

**3-3. Special Accessories**

Not available for this EUT intended for grant.

**3-4. Equipment Modifications**

Not available for this EUT intended for grant.

**Applicant Signature :** Kevin Lin **Date :** April 02, 1999  
**Type/Printed Name :** Kevin Lin **Position :** R & D Manager

### 3.5 Configuration of Tested System

The configuration of tested system is described as the block diagram shown in next page Figure 3.1 and details information of I/O cable and power cord connection are tablized as Table A and B. The monitor is powered from a floor mounted receptale ( referred to as the wall outlet in the previous described )was tested.

**TABLE A - Test Equipment**

Item	Equipment	Mfr.	Model/Type No.	I/O Port	FCC ID	Remark
E-1	Mouse	Tremon	MUO2IA	COM Port PS/2 Port	JKG MUO2IA	EUT
E-2	Monitor	Chern Yin	NE64	VGA Port	KFBNE64	
E-3	PC	IBM	93V	N/A	ANO6282	
E-4	Printer	SII	DPU-414	Centronic Port	N/A	
E-5	Modem	Datatronics	AT-1200CK	Com 2 Port	E2O5OV1200CK	
E-6	Keyboard	Forward	FDA-102A	KB DIN Port	F4Z4K3FDA-102A	

**Remark:**

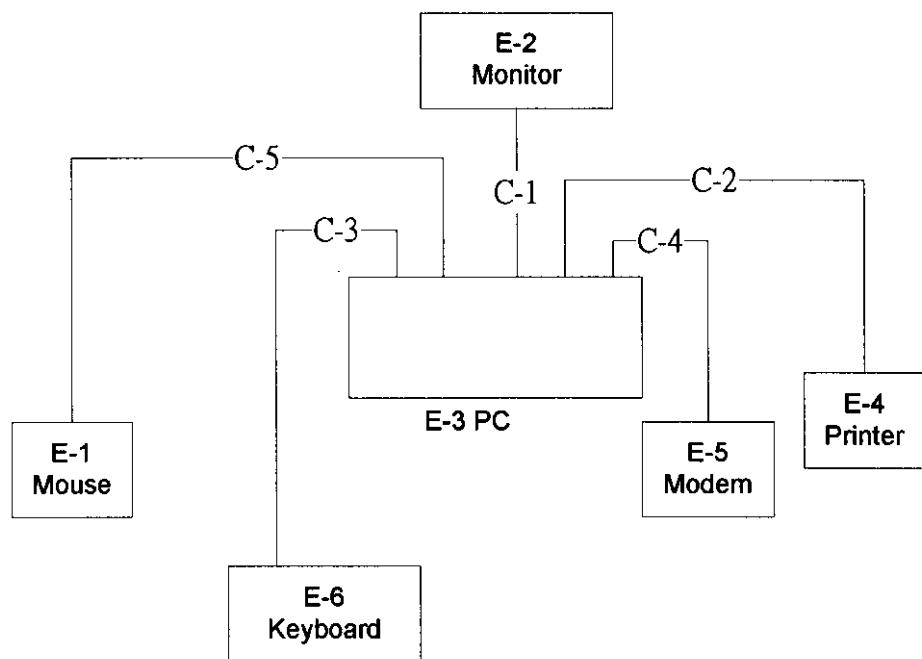
- (1) Unless otherwise denoted as EUT in 「Remark」 column, device(s) used in tested system is a support equipment.
- (2) Unless otherwise marked as \* in 「Remark」 column, Neutron consigns the supporting equipment(s) to the tested system.

Table B. - Informations Cable Information

Item	I/O Cable	Device Connected	Shielded	Ferrite Core	Detachable/Permanently	Length	Note
C-1	Video Cable	PC-Monitor	Yes	No	Permanently attached	150cm	
C-2	Centronics Cable	PC-Printer	Yes	No	Detachable type	200cm	
C-3	Keyboard Cable	PC-Keyboard	Yes	No	Permanently attached	200cm	
C-4	RS-232 Cable	PC-Modem	Yes	No	Detachable type	120cm	
C-5	Mouse Cable	EUT-PC	Yes	No	Permanently attached	280cm	※

Note:

(1) Unless otherwise marked as ※ in 「Remark」 column, Neutron consigns the supporting equipment(s) to the tested system.

**Figure 3.1 Configuration of Tested System**

#### **4. Block Diagram(s)**

Figure 4.1 Block diagram of system, Page 13.A

## 6. Conducted Emission Data

6.1 The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

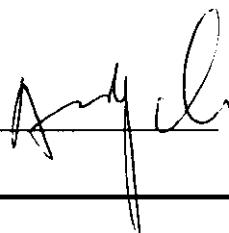
**Judgement: Passed by -14.54 dB in mode of Line terminal 0.23 MHz**

Test Mode : COM Port

Freq. (MHz)	Terminal	Measured(dBuV)		Limits(dBuV)		Safe Margins		
		L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dBuV)	Note
0.23	Line		47.80	*	62.34	52.34	-14.54	(QP)
0.30	Line		43.20	*	60.27	50.27	-17.07	(QP)
1.88	Line		36.80	*	56.00	46.00	-19.20	(QP)
2.72	Line		37.00	*	56.00	46.00	-19.00	(QP)
15.80	Line		36.84	*	60.00	50.00	-23.16	(QP)
0.23	Neutral		47.60	*	62.45	52.45	-14.85	(QP)
0.30	Neutral		43.00	*	60.24	50.24	-17.24	(QP)
2.00	Neutral		36.60	*	56.00	46.00	-19.40	(QP)
2.75	Neutral		36.80	*	56.00	46.00	-19.20	(QP)
15.80	Neutral		36.04	*	60.00	50.00	-23.96	(QP)

Remark :

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz ; SPA setting in RBW=100KHz, VBW =100KHz, Swp. Time = 0.3 sec./MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz, VBW=10Hz, Swp. Time =0.3 sec./MHz.
- (2) All readings are QP Mode value unless otherwise stated AVG in column of "Note". If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured.
- (3) Measuring frequency range from 150KHz to 30MHz.

Review :  Test Personnel : Ricker 1151 Date: March 31, 1999

## 6. Conducted Emission Data

**6.1** The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

**Judgement:** Passed by **-14.18 dB** in mode of **Line terminal 0.23 MHz**

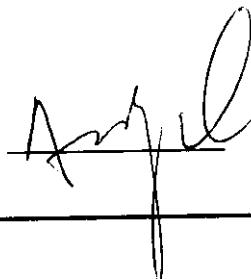
Test Mode : PS/2 Port

Freq. (MHz)	Terminal	Measured(dBuV)		Limits(dBuV)		Safe Margins		
		L/N	QP-Mode	AV-Mode	QP-Mode	AV-Mode	(dBuV)	Note
0.23	Line		48.20	*	62.38	52.38	-14.18	(QP)
0.30	Line		43.00	*	60.24	50.24	-17.24	(QP)
2.00	Line		38.40	*	56.00	46.00	-17.60	(QP)
2.72	Line		37.00	*	56.00	46.00	-19.00	(QP)
15.80	Line		38.84	*	60.00	50.00	-21.16	(QP)
0.23	Neutral		47.80	*	62.49	52.49	-14.69	(QP)
0.30	Neutral		43.20	*	60.35	50.35	-17.15	(QP)
2.00	Neutral		37.20	*	56.00	46.00	-18.80	(QP)
2.84	Neutral		37.20	*	56.00	46.00	-18.80	(QP)
15.80	Neutral		37.84	*	60.00	50.00	-22.16	(QP)

### Remark :

- (1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz ; SPA setting in RBW=100KHz, VBW =100KHz, Swp. Time = 0.3 sec./MHz 。 Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz, VBW=10Hz, Swp. Time =0.3 sec./MHz 。
- (2) All readings are QP Mode value unless otherwise stated AVG in column of "Note" . If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform 。 In this case, a " \* " marked in AVG Mode column of Interference Voltage Measured 。
- (3) Measuring frequency range from 150KHz to 30MHz 。

Review :



Test Personnel :

Riker 1154

Date:

March 31, 1999

## 7. Radiated Emission Datas

7.1 The following data lists the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, as well as the limit. Explanation of the Correction Factor is given in paragraph 7.2.

**Judgement:** Passed by **-3.18 dB** in polarity of **Vertical 127.070 MHz**

Test Mode : COM Port

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Safe Margins (dBuV/m)	Note
48.02	H	31.04	- 4.70	26.34	30.00	- 3.66	
54.99	V	31.39	- 5.17	26.22	30.00	- 3.78	
127.07	V	29.34	- 2.52	26.82	30.00	- 3.18	
150.70	V	28.20	- 2.73	25.47	30.00	- 4.53	
163.62	H	23.45	- 0.75	22.70	30.00	- 7.30	
184.70	H	21.41	2.17	23.58	30.00	- 6.42	
219.20	H	25.04	- 3.76	21.28	30.00	- 8.72	
229.60	H	25.94	- 3.50	22.44	30.00	- 7.56	
229.60	V	24.97	- 3.50	21.47	30.00	- 8.53	
257.60	V	28.98	- 1.67	27.31	37.00	- 9.69	
465.60	H	22.94	5.36	28.30	37.00	- 8.70	
663.20	V	22.71	10.16	32.87	37.00	- 4.13	

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=1MHz, VBW =1MHz, Swp. Time = 0.3 sec./MHz .
- (2) All readings are Peak unless otherwise stated QP in column of « Note ». Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform .
- (3) Measuring frequency range from 30MHz to 1000MHz .
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table .

Review :

Test Personnel :

Ricker 1154

Date:

March 30, 1999

## 7. Radiated Emission Datas

7.1 The following data lists the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, as well as the limit. Explanation of the Correction Factor is given in paragraph 7.2.

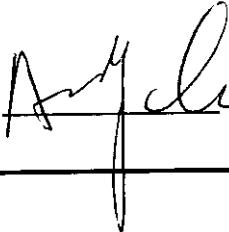
**Judgement:** Passed by **-3.53 dB** in polarity of **Vertical 487.20 MHz**

Test Mode : PS/2 Port

Freq. (MHz)	Ant. H/V	Reading(RA) (dBuV)	Corr.Factor(CF) (dB)	Measured(FS) (dBuV/m)	Limits(QP) (dBuV/m)	Safe Margins (dBuV/m)	Note
40.20	V	29.72	- 4.69	25.03	30.00	- 4.97	
131.83	H	27.69	- 2.78	24.91	30.00	- 5.09	
137.10	V	27.89	- 2.97	24.92	30.00	- 5.08	
150.53	H	28.60	- 2.75	25.85	30.00	- 4.15	
163.28	V	25.18	- 0.79	24.39	30.00	- 5.61	
181.47	H	23.14	1.91	25.05	30.00	- 4.95	
202.40	H	29.69	- 3.62	26.07	30.00	- 3.93	
203.20	V	24.10	- 3.63	20.47	30.00	- 9.53	
219.20	V	24.87	- 3.76	21.11	30.00	- 8.89	
229.60	H	25.53	- 3.50	22.03	30.00	- 7.97	
465.60	H	23.63	5.36	28.99	37.00	- 8.01	
487.20	V	27.03	6.44	33.47	37.00	- 3.53	

Remark :

- (1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz ; SPA setting in RBW=1MHz, VBW =1MHz, Swp. Time = 0.3 sec./MHz.
- (2) All readings are Peak unless otherwise stated QP in column of『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.
- (3) Measuring frequency range from 30MHz to 1000MHz.
- (4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

Review :  Test Personnel : Ricker 1154 Date: March 30, 1999

## 7-2. Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$\mathbf{FS = RA + AF + CF - AG}$$

Where **FS** = Field Strength

**RA** = Receiver Amplitude

**AF** = Antenna Factor (1)

**CF** = Cable Attenuation Factor (1)

**AG** = Amplifier Gain (1) (2)

### Remark :

(1) The Correction Factor =  $AF + CF - AG$ , as shown in the data tables' Correction Factor column.

(2) AG is not available for Neutron's Open Site Facility

### Example of Calculation:

Assume a Receiver Reading of 23.7 dBuV is obtained with an Antenna Factor of 7.2 dBuV and a Cable Factor of 1.1 dBuV. Then:

1. The Correction Factor will be caculated by

$$\mathbf{Correction\ Factor = AF + CF - AG = 7.2 + 1.1 - 0 = 8.3\ (dBuV)}$$

as shown in the data tables' Correction Factor column.

2. The Field Strength will be calculated by

$$\mathbf{FS = RA + Correction\ Factor = 23.7 + 8.3 = 32\ (dBuV).}$$

FS is the value shown in the data tables' Corrected Reading column and RA is the value shown in

the data tables' Receiver Reading column. The 32 dBuV/m value was mathematically converted to its corresponding level in uV/m as:

$$\mathbf{Log^{-1} [(32.0dBuV/m)/20] = 39.8\ (uV/m)}$$

**7-3. Correction Factor VS Frequency**

<b>Frequency (MHz)</b>	<b>Antenna Factor (dB)</b>	<b>Cable Loss (dB)</b>
30.00	11.10	0.90
35.00	10.80	0.50
40.00	11.20	1.00
45.00	11.50	0.80
50.00	11.30	1.00
55.00	10.50	1.30
60.00	9.90	1.00
65.00	8.70	1.50
70.00	7.60	1.20
75.00	6.40	1.40
80.00	6.10	1.30
85.00	7.00	1.40
90.00	8.00	1.70
95.00	10.00	1.50
100.00	11.20	1.90
110.00	12.60	2.00
120.00	13.00	1.80
130.00	12.50	1.80
140.00	12.00	2.00
150.00	12.00	2.20
160.00	13.20	2.40
170.00	14.80	2.50
180.00	16.30	2.50
190.00	17.00	2.50
200.00	17.30	2.40
225.00	10.50	2.70
250.00	11.70	3.10
275.00	12.80	3.70
300.00	14.50	4.00
325.00	14.00	4.50
350.00	14.20	4.50
375.00	14.60	4.60
400.00	15.10	4.80
450.00	16.20	5.40
500.00	17.60	6.50
550.00	17.80	7.00
600.00	18.40	7.10
650.00	19.50	7.10
700.00	20.80	7.20
750.00	20.50	7.50
800.00	21.10	8.00
850.00	22.40	8.60
900.00	23.50	8.90
950.00	24.00	9.70
1000.00	24.80	10.30

**8. Photos of Tested EUT:**

1. Photo # 1. Front View
2. Photo # 2. Front View
3. Photo # 3. Rear View
4. Photo # 4. Unit Partially Disassembled
5. Photo # 5. Unit Partially Disassembled
6. Photo # 6. Unit Partially Disassembled
7. Photo # 7. Unit Partially Disassembled