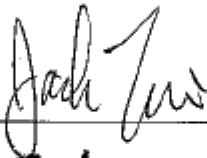
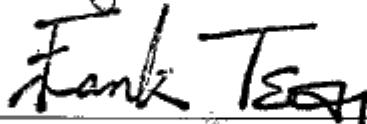


Report No.	U1215786	
Specifications	FCC Part 15, Class B	
Test Method	ANSI C63.4 1992	
Applicant address	2F, No. 5, Alley 22, Lane 513, Jui Kuang Rd., Nei Hu, Taipei 114, Taiwan	
Applicant	UAT Inc.	
Items tested	ADI ADSL Modem	
Model No.	AD-1310, GS-P300D (Sample # U12786)	
Results	Compliance (As detailed within this report)	
Date	11/06/2001 (month / day / year) (Sample received)	
	11/06/2001 (month / day / year) (Test)	
Prepared by		Project Engineer
Authorized by		General Manager (Frank Tsai)
Issue date	November 23, 2001	(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. 5-3, Lane 21, Yen Chiu Yuan Rd., Sec. 4, Taipei, 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: PGCAD-1310**

Contents

CHAPTER 1 INTRODUCTION	3
Description of EUT.....	3
Connections of EUT	3
Test method	3
Configuration of Test Setup.....	4
Connections of Support Equipment	5
Connections of EUT	5
List of Support Equipment.....	6
CHAPTER 2 CONDUCTED EMISSION TEST.....	9
Test condition and setup	9
List of test Instrument.....	9
Conducted Test Placement: (Photographs).....	10
CHAPTER 3 RADIATED EMISSION TEST.....	11
Test condition and setup	11
List of test Instrument.....	12
Radiated Test Placement: (Photographs).....	13
APPENDIX A.....	14
Conducted Emission Test Result	14
APPENDIX B.....	15
Radiated Emission Test Result (Horizontal)	15
Radiated Emission Test Result (Vertical).....	16

Chapter 1 Introduction

Description of EUT

This device is the modem of ADSL interface. The EUT is designed to install in the personal computer, It is a data transmission / receiving facility and makes your data equipment available to transmit / receive data via the EUT.

Connections of EUT

- (1)Install the EUT into a personal computer's PCI interface and screw it.
- (2)The Line jack is connected with a line cable to the ADSL evaluation module, which located remotely.
- (3)The Phone jack is connected with a telephone set.

Test method

The applicant provides the testing program.

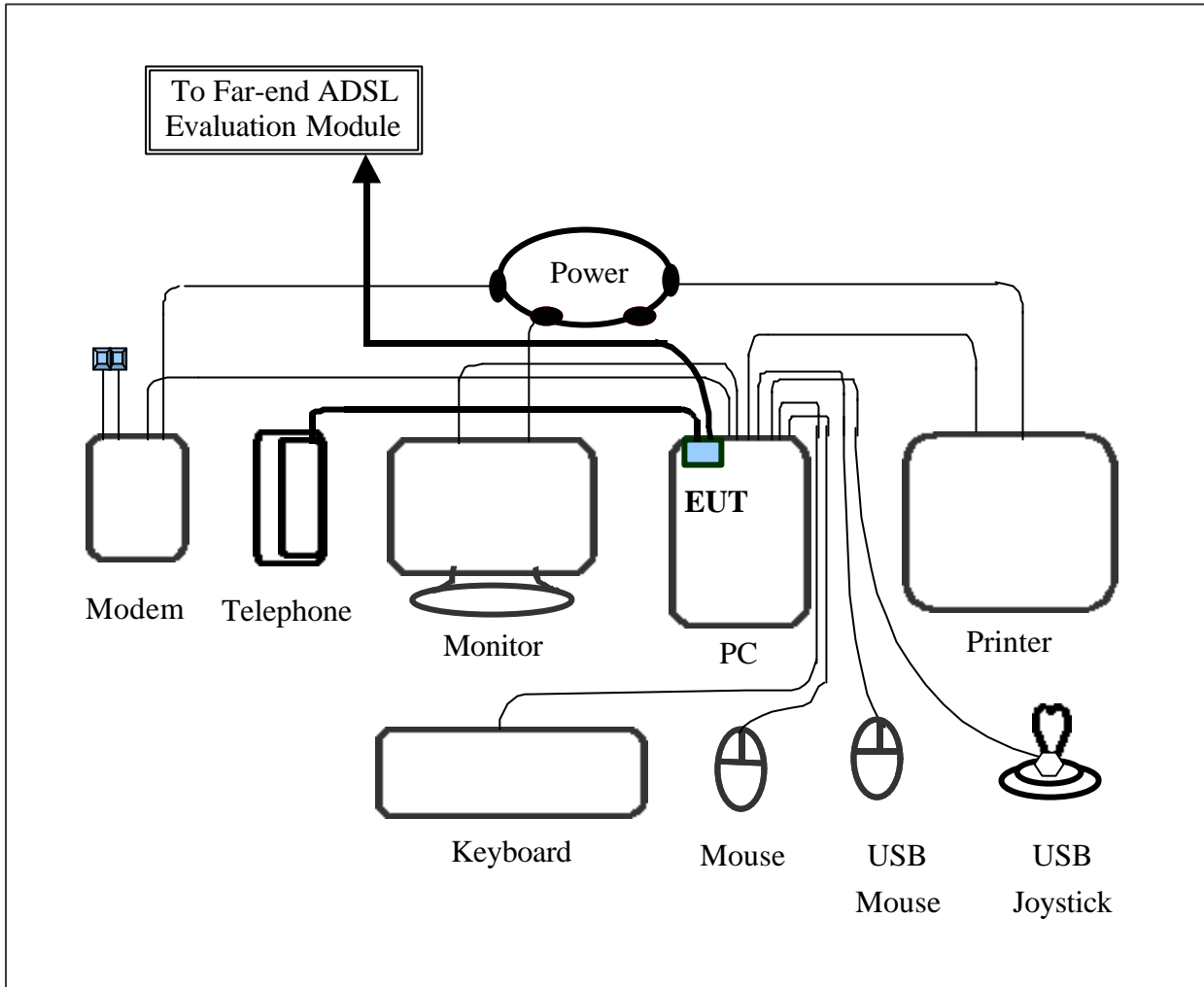
Pretest was found that the emission of operating mode is worse than standby mode. So, The final test is made at the operating mode.

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 of Support Equipment

PC:

- *Serial port --- an external modem
 - *Printer port --- a printer
 - *Monitor port --- a monitor
 - *Keyboard port --- a keyboard
 - *Mouse port --- a mouse
 - *USB A port --- a USB mouse
 - *USB B port --- a USB joystick
- (Each port on PC is connected with suitable device)

Connections of EUT

ADSL Modem:

- *Line jack
 - 15m long, non-shielded, no ferrite bead, RJ-11 cable
- *Phone jack
 - 7feet long, non-shielded, no ferrite core, RJ-11 cable

List of Support Equipment

PC : **HP Brio 85xx 6/350**
Model No. : D6928A
Serial No. : SG91801432
FCC ID : N/A (Doc Approved)
檢磁 : 3872H013
Power type : 100 ~ 230VAC / 50 ~ 60Hz, 5A, Switching
Power cord : Non-shielded, 2.33m long, Plastic, No ferrite core

Monitor : **HP 15' Color Monitor**
Model No. : D2827A
Serial No. : KR91161719
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
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

Modem : **ACEEX**
Model No. : XDM41414
Serial No. : 964111217
FCC ID : IFAXDM1414
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

Printer : **EPSON**
Model No. : P78PA
Serial No. : 0EE0014030
FCC ID : BKM9A8P70RA
Power type : Linear
Power cord : Non-shielded, 2m long, No ferrite core
Data cable : Shielded, 1.8m long, No ferrite core

Telephone : **CORTELCO (HUSTON)**
Model No. : N/A (4782)
Serial No. : N/A
Power type : Powered by PSTN
Data Cable : Non-shielded, 7 feet long

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

USB Joystick : Padix

Model No. : QF-305U

Serial No. : 8100848

FCC ID : N/A, Doc Approval

Power type : Powered by PC

Power Cable : Shielded, 1.5m long, No ferrite bead data cable

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

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, 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 450KHz to 30 MHz. Conducted emission levels are detected at maximum peak mode. But if the maximum 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	8591EM	H P	3710A01203	02/22/01	02/22/02
Pre-selector (<30MHz)	AMP-01	TRC	REP-001	08/09/01	08/09/02
LISN (EUT)	TRC LISN01	TRC	LISN-01	08/21/01	08/21/02
LISN (Support E.)	LISN01	TRC	9912-01, 02	12/18/00	12/18/01

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 are made on a **3 – meter**, open-field test site. The EUT is placed on a nonconductive table, which is 0.8m height, the top surface is 1.0 x 1.5 meter. The entire placement is according to ANSI C63.4 - 1992.

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 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 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	8591EM	H P	3619A01203	02/22/01	02/22/02
Pre-selector (>30MHz)	AMP-01	TRC	REP-001	10/02/01	10/02/02
Spectrum analyzer	8568B	H P	3004A18617	06/04/01	06/04/02
Quasi-peak Adapter	85650A	H P	2521A00984	06/04/01	06/04/02
RF Pre-selector	85685A	H P	2947A01011	06/05/01	06/05/02
RF Pre-selector	AMP-01	TRC	REP-002	10/02/01	10/02/02
Bi-log Antenna	VULB9160	M. E.	3064	07/12/01	07/12/02
Antenna (30M-2GHz)	3142	EMCO	9610-1094	10/02/01	10/02/02
Open test side (Antenna, Amplify, cable calibrated together)				05/20/01	05/20/02

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 : 24 ° C Humidity : 67 % 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)	
534.00	32.97	---	---	48.00	---	-15.03
637.00	38.44	---	---	48.00	---	-9.56
744.00	39.18	---	---	48.00	---	-8.82
851.00	35.47	---	---	48.00	---	-12.53
1063.00	31.20	---	---	48.00	---	-16.80
1170.00	33.19	---	---	48.00	---	-14.81
1274.00	32.75	---	---	48.00	---	-15.25
16150.00	32.23	---	---	48.00	---	-15.77
16690.00	32.28	---	---	48.00	---	-15.72
23350.00	31.23	---	---	48.00	---	-16.77

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)	
2240.00	34.80	---	---	48.00	---	-13.20
2650.00	36.24	---	---	48.00	---	-11.76
2770.00	36.17	---	---	48.00	---	-11.83
3190.00	35.61	---	---	48.00	---	-12.39
3730.00	35.33	---	---	48.00	---	-12.67
3840.00	35.04	---	---	48.00	---	-12.96
4160.00	35.12	---	---	48.00	---	-12.88
4240.00	36.10	---	---	48.00	---	-11.90
4380.00	34.95	---	---	48.00	---	-13.05
16690.00	38.20	---	---	48.00	---	-9.80

**The reading amplitudes are all under limit.*

Appendix B

Radiated Emission Test Result (Horizontal)

Test Conditions:

Testing room : Temperature : 25 ° C Humidity : 68 % RH
 Testing site : Temperature : 27 ° C Humidity : 81 % 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
106.000	46.30	2.56	205	-13.85	32.45	43.50	-11.05
114.550	47.10	4.00	86	-13.11	33.99	43.50	-9.51
288.000	43.00	1.00	52	-9.33	33.67	46.00	-12.33
336.000	44.70	1.00	32	-8.00	36.70	46.00	-9.30
384.000	46.40	1.00	297	-6.10	40.30	46.00	-5.70
415.690	43.80	1.00	196	-5.30	38.50	46.00	-7.50
480.000	43.00	1.00	128	-3.26	39.74	46.00	-6.26
498.830	39.20	1.00	226	-3.08	36.12	46.00	-9.88

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	dB μ V	m	degree	dB/m	dB μ V/m	dB μ V/m	dB
39.980	48.20	1.00	258	-14.25	33.95	40.00	-6.05
44.260	45.70	1.00	0	-14.03	31.67	40.00	-8.33
147.140	40.00	4.00	9	-10.80	29.20	43.50	-14.30
158.980	38.90	1.00	255	-10.56	28.34	43.50	-15.16
288.000	42.10	1.00	197	-9.33	32.77	46.00	-13.23
336.000	41.70	2.56	297	-8.00	33.70	46.00	-12.30
384.000	47.00	2.56	49	-6.10	40.90	46.00	-5.10
415.690	43.80	1.00	31	-5.30	38.50	46.00	-7.50
432.000	39.80	2.56	178	-4.58	35.22	46.00	-10.78
720.000	27.50	1.00	269	2.77	30.27	46.00	-15.73
