

G7E99-F003

Supplement to

G7E99-F002

EA 932 39

Test Report
Application for Certification
Class II Permissive Change
On Behalf Of

First International Computer Inc.
Notebook Computer

Model: Amber 2.0
(La Vie NX/ VersaPro NX/Avanza NX NB)
(NEC Versa Note/ ZDS Versa Note/ Easy Note)
FCC ID:EUNCG2

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.
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1. Test Report Certification

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

(A) Model No. : Amber 2.0
 (B) Serial No. : N/A
 (C) FCC ID : EUNC2
 (D) Power : 110V/60Hz
 (E) Rating DC-O/P : 19V

MEASUREMENT PROCEDURE / STANDARD 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.



Sample Received Date : January 29, 1999
Final Test Date : February 05, 1999
Documented by : Winnie Chiu

Test Engineer :
Approve & Authorized Signer :

JANICE YU

TERRY CHUNG

This test data shown below is traceable to National or international standard such as NIST/USA, etc. The laboratory's NVLAP accreditation in no way constitutes or implies product certification, approval, or endorsement by NVLAP or the United States government.

GTE 99-F003

2. General Information

2.1 Production Description

Description : Notebook Computer
Model Number : Amber 2.0
Serial Number : N/A
Condition : 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.
CPU : Intel Pentium II 266/300MHz, Clock: 66MHz
Power Cord : 1.8m, Non-shielded

Power Adaptor : Delta, M/N:ADP-50MB, S/N:W8824000241,
1.2m bound with a Ferrite core.
I/P : 100~240V 1.5A 50~60Hz, O/P: DC 19V, 2.64A
Liteon, M/N:PA-1480-19G

2.2 Results:

The EUT(s) met the FCC Part 15 Class B requirements.

The Worst Emission data was found as following,

	Worst Emission Frequency (MHz)	Emission Level	Limit	Height of Antenna, Angel of Turntable
Conduction	3.62429	43.4 dBuV Line 2, QP	48.0dBuV	N/A
Radiation	452.833	43.74[dB(uV/m)], Vertical	46.0 [dB(uV/m)]	2M, 179°

67K44-5003

Test Mode:

Mode 1	Item	Manufacturer	M/N & S/N
1.	CPU	Intel	Pentium II 266MHz
2.	Panel 12.1" TFT SVGA	NEC	NL8060BC31-13S
3.	6.4GB HDD	Fujitsu	MHE2064AT
4.	FDD 3.5"	NEC	FD-1238T-018
5.	CD ROM 24X	TEAC	CD-224E-A34
6.	Battery	Panasonic	Ni-MH 3800mAh
7.	AC Adaptor	Delta	ADP-50MB
8.	VGA CARD & Sound	On Board	
9.	Fax/Modem	Askey 56K	
Mode 2			
1.	CPU	Intel	Pentium II 266MHz
2.	Panel 12.1" TFT	ADI	AA121S111
3.	4.3GB HDD	Hitachi	DK238A-43
4.	FDD 3.5"	NEC	FD-1238T-018
5.	CD ROM 24X	TEAC	CD-224E-A34
6.	Battery	Panasonic	Ni-MH 3800mAh
7.	AC Adaptor	Delta	ADP-50MB
8.	VGA CARD & Sound	On Board	
9.	Fax/Modem	Askey 56K	
Mode 3			
1.	CPU	Intel	Pentium II 266MHz
2.	Panel 14.1" XGA	NEC	NL10276BC28-11A
3.	6.4GB HDD	Hitachi	DK228A-65
4.	FDD 3.5"	NEC	FD-1238T-018
5.	CD ROM 24X	TEAC	CD-224E-A34
6.	Battery	Panasonic	Ni-MH 3800mAh
7.	AC Adaptor	Delta	ADP-50MB
8.	VGA CARD & Sound	On Board	
9.	Keyboard & Fax/Modem	Askey 56K	
Mode 4			
1.	CPU	Intel	Pentium II 300MHz
2.	Panel 13.3" TFT XGA	NEC	NL10276BC26-11C
3.	6.4GB HDD	Hitachi	DK228A-65
4.	FDD 3.5"	NEC	FD-1238T-018
5.	CD ROM 24X	NEC	CDR-2800A
6.	Battery	Panasonic	Ni-MH 3800mAh
7.	AC Adaptor	Delta	ADP-50MB
8.	VGA CARD & Sound	On Board	
9.	Keyboard & Fax/Modem	Askey 56K	

1. This Notebook computer was apply for different from previous because it add two more type of CPU and 5 types of HDD, Each different CPU/HDD has been investigated to find the maximum emission situation, and all the component s listed at section 2.3 were investigated. During the performance of the testing, peripherals were connected to all available ports. The data shown in this test report reflects the worst-case data for each frequency/video resolution.

Note:

Mode 5			
1.	CPU	Intel	Pentium II 266MHz
2.	Panel 13.3" TFT XGA	LG	LP133X4-A
3.	4.3GB HDD	Fujitsu	MHF2043AT
4.	FDD 3.5"	NEC	FD-1238T-018
5.	CD ROM 24X	TEAC	CD-224E-A34
6.	Battery	Panasonic	Ni-MH 3800mAh
7.	AC Adaptor	Delta	ADP-50MB
8.	VGA CARD & Sound	On Board	
9.	Keyboard & Fax/Modem	Askey 56K	
Mode 6			
1.	CPU	Intel	Pentium II 300MHz
2.	Panel 14.1" TFT XGA	LG	LP141X5-A
3.	4.3GB	Fujitsu	DK228A-65
4.	FDD 3.5"	NEC	FD-1238T-018
5.	CD ROM 24X	NEC	CDR-2800A
6.	Battery	Panasonic	Ni-MH 3800mAh
7.	AC Adaptor	Delta	ADP-50MB
8.	VGA CARD & Sound	On Board	
9.	Fax/Modem	Askey 56K	
Mode 7			
1.	CPU	Intel	Pentium II 300MHz
2.	Panel 14.1" TFT XGA	Panasonic	EDTCB21QAF
3.	10.0GB HDD	IBM	DCXA-210000
4.	FDD 3.5"	NEC	FD-1238T-018
5.	CD ROM 24X	MKE	CR-175
6.	Battery	Panasonic	Ni-MH 3800mAh
7.	AC Adaptor	Liteon	PA-1480-19G
8.	VGA CARD & Sound	On Board	
9.	Fax/Modem	Askey 56K	

GT49-f003

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:

☒ Notebook PC (EUT)

No.	Category	Manufacturer
1.	CPU	Intel Pentium II 266 / 300MHz; Clock: 66MHz
2.	LCD	NEC 12.1" TFT, NEC 13.3" TFT ADI 12.1" TFT, LG13.3" TFT NEC 14.1" TFT, LG14.1" TFT, Panasonic 14.1" TFT
3.	HDD	Fujitsu 4.3/6.4GB, Hitachi 4.3/6.4GB IBM 10.0GB
4.	FDD 3.5"	NEC
5.	CD ROM 24X	NEC, MKE, TEAC
6.	VGA Card & Sound	On Board
7.	Keyboard & Fax/Modem	Askey 56K
8.	AC Adaptor	Delta
9.	Battery	Panasonic Ni-MH

☒ Monitor M01-011

Model Number : SyncMaster 700p
Serial Number : H3MH903270Y
Manufacturer : SAMSUNG
FCC ID : A3LCGH760
BCIQ No. : 3872A230
Data Cable : Shielded, Undetachable, 1.5m
Power Cord : Shielded, Detachable, 1.5m

☒ Keyboard K01-033

Model Number : KB-5923
Serial Number : 8060032215
FCC ID : E8HKB-5923
Manufacturer : TATUNG
BCIQ ID : 3862A177
Data Cable : Shielded, Undetachable, 2.0 m

☒ Printer P01-011

Model Number : C2642A(DJ-400)
Serial Number : MY7951C4J5
FCC ID : B94C2642X
Manufacturer : HP
Data Cable : Shielded, Detachable, 1.5m
Adaptor & Power Cord : AC 110V, 60Hz To DC 30V
Non-Shielded, Detachable, 1.8m

☒ Microphone M04-006 ~ 010
Model Number : N/A
Serial Number : N/A
FCC ID : N/A
Manufacturer : AIWA
Data Cable : Non-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)

☒ 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

☒ Modem M03-011
Model Number : 1414
Serial Number : 960018041
FCC ID : IFAXDM1414
Manufacturer : ACEEX
Adaptor, Power Cord : Non-Shielded, Detachable, 1.5m
Data Cable : Shielded, Detachable, 1.2m

☒ Telephone T01-001
Model Number : ST-203
Serial Number : 4K01460
Manufacturer : SINOCA
Phone line cable : Non-Shielded, Detachable, 1.5m
Handset Cable : Non-Shielded, Detachable, 1.5m

☒ Mouse(USB) M02-034
Model Number : M-UA34
Serial Number : LTC70500272
FCC ID : DZL211087
Manufacturer : LOGITECH
Data Cable : Shielded, Undetachable, 1.5m

2.4 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.

2.5 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	22-26
Humidity (%RH)	25-75	50-60
Barometric pressure (mbar)	860-1060	950-1000

FCC Site Description : Aug. 10, 1995/Aug. 25, 1998 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

: Global EMC Standard Tech. Corp.

Name of firm : No. 3 Pau-Tou Valley, Chia-Pau Tsuen, Lin Kou

Hsiang, Taipei County, Taiwan, R.O.C.

3. Conducted Emission Test

3.1 Test Equipments

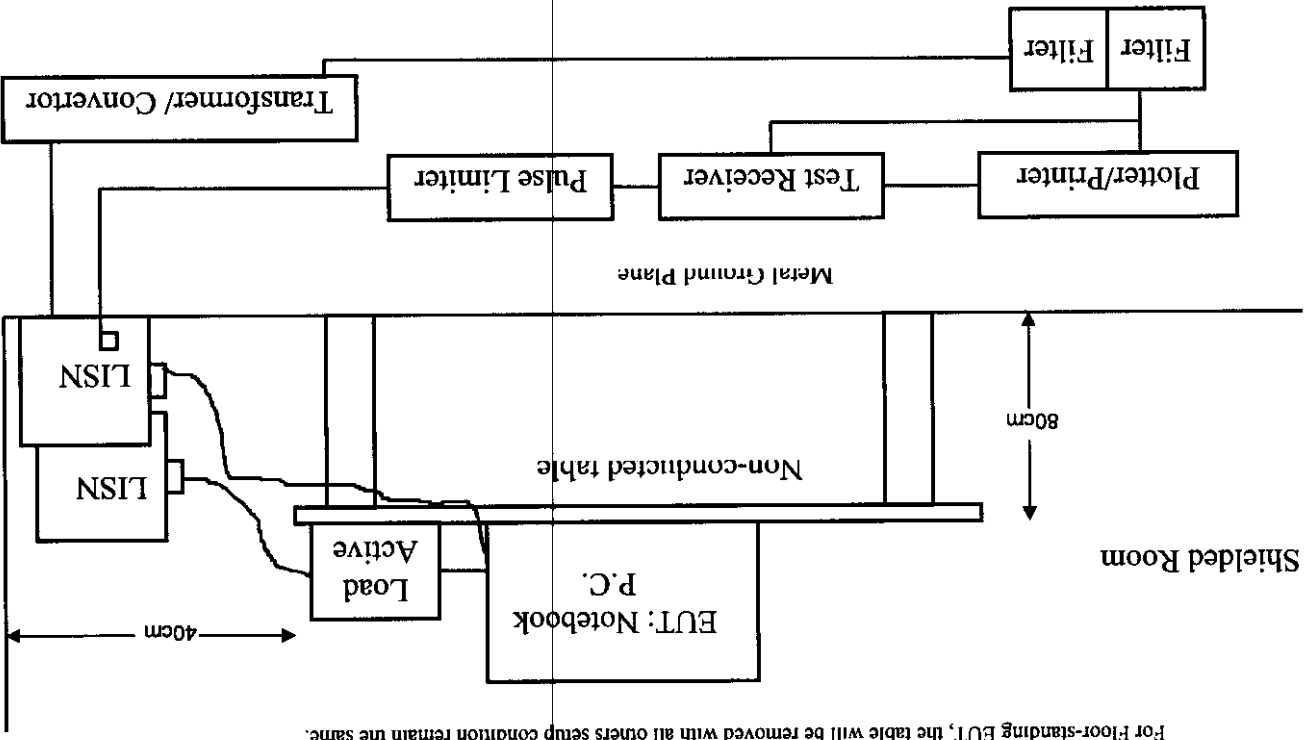
The following test equipments are used during the conducted power line tests:

Instrument	Manufacturer	Type /Serial No.	Last Calibration	Location	C.E.
Test Receiver	Rohde & Schwarz	ESHS 30 / 828109/010	Dec. 15, 1998	Shield Room #1	✓
L.I.S.N.	Kyoritsu	KNW-407	Oct. 03, 1998	Shield Room #1	✓
L.I.S.N.	Solar	8012-50-R24 / 90038	Jun. 02, 1998	Shield Room #1	
L.I.S.N.	Rohde & Schwarz	ESH3-Z5 / 840567/002	Oct. 02, 1998	Shield Room #1	✓
L.I.S.N.	Schwarzbeck	NNLK 8121/8121358	Jun. 02, 1998	Shield Room #1	
Pulse Limiter	Rohde & Schwarz	ESH3-Z2/357.8810.52	Nov. 01, 1998	Shield Room #1	✓
Shielded Room	GesTek	GTK-RF-S04	Sep. 17, 1998	Shield Room #1	✓
RF CABLE	GesTek	GTK-RF-C07	Sep. 17, 1998	Shield Room #1	✓
50 Ohm Terminator	GesTek	GTK-RF-T01	Oct. 03, 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

Note: This is a representative setup diagram for Table-top EUT.
For Floor-standing EUT, the table will be removed with all others setup condition remain the same.



3.3 Conducted Emission Limit

FCC Limits

Frequency	Maximum RF Line Voltage		
	Class A		
	Class B		
MHz	uV	dBuV	uV
0.45 - 1.705	1000	60.0	250
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.

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
0.50-5.0	73	60	56
5.0 - 30	73	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.

The device under test, installed in a representative system as described in section 3.2, was placed on a non-conductive table whose total height equald 80 CM. Powered from one LISN which signal output to receiver, and the other peripherals was powered from another LISN which signal output was terminated by 50Ω.

3.5 EUT 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 from Hard Disk and Enter to windows 98, exercise EMI.EXE test program to active all devices.
- 3.5.4 Play CD Disk audio in windows environment, read HDD and FDD data.
- 3.5.5 PC sent "H" Pattern to Both LCD Panel And Ext. Monitor.
- 3.5.6 PC sent "H" Pattern to Parallel (printer) port.
- 3.5.7 PC sent "H" Pattern to Serial port.
- 3.5.8 Repeat 3.5.4 to 3.5.7

3.6 Conducted 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, unless otherwise noted. The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range for all the test modes. The two different lines were each measured separately, and the worst modes datas were reported on the following data pages. The final measurement equal to Receiver reading plus Correction factor if available. When LISN insertion loss bigger than 0.5dB then the receiver will add correction factor to reading level automatically.

The total uncertainty for this test is as follows:
 • Uncertainty in the field strength measured: $< \pm 2.0 \text{ dB}$
 The uncertainty is calculated in accordance with NAMAS document NIS 81, and is given as 2 standard deviations.

CONDUCTED EMISSION DATA

Date of Test	:	January 08, 1999	Temperature	:	19.8 °C
EUT	:	Notebook PC	Humidity	:	53 %
Test Mode	:	Mode 1	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1	LINE 2			
MHz	dBuV	uV	dBuV	uV	uV
0.55607	31.4	37.15	32.4	32.4	250
0.69534	34.6	53.70	30.9	30.9	250
1.38926	34.4	52.48	34.6	34.6	250
2.36364	36.2	64.57	35.9	35.9	250
**3.68500	40.9	110.92	41.6	41.6	250
14.11748	33.3	46.24	34.2	34.2	250

Remarks : 1. All readings are Quasi-peak.

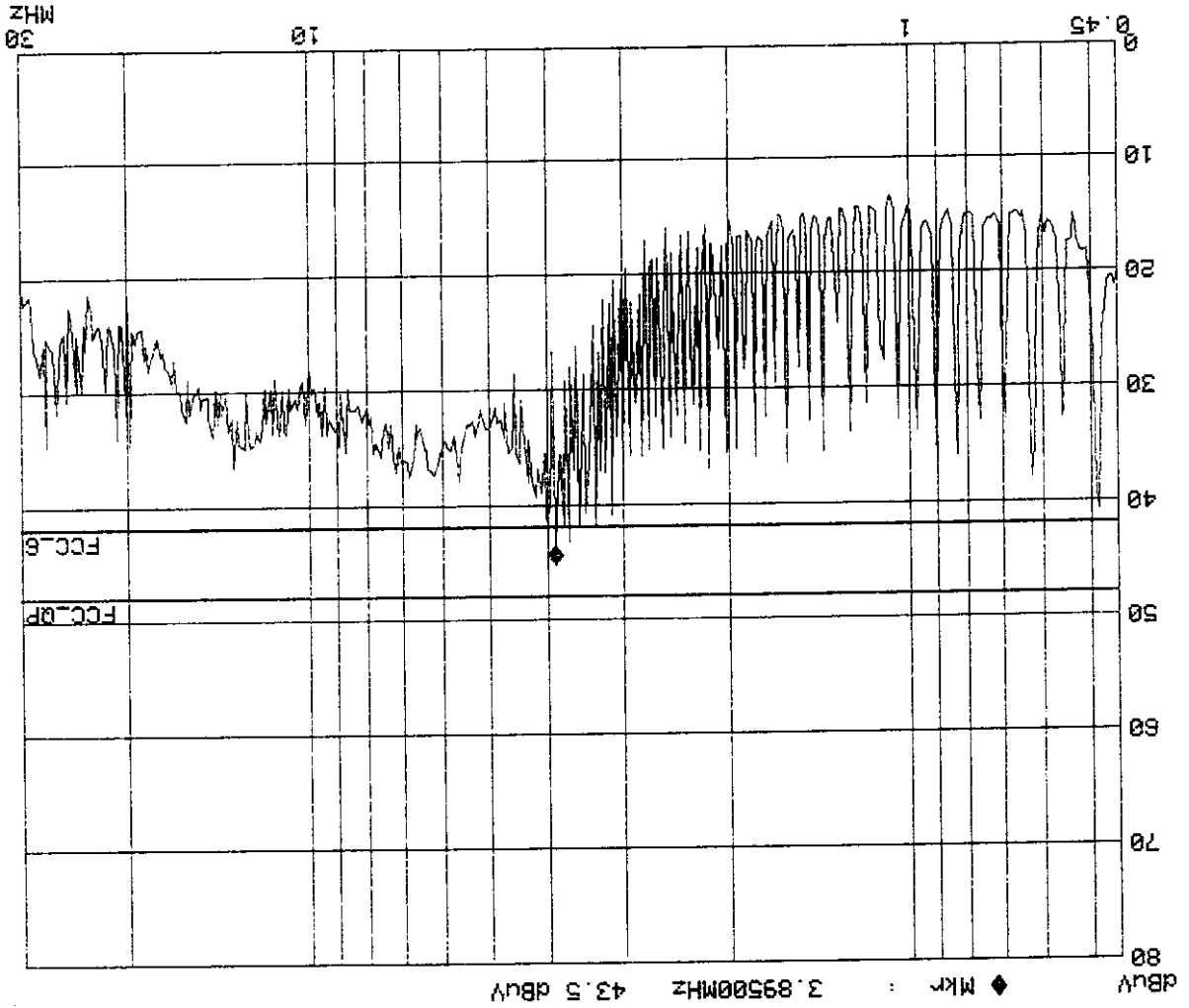
2. “**” means that this data is the worse case emission level.

3. Deviations from the specifications: None.

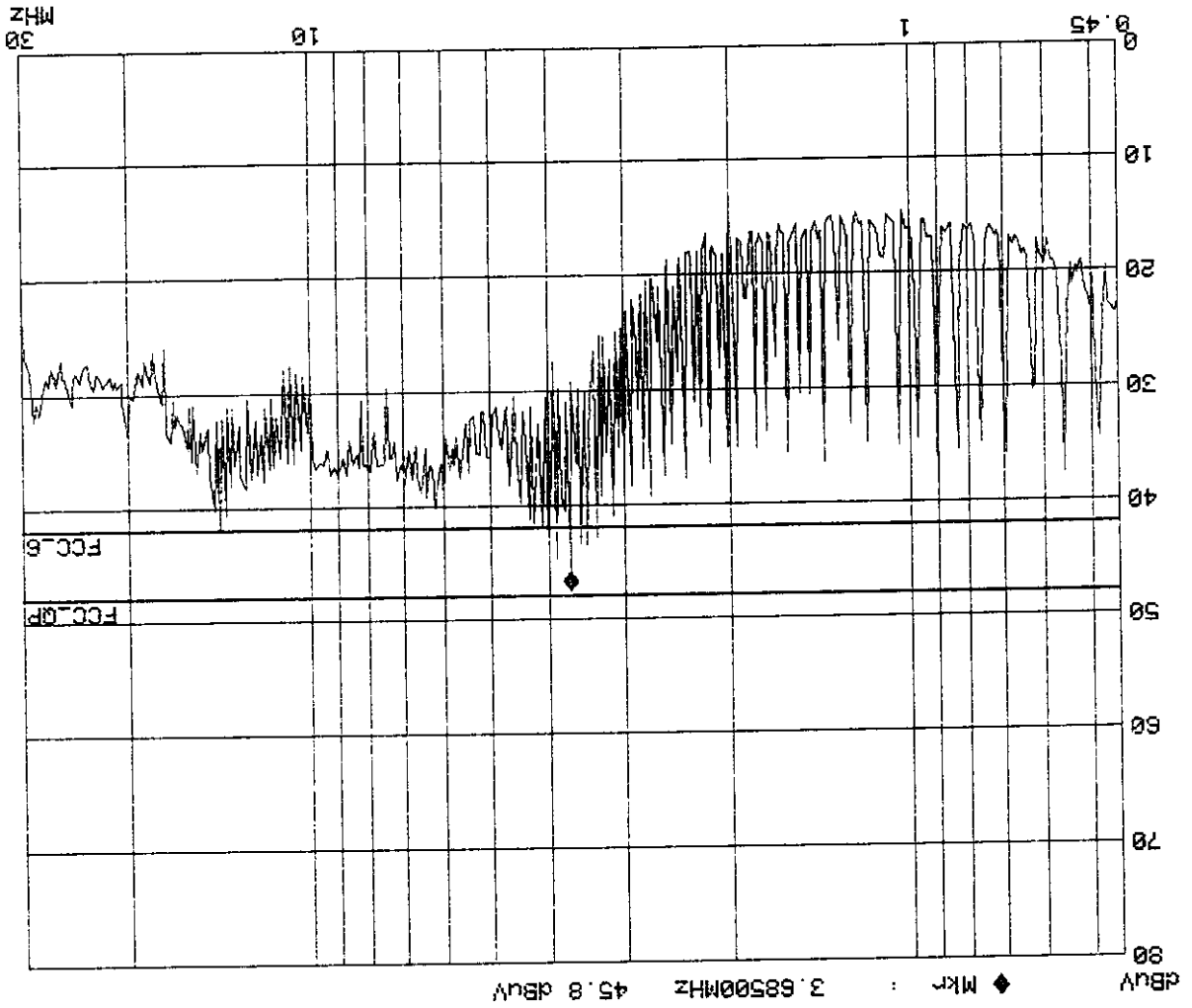
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

EUT: NOTEBOOK
 Manuf: FIC
 Op Cond: FULL SYSTEM
 Operator: HANS
 Test Spec: FCC CLASS B
 Comment: Line 1
 M/N: AMBER 2.0 PI1266 LCD 12.1 NEC HDD 6.4GB FUJITSU
 Date: 26. Jan 99 16:28



EUT: _____
 Manuf: _____
 Op Cond: _____
 Operator: _____
 Test Spec: _____
 Comment: _____
 Date: _____
 M/N: AMBER 2.0 PI1266 LCD 12.1 NEC HDD 6.4GB FUJITSU
 26. Jan 99 16:19



CONDUCTED EMISSION DATA

Date of Test	:	Jan. 26, 1999	Temperature	:	23.3 °C
EUT	:	Notebook PC	Humidity	:	65 %
Test Mode	:	Mode 2	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL		LIMIT	
	LINE 1	LINE 2	uV	uV
MHz	DBuV	dBuV	uV	uV
0.48568	33.8	48.98	33.2	45.71
0.62858	28.5	26.61	29.4	29.51
1.04648	35.2	57.54	34.5	53.09
**3.62429	43.0	141.25	43.4	147.91
6.13007	39.1	90.16	38.2	81.28
13.87522	32.3	41.21	38.2	81.28

Remarks : 1. All readings are Quasi-peak.

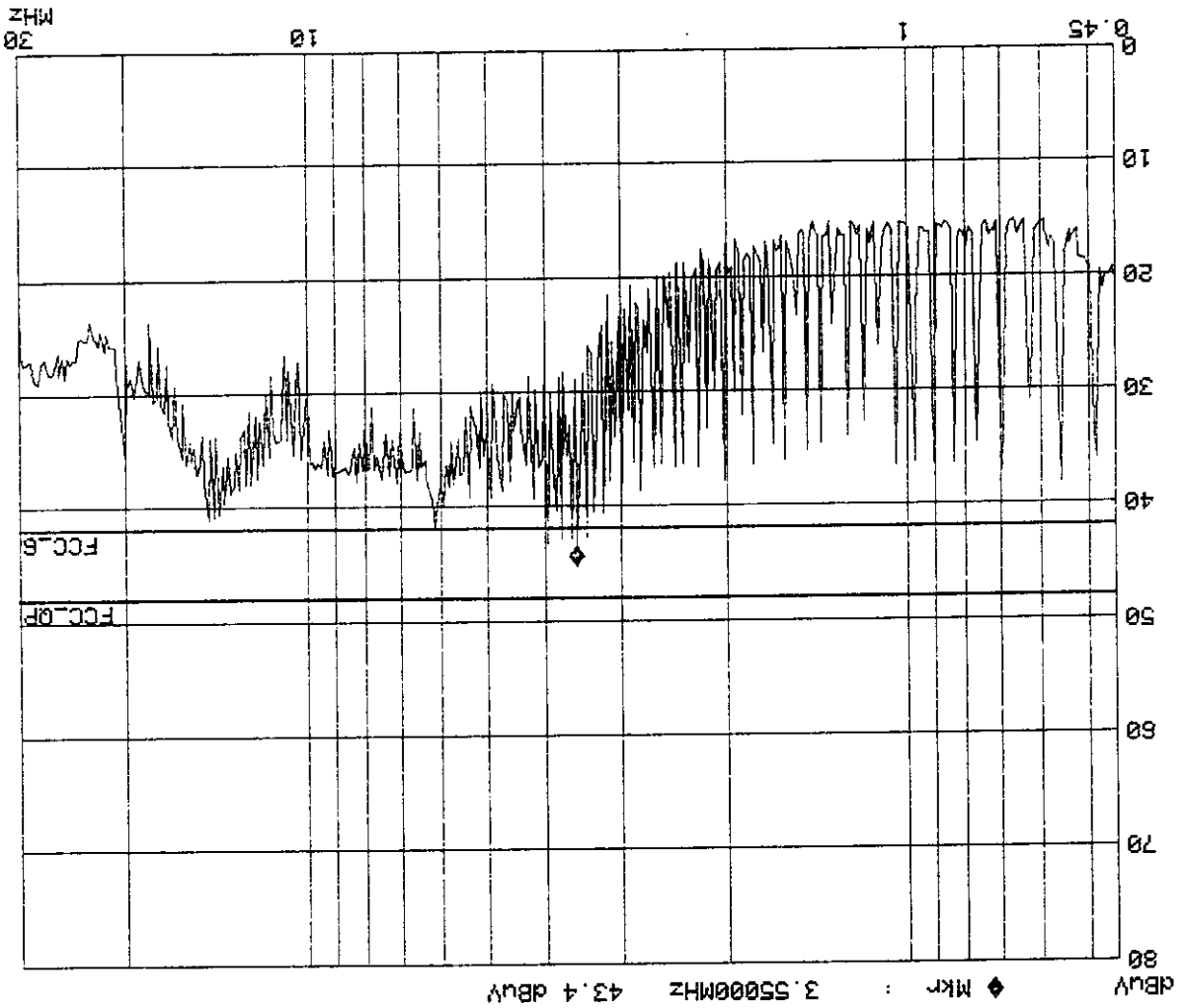
2. " " " " means that this data is the worse case emission level.

3. Deviations from the specifications: None.

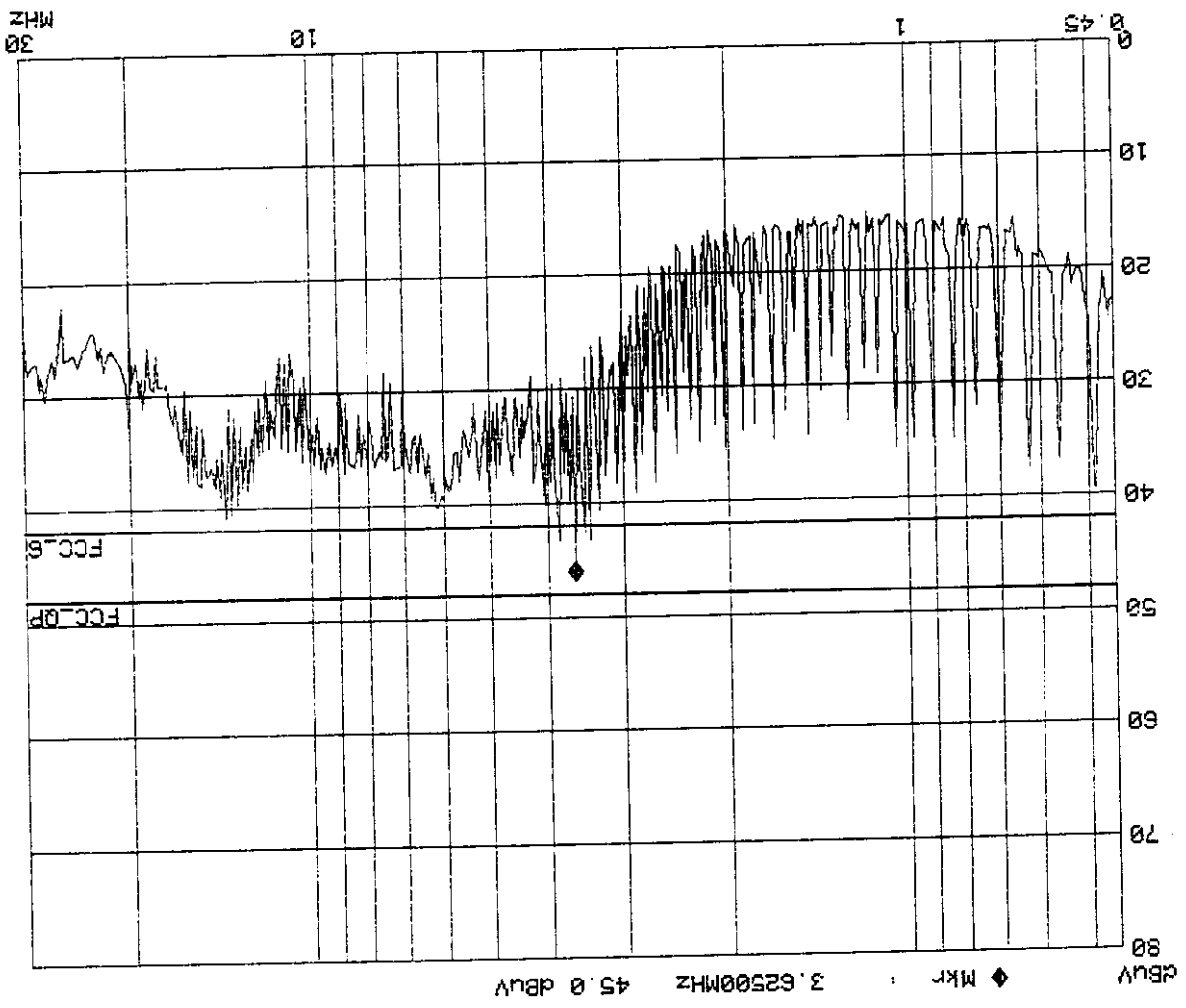
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

EUT: NOTEBOOK
 Manuf: FIC
 Op Cond: FULL SYSTEM
 Operator: HANS
 Test Spec: FCC CLASS B
 Comment: Line 1
 M/N: AMBER 2.0 PI1266 LCD 12.1 ADI HDD 4.3GB HITACHI
 Date: 26. Jan 99 14:42



EUT: NOTEBOOK
 Manuf: FIC
 Op cond: FULL SYSTEM
 Operator: HANS
 Test Spec: FCC CLASS B
 Comment: Line 2
 M/N: AMBER 2.0 P11266 LCD 12.1 ADI HDD 4.3GB HITACHI
 Date: 26. Jan 99 14:35



CONDUCTED EMISSION DATA

Date of Test	:	Jan. 26, 1999	Temperature	:	25.0 °C
EUT	:	Notebook PC	Humidity	:	66 %
Test Mode	:	Mode 3	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1	LINE 2			
MHz	dBuV	uV	dBuV	uV	uV
0.51820	36.3	65.31	39.3	92.26	250
0.65600	32.1	40.27	31.7	38.46	250
1.12007	31.6	38.02	31.4	37.15	250
2.78501	37.8	77.62	33.4	46.77	250
**3.76047	42.2	128.82	40.5	105.93	250
13.52001	38.6	85.11	38.0	79.43	250

Remarks : 1. All readings are Quasi-peak.

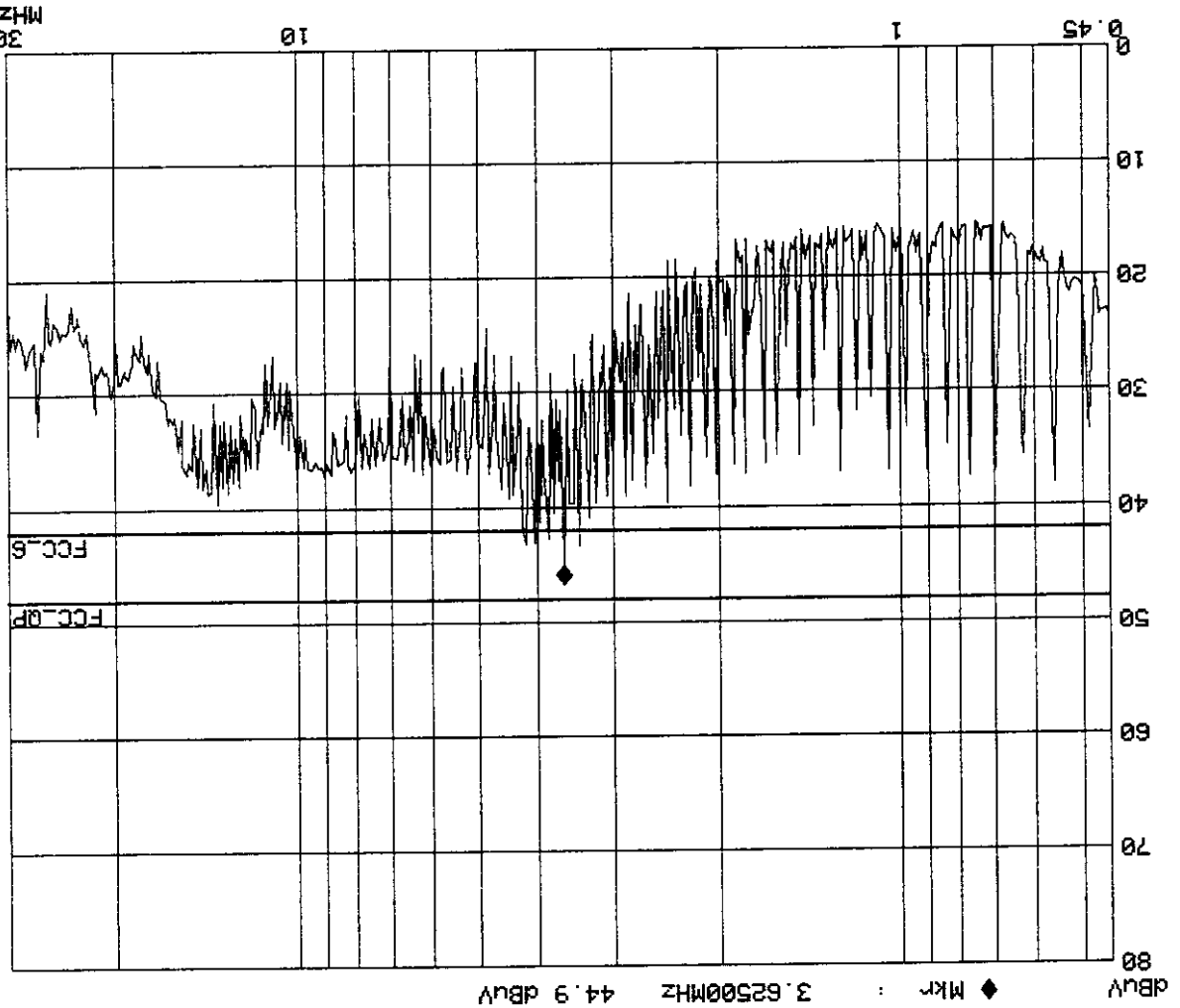
2. " " " " means that this data is the worse case emission level.

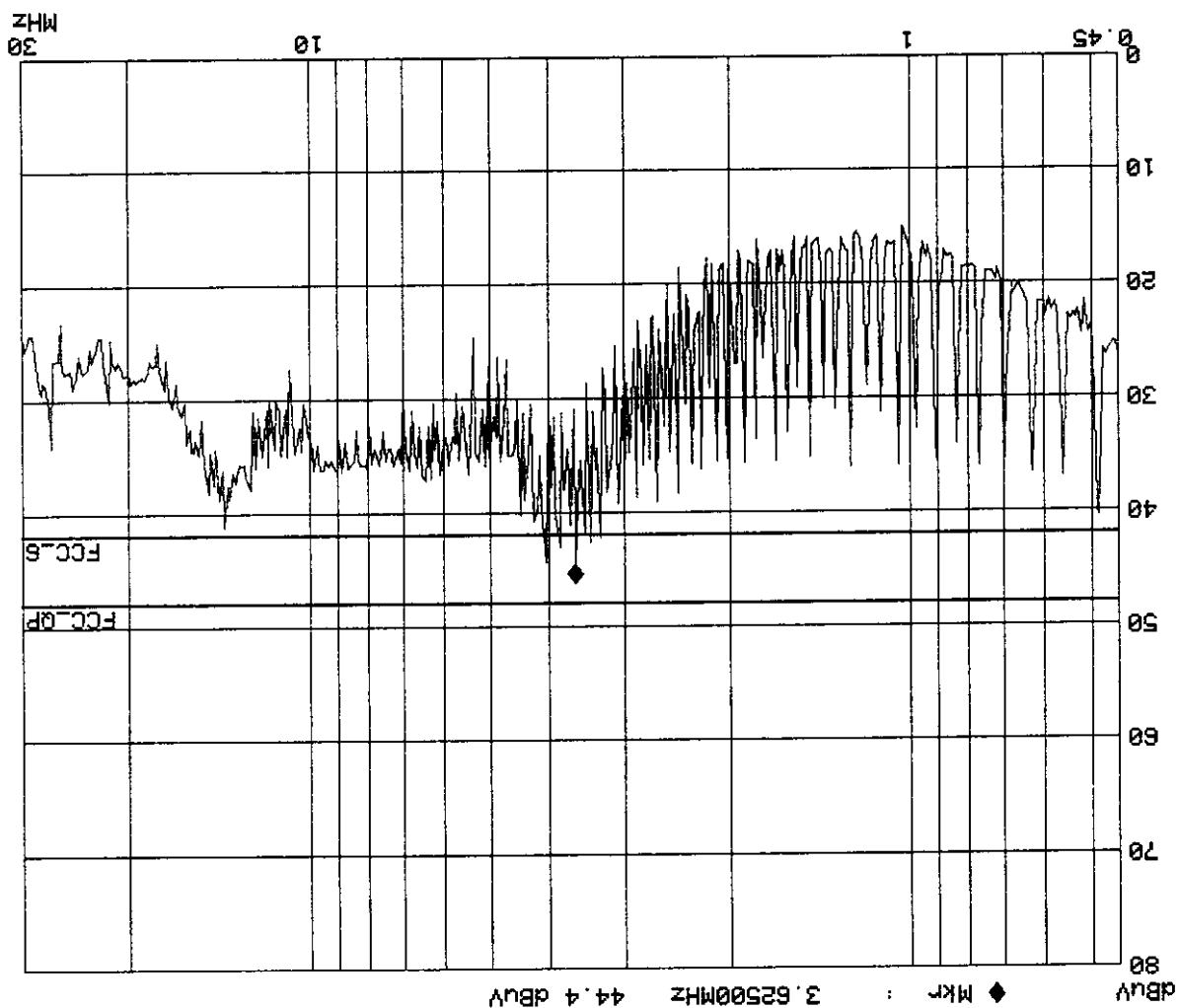
3. Deviations from the specifications: None.

4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

EUT: NOTEBOOK
 Manuf: FIC
 Op cond: FULL SYSTEM
 Operator: HANS
 Test Spec: FCC CLASS B
 Comment: Line 1
 M/N: AMBER 2.0 PI1266 LCD 14.1 NEC HDD 6.4GB HITACHI
 Date: 26. Jan 99 12:04





EUT: NOTEBOOK
 Manuf: PIC
 Op cond: FULL SYSTEM
 Operator: HANS
 Test Spec: FCC CLASS B
 Comment: Line 2
 M/N: AMBER 2.0 P11266 LCD 14.1 NEC HDD 6.4GB HITACHI
 Date: 26. Jan 99 11:58

CONDUCTED EMISSION DATA

Date of Test	:	January 26, 1999	Temperature	:	23.5 °C
EUT	:	Notebook PC	Humidity	:	65 %
Test Mode	:	Mode 4	Display Pattern	:	H Pattern

FREQUENCY		READING LEVEL				LIMIT
		LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	dBuV	uV
0.468672	40.4	104.71	39.6	95.50	250	250
0.62650	37.2	72.44	36.6	67.61	250	250
**3.62440	41.1	113.50	41.5	118.85	250	250
6.07939	36.3	65.31	37.5	74.99	250	250
13.52779	35.2	57.54	34.8	54.95	250	250
26.95764	37.2	72.44	37.6	75.86	250	250

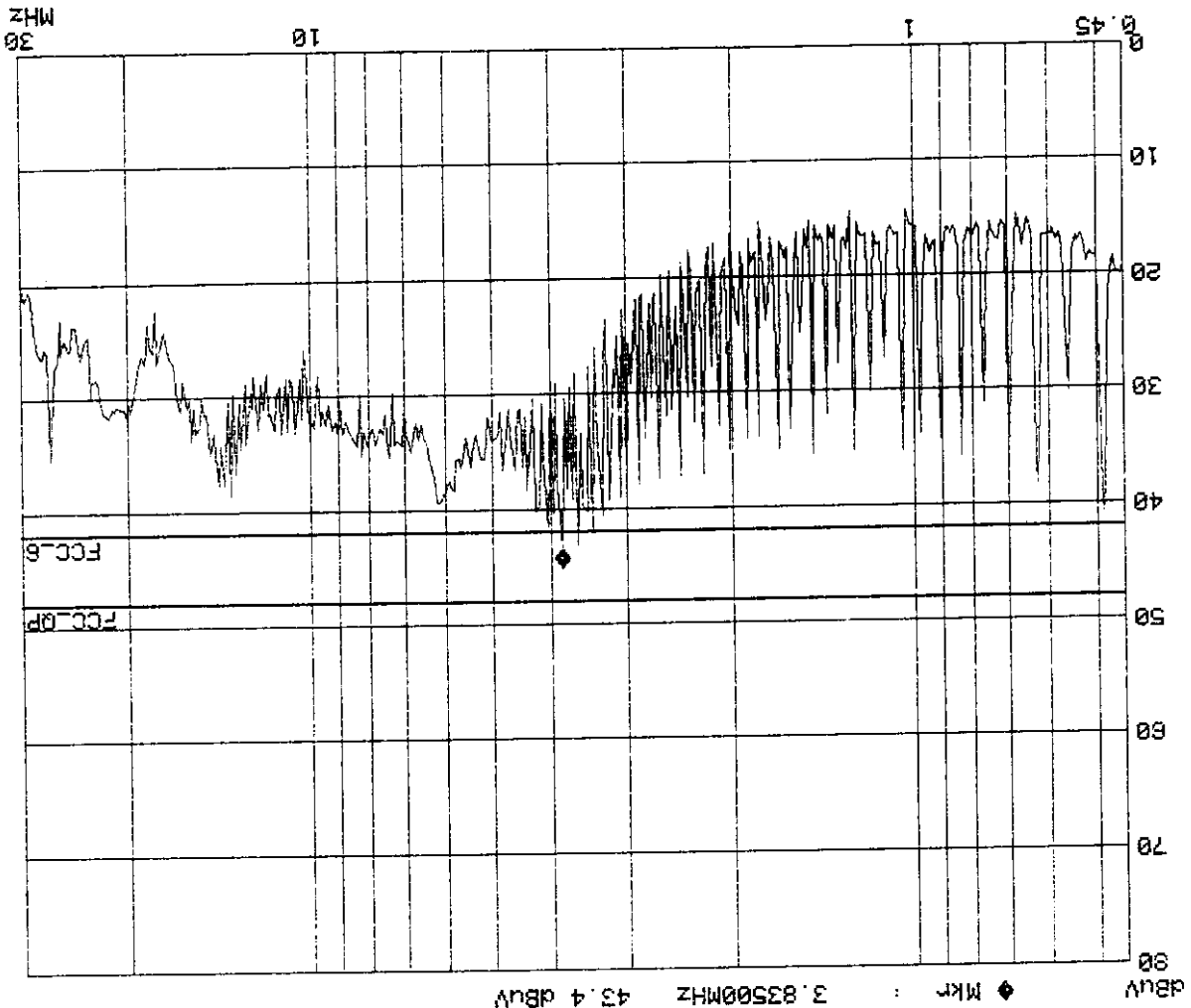
Remarks : 1. All readings are Quasi-peak.

2. " " " " means that this data is the worse case emission level.

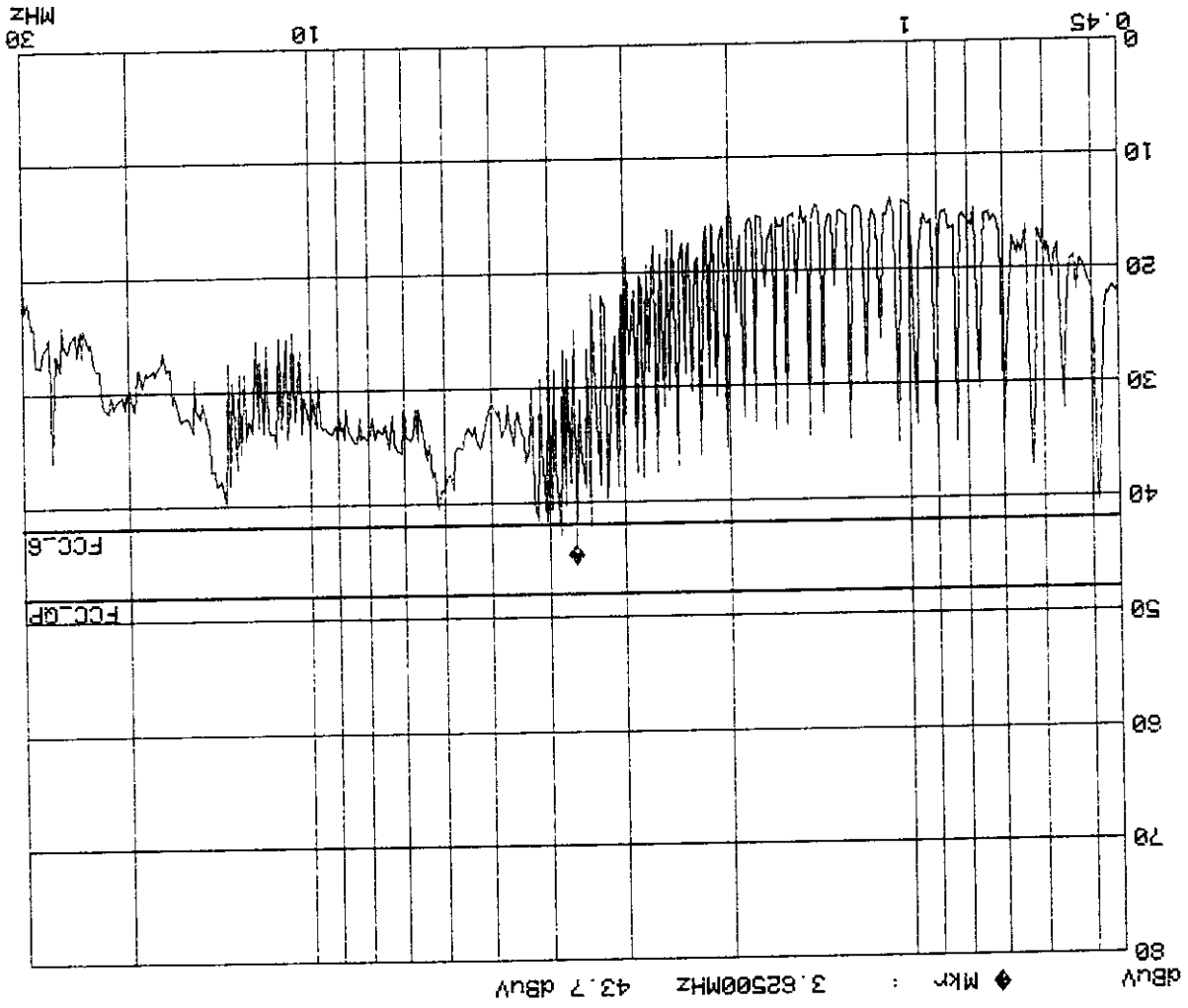
3. Deviations from the specifications: None.

4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.



NOTEBOOK
 EUT:
 Manuf:
 Op Cond:
 Operator:
 Test Spec:
 Comment:
 Line 1
 M/N:AMBER 2.0 PI1300 LCD 13.3 NEC HDD 6.4GB HITACHI
 Date: 26. Jan 99 14:51



EUT: NOTEBOOK
 Manuf: PIC
 Op Cond: FULL SYSTEM
 Operator: HANS
 Test Spec: FCC CLASS B
 Comment: Line 2
 M/N: AMBER 2.0 PI1300 LCD 13.3 NEC HDD 6.4GB HITACHI
 Date: 26. Jan 99 14:57

CONDUCTED EMISSION DATA

Date of Test	:	Jan. 26, 1999	Temperature	:	24.0 °C
EUT	:	Notebook PC	Humidity	:	66 %
Test Mode	:	Mode 5	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1	LINE 2			
MHz	DBuV	uV	dBuV	uV	uV
**0.48671	40.8	109.65	40.4	104.71	250
0.62494	37.1	71.61	36.2	64.57	250
1.04500	35.7	60.95	35.9	62.37	250
3.41500	40.0	100.00	38.9	88.10	250
13.72061	36.1	63.83	35.6	60.26	250
14.28017	34.9	55.59	35.6	60.26	250

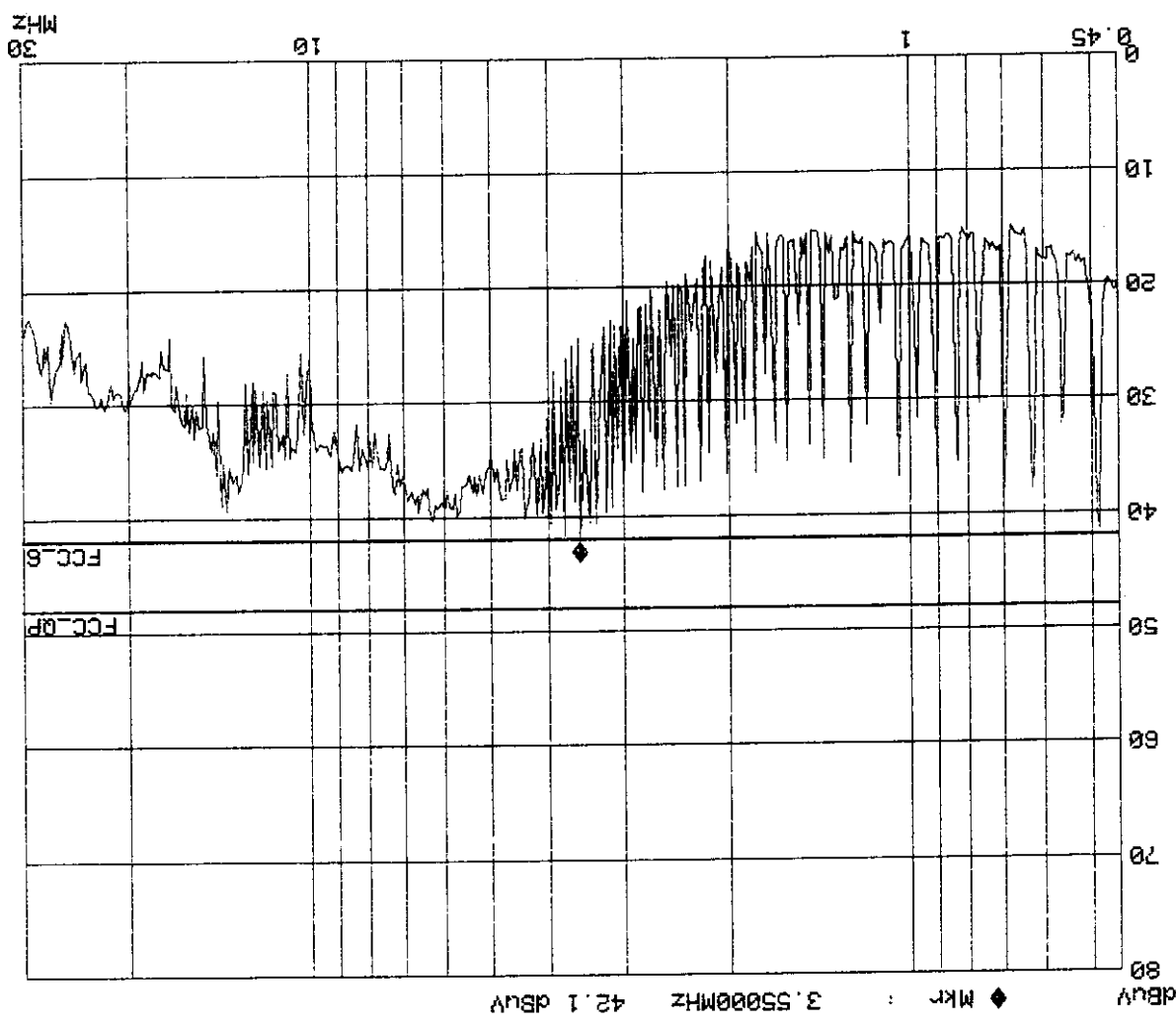
Remarks : 1. All readings are Quasi-peak.

2. " " " " means that this data is the worse case emission level.

3. Deviations from the specifications: None.

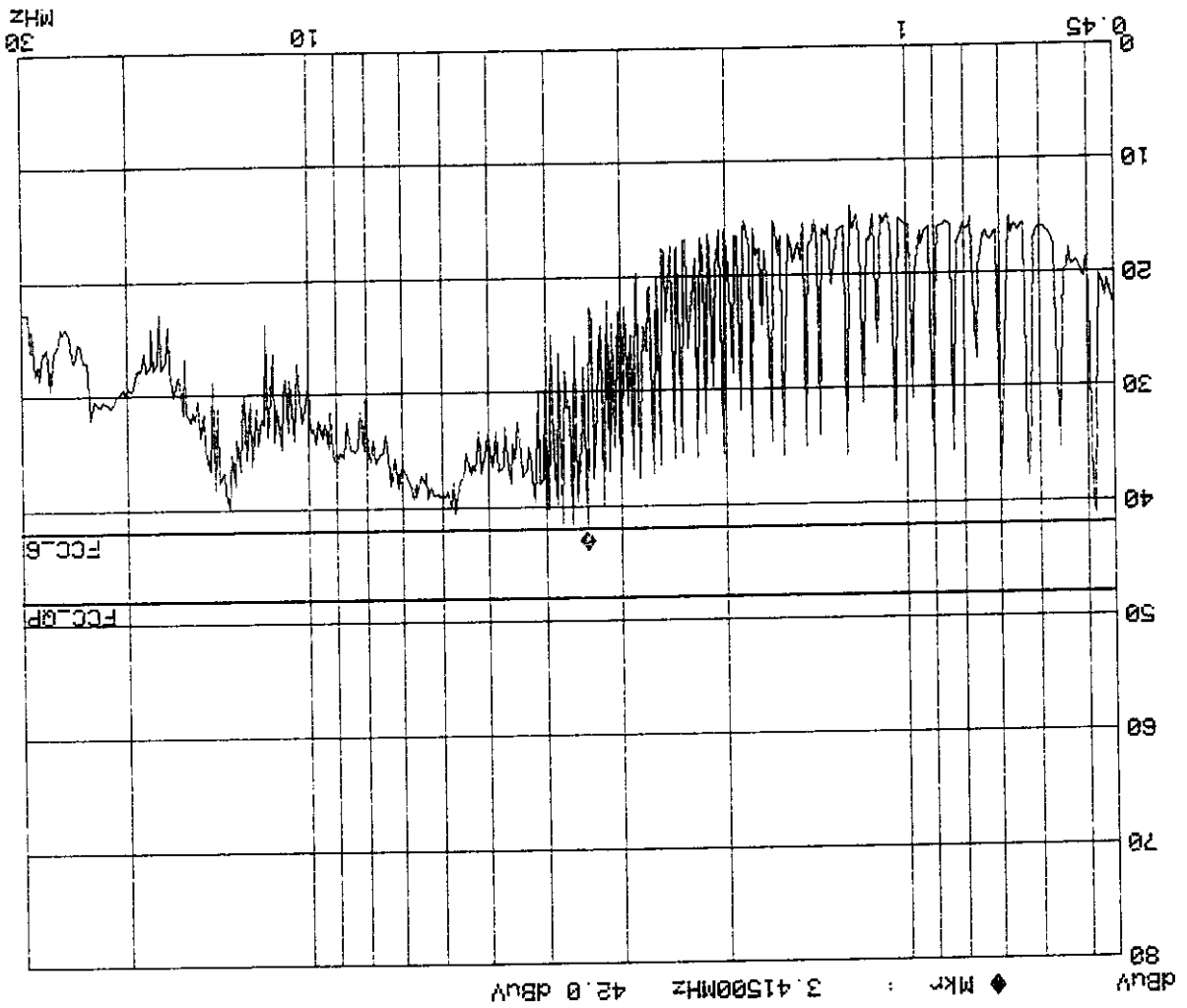
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.



EUT: NOTEBOOK
 Manuf: FIC
 Op cond: FULL SYSTEM
 Operator: HANS
 Test spec: FCC CLASS B
 Comment: Line 1
 M/N: AMBER 2.0 PI1266 LCD 13.3 LG HDD 4.3GB FUJITSU
 Date: 26. Jan 99 16:33

EUT: NOTEBOOK
 Manuf: PIC
 Op Cond: FULL SYSTEM
 Operator: HANS
 Test Spec: FCC CLASS B
 Comment: Line 2
 M/N: AMBER 2.0 PII266 LCD 13.3 LG HDD 4.3GB FUJITSU
 Date: 26. Jan 99 16:43



CONDUCTED EMISSION DATA

Date of Test	:	Jan. 26, 1999	Temperature	:	24.0 °C
EUT	:	Notebook PC	Humidity	:	66 %
Test Mode	:	Mode 6	Display Pattern	:	H Pattern

FREQUENCY		READING LEVEL				LIMIT
		LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV	
0.45063	42.5	133.35	41.5	118.85	250	
0.64138	41.5	118.85	40.7	108.39	250	
0.95870	40.8	109.65	41.2	114.82	250	
1.34510	41.9	124.45	41.2	114.82	250	
2.05000	42.9	139.64	41.5	118.85	250	
**3.20500	42.9	139.64	42.0	125.89	250	

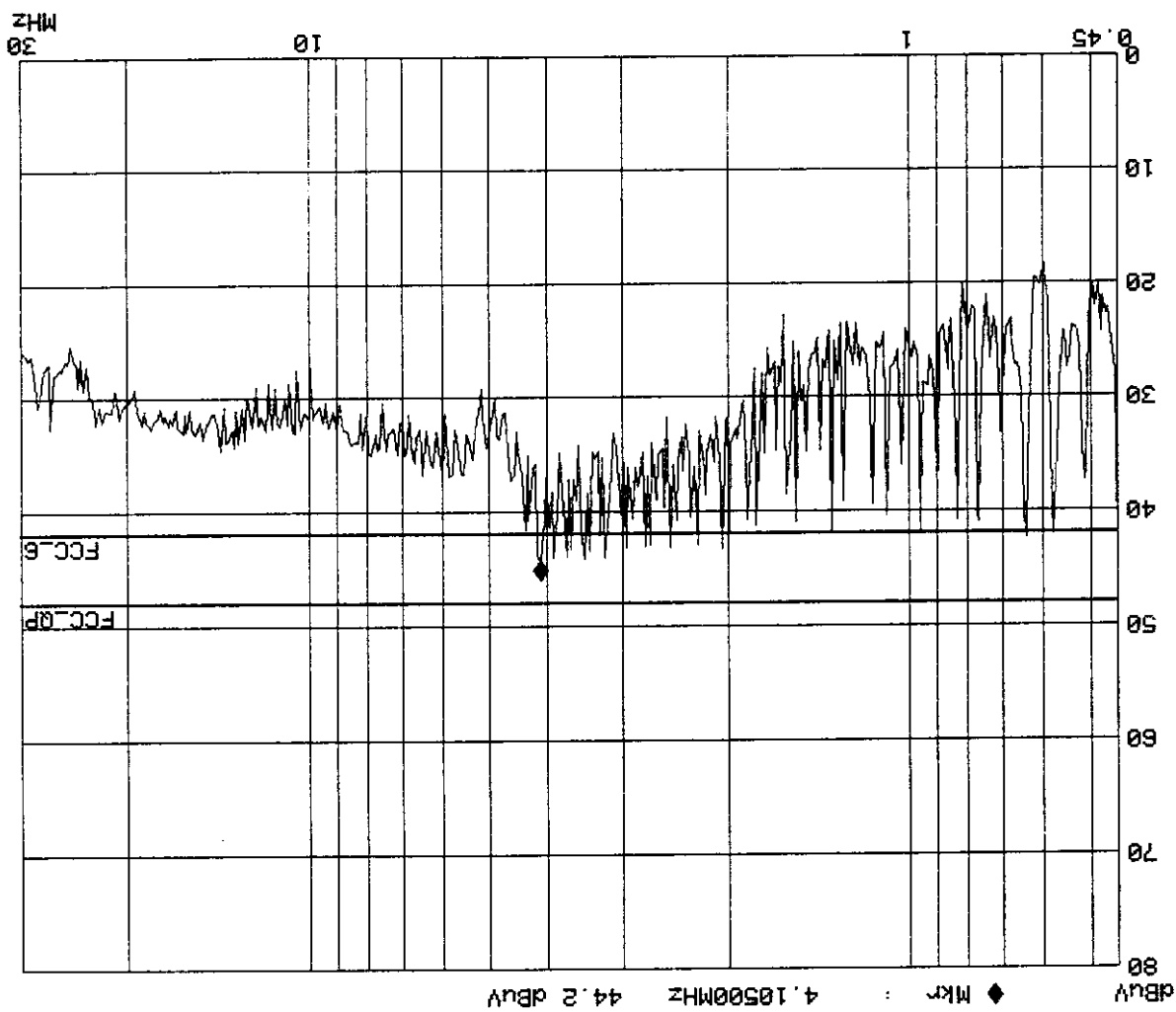
Remarks : 1. All readings are Quasi-peak.

2. " " " " means that this data is the worse case emission level.

3. Deviations from the specifications: None.

4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.



NOTEBOOK

EUT:

Manuf:

Op cond:

Operator:

Test Spec:

Comment:

Line 1

M/N:AMBER 2.0 P11300 LCD 14.1 LG HDD 4.3GB FUJITSU

Date: 26. Jan 99 13:16

gestek, POWELINE CONDUCTED EMISSION

EUT: NOTEBOOK

Manuf: FIC

Op Cond: FULL SYSTEM

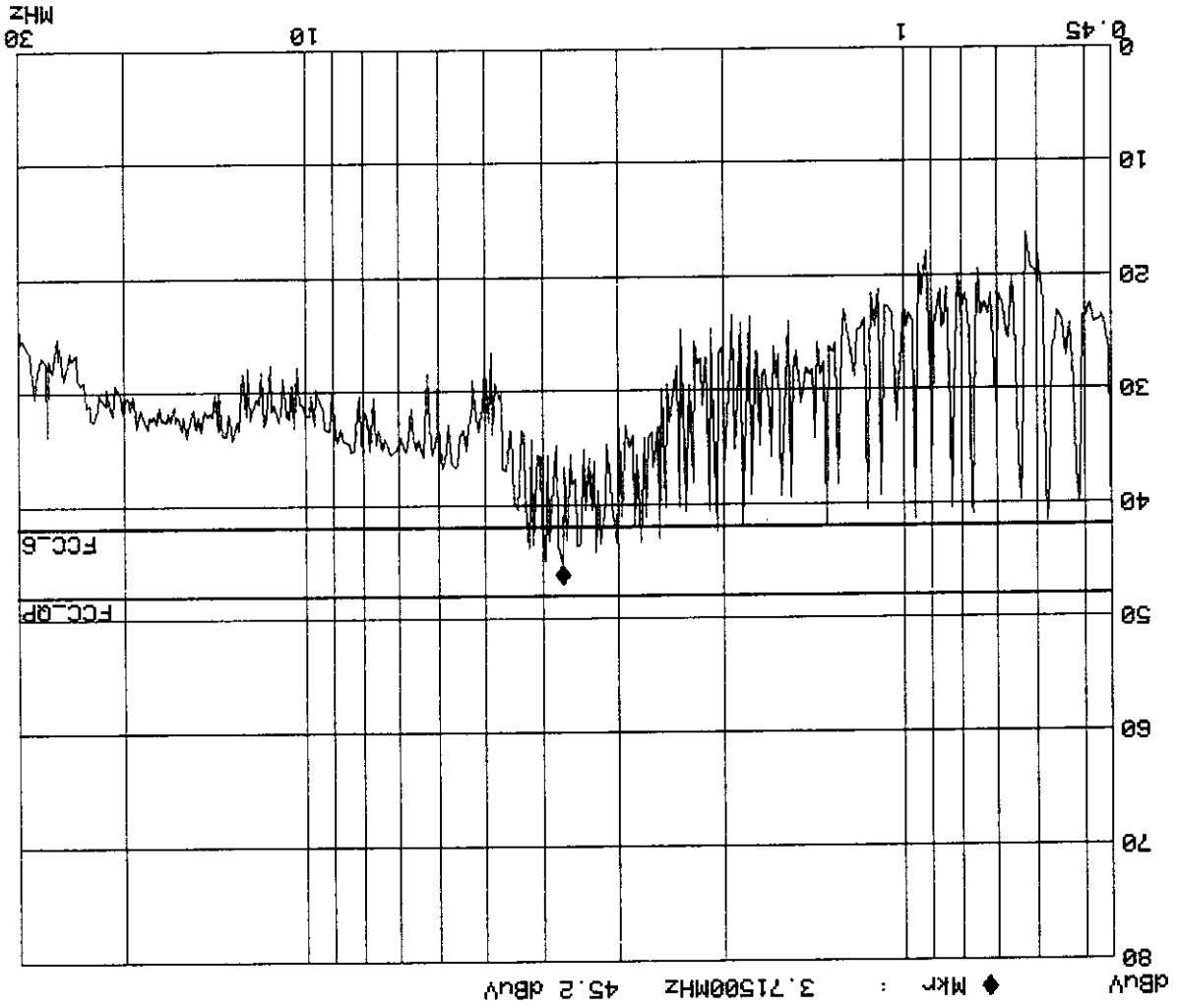
Operator: HANS

Test Spec: FCC CLASS B

Comment: Line 2

M/N: AMBER 2.0 PI1300 LCD 14.1 LG HDD 4.3GB FUJITSU

Date: 26. Jan 99 13:21



CONDUCTED EMISSION DATA

Date of Test	:	Feb. 03, 1999	Temperature	:	16.8 °C
EUT	:	Notebook PC	Humidity	:	47 %
Test Mode	:	Mode 7	Display Pattern	:	H Pattern

FREQUENCY		READING LEVEL				LIMIT
		LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV	
0.52420	38.9	88.10	39.4	93.33	250	
1.65945	37.3	73.28	38.4	83.18	250	
**2.61944	39.1	90.16	39.6	95.50	250	
3.23103	38.8	87.10	39.3	92.26	250	
3.67034	38.6	85.11	39.1	90.16	250	
15.24101	32.7	43.15	32.6	42.66	250	

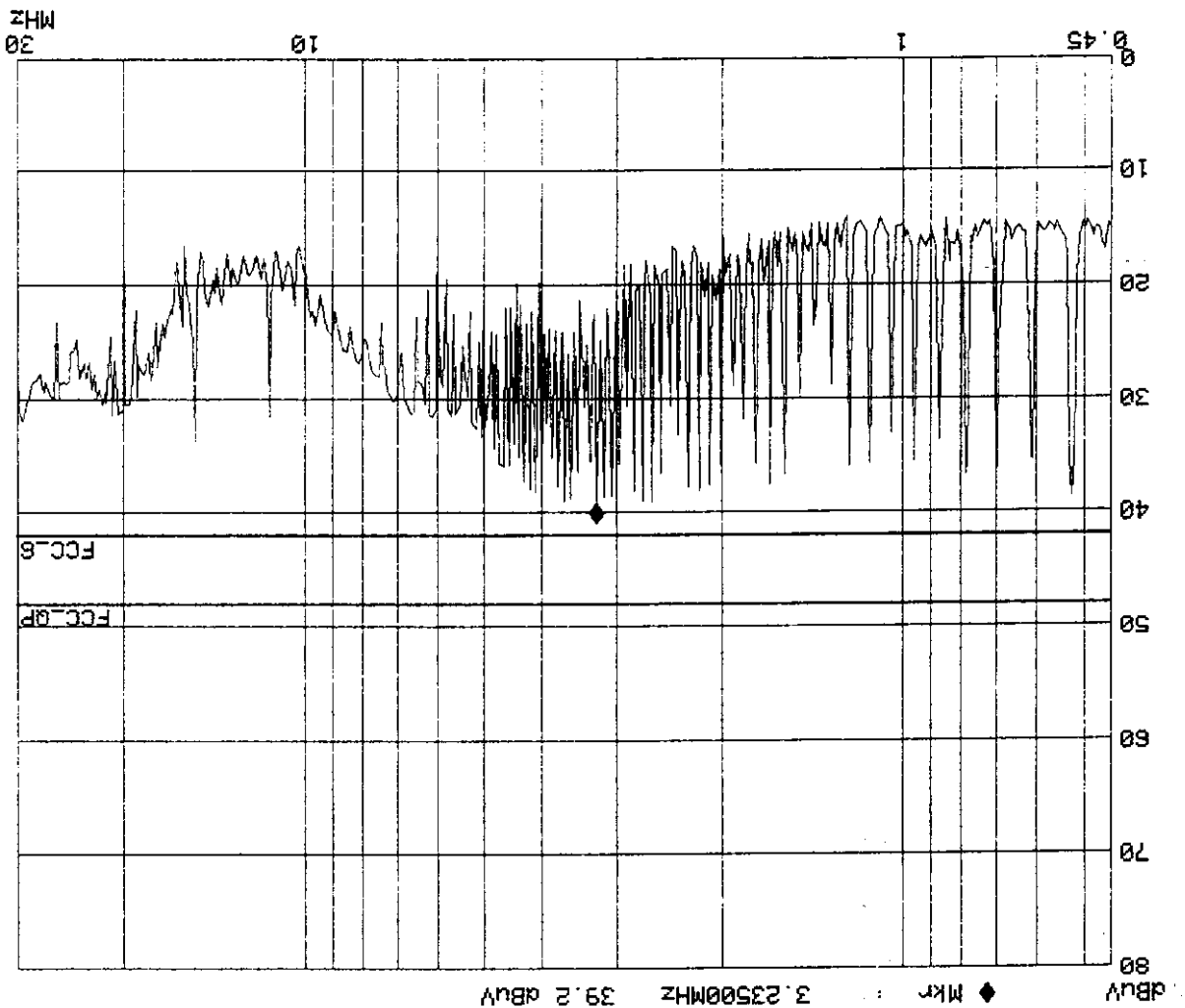
Remarks : 1. All readings are Quasi-peak.

2. " " " " means that this data is the worse case emission level.

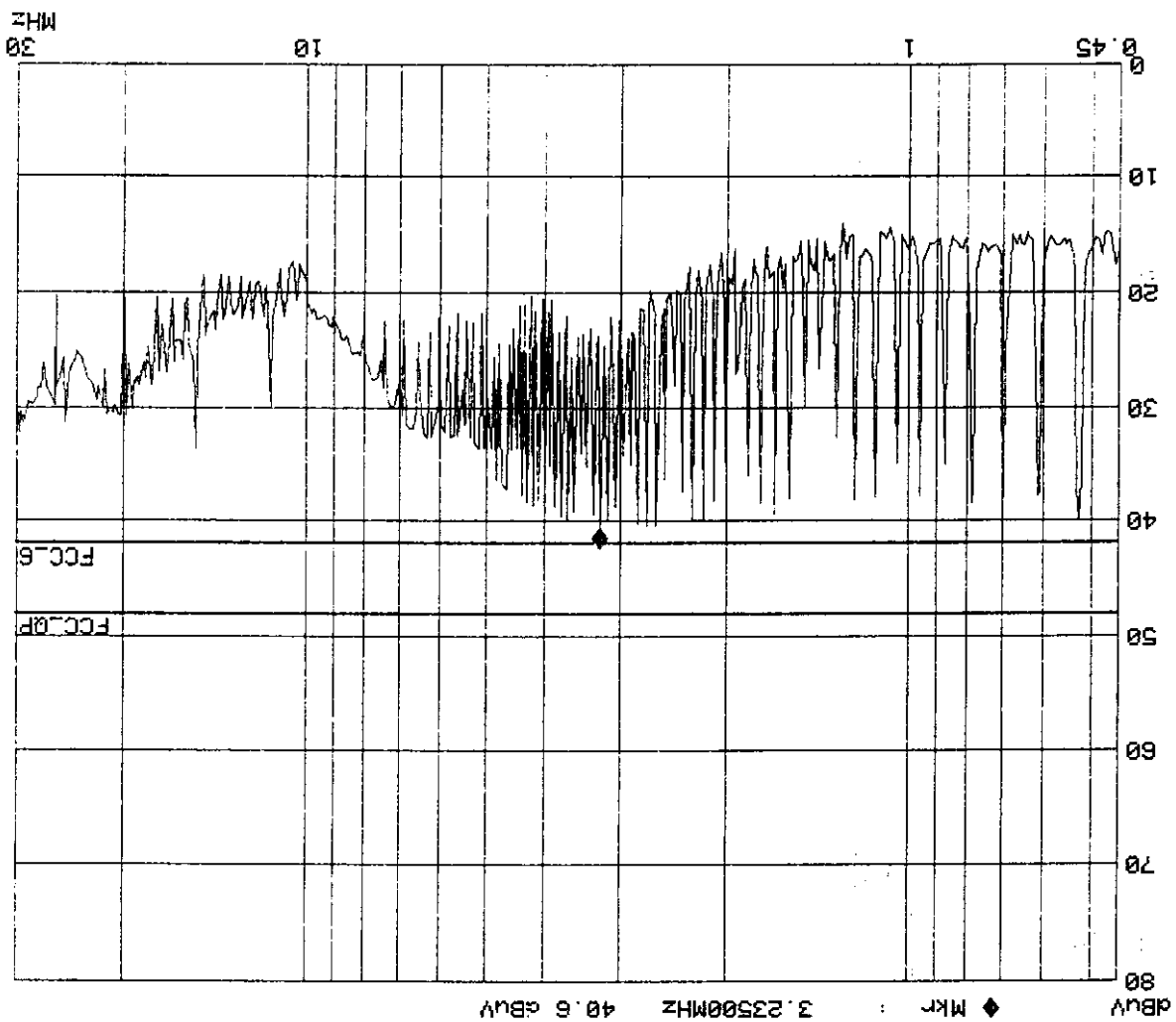
3. Deviations from the specifications: None.

4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.



EUT: NOTEBOOK
 Manuf: FIC
 Op Cond: MODE:7
 Operator: MASON
 Test Spec: FCC CLASS B
 Comment: Line 1
 M/N:AMB 2.0
 Date: 03. Feb 99 23:55



NOTEBOOK
 EUT:
 Manuf: PIC
 Op Cond: MODE:7
 Operator: MASON
 Test Spec: FCC CLASS B
 Comment: Line 2
 M/N:AMB 2.0
 Date: 04. Feb 99 00:00

4. Radiation Emission Test

4.1 Test Equipment

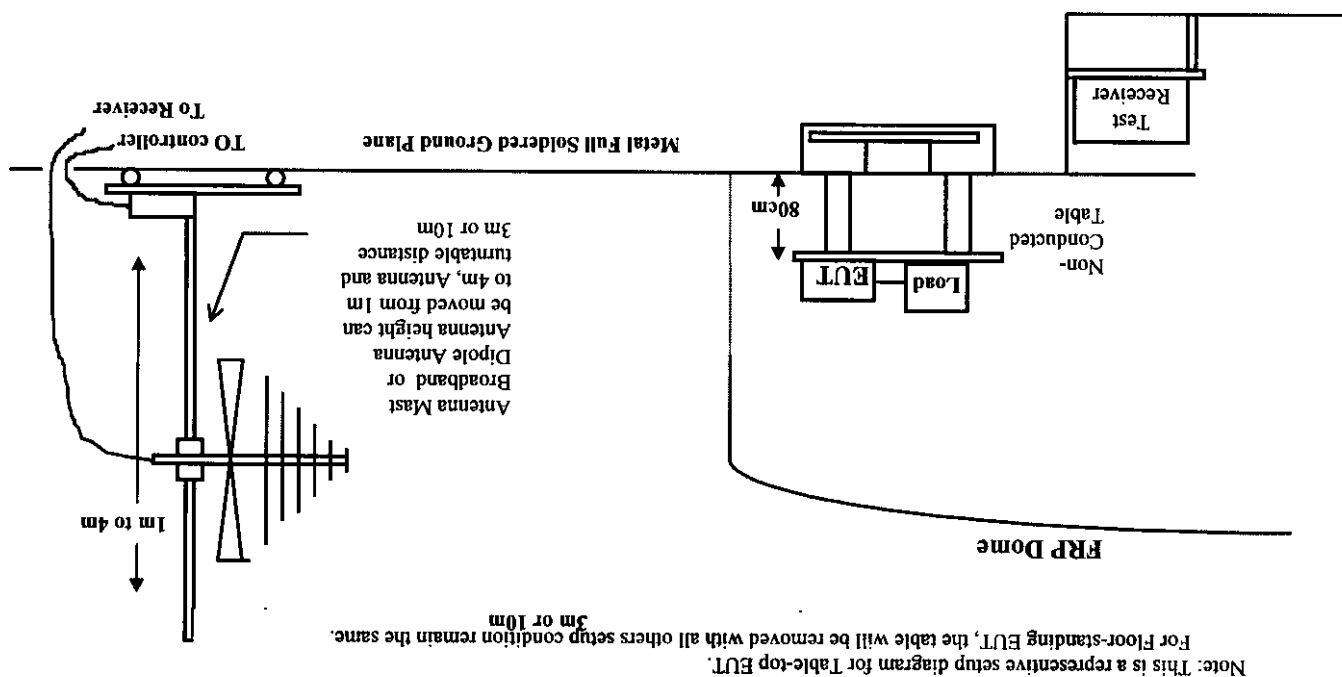
The following test equipments are used during the radiated emission measures:
Radiated test was performed on : ☐ Site #1 ☒ Site #2

Instrument	Manufacturer	Type /Serial No.	Last Cal.	Site #1	Site #2
Test Receiver	Rohde & Schwarz	ESVS 10 / 842122/001	Dec. 16, 1998	✓	
Spectrum Analyzer	HP	8594E / 3543A02689	N/A	✓	
Pre-Amplifier	HP	8447D / 2944A08272	N/A	✓	
Test Receiver	Rohde & Schwarz	ESCS 30/825022/003	Jul. 20, 1998		✓
Spectrum Analyzer	HP	8591E/3543A05040	N/A		✓
Pre Amplifier	HP	8447D/2944A08273	N/A		✓
BIL OG ANTENNA	Chase	CBL6112B/2417	May. 16, 1998	✓	
BIL OG ANTENNA	Chase	CBL6112B/2416	May. 16, 1998		✓
Pre Amplifier	HP	8347A/3307A01401	N/A	✓	✓
Dipole Antenna	Schwarzbeck	VHAP/736,,737	May. 19, 1998	✓	✓
Dipole Antenna	Schwarzbeck	UHAP/719,,720	May. 19, 1998	✓	✓
Open Site	GesTek	GTK-RF-S01	Jul. 22, 1998	✓	
Open Site	GesTek	GTK-RF-S02	Jul. 03, 1998		✓
RF Cable	GesTek	GTK-RF-C01	May. 16, 1998	✓	
RF Cable	GesTek	GTK-RF-C02	May. 16, 1998	✓	
RF Cable	GesTek	GTK-RF-C03	May. 16, 1998		✓
RF Cable	GesTek	GTK-RF-C04	May. 16, 1998		✓
Test Program	GesTek	GTK-RF-P01	N/A	✓	
Test Program	GesTek	GTK-RF-P02	N/A		✓

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

A diagram of a personal computer system. At the center is a desktop unit labeled 'EUT: Notebook' with a screen displaying 'HHHHHHHH'. To its right is a 'CRT Monitor' also displaying 'HHHHHHHH'. Above the desktop is a 'Keyboard' with a grid of keys and a 'Mouse'. To the left of the desktop are a 'Headse' (headset), a 'Mic' (microphone), and a 'TELEPHONE'. Below the desktop is a 'Printer'. To the right of the CRT monitor is a 'Modem'. A 'Cassette Player' is connected to the system via a cable. An 'AC' power source is connected to the bottom of the desktop unit.

4.2.3 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	uV/M	dBuV/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	dB(uV/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.

4.4 EUT Configuration

The equipments which is listed 2.3 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.

The device under test, installed in a representative system as described in section 4.2.2, was placed on a non-conductive table whose total height equaled 80 CM. This table can be rotated 360 degree. The measurement antenna was mounted to a non-conductive mast capable of moving the antenna vertically. Antenna height was varied from 1 meter to 4 meters and the system under test was rotated from 0 degree through 360 degrees relative to the antenna position and polarization (Horizontal and Vertical). Also the I/O cable position was investigated to find the maximum emission condition.

4.5 Operating Condition of EUT

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

4.6 Radiated Emission Data

Radiated emission were investigated over the frequency range of **30 MHz to 2 GHz**. All readings below 1GHz are quasi-peak values with a resolution Bandwidth of 120 KHz, unless otherwise noted. From 1-2GHz was investigated use both peak and average detector use bandwidth 1MHz. 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 reading was measured use a test receiver and reported in the following data pages.

The total uncertainty for this test is as follows:

- Uncertainty in the field strength measured (3m antenna distance): $< \pm 4.0$ dB
- Uncertainty in the field strength measured (10m antenna distance): $< \pm 4.0$ dB

The uncertainty is calculated in accordance with NAMAS document NIS 81, and is given as 2 standard deviations.

Radiated Emission Data

Date of Test : 01-21, 1999 Thu
 EUT : NOTEBOOK AMBER 2.0
 Humidity : 70 %RH
 Temperature : 27 deg/C
 Working Cond.: Mode 1
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	[dB(uV/m)]
	Loss	Factor	Horizontal	Horizontal	

159.750	2.09	10.06	19.91	32.06	40.09	150
*165.989	2.07	9.75	24.96	36.78	69.05	150
198.956	2.20	10.20	22.36	34.76	54.70	150
200.434	2.20	10.20	23.30	35.70	60.95	150
208.900	2.26	10.65	22.31	35.22	57.69	150
220.479	2.33	11.20	24.02	37.55	75.43	200
233.480	2.40	11.74	24.56	38.70	86.14	200
258.058	2.57	12.67	22.46	37.70	76.76	200
319.494	3.02	13.95	15.08	32.06	40.07	200
334.570	3.10	14.20	9.93	27.24	23.01	200
360.781	3.29	15.09	17.41	35.79	61.62	200
440.950	3.76	17.32	11.00	32.08	40.17	200
466.956	3.83	17.75	11.32	32.91	44.21	200
481.040	3.86	17.99	10.15	32.00	39.82	200
614.416	4.55	19.57	7.53	31.65	38.24	200
663.564	4.82	20.00	4.83	29.65	30.36	200
921.991	6.12	22.06	8.12	36.30	65.31	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak.

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 : 01-21, 1999 Thu
 EUT : NOTEBOOK AMBER 2.0
 Working Cond.: Mode 1
 Temperature : 23 deg/C
 Humidity : 66 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss	Factor	Vertical	Vertical	

68.142	1.20	6.14	25.71	33.05	44.91	100
72.166	1.24	6.42	22.98	30.64	34.02	100
111.525	1.46	12.09	19.94	33.49	47.24	150
140.306	1.81	11.30	18.29	31.40	37.17	150
159.747	2.09	10.06	15.08	27.23	22.99	150
166.054	2.07	9.75	19.02	30.84	34.85	150
180.394	2.00	9.40	18.35	29.75	30.74	150
199.489	2.20	10.20	19.15	31.55	37.80	150
200.432	2.20	10.20	20.62	33.02	44.77	150
360.781	3.29	15.09	18.12	36.50	66.87	200
368.796	3.36	15.49	15.96	34.80	54.96	200
380.825	3.45	16.08	15.89	35.41	58.98	200
384.837	3.48	16.27	6.93	26.68	21.58	200
481.037	3.86	17.99	17.48	39.33	92.59	200
561.209	4.26	19.00	16.71	39.97	99.68	200
641.383	4.66	19.90	14.57	39.13	90.46	200
841.817	5.87	21.31	4.95	32.13	40.41	200
921.989	6.12	22.06	8.61	36.79	69.10	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak.

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 :01-21,1999 Thu
 EUT :NOTEBOOK AMBER 2.0
 Temperature :27 deg/C
 Humidity :66 %RH
 Working Cond.:Mode 2
 Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	Factor	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss		Horizontal	Horizontal	

159.750	2.09	10.06	22.47	34.62	53.83	150
200.436	2.20	10.20	21.82	34.22	51.40	150
208.904	2.26	10.65	25.80	38.71	86.21	150
*233.478	2.40	11.74	29.06	43.20	144.61	200
258.058	2.57	12.67	21.22	36.46	66.55	200
280.607	2.74	13.15	24.20	40.09	101.05	200
307.206	2.94	13.71	19.70	36.35	65.67	200
320.000	3.02	13.95	21.75	38.73	86.37	200
368.651	3.36	15.49	19.84	38.68	85.90	200
383.999	3.46	16.17	20.72	40.36	104.21	200
466.956	3.83	17.75	15.39	36.98	70.63	200
614.416	4.55	19.57	10.19	34.31	51.94	200
663.564	4.82	20.00	8.81	33.63	48.01	200
921.991	6.12	22.06	6.81	34.99	56.17	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak.
 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 : 01-20, 1999 Wed
 Temperature : 23 deg/C
 Humidity : 67 %RH
 Working Cond.: Mode 2
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss	Factor	Vertical	Vertical	

68.139	1.20	6.14	28.07	35.41	58.93	100
72.167	1.24	6.42	25.38	33.04	44.85	100
233.480	2.40	11.74	24.48	38.62	85.35	200
258.053	2.57	12.67	14.26	29.50	29.86	200
334.564	3.10	14.20	16.69	34.00	50.10	200
360.781	3.29	15.09	17.96	36.34	65.65	200
380.942	3.45	16.08	18.38	37.90	78.56	200
440.950	3.76	17.32	16.87	37.95	78.96	200
461.001	3.82	17.64	12.37	33.83	49.15	200
466.954	3.83	17.75	14.92	36.51	66.91	200
481.037	3.86	17.99	19.37	41.22	115.10	200
521.125	4.02	18.60	12.42	35.04	56.49	200
561.213	4.26	19.00	13.78	37.04	71.14	200
641.383	4.66	19.90	13.13	37.69	76.64	200
801.728	5.70	20.90	12.30	38.90	88.14	200
841.813	5.87	21.31	15.35	42.53	133.82	200
881.905	5.96	21.72	9.29	36.97	70.54	200
921.989	6.12	22.06	8.16	36.34	65.61	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak.

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 :01-21,1999 Thu
EUT :NOTEBOOK AMBER 2.0
Temperature :23 deg/C
Humidity :64 %RH
Working Cond.:Mode 3
Display Pattern:H Pattern

Frequency Cable Antenna Reading Level Emission Level Limit
[MHz] [dB] [dB/m] [dB(uV)] [dB(uV/m)] (uV/m) (uV/m)

53.914	1.10	7.05	23.28	31.43	37.26	100
157.484	2.09	10.06	22.11	34.26	51.64	150
194.069	2.14	9.95	28.52	40.61	107.24	150
*198.825	2.20	10.20	21.74	34.14	50.93	150
208.899	2.26	10.65	24.34	37.25	72.87	150
233.479	2.40	11.74	26.21	40.35	104.16	200
258.763	2.57	12.67	22.42	37.66	76.41	200
270.345	2.66	12.93	20.99	36.59	67.50	200
319.999	3.02	13.95	25.27	42.25	129.52	200
361.186	3.29	15.09	18.20	36.58	67.48	200
383.994	3.46	16.17	18.52	38.16	80.89	200
466.956	3.83	17.75	13.11	34.70	54.32	200
529.800	4.08	18.70	12.47	35.25	57.85	200
565.260	4.29	19.04	11.05	34.38	52.33	200
614.411	4.55	19.57	9.42	33.54	47.53	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak.
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 :01-21,1999 Thu
 EUT :NOTEBOOK AMBER 2.0
 Humidity :70 %RH
 Temperature :27 deg/C
 Working Cond.:Mode 3
 Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	Factor	Vertical	Vertical	
			[dB(uV)]	[dB(uV/m)]	(uV/m)

70.100	1.20	6.20	23.19	30.59	33.85	100
*80.863	1.40	7.65	27.13	36.18	64.45	100
111.526	1.46	12.09	19.66	33.21	45.74	150
167.116	2.07	9.75	20.45	32.27	41.08	150
172.034	2.04	9.60	15.30	26.95	22.25	150
194.074	2.14	9.95	18.82	30.91	35.11	150
208.905	2.26	10.65	19.80	32.71	43.21	150
231.809	2.39	11.65	22.70	36.74	68.72	200
258.761	2.57	12.67	18.90	34.14	50.95	200
300.456	2.91	13.60	11.86	28.37	26.20	200
320.000	3.02	13.95	16.14	33.12	45.27	200
361.189	3.29	15.09	14.63	33.01	44.74	200
388.141	3.51	16.47	13.94	33.92	49.66	200
466.957	3.83	17.75	10.39	31.98	39.72	200
517.524	4.00	18.56	11.93	34.49	53.01	200
582.211	4.39	19.22	15.31	38.92	88.28	200
646.897	4.69	19.97	12.05	36.70	68.42	200
663.564	4.82	20.00	9.23	34.05	50.39	200
672.006	4.87	20.00	4.99	29.86	31.12	200
776.286	5.56	20.68	2.72	28.96	28.05	200
840.975	5.87	21.31	2.37	29.55	30.03	200
901.314	6.01	21.90	2.37	30.28	32.64	200

Remarks: 1. All Readings below 1GHz are Quasi-Peak.

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 : 01-22, 1999 Fri
 EUT : NOTEBOOK AMBER 2.0
 Humidity : 70 %RH
 Temperature : 27 deg/C
 Working Cond.: Mode 4
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	[dB(uV/m)]
Loss	Factor	Horizontal	Horizontal	Horizontal	Horizontal

49.166	1.08	9.73	11.09	21.90	12.44	100
59.006	1.16	6.32	21.23	28.71	27.27	100
76.014	1.32	6.85	13.40	21.57	11.98	100
113.845	1.47	12.25	18.73	32.44	41.90	150
157.485	2.09	10.06	19.30	31.45	37.37	150
186.117	2.06	9.64	23.73	35.42	59.05	150
194.071	2.14	9.95	23.16	35.25	57.86	150
219.944	2.32	11.11	24.91	38.33	82.53	200
284.630	2.78	13.24	18.70	34.72	54.43	200
297.579	2.87	13.50	20.68	37.05	71.20	200
388.144	3.51	16.47	14.10	34.08	50.58	200
452.832	3.80	17.44	16.43	37.67	76.50	200
582.215	4.39	19.22	6.96	30.57	33.76	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 :01-22,1999 Fri
 EUT :NOTEBOOK AMBER 2.0
 Humidity :63 %RH
 Temperature :23 deg/C
 Working Cond.:Mode 4
 Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	Factor	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss		Vertical	Vertical	

80.833	1.40	7.65	18.37	27.42	23.51	100
111.365	1.46	12.09	22.97	36.52	66.96	150
165.932	2.07	9.75	22.43	34.25	51.60	150
194.072	2.14	9.95	19.02	31.11	35.92	150
214.751	2.29	10.92	18.50	31.72	38.54	150
258.764	2.57	12.67	19.64	34.88	55.48	200
334.094	3.10	14.20	16.60	33.91	49.58	200
388.143	3.51	16.47	16.85	36.83	69.43	200
*452.833	3.80	17.44	22.50	43.74	153.87	200
582.213	4.39	19.22	9.24	32.85	43.89	200
614.412	4.55	19.57	11.01	35.13	57.08	200
761.871	5.47	20.52	5.92	31.91	39.39	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 : 01-22, 1999 Fri
 EUT : NOTEBOOK AMBER 2.0
 Temperature : 23 deg/C
 Humidity : 67 %RH
 Working Cond.: Mode 5
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	Factor	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss		Horizontal	Horizontal	

48.521	1.08	9.73	12.25	23.06	14.22	100
64.695	1.20	6.02	18.55	25.77	19.43	100
135.173	1.72	11.80	20.55	34.07	50.50	150
167.118	2.07	9.75	23.97	35.79	61.61	150
*194.070	2.14	9.95	26.71	38.80	87.07	150
199.463	2.20	10.20	19.17	31.57	37.89	150
208.903	2.26	10.65	23.09	36.00	63.11	150
221.028	2.33	11.20	20.40	33.93	49.72	200
231.811	2.39	11.65	25.25	39.29	92.17	200
258.760	2.57	12.67	25.88	41.12	113.80	200
331.786	3.09	14.17	21.17	38.43	83.46	200
368.645	3.36	15.49	17.53	36.37	65.84	200
452.830	3.80	17.44	17.83	39.07	89.88	200
517.523	4.00	18.56	9.10	31.66	38.27	200
687.255	4.99	20.00	3.59	28.58	26.87	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 : 01-22, 1999 Fri
 EUT : NOTEBOOK AMBER 2.0
 Humidity : 64 %RH
 Temperature : 23 deg/C
 Working Cond.: Mode 5
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss	Factor	Vertical	Vertical	

48.521	1.08	9.73	17.49	28.30	26.00	100
64.693	1.20	6.02	17.83	25.05	17.88	100
75.474	1.32	6.85	20.03	28.20	25.69	100
118.604	1.50	12.72	15.66	29.88	31.17	150
135.170	1.72	11.80	18.23	31.75	38.66	150
157.482	2.09	10.06	21.09	33.24	45.92	150
166.021	2.07	9.75	23.85	35.67	60.77	150
194.069	2.14	9.95	18.98	31.07	35.76	150
199.448	2.20	10.20	16.62	29.02	28.25	150
221.028	2.33	11.20	19.37	32.90	44.16	200
231.809	2.39	11.65	20.35	34.39	52.43	200
258.763	2.57	12.67	21.54	36.78	69.05	200
323.451	3.05	14.03	16.12	33.19	45.66	200
*452.832	3.80	17.44	18.80	40.04	100.50	200
517.519	4.00	18.56	12.56	35.12	56.99	200
776.283	5.56	20.68	6.26	32.50	42.16	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 : 01-22, 1999 Fri
 EUT : NOTEBOOK AMBER 2.0
 Working Cond.: Mode 5
 Temperature : 23 deg/C
 Humidity : 64 %RH
 Display Pattern: H Pattern

Frequency [MHz] Cable Loss [dB] Antenna Factor [dB/m] Reading Level [dB(uV)] Emission Level [dB(uV/m)] Vertical Limit [uV/m]

48.521	1.08	9.73	17.49	28.30	26.00	100
64.693	1.20	6.02	17.83	25.05	17.88	100
75.474	1.32	6.85	20.03	28.20	25.69	100
118.604	1.50	12.72	15.66	29.88	31.17	150
135.170	1.72	11.80	18.23	31.75	38.66	150
157.482	2.09	10.06	21.09	33.24	45.92	150
166.021	2.07	9.75	23.85	35.67	60.77	150
194.069	2.14	9.95	18.98	31.07	35.76	150
199.448	2.20	10.20	16.62	29.02	28.25	150
221.028	2.33	11.20	19.37	32.90	44.16	200
231.809	2.39	11.65	20.35	34.39	52.43	200
258.763	2.57	12.67	21.54	36.78	69.05	200
323.451	3.05	14.03	16.12	33.19	45.66	200
*452.832	3.80	17.44	18.80	40.04	100.50	200
517.519	4.00	18.56	12.56	35.12	56.99	200
776.283	5.56	20.68	6.26	32.50	42.16	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 : 01-22, 1999 Fri
 EUT : NOTEBOOK AMBER 2.0
 Working Cond.: Mode 6
 Temperature : 23 deg/C
 Humidity : 67 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uv)]	[dB(uv/m)]	(uv/m)

57.084	1.12	6.60	22.15	29.87	31.15	100
58.992	1.16	6.32	22.43	29.91	31.31	100
70.404	1.20	6.20	19.81	27.21	22.94	100
86.021	1.40	8.36	18.70	28.46	26.50	100
110.599	1.46	12.09	15.92	29.47	29.74	150
128.849	1.63	12.27	21.19	35.09	56.82	150
157.486	2.09	10.06	16.44	28.59	26.88	150
167.118	2.07	9.75	22.13	33.95	49.85	150
186.115	2.06	9.64	22.19	33.88	49.46	150
*194.067	2.14	9.95	27.56	39.65	96.02	150
199.453	2.20	10.20	23.65	36.05	63.46	150
214.749	2.29	10.92	20.92	34.14	50.92	150
231.805	2.39	11.65	25.82	39.86	98.42	200
258.759	2.57	12.67	23.63	38.87	87.83	200
323.452	3.05	14.03	23.01	40.08	100.94	200
452.831	3.80	17.44	12.47	33.71	48.49	200
529.885	4.08	18.70	10.46	33.24	45.90	200
711.589	5.17	20.09	7.47	32.73	43.32	200
840.968	5.87	21.31	7.63	34.81	55.02	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 : 01-22, 1999 Fri
 EUT : NOTEBOOK AMBER 2.0
 Working Cond.: Mode 6
 Temperature : 23 deg/C
 Humidity : 67 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	[dB(uV/m)]
	Loss	Factor	Vertical	Vertical	

64.694	1.20	6.02	17.81	25.03	17.84	100
111.364	1.46	12.09	21.99	35.54	59.81	150
145.562	1.90	10.89	18.59	31.38	37.06	150
167.119	2.07	9.75	24.12	35.94	62.68	150
194.069	2.14	9.95	23.47	35.56	59.96	150
231.806	2.39	11.65	22.92	36.96	70.49	200
258.763	2.57	12.67	24.65	39.89	98.78	200
*323.452	3.05	14.03	23.56	40.63	107.54	200
361.185	3.29	15.09	15.99	34.37	52.32	200
452.830	3.80	17.44	16.32	37.56	75.54	200
517.523	4.00	18.56	12.27	34.83	55.12	200
565.261	4.29	19.04	11.59	34.92	55.69	200
681.233	4.95	20.00	7.53	32.48	42.06	200
840.967	5.87	21.31	9.86	37.04	71.13	200
905.672	6.03	21.93	10.97	38.93	88.42	200
970.357	6.38	22.18	6.63	35.19	57.50	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
 4. Deviations from the specifications: None.

Radiated Emission Data

Date of Test : 02-03, 1999 Wed
 EUT : NOTEBOOK AMBER 2.0
 Working Cond.: Mode 7
 Temperature : 23 deg/C
 Humidity : 67 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)

102.429	1.41	11.30	23.60	36.31	65.39
156.335	2.05	10.20	20.75	32.99	44.64
167.117	2.07	9.75	25.18	37.00	70.82
184.329	2.04	9.56	22.42	34.02	50.21
194.072	2.14	9.95	23.82	35.91	62.43
285.715	2.78	13.24	25.40	41.42	117.71
296.494	2.87	13.50	24.55	40.92	111.16
307.208	2.94	13.71	22.52	39.17	90.86
323.451	3.05	14.03	21.04	38.11	80.45
331.794	3.09	14.17	20.97	38.23	81.56
452.826	3.80	17.44	18.44	39.68	96.42
512.022	3.96	18.50	15.50	37.96	79.09
*516.114	4.00	18.56	19.23	41.79	122.84
517.519	4.00	18.56	15.13	37.69	76.62
565.267	4.29	19.04	14.74	38.07	80.03

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 :02-03,1999 Wed
 EUT :NOTEBOOK AMBER 2.0
 Temperature :23 deg/C
 Humidity :67 %RH
 Working Cond.:Mode 7
 Display Pattern:H Pattern

Frequency Cable Antenna Reading Level Emission Level Limit
 [MHz] [dB] [dB/m] [dB(uV)] [dB(uV/m)] (uV/m) (uV/m)

48.518	1.08	9.73	19.61	30.42	33.18	100
64.692	1.20	6.02	26.46	33.68	48.30	100
102.429	1.41	11.30	25.67	38.38	82.98	150
118.600	1.50	12.72	16.02	30.24	32.49	150
145.555	1.90	10.89	22.30	35.09	56.81	150
156.336	2.05	10.20	23.18	35.42	59.05	150
*167.117	2.07	9.75	29.20	41.02	112.50	150
172.037	2.04	9.60	20.04	31.69	38.40	150
194.072	2.14	9.95	22.60	34.69	54.25	150
204.852	2.23	10.47	19.48	32.19	40.68	150
221.027	2.33	11.20	18.02	31.55	37.80	200
258.761	2.57	12.67	18.61	33.85	49.28	200
296.498	2.87	13.50	21.40	37.77	77.35	200
388.141	3.51	16.47	18.80	38.78	86.90	200
452.826	3.80	17.44	18.72	39.96	99.58	200
516.112	4.00	18.56	17.55	40.11	101.23	200
517.518	4.00	18.56	17.67	40.23	102.64	200
565.264	4.29	19.04	16.16	39.49	94.25	200
776.275	5.56	20.68	7.28	33.52	47.42	200
905.674	6.03	21.93	9.29	37.25	72.87	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 : 02-08, 1999 Mon
 EUT : N/B PK+AV
 Working Cond.: MODE: I
 Temperature : 23 deg/C
 Humidity : 65 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss	Factor	Horizontal	Horizontal	

1054.687	7.76	22.06	40.67	34.88	55.47	500 PK
1054.687	7.76	22.06	26.41	20.62	10.74	500 AV
1320.340	8.05	24.01	43.05	39.93	99.22	500 PK
1320.340	8.05	24.01	29.32	26.20	20.42	500 AV

Date of Test : 02-08, 1999 Mon
 EUT : N/B PK+AV
 Working Cond.: MODE: I
 Temperature : 23 deg/C
 Humidity : 65 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)
	Loss	Factor	Vertical	Vertical	

1021.042	7.72	22.00	44.64	38.70	86.07	500 PK
1021.042	7.72	22.00	38.26	32.32	41.31	500 AV
1287.325	8.02	23.87	41.69	38.33	82.53	500 PK
1287.325	8.02	23.87	34.21	30.86	34.90	500 AV

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(35.61, 35.19)(35.67, 35.24)
 4. Deviations from the specifications: None.

Radiated Emission Data

Date of Test : 02-08, 1999 Mon		EUT		Working Cond.: MODE: 2		Display Pattern: H Pattern	
Temperature : 23 deg/C		Humidity : 65 %RH					
Frequency	Cable	Antenna	Reading Level	Emission Level	Limit		
[MHz]	[dB]	Factor	Horizontal	Horizontal			
	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)	(uV/m)	
1020.624	7.72	22.00	14.69	8.75	2.74	500 PK	
1020.624	7.72	22.00	30.51	24.57	16.91	500 AV	
1263.842	7.99	23.90	37.62	34.23	51.45	500 PK	
1263.842	7.99	23.90	23.00	19.61	9.56	500 AV	

Date of Test : 02-08, 1999 Mon
EUT : N/B PK+AV
Humidity : 65 %RH
Temperature : 23 deg/C
Working Cond.: MODE: 2
Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	Loss	Factor	Vertical	Vertical	
[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)	(uV/m)

1200.354	7.92	23.33	39.35	35.22	57.69	500 PK
1200.354	7.92	23.33	24.12	19.99	9.99	500 AV
1351.354	8.09	24.26	39.64	36.85	69.61	500 PK
1351.354	8.09	24.26	23.08	20.30	10.35	500 AV

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(35.67, 35.28)(35.38, 35.14)
4. Deviations from the specifications: None.

Radiated Emission Data

Date of Test : 02-08, 1999 Mon
 EUT : N/B PK+AV
 Working Cond.: MODE:3
 Temperature : 23 deg/C
 Humidity : 65 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	Horizontal	Horizontal	
			[dB(uV/m)]	[dB(uV/m)]	(uV/m)

1200.326	7.92	23.33	41.33	37.20	72.42
1200.326	7.92	23.33	36.51	32.38	41.60
1500.000	8.25	25.06	34.80	33.21	45.76
1500.000	8.25	25.06	28.33	26.73	21.71

Date of Test : 02-08, 1999 Mon
 EUT : N/B PK+AV
 Working Cond.: MODE:3
 Temperature : 23 deg/C
 Humidity : 65 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	Loss	Factor	Vertical	Vertical	
	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)

1200.365	7.92	23.33	26.62	22.49	13.33
1200.365	7.92	23.33	41.03	36.91	70.03
1300.625	8.03	23.86	40.97	37.64	76.19
1300.625	8.03	23.86	26.25	22.92	14.00

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 (35.38, 34.90)(35.38, 35.22)
 4. Deviations from the specifications: None.

Radiated Emission Data

Date of Test :02-08,1999 Mon
 EUT :N/B PK+AV
 Working Cond.:MODE:4
 Temperature :23 deg/C
 Humidity :65 %RH
 Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[Mhz]	[dB]	[dB/m]	[dB(uv)]	[dB(uv/m)]	(uv/m)
1020.326	7.72	22.00	40.33	34.38	52.37
500 PK					
1020.326	7.72	22.00	34.16	28.22	25.75
500 AV					
1200.364	7.92	23.33	42.62	38.49	84.08
500 PK					
1200.364	7.92	23.33	35.06	30.93	35.21
500 AV					

Date of Test :02-08,1999 Mon
 EUT :N/B PK+AV
 Working Cond.:MODE:4
 Temperature :23 deg/C
 Humidity :65 %RH
 Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[Mhz]	[dB]	[dB/m]	[dB(uv)]	[dB(uv/m)]	(uv/m)
1203.352	7.92	23.35	41.07	36.97	70.52
500 PK					
1203.352	7.92	23.35	26.54	22.44	13.24
500 AV					
1353.241	8.09	24.28	42.07	39.30	92.24
500 PK					
1353.241	8.09	24.28	28.62	25.86	19.63
500 AV					

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(35.67, 35.38)(35.38, 35.14)
 4. Deviations from the specifications: None.

Radiated Emission Data

Date of Test : 02-08, 1999 Mon									
EUT : N/B PK+AV									
Working Cond.: MODE: 5									
Temperature : 23 deg/C									
Humidity : 65 %RH									
Display Pattern: H Pattern									
Frequency	Cable	Antenna	Reading Level	Emission Level	Limit				
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)				
Loss	Factor	Horizontal	Horizontal	Horizontal	(uV/m)				
1100.534	7.81	22.82	43.26	38.35	82.73	500 PK	500 AV	500 PK	500 AV
1100.534	7.81	22.82	32.21	27.30	23.17	500 AV	500 PK	500 AV	500 PK
1503.354	8.25	25.08	41.85	40.29	103.36	500 PK	500 AV	500 PK	500 AV
1503.354	8.25	25.08	32.03	30.47	33.38	500 AV	500 PK	500 AV	500 PK

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit				
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)				
Loss	Factor	Vertical	Vertical	Vertical	(uV/m)				
1100.235	7.81	22.82	40.13	35.22	57.64	500 PK	500 AV	500 PK	500 AV
1100.235	7.81	22.82	31.62	26.71	21.66	500 AV	500 PK	500 AV	500 PK
1400.128	8.14	24.62	40.35	38.05	79.91	500 PK	500 AV	500 PK	500 AV
1400.128	8.14	24.62	31.05	28.75	27.40	500 AV	500 PK	500 AV	500 PK

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(35.54, 34.90)(35.54, 35.06)
 4. Deviations from the specifications: None.

Radiated Emission Data

Date of Test : 02-08, 1999 Mon
 EUT : N/B PK+AV
 Working Cond.: MODE:6
 Temperature : 23 deg/C
 Humidity : 65 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Horizontal	Horizontal	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)	(uV/m)

1103.542	7.81	22.84	39.65	34.77	54.74	500 PK
1103.542	7.81	22.84	27.65	22.77	13.76	500 AV
1310.574	8.04	23.94	40.98	37.75	77.22	500 PK
1310.574	8.04	23.94	34.24	31.01	35.52	500 AV

Date of Test : 02-08, 1999 Mon
 EUT : N/B PK+AV
 Working Cond.: MODE:6
 Temperature : 27 deg/C
 Humidity : 70 %RH
 Display Pattern: H Pattern

Frequency	Cable	Antenna	Reading Level	Vertical	Vertical	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)	(uV/m)

1200.687	7.92	23.33	44.51	40.38	104.51	500 PK
1200.687	7.92	23.33	34.36	30.23	32.46	500 AV
1300.544	8.03	23.86	40.69	37.36	73.77	500 PK
1300.544	8.03	23.86	27.62	24.30	16.40	500 AV

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(35.54, 35.20) (35.38, 35.22)
 4. Deviations from the specifications: None.

Radiated Emission Data

Date of Test :02-08,1999 Mon
 EUT :N/B PK+AV
 Humidity :65 %RH
 Temperature :23 deg/C
 Working Cond.:MODE:7
 Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limit
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)

1100.327	7.81	22.82	39.02	34.11	50.76
1100.327	7.81	22.82	26.32	21.41	11.76
1302.684	8.03	23.88	41.07	37.76	77.27
1302.684	8.03	23.88	35.26	31.95	39.60

Date of Test :02-08,1999 Mon
 EUT :N/B PK+AV
 Humidity :65 %RH
 Temperature :23 deg/C
 Working Cond.:MODE:7
 Display Pattern:H Pattern

Frequency	Cable	Antenna	Reading Level	Emission Level	Limits
[MHz]	[dB]	[dB/m]	[dB(uV)]	[dB(uV/m)]	(uV/m)

1100.368	7.81	22.82	40.24	35.33	58.38
1100.368	7.81	22.82	26.81	21.90	12.45
1260.326	7.99	23.90	31.58	28.19	25.66
1260.326	7.99	23.90	21.04	17.64	7.62

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(35.54, 35.22)(35.54, 35.28)
 4. Deviations from the specifications: None.

7. EMI Reduction Method During Compliance Testing

Battery unit:

1. Added a gasket on the upper side of the battery of the bottom chassis.
2. The metal tape on the I/O bracket change to gasket.
3. Added an aluminum foil on the M/B which area under the CD-ROM driver.
4. The metal tape which tapping on the Fax/Modem area change to gasket.
5. Improve the conductive coating close to VGA & serial port of the bottom chassis.
6. Taped two metal tape from I/O bracket to the screw hole of the FPC which between the M/B and LCD panel.

LCD:

1. The FPC cable box with metal coating.
2. FPC cable box stopper change to the metal material.
3. The metal stick in the FPC cable box added two ferrite ring core on the both end.
4. 14.1" Panasonic LCD panel FPC cable shielded with aluminum foil and added two gasket between FPC cable and the back cover of the panel.
5. 14.1" NEC FPC cable added two gasket between FPC cable and the back cover of the panel.