

RFI / EMI TEST REPORT

APPLICANT : AMAQUEST COMPUTER CORP.

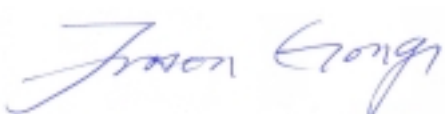
E. U. T. : DVD Array Controller

TRADE NAME : N/A

FCC ID : NHZCTL-9800

REGULATION : CFR 47 , Part 15 Subpart B , Class B

TEST SITE : PEP Testing Laboratory

TEST ENGINEER : 

TEST DATE : 

ISSUED DATE : JAN. / 12 / 2000

REPORT No. : 990694

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 : AMAQUEST COMPUTER CORP. *

PRODUCT : DVD Array Controller *

FCC ID : NHZCTL-9800 *

MODEL : CTL-9805, CTL-9800 *



M. Y. TSUI / Manager

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1. GENERAL

1.1 GENERAL INFORMATION:

APPLICANT : AMAQUEST COMPUTER CORP.

8/F, 79 HSIN-TAI 5TH RD., SEC. 1,
HSI-CHIH, TAIPEI, TAIWAN 221

MANUFACTURER : AMAQUEST COMPUTER CORP.

8/F, 79 HSIN-TAI 5TH RD., SEC. 1,
HSI-CHIH, TAIPEI, TAIWAN 221

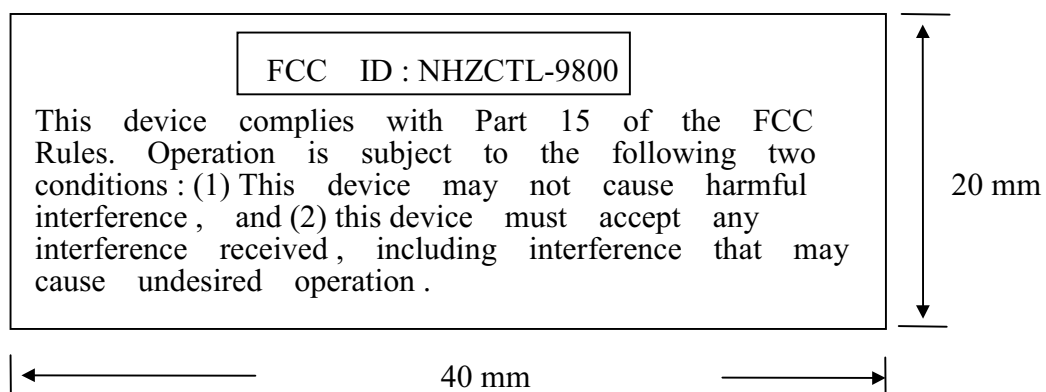
MEASUREMENT PROCEDURE : ANSI C63 , 4 - 1992

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.

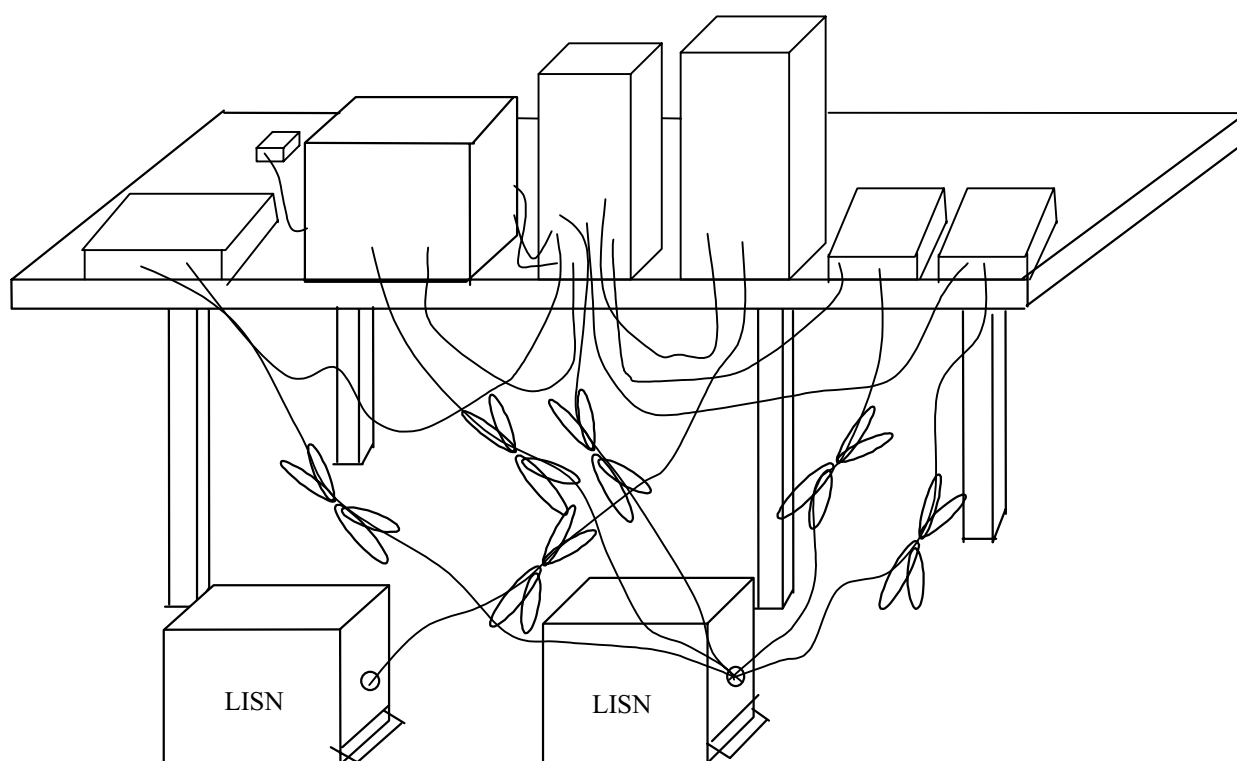
Warning : A shielded-type power cord is required in order to meet FCC emission limits and also to prevent interference to the nearby radio and television reception. It is essential that only the supplied power cord be used.

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 .

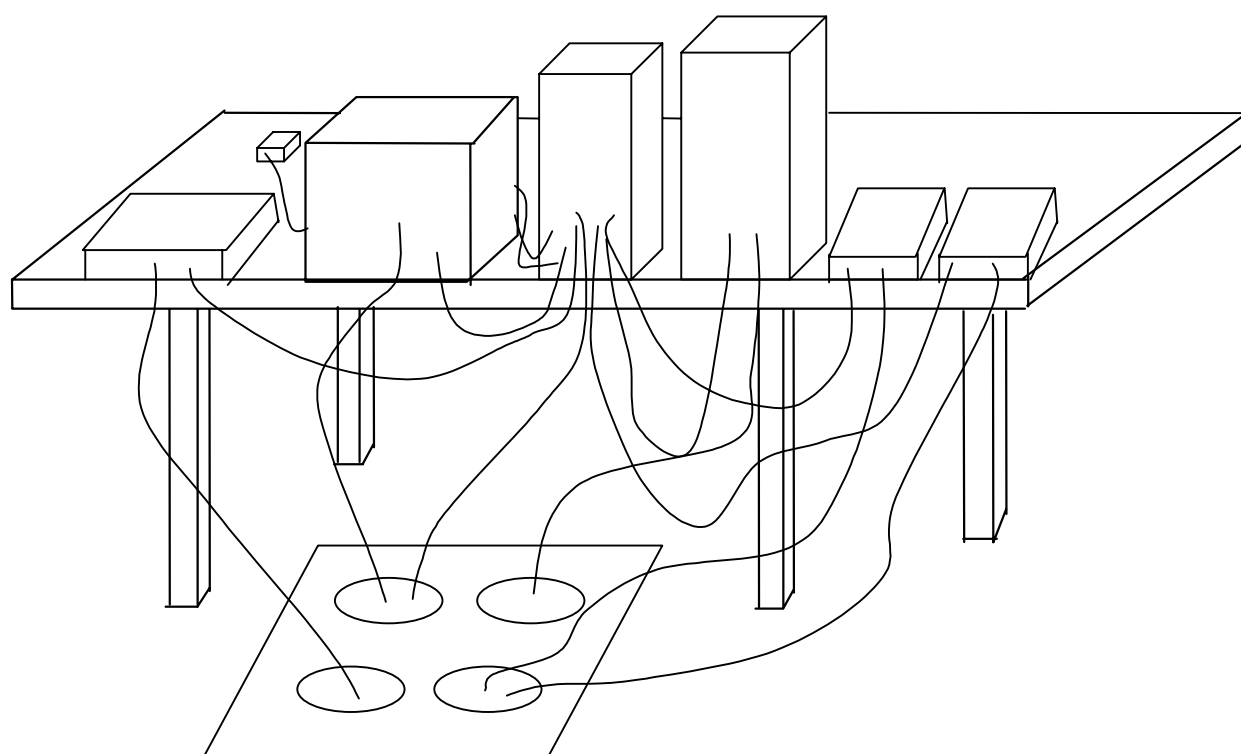
Both the line of power cord , hot and neutral , were run with the EMI tests software .

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 PROCEDURE ----**

- (A) The EUT is DVD Array Controller , FCC ID : NHZCTL-9800 , for more detail information about the EUT , please refer user's manual .
- (B) Test method : We put the EUT and seven DVDs inside a case as a DVD array system and connected to Ethernet port on the PC . The EUT was enabled by files read / write between DVD and HDD inside the PC via Ethernet port , the DVD will be enabled by sequence from one to seven , after this , the PC will be active the rest of peripheral devices by "H" characters ; then , repeat to enable DVD array system .
We provided the worst case data in this report .
- (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 : P/I-PSSTVP4
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 : SAMSUNG
Model Number : SyncMaster 700p
Power Supply Type : Switching
Power Cord : Shielded, Detachable, 1.2m
Data Cable : Shielded, Detachable, 1m
FCC ID : A3LCGH760

SUPPORT UNIT 3. - - - - PRINTER

Manufacturer : Hewlett-Packard Singapore Pte Ltd.
Model Number : HP400
Power Supply Type : Linear
Power Cord : Non-Shielded, Detachable, 1.2m
Data Cable : Shielded, Detachable, 1m. 2464
FCC ID : B94C2642X

SUPPORT UNIT 4. ----MODEM x 2

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
Model Number : 6311-C4C
Power Supply Type : N/A
Power Cord : N/A
Data Cable : Shielded, Undetachable, 1m
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 : Declaration of conformity(DoC)

SUPPORT UNIT 7. ----- POWER SUPPLY

Manufacturer: FSP GROUP INC.

Model Number : FSP400-60GN

Power Supply Type : N/A

Power Cord : N/A

Data Cable : N/A

FCC ID : N/A

SUPPORT UNIT 8. ----- CASE

Manufacturer: AMAQUEST

Model Number : CD-980

Power Supply Type : N/A

Power Cord : N/A

Data Cable : N/A

FCC ID : N/A

SUPPORT UNIT 9. ----- DVD-ROM * 7

Manufacturer: PIONEER

Model Number : CODE DVD-303S

Power Supply Type : N/A

Power Cord : N/A

Data Cable : N/A

FCC ID : N/A

EQUIPMENT UNDER TEST ---- DVD Array Controller

Manufacturer : AMAQUEST COMPUTER CORP.

Model Number : CTL-9805, CTL-9800

Data Cable : N/A

FCC ID : NHZCTL-9800

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 : N/A

Conducted Emission Test Photo. : Page 17

Test Data : Hot 18

Neutral 19

Radiated Emission Test Photo. : Page 20

Test Data : Horizontal 21

Vertical 22

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)
7.335	37.06	-10.94	48.00	35.40	0.66	1.00
8.665	38.59	- 9.41	48.00	37.00	0.66	0.93
10.231	41.25	- 6.75	48.00	39.80	0.65	0.80
11.974	40.25	- 7.75	48.00	38.80	0.65	0.80
13.452	42.85	- 5.15	48.00	41.40	0.65	0.80
16.289	43.04	- 4.96	48.00	41.60	0.64	0.80
18.298	41.23	- 6.77	48.00	39.80	0.63	0.80
19.835	41.67	- 6.33	48.00	40.20	0.62	0.85
20.367	41.49	- 6.51	48.00	40.00	0.62	0.88
24.474	38.00	-10.00	48.00	36.40	0.62	0.98

Note :

1. Level = Read Level + Probe Factor + Cable Loss
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)
3.878	44.68	- 3.32	48.00	43.00	0.68	1.00
12.802	39.62	- 8.38	48.00	38.20	0.62	0.80
13.363	44.22	- 3.78	48.00	42.80	0.62	0.80
14.338	44.81	- 3.19	48.00	43.40	0.61	0.80
16.318	44.61	- 3.39	48.00	43.20	0.61	0.80
18.328	44.82	- 3.18	48.00	43.40	0.62	0.80
19.835	45.07	- 2.93	48.00	43.60	0.62	0.85
20.367	44.89	- 3.11	48.00	43.40	0.62	0.88
24.504	41.79	- 6.21	48.00	40.20	0.61	0.98
26.011	37.03	-10.97	48.00	35.40	0.63	1.00

Note :

1. Level = Read Level + Probe Factor + Cable Loss
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)
48.100	32.23	- 7.77	40.00	39.93	11.64	0.90	20.24
75.004	33.51	- 6.49	40.00	43.53	8.55	1.35	19.92
125.005	34.04	- 9.46	43.50	40.68	11.66	1.60	19.91
150.002	35.17	- 8.33	43.50	39.86	13.11	1.90	19.70
250.004	37.28	- 8.72	46.00	43.80	10.98	2.70	20.19
376.401	35.04	-10.96	46.00	36.93	14.45	3.35	19.69
426.358	33.65	-12.35	46.00	34.41	15.53	3.50	19.79
509.600	35.77	-10.23	46.00	35.06	17.09	3.82	20.20
601.401	34.94	-11.06	46.00	32.25	18.88	4.00	20.20
625.906	31.87	-14.13	46.00	28.55	19.32	4.05	20.05

Note :

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

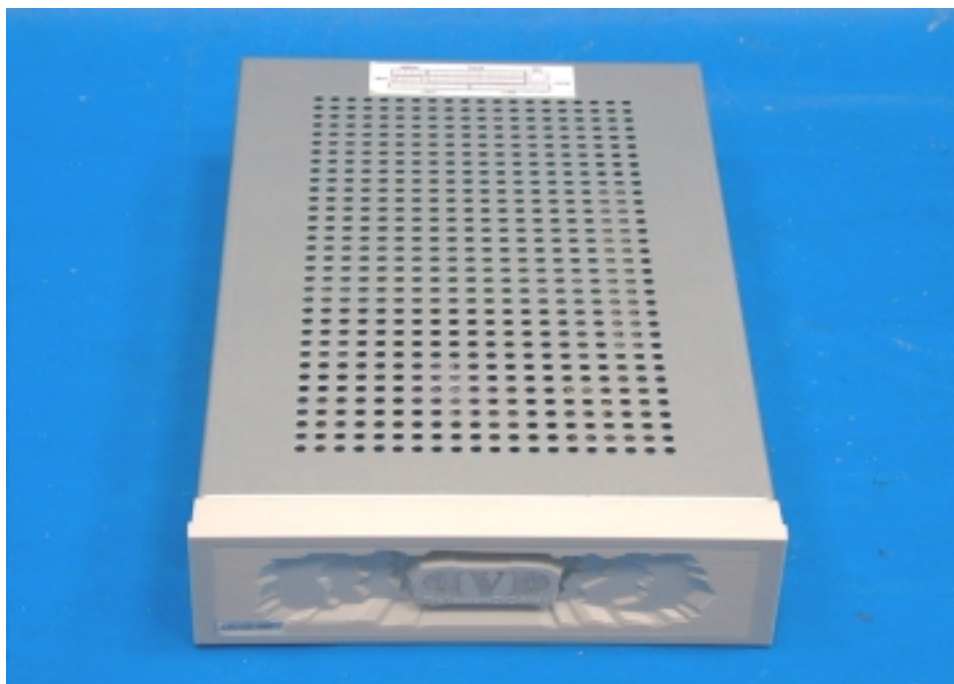
RADIATED EMISSIONS TEST DATA**Antenna polarization : VERTICAL ; Test distance : 3 m ;**

Freq. (MHz)	Level (dB)	Over Limit (dB)	Limit Line (dB)	Read Level (dB)	Probe Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)
49.970	34.26	- 5.74	40.00	41.96	11.61	0.90	20.21
75.004	32.17	- 7.83	40.00	42.19	8.55	1.35	19.92
125.005	36.18	- 7.32	43.50	42.82	11.66	1.60	19.91
150.002	33.87	- 9.63	43.50	38.56	13.11	1.90	19.70
250.004	34.18	-11.82	46.00	40.70	10.98	2.70	20.19
325.067	32.75	-13.25	46.00	36.16	13.23	3.25	19.89
349.262	35.52	-10.48	46.00	38.25	13.77	3.30	19.80
450.197	33.11	-12.89	46.00	32.85	16.26	3.60	19.60
500.021	34.17	-11.83	46.00	33.67	16.90	3.80	20.19
549.993	30.64	-15.36	46.00	28.97	17.97	3.90	20.20

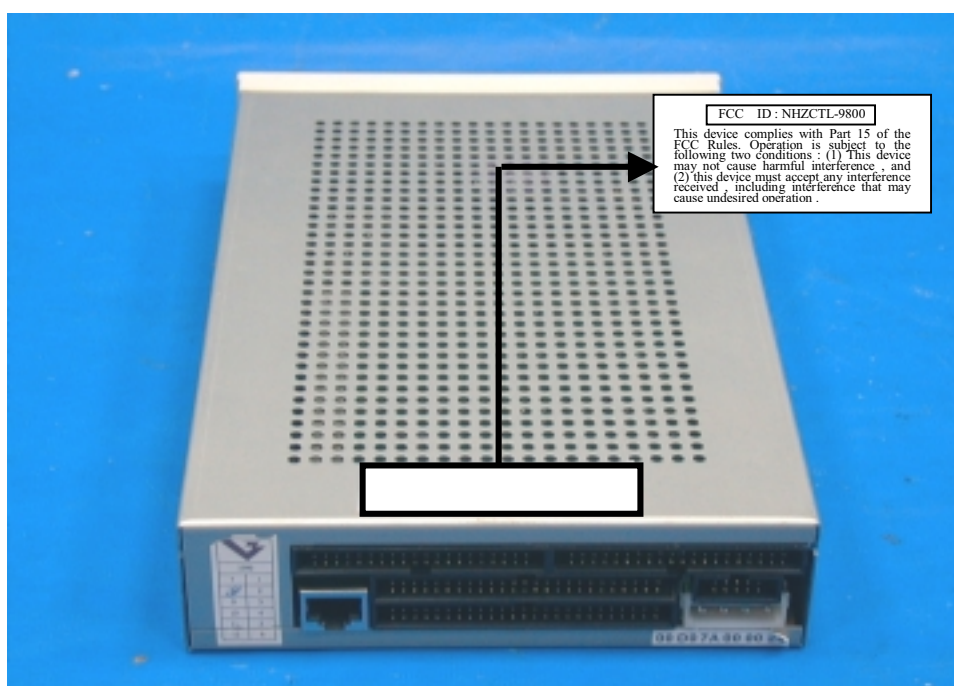
Note :

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, 2000	863342/012
R&S Receiver	ESBI (20~5GHZ)	Feb. 12, 2000	845658/003
Spectrum Analyzer	HP8591A(9K~1.8GHZ)	Apr. 15, 2000	3225A03039
Spectrum Analyzer	R3261A (9K~2.6GHZ)	Dec. 03, 2000	91720076
EMCO L.I.S.N.	3825/2 (10K~30MHZ)	Apr. 15, 2000	9311-2150
Anritsu Pre-Amp.	MH648A(100K~1.4GHZ)	Sep. 20, 2000	M40076
COM-Power Horn Antenna	AH-118 (1G~18GHZ)		10056
EMCO Dipole Antenna	3121C (20M~1GHZ)	May. 22, 2000	9611-1230
EMCO Biconical Antenna	3110B (30M~300M)	Mar. 10, 2000	2932
EMCO Log-Periodic Antenna	3146A (300M~1GHZ)	Apr. 14, 2000	1384