

FCC TEST REPORT

FCC ID. : SQAJM151713

Applicant : **JinLing Electrical Company Limited**
No.162 Jiang Cui Road, Jiang Hai District , Jiang Men City, Guang Dong
Province, China

Equipment Under Test (EUT) :

Product Name : LCD Monitor

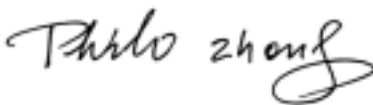
Model No. : LCDMXXXXX

Serial No. : XXXXX

Standards : FCC 15 SUBPART B

Date of Test : December 08, 2004

Test Engineer : Model Wu

Reviewed By : 

PERPARED BY:
Shenzhen Huatongwei International Inspection Co., Ltd
Keji S,12th,Road, Hi-tech Industrial Park, Shenzhen, Guangdong, China

FCC Registration Number: 662850

2 Test Summary

Test	Test Requirement	Test Method	Class / Severity	Result
Radiated Emission (30MHz to 1GHz)	FCC PART 15, SUBPART B: 2003	ANSI C63.4: 1992	Class B	PASS
Conducted Emission (150KHz to 30MHz)	FCC PART 15, SUBPART B: 2003	ANSI C63.4: 1992	Class B	PASS

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4 General Information

4.1 Client Information

Applicant: JinLing Electrical Company Limited
Address of Applicant: No.162 Jiang Cui Road, Jiang Hai District , Jiang Men City, Guang
Dong Province, China

4.2 General Description of E.U.T.

Product Name: LCD Monitor
Item No.: LCDMXXXXXX
Serial No.: XXXXX (Where X may be any alphanumeric character or blank or
dash)

4.3 Details of E.U.T.

Power Supply: 120VAC/60HZ

4.4 Description of Support Units

The EUT has been tested with a PC system. The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software, EMCTEST-H Program, contained on the hard drive, is auto starting on power-up. Once loaded, the program sequentially exercises each system component.

The customer requested FCC tests for a LCD Monitor.

The standard used was FCC PART 15, SUBPART B, CLASS B (2003)

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC – Registration No.: 662850**

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 662850, November 17, 2003.

4.6 Test Location

All Emissions tests were performed at:-Shenzhen Huatongwei International Inspection Co., Ltd. at Keji S,12th,Road, Hi-tech Industrial Park, Shenzhen, Guangdong, China.

4.7 Host System Configuration Details

Description	Manufacturer	Model No.	Serial No.	FCC ID
Printer	Epson	P310B	N/A	DOC
Modem	SAST	AEM-2100	0294	DOC
PC	DELL	D/MENSION 2305	GXRF81X	DOC
Mouse	DELL	TG2132	3C015892	DOC
Keyboard	DELL	SAW34	CZA3087461 3	DOC

4.8 External I/O Cabling List and Details

Cable Description	Length(m)	From/Port	To
Shielded Video Cable	1.2	VGA Port	Monitor
Shielded Printer Cable	1.8	Parallel/Host	Printer
Shielded Modem Cable	2.0	Host	Modem
Shielded KB Cable	1.6	Host	Keyboard
Shielded Cable	1.5	Mouse Port	Mouse

5 Equipment Used during Test

Conducted Emission Test						
Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Due date
1	EMI Test Receiver	Rohde&schwarz	ESCS30	100038	05-11-2004	04-11-2005
2	Artificial Mains	Rohde&schwarz	ESH2-Z5	100028	05-11-2004	04-11-2005
3	Pulse Limiter	Rohde&schwarz	ESHSZ2	100044	05-11-2004	04-11-2005
4	EMI Test Software	Rohde&schwarz	ESK1	N/A	N/A	N/A
Radiated Emission Test						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Due date
1	3m Semi- Anechoic Chamber	Frankonia	N/A	N/A	05-11-2004	04-11-2005
2	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100085	18-09-2004	17-09-2005
3	EMI Test Software	ROHDE & SCHWARZ	ES-K1	N/A	N/A	N/A
4	Bilog Type Antenna	Schaffner -Chase	CBL6143	5070	18-09-2004	17-09-2005
Common Used Equipment						
Item	Test Equipment	Manufacturer	Model No.	Series No.	Cal. Date	Due date
1	Temperature, Humidity & Barometer	OREGON SCIENTIFIC	BA-888	EMC0001 to EMC0004	25-07-2004	25-07-2005
2	DMM	FLUKE	73	70681569 or 70671122	23-07-2004	23-07-2005

5.1 Conduction Emissions, 0.15MHz to 30MHz

Test Requirement:	FCC Part15 B
Test Method:	ANSI C63.4: 1992
Test Date:	December 08, 2004
Frequency Range:	150kHz to 30MHz
Class/Severity:	Class B
Limit:	66-56 dB μ V/m between 0.15MHz & 0.5MHz 56 dB μ V/m between 0.5MHz & 5MHz 60 dB μ V/m between 5MHz & 30MHz
Detector:	Peak for pre-scan (9kHz Resolution Bandwidth) Quasi-Peak & Average if maximised peak within 6dB of Average Limit

5.1.1 E.U.T. Operation

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1012 mbar

EUT Operation :

Compliance test was performed test in on mode connected with PC with the load:a modem and a printer.

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

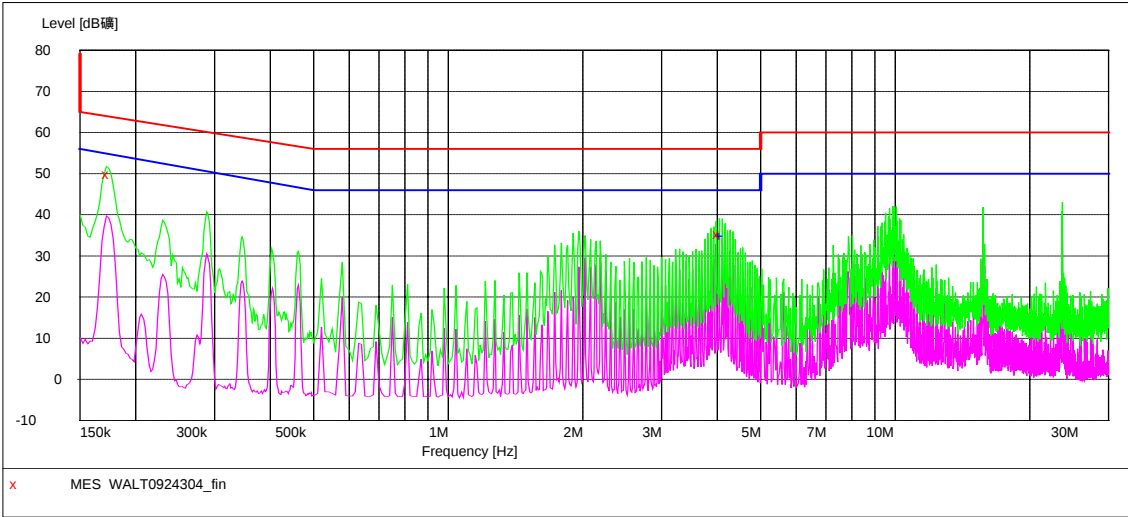
5.1.2 Measurement Data

An initial pre-scan was performed on the live and neutral lines.

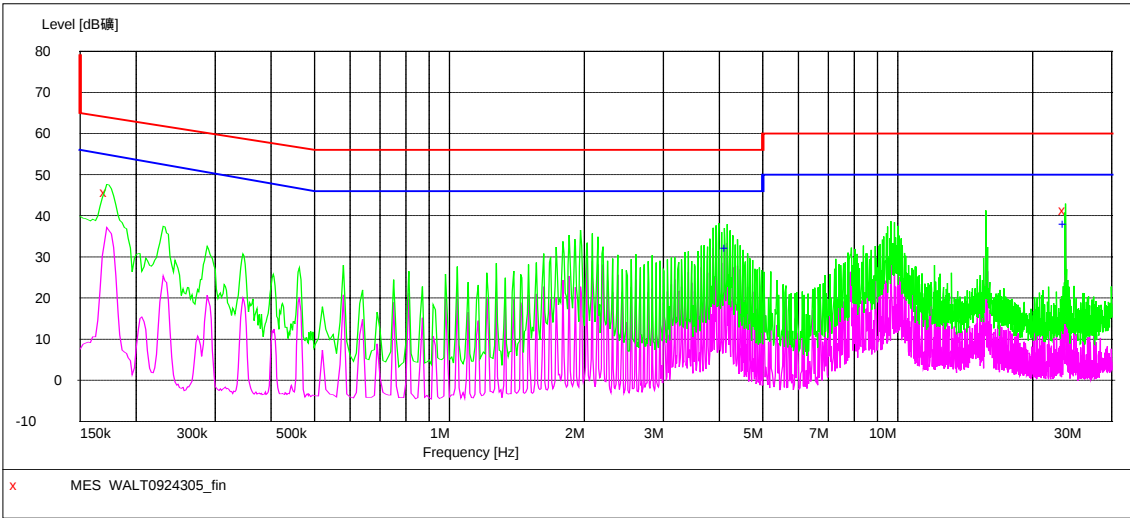
No futher quasi-peak or average measurements were performed since no peak emissions were detected within 10dB line below the average limit.

Please refer to the following peak scan graph for reference.

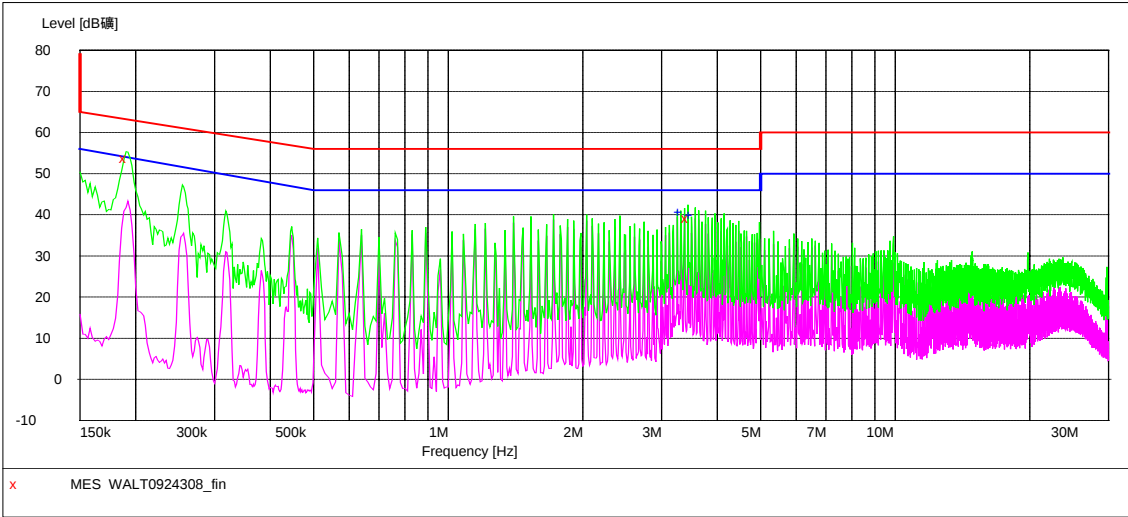
Live Line for 15” Monitor 1024*768 75Hz



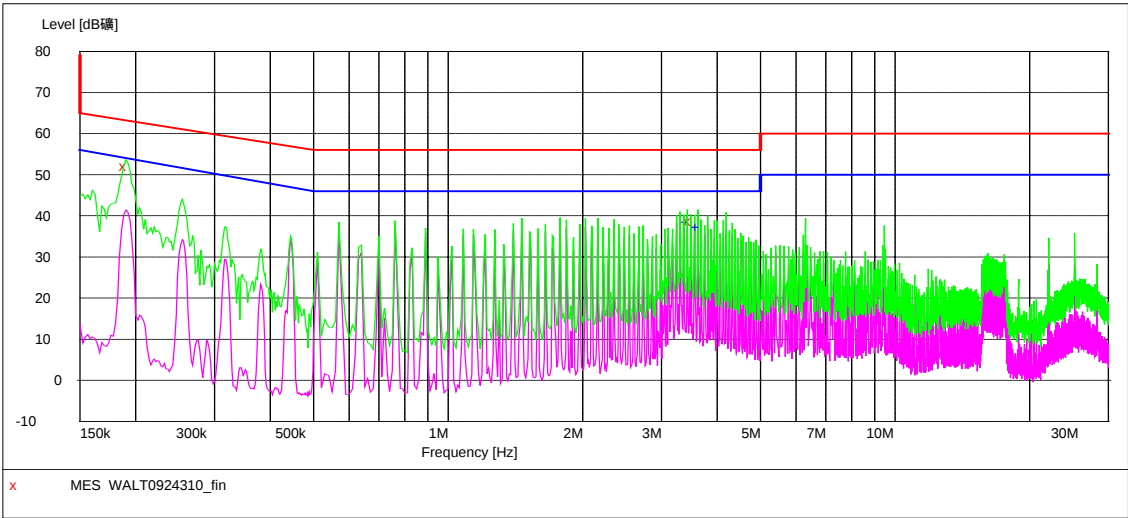
Neutral Line for 15” Monitor 1024*768 75Hz



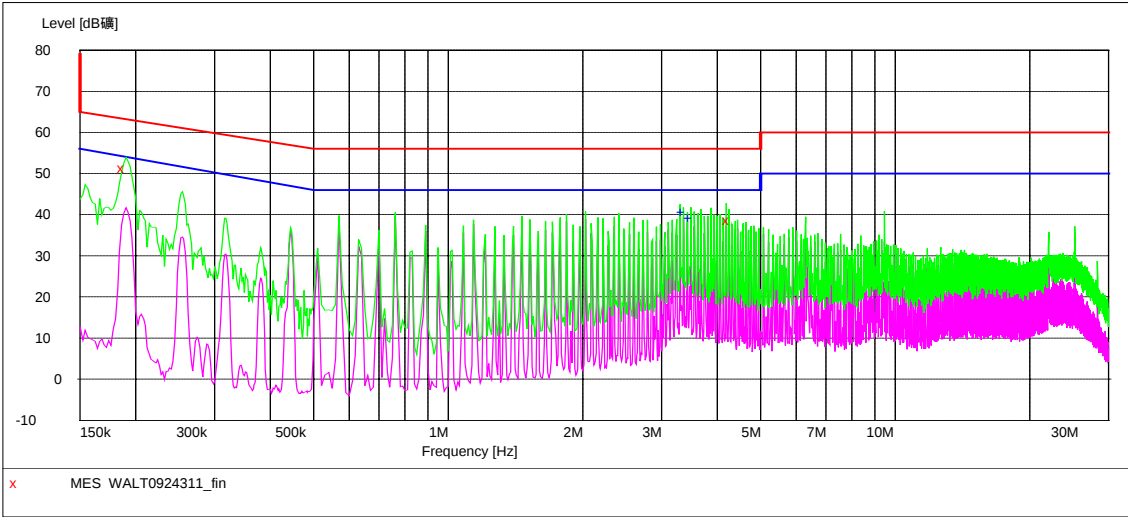
Live Line for 15” Monitor 800*600 75Hz



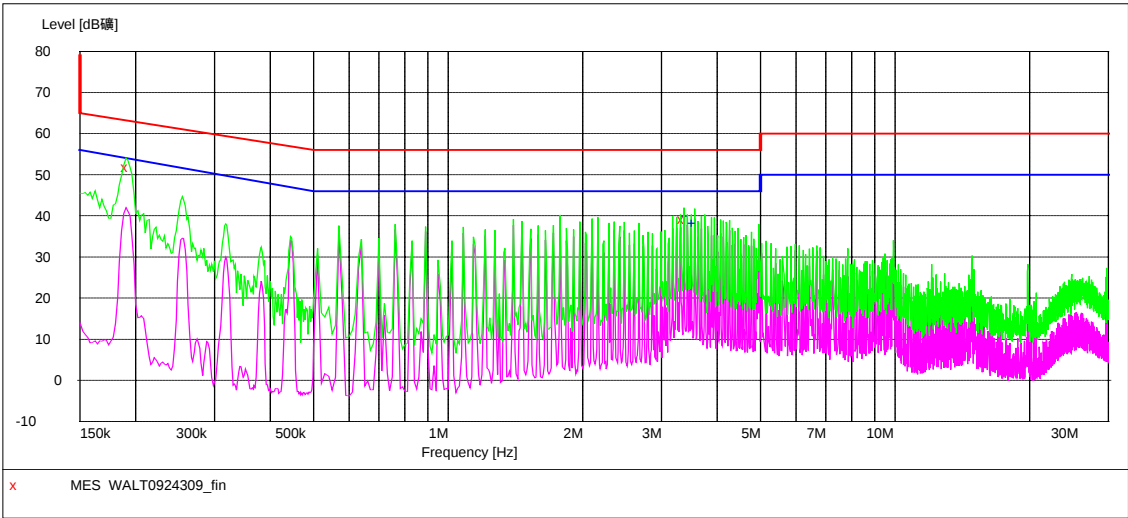
Neutral Line for 15” Monitor 800*600 75Hz



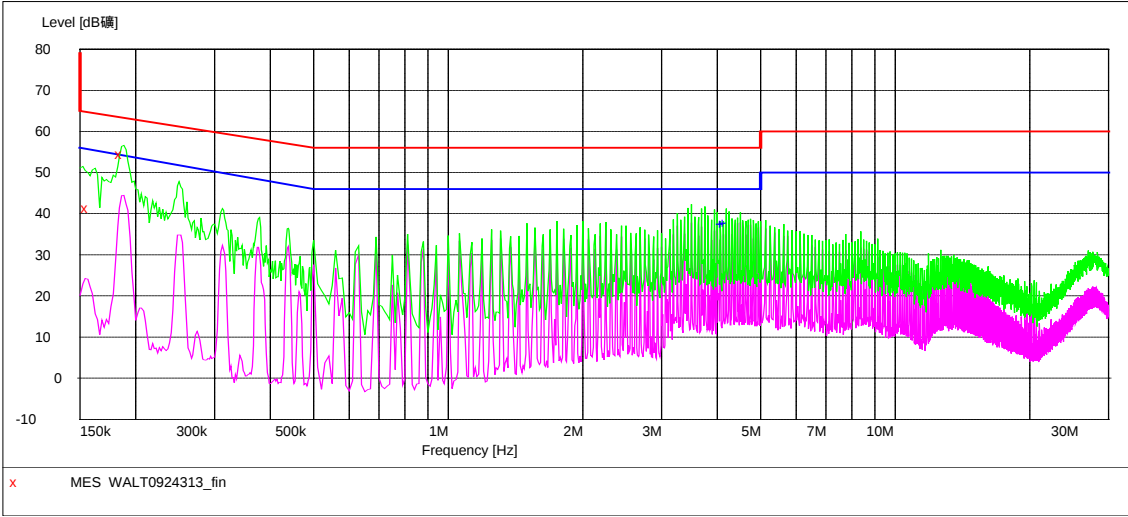
Live Line for 15” Monitor 640*480 60Hz



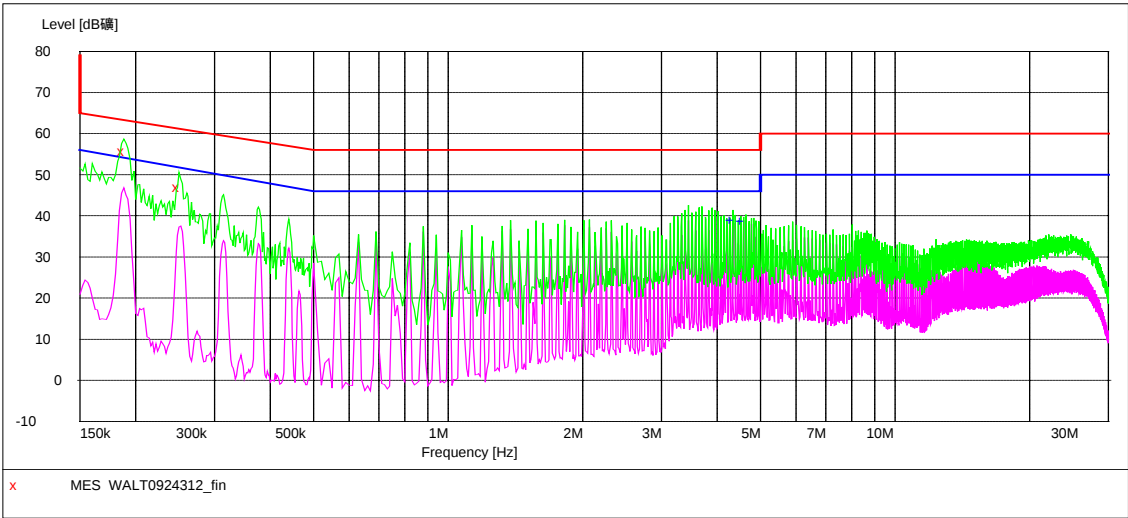
Neutral Line for 15” Monitor 640*480 60Hz



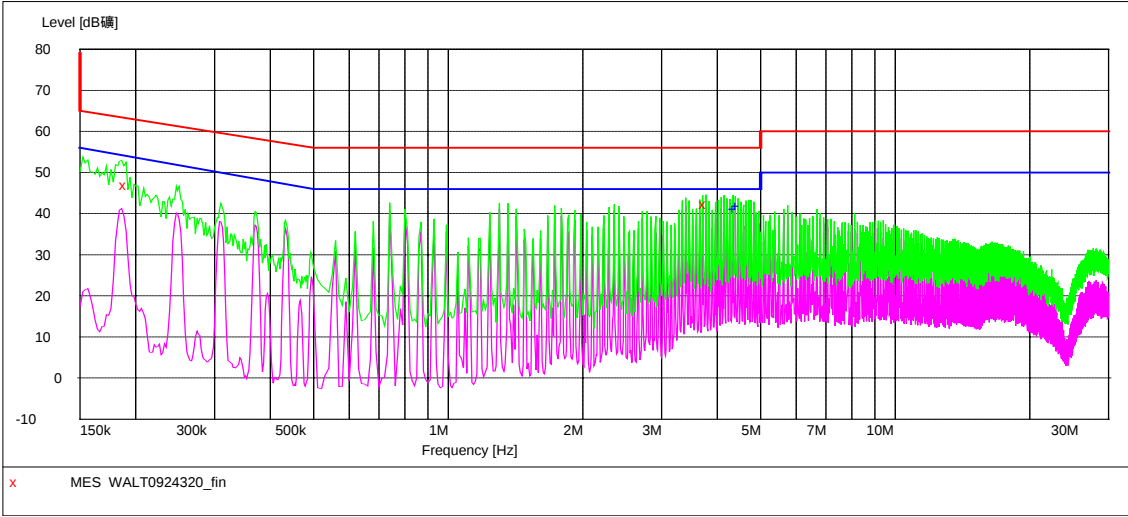
Live Line for 17” Monitor 1280*1024 75Hz



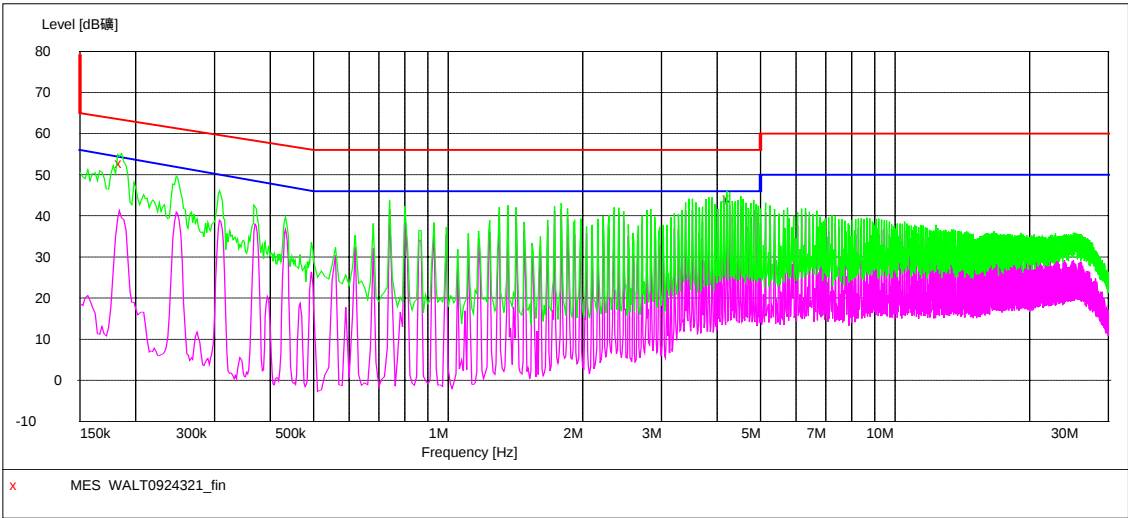
Neutral Line for 17” 1280*1024 75Hz



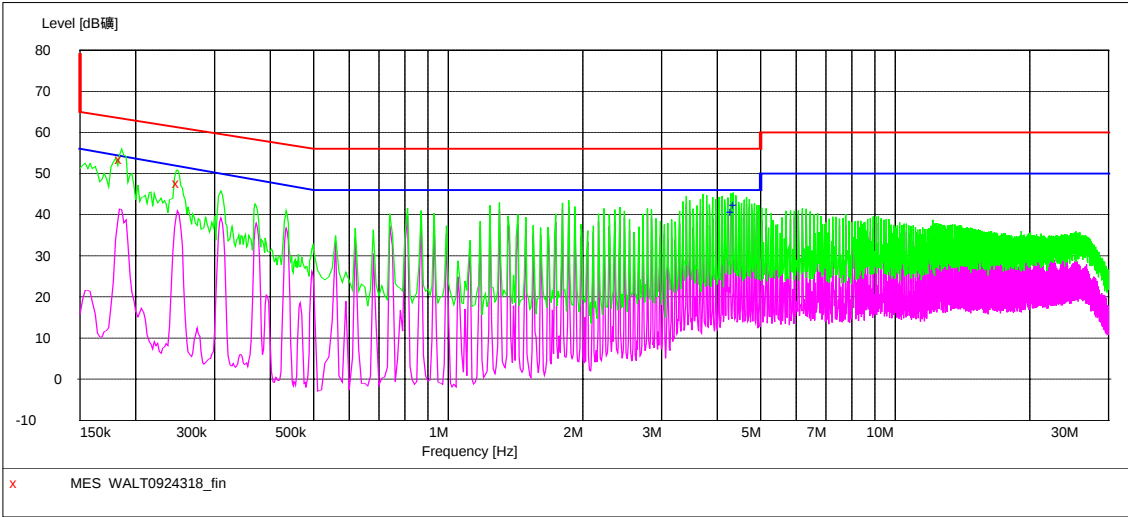
Live Line for 17” Monitor 1024*768 75Hz



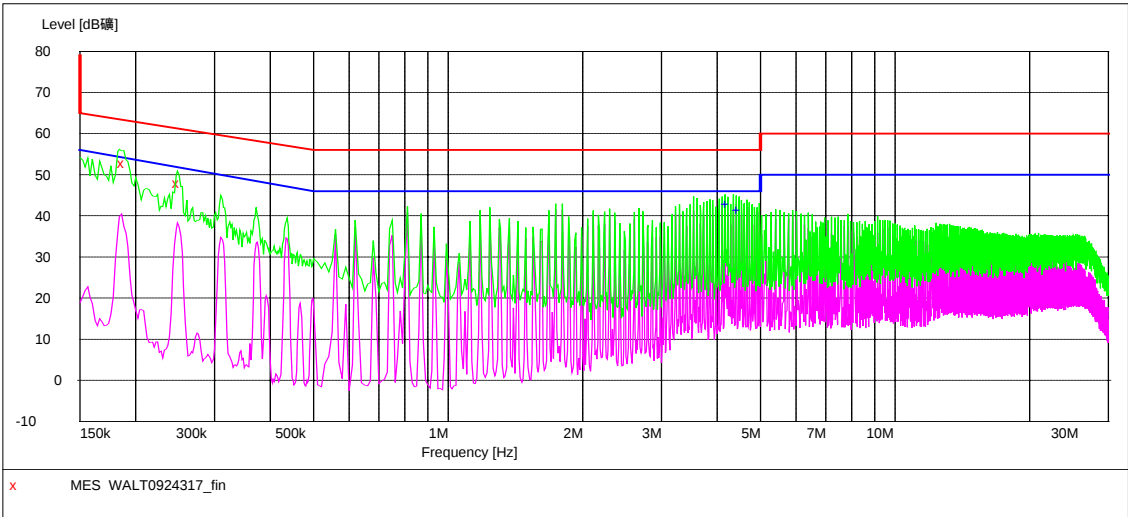
Neutral Line for 17” Monitor 1024*768 75Hz



Live Line for 17” Monitor 640*480 60Hz



Neutral Line for 17” Monitor 640*480 60Hz



5.1.3 Conducted Emissions Test Data For 17" Monitor

Freq. MHz	Line	QP Reading dBuV	Limit dBuV	Margin dB	AV Reading dBuV	Limit dBuV	Margin dB
1280*1024 75 Hz							
0.156	Live	41.4	65.0	23.6	22.1	55.0	32.9
0.186	Live	54.4	63.0	8.6	40.6	53.0	12.4
0.188	Neutral	55.8	63.0	7.2	41.2	53.0	11.8
0.25	Neutral	46.9	61.0	14.1	34.9	51.0	16.1
1024*768 75 Hz							
0.19	Live	46.8	63.0	16.2	39.3	53.0	13.7
3.77	Live	42.3	56.0	13.7	38.8	46.0	7.2
0.186	Neutral	52.7	63.0	10.3	39.8	53.0	13.2
4.26	Neutral	44.3	56.0	11.7	40.5	46.0	5.5
640*480 60 Hz							
0.18	Live	53.3	63.0	9.7	38.4	53.0	14.6
4.25	Live	38.7	56.0	17.3	33.6	46.0	12.4
0.19	Neutral	51.8	63.0	11.2	38.7	53.0	14.3
3.37	Neutral	39.3	56.0	16.7	38.4	46.0	7.6

5.1.4 Conducted Emissions Test Data Fof 15” Monitor

Freq. MHz	Line	QP Reading dBuV	Limit dBuV	Margin dB	AV Reading dBuV	Limit dBuV	Margin dB
1024*768 75 Hz							
0.174	Live	49.8	64.0	14.2	35.1	54.0	18.9
4.04	Live	35.3	56.0	20.7	34.7	46.0	11.3
0.172	Neutral	45.7	64.0	18.3	34.5	54.0	19.5
23.65	Neutral	41.3	60.0	18.7	37.9	50.0	31.3
800*600 75 Hz							
0.19	Live	53.7	63.0	9.3	41.3	53.0	11.7
3.44	Live	39.3	56.0	16.7	35.8	46.0	10.2
0.19	Neutral	52.1	63.0	10.9	38.8	53.0	14.2
3.49	Neutral	38.7	56.0	17.3	37.5	46.0	8.5
640*480 60 Hz							
0.19	Live	51.3	63.0	11.7	38.0	53.0	15.0
4.25	Live	38.7	56.0	17.3	33.6	46.0	12.4
0.19	Neutral	51.8	63.0	11.2	38.7	53.0	14.3
3.37	Neutral	39.3	56.0	16.7	38.4	46.0	7.6

5.2 Radiated Emissions, 30MHz to 1GHz

Test Requirement:	FCC Part15 B
Test Method:	ANSI C63.4: 1992
Test Date:	December 08, 2004
Frequency Range:	30MHz to 1GHz
Measurement Distance:	3m
Class:	Class B
Limit:	40.0 dB μ V/m between 30MHz & 88MHz 43.5 dB μ V/m between 88MHz & 216MHz 46.0 dB μ V/m between 216MHz & 960MHz 54.0 dB μ V/m zbove 960MHz
Detector:	Peak for pre-scan (120kHz resolution bandwidth) Quasi-Peak if maximised peak within 6dB of limit

5.2.1 E.U.T. Operation

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1012 mbar

EUT Operation :

Compliance test was performed in The EUT connected with PC and with the load: a modem and a printer.

5.2.2 EUT Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site, using the setup accordance with the ANSI C63.4, The specification used in this report was the FCC Part 15 Class B limits.

5.2.3 Spectrum Analyzer Setup

According to FCC Part 15 Class B Rules, the system was tested to 1000 MHz.

Start Frequency	30 MHz
Stop Frequency	1000 MHz
Sweep Speed	Auto
IF Bandwidth	1 MHz
Video Bandwidth	1 MHz
Quasi-Peak Adapter Bandwidth	120 kHz
Quasi-Peak Adapter Mode.....	Normal
Resolution Bandwidth	1MHz

5.2.4 Test procedure

For the radiated emissions test, since the EUT does have a power source, there was connection to AC outlets.

Maximizing procedure was performed on the six (6) highest emissions to ensure EUT is compliant with all installation combinations.

All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dBμV of specification limits), and are distinguished with a "Qp" in the data table.

The EUT was under normal mode during the final qualification test and the configuration was used to represent the worst case results.

5.2.5 Summary of Test Results

According to the data in section 5.2.6, the EUT complied with the FCC Part15 Class B standards,The test results:PASS.

5.2.6 Radiated Emissions Test Data For 17" Monitor

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)	Limit dBuV/m)	Margin (dB)	Antenna Height (m)	Turntable Angle (°)
1280*1024 75 Hz						
33.9641	Vertical	34.6	40.0	5.4	1.8	180
123.3054	Vertical	36.25	43.5	7.25	1.5	60
362.404	Vertical	43.49	46.0	2.51	2.0	45
123.3075	Horizontal	33.46	43.5	10.04	1.8	90
168.061	Horizontal	33.75	43.5	9.75	2.0	270
363.346	Horizontal	39.29	46.0	6.71	1.5	45
1024*768 75 Hz						
34.077	Vertical	33.7	40.0	6.3	1.5	90
168.518	Vertical	34.8	43.5	8.7	1.8	45
598.148	Vertical	40.5	46.0	5.5	1.0	45
168.785	Horizontal	31.7	43.5	11.8	2.0	270
181.632	Horizontal	32.6	43.5	10.9	1.5	45
598.862	Horizontal	39.8	46.0	6.2	1.0	180
640*480 60 Hz						
203.017	Vertical	35.1	43.5	8.4	1.8	90
519.859	Vertical	40.92	46.0	5.08	1.5	60
618.646	Vertical	44.46	46.0	1.54	2.0	180
154.488	Horizontal	32.65	43.5	10.85	1.8	45
518.061	Horizontal	43.96	46.0	2.04	2.0	270
661.764	Horizontal	38.73	46.0	7.27	1.5	45

5.2.7 Radiated Emissions Test Data For 15" Monitor

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)	Limit dBuV/m)	Margin (dB)	Antenna Height (m)	Turntable Angle (°)
1024*768 75 Hz						
33.8877	Vertical	34.6	40.0	5.4	1.8	180
168.0168	Vertical	35.04	43.5	8.46	1.5	90
362.553	Vertical	33.05	46.0	12.95	2.0	45
123.3075	Horizontal	33.46	43.5	10.04	1.8	270
168.061	Horizontal	33.75	43.5	9.75	2.0	270
363.346	Horizontal	39.29	46.0	6.71	1.5	90
800*600 75 Hz						
33.495	Vertical	32.1	40.0	7.9	1.5	45
168.408	Vertical	33.3	43.5	10.2	1.8	45
618.997	Vertical	41.7	46.0	4.3	1.0	75
33.785	Horizontal	31.7	40.0	8.3	2.0	270
168.232	Horizontal	34.3	43.5	9.2	1.5	45
619.252	Horizontal	40.9	46.0	5.1	1.0	90
640*480 60 Hz						
108.079	Vertical	34.1	43.5	9.4	1.8	180
168.859	Vertical	31.5	43.5	12.0	1.5	90
617.998	Vertical	42.53	46.0	3.47	2.0	180
108.485	Horizontal	31.45	43.5	12.05	1.8	45
168.861	Horizontal	33.95	43.5	9.55	2.0	180
661.764	Horizontal	39.88	46.0	6.12	1.5	75

5.3 Photographs - Test Setup

5.3.1 Mains Terminals Disturbance Voltage 150KHz To 30MHz for 15”



5.3.2 Mains Terminals Disturbance Voltage ,150KHz To 30MHz for 17”



5.3.3 Radiated Emissions, 30M-1000MHz for 15”



5.3.4 Radiated Emissions, 30M-1000MHz for 17”



6 FCC ID Label

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:(1)this device may not cause harmful interference,and (2) this device must accept any interference received, including interference that may cause undesired operation.

The Label must not be a stick-on paper. The Label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Proposed Label Location on EUT
EUT Top View/ proposed FCC Mark Location

