antenna | Schwarzbeck | BBHA 9170 | BBHA9170399 | May 29, 2009 | 1 Year |
| 6. | Horn Antenna | Schwarzbeck | BBHA 9120 | D143 | May 29, 2009 | 1 Year |

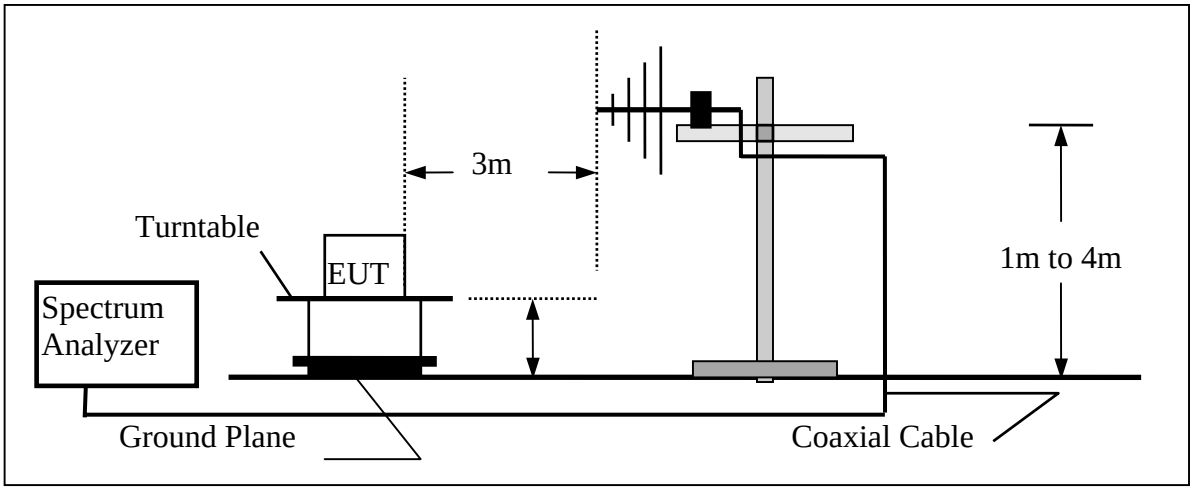
## 3.2.Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators




(EUT: Track Speaker)

3.2.2. Anechoic Chamber Test Setup Diagram




(EUT: Track Speaker)

## 3.3.Radiated Emission Limit (Class B)

| FREQUENCY MHz | DISTANCE Meters | FIELD STRENGTHS LIMIT | |
|---|---|---|---|
| | | μV/m | dB(μV)/m |
| 30 ~ 88 | 3 | 100 | 40.0 |
| 88 ~ 216 | 3 | 150 | 43.5 |
| 216 ~ 960 | 3 | 200 | 46.0 |
| 960 ~ 1000 | 3 | 500 | 54.0 |

Remark： (1) Emission level (dB)μV = 20 log Emission level μV/m

(2) The smaller limit shall apply at the cross point between two frequency bands.

(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

## 3.4.EUT Configuration on Measurement

The following 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.

Track Speaker (EUT)

Model Number : TS-001
Serial Number : N/A

## 3.5.Operating Condition of EUT

1. Setup the EUT as shown in Section 3.2.
2. Let the EUT work in test mode (Receiving Mode) and measure it.

## 3.6.Test Procedure

EUT and its simulators are placed on a turntable, which is 0.8 meter high above ground. The turn table 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 (R&S ESCS30) is set at 120KHz.

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

All the test data is attached in the following page.

## 3.7.Radiated Emission Noise Measurement Result

**PASS.**

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

| | | | |
|---|---|---|---|
| Operation Mode: | Receiving Mode | Test Date : | November 09, 2009 |
| Test Item: | Radiated Emission Data | Temperature : | 28 ℃ |
| Test Result: | PASS | Humidity : | 65 % |

| Freq. (MHz) | Ant.Pol. H/V | Emission Level (dBuV) | Limit 3m (dBuV/m) | Margin (dB) | Note |
|---|---|---|---|---|---|
| 172.14 | V | 32.36 | 43.50 | -11.14 | Peak |
| 298.69 | V | 30.85 | 46.00 | -15.15 | Peak |
| 426.39 | V | 36.01 | 46.00 | -9.99 | Peak |
| 542.98 | V | 38.01 | 46.00 | -7.99 | Peak |
| 599.28 | V | 34.27 | 46.00 | -11.73 | Peak |
| 853.88 | V | 39.85 | 46.00 | -6.15 | Peak |
| 62.54 | H | 21.02 | 40.00 | -18.98 | Peak |
| 182.34 | H | 19.90 | 43.50 | -23.6 | Peak |
| 426.39 | H | 35.22 | 46.00 | -10.78 | Peak |
| 731.43 | H | 28.73 | 46.00 | -17.27 | Peak |
| 853.88 | H | 41.17 | 46.00 | -4.83 | Peak |
| 862.64 | H | 34.28 | 46.00 | -11.72 | Peak |

**Note:** (1) All Readings are Peak Value.
(2) Emission Level= Reading Level+Probe Factor +Cable Loss