



EMC

TEST REPORT

REPORT NO. : F87091405

MODEL NO. : JT156D

DATE OF TEST : Sept. 23, 1998

PREPARED FOR: JEAN CO., LTD.

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PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

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TABLE OF CONTENTS

1. CERTIFICATION.....	3
2. 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
4.1.1 EUT OPERATION CONDITION	8
4.1.2 TEST DATA OF CONDUCTED EMISSION (A).....	9
4.1.3 TEST DATA OF CONDUCTED EMISSION (B).....	10
4.1.4 TEST DATA OF RADIATED EMISSION.....	11
5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN.	13
6. ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT	16

**1. CERTIFICATION**

Issue Date: Oct. 03, 1998

Product : LCD MONITOR
Trade Name : JEAN
Model No. : JT156D
Type No. : L51A
Applicant : JEAN 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 Sept. 23, 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: Alan Chang, DATE: 10/03/98
(Alan Chang)

CHECKED BY: Yemmye, DATE: 10/03/98
(Yemmy Soong)

APPROVED BY: Mike Su, DATE: 10/03/98
(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.	:	JT156D
Power Supply Type	:	DC (from power adapter)
Power Cord	:	Nonshielded (AC) (1.8 m) Nonshielded (DC) (0.95 m)
Data Cable	:	Shielded (1.5 m)

Note: The EUT is a 15" LCD monitor with resolution up to 1024x768 (48 kHz).

The EUT will be sold together with a power adapter and a VGA card
(Chip: Lynx, SM910Q C1).

The EUT was tested with a JEAN power adapter, Model: JA30
Its rating, Input: 100-240 Vac, 50/60 Hz, 1.5 A. Output: DC 12 V, 2.5A, 30W.
There are two ferrite cores on the DC output cable of power adapter.

There are two ferrite cores on the video cable of the EUT.

The VGA card's CRT maximum resolution is up to 1024x768 (60 kHz) and LCD
maximum resolution is up to 1024x768 (48 kHz). There is a separate conducted
test data of the VGA card in this report.

The VGA Card has a TV output port which is still under design and therefore
during the test, this TV port was disabled.

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-233T	FCC Doc Approved	Nonshielded Power (1.8m)
2	MONITOR	HP	D2846	FCC Doc Approved	Shielded Signal (1.2m) Nonshielded Power (1.8m)
3	KEYBOARD	FORWARD	FDA-104GA	F4ZDA-104G	Shielded Signal (1.4m)
4	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded Signal (1.5m)
5	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (2.5m) Nonshielded Power (1.9m)
6	MODEM	ACEEX	1414	IFAXDM1414	Shielded signal (1.2m) Nonshielded Power (1.9m)
7	EARPHONE	GAMMA	LH115	N/A	Shielded Signal (2.3m)

Note : 1. An audio cable (1.8m) was connected from the 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 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	3544A01042	April 29, 1999
HP Preamplifier	8447D	2944A08313	March 21, 1999
ROHDE & SCHWARZ TEST RECEIVER	ESVS 30	841977/008	Oct. 5, 1998
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 28, 1998
CHASE BiLOG Antenna	CBL6111A	1647	July 3, 1999
EMCO Turn Table	1016	1722	N/A
EMCO Tower	1051	1825	N/A
Open Field Test Site	Site 4	ADT-R04	June 19, 1999

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	828765/002	July 29, 1999
ROHDE & SCHWARZ Artificial Mains Network	ESH2-Z5	828075/003	July 27, 1999
EMCO-L.I.S.N.	3825/2	90031627	July 27, 1999
Shielded Room	Site 5	ADT-C05	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)	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 : 27 °C

Humidity : 58 %

Atmospheric Pressure : 998 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -13.4 dB at 0.218 MHz Minimum passing margin of radiated emission: -2.4 dB at 225.53 MHz

Note : The EUT was pretested using the following mode :

- 1024x768 (48 kHz) with LCD & CRT display
- 1024x768 (60kHz) CRT display only

During the pretest, the worst emission levels were found when there is simultaneous LCD and CRT display mode under 1024x768 (48 kHz) and therefore only this mode is recorded in this report.

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 LCD monitor (EUT) and external monitor, and both display "H" patterns on their 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 internal speaker of EUT and earphone.
8. Repeat steps 3-8.



4.1.2 TEST DATA OF CONDUCTED EMISSION (A)

EUT: LCD MONITOR

MODEL: JT156D

MODE: LCD & CRT display

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: *Alan 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
0.295	40.80	-	41.20	-	60.38	50.38	-19.6	-	-19.2	-
0.791	38.20	-	37.60	-	56.00	46.00	-17.8	-	-18.4	-
1.578	36.90	-	36.20	-	56.00	46.00	-19.1	-	-19.8	-
3.065	40.80	-	37.20	-	56.00	46.00	-15.2	-	-18.8	-
5.136	40.60	-	41.30	-	60.00	50.00	-19.4	-	-18.7	-
17.182	44.20	-	44.50	-	60.00	50.00	-15.8	-	-15.5	-

- 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 levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value

ADT CO. Shielded Room 5
CISPR 22 CLASS B

23. Sep 98 17:18

EUT: JT1560 (TYPE NO: L51A)
Test Spec: LISN : L
Comment: 1024X768 48KHz/50Hz

Report No. F87091405

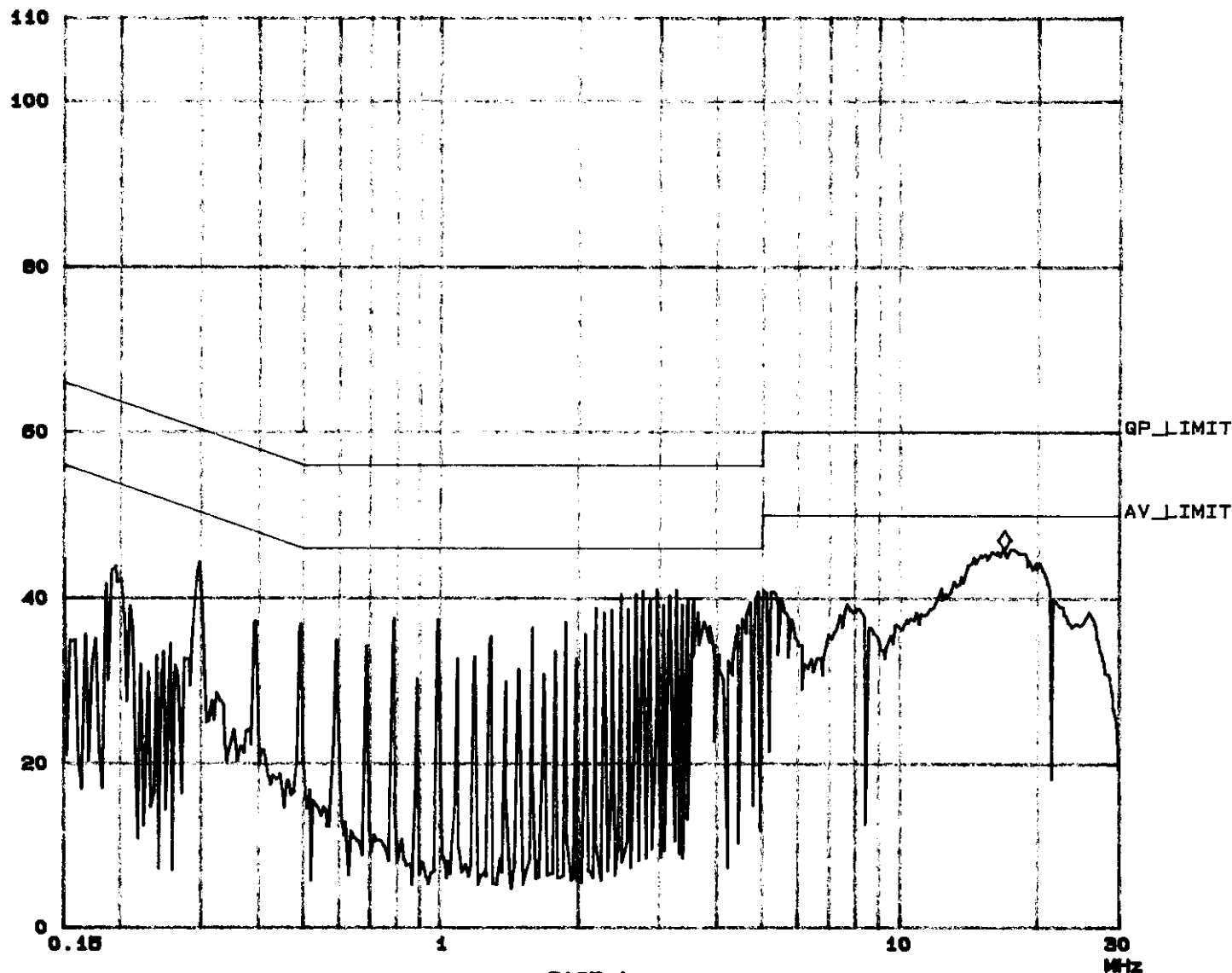
Page 9-1

Tested by Alan Chang

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	450k	3k	10k	PK	1ms	10dB	OFF	50dB
450k	5M	3k	10k	PK	1ms	10dB	OFF	50dB
5M	30M	3k	10k	PK	1ms	10dB	OFF	50dB

dBuV ◇ Mkr : 16.88300MHz 45.8 dBuV



ADT CO. Shielded Room 5
CISPR 22 CLASS B

23. Sep 98 17:09

EUT: JT1560 (TYPE NO: L51A)
Test Spec: LISN : N
Comment: 1024X768 48KHz/60Hz

Report No. F87091405

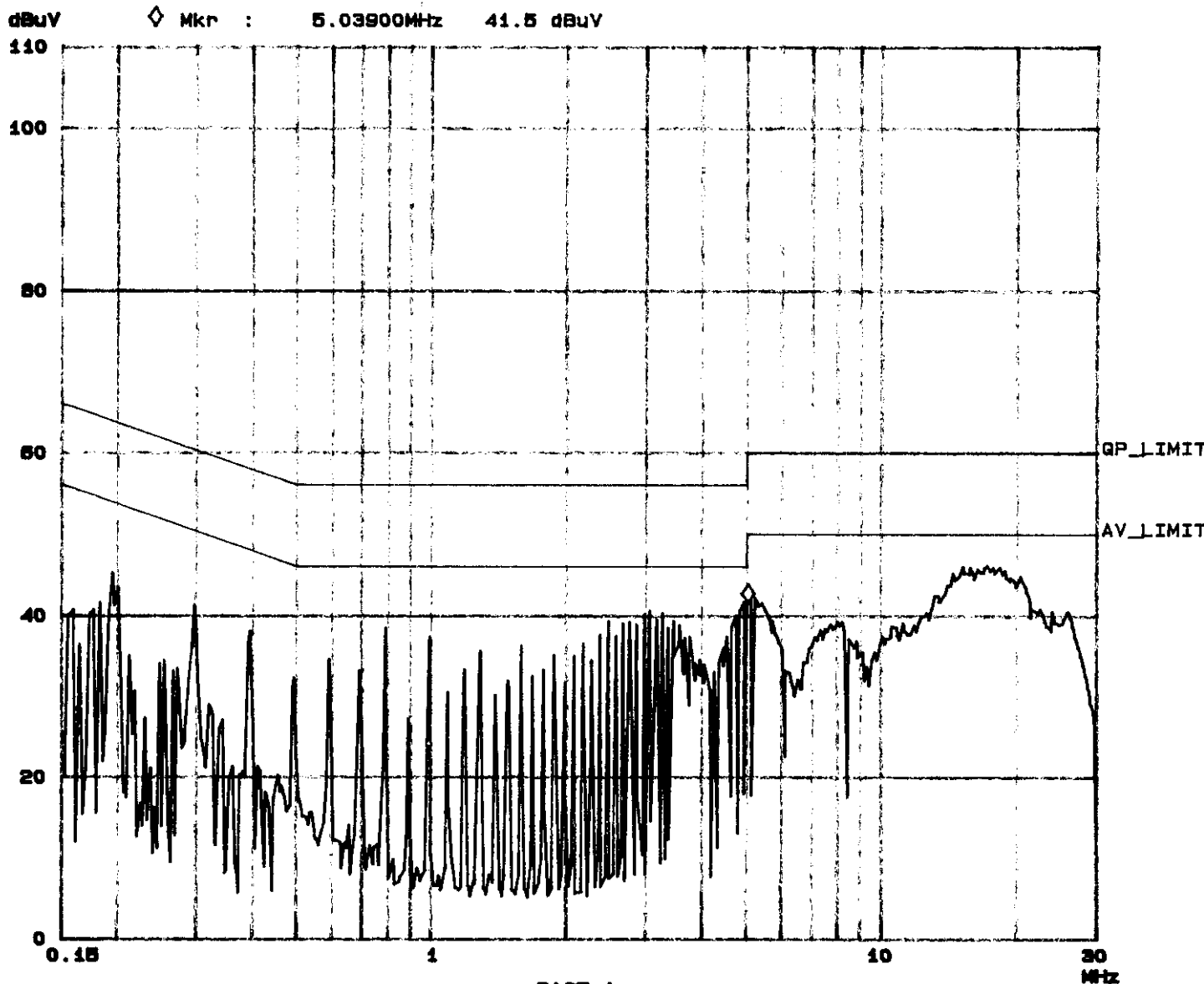
Page

9-2

Tested by Alan Chang

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	450k	3k	10k	PK	1ms	10dB	LN OFF	50dB
450k	5M	3k	10k	PK	1ms	10dB	LN OFF	50dB
5M	30M	3k	10k	PK	1ms	10dB	LN OFF	50dB





4.1.3 TEST DATA OF CONDUCTED EMISSION (B)

EUT: LCD MONITORMODEL: JT156DMODE: VGA Card

6 dB Bandwidth: 10 kHz

TEST PERSONNEL: *Alan 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
0.218	40.20	-	49.50	-	62.87	52.87	-22.7	-	-13.4	-
0.596	34.20	-	40.30	-	56.00	46.00	-21.8	-	-15.7	-
0.971	35.60	-	42.20	-	56.00	46.00	-20.4	-	-13.8	-
1.816	30.70	-	41.20	-	56.00	46.00	-25.3	-	-14.8	-
10.241	35.20	-	38.50	-	60.00	50.00	-24.8	-	-21.5	-
18.632	41.90	-	42.70	-	60.00	50.00	-18.1	-	-17.3	-

- 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 levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value

ADT CO. Shielded Room 5
CISPR 22 CLASS B

23. Sep 98 18:23

EUT: JT156D (TYPE NO: L51A)
Test Spec: LISN : L
Comment: VSA MODE

Report No. F87091405

Page

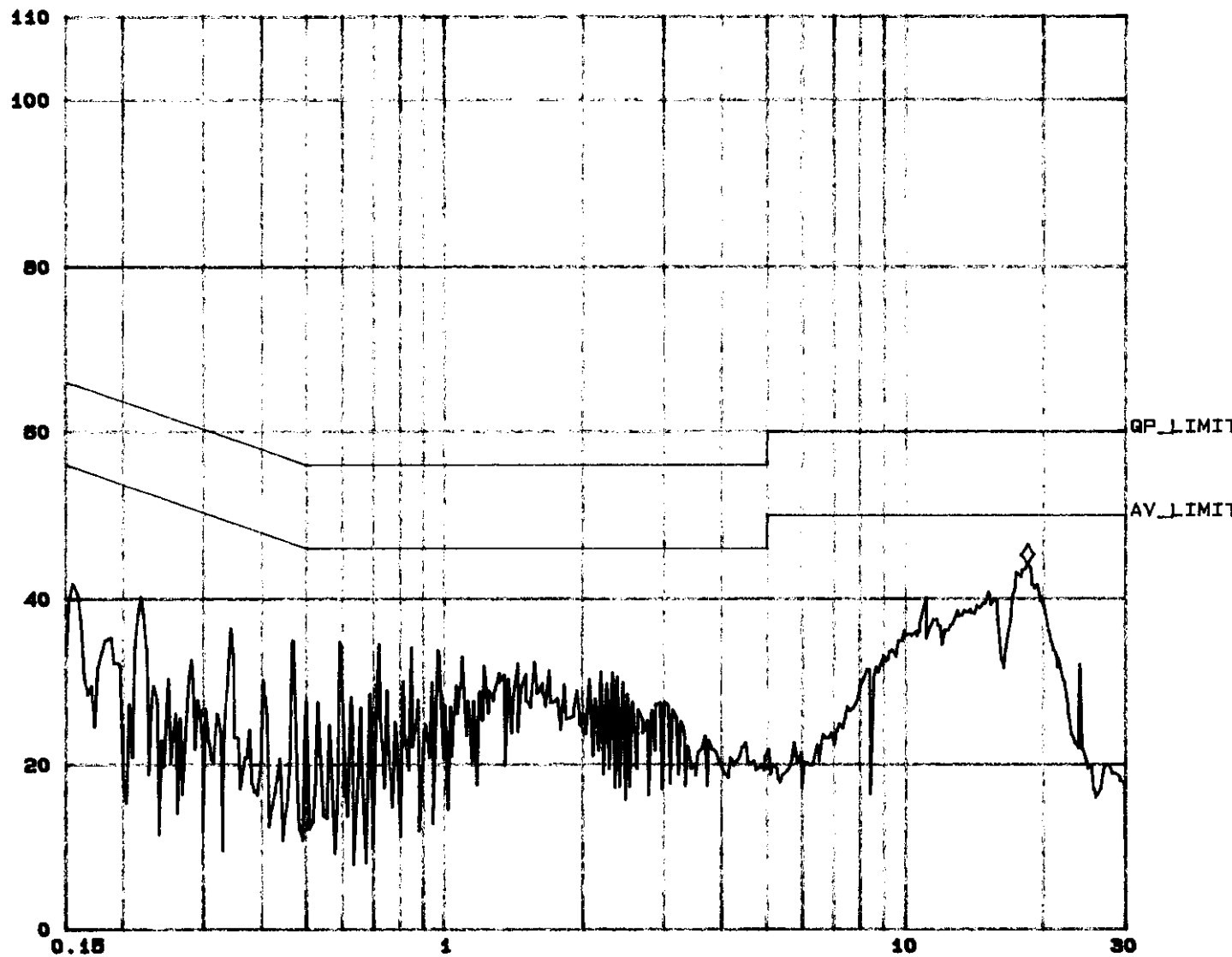
10-1

Tested by Alan Chang

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings					
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp	OpRge
150k	450k	3k	10k	PK	1ms	10dB	OFF	80dB
450k	5M	3k	10k	PK	1ms	10dB	OFF	80dB
5M	30M	3k	10k	PK	1ms	10dB	OFF	80dB

dBuV ◇ Mkr : 18.43400MHz 44.1 dBuV



ADT CO. Shielded Room 5
CISPR 22 CLASS B

23. Sep 98 18:29

EUT: JT1550 (TYPE NO: L51A)
Test Spec: L15N : N
Comment: V6A MODE

Report No. F87091405

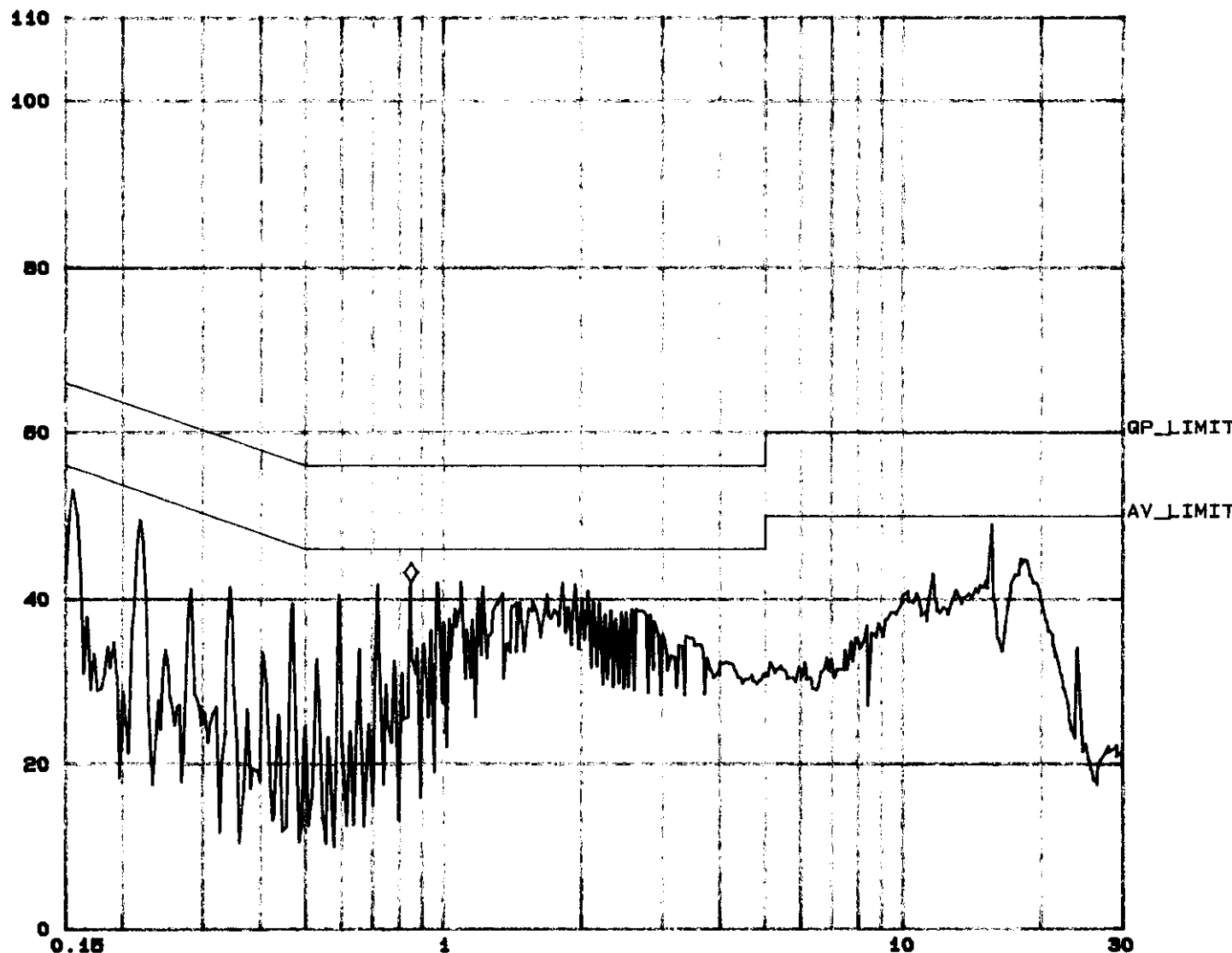
Page 10-2

Tested by Alan Chang

Fast Scan Settings (3 Ranges)

Frequencies			Receiver Settings				
Start	Stop	Step	IF BW	Detector	M-Time	Atten	Preamp OpRge
150k	450k	3k	10k	PK	1ms	10dB LN	OFF 60dB
450k	5M	3k	10k	PK	1ms	10dB LN	OFF 60dB
5M	30M	3k	10k	PK	1ms	10dB LN	OFF 60dB

dBuV ◇ Mkr : 846.00 kHz 42.0 dBuV





4.1.4 TEST DATA OF RADIATED EMISSION

EUT: LCD MONITORMODEL: JT156DMODE: 1024x768 (48 kHz)ANTENNA: CHASE BILOG CBL6111APOLARITY: HorizontalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 MTEST PERSONNEL: *Alan Chang*

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
69.28	8.2	15.1	23.3	30.0	-6.7
83.80	9.9	15.2	25.1	30.0	-4.9
109.53	12.8	8.0	20.8	30.0	-9.2
154.66	12.6	11.7	24.3	30.0	-5.7
161.08	12.0	14.6	26.6	30.0	-3.4
180.42	11.6	8.8	20.4	30.0	-9.6
193.31	11.6	14.7	26.3	30.0	-3.7
212.64	12.4	14.8	27.2	30.0	-2.8
225.53	13.3	14.3	27.6	30.0	-2.4

- 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: LCD MONITORMODEL: JT156DMODE: 1024x768 (48 kHz)ANTENNA: CHASE BILOG CBL6111APOLARITY: VerticalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 MTEST PERSONNEL: Alan Chang

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)
51.55	9.0	16.3	25.3	30.0	-4.7
68.90	8.0	19.2	27.2	30.0	-2.8
83.76	8.1	18.0	26.1	30.0	-3.9
86.92	9.0	17.2	26.2	30.0	-3.8
109.54	11.5	15.2	26.7	30.0	-3.3
154.65	13.5	11.0	24.5	30.0	-5.5
161.10	12.7	14.3	27.0	30.0	-3.0
176.02	11.7	15.2	26.9	30.0	-3.1
180.02	11.5	12.9	24.4	30.0	-5.6
193.30	11.9	14.3	26.2	30.0	-3.8
212.63	12.6	14.1	26.7	30.0	-3.3
225.53	13.1	13.4	26.5	30.0	-3.5
239.80	13.7	17.8	31.5	37.0	-5.5

- 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

