

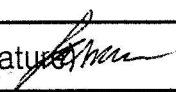
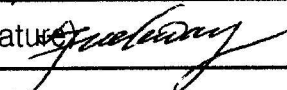


ESTECH Co., Ltd.
3rd Fl., Chungdam Bldg.,
119-1 Chungdam-dong,
Kangnamgu, Seoul



**Electromagnetic
Interference
Test Report**

Compliance Test Report for FCC

Report Number		ESTF150204-002			
Applicant	Company name	LG Electronics USA			
	Address	6133 N River Rd Suite 1100 Rosemont, IL60018US			
	Telephone	847-692-4630			
Product	Product name	60" Plasma Monitor			
	Model No.	MU-60PZ12V	Manufacturer	LG Electronics Inc.	
	Serial No.	204KT00001	Country of origin	KOREA	
Test date	2002-04-22 ~ 2002-04-22		Date of issue	2002-04-25	
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea				
Standard	FCC PART 15 2001 , ANSI C 63.4 2001				
Test item	☒ Conducted Emission	☐ Class A	☒ Class B	Test result	OK
	☒ Radiated Emission	☐ Class A	☒ Class B	Test result	OK
Measurement facility registration number		94696			
Tested by	Senior Engineer J.M. Yang		(Signature) 		
Reviewed by	Director T.K. Lee		(Signature) 		
Abbreviation	OK, Pass = Passed, Fail = Failed, N/A = not applicable				
* Note - This test report is not permitted to copy partly without our permission - This test result is dependent on only equipment to be used - This test result based on a single evaluation of one sample of the above mentioned					

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Product	Product name	60" Plasma Monitor			
	Model No.	MU-60PZ12V	Manufacturer	LG Electronics Inc.	
	Serial No.	204KT00001	Country of origin	KOREA	
Test date	4/22/2002 ~ 4/22/2002		Date of issue	4/25/2002	
Testing location	ESTECH. Co., Ltd. 97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea				
Standard	FCC PART 15 2001 , ANSI C 63.4 2001				
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Contents

1. Laboratory Information	3
2. Description of EUT	4
3. Test Standards	5
4. Measurement condition	6
5. Measurement of radiated emission	8
5.1 Measurement equipment	8
5.2 Environmental conditions	8
5.3 Test data	9
6. Measurement of conducted emission	10
6.1 Measurement equipment	10
6.2 Environmental conditions	10
6.3 Test data	11
7. Photographs of test setup	12
8. Photographs of EUT	14

Appendix 1. Spectral diagram

Appendix 2. Photographs of EUT in side PCB

Appendix 3. Block diagram of EUT

Appendix 4. Circuit Diagram

1. Laboratory Information

1.1 General

This EUT (Equipment Under Test) has been shown to be capable of compliance with the applicable technical standards and is tested in accordance with the measurement procedures as indicated in this report. ESTECH Lab attests to accuracy of test data. All measurement reported herein were performed by ESTECH Co., Ltd. ESTECH Lab assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

1.2 Test Lab.

Corporation Name : ESTECH Co. Ltd

Head Office : 3 rd Fl., Chungdam Bldg., 119-1 Chungdam-dong Kangnam-gu , S
(Safety & Telecom. Test Lab)

EMC Test Lab : 58-1 Osan-Ri, GaNam-Myon, YeoJoo-Gun, KyungKi-Do, Korea
97-1 Hoiuk-Ri Majang-Myon, Icheon-city, KyungKi-Do, Korea

Branch Office : USA-ESTECH INC.
21801 Stevens Creek Blvd. Suite 2A Cupertino, CA95014

1.3 Official Qualification(s)

MIC : Granted Accreditation from Ministry of Information & Communication
and Telecommunication

KOLAS : Accredited Lab By Korea Laboratory Accreditation Schema base on CI
requirements

FCC : Filed Laboratory at Federal Communications Commission

VCCI : Granted Accreditation from Voluntary Control Council for Interference

2. Description of EUT

2.1 Summary of Equipment Under Test

Product : 60" Plasma Monitor

Model Number : MU-60PZ12V

Serial Number : 204KT00001

Manufacturer : LG Electronics Inc.

Country of origin : KOREA

Rating : 120V, 60Hz

Receipt Date : 22-Apr-02

2.2 General descriptions of EUT

* This Product is used Monitor, VCR, Cable TV , DVD , DTV, PC

* Specification of this product is the following

- Width : 1455mm, Height : 883 mm
- Depth 99mm, Weight : 70 Kg
- Resolution : 1280 * 720 (Dot)
- Color : 16,770,000 (256 steps of each R, G and B)

* This equipment has been tested and found to comply with the limits for

3. Test Standards

Test Standard : FCC PART 15 (2001)

This Standard sets out the regulations under which an intentional, unintentional, or incidental radiator may be operated without an individual license. It also contains the technical specifications, administrative requirements and other conditions relating to the marketing of Part 15 devices.

Test Method : ANSI C 63.4 (2001)

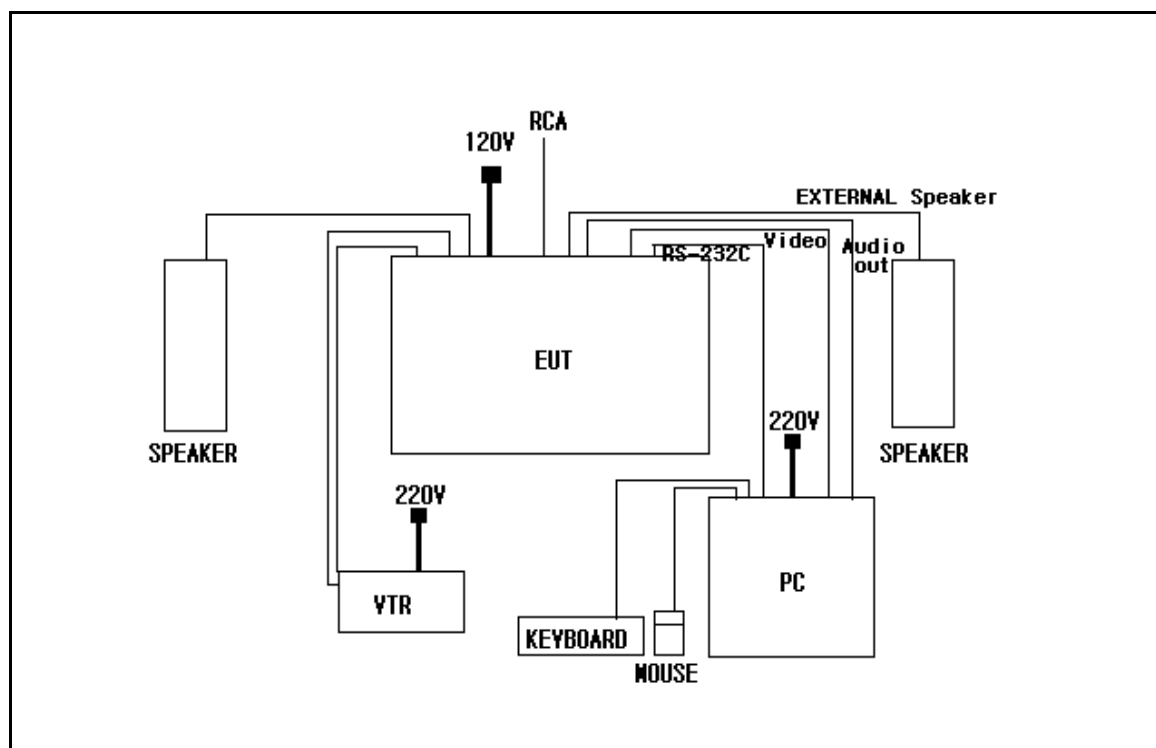
This standard sets forth uniform methods of measurement of radio-frequency (RF) signals and noise emitted from both unintentional and intentional emitters of RF energy in the frequency range 9 kHz to 40 GHz. Methods for the measurement of radiated and AC power-line conducted radio noise are covered and may be applied to any such equipment unless otherwise specified by individual equipment requirements. These methods cover measurement of certain devices that deliberately radiate energy, such as intentional emitters, but does not cover licensed transmitters. This standard is not intended for certification/approval of avionic equipment or for industrial, scientific, and medical (ISM) equipment. These methods apply to the measurement of individual units or systems comprised of multiple units.

4. Measurement Condition

4.1 EUT Operation.

- * The EUT was in the following operation mode during all testing
- * The operational conditions of the EUT was determined by the manufacturer according to
the typical use of the EUT with respect to the expected highest level of emission
- * Using the self test program, and "H" Character Read/Write.

4.2 Configuration and Peripherals



4.3 EUT and Support equipment

Equipment Name	Model Name	S/N	Manufacturer	Remark (FCC ID)
60" Plasma Monitor	MU-60PZ12V	204KT00001	Electronics In	EUT
PC	M6030	ERA00236	Samsung	-
KEYBOARD	SEM-DT35	18661447	Electronics Co., Samsung	-
MOUSE	M-S48a	HCA11804896	ElectroMechanics	-
VTR	LV-M320	NONE	Logitech	-
SPEAKER	NONE	NONE	Electronics In	-
			NONE	-

4.4 Cable Connecting

Start Equipment		End Equipment		Cable Standard		Remark
Name	I/O port	Name	I/O port	Length	Shielded	
60" Plasma Monitor	Video	PC	Video	3	Y	
60" Plasma Monitor	RS-232C	PC	Serial	2	Y	
60" Plasma Monitor	AV INPUT	VTR	Video out	2	Y	
60" Plasma Monitor	AV INPUT	VTR	Audio out	2	Y	
60" Plasma Monitor	SPEAKER	SPEAKER	-	3	N	
60" Plasma Monitor	AUDIO IN	PC	Audio out	2	N	
60" Plasma Monitor	COMPONENT	-	-	2	Y	
PC	PS/2 Keyboard	Keyboard	PS/2 Keyboard	2	N	
PC	PS/2 Mouse	Mouse	PS/2 Mouse	2	N	

5. Measurement of radiated disturbance

Above 30 MHz Electric Field strength was measured in accordance with FCC Part 15 (2001) & ANSI C 63.4 (2001). The test setup was made according to FCC Part 15 (2001) & ANSI C 63.4 (2001) on an open test site, which allows a 3m distance measurement. The EUT was placed in the center of wooden turntable. The height of this table was 0.8m. The measurement was conducted with both horizontal and vertical antenna polarization. The turntable has fully rotated. For further description of the configuration refer to the picture of the test set-up.

5.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
Receiver	ESPC	Rohde & Schwarz	838248/001	2003. 1. 31
LogBicon Antenna	VULB 9160	S/B	3107	2002.5.9
Turn Table	2087	EMCO	2129	-
Antenna Mast	2070-01	EMCO	9702-203	-
Amplifier	310N	Sonoma Instrument	185817	2002.9.27
ANT Mast Controller	2090	EMCO	1535	-
Turn Table Controller	2090	EMCO	1535	-

5.2 Environmental Condition

Test Place : Open site (3m)
 Temperature (°C) : 28 °C
 Humidity (%) : 38 %

5.3 Test data

Measurement Distance : 3 m

Frequency (MHz)	Reading (dBμ)	Position (V/H)	Height (m)	Correction Factor		Result Value		
				Ant Factor (dB)	Cable (dB)	Limit (dBμ/m)	Result (dBμ/m)	Margin (dBμ/m)
35.82	11.60	H	4.0	11.72	1.1	40.0	24.44	-15.56
38.78	11.00	H	4.0	11.90	1.2	40.0	24.08	-15.92
136.28	8.50	H	1.8	12.36	2.5	43.5	23.32	-20.18
166.52	14.00	V	1.0	12.79	2.7	43.5	29.52	-13.98
501.26	18.50	V	1.0	17.36	5.3	46.0	41.17	-4.83
572.8	14.00	H	1.4	18.83	5.8	46.0	38.66	-7.34
610.91	14.50	H	1.0	19.58	5.8	46.0	39.89	-6.11
627.08	10.50	V	1.0	19.71	6.0	46.0	36.18	-9.82
944.63	10.50	H	1.4	23.92	7.8	46.0	42.22	-3.78
946.33	9.50	H	1.3	23.93	7.8	46.0	41.23	-4.77
Remark	H : Horizontal, V : Vertical							

6. Measurement of conducted disturbance

The continuous disturbance voltage of AC Mains in the frequency from 0.45 to 30 MHz was measured in accordance to FCC Part 15 (2001) & ANSI C 63.4 (2001). The test setup was made according to FCC Part 15 (2001) & ANSI C 63.4 (2001) in a shielded. The EUT was placed on a non-conductive table at least 80 above the ground plan. A grounded vertical reference plane was positioned in a distance of 40cm from the EUT. The distance from the EUT to other metal surfaces was at least 0.8m. The EUT was only earthen by its power cord through the line impedance stabilizing network. The power cord has been bundled to a length of 1.0m.. The test receiver with Quasi Peak detector complies with CISPR 16

6.1 Measurement equipments

Equipment Name	Type	Manufacturer	Serial No.	Next Calibration date
LISN	ESHS-Z5	Rohde & Schwarz	838979/010	2003. 2. 1
LISN	NNLA81020A	Schwarzbeck	8120161	2003. 2. 1
TEST Receive	ESPC	Rohde & Schwarz	838248/001	2003. 1. 31

6.2 Environmental Condition

Test Place : Shield Room
 Temperature (° : 23 °C
 Humidity (%) : 38 %

6.3 Test data

Frequency (MHz)	Reading (dBμ)	Line (H/N)	Correction Factor		Limit (dBμ)	Result (dBμ)	Margin (dBμ)
			Lisn (dB)	Cable (dB)			
0.714	41.65	H	0.09	0.2	48.00	41.94	-6.06
0.767	41.92	H	0.09	0.2	48.00	42.21	-5.79
0.851	41.93	H	0.09	0.2	48.00	42.22	-5.78
0.879	41.84	H	0.09	0.2	48.00	42.13	-5.87
0.929	42.49	H	0.10	0.2	48.00	42.79	-5.21
0.937	42.03	H	0.10	0.2	48.00	42.33	-5.67
1.873	33.89	N	0.11	0.3	48.00	34.28	-13.72
2.998	29.17	N	0.14	0.3	48.00	29.61	-18.39
4.123	27.93	H	0.20	0.3	48.00	28.43	-19.57
10.309	41.96	N	0.38	0.6	48.00	42.95	-5.05
10.813	33.92	H	0.49	0.6	48.00	35.04	-12.96
10.987	36.80	N	0.41	0.6	48.00	37.85	-10.15
Remark	H : Hot Line, N : Neutral Line						

FREQ	AF	CL
30.0	11.51	1.10
35.0	11.67	1.10
40.0	11.98	1.20
45.0	12.02	1.30
50.0	11.84	1.30
55.0	11.67	1.50
60.0	11.95	1.50
65.0	11.61	1.60
70.0	10.26	1.60
75.0	9.14	1.70
80.0	8.04	1.70
85.0	7.95	1.80
90.0	8.57	2.00
100.0	9.51	2.00
110.0	10.34	2.10
120.0	11.30	2.20
130.0	11.90	2.40
140.0	12.63	2.50
150.0	13.17	2.60
160.0	13.15	2.60
170.0	12.60	2.80
180.0	11.71	2.90
190.0	10.45	3.00
200.0	9.80	2.90
210.0	10.04	3.20
220.0	10.29	3.20
230.0	10.80	3.30
240.0	11.35	3.40
250.0	11.61	3.50
260.0	11.87	3.60
270.0	12.24	3.70
280.0	12.63	3.70
290.0	12.85	3.80
300.0	13.07	3.80
320.0	13.59	4.00
340.0	14.08	4.30
360.0	14.43	4.30
380.0	14.98	4.60
400.0	15.45	4.70
420.0	15.87	4.80
440.0	16.41	5.00
460.0	16.74	5.10
480.0	17.15	5.10
500.0	17.34	5.30

520.0	17.65	5.50
540.0	18.02	5.50
560.0	18.52	5.70
580.0	19.00	5.90
600.0	19.55	5.70
620.0	19.60	5.90
640.0	19.90	6.10
660.0	20.09	6.20
680.0	20.31	6.30
700.0	20.61	6.20
720.0	21.00	6.50
740.0	21.65	6.70
760.0	21.90	6.60
780.0	21.99	6.90
800.0	22.29	6.70
820.0	22.35	7.10
840.0	22.57	7.20
860.0	22.62	7.30
880.0	22.70	7.40
900.0	23.16	7.20
920.0	23.36	7.60
940.0	23.89	7.80
960.0	24.03	7.80
980.0	24.04	7.80
1000.0	24.06	7.80

FREQ1	ANT	CABLE
1000.0	24.06	7.80
980.0	24.04	7.80
960.0	24.03	7.80
940.0	23.89	7.80
920.0	23.36	7.60
900.0	23.16	7.20
880.0	22.70	7.40
860.0	22.62	7.30
840.0	22.57	7.20
820.0	22.35	7.10
800.0	22.29	6.70
780.0	21.99	6.90
760.0	21.90	6.60
740.0	21.65	6.70
720.0	21.00	6.50
700.0	20.61	6.20
680.0	20.31	6.30
660.0	20.09	6.20

640.0	19.90	6.10
620.0	19.60	5.90
600.0	19.55	5.70
580.0	19.00	5.90
560.0	18.52	5.70
540.0	18.02	5.50
520.0	17.65	5.50
500.0	17.34	5.30
480.0	17.15	5.10
460.0	16.74	5.10
440.0	16.41	5.00
420.0	15.87	4.80
400.0	15.45	4.70
380.0	14.98	4.60
360.0	14.43	4.30
340.0	14.08	4.30
320.0	13.59	4.00
300.0	13.07	3.80
290.0	12.85	3.80
280.0	12.63	3.70
270.0	12.24	3.70
260.0	11.87	3.60
250.0	11.61	3.50
240.0	11.35	3.40
230.0	10.80	3.30
220.0	10.29	3.20
210.0	10.04	3.20
200.0	9.80	2.90
190.0	10.45	3.00
180.0	11.71	2.90
170.0	12.60	2.80
160.0	13.15	2.60
150.0	13.17	2.60
140.0	12.63	2.50
130.0	11.90	2.40
120.0	11.30	2.20
110.0	10.34	2.10
100.0	9.51	2.00
90.0	8.57	2.00
85.0	7.95	1.80
80.0	8.04	1.70
75.0	9.14	1.70
70.0	10.26	1.60
65.0	11.61	1.60
60.0	11.95	1.50

55.0	11.67	1.50
50.0	11.84	1.30
45.0	12.02	1.30
40.0	11.98	1.20
35.0	11.67	1.10
30.0	11.51	1.10

FREQ	CL	H-LISN	N-LISN
0.15	0.0	0.07	0.07
0.30	0.1	0.07	0.07
0.50	0.2	0.08	0.07
0.80	0.2	0.09	0.09
1.00	0.2	0.10	0.09
2.00	0.3	0.12	0.11
5.00	0.3	0.23	0.20
7.00	0.4	0.34	0.28
10.00	0.6	0.44	0.36
15.00	0.8	0.75	0.61
20.00	0.8	0.92	0.70
25.00	0.9	1.01	0.82
30.00	0.9	0.87	0.70

FREQ	CL	H-LISN	H-LISN
30.00	0.9	0.87	0.70
25.00	0.9	1.01	0.82
20.00	0.8	0.92	0.70
15.00	0.8	0.75	0.61
10.00	0.6	0.44	0.36
7.00	0.4	0.34	0.28
5.00	0.3	0.23	0.20
2.00	0.3	0.12	0.11
1.00	0.2	0.10	0.09
0.80	0.2	0.09	0.09
0.50	0.2	0.08	0.07
0.30	0.1	0.07	0.07
0.15	0.0	0.07	0.07

PRODUCT	MODEL	SERIAL	COMPANY
□□□□□□	M6030	ERA00236	□□□□(□)
□ □ □	PE1041	NONE	MITSUBISHI
□ □ □	D8897	CN11104168	Hewlett Packard
□ □ □	C6414J	TH18M149P2	Hewlett Packard
□ □ □	7800	K19120116	□□□□□□□□
□ □ □	M-S48a	HCA11804896	Logitech
□ □ □	SP-F214	KKAN529272	□□□□(□)
□ □ □	SP-F201	305158	□□□□(□)
□ □ □	SDM4510UH	4M034915	Samsung Electro-Mechanics Ltd.
□ □ □	SP-F127	KKBKC09505	□□□□(□)
□ □ □	X03-69944	4533067-10000	Microsoft Corp.
□ □ □	SDM4600UH	4S013563	□□□□(□)