



EMC

TEST REPORT

REPORT NO. : F87072212
MODEL NO. : LT561, LTX15CA01(A),
LT561D, LTXCA01(B)
DATE OF TEST : July 22, 1998

PREPARED FOR: MAG TECHNOLOGY CO., LTD.

ADDRESS : 9F, 245, SEC. 1, TUNHWA S. RD.,
TAIPEI, 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.

This test report consists of 17 pages in total. It may be duplicated completely for legal use with the allowance of the applicant. It shall not be reproduced except in full, without the written approval of our laboratory. It should not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. government. The test result in the report only applies to the tested sample.



TABLE OF CONTENTS

1. CERTIFICATION.....	3
2. 5 GENERAL INFORMATION	4
2.1 GENERAL DESCRIPTION OF EUT	4
2.2 DESCRIPTION OF SUPPORT UNITS	5
2.3 TEST METHODOLOGY AND CONFIGURATION.....	5
3. TEST INSTRUMENTS	6
3.1 TEST INSTRUMENTS (EMISSION).....	6
3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION.....	7
4. TEST RESULTS (EMISSION)	8
4.1 RADIO DISTURBANCE	8
4.2 EUT OPERATION CONDITION	8
4.3 TEST DATA OF CONDUCTED EMISSION (A).....	9
4.4 TEST DATA OF CONDUCTED EMISSION (B)	10
4.5 TEST DATA OF RADIATED EMISSION (A)	11
4.6 TEST DATA OF RADIATED EMISSION (B)	13
5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN.	15
6. ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT	17



1.

CERTIFICATION

Issue date: Sept. 17, 1998

Product : LCD MONITOR
Trade Name : MAG
Model No. : LT561, LT561D, LTX15CA01(A), LTXCA01(B)
Applicant : MAG TECHNOLOGY 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 July 22, 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: Jackey Chang, DATE: 9/17/98
(Jackey Chang)

CHECKED BY: Yemmy Soong, DATE: 9/17/98
(Yemmy Soong)

APPROVED BY: Mike Su, DATE: 9/17/98
(Mike Su)

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

Accredited Laboratory



2.5 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	LCD MONITOR
Model No.	:	LT561, LT561D, LTX15CA01(A), LTXCA01(B)
Power Supply Type	:	Switching
Power Cord	:	Nonshielded AC (1.8m)
Data Cable	:	Shielded (1.8m)

Note: The EUT is a 15" LCD monitor with resolution up to 1024x768 (69 kHz)

The EUT has four model names which are identical to each other except for their model names, as the following:

- Model : LT561
- Model : LT561D
- Model : LTX15CA01(A)
- Model : LTXCA01(B)

From the above model names, Model : LT561 was selected as the representative for this test and its data is recorded in this report.

The EUT was tested using the following modes:

Mode 1 : using 1 Toshiba Pannel and
MAG Adapter, Model: PM1230,
Input: 100-240V, 1.0A, 50-60Hz
Output: 12Vdc, 3.0A

Mode 2 : using 1 Toshiba Pannel and
MAG adapter, Model: PA1232,
Input: 100-240V, 1.0A, 50-60 Hz
Output: 12Vdc, 3.2A

The EUT was tested using both Modes and the data of the tests are recorded in this report. There are two ferrite cores on the cable of both the above power adapters.

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

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



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. 3, 1999
HP Preamplifier	8447D	2944A08119	Jan. 20, 1999
ROHDE & SCHWARZ TEST RECEIVER	ESVP	893496/030	July 15, 1999
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 ± 3 dB, 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 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 ± 2.6 dB, 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)	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. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range : 0.15 - 30 MHz (Conducted Emission)
30 - 1000 MHz (Radiated Emission)

Input Voltage : 120 Vac, 60 Hz

Temperature : 26 °C

Humidity : 60 %

Atmospheric Pressure : 998 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -4.7 dB at 2.589 MHz Minimum passing margin of radiated emission: -2.5 dB at 203.98 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. CCD camera captures an image and sends it to PC.
5. PC sends "H" messages & picture messages to LCD monitor (EUT) displays them on its screen.
6. PC sends "H" messages to modem.
7. PC sends "H" messages to printer, and the printer prints them on paper.
8. Send audio messages to internal speaker of EUT.
9. Repeat steps 3-9.



4.3 TEST DATA OF CONDUCTED EMISSION (A)

EUT: LCD MONITOR

MODEL: LT561

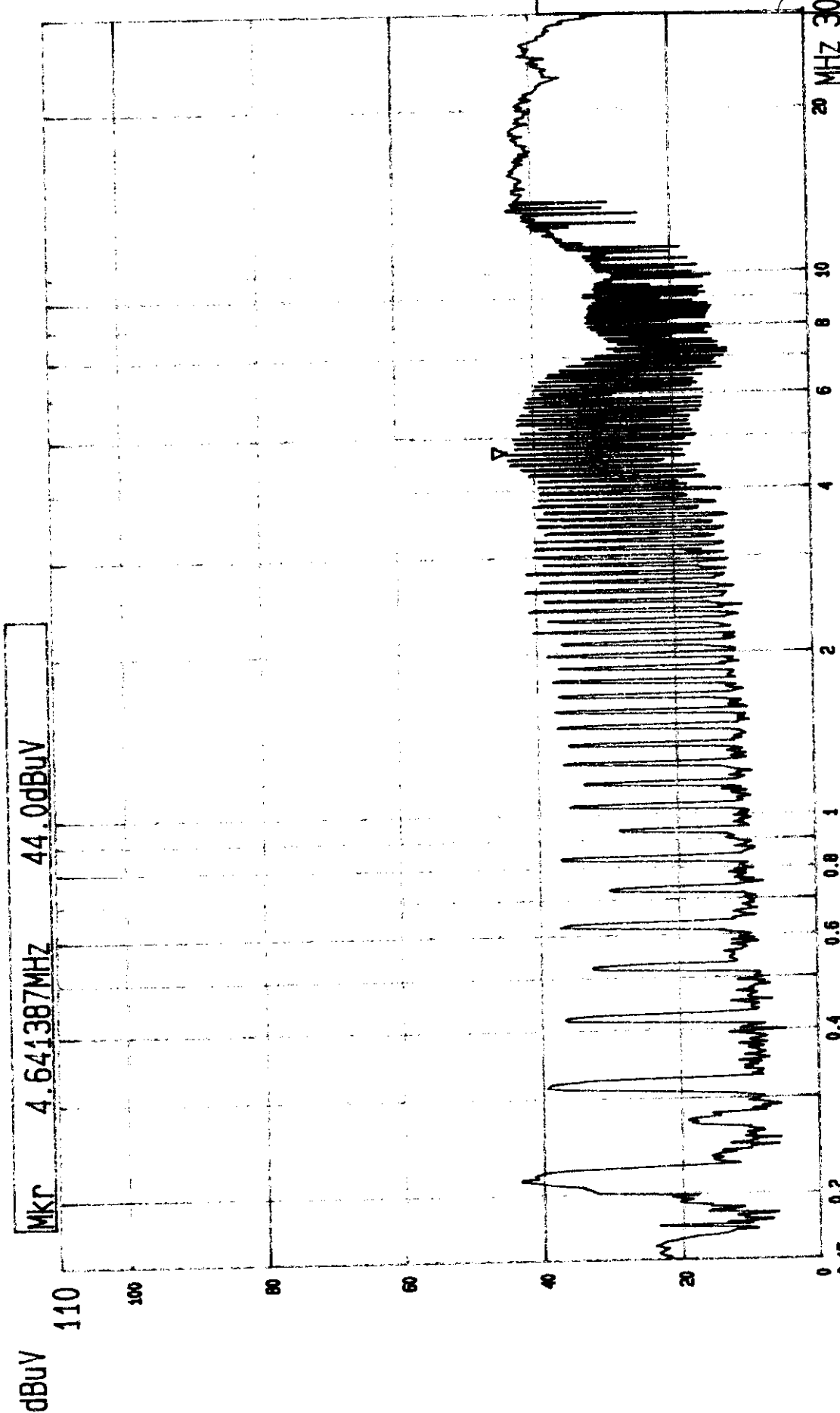
MODE : 1

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: *Jackey Chang*

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
0.203	42.70	-	43.90	-	63.45	53.45	-20.8	-	-19.6	-
0.313	39.30	-	38.70	-	59.89	49.89	-20.6	-	-21.2	-
2.589	39.50	-	51.30	39.40	56.00	46.00	-16.5	-	-4.7	-6.6
4.449	40.70	-	41.10	-	56.00	46.00	-15.3	-	-14.9	-
13.080	40.10	-	44.80	-	60.00	50.00	-19.9	-	-15.2	-
25.143	39.50	-	40.00	-	60.00	50.00	-20.5	-	-20.0	-

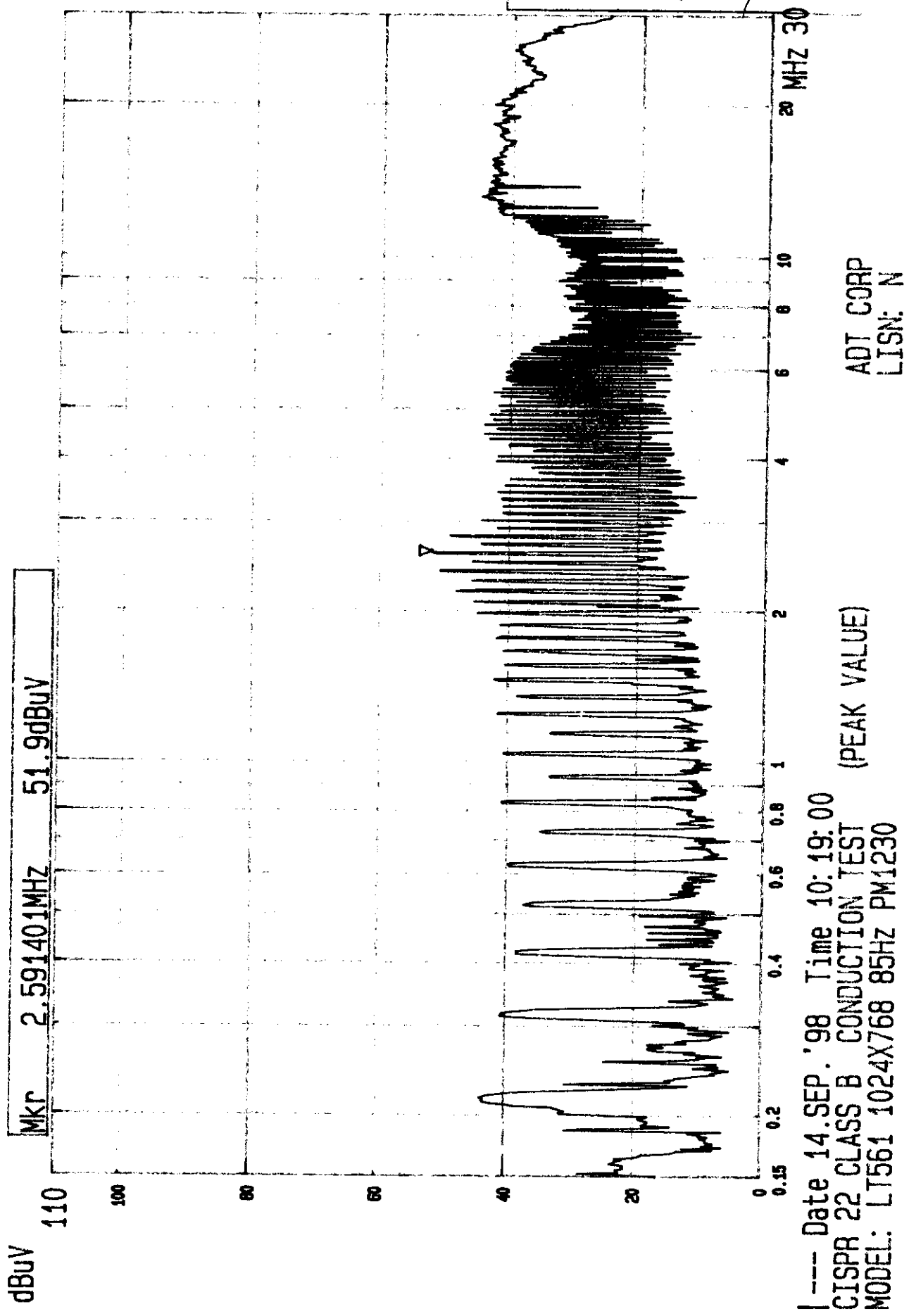
- Remarks:
1. "*": Undetectable
 2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 4. The emission levels of other frequencies were very low against the limit.



ADT CORP
LISN: L

(PEAK VALUE)

---- Date 14.SEP.'98 Time 10:13:03
CISPR 22 CLASS B CONDUCTION TEST
MODEL: LT561 1024X768 85HZ PM1230





4.4 TEST DATA OF CONDUCTED EMISSION (B)

EUT: LCD MONITOR

MODEL: LT561

MODE : 2

6 dB Bandwidth: 10 kHz

TEST PERSONNEL:

Jackey Chang

Freq. [MHz]	L Level		N Level		Limit		Margin [dB (μV)]			
	[dB (μV)]		[dB (μV)]		[dB (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.197	48.50	-	48.90	-	63.70	53.70	-15.2	-	-14.8	-
0.260	42.90	-	42.50	-	61.40	51.40	-18.5	-	-18.9	-
1.918	34.70	-	34.80	-	56.00	46.00	-21.3	-	-21.2	-
3.839	36.50	-	37.50	-	56.00	46.00	-19.5	-	-18.5	-
7.378	49.20	-	49.20	-	60.00	50.00	-10.8	-	-10.8	-
13.274	49.60	-	49.60	-	60.00	50.00	-10.4	-	-10.4	-

- 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 levels of other frequencies were very low against the limit.

dBuV

Mkr 7.346317MHz 55.2dBuV

110

100

80

60

40

20

0

0.15

0.2

0.4

0.6

0.8

1

2

4

6

8

10

20

30

MHz

--- Date 22.JUL.'98 Time 23:25:24

CISPR 22 CLASS B

CONDUCTION TEST (PEAK VALUE)

ADT CORP

MODEL : LT561

1024X768 85Hz/69kHz

LISN: N

Report No. F87072212

Page

10-2

Tested by Jackie Chan

dBuV

Mkr 7.389702MHz 54.7dBuV

110

100

80

60

40

20

0

0.15 0.2 0.4 0.6 0.8 1 2 4 6 8 10 20 MHz 30

--- Date 22.JUL.'98 Time 23:18:22

CISPR 22 CLASS B

CONDUCTION TEST (PEAK VALUE)

MODEL : LT561

1024X768 85Hz/69kHz

ADT CORP

LISN: L

Report No. F8707242

Page 10-1

Tested by Jacky Chong



4.5 TEST DATA OF RADIATED EMISSION (A)

EUT: LCD MONITOR

MODEL: LT561

MODE: 1

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: *Jackey Chang*

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
73.35	8.3	14.7	23.0	30.0	-7.0
120.00	15.1	10.4	25.5	30.0	-4.5
144.00	13.8	12.7	26.5	30.0	-3.5
180.00	12.2	14.8	27.0	30.0	-3.0
192.00	12.8	12.7	25.5	30.0	-4.5
204.00	13.5	11.1	24.6	30.0	-5.4
208.18	13.7	8.1	21.8	30.0	-8.2
216.01	14.1	12.7	26.8	30.0	-3.2
227.54	14.6	12.2	26.8	30.0	-3.2
228.01	14.6	11.6	26.2	30.0	-3.8
229.49	14.7	12.2	26.9	30.0	-3.1
240.00	15.2	18.6	33.8	37.0	-3.2

- 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



TEST DATA OF RADIATED EMISSION (A)

EUT: LCD MONITOR

MODEL: LT561

MODE: 1

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:

Jukey Chong

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
76.01	7.6	18.8	26.4	30.0	-3.6
81.01	8.3	17.5	25.8	30.0	-4.2
110.51	13.3	11.6	24.9	30.0	-5.1
120.01	15.5	10.3	25.8	30.0	-4.2
126.27	15.4	10.0	25.4	30.0	-4.6
131.99	15.3	10.4	25.7	30.0	-4.3
144.00	14.5	12.3	26.8	30.0	-3.2
203.98	13.8	13.7	27.5	30.0	-2.5
228.00	14.7	10.6	25.3	30.0	-4.7

- 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



4.6 TEST DATA OF RADIATED EMISSION (B)

EUT: LCD MONITOR

MODEL: LT561

MODE: 2

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:

Jackey Chang

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
60.07	7.9	9.5	17.4	30.0	-12.6
119.98	15.1	8.6	23.7	30.0	-6.3
144.00	13.8	12.7	26.5	30.0	-3.5
167.99	12.3	14.6	26.9	30.0	-3.1
175.56	12.2	13.0	25.2	30.0	-4.8
195.03	13.0	12.8	25.8	30.0	-4.2
208.02	13.7	12.3	26.0	30.0	-4.0
216.01	14.1	12.6	26.7	30.0	-3.3
227.47	14.6	12.0	26.6	30.0	-3.4
500.59	23.2	8.9	32.1	37.0	-4.9
600.23	26.2	7.3	33.5	37.0	-3.5

- 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 (B)

EUT: LCD MONITOR

MODEL: LT561

MODE: 2

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:

Jacky Chang

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
144.02	14.5	12.5	27.0	30.0	-3.0
192.01	13.2	11.4	24.6	30.0	-5.4
195.05	13.4	8.3	21.7	30.0	-8.3
210.51	14.0	11.0	25.0	30.0	-5.0
213.26	14.1	12.3	26.4	30.0	-3.6
216.02	14.2	11.7	25.9	30.0	-4.1
227.49	14.7	11.8	26.5	30.0	-3.5
240.57	15.2	13.4	28.6	37.0	-8.4
400.97	21.6	9.2	30.8	37.0	-6.2
500.56	22.6	7.8	30.4	37.0	-6.6
600.18	24.9	8.1	33.0	37.0	-4.0

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