588 West Jindu Road, Songjiang District, Shanghai, China

Telephone: +86 (0) 21 6191 5666 Report No.:SHEMO10050056505

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# TEST REPORT

## Mobiles /Fixed Base Station Maximum Permissible Exposure (MPE)

Application No.: SHEMO10050056505

Applicant: Jiangsu Shinco Digital Technology Co.,Ltd.

FCC ID: YGLSH7601

Fundamental Frequency: 2.4GHz ISM Band

**Equipment Under Test (EUT):** 

Name: LCD COLOR TV&BD PLAYER

Model No.: NS-32LB451A11

Standards: FCC PART 15 SUBPART C, Section 15.247

**Date of Receipt:** May 17,2010

**Date of Test:** May 18,2010 to July 15,2010

Date of Issue: July 16,2010

Test Result : PASS \*

\* In the configuration tested, the EUT complied with the standards specified above.

Approved by: Tested By:

San Yuan

Tino Pan San Yuan

E&E Section Manager EMC TEST Engineer

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## 3 General Information

### **3.1** Client Information

Applicant: Jiangsu Shinco Digital Technology Co.,Ltd.

Applicant Address: 5 West Waihuan Road, New District Changzhou , Jiangsu 213022

China

Manufacturer: Best Buy Co.,Inc. and its subsidiaries and affiliates

Manufacturer Address:

7601 Penn Avenue South Richfield, MN55423 USA

## 3.2 Details of E.U.T.

Name: LCD COLOR TV&BD PLAYER

Model No.: NS-32LB451A11 Power Supply: ~120VAC 60Hz

Power Cord: N/A

Frequency Band: About 1.5

Modulation tye CCK,DQPSK,DBPSK for DSSS

64QAM,16QAM,QPSK,BPSK for OFDM

Spread Spectrum: IEEE 802.11b:DSSS

IEEE 802.11g/n:OFDM

Frequency Range& 802.11b/g/n\_20MHz:2412-2462MHz,11 channels Channel number 802.11 n\_40MHz:2422-2452 MHz, 7 channels

### 3.3 Test Location

Tests were performed at:

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd.

No.588 West Jindu Road, Songjiang District, Shanghai, China. 201612.

Tel: +86 21 6191 5666 Fax: +86 21 6191 5655

No tests were sub-contracted.

## **3.4** Other Information Requested by the Customer

None.

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## 3.5 Test Facility

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

#### CNAS (No. CNAS L0599)

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing. Date of expiry: 2011-07-29.

#### • FCC – Registration No.: 402683

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2012-03-17.

### • Industry Canada (IC) – IC Assigned Code: 8617A

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A. Expiry Date: 2011-09-29.

### • VCCI (Member No.: 3061)

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-3172 and C-3514 respectively. Date of Registration: 2009-11-30. Date of Expiry: 2012-03-17.

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# 4 Maximum Permissible Exposure(MPE)Evaluation

## **4.1** Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissive Exposure (MPE)

| Frequency Range<br>(MHz) | Electric Field<br>Strength (V/m)                    | Magnetic Field<br>Strength (A/m) | Power Density<br>(mW/cm <sup>2</sup> ) | Averaging Time<br>(minute) |  |  |  |  |
|--------------------------|---|----------------------------------|--|----------------------------|--|--|--|--|
|                          | Limits for General Population/Uncontrolled Exposure |                                  |  |                            |  |  |  |  |
| 0.3-1.34                 | 614   | 1.63                             | *(100)                                 | 30                         |  |  |  |  |
| 1.34-30                  | 824/f   | 2.19/f                           | *(180/f <sup>2</sup> )                 | 30                         |  |  |  |  |
| 30-300                   | 27.5  | 0.073                            | 0.2                                    | 30                         |  |  |  |  |
| 300-1500                 | /   | /                                | F/1500                                 | 30                         |  |  |  |  |
| 1500-15000               | /   | / /                              | 1.0                                    | 30                         |  |  |  |  |

F = frequency in MHz

<sup>\* =</sup> Plane-wave equipment power density

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### **4.2** Peak Power Measurement Result:

|                          |      |                    | Chain 1 | Chain2 | Total                   |                |        |
|--------------------------|------|--------------------|---------|--------|-------------------------|----------------|--------|
| Mode                     | СН   | Frequency<br>(MHz) | Output  | Output | Total<br>Power<br>(dBm) | Limit<br>(dBm) | Result |
|                          |      |                    | Power   | Power  |                         |                |        |
|                          |      |                    | (dBm)   | (dBm)  |                         |                |        |
| 802.11b<br>(1Mbps)       | Low  | 2412               | 12. 72  | 12. 55 | N/A                     | 30             | PASS   |
|                          | Mid  | 2437               | 12.63   | 12. 34 | N/A                     | 30             | PASS   |
|                          | High | 2462               | 12. 31  | 12. 25 | N/A                     | 30             | PASS   |
| 909 11 <sub>m</sub>      | Low  | 2412               | 17. 67  | 17.74  | N/A                     | 30             | PASS   |
| 802.11g<br>(6Mbps)       | Mid  | 2437               | 18. 56  | 18. 43 | N/A                     | 30             | PASS   |
|                          | High | 2462               | 18. 19  | 18.65  | N/A                     | 30             | PASS   |
| 000 11 <sub>m</sub> UT90 | Low  | 2412               | 18. 74  | 18.86  | 21.81                   | 30             | PASS   |
| 802.11n_HT20 (6.5Mbps)   | Mid  | 2437               | 18. 96  | 18. 76 | 21.87                   | 30             | PASS   |
|                          | High | 2462               | 18. 10  | 18. 21 | 21. 16                  | 30             | PASS   |
| 802.11n_HT40 (13.5Mbps)  | Low  | 2422               | 18. 16  | 18. 11 | 21. 15                  | 30             | PASS   |
|                          | Mid  | 2437               | 17. 94  | 18. 32 | 21. 14                  | 30             | PASS   |
| (13. 5Mbps)              | High | 2452               | 17. 56  | 18. 45 | 21.04                   | 30             | PASS   |

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## 4.3 MPE Prediction(802.11b/g/n)

Prediction of MPE limit at a given distance Equation from page 18 of OET Bulletin 65, Edition 97-01  $S=PG/4\pi R^2$ 

Where: S = Power density

P = Power input to antenna

G = Power gain of the antenna in the direction of interest relative to an isotropic radiator

R = Distance to the center of radiation of the antenna

### The Worst Case at Mid channel of 802.11n\_HT20 mode:

| Maximum peak output power at antenna input terminal:             | 21.87  | dBm    |
|--|--------|--------|
| Maximum peak output power at antenna input terminal:             | 153.82 | mW     |
|  |        |        |
| Duty cycle   | 100    | %      |
| Maximum Pav:   | 153.82 | mW     |
| Antenna gain:  | 2      | dBi    |
| Prediction distance  | 20     | cm     |
| Prediction frequency:  | 2437   | MHz    |
|  |        |        |
| MPE limit for uncontrolled exposure at prediction                | 1      | mW/cm  |
| Power density at predication frequency 2462MHz at 20(cm)distance | 0.0485 | mW/cm  |
|  |        |        |
| The predicted power density level at 20cm is                     | 0.485  | W/m^2) |
| T. C.                        |        |        |

### **Measurement Result**

The predicted power density level at 20 cm is 0.0485 mW/cm<sup>2</sup>. This is below the uncontrolled exposure limit of 1 mW/cm<sup>2</sup> at 2437 MHz.

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# 5 Appendix A: EUT Construction Photoghaphs



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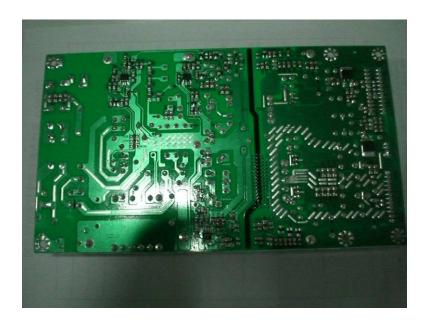
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