# APPLICATION OF CERTIFICATION
For

TTE Technology Inc.

LCD TV

| Brand Name | Model Number |
|---|---|
| RCA | L32HD31<br>L32HD36 |

FCC ID: W8UL32HD31

Prepared for : TTE Technology Inc.
101 West 103rd Street, Indianapolis, IN 46290, United States

Prepared By: Audix Technology (Shenzhen) Co., Ltd.
No. 6, Ke Feng Rd., 52 Block,
Shenzhen Science & Industrial Park,
Nantou, Shenzhen, Guangdong, China

Tel: (0755) 26639496
Fax: (0755) 26632877

Report Number : ACS-F09048
Date of Test : Jan.27~Feb.24, 2008
Date of Report : Mar.19, 2009

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**Description** **Page**

# TEST REPORT CERTIFICATION

| | | |
|---|---|---|
| Applicant | : | TTE Technology Inc. |
| Manufacturer #1 | : | TCL King Electrical Appliances (Huizhou) Co., Ltd. |
| Manufacturer #2 | : | Manufacturas Avanzadas S A |
| EUT Description | : | LCD TV |
| FCC ID | : | W8UL32HD31 |

(A) MODEL NO.& Brand Name :

| Brand Name | Model Number |
|---|---|
| RCA | L32HD31<br>L32HD36 |

(B) SERIAL NO. : N/A

(C) TEST VOLTAGE : AC 120V/60Hz

Measurement Standard Used:

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

The device described above is tested by Audix Technology (Shenzhen) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart B Class B limits for radiated and conducted emissions. The test results are contained in this test report and Audix Technology (Shenzhen) Co., Ltd. is assumed full responsibility for the accuracy and completeness of tests. Also, this report shows that EUT is technically compliant with FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in parts without written approval of AUDIX TECHNOLOGY (SHENZHEN) CO., LTD.

Date of Test: Jan.27~ Feb.24, 2008

Prepared by: Daisy Ye

Daisy Ye/ Assistant

Reviewer:

Richzhy Zhong / Assistant Manager

AUDIX 奧美科技(深圳)有限公司
Audix Technology (Shenzhen) Co., Ltd.
EMC 部門報告專用章
Stamp only for EMC Dept. Report
Signature: Ken Lu 3/13/09

Approved & Authorized Signer:

Ken Lu / Manager

# 1. SUMMARY OF STANDARDS AND RESULTS

## 1.1.Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

| EMISSION | | | |
|---|---|---|---|
| **Description of Test Item** | **Standard** | **Limits** | **Results** |
| Power Line Conducted Emission Test | FCC Part 15: 2008<br>ANSI C63.4: 2003 | Class B | PASS |
| Radiated Emission Test | FCC Part 15: 2008<br>ANSI C63.4: 2003 | Class B | PASS |

# 2. GENERAL INFORMATION

## 2.1.Description of Device (EUT)

Description : LCD TV

Model Number :

| Brand Name | Model Number |
|---|---|
| RCA | L32HD31<br>L32HD36 |

Test model: L32HD31
The model name and the appearance is different
Add a new SAMSUNG panel, only test Radiation.

FCC ID : W8UL32HD31

Power IC : PWL37C-03

Chassis : RS86A

Applicant : TTE Technology Inc.
101 West 103rd Street, Indianapolis, IN 46290, United States

Manufacturer #1 : TCL King Electrical Appliances (Huizhou) Co., Ltd.
Section 19, Zhongkai Development Zone for New and High Level TECH Industries, Huizhou, Guangdong 516006, China

Manufacturer #2 : Manufacturas Avanzadas S A
Parque Industrial Salvarcar, Blvd Independencia 2151,
CD Juarez, Chih, Mexico

Date of Test : Jan.27~Feb.24, 2008

Date of Receipt : Jan.25, 2008

Sample Type : Prototype production

## 2.2. Tested Supporting System Details

### 2.2.1. PC

| | | |
|---|---|---|
| EMC CODE | : | Test PC K |
| M/N | : | CR6 |
| S/N | : | L38N404 |
| Manufacturer | : | Lenovo |
| Power cord | : | Unshielded, detachabled , 1.8m |
| FCC ID | : | By DoC |
| BSMI ID | : | R33B65 |

### 2.2.2. USB Keyboard

| | | |
|---|---|---|
| EMC CODE | : | ACS-EMC-K10R |
| M/N | : | KKU-0225 |
| Manufacturer | : | Lenovo |
| S/N | : | 0011814 |
| Data Cable | : | Shielded, Undetachabled, 2.0m |
| FCC ID | : | By DoC |
| BSMI ID | : | R31310 |

### 2.2.3. PRINTER

| | | |
|---|---|---|
| EMC CODE | : | ACS-EMC-PT03 |
| M/N | : | EN8060A |
| S/N | : | 908A1001201 |
| Manufacturer | : | OKIPAGE |
| Data Cable | : | Shielded, Detachabled, 1.5m |
| Power Cord | : | Unshielded, Detachabled, 1.8m |
| FCC ID | : | By DoC |
| BSMI ID | : | 3882A463 |

### 2.2.4. USB MOUSE

| | | |
|---|---|---|
| EMC CODE | : | ACS-EMC-M10R |
| M/N | : | MO28UOL |
| S/N | : | 44N1421 |
| Manufacturer | : | Lenovo |
| Data Cable | : | Shielded, Undetachabled, 1.8m |
| FCC ID | : | By DoC |
| BSMI ID | : | R41108 |

2.2.5. HDD

| | | |
|---|---|---|
| EMC CODE | : | ACS-EMC-HDD01 |
| M/N | : | F12-UF |
| S/N | : | A0100215-5390031 |
| Manufacturer | : | Terasys |
| Data Cable | : | Shielded, Detachabled, 1.8m |
| FCC ID | : | By DoC |
| BSMI ID | : | 4912A022 |

2.2.6. HEADPHONE

| | | |
|---|---|---|
| EMC CODE | : | ACS-EMC-EP01 |
| M/N | : | OV880V |
| Manufacturer | : | OVANN |
| Data Cable | : | Shielded, Undetachabled, 4.0m |

2.2.7. Cables

| | | |
|---|---|---|
| Audio Cable | : | Shielded, Detachabled, 1.8m |
| VGA Cable | : | Shielded, Detachabled, 1.8m (With two cores) |
| USB Cable | : | Unshielded, Detachabled, 1.2m |
| S-Video Cable | : | Unshielded, Detachabled, 1.2m (Dummy Load 75Ω) |

## 2.3.Test Facility

Site Description

| | | |
|---|---|---|
| Name of Firm | : | Audix Technology (Shenzhen) Co., Ltd.<br>No. 6, Ke Feng Rd., 52 Block, Shenzhen Science & Industrial Park,Nantou, Shenzhen, Guangdong, China |
| 3m Anechoic Chamber | : | Jun. 13, 2006 File on Federal Communication Commission<br>Registration Number: 90454 |
| 3m & 10m Anechoic Chamber | : | Jan. 31, 2007 File on Federal Communication Commission<br>Registration Number: 794232 |
| EMC Lab. | : | Accredited by DATech, German<br>Registration Number: DAT-P-091/99-01<br>Feb. 02, 2009<br><br>Accredited by NVLAP, USA<br>NVLAP Code: 200372-0<br>Apr. 01, 2008 |

## 2.4.Measurement Uncertainty（95% confidence levels, k=2）

| Test Item | Uncertainty | Memo |
|---|---|---|
| Uncertainty for Conduction emission test in No. 1 Conduction | 2.88dB | |
| Uncertainty for Radiation Emission test in 3m chamber | 3.86 dB | Polarize: V |
| | 4.3 dB | Polarize: H |
| Uncertainty for Radiation Emission test in 10m chamber | 3.82 dB | Distance: 3m Polarize: V |
| | 3.80 dB | Distance: 3m Polarize: H |
| Uncertainty for test site temperature and humidity | 0.1℃ | |
| | 1% | |

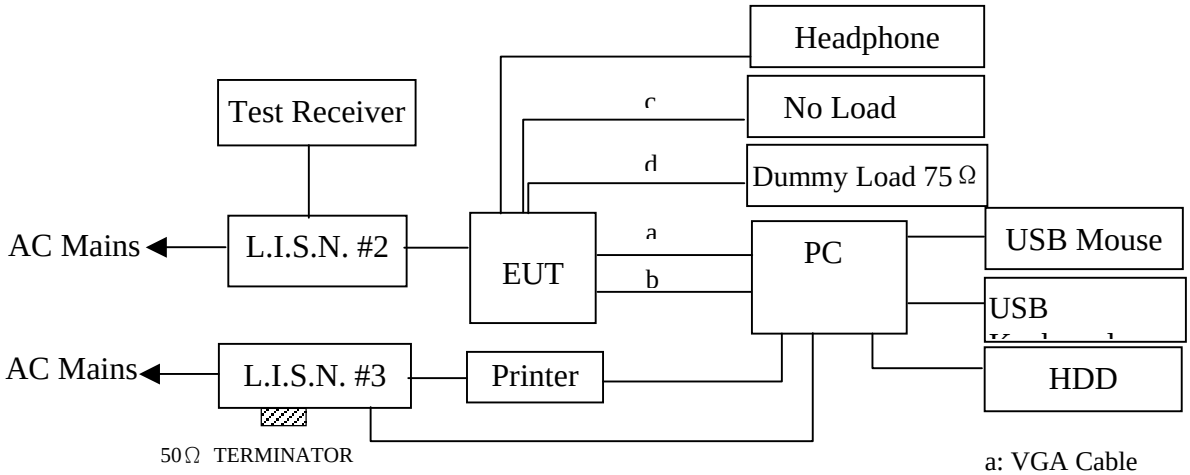
# 3. POWER LINE CONDUCTED EMISSION TEST

## 3.1.Test Equipment

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Test Receiver | Rohde & Schwarz | ESHS10 | 838693/001 | Dec.19, 07 | 1 Year |
| 2. | L.I.S.N.#2 | Kyoritsu | KNW-407 | 8-1636-1 | May 11, 07 | 1 Year |
| 3. | L.I.S.N.#3 | EMCO | 3825/2 | 9006-1660 | May 11, 07 | 1 Year |
| 4. | Terminator | Hubersuhner | 50Ω | No. 1 | May 11, 07 | 1 Year |
| 5. | RF Cable | MIYAZAKI | 5D-2W | LISN Cable 1# | Jan.09, 08 | 1/2 Year |
| 6. | Coaxial Switch | Anritsu | MP59B | M55367 | Jan.09,08 | 1/2 Year |
| 7. | Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100340 | Jan.09,08 | 1/2 Year |

## 3.2.Block Diagram of Test Setup

3.2.1. Block diagram of connection between the EUT and simulators




***(EUT: LCD TV)***

## 3.3.Power Line Conducted Emission Test Limits

| Frequency | Maximum RF Line Voltage | |
|---|---|---|
| | Quasi-Peak Level dB(μV) | Average Level dB(μV) |
| 150kHz ~ 500kHz | 66 ~ 56* | 56 ~ 46* |
| 500kHz ~ 5MHz | 56 | 46 |
| 5MHz ~ 30MHz | 60 | 50 |

Notes: 1. * Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

## 3.4. Configuration of EUT on Test

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

3.4.1. LCD TV (EUT)

Model Number : L32HD31
Serial Number : N/A

3.4.2. Support Equipment : As Tested Supporting System Detail, in Section 2.2.

## 3.5. Operating Condition of EUT

3.5.1. Setup the EUT and simulator as shown as Section 3.2.

3.5.2. Turn on the power of all equipment.

3.5.3. Let the EUT work in test mode (Running “H” Pattern and Playing Music 640*480 60Hz/ Running “H” Pattern and Playing Music 800*600 60Hz/ Running “H” Pattern and Playing Music 1024*768 60Hz) and measure it.

## 3.6. Test Procedure

The EUT was placed on a non-metallic table, 80cm above the ground plane. The EUT Power connected to the power mains through a line impedance stabilization network (L.I.S.N. 2#). This provided a 50-ohm coupling impedance for the EUT (Please refer to the block diagram of the test setup and photographs). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#3). Both sides of power line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on conducted Emission test.

The bandwidth of test receiver (R&S TEST RECEIVER ESHS10) is set at 10kHz.

The frequency range from 150kHz to 30MHz is checked. The test result are reported on Section 3.7.

## 3.7.Conducted Disturbance at Mains Terminals Test Results

**PASS. (**All emissions not reported below are too low against the prescribed limits.)

The EUT with the following test modes was tested and selected (mode 3) to read Q.P values and Average values, all the test results are listed in next pages.

EUT: LCD TV Model No. : L32HD31

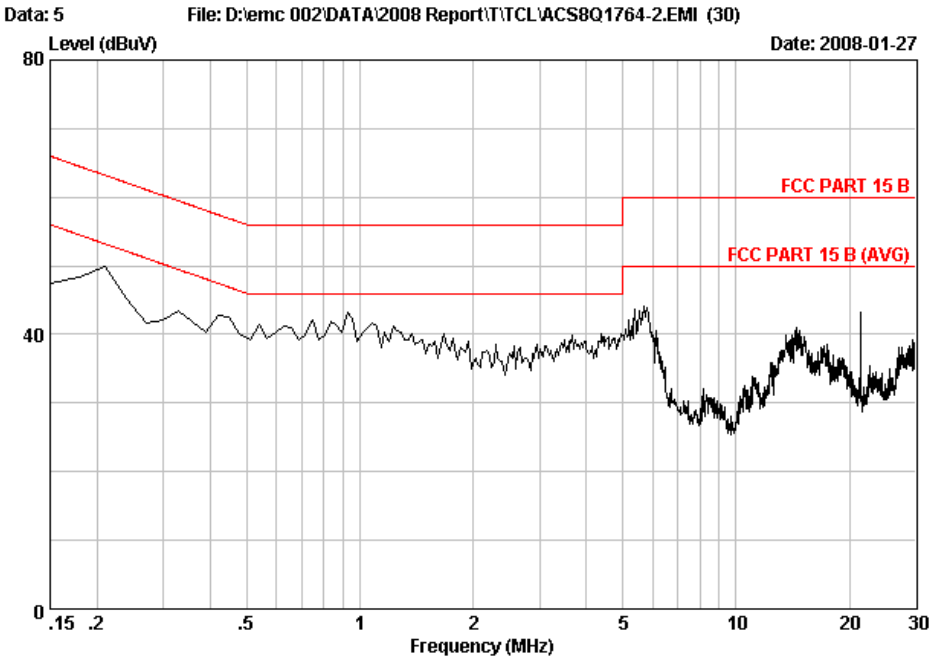
Test Date: Jan.27, 2008 Temperature: 23℃ Humidity: 54%

The details of test modes are as follows：

| NO. | Test Mode | Resolution & Frequency | Reference Test Data No. | |
|---|---|---|---|---|
| | | | VA | VB |
| 1. | Running “H” Pattern and Playing Music | 640*480 60Hz | #5 | #6 |
| 2. | | 800*600 60Hz | #3 | #4 |
| **3. ※** | | **1024*768 60Hz** | **#1** | **#2** |

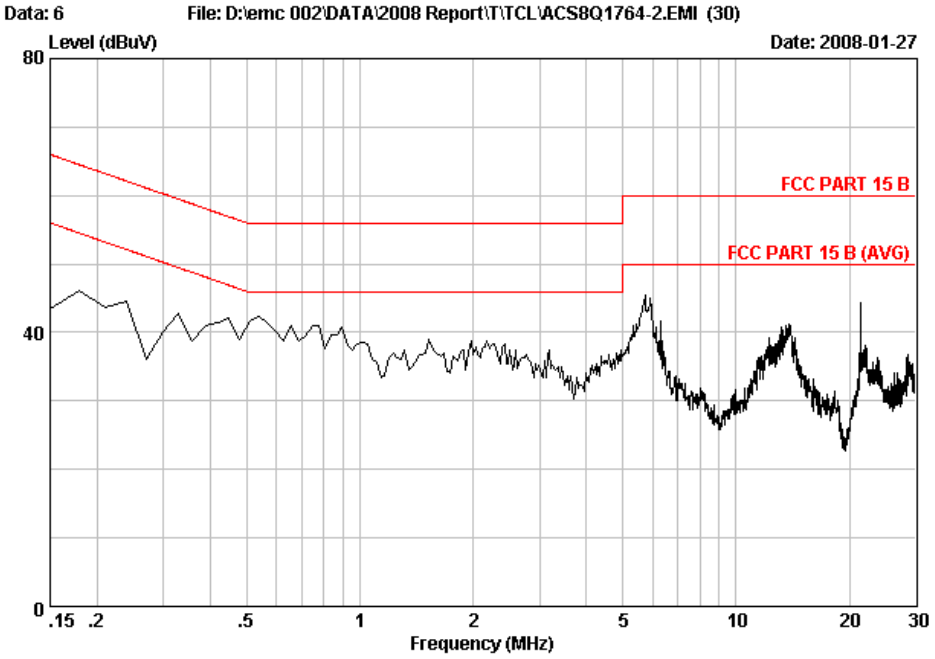
(※ Worst test mode)

No.6,Ke Feng Road,Block 52,
Shenzhen Science&Industry Park
Nantou Shenzhen,Guangdong,China
Tel:+86-755-26639495
Fax:+86-755-26632877
Postcode:518057




Site no :AUDIX No.1 Conduction
Dis./Ant. :-- KNW407 VA (1#)
Limit :FCC PART 15 B
Env./Ins. :Temp:23' Humi:54% ESHS10
EUT :LCD TV M/N:L32HD31
Power Rating :AC 120V/60Hz
Test Mode :Running "H" Pattern And Playing Music
Memo :640*480@60Hz

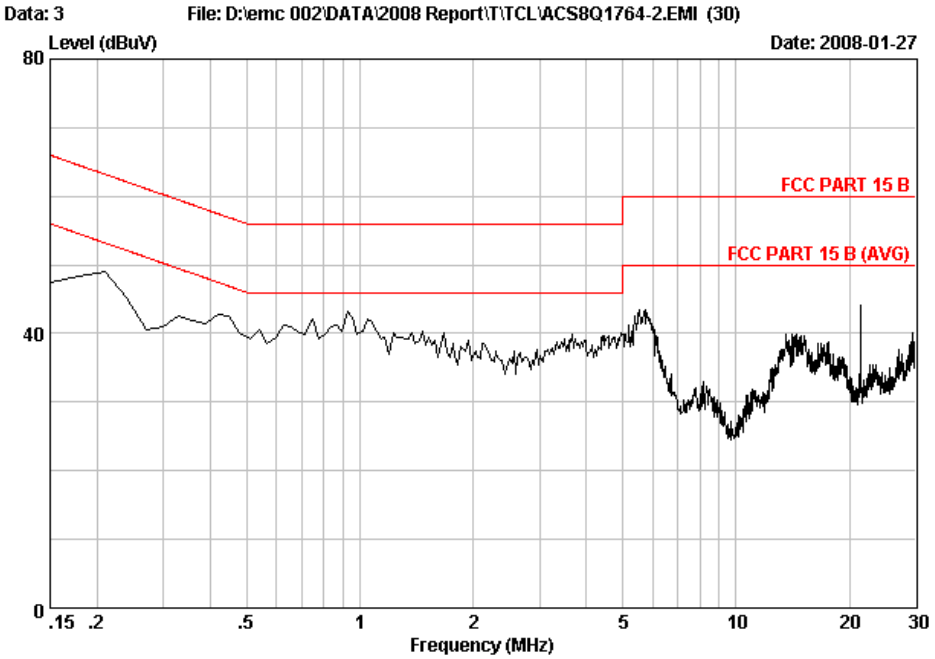
Data no :5
LISN phase:
Engineer :Chinalee



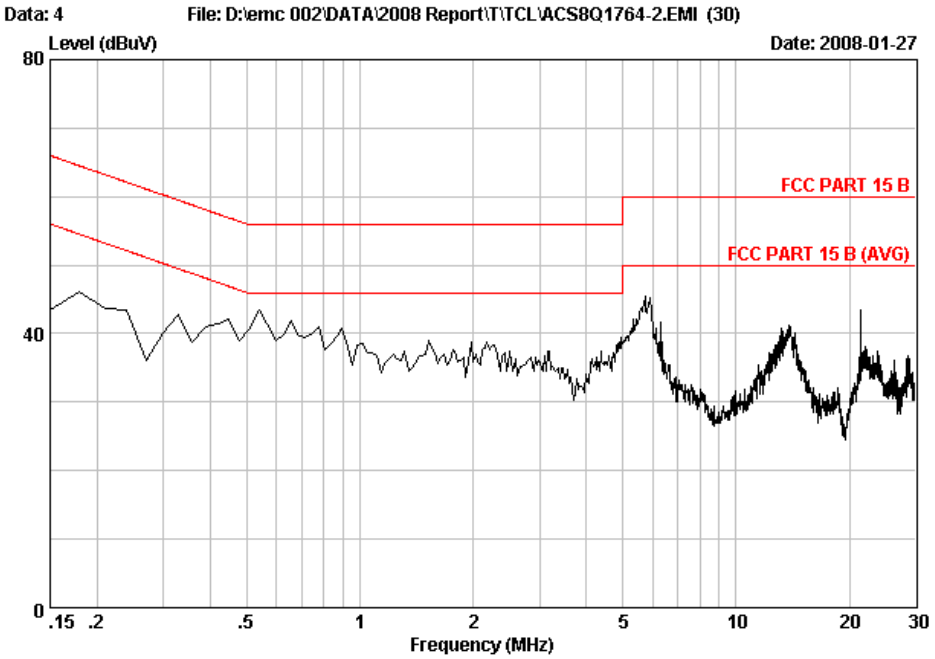

Site no :AUDIX No.1 Conduction
Dis./Ant. :-- KNW407 VB (1#)
Limit :FCC PART 15 B
Env./Ins. :Temp:23' Humi:54% ESHS10
EUT :LCD TV M/N:L32HD31
Power Rating :AC 120V/60Hz
Test Mode :Running "H" Pattern And Playing Music
Memo :640*480@60Hz

Data no :6
LISN phase:
Engineer :Chinalee

No.6,Ke Feng Road,Block 52,
Shenzhen Science&Industry Park
Nantou Shenzhen,Guangdong,China
Tel:+86-755-26639495
Fax:+86-755-26632877
Postcode:518057




| | | | |
|---|---|---|---|
| Site no | :AUDIX No.1 Conduction | Data no | :3 |
| Dis./Ant. | :-- KNW407 VA (1#) | LISN phase | : |
| Limit | :FCC PART 15 B | | |
| Env./Ins. | :Temp:23' Humi:54% ESHS10 | Engineer | :Chinalee |
| EUT | :LCD TV M/N:L32HD31 | | |
| Power Rating | :AC 120V/60Hz | | |
| Test Mode | :Running "H" Pattern And Playing Music | | |
| Memo | :800*600@60Hz | | |




| | | | |
|---|---|---|---|
| Site no | :AUDIX No.1 Conduction | Data no | :4 |
| Dis./Ant. | :-- KNW407 VB (1#) | LISN phase | : |
| Limit | :FCC PART 15 B | | |
| Env./Ins. | :Temp:23' Humi:54% ESHS10 | Engineer | :Chinalee |
| EUT | :LCD TV M/N:L32HD31 | | |
| Power Rating | :AC 120V/60Hz | | |
| Test Mode | :Running "H" Pattern And Playing Music | | |
| Memo | :800*600@60Hz | | |

No.6,Ke Feng Road,Block 52,
Shenzhen Science&Industry Park
Nantou Shenzhen,Guangdong,China
Tel:+86-755-26639495
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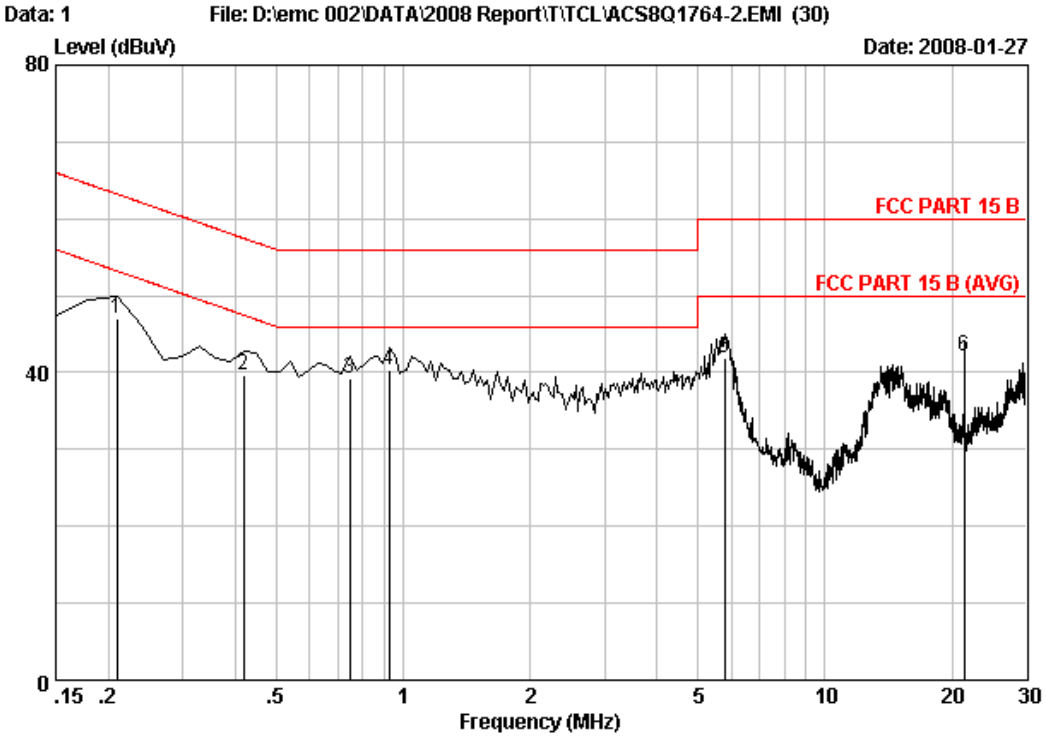


Site no :AUDIX No.1 Conduction
Dis./Ant. :-- KNW407 VA (1#)
Limit :FCC PART 15 B
Env./Ins. :Temp:23' Humi:54% ESHS10
EUT :LCD TV M/N:L32HD31
Power Rating :AC 120V/60Hz
Test Mode :Running "H" Pattern And Playing Music
Memo :1024*768@60Hz

Data no :1
LISN phase:
Engineer :Chinalee

| No | Freq (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV) | Limits (dBuV) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.21 | 0.15 | 9.85 | 36.97 | 46.97 | 63.22 | 16.25 | QP |
| 2 | 0.42 | 0.08 | 9.87 | 29.80 | 39.75 | 57.47 | 17.72 | QP |
| 3 | 0.75 | 0.05 | 9.89 | 29.22 | 39.16 | 56.00 | 16.84 | QP |
| 4 | 0.93 | 0.04 | 9.88 | 30.31 | 40.23 | 56.00 | 15.77 | QP |
| 5 | 5.79 | 0.11 | 9.92 | 31.89 | 41.92 | 60.00 | 18.08 | QP |
| 6 | 21.37 | 0.49 | 10.10 | 31.62 | 42.21 | 60.00 | 17.79 | QP |

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
2.If the average limit is met when useing a quasi-peak detector.
the EUT shall be deemed to meet both limits and measurement
with average detector isunnecessary.

No.6,Ke Feng Road,Block 52,
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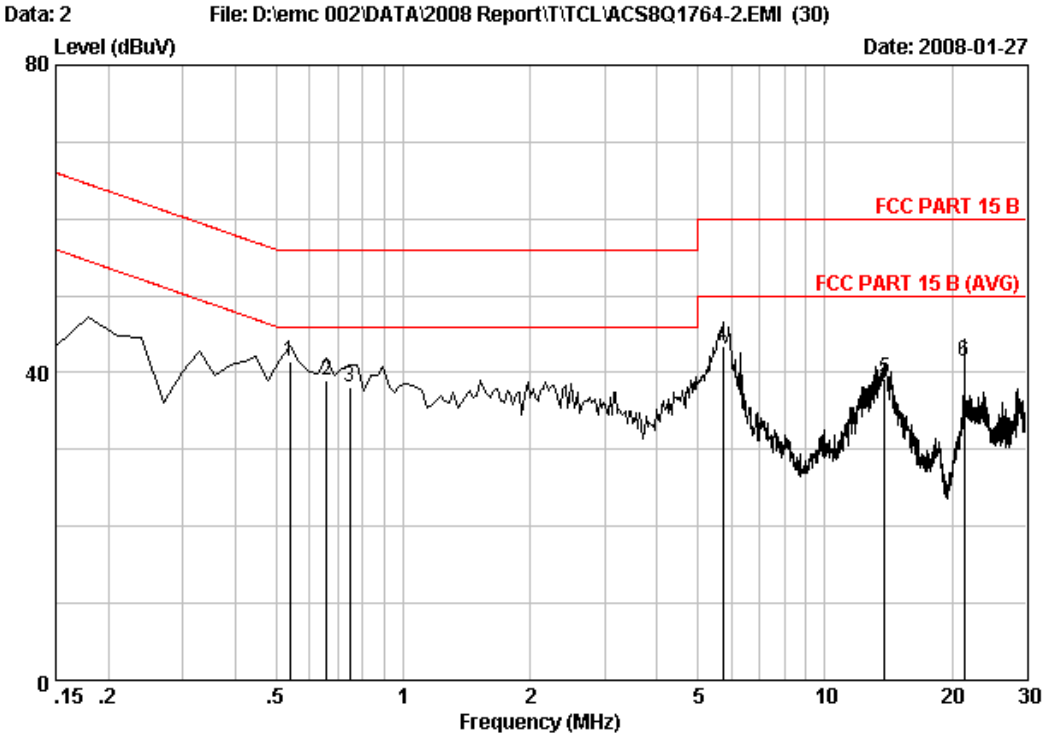



Site no :AUDIX No.1 Conduction
Dis./Ant. :-- KNW407 VB (1#)
Limit :FCC PART 15 B
Env./Ins. :Temp:23' Humi:54% ESHS10
EUT :LCD TV M/N:L32HD31
Power Rating :AC 120V/60Hz
Test Mode :Running "H" Pattern And Playing Music
Memo :1024*768@60Hz

Data no :2
LISN phase:
Engineer :Chinalee

| No | Freq (MHz) | LISN Factor (dB) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV) | Limits (dBuV) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 0.54 | 0.05 | 9.87 | 31.43 | 41.35 | 56.00 | 14.65 | QP |
| 2 | 0.66 | 0.04 | 9.87 | 28.99 | 38.90 | 56.00 | 17.10 | QP |
| 3 | 0.75 | 0.04 | 9.89 | 28.18 | 38.11 | 56.00 | 17.89 | QP |
| 4 | 5.73 | 0.10 | 9.96 | 33.44 | 43.50 | 60.00 | 16.50 | QP |
| 5 | 13.82 | 0.27 | 10.03 | 28.93 | 39.23 | 60.00 | 20.77 | QP |
| 6 | 21.37 | 0.49 | 10.10 | 30.86 | 41.45 | 60.00 | 18.55 | QP |

Remarks: 1.Emission Level=LISN Factor+Cable Loss+Reading.
2.If the average limit is met when useing a quasi-peak detector. the EUT shall be deemed to meet both limits and measurement with average detector isunnecessary.

# 4. RADIATED EMISSION TEST

## 4.1.Test Equipment

For frequency range 30MHz~1000MHz (At Anechoic Chamber)

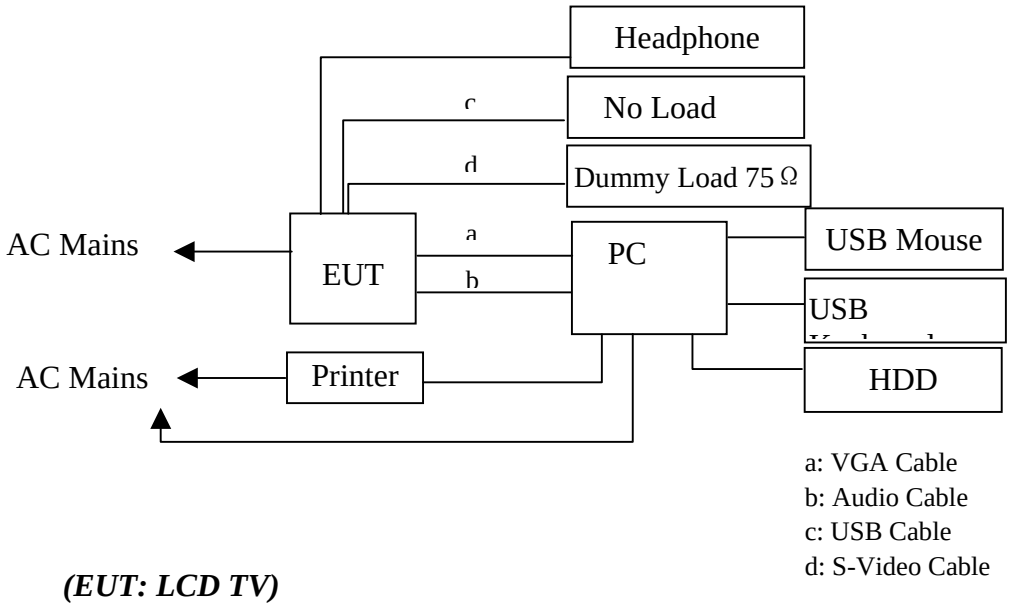
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1 | 3#Chamber | AUDIX | N/A | N/A | Dec.20.07 | 1/2 Year |
| 2 | EMI Spectrum | Agilent | E7403A | MY42000106 | May 11, 07 | 1 Year |
| 3 | Test Receiver | Rohde & Schwarz | ESVS20 | 830350/005 | May 11, 07 | 1 Year |
| 4 | Amplifier | HP | 8447D | 2944A04738 | Jan.09, 08 | 1/2 Year |
| 5 | Bilog Antenna | Schaffner | CBL6111C | 2598 | Feb.24, 07 | 1 Year |
| 6 | RF Cable | MIYAZAKI | 5D-2W | 3# Chamber No.1 | Jan.09, 08 | 1/2 Year |
| 7 | RF Cable | MIYAZAKI | 5D-2W | 3# Chamber No.2 | Jan.09, 08 | 1/2 Year |
| 8 | RF Cable | FUJIKURAw | RG-55/U | 3# Chamber No.3 | Jan.09, 08 | 1/2 Year |
| 9 | RF Cable | FUJIKURA | RG-55/U | 3# Chamber No.4 | Jan.09, 08 | 1/2 Year |
| 10 | Coaxial Switch | Anritsu | MP59B | M73989 | Jan.09, 08 | 1/2 Year |

For frequency range Above 1000MHz (At Anechoic Chamber)

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|---|---|---|---|---|---|---|
| 1. | Spectrum | Agilent | E4407B | MY41440292 | May 10, 07 | 1 Year |
| 2. | Amp | HP | 8449B | 3008A00863 | May 10, 07 | 1 Year |
| 3. | Antenna | EMCO | 3115 | 9607-4877 | Jan. 23, 07 | 1.5 Year |
| 4. | HF Cable | Hubersuhne | Sucoflex104 | - | May 10, 07 | 1 Year |

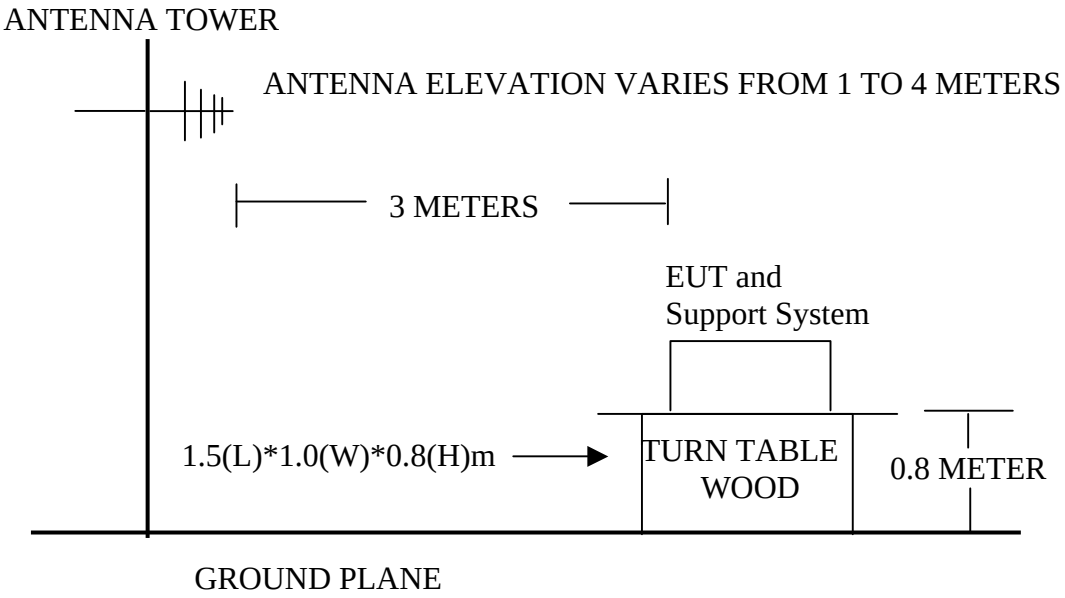
## 4.2.Block Diagram of Test Setup

4.2.1. Block diagram of connection between the EUT and simulators

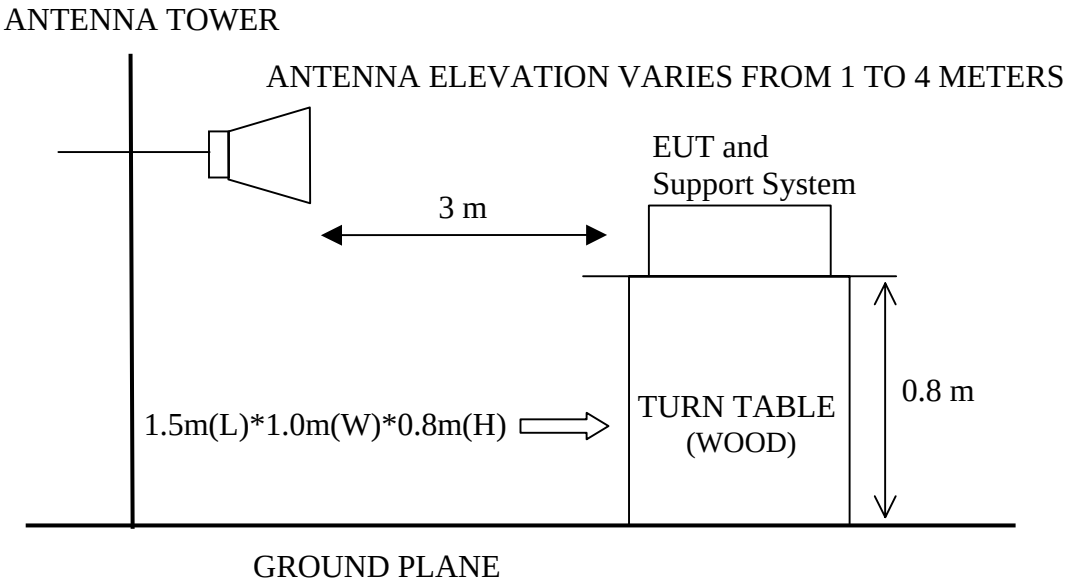



***(EUT: LCD TV)***

4.2.2. In Anechoic (3m) Chamber Test Setup Diagram for 30MHz~1000MHz




4.2.3.In Anechoic (10m) Chamber Test Setup Diagram for 1-2GHz



## 4.3.Radiated Emission Limit

| Frequency MHz | Distance (Meters) | Field Strengths Limits dB(μV)/m |
|---|---|---|
| 30 ~ 88 | 3 | 40.0 |
| 88 ~ 216 | 3 | 43.5 |
| 216 ~ 960 | 3 | 46.0 |
| 960 ~ 1000 | 3 | 54.0 |
| Above 1000 | 3 | 74.0 dB(μV)/m (Peak)<br>54.0 dB(μV)/m (Average) |

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

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

(3) The emissions above 1GHz should comply with average limit and peak limit.

## 4.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Test to meet the commission requirements and operating regulations in a manner that tends to maximize its emission characteristics in normal application.

4.4.1. LCD TV (EUT)

Model Number : L32HD31
Serial Number : N/A

## 4.5.Operating Condition of EUT

4.5.1. Setup the EUT as shown in Section 4.2.

4.5.2. Turn on the power of all equipment.

4.5.3. Let the EUT work in test mode (Running “H” Pattern and Playing Music 640*480 60Hz/ Running “H” Pattern and Playing Music 800*600 60Hz / Running “H” Pattern and Playing Music 1024*768 60Hz) and test it.

## 4.6.Test Procedure

The EUT was placed on a non-metallic table, 80 cm above the ground plane inside a semi-anechoic chamber. An antenna was located 3m from the EUT on an adjustable mast. A pre-scan was first performed in order to find prominent radiated emissions. For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurements in both horizontal and vertical polarities were made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to ANSI C63.4-2003 on Radiated Emission test.

The bandwidth setting on the test receiver (R&S TEST RECEIVER ESVS20) is 120 kHz.

The resolution bandwidth of the Agilent Spectrum Analyzer E4407B was set at 1MHz. (For above 1GHz)

The frequency range from 30MHz to 1000MHz was pre-scanned with a peak detector and all final readings of measurement from Test Receiver are Quasi-Peak values.

The frequency range from 1GHz to 2GHz was checked with peak and average detector, measurement distance is 3m in 10m chamber.

Finally, selected operating situations at Anechoic Chamber measurement, all the test results are listed in section 4.7.

## 4.7. Radiated Disturbance Test Results

**PASS. (**All emissions not reported below are too low against the prescribed limits.)

**For frequency range 30MHz~1000MHz**

The EUT with the following test modes was tested and selected (mode 3&5) to read Q.P values, all the test results are listed in next pages.

EUT: LCD TV Model No. : L32HD31

Test Date: Feb.16~24, 2008 Temperature: 24℃ Humidity: 56%

The details of test modes are as follows：

| NO. | Test Mode | Resolution & Frequency | Reference Test Data No. | |
|---|---|---|---|---|
| | | | Horizontal | Vertical |
| 1. | (Sharp Panel) Running “H” Pattern and Playing Music | 640*480 60Hz | #26 | #25 |
| 2. | | 800*600 60Hz | #27 | #28 |
| **3. ※** | | **1024*768 60Hz** | **#30** | **#29** |
| 4. | (Samsung Panel) Running “H” Pattern and Playing Music | 640*480 60Hz | #26 | #25 |
| **5.** | | **800*600 60Hz** | **#27** | **#28** |
| 6. | | 1024*768 60Hz | #30 | #29 |

(※ Worst test mode)

**For frequency range 1GHz~2GHz**

The EUT with below test mode 1~3 was measured within Anechoic Chamber and the test results listed in next pages.

All the PK emissions were comply with average limit, So the average level were deemed to comply with average limit

Test Date: Feb.16, 2008 Temperature: 23℃ Humidity: 54%

| NO. | Test Mode | Resolution & Frequency | Reference Test Data No. | |
|---|---|---|---|---|
| | | | Horizontal | Vertical |
| 1. | Running “H” Pattern and Playing Music | 640*480 60Hz | #1 | #2 |
| 2. | | 800*600 60Hz | #4 | #3 |
| 3. | | 1024*768 60Hz | #5 | #6 |

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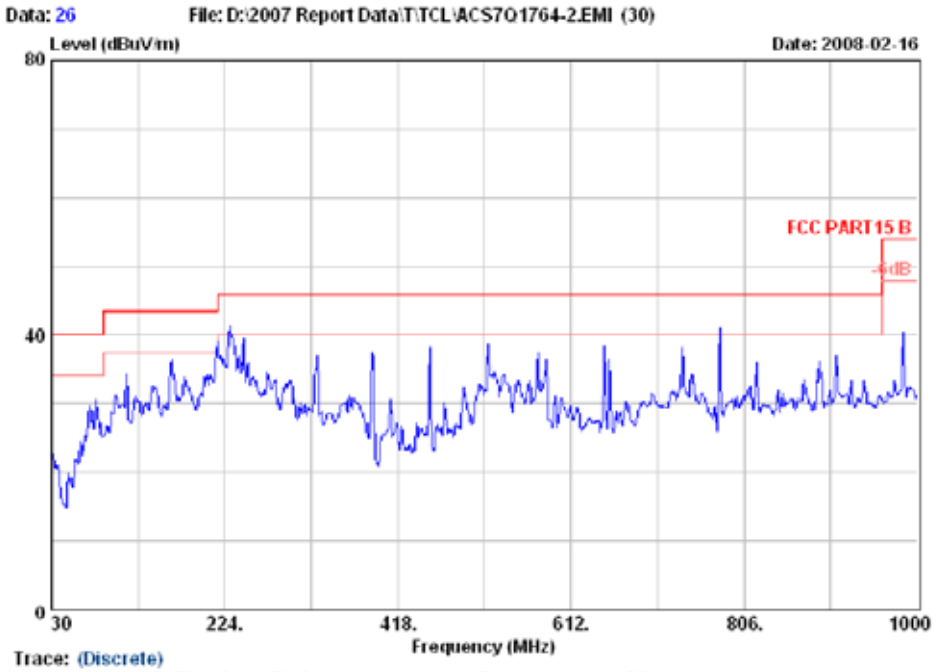
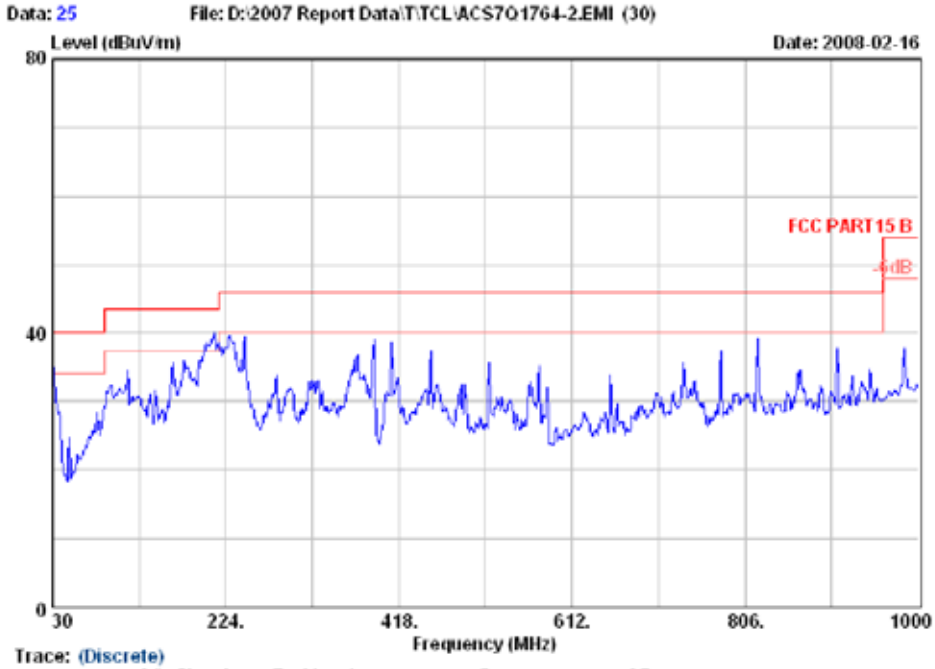



Trace: (Discrete)

| | | | |
|---|---|---|---|
| Site no. | : 3# Chamber Radiation | Data no. | : 26 |
| Dis. / Ant. | : 3m 2598 | Ant. pol. | : HORIZONTAL |
| Limit | : FCC PART15 B | | |
| Env. / Ins. | : 24*C/56% ESVS20 | Engineer | : Longe |
| EUT | : LCD TV M/N:L32HD31 | | |
| Power Rating | : AC 120V/60Hz | | |
| Test Mode | : 640*480@60Hz | | |
| | : Running "H" Pattern And Playing Music | | |




Trace: (Discrete)

| | | | |
|---|---|---|---|
| Site no. | : 3# Chamber Radiation | Data no. | : 25 |
| Dis. / Ant. | : 3m 2598 | Ant. pol. | : VERTICAL |
| Limit | : FCC PART15 B | | |
| Env. / Ins. | : 24*C/56% ESVS20 | Engineer | : Longe |
| EUT | : LCD TV M/N:L32HD31 | | |
| Power Rating | : AC 120V/60Hz | | |
| Test Mode | : 640*480@60Hz | | |
| | : Running "H" Pattern And Playing Music | | |

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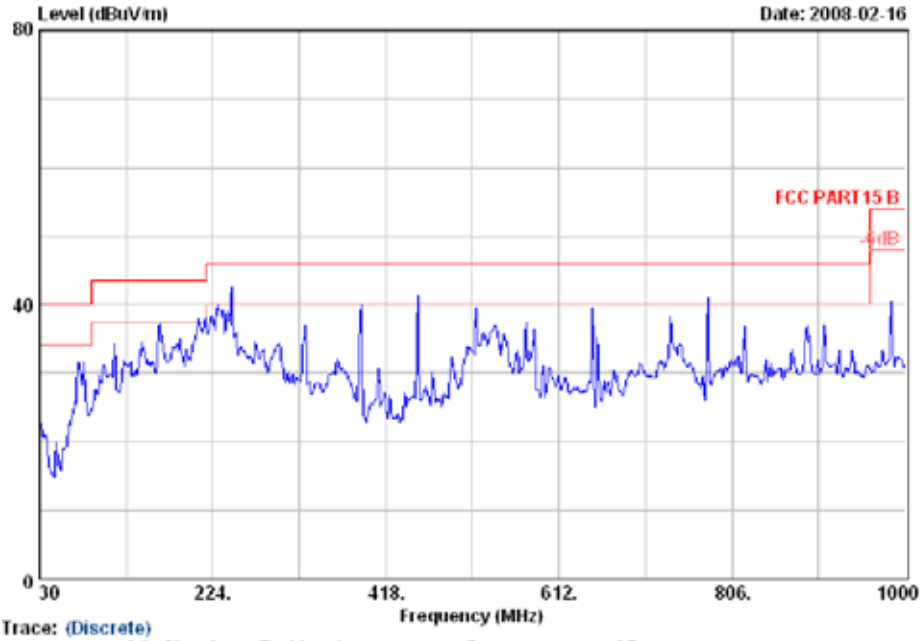
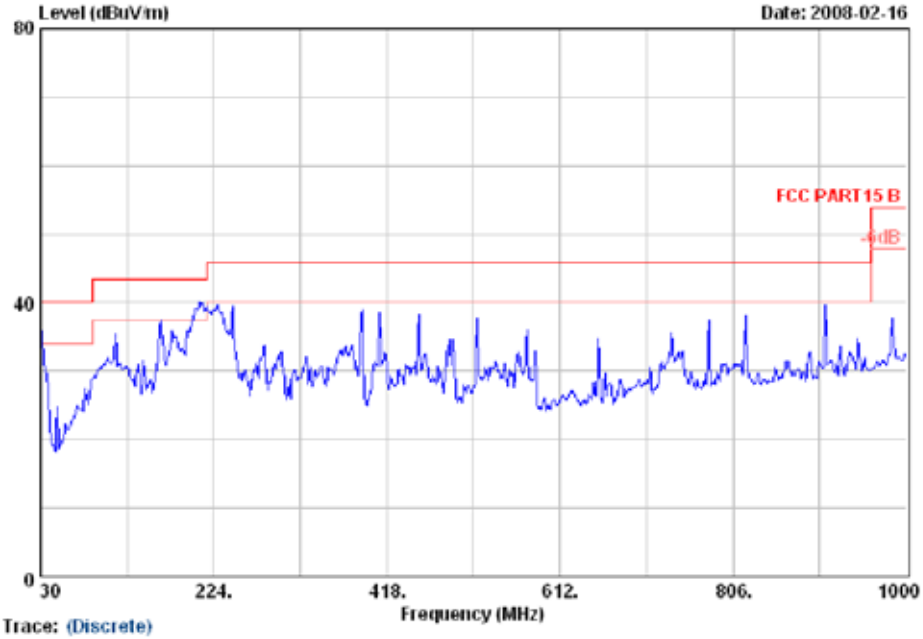
Data: 27 File: D:\2007 Report Data\T\TCL\ACS7O1764-2.EMI (30)




Trace: (Discrete)

| | | | |
|---|---|---|---|
| Site no. | : 3# Chamber Radiation | Data no. | : 27 |
| Dis. / Ant. | : 3m 2598 | Ant. pol. | : HORIZONTAL |
| Limit | : FCC PART15 B | | |
| Env. / Ins. | : 24*C/56% ESVS20 | Engineer | : Longe |
| EUT | : LCD TV M/N:L32HD31 | | |
| Power Rating | : AC 120V/60Hz | | |
| Test Mode | : 800*600@60Hz | | |
| | : Running "H" Pattern And Playing Music | | |

Data: 28 File: D:\2007 Report Data\T\TCL\ACS7O1764-2.EMI (30)




Trace: (Discrete)

| | | | |
|---|---|---|---|
| Site no. | : 3# Chamber Radiation | Data no. | : 28 |
| Dis. / Ant. | : 3m 2598 | Ant. pol. | : VERTICAL |
| Limit | : FCC PART15 B | | |
| Env. / Ins. | : 24*C/56% ESVS20 | Engineer | : Longe |
| EUT | : LCD TV M/N:L32HD31 | | |
| Power Rating | : AC 120V/60Hz | | |
| Test Mode | : 800*600@60Hz | | |
| | : Running "H" Pattern And Playing Music | | |

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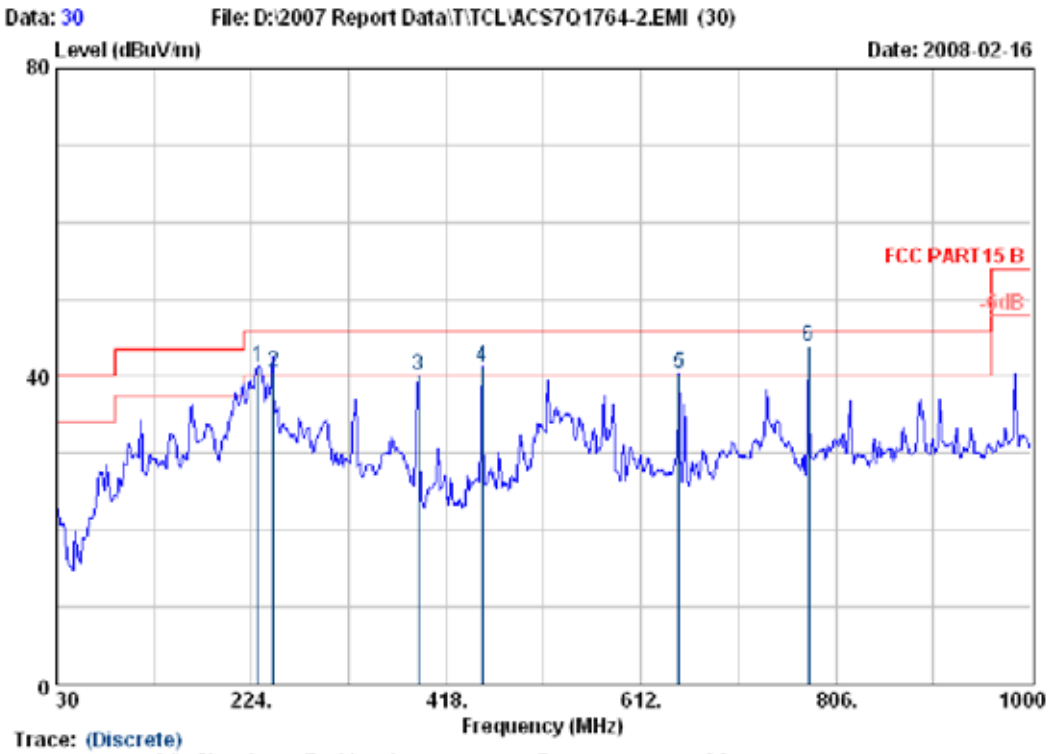


Site no. : 3# Chamber Radiation
Dis. / Ant. : 3m 2598
Limit : FCC PART15 B
Env. / Ins. : 24*C/56% ESVS20
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test Mode : 1024*768@60Hz
: Running "H" Pattern And Playing Music

Data no. : 30
Ant. pol. : HORIZONTAL
Engineer : Longe

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 230.79 | 11.08 | 1.39 | 28.85 | 41.32 | 46.00 | 4.68 | QP |
| 2 | 246.00 | 12.38 | 1.46 | 26.70 | 40.54 | 46.00 | 5.46 | QP |
| 3 | 390.84 | 16.22 | 1.83 | 22.02 | 40.07 | 46.00 | 5.93 | QP |
| 4 | 453.89 | 17.18 | 1.88 | 22.07 | 41.13 | 46.00 | 4.87 | QP |
| 5 | 649.83 | 20.20 | 2.25 | 17.89 | 40.34 | 46.00 | 5.66 | QP |
| 6 | 779.17 | 21.90 | 2.38 | 19.60 | 43.88 | 46.00 | 2.12 | QP |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

**3. The worst emission was detected at779.17MHz with corrected signal level of 43.88dBμV/m (Limit is 46.00dBμV/m) when the antenna was at horizontal polarization and at 1.0m high and the turn table was at 45°.**

**4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.**

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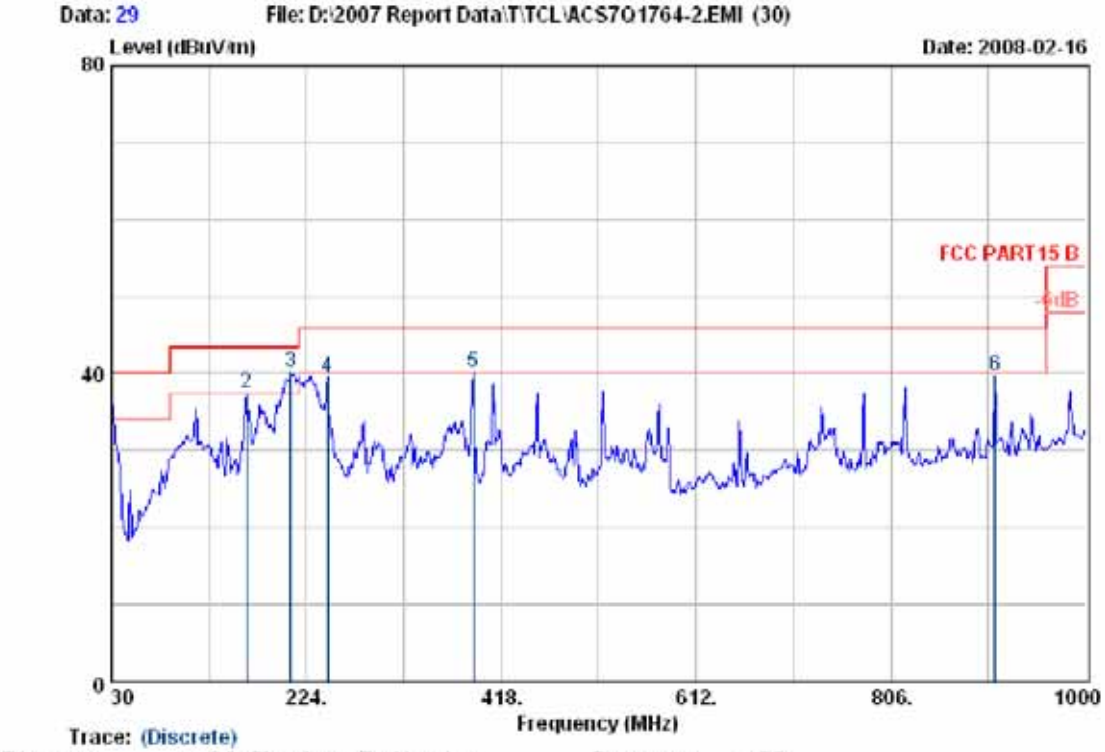


Trace: (Discrete)

| | | | |
|---|---|---|---|
| Site no. | : 3# Chamber Radiation | Data no. | : 29 |
| Dis. / Ant. | : 3m 2598 | Ant. pol. | : VERTICAL |
| Limit | : FCC PART15 B | | |
| Env. / Ins. | : 24#C/56% ESVS20 | Engineer | : Longe |
| EUT | : LCD TV M/N:L32HD31 | | |
| Power Rating | : AC 120V/60Hz | | |
| Test Mode | : 1024*768@60Hz | | |
| | : Running "H" Pattern And Playing Music | | |

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 30.02 | 19.80 | 0.68 | 13.20 | 33.68 | 40.00 | 6.32 | QP |
| 2 | 164.83 | 10.60 | 1.25 | 25.70 | 37.55 | 43.50 | 5.95 | QP |
| 3 | 208.48 | 10.37 | 1.39 | 28.26 | 40.02 | 43.50 | 3.48 | QP |
| 4 | 245.34 | 12.30 | 1.46 | 25.65 | 39.41 | 46.00 | 6.59 | QP |
| 5 | 390.84 | 16.22 | 1.83 | 21.98 | 40.03 | 46.00 | 5.97 | QP |
| 6 | 909.79 | 23.20 | 2.83 | 13.66 | 39.69 | 46.00 | 6.31 | QP |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

3. The worst emission was detected at 208.48MHz with corrected signal level of 40.02dBμV/m (Limit is 43.5dBμV/m) when the antenna was at vertical polarization and at 1.0m high and the turn table was at 225°.
4. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

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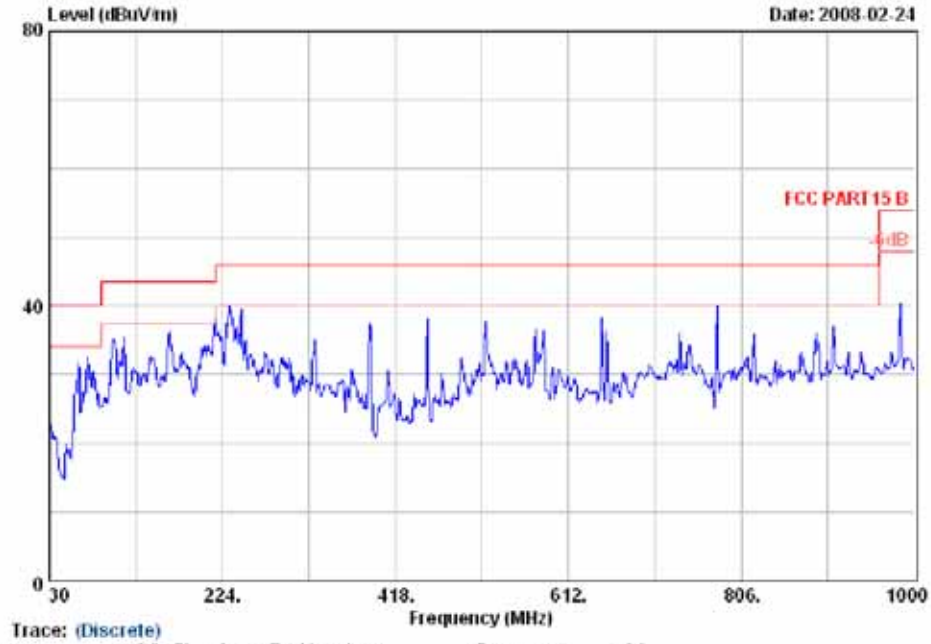
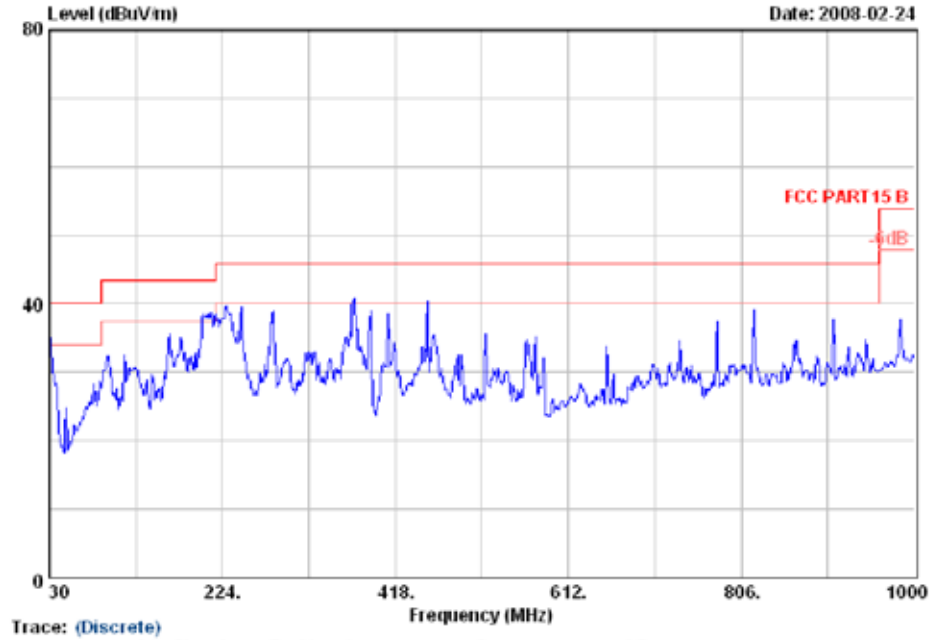
Data: 26 File: D:\2008 Report Data\T\TCL\ACS8O220.EMI (30)




Trace: (Discrete)

| | | | |
|---|---|---|---|
| Site no. | : 3# Chamber Radiation | Data no. | : 26 |
| Dis. / Ant. | : 3m 2598 | Ant. pol. | : HORIZONTAL |
| Limit | : FCC PART15 B | | |
| Env. / Ins. | : 24*C/56% ESVS20 | Engineer | : Longe |
| EUT | : LCD TV M/N:L32HD31 | | |
| Power Rating | : AC 120V/60Hz | | |
| Test Mode | : 640*480@60Hz | | |
| | : Running "H" Pattern And Playing Music | | |

Data: 25 File: D:\2008 Report Data\T\TCL\ACS8O220.EMI (30)




Trace: (Discrete)

| | | | |
|---|---|---|---|
| Site no. | : 3# Chamber Radiation | Data no. | : 25 |
| Dis. / Ant. | : 3m 2598 | Ant. pol. | : VERTICAL |
| Limit | : FCC PART15 B | | |
| Env. / Ins. | : 24*C/56% ESVS20 | Engineer | : Longe |
| EUT | : LCD TV M/N:L32HD31 | | |
| Power Rating | : AC 120V/60Hz | | |
| Test Mode | : 640*480@60Hz | | |
| | : Running "H" Pattern And Playing Music | | |

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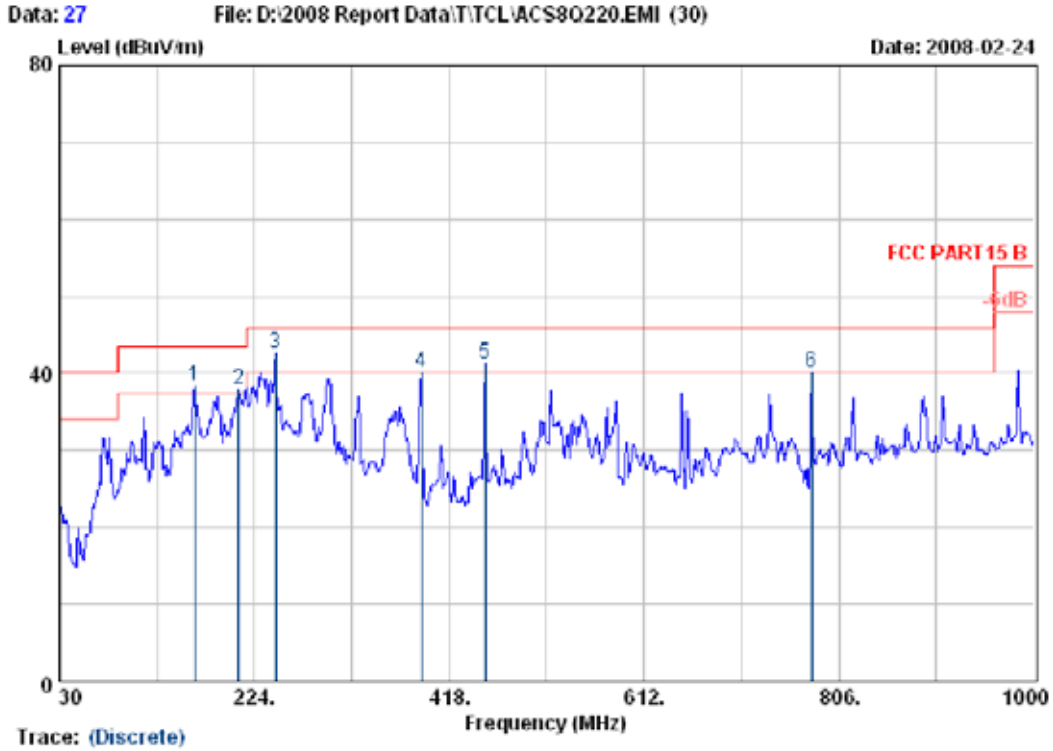


Site no. : 3# Chamber Radiation
Dis. / Ant. : 3m 2598
Limit : FCC PART15 B
Env. / Ins. : 24*C/56% ESVS20
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test Mode : 800*600@60Hz
: Running "H" Pattern And Playing Music

Data no. : 27
Ant. pol. : HORIZONTAL
Engineer : Longe

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 164.83 | 10.60 | 1.25 | 26.45 | 38.30 | 43.50 | 5.20 | QP |
| 2 | 208.48 | 10.37 | 1.39 | 26.12 | 37.88 | 43.50 | 5.62 | QP |
| 3 | 245.34 | 12.30 | 1.46 | 28.76 | 42.52 | 46.00 | 3.48 | QP |
| 4 | 390.84 | 16.22 | 1.83 | 22.02 | 40.07 | 46.00 | 5.93 | QP |
| 5 | 453.89 | 17.18 | 1.88 | 22.07 | 41.13 | 46.00 | 4.87 | QP |
| 6 | 778.84 | 21.90 | 2.38 | 15.77 | 40.05 | 46.00 | 5.95 | QP |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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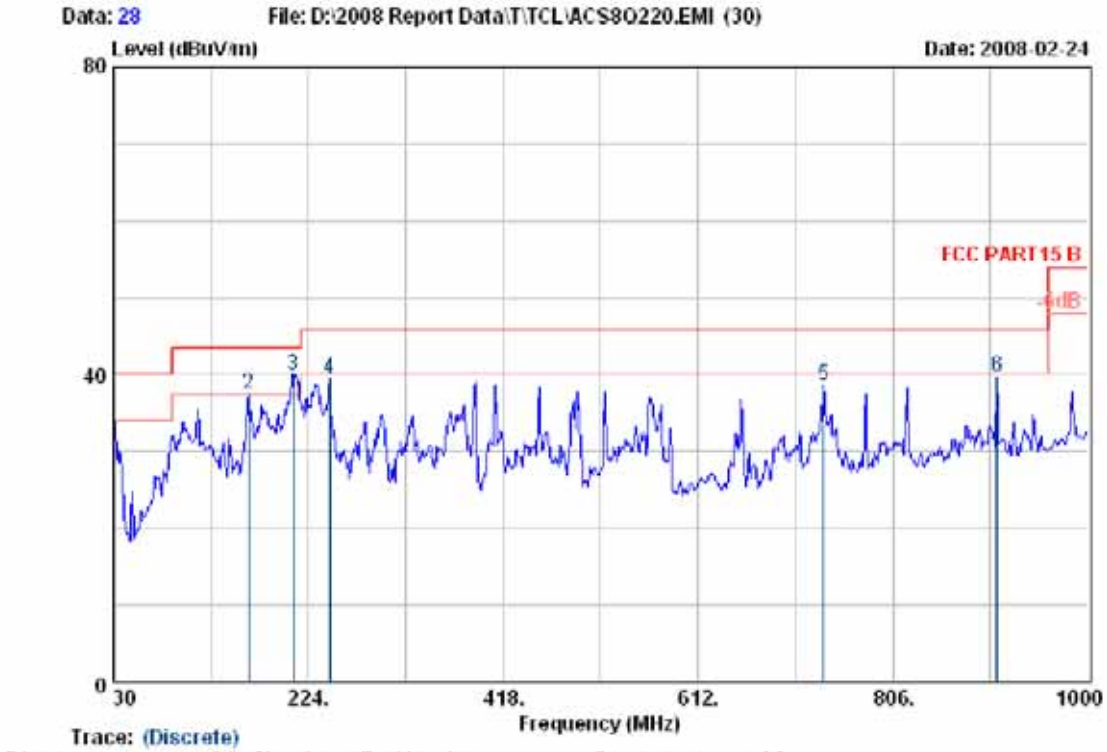


Site no. : 3# Chamber Radiation
Dis. / Ant. : 3m 2598
Limit : FCC PART15 B
Env. / Ins. : 24*C/56% ESVS20
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test Mode : 800*600@60Hz
: Running "H" Pattern And Playing Music

Data no. : 28
Ant. pol. : VERTICAL
Engineer : Longe

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|
| 1 | 30.00 | 19.80 | 0.68 | 14.33 | 34.81 | 40.00 | 5.19 | QP |
| 2 | 164.83 | 10.60 | 1.25 | 25.70 | 37.55 | 43.50 | 5.95 | QP |
| 3 | 209.45 | 10.38 | 1.38 | 28.23 | 39.99 | 43.50 | 3.51 | QP |
| 4 | 245.34 | 12.30 | 1.46 | 25.65 | 39.41 | 46.00 | 6.59 | QP |
| 5 | 737.13 | 21.74 | 2.53 | 14.38 | 38.65 | 46.00 | 7.35 | QP |
| 6 | 909.79 | 23.20 | 2.83 | 13.66 | 39.69 | 46.00 | 6.31 | QP |

Remarks: 1. Emission Level= Antenna Factor + Cable Loss + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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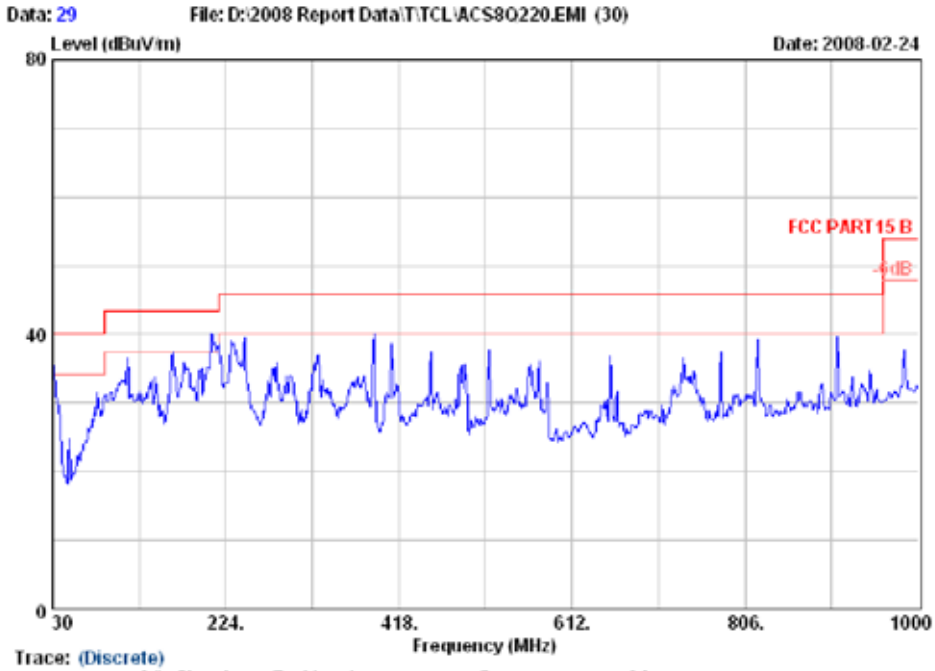
Site no. : 3# Chamber Radiation
Dis. / Ant. : 3m 2598
Limit : FCC PART15 B
Env. / Ins. : 24*C/56% ESVS20
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test Mode : 1024*768@60Hz
: Running "H" Pattern And Playing Music

Data no. : 30
Ant. pol. : HORIZONTAL
Engineer : Longe




Site no. : 3# Chamber Radiation
Dis. / Ant. : 3m 2598
Limit : FCC PART15 B
Env. / Ins. : 24*C/56% ESVS20
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test Mode : 1024*768@60Hz
: Running "H" Pattern And Playing Music

Data no. : 29
Ant. pol. : VERTICAL
Engineer : Longe

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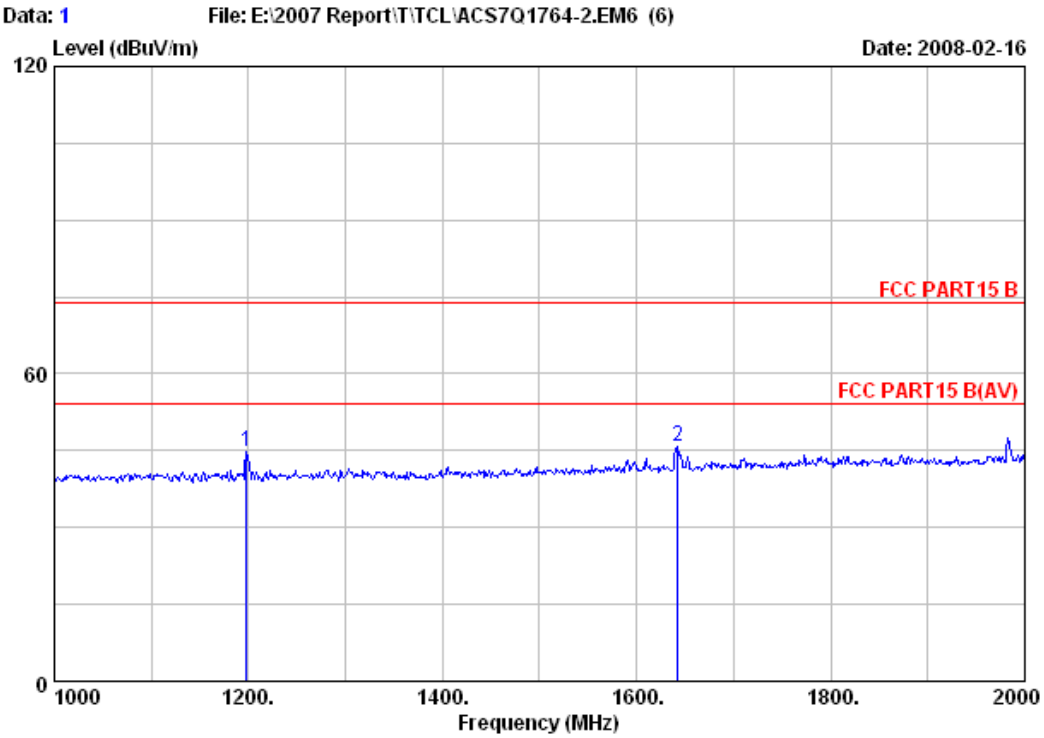
ShenZhen Science & Industry Park
Noutou,ShenZhen,GuangDong,China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057




Site no. : 10# Chamber Data no. : 1
Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL
Limit : FCC PART15 B
Env. / Ins. : 23*C/54% Engineer : Longe
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test mode : 640*480@60Hz
Running"H"Pattern And Playing Music

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1198.000 | 25.49 | 4.78 | 36.07 | 50.47 | 44.67 | 74.00 | 29.33 | Peak |
| 2 | 1642.000 | 26.50 | 5.53 | 35.59 | 49.22 | 45.66 | 74.00 | 28.34 | Peak |

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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Noutou,ShenZhen,GuangDong,China
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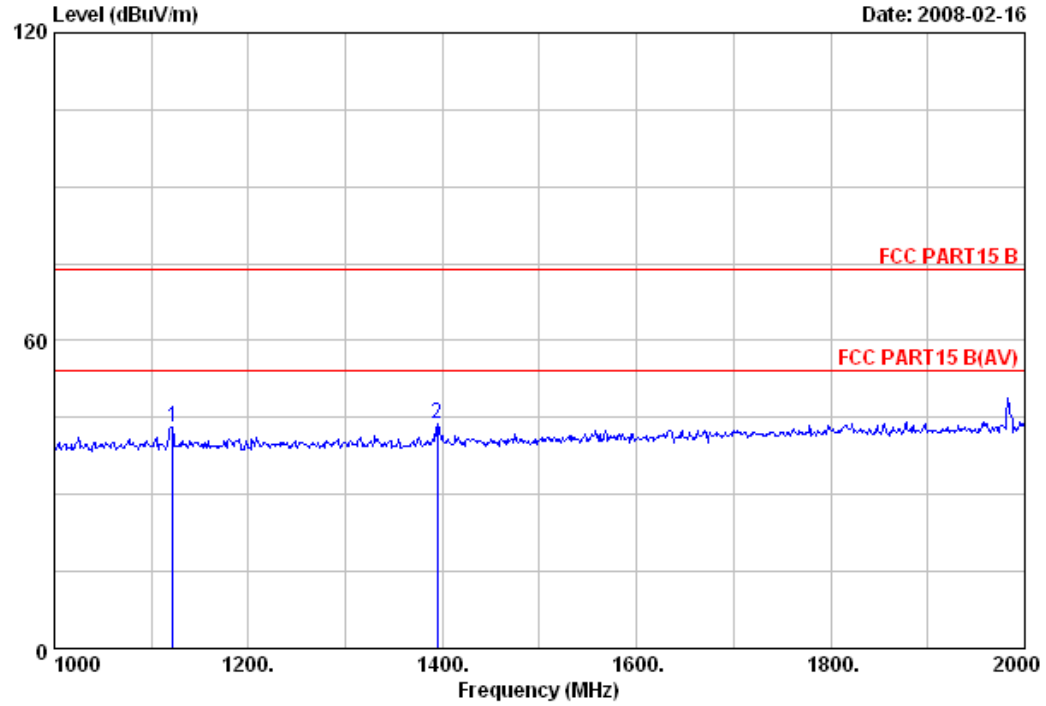
Postcode:518057

Data: 2 File: E:\2007 Report\T\TCL\ACS7Q1764-2.EM6 (6)




Site no. : 10# Chamber Data no. : 2
Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL
Limit : FCC PART15 B
Env. / Ins. : 23*C/54% Engineer : Longe
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test mode : 640*480@60Hz
Running"H"Pattern And Playing Music

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1122.000 | 25.37 | 4.63 | 36.16 | 49.28 | 43.12 | 74.00 | 30.88 | Peak |
| 2 | 1395.000 | 25.76 | 5.08 | 35.88 | 48.76 | 43.72 | 74.00 | 30.28 | Peak |

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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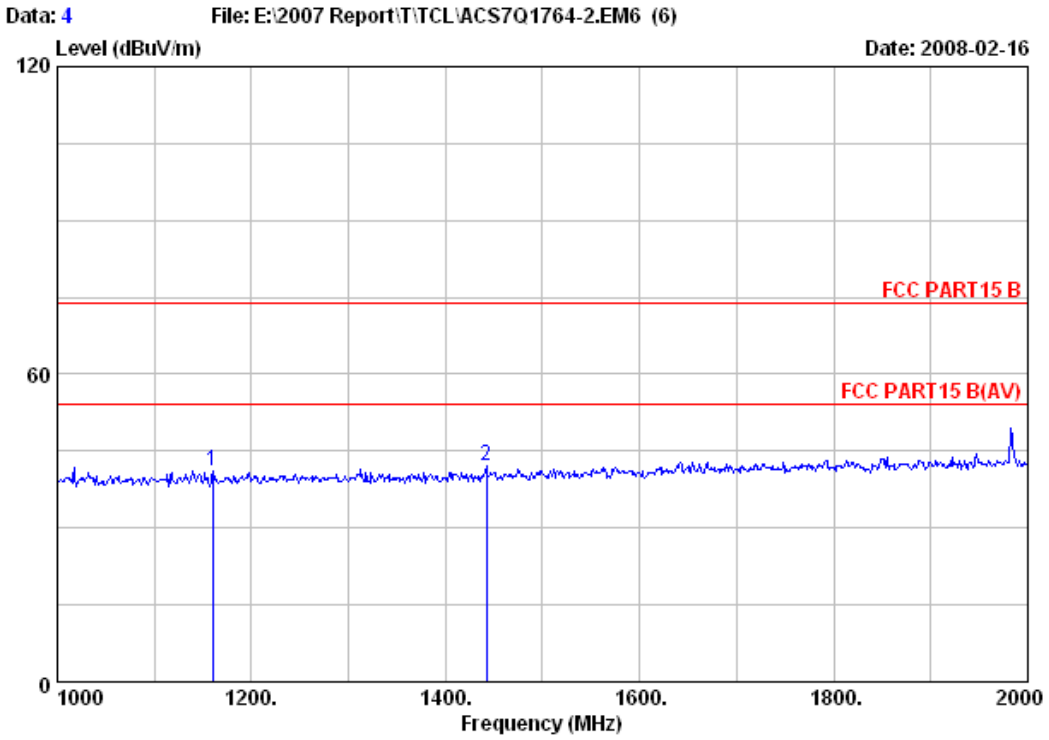
Postcode:518057




Site no. : 10# Chamber Data no. : 4
Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL
Limit : FCC PART15 B
Env. / Ins. : 23*C/54% Engineer : Longe
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test mode : 800*600@60Hz
Running"H"Pattern And Playing Music

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1160.000 | 25.42 | 4.71 | 36.13 | 47.25 | 41.25 | 74.00 | 32.75 | Peak |
| 2 | 1442.000 | 25.83 | 5.16 | 35.82 | 46.94 | 42.11 | 74.00 | 31.89 | Peak |

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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ShenZhen Science & Industry Park
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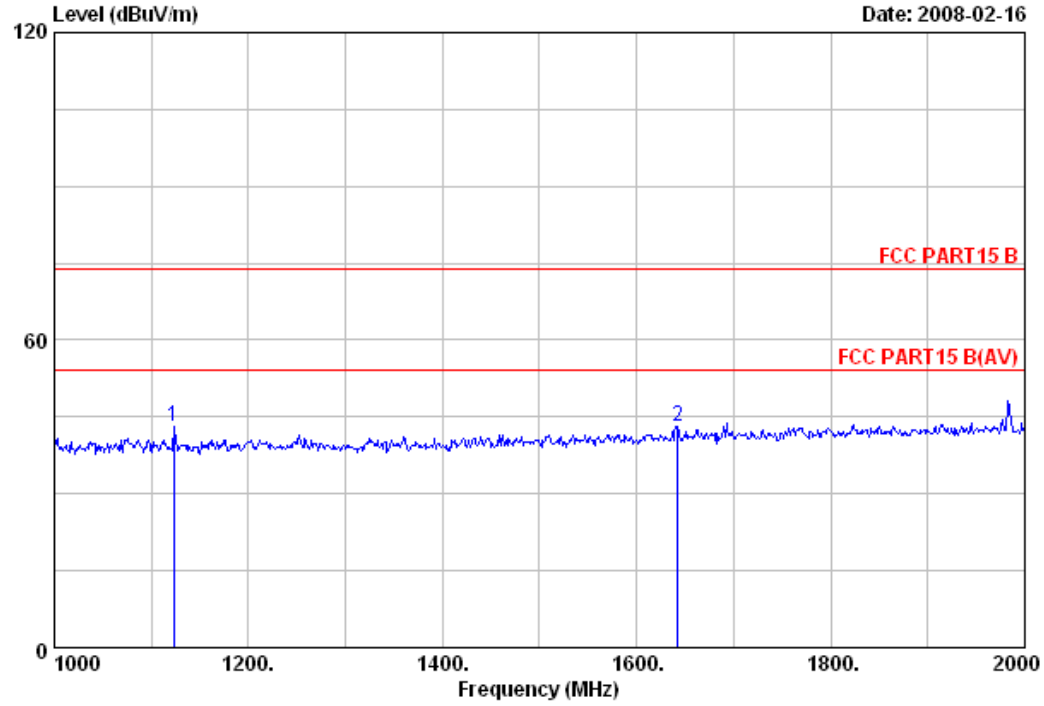
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057

Data: 3 File: E:\2007 Report\T\TCL\ACS7Q1764-2.EM6 (6)




Site no. : 10# Chamber Data no. : 3
Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL
Limit : FCC PART15 B
Env. / Ins. : 23*C/54% Engineer : Longe
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test mode : 800*600@60Hz
Running"H"Pattern And Playing Music

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1123.000 | 25.37 | 4.63 | 36.16 | 49.27 | 43.11 | 74.00 | 30.89 | Peak |
| 2 | 1642.000 | 26.50 | 5.53 | 35.59 | 46.56 | 43.00 | 74.00 | 31.00 | Peak |

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

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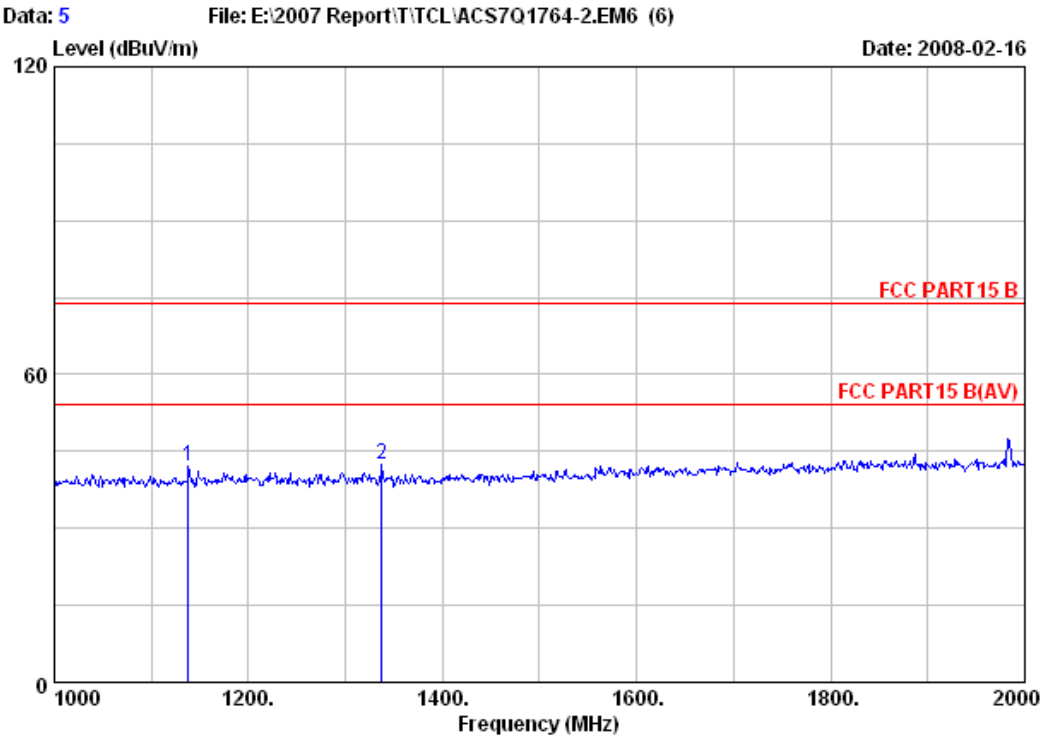
Postcode:518057

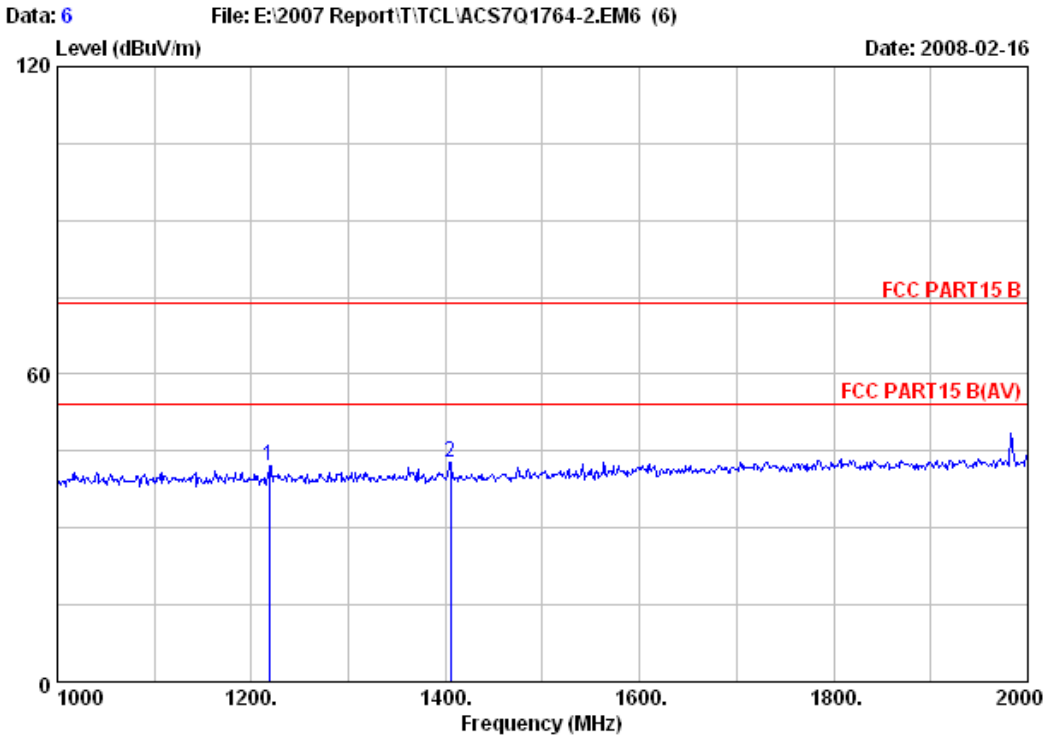



Site no. : 10# Chamber Data no. : 5
Dis. / Ant. : 3m 3115 Ant. pol. : HORIZONTAL
Limit : FCC PART15 B
Env. / Ins. : 23*C/54% Engineer : Longe
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test mode : 1024*768@60Hz
Running"H"Pattern And Playing Music

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1138.000 | 25.39 | 4.63 | 36.16 | 48.23 | 42.09 | 74.00 | 31.91 | Peak |
| 2 | 1337.000 | 25.68 | 5.00 | 35.93 | 47.59 | 42.34 | 74.00 | 31.66 | Peak |

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

No.6 Ke Feng Road,Block 52,
ShenZhen Science & Industry Park
Noutou,ShenZhen,GuangDong,China
Tel:+86-755-26639495-7
Fax:+86-755-26632877
Postcode:518057




Site no. : 10# Chamber Data no. : 6
Dis. / Ant. : 3m 3115 Ant. pol. : VERTICAL
Limit : FCC PART15 B
Env. / Ins. : 23*C/54% Engineer : Longe
EUT : LCD TV M/N:L32HD31
Power Rating : AC 120V/60Hz
Test mode : 1024*768@60Hz
Running"H"Pattern And Playing Music

| | Freq. (MHz) | Ant. Factor (dB/m) | Cable Loss (dB) | Amp Factor (dB) | Reading (dBuV) | Emission Level (dBuV/m) | Limits (dBuV/m) | Margin (dB) | Remark |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1218.000 | 25.51 | 4.81 | 36.05 | 47.76 | 42.03 | 74.00 | 31.97 | Peak |
| 2 | 1405.000 | 25.78 | 5.08 | 35.85 | 47.70 | 42.71 | 74.00 | 31.29 | Peak |

Remarks:
1. Emission Level= Antenna Factor + Cable Loss -Amp Factor + Reading.
2. The emission levels that are 20dB below the official limit are not reported.

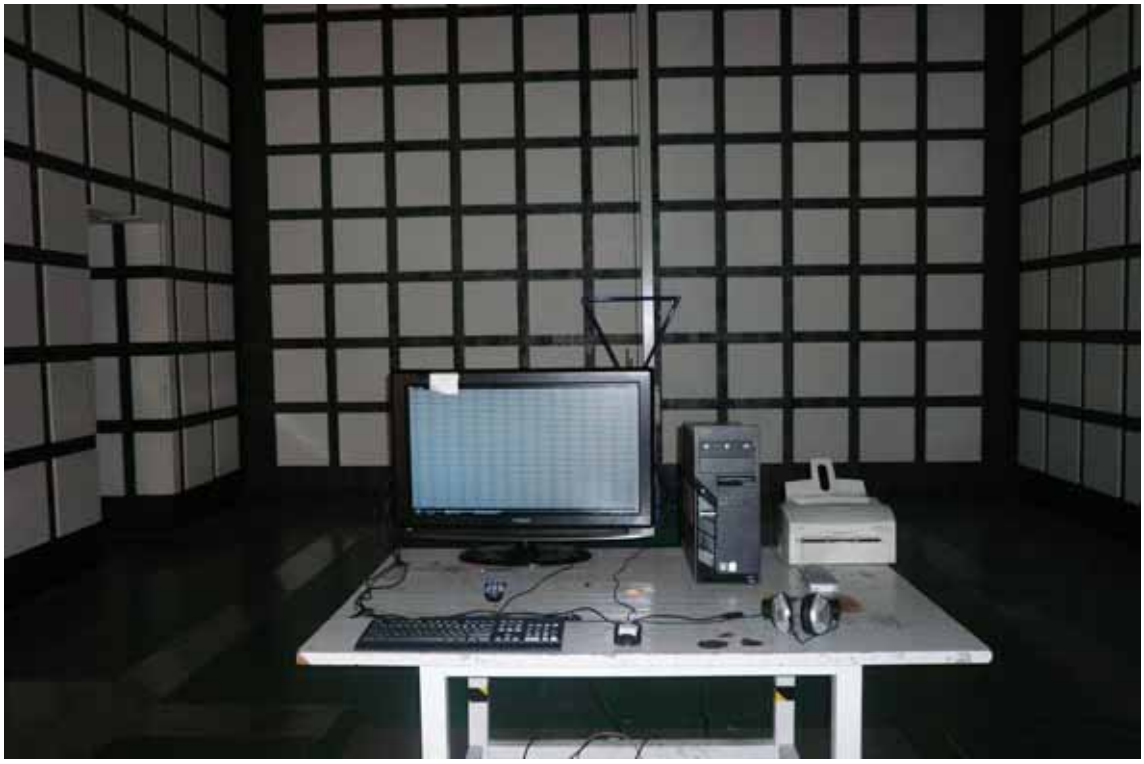
# 5. DEVIATION TO TEST SPECIFICATIONS

[ NONE]

# 6. PHOTOGRAPH

## 6.1.Photos of Power Line Conducted Emission Test

## 6.2.Photos of Radiated Emission Test (In Anechoic Chamber)



# 7. PHOTOS OF THE EUT

**Figure 1**
General Appearance of the EUT

**Figure 2**
General Appearance of the EUT

**Figure 3**
General Appearance of the EUT

**Figure 4**
General Appearance of the EUT

**Figure 5**
General Appearance of the EUT

**Figure 6**
General Appearance of the EUT

**Figure 7**
Inside of the EUT

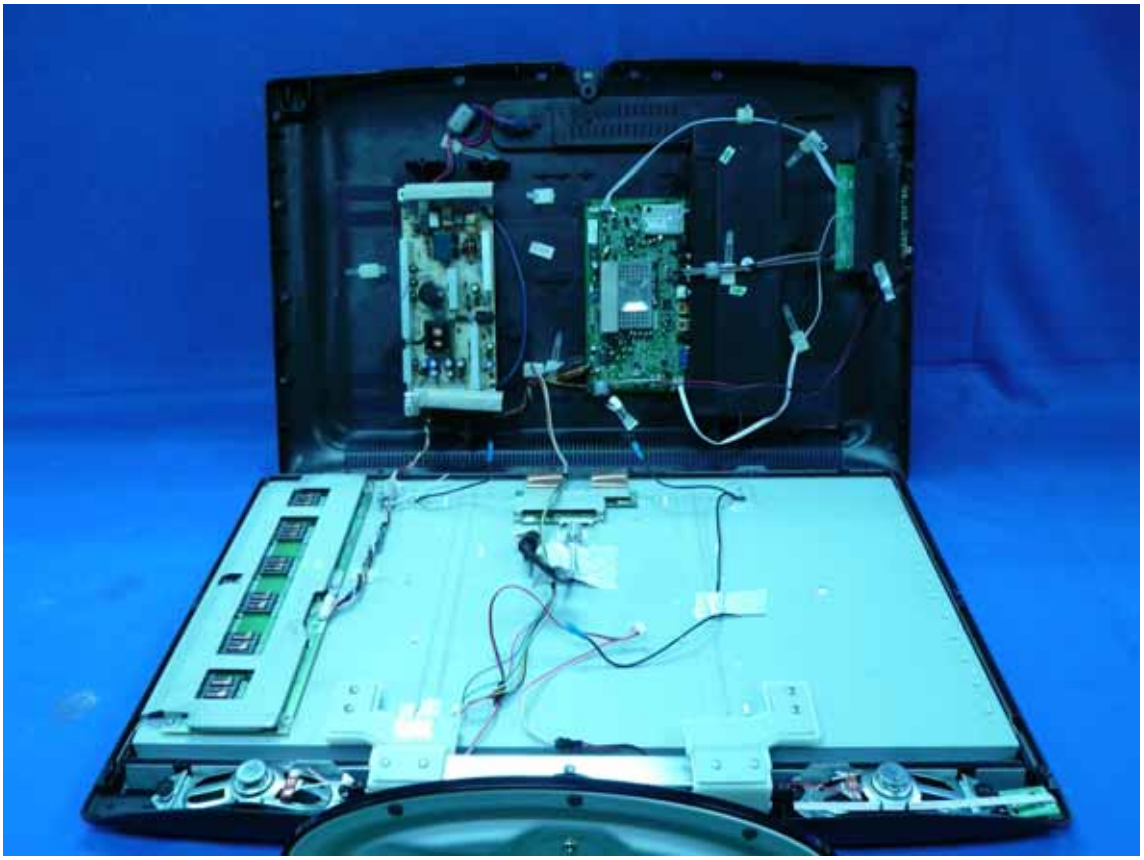


**Figure 8**
Core of the EUT

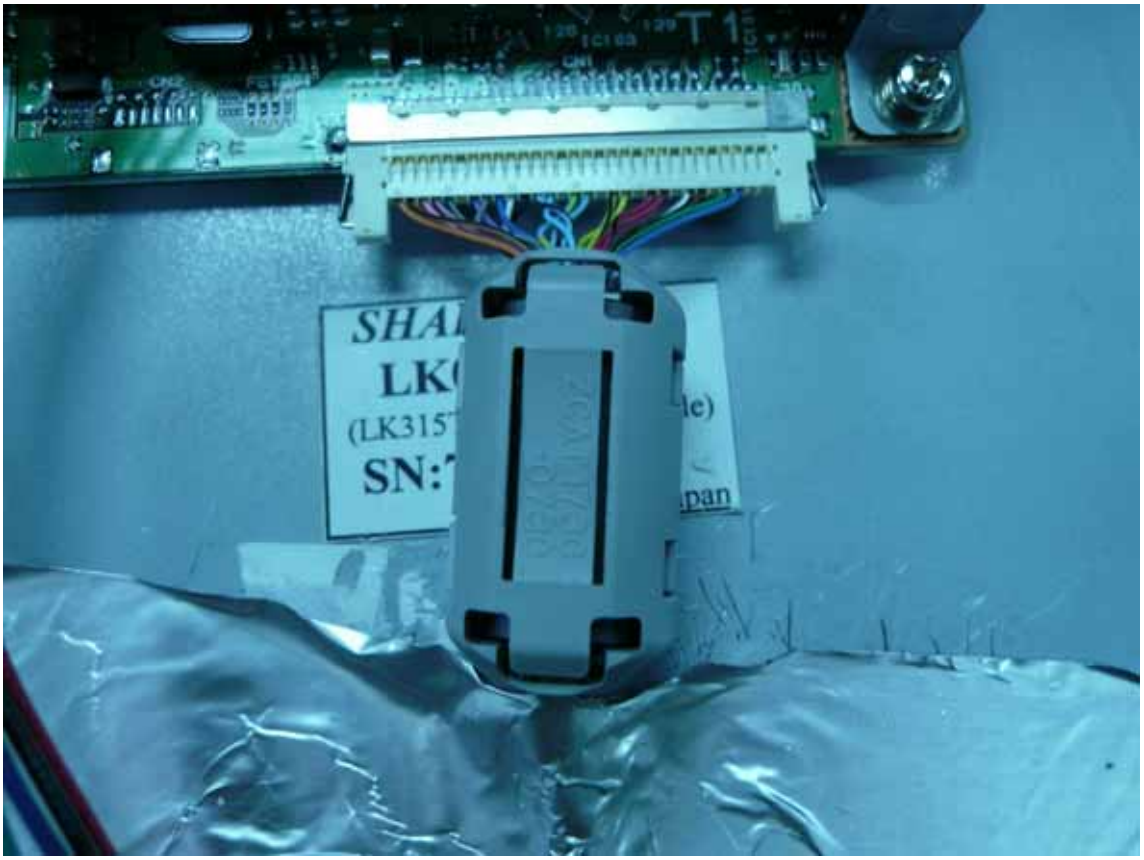


**Figure 9**
Core of the EUT

**Figure 10**
Core of the EUT

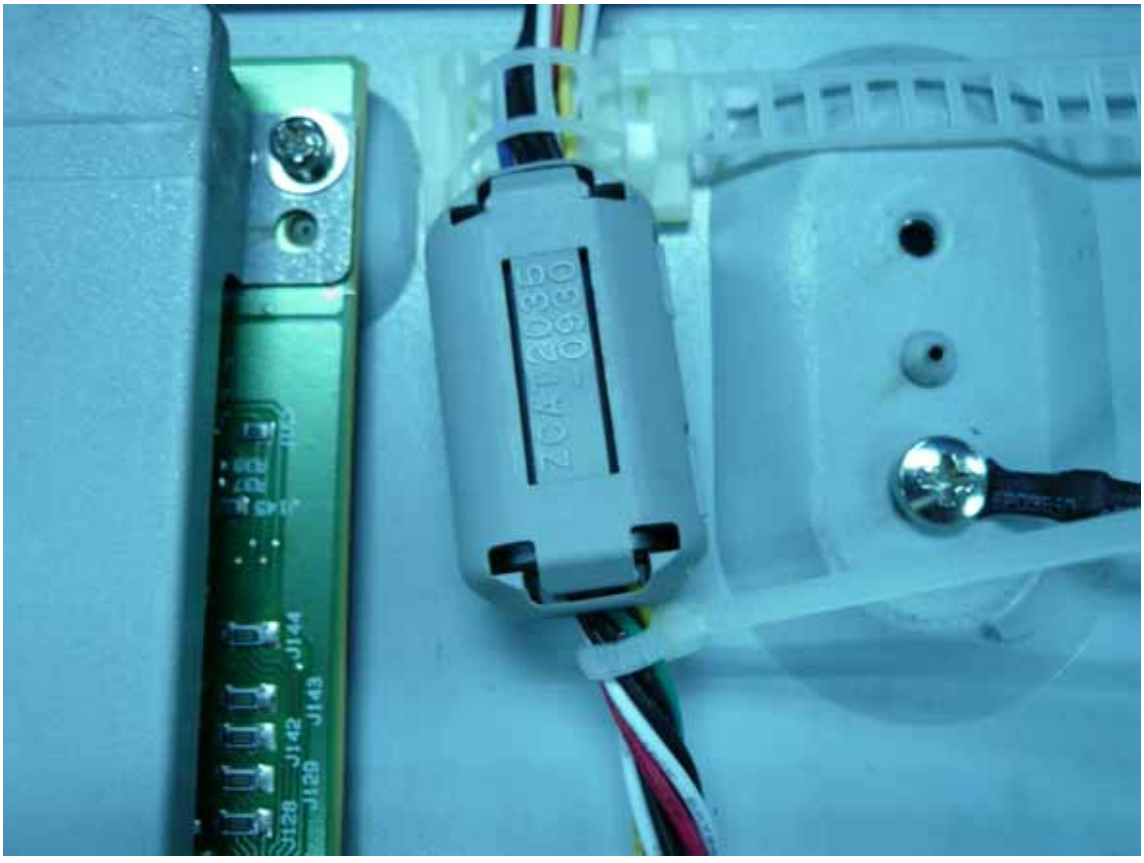


**Figure 11**
Core of the EUT

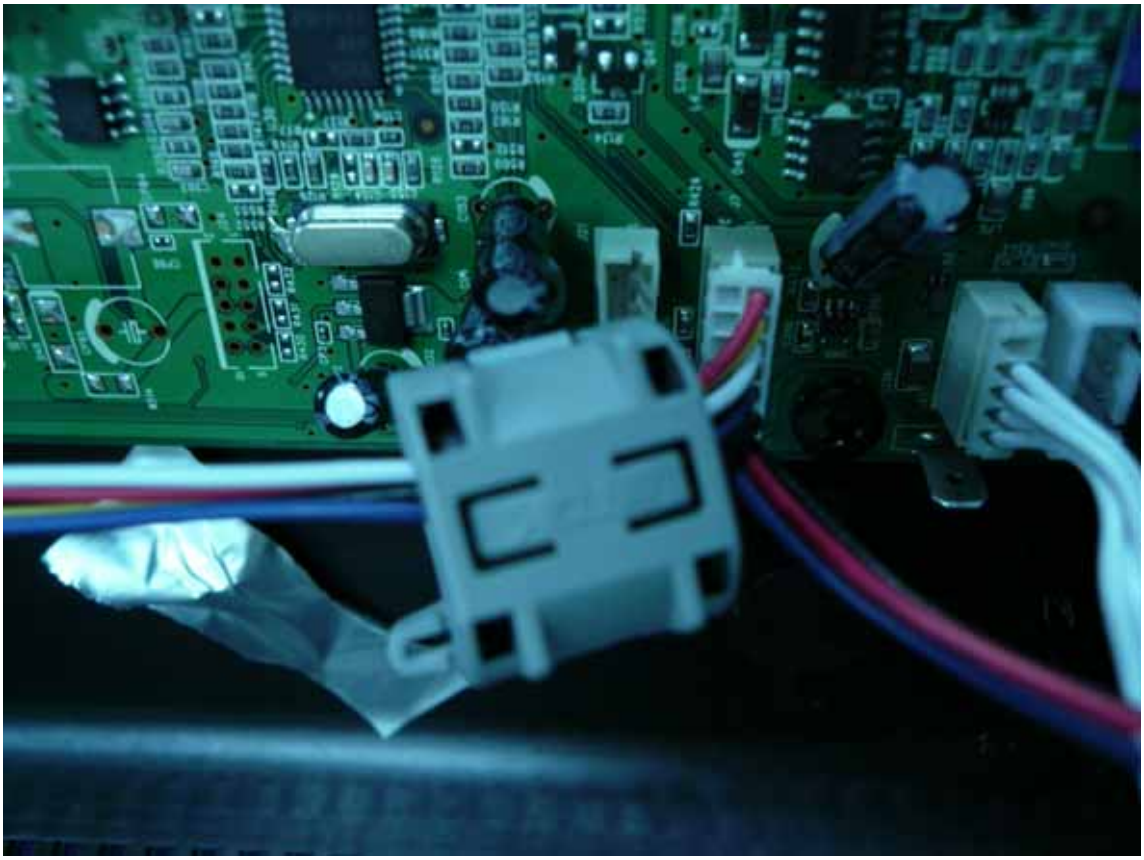


**Figure 12**
Core of the EUT

**Figure 13**
Core of the EUT

**Figure 14**
Inside of the EUT

**Figure 15**
Inside of the EUT


**Figure 16**
Inside of the EUT

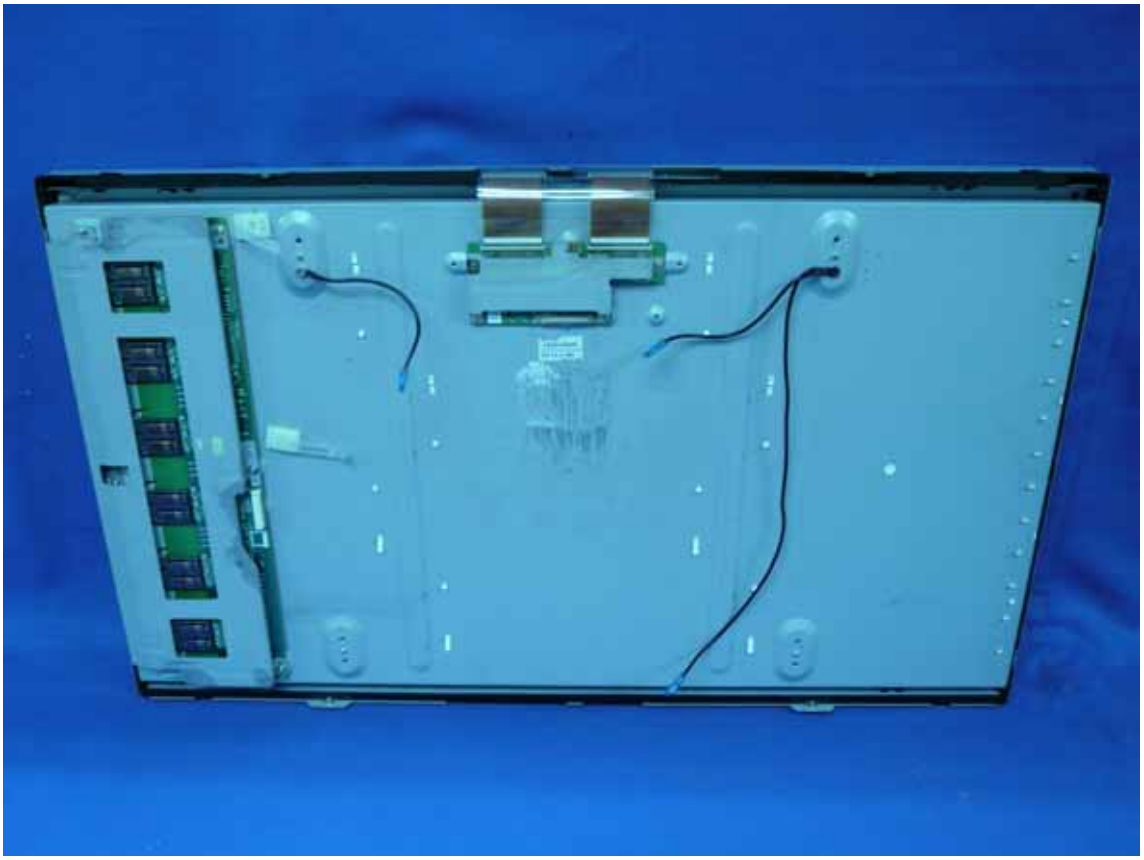


**Figure 17**
Inside of the EUT

**Figure 18**
EUT of the Samsung panel

**Figure 19**
EUT of the Samsung panel

**Figure 20**
EUT of the Samsung panel

**Figure 21**
Component Side of the PCB

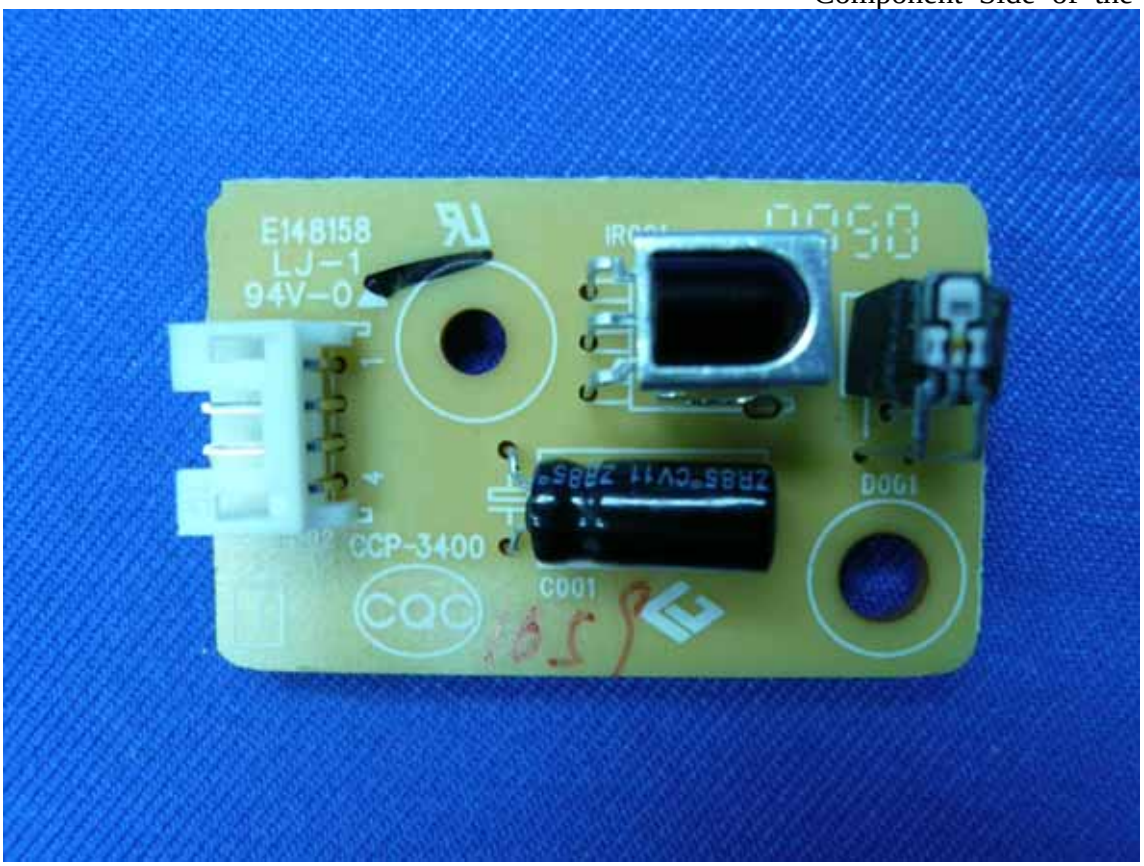



**Figure 22**
Component Side of the PCB

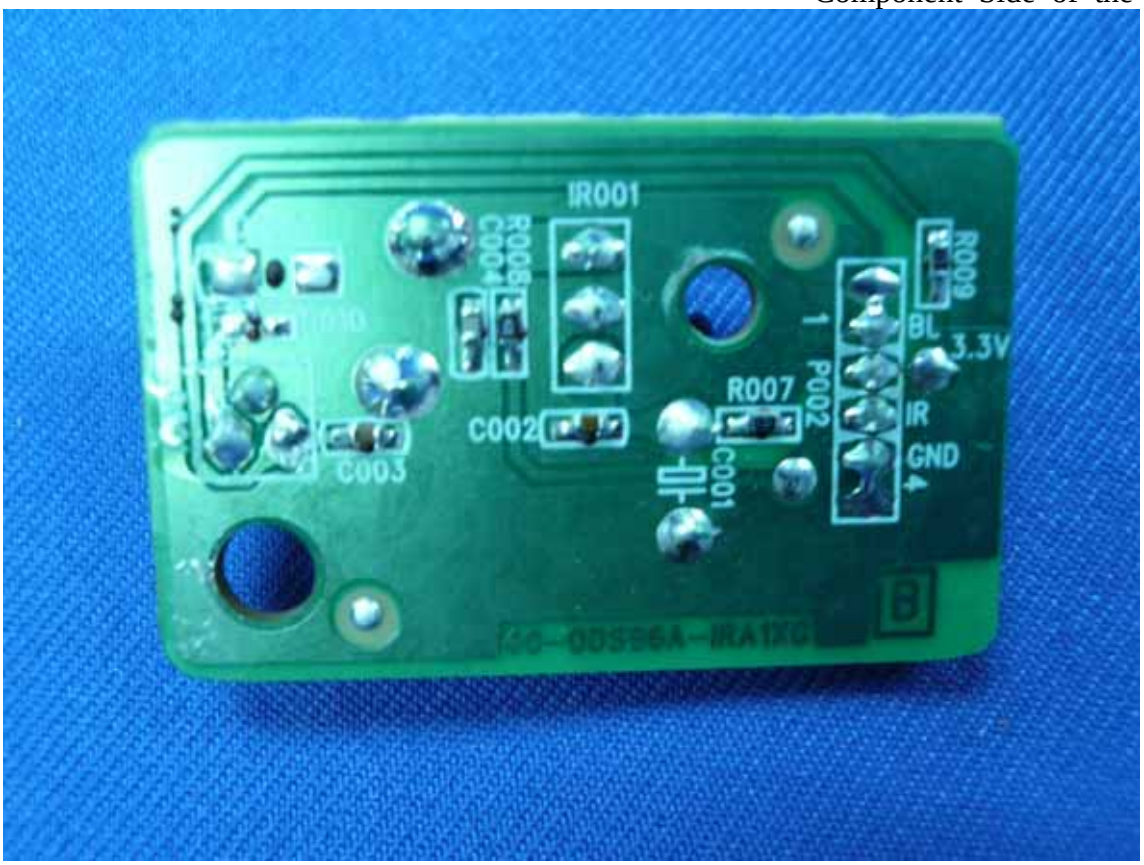


**Figure 23**
Component Side of the PCB

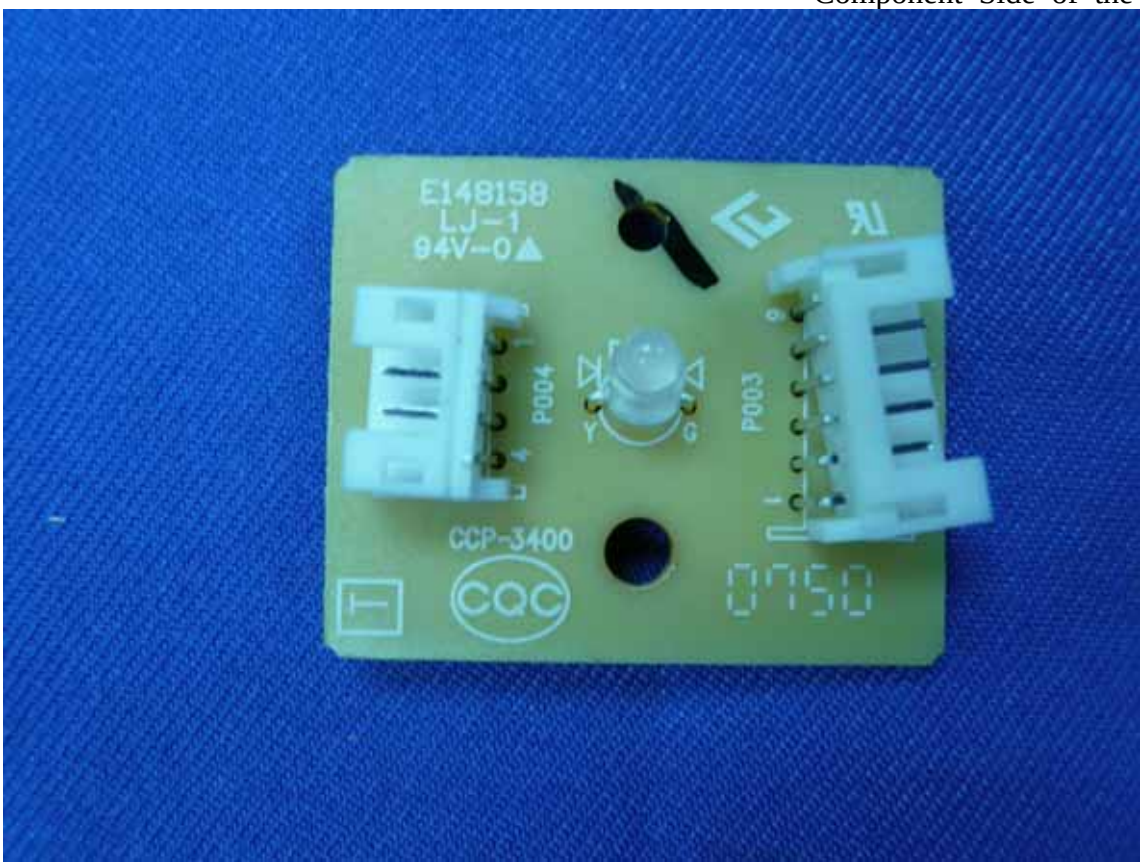



**Figure 24**
Component Side of the PCB

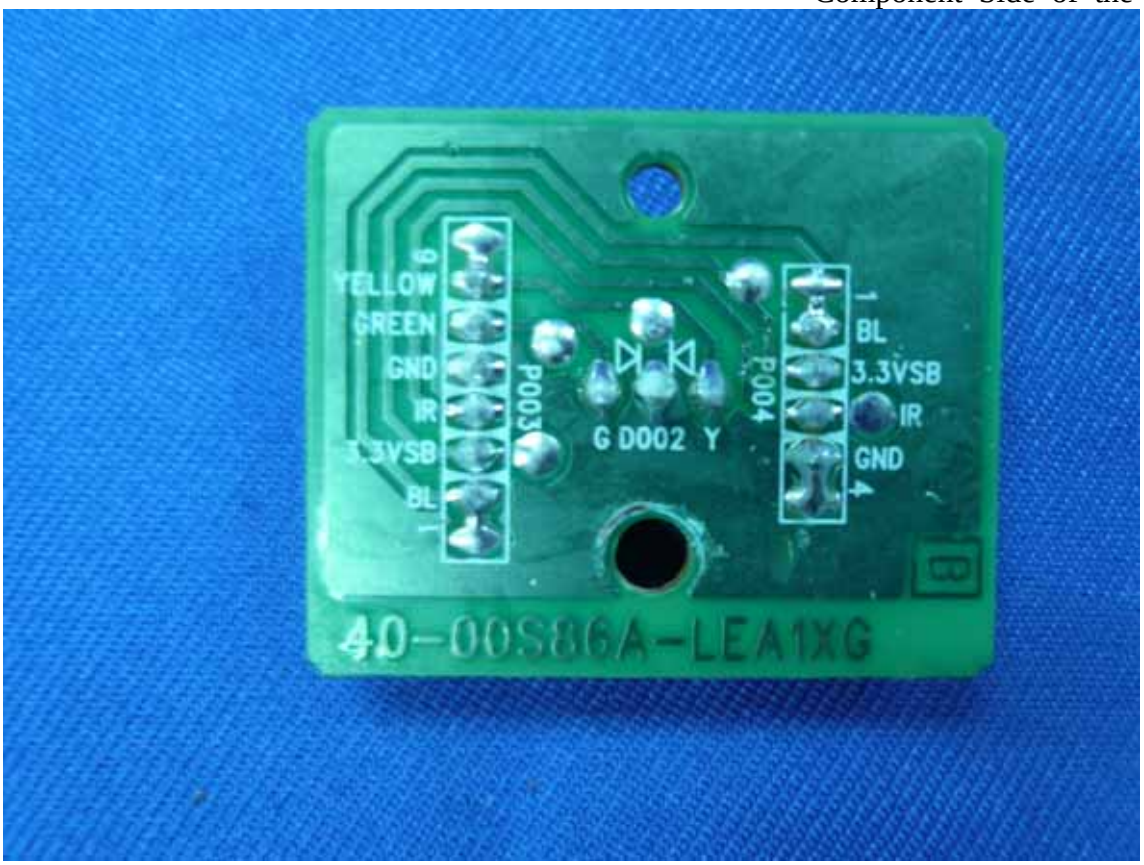


**Figure 25**
Component Side of the PCB

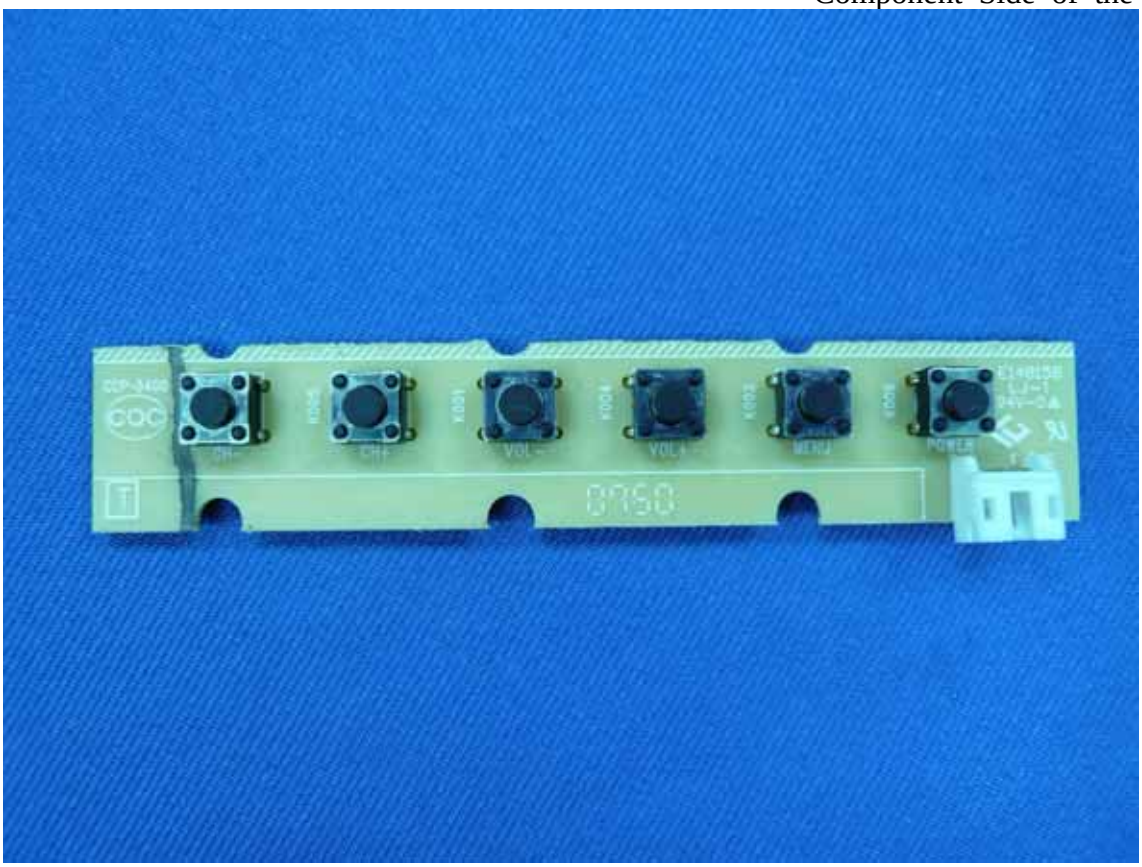



**Figure 26**
Component Side of the PCB

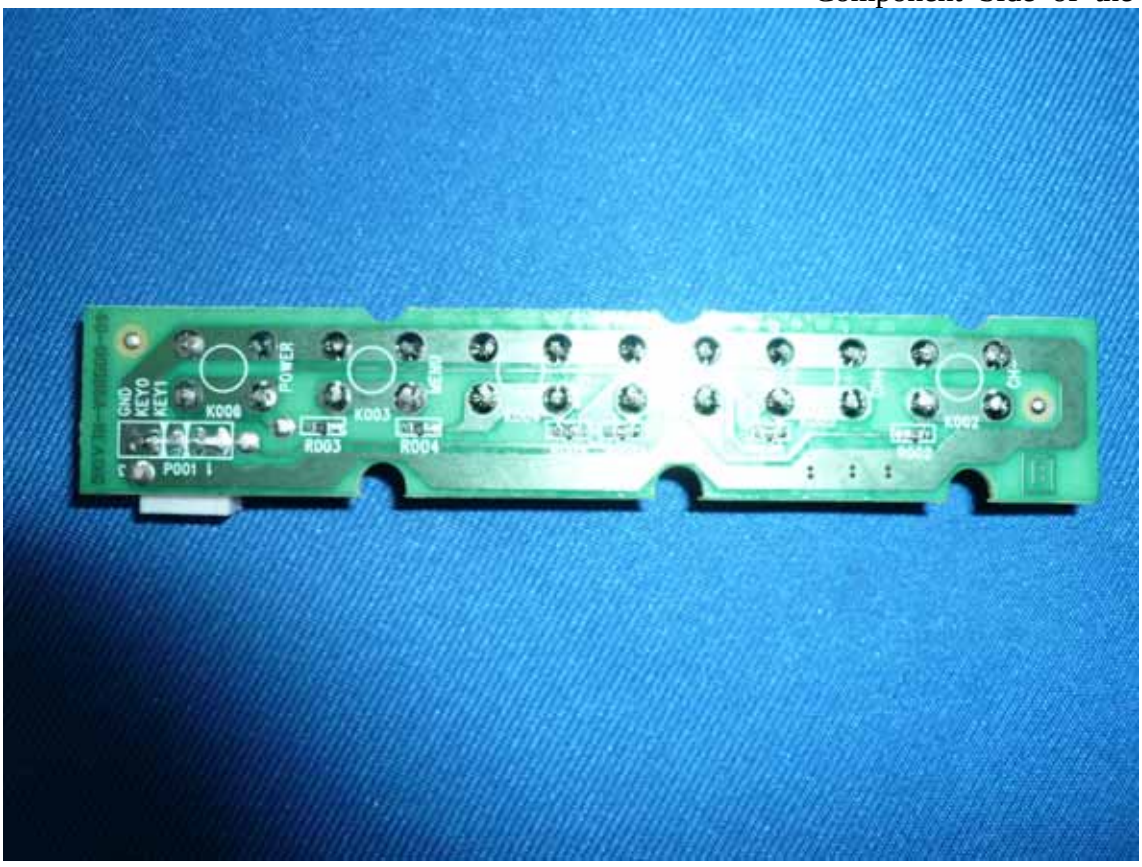


**Figure 27**
Component Side of the PCB

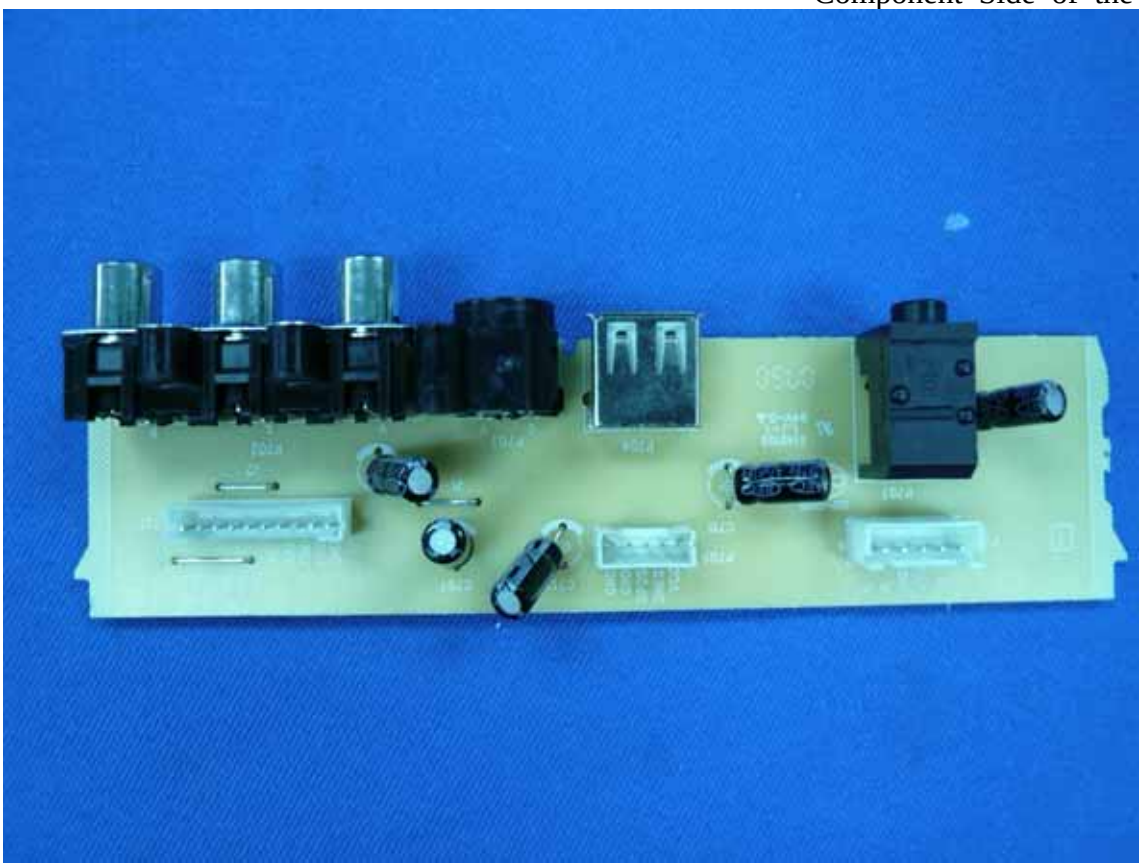


**Figure 28**
Component Side of the PCB

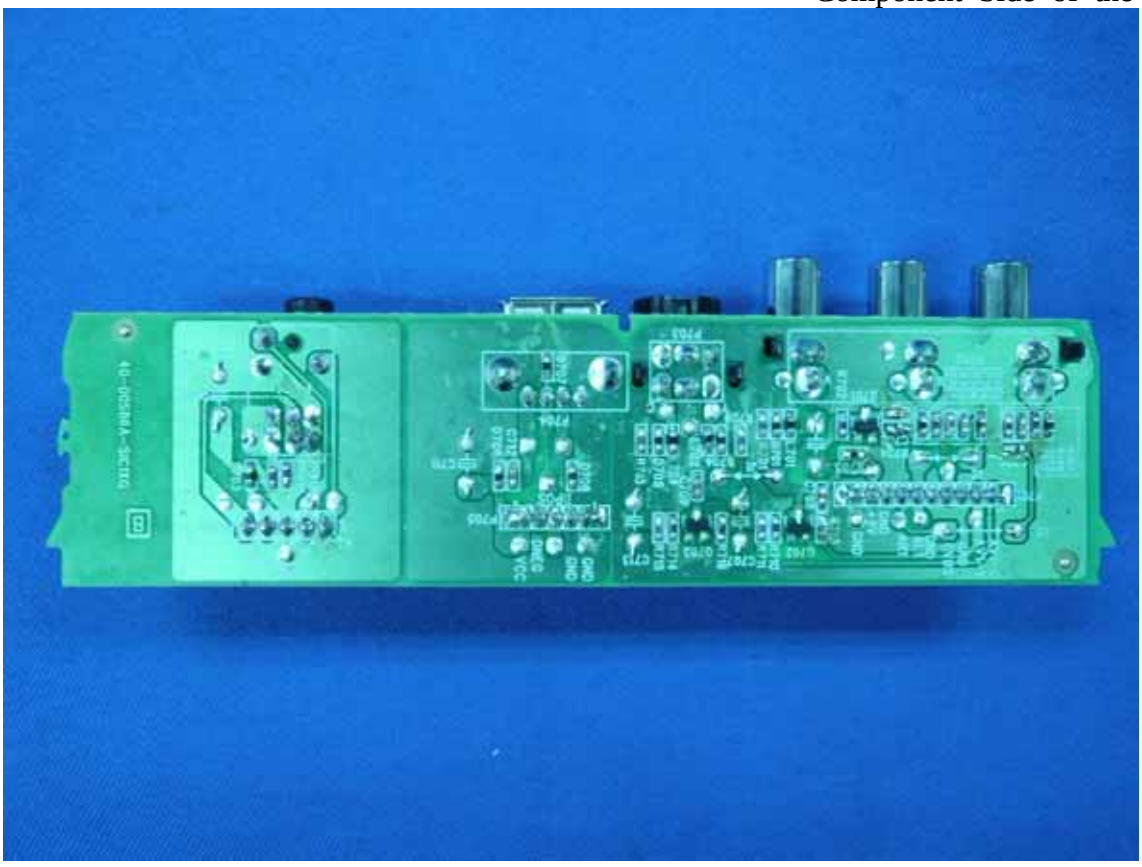


**Figure 29**
Component Side of the PCB

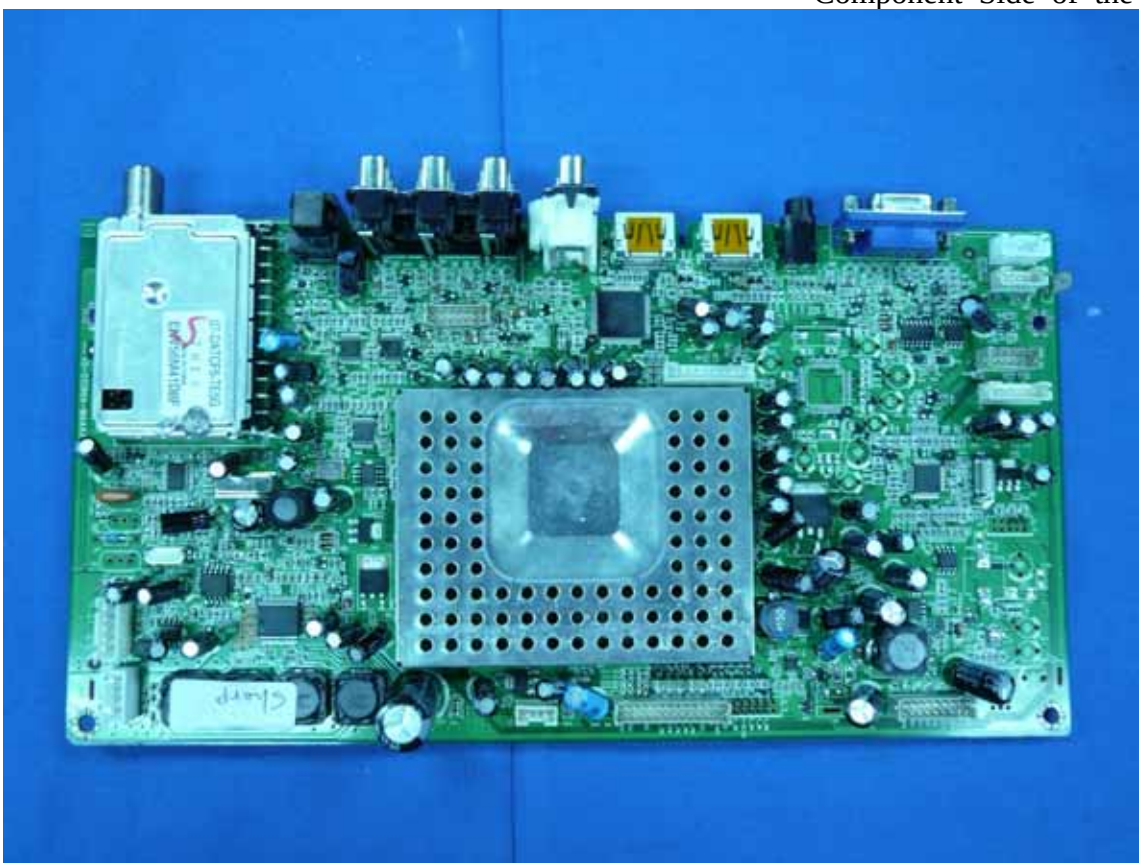


**Figure 30**
Component Side of the PCB

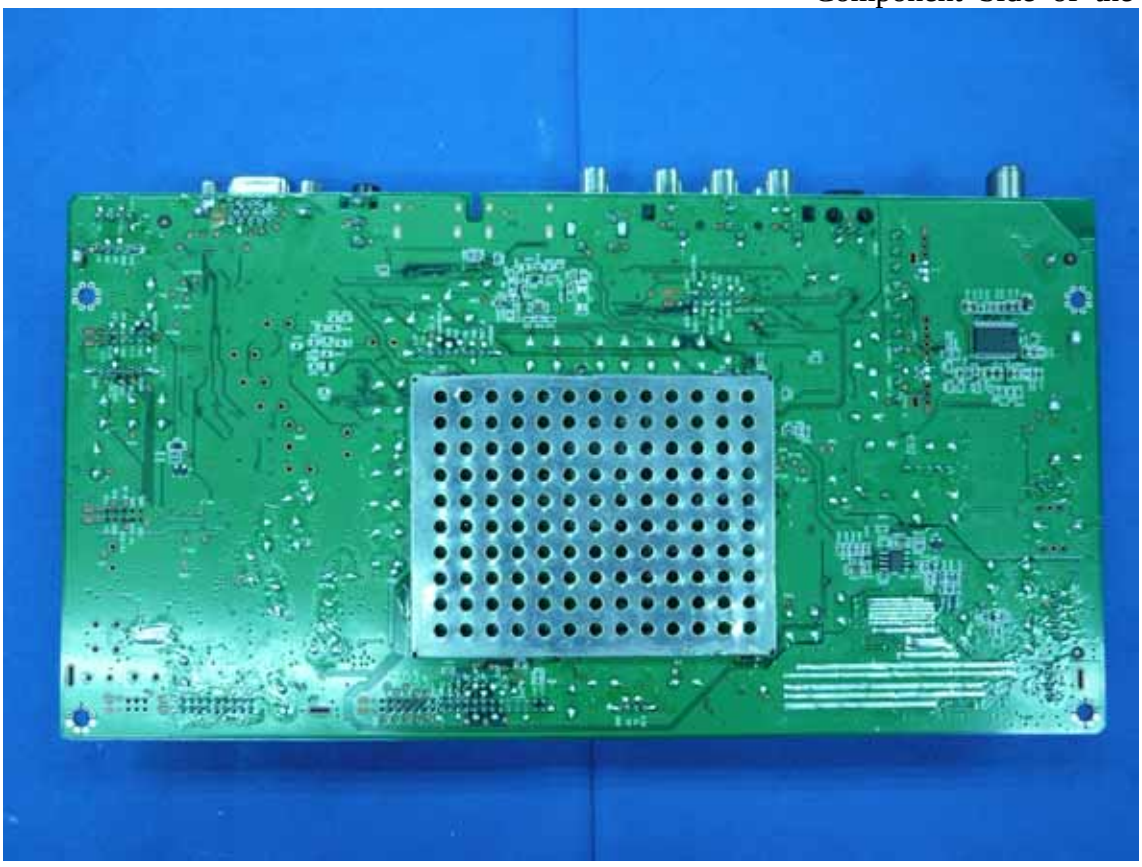


**Figure 31**
Component Side of the PCB

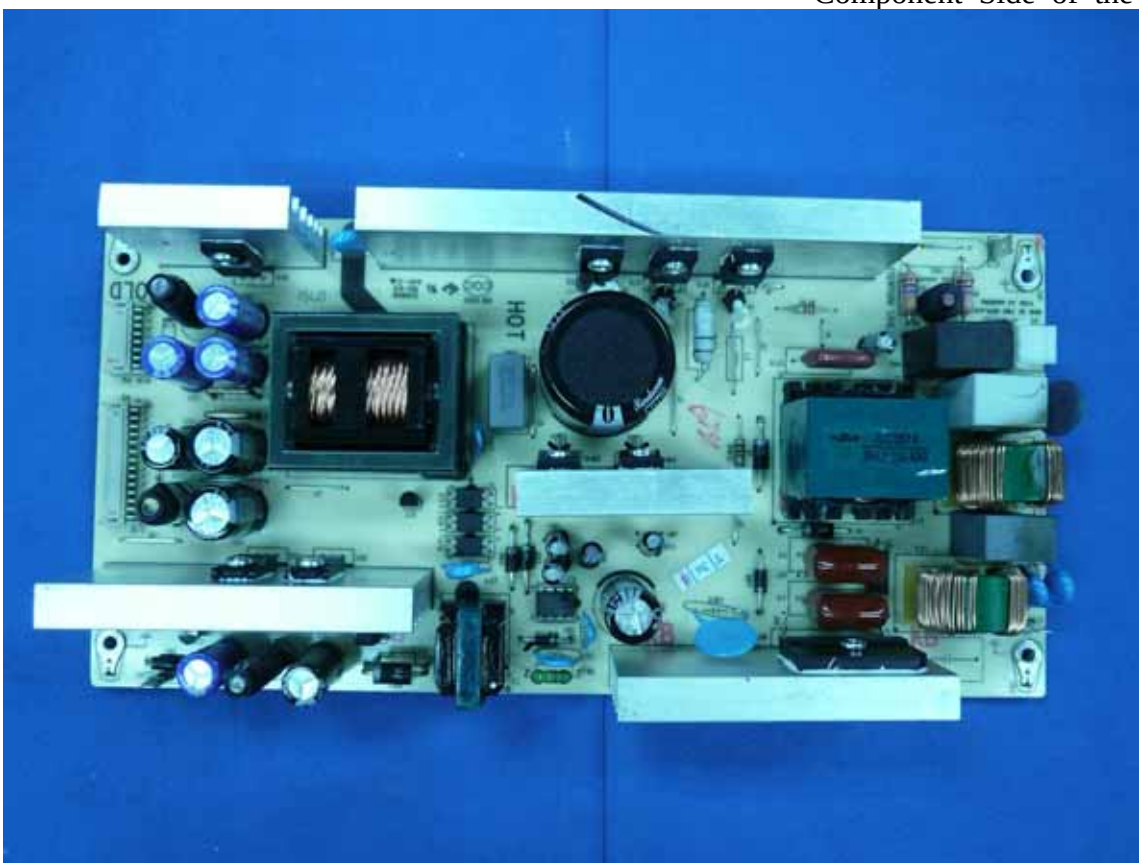



**Figure 32**
Component Side of the PCB