

**Test Report
Application for Certification
Class II permissive Change
On Behalf Of**

**First International Computer Inc.
Notebook Computer**

Model: 7200XT, 7200XT1, 7200XT1D3

FCC ID: EUNDESIGNOTE70

**Prepared For:
First International Computer Inc.
6F., Formosa Plastics Rear Bldg 201, Tung-Hwa N. Road,
Taipei, Taiwan, R.O.C.**



**Report By : Global EMC Standard Tech. Corp.
No.3 Pau-Tou-Tsuo Valley, Chia-Pau
Tsuen, Lin Kou Hsiang, Taipei County,
Taiwan, R.O.C.**

Tel : (02) 2603-5321

Fax : (02) 2603-5325

TABLE OF CONTENTS

Description	Page
1. Test Report Certification.....	3
2. General Information	4
2.1 Production Description.....	4
2.2 Tested System Details.....	5
2.3 Test Methodology	8
2.4 Test Facility.....	8
3. Conducted Power Line Test.....	9
3.1 Test Equipments.....	9
3.2 Block Diagram of Test Setup.....	9
3.3 Conducted Powerline Emission Limit	10
3.4 EUT Configuration on Measurement.....	10
3.5 EUT Exercise Software.....	11
3.6 Conducted Emission Data.....	11
4. Radiation Emission Test.....	15
4.1 Test Equipment	15
4.2 Test Setup.....	15
4.3 Radiated Emission Limit.....	16
4.4 EUT Configuration.....	17
4.5 Operating Condition of EUT.....	17
4.6 Radiated Emission Data	17
5. Photographs	36
5.1 Test Photographs.....	36
6. EUT Detail Photographs.....	42
7. EMI Reduction Method During Compliance Testing.....	66
Appendix A.....	67
FCC ID	67
Appendix B	69
Circuit (Block) Diagram.....	69
Appendix C	70
User Manual	70

G-T#93-F014

1. Test Report Certification

Applicant : First International Computer Inc.**Manufacturer : First International Computer Inc.****EUT Description : Notebook Computer**

(A) FCC ID : EUNDESIGNOTE70
(B) Model No. : 7200XT, 7200XT1, 7200XT1D3
(C) Serial No. : ProtoType
(D) Power : 110V/60Hz
(E) Rating DC-O/P : 20V

MEASUREMENT PROCEDURE USED :

CFR 47, Part 15 Radio Frequency Device Subpart B Unintentional Radiators Class **B** :1996
CISPR 22 Limits and methods of measurement of radio disturbance characteristics of
information technology equipment: 1993
ANSI C63.4 Methods of Measurements of Radio-Noise Emissions from Low-Voltage
Electrical and Electronic Equipment in the range of 9kHz to 40GHz. :1992

THE MEASUREMENT SHOWN IN THE ATTACHMENT WERE MADE IN ACCORDANCE
WITH THE PROCEDURES INDICATED, AND THE MAXIMUM ENERGY EMITTED BY
THE EQUIPMENT WAS FOUND TO BE WITHIN THE ABOVE LIMITS APPLICABLE.

The logo for the National Voluntary Laboratory Accreditation Program (NVLAP). It features the letters "NVLAP" in a bold, sans-serif font, with a registered trademark symbol (®) to the upper right of the "P".

Sample Received Date : May, 05, 1998

Final Test Date : Jun, 05, 1998

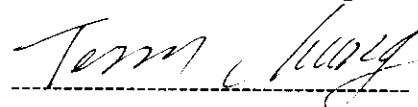
Documented by : May Tseng

Test Engineer :

A handwritten signature in black ink, appearing to read "Jackie Lin", written over a horizontal dashed line.

JACKIE LIN

Approve & Authorized Signer :

A handwritten signature in black ink, appearing to read "Terry Chung", written over a horizontal dashed line.

TERRY CHUNG

This test data shown below is traceable to NIST.

2. General Information

2.1 Production Description

Description : Notebook Computer
 Model Number : 7200XT, 7200XT1, 7200XT1D3
 Serial Number : Prototype
 Applicant : First International Computer Inc.
 Address : 6F., Formosa Plastics Rear Bldg 201, Tung-Hwa N. Road, Taipei, Taiwan, R.O.C.
 Manufacturer : First International Computer Inc.
 Address : 6F., Formosa Plastics Rear Bldg 201, Tung-Hwa N. Road, Taipei, Taiwan, R.O.C.
 FCC ID : EUNDESIGNOTE70
 CPU : Pentium II 266MHz , Clock: 66MHz
 Power Adaptor : I-LAN, 50W/ M/N: F1700C
 AC-100~240V 1.8A/50-60Hz, DC O/P: 20V 2.8A

Mode 1: Model:7200XT, Pentium 266MHz, Clock: 66MHz, LCD 13.3" TFT, Resolution 1024x768.

Mode 2: Model: 7200XT1, Pentium 266MHz, Clock: 66MHz, LCD 14.1" TFT, Resolution 1024X768.

Mode 3: Model: 7200XT1D3, Pentium 266MHz, Clock: 66MHz, LCD 14.1" TFT, Resolution 1024X768.

Note:

1. This Notebook computer can support different CPU/Clock frequency modes and can support different types of LCD panel. The test condition of 233 MHz/Clock and 266MHz and all the components listed at section 1.2 were investigated. The data shown in this test report reflects the worst-case data for each frequency/video resolution.
2. The difference between 7200XT and 7200XT1 is on LCD panel, 7200XT use 13.3" TFT but 7200XT1 use 14.1" TFT panel. 7200XT1D3 use the same 14.1" TFT panel, and the all same circuit board except audio board. And with different outside design, the plastic chassis is different.
3. These Notebooks has a internal CCD camera located at the upper top side of panel.

Checked from OEM, XAL, FIC, K&C

2.2 Tested System Details

The FCC IDs/Types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards, which have grants) are:

☒ Host Notebook Computer (EUT)

Model Number : 7200XT, 7200XT1, 7200XT1D3
Serial Number : N/A
FCC ID : EUNDESIGNOTE70
Manufacturer : First International Computer Inc.
CPU : INTEL Pentium II 266MHz, , Clock: 66MHz
L2 CACHE : 512KB
SDRAM SO DIMM : 32MB
1.44MB Floppy Disk Driver : TEAC, FD-05HG-5661
4.2 GB Hard Disk Driver : IBM, DTCA-24090
13.3" TFT LCD : Samsung, LT133X2-122 (Mode 1)
14.1" TFT : HITACHI, TX36D61VC1CAA (Mode 2, 3)
24X CD-ROM : Toshiba, XM-1702B
CCD Camera : AXIS, PCAM-QU
NIMH Battery Pack : Simplo, SMP-36S, 12V, 3500mAH
Power Adaptor : I-LAN, M/N:F1700C, 50W
Power Cord : Non-Shielded, Detachable. 1.4m

☒ Monitor M01-003

Model Number : 4500DC
Serial Number : 3652100181
FCC ID : GWGMULTI82
Manufacturer : OPTIQUEST, INC.
Data Cable : Shielded, Undetachable, 1.2m
Power Cord : Shielded, Detachable, 1.5m

☒ Mouse(PS2) M02-024

Model Number : MUS3P
Serial Number :
FCC ID : JKGMUS3P01
Manufacturer : Tremon Enterpnses Co., Ltd.
Data Cable : Shielded, Undetachable, 1.5m

CHANGED FROM ORIGINAL FILING

☒ Printer

Model Number : C2642A(DJ-400)
Serial Number : MY7951C4J5
FCC ID : B94C2642X
Manufacturer : HP
Data Cable : Shielded, Detachable, 1.8m
Adaptor & Power Cord : AC 110V, 60Hz To DC 30V
: Non-Shielded, Detachable, 1.9m

☒ Modem M03-013

Model Number : 1414
Serial Number : 960018044
FCC ID : IFAXDM1414
Manufacturer : ACEEX
Adaptor & Power Cord : Non-Shielded, Detachable, 1.5m
Data Cable : Shielded, Detachable, 1.2m

☒ Earphone E01-007 ~ 011

Model Number : PH-12B
Serial Number : N/A
Manufacturer : PRO2 International Corp.
Power Cord : N/A
Data Cable : Non-Shielded, Undetachable, 1.2 m

☒ Microphone M04-006 ~ 010

Model Number : N/A
Serial Number : N/A
FCC ID : N/A
Manufacturer : AIWA
Data Cable : Non-Shielded, Undetachable, 1m

☒ Joystick

Model Number : 3001
Serial Number : AE62901417
FCC ID : N/A
Manufacturer : Logitech
Data Cable : Shielded, Undetachable, 0.8m

☒ Speaker S01-003 ~007

Model Number : DS-203

Serial Number : N/A

FCC ID : N/A

Manufacturer : Crocodile

Power Cord : N/A

Data Cable : Shielded, Undetachable, 1m

☒ Radio Receiver R02-010 ~014

Model Number : HS-GS162

Serial Number : LYJ1084567

FCC ID : N/A

Manufacturer : AIWA CO., LTD

Power Cord : N/A (Battery)

☒ LCD PROJECTOR

Model Number : CPJ-200

Serial Number : 87881

FCC ID : N/A

Manufacturer : SONY

Power Cord : Non-Shielded, Detachable, 1.8m

Data Cable : Shielded, Detachable, 1.2m*4

☒ Scanner (USB)

Model Number : S-UA1

Serial Number : LTC74803704

FCC ID : DZL211089

Manufacturer : Logitech

Power with Data cable :Shielded, Undetachable, 1.5m with DC 5V

2.3 Test Methodology

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 3 meters.

2.4 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	21-27
Humidity (%RH)	25-75	60-65
Barometric pressure (mbar)	860-1060	950-1000

FCC Site Description : Aug. 10, 1995 File on

Federal Communication Commission

FCC Engineering Laboratory

7435 Oakland Mills Road

Columbia, MD 21046

Reference 31040/SIT1300F2

NVLAP Lab Code : 200085-0

United States Department of commerce

National Institute of Standards and Technology

National Voluntary Laboratory Accreditation Program

Name of firm : Global EMC Standard Tech. Corp.

Site location : No. 3 Pau-Tou Valley, Chia-Pau Tsuen, Lin Kou

Tsiang, Taipei Country, Taiwan, R.O.C.

3. Conducted Power Line Test

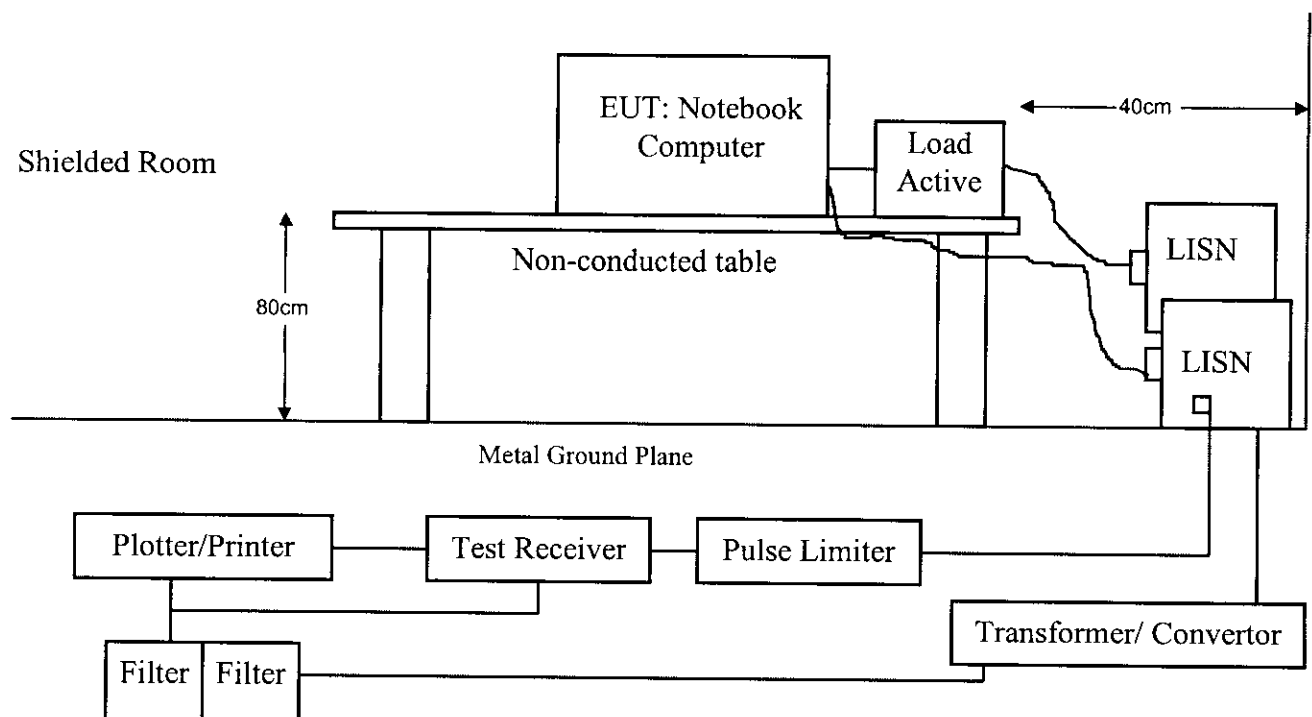
3.1 Test Equipments

The following test equipments are used during the conducted power line tests:

Instrument	Manufacturer	Type /Serial No.	Last Calibration	Location	C.E.
Test Receiver	Rohde & Schwarz	ESHS 30 / 8281091010	Dec. 24, 1997	Shield Room #1	✓
L.I.S.N.	Kyoritsu	KNW-407	Jul.1997	Shield Room #1	
L.I.S.N.	Solar	8012-50-R24 / 90038	Jun. 02, 1998	Shield Room #1	✓
L.I.S.N.	EMCO	3825/2 / 91111-1902	Jul.1997	Shield Room #1	
L.I.S.N.	Rohde & Schwarz	ESH3-Z5 / 840567/002	Jun. 02, 1998	Shield Room #1	✓
L.I.S.N.	Schwarzbeck	NNLK 8121	Apr. 10, 1998	Shield Room #1	
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	Jan. 11, 1998	Shield Room #1	✓

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

3.2 Block Diagram of Test Setup



3.3 Conducted Powerline Emission Limit

3.3.1 FCC Limits

Frequency	Maximum RF Line Voltage			
	Class A		Class B	
MHz	uV	dBuV	uV	dBuV
0.45 - 1.705	1000	60.0	250	48.0
1.705 - 30	3000	69.5	250	48.0

Remarks : 1. RF Line Voltage (dBuV) = $20 \log$ RF Line Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3.3.2 CISPR Limits

Frequency	Maximum RF Line Voltage dB(uV)			
	Class A		Class B	
MHz	QUASI-PEAK	AVERAGE	QUASI-PEAK	AVERAGE
0.15 - 0.50	79	66	66-56	56-46
0.50-5.0	73	60	56	46
5.0 - 30	73	60	60	50

Remarks : In the Above Table, the tighter limit applies at the band edges.

3.4 EUT Configuration on Measurement

The equipments which is listed 3.2 are installed on Conducted Power Line Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

3.5EUT Exercise Software

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

- 3.5.1 Setup the EUT and simulators as shown on 3.2.
- 3.5.2 Turn on the power of all equipments.
- 3.5.3 Boot the PC form Hard Disk to windows 95, active all devices.
- 3.5.4 Play CD Disk audio in windows environment, read HDD and FDD data.
- 3.5.5 Active the CCD carema.
- 3.5.6 PC sent "H" Pattern to Both LCD Panel And Ext. Monitor.
- 3.5.7 PC sent "H" Pattern to Parallel (printer) port.
- 3.5.8 PC sent "H" Pattern to Serial port.
- 3.5.9 Repeat 3.5.4 to 3.5.8

3.6Conducted Emission Data

The measurement range of conducted emission which is from **0.45 MHz to 30 MHz** was investigated. All readings are quasi-peak and average values with a resolution Bandwidth of 9 KHz. The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

CONDUCTED EMISSION DATA

Date of Test	:	May. 09, 1998	Temperature	:	26 °C
EUT	:	Notebook Computer	Humidity	:	55 %
Test Mode	:	Mode 1	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMITS
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
0.46138	34.0	50.12	26.1	20.18	250
0.57856	33.1	45.19	25.6	19.05	250
0.80951	34.3	51.88	21.6	12.02	250
** 4.34924	38.8	87.10	38.2	81.28	250
15.36027	32.2	40.74	32.0	39.81	250
20.08514	24.5	16.79	22.0	12.59	250

Remarks : 1. All readings are Quasi-peak and average values.

2. “ * ” means that the quasi-peak reading level is lower then the average limits, it is not necessary to measure the average level.

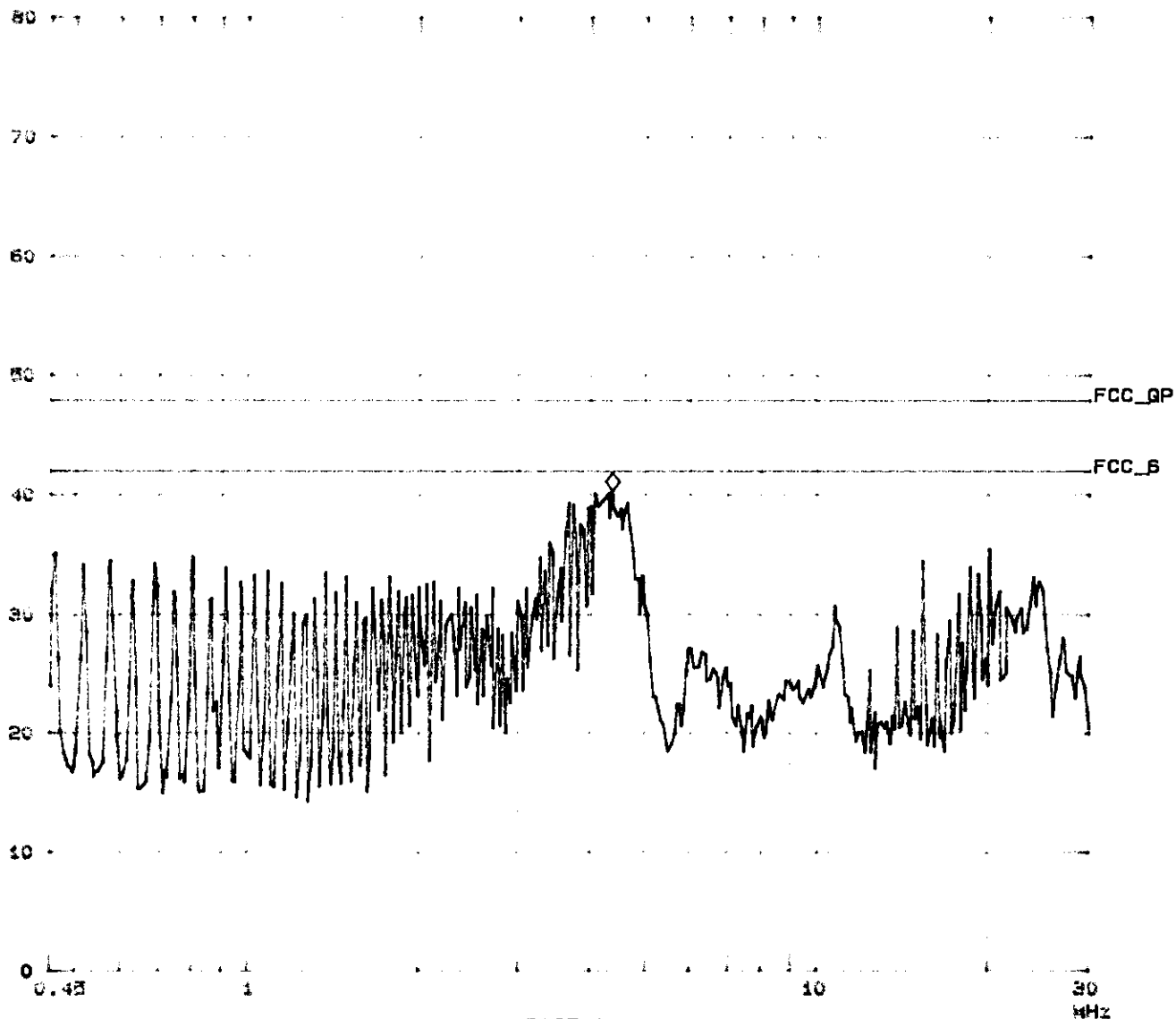
3. “ ** ” means that this data is the worse case emission level.

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30
GesTek, PowerLine Conducted Emission

EUT: NOTEBOOK COMPUTER
Manuf: FIC
Operator: JACKIE
Test Spec: FCC CLASS B
Comment: Line 1
M/N: 7200XT

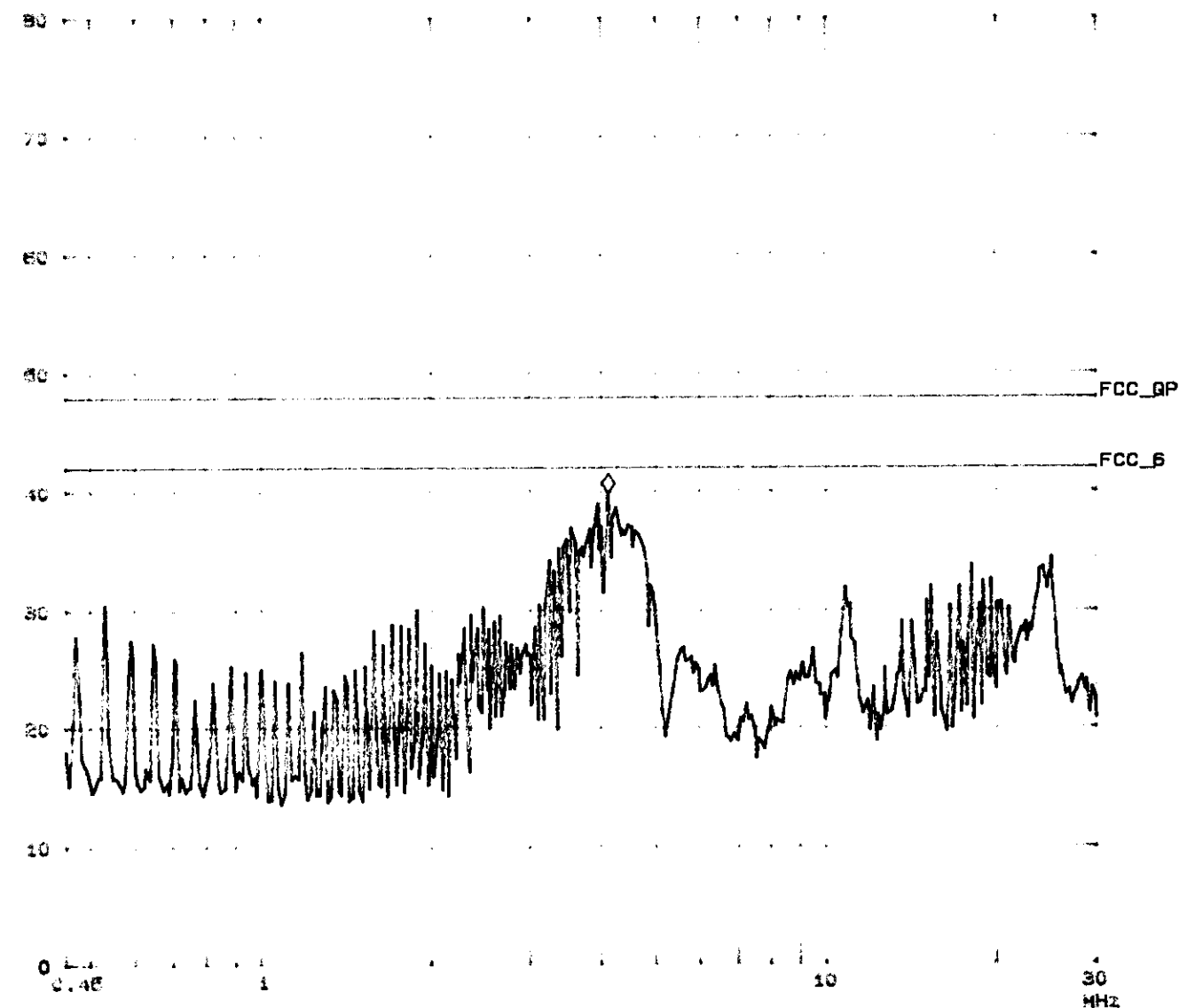
38uV ◇ Mkr : 4.36000MHz 40.3 dBuV



ROHDE & SCHWARZ ESHS 30
GesTek, PowerLine Conducted Emission

EUT: NOTEBOOK COMPUTER
Manuf: FIC
Operator: JACKIE
Test Spec: FCC CLASS B
Comment: Line 2
M/N: 7200XT

dBuV ◇ Mkr : 4.12000MHz 39.8 dBuV



CONDUCTED EMISSION DATA

Date of Test	:	May. 09, 1998	Temperature	:	26 °C
EUT	:	Notebook Computer	Humidity	:	54 %
Test Mode	:	Mode 2	Display Pattern	:	H Pattern

FREQUENCY		READING LEVEL			LIMITS
		LINE 1		LINE 2	
MHz		DBuV	uV	dBuV	uV
0.47548		36.0	63.10	25.4	18.62
0.59460		35.8	61.66	24.3	16.41
0.71354		35.9	62.37	29.6	30.20
3.63264		39.3	92.26	38.3	82.22
** 4.46752		40.8	109.65	38.9	88.10
23.75849		26.0	19.95	30.3	32.73

Remarks : 1. All readings are Quasi-peak and average values.

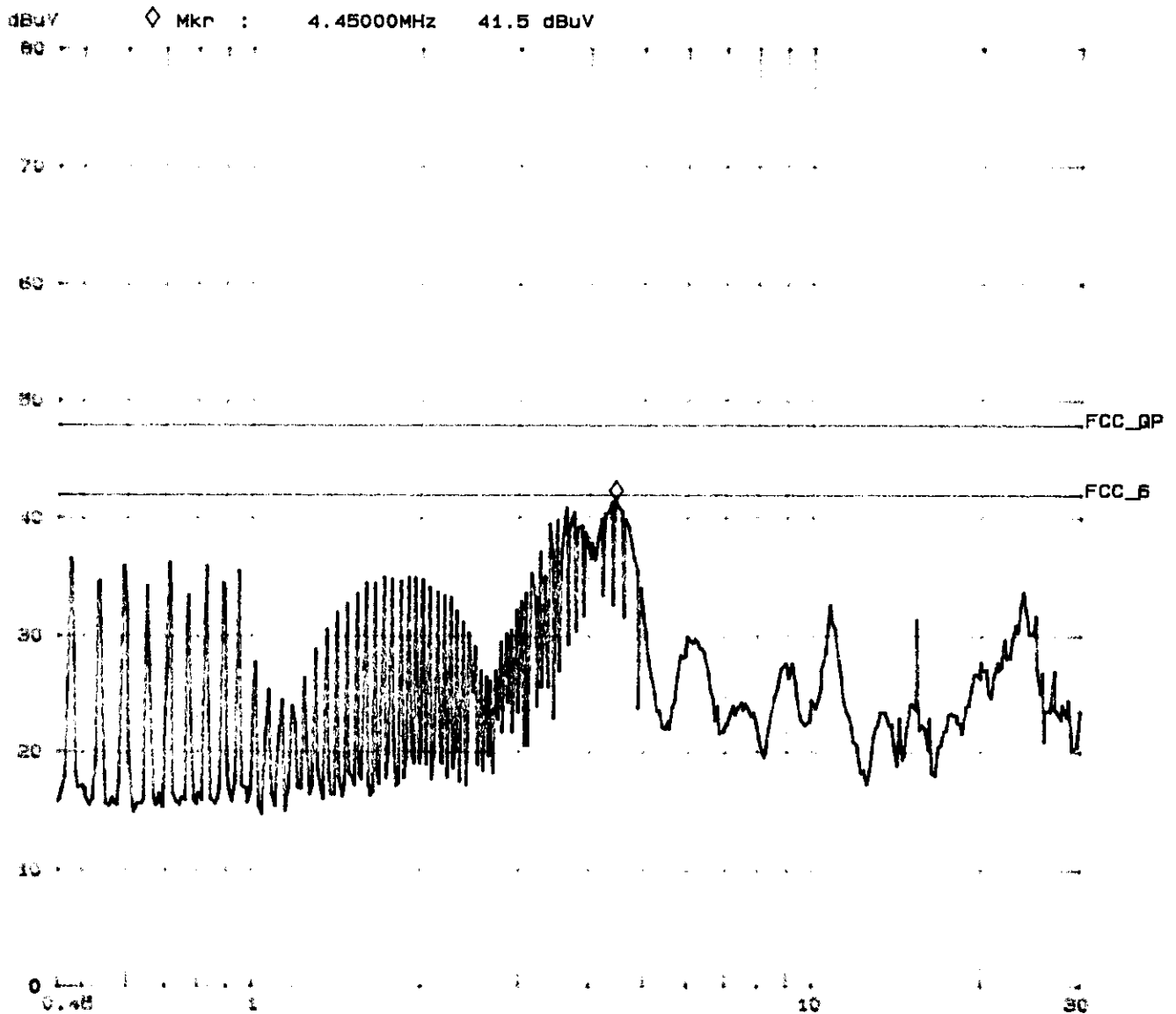
2. “ * ” means that the quasi-peak reading level is lower then the average limits, it is not necessary to measure the average level.

3.“ ** ” means that this data is the worse case emission level.

Attached 2 individual pages of peak scan curve data sheets.

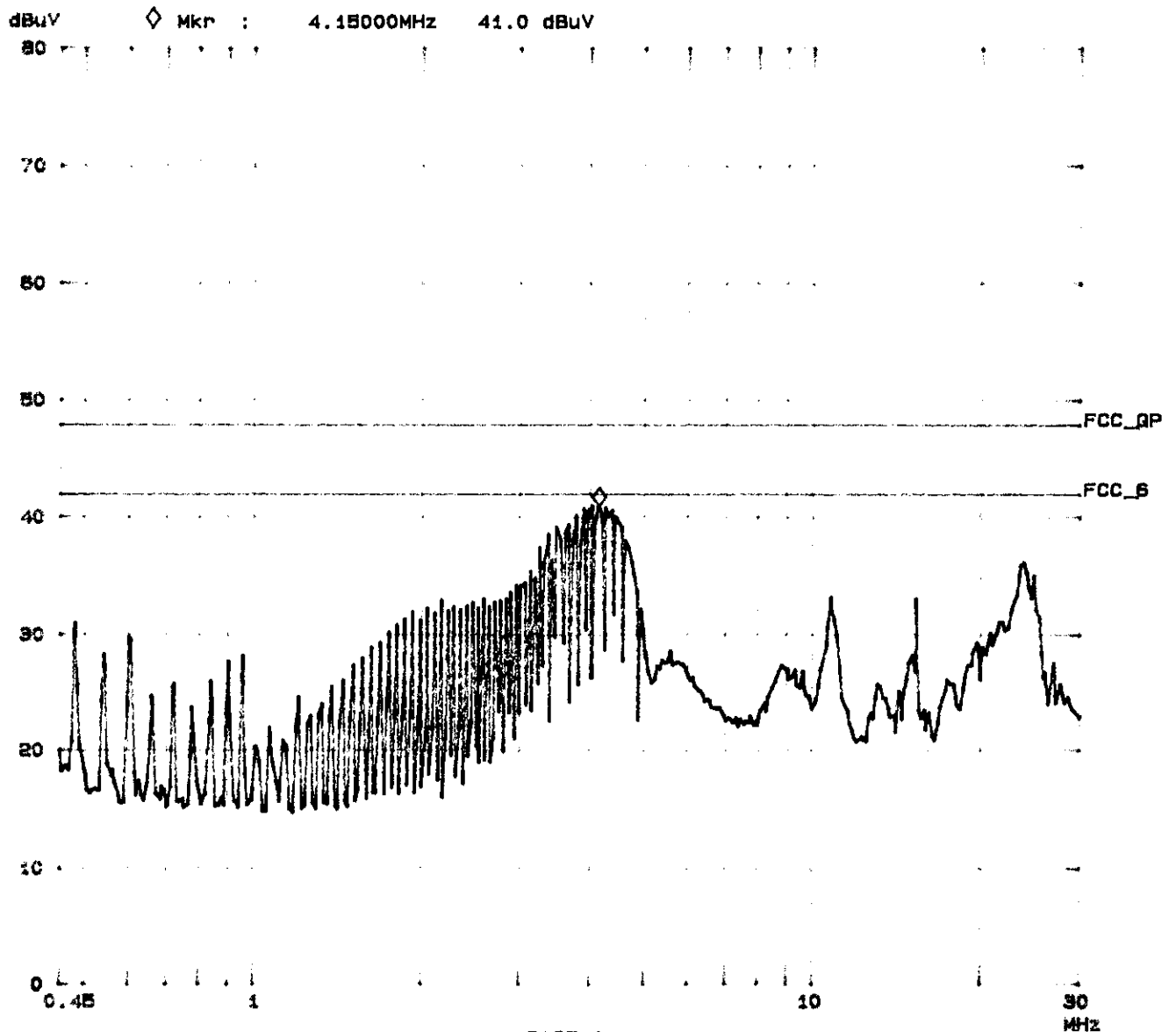
ROHDE & SCHWARZ ESHS 30
GesTek, PowerLine Conducted Emission

EUT: NOTEBOOK COMPUTER
Manuf: FIC
Operator: JACKIE
Test Spec: FCC CLASS B
Comment: Line 1
M/N: 7200XT1



ROHDE & SCHWARZ ESHS 30
GesTek, PowerLine Conducted Emission

EUT: NOTEBOOK COMPUTER
Manuf: FIC
Operator: JACKIE
Test Spec: FCC CLASS B
Comment: Line 2
M/N: 7200XT1



CONDUCTED EMISSION DATA

Date of Test	:	May. 09, 1998	Temperature	:	26.7 °C
EUT	:	Notebook Computer	Humidity	:	52 %
Test Mode	:	Mode 3	Display Pattern	:	H Pattern

FREQUENCY		READING LEVEL			LIMITS
		LINE 1		LINE 2	
MHz		DBuV	uV	dBuV	uV
** 0.54304		36.5	66.83	23.4	14.79
0.66578		35.0	56.23	23.8	15.49
0.96764		34.3	51.88	22.5	13.34
3.57002		33.9	49.55	36.0	63.10
4.60057		35.0	56.23	27.3	23.17
24.84178		30.0	31.62	30.3	32.73

Remarks : 1. All readings are Quasi-peak and average values.

2. “ * ” means that the quasi-peak reading level is lower then the average limits, it is not necessary to measure the average level.

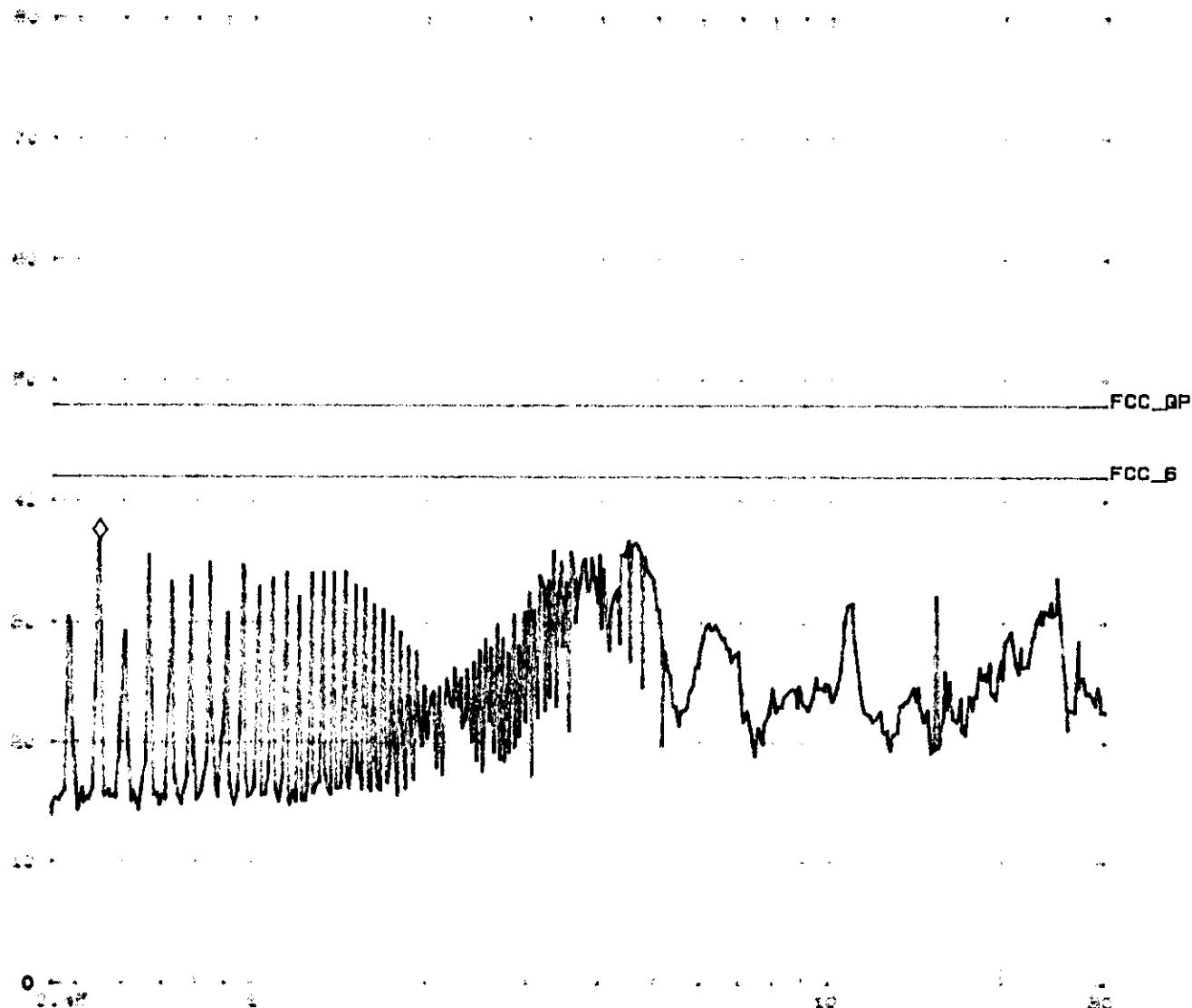
3. “ ** ” means that this data is the worse case emission level.

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30
GesTek, PowerLine Conducted Emission

EUT: NOTEBOOK COMPUTER
Manuf: FIC
Operator: JACKIE
Test Spec: FCC CLASS B
Comment: Line 1
M/N: 7200XT1D3

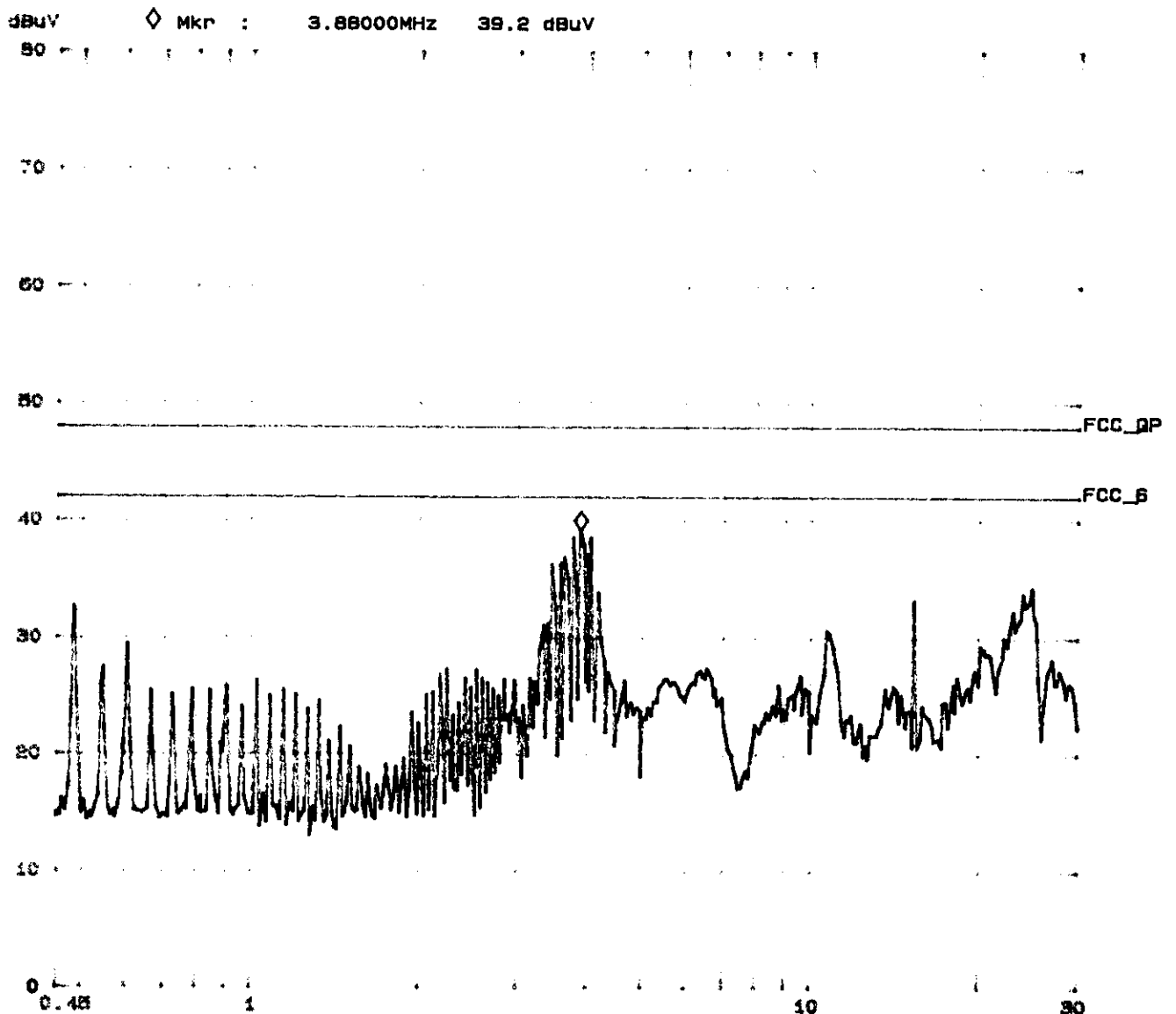
16uV $\diamond$ Mkr : 544.00 kHz 36.8 dBuV



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT: NOTEBOOK COMPUTER
Manuf: FIC
Operator: JACKIE
Test Spec: FCC CLASS B
Comment: Line 2
M/N: 7200XT1D3



4. Radiation Emission Test

4.1 Test Equipment

The following test equipments are used during the radiated emission tests:

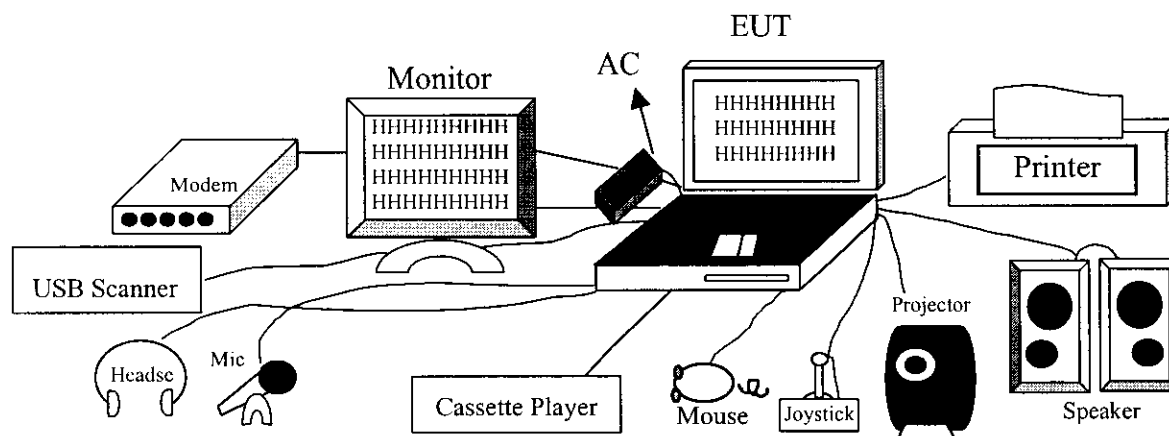
Radiated test was performed on : ☒ Site #1 ☐ Site #2

Instrument	Manufacturer	Type /Serial No.	Last Calibration	Site #1	Site #2
Test Receiver	Rohde & Schwarz	ESVS 30/829007/014	Nov. 15,1997	✓	
Spectrum Analyzer	Anristu	MA2601B/MT16442	Jun. 11,1997	✓	
Pre-Amplifier	HP	7447F/3113A04998	Nov. 16,1997	✓	
Test Receiver	Rohde & Schwarz	ESVS 10/8421122/001	Dec. 26,1997		✓
Spectrum Analyzer	HP	8568B/4315B05847	Jan. 05,1998		✓
Pre Amplifier	HP	8447D/3113A04487	Jan. 05,1998		✓
Antenna 30Mhz-2Ghz	Chase	CBL 6112/2039	May. 16,1998	✓	
Bilog Antenna	Chase	CBL6111/1380	May. 16,1998		✓
Dipole Antenna	Schwarzbeck	VHAP/719,UHAP/736	Jun.11,1997		

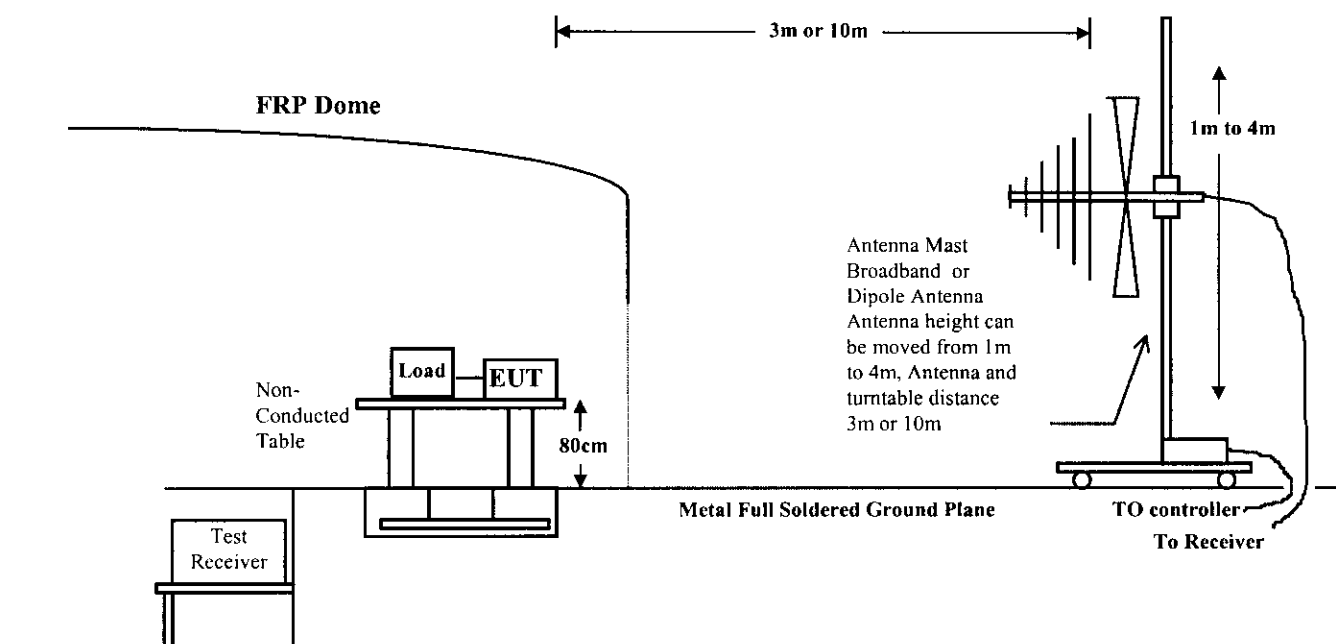
Note: All equipment upon which need to calibrated are with calibration period of 1 year.

4.2 Test Setup

4.2.1 Block Diagram of Connections between EUT and simulators



4.2.2 Open Test Site Setup Diagram



4.3 Radiated Emission Limit

4.3.1 FCC Class B Limits at 3m

Frequency	Distance	Field Strength	
MHz	Meter	$\mu\text{V}/\text{M}$	$\text{dB}\mu\text{V}/\text{M}$
30 - 88	3	100	40.0
88 - 216	3	150	43.5
216 - 960	3	200	46.0
960 - 2000	3	500	54.0

4.3.2 CISPR Class B Limits at 10m

Frequency	Distance	Field Strength
MHz	Meter	$\text{dB}(\mu\text{V}/\text{M})$
30 - 230	10	30
230 - 1000	10	37

- Remark :
1. The tighter limit shall apply at the edge between two frequency bands.
 2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4EUT Configuration

The equipments which is listed 4.2.1 are installed on Radiated Emission Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

4.5Operating Condition of EUT

Same as Conducted Power Line Test which is listed in 3.5.

4.6Radiated Emission Data

The measurement range of radiated emission which is from 30 MHz to 2 GHz was investigated. All readings are quasi-peak values with a resolution Bandwidth of 120 KHz. The initial step in collecting radiated emission data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

Radiated Emission Data

Date of Test :05-15,1998 Fri Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :55 %RH
 Working Cond.:MODE 1 Display Pattern:

Frequency	Cable	Antenna	Reading Level	Emission Level		Limits
	Loss	Factor	Horizontal	Horizontal		
(MHz)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(uV/m)	(uV/m)
72.692	1.89	6.63	17.49	26.01	19.98	100
86.015	2.16	7.82	17.25	27.24	23.00	100
122.881	2.60	12.35	21.66	36.61	67.70	150
159.745	2.76	10.48	19.35	32.58	42.58	150
172.034	2.82	9.88	21.84	34.54	53.30	150
233.478	3.09	11.81	21.40	36.31	65.36	200
270.338	3.26	13.08	18.20	34.54	53.36	200
297.003	3.38	13.19	18.48	35.04	56.52	200
336.011	3.52	13.99	15.71	33.22	45.79	200
452.923	3.90	17.23	12.44	33.58	47.73	200
535.808	4.18	18.46	15.43	38.07	80.06	200
621.005	4.46	18.96	14.32	37.73	77.01	200
647.023	4.54	19.26	12.39	36.19	64.48	200
735.152	4.82	19.81	13.12	37.76	77.22	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-15,1998 Fri Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :55 %RH
 Working Cond.:MODE 1 Display Pattern:

Frequency	Cable	Antenna	Reading Level	Emission Level	Limits
	Loss	Factor	Vertical	Vertical	
(MHz)	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(uV/m)
38.680	1.08	15.04	18.39	34.51	53.13
42.638	1.17	12.49	14.80	28.46	26.50
86.018	2.16	8.40	21.62	32.19	40.67
172.035	2.82	10.47	22.51	35.80	61.67
200.026	2.94	10.00	17.17	30.11	32.04
243.003	3.14	12.60	19.20	34.94	55.84
273.236	3.27	13.56	18.90	35.73	61.20
351.327	3.57	15.64	15.24	34.45	52.79
401.049	3.73	16.70	12.97	33.40	46.77
567.000	4.27	18.96	14.15	37.38	73.97
585.258	4.34	19.15	18.52	42.01	126.08
* 665.153	4.60	19.80	18.46	42.86	138.95
674.999	4.63	19.80	10.95	35.38	58.75
744.865	4.86	20.41	11.28	36.54	67.17
825.857	5.13	20.90	13.07	39.10	90.19
905.178	5.39	21.59	11.30	38.28	82.03
984.736	5.65	22.49	13.12	41.27	115.68

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-15,1998 Fri Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :55 %RH
 Working Cond.:MODE 2 Display Pattern:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Level Horizontal (dBuV/m)	Emission Level Horizontal (dBuV/m)	(uV/m)	Limits (uV/m)
40.480	1.13	13.00	12.31	26.44	20.98	100
61.444	1.62	6.49	22.06	30.17	32.25	100
86.017	2.16	7.82	22.64	32.63	42.78	100
196.610	2.93	9.35	15.09	27.37	23.36	150
242.999	3.14	12.53	7.63	23.30	14.62	200
270.343	3.26	13.08	10.99	27.33	23.26	200
368.646	3.63	14.69	12.11	30.42	33.21	200
516.100	4.11	18.00	10.32	32.43	41.82	200
565.255	4.27	18.77	13.42	36.46	66.53	200
614.405	4.43	18.86	14.81	38.10	80.37	200
712.709	4.75	19.41	11.78	35.94	62.68	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-15,1998 Fri Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :55 %RH
 Working Cond.:MODE 2 Display Pattern:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Level Vertical (dBuV/m)	Emission Level Vertical (dBuV/m)	(uV/m)	Limits (uV/m)
58.345	1.53	7.20	17.20	25.93	19.80	100
* 86.019	2.16	8.40	24.20	34.77	54.74	100
122.884	2.60	12.16	21.22	35.98	62.94	150
184.322	2.87	9.92	22.82	35.61	60.34	150
242.999	3.14	12.60	20.91	36.65	67.99	200
270.337	3.26	13.51	18.91	35.68	60.85	200
297.004	3.38	14.18	17.44	35.00	56.21	200
516.097	4.11	18.73	12.17	35.01	56.32	200
565.253	4.27	18.94	12.25	35.46	59.26	200
614.413	4.43	19.44	12.29	36.16	64.25	200
663.558	4.60	19.80	14.15	38.55	84.60	200
712.713	4.75	19.97	14.60	39.32	92.45	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-15,1998 Fri Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :55 %RH
 Working Cond.:MODE 3 Display Pattern:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Level Horizontal (dBuV/m)	Emission Level Horizontal (dBuV/m)	(uV/m)	Limits (uV/m)
110.594	2.54	11.62	12.10	26.27	20.57	150
129.405	2.62	11.92	15.12	29.66	30.42	150
194.111	2.92	9.37	18.64	30.93	35.20	150
221.184	3.04	10.95	21.60	35.59	60.20	200
243.003	3.14	12.53	22.65	38.32	82.40	200
258.815	3.21	13.03	21.53	37.77	77.39	200
270.334	3.26	13.08	17.93	34.27	51.72	200
297.000	3.38	13.19	15.01	31.57	37.90	200
319.489	3.46	13.65	18.66	35.77	61.47	200
368.633	3.63	14.69	15.88	34.19	51.25	200
388.223	3.69	15.08	12.56	31.33	36.84	200
* 565.250	4.27	18.77	19.72	42.76	137.41	200
614.405	4.43	18.86	12.99	36.28	65.18	200
663.553	4.60	19.27	15.14	39.01	89.23	200
761.853	4.91	20.15	11.18	36.24	64.87	200
811.007	5.08	20.39	8.85	34.31	51.95	200
841.145	5.18	20.63	8.52	34.33	52.08	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-15,1998 Fri Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :55 %RH
 Working Cond.:MODE 3 Display Pattern:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB)	Reading Level Vertical (dBuV/m)	Emission Level Vertical (dBuV/m)	(uV/m)	Limits (uV/m)
66.777	1.71	6.78	23.01	31.50	37.59	100
86.018	2.16	8.40	22.79	33.36	46.53	100
110.593	2.54	11.74	13.65	27.94	24.94	150
129.409	2.62	12.04	13.93	28.60	26.90	150
144.038	2.70	11.70	18.84	33.24	45.90	150
167.153	2.79	10.89	18.65	32.33	41.35	150
194.114	2.92	9.97	22.29	35.18	57.38	150
243.003	3.14	12.60	17.66	33.40	46.77	200
297.003	3.38	14.18	17.10	34.66	54.05	200
388.223	3.69	16.47	16.62	36.78	69.01	200
452.923	3.90	17.50	14.57	35.98	62.93	200
516.098	4.11	18.73	13.48	36.32	65.49	200
614.403	4.43	19.44	16.07	39.94	99.28	200
614.403	4.43	19.44	16.38	40.25	102.89	200
663.555	4.60	19.80	14.41	38.81	87.17	200
761.848	4.91	20.55	11.77	37.23	72.71	200
841.147	5.18	21.03	10.91	37.12	71.79	200
970.547	5.60	22.05	12.04	39.69	96.52	501

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
EUT :NOTEBOOK Humidity :52 %RH
Working Cond.:MODE 1 (PEAK) Display Pattern:

Frequency	Cable	Antenna	Reading Level	Emission Level	Limits	
(MHz)	Loss	Factor	Horizontal	Horizontal	(uV/m)	(uV/m)
	(dB)	(dB)	(dBuV/m)	(dBuV/m)	(uV/m)	(uV/m)
1067.840	5.91	21.27	27.01	18.59	8.50	500
1201.320	6.32	22.11	26.96	20.01	10.01	500
1334.830	6.74	23.60	27.40	22.57	13.44	500

- Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
2.“ * ”, means this data is worse case emission level.
3.Emission Level = Reading Level + Antenna Factor + Cable loss-
Amp Factor(35.59, 35.38, 35.17)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :52 %RH
 Test Mode :Mode 1 (Peak) Display Pattern:H Pattern

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Level Vertical (dBuV/m)	Emission Level Vertical (dBuV/m)	(uV/m)	Limit (uV/m)
1064.828	5.90	21.92	27.45	19.68	9.64	500
1198.306	6.32	22.09	27.31	20.33	10.39	500
1331.784	6.73	23.50	28.26	23.32	14.66	500

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss-
 Amp Factor(35.59, 35.38, 35.17)
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
EUT :NOTEBOOK Humidity :52 %RH
Test Mode :Mode 1 (Average) Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit	
	Loss	Factor	Horizontal	Horizontal		
(MHz)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(uV/m)	(uV/m)
1067.840	5.91	21.27	24.14	15.72	6.11	500
1201.320	6.32	22.11	22.08	15.13	5.71	500
1334.830	6.74	23.60	23.93	19.10	9.02	500

- Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
2.“ * ”, means this data is worse case emission level.
3.Emission Level = Reading Level + Antenna Factor + Cable loss-
Amp Factor(35.59, 35.38, 35.17)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
EUT :NOTEBOOK Humidity :52 %RH
Test Mode :Mode 1 (Average) Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
(MHz)	Loss	Factor	Vertical	Vertical	
	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(uV/m)
1064.828	5.90	21.92	23.64	15.87	6.22
1198.306	6.32	22.09	24.16	17.18	7.23
1331.784	6.73	23.50	23.06	18.12	8.05

- Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
2.“ * ”, means this data is worse case emission level.
3.Emission Level = Reading Level + Antenna Factor + Cable loss-
Amp Factor(35.59, 35.38, 35.17)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
EUT :NOTEBOOK Humidity :52 %RH
Test Mode :Mode 2 (Peak) Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit	
	Loss	Factor	Horizontal	Horizontal		
(MHz)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(uV/m)	(uV/m)
1064.882	5.90	21.26	27.02	18.58	8.49	500
1198.360	6.32	22.09	28.61	21.64	12.08	500
1331.748	6.73	23.53	27.60	22.68	13.61	500

- Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
2.“ * ”, means this data is worse case emission level.
3.Emission Level = Reading Level + Antenna Factor + Cable loss-
Amp Factor(35.59, 35.38, 35.17)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
EUT :NOTEBOOK Humidity :52 %RH
Test Mode :Mode 2 (Peak) Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit	
	Loss	Factor	Vertical	Vertical		
(MHz)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(uV/m)	(uV/m)
1067.480	5.91	21.90	28.65	20.86	11.04	500
1201.230	6.32	22.10	27.65	20.69	10.83	500
1334.380	6.74	23.57	27.44	22.58	13.46	500

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
2.“ * ”, means this data is worse case emission level.
3.Emission Level = Reading Level + Antenna Factor + Cable loss-
Amp Factor(35.59, 35.38, 35.17)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :52 %RH
 Test Mode :Mode 2 (Average) Display Pattern:H Pattern

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Level Horizontal (dBuV/m)	Emission Level Horizontal (dBuV/m)	(uV/m)	Limit (uV/m)
1064.882	5.90	21.26	22.29	13.85	4.93	500
1198.360	6.32	22.09	24.09	17.12	7.18	500
1331.748	6.73	23.53	24.11	19.19	9.11	500

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss-
 Amp Factor(35.59, 35.38, 35.17)
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :52 %RH
 Test Mode :Mode 2 (Average) Display Pattern:H Pattern

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Level Vertical (dBuV/m)	Emission Level Vertical (dBuV/m)	(uV/m)	Limit (uV/m)
1067.480	5.91	21.90	23.06	15.27	5.80	500
1201.230	6.32	22.10	27.66	20.70	10.84	500
1334.380	6.74	23.57	24.52	19.66	9.62	500

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss -
 Amp Factor(35.59, 35.38, 35.17)
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
EUT :NOTEBOOK Humidity :52 %RH
Test Mode :Mode 3 (Peak) Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit	
	Loss	Factor	Horizontal	Horizontal		
(MHz)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(uV/m)	(uV/m)
1061.728	5.89	21.24	27.05	18.58	8.49	500
1128.086	6.10	21.60	27.43	19.63	9.58	500
1260.802	6.51	22.64	27.82	21.68	12.13	500

- Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
2.“ * ”, means this data is worse case emission level.
3.Emission Level = Reading Level + Antenna Factor + Cable loss-
Amp Factor(35.59, 35.38, 35.17)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :52 %RH
 Test Mode :Mode 3 (Peak) Display Pattern:H Pattern

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Level Vertical (dBuV/m)	Emission Level Vertical (dBuV/m)	(uV/m)	Limit (uV/m)
1063.744	5.90	21.95	27.24	19.49	9.43	500
1196.712	6.31	22.08	26.89	19.89	9.87	500
1263.196	6.52	22.67	27.03	20.94	11.14	500

- Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss-
 Amp Factor(35.59, 35.38, 35.17)
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
 EUT :NOTEBOOK Humidity :52 %RH
 Test Mode :Mode 3 (Average) Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit	
	Loss	Factor	Horizontal	Horizontal		
(MHz)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(uV/m)	(uV/m)
1061.728	5.89	21.24	24.31	15.84	6.19	500
1128.086	6.10	21.60	22.66	14.86	5.53	500
1260.802	6.51	22.64	23.53	17.39	7.40	500

Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
 2.“ * ”, means this data is worse case emission level.
 3.Emission Level = Reading Level + Antenna Factor + Cable loss-
 Amp Factor(35.59, 35.38, 35.17)
 4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-14,1998 Thu Temperature :26 deg/C
EUT :NOTEBOOK Humidity :52 %RH
Test Mode :Mode 3 (Average) Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
	Loss	Factor	Vertical	Vertical	
(MHz)	(dB)	(dB/m)	(dBuV/m)	(dBuV/m)	(uV/m)
1063.744	5.90	21.95	23.05	15.30	500
1196.712	6.31	22.08	23.64	16.64	500
1263.196	6.52	22.67	22.35	16.26	500

- Remarks: 1. All Readings below 1GHz are Quasi-Peak, above are average value.
2.“ * ”, means this data is worse case emission level.
3.Emission Level = Reading Level + Antenna Factor + Cable loss-
Amp Factor(35.59, 35.38, 35.17)
4.Deviations from the specifications: None.

7. EMI Reduction Method During Compliance Testing

1. The gasket of eight pieces is addition between the backside of LCD panel and LCD holder.
And the backside of LCD needs a sheet of Metal and conduct with LCD chassis.
2. The gasket of three pieces is addition between the aluminum sheet of L-type and the bottom of notebook PC.
3. The copper sheet of two pieces is stamping between the LCD panel and hinge.
4. The gasket of one piece is addition between the first cooling fan and the bottom of notebook PC. The first cooling fan at right side of notebook PC. The second cooling fan at up side of CPU.
5. The LCD cable requests a ferrite core and addition at near LVDS board.
6. For 12.1" CD panel, the LCD cable requests a ferrite core and addition at near LCD side.
7. The adapter of cable is addition a ferrite core near power in.
8. The gasket of four pieces is addition between the keyboard of back and notebook.