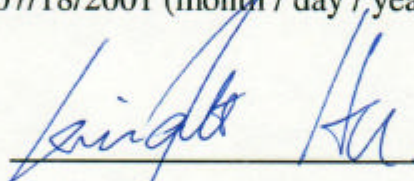
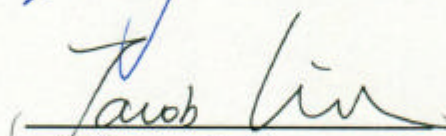


EXHIBIT B
Test Report

Report No.	U1215280
FCC ID	PGCAR-1150
Specifications	FCC Part 15
Test Method	ANSI C63.4 1992
Applicant	UAT Inc.
Applicant Address	2F, No. 5, Alley 22, Lane 513, Jui Kuang Rd., Nei Hu, Taipei, Taiwan, 114
Items tested	ADSL SOHO Router
Model No.	AB-1150, AR-1150, GS-R350D, GS-B340D (Sample # U12280)
Results	Compliance (As detailed within this report)
Date	07/13/2001 (month / day / year)(Sample received) 07/18/2001 (month / day / year)(Tested)
Prepared by	 Project Engineer
Authorized by	 V. General Manager (Jacob Lin)
Issue date	August 8, 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. 15, Lane 530, Pa-Lian RD., Sec. 1, Hsichih City, 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.**
- (2) **This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.**
- (3) **This test report, measurements made by TRC are traceable to the NIST only Conducted and Radiated Method.**

★ NVLAP LAB CODE: 200174-0

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
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Appendix B :

Radiated test result.....	12
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Chapter 1 Introduction

Description of EUT:

- ◆ Ethernet interface
- ◆ Many popular router functions
- ◆ Five LED indicators
- ◆ Supports: ANSI T1.413 issue 2, G.992.1 (Full-Rate DMT), G.992.2 (G.Lite)
- ◆ Supported Protocols: Bridged RFC 1483, Routed RFC 1483, RFC 1577, RFC 2364
- ◆ ATM supports AAL5, AAL3/4 and AAL0. AATM Traffic shaping supports CBR and UBR
- ◆ Transparent Bridging features conformance to IEEE 802.1d and supports spanning tree protocol and bridge filters
- ◆ NAT functionality

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. There is a DSL Lab test system for ADSL located at the far end side. While testing, the EUT was active all the way.

The EUT has different power supply adaptor. Their Specification as bellow table showed:

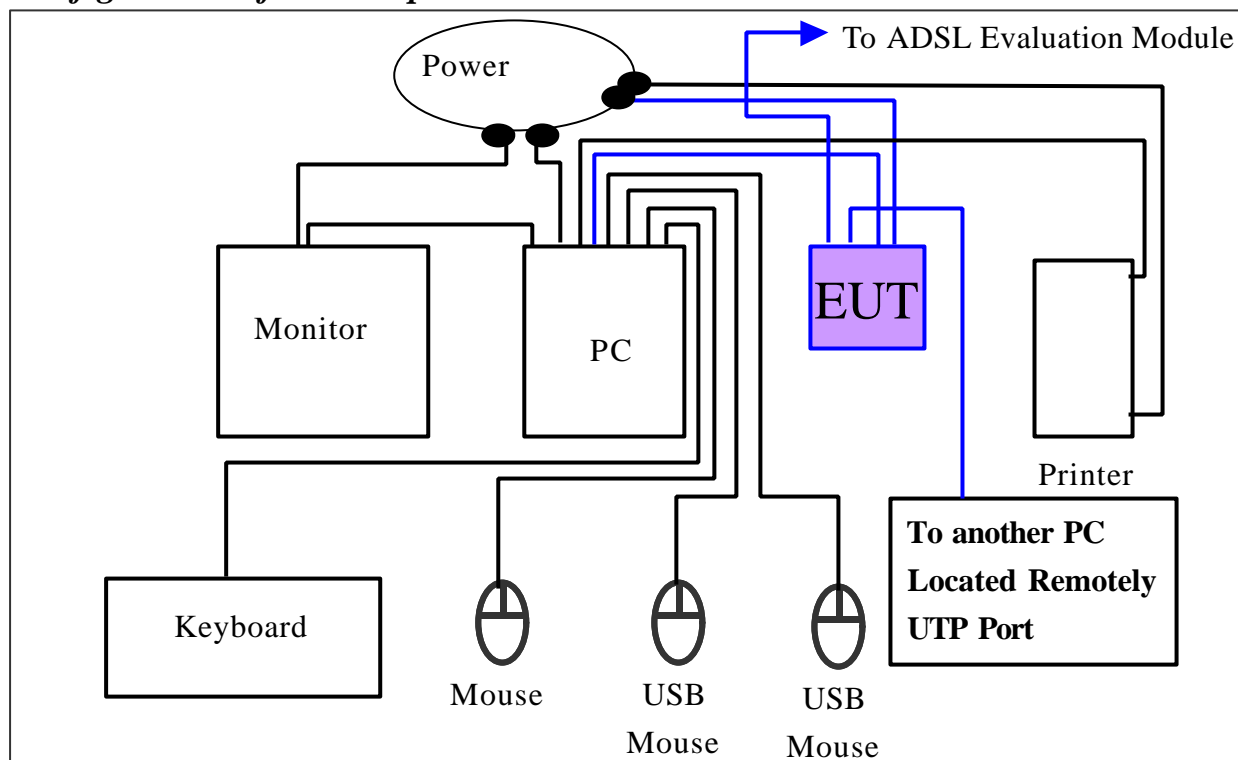
Trade Name	Model No.	Input	Output
TML	SYS1089-0909L-W2	AC110-120V~1.0A MAX, 50-60Hz, 10-20VA	DC+9V, 1.0A
DVE.	DSA-009-09A	90-132V~ 47-63Hz 0.25A	+9.0VDC 1.0A 9W
DVE.	DSA-009F-09A	90-264V~ 47-63Hz 0.25A	+9.0VDC 1.0A 9W

During the pretest, the following power supply adaptors, “SYS1089-0909L-W2”, “DSA-009-09A” and “DSA-009F-09A” had been verified. And it was found out the adaptor: “DSA-009-09A” was the worst one. The test data were recorded using this adaptor.

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 110cm shielded RS-232 cable to the serial port of EUT.
- *Monitor Port --- a monitor with 1.5m length data cable.
- *Keyboard Port --- a keyboard with 1.7m length data cable.
- *Mouse Port --- a mouse with 1.8m long of data cable.
- *USB port A --- a USB mouse with 1.8m long of data cable.
- *USB port B --- a USB mouse with 1.8m long of data cable.
- *Printer port --- a printer with 1.80m length data cable.

(Each port on PC is connected with suitable device)

EUT:

- *LAN Port --- connect with a 3m long, non-shielded, no ferrite bead, RJ-45 cable to the RJ-45 jack of another LAN card that installed in PC.
- *Serial Port --- via a 110cm shielded RS-232 cable to the serial port of PC.
- *Line port -- via a 30m long, non-shielded, no ferrite core, RJ11 cable to the ADSL Evaluation Module
- *Power Jack --- connect to the AC power source via a power adapter that the power cable is 1.90m(SYS1089-0909L-W2)/1.94m(DSA-009-09A& DSA-009F-09A) long, non-shielded, no ferrite bead.

List of support equipment

Conducted test:

PC : **HP Brio 85xx 6/350**
Model No. : D6928A
Serial No. : SG91801443
FCC ID : Doc Approved
Power type : 100 ~ 230VAC / 50 ~ 60Hz, 5A, Switching
Power cord : Non-shielded, 2.33m long, Plastic, No ferrite core

Monitor : **Viewsonic P775**
Model No. : VCDTS21366
Serial No. : KP74620621
FCC ID : GSS17019
Power type : 100 ~ 240 VAC, Switching
Power cord : Non-Shielded, 1.8m long , no ferrite core
Data cable : Shielded, 1.5m long, with 2 ferrite cores

Keyboard : **HP**
Model No. : SK-2501K
Serial No. : MR80700789
FCC ID : GYUR38SK
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
Power type : By PC
Power cord : Non-shielded, 1.88m long, No ferrite core

Printer : **HP**
Model No. : C2642A
Serial No. : SG69A196GV
FCC ID : B94C2642X
Power type : 230 VAC, 50Hz
Power cord : Non-shielded, 2m long, no ferrite core
Data cable : Shielded, 1.84m long, no ferrite core

USB Mouse : **Logitech**
Model No. : M-BB48
Serial No. : LZA00354614, LZA0054616
FCC ID : Doc Approval
Power type : By PC
Power cord : Non-shielded, 1.8m long, No ferrite core

ADSL Evaluation Module : **Veritas 2000**
Model No. : ADS-006004003
Serial No. : P3906001
Power type : 100-240VAC, 50~60Hz, 0.8A
Power cord : non-shielded, 1.8m 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 1922. 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 30MHz. Conducted emission levels are detected at max. peak mode. But if the max. peak mode failed or over average limit, it will be measured by average 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	HP	3710A00198	06/29/01	06/29/02
LISN (EUT)	3825/2	EMCO	9411-2284	06/10/01	06/10/02
LISN (Support E.)	3825/2	EMCO	9210-2007	05/31/01	05/31/02
Preamplifier	EQ3-006	TRC	-----	05/15/01	05/15/02
Line switch box	EQ3-007	TRC	-----	05/15/01	05/15/02

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 exactly emits from the EUT.

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

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The M.E. whole 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 from 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 :

Instrument Name	Model No.	Brand	Serial No.	<u>Calibration Date</u>	
				Last time	Next time
RECIVER	SCR3502	SCHAFFNER	210	12/01/00	12/01/01
Control Box	TWR95-4	TRC	C9001-2	12/01/00	12/01/01
Antenna	VULB 9160	M.E.	3063	06/26/01	06/23/02
Open test side (Antenna, Amplify, cable calibrated together)				05/15/01	05/15/02

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 : 73 % 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)	
477.00	41.97	***.**	***.**	48.00	48.00	-6.03
496.00	42.20	***.**	***.**	48.00	48.00	-5.80
564.00	42.43	***.**	***.**	48.00	48.00	-5.57
612.00	42.49	***.**	***.**	48.00	48.00	-5.51
724.00	43.33	***.**	***.**	48.00	48.00	-4.67
857.00	43.49	***.**	***.**	48.00	48.00	-4.51
886.00	42.62	***.**	***.**	48.00	48.00	-5.38
978.00	43.27	***.**	***.**	48.00	48.00	-4.73
1127.00	42.40	***.**	***.**	48.00	48.00	-5.60
2000.00	42.14	***.**	***.**	48.00	48.00	-5.86

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)	
464.00	41.89	***.**	***.**	48.00	48.00	-6.11
692.00	43.55	***.**	***.**	48.00	48.00	-4.45
729.00	44.40	***.**	***.**	48.00	48.00	-3.60
851.00	42.85	***.**	***.**	48.00	48.00	-5.15
880.00	41.52	***.**	***.**	48.00	48.00	-6.48
935.00	41.66	***.**	***.**	48.00	48.00	-6.34
978.00	44.13	***.**	***.**	48.00	48.00	-3.87
1099.00	42.06	***.**	***.**	48.00	48.00	-5.94
1135.00	43.59	***.**	***.**	48.00	48.00	-4.41
1400.00	42.91	***.**	***.**	48.00	48.00	-5.09

* The reading amplitudes are all under limit.

Appendix B

Radiated Emission Test Result:

Test Conditions:

Testing site : Temperature : 25°C Humidity : 73 %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

Horizontal

123.6530	36.63	2.50	98	-3.69	32.94	43.52	-10.58
158.9820	41.58	3.99	93	-1.77	39.81	43.52	-3.71
194.3090	41.96	1.00	61	4.89	37.07	43.52	-6.45
229.6400	34.69	1.00	108	-4.07	30.62	46.02	-15.40
264.9660	37.17	1.00	149	-2.46	34.71	46.02	-11.31
880.1430	25.81	1.00	109	11.25	37.06	46.02	-8.96

Vertical

141.3190	39.71	1.00	171	-2.70	37.01	43.52	-6.51

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)