

Test Report
Application for Certification
On Behalf Of
First International Computer Inc.
Notebook P.C.

Model: 2000

FCC ID:EUN2000

Prepared For:
First International Computer Inc.
6F.,Formosa Plastics Rear Bldg 201-24,Tun-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 P.C.

(A) Model No.: 2000

(B) Serial No. : N/A

(C) Power : 110V/60Hz

(D) FCC ID : EUN2000

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 : Aug. 16, 1999

Final Test Date : Sep. 13, 1999

Documented by : Joan Chein

Test Engineer :

Ivan Chiang

IVAN CHIANG

Approve & Authorized Signer :

Raymond Chang

RAYMOND CHANG

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.

2.General Information

2.1 Production Description

Description	:	Notebook P.C.
Model Number	:	2000
Serial Number	:	Prototype
FCC ID	:	EUN2000
Applicant	:	First International Computer Inc.
Address	:	6F., Formosa Plastics Rear Bldg 201-24, Tun-Hwa N. Road, Taipei, Taiwan, R.O.C.
Manufacturer	:	First International Computer Inc.
Address	:	122, Nan-Lin Rd., Taishan Hsiang, 243 Taipei, Taiwan, R.O.C.
Power Supply	:	100-240V, 50/60Hz.

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 4	18.93916	42.6 dBuV Line 1, QP	48.0dBuV	N/A
Radiation Mode 3	458.140	41.71[dB(uV/m)], Vertical	46.0 [dB(uV/m)]	2.9M, 132°

2.2.1 Test Mode:

Mode 1	Item	Manufacturer	M/N & S/N
1.	CPU	Mobile K6-2	350MHz
2.	LCD Panel 12.1 " DSTN	Panasonic	M/N:EDMGRB6KAF
3.	3.2GB HDD	Toshiba	M/N:3212MAT
4.	FDD 3.5"	Mitsubishi	MF355H-347MN
5.	CD ROM 24X	TEAC	CD-224EA-92
6.	AC Adaptor	Delta	M/N:ADP-50MB
7.	Battery	Panasonic	Ni-MH 3800mAH 9.6V
8.	Resolution:800 x 600, H-sync:38KHz, V-sync:60Hz.		
Mode 2			
1.	CPU	Mobile K6-2	380MHz
2.	LCD Panel 12.1" TFT	Sanyo	TM121SV-02L03A
3.	4.8GB HDD	Fujitsu	MHH2048AT
4.	FDD 3.5"	Mitsumi	D353F3
5.	DVD ROM 4X	MKE	SR-8173-C
6.	AC Adaptor	Lite-On	PA-1510-19FI
7.	Li-Ion Battery	Panasonic	CGR18650(2800mA)
9.	Resolution:800 x 600, H-sync:38KHz, V-sync:60Hz.		
Mode 3			
1.	CPU	Mobile K6-2	400MHz
2.	LCD Panel 14.1" TFT	CPT	CLAA141XB01
3.	10GB HDD	IBM	DCXA-21000
4.	FDD 3.5"	Mitsubishi	MF355H-347MN
5.	CD-ROM 24X	TEAC	CD-224EA-92
6.	AC Adaptor	Delta	ADP-50MB
7.	Li-Ion Battery	Panasonic	CGR18650(2800mA)
8.	Resolution:1024 x 768, H-sync:48KHz, V-sync:60Hz.		
Mode 4			
1.	CPU	Mobile K6-2	366MHz
2.	LCD Panel 13.3" TFT	ADT	L133X1-3
3.	6.4GB HDD	Hitachi	DK239A-65
4.	LS120	MKE	LKM-FB33-5
5.	DVD ROM 4X	Toshiba	SD-C2202
6.	AC Adaptor	Lite-On	PA-1510-19FI
7.	Ni-MH Battery	Panasonic	Ni-MH 3800mAH 9.6V
8.	Resolution:1024 x 768, H-sync:48KHz, V-sync:60Hz.		

2.2.2Note:

1. This Notebook computer can support different CPU/Clock frequency modes and can support different types of LCD panel. The test condition of 350, 366, 380, 400MHz 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. 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 P.C. (EUT)

No.	Category	Vendor	Model
1.	Mother Board	FIC	50-70402-02, Ver:0.3
2.	Audio Board #1	FIC	P/N:50-70407-00, Ver:0.1
3.	Audio Board #2	FIC	P/N:50-70402-02, Ver:0.3
4.	DC to DC Board #1	FIC	50-70406-02, Ver:0.3
5.	DC to DC Board #2	FIC	50-70407-02, Ver:0.3
6.	CPU #1	K6-2	350MHz/Clock:100MHz.
7.	CPU #2	K6-2	366MHz./Clock:66MHz.
8.	CPU #3	K6-2	380MHz./Clock:95MHz.
9.	CPU #4	K6-2	400MHz./Clock:100MHz.
10.	LCD Panel 12.1" DSTN #1	Panasonic	EDMGRB6KAF
11.	LCD Panel 12.1" TFT #2	Sanyo	TM121SV-02L03A
12.	LCD Panel 14.1" TFT #3	CPT	CLAA141XB01
13.	LCD Panel 13.3" TFT #4	ADT	L133X1-3
14.	3.2GB HDD	Toshiba	MK3212MAT, S/N:39I94310G.
15.	3.2GB HDD	Fujitsu	MHH2032AT, S/N:00000264
16.	3.2GB HDD	IBM	DBCA-203240, S/N:HPL03160
17.	4.8GB HDD	Fujitsu	MHH2048AT, S/N:01000171
18.	4.8GB HDD	Hitachi	DK239A-48, S/N:H840101408
19.	6.4GB HDD	Fujitsu	MHH2064AT, S/N:01002127
20.	6.4GB HDD	Hitachi	DK239A-65, S/N:ES10013961
21.	6.4GB HDD	IBM	DBCA-26480, S/N:HRL06633
22.	10GB HDD	IBM	DCXA-21000, SN:PRL36138
23.	10GB HDD	Fujitsu	MHG2102AT, S/N:00012914
24.	10GB HDD	Hitachi	DK229A-10, S/N:KB45009315
25.	FDD 3.5" #1	MITSUMI	D353F3, P/N:23-10123-01
26.	FDD 3.5" #2	MITSUBISHI	MF355H-347MN
27.	CD ROM 24X	TEAC	CD-224EA-92, S/N:5511461
28.	DVD-ROM #1 4X	MKE	SR-8173-C, S/N:SA9308098291
29.	DVD-ROM #2 4X	TOSHIBA	SD-C2202, S/N:936T103481
30.	LS120	MKE	LKM-FB33-5, S/N:8B8727BPM04180
31.	Li-Ion Battery	Panasonic	CGR18650(2800mA)
32.	Li-Ion Battery	Panasonic	CGR18650(3000mA)
33.	Ni-MH Battery	Panasonic	3800mAh 9.6V
34.	AC Adaptor #1	Delta	ADP-50MB
35.	AC Adaptor #2	Lite-On	PA-1510-19FI
36.	Inverter Board #1	SUMIDA	IV12098/T
37.	Inverter Board #2	AMBIT	T90.008.C.00
38.	Inverter Board #3	SUMIDA	IV12098T/B3
39.	Inverter Board #4	AMBIT	M/N:T90.009.C.00
40.	Touch Pad	ALPS	KGDDG2941A

41.	Keyboard	JME	K980105S1 US *99/32, P/N:71-30411-00
42.	Modem Card	MPB-000121, Ver:1.3	
43.	LAN Card	AMBIT, S/N:T90L020.00	
44.	SD-RAM	32M, 64M, 128M	

Monitor M01-010

Model Number : SyncMaster 700p
 Serial Number : H3MH903296Y
 Manufacturer : SAMSUNG
 FCC ID : A3LCGH760
 BCIQ No. : 3872A230
 Data Cable : Shielded, Undetachable, 1.8m
 Power Cord : Non-Shielded, Detachable, 1.8m

Keyboard K01-039

Model Number : KB-5923
 Serial Number : 8060032202
 FCC ID : E8HKB-5923
 Manufacturer : TATUNG
 BCIQ No. : 3862A177
 Data Cable : Sheiled, Undetachable, 2.0 m
 Purchase Date : 8/6/1998

Printer P01-011

Model Number : C2642A(DJ-400)
 Serial Number : MY7951C4J5
 FCC ID : B94C2642X
 Manufacturer : HP
 Data Cable : Shielded, Detachable, 1.8m
 Adaptor, Power Cord : Non-Shielded, Detachable, 1.8m

Modem M03-009

Model Number : 1414
 Serial Number : 960018052
 FCC ID : IFAXDM1414
 Manufacturer : ACEEX
 Adaptor, Power Cord : Non-Shielded, Detachable, 1.8m
 Data Cable : Shielded, Detachable, 1.5m

Headset&Microphone E01-019
Model Number : SX-M1
Serial Number : N/A
Manufacturer : TOKYO
Power Cord : N/A
Data Cable : Non-Shielded, Undetachable, 1.8 m
Purchase Date : 2/22/1999

Cassette Player R02-013
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

USB Mouse #1
Model Number : MOSUU B
Serial Number : A2009923
Manufacturer : KENSINGTON

- USB Mouse #2
 - Model Number : MOSUU B
 - Serial Number : A2009924
 - Manufacturer : KENSINGTON

- 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 States Department of commerce
 National Institute of Standards and Technology
 National Voluntary Laboratory Accreditation Program

Name of firm : Global EMC Standard Tech. Corp.

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

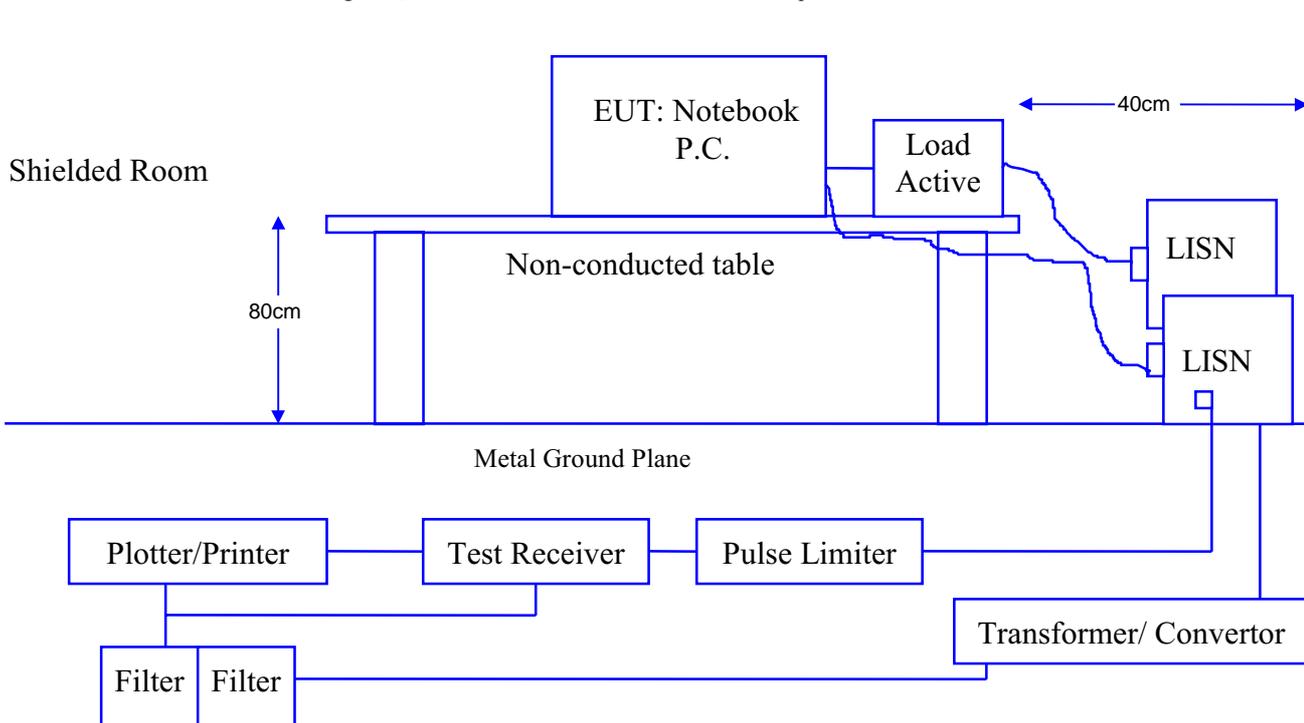
Item	Instrument	Manufacturer	Type /Serial No.	Last Calibration	Location	C.E.
1	Test Receiver	Rohde & Schwarz	ESHS 30 / 828109/010	Dec. 15, 1998	Shield Room #1	✓
2	L.I.S.N.	Kyoritsu	KNW-407	Oct. 03, 1998	Shield Room #1	✓
3	L.I.S.N.	Solar	8012-50-R24 / 90038	May 20, 1999	Shield Room #1	
4	L.I.S.N.	Rohde & Schwarz	ESH3-Z5 / 840567/002	Oct. 02, 1998	Shield Room #1	✓
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	✓
7	Shielded Room	GesTek	GTK-RF-S04	Sep. 05, 1999	Shield Room #1	✓
8	RF CABLE	GesTek	GTK-RF-C07	Sep. 05, 1999	Shield Room #1	✓
9	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

3.3.1 FCC Limits

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

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

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

3.3.2 CISPR Limits

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

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

3.4 EUT Configuration on Measurement

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

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 80cm. 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 P.C. from Hard Disk and Enter to windows 98,
exercise EMI.EXE test program to active all devices.
- 3.5.4 The EUT exchange the information with the GesTek server via HUB.(Mode 4)
- 3.5.5 The EUT exchange the information with the Network via exchange board.(Mode 1,2,3)
- 3.5.6 Play CD Disk audio in windows environment, read HDD and FDD data.
- 3.5.7 P.C. sent "H" Pattern to Both LCD Panel And Ext. Monitor.
- 3.5.8 P.C. sent "H" Pattern to Parallel (printer) port.
- 3.5.9 P.C. sent "H" Pattern to Serial port.
- 3.5.10 Repeat 3.5.4 to 3.5.9

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 : Aug. 07, 1999 Temperature : 25.3 °C
 EUT : Notebook P.C. Humidity : 50 %
 Test Mode : Mode 1 Display Pattern : H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
0.48587	26.6	21.38	25.2	18.20	250
1.45685	28.2	25.70	25.0	17.78	250
4.01223	34.8	54.95	34.7	54.33	250
12.28747	30.9	35.08	28.8	27.54	250
19.32154	36.7	68.39	38.1	80.35	250
**23.18601	38.3	82.22	37.2	72.44	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.

CONDUCTED EMISSION DATA

Date of Test : Aug. 19, 1999 Temperature : 25 °C
 EUT : Notebook P.C. Humidity : 58 %
 Test Mode : Mode 2 Display Pattern : H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
0.48376	26.2	20.42	26.8	21.88	250
2.55694	30.7	34.28	30.6	33.88	250
3.04222	34.0	50.12	34.1	50.70	250
4.70026	34.1	50.70	32.9	44.16	250
**18.93916	40.2	102.33	39.6	95.50	250
21.50038	37.1	71.61	36.8	69.18	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.

CONDUCTED EMISSION DATA

Date of Test : Aug. 19, 1999 Temperature : 25 °C
 EUT : Notebook P.C. Humidity : 55 %
 Test Mode : Mode 3 Display Pattern : H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
3.11299	35.0	56.23	35.5	59.57	250
4.98334	38.2	81.28	36.8	69.18	250
10.90725	37.0	70.79	36.8	69.18	250
12.28501	32.7	43.15	34.2	51.29	250
18.91405	37.2	72.44	37.6	75.86	250
**21.50453	40.2	102.33	40.1	101.16	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.

CONDUCTED EMISSION DATA

Date of Test : Aug. 19, 1999 Temperature : 25 °C
 EUT : Notebook P.C. Humidity : 55 %
 Test Mode : Mode 4 Display Pattern : H Pattern

FREQUENCY	READING LEVEL				LIMIT
	LINE 1		LINE 2		
MHz	dBuV	uV	dBuV	uV	uV
0.69054	22.0	12.59	26.1	20.18	250
0.96906	23.9	15.67	27.2	22.91	250
3.25453	31.9	39.36	32.8	43.65	250
4.71037	34.4	52.48	34.6	53.70	250
**18.93916	42.6	134.90	41.4	117.49	250
21.50038	39.1	90.16	37.5	74.99	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.

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

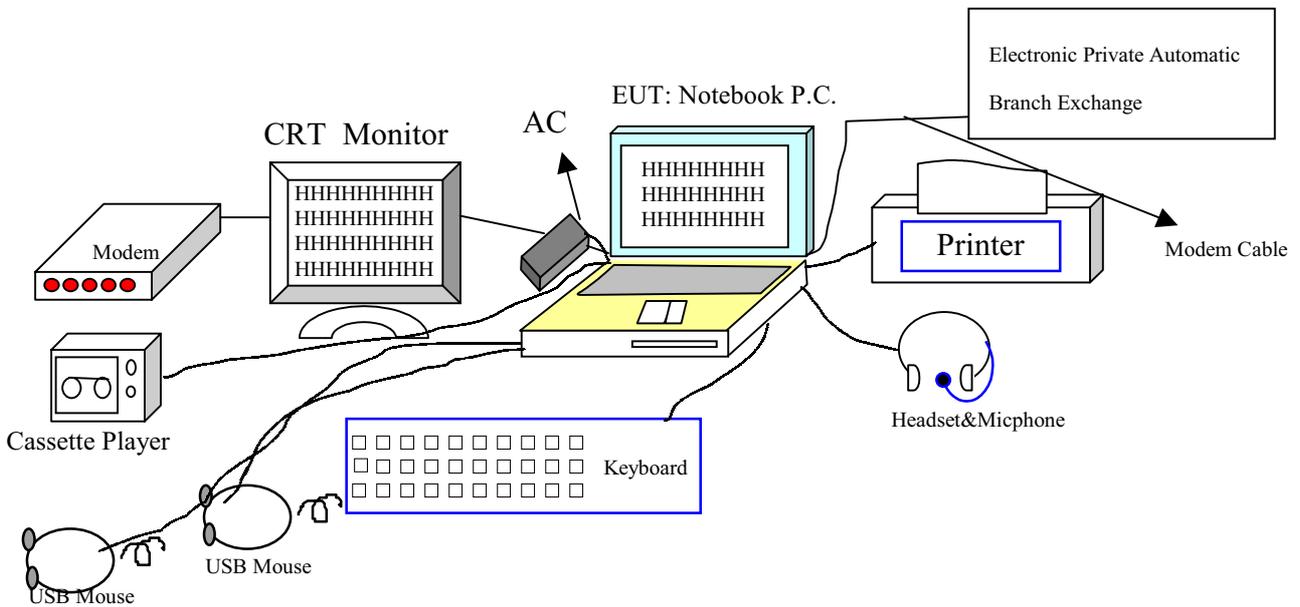
Item	Instrument	Manufacturer	Type /Serial No.	Last Cal.	Site #1	Site #2
1	Test Receiver	Rohde & Schwarz	ESVS 30 / 829007/014	Nov. 23,1998	√	
2	Spectrum Analyzer	HP	8594E / 3543A02689	N/A	√	
3	Pre-Amplifier	HP	8447D / 2944A08272	N/A	√	
4	Test Receiver	Rohde & Schwarz	ESCS 30/825022/003	Jun. 17,1999		√
5	Spectrum Analyzer	HP	8591E/3543A05040	N/A		√
6	Pre Amplifier	HP	8447D/2944A08273	N/A		√
7	BILOG ANTENNA	Chase	CBL6112B/2417	May. 15,1999	√	
8	BILOG ANTENNA	Chase	CBL6112B/2416	May. 15,1999		√
9	Pre Amplifier	HP	8347A/3307A01401	N/A	√	√
10	Open Site	GesTek	GTK-RF-S01	Jan. 05, 1999	√	
11	Open Site	GesTek	GTK-RF-S02	Jan. 03, 1999		√
12	RF Cable	GesTek	GTK-RF-C01	May. 15,1999	√	
13	RF Cable	GesTek	GTK-RF-C02	May. 15,1999	√	
14	RF Cable	GesTek	GTK-RF-C03	Mar. 26,1999		√
15	Test Program Software	GesTek	GTK-RF-P01	N/A	√	
16	Test Program Software	GesTek	GTK-RF-P02	N/A		√
17	Spectrum Analyzer	Advantest	R3272 / 82420372	May, 05, 1999		√
18	Spectrum Analyzer	Advantest	R3272 / 82420232	May, 06, 1999	√	
19	Pre Amplifier	HP	8449B / 3008A01264	N/A		√
20	Pre Amplifier	HP	8449B / 3008A01263	N/A	√	
21	Horn Antenna	Electro-Metrics	EM-6961 / 103329	Apr, 30, 1999		√
22	Horn Antenna	Electro-Metrics	EM-6961 / 103318	Apr, 30, 1999	√	

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

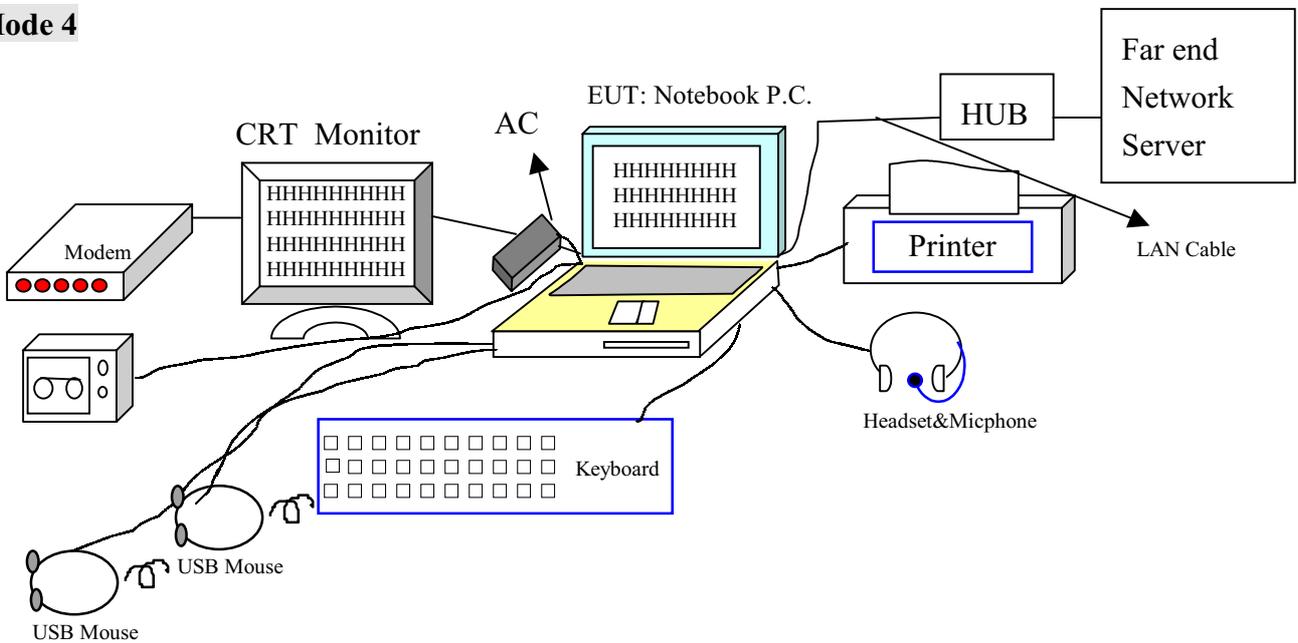
4.2 Test Setup

4.2.1 Block Diagram of Connections between EUT and simulators

Mode 1,2,3



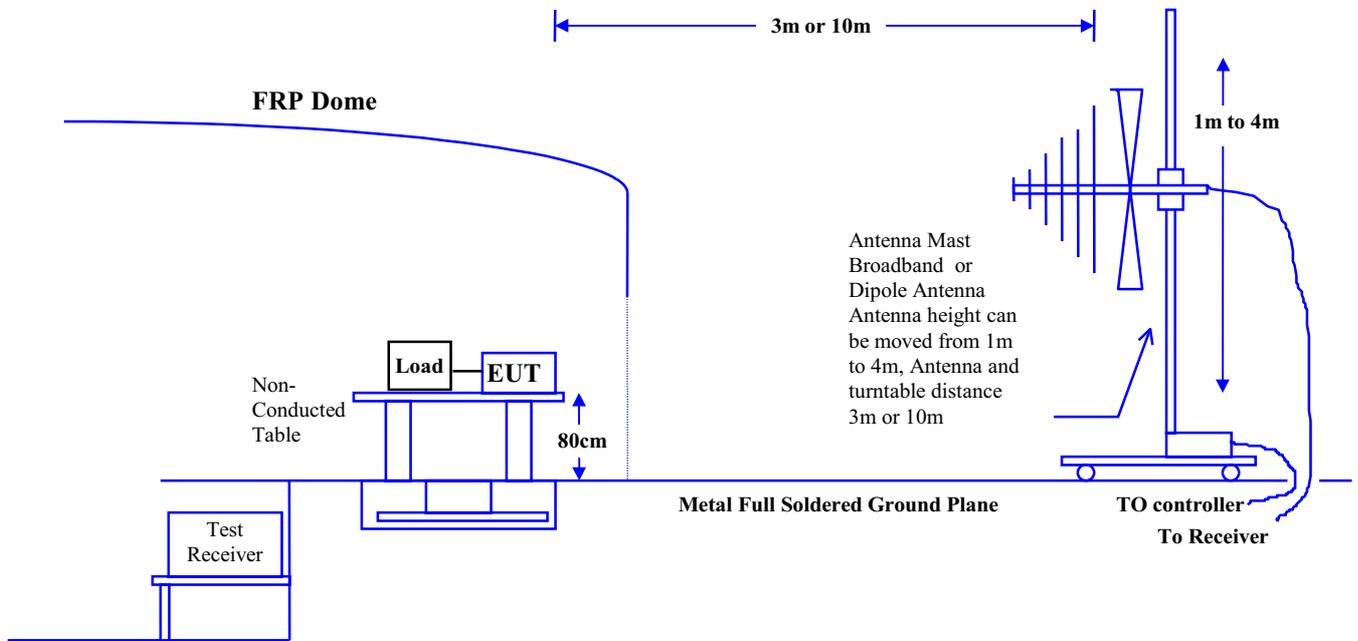
Mode 4



4.2.2 Open Test Site Setup Diagram

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.



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

Note: The frequencies above 1000MHz, as measured using instrumentation with a peak detector function was corresponding to 20dB above the maximum permitted average limit.

(refer 47CFR Ch. 1 (10-1-98 Edition §15.35(b))

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 :08-06,1999 Fri. Temperature :25 deg/C
 EUT :NOTEBOOK P.C. Humidity :50 %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)
86.010	1.06	8.25	14.95	24.26	16.33	100
111.919	1.25	11.14	16.71	29.10	28.50	150
152.871	1.52	11.17	21.60	34.29	51.83	150
*167.863	1.65	10.36	26.11	38.13	80.59	150
184.856	1.76	9.96	22.49	34.21	51.34	150
192.841	1.88	9.88	21.51	33.27	46.07	150
214.832	2.06	10.65	13.05	25.76	19.42	150
240.027	2.16	11.93	16.32	30.41	33.13	200
264.793	2.31	12.80	17.76	32.87	44.02	200
300.782	2.60	13.60	16.54	32.74	43.35	200
350.907	2.94	14.90	9.12	26.96	22.30	200
401.026	3.30	16.20	8.27	27.77	24.46	200
501.130	3.60	17.30	9.48	30.38	33.04	200
601.427	4.51	18.76	3.90	27.17	22.84	200
702.194	5.01	18.66	12.64	36.31	65.42	200
902.480	5.91	21.48	2.79	30.18	32.29	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 :08-06,1999 Fri. Temperature :25 deg/C
 EUT :NOTEBOOK P.C. Humidity :50 %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)
66.814	0.90	6.73	15.98	23.61	15.16	100
86.936	1.08	8.47	21.22	30.77	34.54	100
122.873	1.30	12.00	13.93	27.23	22.99	150
184.857	1.76	9.96	16.56	28.28	25.94	150
192.842	1.88	9.88	17.48	29.24	28.97	150
207.830	2.03	10.23	20.65	32.91	44.19	150
267.251	2.33	12.85	11.06	26.23	20.49	200
294.892	2.55	13.45	13.62	29.62	30.27	200
*300.665	2.60	13.60	24.32	40.52	106.17	200
350.784	2.94	14.90	15.09	32.93	44.33	200
400.895	3.30	16.20	18.64	38.14	80.72	200
432.038	3.39	16.64	14.45	34.49	53.00	200
501.099	3.60	17.30	10.95	31.85	39.13	200
601.288	4.51	18.76	6.87	30.14	32.15	200
701.525	5.01	18.66	15.84	39.51	94.57	200
804.882	5.61	20.76	5.90	32.27	41.05	200
902.150	5.91	21.48	1.63	29.02	28.25	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 :08-13,1999 Fri. Temperature :25 deg/C
 EUT :NOTEBOOK P.C. Humidity :58 %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)
73.724	1.10	7.30	20.08	28.48	26.54	100
*84.795	1.34	8.25	22.79	32.38	41.57	100
94.895	1.40	9.33	12.31	23.04	14.19	150
144.008	1.33	11.72	11.99	25.04	17.87	150
159.734	1.40	10.76	11.25	23.41	14.81	150
190.824	1.80	9.90	21.10	32.80	43.64	150
196.594	1.92	9.84	20.31	32.07	40.12	150
199.843	2.00	9.80	22.39	34.19	51.23	150
240.028	2.00	11.93	9.53	23.46	14.89	200
286.705	2.32	13.28	17.20	32.80	43.63	200
344.043	2.67	14.73	13.72	31.12	35.97	200
381.500	2.91	15.72	13.80	32.43	41.84	200
439.654	3.16	16.75	9.16	29.07	28.41	200
559.558	3.75	18.29	10.49	32.53	42.32	200
679.465	4.24	18.29	8.69	31.22	36.39	200
719.433	4.39	19.23	8.00	31.62	38.09	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 :08-23,1999 Mon. Temperature :25 deg/C
 EUT :NOTEBOOK P.C. Humidity :55 %RH
 Working Cond.:MODE:3 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)
66.761	1.06	6.73	19.51	27.30	23.18	100
119.991	1.40	11.81	13.96	27.17	22.82	150
169.074	1.50	10.36	17.98	29.84	31.05	150
196.345	1.92	9.84	26.56	38.32	82.39	150
200.436	2.00	9.80	20.36	32.16	40.55	150
221.166	2.00	10.97	21.20	34.17	51.11	200
300.804	2.40	13.60	20.69	36.69	68.31	200
327.243	2.58	14.32	17.97	34.86	55.36	200
400.975	3.02	16.20	13.75	32.97	44.49	200
*458.140	3.24	16.96	21.51	41.71	121.79	200
589.036	3.92	18.67	10.73	33.33	46.38	200
654.485	4.16	17.96	10.70	32.81	43.71	200
719.934	4.39	19.23	10.90	34.52	53.19	200
802.292	4.70	20.73	6.31	31.74	38.64	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 :08-06,1999 Fri.	Temperature :25 deg/C
EUT :Notebook P.C.	Humidity :50 %RH
Working Cond.:Mode 1 PK+AV	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)
1053.130	6.41	22.10	52.98	45.88	196.68	500 PK
1053.130	6.41	22.10	29.49	22.39	13.16	500 AV
1402.630	7.61	24.61	57.00	54.16	510.56	500 PK
1402.630	7.61	24.61	37.34	34.50	53.09	500 AV
1752.365	8.70	26.10	46.11	46.12	202.20	500 PK
1752.365	8.70	26.10	25.48	25.49	18.81	500 AV

Remarks:

1. All Readings are Quasi-Peak & average values.
2. Emission Level = Reading Level + Antenna Factor + Cable loss-Amp Factor(35.62, 35.06,34.80)
3. Deviations from the specifications: None.
4. The frequncies above 1000MHz, as measured using instrumentation with a peak detector function was corresponding to 20dB above the maximum permitted average limit.

Radiated Emission Data

Date of Test :08-23,1999 Mon.	Temperature :25 deg/C
EUT :Notebook P.C.	Humidity :55 %RH
Working Cond.:Mode 3 PK+AV	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)
1103.250	6.02	22.82	27.85	21.15	11.42	500 AV
1103.250	6.02	22.82	48.24	41.54	119.43	500 PK
1195.250	6.28	23.27	30.64	24.81	17.39	500 AV
1195.250	6.28	23.27	57.96	52.13	404.04	500 PK
1364.000	6.79	24.34	47.60	43.61	151.58	500 PK
1364.000	6.79	24.34	26.67	22.68	13.62	500 AV

Remarks:

1. All Readings are Quasi-Peak & average values.
2. Emission Level = Reading Level + Antenna Factor + Cable loss-Amp Factor(35.54,35.39,35.12)
3. Deviations from the specifications: None.
4. The frequncies above 1000MHz, as measured using instrumentation with a peak detector function was corresponding to 20dB above the maximum permitted average limit.

Radiated Emission Data

Date of Test :08-14,1999 Sat.	Temperature :25 deg/C
EUT :Notebook P.C.	Humidity :55 %RH
Working Cond.:Mode 4 PK+AV	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)
1102.500	6.02	22.81	57.45	50.74	344.38	500 PK
1102.500	6.02	22.81	44.09	37.38	73.97	500 AV
1469.900	7.19	24.94	34.09	31.28	36.63	500 AV
1469.900	7.19	24.94	55.79	52.98	445.49	500 PK
1828.880	8.29	26.43	47.55	47.50	237.16	500 PK
1828.880	8.29	26.43	27.30	27.25	23.04	500 AV

Remarks:

1. All Readings are Quasi-Peak & average values.
2. Emission Level = Reading Level + Antenna Factor + Cable loss-Amp Factor(35.54,34.95,34.77)
3. Deviations from the specifications: None.
4. The frequncies above 1000MHz, as measured using instrumentation with a peak detector function was corresponding to 20dB above the maximum permitted average limit.

