

## FCC EVALUATION REPORT FOR CERTIFICATION

*KOREA Standard Technology*

*Test report No.: KST-FCC0536*

**Applicant's Name :** LPS Device Co.,Ltd.

**Applicant's Address :** Rm 606 6F, Joongang Induspia2 Apt. Factory 144-5,  
Sangdaewon-dong, Sungnam-si, Kyunggi-Do , KOREA

**Manufacturer's Name :** LPS Device Co.,Ltd.

**Manufacturer's Address :** Rm 606 6F, Joongang Induspia2 Apt. Factory 144-5,  
Sangdaewon-dong, Sungnam-si, Kyunggi-Do , KOREA

**EUT's:**

**FCC ID** : QY6NEO-4005LS

**Product Name** : LCD TV & Monitor

**Model Number(s)** : NEO-4005LS

**Product Options** : Request for enter a multi list of model name by Applicant's  
( L40DTP & L40DTN & L40DTA & L40DTB &  
L40DTC & L40DTJ )

**Category** : FCC Part 15 subpart B

**Class B Computing Digital Device**

### Supplementary Information

The device bearing the brand name and FCC ID specified above has been shown to comply with the applicable technical standards as indicated in the measurement report and was tested in accordance with measurement procedures specified in ANSI C63.4-2003.

I attest to the accuracy of data and all measurements reported herein were performed by or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

**Test Date : August 1, 2005.**

**Issued Date : August 10 , 2005**

**Tested by:**



Jung, Suck-Jin

**Approved by:**



Lee, Weon-Woo

# EMI TEST REPORT

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## 1. Description of Device

1) Kind of equipment: LCD TV & Monitor

2) FCC ID: QY6NEO-4005LS

3) Model Name: NEO-4005LS

4) Serial No.: None

5) Type of Sample Tested: Pre-production

6) High Frequency Used:  
32.768 KHz  
14.31818 MHz  
18.432 MHz  
27.000 MHz  
28.322 MHz

7) Power Rating: 100-240 V~; 50/60 Hz; 250 W

8) Tested Power supply: 1phase AC110V, 60Hz

9) Date of Manufacture: July , 2005

10) Manufacture: LPS DEVICE CO.,LTD.

11) Description of Operating:  
Scroll All "H" Character  
Resolution 1024\*768 , Vertical Frequency: 75Hz  
& TV tuner mode

12) Dates of Test: August 1, 2005

13) Place of Tests: Korea Standard Technology EMC site

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## 2. Test Facility

The open field test site and conducted measurement facility are used for these testing, where are located following address and drawing. This site was fully described in a report dated November 14, 2002, that was submitted to the FCC.

Korea Standard Technology ( KOSTEC Co., Ltd)

Head office:

180-254, Annyung-Ri, Taean-Yup, Hwasung-shi, Kyunggi-do, Korea

Telephone Number : 82-31-222-4251

Facsimile Number : 82-31-222-4252

Test Lab

:180-254, Annyung-Ri, Taean-Yup, Hwasung-shi, Kyunggi-do, Korea

Telephone Number : 82-31-222-4251

Facsimile Number : 82-31-222-4252

MIC(Ministry of Information and Communication) Number : **KR0041**

FCC Filing Number : **525762**

VCCI Membership Number : **2005**

VCCI Registration Number : **R-1657 / C-1763**

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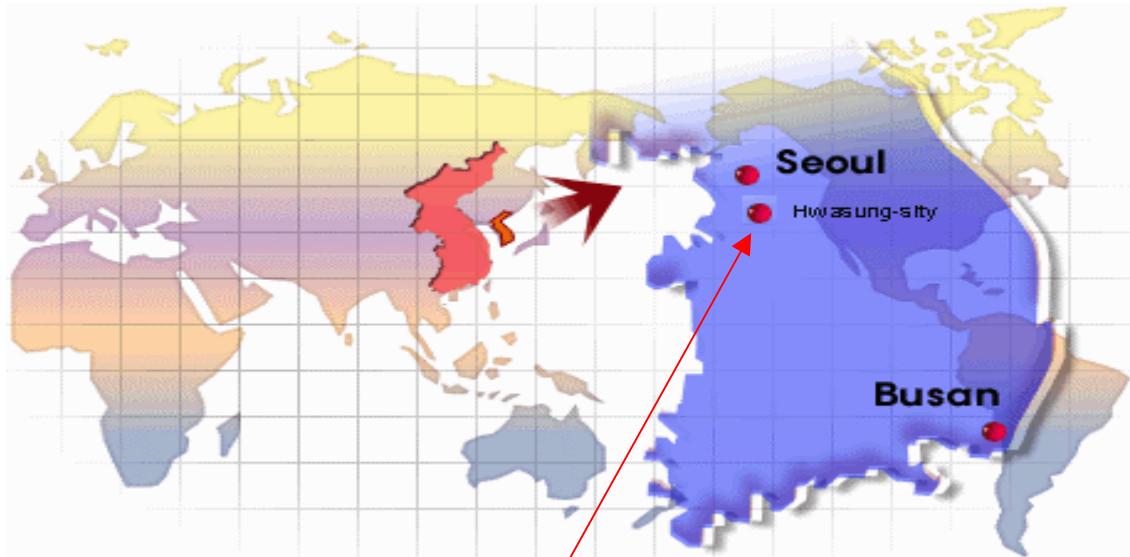
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## 3. MAP

Korea



Hwasung-si (open area test site)



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## 4. TEST SYSTEM CONFIGURATION

### Operation Environment

	<u>Temperature</u> ( ° C )	<u>Humidity</u> ( % )	<u>Pressure</u> ( hPa )
Ambient			
10 m Open Area site	26	39	996
Shielded room:	26	38	996

### Test site

These testing were performed following locations :

Shielded room : Conducted Emission,

10 m Open Area Site: Radiated Emission

### Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC.

The factors contributing to uncertainties are test receiver, Cable loss, antenna factor calibration, Antenna directivity, antenna factor variation with height, antenna phase center variation, antenna frequency interpolation, measurement distance variation, ite imperfection, mismatch, and system repeatability.

Based on NIS 80,81, The measurement uncertainty level with a 95 % confidence level were applied.

### sample calculation

#### Conducted emission

The field strength is calculated by adding the LISN factor, cable loss from the measured reading.

The sample calculation is as follows:

$$\begin{aligned} FS &= MR + LF + CL \\ MR &= \text{Meter Reading} \\ LF &= \text{LISN Factor} \\ CL &= \text{Cable Loss} \end{aligned}$$

If MR is 30 dB, LISN Factor 1dB, CL 1dB

The result (MR) is

$$30 + 1 + 1 = 32 \text{ dBuV}$$

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## 5. Description of E.U.T.

### Product Description

Manufactured By:	LPS Device Co.,Ltd.
Address:	Rm 606 6F, Joongang Induspia2 Apt. Factory 144-5, Sangdaewon-dong, Sungnam-si, Kyunggi-Do , KOREA
Model:	NEO-4005LS
Serial Number:	None

### Configuration of EUT

Description	Manufacturer	Model/Part #	Serial Number
LCD Panel	SamSung.	LTA400W2-L01	7Q5BOU012B
AD Board	LPS Device Co.,Ltd..	None	None
OSD Board	LPS Device Co.,Ltd.	None	None
Interface Board	LPS Device Co.,Ltd.	LC300W01-A3	LG0238
Tuner Board	LPS Device Co.,Ltd.	None	None
Remote Control	LPS Device Co.,Ltd.	None	None
I/O Board	LPS Device Co.,Ltd.	None	None
SMPS	CAMEL TECHNOLOGY CO.,LTD	CMP-40T	None
Extension Board	LPS Device Co.,Ltd.	EUCB-A	None

### EUT Used cables

Cable Type	Shield	Length (m)	Ferrite	Connector	Connection Point 1	Connection Point 2
POWER	Y	1.5	-	AC INLET	Main power source	EUT
VGA In	Y	1.5	Y	D-sub	EUT	PC
DVI	Y	1.5	Y	D-sub	EUT	-
Audio In	Y	1.2	-	Jack	EUT	PC
Antenna	-	-	-	NTSC	EUT Ant	75Ω terminated
H.P Out	-	2.0	-	Jack	EUT	Headset
SCART	Y	2.0	-	D-sub	EUT	-

### Operating conditions

The operating mode/system were as follows in details:

Operating : After Connected from personal comput to E.U.T by RGB cable(D-sub 15 pin).  
And then use to "H" pattern program for data transmission and continuously 'H' pattern displayed on the LCD Monitor. And 75 Ω terminated in end point of TV tuner antenna terminal. And TV tuner mode.

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## 7. TEST RESULTS

### 7.1 Conducted emission

Measurement procedure

#### Mains

The measurements were performed in a shielded room. EUT was placed on a non-metallic table height of 0.4 m above the reference ground plane. They were folded back and forth forming a bundle 30 Cm to 40 Cm long and were hanged at a 40 Cm height to the ground plane.

Each EUT power lead, except ground (safety) lead, were individually connected through a LISN to input power source.

Both lines of power cord, hot and neutral, were measured.

#### Used equipment

Equipment	Model no.	Serial no.	Makers	Next cal date	Used
Test receiver	ESPI3	100109	R&S	2006.03.10	
L.I.S.N.	ESH2-Z5	100044	R&S	2006.05.02	
	ESH3-Z5	100147	R&S	2005.08.16	

#### Measurement uncertainty

Conducted Emission measurement :  $\pm$  2.4dB (K=2)

#### Test Data

##### <Class B>

FREQ. (MHz)	LEVEL(dB $\mu$ V)		LINE POL	Loss (dB)	LIMIT(dB $\mu$ V)		MARGIN(dB)	
	QP	AV			QP	AV	QP	AV
0.150	55.73	39.56	N	0.29	66.00	56.00	10.56	16.73
0.234	52.60	43.75	L	0.29	62.31	52.31	10.00	8.85
0.286	54.26	41.85	L	0.29	60.64	50.64	6.67	9.08
0.678	43.24	33.44	N	0.90	56.00	46.00	13.66	13.46
0.842	42.15	33.46	N	0.43	56.00	46.00	14.28	12.97
1.054	42.40	27.47	N	0.44	56.00	46.00	14.04	18.97
15.094	45.23	41.14	L	1.77	60.00	60.00	16.54	20.63

\* Level = test receiver reading value

\* Loss = LISN insertion Loss + Cable Loss

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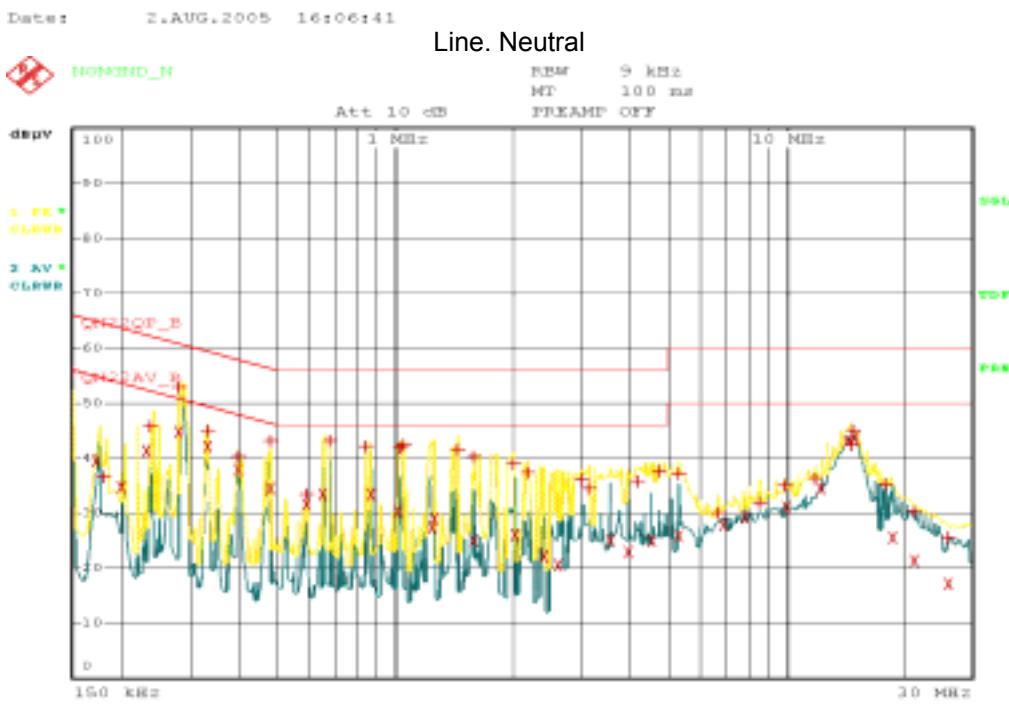
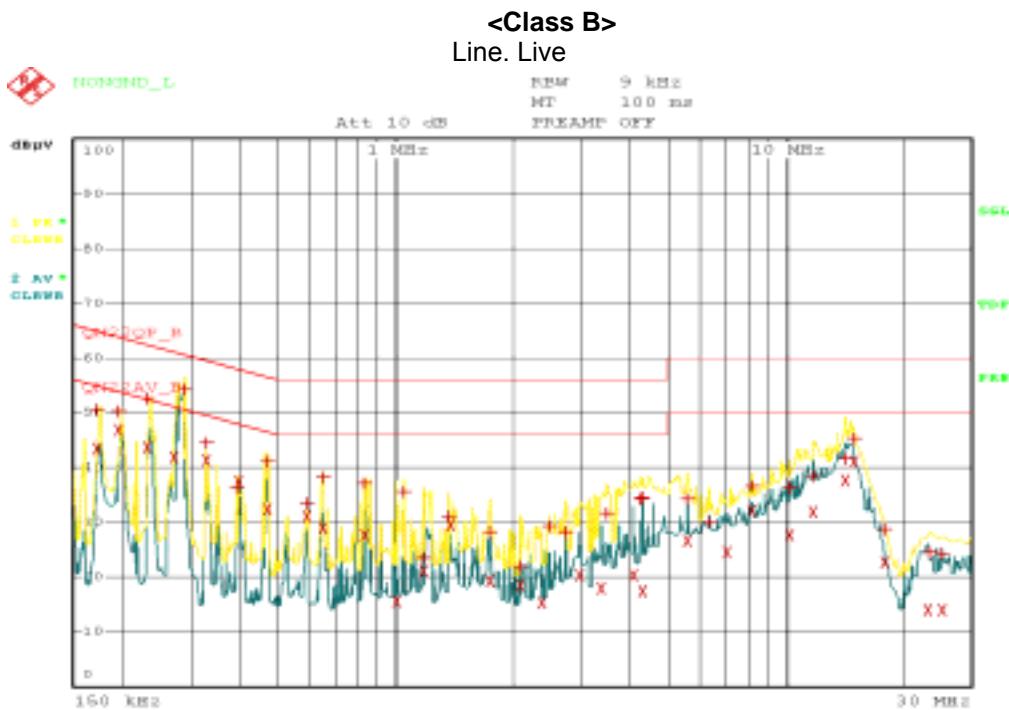
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## Conducted emission test graph



Date: 2 AUG 2005 16:09:23

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## 7.2 Radiated Emission

### Measurement procedure

A pretest was performed at 3 m distances in a semi-anechoic chamber for searching correct frequency. The final test was done at a 10 m open area test site with a quasi-peak detector. EUT was placed on a non-metallic table height of 0.8 m above the reference ground plane. Cables connected to EUT were fixed to cause maximum emission. Test was made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna was varied in height above the conducting ground plane to obtain the maximum signal strength.

### Used equipment

Equipment	Model no.	Serial no.	Makers	Next cal	USED
Test receiver	ESCS30	100111	R&S	2006.3.17	
Ultra broadband antenna	HL562	100075	R&S	2006.3.16	
Antenna Mast	AT14	none	Daeil EMC	-	
Turn Table	TT15	none	Daeil EMC	-	
10 m Open area site	None	none	KOSTEC Lab	-	
chamber(3 m)	none	none	FRANCONIA	-	

### Measurement uncertainty

Radiated Emission measurement : :

30-300 MHz +3.96 dB / -4.04 dB  
300-1000 MHz +3.04 dB / -3.00 dB

### Test Data

Freq (MHz)	Reading (dBuV/m)	P (H/V)	H (m)	A (.)	Antenna (dB)	Cable Loss (dB)	Result (dBuV/m)	Limit dBuV/m	Margin (dB)
78.50	18.86	V	1.70	90	8.00	3.24	30.10	40.0	9.90
159.95	18.37	V	1.70	90	7.56	4.47	30.40	43.5	13.10
214.26	17.00	H	2.90	45	7.84	4.96	29.80	43.5	13.70
236.26	24.20	H	2.80	180	8.94	5.16	38.30	46.0	7.70
258.26	22.16	H	2.90	240	9.72	6.02	37.90	46.0	8.10
399.89	17.33	H	2.40	90	13.48	7.39	38.20	46.0	7.80
630.02	10.79	H	2.10	240	17.40	9.41	37.60	46.0	8.40
708.77	14.04	H	2.00	270	18.48	10.08	42.60	46.0	3.40

Reading = Test receiver reading / P= antenna Polarization / H=antenna Height

A=turn table Angle / Antenna = antenna factor / Cable loss = used cable loss

Result = reading + antenna + loss / Margin = Limit - result

\* Receiving Antenna Mode: Horizontal, Vertical / \* Test site: 3m Open area site

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