

FCC EVALUATION REPORT FOR CERTIFICATION

KOREA Standard Technology

Test report No.: KST-FCC0432

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 : QY6L190SD
Product Name : LCD MONITOR
Model Number(s) : L190SD
Product Options : N/A
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 C63.4-2000.

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 : November 20, 2004.

Issued Date : November 24 , 2004

Tested by:



Chung, Suck-Jin

Approved by:



Lee, Weon-Woo

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Specifications.

1. Description of Device

- | | |
|-------------------------------|---|
| 1) Kind of equipment: | LCD MONITOR |
| 2) FCC ID: | QY6L190SD |
| 3) Model Name: | L190SD |
| 4) Serial No.: | RDKS0009SUD |
| 5) Type of Sample Tested: | Pre-production |
| 6) High Frequency Used: | 24.576 MHz
27.000 MHz |
| 7) Adapter | Model name: AM149B
Manufacturer: ACHME CORP.
Serial no: 0000234 |
| 8) Power Rating: | 1phase AC100-240 V, 50/60 Hz 1.2 A
Output: DC 12 V, 4.2 A, 50 W |
| 9) Tested Power supply: | 1phase AC120 V, 60 Hz |
| 10) Date of Manufacture: | October , 2004 |
| 11) Manufacture: | LPS Device Co., Ltd. |
| 12) Description of Operating: | Scroll All "H" Character
Resolution 1024*768
Vertical Frequency: 75Hz |
| 13) Dates of Test: | November 20, 2004 |
| 14) Place of Tests: | Korea Standard Technology EMC site |
| 15) Test Report No: | KST-FCC0432 |

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:

4F, 1503-2, Kwanyang-dong, Dongan-gu, Anyang-shi, Kyunggi-do, Korea

Telephone Number : 82-31-388-2051

Facsimile Number: 82-31-388-2052

Test Lab

:180-254, Annyung-Ri, Taeaeon-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: **KR0042**

FCC Filing Number. : **525762**

VCCI Membership Number : **2005**

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

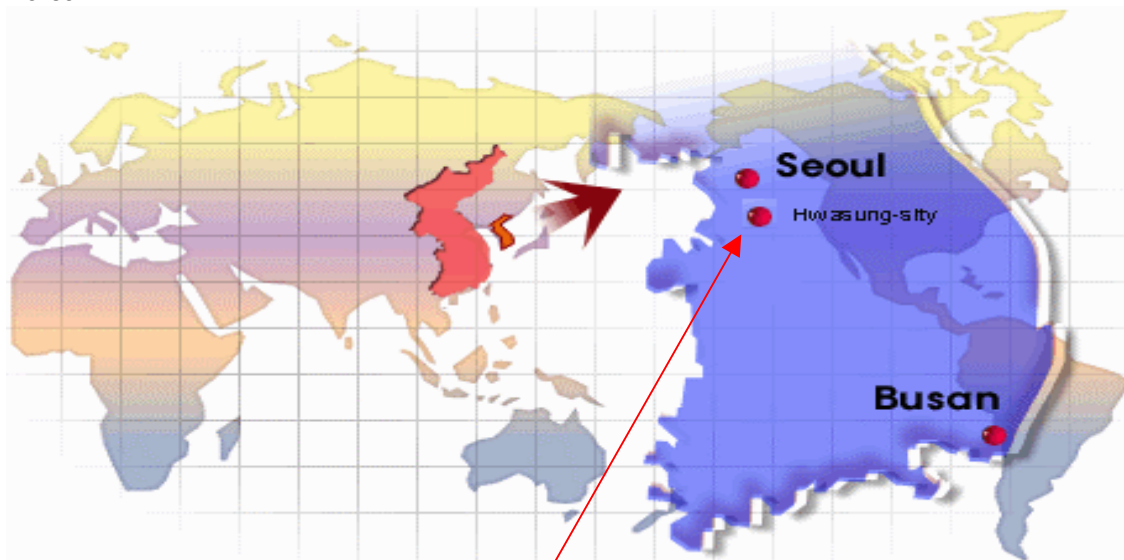
EMI TEST REPORT



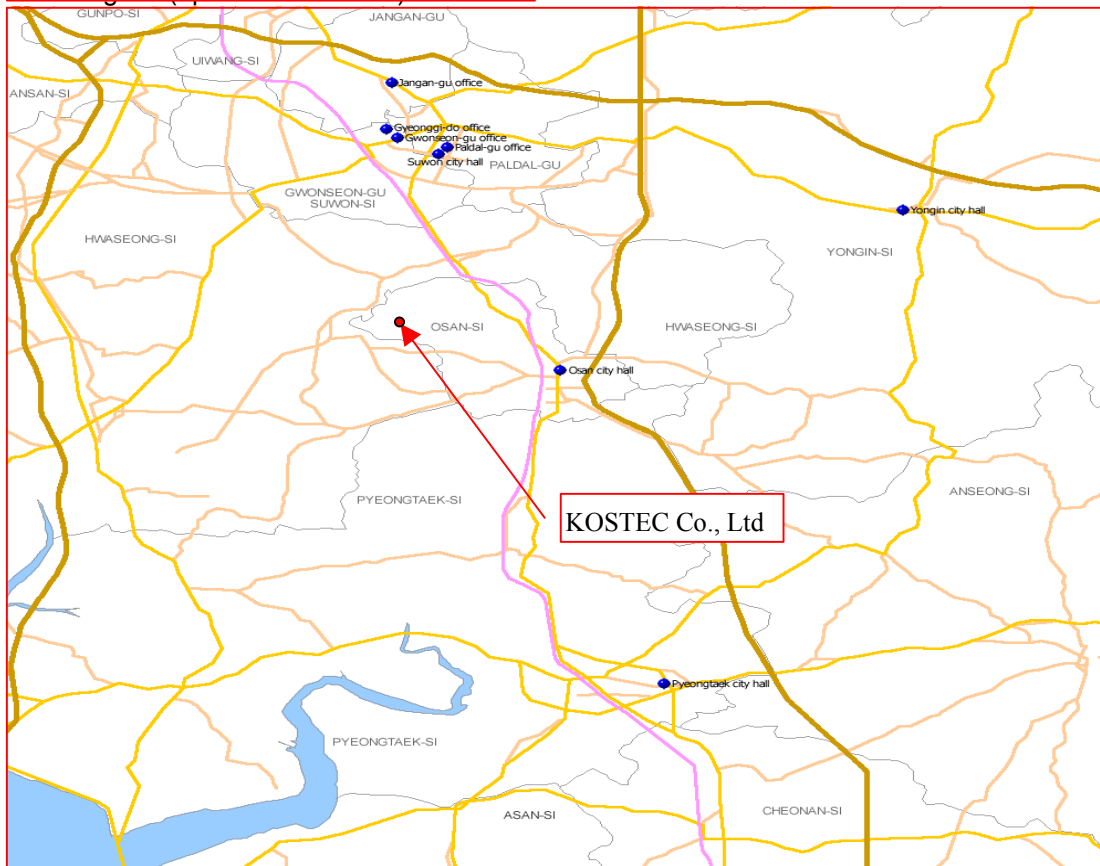
Report reference No: KST-FCC0432

3. MAP

Korea



Hwasung-shi (open area test site)



KOSTEC Co.,Ltd.
180-254,Anyung-Ri, Taeaeon-Yup, Hwasung-shi, Kyunggi-do, Koreo
Tel : +82-31-222-4251 Fax: +82-31-222-4252
<http://www.kostecclab.com>

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4. Test System Configuration

Operation Environment

Ambient	<u>Temperature</u> (° C)	<u>Humidity</u> (%)	<u>Pressure</u> (hPa)
10 m Open Area site	17	49	1012
Shielded room:	16	49	1011

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, site 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:

$$FS = MR + LF + CL$$

MR = Meter Reading

LF = LISN Factor

CL = Cable Loss

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

The result (MR) is

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

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:	L190SD
Serial Number:	RDKS0009SUD

Configuration of EUT

Description	Manufacturer	Model / Part #	Serial Number
LCD Panel	SAMSUNG	LTM190EI-L03	6V4J20916I
Main Board	LPS Device Co., Ltd.	-	-
Inverter	D&D Co.,Ltd	194BBRO	DI1924NN
OSD Borad	LPS Device Co., Ltd	19inch SW	-
Ac/dc adapter	ACHME CORP.	AM149B	0000234

EUT Used cables

Cable Type	Shield	Length (m)	Ferrite	Connector	Connection Point 1	Connection Point 2
POWER	Yes	1.5	Y	DC INLET	Ac/dc adapter	Main power source
VGA In	Yes	1.5	Y	D-sub	EUT	Personal computer
DVI	Yes	1.5	Y	D-sub	EUT	-
Audio Out	Yes	2.0	-	Jack	EUT	Headset
Audio In	Yes	1.5	-	Jack	EUT	Personal computer
RCA	Yes	1.2	-	RCA	EUT	-
S-Video	Yes	1.5	Y	Din	EUT	-

Operating conditions

The operating mode/system were as follows in details:

Operating: After connected from personal computer to E.U.T by RGB cable(D-sub 15 pin). And connected from headset to E.U.T by audio out port. And connected from to personal computer to E.U.T by audio in port. And then use to media player pogram for continuously data transmission and continuously 'H' pattern displayed on the LCD Monitor

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	2005.3.15	●
L.I.S.N.	ESH2-Z5	100044	R&S	2005.4.23	●
	ESH2-Z5	100147	R&S	2005.4.23	●

Measurement uncertainty

Conducted Emission measurement : ± 2.4 (K=2)

Test data

FREQ. (MHz)	LEVEL(dB μ V)		LINE Pol	Loss (dB)	LIMIT(dB μ V)		MARGIN(dB)	
	QP	AV			QP	AV	QP	AV
0.154	34.47	20.02	N	0.29	65.78	55.78	31.60	36.05
0.202	39.54	38.13	N	0.29	63.53	63.53	24.28	25.69
0.266	31.48	29.40	L	0.29	61.24	51.24	30.05	22.13
0.534	25.16	21.99	L	0.90	56.00	46.00	31.74	24.91
0.930	24.02	20.23	L	0.43	56.00	46.00	32.41	26.20
9.766	36.37	30.89	N	1.28	60.00	50.00	24.91	20.39
10.446	38.58	33.60	N	1.33	60.00	50.00	22.75	17.73
12.550	33.60	22.12	N	1.52	60.00	50.00	27.92	29.40

* Level = test receiver reading value

* Loss = LISN insertion Loss + Cable Loss

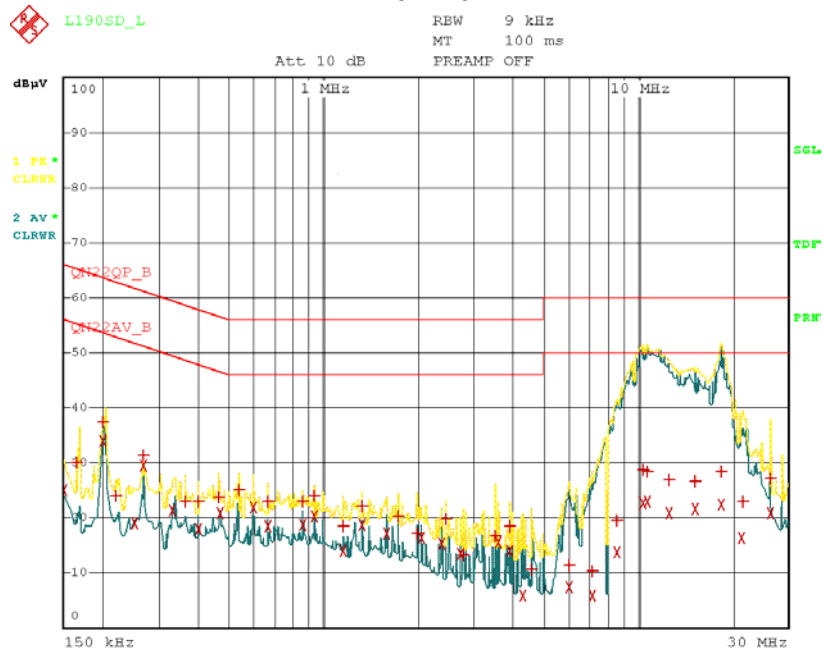
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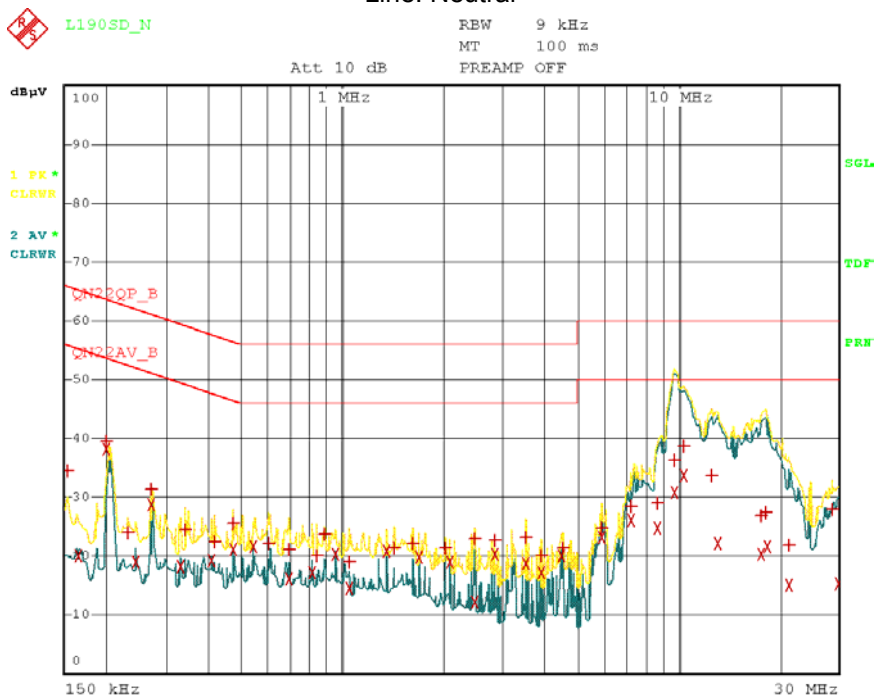
Conducted emission test graph

Line. Live



Date: 20.NOV.2004 17:10:58

Line. Neutral



Date: 20.NOV.2004 17:07:08

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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 date
Test receiver	ESCS30	100111	R&S	2005.3.17
Ultra broadband antenna	HL562	100075	R&S	2005.3.16
Matching network	RAM	358.5414.02	R&S	-
Antenna Mast	AT14	none	Daeil EMC	-
Turn Table	TT15	none	Daeil EMC	-
10m 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)
78.13	19.10	H	3.90	45	8.00	3.24	24.60	40.0	15.40
147.46	20.93	V	1.60	90	7.60	4.17	32.70	43.5	10.80
189.00	21.49	V	1.50	270	7.22	4.69	33.40	43.5	10.10
196.61	16.74	V	1.60	90	7.22	4.94	28.90	43.5	14.60
291.69	12.57	V	1.60	90	10.72	6.41	29.70	46.0	16.30
563.29	8.48	H	2.20	270	16.46	9.16	34.10	46.0	11.90
589.85	9.83	H	2.00	45	16.89	9.27	35.99	46.0	10.01
683.08	10.31	H	1.50	120	18.16	9.83	38.30	46.0	7.70

Reading = Test receiver reading / P= antenna Polarization / H=antenna H
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: 3 m Open area site