FCC ID: JVP72211C

EMC

TEST REPORT

REPORT NO. : F87042206
MODEL NO. : 72211C
DATE OF TEST : June 10, 1998

PREPARED FOR : ACER PERIPHERALS, INC.

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

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION

NVLAP®
Accredited Laboratory

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

TABLE OF CONTENTS

1. CERTIFICATION

Issue Date: June 22, 1998

Product	:	COLOR MONITOR
Trade Name	:	ACER
Model No.	:	72211C
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 June 10, 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: Rita Yi , DATE: 6/22/98
(Rita Yi)

TESTED BY: Ken Liu , DATE: 6/22/98
(Ken Liu)

APPROVED BY: Mike Su , DATE: 6/22/98
(Mike Su)

ADVANCE DATA TECHNOLOGY CORPORATION

NVLAP®
Accredited Laboratory

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	COLOR MONITOR
Model No.	:	72211C
Power Supply Type	:	Switching
Power Cord	:	Nonshielded (1.8m)
Data Cable	:	Shielded (1.5m)

Note: The EUT is a 21" color monitor with resolution up to 1600x1200.

There are two ferrite cores on the video cable outside the monitor.

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	HP	D4579A	DoC Approved	Nonshielded Power (1.8 m)
2	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104G	Shielded Signal (1.4 m)
3	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.6 m) Nonshielded Power (1.8m)
4	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.6m) Nonshielded Power (1.8m)
5	MOUSE	COMPAQ	M-S28	DZL210472	Shielded Signal (1.6m)
6	VGA CARD	ASUS	3DP-V3000	DoC Approved	N/A

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)

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated until
HP Spectrum Analyzer	8590L	3544A00941	Dec. 14, 1998
HP Pre-Amplifier	8447D	2944A08312	Sept. 10, 1998
R&S Receiver	ESVS10	844591/010	Sept. 23, 1998
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 28, 1998
CHASE BILOG Antenna	CBL6111A	1500	Sept. 12, 1998
EMCO Turn Table	1060-04	1196	N/A
EMCO Tower	1051	1264	N/A
Open Field Test Site	Site 1	ADT-R01	Sept. 5, 1998

Note: 1. The measurement uncertainty is less than +/- 3dB, 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.

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESHS30	828109/007	Aug. 4, 1998
ROHDE & SCHWARZ Artificial Mains Network	ESH2-Z5	892107/003	July 22, 1998
EMCO L.I.S.N.	3825/2	9504-2359	Aug. 1, 1998
Shielded Room	Site 3	ADT-C03	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 AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m) dBuV/m	Class B (at 10m) 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. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range	:	0.15 - 30 MHz (Conducted Emission)
		30 - 2000 MHz (Radiated Emission)
Input Voltage	:	120 Vac, 60 Hz
Temperature	:	25 ℃
Humidity	:	60 %
Atmospheric Pressure	:	1060 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -18.3 dB at 24.001 MHz Minimum passing margin of radiated emission: -2.1 dB at 432.13 MHz

Note: The EUT was pretested under the following resolution & horizontal synchronization speed mode:

- 1600 x 1200 (107 kHz)
- 1280 x 1024 (91 kHz)
- 640 x 480 (31.5 kHz)

The EUT has two kind of video signal cable connector, one is BNC type and the other is D-sub type connector.
The worst emission levels were found under 1600x1200 (107 kHz) with using BNC type video signal cable connector, so this type of video cabland therefore the test data of only this mode is recorded.

4.1.1 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 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.

4.1.2 TEST DATA OF CONDUCTED EMISSION

EUT: **COLOR MONITOR** MODEL: **72211C**

MODE: **1600x1200 (107 kHz)**

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: KEN

Freq.	L Level		N Level		Limit		Margin [dB (μV)]			
[MHz]	[dB (μV)]		[dB (μV)]		[dB (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.214	37.60	-	41.50	-	63.05	53.05	-25.4	-	-21.6	-
0.321	36.10	-	38.80	-	59.68	49.68	-23.6	-	-20.9	-
2.035	27.70	-	31.60	-	56.00	46.00	-28.3	-	-24.4	-
2.808	34.80	-	35.80	-	56.00	46.00	-21.2	-	-20.2	-
13.167	35.00	-	33.20	-	60.00	50.00	-25.0	-	-26.8	-
24.001	41.70	-	41.50	-	60.00	50.00	-18.3	-	-18.5	-

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

ADT CORP.

CISPR 22 CLASS B

10. Jun 98 09: 08

EUT:	72211C
Op Cond:	1600X1200 85Hz/107KHz
Operator:	KEN
Test Spec:	LISN : L

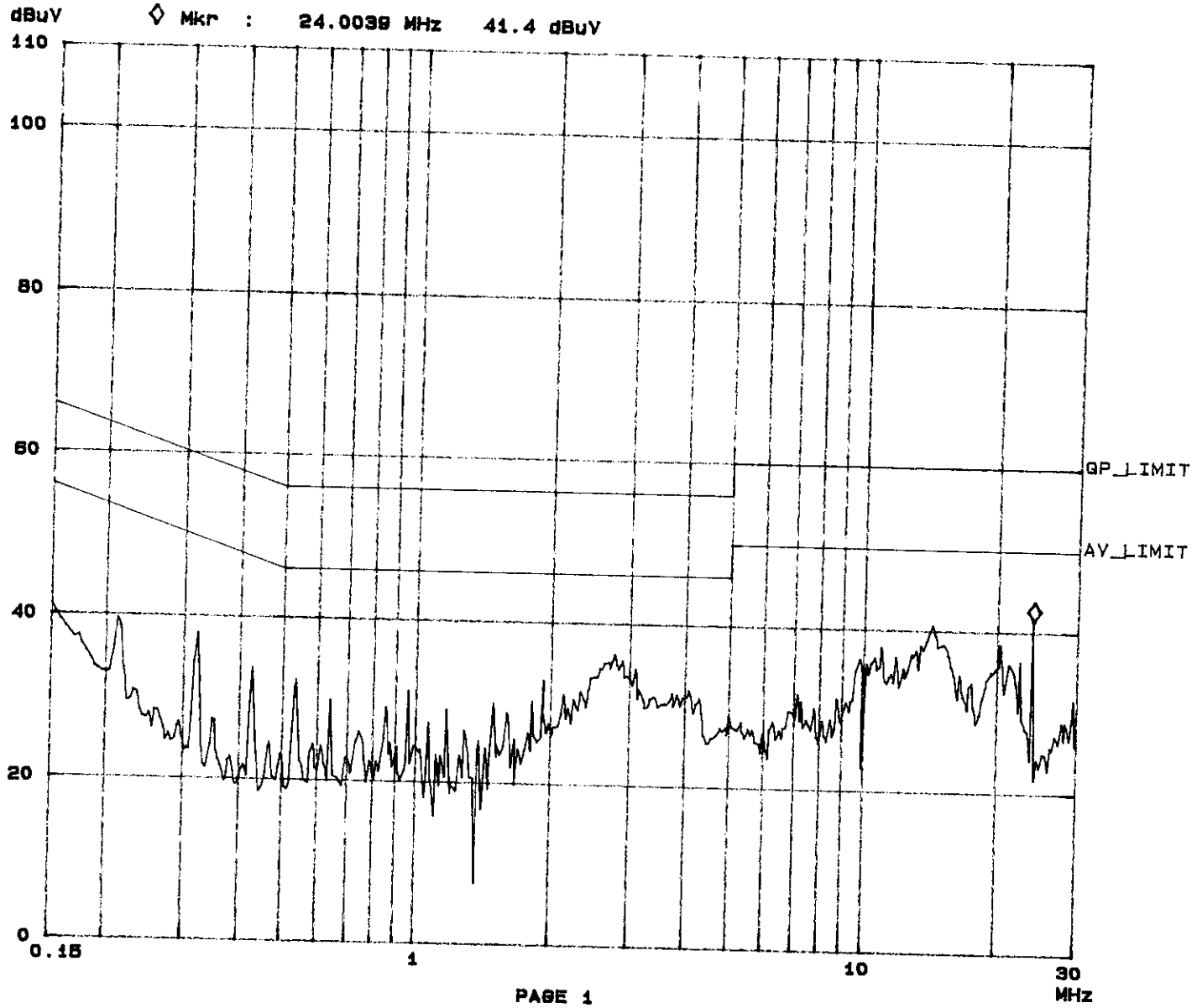
Report No. FR9042206

Page 9-1

Tested by KEN

Overview Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	1M	3.90625k	9k	PK	10ms	15dBLN	OFF
1M	10M	3.90625k	9k	PK	0.10ms	10dBLN	OFF
10M	30M	3.90625k	9k	PK	0.10ms	10dBLN	OFF



ADT CORP.

CISPR 22 CLASS B

10. Jun 98 09:21

Report No. F870422O6

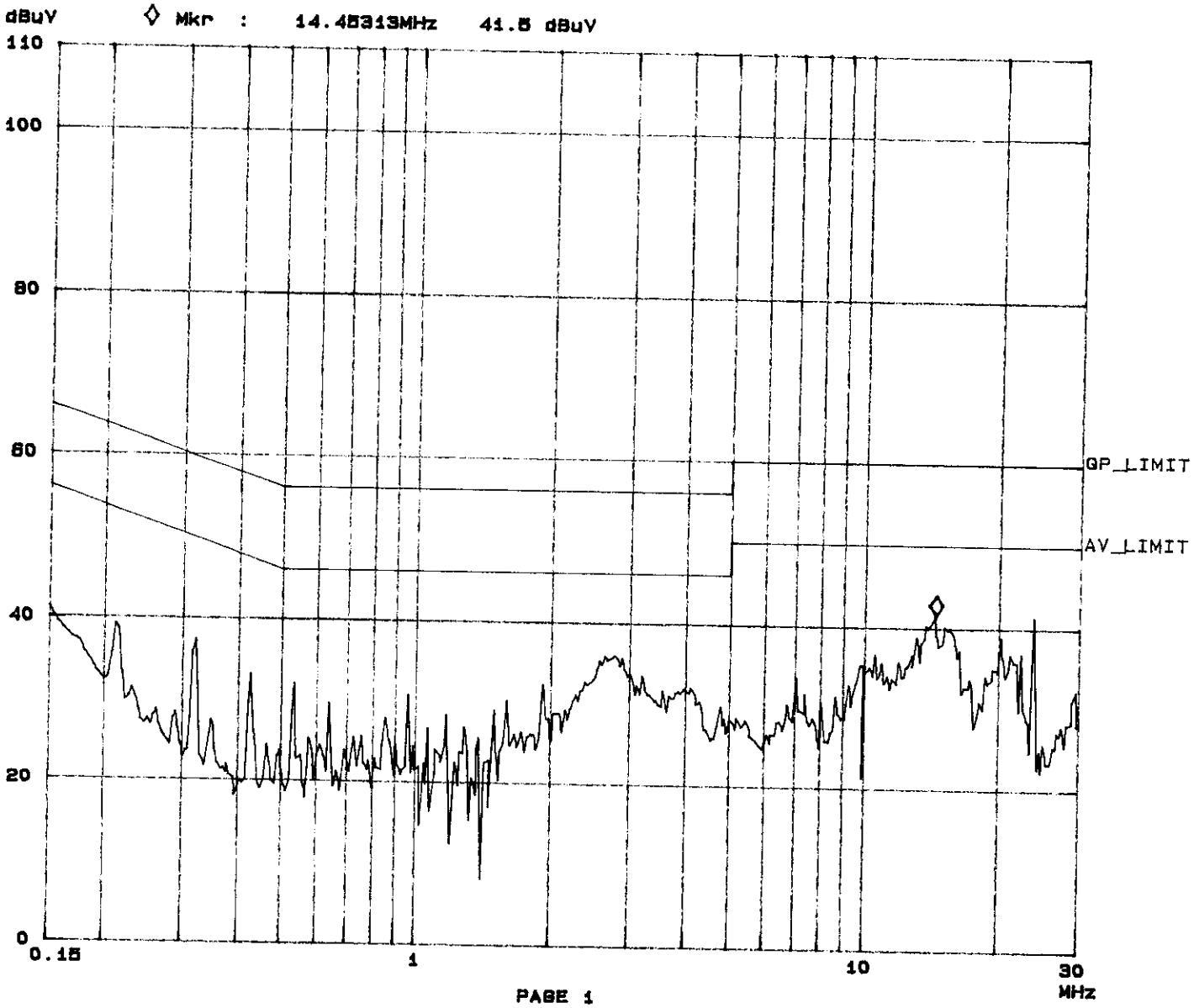
Page 9-2

Tested by KEN

EUT: 72211C
Op Cond: 1600X1200 85Hz/107KHz
Operator: KEN
Test Spec: LISN : N

Overview Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp
150k	1M	3.90625k	9k	PK	10ms	15dBLN	OFF
1M	10M	3.90625k	9k	PK	0.10ms	10dBLN	OFF
10M	30M	3.90625k	9k	PK	0.10ms	10dBLN	OFF



4.1.3 TEST DATA OF RADIATED EMISSION

EUT: **COLOR MONITOR** MODEL: **72211C**

MODE: **1600x1200 (107 kHz)**

ANTENNA: CHASE BILOG CBL 6111A/EMCO Horn 3115 POLARITY: horizontal

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

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

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

TEST PERSONNEL: KEN

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
58.56	8.3	10.6	18.9	30.0	-11.1
60.01	7.9	8.4	16.3	30.0	-13.7
84.03	9.6	8.3	17.9	30.0	-12.1
120.03	14.9	6.3	21.2	30.0	-8.8
240.07	16.5	5.2	21.7	37.0	-15.3
432.11	22.8	7.5	30.3	37.0	-6.7

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

TEST DATA OF RADIATED EMISSION

EUT: **COLOR MONITOR** MODEL: **72211C**

MODE: **1600x1200 (107 kHz)**

ANTENNA: CHASE BILOG CBL 6111A/EMCO Horn 3115 POLARITY: Vertical

DETECTOR FUNCTION AND BANDWIDTH: Quasi peak, 120 kHz (30-1000 MHz)
Peak, 1 MHz (1000 MHz-2000 MHz)

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

FREQUENCY RANGE: 1000-2000 MHz MEASURED DISTANCE: 3 M

TEST PERSONNEL: KEN

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
36.28	16.5	9.9	26.4	30.0	-3.6
58.59	8.3	15.3	23.6	30.0	-6.4
60.04	7.9	12.1	20.0	30.0	-10.0
84.03	8.5	11.6	20.1	30.0	-9.9
108.02	13.2	11.3	24.5	30.0	-5.5
120.03	15.4	7.9	23.3	30.0	-6.7
192.03	13.3	2.6	15.9	30.0	-14.1
216.07	14.6	4.6	19.2	30.0	-10.8
240.05	15.9	8.5	24.4	37.0	-12.6
432.13	22.7	12.2	34.9	37.0	-2.1

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:

¤ Picture	
¤ Size	21" (53.34cm) diagonal
¤ AG Pitch	0.26mm dot pitch
¤ Surface Transmission	Non-glare/semi-tinted
¤ Maximum Viewable Size	20" (51cm) diagonal
¤ Video Input	15-pin, mini D-SUB Connector/BNC Connector
¤ Bandwidth	230MHz
¤ Display Area	380mm(H) x 285mm(V) (Preset) 408mm(H) x 306mm(V) (Full Scan)
¤ Power Supply (Universal)	
¤ Input	100-120/200-240 Vac, 50-60Hz (Universal compatible)
¤ Power consumption	150 Watts max./165 Watts max. (With USB)
¤ External Controls	Power switch, i key auto-calibration, Contrast, Brightness, Horizontal Position, Horizontal Size, Vertical Position, Vertical Size, Pincushion, Unbalance, Trapezoid, Parallelogram, Rotation, Top Corner, Bottom Corner, Color Weight, Degaussing, Horizontal Convergence, Vertical Convergence, Horizontal Moire, Vertical Moire, BNC and DB-15 Selection, Reset, language Select, Purity
¤ Max. Resolution	1600 x 1200
¤ Horizontal Frequency	30-107 KHz
¤ Vertical Frequency	50-160 Hz
¤ Dimensions (with stand)	508mm(W) x 515mm(H) x 512mm(D)
¤ Weight	29.4 Kg
¤ Ambient Temperature	
¤ Operating	+5C ~ +40C
¤ Storage	0C ~ +60C
¤ Humidity	
¤ Operating	20% ~ 90%
¤ Storage	10% ~ 90%
¤ X-Radiation	MPR-II, DHHS, PTB, D.N.S.F.
¤ Regulatory Compliance	FCC-B, UL, FTZ-B, CSA, BZT-B, CE, TUV, VCCI, GS, ISO-921-3, BCIQ, EMC, MPR-II, TCO95