

EXHIBIT B

Test Report

Test Report

Report No.

C0915210

Specifications
Test MethodFCC Part 15.109(g), Class B
ANSI C63.4 1992Applicant
address16F, No. 75 Hsin Tai Wu RD., Sec. 1 Bldg #A
Hsi-Chih, Taipei Hsien, TaiwanApplicant
Items tested
Model No.CIS TECHNOLOGY INC.
8 Port 10/100 Dual Speed Ethernet Hub
WS-DH08/V2 (Sample # C09210)Results
Sample received
data**Compliance** (As detailed within this report)
04/20/1999 (month / day / year)

Prepared by

project engineer

Authorized by

Vice General Manager
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(month / day / year)

Issue date

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Modifications

None

Tested by
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Taipei Hsien, Taiwan, R.O.C.**Conditions of issue:**

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- (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 : L40DH08V2

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Chapter 1 Introduction

Description of EUT:

HUB is a data transmission / receiver facility. It was connected to Lan card installed 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) The power jack of EUT was connected with the AC power source via a power adapter.
- (2) UTP port 1 and UTP port 8 were each connected with a Lan card installed in a PC located remotely.
- (3) The other UTP ports were terminated.

Test method:

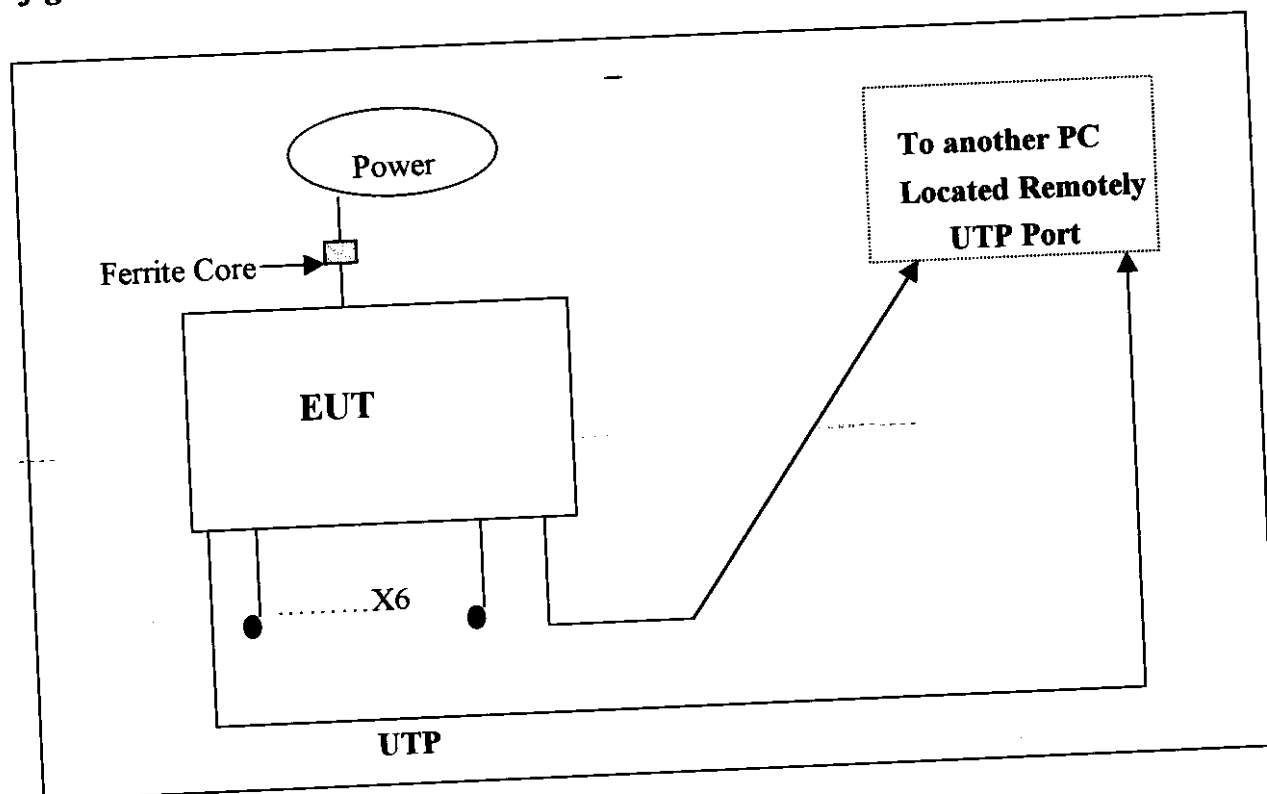
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

During pretest, there were three modes testing: 10 x 10MHz, 10 x 100MHz, 100 x 100MHz.

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.

Test Report**Configuration of test setup****Connections:****EUT:**

- *RJ45 cable X 2 --- 30m, Non-Shielded, Plastic Hood, No ferrite bead.
- *RJ45 cable X 6 --- 1m, Non-Shielded, Plastic Hood, No ferrite bead.
- *Power cable --- 1.8m, Non-Shielded, Metal Hood, with ferrite core.

Test Report**List of support equipment****Conducted (Radiated) test:**

PC : HP
Model : Vectra VE 5/166 SERIES 3
Serial No. : SG72450161, SG72450174
FCC ID : B94VECTRAVE53
Power type : 110~120 / 220~240 VAC, Switching
Power cord : non-Shielded, 1.7m long, Plastic, no ferrite core

Monitor : HP
Model No. : D2821
Serial No. : TW73107071, TW73512262
FCC ID : A3KM064
Power type : 110~120 / 220~240 VAC, Switching
Power cord : Non-Shielded, 3m long, no ferrite core
Data cable : Shielded, 1.8m long, with ferrite core

Keyboard : Digital
Model No. : KB-5923
Serial No. : 9S74904768, 9S74904741
FCC ID : E8HKB-5923
Power type : By PC
Data cable : Shielded, 1.8m long, with ferrite core

Lan Card : DELTA
Model No. : AEF380-TX
Serial No. : N/A
Power Type : Powered by PC
Data Cable : UTP, 7', Plastic RJ-45 hoods, No ferrite bead.

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 that 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.

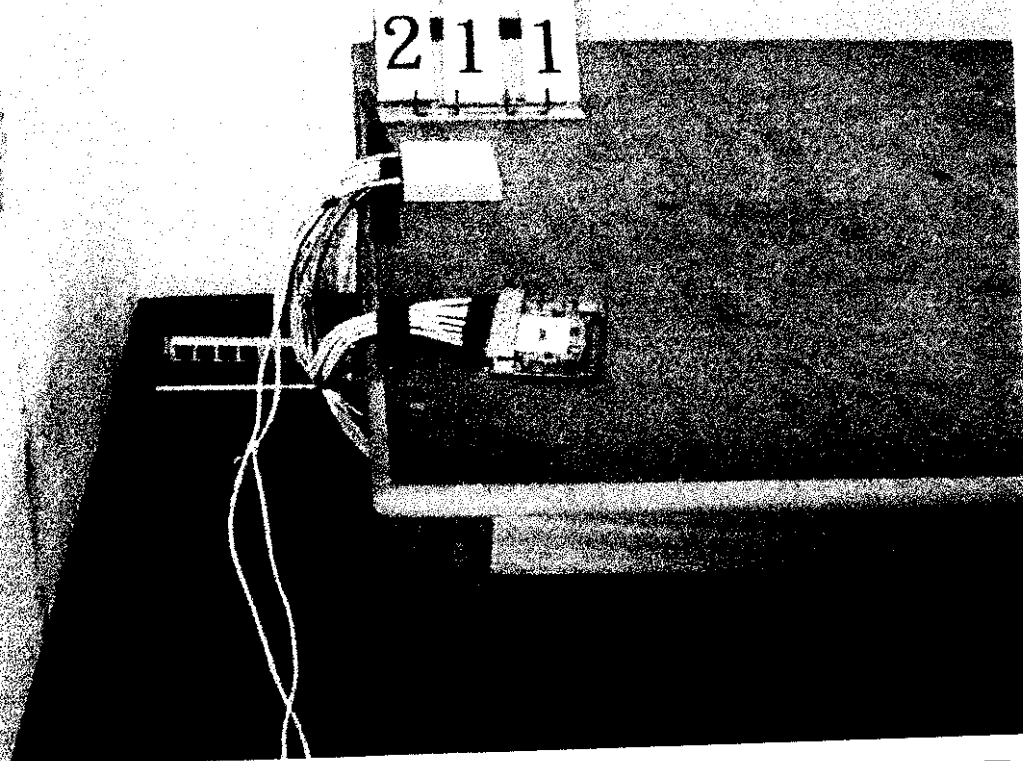
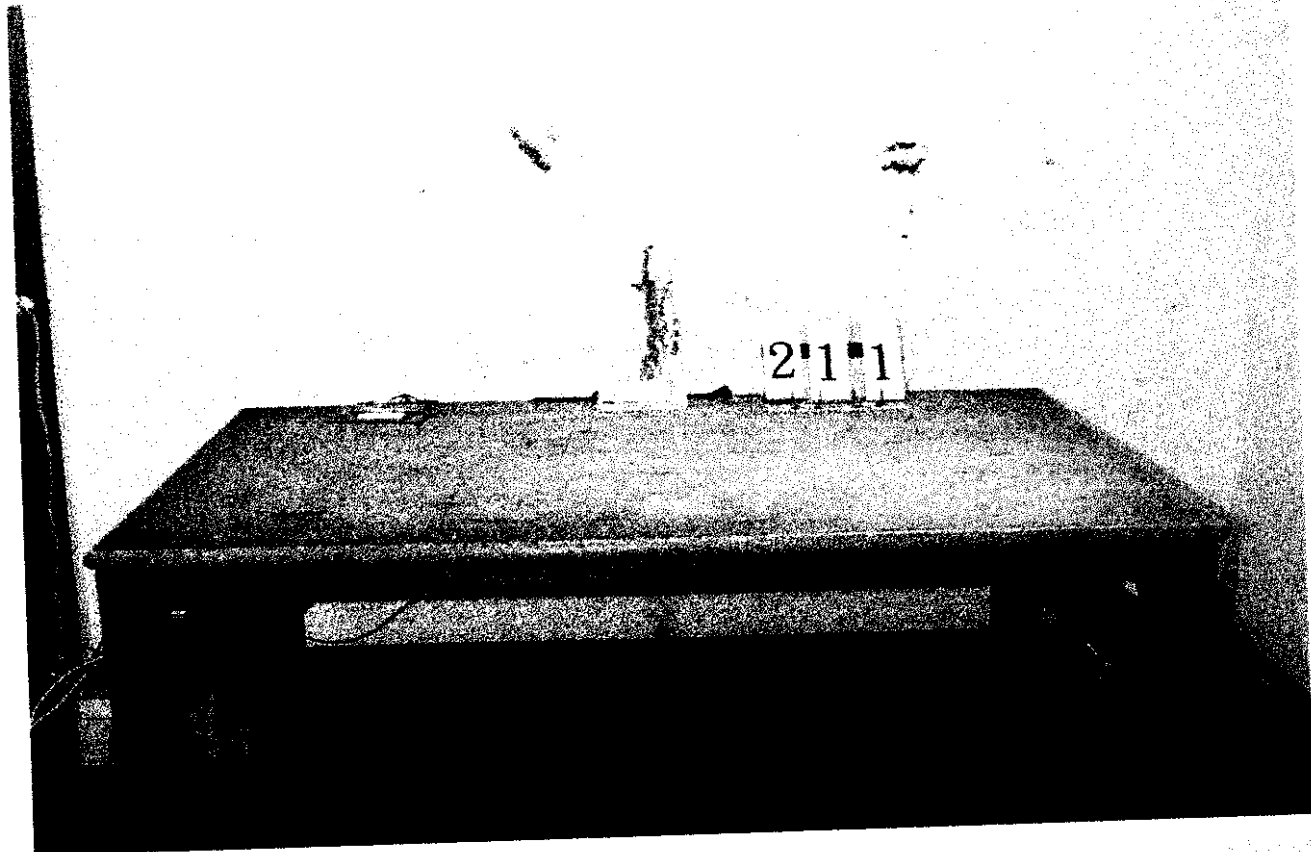
List of test Instrument:

| Instrument Name | Model No. | Brand | Serial No. | Calibration Date | |
|-------------------|-----------|-------|------------|------------------|-----------|
| | | | | Last time | Next time |
| Spectrum analyzer | 8594EM | H P | 3710A00279 | 01/07/99 | 01/07/00 |
| LISN (EUT) | 3825/2 | EMCO | 9411-2284 | 05/15/98 | 05/15/99 |
| LISN (Support E.) | AC3-001 | TRC | ----- | 05/15/98 | 05/15/99 |
| Preamplifier | AC3-002 | TRC | ----- | 05/15/98 | 05/15/99 |
| Line switch box | AC3-003 | TRC | ----- | 05/15/98 | 05/15/99 |

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:



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. 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:

Calibration Date

| Instrument Name | Model No. | Brand | Serial No. | Last | Next |
|--|-----------|-------|------------|----------|----------|
| Spectrum analyzer | 8594EM | H P | 3619A00198 | 11/17/98 | 11/17/99 |
| RF Pre-selector | AC4-001 | TRC | ----- | 05/15/98 | 05/15/99 |
| Antenna (30M-2G Hz) | 3141 | EMCO | 9711-1076 | 12/17/98 | 12/17/99 |
| Open test side (Antenna, Amplify, cable calibrated together) | | | | 05/15/98 | 05/15/99 |

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

Test Result: Pass (Appendix B)

Appendix A

Conducted Emission Test Result: (10 X 10 MHz)

Testing room: Temperature : 24 ° C Humidity : 57 % RH

Line 1

| FREQUENCY (KHz) | READING AMPLITUDE | | | LIMIT | | MARGIN (dB) |
|----------------------|-------------------|------------------------|---------------------|------------------------|---------------------|------------------|
| | Peak (dBμV/m) | Quasi-peak (dBμV/m) | Average (dBμV/m) | Quasi-Peak (dBμV/m) | Average (dBμV/m) | |
| 400 | 34.77 | **** * | **** * | 58.86 | 48.86 | -14.09 |
| 449 | 33.44 | **** * | **** * | 57.46 | 47.46 | -14.02 |
| 597 | 30.56 | **** * | **** * | 56.00 | 46.00 | -15.44 |
| 701 | 34.51 | **** * | **** * | 56.00 | 46.00 | -11.49 |
| 754 | 35.45 | **** * | **** * | 56.00 | 46.00 | -10.55 |
| 798 | 36.13 | **** * | **** * | 56.00 | 46.00 | -9.87 |
| 851 | 35.52 | **** * | **** * | 56.00 | 46.00 | -10.48 |
| 904 | 34.05 | **** * | **** * | 56.00 | 46.00 | -11.95 |
| 960 | 32.44 | **** * | **** * | 56.00 | 46.00 | -13.56 |
| 1003 | 32.34 | **** * | **** * | 56.00 | 46.00 | -13.66 |

Line 2

| FREQUENCY (KHz) | READING AMPLITUDE | | | LIMIT | | MARGIN (dB) |
|----------------------|-------------------|------------------------|---------------------|------------------------|---------------------|------------------|
| | Peak (dBμV/m) | Quasi-peak (dBμV/m) | Average (dBμV/m) | Quasi-Peak (dBμV/m) | Average (dBμV/m) | |
| 449 | 32.45 | **** * | **** * | 57.46 | 47.46 | -15.01 |
| 601 | 32.14 | **** * | **** * | 56.00 | 46.00 | -13.86 |
| 645 | 31.20 | **** * | **** * | 56.00 | 46.00 | -14.80 |
| 705 | 33.67 | **** * | **** * | 56.00 | 46.00 | -12.33 |
| 744 | 34.46 | **** * | **** * | 56.00 | 46.00 | -11.54 |
| 798 | 33.14 | **** * | **** * | 56.00 | 46.00 | -12.86 |
| 851 | 34.55 | **** * | **** * | 56.00 | 46.00 | -11.45 |
| 904 | 33.63 | **** * | **** * | 56.00 | 46.00 | -12.37 |
| 954 | 30.55 | **** * | **** * | 56.00 | 46.00 | -15.45 |
| 1106 | 29.55 | **** * | **** * | 56.00 | 46.00 | -16.45 |

* The reading amplitudes are all under average limit.

Conducted Emission Test Result: (10 X 100 MHz)

Testing room: Temperature : 24 ° C Humidity : 57 % RH

Line 1

| FREQUENCY (KHz) | READING AMPLITUDE | | | LIMIT | | MARGIN (dB) |
|----------------------|------------------------|------------------------------|---------------------------|------------------------------|---------------------------|------------------|
| | Peak (dB μ V/m) | Quasi-peak (dB μ V/m) | Average (dB μ V/m) | Quasi-Peak (dB μ V/m) | Average (dB μ V/m) | |
| 397 | 35.10 | **** * | **** * | 58.94 | 48.94 | -13.84 |
| 645 | 31.63 | *** ** | **** * | 56.00 | 46.00 | -14.37 |
| 754 | 29.82 | *** ** | **** * | 56.00 | 46.00 | -16.18 |
| 803 | 34.78 | *** ** | **** * | 56.00 | 46.00 | -11.22 |
| 851 | 34.17 | *** ** | **** * | 56.00 | 46.00 | -11.83 |
| 904 | 31.26 | *** ** | **** * | 56.00 | 46.00 | -14.74 |
| 947 | 32.60 | *** ** | **** * | 56.00 | 46.00 | -13.40 |
| 1003 | 31.03 | *** ** | **** * | 56.00 | 46.00 | -14.97 |
| 1091 | 34.31 | *** ** | **** * | 56.00 | 46.00 | -11.69 |
| 1192 | 31.23 | *** ** | **** * | 56.00 | 46.00 | -14.77 |

Line 2

| FREQUENCY (KHz) | READING AMPLITUDE | | | LIMIT | | MARGIN (dB) |
|----------------------|------------------------|------------------------------|---------------------------|------------------------------|---------------------------|------------------|
| | Peak (dB μ V/m) | Quasi-peak (dB μ V/m) | Average (dB μ V/m) | Quasi-Peak (dB μ V/m) | Average (dB μ V/m) | |
| 400 | 35.14 | **** * | **** * | 58.86 | 48.86 | -13.72 |
| 499 | 34.26 | **** * | **** * | 56.03 | 46.03 | -11.77 |
| 645 | 32.58 | **** * | **** * | 56.00 | 46.00 | -13.42 |
| 749 | 30.43 | **** * | **** * | 56.00 | 46.00 | -15.57 |
| 793 | 34.74 | **** * | **** * | 56.00 | 46.00 | -11.26 |
| 845 | 36.06 | **** * | **** * | 56.00 | 46.00 | -9.94 |
| 898 | 32.90 | **** * | **** * | 56.00 | 46.00 | -13.10 |
| 1015 | 30.45 | **** * | **** * | 56.00 | 46.00 | -15.55 |
| 1070 | 32.06 | **** * | **** * | 56.00 | 46.00 | -13.94 |
| 1156 | 32.27 | **** * | **** * | 56.00 | 46.00 | -13.73 |

* The reading amplitudes are all under average limit.

Test Report**Conducted Emission Test Result: (100 X 100 MHz)**

Testing room: Temperature : 24 ° C Humidity : 57 % RH

Line 1

| FREQUENCY (KHz) | READING AMPLITUDE | | | LIMIT | | MARGIN (dB) |
|----------------------|------------------------|------------------------------|---------------------------|------------------------------|---------------------------|------------------|
| | Peak (dB μ V/m) | Quasi-peak (dB μ V/m) | Average (dB μ V/m) | Quasi-Peak (dB μ V/m) | Average (dB μ V/m) | |
| 394 | 33.12 | *** ** | *** ** | 59.03 | 49.03 | -15.91 |
| 489 | 30.85 | *** ** | *** ** | 56.31 | 46.31 | -15.46 |
| 697 | 31.59 | *** ** | *** ** | 56.00 | 46.00 | -14.41 |
| 798 | 30.73 | *** ** | *** ** | 56.00 | 46.00 | -15.27 |
| 851 | 34.20 | *** ** | *** ** | 56.00 | 46.00 | -11.80 |
| 904 | 35.38 | *** ** | *** ** | 56.00 | 46.00 | -10.62 |
| 947 | 34.91 | *** ** | *** ** | 56.00 | 46.00 | -11.09 |
| 997 | 36.61 | *** ** | *** ** | 56.00 | 46.00 | -9.39 |
| 1048 | 32.16 | *** ** | *** ** | 56.00 | 46.00 | -13.84 |
| 1106 | 30.33 | *** ** | *** ** | 56.00 | 46.00 | -15.67 |

Line 2

| FREQUENCY (KHz) | READING AMPLITUDE | | | LIMIT | | MARGIN (dB) |
|----------------------|------------------------|------------------------------|---------------------------|------------------------------|---------------------------|------------------|
| | Peak (dB μ V/m) | Quasi-peak (dB μ V/m) | Average (dB μ V/m) | Quasi-Peak (dB μ V/m) | Average (dB μ V/m) | |
| 397 | 36.41 | *** ** | *** ** | 58.94 | 48.94 | -12.53 |
| 499 | 32.91 | *** ** | *** ** | 56.03 | 46.03 | -13.12 |
| 641 | 31.93 | *** ** | *** ** | 56.00 | 46.00 | -14.07 |
| 803 | 32.36 | *** ** | *** ** | 56.00 | 46.00 | -13.64 |
| 851 | 33.90 | *** ** | *** ** | 56.00 | 46.00 | -12.10 |
| 904 | 31.92 | *** ** | *** ** | 56.00 | 46.00 | -14.08 |
| 947 | 29.48 | *** ** | *** ** | 56.00 | 46.00 | -16.52 |
| 1015 | 31.49 | *** ** | *** ** | 56.00 | 46.00 | -14.51 |
| 1048 | 37.52 | *** ** | *** ** | 56.00 | 46.00 | -8.48 |
| 1142 | 29.94 | *** ** | *** ** | 56.00 | 46.00 | -16.06 |

* The reading amplitudes are all under average limit.

Appendix B

Radiated Emission Test Result: (Horizontal) (100 X 100 MHz)

Test Conditions:

Testing room : Temperature : 21 ° C Humidity : 45 % RH
 Testing site : Temperature : 21 ° C Humidity : 49 % RH

| 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 |

| | | | | | | | |
|---------|-------|------|-----|--------|-------|-------|-------|
| 124.990 | 45.39 | 0.99 | 77 | -21.89 | 23.50 | 30.00 | -6.50 |
| 600.020 | 45.12 | 2.52 | 94 | -16.67 | 28.45 | 37.00 | -8.55 |
| 650.010 | 50.28 | 0.99 | 252 | -18.75 | 31.53 | 37.00 | -5.47 |
| 749.990 | 47.11 | 0.99 | 105 | -18.07 | 29.04 | 37.00 | -7.96 |
| *** | | | | | | | |
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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) (10 X 10 MHz)

| 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 |

| | | | | | | | |
|---------|-------|------|-----|--------|-------|-------|--------|
| 37.500 | 43.51 | 2.51 | 94 | -22.74 | 20.77 | 30.00 | -9.23 |
| 69.980 | 52.71 | 0.99 | 283 | -24.14 | 28.57 | 30.00 | -1.43 |
| 169.990 | 42.53 | 0.99 | 342 | -22.06 | 20.47 | 30.00 | -9.53 |
| 190.000 | 43.60 | 0.99 | 328 | -24.19 | 19.41 | 30.00 | -10.59 |
| 200.020 | 43.60 | 4.01 | 226 | -24.56 | 19.04 | 30.00 | -10.96 |
| 375.000 | 46.55 | 0.99 | 337 | -18.73 | 27.82 | 37.00 | -9.18 |
| *** | | | | | | | |
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Final statement:

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