

## EMC TEST REPORT

**Test Report No. :** DST-11-F008

**Applicant :** Diasonic Technology Co., Ltd.  
#321-43, Suksu-dong, Manan-ku, Anyang-city,  
Kyungki-do, Korea.

**Manufacturer :** Diasonic Technology Co., Ltd.  
#321-43, Suksu-dong, Manan-ku, Anyang-city,  
Kyungki-do, Korea.

**Product name :** LED DESK LAMP

**Model name. :** DL-60iSH

**Serial number:** -

**Standard applied:** ANSI C 63.4:2009  
FCC Part 15 subpart B

**FCC Classification :** Class B personal computers and peripherals

**FCC Procedure :** Certification

**FCC ID :** P7KDL-60iSH

**Test Lab :** DSTech Co.(FCC Registration No. : 762812)

**Date of receipt :** April 21, 2011

**Test Period :** April 25~26, 2011

**Date of issue :** April 28, 2011

**Tested by :**   
Chang-youl Kim / EMC Engineer

**Reviewed by:**   
Sang-uk Han / Chief Engineer

**DSTech Co.**

\*This report only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory.

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## 1. General Description of EUT

### 1.1 Applicant

|                       |   |                                                                |
|-----------------------|---|----------------------------------------------------------------|
| <b>Company Name</b>   | : | Diasonic Technology Co., Ltd.                                  |
| <b>Address</b>        | : | #321-43, Suksu-dong, Manan-ku, Anyang-city, Kyungki-do, Korea. |
| <b>Contact Person</b> | : | Byung Hoon Lee                                                 |
| <b>E-mail</b>         | : | <a href="mailto:rnd7@diasonic.com">rnd7@diasonic.com</a>       |
| <b>Phone/Fax</b>      | : | Phone : +82-31-474-0852      Fax : +82-31-474-0861             |

### 1.2 Manufacture

|                     |   |                                                                |
|---------------------|---|----------------------------------------------------------------|
| <b>Company Name</b> | : | Diasonic Technology Co., Ltd.                                  |
| <b>Address</b>      | : | #321-43, Suksu-dong, Manan-ku, Anyang-city, Kyungki-do, Korea. |

### 1.3 Basic Description of EUT

|                                        |   |                                                                                                                          |
|----------------------------------------|---|--------------------------------------------------------------------------------------------------------------------------|
| <b>Product Name</b>                    | : | LED DESK LAMP                                                                                                            |
| <b>Model Name</b>                      | : | DL-60iSH                                                                                                                 |
| <b>Brand Name</b>                      | : | -                                                                                                                        |
| <b>Serial Number</b>                   | : | -                                                                                                                        |
| <b>Input Rating<br/>(Used adapter)</b> | : | Manufacturer : Ktec Co.,Ltd<br>Model No.: KSAS0241200200HU<br>Input : AC 100V~240V, 50/60Hz, 0.6A<br>Output : DC 12V, 2A |
| <b>Internal Clock Freq</b>             | : | 32 MHz                                                                                                                   |

## 2. General Information of Test

### 2.1 Test Facility

This test was carried out by DS Tech Co.  
Test Site Location : 80, Jeil-ri, Yangji-myun, Cheoin-gu, Yongin-si, Gyeonggi-do, Korea  
TEL : 82-31-336-1798, FAX : 82-31-336-3451

### 2.2 Standard for Methods of Measurement

| Basic Standard        | Description                  | Test Result                                                            |
|-----------------------|------------------------------|------------------------------------------------------------------------|
| FCC Part 15 Subpart B | 15.107(a) Conducted Emission | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |
|                       | 15.109(a) Radiated Emission  | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail |

\* The sample was tested according to the following specification: ANSI C 63.4:2009

## 2.3 Description of EUT modification

N/A

## 2.4 Variations covered by this report

N/A

## 2.5 Additional information related to Testing

Test results apply only to the particular sample tested and functionality described in this test report. This report may be reproduced in full. Partial reproduction may only be made with the written permission of the DSTech.

## 2.6 Test Conditions

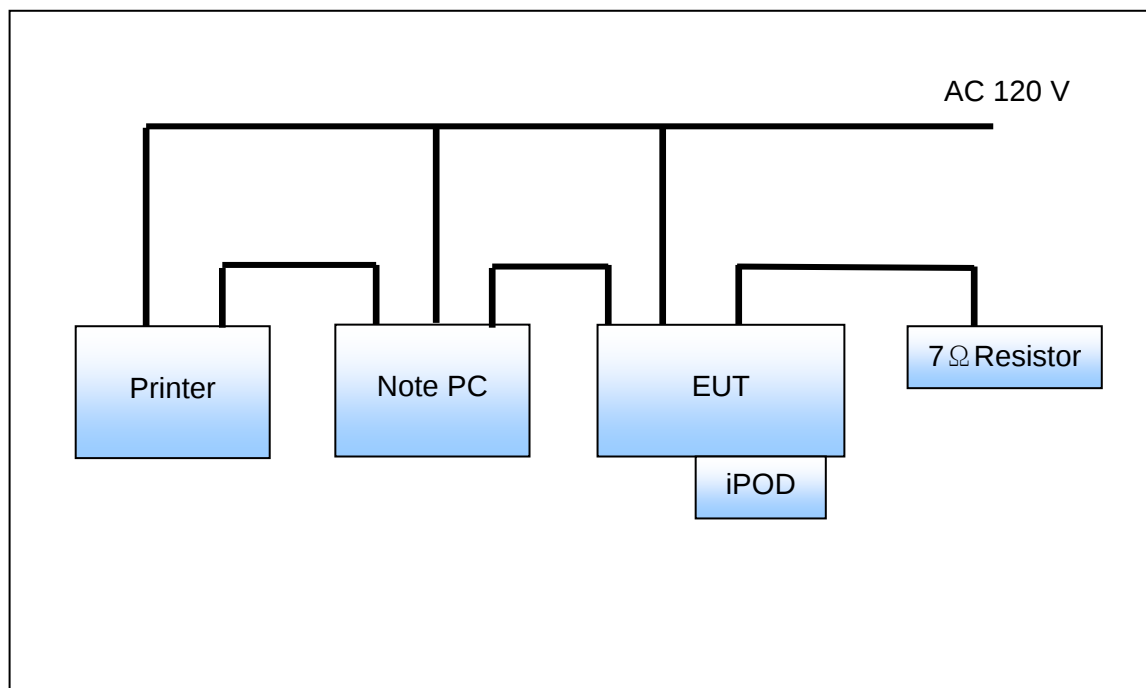
### EUT Operating Mode

EUT was tested according to the following operation modes provided by the specifications given by the manufacturer and reported the worst emissions.

| Operation Modes                                            | Worst Case Mode |
|------------------------------------------------------------|-----------------|
| The EUT set up max value and PC download and Charging mode | ☒               |

### Test System layout on EUT and peripherals

—— Power cable      ——— Signal cable



## 2.7 Description of Test System

### Type of Peripheral Equipment Used:

| Description         | Model Name | Serial No.      | Manufacturer |
|---------------------|------------|-----------------|--------------|
| Note pc             | NT-R780    | ZNWE93GZ200193M | SAMSUNG      |
| iPOD                | A1367      | C41DNXW0DCP7    | Apple Inc.   |
| Printer             | VCVRA-0702 | TH7CI541WW      | HP           |
| 7 $\Omega$ Resistor | N/A        | N/A             | N/A          |

### Type of Cables Used:

| Device from | Device to           | Type of Cable | Length (m) | Type of shield |
|-------------|---------------------|---------------|------------|----------------|
| Note PC     | AC power            | Power         | 1.0        | Unshield       |
| Printer     | AC power            | Power         | 1.2        | Unshield       |
| EUT         | DC power            | Power         | 1.8        | Unshield       |
| EUT         | 7 $\Omega$ Resistor | Power         | 1.0        | Unshield       |
| EUT         | Note PC             | USB           | 1.2        | Shield         |
| Note PC     | Printer             | USB           | 1.5        | Shield         |

### 3.1 Conducted Emission Test

Conducted emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz on the 120 V AC power input terminal. The EUT was placed on a un-metallic stand in a shielded room 0.8 meters above the ground plane as shown in photograph of test setup. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position producing maximum conducted emissions.

#### 3.1.1 Test Condition

Frequency Range of Test : 150 kHz to 30 MHz

Test Method : FCC Part 15 Subpart B (Section : 15.107a)

Test Date : April 25, 2011

Temperature/Humidity : (20 ± 1) °C / (46 ± 1) % R.H.

Input Voltage : AC 120 V / 60 Hz

#### 3.1.2 Test Standard.

| Frequency Range<br>(MHz) | Limit at Mains Terminal |                     |
|--------------------------|-------------------------|---------------------|
|                          | Quasi-Peak<br>[dB(uV)]  | Average<br>[dB(uV)] |
| 0.15 ~ 0.5               | 66.0 ~ 56.0             | 56.0 ~ 46.0         |
| 0.5 ~ 5                  | 56.0                    | 46.0                |
| 5 ~ 30                   | 60.0                    | 50.0                |

#### 3.1.3 Test Equipment List.

| Equipment Type             | Model   | Manufacture | Serial No | Cal Due Date | Use                                 |
|----------------------------|---------|-------------|-----------|--------------|-------------------------------------|
| 2-LINE<br>V-NETWORK        | ESH3-Z5 | R&S         | 100193    | 2011.06.18   | <input checked="" type="checkbox"/> |
| ARTIFICIAL MAIN<br>NETWORK | MN425B  | ANRITSU     | M05519    | 2011.06.28   | <input checked="" type="checkbox"/> |
| EMI TEST RECEIVER          | ESCI    | R&S         | 100049    | 2011.06.21   | <input checked="" type="checkbox"/> |

### 3.1.4 Test Result of Main Conducted Emission

Test Results: **PASS**

Test data sheets follow.

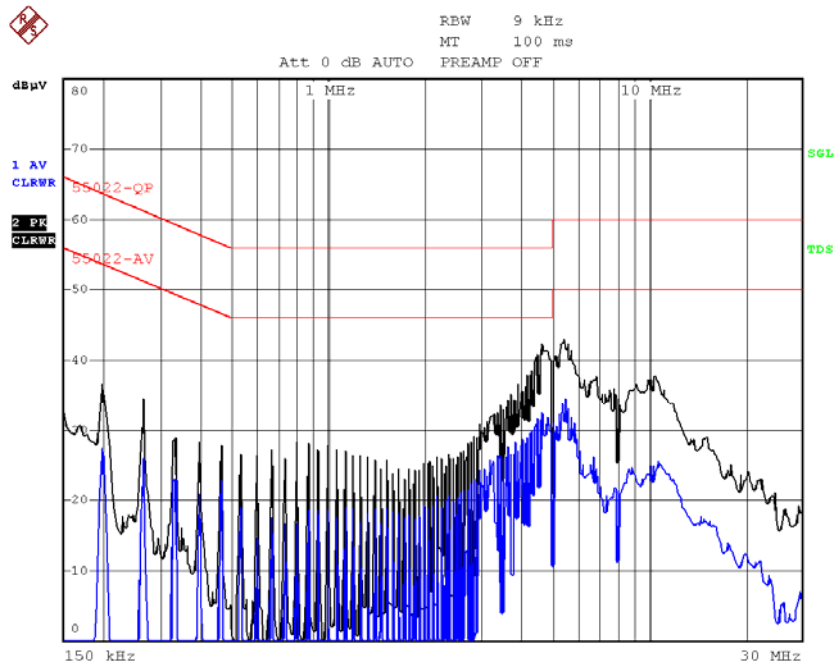
| Frequency    | C.F.       | Phase    | Quasi-Peak Mode |             |             | Average Mode |             |             |
|--------------|------------|----------|-----------------|-------------|-------------|--------------|-------------|-------------|
|              |            |          | Limit           | Result      | Margin      | Limit        | Result      | Margin      |
| [MHz]        | [dB]       | [N/L1]   | [dB(uV)]        | [dB(uV)]    | [dB(uV)]    | [dB(uV)]     | [dB(uV)]    | [dB(uV)]    |
| 0.199        | 0.1        | N        | 63.6            | 38.2        | 25.4        | 53.6         | 29.2        | 24.4        |
| 4.589        | 0.3        | N        | 56.0            | 44.3        | 11.7        | 46.0         | 29.8        | 16.2        |
| 4.639        | 0.3        | N        | 56.0            | 44.1        | 11.9        | 46.0         | 28.0        | 18.0        |
| <b>4.721</b> | <b>0.3</b> | <b>N</b> | <b>56.0</b>     | <b>44.7</b> | <b>11.3</b> | <b>46.0</b>  | <b>31.9</b> | <b>14.1</b> |
| 5.455        | 0.3        | N        | 60.0            | 44.2        | 15.8        | 50.0         | 30.4        | 19.6        |
| 0.199        | 0.1        | L1       | 63.6            | 35.4        | 28.2        | 53.6         | 27.7        | 25.9        |
| 4.648        | 0.3        | L1       | 56.0            | 40.2        | 15.8        | 46.0         | 32.8        | 13.2        |
| 4.715        | 0.3        | L1       | 56.0            | 39.7        | 16.3        | 46.0         | 31.9        | 14.1        |
| 4.848        | 0.3        | L1       | 56.0            | 40.0        | 16.0        | 46.0         | 32.4        | 13.6        |
| 5.511        | 0.3        | L1       | 60.0            | 40.4        | 19.6        | 50.0         | 33.1        | 16.9        |

#### Notes:

1. C.F = LISN Factor + Cable Loss + Pulse Limiter Loss / Result = Reading Level + C.F
2. All modes of operation were investigated and the worst-case emissions are reported.
3. Measurement uncertainty estimated at  $\pm 3.9$  dB.  
The measurement uncertainty is given with a confidence of 95.45 % with the coverage factor, k=2.
4. See next page for measurement graph.

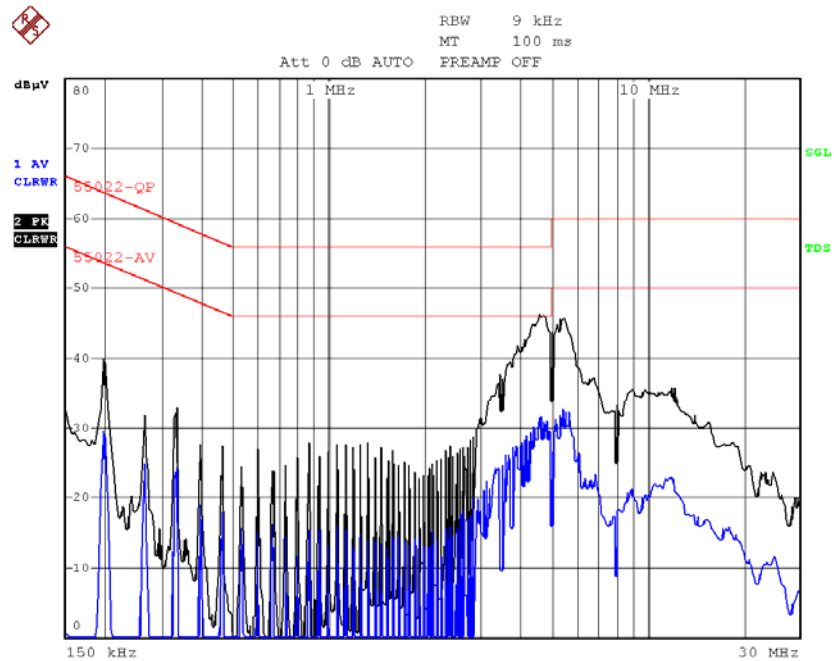


Tested by Chang-youl Kim



Date: 25.APR.2011 16:09:08

<L1 LINE>



Date: 25.APR.2011 15:58:18

<N LINE>

## 3.2 Radiated Emission Test

Radiated disturbance from 30 MHz to 1 000 MHz were measured with a bandwidth of 120 kHz (and 1 MHz above 1 GHz) for both vertical and horizontal polarization of the measuring antenna according to the methods defines in ANSI C 63.4:2009. The EUT was placed on a non-metallic table in the 3 meter open area test site, 0.8 meter above the ground plane, and the measurement distance from the measuring antenna to the center of the EUT was set 3 m distance as shown in Test setup photograph. The measuring antenna was adjusted in height of 1m to 4m range for the maximum emission. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

### 3.2.1 Test Condition

Frequency Range of Test : 30 MHz ~ 1 000 MHz  
Test Method : FCC Part 15 Subpart B (Section : 15.109a)  
Test Date : April 26, 2011  
Temperature/Humidity : (16 ± 1) °C / (49 ± 2) % R.H.

### 3.2.2 Test Standard

| Frequency Range<br>(MHz) | Limit                  |
|--------------------------|------------------------|
|                          | Quasi-Peak<br>dB(uV/m) |
| 30 ~ 88                  | 40.0                   |
| 88 ~ 216                 | 43.5                   |
| 216 ~ 960                | 46.0                   |
| Above 960                | 53.9                   |

### 3.2.3 Test Equipment List

| Equipment Type               | Model    | Manufacture | Serial No  | Cal Due Date | Use                                 |
|------------------------------|----------|-------------|------------|--------------|-------------------------------------|
| EMI TEST RECEIVER            | ESCI     | R&S         | 100049     | 2011.06.21   | <input checked="" type="checkbox"/> |
| Antenna Mast                 | EAM 4.0  | DAEIL EMC   | N/A        | N/A          | <input checked="" type="checkbox"/> |
| Antenna Turntable Controller | EMRT2015 | HD          | N/A        | N/A          | <input checked="" type="checkbox"/> |
| Biconical ANT                | HK116    | R&S         | 825177/014 | 2011.07.09   | <input checked="" type="checkbox"/> |
| Log-Periodic ANT             | HL223    | R&S         | 832369/010 | 2011.07.09   | <input checked="" type="checkbox"/> |

### 3.2.4 Test Result of Radiated Emission

Test Results: **PASS**

Test data sheets follow.

| Frequency (MHz) | Quasi-Peak [dB(uV)/m] | Antenna height (cm) | Pol      | Corr. (dB)  | Margin (dB) | Limit [dB(uV)/m] |
|-----------------|-----------------------|---------------------|----------|-------------|-------------|------------------|
| 120.0           | 33.6                  | 115                 | H        | -11.7       | 9.9         | 43.5             |
| <b>192.1</b>    | <b>37.7</b>           | <b>235</b>          | <b>H</b> | <b>-6.9</b> | <b>5.8</b>  | <b>43.5</b>      |
| 192.0           | 36.7                  | 230                 | V        | -6.9        | 6.8         | 43.5             |
| 256.0           | 38.4                  | 190                 | H        | -4.9        | 7.6         | 46.0             |
| 256.1           | 39.4                  | 200                 | V        | -4.9        | 6.6         | 46.0             |
| 360.0           | 37.8                  | 260                 | H        | -4.0        | 8.2         | 46.0             |
| 480.1           | 38.0                  | 290                 | V        | -1.3        | 8.0         | 46.0             |

#### Notes

1. H: Horizontal polarization, V: Vertical polarization
2. Quasi-Peak Level = Reading + Corr. (Antenna factor + Cable loss)
3. Margin value = Limit – Quasi-Peak Level
4. Measurement uncertainty estimated at  $\pm 5.08$  dB.

The measurement uncertainty is given with a confidence of 95.45 % with the coverage factor,  $k = 2$ .



Tested by Chang-youl Kim