

EXHIBIT 3

Test Report With Eut Photograph



Test Report

For

Applicant : AboCom Systems, Inc.
Equipment Type : PCMCIA Lan Card
Model : FE1200A
FCC ID : MQ4FE1200A

Report No. : 992012F



Test Report Certification

QuieTek Corporation

No.75-1, Wang-Yeh Valley, Yung-Hsing, Chiung-Lin,

Hsin-Chu County, Taiwan, R.O.C.

Tel : 886-3-592-8858, Fax: 886-3-592-8859

E-Mail : quietek@ms24.hinet.net

Accredited by NIST, VCCI, BSMI, DNV, TUV

Applicant : AboCom Systems, Inc.
Address : 1F, No.21, R&D Road II, Science-Based Industrial Park,
Hsin-Chu , Taiwwan, R.O.C.
Equipment Type : PCMCIA Lan Card
Model : FE1200A
FCC ID. : MQ4FE1200A
Measurement Standard : CISPR 22 / 1994
Measurement Procedure : ANSI C63.4 / 1992
Classification : Class B
Operation Voltage : 110Vac/ 60Hz
Test Result : Complied
Test Date : March 06, 1999

The Test Results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

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Neil Huang

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Gene Chang

Gene Chang



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1. General Information

1.1 EUT Description

Applicant : AboCom Systems, Inc.

Address : 1F, No.21, R&D Road II, Science-Based Industrial
Park, Hsin-Chu , Taiwan, R.O.C.

Equipment Type : PCMCIA Lan Card

Model : FE1200A

FCC ID. : MQ4FE1200A

Operation Voltage : 110Vac/ 60Hz

Data Cable : Shielded, 1.3m

Test Mode: 1) Baud rate speed: 100MHz

2) Baud rate speed: 10MHz

Remark: The data shown in this report reflects the worst-case data for each operation mode.

1.2 Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

☒ Notebook Personal Computer

Model Number : 2640-70A
Serial Number : 97-6492R
Manufacturer : IBM
Pcmcia Land Card (EUT) : AboCom, Mode: FE1200A
Data Cable : Shielded, 1.3m
Cable IN(Adapte) : Shielded, Un-detachable, 1.5m
Cable OUT(Adapte) : Shielded, Un-detachable, 1.5m

☒ Monitor

Model Number : CM752ET-311
Serial Number : T8E004443
FCC ID : DoC
Manufacturer : HITACHI
Data Cable : Shielded, Un-Detachable 1.5m
Power Cord : Shielded, Detachable 1.8m

☒ Keyboard

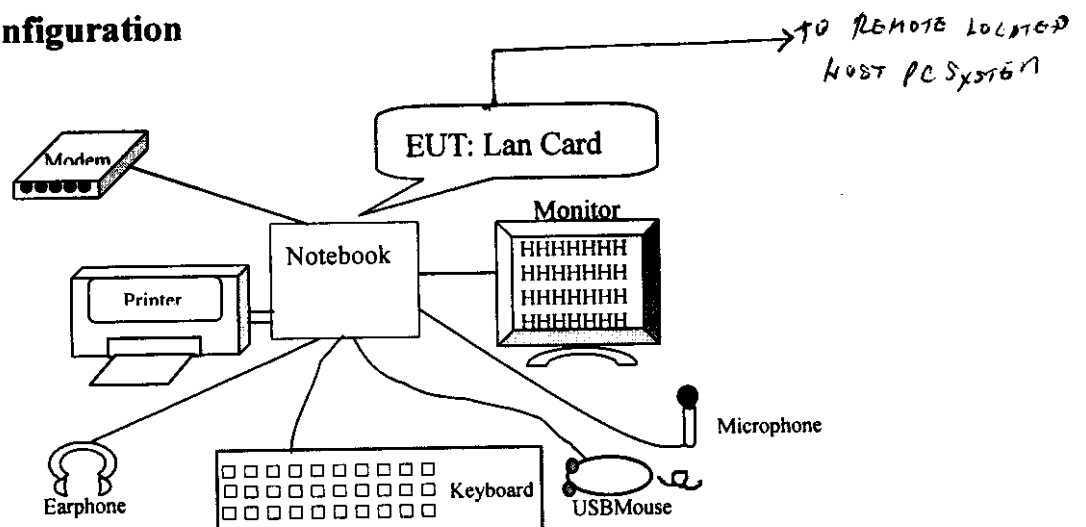
Model Number : 6311-TW2C
Serial Number : N/A
FCC ID : DoC
Manufacturer : ACER
Data Cable : Shielded, Un-Detachable, 1.8m

☒ Mouse

Model Number : M-UB48
Serial Number : LTC74800118
FCC ID : DZL211137
Manufacturer : Logitech
Data Cable : Shielded, Un-Detachable, 1.8m

- ☒ **Modem**
 Model Number : 1414
 Serial Number : 980033038
 FCC ID : IFAXDM1414
 Manufacturer : ACEEX
 Data Cable : Shielded, Detachable, 1.5m
 Power Adapter : ACCEX, M/N: SCP41-91000A
 Cable Output : Shielded, Un-Detachable, 1.5m
- ☒ **Printer**
 Model Number : C2642A
 Serial Number : MY75J1D1D2
 FCC ID : B94C2642X
 Manufacturer : HP
 Data Cable : Shielded, Detachable, 1.2m
 Power Adapter : NMB, M/N: C2175A
 Cable for AC IN: Unshielded, Un-Detachable, 0.7m
 Cable for AC Out: Unshielded, Un-Detachable, 1.5m
- ☒ **Earphone**
 Model Number : PH136
 Manufacturer : BSD
 Data Cable : Shielded, Un-Detachable, 1.2m
- ☒ **Microphone**
 Model Number : CD-8000
 Manufacturer : AIWA
 Data Cable : Non-Shielded, Un-detachable, 1m

1.3 EUT Configuration



1.4 Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: November 3, 1998 File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2



September 30, 1998 Accreditation on NVLAP
NVLAP Lab Code: 200347-0

February 23, 1999 Accreditation on DNV
Statement No. : 413-99-LAB11



December 8, 1998 Registration on VCCI
Registration No. for No.2 Shielded Room C-858
Registration No. for No.1 Open Area Test Site R-823
Registration No. for No.2 Open Area Test Site R-835



January 04, 1999 Accreditation on TÜV Rheinland
Certificate No.: I9865712-9901



Name of firm : QuieTek Corporation

Site location : No.75-1, Wang-Yeh Valley, Yung-Hsing Tsuen,
Chiung-Lin, Hsin-Chu County, Taiwan, R.O.C.

2. Test Equipment List

2.1 Conducted Emission Test Equipments

The following test equipments are used during the conducted power line tests:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal..	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 1998	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 1998	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 1998	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	N/A	
5	N0.2 Shielded Room			N/A	

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2 Radiated Emission Test Equipment

The following test equipments are used during the radiated emission tests:

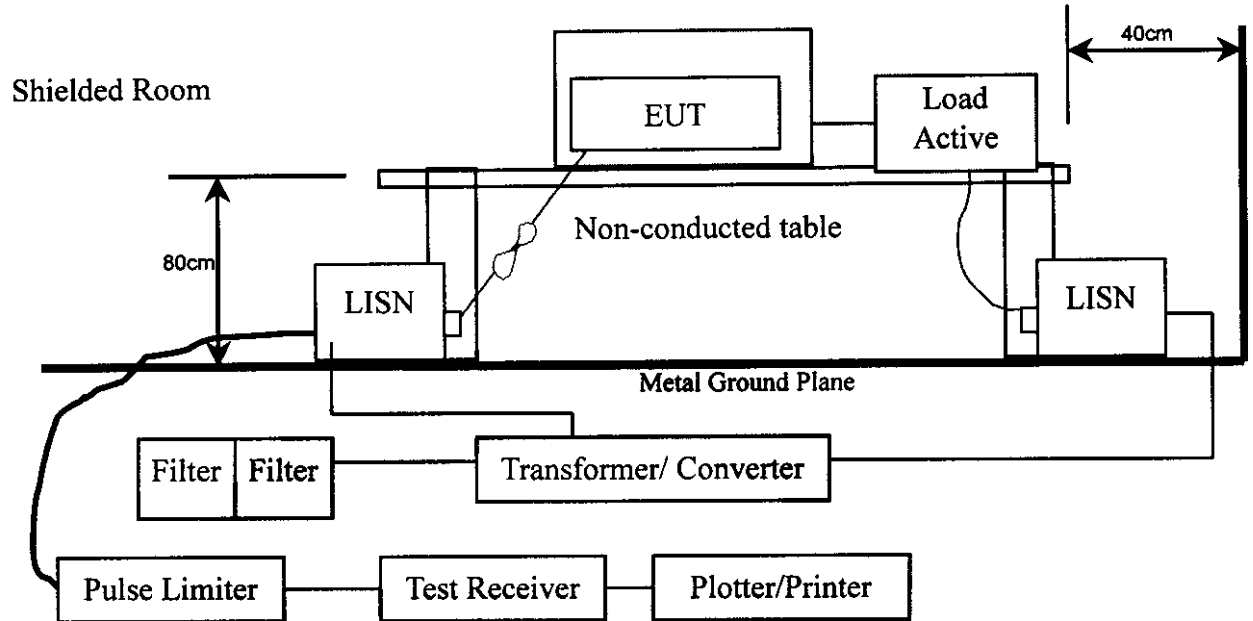
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
SITE # 1	X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 1998
		Spectrum Analyzer	Advantest	R3261C / 71720140	May, 1998
		Pre-Amplifier	HP	8447D/3307A01812	May, 1998
	X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 1998
	X	Horn Antenna	EM	EM6917 / 103325	May, 1998
SITE # 2	X	Test Receiver	R & S	ESCS 30 / 825442/17	May, 1998
		Spectrum Analyzer	Advantest	R3261C / 71720609	May, 1998
		Pre-Amplifier	HP	8447D/3307A01814	May, 1998
	X	Bilog Antenna	Chase	CBL6112B / 2455	Sep., 1998
	X	Horn Antenna	EM	EM6917 / 103325	May, 1998

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.

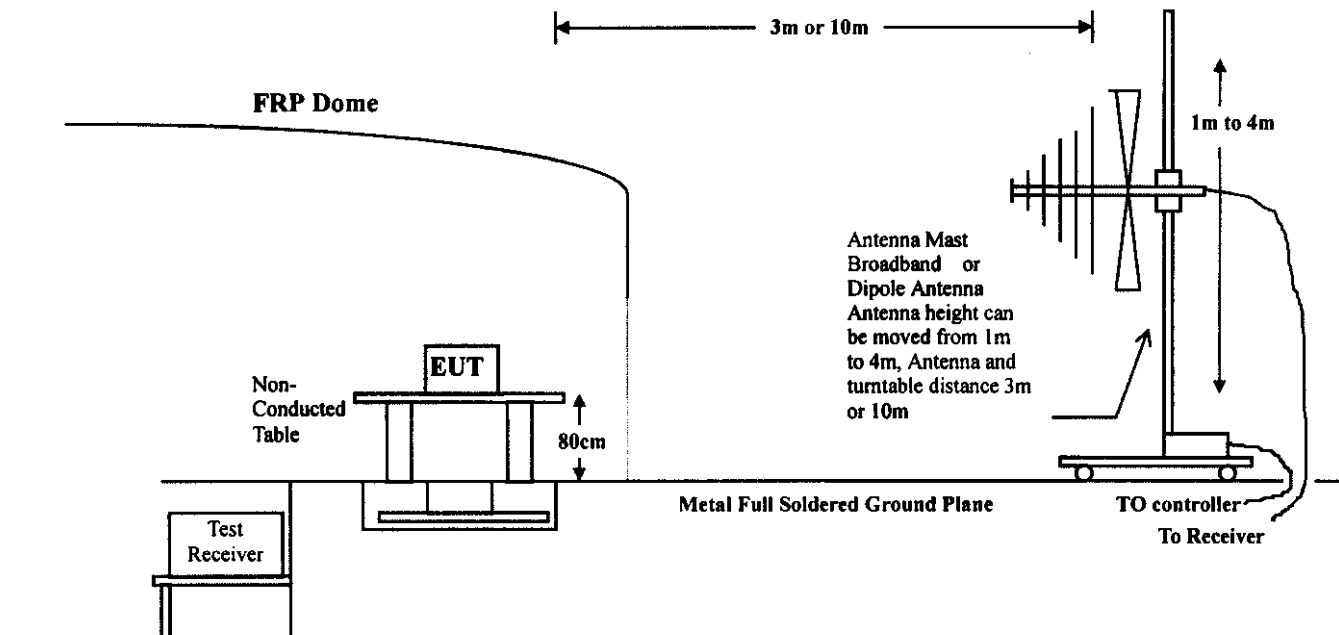
2. Mark "X" test instruments are used to measure the final test results.

3. Test Setup

3.1 Conducted Emission Test Setup



3.2 Radiated Emission Test Setup



4. Limits

4.1 Conducted Emission Limit

CISPR 22 Limits (dBuV)					FCC Part 15 Subpart B (dBuV)				
Frequency MHz	Class A		Class B		Frequency MHz	Class A		Class B	
	QP	AV	MHz	AV		uV	dBuV	uV	dBuV
0.15 - 0.50	79	66	66-56	56-46	0.45-1.705	1000	60.0	250	48.0
0.50-5.0	73	60	56	46	1.705-30	3000	69.5	250	48.0
5.0 - 30	73	60	60	50					

Remarks : In the Above Table, the tighter limit applies at the band edges.

4.2 Radiated Emission Limit

CISPR 22 Limits (dBuV)					FCC Part 15 Subpart B (dBuV)				
Frequency MHz	Class A		Class B		Frequency	Class A		Class B	
	Distance (m)	dBuV/m	Distance (m)	dBuV/m		uV	dBuV	uV	dBuV
30 – 230	10	40	10	30	30 – 88	90	39	100	40.0
230 – 1000	10	47	10	37	88 – 216	150	43.5	150	43.5
					216 – 960	210	46.5	200	46.0
					960 - 2000	300	49.5	500	54.0

Remark: 1. The tighter limit shall apply at the edge between two frequency bands.

2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3. RF Line Voltage (dBuV) = 20 log RF Line Voltage (uV)

5. Tests Performed

6. EUT Configuration on Measurement

The equipments which are listed 2.1 & 2.2 are installed on Conducted Emission Test and Radiated Emission Test to meet the Commission requirement and operating in a manner which tends to maximize its emission characteristics in a normal application.

6.1 EUT Exercise Software

The EUT exercise program used during conducted testing was designed to exercise the EUT in a manner similar to a typical use. The exercise sequence is listed as below:

- 3.5.1 Setup the EUT and simulators as shown on 3.2
- 3.5.2 Turn on the power of all equipment.
- 3.5.3 Boot the PC from Hard Disk .
- 3.5.4 Data will communicate between personal computer and partner personal computer through Lan card (EUT) that is within PC.
- 3.5.5 The personal computer's and partner computer's monitor will show the transmitting and receiving characteristics when the communication is success.
- 3.5.6 Printer and modem will keep at standby mode during Scanner operation.
- 3.5.7 Repeat the above procedure 3.5.4 to 3.5.7

6.2 Frequency Range

Conducted emissions were invested over the frequency range from **0.15MHz to 30MHz** using a receiver bandwidth of 9KHz.

Radiated emissions were invested over the frequency range from **30MHz to 1000Mhz** using a receiver bandwidth of 120KHz.

6.3 Test Procedure

➤ Conducted Power Line Test

The PC with EUT is connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipments and all of the interface cables must be changed according to ANSI C63.4-1992 on conducted measurement.

➤ Radiated Emissions Test

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 10 meters. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4-1992 on radiated measurement.

7. Test Data

The initial step in collecting emission data is a spectrum analyzer peak scan of the measurement range for all the test modes. Then the worst modes were reported the following data pages.

The uncertainty is calculated in accordance with NAMAS NIS 81, The total uncertainty for this test is as follows:

- Uncertainty in the Conducted Emission Test: $< \pm 2.0 \text{ dB}$
- Uncertainty in the field strength measured: $< \pm 4.0 \text{ dB}$

CONDUCTED EMISSION DATA

Date of Test	: Mar. 05, 1999	Temperature	: 28 °C
EUT	: PCMCIA Lan Card	Humidity	: 70 %
Test Mode	: Mode 1	Detect Mode	: Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
MHz	Loss	Factor	L1	L1	
	dB	dB	dBuV	dBuV	dBuV
* 0.150	0.00	0.10	48.17	48.27	66.00
0.189	0.01	0.10	42.54	42.65	64.08
0.205	0.02	0.10	42.77	42.89	63.42
0.232	0.02	0.10	39.93	40.05	62.38
0.259	0.03	0.10	37.35	37.48	61.45
2.775	0.16	0.14	34.92	35.23	56.00
12.107	0.30	0.27	36.86	37.43	60.00

Average:

0.150	0.00	0.10	28.50	28.60	56.00
0.189	0.01	0.10	15.90	16.01	54.08
0.205	0.02	0.10	28.70	28.82	53.41
0.232	0.02	0.10	32.70	32.82	52.38
*0.259	0.03	0.10	32.60	32.73	51.46
2.775	0.16	0.14	19.70	20.01	46.00
12.107	0.30	0.27	30.40	30.97	50.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.

CONDUCTED EMISSION DATA

Date of Test	:	Mar. 05. 1999	Temperature	:	28 °C
EUT	:	PCMCIA Lan Card	Humidity	:	70 %
Test Mode	:	Mode 1	Detect Mode	:	Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
MHz	Loss	Factor	L2	L2	
	dB	dB	dBuV	dBuV	dBuV
0.220	0.02	0.10	41.14	41.26	62.81
0.240	0.02	0.10	39.34	39.46	62.10
0.267	0.03	0.10	37.37	37.50	61.20
0.408	0.05	0.10	29.95	30.10	57.69
* 2.880	0.17	0.15	36.57	36.88	56.00
14.005	0.31	0.32	37.56	38.20	60.00

Average:

0.220	0.02	0.10	12.80	12.92	52.82
0.240	0.02	0.10	11.50	11.62	52.10
0.267	0.03	0.10	14.70	14.83	51.21
0.408	0.05	0.10	5.70	5.85	47.69
2.880	0.17	0.15	16.30	16.61	46.00
*14.005	0.31	0.32	30.90	31.54	50.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.



CONDUCTED EMISSION DATA

Date of Test	:	Mar. 05, 1999	Temperature	:	28 °C
EUT	:	PCMCIA Lan Card	Humidity	:	70 %
Test Mode	:	Mode 2	Detect Mode	:	Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
MHz	Loss	Factor	L1	L1	
	dB	dB	dBuV	dBuV	dBuV
0.162	0.00	0.10	46.60	46.70	65.38
0.177	0.01	0.10	44.59	44.70	64.61
0.236	0.02	0.10	38.90	39.02	62.24
0.252	0.03	0.10	37.69	37.82	61.71
* 2.775	0.16	0.14	40.44	40.75	56.00
11.576	0.29	0.25	37.70	38.25	60.00

Average:

0.162	0.00	0.10	35.30	35.40	55.36
0.177	0.01	0.10	16.40	16.51	54.63
0.236	0.02	0.10	9.90	10.02	52.24
0.252	0.03	0.10	10.50	10.63	51.69
2.775	0.16	0.14	23.20	23.51	46.00
*11.576	0.29	0.25	30.30	30.85	50.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.

CONDUCTED EMISSION DATA

Date of Test	:	Mar. 05, 1999	Temperature	:	28 °C
EUT	:	PCMCIA Lan Card	Humidity	:	70 %
Test Mode	:	Mode 2	Detect Mode	:	Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
MHz	Loss	Factor	L2	L2	
	dB	dB	dBuV	dBuV	dBuV
0.158	0.00	0.10	48.15	48.25	65.58
0.222	0.02	0.10	40.40	40.52	62.73
0.341	0.04	0.10	32.55	32.69	59.17
0.420	0.05	0.10	29.53	29.68	57.46
* 2.880	0.17	0.15	42.26	42.57	56.00
12.619	0.30	0.28	37.91	38.50	60.00

Average:

* 0.158	0.00	0.10	38.90	39.00	55.57
0.222	0.02	0.10	11.70	11.82	52.74
0.341	0.04	0.10	4.80	4.94	49.18
0.420	0.05	0.10	19.70	19.85	47.45
2.880	0.17	0.15	23.20	23.51	46.00
12.619	0.30	0.28	31.30	31.89	50.00

Remarks :

1. " * " means that this data is the worse emission level.
2. All readings are Quasi-peak and average values.

Radiated Emission Data

Date of Test	: Mar. 05. 1999	Temperature	: 26.0 °C
EUT	: PCMCIA Lan Crad	Humidity	: 68.0 %
Test Mode	: Mode 1		

Frequency	Cable	Ant	Reading Level	Emission Level	Limits	Ant	Table
	Loss	Factor	Horizontal	Horizontal		Pos	Pos
MHz	dB	dB/m	dBuV/m	dBuV/m	dBuV/m	cm	deg
125.027	2.07	11.84	1.54	15.45	30.00	400	62
150.027	2.31	10.72	5.45	18.48	30.00	400	49
175.031	2.55	9.76	4.16	16.47	30.00	400	19
* 199.997	2.78	9.30	12.95	25.03	30.00	400	59
225.044	3.03	9.83	7.79	20.65	30.00	400	74
250.046	3.27	12.61	8.99	24.87	37.00	400	15

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. " * ", means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

Radiated Emission Data

Date of Test	: Mar. 05, 1999	Temperature	: 26.0 °C
EUT	: PCMCIA Lan Crad	Humidity	: 68.0 %
Test Mode	: Mode 1		

Frequency	Cable	Ant	Reading Level	Emission Level	Limits	Ant	Table
	Loss	Factor	Vertical	Vertical		Pos	Pos
MHz	dB	dB/m	dBuV/m	dBuV/m	dBuV/m	cm	deg
125.022	2.07	11.49	6.18	19.74	30.00	99	9
150.028	2.31	10.43	12.94	25.68	30.00	99	48
175.034	2.55	9.32	6.94	18.81	30.00	99	83
200.040	2.78	9.07	15.77	27.63	30.00	99	93
225.042	3.03	9.68	11.56	24.26	30.00	99	13
250.048	3.27	12.26	11.46	26.99	37.00	99	18

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. " * ", means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss

Radiated Emission Data

Date of Test	Mar. 05, 1999	Temperature	26.0 °C
EUT	PCMCIA Lan Card	Humidity	68.0 %
Test Mode	Mode 2		

Frequency	Cable	Ant	Reading Level	Emission Level	Limits	Ant	Table
	Loss	Factor	Horizontal	Horizontal		Pos	Pos
MHz	dB	dB/m	dBuV/m	dBuV/m	dBuV/m	cm	deg
125.023	2.07	11.84	3.33	17.24	30.00	400	86
150.027	2.31	10.72	6.80	19.83	30.00	400	91
175.033	2.55	9.76	1.44	13.75	30.00	400	15
*200.038	2.78	9.30	14.13	26.21	30.00	400	45
225.042	3.03	9.83	4.28	17.14	30.00	400	39
250.046	3.27	12.61	12.72	28.60	37.00	400	163

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. " * ", means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss



Radiated Emission Data

Date of Test	: Mar. 05, 1999	Temperature	: 26.0 °C
EUT	: PCMCIA Lan Card	Humidity	: 68.0 %
Test Mode	: Mode 2		

Frequency	Cable	Ant	Reading Level	Emission Level	Limits	Ant	Table
	Loss	Factor	Vertical	Vertical		Pos	Pos
MHz	dB	dB/m	dBuV/m	dBuV/m	dBuV/m	cm	deg
75.016	1.58	6.83	8.96	17.37	30.00	99	203
125.023	2.07	11.49	8.31	21.87	30.00	99	5
*150.028	2.31	10.43	13.16	25.90	30.00	99	81
175.033	2.55	9.32	5.47	17.34	30.00	99	81
200.038	2.78	9.07	10.32	22.18	30.00	99	20
225.042	3.03	9.68	3.92	16.62	30.00	99	12
250.046	3.27	12.26	15.57	31.10	37.00	99	16

Remarks:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. " * ", means this data is the worse emission level.
3. Emission Level = Reading Level + Antenna Factor + Cable loss