APPLICATION FOR CERTIFICATION
On Behalf of
Kinpo Electronics, Inc.
ADSL

Model : A100A

FCC ID：ESNA100A

Prepared for : Kinpo Electronics, Inc.
1, Tsao Ti Wei, Wan Shun Tsun,
Shen Keng Hsiang, Taipei Hsien,
Taiwan, R.O.C.

Prepared By : Taiwan Tokin EMC Eng. Corp.
No. 53-11, Tin-Fu Tsun, Lin-Kou,
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File Number	:	ATM-G99645
Report Number	:	TTEMC-F99189
Date of Test	:	Dec. 07/10, 1999
Date of Report	:	Dec. 21, 1999

TABLE OF CONTENTS

TEST REPORT CERTIFICATION

Applicant	:	Kinpo Electronics, Inc.
Manufacturer	:	Cal-Comp Electronic (Thailand) Co., Ltd.
FCC ID	:	ESNA100A
EUT Description	:	ADSL
		(A) MODEL NO. : A100A
		(B) SERIAL NO. : N/A
		(C) POWER SUPPLY : AC 120V/60Hz (Via PC)

Measurement Procedure Used :

FCC RULES AND REGULATIONS PART 15 SUBPART B CLASS B OCTOBER 1998 AND FCC / ANSI C63.4-1992

The device described above was tested by TAIWAN TOKIN EMC ENG. CORP. to determine the maximum emission levels emanating from the device. The maximum emission levels were compared to the FCC Part 15B Class B limits both radiated and conducted emissions.
The measurement results were contained in this test report and TAIWAN TOKIN EMC ENG. CORP. was assumed full responsibility for the accuracy and completeness of these measurements. Also, this report showed that the EUT to be technically compliance with the FCC official limits.
This report applied to above tested sample only. This report shall not be reproduced in part without written approval of Taiwan Tokin EMC Eng. corp.

Date of Test : Dec. 07/10, 1999

Prepared by : _____
(CHERRY WANG)

Test Engineer : _____
(ALLEN WANG)

Approve & Authorized Signer : _____
(JACKIE DENG)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	:	ADSL (Asymmetrical Digital Subscriber Line) (ADSL Network Modem Board)
Model Number	:	A100A
FCC ID.	:	ESNA100A
Applicant	:	Kinpo Electronics, Inc. 1, Tsao Ti Wei, Wan Shun Tsun, Shen Keng Hsiang, Taipei Hsien, Taiwan, R.O.C.
Manufacturer	:	Cal-Comp Electronics (Thailand) Co., Ltd. 60 Moo 8, Sethakji Rd., Klong Maduea, Kratoom Bean, Samuthsakorn 74110 Thailand.
Date of Receipt of Sample	:	Dec. 03, 1999
Date of Test	:	Dec. 07/10, 1999

1.2. Tested Supporting System Details

1.2.1. PERSONAL COMPUTER

Model Number	:	71XX
Serial Number	:	TW84200235
System Number	:	D6923A
FCC ID	:	By DoC
BSMI Number	:	檢磁 3872H010
Manufacturer	:	Hewlett Packard
ADSL (EUT)	**:**	**Kinpo Electronics, Inc.** **M/N A100A** **FCC ID. ESNA100A**
Telephone Line #1 (EUT link to Telephone)	:	Non-Shielded, Detachable, 2.0m
Telephone Line #2 (EUT link to Partner PC)	:	Non-Shielded, Detachable, 2.0m
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.2. COLOR MONITOR

Model Number	:	CM753ET
Serial Number	:	T9B000203
FCC ID	:	By DoC
Manufacturer	:	Hitachi
Data Cable	:	Shielded, Detachable, 1.8m
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.3. KEYBOARD

Model Number	:	SK-2501K
Serial Number	:	MR80700543
FCC ID	:	GYUR38SK
Manufacturer	:	HP
Data Cable	:	Shielded, Undetachable, 1.2m

1.2.4. PRINTER

Model Number	:	2225C+
Serial Number	:	3007S68643
FCC ID	:	DSI6XU2225
Manufacturer	:	Hewlett Packard
Power Adapter	:	Hewlett Packard, M/N 82241A Non-Shielded, Undetachable, 2.0m
Data Cable	:	Shielded, Detachable, 1.2m

1.2.5. MODEM

Model Number	:	DM-1414
Serial Number	:	980034400
FCC ID	:	IFAXDM1414
Manufacturer	:	Aceex
Data Cable	:	Shielded, Detachable, 1.2m
Power Adapter	:	Amigo, Model AM-91000A Non-Shielded, Undetachable, 1.8m

1.2.6. PS2 MOUSE

Model Number	:	M-S34
Serial Number	:	LZA81757340
FCC ID	:	DZL211029
Manufacturer	:	Logitech
Data Cable	:	Non-Shielded, Undetachable, 1.8m

1.2.7. USB MOUSE

Model Number	:	M-UB48
Serial Number	:	LZB81900212
FCC ID	:	DZL211137
Manufacturer	:	Logitech
Data Cable	:	Shielded, Undetachable, 1.8m

1.2.8. MICROPHONE

Model Number	:	HD-303
Serial Number	:	N/A
Manufacturer	:	Multimedia Microphone System
Data Cable	:	Non-Shielded, Undetachable, 2.2m

1.2.9. SPEAKER

Model Number	:	J-008
Serial Number	:	97-C-008923-T
Manufacturer	:	(J-S) JAZZ HIPSTER
Data Cable	:	Non-Shielded, Undetachable, 1m

1.2.10. WALKMAN

Model Number	:	RQ-P35LT-K
Serial Number	:	HA08473
Manufacturer	:	Panasonic
Data Cable	:	Non-Shielded, Detachable, 1.8m

1.2.11. EARPHONE

Model Number	:	N/A
Serial Number	:	N/A
Manufacturer	:	Panasonic
Earphone Cable	:	Non-Shielded, Undetachable, 1.1m

1.2.12. JOYSTICK

Model Number	:	1FD05015
Serial Number	:	N/A
Manufacturer	:	Rambo
Data Cable	:	Non-Shielded, Undetachable, 1.6m

1.2.13. TELEPHONE

Model Number	:	K-2500TRP
Serial Number	:	1015198
Manufacturer	:	Kuo Yang
Data Cable	:	Non-Shielded, Detachable, 1.8m

** PARTNER SYSTEMS **

1.2.14. PERSONAL COMPUTER (ITeX ADSL DEVELOPMENT TOOL)

Main Board	:	ASUS, M/N P28, FCC by DoC
CPU	:	Intel Pentium II 450MHz
S.P.S.	:	Seventeam, M/N ST-250GL
CD-ROM	:	ASUS, M/N CD-S400/A, FCC by DoC
VGA	:	Enn Yah, M/N ST-775A
SAM ADSL ATU-C Board	:	ITEX, SAM ADSL Transceiver Unit Central
Power Cord	:	Non-Shielded, Detachable, 1.8m

1.2.15. COLOR MONITOR

Model Number	:	PM36B
Serial Number	:	W821111454
FCC ID	:	IIBTC1
Manufacturer	:	Funai Electric Company of Taiwan
Data Cable	:	Shielded, Undetachable, 1.2m
Power Cord	:	Non-Shielded, Detachable, 1.5m

1.2.16. KEYBOARD

Model Number	:	6511-TW4C
Serial Number	:	N/A
FCC ID	:	By DoC
BSMI Number	:	檢磁 4862A064
Manufacturer	:	Acer
Data Cable	:	Shielded, Undetachable, 1.2m

1.2.17. PS2 MOUSE

Model Number	:	M-S43
Serial Number	:	LZA90501119
FCC ID	:	DZL211106
Manufacturer	:	Logitech
Data Cable	:	Non-Shielded, Undetachable, 1.8m

1.3. Description of Test Facility

Site Description (No. 1 Open Site)	:	Nov. 23, 1999 Re-file on Federal Communication Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, U.S.A.
Name of Firm	:	Taiwan Tokin EMC Eng. Corp.
Site Location	:	No. 53-11, Tin-Fu Tsun, Lin-Kou, Taipei Hsien, Taiwan, R.O.C.
NVLAP lab. Code	:	200077-0

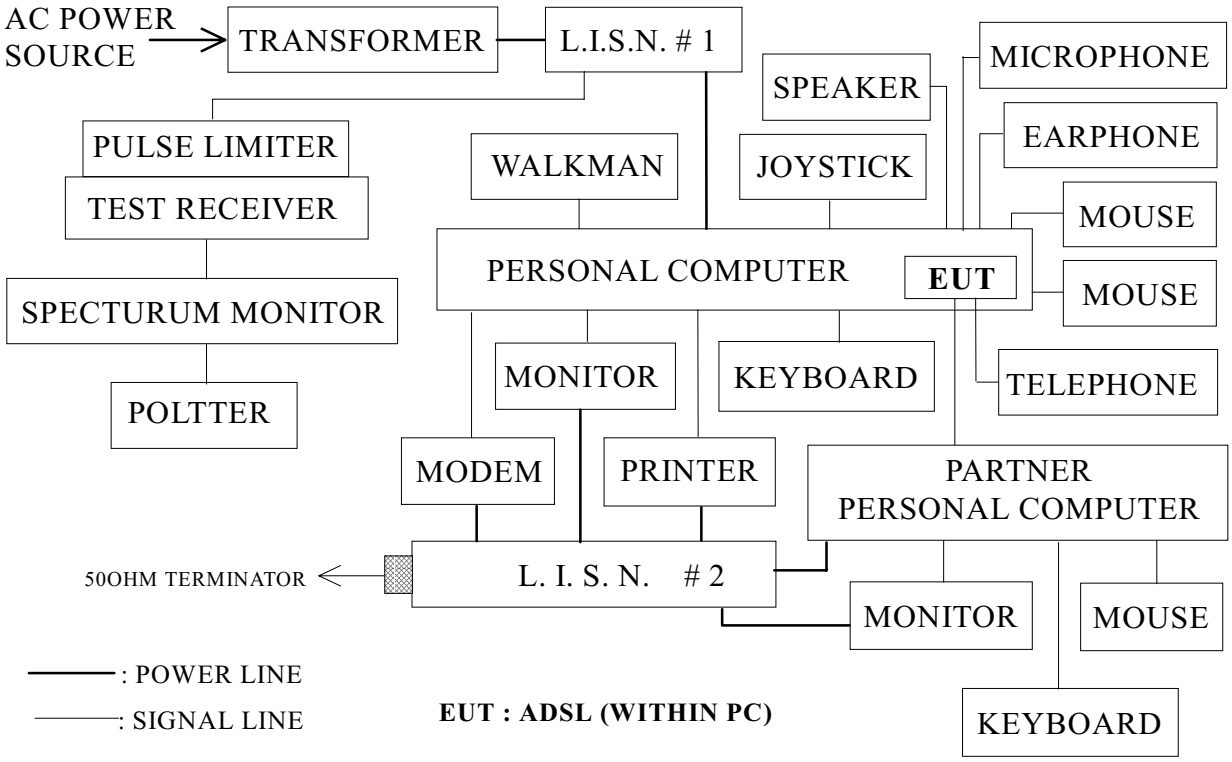
2. POWERLINE CONDUCTED TEST

2.1. Test Equipment

The following test equipment were used during the power line conducted tests：

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESH3	880647/035	Jun. 19, 99'	1 Year
2.	L.I.S.N. # 1	Kyoritsu	KNW-407	8-881-13	Apr. 21, 99'	1 Year
3.	L.I.S.N. # 2	Kyoritsu	KNW-407	8-855-9	Apr. 21, 99'	1 Year

2.2. Block Diagram of Test Setup



2.3. Powerline Conducted Emission Limit (CLASS B)

Frequency	Maximum RF Line Voltage	
	μV	dBμV
0.45MHz ~ 30MHz	250	48

REMARKS：RF LINE VOLTAGE (dBμV) = 20 log RF LINE VOLTAGE (μV)

2.4. EUT's Configuration during Compliance Measurement

The following equipment were installed on RF LINE VOLTAGE measurement to meet the Commission requirement and operating in a manner which tend to maximize its emission characteristics in a normal application.

2.4.1. ADSL (EUT)

Model Number	:	A100A
Serial Number	:	N/A
FCC ID.	:	ESNA100A
Manufacturer	:	Cal-Comp Electronics (Thailand) Co., Ltd.

2.4.2. Supporting System : As in Section 1.2

2.5. Operating Condition of EUT

2.5.1. Setup the EUT and simulator as shown on 2.2.

2.5.2. Turn on the power of all equipment.

2.5.3. Personal computer read data from disk.

2.5.4. Host and partner personal computers were running the self-test programs "ITEX TEST" and "NES CAP" at the same time, and then the host and partner personal computers "Down Stream/Up Stream" data file through ADSL (EUT) and SAM ADSL ATU-C Board.

2.5.5. Host and partner personal computers displayed the "Down Stream/Up Stream" worked status on the screen of monitors by windows.

2.5.6. Personal computer read data from floppy disk 、modem and then wrote the data into floppy disk、modem.

2.5.7. The other peripheral devices were drove and operated in turn during all testing.

2.5.8. Repeat above procedures from 2.5.3 to 2.5.7.

2.6. Test Procedure

The EUT within PC and then the PC was connected to the power mains through a line impedance stabilization network (L.I.S.N.# 1). The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N. # 2). This provided a 50 ohm coupling impedance for the measuring equipment. (Please refer to the block diagram of the test setup and photographs.) Both sides of A.C. line were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed according to FCC ANSI C63.4-1992 on conducted measurement.

The bandwidth of the R&S Test Receiver ESH3 was set at 10KHz.

The frequency range from 450KHz to 30MHz was checked.

All the test results are listed in section 2.8.

2.7. Test Results

PASSED. Please refer to the following pages.

2.8. Line Conducted RF Voltage Measurement Results

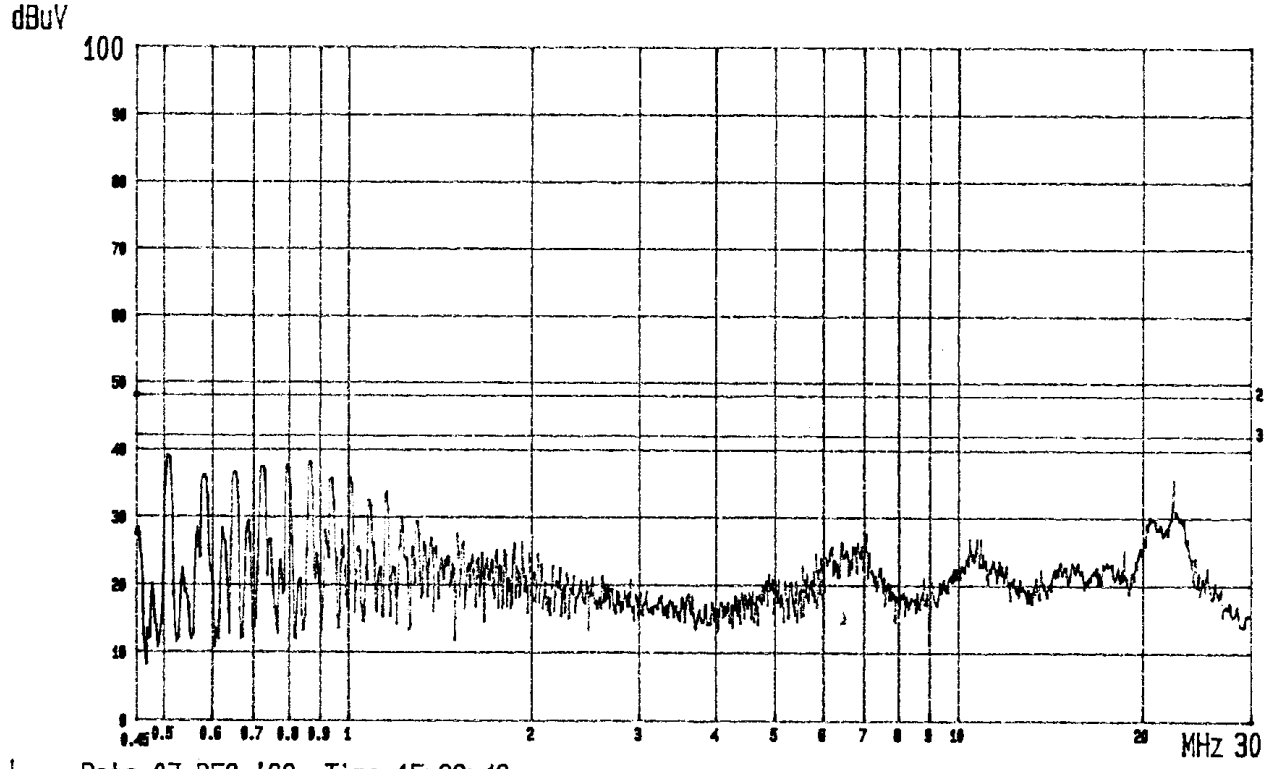
The frequency range from 450KHz to 30 MHz was investigated.
All emissions not reported below are too low against the prescribed limits.

Date of Test： Dec. 07, 1999 Temperature： 20℃

EUT ： ADSL Humidity： 51%

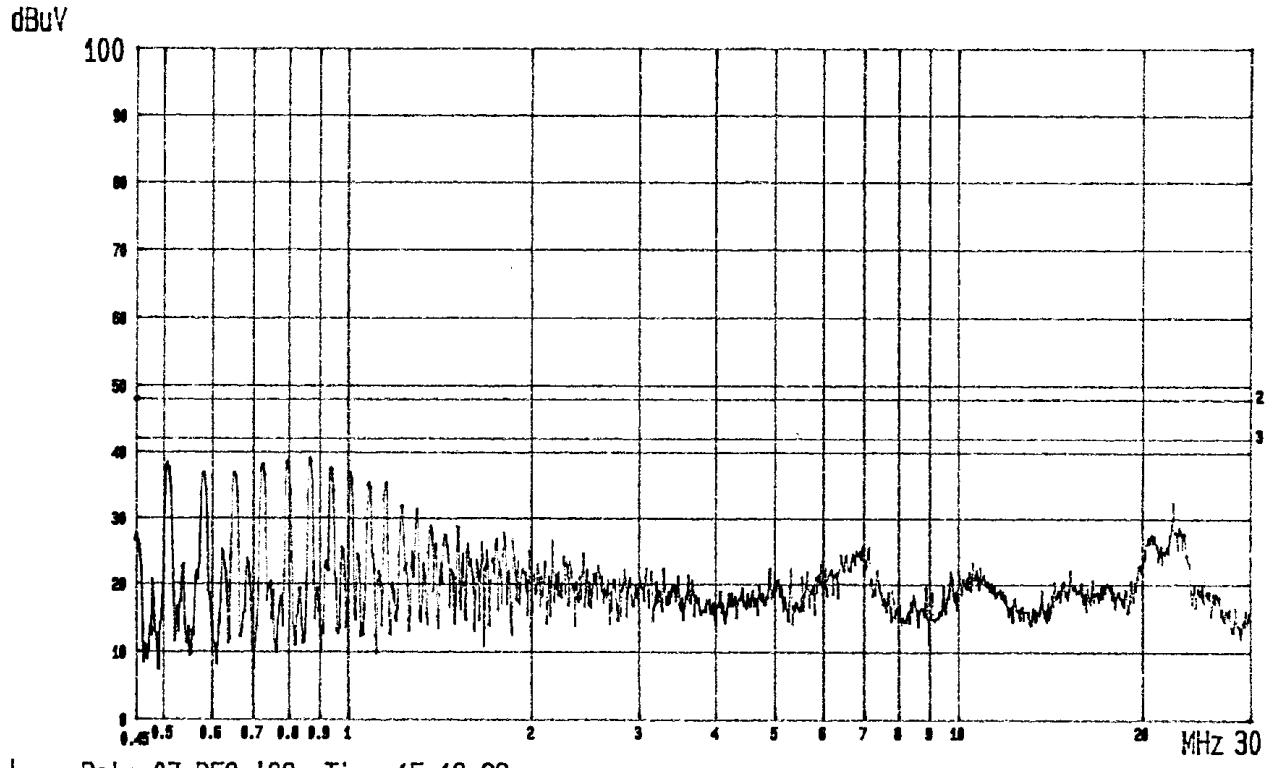
Frequency (MHz)	Factor dB	Reading (dBμV)		Measurement (dBμV)		Limits (dBμV)	Margin dB	
		VA	VB	VA	VB		VA	VB
0.5058	0.5	37.3	37.3	37.8	37.8	48.0	10.2	10.2
0.7221	0.5	37.4	36.5	37.9	37	48.0	10.1	11
0.8667	**0.5**	**37.9**	*	**38.4**	*	**48.0**	**9.6**	*
0.8670	0.5	*	36.3	*	36.8	48.0	*	11.2
1.0115	0.5	*	33.9	*	34.4	48.0	*	13.6
1.1553	0.5	34.4	*	34.9	*	48.0	13.1	*
7.0508	0.8	*	20.1	*	20.9	48.0	*	27.1
7.0809	0.8	17.1	*	17.9	*	48.0	30.1	*
22.5269	1.1	27.1	*	28.2	*	48.0	19.8	*
22.5698	1.1	*	35.4	*	36.5	48.0	*	11.5

Remark： 1. All reading are Quasi-Peak values.
2. Factor = Insertion Loss + Cable Loss
3. The worst emission was detected at 0.8667MHz with corrected signal level of 38.4dBμV (limit is 48dBμV) when the VA side of the PC's (EUT within) power was connected to L.I.S.N.



|—— Date 07.DEC.'99 Time 15:22:49
KINPO EUT: ADSL M/N: A100A
LINE: VB. MEMO: UP STREAM/DOWN STREAM

120V/60Hz PAGE: 02.
(PEAK VALUE) TTEMC.



|—— Date 07.DEC.'99 Time 15:19:23
KINPO EUT: ADSL M/N: A100A
LINE: VA. MEMO: UP STREAM/DOWN STREAM

120V/60Hz PAGE: 01.
(PEAK VALUE) TTEMC.

3. RADIATED EMISSION TEST

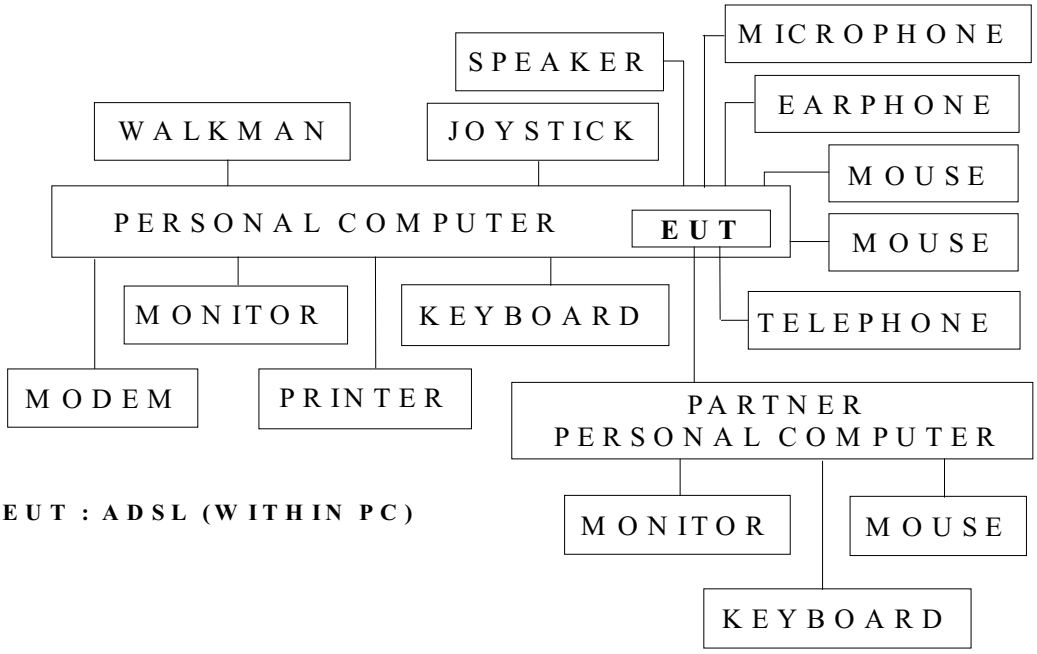
3.1. Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESVP	893202/001	May 13, 99’	1 Year
2.	Broadband Antenna	Schwarzbeck	BBA9106	A1L	Feb. 02, 99’	1 Year
3.	Broadband Antenna	Chase	UPA6109	1039	Feb. 02, 99’	1 Year

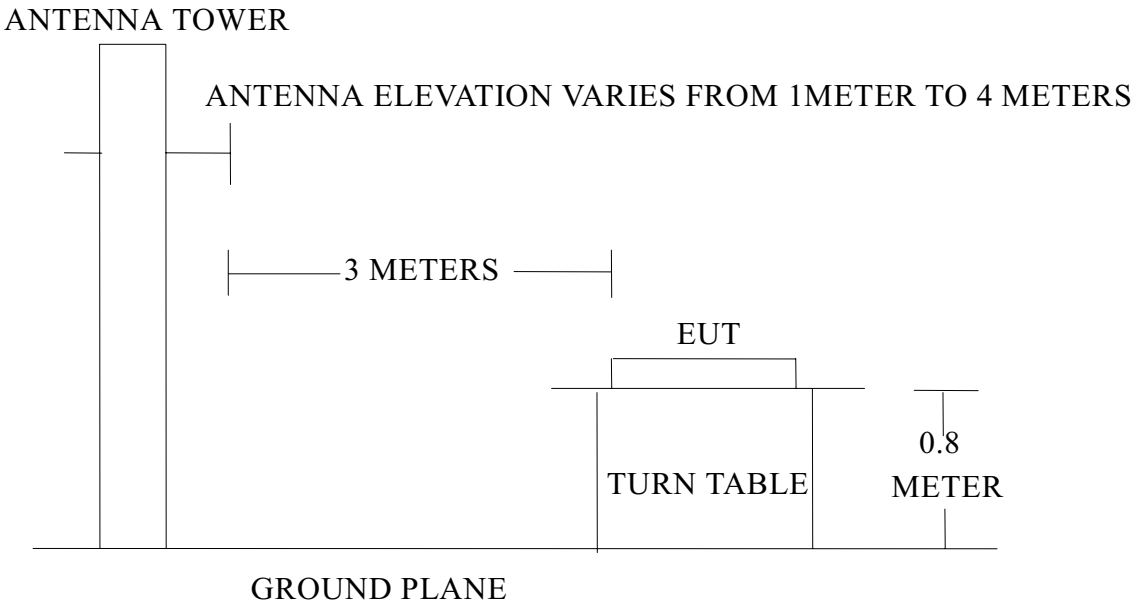
3.2. Block Diagram of Test Setup

3.2.1. Block Diagram of connection between EUT and simulators



EUT : ADSL (WITHIN PC)

3.2.2. Open Field Test Site Setup Diagram (3M)



3.3. Radiation Limit (CLASS B)

FREQUENCY	DISTANCE	FIELD STRENGTHS LIMITS	
MHz	Meters	μV/M	dBμV/M
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Remark： (1) Emission level (dBμV/M) = 20 log Emission level (μV/M)
(2) The tighter limit applies at the edge between two frequency bands.
(3) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

3.4. EUT's Configuration during Compliance Measurement

The configuration of EUT and its simulators were same as those used in conducted measurement. Please refer to 2.4.

3.5. Operating Condition of EUT

Same as conducted measurement which is listed in 2.5.

3.6. Test Procedure

The EUT and its simulators were placed on a turn table which was 0.8 meter above ground. The turn table rotate 360 degrees to determine the position of the maximum emission level. EUT was set 3 meters away from the receiving antenna which were mounted on a antenna tower. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated biconical and log periodical antenna) and dipole antenna were used as receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4-1992 on radiated measurement.

The bandwidth of the R&S Test Receiver ESVP was set at 120KHz.

The frequency range from 30MHz to 1000MHz was checked.

All the test results are listed in section 3.8.

3.7. Test Results

PASSED. Please refer to the following pages.

3.8. Radiated Emission Measurement Results

The frequency spectrum from 30 MHz to 1000MHz was investigated. All the emissions not reported below were too low against the FCC CLASS B limit.

Date of Test： Dec. 10, 1999 Temperature： 18℃

EUT ： ADSL Humidity： 79%

	Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Horizontal dBμV	Emission Level Horizontal dBμV/m	Limits dBμV/m	Margin dB
*	**44.204**	**20.69**	**1.49**	**1.10**	**23.28**	**40.00**	**16.72**
	70.604	11.58	1.82	4.29	17.69	40.00	22.31
	132.492	20.01	2.21	- 3.50	18.72	43.50	24.78
	176.647	21.74	2.62	- 3.10	21.26	43.50	22.24
	203.146	22.30	2.93	- 3.90	21.33	43.50	22.17
	247.320	23.81	3.21	1.50	28.52	46.00	17.48
	264.983	24.82	3.31	- 3.10	25.03	46.00	20.97
	282.651	24.63	3.57	- 4.70	23.50	46.00	22.50
	300.295	13.59	3.65	2.00	19.24	46.00	26.76
	309.134	13.67	3.57	2.41	19.65	46.00	26.35
	317.971	13.97	3.72	0.40	18.09	46.00	27.91
	331.180	14.85	3.63	1.80	20.28	46.00	25.72
	353.286	15.81	3.73	1.69	21.23	46.00	24.77
	388.630	15.55	3.92	- 0.01	19.46	46.00	26.54
	406.293	15.91	4.18	1.49	21.58	46.00	24.42
	459.287	16.66	4.50	- 0.10	21.06	46.00	24.94

Remark:
1. All readings are Quasi-Peak values.
2. The worst emission was detected at 44.204MHz with corrected signal level of 23.28dBμV/m (limit was 40.0dBμV/m) when the antenna was at horizontal polarization and was at 3m high and the turn table was at 45°
3. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

Date of Test： Dec. 10, 1999 Temperature： 18℃

EUT ： ADSL Humidity： 79%

	Frequency MHz	Antenna Factor dB/m	Cable Loss dB	Meter Reading Vertical dBμV	Emission Level Vertical dBμV/m	Limits dBμV/m	Margin dB
	35.339	22.61	1.36	- 1.24	22.73	40.00	17.27
	61.850	14.54	1.72	9.45	25.71	40.00	14.29
*	**70.664**	**13.97**	**1.81**	**11.24**	**27.02**	**40.00**	**12.98**
	110.408	15.99	2.09	5.09	23.17	43.50	20.33
	167.806	22.33	2.67	0.09	25.09	43.50	18.41
	181.073	20.44	2.77	4.12	27.33	43.50	16.17
	203.154	22.98	2.93	- 0.95	24.96	43.50	18.54
	256.130	24.17	3.36	- 0.53	27.00	46.00	19.00
	300.299	13.72	3.65	3.10	20.47	46.00	25.53
	309.130	13.76	3.57	6.31	23.64	46.00	22.36
	317.938	13.88	3.72	4.40	22.00	46.00	24.00
	388.608	14.91	3.92	2.00	20.83	46.00	25.17
	423.941	15.50	4.28	2.70	22.48	46.00	23.52
	459.265	16.42	4.50	2.90	23.82	46.00	22.18
	529.970	17.38	4.72	- 0.20	21.90	46.00	24.10

Remark:
1. All readings are Quasi-Peak values.
2. The worst emission was detected at 70.664MHz with corrected signal level of 27.02dBμV/m (limit was 40.0dBμV/m) when the antenna was at vertical polarization and was at 1m high and the turn table was at 275°
3. 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

4. DEVIATION TO TEST SPECIFICATIONS

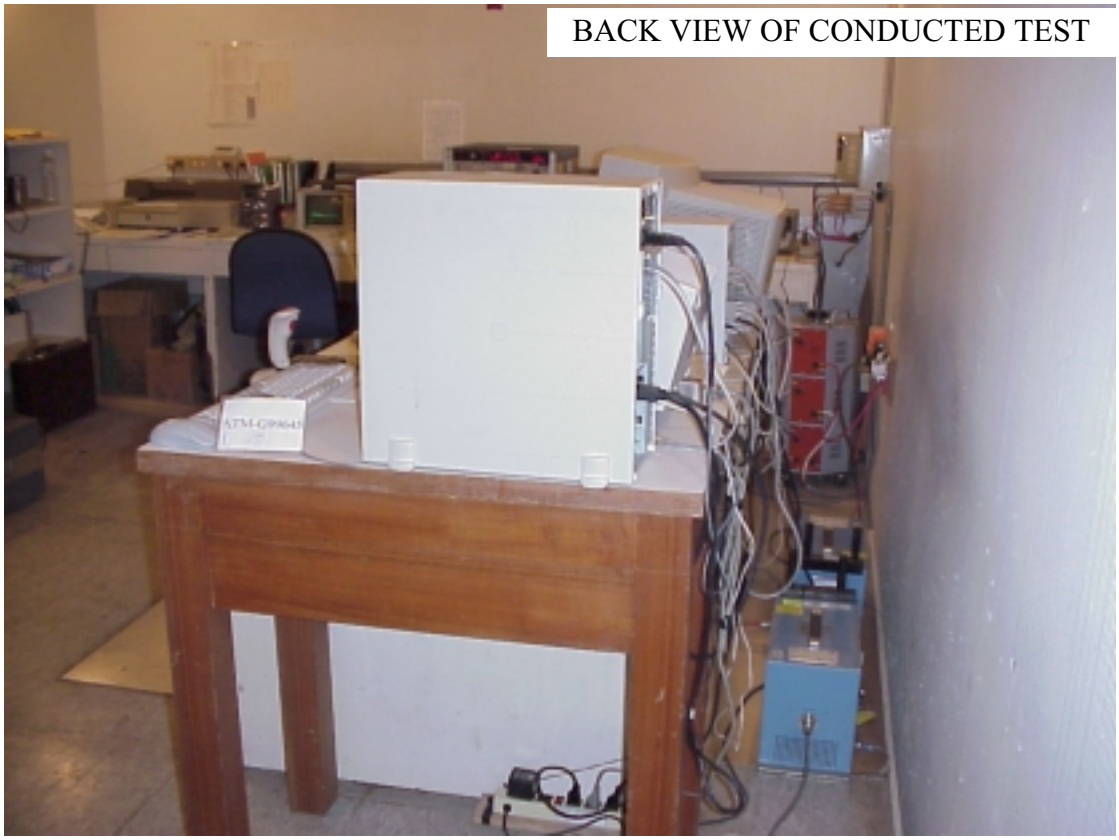
【NONE】

5. PHOTOGRAPHS

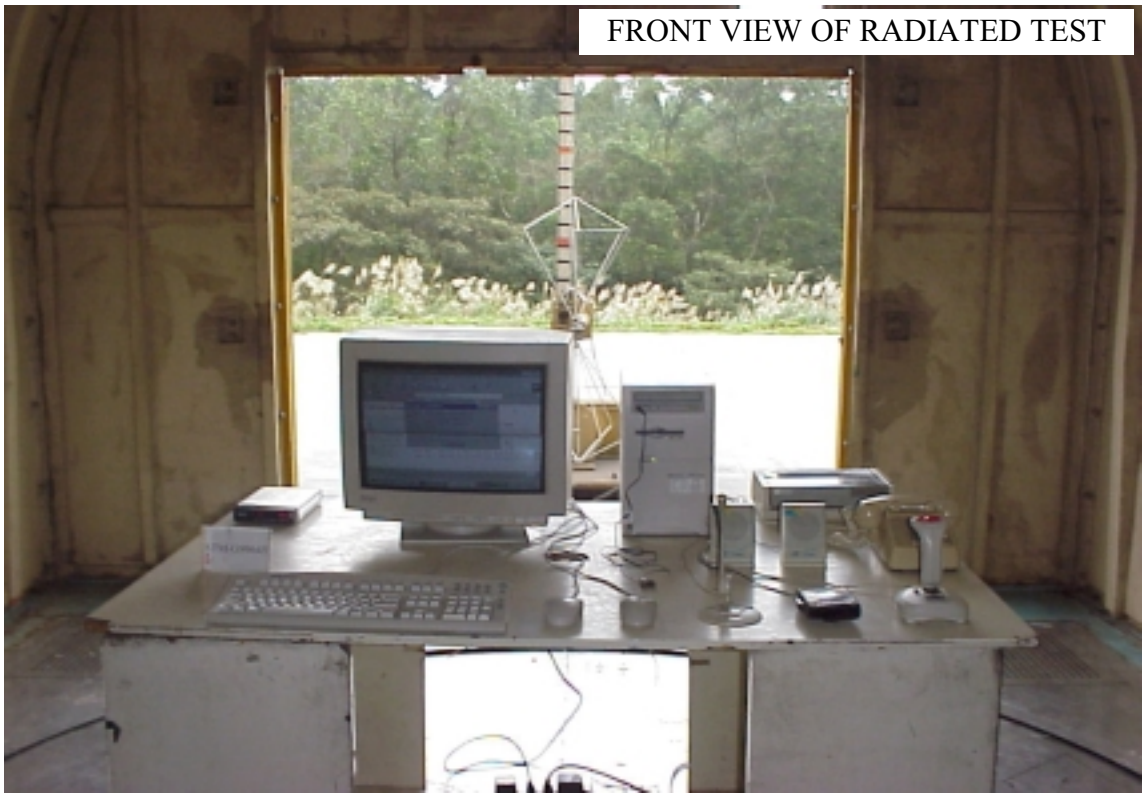
5.1. Photos of Powerline Conducted Measurement

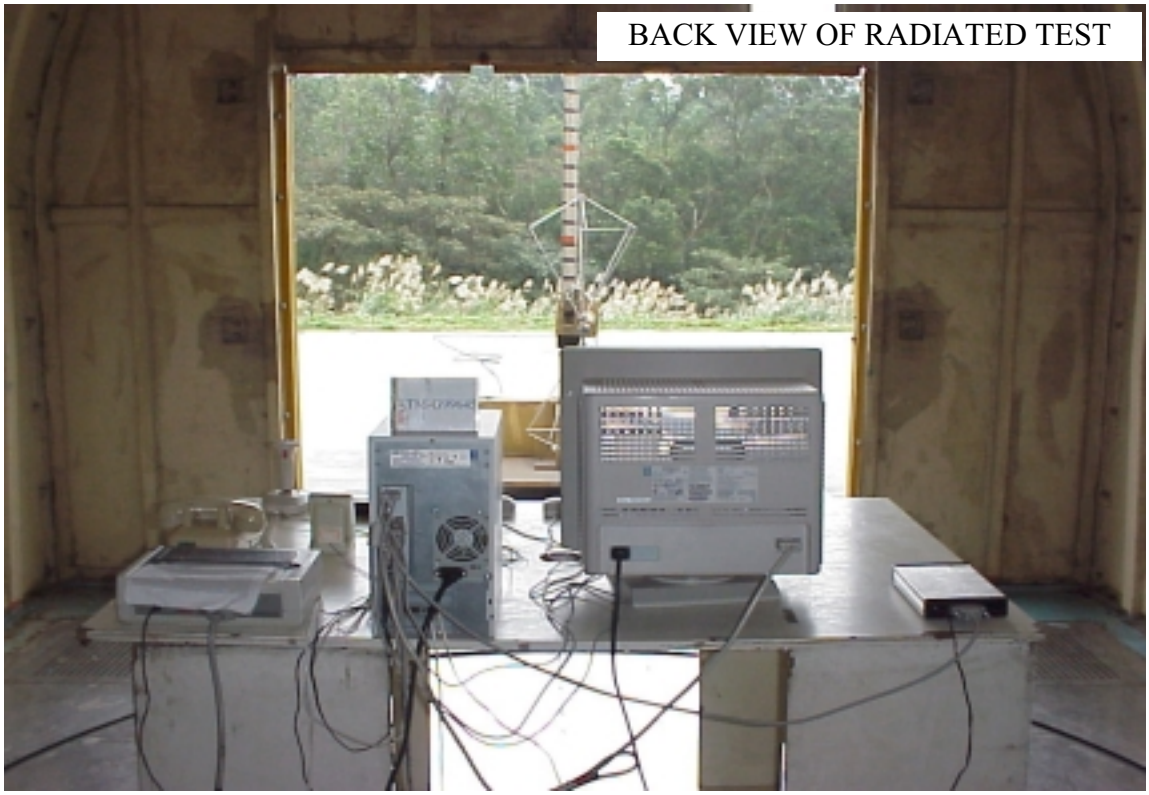
FRONT VIEW OF CONDUCTED TEST

BACK VIEW OF CONDUCTED TEST

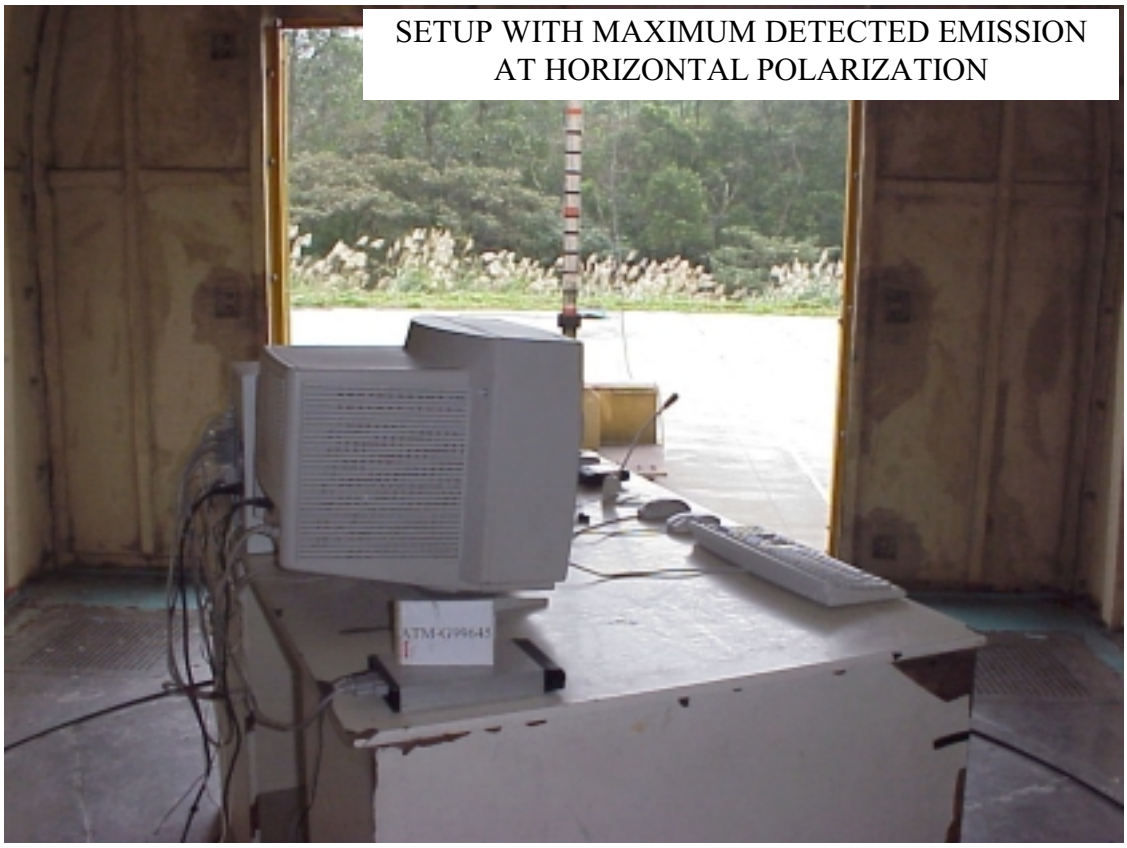


5.2. Photos of Radiated Measurement at Open Field Test Site

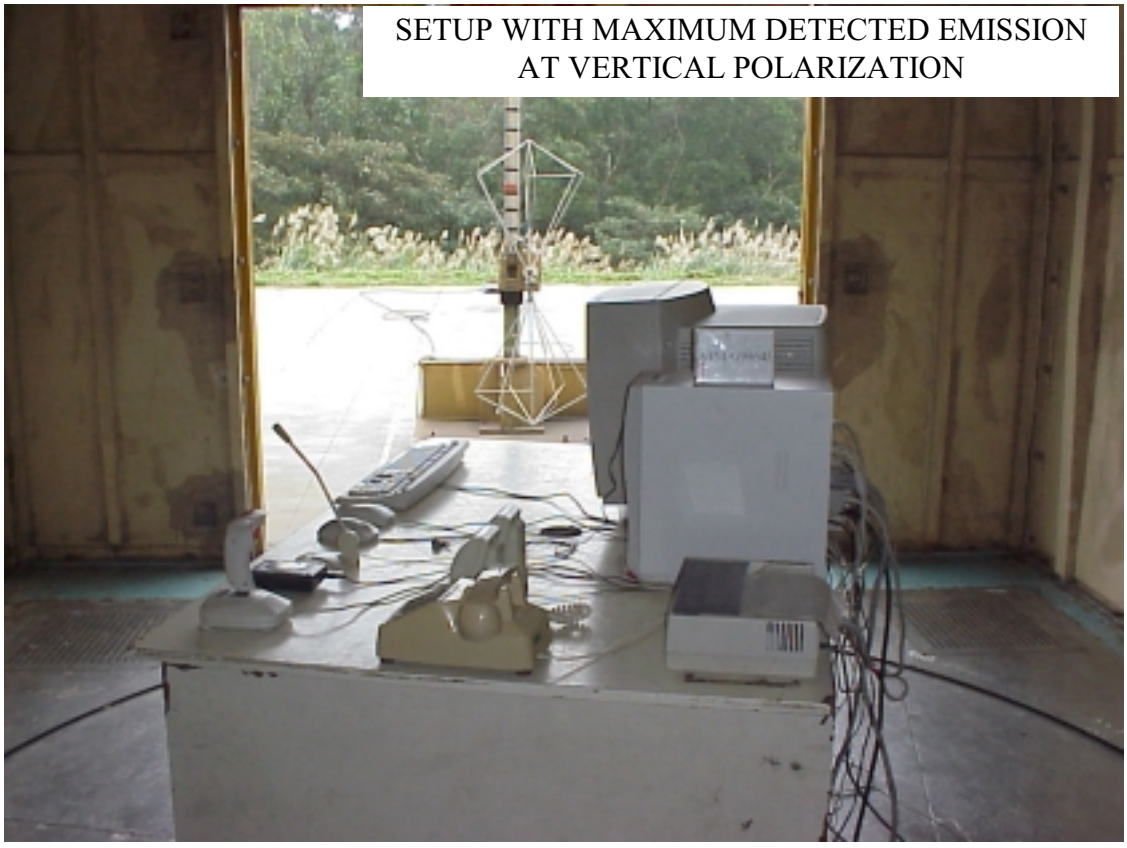




SETUP WITH MAXIMUM DETECTED EMISSION
AT HORIZONTAL POLARIZATION



SETUP WITH MAXIMUM DETECTED EMISSION
AT VERTICAL POLARIZATION



FRONT VIEW OF PARTNER SYSTEMS