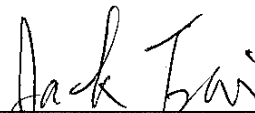



EXHIBIT B

Test Report

Report No.	C0915439	
Specifications	FCC Part 15.109(g), Class B	
Test Method	ANSI C63.4 1992	
Applicant Address	16F, No. 75, Hsin Tai Wu RD., Sec. 1, Bldg. #A, Hsi Chih, Taipei Hsien, 221 Taiwan	
Applicant Items Tested	CIS TECHNOLOGY, INC. 10/100 PCI Fast Ethernet Adapter	
Model No.	WS-R450 (Sample # C09439)	
Results	Compliance (As detailed within this report)	
Sample received date	03/06/2000 (month / day / year)	
Prepared by		project engineer
Authorized by		General Manager (Frank Tsai)
Issue date	Mar. 9, 2000	(month / day / year)
Modifications	None	
Tested by	Training Research Co., Ltd.	
Office at	2, Lane 194, Huan-Ho Street, Hsichih, Taipei Hsien 221, Taiwan	
Open Site at	No. 15, Lane 530, Pa-Lian RD., Sec. 1, Hsichih City, Taipei Hsien, Taiwan, R.O.C.	

Conditions of issue :

- (1) **This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.**
- (2) **This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.**

★FCC ID: L4OR450

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Chapter 1 Introduction

Description of EUT:

The EUT is a data transmission / receiver facility. It is designed to install in the PC or compatible computer and makes your data equipment available to transmit / receive data via the EUT. During testing the EUT was operated at Tx or Rx mode for each emission measured. This was done in order to insure that maximum emission levels were attained.

Connections of EUT:

- (1) Put the EUT into a personal computer's PCI bus and screw it.
- (2) The UTP port of EUT is connected with another LAN card installed in PC located remotely.

Test method:

The applicant provided the testing program

Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

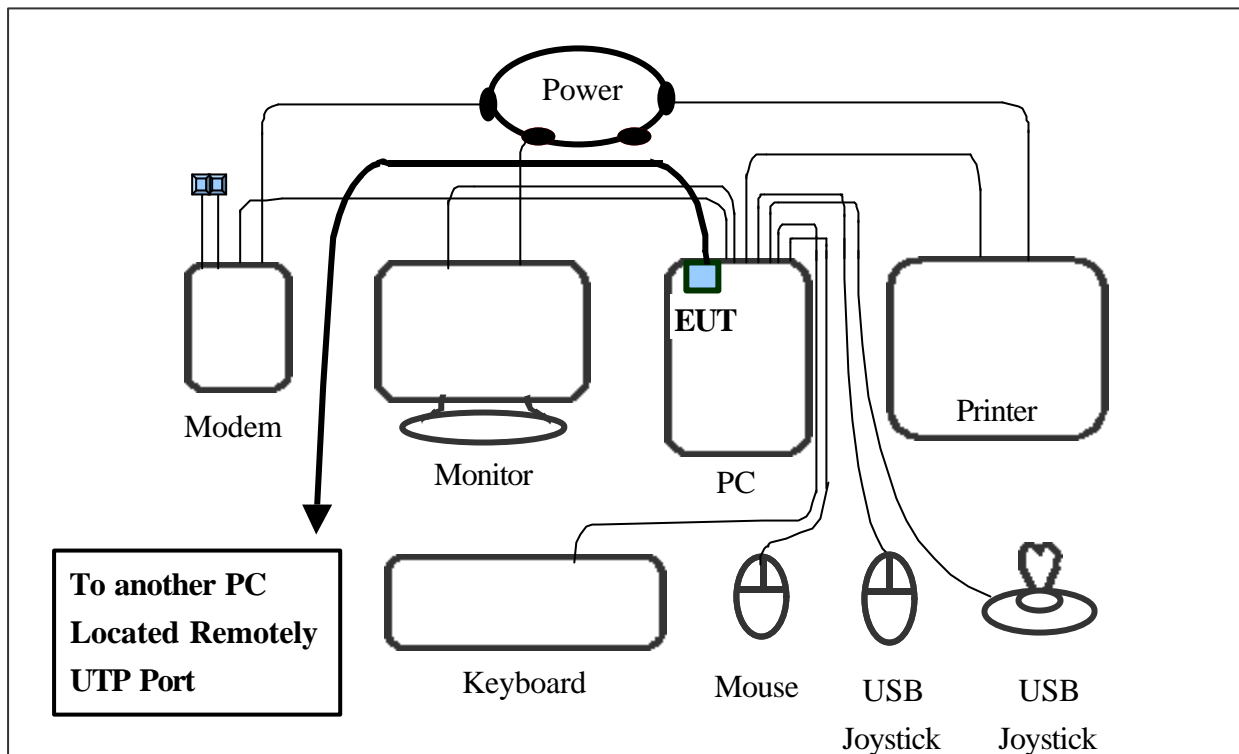
During the measurement, there are two modes tested: "10Mbps mode" and "100Mbps mode." The pretest was found out that the testing mode: "100Mbps" and "10Mbps-Vertical" were the worst cases.

During testing, the EUT was operated at "transmitting" and "receiving" mode simultaneously.

The test placement as the photographs showed is the worst case emission placed. (If the emission is close to the ambient, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

The testing configuration of test setup is showing in the next page.

Configuration of test setup



Connections:

PC:

- *Serial port --- via a 76cm shielded RS-232 cable to an external modem
 - *Printer port --- a printer with 1.2m length data cable
 - *Keyboard port --- a keyboard with 1m length data cable
 - *Mouse port --- a mouse with 1m length data cable
 - *Monitor port --- a monitor with 0.7m long of data cable
 - *USB port A --- a USB mouse with 1.5m long data cable
 - *USB port B --- a USB joystick with 1.5m long data cable
- (Each port on PC is connected with suitable device)

EUT:

- *UTP Port --- via a 30m long, non-shielded, no ferrite bead, RJ-45 cable to another LAN card that installed in another PC located in far-end

List of support equipment

Conducted (Radiated) test:

PC : **ACER Power 8000**
Model No. : M11E/H71-X30-99X
Serial No. : TM01356
FCC ID : N/A, Doc Approved
檢磁 : 3872A827
Power type : AC 100~120V, 50 ~60Hz, 5A / 200~240 VAC, 50 ~60Hz, 3A, Switching
Power cord : Non-shielded, 1.8m long, Plastic, no ferrite core

Monitor : **HP 15' Color Monitor**
Model No. : D2827A
Serial No. : KR91161719 (KR91161717)
FCC ID : C5F7NFCMC1518X
檢磁 : 3872B039
Power type : 110 ~ 240 VAC / 50 ~ 60 Hz, Switching
Power cord : Shielded, 1.83m long, No ferrite core
Data cable : Shielded, 1.46m long, with two ferrite cores

Keyboard : **Digital**
Model No. : KB-5923
Serial No. : 9S74904837 (9S74904665)
FCC ID : E8HKB-5923
Power type : By PC
Data cable : Shielded, 1.8m long, with ferrite core

Mouse : **HP**
Model No. : M-S34
Serial No. : LZB90714106 (LZB90714122)
FCC ID : DZL211029
檢磁 : 4862A011
Power type : By PC
Power cord : Non-shielded, 1.88m long, No ferrite core

Modem : **ACEEX**
Model No. : XDM-9624
FCC ID : IFAXDM-9624
Power type : 220VAC, 50Hz / 9VAC, 1A
Power cord : Non-shielded, 1.9m long, No ferrite cord
Data cable : RS232, Shielded, 1.2m long, No ferrite core
RJ11C x 2, 7' long non-shielded, No ferrite core

Printer : **HP**
Model No. : C2642A
Serial No. : SG69A196GV
FCC ID : B94C2642X
Power type : 220 VAC, 50Hz
Power cord : Non-shielded, 2m long, no ferrite core
Data cable : Shielded, 1.84m long, no ferrite core (1.7m)

USB Mouse : **Logitech (Chic Technology Corporation)**
Model No. : M-BA47 (CM-USB)
Serial No. : LZE92250027 (N/A)
FCC ID : N/A, Doc Approved
檢磁 : 4872A220 (N/A)
Power type : Powered by PC
Power Cable : Shielded, 1.5m long, Plastic hoods, No ferrite bead

USB Joystick : **Padix**
Model No. : QF-606U, QF-707U
Serial No. : N/A
FCC ID : N/A, Doc Approval
Power type : Powered by PC
Power Cable : Shielded, 1.5m long, No ferrite bead data cable

Chapter 2 Conducted Emission Test

Test condition and setup:

All the equipment is placed and setup according to the CISPR 22. The EUT is assembled on a wooden table which is 80 cm high, is placed 40 cm from the back-wall which is a vertical conducting plane. One LISN is for EUT, the other LISN is for support equipment. They are all placed on the conductive ground. The EUT's LISN connect a line switch box for selecting L1 or L2, then connect to a preamplifier and spectrum.

The spectrum scans from 150KHz to 30MHz. Conducted emission levels are detected at max. peak mode. But if the max. peak mode failed or over average limit, it will be measured by average detection mode.

While testing, there is the worst-emission plot printed at peak detection mode, and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report.

List of test Instrument :

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Calibration Date</u>	
				<u>Last time</u>	<u>Next time</u>
Spectrum analyzer	8594EM	H P	3710A00198	01/12/00	01/12/01
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/99	05/15/00
LISN (Support E.)	AC3-001	TRC	-----	05/15/99	05/15/00
Preamplifier	AC3-002	TRC	-----	05/15/99	05/15/00
Line switch box	AC3-003	TRC	-----	05/15/99	05/15/00

The level of confidence of 95%, the uncertainty of measurement of conducted emission is ± 2.4 dB.

Test Result : Pass (Appendix A)

Conducted Test Placement : (Photographs)



Chapter 3 Radiated Emission Test

Test condition and setup:

Pretest: Prior to the final test (OATS test), the EUT is placed in a shielded enclosure, and scan from 30MHz to 1GHz. This is done to ensure the radiation is exactly emitted from the EUT.

Final test: Final radiation measurements is made on a **10 – meter, open-field** test site. The EUT is placed on a nonconductive table, which is 0.8 m height, the top surface is 1.0 x 1.5 meter. All the placement is according to CISPR 22.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The range Antenna is used to measure frequency from 30 MHz to 1GHz.The final test is used the spectrum analyzer.

Measure more than six top marked frequencies generated form pretest by computer step by step at each frequency. The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meters to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier, which is made by TRC, is used for improving sensitivity and precautions is taken to avoid overloading. The spectrum analyzer’s 6dB bandwidth is set to 120 K Hz , and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the tester will recheck the data and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from shielded room will be taken as the final data.

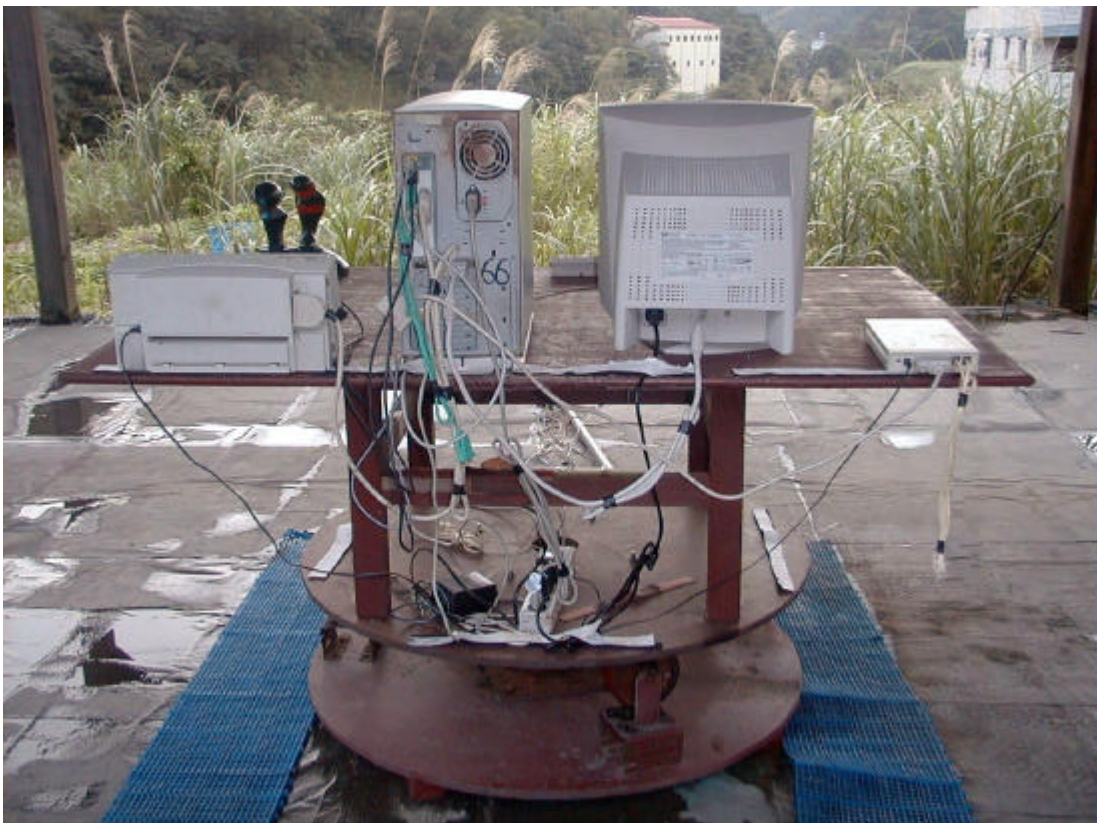
List of test Instrument :

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Calibration Date</u>	
				<u>Last time</u>	<u>Next time</u>
Spectrum analyzer	8594EM	H P	3710A00279	06/22/99	06/22/00
Spectrum analyzer	8594EM	H P	3710A00198	01/12/00	01/12/01
Antenna (30M-1.5G Hz)	VULB 9160	M.E.	3063	01/18/00	01/18/01
Antenna (30M-2G Hz)	3141	EMCO	9711-1076	05/15/99	05/15/00
RF Pre-selector	AC4-001	TRC	-----	05/15/99	05/15/00
Open test side (Antenna, Amplify, cable calibrated together)				05/15/90	05/15/00

The level of confidence of 95%, the uncertainty of measurement of radiated emission is ± 4.96 dB.

Test Result : Pass (Appendix B)

Radiated Test Placement : (Photographs)



Appendix A

Conducted Emission Test Result: (Test Mode: 10 Mbps)

Testing room : Temperature : 19 ° C Humidity : 89 % RH

Line 1

Frequency (KHz)	READING AMPLITUDE			LIMIT		Margin (dB)
	Peak (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	
151.00	46.38	***.**	***.**	65.97	55.97	-9.59
159.00	48.42	***.**	***.**	64.74	54.74	-6.32
165.00	49.07	***.**	***.**	65.57	55.57	-6.50
197.00	45.53	***.**	***.**	64.66	54.66	-9.13
202.00	43.76	***.**	***.**	64.51	54.51	-10.75
297.00	44.10	***.**	***.**	61.80	51.80	-7.70
430.00	36.34	***.**	***.**	58.00	48.00	-11.66
499.00	37.47	***.**	***.**	56.03	46.03	-8.56
793.00	34.07	***.**	***.**	56.00	46.00	-11.93
1055.00	36.74	***.**	***.**	56.00	46.00	-9.26

Line 2

Frequency (KHz)	READING AMPLITUDE			LIMIT		Margin (dB)
	Peak (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	
153.00	46.43	***.**	***.**	65.91	55.91	-9.48
164.00	47.99	***.**	***.**	65.60	55.60	-7.61
198.00	44.86	***.**	***.**	64.63	54.63	-9.77
297.00	44.43	***.**	***.**	61.80	51.80	-7.37
427.00	36.78	***.**	***.**	58.09	48.09	-11.31
499.00	38.13	***.**	***.**	56.03	46.03	-7.90
560.00	34.50	***.**	***.**	56.00	46.00	-11.50
1084.00	34.35	***.**	***.**	56.00	46.00	-11.65
1249.00	34.64	***.**	***.**	56.00	46.00	-11.36
1382.00	33.93	***.**	***.**	56.00	46.00	-12.07

*The reading amplitudes are all under average limit.

Conducted Emission Test Result: (Test Mode: 100 Mbps)

Testing room : Temperature : 19 ° C Humidity : 89 % RH

Line 1

Frequency (KHz)	READING AMPLITUDE			LIMIT		Margin (dB)
	Peak (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	
153.00	47.33	***.**	***.**	65.91	55.91	-8.58
165.00	49.59	***.**	***.**	65.57	55.57	-5.98
198.00	45.81	***.**	***.**	64.63	54.63	-8.82
299.00	44.43	***.**	***.**	61.74	51.74	-7.31
430.00	36.39	***.**	***.**	58.00	48.00	-11.61
499.00	37.38	***.**	***.**	56.03	46.03	-8.65
560.00	33.16	***.**	***.**	56.00	46.00	-12.84
658.00	33.36	***.**	***.**	56.00	46.00	-12.64
922.00	34.17	***.**	***.**	56.00	46.00	-11.83
1120.00	35.90	***.**	***.**	56.00	46.00	-10.10

Line 2154.00

Frequency (KHz)	166.00READING AMPLITUDE			LIMIT		Margin (dB)
	Peak198.0 0 (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	Quasi- Peak (dBmV/m)	Average (dBmV/m)	
154.00	46.47	***.**	***.**	65.89	55.89	-9.42
166.00	49.56	***.**	***.**	65.54	55.54	-5.98
198.00	45.36	***.**	***.**	64.63	54.63	-9.27
297.00	44.67	***.**	***.**	61.80	51.80	-7.13
430.00	37.08	***.**	***.**	58.00	48.00	-10.92
499.00	38.24	***.**	***.**	56.03	46.03	-7.79
560.00	34.20	***.**	***.**	56.00	46.00	-11.80
692.00	33.21	***.**	***.**	56.00	46.00	-12.79
960.00	33.64	***.**	***.**	56.00	46.00	-12.36
1199.00	33.77	***.**	***.**	56.00	46.00	-12.23

*The reading amplitudes are all under average limit.

Appendix B

Radiated Emission Test Result: (Horizontal) (Test Mode: 100 Mbps)

Test Conditions:

Testing room : Temperature : 20 ° C Humidity : 80 % RH
 Testing site : Temperature : 23 ° C Humidity : 89 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B Limit	Margin
MHz	dBµV	m	degree	dB/m	dBµV/m	dBµV/m	dB

40.000	40.54	4.01	227	-22.18	18.36	30.00	-11.64
45.053	38.99	2.50	172	-22.16	16.83	30.00	-13.17
216.064	48.16	4.01	272	-24.37	23.79	30.00	-6.21
498.975	40.06	0.99	70	-14.47	25.59	37.00	-11.41

Note:

1. Margin = Amplitude - limit, *if margin is minus means under limit.*
2. Corrected Amplitude = Reading Amplitude + Correction Factors
3. Correction factor = Antenna factor + (Cable Loss - Amplitude gain)
 (For example : 30MHz correction factor = 15.5 + (-15.26) = 0.24 dB/m)

Radiated Emission Test Result: (Vertical) (Test Mode: 100 Mbps)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B limit	Margin
MHz	dB μ V	m	degree	dB/m	dB μ V/m	dB μ V/m	dB

40.351	44.70	0.99	69	-22.18	22.52	30.00	-7.48
45.053	41.32	0.99	270	-22.16	19.16	30.00	-10.84
48.472	41.22	0.99	210	-21.90	19.32	30.00	-10.68
125.003	48.03	0.99	169	-21.88	26.15	30.00	-3.85
216.063	50.52	1.00	262	-24.37	26.15	30.00	-3.85

Radiated Emission Test Result: (Vertical) (Test Mode: 10 Mbps)

Test Conditions:

Testing room : Temperature : 20 ° C Humidity : 80 % RH
 Testing site : Temperature : 23 ° C Humidity : 89 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B Limit	Margin
MHz	dBµV	m	degree	dB/m	dBµV/m	dBµV/m	dB

46.550	37.34	0.99	7	-22.05	15.29	30.00	-14.71
200.003	50.53	0.98	293	-24.56	25.97	30.00	-4.03
216.063	50.24	0.98	111	-24.37	25.87	30.00	-4.13
238.756	45.82	2.50	16	-23.21	22.61	37.00	-14.39
