FCC ID: IJE564

EMC

TEST REPORT

REPORT NO. : F87060504
MODEL NO. : 564XX, 850XX
DATE OF TEST : June 18, 1998

PREPARED FOR: PROVIEW ELECTRONICS (TAIWAN) CO. LTD.

ADDRESS : 6F, NO. 1, PAU-SHENG RD., YUNG-HO CITY,
TAIPEI HSIEN, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION

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TABLE OF CONTENTS

1. CERTIFICATION

Issue Date: July 4, 1998

Product	:	COLOR MONITOR
Trade Name	:	PROVIEW, EMC
Model No.	:	564XX, 850XX
Applicant	:	PROVIEW ELECTRONICS (TAIWAN) CO. LTD.
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 18, 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.

TESTED BY: Chris Yang , DATE: 7/4/98
(Chris Yang)

CHECKED BY: Sharon Hsiung , DATE: 7/4/98
(Sharon Hsiung)

APPROVED BY: Mike Su , DATE: 7/4/98
(Mike Su)

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2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	Color Monitor
Model No.	:	564XX , 850XX
Power Supply Type	:	Switching
Power Cord	:	Nonshielded (1.3m)
Data Cable	:	Shielded (1.3m)

Note: The EUT has the following 2 models:

- Model 564XX with 15" CRT
- Model 850XX with 14" CRT

The "X" could be defined as 0-9, A-Z or blank.

Both models were tested individually and the data was recorded separately.

There is a ferrite core on the signal cable outside the EUT .

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	VL Series 4 5/100	B94VECTRA500T	Nonshielded Power (1.8m)
2	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104G	Shielded Signal (1.4m)
3	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.5m) Nonshielded Power (1.8m)
4	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.5m) Nonshielded Power (1.8m)
5	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded Signal (1.5m)
6	MICROPHONE	L	UDM-535	N/A	Nonshielded Signal (2.6m)
7	SOUND CARD	CREATIVE	CT-2970	IBACT-SONATE	N/A
8	VGA CARD	GORDIA	DSV3365	LUT-DSV3365	N/A

Note: An audio cable (1.5m) was connected between EUT and PC.

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 and 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	8594A	3144A00308	Sept. 1, 1998
HP Preamplifier	8447D	2944A08119	Aug. 2, 1998
ROHDE & SCHWARZ TEST RECEIVER	ESVP	893496/030	July 17, 1998
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 28, 1998
CHASE Bilog Antenna	CBL6112	2086	Dec. 26, 1998
EMCO Turn Table	1060	1195	N/A
EMCO Tower	1051	1163	N/A
Open Field Test Site	Site 2	ADT-R02	Sept. 26, 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	ESH3	893495/006	July 23, 1998
ROHDE & SCHWARZ Spectrum Monitor	EZM	893787/013	July 24, 1998
ROHDE & SCHWARZ Artificial Mains Network	ESH3-Z5	839135/006	Aug. 1, 1998
EMCO-L.I.S.N.	3825/2	9204-1964	July 22, 1998
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 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 - 1000 MHz (Radiated Emission)
Input Voltage	:	110V ac, 60 Hz
Temperature	:	35 ℃
Humidity	:	46 %
Atmospheric Pressure	:	995 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -13.9 dB at 0.255 MHz Minimum passing margin of radiated emission: -2.8 dB at 32.50 MHz

Note: 1. The model 564XX was pretested under the following resolution & horizontal synchronization speed mode:
- 1280 x 1024 (64kHz)
- 1024 x 768 (60kHz)
- 640 x 480 (31.5kHz)

2. The model 850XX was pretested under the following resolution & horizontal synchronization speed mode:
- 1024 x 768 (48kHz)
- 800 x 600 (38kHz)
- 640 x 480 (31.5kHz)

The worst emission levels were found under 1280x1024 (64kHz) for model 564XX and 1024x768 (48kHz) for model 850XX, therefore the test data of 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 displays"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. PC sends audio messages to speaker.
8. Repeat steps 3-8.

4.2 TEST DATA OF CONDUCTED EMISSION (A)

EUT: **COLOR MONITOR** MODEL: **564XX**

MODE: **1280x1024 (64kHz)**

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: Chris Yang

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
0.150	50.50	-	50.80	-	66.00	56.00	-15.5	-	-15.2	-
0.255	47.70	-	44.40	-	61.59	51.59	-13.9	-	-17.2	-
0.391	40.50	-	37.70	-	58.04	48.04	-17.5	-	-20.3	-
2.748	36.40	-	36.50	-	56.00	46.00	-19.6	-	-19.5	-
7.884	36.20	-	34.50	-	60.00	50.00	-23.8	-	-25.5	-
21.702	34.80	-	30.70	-	60.00	50.00	-25.2	-	-29.3	-

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.

4.3TEST DATA OF CONDUCTED EMISSION (B)

EUT: **COLOR MONITOR** MODEL: **850XX**

MODE: **1024x768 (48kHz)**

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: Chris Yang

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
0.155	46.80	-	47.20	-	65.73	55.73	-18.9	-	-18.5	-
0.249	45.60	-	46.00	-	61.86	51.86	-16.3	-	-15.9	-
0.344	39.20	-	38.20	-	59.11	49.11	-19.9	-	-20.9	-
1.463	30.50	-	31.00	-	56.00	46.00	-25.5	-	-25.0	-
13.003	38.00	-	35.00	-	60.00	50.00	-22.0	-	-25.0	-
21.322	37.80	-	36.50	-	60.00	50.00	-22.2	-	-23.5	-

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.

4.4 TEST DATA OF RADIATED EMISSION (A)

EUT: **COLOR MONITOR** MODEL: **564XX**

MODE: **1280x1024 (64kHz)**

ANTENNA: CHASE BILOG CBL6112 POLARITY: Horizontal

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

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

TEST PERSONNEL: Chris Yang

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
32.50	18.1	6.2	24.3	30.0	-5.7
64.97	8.0	9.5	17.5	30.0	-12.5
75.84	8.4	14.3	22.7	30.0	-7.3
86.65	9.9	6.7	16.6	30.0	-13.4
129.97	14.6	5.1	19.7	30.0	-10.3
184.16	12.4	9.6	22.0	30.0	-8.0

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.

FCC ID: IJE564

TEST DATA OF RADIATED EMISSION (A)

EUT: **COLOR MONITOR** MODEL: **564XX**

MODE: **1280x1024 (64kHz)**

ANTENNA: CHASE BILOG CBL6112 POLARITY: Vertical

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

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

TEST PERSONNEL: Chris Jiang

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
32.50	17.9	9.3	27.2	30.0	-2.8
64.99	7.5	15.2	22.7	30.0	-7.3
75.83	7.6	15.9	23.5	30.0	-6.5
86.65	10.2	14.0	24.2	30.0	-5.8
108.26	12.8	7.9	20.7	30.0	-9.3
130.01	15.3	6.0	21.3	30.0	-8.7
184.17	12.8	8.7	21.5	30.0	-8.5
249.21	15.5	5.9	21.4	37.0	-15.6

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.

4.5 TEST DATA OF RADIATED EMISSION (B)

EUT: **COLOR MONITOR** MODEL: **850XX**

MODE: **1024x768 (48kHz)**

ANTENNA: CHASE BILOG CBL6112 POLARITY: Horizontal

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

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

TEST PERSONNEL: Chris Jiang

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
31.57	18.5	5.6	24.1	30.0	-5.9
71.58	8.1	9.1	17.2	30.0	-12.8
78.17	8.6	13.5	22.1	30.0	-7.9
84.65	9.6	9.7	19.3	30.0	-10.7
110.75	14.1	2.6	16.7	30.0	-13.3
117.27	14.8	8.5	23.3	30.0	-6.7
209.51	13.7	7.0	20.7	30.0	-9.3

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.

FCC ID: IJE564

TEST DATA OF RADIATED EMISSION (B)

EUT: **COLOR MONITOR** MODEL: **850XX**

MODE: **1024x768 (48kHz)**

ANTENNA: CHASE BILOG CBL6112 POLARITY: Vertical

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

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

TEST PERSONNEL: Chris Yang

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
30.70	19.2	6.4	25.6	30.0	-4.4
71.64	7.2	12.9	20.1	30.0	-9.9
78.17	7.8	13.0	20.8	30.0	-9.2
84.70	9.6	12.3	21.9	30.0	-8.1
110.76	13.4	6.1	19.5	30.0	-10.5
117.27	14.8	9.0	23.8	30.0	-6.2
280.19	16.7	2.1	18.8	37.0	-18.2

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 (MODEL 564XX) :

*Power Input	AC 100-240V. 50-60HZ
*Power Consumption	100W max.
*C.R.T.	15" diagonal flat screen, 13.8" viewable size 0.28mm dot-pitch. Tint glass, Non-glare.
*Input signal	
Video	Analog R.G.B 0.7Vpp/75 ohm.
Sync	Separate or composite Hor./Vert. TTL Pos./Neg.
*Connector	D-sub 15-pin interface cable.
*Resolution (max.)	1280 X 1024 1024 X 768 (For Product No.:PV-550/550R/550D/ 550DA/1550A)
*Scanning Freq.	Hor. 30KHz-64KHz 30KHz-50KHz (For Product No.:PV-550/550R/ 550D/550DA/1550A) Vert. 50Hz-100Hz
*Video B/W	75MHz at –3dB
*Display size	260mm X 190mm (Adjustable)
*User control	power ON/OFF, Select , Up, Down, Right, Left. Control function : H-size, H-phase, V-size, V-center, Pincushion, Trape-zium Brightness, Contrast, Rotation. (Option)
*Cabinet Dimension	385mm(L) X 359mm (W) X 366mm (H)
*Weight	12.5 kg (27.5 Lb) Net. 14 kg (30.8 Lb) Gross.
*Environment	Operation Temp. +5 °C - +40 °C Humidity 20 %- 90 % Storage Temp. -20 °C - +60 °C Humidity 10 %- 95 %

FCC ID: IJE564

SPECIFICATIONS (MODEL 850XX) :

*Power Input	AC 100-240V. 50-60HZ	
*Power Consumption	85W max.	
*C.R.T.	14" 90°deflection. Tint glass, Non-glare. 13.3" viewable size	
*Input signal		
Video	Analog R.G.B 0.7Vpp/75 ohm.	
Sync	Separate or composite Hor./Vert. TTL Pos./Neg.	
*Connector	D-sub 15-pin interface cable.	
*Resolution (max.)	1024 X 768 (Non-interlaced)	
*Scanning Freq.	Hor. 30KHz-50KHz Vert. 50Hz-100Hz	
*Video B/W	65MHz at –3dB	
*Display size	245mm X 180mm (Adjustable)	
*User control	power ON/OFF, Select , Up, Down, Right, Left. Control function : H-size, H-phase, V-size, V-center, Pincushion, Trape-zium Brightness, Contrast, Rotation. (Option)	
*Cabinet Dimension	385mm(L) X 359mm (W) X 366mm (H)	
*Weight	11.5 kg (25.3 Lb) Net. 13 kg (28.6 Lb) Gross.	
*Environment	Operation Temp.	+5 °C - +40 °C
	Humidity	20 %- 90 %
	Storage Temp.	-20 °C - +60 °C
	Humidity	10 %- 95 %