



EMC

TEST REPORT

REPORT NO. : F87030610A

MODEL NO. : 7650F

DATE OF TEST : July 29, 1998

PREPARED FOR : ACER PERIPHERALS, INC.

ADDRESS : 157, SHAN-YING ROAD, KWEISHAN,
TAOYUAN 333, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

12F, NO.1, SEC.4, NAN-KING EAST RD.,
TAIPEI, TAIWAN, R.O.C.

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**1. CERTIFICATION**

Issue Date: Aug. 3, 1998

Product : LCD MONITOR
Trade Name : ACER
Model No. : 7650F
Applicant : ACER PERIPHERALS, INC.
Standard : FCC Part 15, Subpart B, Class B
ANSI C63.4-1992
CISPR 22:1993+A1+A2

We hereby certify that one sample of the designation has been tested in our facility on July 29, 1998. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits of conducted of applicable standards.

TESTED BY: Leo Hong, DATE: 8/3/98
(Leo Hong)

CHECKED BY: Sharon Hsiung, DATE: 8/3/98
(Sharon Hsiung)

APPROVED BY: Mike Su, DATE: 8/3/98
(Mike Su)

ADVANCE DATA TECHNOLOGY CORPORATION**NVLAP[®]**

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	LCD MONITOR
Model No.	:	7650F
Power Supply Type	:	DC (from power adapter)
Power Cord	:	Nonshielded (AC) (1.8 m) Nonshielded (DC) (1.2 m)
Data Cable	:	Shielded (1.5m)

Note: The EUT is a 15" TTN LCD monitor with resolution up to 1024x768.

This report which is a supplementary report to report no.: F87030610 consists of the AC line conducted tests results from the computer powering the VGA card.

For more detailed features description, please refer to ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT and User's Manual.



2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No	Product	Brand	Model No.	FCC ID	I/O Cable
1	PERSONAL COMPUTER	NTI	PII-233	DoC approved	Nonshielded Power (1.8m)
2	MONITOR	ADI	PD-959	DoC approved	Shielded signal (1.5m) Nonshielded Power (1.8 m)
3	KEYBOARD	IBM	KB-8929	E8HKB-5923	Shielded signal (1.4m)
4	PRINTER	HP	C2145A	B94C2145X	Shielded Signal (1.2m) Nonshielded Power (2.4m)
5	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded signal (1.5 m)
6	MODEM	ACEEX	1414	IFAXDM1414	Shielded signal (1.2m) Nonshielded Power (2.4 m)

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site. Please refer to the photos of test configuration in Item 5.



3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESH3	893495/006	July 15, 1999
ROHDE & SCHWARZ Spectrum Monitor	EZM	893787/013	July 16, 1999
ROHDE & SCHWARZ Artificial Mains Network	ESH3-Z5	839135/006	July 14, 1999
EMCO-L.I.S.N.	3825/2	9204-1964	July 14, 1999
Shielded Room	Site 2	ADT-C02	N/A

Note: 1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months.
And the calibrations are traceable to NML/ROC and NIST/USA.



3.2 LIMITS OF CONDUCTED EMISSION

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range : 0.15 - 30 MHz (Conducted Emission)
 Input Voltage : 120 Vac, 60 Hz
 Temperature : 28 °C
 Humidity : 52 %
 Atmospheric Pressure : 1060 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -19.4 dB at 0.448 MHz

4.2 EUT OPERATION CONDITION

1. Turn on the power of all equipments.
2. PC runs a test program to enable all functions.
3. PC reads and writes messages from FDD and HDD.
4. PC sends "H" messages to LCD monitor (EUT) and monitor display "H" patterns on screen.
5. PC sends "H" messages to modem.
6. PC sends "H" messages to printer, and the printer prints them on paper.
7. Repeat steps 3-7.



4.3 TEST DATA OF CONDUCTED EMISSION

EUT: LCD MONITOR

MODEL: 7650FP

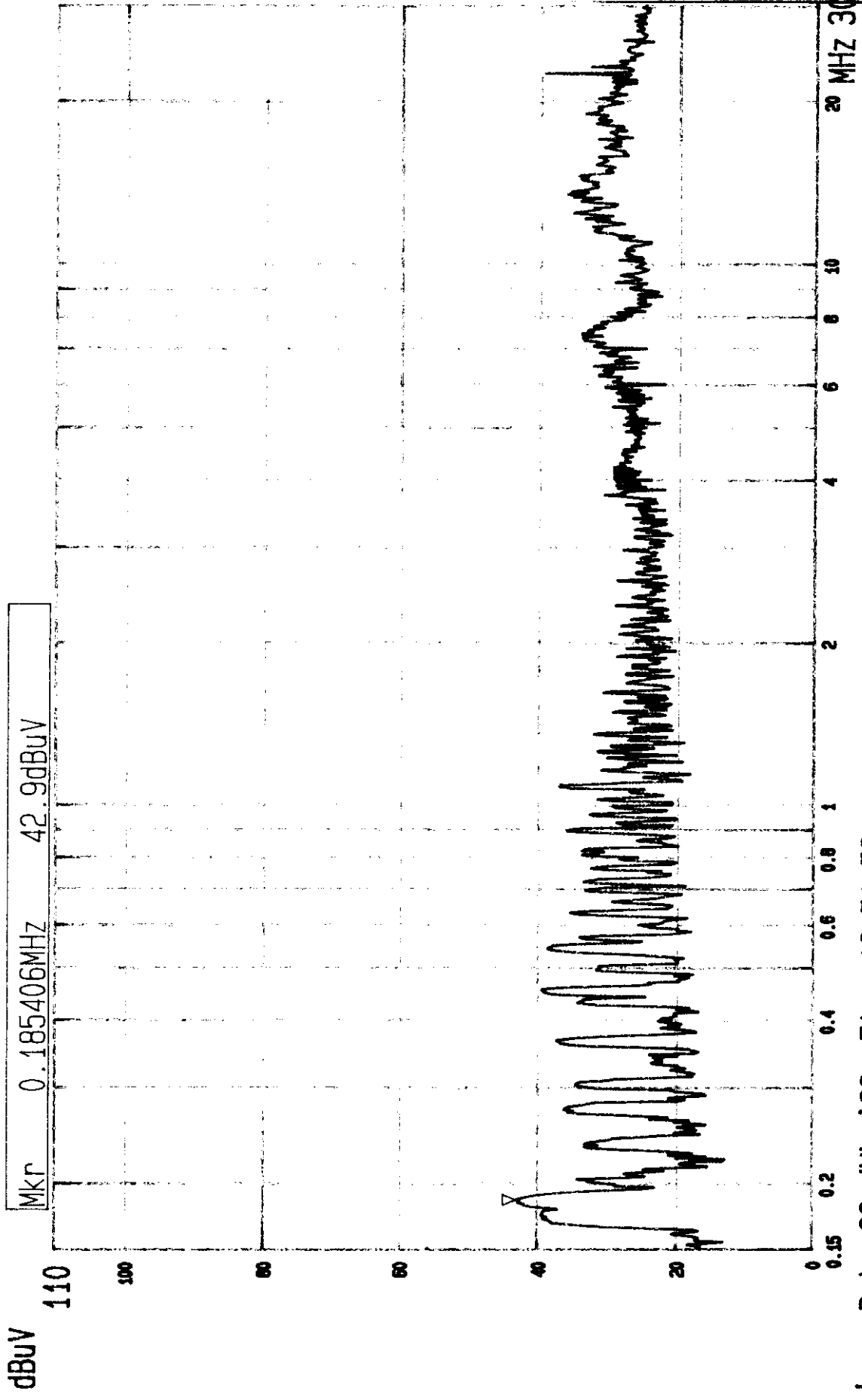
MODE: 1024x768 (52 kHz)

6 dB Bandwidth: 10 kHz

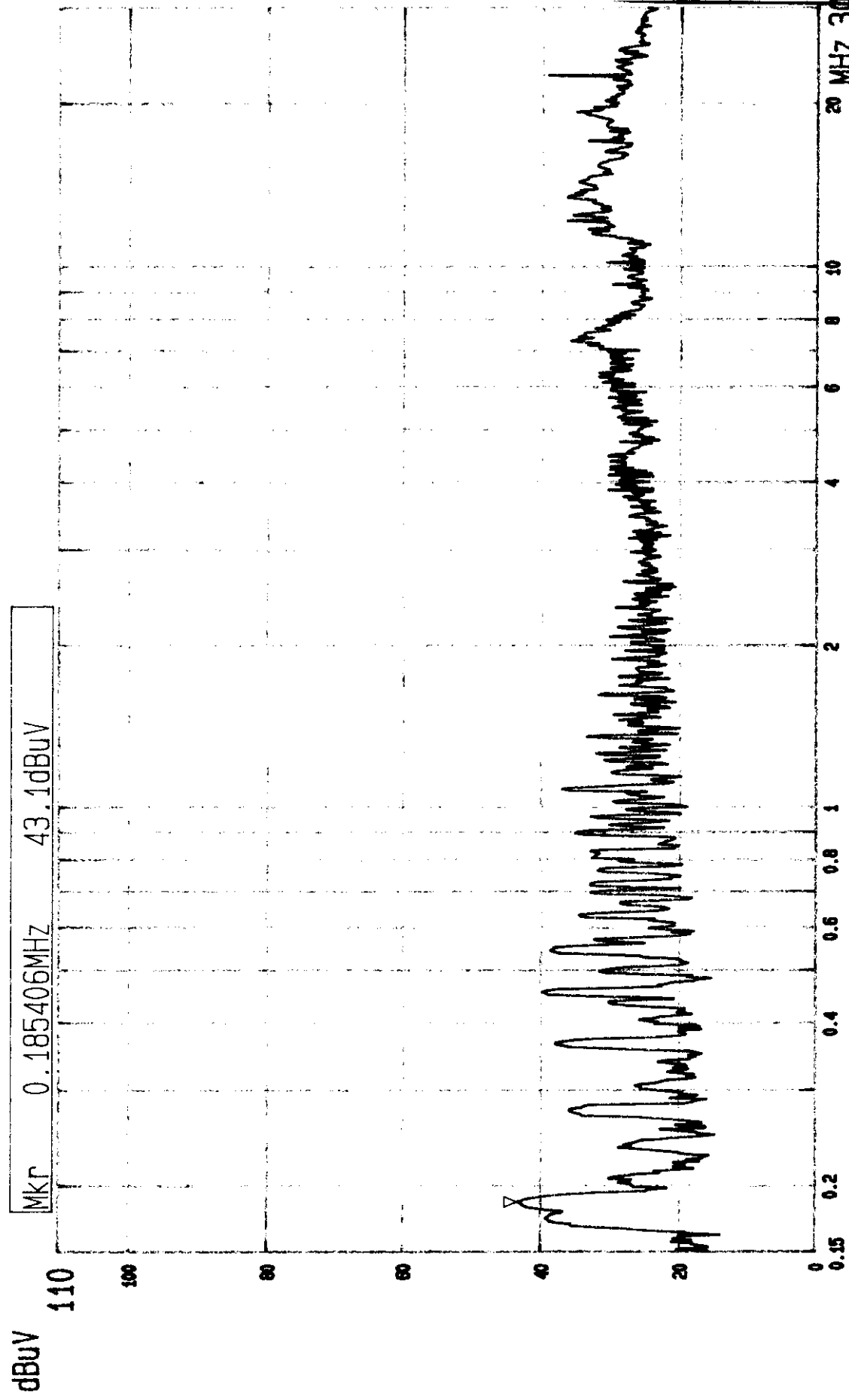
TEST PERSONNEL: *Leo Hong*

Freq. [MHz]	L Level [dB (μV)]		N Level [dB (μV)]		Limit [dB (μV)]		Margin [dB (μV)]			
	QP	AV	QP	AV	QP	AV	L		N	
0.177	41.6	-	41.8	-	64.59	54.59	-23.0	-	-22.8	-
0.358	36.2	-	36.3	-	58.76	48.76	-22.6	-	-22.5	-
0.448	37.4	-	37.5	-	56.91	46.91	-19.5	-	-19.4	-
1.071	34.1	-	34.2	-	56.00	46.00	-21.9	-	-21.8	-
7.179	27.2	-	27.5	-	60.00	50.00	-32.8	-	-32.5	-
13.402	25.6	-	27.4	-	60.00	50.00	-34.4	-	-32.6	-

- Remarks:
1. "*": Undetectable
 2. Q.P. and AV are abbreviations of quasi-peak and average individually.
 3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 4. The emission level of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value



--- Date 29.JUL.'98 Time 19:51:56
CISPR 22 CLASS B CONDUCTION TEST (PEAK VALUE)
MODEL: 7650F
ADT CORP
LISN: L



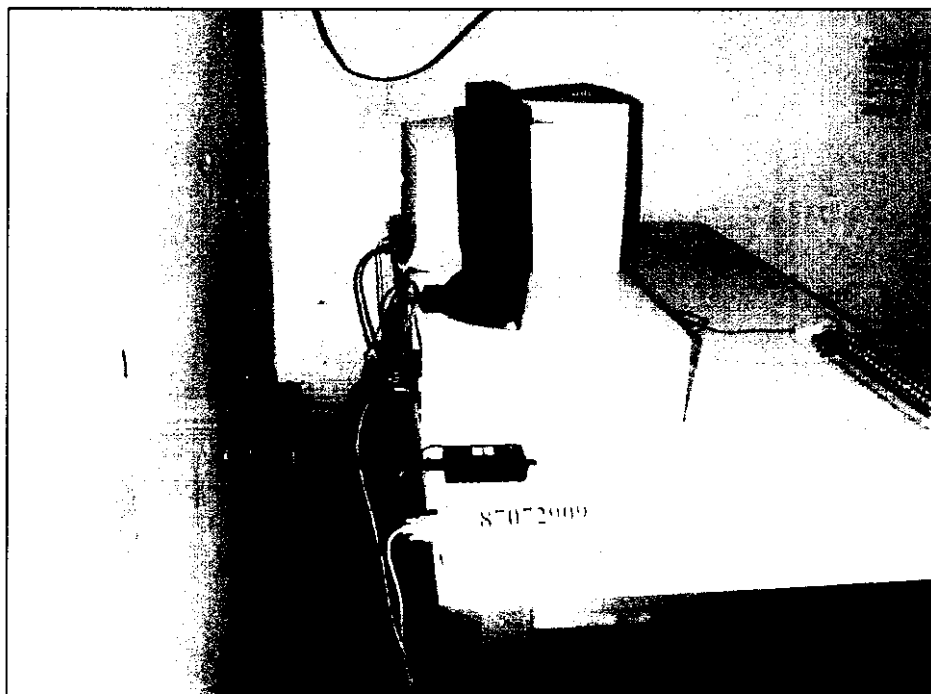
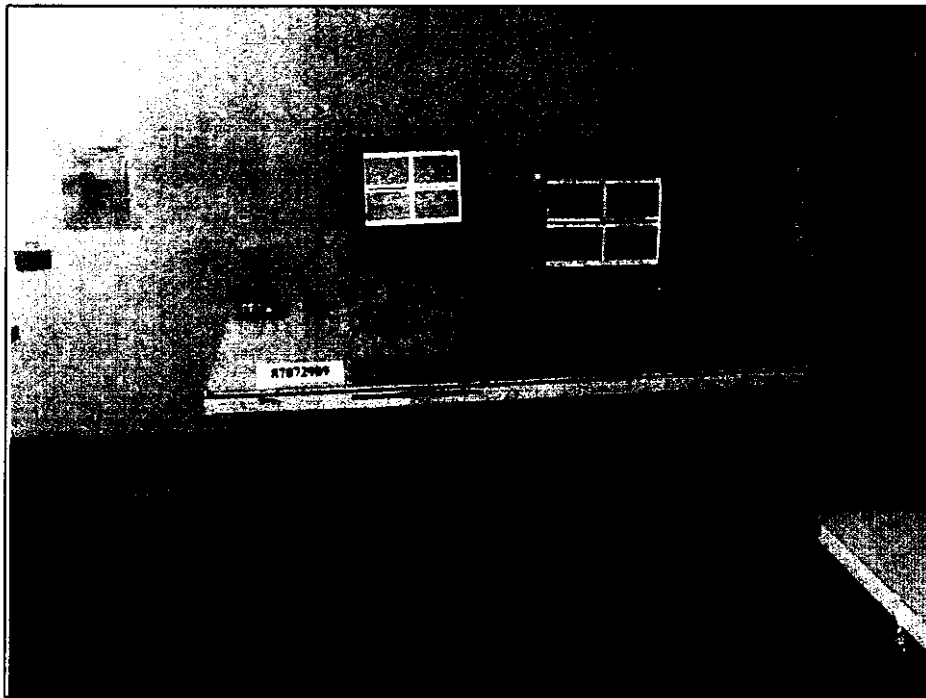
--- Date 29.JUL.'98 Time 19:55:50
CISPR 22 CLASS B CONDUCTION TEST (PEAK VALUE)
MODEL: 7650F

ADT CORP
LISN: N



**5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH
MINIMUM MARGIN**

CONDUCTED EMISSION TEST





6. ATTACHMENT I-TECHNICAL DESCRIPTION OF EUT

SPECIFICATIONS:

- * LCD Panel 15", TTN
- * Power Supply (Universal)
 - Input Voltage 90-264 Vac, 47-63 Hz
 - Power Consumption 20 W (typical), 25 W max.
- * Max. Resolution 1024x768
- * Video Input 26-pin LVDS SCSI Connector
- * User's Control Power ON/OFF, Brightness
- * Display Area 304 mm (H) x 228mm (V)
- * Interface Card Cirrus logic GD7555 chip set, 32-bit PCI bus interface,
CRT and LVDS output connectors, 32 K video ROM BIOS,
2 MB EDO DRAM, 64-bit windows acceleration
- * Ambient Temperature
 - Operating +5°C ~ +40°C / +41°F ~ +104°F
 - Storage -20°C ~ +60°C / -4°F ~ +140°F
- * Humidity
 - Operating 20% ~ 85%
 - Storage 10% ~ 85%
- * Dimensions: 386mm (W) x 360mm (H) x 170mm (D)
- * Weight (net) Less than 5.2 Kg

To: Mike Su (Acer Peripherals Inc)
From: Rich Fabina FCC Application Processing Branch
Date: July 16, 1998
FCC ID: JVP7650F

Applicant Name: Mike Su

Subject: ADDITIONAL INFORMATION ON FCC ID: FVP7650F

The items indicated below must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 60 days may result in application dismissal pursuant to Section 2.917(c) and forfeiture of the filing fee pursuant to Section 1.1106

ONLY ONE ELECTRONIC RESPONSE PER REFERENCE NUMBER (shown at the end of this email) IS ACCEPTED ELECTRONICALLY VIA THE INTERNET. PLEASE DO NOT SUBMIT A PARTIAL RESPONSE VIA THE INTERNET. PARTIAL RESPONSES MUST BE SENT VIA STANDARD METHODS LIKE FAX, EMAIL OR MESSENGER SERVICE. YOUR COOPERATION IS APPRECIATED.

1. There should be two AC line conducted test reports in this application. One for the LCD display since it has its own external power supply and one for the VGA card powered by the computer (Unless you powered both the computer and the LCD display from the same LISN and measured the combined results). Please either provide the AC line conducted tests from the computer powering the VGA card or confirm in writing that both the LCD display and the computer were powered from the LISN during the submitted AC line conducted tests.

DO NOT Reply to this email by using the 'Reply' button. In order for your response to be processed expeditiously, you must upload your response via the Internet at <https://dettifoss.fcc.gov/beta/oet/index.html>

Replies to this letter MUST contain the Reference Number: 2005



ADVANCE DATA TECHNOLOGY CORPORATION

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Fax: (02) 602 2943
(03) 459 7906

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Rd.
Columbia, MD. 21046

Date: May 25, 1998

Attention: Authorization and Evaluation Division

Subject: Application for Certification on COLOR MONITOR
(EUT) with FCC ID: JVP7650F

Dear Sir:

We would like to apply for FCC certification of the EUT.
Enclosed please find all required documents of the EUT listed below:

1. Exhibit 1 : The Authorization Letter signed by the applicant
2. Exhibit 2 : The FCC Label of EUT
3. Exhibit 3 : The modification List Letter signed by the applicant
4. Exhibit 4 : The RFI/EMI Test Report issued by ADT Corp.
5. Exhibit 5 : The photographs of EUT
6. Exhibit 6 : The Block Diagram & Schematic Diagram of EUT
7. Exhibit 7 : The User's Manual of EUT

Please review the information we submitted and issue us a grant
for the EUT. If you have any questions or comments, please do not
hesitate to contact Mr. Johnson Ho of SRT Lab. at (301) 855-2262.

Sincerely yours,

Mike Su / Project Manager
ADT Corp.

cc. Mr. Johnson Ho - Spectrum Research and Testing Laboratory

EXHIBIT 4
RFI/EMI TEST REPORT



EMC

TEST REPORT

REPORT NO. : F87030610
MODEL NO. : 7650F
DATE OF TEST : May 1, 1998

PREPARED FOR : ACER PERIPHERALS, INC.

ADDRESS : 157, SHAN-YING ROAD, KWEISHAN,
TAOYUAN 333, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

12F, NO.1, SEC.4, NAN-KING EAST RD.,
TAIPEI, TAIWAN, R.O.C.

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1.

CERTIFICATION

Issue Date: May 13, 1998

Product : LCD MONITOR
Trade Name : ACER
Model No. : 7650F
Applicant : ACER PERIPHERALS, INC.
Standard : FCC Part 15, Subpart B, Class B
ANSI C63.4-1992
CISPR 22:1993+A1+A2

We hereby certify that one sample of the designation has been tested in our facility on May 1, 1998. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits of conducted and radiated emission of applicable standards.

PREPARED BY: *Ariel Hsieh*, DATE: 5/13/98
(Ariel Hsieh)

TESTED BY: *James Chen*, DATE: 5/13/98
(James Chen)

APPROVED BY: *Mike Su*, DATE: 5/13/98
(Mike Su)

ADVANCE DATA TECHNOLOGY CORPORATION**NVLAQ[®]**

Accredited Laboratory



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	LCD MONITOR
Model No.	:	7650F
Power Supply Type	:	DC (from power adapter)
Power Cord	:	Nonshielded (AC) (1.8 m) Nonshielded (DC) (1.2 m)
Data Cable	:	Shielded (1.5m)

Note: The EUT is a 15" TTN LCD monitor with resolution up to 1024x768.

The EUT was tested with a LIEN power adapter, model: LE-9401B36W1P which has a 3 pin nonshielded power cord (1.8 m) and a nonshielded DC output cable (1.2 m). Its rating, Input: 100-240 Vac, 50/60 Hz, 1.5 A Output: DC 12 V, 3A, 36W. There is a ferrite core on the DC output cable of power adapter.

The EUT will be sold together with a VGA card whose LCD maximum resolution is up to 1024x768 (52 kHz) and CRT maximum resolution is up to 1280x1024 (64 kHz). During pretest, the worst emission levels were found when there is simultaneous LCD and CRT display mode under 1024x768 (52 kHz) and therefore only this mode is recorded in this report.

For more detailed features description, please refer to ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT and User's Manual.



2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No	Product	Brand	Model No.	FCC ID	I/O Cable
1	PERSONAL COMPUTER	NTI	PII-233	DoC approved	Nonshielded Power (1.8m)
2	MONITOR	ADI	PD-959	DoC approved	Shielded signal (1.5m) Nonshielded Power (1.8 m)
3	KEYBOARD	FORWARD	FDA-104GA	F4Z4DA-104G	Shielded signal (1.4m)
4	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.2m) Nonshielded Power (2.4m)
5	MOUSE	HP	M-S34	DZL211029	Shielded signal (1.5 m)
6	MODEM	HAYES	231AA	BFJ9D9-231AA	Shielded signal (1.2m) Nonshielded Power (2.4 m)

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site. Please refer to the photos of test configuration in Item 5.



3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dBuV/m	dBuV/m
30 - 230	40	30
230 - 1000	47	37

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
Above 1000	300	49.5	500	54.0

Note: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4.2 TEST DATA OF CONDUCTED EMISSION

EUT: LCD MONITOR

MODEL: 7650F

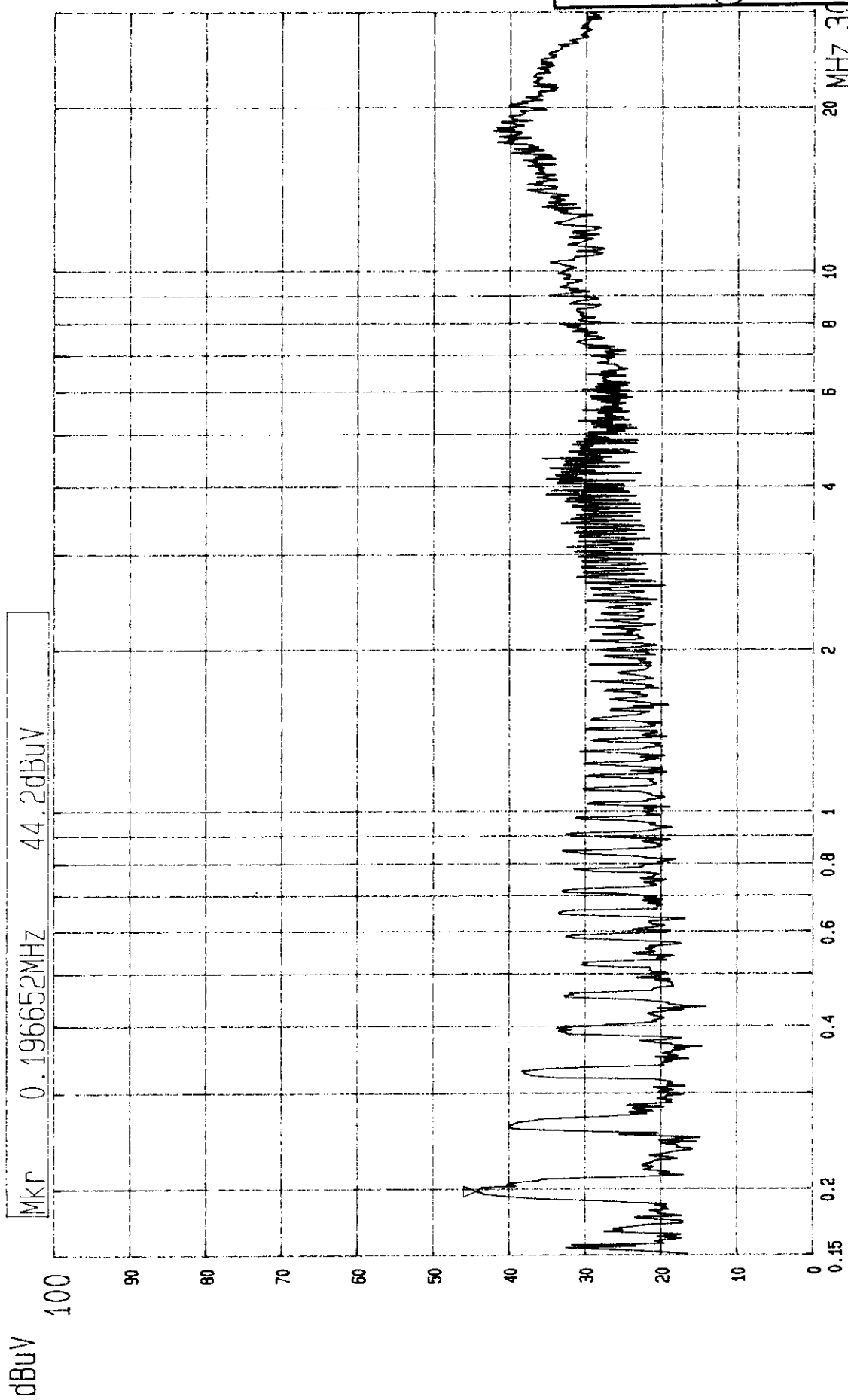
MODE: 1024x768 (52 kHz)

6 dB Bandwidth: 10 kHz

TEST PERSONNEL:

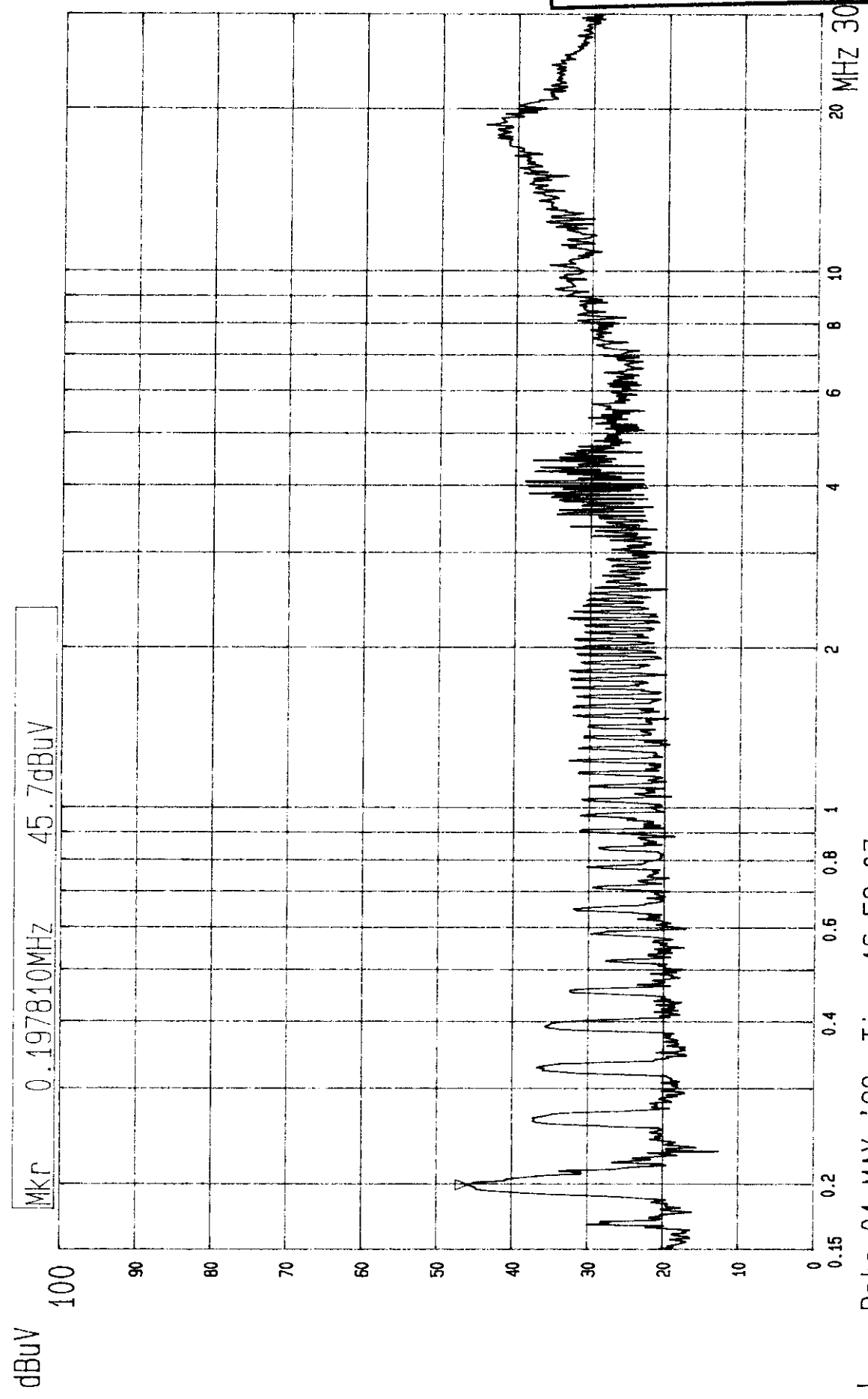
Freq. [MHz]	L Level [dB (μV)]		N Level [dB (μV)]		Limit [dB (μV)]		Margin [dB (μV)]			
	QP	AV	QP	AV	QP	AV	L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.191	42.7	-	44.1	-	63.99	53.99	-21.3	-	-19.9	-
0.255	38.2	-	41.2	-	61.59	51.59	-23.4	-	-20.4	-
0.639	30.6	-	32.1	-	56.00	46.00	-25.4	-	-23.9	-
3.821	35.9	-	33.4	-	56.00	46.00	-20.1	-	-22.6	-
14.457	37.7	-	32.5	-	60.00	50.00	-22.3	-	-27.5	-
18.295	40.1	-	42.1	-	60.00	50.00	-19.9	-	-17.9	-

- Remarks:
1. "": Undetectable
 2. Q.P. and AV are abbreviations of quasi-peak and average individually.
 3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 4. The emission level of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value



--- Date 01.MAY.'98 Time 16:59:45
CISPR 22 CLASS B CONDUCTION TEST (PEAK VALUE)
MODEL: 7650F 1024X768 52KHZ LISN: L

ADT CORP. 110V AC/60HZ



--- Date 01.MAY.'98 Time 16:58:07
CISPR 22 CLASS B CONDUCTION TEST (PEAK VALUE) ADT CORP. 110V AC/60HZ
MODEL: 7650F 1024X768 52KHZ LISN: N



TEST DATA OF RADIATED EMISSION

EUT: **LCD MONITOR** MODEL: **7650F** MODE: **1024x768 (52 kHz)**

ANTENNA: CHASE BILOG CBL 6111A POLARITY: Vertical

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

TEST PERSONNEL:

J. Amis

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
77.73	7.9	16.5	24.4	30.0	-5.6
119.51	11.1	11.4	22.5	30.0	-7.5
136.58	12.5	13.0	25.5	30.0	-4.5
145.05	12.5	14.4	26.9	30.0	-3.1
153.81	11.9	14.9	26.8	30.0	-3.2
179.16	10.9	15.5	26.4	30.0	-3.6
187.64	11.0	14.8	25.8	30.0	-4.2
196.41	11.1	14.2	25.3	30.0	-4.7
213.40	12.4	10.5	22.9	30.0	-7.1
239.00	14.8	16.1	30.9	37.0	-6.1

- REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) + Meter Reading (dBuV).
 2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level - Limit value



6. ATTACHMENT I-TECHNICAL DESCRIPTION OF EUT

SPECIFICATIONS:

* LCD Panel	15", TTN
* Power Supply (Universal)	
Input Voltage	90-264 Vac, 47-63 Hz
Power Consumption	20 W (typical), 25 W max.
* Max. Resolution	1024x768
* Video Input	26-pin LVDS SCSI Connector
* User's Control	Power ON/OFF, Brightness
* Display Area	304 mm (H) x 228mm (V)
*Interface Card	Cirrus logic GD7555 chip set, 32-bit PCI bus interface, CRT and LVDS output connectors, 32 K video ROM BIOS, 2 MB EDO DRAM, 64-bit windows acceleration
* Ambient Temperature	
Operating	+5 °C ~ +40 °C / +41 °F ~ +104 °F
Storage	-20 °C ~ +60 °C / -4 °F ~ +140 °F
* Humidity	
Operating	20% ~ 85%
Storage	10% ~ 85%
* Dimensions:	386mm (W) x 360mm (H) x 170mm (D)
* Weight (net)	Less than 5.2 Kg