

ZyXEL

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Science-Based Industrial Park, Hsinchu, Taiwan, 300 R.O.C.
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FCC ID.:I88OMNI56K

EXHIBIT 3

Test Report With EUT Photograph



Test Report

For

Applicant : ZyXEL Communications Corporation
Equipment Type : 56K Modem
Model : Omni 56K Plus, Omni 56K
FCC ID : I88OMNI56K

Report No. : 997H019F



QTK99-F022

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(NVLAP), VCCI, BSMI, DNV, TUV

Applicant : ZyXEL Communications Corporation

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

Equipment Type : 56K Modem

Model : Omni 56K Plus, Omni 56K

FCC ID. : I88OMNI56K

Measurement Standard : CISPR 22/1994

Measurement Procedure : ANSI C63.4 /1992

Operation Voltage : 120Vac/60Hz

Classification : Class B

Test Result : Complied

Test Date : July 23, 1999

Report No. : 997H019F



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

Documented by: Kim Hung

Test Engineer: Warren Lin

Approved: Gene Chang

A handwritten signature in black ink, appearing to read "Kim Hung".

A handwritten signature in black ink, appearing to read "Warren Lin".

A handwritten signature in black ink, appearing to read "Gene Chang".



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1. General Information

1.1 EUT Description

Applicant : ZyXEL Communications Corporation

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

Equipment Type : 56K Modem

Model : Omni 56K Plus, Omni 56K

FCC ID : I88OMNI56K

Operation Voltage : 120Vac/60Hz

Speed : 56K

Power Adaptor : ZyXEL, M/N:JAA-091000E
Cable Output : Non-shielded, 1.8m

Remark:

1. The device is a 56KB modem system that has two kinds of system. One is Omni 56K Plus, another is Omni 56K. (PROVIDED w/USB and w/o USB port)
2. The Omni 56K is connected to the PC through RS232 and the Omni 56K Plus is connected the PC through USB port.

1.2 Tested System Details

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

1.2.1 Host Personal Computer

Model Number : P2L97
Serial Number : AS10226
FCC ID : DoC
Manufacturer : ASUS
Power Cord : Non-Shielded, 1.8m

1.2.2 Monitor

Model Number : CM752ET-311
Serial Number : T8F006364
FCC ID : DoC
Manufacturer : HITACHI
Data Cable : Shielded, 1.5m
Power Cord : Shielded, 1.8m

1.2.3 Keyboard

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

1.2.4 Mouse

Model Number : M-S34
Serial Number : LZB75078428
FCC ID : DZL211029
Manufacturer : HP
Data Cable : Shielded, 1.8m

1.2.5 Printer

Model Number : C2642A
Serial Number : MY75J1D1D0
FCC ID : B94C2642X
Manufacturer : HP
Data Cable : Shielded, 1.2m
Power Adapter : NMB, M/N: C2175A
Cable for AC IN: Non-Shielded, 0.7m
Cable for AC Out: Non-Shielded, 1.5m

1.2.6 Modem

Model Number : 1414
Serial Number : 980033032
FCC ID : IFAXDM1414
Manufacturer : ACEEX
Data Cable : Shielded, 1.5m
Power Adapter : ACCEX, M/N: SCP41-91000A
Cable Output : Shielded, 1.5m

1.2.7 Modem

Model Number : 1414
Serial Number : 980033039
FCC ID : IFAXDM1414
Manufacturer : ACEEX
Data Cable : Shielded, 1.5m
Power Adapter : ACCEX, M/N: SCP41-91000A
Cable Output : Shielded, 1.5m

1.2.8 Phone

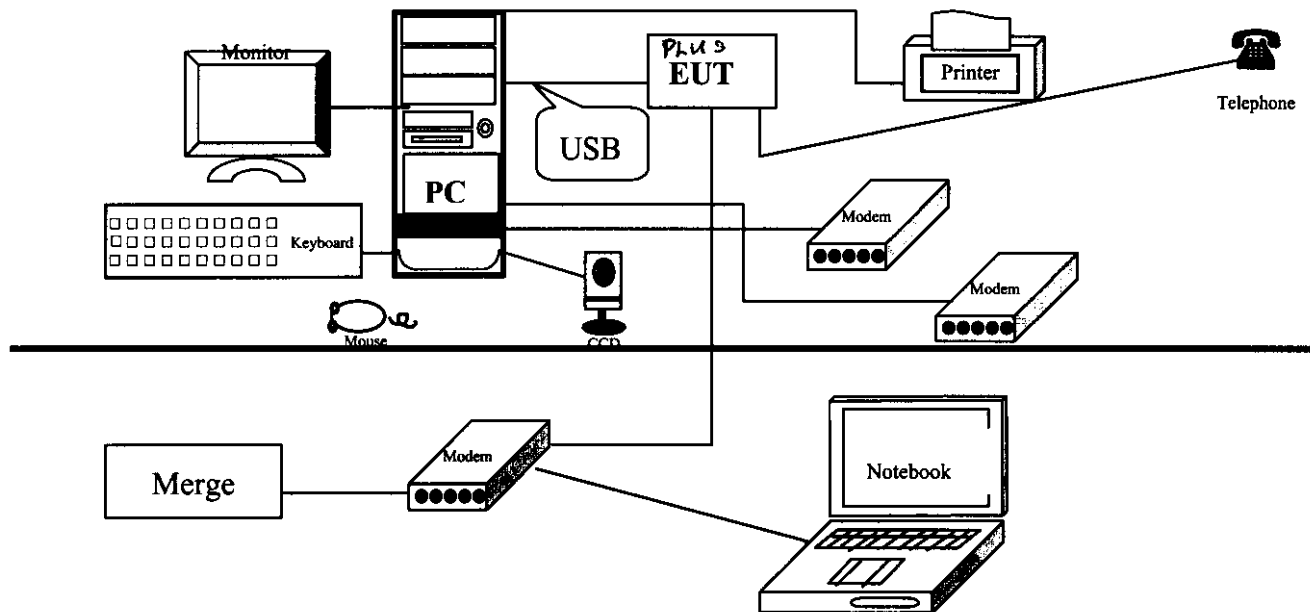
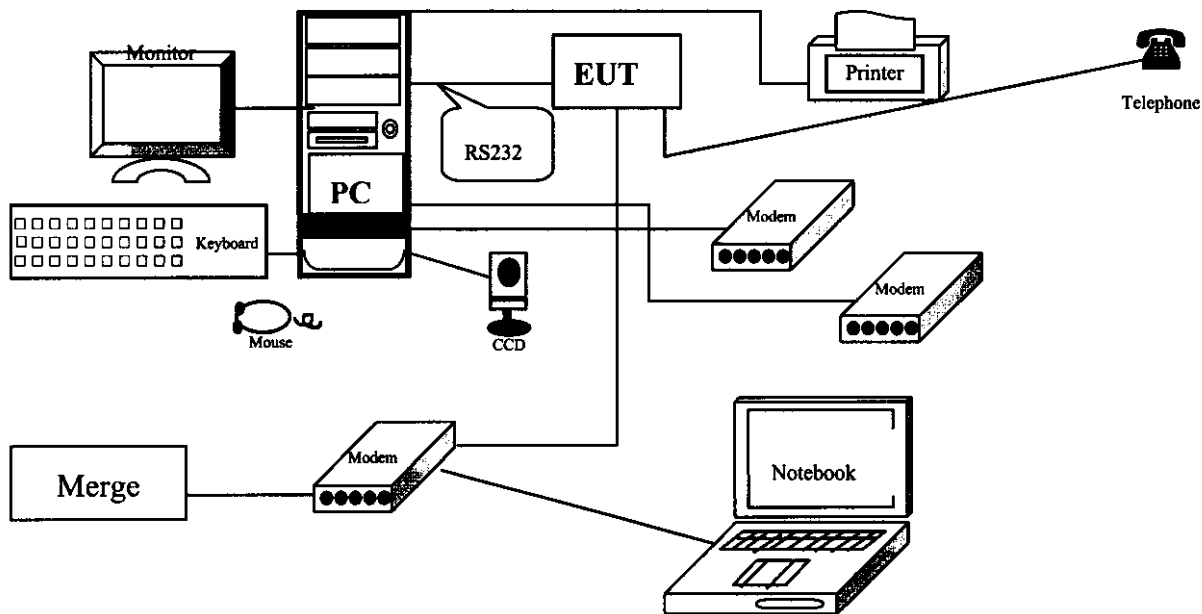
Model Number : K-903S
Serial Number : 306801
Manufacturer : TENTEL
Power Cord : Shielded, 1.8m

1.2.9 Joystick

Model Number : G-ZA-PHI
Serial Number : N/A
FCC ID : DoC
Manufacturer : LOGITECH
Data Cable : Shielded, 2.0m

- 1.2.10 Video Camera**
- | | |
|------------------|------------------|
| Model Number | : Vcam 3X |
| Serial Number | : N/A |
| FCC ID | : DoC |
| Manufacturer | : Mustek |
| Data Cable (USB) | : Shielded, 1.5m |
-
- 1.2.11 Notebook PC** FCC ID : DoC
- | | |
|---------------|-------------------------------|
| Model Number | : DESIGNOTE |
| Serial Number | : N/A |
| Manufacturer | : Leo |
| Power Adapter | : ZyXEL, M/N:JAA-091000E |
| | Cable out: Non-Shielded, 1.2m |
| Power Cord | : Non-Shielded, 1.8m |
-
- 1.2.12 Modem**
- | | |
|---------------|-----------------------------------|
| Model Number | : Elite 2864I |
| Serial Number | : S7AH300011 |
| FCC ID | : DoC |
| Manufacturer | : ZyXEL |
| Data Cable | : Shielded, 1.5m |
| Power Adapter | : ZyXEL, M/N: Zy-9530 |
| | Cable Output : Non-shielded, 0.5m |
-
- 1.2.13 Merge**
- | | |
|---------------|------------------|
| Model Number | : 2000AFP |
| Serial Number | : AFP98C15359 |
| FCC ID | : DoC |
| Manufacturer | : MERGE |
| Power Cord | : Shielded, 1.8m |
-
- 1.2.14 UTP for connecting between PC and EUT(Mode 1)** USB
- | | |
|--------|-------------|
| Type | : Shielding |
| Length | : 1.8m |
-
- 1.2.15 RS-232 for connecting between PC and EUT(Mode 2)**
- | | |
|--------|-------------|
| Type | : Shielding |
| Length | : 1.8m |



1.3 EUT Configuration**Mode 1****Mode 2**

1.4 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:

- 1.4.1 Setup the EUT and simulators as shown on 1.3.
- 1.4.2 Turn on the power of all equipment.
- 1.4.3 Boot the PC from Hard Disk .
- 1.4.4 Data will communicate between personal computer and partner notebook personal computer through 56K Modem (EUT) that is connected to RS232 port of personal computer.
- 1.4.5 The personal computer's and partner notebook personal computer's monitor will show the transmitting and receiving characteristics when the communication is success.
- 1.4.6 Printer and modem will keep at standby mode during EUT operation.
- 1.4.7 Telecom signal was communicate between personal computer and partner notebook through the ISDN port of the EUT
- 1.4.8 Repeat the above procedure 1.4.4 to 1.4.7

1.5 Test performed

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. Radiated testing was performed at an antenna to EUT distance of 10 meters

1.6 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. Conducted Emission

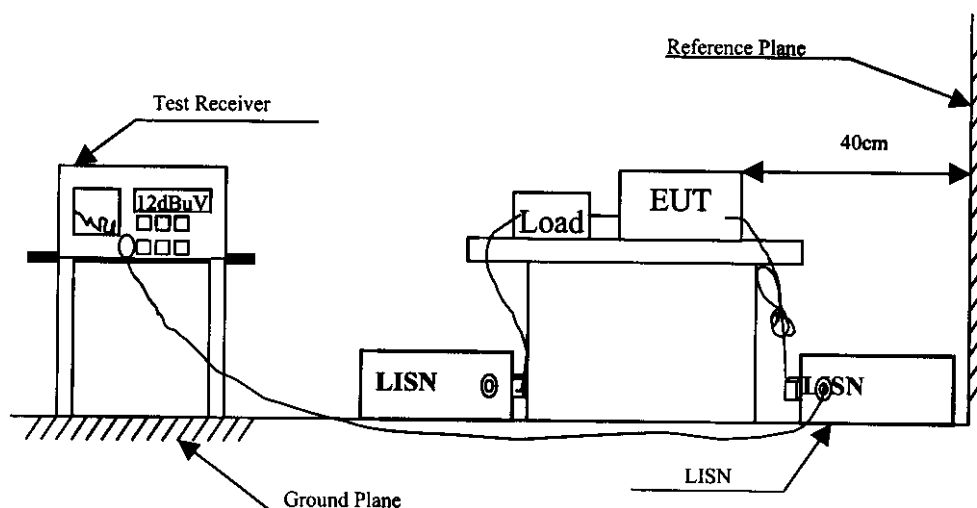
2.1 Test Equipment List

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal..	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 1999	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 1999	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 1999	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 Test Setup



2.3 Limits

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.

2.4 Test Procedure

The EUT and simulators are 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 refers 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 equipment and all of the interface cables must be changed according to ANSI C63.4 /1992 on conducted measurement.

The bandwidth of the field strength meter (R & S Test Receiver ESCS 30) is set at 9kHz.

2.5 Test Results

The conducted emission from the EUT is measured and shown in attachment 1 of test report. The acceptance criterion was met and the EUT passed the test.

3. Radiated Emission

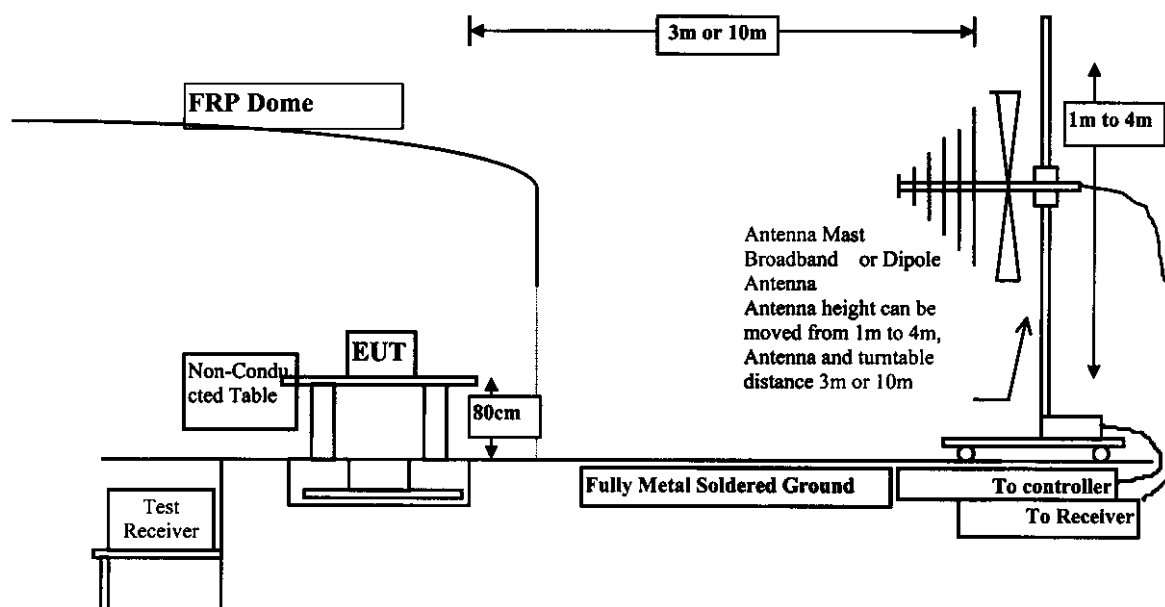
3.1 Test Equipment

The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Site # 1	X	Test Receiver	R & S	ESCS 30 / 825442/14	May, 1999
		Spectrum Analyzer	Advantest	R3261C / 71720140	May, 1999
		Pre-Amplifier	HP	8447D/3307A01812	May, 1999
	X	Bilog Antenna	Chase	CBL6112B / 12452	Sep., 1998
	X	Horn Antenna	EM	EM6917 / 103325	May, 1999
Site # 2	X	Test Receiver	R & S	ESCS 30 / 825442/17	May, 1999
		Spectrum Analyzer	Advantest	R3261C / 71720609	May, 1999
		Pre-Amplifier	HP	8447D/3307A01814	May, 1999
	X	Bilog Antenna	Chase	CBL6112B / 2455	Sep., 1998
	X	Horn Antenna	EM	EM6917 / 103325	May, 1999

- 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.

3.2 Test Setup



3.3 Limits

CISPR 22 Limits (dBuV)					FCC Part 15 Subpart B (dBuV)				
Frequency	Class A		Class B		Frequency	Class A		Class B	
MHz	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) = $20 \log \text{RF Line Voltage (uV)}$

3.4 Test Procedure

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.

The bandwidth below 1Ghz setting on the field strength meter (R&S Test Receiver ESCS 30) is 120 KHz.

3.5 Test Results

The radiated emission from the EUT is measured and shown in attachment 1 of test report.

The acceptance criterion was met and the EUT passed the test.

4. EMI Reduction Method During Compliance Testing

No modification was made during testing.



5. Attachment

Attachment 1: Summary of Test Results	Number of Pages: 11
Attachment 2: EUT Test Photographs	Number of Pages: 4
Attachment 3: EUT detail photographic	Number of Pages: 12



Attachment 1 : Summary of Test Results

The test results in the emission and immunity were performed according to the requirements of measurement standard and process. QuieTek Corporation is assumed full responsibility for the accuracy and completeness of these measurements. The test data of the emission and immunity are listed as the attached data.

All the tests were carried out with the EUT in normal operation, which was defined as:

Mode 1 : USB

Mode 2 : RS232

The EUT passed all the tests.

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

➤ **Emission Test**

- 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 : July 23, 1999 EUT : 56K Modem
 Test Mode : Mode 1 / 49B Detect Mode : Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
MHz	Loss	Factor	Line1	Line1	
	dB	dB	dBuV	dBuV	dBuV
2.458	0.16	0.14	24.64	24.94	56.00
3.572	0.18	0.16	27.78	28.11	56.00
4.915	0.20	0.17	28.86	29.23	56.00
*7.373	0.24	0.19	37.97	38.40	60.00
12.001	0.30	0.27	29.46	30.02	60.00
15.356	0.33	0.36	25.76	26.44	60.00

Average:

2.460	0.16	0.14	24.80	25.10	46.00
3.570	0.18	0.16	25.60	25.93	46.00
4.920	0.20	0.17	28.30	28.67	46.00
7.370	0.24	0.19	38.10	38.53	50.00
12.000	0.30	0.27	26.10	26.66	50.00
15.360	0.33	0.36	21.50	22.18	50.00

Remarks :

1. " * " means that this data is the worst emission level.



CONDUCTED EMISSION DATA

Date of Test	July 23, 1999	EUT	56K Modem
Test Mode	Mode 1	Detect Mode	Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
	Loss	Factor	Line2	Line2	
MHz	dB	dB	dBuV	dBuV	dBuV
2.456	0.16	0.14	24.38	24.68	56.00
3.526	0.18	0.15	26.99	27.32	56.00
4.916	0.20	0.17	29.52	29.89	56.00
*7.370	0.24	0.19	37.90	38.33	60.00
12.002	0.30	0.27	30.84	31.40	60.00
15.360	0.33	0.36	28.46	29.14	60.00

Average:

2.460	0.16	0.14	24.40	24.70	46.00
3.530	0.18	0.15	24.10	24.43	46.00
4.920	0.20	0.17	28.80	29.17	46.00
7.370	0.24	0.19	38.00	38.43	50.00
12.000	0.30	0.27	26.60	27.16	50.00
15.360	0.33	0.36	24.00	24.68	50.00

Remarks :

1. " * " means that this data is the worst emission level.



CONDUCTED EMISSION DATA

Date of Test : July 23, 1999 EUT : 56K Modem
 Test Mode : Mode 2 / ~~LS232~~ Detect Mode : Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
MHz	Loss	Factor	Line1	Line1	
	dB	dB	dBuV	dBuV	dBuV
0.157	0.00	0.10	22.14	22.24	65.65
2.457	0.16	0.14	29.00	29.30	56.00
3.800	0.18	0.16	24.04	24.38	56.00
*4.917	0.20	0.17	30.59	30.96	56.00
5.918	0.22	0.18	34.33	34.73	60.00
7.048	0.24	0.18	30.50	30.92	60.00

Average:

0.157	0.00	0.10	21.30	21.40	55.62
2.460	0.16	0.14	29.10	29.40	46.00
3.800	0.18	0.16	20.10	20.44	46.00
4.920	0.20	0.17	27.70	28.07	46.00
5.920	0.22	0.18	30.40	30.80	50.00
7.050	0.24	0.18	26.60	27.02	50.00

Remarks :

1. " * " means that this data is the worst emission level.

CONDUCTED EMISSION DATA

Date of Test	: July 23, 1999	EUT	: 56K Modem
Test Mode	: Mode 2	Detect Mode	: Quasi-Peak & Average

Frequency	Cable	LISN	Reading Level	Measurement Level	Limits
	Loss	Factor	Line2	Line2	
MHz	dB	dB	dBuV	dBuV	dBuV
0.157	0.00	0.10	21.18	21.28	65.64
*2.458	0.16	0.14	29.10	29.40	56.00
3.798	0.18	0.16	23.63	23.97	56.00
4.918	0.20	0.17	29.24	29.61	56.00
5.919	0.22	0.18	32.08	32.48	60.00
17.202	0.34	0.40	30.79	31.52	60.00

Average:

0.157	0.00	0.10	20.10	20.20	55.62
2.460	0.16	0.14	29.20	29.50	46.00
3.800	0.18	0.16	20.40	20.74	46.00
4.920	0.20	0.17	26.10	26.47	46.00
5.920	0.22	0.18	28.50	28.90	50.00
17.200	0.34	0.40	29.60	30.33	50.00

Remarks :

1. " * " means that this data is the worst emission level.



RADIATED EMISSION DATA

Date of Test : July 23, 1999 EUT : 56K Modem

Test Mode : Mode 1

Freq.	Cable	Probe	PreAMP	Reading	Measurement	Margin	Limit	Ant	Turn
	Loss	Factor		Level	Horizontal				
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	cm	deg
61.440	1.45	5.39	0.00	4.58	11.42	18.58	30.00	394	99
73.728	1.57	7.10	0.00	4.60	13.27	16.73	30.00	394	108
86.016	1.69	8.88	0.00	0.42	11.00	19.00	30.00	395	81
110.592	1.93	11.97	0.00	1.08	14.98	15.02	30.00	396	78
122.880	2.05	11.93	0.00	1.12	15.10	14.90	30.00	396	117
172.032	2.51	9.43	0.00	6.43	18.37	11.63	30.00	398	91
184.320	2.64	9.18	0.00	6.14	17.95	12.05	30.00	399	156
192.000	2.71	9.00	0.00	13.47	25.18	4.82	30.00	399	49
196.608	2.76	9.10	0.00	5.78	17.64	12.36	30.00	399	2
221.184	2.99	9.53	0.00	6.38	18.90	11.10	30.00	399	118
233.472	3.11	10.71	0.00	4.08	17.90	19.10	37.00	399	138
240.000	3.17	11.32	0.00	10.66	25.15	11.85	37.00	400	121
245.760	3.23	12.21	0.00	3.54	18.99	18.01	37.00	400	39
270.336	3.47	13.00	0.00	5.16	21.62	15.38	37.00	400	134
288.000	3.63	13.11	0.00	13.06	29.80	7.20	37.00	394	110
336.000	3.94	13.76	0.00	9.40	27.10	9.90	37.00	394	170
344.064	3.98	13.97	0.00	8.41	26.36	10.64	37.00	399	203
356.352	4.05	14.45	0.00	4.09	22.59	14.41	37.00	400	154
384.047	4.19	15.11	0.00	6.07	25.37	11.63	37.00	394	62



Freq.	Cable	Probe	PreAMP	Reading	Measurement	Margin	Limit	Ant	Turn
	Loss	Factor		Level	Horizontal				
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	cm	deg
432.047	4.44	16.31	0.00	4.08	24.83	12.17	37.00	346	146
480.047	4.69	17.00	0.00	7.46	29.15	7.85	37.00	198	171
528.047	4.94	17.67	0.00	6.84	29.46	7.54	37.00	171	167
576.047	5.20	18.72	0.00	5.87	29.78	7.22	37.00	163	65
672.047	5.70	19.09	0.00	5.11	29.90	7.10	37.00	147	83
720.047	5.94	19.71	0.00	3.82	29.47	7.53	37.00	127	85
816.047	6.44	20.53	0.00	5.24	32.21	4.79	37.00	126	159
*912.047	6.95	21.05	0.00	5.89	33.89	3.11	37.00	101	19

Remarks:

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



RADIATED EMISSION DATA

Date of Test : July 23, 1999 EUT : 56K Modem
 Test Mode : Mode 1

Freq.	Cable	Probe	PreAMP	Reading	Measurement	Margin	Limit	Ant	Turn
	Loss	Factor		Level	Vertical				
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	cm	deg
48.000	1.33	8.03	0.00	7.25	16.61	13.39	30.00	102	51
61.440	1.45	6.15	0.00	11.47	19.06	10.94	30.00	101	119
73.728	1.57	6.63	0.00	5.41	13.61	16.39	30.00	101	129
86.016	1.69	8.56	0.00	2.94	13.19	16.81	30.00	101	87
122.880	2.05	11.33	0.00	3.41	16.78	13.22	30.00	102	108
147.456	2.28	10.68	0.00	2.10	15.06	14.94	30.00	102	62
159.744	2.40	10.28	0.00	1.79	14.47	15.53	30.00	102	101
172.032	2.51	9.26	0.00	6.67	18.45	11.55	30.00	102	31
184.320	2.64	9.01	0.00	5.70	17.34	12.66	30.00	102	73
192.000	2.71	8.88	0.00	10.90	22.49	7.51	30.00	102	19
196.608	2.76	8.94	0.00	6.52	18.22	11.78	30.00	102	101
221.184	2.99	9.32	0.00	10.10	22.41	7.59	30.00	102	73
233.472	3.11	10.51	0.00	5.12	18.74	18.26	37.00	102	119
240.000	3.17	11.22	0.00	13.64	28.03	8.97	37.00	102	99
*288.000	3.63	13.17	0.00	13.77	30.58	6.42	37.00	101	28
307.200	3.79	13.84	0.00	4.34	21.96	15.04	37.00	102	182
319.488	3.86	14.13	0.00	9.02	27.01	9.99	37.00	102	161
480.056	4.69	17.20	0.00	5.54	27.43	9.57	37.00	392	10
528.056	4.94	17.43	0.00	5.03	27.40	9.60	37.00	392	61



Freq.	Cable	Probe	PreAMP	Reading	Measurement	Margin	Limit	Ant	Turn
	Loss	Factor		Level	Vertical				
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	cm	deg
576.056	5.20	18.47	0.00	5.10	28.77	8.23	37.00	392	13
672.056	5.70	18.58	0.00	2.38	26.65	10.35	37.00	247	198
720.056	5.94	19.02	0.00	1.45	26.41	10.59	37.00	247	146
816.056	6.44	19.54	0.00	3.26	29.25	7.75	37.00	249	68
912.056	6.95	20.05	0.00	2.43	29.43	7.57	37.00	249	96

Remarks:

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



RADIATED EMISSION DATA

Date of Test : July 23, 1999 EUT : 56K Modem

Test Mode : Mode 2

Freq.	Cable	Probe	PreAMP	Reading	Measurement	Margin	Limit	Ant	Turn
	Loss	Factor		Level	Horizontal				
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	cm	deg
172.032	2.51	9.43	0.00	7.52	19.46	10.54	30.00	392	57
184.320	2.64	9.18	0.00	2.23	14.04	15.96	30.00	392	160
192.023	2.71	9.00	0.00	6.66	18.37	11.63	30.00	394	109
196.608	2.76	9.10	0.00	2.35	14.21	15.79	30.00	392	43
221.184	2.99	9.53	0.00	7.96	20.48	9.52	30.00	392	39
240.023	3.17	11.32	0.00	11.21	25.70	11.30	37.00	394	122
245.760	3.23	12.21	0.00	1.21	16.66	20.34	37.00	392	22
288.022	3.63	13.11	0.00	16.87	33.61	3.39	37.00	394	11
294.912	3.70	13.25	0.00	1.63	18.58	18.42	37.00	392	174
331.707	3.92	13.61	0.00	2.20	19.73	17.27	37.00	392	57
336.022	3.94	13.76	0.00	9.79	27.49	9.51	37.00	394	18
368.644	4.11	14.81	0.00	5.72	24.64	12.36	37.00	392	189
384.022	4.19	15.11	0.00	9.14	28.44	8.56	37.00	394	4
432.022	4.44	16.31	0.00	7.89	28.64	8.36	37.00	248	73
480.022	4.69	17.00	0.00	6.94	28.63	8.37	37.00	248	81
503.812	4.81	17.37	0.00	2.36	24.54	12.46	37.00	278	130
624.075	5.44	19.30	0.00	5.72	30.47	6.53	37.00	248	21
672.075	5.70	19.09	0.00	6.40	31.19	5.81	37.00	154	77
720.075	5.94	19.71	0.00	4.37	30.02	6.98	37.00	154	83
816.034	6.44	20.53	0.00	7.02	33.99	3.01	37.00	154	175
*912.034	6.95	21.05	0.00	5.34	33.34	3.66	37.00	154	147

Remarks:

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



RADIATED EMISSION DATA

Date of Test : July 23, 1999 EUT : 56K Modem

Test Mode : Mode 2

Freq.	Cable	Probe	PreAMP	Reading	Measurement	Margin	Limit	Ant	Turn
	Loss	Factor		Level	Vertical				
MHz	dB	dB/m	dB	dBuV	dBuV/m	dB	dBuV/m	cm	deg
48.000	1.33	8.03	0.00	6.78	16.14	13.86	30.00	102	0
73.728	1.57	6.63	0.00	6.58	14.78	15.22	30.00	102	173
86.016	1.69	8.56	0.00	2.11	12.36	17.64	30.00	102	64
172.032	2.51	9.26	0.00	4.75	16.53	13.47	30.00	102	135
184.340	2.64	9.01	0.00	7.17	18.81	11.19	30.00	102	169
192.000	2.71	8.88	0.00	11.38	22.97	7.03	30.00	102	21
196.607	2.76	8.94	0.00	6.30	18.00	12.00	30.00	102	3
208.895	2.87	9.52	0.00	2.46	14.85	15.15	30.00	102	203
221.183	2.99	9.32	0.00	7.94	20.25	9.75	30.00	102	72
240.000	3.17	11.22	0.00	9.55	23.94	13.06	37.00	102	52
245.759	3.23	12.01	0.00	4.47	19.72	17.28	37.00	102	7
270.335	3.47	13.00	0.00	6.69	23.15	13.85	37.00	102	203
*288.000	3.63	13.17	0.00	16.59	33.40	3.60	37.00	102	38
307.199	3.79	13.84	0.00	1.16	18.78	18.22	37.00	102	55
319.487	3.86	14.13	0.00	11.50	29.49	7.51	37.00	102	137
331.780	3.92	14.49	0.00	3.84	22.24	14.76	37.00	102	156
336.000	3.94	14.63	0.00	4.69	23.26	13.74	37.00	102	19
384.000	4.19	15.50	0.00	8.30	27.99	9.01	37.00	102	178
491.524	4.75	17.25	0.00	1.07	23.06	13.94	37.00	102	184
528.064	4.94	17.43	0.00	2.50	24.87	12.13	37.00	372	203
576.064	5.20	18.47	0.00	3.22	26.89	10.11	37.00	372	29
672.064	5.70	18.58	0.00	3.47	27.74	9.26	37.00	333	23
816.035	6.44	19.54	0.00	2.63	28.62	8.38	37.00	222	81
912.035	6.95	20.05	0.00	1.59	28.59	8.41	37.00	234	144

Remarks:

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

