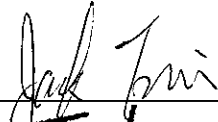
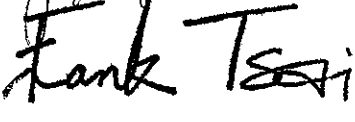


Report No.	A0415413	
Specifications	FCC Part 15, Class B	
Test Method	ANSI C63.4 1992	
Applicant address	2F, NO. 2, ALLEY 1, SZE-WEI LANE CHUNG-CHENG RD., HSINTIEN, TAIPEI, TAIWAN	
Applicant	ACEEX CORPORATION	
Items tested	ADSL	
Model No.	ADSL-PRO (Sample # A04413)	
Results	Compliance (As detailed within this report)	
Date	09/01/2000 (month / day / year) (Sample received) 09/21/2000 (month / day / year) (Test)	
Prepared by		Project Engineer
Authorized by		General Manager (Frank Tsai)
Issue date	October 9, 2000	(month / day / year)
Modifications	None	
Tested by	Training Research Co., Ltd.	
Office at	2, Lane 194, Huan-Ho Street, His-Chih, Taipei Hsien 221, Taiwan	
Chamber at	2, Lane 194, Huan-Ho Street, His-Chih, Taipei Hsien 221, Taiwan	

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.**

★ NVLAP LAB CODE: 200174-0

★ FCC ID: IFAX-ADSL

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Chapter 1 Introduction

Description of EUT:

This ADSL interface card is a data communication device. It is designed to install in the personal computer and makes data transmission available via the public telephone network.

Connections of EUT:

- (1) Install the EUT into a personal computer's PCI interface and screw it.
- (2) Line jack of EUT is connected with a line cable to the ADSL PABX located remotely.

Test method:

The applicant provides the test program

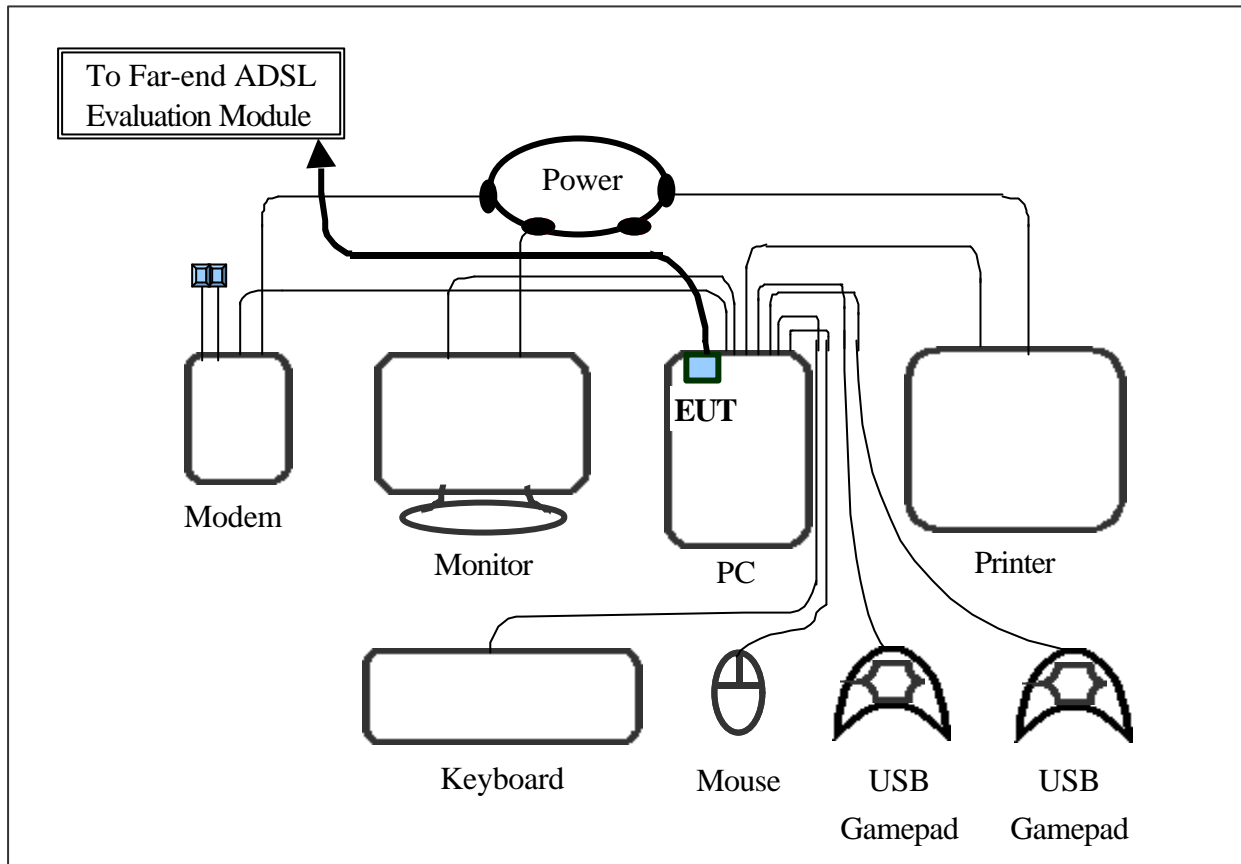
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

When the measurement was taken, 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.

Configuration of test setup



Connections:

PC:

- *Serial port --- via a 185cm shielded RS-232 cable to external modem
 - *Printer port --- a printer with 1.84m length data cable
 - *Monitor port --- a monitor with 1.46m length data cable
 - *Keyboard port --- a keyboard with 1.73m length data cable
 - *Mouse port --- a mouse with 1.88m long of data cable
 - *USB A port --- a USB gamepad with 1.8m long, shielded, no ferrite bead data cable
 - *USB B port --- a USB gamepad with 1.8m long, shielded, no ferrite bead data cable
- (Each port on PC is connected with suitable device)

EUT:

- *Line jack --- via 15m long, non-shielded, no ferrite bead, RJ-11 cable to the ADSL evaluation module located remotely

List of support equipment

Conducted (Radiated) test:

PC : **HP Brio 8410 6/350**
Model No. : D6928A
Serial No. : TW90400174
FCC ID : N/A (Doc Approved)
檢磁 : 3872H013
Power type : 100 ~ 230VAC / 50 ~ 60Hz, 5A, Switching
Power cord : Non-shielded, 2.30m long, Plastic, No ferrite core

Monitor : **HP 15' Color Monitor**
Model No. : D2832A
Serial No. : MY90615892
FCC ID : N/A (Doc Approved)
檢磁 : 4872A167
Power type : 110 ~ 240 VAC / 50 ~ 60 Hz, Switching
Power cord : Shielded, 1.80m long, No ferrite core
Data cable : Shielded, 1.50m long, with two ferrite cores

Keyboard : **HP**
Model No. : SK-2501K
Serial No. : MR80700789
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
FCC ID : DZL211029
檢磁 : 4862A011
Power type : By PC
Power cord : Non-shielded, 1.88m long, No ferrite core

USB Gamepad: Chic Technology Corporation

Model No. : G48031
Serial No. : N/A, Doc Approved
FCC ID : IOWCM-USB
Power type : Powered by PC
Data Cable : Shielded. 1.8m long, No ferrite bead

DSL Lab Test System: AWARE

Model No : ADS-005002
Serial No. : 006060
Power type : Switching Adaptor
Power cord : Shielded. 2.1m long, No ferrite bead

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. : C2184A
Serial No. : SG55T7P1KY
FCC ID : B94C2184X
Power type : 220VAC, 50Hz
Power cord : Non-shielded, 2.m long, No ferrite core
Data cable : Shielded, 1.84m long, No ferrite core

Chapter 2 Conducted Emission Test

Test condition and setup:

All the equipment is placed and setup according to the ANSI C63.4 - 1992.

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 450KHz to 30 MHz. 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>
EMI Receiver	8546A	H P	3520A00242	10/01/99	10/01/00
RF Filter Section	85460A	H P	3448A00217	10/01/99	10/01/00
LISN (EUT)	LISN-01	TRC	9912-03,04	12/09/99	12/09/00
LISN (Support E.)	LISN-01	TRC	9912-05	01/04/00	01/04/01
Switch/Control Unit (< 30MHz)	3488A	HP	N/A	11/20/99	11/20/00
Auto Switch Box (< 30MHz)	ASB-01	TRC	9904-01	11/20/99	11/20/00

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, the EUT is placed in a shielded enclosure and scan from 30MHz to 1GHz. This is done to ensure the radiation exactly emits form the EUT.

Final test: Final radiation measurement is made on a **3 - meter**, anechoic chamber. 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 ANSI C63.4 - 1992.

HP EMI receiver examines the EMI receiver from 30 MHz to 1000 MHz measured.

The SCHAFFNER whole range Antenna is used to measure frequency from 30 MHz to 2GHz. The final test is used the HP EMI receiver 8546A.

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 that is made by TRC is used for improving sensitivity and precaution 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 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 shield room will be taken as the final data.

List of test Instrument:

Calibration Date

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Last time</u>	<u>Next time</u>
EMI Receiver	8546A	H P	3520A00242	10/01/99	10/01/00
RF Filter Section	85460A	H P	3448A00217	10/01/99	10/01/00
Bi-log Antenna	CBL6141A	Schaffner	4151	06/28/00	06/28/01
Switch/Control Unit (> 30MHz)	3488A	HP	N/A	11/20/99	11/20/00
Auto Switch Box (> 30MHz)	ASB-01	TRC	9904-01	11/20/99	11/20/00
Anechoic Chamber (cable calibrated together)				05/20/00	05/20/01

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:

Testing room: Temperature : 27 ° C Humidity : 56 % 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)	
2930.00	37.81	***.**	***.**	48.00	***.**	-10.19
3030.00	39.12	***.**	***.**	48.00	***.**	-8.88
3150.00	41.72	***.**	***.**	48.00	***.**	-6.28
3240.00	43.80	***.**	***.**	48.00	***.**	-4.20
3330.00	43.70	***.**	***.**	48.00	***.**	-4.30
3470.00	40.23	***.**	***.**	48.00	***.**	-7.77
3610.00	41.67	***.**	***.**	48.00	***.**	-6.33
3730.00	44.04	***.**	***.**	48.00	***.**	-3.96
3860.00	40.36	***.**	***.**	48.00	***.**	-7.64
3950.00	38.41	***.**	***.**	48.00	***.**	-9.59

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)	
1814.00	34.83	***.**	***.**	48.00	***.**	-13.17
2870.00	34.96	***.**	***.**	48.00	***.**	-13.04
2930.00	37.71	***.**	***.**	48.00	***.**	-10.29
3170.00	40.17	***.**	***.**	48.00	***.**	-7.83
3310.00	43.18	***.**	***.**	48.00	***.**	-4.82
3590.00	41.36	***.**	***.**	48.00	***.**	-6.64
3700.00	42.34	***.**	***.**	48.00	***.**	-5.66
3780.00	41.27	***.**	***.**	48.00	***.**	-6.73
4030.00	36.33	***.**	***.**	48.00	***.**	-11.67
4110.00	34.81	***.**	***.**	48.00	***.**	-13.19

* The reading amplitudes are all under limit.

Appendix B

Radiated Emission Test Result: (Horizontal)

Test Conditions:

Testing room : Temperature : 26 ° C Humidity : 73 % RH

Testing site : Temperature : 31 ° C Humidity : 75 % 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

44.320	9.32	1.00	37	-15.31	24.63	40.00	-15.37
101.430	4.41	1.00	45	-19.56	23.97	43.50	-19.53
265.372	9.68	1.00	27	-18.11	27.79	46.00	-18.21
384.002	13.22	1.00	81	-18.95	32.17	46.00	-13.83
415.681	15.99	1.00	31	-19.99	35.98	46.00	-10.02
697.550	5.39	1.00	13	-25.06	30.45	46.00	-15.55

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 Limit	Margin
MHz	dBμV	m	degree	dB/m	dBμV/m	dBμV/m	dB

125.003	12.72	1.00	56	-13.65	26.37	43.50	-17.13
144.032	14.43	1.00	38	-13.78	28.21	43.50	-15.29
191.995	14.29	1.00	42	-14.16	28.45	43.50	-15.05
384.358	16.12	2.46	61	-13.55	29.67	46.00	-16.33
415.686	14.21	2.46	39	-19.77	33.98	46.00	-12.02
697.440	8.61	1.00	47	-25.20	33.81	46.00	-12.19

Final statement:

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