



FCC TEST REPORT

REPORT NO.: F900605A01A

MODEL NO.: 9Glr, 9Slr, 9Klr

PART NO.: P9B0S

RECEIVED: Jan. 15, 2002

TESTED: Jan. 16, 2002

APPLICANT: Top Victory Electronics Co., Ltd.

ADDRESS: 18F, No. 738, Chung-Cheng Rd. Chung Ho,
Taipei Hsien, Taiwan, R.O.C.

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: 47 14th Lin, Chiapau Tsun, Linko, Taipei,
Taiwan, R.O.C.

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0528
ILAC MRA



Lab Code: 200102-0



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1 CERTIFICATION

PRODUCT: 19" COLOR MONITOR
BRAND NO.: AOC
MODEL NO.: 9Glr, 9Slr, 9Klr
PART NO.: P9B0S
TEST ITEM: ENGINEERING SAMPLE
APPLICANT: TOP VICTORY ELECTRONICS CO., LTD.
STANDARDS: FCC Part 15, Subpart B, Class B
CISPR 22: 1997, Class B
ANSI C63.4-1992

We, **Advance Data Technology Corporation**, hereby certify that one sample (model: 9Glr) of the designation has been tested in our facility on Jan. 16, 2002. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

TESTED BY: Mart Su, DATE: Jan. 16, 2002
(Mart Su)

CHECKED BY: Yemmy Soong, DATE: Jan. 21, 2002
(Yemmy Soong)

APPROVED BY: Mike Su, DATE: Jan 21, 2002
(Mike Su, Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

Standard	Test Type	Result	Remarks
FCC Part 15, Subpart B, Class B	Conducted Test	PASS	Meets Class B Limit Minimum passing margin is -10.65 dB at 0.530 MHz
CISPR 22: 1997, Class B	Radiated Test	PASS	Meets Class B Limit Minimum passing margin is -5.1 dB at 78.78 MHz

NOTE: For conducted emission test, the test limit used is according to FCC Part 15.107. In this part, conducted emission test for telecom port is not mentioned and therefore this item is not tested.



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	19" COLOR MONITOR
MODEL NO.	9Glr, 9Slr, 9Klr
PART NO.	P9B0S
POWER SUPPLY	Switching Power Cord: Non-shielded, 3 pin, AC (1.8m)
DATA CABLE	Shielded 1.8m

NOTE: This report is a FCC Class II Permissive Change report of the original one (ADT report No.: F900605A01) issued on June 13, 2001 and received grant on Sept. 5, 2001. The main changes are the addition of Diamondtron CRT and addition of model name: 9Glr

The EUT is a 19" COLOR MONITOR with resolution up to 1600x1200.

The EUT has three model names, which are identical to each other except for their marketing differences:

- ◆ Model: 9Glr
- ◆ Model: 9Slr
- ◆ Model: 9Klr

From the above models, model: 9Glr was chosen as representative model for the test.

There is a ferrite core on the video cable outside the monitor.

For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

3.2 DESCRIPTION OF TEST MODES

The EUT was pre-tested under the following conditions in electromagnetic interference:

MODE	RESOLUTION
1	1600x1200 (85 Hz/106 kHz)
2	1600x1200 (75 Hz/93 kHz)
3	1280x1024 (85kHz/91 kHz)
4	640x480(60Hz/31.5kHz)

Since the worst emission levels were found when the EUT was tested under 1600x1200 (85 Hz/106kHz) resolution, Mode 1 is adopted for the final test.



3.3 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 were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Personal Computer	HP	Brio BA410	SG12106022	FCC DoC Approved
2	PRINTER	HP	2225C+	2936S56294	DSI6XU2225
3	MODEM	ACEEX	1414	980020509	IFAXDM1414
4	PS/2 KEYBOARD	BTC	5121W	A00801374	E5XKB5121WTH01 10
5	PS2/MOUSE	LOGITECH	M-S61	HCA12002841	JNZ211403
6	VGA CARD	ELSA	ERAZOR III LT	0111011967	FCC DoC Approved

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA
2	1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core.
3	1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core.
4	1.6 m foil shielded wire, terminated with PS/2 connector via metallic frame, w/o core.
5	1.8 m Non-shielded wire, terminated with PS/2 connector via drain wire, w/o core.
6	NA

NOTE: All power cords of the above support units are non-shielded (1.8m).



4 EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTES:**
- (1) The lower limit shall apply at the transition frequencies.
 - (2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 - (3) All emanations 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.

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS30	834115/016	Feb. 21, 2002
ROHDE & SCHWARZ Artificial Mains Network (For EUT)	ESH3-Z5	847265/023	Jan. 10, 2003
* ROHDE & SCHWARZ 4-wire ISN	ENY41	838119/028	Dec. 10, 2002
* ROHDE & SCHWARZ 2-wire ISN	ENY22	837497/018	Dec. 10, 2002
EMCO L.I.S.N. (For peripherals)	3825/2	9504-2359	July 10, 2002
Software	Cond-V2L	NA	NA
RF cable (JYEBAO)	5D-FB	Cable-C03.01	July 11, 2002
Terminator (For EMCO LISN)	NA	E1-01-300	Feb. 20, 2002
Terminator (For EMCO LISN)	NA	E1-01-301	Feb. 20, 2002
Shielded Room	Site 3	ADT-C03	NA
VCCI Site Registration No.	Site 3	C-274	NA

- NOTE:**
1. The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS 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. “*”: These equipment are used for conducted telecom port test only (if tested).

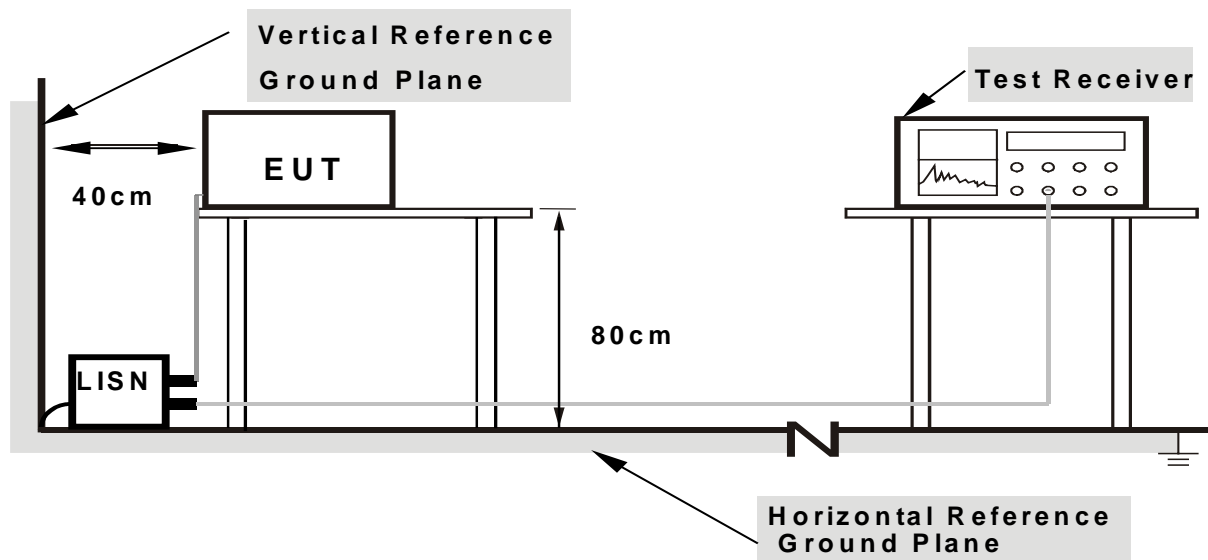
4.1.3 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 cm from other units and other metal planes

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.



4.1.6 EUT OPERATING CONDITIONS

- a. Turned on the power of all equipment.
- b. PC ran a test program to enable all functions.
- c. PC read and wrote messages from FDD and HDD.
- d. PC sent "H" messages to color monitor (EUT) and then monitor displayed "H" patterns on screen.
- e. PC sent "H" messages to modem.
- f. PC sent "H" messages to printer, and the printer printed them on paper.
- g. Steps c-g are repeated.

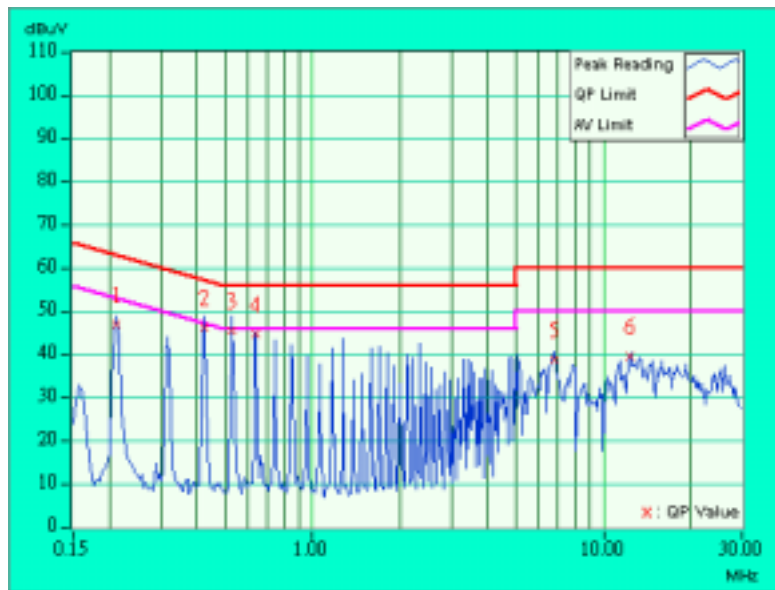


4.1.7 TEST RESULTS

EUT	19" COLOR MONITOR	MODEL	9Glr
MODE	1600x1200(85Hz/106 kHz)	6dB BANDWIDTH	10 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25 deg. C, 81 % RH, 1005 hPa	TESTED BY: Mart Su	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.210	0.10	46.52	-	46.62	-	63.19	53.19	-16.57	-
2	0.424	0.10	45.75	-	45.85	-	57.36	47.36	-11.51	-
3	0.530	0.12	45.23	-	45.35	-	56.00	46.00	-10.65	-
4	0.636	0.14	44.24	-	44.38	-	56.00	46.00	-11.62	-
5	6.789	0.35	38.55	-	38.90	-	60.00	50.00	-21.10	-
6	12.305	0.45	39.06	-	39.51	-	60.00	50.00	-20.49	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.

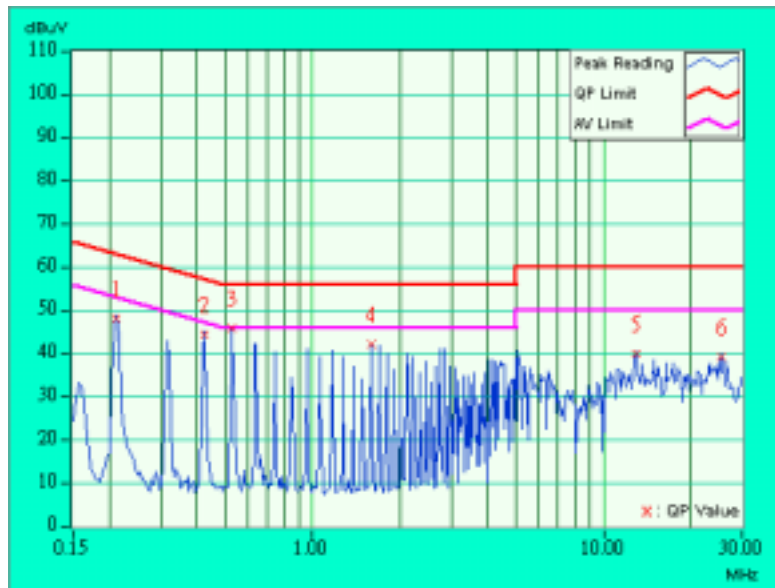




EUT	19" COLOR MONITOR	MODEL	9Glr
MODE	1600x1200(85Hz/106 kHz)	6dB BANDWIDTH	10 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25 deg. C, 81 % RH, 1005 hPa	TESTED BY: Mart Su	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.213	0.10	47.25	-	47.35	-	63.11	53.11	-15.76	-
2	0.423	0.10	43.48	-	43.58	-	57.38	47.38	-13.80	-
3	0.530	0.12	44.85	-	44.97	-	56.00	46.00	-11.03	-
4	1.590	0.20	41.15	-	41.35	-	56.00	46.00	-14.65	-
5	12.941	0.52	38.95	-	39.47	-	60.00	50.00	-20.53	-
6	25.563	1.05	38.09	-	39.14	-	60.00	50.00	-20.86	-

- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value = Emission level - Limit value
 5. Correction factor = Insertion loss + Cable loss
 6. Emission Level = Correction Factor + Reading Value.





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT FOR FREQUENCY BELOW 1000 MHz

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 (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	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.



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
HP Spectrum Analyzer	8590L	3544A01042	April 16, 2002
HP Preamplifier	8447D	2944A08313	April 3, 2002
* HP Preamplifier	8449B	3008A01201	Dec. 06, 2002
* HP Preamplifier	8449B	3008A01292	Aug. 21, 2002
* ROHDE & SCHWARZ TEST RECEIVER	ESI7	838496/016	Feb. 17, 2002
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 23, 2002
* ROHDE & SCHWARZ TEST RECEIVER	ESMI	839013/007 839379/002	Jan. 25, 2002
* CHASE BILOG Antenna	CBL6111A	1647	June 27, 2002
* SCHWARZBECK Horn Antenna	BBHA9120-D1	D130	July 6, 2002
* EMCO Horn Antenna	3115	9312-4192	April 15, 2002
* EMCO Turn Table	1016	1722	NA
* EMCO Tower	1051	1825	NA
* Software	AS61D4	NA	NA
* ANRITSU RF Switches	MP59B	M28342	June 27, 2002
* TIMES RF cable	LMR-600	CABLE-ST4-01	June 27, 2002
Open Field Test Site	Site 4	ADT-R04	June 8, 2002
VCCI Site Registration No.	Site 4	R-1038	NA

NOTE: 1. The measurement uncertainty is less than +/- 3.0dB, which is calculated as per the NAMAS 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. "*" = These equipment are used for the final measurement.

4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

4.2.3 TEST PROCEDURE

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10-meter open field site. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field

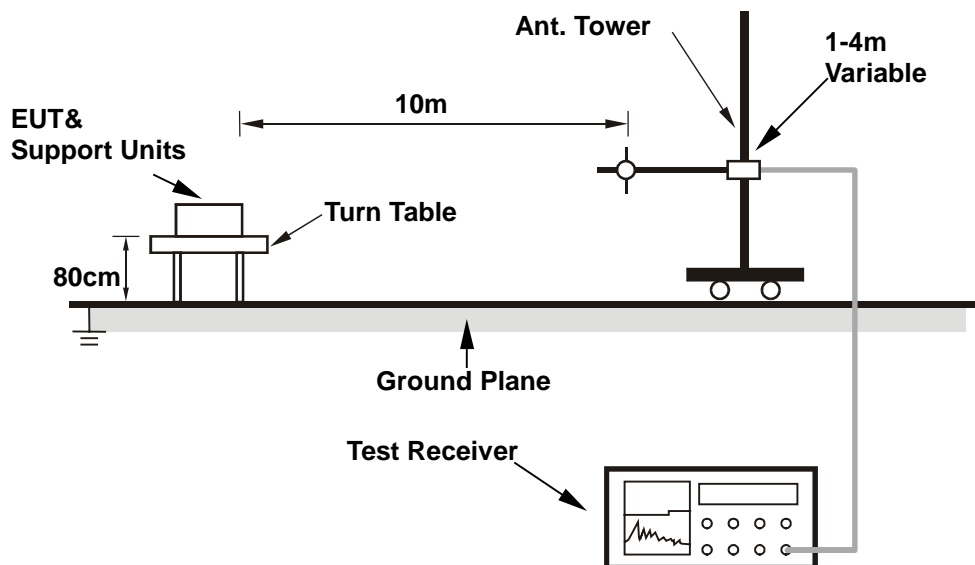
strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi- peak method or average method as specified and then reported In Data sheet peak mode and QP mode.
- g. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the interference antenna and the detect function was set to Peak or Average.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

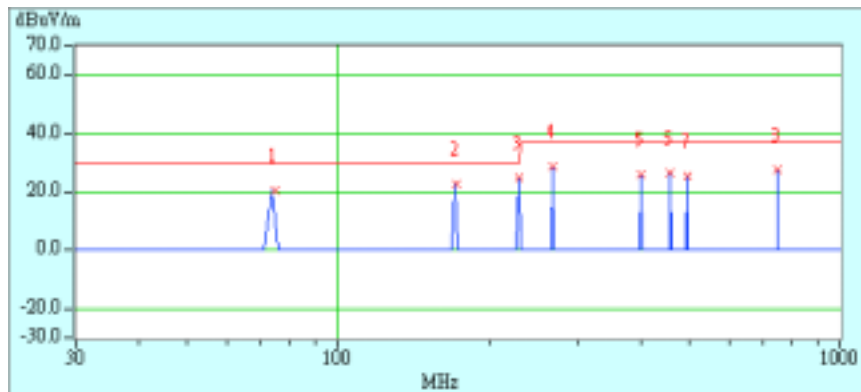


4.2.7 TEST RESULTS

EUT	19" COLOR MONITOR	MODEL	9Glr
MODE	1600x1200(85Hz/106 kHz)	FREQUENCY RANGE	30-2000 MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz Peak, 1 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 81 % RH, 1005 hPa	TESTED BY: Mart Su	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 10 M											
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Gain (dB)	Correction Factor (dB/m)
1	74.83	20.4 QP	30.00	-9.60	3.44H	216	13.87	5.69	0.80	0.00	-6.49
2	171.84	22.6 QP	30.00	-7.40	4.00H	52	11.88	9.41	1.31	0.00	-10.72
3	229.13	24.8 QP	30.00	-5.20	3.07H	2	12.40	10.95	1.50	0.00	-12.44
4	267.30	28.9 QP	37.00	-8.10	2.74H	203	14.93	12.33	1.64	0.00	-13.97
5	400.96	26.2 QP	37.00	-10.80	2.62H	306	8.10	16.02	2.07	0.00	-18.10
6	458.24	26.7 QP	37.00	-10.30	1.53H	80	7.22	17.22	2.26	0.00	-19.48
7	496.40	25.3 QP	37.00	-11.70	2.24H	29	5.05	18.13	2.12	0.00	-20.25
8	750.15	27.5 QP	37.00	-9.50	1.52H	304	2.29	22.36	2.85	0.00	-25.21

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB/m) = Pre-Amplifier Gain (dB) - Antenna Factor (dB/m) - Cable Factor (dB)
 3. Pre-Amplifier Gain (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level – Limit value.



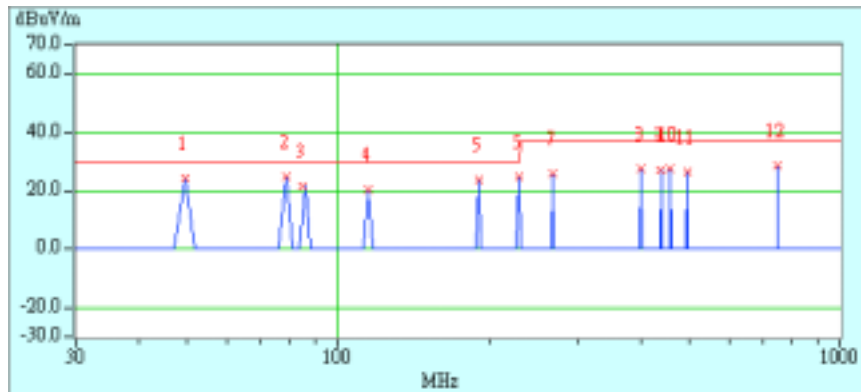


EUT	19" COLOR MONITOR	MODEL	9Glr
MODE	1600x1200(85Hz/106 kHz)	FREQUENCY RANGE	30-2000 MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz Peak, 1 MHz
ENVIRONMENTAL CONDITIONS	25 deg. C, 81 % RH, 1005 hPa	TESTED BY: Mart Su	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 10 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Antenna Factor (dB/m)	Cable Factor (dB)	Pre-Amp. Gain (dB)	Correction Factor (dB/m)
1	49.50	24.3 QP	30.00	-5.70	1.00V	117	13.49	10.08	0.74	0.00	-10.81
2	78.78	24.9 QP	30.00	-5.10	1.45V	206	17.13	6.90	0.84	0.00	-7.75
3	85.00	21.8 QP	30.00	-8.20	1.00V	194	12.94	7.98	0.93	0.00	-8.91
4	114.58	20.7 QP	30.00	-9.30	1.00V	197	8.04	11.70	0.95	0.00	-12.66
5	191.04	24.0 QP	30.00	-6.00	1.00V	49	13.67	8.94	1.38	0.00	-10.33
6	229.10	24.8 QP	30.00	-5.20	1.00V	231	12.32	10.95	1.50	0.00	-12.44
7	267.31	25.8 QP	37.00	-11.20	1.00V	57	11.81	12.33	1.64	0.00	-13.97
8	400.93	27.8 QP	37.00	-9.20	1.00V	56	9.70	16.02	2.07	0.00	-18.11
9	439.01	27.0 QP	37.00	-10.00	1.00V	153	7.98	16.79	2.25	0.00	-19.04
10	458.22	27.9 QP	37.00	-9.10	1.00V	218	8.42	17.22	2.26	0.00	-19.48
11	496.51	26.4 QP	37.00	-10.60	2.36V	299	6.15	18.13	2.12	0.00	-20.25
12	750.10	28.6 QP	37.00	-8.40	3.67V	32	3.39	22.36	2.85	0.00	-25.21

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) – Correction Factor(dB)
 2. Correction Factor(dB/m) = Pre-Amplifier Gain (dB) - Antenna Factor (dB/m) - Cable Factor (dB)
 3. Pre-Amplifier Gain (dB) = 0, when the test receiver is used to read the value and because it did not use the Pre-Amplifier.
 4. The other emission levels were very low against the limit.
 5. Margin value = Emission level – Limit value.



5 PHOTOGRAPHS OF THE TEST CONFIGURATION CONDUCTED EMISSION TEST



RADIATED EMISSION TEST





6 APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

USA	FCC, NVLAP, UL
Germany	TUV Rheinland
Japan	VCCI
New Zealand	MoC
Norway	NEMKO, DNV
Canada	INDUSTRY CANADA
R.O.C.	CNLA, BSMI

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml.

If you have any comments, please feel free to contact us at the following:

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Lin Kou Safety Lab:

Tel: 886-2-26093195

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Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.