Test Report
Application for Certification
On Behalf Of

First International Computer Inc.

Notebook PC

Model: Ruby 2.5+DESIGNote 5650

FCC ID: EUN 5650

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.
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Fax : (02) 2603-5325

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GTE44-F007

1. Test Report Certification

Applicant : First International Computer Inc.

Manufacturer : First International Computer Inc.

EUT Description : Notebook PC

(A) Model No. : Ruby 2.5+DESIGNote 5650
(B) Serial No. : ProtoType
(C) FCC ID : EUN 5650
(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.

NVLAP®

Sample Received Date : May 12, 1999
Final Test Date : June 09, 1999
Documented by : Winnie Chiu

Test Engineer :

Ivan Chiang

IVAN CHIANG

Approve & Authorized Signer :

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 endosement by NVLAP or the United States government.

2. General Information

2.1 Production Description

Description	:	Notebook PC
Model Number	:	Ruby 2.5+DESIGNote 5650
Serial Number	:	Prototype
FCC ID	:	EUN 5650
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.
Power Adaptor	:	Manufacturer:Delta, Liteon I/P : 100~240V, 50~60Hz, 98~135VA. O/P: DC 19V, 2.6A.

2.2 Results:

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

This Class B digital apparatus complies with Canadian ICES-003.

The Worst Emission data was found as following,

	Worst Emission Frequency (MHz)	Emission Level	Limit	Height of Antenna, Angel of Turntable
Conduction Mode 5	22.68069	41.5 dBuV Line 1, Q.P.	48.0dBuV	N/A
Radiation Mode 3	666.943	43.84[dB(uV/m)], Vertical	46.00 [dB(uV/m)]	1M, 180°

2.2.1Test Mode:

Mode	CPU	LCD	HDD	CD/DVD ROM	Battery	FDD	Adapter
1	Celeron 266MHz	LG 12.1" LP121S3-A	Fujitsu 4.3GB M/N:MHF2043AT S/N:01091558	TEAC CD-ROM 24X M/N:CD-224E-92 S/N:1626883	Sanyo Ni-MH 3800mAh /9.6V	Mitsubishi M/N:MF355H-347MN S/N:M031569	Delta ADP-50MB
2	Celeron 300MHz	LG 14.1" LP141X5-A	Hitachi 6.4GB M/N:DK239EA-65 S/N:ES10215231	Toshiba DVD-ROM M/N:SD-C2202 S/N:916S103304	Sanyo Ni-MH 3800mAh /9.6V	Mitsubishi M/N:MF355H-347MN S/N:M031569	Delta ADP-50MB
3	Celeron 333MHz	LG 14.1" LP141X5-A	IBM 6.4GB M/N:DBCA-206480 S/N:HRL06616	Toshiba CD-ROM 24X M/N:XM-1902B S/N:916C106972	Sanyo Li-Ion 3200mAh /14.4V	Mitsubishi M/N:MF355H-347MN S/N:M031569	Delta ADP-50MB
4	Celeron 366MHz	Panasonic 14.1" EDTCB21-QAF	Hitachi 10GB M/N:DK229A-10 S/N:DXT1005595	TEAC CD-ROM 24X M/N:CD-224EA-92 S/N:1626883	Panasonic Li-Ion 2800mAh/14.4V (2P4S)	Mitsubishi M/N:MF355H-347MN S/N:M031569	Delta ADP-50MB
5	Dixon 300MHz	LG 14.1" LP141X5-A	IBM 4.8GB M/N:DBCA-204860 S/N:HQL6355	MKE DVD ROM M/N:SR-8171-C S/N:8910PIA44302	Panasonic Ni-MH 3800mAH / 9.6V	NEC M/N:FD-1238T-018 S/N:669441007	Lite-On PA-1480-19G
6	Dixon 333MHz	Panasonic 14.1" EDTCB21-QAF	Fujitsu 4.8GB M/N:MHH2048AT S/N:01000194	Toshiba CD-ROM 24X M/N:XM-1902B S/N:916C106972	Panasonic Ni-MH 3800mAh /9.6V	NEC M/N:FD-1238T-018 S/N:669441007	Lite-On PA-1480-19G
7 +PortBar	Dixon 366MHz	LG 14.1" LP141X5-BINC	Fujitsu 10GB M/N:MHG2102AT S/N:00002714	TEAC CD-ROM 24X M/N:CD-224EA-92 S/N:1626883	Panasonic Li-Ion (2P4S) 2800mAh/14.4V	NEC M/N:FD-1238T-018 S/N:669441007	Lite-On PA-1480-19G

SDRAM: 32M ,64M.

Keyboard: JME, P/N:71-30411-00.

Lank Card: PL3400018002, **Lank Connect Board:** 1V-094V-0

Modem Card: 80-319V236-2A, **Modem Connect Board:** 80-319V237-2,

Touch Pad: ALPS, M/N:56AAA1793B, **Botton Board:**Amber 2.5 A25GP Ver.0.2

Power Board: Amber 2.5 A2.5DC Ver.0.3, **DC to DC Board:**Amber 2.5 A25CG Ver.0.3

PortBar: N38802551, M/B: Amber 2.0 APB Ver.2.0 (only Mode 7)

Charger/ HDD I/O Board: Amber 2.5 AIO Ver.0.3

Adaptor: (1) Liteon, M/N: PA1480-19G, S/N:00000074, Main Board: 214002301.
(2) Delta, M/N:ADP-50MB, S/N:CTD9851015634, Main Board:N/A

Panel: LG 12.1", M/N:LP121S3-A, P/N:6091L-0036B. **(Mode 1)**

Inverter: DAC-10B005 with switch board: Amber 2.0 ALCLD Ver.0.3

Panel: LG 14.1", M/N:LP141X5-A, P/N:6091L-0039A.**(Mode 2, 3, 5)**

Inverter:T90.003.00 AMBIT Rev.7

Panel: Panasonic 14.1", M/N:EDTCB21-QAF. **(Mode 4, 6)**

Inverter: AMBIT Rev.5

Panel: LG 14.1", M/N:LP141X5-BINC, P/N:609IL-0039A. **(Mode 7)**

Inverter: AMBIT Rev.5

Note:

1. Each different CPU/PANEL has been investigated to find the maximum emission situation, and all the components 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.

2.3 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), Ruby 2.5 KEYPARTS LIST

NO.	Category	Model No.	Vendor
1	12.1" TFT	TM121SV-02L03A	Sanyo
2	12.1" TFT	LP121S3-A	LG
3	14.1" TFT	LP141X5-BINC	LG
4	14.1" TFT	LP141X5-A	LG
5	14.1" TFT	EDTCB21-QAF	Panasonci
6	3.2GB HDD	MHH2032AT	Fujitsu
7	3.2GB HDD	DBCA-203240	IBM
8	4.3GB HDD	MHF2043AT	Fujitsu
9	4.3GB HDD	DK238A-43	Hitachi
10	4.8GB HDD	MHH2048AT	Fujitsu
11	4.8GB HDD	DBCA-204860	IBM
12	6.4GB HDD	DBCA-206480	IBM
13	6.4GB HDD	MHH2064AT	Fujitsu
14	6.4GB HDD	DK239A-65	Hitachi
15	10GB HDD	DCXA21000	IBM
16	10GB HDD	MHG2102AT	Fujitsu
17	10GB HDD	DK229A-10	Hitachi
18	AC Adaptor	ADP-50MB	Delta
19	AC Adaptor	PA-1480-19G	Lite-On
20	CD ROM 24X	CD-224E-92	TEAC
21	CD ROM 24X	XM-1902B	Toshiba
22	CPU Module	Celeron 266u PGA	Intel
23	CPU Module	Celeron 300u PGA	Intel
24	CPU Module	Celeron 333u PGA	Intel
25	CPU Module	Celeron 366u PGA	Intel
26	CPU Module	Dixon 300u PGA	Intel
27	CPU Module	Dixon 333u PGA	Intel
28	CPU Module	Dixon 366 PGA	Intel
29	DVD ROM Drive	SR-8171-C	MKE
30	DVD ROM Drive	SD-C2202	Toshiba
31	FDD	MF355H-347MN	Mitsubishi
32	FDD	FD-1238T-018	NEC
33	Glide Pad	KGDDGQ941A	ALPS
34	Ni-MH Battery	3800mAh 9.6V	Sanyo
35	Ni-MH Battery	3800mAh 9.6V	Panasonic
36	Li-Ion Battery	3200mAh/14.4V(2P4S)	Sanyo
37	Li-Ion Battery	2800mAh/14.4V(2P4S)	Panasonic
38	DRAM MODULE	32MB MSY323S-28KX	Kingmax
39	DRAM MODULE	64MB MSY643S-88KX	Kingmax
40	DRAM MODULE	64MB MDS-MOG08D08B2438	Mosel
41	DRAM MODULE	128MB MSYA83S-88TKX	Kingmax

☒ Monitor M01-012

Model Number	: SyncMaster 700p
Serial Number	: H3MH903257V
Manufacturer	: SAMSUNG
FCC ID	: A3LCGH760
BCIQ No.	: 3872A230
Data Cable	: Shielded, Undetachable, 1.5m
Power Cord	: Non-Shielded, Detachable, 1.8m

☒ Printer P01-012

Model Number	: C2642A(DJ-400)
Serial Number	: MY7951C4QC
FCC ID	: B94C2642X
Manufacturer	: HP
Adaptor, Power Cord	: Non-Shielded, Detachable, 1.9m
Data Cable	: Shielded, Detachable, 1.8m

☒ Modem M03-009

Model Number	: 1414
Serial Number	: 960018052
FCC ID	: IFAXDM1414
Manufacturer	: ACEEX
Adaptor, Power Cord	: Non-Shielded, Detachable, 1.5m
Data Cable	: Shielded, Detachable, 1.2m

☒ Mouse(PS2) M02-027

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

☒ Cassette Player R02-010 ~014

Model Number	: HS-GS162
Serial Number	: LYJ1084567
FCC ID	: N/A
Manufacturer	: AIWA CO., LTD
Power Cord	: N/A (Battery)
Date Cable	: Non-Shielded,Detachable,1.5m

☒ Headset&Microphone E01-018~ 027

Model Number	: SX-M1
Serial Number	: N/A
Manufacturer	: TOKYO
Power Cord	: N/A
Data Cable	: Non-Shielded, Undetachable, 1.8 m

☒ Mouse M02-042 (USB)

Model Number	: M-UB48
Serial Number	: LZB81900215
FCC ID	: DZL211137
Manufacturer	: Logitech Inc..
Data Cable	: Shielded, Undetachable, 1.5m
BCIQ ID	: 4872A001

☒ Electronic Private Automatic Branch Exchange O01-003

Model Number	: EASYSWITCH PX-4
Serial Number	: 95030015
FCC ID	: N/A
Manufacturer	: VIDAR CO., LTD.
Power Cord	: Non-Shielded, Detachable, 1.5m
Data Cable	: Non-Shielded, Detachable, 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 Stated 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 Hsiang, Taipei County, Taiwan, R.O.C.

3. Conducted Emission Test

3.1 Test Equipments

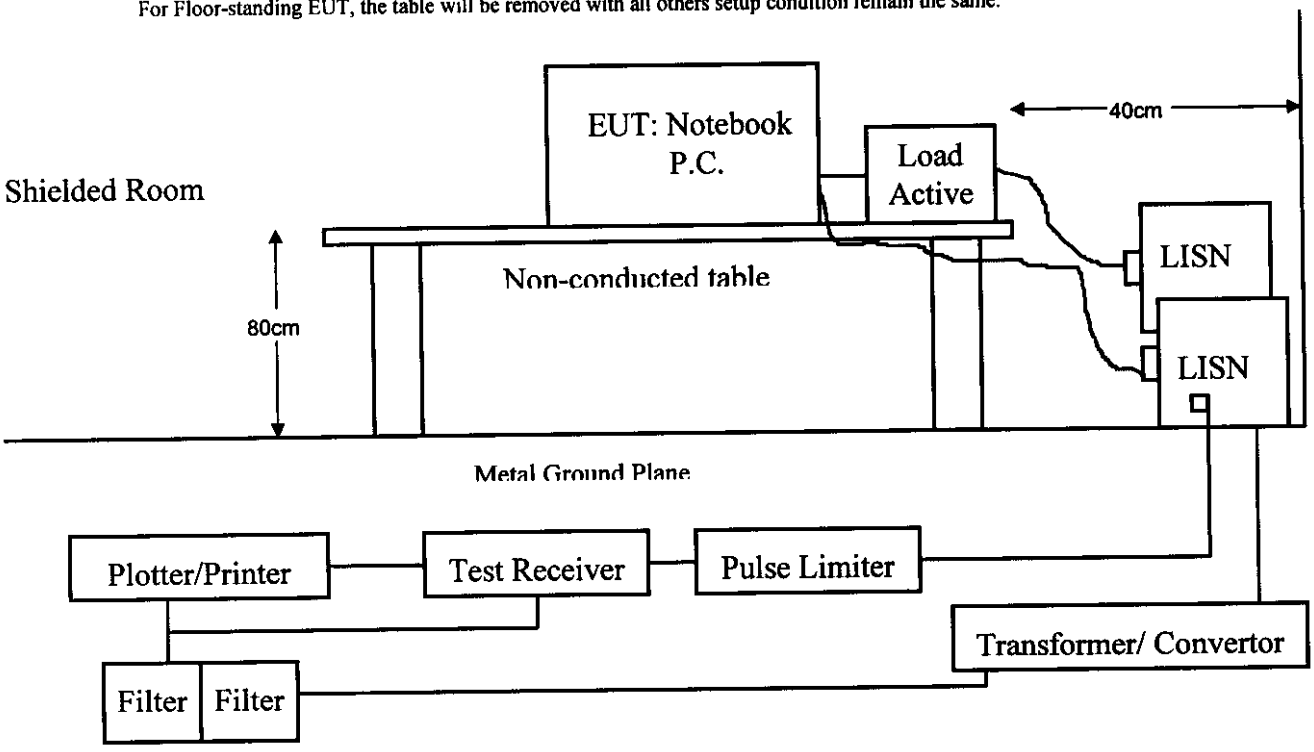
The following test equipments are used during the conducted power line tests:

Item	Instrument	Manufacturer	Type /Serial No.	Last Calibration	Location	C.E.
1	Test Receiver	Rohde & Schwarz	ESHS 30 / 828109/010	Dec. 15, 1998	Shield Room #1	V
2	L.I.S.N.	Kyoritsu	KNW-407	Oct. 03, 1998	Shield Room #1	V
3	L.I.S.N.	Solar	8012-50-R24 / 90038	May 20, 1999	Shield Room #1	
4	L.I.S.N.	Rohde & Schwarz	ESH3-Z5 / 840567/002	Oct. 02, 1998	Shield Room #1	V
5	L.I.S.N.	Schwarzbeck	NNLK 8121/8121358	May 20, 1999	Shield Room #1	
6	Pulse Limiter	Rohde & Schwarz	ESH3-Z2/357.8810.52	Jun. 02, 1999	Shield Room #1	V
7	Shielded Room	GesTek	GTK-RF-S04	Sep. 17, 1998	Shield Room #1	V
8	RF CABLE	GesTek	GTK-RF-C07	Sep. 17, 1998	Shield Room #1	V
9	50 Ohm Terminator	GesTek	GTK-RF-T01	Oct. 03, 1998	Shield Room #1	V

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 representive 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

3.3.1FCC 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.

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 equaled 80 CM. Powered from one LISN which signal output to receiver, and the other peripherials 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 form Hard Disk to windows 98, active all devices.
3.5.4 Run test program EMI.EXE.
3.5.4 Play VCD 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 3.5.8

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: $< \pm 2.0$ 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	:	May 26, 1999	Temperature	:	25 ℃
EUT	:	Notebook PC	Humidity	:	66 %
Test Mode	:	Mode 1	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
0.54495	31.7	38.46	27.3	23.17	250
0.68210	29.7	30.55	25.1	17.99	250
0.81919	28.5	26.61	21.9	12.45	250
3.34608	33.2	45.71	34.4	52.48	250
**4.98413	37.1	71.61	35.1	56.89	250
15.22111	35.1	56.89	34.8	54.95	250

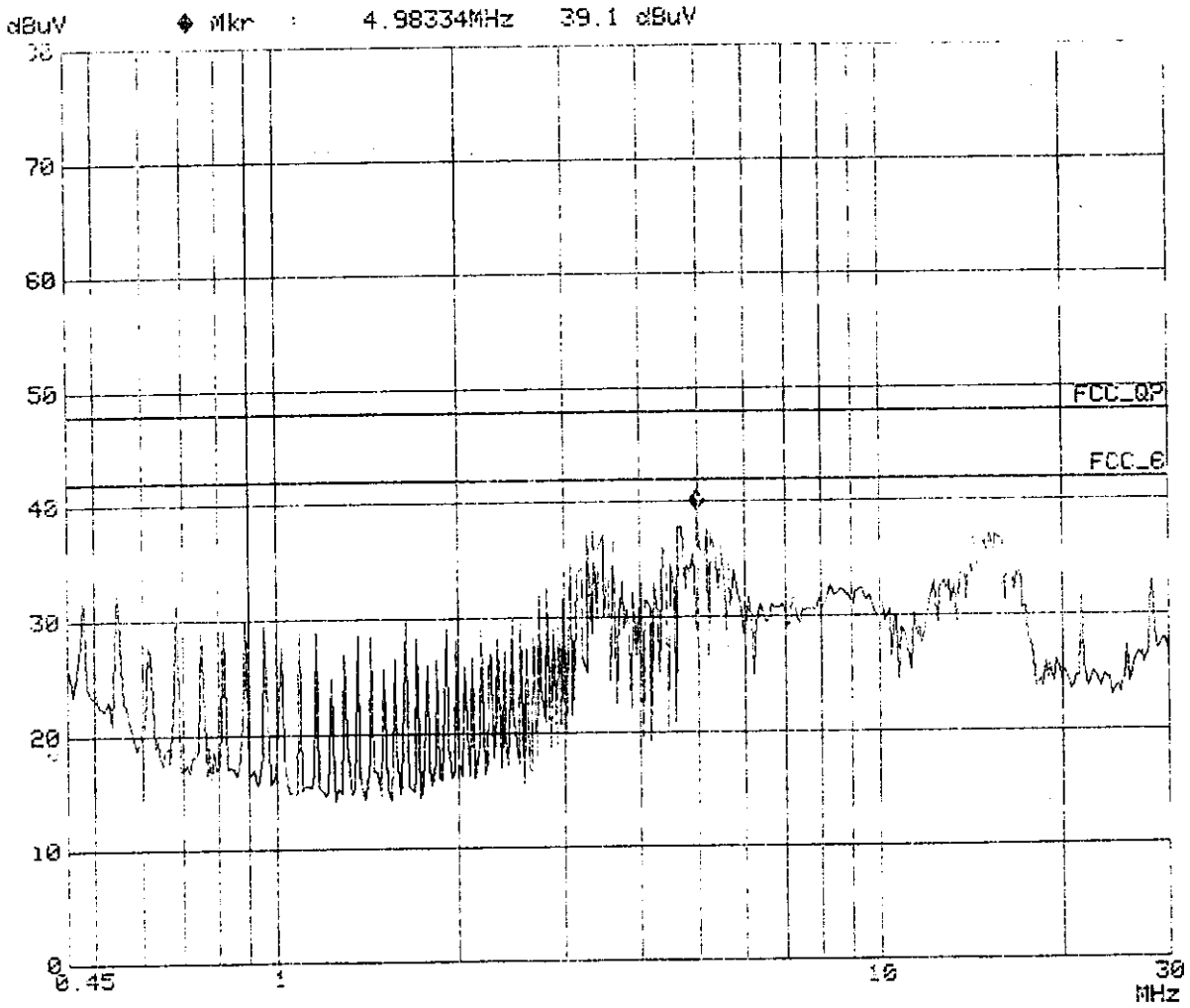
Remarks : 1. All readings are Quasi-peak.
2. " ** " means that this data is the worse case emission level.
3. Deviations from the specifications: None.
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

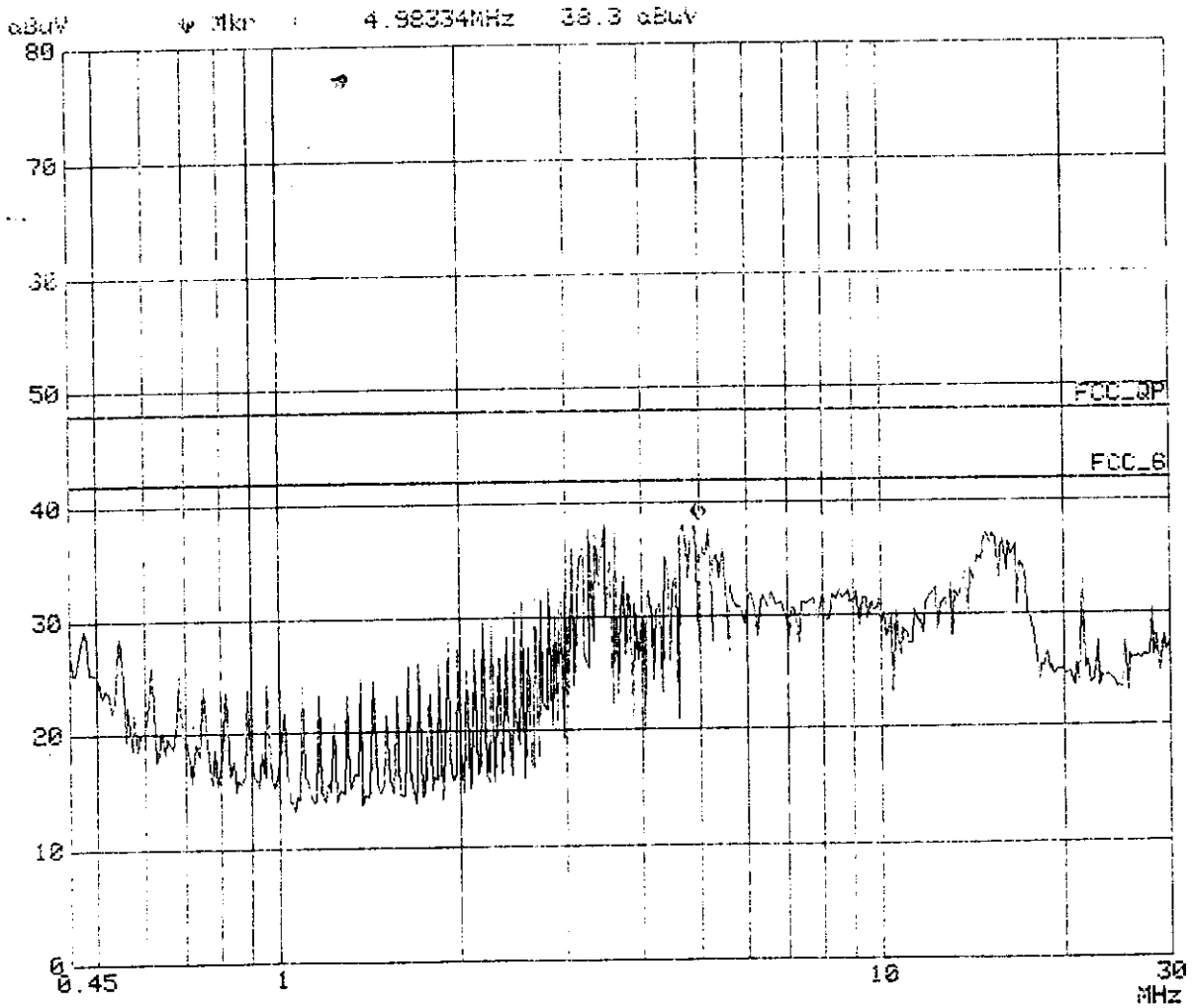
EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 1
	M/N:RUBY 2.5 MODE:1
Date:	26. May 99 17:10



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 2
	M/N:RUBY 2.5 MODE:1
Date:	26. May 99 17:16



CONDUCTED EMISSION DATA

Date of Test	:	May 26, 1999	Temperature	:	27.0 ℃
EUT	:	Notebook PC	Humidity	:	56 %
Test Mode	:	Mode 2	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
0.47743	32.1	40.27	32.0	39.81	250
0.61585	29.5	29.85	29.0	28.18	250
0.82136	23.9	15.67	27.0	22.39	250
**3.76003	32.8	43.65	34.8	54.95	250
10.77841	33.6	47.86	32.8	43.65	250
15.25003	26.1	20.18	27.1	22.65	250

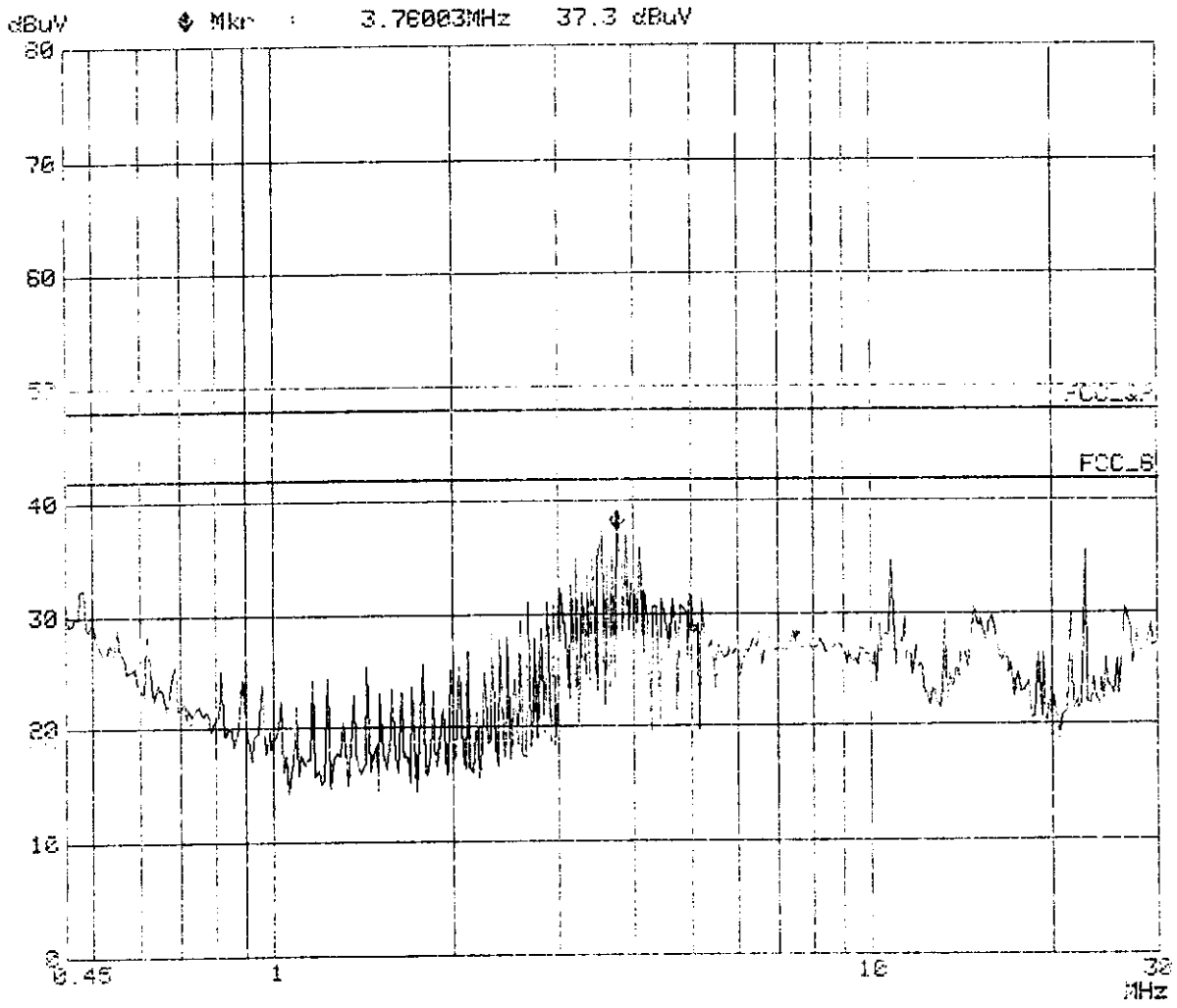
Remarks : 1. All readings are Quasi-peak.
2. " ** " means that this data is the worse case emission level.
3. Deviations from the specifications: None.
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

RCHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

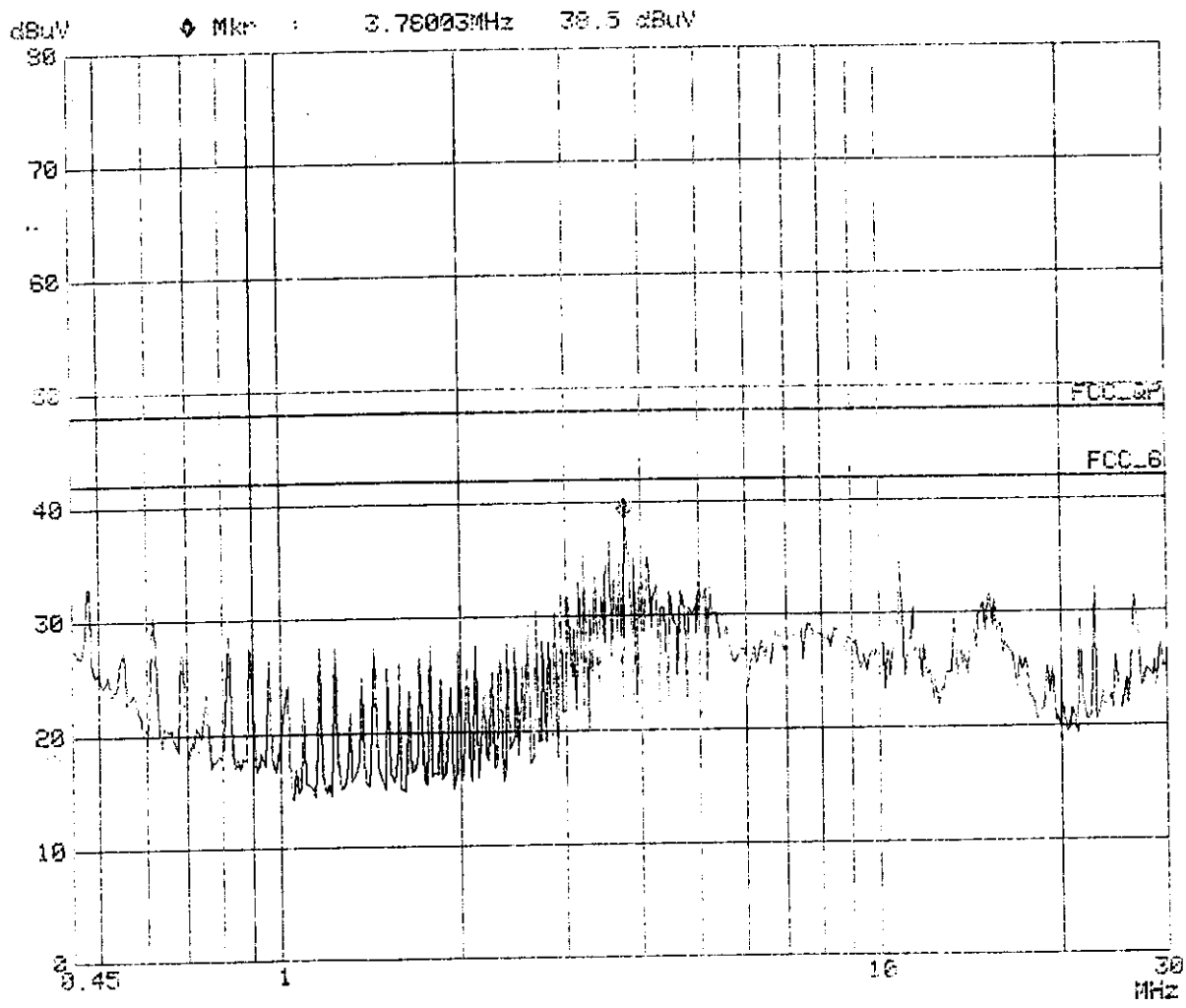
EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 1
	M/N:RUBY 2.9 MODE:2
Date:	26. May 99 11:06



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 2
	M/N:RUBY 2.5 MODE:2
Date:	26. May 99 11:01



CONDUCTED EMISSION DATA

Date of Test	:	May 26, 1999	Temperature	:	25 ℃
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
0.47743	32.1	40.27	32.0	39.81	250
0.61585	29.5	29.85	29.0	28.18	250
0.82136	23.9	15.67	27.0	22.39	250
**3.76003	32.8	43.65	34.8	54.95	250
10.77841	33.6	47.86	32.8	43.65	250
15.25003	26.1	20.18	27.1	22.65	250

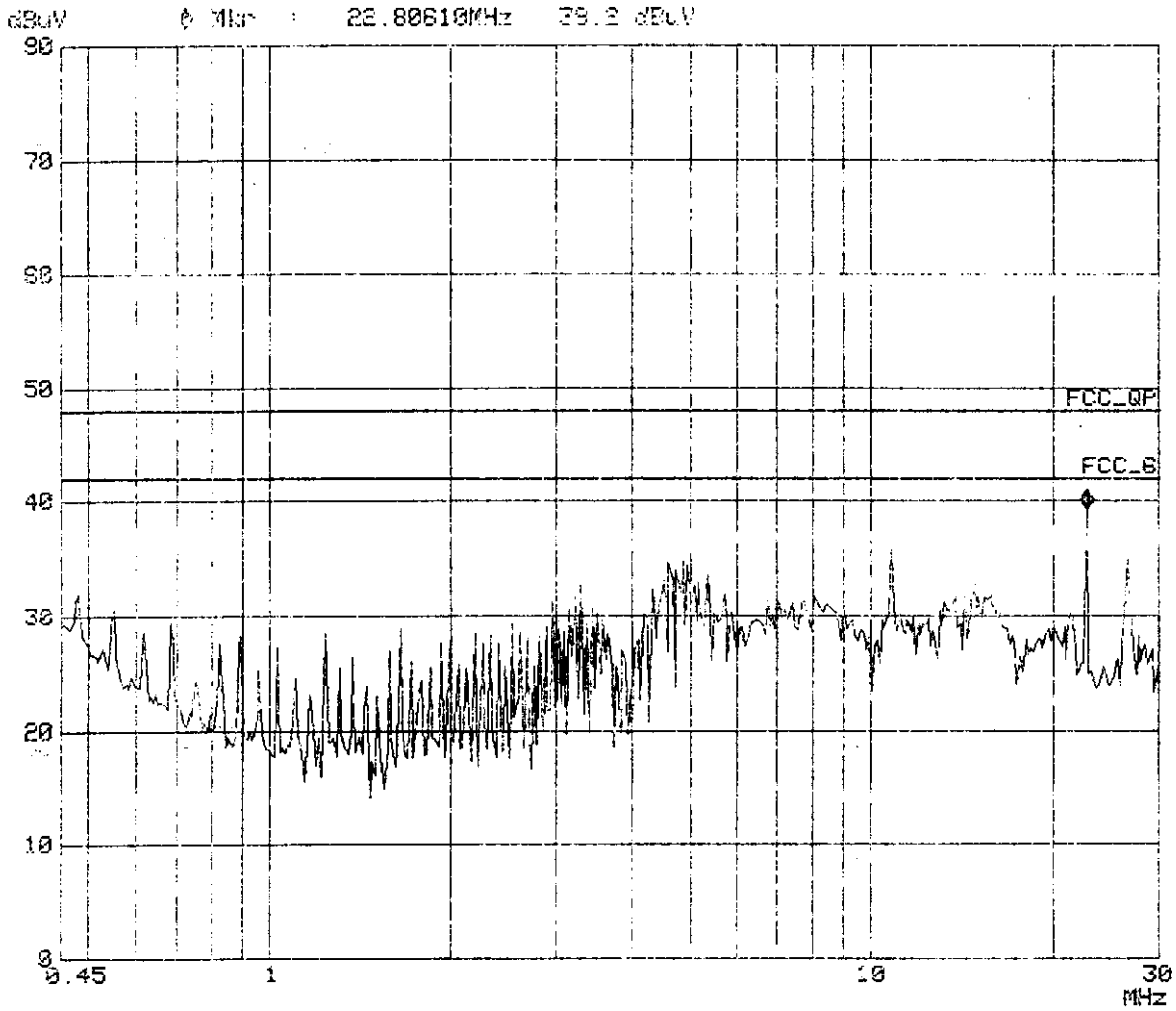
Remarks : 1. All readings are Quasi-peak.
2. " ** " means that this data is the worse case emission level.
3. Deviations from the specifications: None.
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

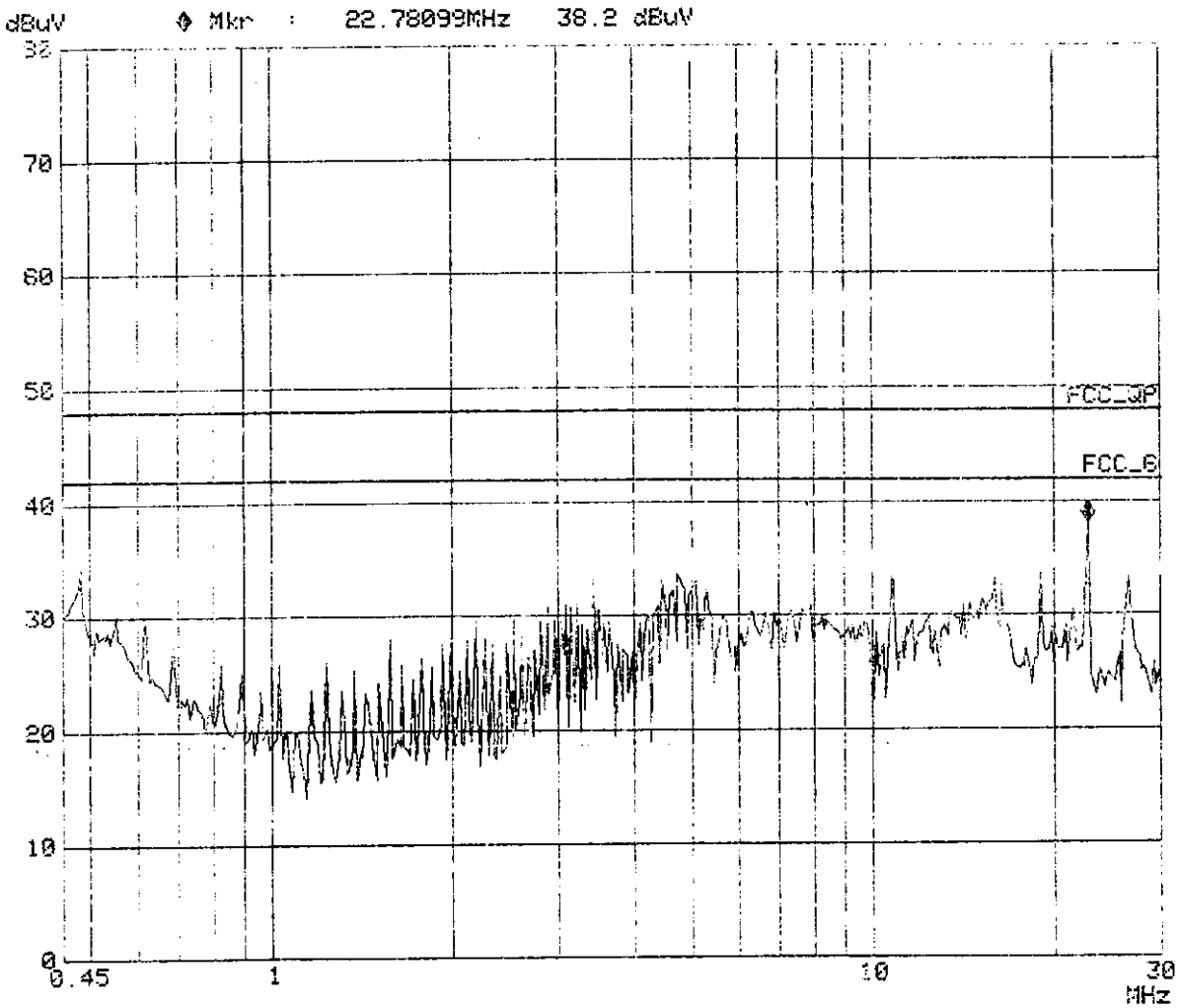
EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 1
	M/N:RUBY 2.5 MODE:3
Date:	26. May 99 19:20



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 2
	M/N:RUBY 2.5 MODE:3
Date:	26. May 99 19:27



CONDUCTED EMISSION DATA

Date of Test	:	May 26, 1999	Temperature	:	25.0℃
EUT	:	Notebook PC	Humidity	:	55 %
Test Mode	:	Mode 4	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
0.47743	25.3	18.41	28.7	27.23	250
0.68371	22.1	12.74	26.8	21.88	250
3.28711	32.4	41.69	31.3	36.73	250
4.79600	30.7	34.28	30.2	32.36	250
10.77820	35.3	58.21	35.0	56.23	250
**18.99200	42.9	139.64	42.5	133.35	250

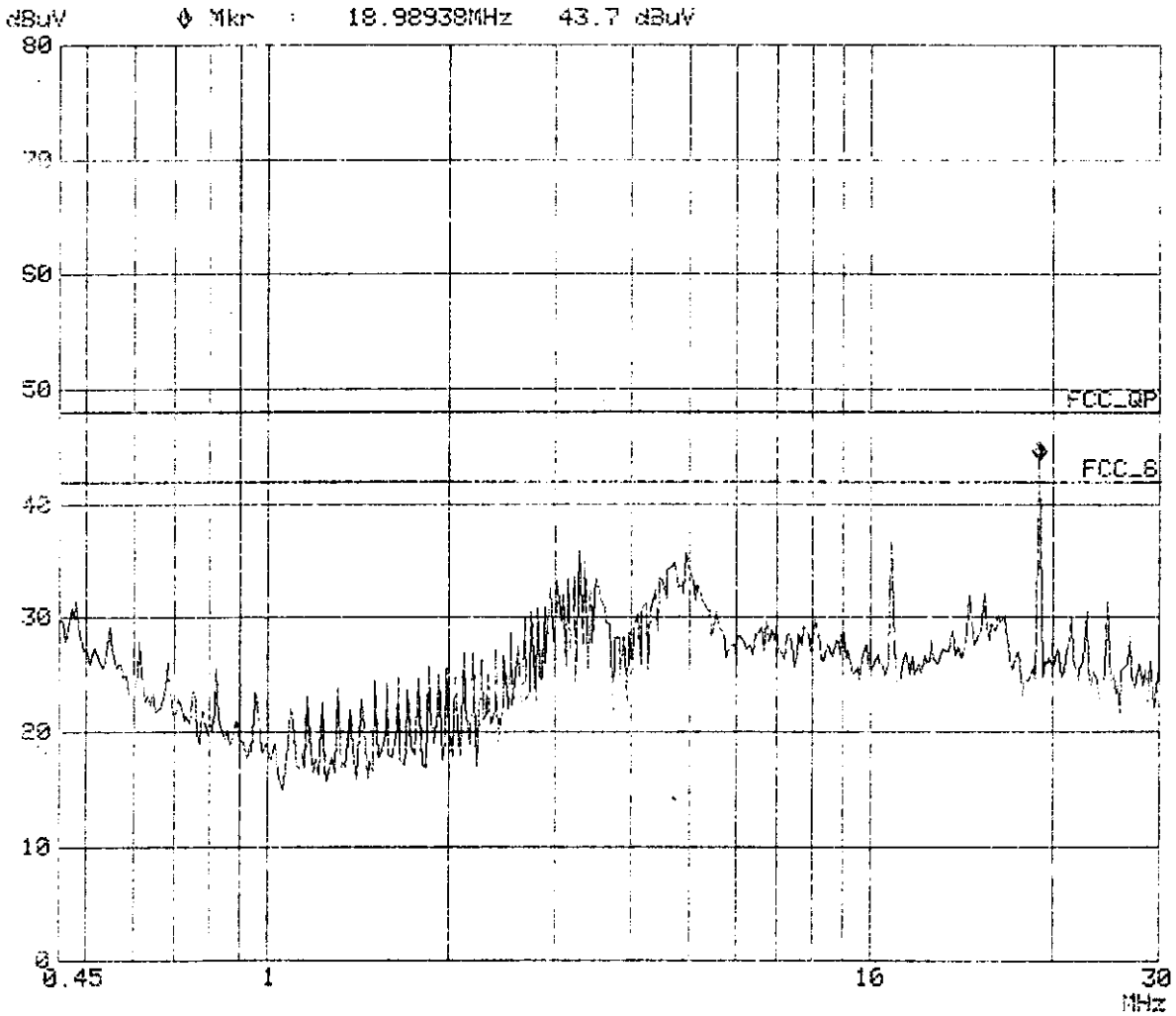
Remarks : 1. All readings are Quasi-peak.
2. " ** " means that this data is the worse case emission level.
3. Deviations from the specifications: None.
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

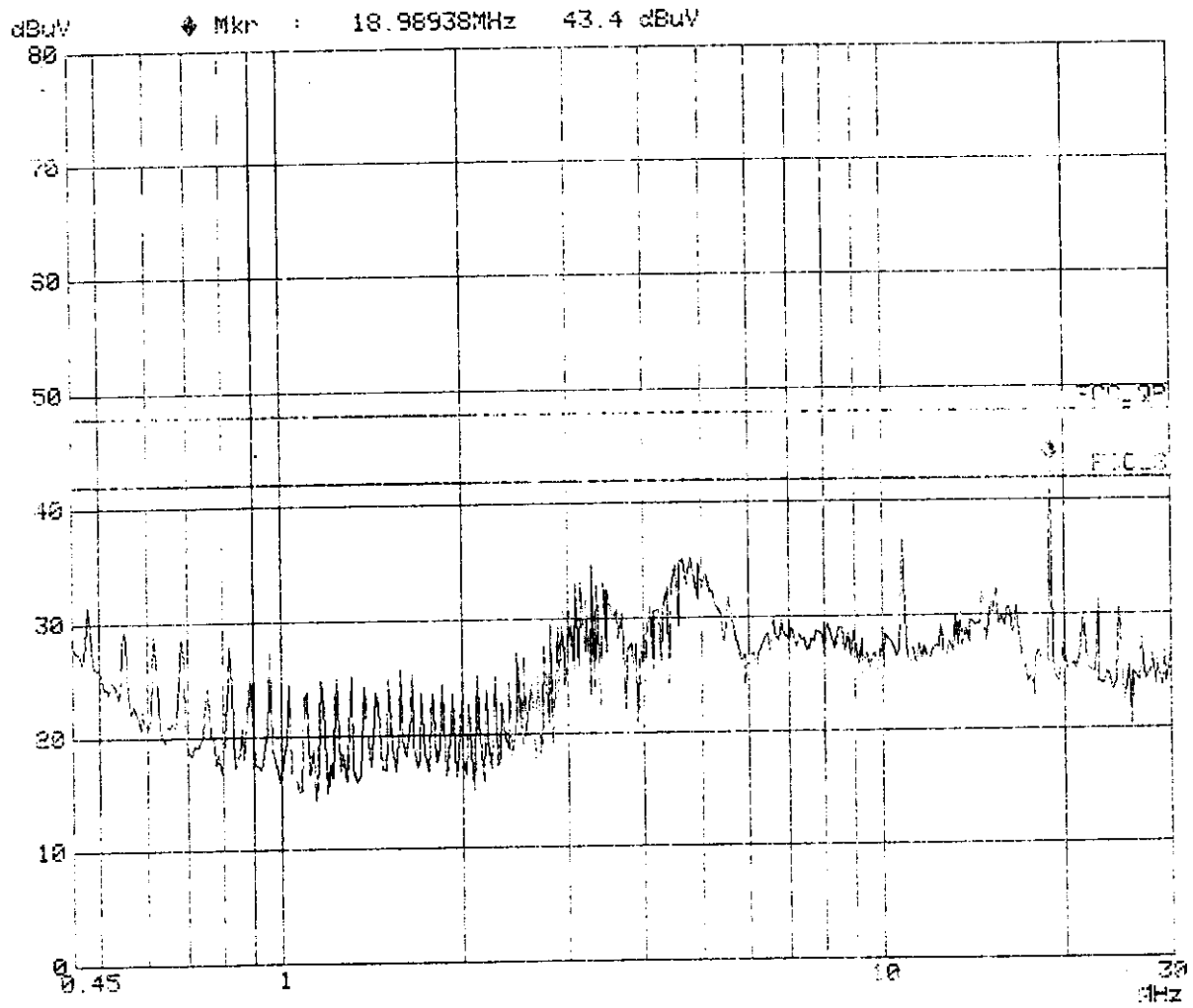
EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 1
	M/N:RUBY 2.5 MODE:4
Date:	26. May 99 14:39



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 2
	M/N:RUBY 2.5 MODE:4
Date:	26. May 99 14:32



CONDUCTED EMISSION DATA

Date of Test	:	May 26, 1999	Temperature	:	25 ℃
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
0.49220	37.9	78.52	37.0	70.79	250
0.59137	39.9	98.86	36.9	69.98	250
0.78656	36.8	69.18	38.4	83.18	250
1.28308	36.5	66.83	36.3	65.31	250
2.47625	38.8	87.10	38.7	86.10	250
**3.36443	38.7	86.10	39.1	90.16	250

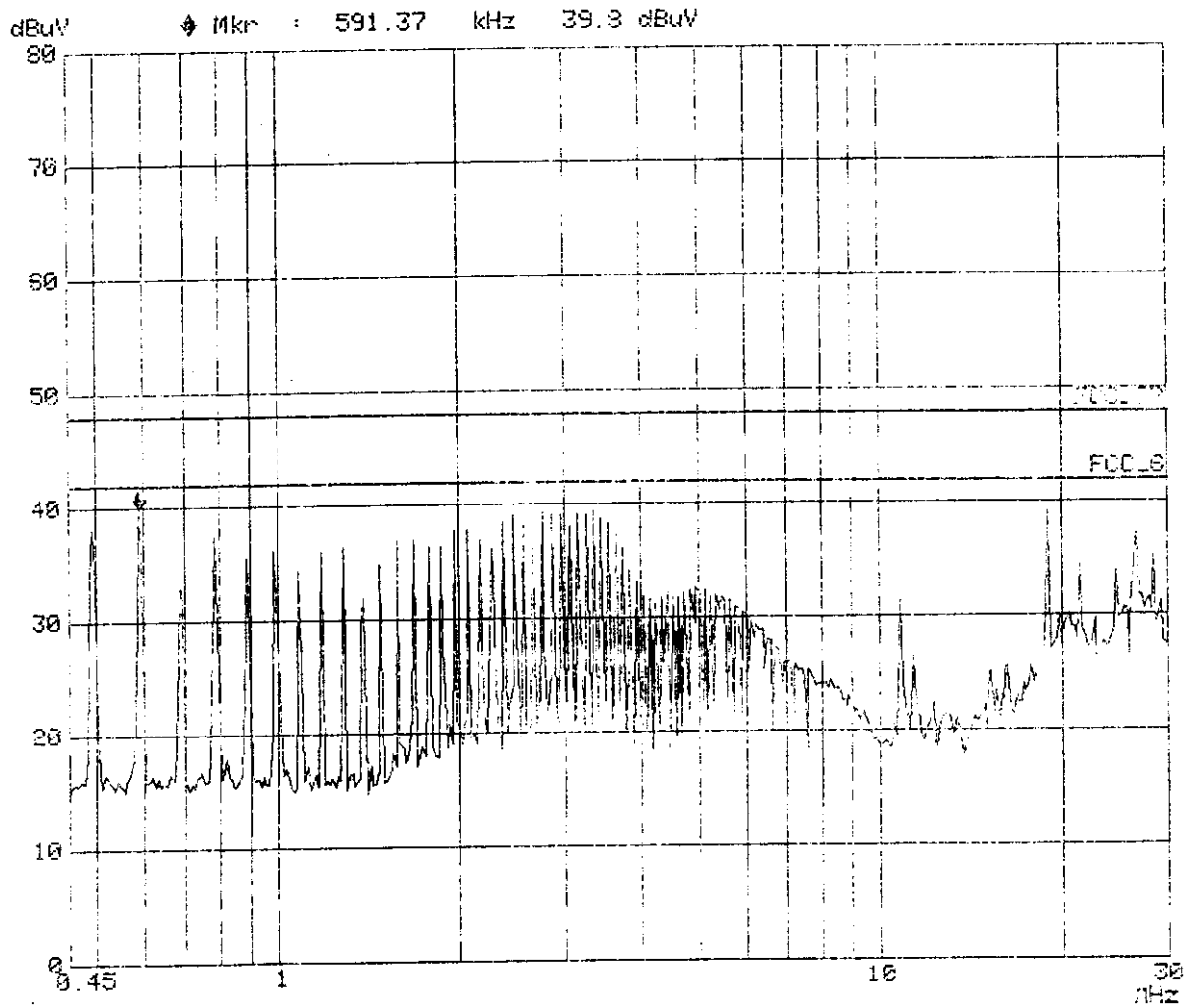
Remarks : 1. All readings are Quasi-peak.
2. " ** " means that this data is the worse case emission level.
3. Deviations from the specifications: None.
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

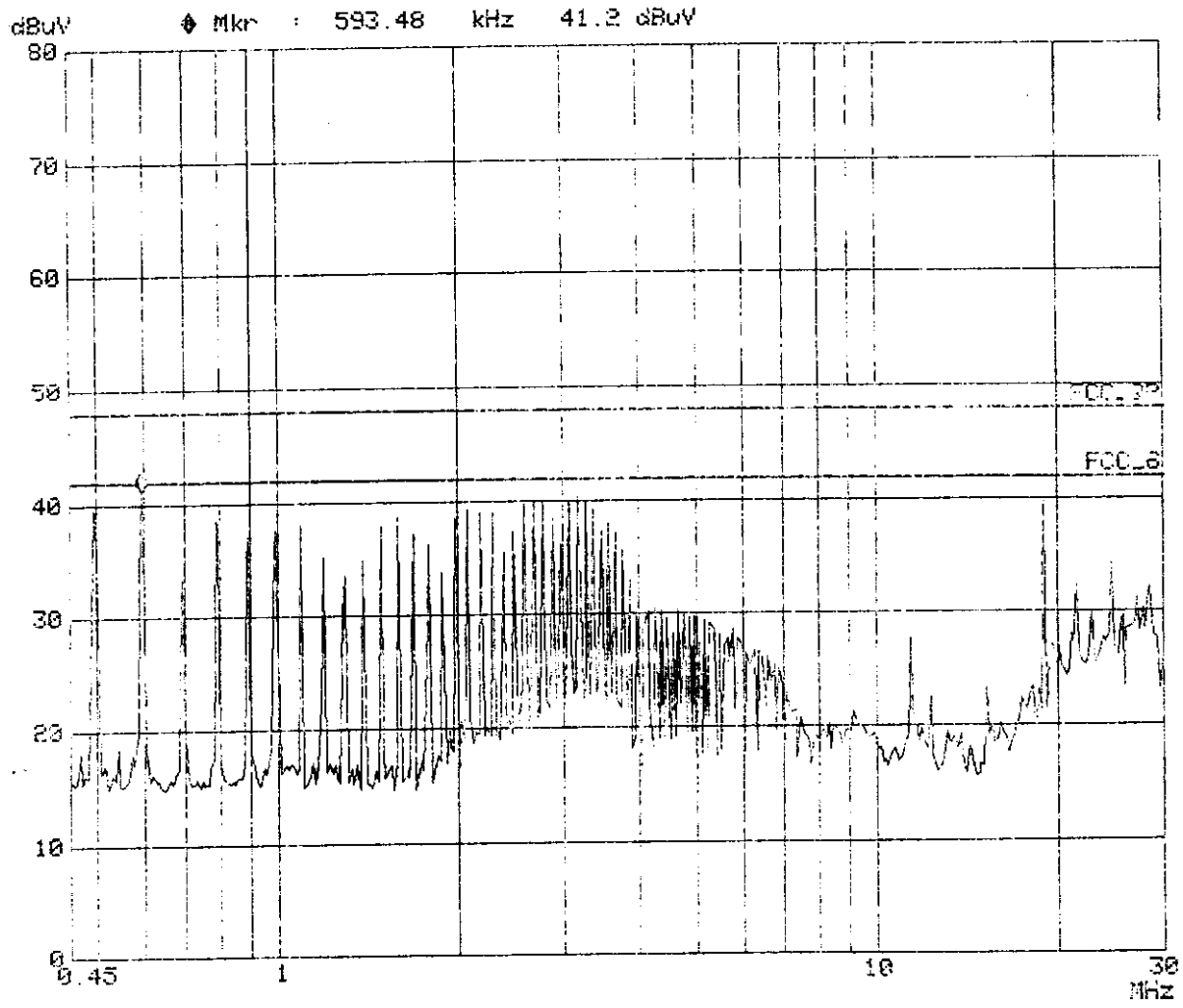
EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 1
	M/N:RUBY 2.5 MODE:3
Date:	26. May 99 11:34



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 2
	M/N:RUBY 2.5 MODE:5
Date:	26. May 99 11:45



CONDUCTED EMISSION DATA

Date of Test	:	May 26, 1999	Temperature	:	24.0℃
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
0.47743	31.0	35.48	30.6	33.88	250
0.68670	25.7	19.28	23.3	14.62	250
0.81959	25.5	18.84	24.3	16.41	250
3.28497	30.5	33.50	33.2	45.71	250
10.78237	36.1	63.83	36.0	63.10	250
**22.78090	40.7	108.39	41.2	114.82	250

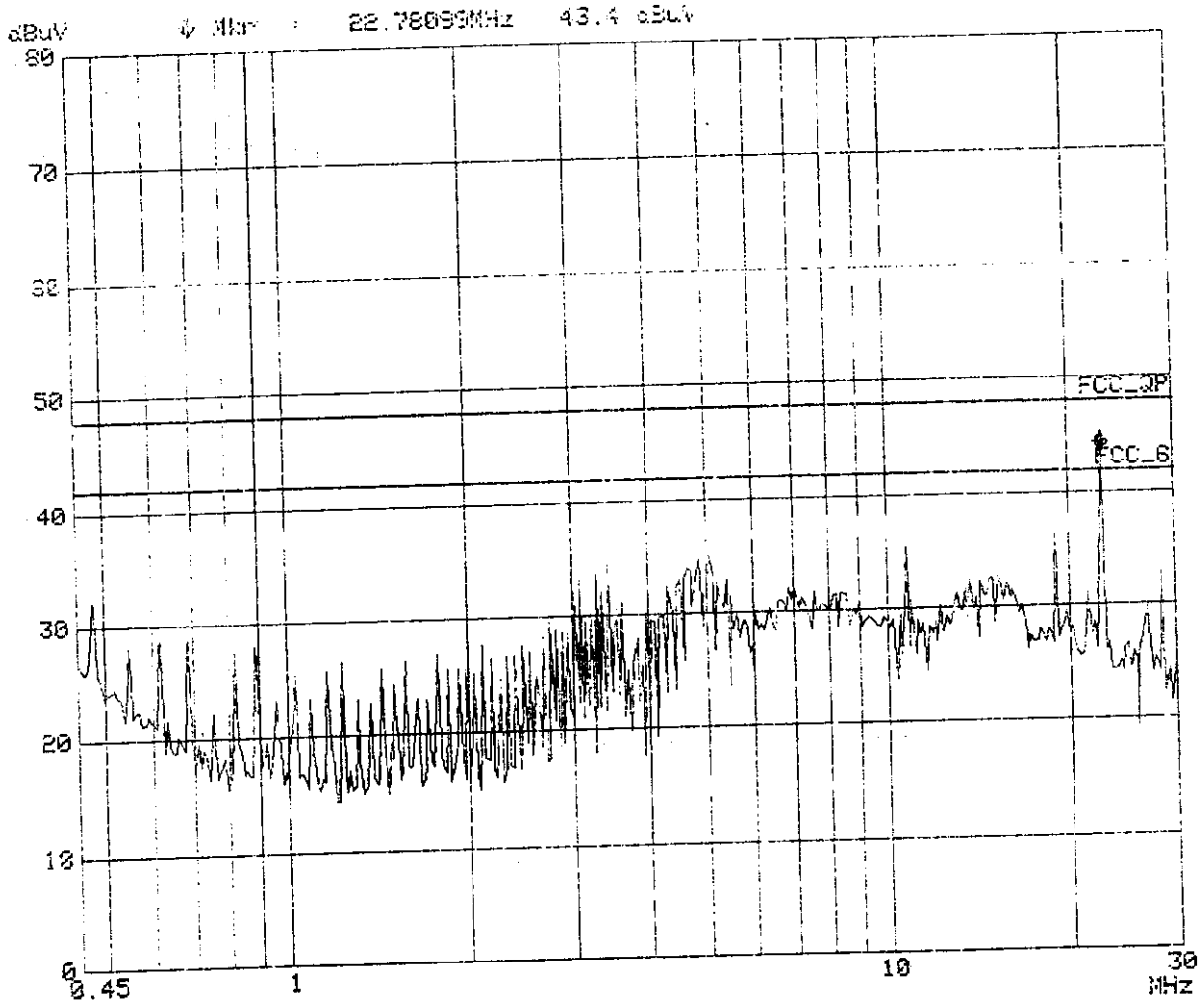
Remarks : 1. All readings are Quasi-peak.
2. " ** " means that this data is the worse case emission level.
3. Deviations from the specifications: None.
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

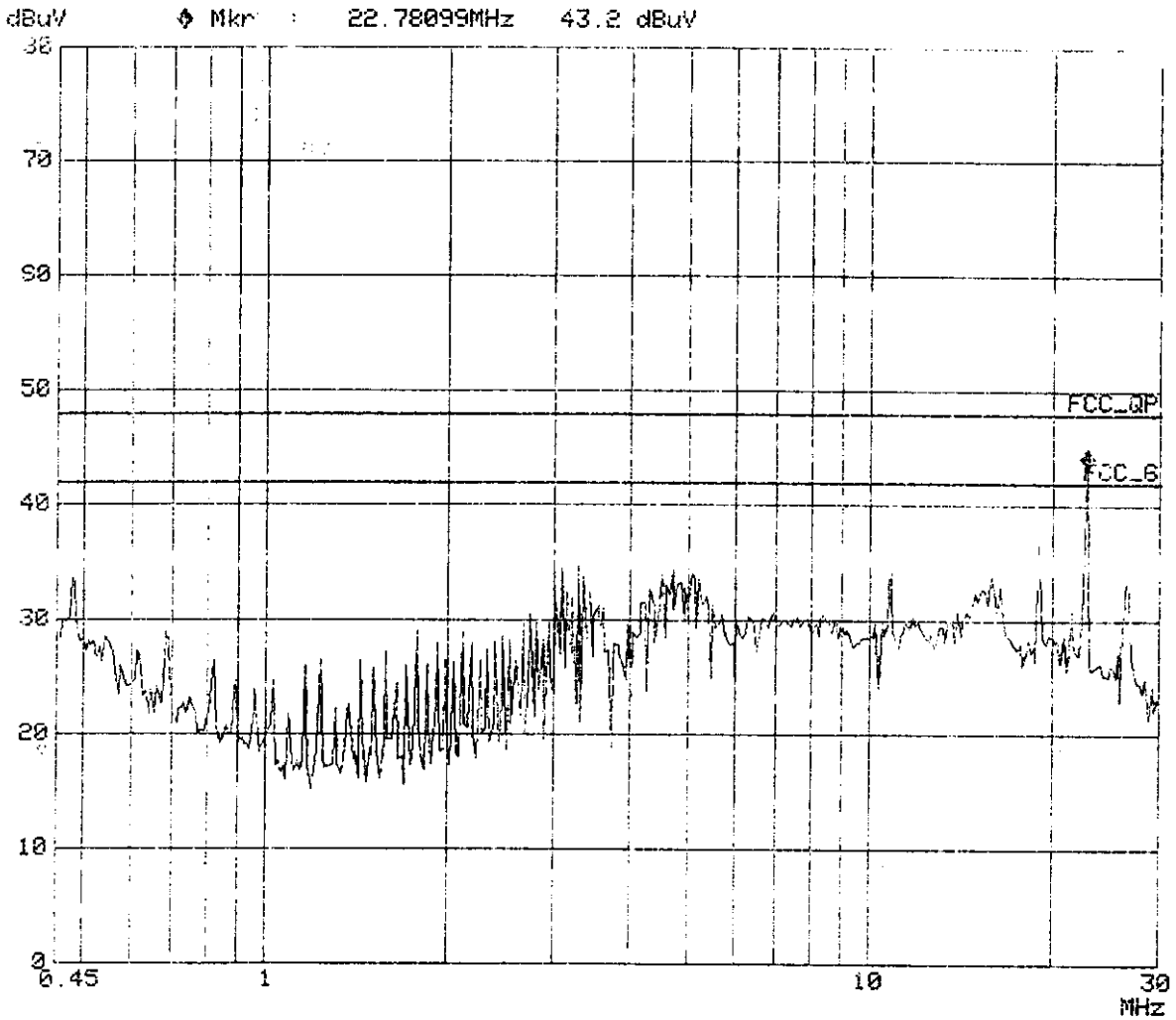
EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 1
	M/N:RUBY 2.5 MODE:6
Date:	26. May 99 19:04



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 2
	M/N:RUBY 2.5 MODE:6
Date:	26. May 99 18:57



CONDUCTED EMISSION DATA

Date of Test	:	May 26, 1999	Temperature	:	25.0℃
EUT	:	Notebook PC	Humidity	:	56 %
Test Mode	:	Mode 7	Display Pattern	:	H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
**0.49009	41.2	114.82	40.1	101.16	250
0.68633	36.5	66.83	33.9	49.55	250
0.78540	37.1	71.61	34.0	50.12	250
1.08143	34.7	54.33	31.8	38.90	250
1.67008	35.4	58.88	36.2	64.57	250
3.15172	35.2	57.54	38.3	82.22	250

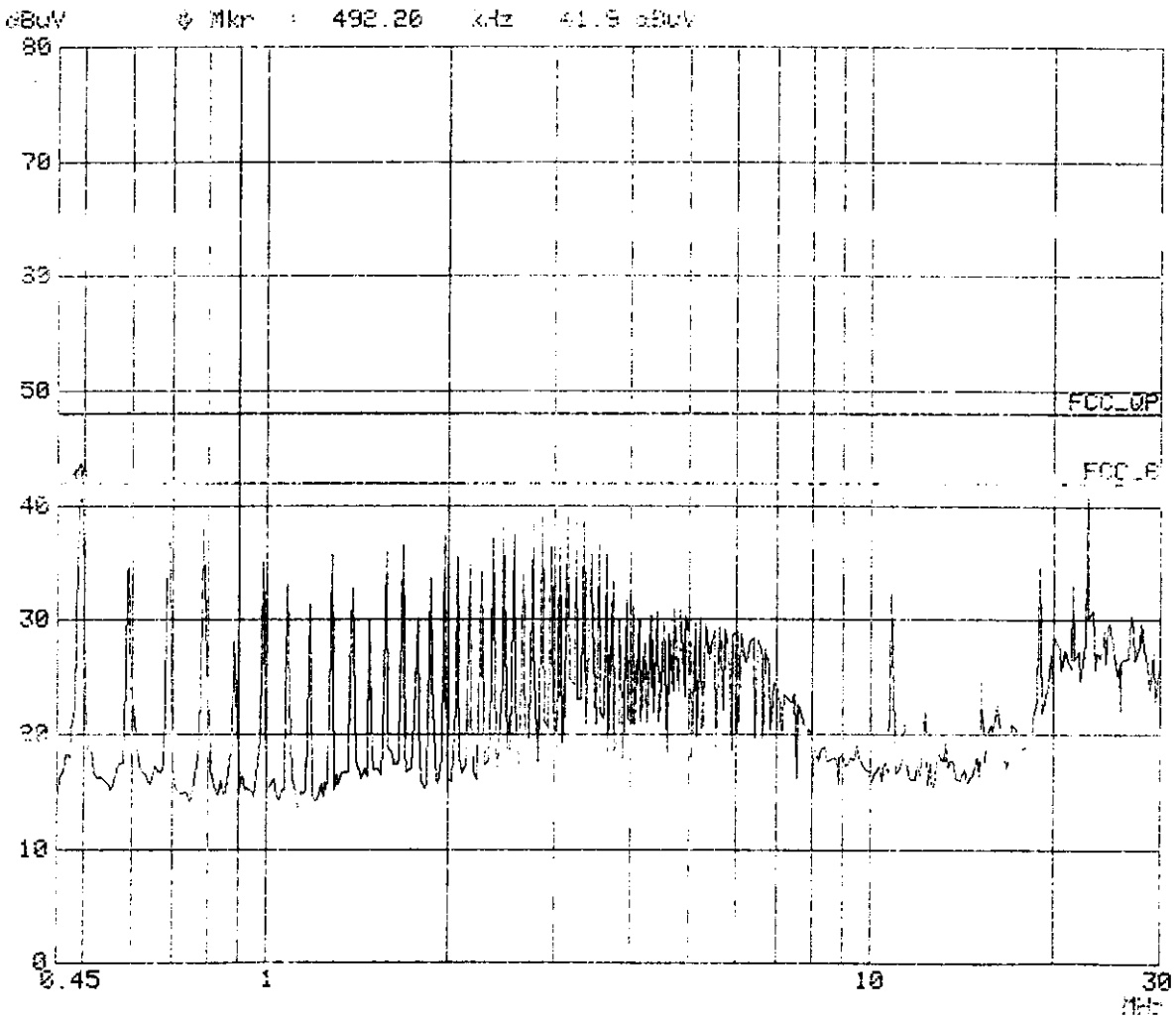
Remarks : 1. All readings are Quasi-peak.
2. " ** " means that this data is the worse case emission level.
3. Deviations from the specifications: None.
4. Final measurement = (Receiver reading) + (Correction factor if available)

Attached 2 individual pages of peak scan curve data sheets.

ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

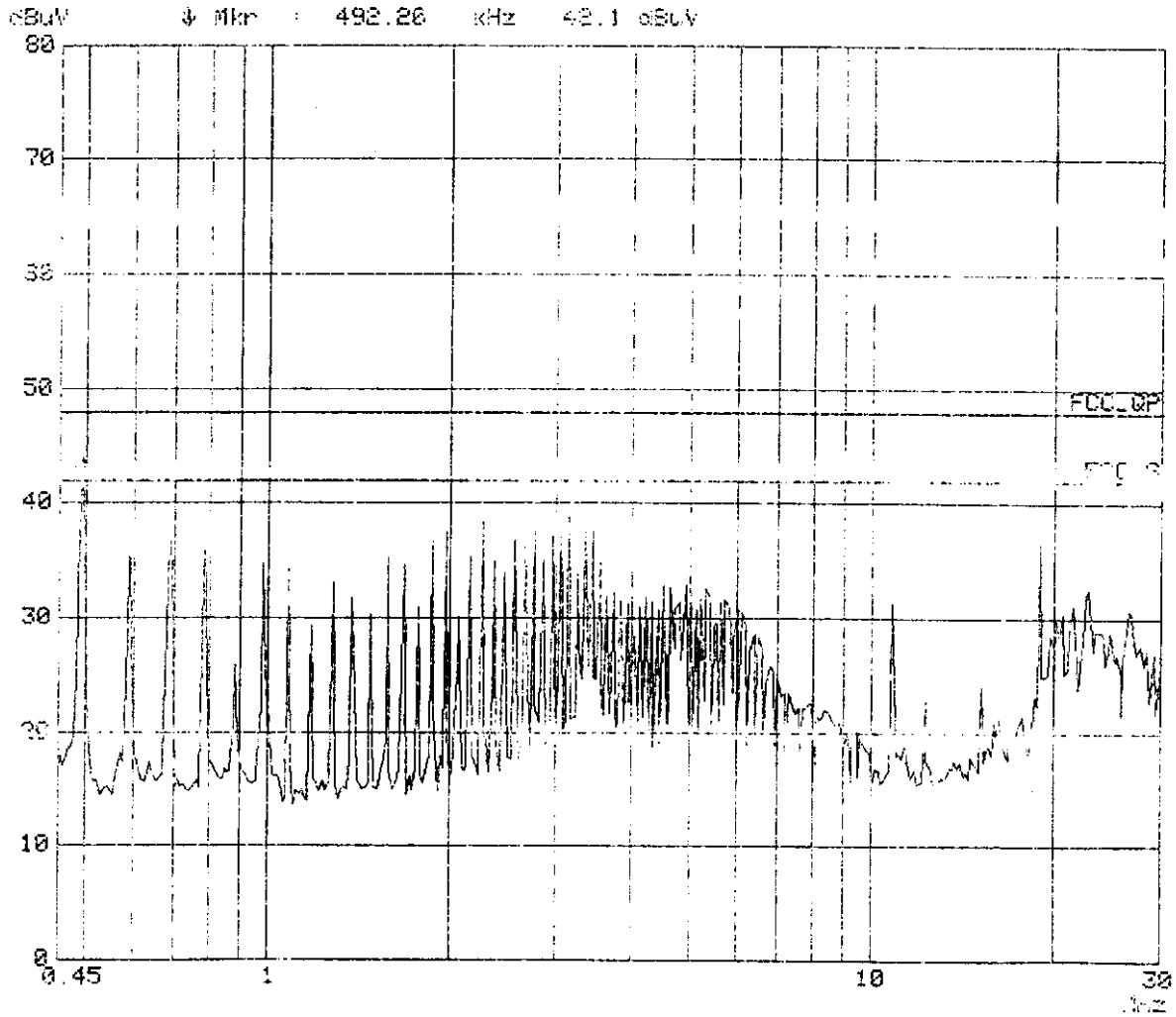
EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 1
	M/N:RUBY 2.5 MODE:7
Date:	26. May 99 15:25



ROHDE & SCHWARZ ESHS 30

GesTek, PowerLine Conducted Emission

EUT:	NOTEBOOK PC
Manuf:	FIC
Operator:	HANS
Test Spec:	FCC B
Comment:	Line 2
	M/N:RUBY 2.5 MODE:7
Date:	26. May 99 15:22



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

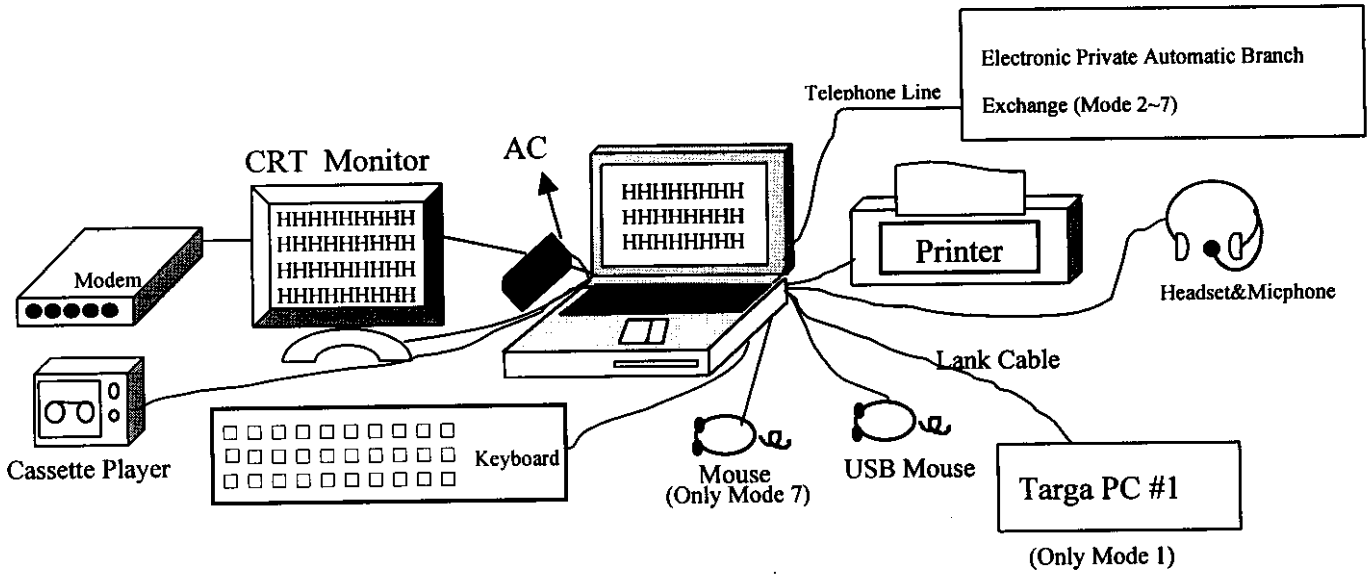
Item	Instrument	Manufacturer	Type /Serial No.	Last Cal.	Site #1	Site #2
1	Test Receiver	Rohde & Schwarz	ESVS 30 / 829007/014	Nov. 23,1998	V	
2	Spectrum Analyzer	HP	8594E / 3543A02689	N/A	V	
3	Pre-Amplifier	HP	8447D / 2944A08272	N/A	V	
4	Test Receiver	Rohde & Schwarz	ESCS 30/825022/003	Jul. 08,1998		V
5	Spectrum Analyzer	HP	8591E/3543A05040	N/A		V
6	Pre Amplifier	HP	8447D/2944A08273	N/A		V
7	BILOG ANTENNA	Chase	CBL6112B/2417	May. 15,1999	V	
8	BILOG ANTENNA	Chase	CBL6112B/2416	May. 15,1999		V
9	Pre Amplifier	HP	8347A/3307A01401	N/A	V	V
10	Open Site	GesTek	GTK-RF-S01	Jan. 05, 1999	V	
11	Open Site	GesTek	GTK-RF-S02	Jan. 03, 1999		V
12	RF Cable	GesTek	GTK-RF-C01	May. 15,1999	V	
13	RF Cable	GesTek	GTK-RF-C02	May. 15,1999	V	
14	RF Cable	GesTek	GTK-RF-C03	Mar. 26,1999		V
15	Test Program Software	GesTek	GTK-RF-P01	N/A	V	
16	Test Program Software	GesTek	GTK-RF-P02	N/A		V

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

GTK99-F007

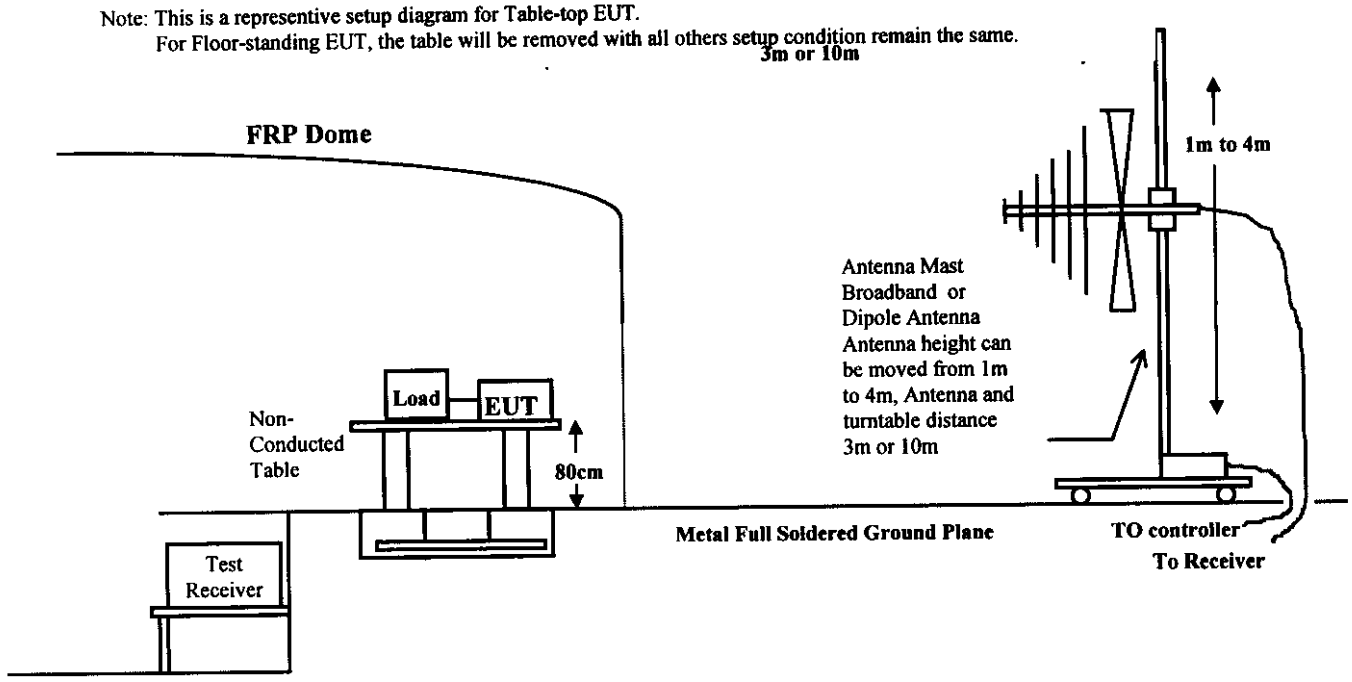
4.2 Test Setup

4.2.1 Block Diagram of Connections between EUT and simulators



4.2.2 Open Test Site Setup Diagram

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



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 bandwith 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.

N0 3, Pau-Tou-Tsuo Valley, Chia-Pau Tsuen, Lin Kou Hsiang, Taipei County, Taiwan, R.O.C. Tel:886-2-2603-5321 Fax:886-2-2603-5325

Radiated Emission Data

Date of Test :05-31,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 1
Temperature :26 deg/C
Humidity :54 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
60.005	0.90	5.90	18.69	25.49	18.81	100
64.004	0.90	6.02	17.06	23.98	15.81	100
80.182	1.00	7.30	27.78	36.08	63.68	100
166.995	1.64	9.75	15.00	26.39	20.87	150
200.450	2.00	10.20	20.36	32.56	42.46	150
240.545	2.17	12.10	24.18	38.45	83.64	200
267.073	2.33	12.85	20.11	35.28	58.10	200
334.242	2.83	14.20	17.80	34.84	55.19	200
400.911	3.30	17.00	14.53	34.83	55.14	200
*500.042	3.60	18.39	21.63	43.61	151.54	200
561.274	4.13	19.00	14.64	37.77	77.36	200
734.852	5.20	20.27	15.93	41.40	117.47	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 :05-31,1999 Temperature :26 deg/C
EUT :NOTEBOOK PC Humidity :54 %RH
Working Cond.:Mode 1 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
64.011	0.90	6.02	23.93	30.85	34.87	100
80.180	1.00	7.30	22.65	30.95	35.28	100
133.650	1.30	11.95	13.45	26.70	21.64	150
166.995	1.64	9.75	16.71	28.10	25.41	150
200.455	2.00	10.20	18.41	30.61	33.92	150
240.548	2.17	12.10	25.43	39.70	96.59	200
334.247	2.83	14.20	22.45	39.49	94.27	200
400.910	3.30	17.00	17.15	37.45	74.56	200
*500.043	3.60	18.39	19.85	41.83	123.46	200
601.384	4.51	19.42	12.74	36.67	68.18	200
734.745	5.20	20.27	12.38	37.85	78.06	200
841.913	5.72	21.31	9.40	36.44	66.36	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 :05-31,1999 Temperature :25 deg/C
EUT :NOTEBOOK PC Humidity :55 %RH
Working Cond.:Mode 2 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
40.120	0.60	12.30	9.72	22.62	13.52	100
61.030	0.90	5.90	18.45	25.25	18.30	100
64.696	0.90	6.02	27.65	34.57	53.51	100
194.090	1.91	9.95	19.77	31.63	38.14	150
210.264	2.04	10.65	21.11	33.80	48.99	150
242.621	2.17	12.19	20.94	35.31	58.26	200
258.791	2.26	12.67	20.19	35.13	57.06	200
323.486	2.77	14.03	21.24	38.03	79.72	200
388.183	3.22	16.47	15.04	34.73	54.52	200
452.881	3.45	17.44	19.88	40.77	109.31	200
*500.045	3.60	18.39	21.04	43.02	141.59	200
601.211	4.51	19.42	15.11	39.04	89.57	200
725.067	5.15	20.20	12.23	37.59	75.76	200
775.071	5.45	20.66	10.90	37.01	70.84	200
925.087	5.97	22.09	9.08	37.14	71.95	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 :05-31,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 2
Temperature :25 deg/C
Humidity :54 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
64.694	0.90	6.02	24.21	31.13	36.01	100
86.253	1.06	8.36	20.95	30.37	33.01	100
140.178	1.30	11.30	7.24	19.84	9.82	150
194.092	1.91	9.95	15.90	27.76	24.43	150
200.005	2.00	10.20	14.16	26.36	20.80	150
210.264	2.04	10.65	15.54	28.23	25.80	150
267.473	2.33	12.85	15.57	30.74	34.45	200
323.482	2.77	14.03	20.66	37.45	74.57	200
388.182	3.22	16.47	13.64	33.33	46.40	200
*452.882	3.45	17.44	22.68	43.57	150.89	200
500.045	3.60	18.39	17.42	39.40	93.33	200
517.539	3.74	18.56	16.86	39.16	90.78	200
601.617	4.51	19.42	19.49	43.42	148.31	200
625.057	4.63	19.71	13.91	38.25	81.71	200
711.619	5.07	20.09	13.86	39.03	89.39	200
925.086	5.97	22.09	8.17	36.23	64.79	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 :05-26,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 3
Temperature :23 deg/C
Humidity :64 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	[uV/m]	Limit (uV/m)
66.868	0.90	6.14	16.05	23.09	14.27	100
*84.654	1.06	8.36	24.72	34.14	50.95	100
167.096	1.64	9.75	21.09	32.48	42.08	150
183.306	1.76	9.56	20.00	31.32	36.80	150
194.091	1.91	9.95	20.92	32.78	43.54	150
215.657	2.06	10.92	21.06	34.05	50.40	150
240.040	2.16	12.01	20.69	34.86	55.34	200
323.486	2.77	14.03	19.10	35.89	62.31	200
388.181	3.22	16.47	14.68	34.37	52.30	200
452.879	3.45	17.44	17.01	37.90	78.55	200
582.229	4.33	19.22	6.24	29.78	30.84	200
646.926	4.74	19.97	10.78	35.48	59.45	200
668.283	4.84	20.00	13.74	38.58	84.96	200
711.668	5.07	20.09	7.47	32.64	42.83	200
816.139	5.65	21.06	9.88	36.58	67.49	200
905.670	5.91	21.93	6.23	34.07	50.54	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 :05-26,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 3
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
66.542	0.90	6.08	19.52	26.50	21.13	100
84.654	1.06	8.36	23.21	32.63	42.82	100
166.996	1.64	9.75	21.74	33.13	45.35	150
204.874	2.02	10.47	18.01	30.51	33.52	150
258.786	2.26	12.67	16.33	31.27	36.59	200
323.487	2.77	14.03	16.35	33.14	45.40	200
334.270	2.83	14.20	18.28	35.32	58.33	200
452.880	3.45	17.44	15.51	36.40	66.09	200
517.576	3.74	18.56	14.35	36.65	67.99	200
582.228	4.33	19.22	11.31	34.85	55.28	200
*646.970	4.74	19.97	15.69	40.39	104.64	200
668.284	4.84	20.00	14.82	39.66	96.21	200
711.671	5.07	20.09	13.42	38.59	84.97	200
816.140	5.65	21.06	6.81	33.51	47.40	200
905.742	5.91	21.93	4.98	32.82	43.77	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 :05-31,1999 Temperature :25 deg/C
EUT :NOTEBOOK PC Humidity :55 %RH
Working Cond.:Mode 4 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
64.698	0.90	6.02	29.02	35.94	62.65	100
80.830	1.02	7.65	23.57	32.24	40.95	100
157.502	1.58	10.06	21.13	32.77	43.49	150
194.089	1.91	9.95	19.18	31.04	35.64	150
200.606	2.00	10.20	21.06	33.26	46.03	150
210.243	2.04	10.65	22.02	34.71	54.40	150
214.772	2.06	10.92	22.79	35.78	61.50	150
258.788	2.26	12.67	25.06	40.00	99.96	200
323.483	2.77	14.03	24.74	41.53	119.28	200
388.179	3.22	16.47	18.83	38.52	84.34	200
425.038	3.37	17.19	17.56	38.12	80.54	200
452.877	3.45	17.44	19.53	40.42	104.99	200
500.045	3.60	18.39	19.09	41.07	113.12	200
525.047	3.81	18.64	13.86	36.31	65.38	200
582.276	4.33	19.22	15.56	39.10	90.18	200
*734.852	5.20	20.27	17.76	43.23	145.02	200
925.085	5.97	22.09	12.48	40.54	106.41	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 :05-31,1999 Temperature :23 deg/C
EUT :NOTEBOOK PC Humidity :63 %RH
Working Cond.:Mode 4 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
64.012	0.90	6.02	23.12	30.04	31.76	100
129.394	1.30	12.27	18.84	32.41	41.73	150
194.089	1.91	9.95	16.35	28.21	25.73	150
200.456	2.00	10.20	14.73	26.93	22.21	150
258.784	2.26	12.67	22.97	37.91	78.58	200
323.485	2.77	14.03	24.64	41.43	117.91	200
388.185	3.22	16.47	18.63	38.32	82.42	200
452.878	3.45	17.44	15.13	36.02	63.26	200
*500.047	3.60	18.39	20.02	42.00	125.90	200
517.539	3.74	18.56	12.83	35.13	57.08	200
582.273	4.33	19.22	13.17	36.71	68.49	200
734.914	5.20	20.27	12.19	37.66	76.37	200
905.689	5.91	21.93	5.02	32.86	43.97	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 :05-31,1999 Temperature :25 deg/C
EUT :NOTEBOOK PC Humidity :55 %RH
Working Cond.:Mode 5 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
57.187	0.86	6.32	20.15	27.33	23.26	100
64.700	0.90	6.02	19.52	26.44	20.99	100
133.684	1.30	11.95	11.55	24.80	17.39	150
167.347	1.64	9.75	15.35	26.74	21.73	150
194.091	1.91	9.95	19.81	31.67	38.32	150
200.004	2.00	10.20	18.54	30.74	34.44	150
215.649	2.06	10.92	18.48	31.47	37.45	150
267.325	2.33	12.85	16.77	31.94	39.55	200
329.319	2.81	14.13	14.68	31.62	38.10	200
388.184	3.22	16.47	14.55	34.24	51.53	200
452.881	3.45	17.44	15.63	36.52	67.01	200
*500.045	3.60	18.39	20.44	42.42	132.14	200
517.579	3.74	18.56	12.83	35.13	57.08	200
601.430	4.51	19.42	13.91	37.84	78.01	200
625.056	4.63	19.71	14.99	39.33	92.53	200
725.065	5.15	20.20	10.99	36.35	65.68	200
800.071	5.59	20.89	8.55	35.03	56.45	200
925.083	5.97	22.09	7.11	35.17	57.35	200
970.458	6.11	22.18	6.61	34.90	55.58	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 :05-31,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 5
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
80.838	1.02	7.65	21.64	30.31	32.79	100
129.394	1.30	12.27	15.91	29.48	29.78	150
172.531	1.68	9.60	14.83	26.11	20.21	150
200.001	2.00	10.20	14.12	26.32	20.70	150
267.271	2.33	12.85	13.30	28.47	26.52	200
323.488	2.77	14.03	21.54	38.33	82.52	200
400.110	3.30	17.00	15.72	36.02	63.24	200
425.041	3.37	17.19	12.53	33.09	45.13	200
452.879	3.45	17.44	21.58	42.47	132.94	200
500.046	3.60	18.39	20.36	42.34	130.93	200
517.528	3.74	18.56	15.60	37.90	78.52	200
525.049	3.81	18.64	15.62	38.07	80.07	200
575.055	4.26	19.14	13.71	37.10	71.63	200
*601.516	4.51	19.42	19.02	42.95	140.50	200
625.058	4.63	19.71	18.11	42.45	132.52	200
711.665	5.07	20.09	14.15	39.32	92.42	200
841.009	5.72	21.31	6.42	33.46	47.09	200
905.760	5.91	21.93	11.66	39.50	94.44	200
970.460	6.11	22.18	10.70	38.99	89.01	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 :05-26,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 6
Temperature :23 deg/C
Humidity :67 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
66.767	0.90	6.08	16.64	23.62	15.17	100
75.481	0.96	6.85	21.73	29.54	29.99	100
84.653	1.06	8.36	24.17	33.59	47.82	100
167.096	1.64	9.75	19.51	30.90	35.08	150
204.877	2.02	10.47	19.37	31.87	39.20	150
240.040	2.16	12.01	19.63	33.80	48.98	200
258.789	2.26	12.67	24.36	39.30	92.22	200
323.485	2.77	14.03	21.68	38.47	83.86	200
388.183	3.22	16.47	16.81	36.50	66.84	200
452.881	3.45	17.44	18.50	39.39	93.25	200
517.575	3.74	18.56	10.68	32.98	44.56	200
582.275	4.33	19.22	12.45	35.99	63.04	200
646.971	4.74	19.97	9.14	33.84	49.23	200
*668.182	4.83	20.00	17.15	41.98	125.67	200
816.136	5.65	21.06	8.04	34.74	54.61	200
841.067	5.72	21.31	8.60	35.64	60.52	200
905.780	5.91	21.93	6.36	34.20	51.31	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 :05-26,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 6
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
50.008	0.70	8.70	24.34	33.74	48.64	100
66.767	0.90	6.08	18.51	25.49	18.81	100
80.873	1.02	7.65	22.37	31.04	35.66	100
86.244	1.06	8.36	19.88	29.30	29.18	100
129.394	1.30	12.27	17.94	31.51	37.63	150
145.548	1.42	10.89	15.99	28.29	25.99	150
204.873	2.02	10.47	17.70	30.20	32.34	150
240.038	2.16	12.01	15.46	29.63	30.30	200
300.682	2.60	13.60	14.42	30.62	33.96	200
323.483	2.77	14.03	15.69	32.48	42.08	200
388.181	3.22	16.47	21.20	40.89	110.80	200
*452.881	3.45	17.44	20.38	41.27	115.79	200
517.576	3.74	18.56	17.23	39.53	94.73	200
582.275	4.33	19.22	17.16	40.70	108.42	200
646.971	4.74	19.97	14.13	38.83	87.44	200
668.284	4.84	20.00	16.46	41.30	116.21	200
801.720	5.60	20.90	4.16	30.66	34.12	200
905.763	5.91	21.93	7.52	35.36	58.64	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 :05-31,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 7
Temperature :23 deg/C
Humidity :67 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
58.012	0.86	6.32	21.21	28.39	26.28	100
66.868	0.90	6.14	19.61	26.65	21.49	100
118.610	1.29	12.72	13.77	27.78	24.48	150
166.994	1.64	9.75	20.28	31.67	38.33	150
194.089	1.91	9.95	24.06	35.92	62.51	150
200.506	2.00	10.20	15.58	27.78	24.49	150
267.372	2.33	12.85	20.67	35.84	61.96	200
300.026	2.60	13.60	18.17	34.37	52.30	200
323.485	2.77	14.03	20.50	37.29	73.21	200
388.181	3.22	16.47	20.55	40.24	102.81	200
452.879	3.45	17.44	21.23	42.12	127.69	200
500.044	3.60	18.39	20.33	42.31	130.47	200
*734.958	5.20	20.27	17.28	42.75	137.23	200
925.082	5.97	22.09	12.32	40.38	104.47	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 :05-31,1999
EUT :NOTEBOOK PC
Working Cond.:Mode 7
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
64.012	0.90	6.02	23.42	30.34	32.88	100
80.188	1.00	7.30	23.53	31.83	39.04	100
118.610	1.29	12.72	16.89	30.90	35.06	150
166.996	1.64	9.75	19.64	31.03	35.61	150
194.094	1.91	9.95	19.73	31.59	37.97	150
204.875	2.02	10.47	17.72	30.22	32.42	150
275.024	2.39	13.02	15.15	30.56	33.73	200
334.249	2.83	14.20	21.51	38.55	84.60	200
388.186	3.22	16.47	14.04	33.73	48.59	200
452.879	3.45	17.44	20.78	41.67	121.24	200
500.043	3.60	18.39	16.92	38.90	88.11	200
575.049	4.26	19.14	14.13	37.52	75.18	200
646.914	4.74	19.97	10.20	34.90	55.61	200
675.057	4.87	20.00	12.41	37.28	73.15	200
*734.953	5.20	20.27	18.12	43.59	151.16	200
875.075	5.82	21.66	10.36	37.84	77.99	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 :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:1 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
1068.500	6.48	22.29	54.58	47.76	244.21	500 PK
1068.500	6.48	22.29	39.88	33.06	44.95	500 AV
1158.913	6.90	23.08	48.99	43.52	149.89	500 PK
1158.913	6.90	23.08	37.36	31.89	39.29	500 AV
1661.700	8.42	25.71	47.73	47.03	224.66	500 PK
1661.700	8.42	25.71	36.89	36.19	64.50	500 AV

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:1 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
1069.250	6.48	22.29	38.87	32.05	40.03	500 AV
1069.250	6.48	22.29	56.73	49.91	312.86	500 PK
1153.500	6.87	23.04	47.85	42.30	130.36	500 PK
1153.500	6.87	23.04	37.04	31.49	37.55	500 AV
1661.000	8.42	25.71	47.64	46.94	222.35	500 PK
1661.000	8.42	25.71	37.95	37.25	72.87	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(35.59,35.45,34.84)(35.59,34.46,34.84)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:2 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.100	6.20	22.00	52.52	45.02	178.24	500 PK
1000.100	6.20	22.00	39.13	31.63	38.15	500 AV
1069.000	6.48	22.29	36.87	30.05	31.79	500 AV
1069.000	6.48	22.29	50.35	43.53	150.09	500 PK
1195.950	7.07	23.29	38.63	33.60	47.89	500 AV
1195.950	7.07	23.29	55.22	50.19	323.40	500 PK

Date of Test :05,31,1999 Temperature :23 deg/C
EUT :N/B PK+AV Humidity :65 %RH
Working Cond.:MODE:2 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.163	6.20	22.00	50.82	43.32	146.55	500 PK
1000.163	6.20	22.00	41.16	33.66	48.19	500 AV
1069.330	6.48	22.29	50.49	43.67	152.53	500 PK
1069.330	6.48	22.29	36.68	29.86	31.11	500 AV
1200.330	7.10	23.33	56.03	51.08	358.10	500 PK
1200.330	7.10	23.33	41.64	36.69	68.31	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(35.70,35.59,35.39)(35.70,35.59,35.38)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-31,1999
EUT :N/B PK+AV
Working Cond.:MODE:3
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
1001.500	6.21	22.00	50.39	42.90	139.63	500 PK
1001.500	6.21	22.00	35.69	28.20	25.70	500 AV
1159.000	6.90	23.08	51.50	46.03	200.15	500 PK
1159.000	6.90	23.08	34.95	29.48	29.78	500 AV
1488.800	7.95	25.04	47.84	45.92	197.65	500 PK
1488.800	7.95	25.04	37.69	35.77	61.43	500 AV

Date of Test :05-31,1999
EUT :N/B PK+AV
Working Cond.:MODE:3
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.130	6.20	22.00	53.54	46.04	200.45	500 PK
1000.130	6.20	22.00	40.26	32.76	43.45	500 AV
1159.035	6.90	23.08	51.99	46.52	211.77	500 PK
1159.035	6.90	23.08	36.94	31.47	37.44	500 AV
1488.000	7.95	25.04	48.28	46.36	207.92	500 PK
1488.000	7.95	25.04	35.98	34.06	50.45	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 (35.70,35.45,34.92)(35.70,35.45,34.92)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:4 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.400	6.20	22.00	52.26	44.76	172.98	500 PK
1000.400	6.20	22.00	39.06	31.56	37.84	500 AV
1065.800	6.46	22.23	48.05	41.14	114.03	500 PK
1065.800	6.46	22.23	35.23	28.32	26.06	500 AV
1621.000	8.34	25.57	48.84	47.90	248.37	500 PK
1621.000	8.34	25.57	37.70	36.76	68.88	500 AV

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:4 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.230	6.20	22.00	49.06	41.56	119.67	500 PK
1000.230	6.20	22.00	39.27	31.77	38.77	500 AV
1103.500	6.62	22.84	37.85	31.77	38.78	500 AV
1103.500	6.62	22.84	50.69	44.61	170.04	500 PK
1358.690	7.47	24.31	42.49	39.14	90.60	500 AV
1358.690	7.47	24.31	53.50	50.15	321.83	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(35.70,35.60,34.85)(35.70,35.54,35.13)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:5 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.350	6.20	22.00	52.26	44.76	172.98	500 PK
1000.350	6.20	22.00	44.03	36.53	67.07	500 AV
1105.300	6.63	22.84	37.24	31.18	36.23	500 AV
1105.300	6.63	22.84	49.08	43.02	141.62	500 PK
1195.950	7.07	23.29	39.32	34.29	51.85	500 AV
1195.950	7.07	23.29	52.60	47.57	239.19	500 PK

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:5 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.000	6.20	22.00	49.72	42.22	129.12	500 PK
1000.000	6.20	22.00	37.00	29.50	29.85	500 AV
1072.000	6.49	22.36	48.94	42.20	128.86	500 PK
1072.000	6.49	22.36	38.10	31.36	36.99	500 AV
1203.750	7.10	23.35	55.05	50.13	321.05	500 PK
1203.750	7.10	23.35	42.79	37.87	78.27	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(35.70,35.53,35.39)(35.70,35.58,35.38)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:6 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.500	6.20	22.00	55.19	47.69	242.38	500 PK
1000.500	6.20	22.00	41.50	34.00	50.12	500 AV
1069.000	6.48	22.29	35.86	29.04	28.30	500 AV
1069.000	6.48	22.29	48.14	41.32	116.37	500 PK
1159.000	6.90	23.08	37.47	32.00	39.80	500 AV
1159.000	6.90	23.08	51.09	45.62	190.92	500 PK

Date of Test :05-31,1999 Temperature :25 deg/C
EUT :N/B PK+AV Humidity :55 %RH
Working Cond.:MODE:6 Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.730	6.20	22.00	53.22	45.72	193.20	500 PK
1000.730	6.20	22.00	38.85	31.35	36.94	500 AV
1069.500	6.48	22.29	52.34	45.52	188.73	500 PK
1069.500	6.48	22.29	38.42	31.60	38.01	500 AV
1159.038	6.90	23.08	53.40	47.93	249.09	500 PK
1159.038	6.90	23.08	36.57	31.10	35.88	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(35.70, 35.59, 35.45) (35.70, 35.59, 35.45)
4.Deviations from the specifications: None.

Radiated Emission Data

Date of Test :05-31,1999
EUT :N/B PK+AV
Working Cond.:MODE:7
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Horizontal [dB(uV)]	Emission Level Horizontal [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.500	6.20	22.00	50.80	43.30	146.22	500 PK
1000.500	6.20	22.00	39.03	31.53	37.71	500 AV
1067.000	6.47	22.26	49.66	42.79	137.94	500 PK
1067.000	6.47	22.26	37.85	30.98	35.41	500 AV
1158.988	6.90	23.08	50.93	45.46	187.40	500 PK
1158.988	6.90	23.08	37.75	32.28	41.09	500 AV

Date of Test :05-31,1999
EUT :N/B PK+AV
Working Cond.:MODE:7
Temperature :25 deg/C
Humidity :55 %RH
Display Pattern:H Pattern

Frequency [MHz]	Cable Loss [dB]	Antenna Factor [dB/m]	Reading Level Vertical [dB(uV)]	Emission Level Vertical [dB(uV/m)]	(uV/m)	Limit (uV/m)
1000.138	6.20	22.00	50.42	42.92	139.96	500 PK
1000.138	6.20	22.00	37.16	29.66	30.41	500 AV
1067.550	6.47	22.26	50.87	44.00	158.55	500 PK
1067.550	6.47	22.26	37.20	30.33	32.86	500 AV
1158.950	6.90	23.08	54.04	48.57	268.09	500 PK
1158.950	6.90	23.08	36.79	31.32	36.79	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(35.70, 35.59, 35.45) (35.70, 35.59, 35.45)
4.Deviations from the specifications: None.