



EXHIBIT B

Test Report

| | | |
|----------------------|---|---------------------------------|
| Report No. | C0915792 | |
| 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, Taiwan | |
| Applicant | CIS TECHNOLOGY INC. | |
| Items tested | 10/100BASE-TX Fast Ethernet Card | |
| Model No. | WS-R430/W (Sample # C09792) | |
| Results | Compliance (As detailed within this report) | |
| Sample received date | 09/17/99 (month / day / year) | |
| Prepared by |  | project engineer |
| Authorized by |  | General Manager (Frank Tsai) |
| Issue date | Oct. 06, 1999 | (month / day / year) |
| Modifications | None | |
| Tested by | Training Research Co., Ltd. | |
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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.*
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★ **FCC ID: L40R430W**

Contents

Chapter 1 Introduction

| | |
|-----------------------------------|---|
| Description of EUT | 3 |
| Configuration of Test Setup | 4 |
| List of Support Equipment | 5 |

Chapter 2 Conducted Emission Test

| | |
|--------------------------------|---|
| Test Condition and Setup | 7 |
| Conducted Test Placement | 8 |

Chapter 3 Radiated Emission Test

| | |
|--------------------------------|----|
| Test Condition and Setup | 9 |
| Radiated Test Placement | 10 |

Appendix A :

| | |
|----------------------------|----|
| Conducted test result..... | 11 |
|----------------------------|----|

Appendix B :

| | |
|---------------------------|----|
| Radiated test result..... | 13 |
|---------------------------|----|

Chapter 1 Introduction

Description of EUT:

The 10/100 BASE-TX Fast Ethernet Card for PCI 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 another PC via a Hub located remotely.

Test method:

During the measurement, there are two modes tested: " 10 × 10Mbps " mode and " 100 × 100Mbps " mode.

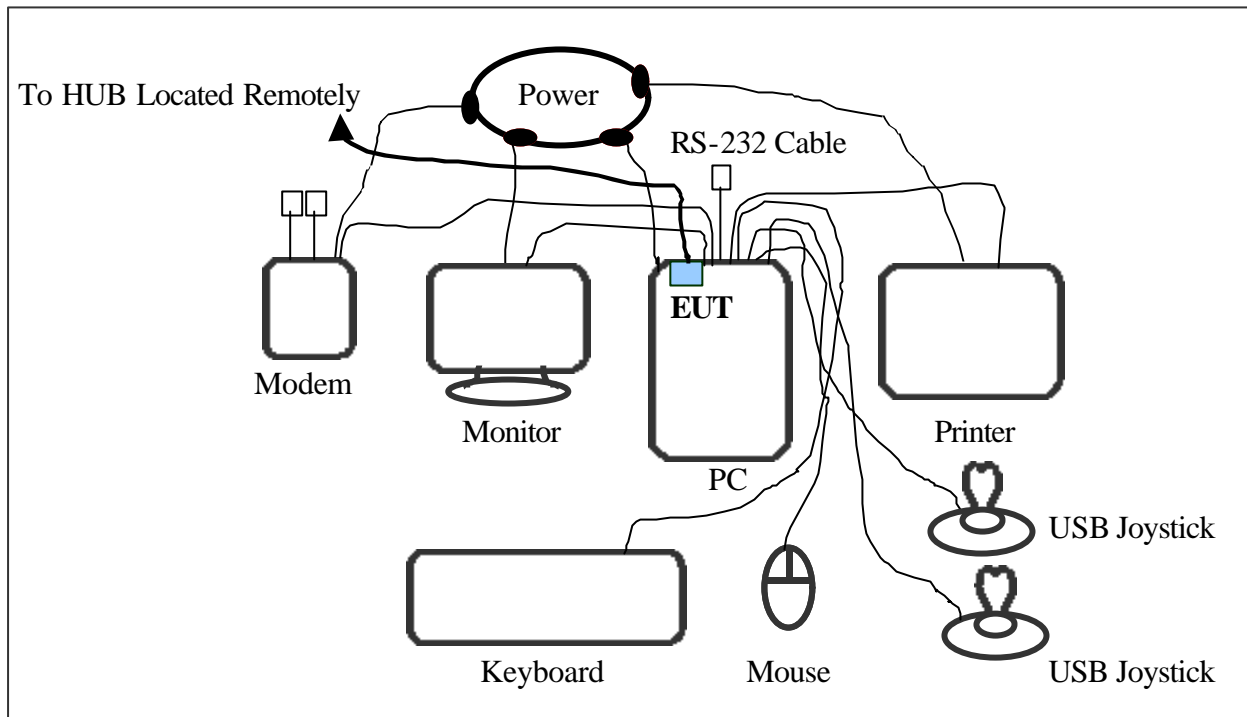
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

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

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 A port --- via a 76cm shielded RS-232 cable connected to an external modem
 - *Serial B port --- connected with a 76cm shielded RS-232 cable left unterminated
 - *Printer port --- a printer with 1.8m length data cable
 - *Keyboard port --- a keyboard with 1.5m length data cable
 - *Mouse port --- a mouse with 1.5m length data cable
 - *Monitor port --- a monitor with 1.8m long of data cable
 - *USB port A --- a joystick with 1.5m long, shielded and no ferrite bead data cable
 - *USB port B --- a joystick with 1.5m long, shielded and no ferrite bead data cable
- (Each port on PC is connected with suitable device)

EUT:

- * UTP port--- a 20m long, non-shielded, no ferrite bead, RJ-45 cable to the Hub located remotely.

List of support equipment

Conducted (Radiated) test:

PC : **ACER**
Model : M11E/H71-X35I19X
Serial No. : TM12535
FCC ID : DOC Approval
Power type : AC 100~120V, 50 ~60Hz, 5A / 200~240 VAC, 50 ~60Hz, 3A, Switching
Power cord : Non-Shielded, 1.7m 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 : **HP**
Model No. : SK-2501K
Serial No. : MR80700789, M990308909
FCC ID : GYUR38SK
檢磁 : 3862A621
Power type : By PC
Data cable : Shielded, 1.73m 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 (1.7m) long, no ferrite core

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 that 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 ,it will be measured by CISPR' s quasi-peak 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 | 3710A00279 | 01/07/99 | 01/07/00 |
| 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 anechoic chamber and scan from 30MHz to 1GHz.This is done to ensure the radiation exactly emits form the EUT.

Final test: Final radiation measurements are made on a **10 - meter**, open-field test site. The EUT is placed on a nonconductive table that is 0.8m 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 EMCO whole range Antenna is used to measure frequency from 30 MHz to 1GHz.The final test is used the spectrum HP 8594EM.

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 KHz, and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambient, the data will be rechecked by the tester and the corrected data will be written in the test data sheet. If the emission is just within the ambient, the data from anechoic chamber 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 | 3619A00198 | 11/17/98 | 11/17/99 |
| RF Pre-selector | AC4-001 | TRC | ----- | 05/15/99 | 05/15/00 |
| Antenna (30M-2G Hz) | 3141 | EMCO | 9711-1076 | 12/17/98 | 12/17/99 |
| 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: (10 X 10 Mbps)

Testing room : Temperature : 29 ° C Humidity : 66 % RH

Line 1

| Frequency (KHz) | READING AMPLITUDE | | | LIMIT | | Margin (dB) |
|--------------------|-------------------|----------------------------|---------------------|----------------------------|---------------------|----------------|
| | Peak (dBmV/m) | Quasi-Pea k (dBmV/m) | Average (dBmV/m) | Quasi-Pea k (dBmV/m) | Average (dBmV/m) | |
| 152.00 | 43.77 | ***.** | ***.** | 65.94 | 55.94 | -12.17 |
| 157.00 | 46.88 | ***.** | ***.** | 65.80 | 55.80 | -8.92 |
| 165.00 | 47.33 | ***.** | ***.** | 65.57 | 55.57 | -8.24 |
| 197.00 | 42.64 | ***.** | ***.** | 64.66 | 54.66 | -12.02 |
| 201.00 | 42.58 | ***.** | ***.** | 64.54 | 54.54 | -11.96 |
| 297.00 | 40.26 | ***.** | ***.** | 61.80 | 51.80 | -11.54 |
| 505.00 | 36.87 | ***.** | ***.** | 56.00 | 46.00 | -9.13 |
| 524.00 | 33.37 | ***.** | ***.** | 56.00 | 46.00 | -12.63 |
| 857.00 | 33.33 | ***.** | ***.** | 56.00 | 46.00 | -12.67 |
| 1316.00 | 35.52 | ***.** | ***.** | 56.00 | 46.00 | -10.48 |

Line 2

| Frequency (KHz) | READING AMPLITUDE | | | LIMIT | | Margin (dB) |
|--------------------|-------------------|----------------------------|---------------------|----------------------------|---------------------|----------------|
| | Peak (dBmV/m) | Quasi-Pea k (dBmV/m) | Average (dBmV/m) | Quasi-Pea k (dBmV/m) | Average (dBmV/m) | |
| 152.00 | 44.95 | ***.** | ***.** | 65.94 | 55.94 | -10.99 |
| 156.00 | 45.63 | ***.** | ***.** | 65.83 | 55.83 | -10.20 |
| 165.00 | 47.71 | ***.** | ***.** | 65.57 | 55.57 | -7.86 |
| 200.00 | 42.56 | ***.** | ***.** | 64.57 | 54.57 | -12.01 |
| 229.00 | 41.34 | ***.** | ***.** | 63.74 | 53.74 | -12.40 |
| 297.00 | 40.83 | ***.** | ***.** | 61.80 | 51.80 | -10.97 |
| 427.00 | 36.31 | ***.** | ***.** | 58.09 | 48.09 | -11.78 |
| 505.00 | 37.66 | ***.** | ***.** | 56.00 | 46.00 | -8.34 |
| 556.00 | 33.65 | ***.** | ***.** | 56.00 | 46.00 | -12.35 |
| 1120.00 | 36.29 | ***.** | ***.** | 56.00 | 46.00 | -9.71 |

*The reading amplitudes are all under average limit.

Conducted Emission Test Result: (100 X 100 Mbps)

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 | 42.97 | ***.*** | ***.*** | 65.97 | 55.97 | -13.00 |
| 159.00 | 47.29 | ***.*** | ***.*** | 65.74 | 55.74 | -8.45 |
| 164.00 | 46.75 | ***.*** | ***.*** | 65.60 | 55.60 | -8.85 |
| 200.00 | 43.13 | ***.*** | ***.*** | 64.57 | 54.57 | -11.44 |
| 230.00 | 39.67 | ***.*** | ***.*** | 63.71 | 53.71 | -14.04 |
| 297.00 | 40.13 | ***.*** | ***.*** | 64.80 | 51.80 | -11.67 |
| 427.00 | 36.62 | ***.*** | ***.*** | 58.09 | 48.09 | -11.47 |
| 505.00 | 36.95 | ***.*** | ***.*** | 56.00 | 46.00 | -9.05 |
| 1055.00 | 32.70 | ***.*** | ***.*** | 56.00 | 46.00 | -13.30 |
| 1120.00 | 33.33 | ***.*** | ***.*** | 56.00 | 46.00 | -12.67 |

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) | |
| 150.00 | 44.53 | ***.*** | ***.*** | 66.00 | 56.00 | -11.47 |
| 159.00 | 45.90 | ***.*** | ***.*** | 65.74 | 55.74 | -9.84 |
| 164.00 | 46.97 | ***.*** | ***.*** | 65.60 | 55.60 | -8.63 |
| 200.00 | 42.72 | ***.*** | ***.*** | 64.57 | 54.57 | -11.85 |
| 297.00 | 40.62 | ***.*** | ***.*** | 61.80 | 51.80 | -11.18 |
| 430.00 | 36.79 | ***.*** | ***.*** | 58.00 | 48.00 | -11.21 |
| 505.00 | 37.99 | ***.*** | ***.*** | 56.00 | 46.00 | -8.01 |
| 1055.00 | 33.85 | ***.*** | ***.*** | 56.00 | 46.00 | -12.15 |
| 1120.00 | 33.90 | ***.*** | ***.*** | 56.00 | 46.00 | -12.10 |
| 1316.00 | 33.77 | ***.*** | ***.*** | 56.00 | 46.00 | -12.23 |

*The reading amplitudes are all under average limit.

Appendix B

Radiated Emission Test Result : (Horizontal --- 100 X 100 Mbps)

Test Conditions:

Testing room : Temperature : 28 ° C Humidity : 46 % RH
 Testing site : Temperature : 29 ° C Humidity : 47 % 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 |

| | | | | | | | |
|---------|-------|------|-----|--------|-------|-------|--------|
| 34.122 | 41.24 | 4.00 | 193 | -23.33 | 17.91 | 30.00 | -12.09 |
| 39.675 | 43.86 | 2.51 | 265 | -22.25 | 21.61 | 30.00 | -8.39 |
| 598.769 | 40.54 | 4.00 | 5 | -16.69 | 23.85 | 37.00 | -13.15 |
| 602.280 | 37.77 | 0.99 | 186 | -16.81 | 20.96 | 37.00 | -16.04 |
| *** | | | | | | | |
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| | | | | | | | |

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 --- 100 X 100 Mbps)

| 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 |

| | | | | | | | |
|---------|-------|------|-----|--------|-------|-------|--------|
| 39.560 | 50.55 | 0.99 | 124 | -22.28 | 28.27 | 30.00 | -1.73 |
| 42.060 | 47.21 | 0.99 | 241 | -22.17 | 25.04 | 30.00 | -4.96 |
| 47.040 | 47.01 | 0.98 | 137 | -22.01 | 25.00 | 30.00 | -5.00 |
| 226.870 | 39.22 | 0.99 | 123 | -23.85 | 15.37 | 30.00 | -14.63 |
| 250.000 | 51.48 | 0.99 | 122 | -22.68 | 28.80 | 37.00 | -8.20 |
| *** | | | | | | | |
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Final statement:

This test report, measurements made by TRC are traceable to the NIST.

