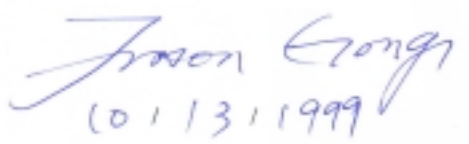
RFI / EMI TEST REPORT

APPLICANT	:	DATATRONICS TECHNOLOGY, INC.
E. U. T.	:	56K (Fax/Data/Voice) Modem
TRADE NAME	:	N/A
FCC ID	:	E2O5614MX-1
REGULATION	:	CFR 47 , Part 15 Subpart B , **Class B**
TEST SITE	:	PEP Testing Laboratory
TEST ENGINEER	:	
TEST DATE	:	
ISSUED DATE	:	OCT. / 27 / 1999
REPORT No.	:	990191

VERIFICATION

WE HEREBY VERIFY THAT:

The E. U. T. listed below has completed RFI testing by PEP Testing Laboratory and the interference emissions can pass **FCC Class B** limitations .

The tested configurations and the facility complies with the radiated and AC line conducted test site criteria in ANSI C63 . 4 - 1992 .

Any data in this RFI report is **“ reference “** only .

APPLICANT : DATATRONICS TECHNOLOGY, INC. *
PRODUCT : 56K (Fax/Data/Voice) Modem *
FCC ID : E2O5614MX-1 *
MODEL : 5614MX, 56ME-560M, External 56K Modem, 5MX2, 5MX3, 5MX4, 5MX5, 5MX6, 5MX7, 5MX8*

M. Y. TSUI / Manager

PEP Testing Laboratory
12-3FL., NO. 27-1, Lane 169, Kang-Ning St.,
Hsi-Chi, Taipei Hsien, Taiwan, R. O. C.
TEL : 886-2-6922097 FAX : 886-2-6956236

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1. GENERAL

1.1 GENERAL INFORMATION:

APPLICANT : DATATRONICS TECHNOLOGY, INC.

15, LANE 768, PA-TEH RD. SEC. 4,
TAIPEI 10565, TAIWAN, R. O. C.

MANUFACTURER : DATATRONICS TECHNOLOGY, INC.

15, LANE 768, PA-TEH RD. SEC. 4,
TAIPEI 10565, TAIWAN, R. O. C.

MEASUREMENT PROCEDURE : ANSI C63 , 4 - 1992

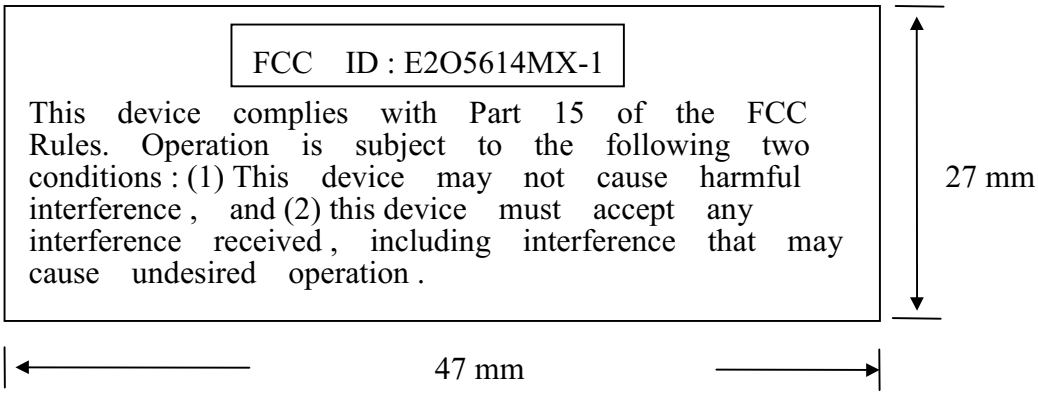
TESTED FOR COMPLIANCE WITH : Title 47 of CFR
Part 15 , Subpart B , Class B

1.2 PLACE OF MEASUREMENT

PEP Testing Laboratory

1.3 LABELING REQUIREMENT

A FCC ID label shall be permanently attached and conspicuously located on the equipment :



1.4 INFORMATION TO THE USER

The following FCC statement should be declared in a conspicuous location in the user's manual .

Federal Communications Commission (FCC) Statement

This equipment has been tested and found to comply with the limits for a Class B digital device , pursuant to Part 15 of the FCC Rules . These limits are designed to provide reasonable protection against harmful interference in a residential installation . This equipment generates , uses and can radiate radio frequency energy and , if not installed and used in accordance with the instruction, may cause harmful interference to radio communications . However , there is no guarantee that interference will not occur in a particular installation . If this equipment does cause harmful interference to radio or television reception , which can be determined by turning the equipment off and on , the user is encouraged to try to correct the interference by one or more of the following measures :

- Reorient or relocate the receiving antenna .
- Increase the separation between the equipment and receiver .
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected .
- Consult the dealer or an experienced radio / TV technician for help .

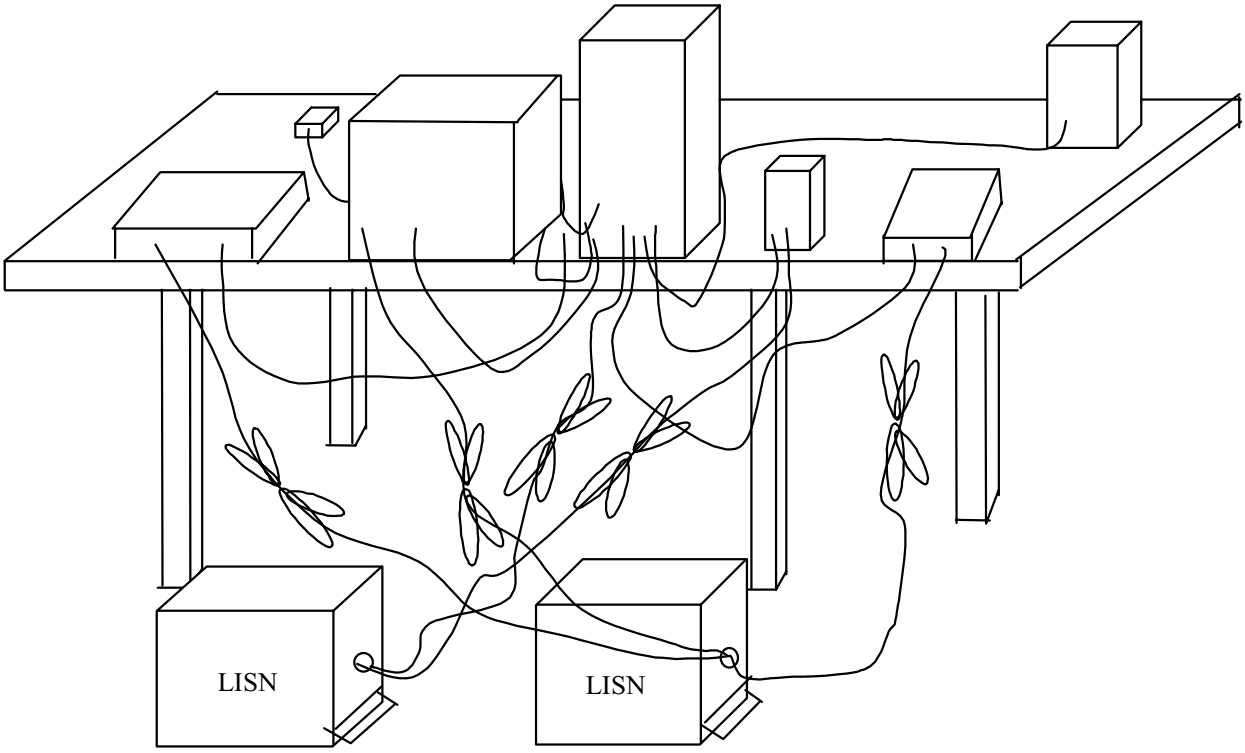
Warning : A shielded- type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception . It is essential that only the supplied power cord be used .

Use only shielded cables to connect I / O devices to this equipment .

You are cautioned that changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment .

2. CONDUCTION EMISSIONS TEST

2.1 GENERAL SETUP OF THE TEST FACILITIES



2.2 TEST PROCEDURES

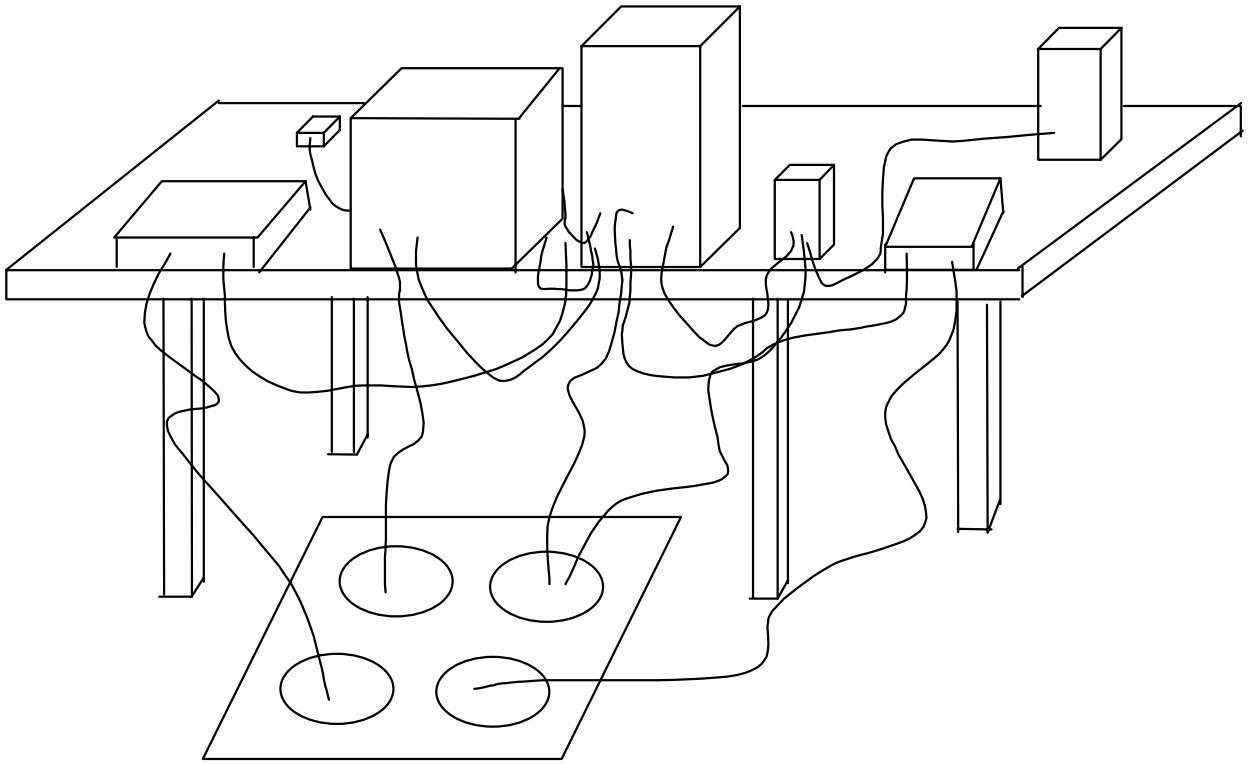
The system was setup as described above , with the EMI diagnostic software .
Both the line of power cord , hot and neutral , were run with the EMI tests software .

To get the maximum power line conducted emission , we changed the configuration by varying the monitor power cord fed from floor outlet and from the outlet on the power supply of this computer .

The highest emissions were recorded in the RFI test report .

3. RADIATED EMISSIONS TEST

3.1 GENERAL SETUP OF THE FACILITIES



3.2 TEST PROCEDURES

Radiated emissions test was carried out by **PEP Testing Laboratory** at the open field test site authorized by FCC .

The EUT and supporting equipments were setup with the EMI diagnostic software .

a. setting up the EUT under normally position , and scanning it from 30 MHz to 1000 MHz , then recording those narrow band noises which cannot be 6 dBuV below lower bound . Both horizontal and vertical antenna are measured from 1 meter height to 4.0 meter height , and turntable rotate 360 degrees .

b. fixing the EUT rear face to antenna and antenna 1.0 meter height . We adjusted I / O cables to find the highest coupling noise and moved the height of antenna from 1 to 4 meters , then rotated the turntable simultaneously .

c. checking following step b. all points which were recorded in step a.

d. changing the peripherals position , and routine steps a. b. c.

The highest emissions were recorded in the RFI test report .

4. DESCRIPTION FOR EUT TESTING CONFIGURATION

** **TEST PROCESURE - - - -**

(A) The EUT is 56000 bps fax / data / voice modem , FCC ID : E2O5614MX-1 with one RS232 port / LINE & PHONE jacks / MIC & SPEAKER jacks , for more detail information about the EUT , please refer user's manual .

(B) Test method : two PC systems with EUT were set up away from each other about 30 meters , host PC system put on testing platform . The data transmitted between both PCs via EUT's LINE port . In addition , the rest of I/O ports on the EUT were terminated by relevant peripheral devices and enabled during the test .
There are three of transmitting rate tested (1) 28800 bps (2) 33600 bps (3) 56000 bps , we provided the worst case data (56000 bps) in this report . For the MODEM bear this identification will be with several kinds of plastic enclosure which show out as PHOTO.10 to PHOTO.27 .

(C) After the EUT was set up , we did the conducted emission test in the shielded room and the worst case placement finding as the ANSI C63.4 requirement ; similarly , the radiated emission test was done at the open field site .

(D) If the peak value of the noise can't under Non-consumer equipment limit 3 dBuV more , we'll change Biconical antenna or Log-periodic antenna for Dipole antenna and record its Quasi-Peak value , making sure it can under 6 dBuV at least .

(E) In the RFI test report , we provided the worst conducted emission testing data and radiated emission test data.

5. SUPPORTING DEVICES TO TEST

SUPPORT UNIT 1. - - - - PERSONAL COMPUTER

Manufacturer : ASUS Inc.
Model Number : P2L97
Power Supply Type : Switching
Power Cord : Shielded, Detachable, 1.2m
Data Cable : Shielded, Detachable, 1.2m
FCC ID : Declaration of conformity(DoC)

SUPPORT UNIT 2. - - - - MONITOR

Manufacturer : ACER Peripherals Inc.
Model Number : 7134T
Power Supply Type : Switching
Power Cord : Shielded, Detachable, 1.2m
Data Cable : Shielded, Undetachable, 1m
FCC ID : JVP7134T

SUPPORT UNIT 3. - - - - PRINTER

Manufacturer : Hewlett-Packard Singapore Pte Ltd.
Model Number : C2642A
Power Supply Type : Linear
Power Cord : Non-Shielded, Detachable, 1.2m
Data Cable : Shielded, Detachable, 1m. 2464
FCC ID : B94C2642X

SUPPORT UNIT 4. - - - - MODEM

Manufacturer : ACEEX

Model Number : 1414

Power Supply Type : Linear

Power Cord : Non-Shielded, Detachable, 1.2m

Data Cable : Shielded, Detachable, 1m

FCC ID : IFAXDM1414

SUPPORT UNIT 5. - - - - KEYBOARD

Manufacturer : Acer Peripherals Inc.

Model Number : 6311-KW

Power Supply Type : N/A

Power Cord : N/A

Data Cable : Shielded, Undetachable, 1.2m

FCC ID : JVPKBS-WIN

SUPPORT UNIT 6. - - - - MOUSE

Manufacturer : ACER

Model Number : M-S34

Power Supply Type : N/A

Power Cord : N/A

Data Cable : Shielded, Undetachable, 1m

FCC ID : DZL211029

SUPPORT UNIT 7. - - - - TELEPHONE

Manufacturer : Kingtel Co., Ltd.

Model Number : KT882T/PM

Power Supply Type : N/A

Power Cord : N/A

Data Cable : Non-Shielded, Detachable, 1.2m

FCC ID : N/A

SUPPORT UNIT 8. - - - - MICRO-PHONE

Manufacturer : Professional Co., Ltd.

Model Number : MUD 5155

Power Supply Type : N/A

Power Cord : N/A

Data Cable : Non-Shielded, Undetachable, 1m

FCC ID : N/A

SUPPORT UNIT 9. - - - - SPEAKER

Manufacturer : ACER

Model Number : B-611

Power Supply Type : N/A

Power Cord : N/A

Data Cable : Non-Shielded, Undetachable, 1m

FCC ID : N/A

EQUIPMENT UNDER TEST - - - - 56K (Fax/Data/Voice) Modem

Manufacturer : DATATRONICS TECHNOLOGY, INC.

Model Number : 5614MX, 56ME-560M, External 56K Modem, 5MX2, 5MX3, 5MX4, 5MX5, 5MX6, 5MX7, 5MX8

Data Cable : N/A

FCC ID : E2O5614MX-1

6. TEST CONFIGURATION

Radiated emission detector function :

(1) 30MHZ~1GHZ : Quasi-Peak Value
Resolution BW : 120KHZ Video BW : 300KHZ

(2) above 1GHZ : Quasi-Peak value and Average Value
Resolution BW : 1MHZ Video BW : 1MHZ
*** either Q. P. or average value will be recorded in the report**

Conducted emission detector function :

(1) 450KHZ~30MHZ : Quasi-Peak Value
Resolution BW : 9KHZ Video BW : 30KHZ

The else descriptions : both PC systems were enabled by " H " characters pattern .

CONDUCTED TEST CONFIGURATION PHOTO.

< FRONT VIEW >

CONDUCTED EMISSIONS TEST DATA

Note : HOT LINE TEST

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)
2.371	43.51	– 4.49	48.00	32.20	0.90	0.41	-10.00
5.592	29.86	-18.14	48.00	18.00	1.13	0.72	-10.00
12.300	30.88	-17.12	48.00	18.60	1.23	1.06	-10.00
15.255	31.77	-16.23	48.00	19.40	1.26	1.12	-10.00
16.614	36.29	-11.71	48.00	23.80	1.29	1.21	-10.00
20.101	34.36	-13.64	48.00	21.60	1.35	1.41	-10.00
22.938	36.13	-11.87	48.00	23.20	1.40	1.52	-10.00
24.120	34.59	-13.41	48.00	21.60	1.42	1.57	-10.00
25.390	33.06	-14.94	48.00	20.00	1.44	1.63	-10.00
28.375	37.89	-10.11	48.00	24.60	1.48	1.81	-10.00

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

CONDUCTED EMISSIONS TEST DATA

Note : NEUTRAL LINE TEST

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)
2.607	40.40	- 7.60	48.00	29.00	0.98	0.41	-10.00
7.690	32.32	-15.68	48.00	20.20	1.17	0.95	-10.00
8.547	32.16	-15.84	48.00	20.00	1.18	0.98	-10.00
12.684	35.09	-12.91	48.00	22.80	1.23	1.06	-10.00
14.250	34.73	-13.27	48.00	22.40	1.24	1.09	-10.00
16.614	35.09	-12.91	48.00	22.60	1.29	1.21	-10.00
18.978	37.48	-10.52	48.00	24.80	1.33	1.35	-10.00
20.455	38.18	- 9.82	48.00	25.40	1.36	1.42	-10.00
21.253	35.63	-12.37	48.00	22.80	1.37	1.46	-10.00
28.375	37.69	-10.31	48.00	24.40	1.48	1.81	-10.00

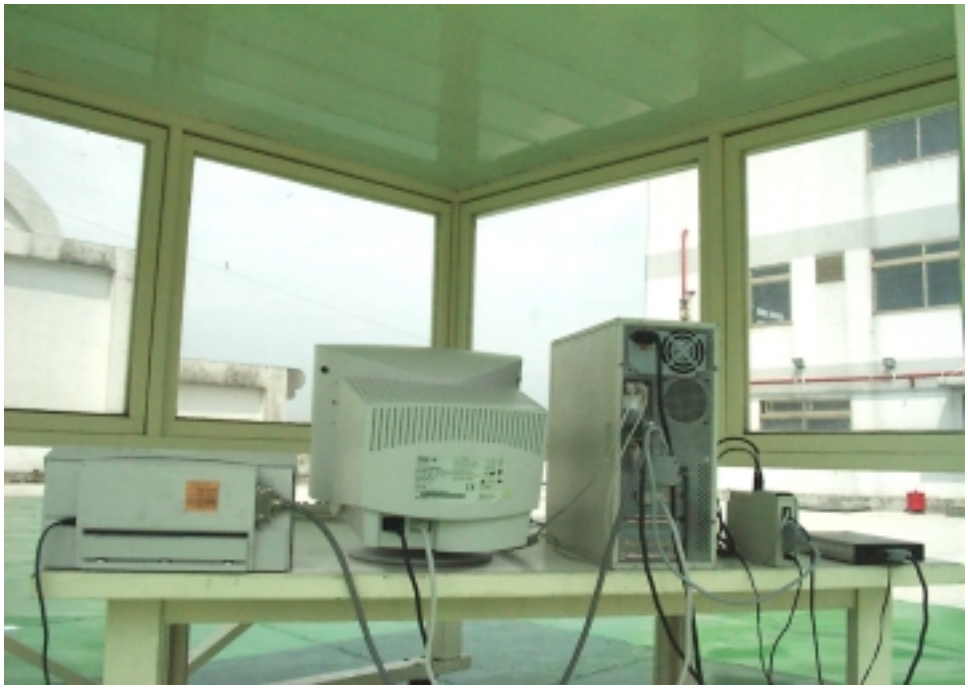
Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

RADIATED TEST CONFIGURATION PHOTO.

< FRONT VIEW >

< REAR VIEW >



RADIATED EMISSIONS TEST DATA

Antenna polarization : HORIZONTAL ; Test distance : 3 m ;

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)
86.028	28.90	-11.10	40.00	38.24	9.76	0.90	20.00
129.027	27.04	-16.46	43.50	33.63	12.15	1.25	20.00
150.529	25.05	-18.45	43.50	30.74	12.91	1.40	20.00
172.035	25.06	-18.44	43.50	30.22	13.26	1.58	20.00
215.043	27.14	-16.36	43.50	29.01	16.20	1.93	20.00
236.544	24.20	-21.80	46.00	24.08	18.03	2.10	20.00
258.052	22.62	-23.38	46.00	21.23	19.11	2.28	20.00
376.282	30.92	-15.08	46.00	32.01	16.13	2.78	20.00
408.538	25.76	-20.24	46.00	25.85	17.07	2.84	20.00
440.794	27.36	-18.64	46.00	26.97	17.41	2.97	20.00

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

RADIATED EMISSIONS TEST DATA

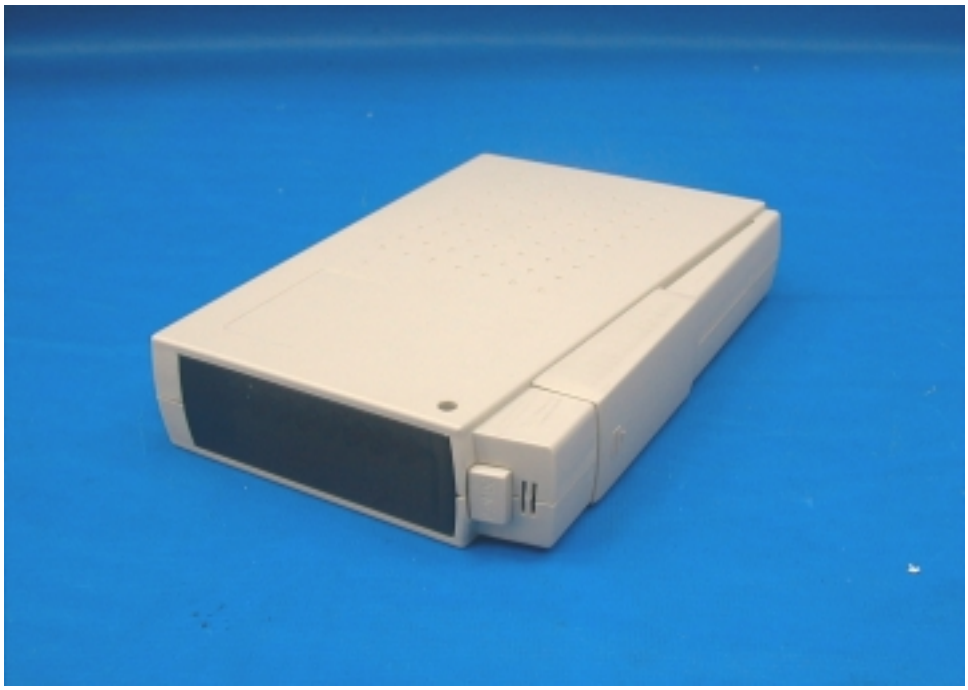
Antenna polarization : VERTICAL ; Test distance : 3 m ;

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)
32.244	29.38	-10.62	40.00	34.80	14.18	0.40	20.00
129.025	26.80	-16.70	43.50	33.39	12.15	1.25	20.00
150.529	26.39	-17.11	43.50	32.08	12.91	1.40	20.00
225.793	29.86	-16.14	46.00	30.60	17.24	2.02	20.00
236.532	25.96	-20.04	46.00	25.84	18.03	2.10	20.00
247.297	28.48	-17.52	46.00	27.64	18.66	2.18	20.00
311.760	27.89	-18.11	46.00	30.83	14.35	2.71	20.00
354.768	29.31	-18.69	46.00	31.10	15.45	2.76	20.00
408.528	26.54	-19.46	46.00	26.63	17.07	2.84	20.00
419.280	27.92	-18.08	46.00	27.63	17.41	2.08	20.00

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line

APPENDIX A.
PHOTOS OF EUT APPEARANCE
< EUT FRONT VIEW >



< EUT REAR VIEW >

APPENDIX B.
List of Test Equipment

Instrument	Model No.	Cal. Due Date	S/N
R&S Receiver	ESVS30(30M~1GHZ)	Apr. 21, 1999	863342/012
R&S Receiver	ESBI (20~5GHZ)	Feb. 12, 2000	845658/003
Spectrum Analyzer	HP8591A(9K~1.8GHZ)	Apr. 15, 1999	3225A03039
Spectrum Analyzer	R3261A (9K~2.6GHZ)	Dec. 03 1999	91720076
EMCO L.I.S.N.	3825/2 (10K~30MHZ)	Apr. 15, 1999	9311-2150
Anritsu Pre-Amp.	MH648A(100K~1.4GHZ)	Sep. 20, 1999	M40076
COM-Power Horn Antenna	AH-118 (1G~18GHZ)		10056
EMCO Dipole Antenna	3121C (20M~1GHZ)	May. 22, 1999	9611-1230
EMCO Biconical Antenna	3110B (30M~300M)	Mar. 10, 2000	2932
EMCO Log-Periodic Antenna	3146A (300M~1GHZ)	Apr. 14, 2000	1384