Certification of Compliance

CFR 47 Part 15 Subpart B

Test Report File No.	: 05-IST-0088 Date of Issue : Jan. 21, 2005
Model(s)	: DPA-5034LDS
Kind of Product	: Plasma Display Panel
Applicant	: Daewoo Electronics Corp.
Address	: 543, Dangjung-Dong, Kunpo-City, Gyunggi-Do, Korea
Manufacturer	: Daewoo Electronics Corp.
Address	: 543, Dangjung-Dong, Kunpo-City, Gyunggi-Do, Korea

Test Result

Positive

Negative

Reviewed By

-J. Co-

S. J. Cho / EMC Group Manager

Approved By

Grow 14. Cae

J. H. Lee / Chief

Investigations requested : Measurement to the relevant clauses of F.C.C rules and regulations Part 15 Subpart B (Unintentional Radiators, Class B) - Class B PC Peripherals
The test report with appendix consists of 17 pages.
The test result only responds to the tested sample.

-It is not allowed to copy this report even partly without the allowance of IST EMC Laboratory.

-This equipment as for has been shown to be capable of continued compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4 2003.



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TEST REGULATIONS

The tests were performed according to the following regulations ; FCC Part 15, Subpart B (Unintentional Radiators, Class B)

INFORMATIONS OF TEST LABORATORY

EMC LABORATORY of IST Co., Ltd. *(FCC Filing Lab.)* San 21-8, Goan-Ri, Baekam-Myun, Yongin-City Kyonggi-Do, 449-860, Korea TEL : +82 31 333 4093 FAX : +82 31 333 4094

ENVIRONMENTAL CONDITIONS

Temperature	21	°C	
Humidity	43	00	
Atmospheric pressure	101	4	mbar

MEASUREMENT UNCERTAINTY

The measurement uncertainty was evaluated for all test items listed in this report. Also it, " The evaluation and treatment of uncertainty ", is described in IST Quality Manual according to ISO17025 Guide. The data and results described in this report are true and include evaluated uncertainty. It may cause some deviation of uncertainty by change component or process of the test for similar products.

POWER SUPPLY SYSTEM USED

Power supply system	AC 120Vac, 60Hz
	(Refer to the product information)

PRODUCT INFORMATION

Diagonal :	50″	
screen Aspect Ratio :	16:9	
Display Resolution :	1024(H) X 768(V) dots	
Pixel Pitch :	0.810(H) X 0.810(V) mm	
Video Signal :	NTSC, PAL, SECAM, PAL-M/N	I, NTSC4.43
Dimension :	1222(W) X 738(H) X 93.8(E) mm
	41.10(W) x 24.84(H) X 3.5	0(D) inch
Weight :	42.25kg	
Power Requirement :	AC 100-240V, 50/60Hz, 260	W
Input/Output Terminal	VIDEO	AUDIO
DVI INPUT	DVI-D Jack	(Left/Right)
PC INPUT	15 pin D-sub Jack	(Left/Right)
Component Input :	DTV/DVD only	2Sets(Left/Right)
Video Input :	RCA and S-Video Jack2sets each	2Sets(Left/Right)
	Standard: NTSC-M	
	Receiving Channel:	
TV	VHF:CH02~13(55.25MHz~211.25MHz)	
	UHF:CH14~69(471.25MHz~801.25MHz	
	CATV:CH1(73.25MHz), 14~125(121.	
	Applied Tuner: TCMN3080DC29A(H)	
Video Output :	RCA jack	(Left/Right)
Audio Output :	Speaker Output(sold separately)	20W(two 10W)

- EMC suppression device is not used during the test.

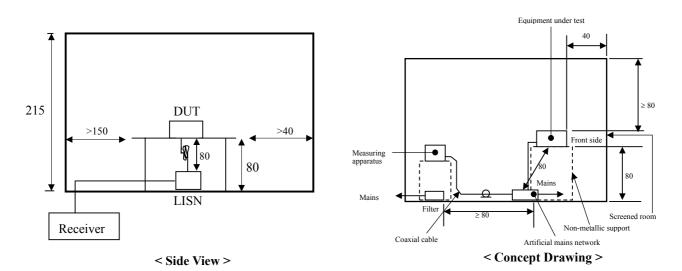
DESCRIPTIONS OF TEST

Conducted Emissions:

The measurement were performed over the frequency range of 0.15MHz to 30MHz using a $50\,\Omega/50$ uH LISN as the input transducer to a Spectrum Analyzer or a Field Intensity Meter. The measurements were made with the detector set for "Peak" amplitude within a bandwidth of 10KHz or for "quasi-peak" & "Average" within a bandwidth of 9KHz.

-Procedure of Test

The line-conducted facility is located inside a shielded room No.1. A lm X 1.5m wooden table 80cm height is placed 40cm away from the vertical wall and 1.5m away from the other wall of the shielded room. The R/S ESH3-Z5 and EMCO 3825/2 LISN are bonded to bottom of the shielded room. The EUT is located on the wooden table with distance more than 80cm from the LISN and powered from the EMCO LISN .The peripheral equipment is powered from the other LISN. Fower to the LISNs are filtered by a noise cut power line filters. All electrical cables are shielded by braided tinned steel tubing with inner ϕ 1.2cm. If the EUT is a DC-powered device, power will be derived from the SMCO LISN. All interconnecting cables more than 1m were shortened by non-inductive bundling to a 1m length. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating conditions. The RF output of the LISN was connected to the R/S receiver to determine the frequency producing the maximum emission from the EUT. The frequency producing the maximum level was reexamined using Quasi-Peak mode by manual measurement, after scanned by automatic Peak mode for frequency range from 0.15 to 30MHz. The bandwidth of the receiver was set to 10kHz. The EUT, peripheral equipment, and interconnecting cables were arranged and manipulated to maximize each EME emission.



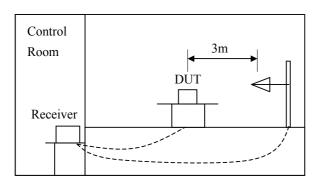
DESCRIPTION OF TEST

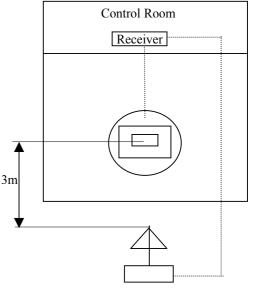
Radiated Emissions:

The measurement was performed over the frequency range of 30MHz to 1GHz using antenna as the input transducer to a Spectrum analyzer or a Field Intensity Meter. The measurement was made with the detector set for "quasi-peak" within a bandwidth of 120KHz.

-Procedure of Test

Preliminary measurements were made at 3 meter using bi-conical and log-periodic antennas, and spectrum analyzer to determine the frequency producing the max. emission in anechoic chamber. Appropriate precaution was taken to ensure that all emission from the EUT were maximized and investigated. The system configuration, mode of operation, turn-table azimuth and height with respect to the antenna were noted for each frequency found. The spectrum was scanned from 30MHz to 300MHz using S/B bi-conical antenna and 300 to 1000MHz using S/B log-periodic antenna. Above 1GHz, linearly polarized double ridge horn antennas were used. Final measurements were made at open site with 3-meters test distance using S/B bi-log antenna or horn antenna. The OATS have been verified in regular for its normalized site attenuation. The test equipment was placed on a wooden table. Sufficient time for the EUT, peripheral equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. Each frequency found during pre-scan measurements was re-examined by manual. The detector function was set to CISPR quasi-peak mode and the bandwidth of the receiver was set to 120kHz or 1MHz depending on the frequency of type of signal. The EUT, peripheral equipment and interconnecting cables were re-configured to the set-up producing the max. emission for the frequency and were placed on top of a 0.8-meter high nonmetallic 1 x 1.5 meter table. The EUT, peripheral equipment, and interconnecting cables were re-arranged and manipulated to maximize each emission. The turntable containing the system was rotated; the antenna height was varied 1 to 4 meters and stopped at the azimuth or height producing the maximum emission. Each emission was maximized by: varying the mode of operation to the EUT and/or peripheral equipment and changing the polarity of the antenna, whichever determined the worst-case emission.





Equipment Under Test

EUT Type :

■ Table-Top. □ Floor-Standing.

□ Table-Top and Floor-Standing(Combination).

Operation - mode of the E.U.T. :

The equipment under test was operated during the measurement under following conditions :

 Standby Mode
 Operational Condition : 1024x768, 60Hz 800x600, 60Hz 640x480, 60Hz

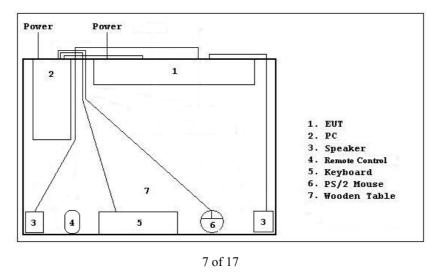
The test results of followings are the representative of worst case emissions for the available resolution can be adjusted

Configuration of the equipment under test :

Following peripheral devices and interface cables were connected during the measurement :

Equipment	Туре	Brand	Serial No.
PC	Vectra VL420 MT	HP	SG23101784
Keyboard	SK-2502C	HP	M020321066
PS/2 Mouse	M-S48A	HP	LZE10251257
Serial Mouse	M-M28	Logitech	LCA53305547
Connecting Inter	face Cables		
-Unshielded AC	power cable : 1.8 m		
-Shielded moni	tor's signal cable (w	ith two ferrite co	re) : 1.5m
-Unshielded S-	Video Cable : 1.5m		
-Unshielded RC	A Cable : 1.5m		
-Unshielded RF	Cable : 1.25m		
-Unshielded Au	dio Cable(with one fe	rrite core) : 1.5m	

The drawing of general test setup :



ist Co., Ltd EMC LABORATORY TEST REPORT NO.: 05-IST-0088 SUMMARY Emissions Conducted Emission (🔵) MET () Not MET The requirements are 0.209 MHz 5.2 dB Minimum limit margin Maximum limit exceeding Remarks : Limits are kept with more than 3dB margin With Neutral phase Find the test data in following pages 8 to 17 Radiated Emission () MET () NOT MET The requirements are 6.2 dB 54.2 MHz Minimum limit margin Maximum limit exceeding Remarks : Limits are kept with more than 3dB margin Operational Condition : 800 x 600, 60Hz Mode Find the test data in following pages 8 to 17 Test Date Begin of Testing : Jan. 10, 2005 End of Testing : Jan. 18, 2005 Prepared By Note : - means the test is applicable, - 🗌 is not applicable. S.J.Oh / EMC Senior Engineer

TEST CONDITIONS AND DATA

Conducted Emissions

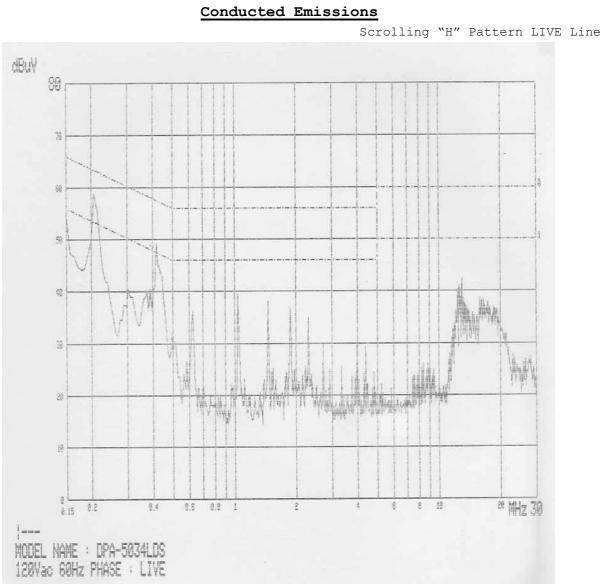
[Applicable]

♦ Test Equipment Used

Model Name	Description	Manufacture	Calibration Date	Serial Number
ESH 3	Test Receiver	Rohde & Schwarz	Jul. 13, 2004	892108/018
3725/2	LISN	EMCO	Jul. 15, 2004	9101-2068
KNW-407	LISN	Hyup-Rip	Jul. 15, 2004	8-883-10
ESH 3-Z2	Pulse Limiter	Rohde & Schwarz	Jul. 13, 2004	357.8810.52

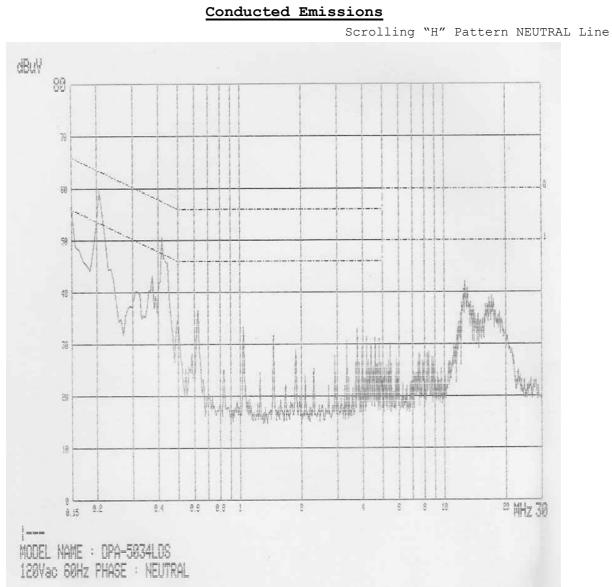
♦ Test Accessories Used

Туре	Manufacturer			
Aneroid Barometer	Sato			
Hygrometer	Sato	=		
Test Program	Scrolling "H" Patt	erns on the	windows	
Test Date	Jan. 10, 2005			
Test Area	Shielded room No.	1		
te : The e	quipment used is cal	ibrated in .	regular for	every yea



Freq. [MHz]		rement 3µ∛]		mit 8µ∛]	Insertion Loss	Cable Loss	_	sult Bµ∛]		rgin 1B]
	Q-peak	Average	Q-peak	Average	[dB]	[dB #∛]	Q-peak	Average	Q-peak	Average
0.153	46.4	36.6	65.8	55.8	0.2	0.5	47.1	37.3	18.7	18.5
0.208	56.8	35.8	63.3	53.3	0.2	0.5	57.5	36.5	5.8	16.8
0.417	47.1	30.6	57.5	47.5	0.2	0.4	47.7	31.2	9.8	16.3
1.041	36.5	12.6	56.0	46.0	0.1	0.4	37.0	13.1	19.0	32.9
13.167	34.5	30.9	60.0	50.0	0.1	0.7	35.3	31.7	24.7	18.3

Note :



Freq. [MHz]		rement 8µ∛]		mit 3µV]	Insertion Loss	Cable Loss	_	sult 3µ∛]		rgin 1B]
	Q-peak	Average	Q-peak	Average	[dB]	[dв ∦]	Q-peak	Average	Q-peak	Average
0.209	57.4	37.0	63.2	53.2	0.1	0.5	58.0	37.6	5.2	15.6
0.416	47.7	30.7	57.5	47.5	0.1	0.4	48.2	31.2	9.3	16.3
0.624	33.5	12.9	56.0	46.0	0.1	0.4	34.0	13.4	22.0	32.6
12.656	40.3	33.3	60.0	50.0	0.2	0.7	41.2	34.2	18.8	15.8

Note :

TEST CONDITIONS AND DATA

Radiated Emission

[Applicable]

♦ Test Equipment Used

Name	Туре	Manufacturer	Calibration. Date	Serial Number
ESVP	Test Receiver	Rohde & Schwarz	Aug. 17, 2004	861744/004
VULB 9160	Antenna	Schwarzbeck	Jul. 19, 2004	3048

♦ Test Accessories Used

Туре	Manufacturer
Aneroid Barometer	Sato
Hygrometer	Sato
,	

◆ Test Program Scrolling "H" Patterns on the windows

♦ Test Date Jan. 14, 2005

◆ Test Area Open site No.2

Note : The equipment used is calibrated in regular for every year.

Radiated Emissions

Mode	Freq. [MHz]	Reading [dBuV]	Antenna Factor [dB/m]	Cable Loss [dB]	Polar. [H/V]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]
1024x768, 60Hz	45.5	19.5	11.6	1.3	V	32.4	40.0	7.6
	54.3	19.2	11.3	1.6	V	32.1	40.0	7.9
	63.6	12.3	10.8	1.7	V	24.8	40.0	15.2
	117.0	17.3	11.0	2.5	V	30.8	43.5	12.7
	187.3	20.0	10.1	3.2	V	33.3	43.5	10.2
	287.7	16.0	12.1	4.2	V	32.3	46.0	13.7
800x600, 60Hz	54.2	20.9	11.3	1.6	V	33.8	40.0	6.2
	66.8	12.7	10.1	1.8	V	24.6	40.0	15.4
	77.7	20.3	8.0	1.9	Н	30.2	40.0	9.8
	117.8	18.9	11.1	2.5	V	32.5	43.5	11.0
	193.3	24.2	9.6	3.3	V	37.1	43.5	6.4
	287.7	14.3	12.1	4.2	V	30.6	46.0	15.4
640x480, 60Hz	53.8	20.3	11.3	1.6	V	33.2	40.0	6.8
0402480, 00112	66.4	11.5	10.1	1.8	V	23.4	40.0	16.6
	77.7	20.3	8.0	1.9	V V	30.2	40.0	9.8
	126.1	18.5	11.8	2.7	V V	33.0	40.0	9.8 10.5
	229.1	20.6	10.1	3.6	V H	34.3	45.5	10.5
	287.7	12.5	12.1	4.2	п V	28.8	46.0	17.2
	201.1	12.0	14.1	7.4	v	20.0	40.0	11.4

Appendix A. The EUT Photos



Front View



Rear View

14 of 17

Appendix A. The EUT Photos

DVENOO	MODEL DPA-5034LDS
RISK OF ELECTRIC SHOCK	WARNING:SHOCK HAZARD-DO NOT OPEN AVERTISSEMENT: RISQUE DE ÉLECTRIQUE- NE PAS OUVRIR.
FOLLOWING TWO CONDITIONS: (1)THI	5 OF THE FCC RULES. OPERATION IS SUBJECT TO THE S DEVICE MAY NOT CAUSE HARMFUL INTERFERENCE, INTERFERENCE RECEIVED, INCLUDING INTERFERENCE DN.
FCC ID: C5FDPA5034LDS	MADE IN KOREA
POWER 120V CONT 440W	
POWER 120V~ 60Hz 440W SERIAL NO.	Audio/Video Appartus
Schine Ho.	CULUS E242687 USTED
MANUFACTURED: JAN 2005	
	DAEWOO ELECTRONICS Corp. 686 AHYEON-DONG, MAPO-GU, SEOUL, KOREA

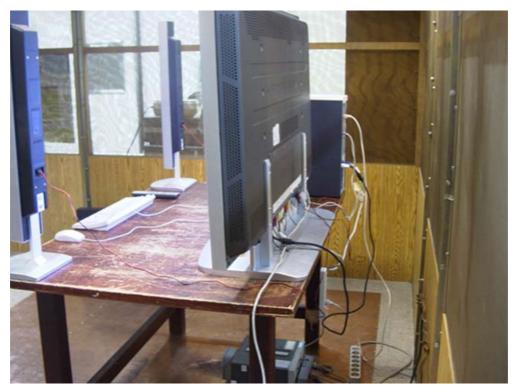
Label



Speaker

Appendix B. The Test Setup Photos

Conducted Emissions - Front View



Conducted Emissions - Rear View

Appendix B. The Test Setup Photos



Radiated Emissions - Front View



Radiated Emissions - Rear View