# EXHIBIT B

Test Report

Report No.

Specifications
Test Method

Applicant address

Applicant
Items tested
Model No.

Results Sample received data

Prepared by

Authorized by

Issue date

**Modifications** 

Tested by Office and Open site at C0915508

FCC Part 15.109(g), Class B ANSI C63.4 1992

16F, No. 75 Hsin Tai Wu RD., Sec. 1 Bldg #A Hsi-Chih, Taipei Hsien, Taiwan

CIS TECHNOLOGY INC. 56K Fax/Data/Voice modem card WS-5614JS2 (Sample # C09508)

As detailed within this report 03/13/1998 (month / day / year)

project engineer

Vice General Manager (Jacob Lin) (month / day / year)

None

Training Research Co., Ltd.

No. 15, Lane 530, Pa-Lian RD., Sec. 1, Hsi-Chih Town,

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.
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# Chapter 1 Introduction

#### **Description of EUT:**

This 56K Fax/Data/Voice modem card is a data communication device. It is designed to install in the personal computer and makes your data equipment available to transmit and receive data via the public telephone network.

# Connections of EUT:

- (1) Put the EUT into a personal computer's bus and screw it.
- (2)Line jack of EUT connects with a line cable to the PABX located remotely.
- (3) Phone jack of EUT connects with a telephone set.
- (4) Spk jack of EUT connects a pairs of speakers.
- (5) Mic jack of EUT connects a microphone.

#### Test method:

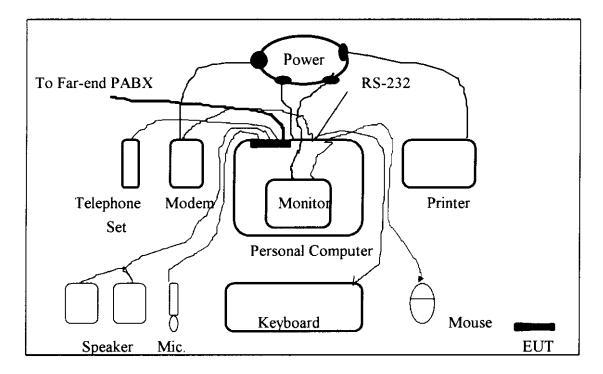
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

During testing, the EUT was operated at "transmitting" and "receiving" mode simultaneously. While testing, the transmitting rate was set to "AUTO" which means it transmitted the test file depending on the telephone line condition, normally the operating rate is the highest speed. 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.

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# Configuration of test setup



#### Connections:

#### PC:

- \*Serial A port --- a external modem
- \*Serial B port --- a 76 cm shielded RS232 cable
- \*Printer port --- a Printer
- \*Keyboard port --- a Keyboard
- \*Mouse port --- a Mouse
- \*Monitor port --- a monitor

(Each port on PC is connected with suitable device)

#### EUT:

- \*Line jack --- via 15 m RJ11C cable to PABX located remotely
- \*Phone jack --- via a 7 feet RJ11C cable to telephone set
- \*Spk. jack --- a pairs of speakers with 1.2 m long wire
- \*Mic. Jack --- a dynamic microphone with 3 m long wire

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# List of support equipment

# Conducted (Radiated) test:

PC: HP

Model Vectra VE2

Serial No. : SG61803151 (SG61802786)

FCC ID HCJVECTRAVL5

Power type : AC 117 VAC, switching

Power cord : non-Shielded, 1.7m long, Plastic, no ferrite core

Monitor : HP

Model No. : D2084 (D2813)

Serial No. : KR4397004 (TW63803597) FCC ID : CSYSC-428VSP (A3KM043)

Power type : 117VAC, Switching

Power cord : Non-Shielded, 3m long, no ferrite core
Data cable : Shielded, 1.8m long, with ferrite core

Keyboard: HP

Model No. : C3757 #ABO (C3346A #ABO) Serial No. : C3757-60423 (C3346-60231)

FCC ID : CIGE03614

Power type : By PC

Data cable : Shielded, 1.8m long, with ferrite core

Printer : EPSON

Model No. : P78PA (P70RA)

Serial No. : 0EE0014030 (10010386)

FCC ID : BKM9A8P70RA

Power type : Linear

Power cord : Non-shielded, 2m long, no ferrite core

Data cable : Shielded, 1.84m long, no ferrite core (1.7m)

Modem : ACEEX

Model No. : XDM-9624

FCC ID : IFAXDM-9624

Power type : Linear

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

PABX : King Design

Model No. : KD8705-A

Serial No. : GV101101186

Power type : 110 VAC 50/60Hz

Power cord : Non - Shielded

Microphone : KOKA

Model : DM-515 Power type : Dynamic

Data cable : non-Shielded, 3m

Speaker : J-S

Model : J-006

Data cable : non-Shielded, 1.2 m

# Chapter 2 Conducted emission test

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# Test condition and setup:

All the equipment is placed and setup according to the EN 55022.

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, it will be measured by CISPR's quasi-peak detection mode.

While testing, there is a 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:

#### Calibration Date Last time Next time Instrument Name Model No. Brand Serial No. Spectrum analyzer 8591EM ΗP 10/06/97 10/06/98 3619A00821 LISN (EUT) 3825/2 EMCO 9411-2284 05/15/97 05/15/98 LISN (Support E.) 3825/2 EMCO 9210-2007 05/15/97 05/15/98 Preamplifier 8447F ΗP 2944A03706 05/13/97 05/15/98 Line switch box AC1-003 **TRC** ----- 05/15/97 05/15/98 Line selector AC1-002 TRC ----- 05/15/97 05/15/98

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

Test Result: Pass (Appendix A)

Test date: 04/13/98, Training Research Co., Ltd., TEL: 886-2-7881332,Fax: 886-2-7857408

# 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, GTEM, and scan from 30MHz to 1GHz. This is done to ensure the radiation exactly emits form 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  $1.0 \times 1.5$  meter. All the placement is according to EN 55022.

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 GTEM will be taken as the final data.

# List of test Instrument:

#### **Calibration Date**

Instrument name	Model No.	Brand	Serial No.	Last	Next
Spectrum analyzer	8568B	ΗP	3004A18617	05/15/97	05/15/98
Quasi-peak Adapter	85650A	ΗP	2521A00984	05/15/97	05/15/98
RF Pre-selector	85685A	ΗP	2947A01011	05/15/97	05/15/98
Spectrum analyzer	8594EM	ΗP	3619A00198	08/13/97	08/13/98
Antenna (30M-2G Hz)	3141	<b>EMCO</b>	9706-1049	01/30/97	12/30/98
Open test side (Antenna	i, Amplify, cabl	le calibrate	ed together)	05/15/97	05/15/98

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

# Test Result: Pass (Appendix B)

Test date: 04/13/98, Training Research Co., Ltd., TEL: 886-2-7881332, Fax: 886-2-7857408

# Appendix A

#### Conducted Emission Test Result:

Testing room : Temperature : 28 ° C Humidity : 63 % RH

#### Line 1

<u>Line 1</u>			•
Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV/m)	Margin (dB)
0.225	34.72	63,85	-29.13
1.048	33.32	56.00	-22.68
2.843	41.72	56.00	-14.28
3.590	44.22	56.00	-11.78
4.113	39.62	56.00	-16.38
5.307	38.74	60.00	-21.26
5.382	38.63	60.00	-21.37
6.277	35.38	60.00	-24.62
8.290	33.81	60.00	-26.19
8.514	33.46	60.00	-26.54

#### Line 2

Line 4			
Frequency (MHz)	Amplitude (dBuV)	Limit (dBuV)	Margin (dB)
0.150	39.94	66.00	-26.06
1.048	33.50	56.00	-22.50
2.693	41.10	56.00	-14.90
3.441	44.11	56.00	-11.89
4.113	40.75	56.00	-15.25
5.382	38.12	60.00	-21.88
6.501	35.69	60.00	-24.31
8.216	33.38	60.00	-26.62
8.514	32.89	60.00	-27.11
9.110	29.65	60.00	-30.35

# Appendix B

# Radiated Emission Test Result: (Horizontal)

Test Conditions:

Testing room: Temperature : 25 ° C Humidity: 66 % RH
Testing site : Temperature : 28 ° C Humidity: 63 % RH

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B	Margin
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
		·		-			<b>1</b>
112.899	42.94	2.48	0	-24.62	18.32	30.00	-11.68
114.589	39.99	4.00	346	-24.63	15.36	30.00	-14.64
141.119	43.81	3.99	106	-23.53	20.28	30.00	-9.72
169.340	45.06	3.99	54	-22.99	22.07	30.00	-7.93
197.563	48.01	3.99	170	-22.84	25.17	30.00	-4.83
200.491	48.42	2.48	270	-22.73	25.69	30.00	-4.31
310.456	45.98	3.99	18	-19.03	26.95	37.00	-10.05
***							

#### 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)

Frequency	Reading Amplitude	Ant. Height	Table	Correction Factors	Corrected Amplitude	Class B	Margin
MHz	dBuV	m	degree	dB/m	dBuV/m	dBuV/m	dB
		т	· · · · · · · · · · · · · · · · · · ·				
112 800	47.05	2.51	1147	24.62	22.43	30.00	7.57

141.119     50.31     2.50     49     -23.53     26.78     30.00     -3.22       169.340     44.33     0.99     172     -22.99     21.34     30.00     -8.66       197.563     48.25     0.99     82     -22.84     25.41     30.00     -4.59       200.491     48.77     2.50     252     -22.73     26.04     30.00     -3.96       310.456     47.17     0.99     316     -19.03     28.14     37.00     -8.86	112.899	47.05	2.51	147	-24.62	22.43	30.00	-7.57
169.340     44.33     0.99     172     -22.99     21.34     30.00     -8.66       197.563     48.25     0.99     82     -22.84     25.41     30.00     -4.59       200.491     48.77     2.50     252     -22.73     26.04     30.00     -3.96       310.456     47.17     0.99     316     -19.03     28.14     37.00     -8.86	114.589	46.24	0.99	88	-24.63	21.61	30.00	-8.39
197.563     48.25     0.99     82     -22.84     25.41     30.00     -4.59       200.491     48.77     2.50     252     -22.73     26.04     30.00     -3.96       310.456     47.17     0.99     316     -19.03     28.14     37.00     -8.86	141.119	50.31	2.50	49	-23.53	26.78	30.00	-3.22
200.491     48.77     2.50     252     -22.73     26.04     30.00     -3.96       310.456     47.17     0.99     316     -19.03     28.14     37.00     -8.86	169.340	44.33	0.99	172_	-22.99	21.34	30.00	-8.66
310.456 47.17 0.99 316 -19.03 28.14 37.00 -8.86	197.563	48.25	0.99	82	-22.84	25.41	30.00	-4.59
	200.491	48.77	2.50	252	-22.73	26.04	30.00	-3.96
***	310.456	47.17	0.99	316	-19.03	28.14	37.00	-8.86
	***							
								<u> </u>

#### Final statement:

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