



EMC

TEST REPORT

REPORT NO. : F88012906
MODEL NO. : NF 3000 Series
DATE OF TEST : Feb. 4, 1999

PREPARED FOR: VXL INSTRUMENTS LIMITED

ADDRESS : 168, 7TH MAIN, 1ST BLOCK, KORAMANGALA,
BANGALORE 560034, INDIA

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

11F, NO.1, SEC.4, NAN-KING EAST RD.,
TAIPEI, TAIWAN, R.O.C.

This test report consists of 15 pages in total. It may be duplicated completely for legal use with the allowance of the applicant. It shall not be reproduced except in full, without the written approval of our laboratory. It should not be used by the client to claim product endorsement by NVLAP or any agency of the U.S. government. The test result in the report only applies to the tested sample.



TABLE OF CONTENTS

1. CERTIFICATION.....	3
2. GENERAL INFORMATION	4
2.1 GENERAL DESCRIPTION OF EUT	4
2.2 DESCRIPTION OF SUPPORT UNITS	5
2.3 TEST METHODOLOGY AND CONFIGURATION.....	5
3. TEST INSTRUMENTS	6
3.1 TEST INSTRUMENTS (EMISSION).....	6
3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION.....	7
4. TEST RESULTS (EMISSION)	8
4.1 RADIO DISTURBANCE	8
4.2 EUT OPERATING CONDITION	8
4.3 TEST DATA OF CONDUCTED EMISSION	9
4.4 TEST DATA OF RADIATED EMISSION.....	10
5. PHOTOGRAPHS OF THE TEST CONFIGURATION WITH MINIMUM MARGIN....	12
6. ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT	14
7. APPENDIX - INFORMATION OF THE TESTING LABORATORY	15

**1. CERTIFICATION**

Issue Date: Feb. 6, 1999

Product : NETFLASH CARD
Trade Name : VXL
Model No. : NF 3000 Series
Applicant : VXL INSTRUMENTS LIMITED
Standard : FCC Part 15, Subpart B, Class B
ANSI C63.4-1992
CISPR 22: 1993+A1: 1995+A2: 1996

We hereby certify that one sample of the designation has been tested in our facility on Feb. 4, 1999. The test record, data evaluation and Equipment Under Test (EUT) configurations represent herein are true and accurate representation of the measurements of the sample's EMC characteristics under the conditions herein specified.

The test results show that the EUT as described in this report is in compliance with the Class B limits of conducted and radiated emission of applicable standards.

TESTED BY: Alan Chang, DATE: 2/6/99
(Alan Chang)

CHECKED BY: Sharon Hsiung, DATE: 2/6/99
(Sharon Hsiung)

APPROVED BY: Mike Su, DATE: 2/6/99
(Mike Su)

ADVANCE DATA TECHNOLOGY CORPORATION**NVLAP[®]**

Accredited Laboratory



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	NETFLASH CARD
Model No.	:	NF 3000 Series
Power Supply Type	:	DC (from PC)
Data Cable	:	UTP cable

Note: The EUT is an ISA compatible add-on card for IBM compatible PC that facilitates PC to be used as a thinclient in client server applications. It consists of Flash and Ethernet sections. The Flash section consists of disk on chip which emulates a standard disk drive. The disk on chip contains the operating system which allows the systems to boot without a hard disk. Ethernet section consists of ethernet controller, supporting 10Base-T interface. It has video SVGA display with resolution upto 1024x768 and with 256 colors.

For more detailed features description, please refer to ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT and User's Manual.



2.2 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories are used to form representative test configuration during the tests.

No.	Product	Brand	Model No.	FCC ID	I/O Cable
1	PERSONAL COMPUTER	NTI	PII-233	FCC Doc Approved	Nonshielded Power (1.8m)
2	MONITOR	ADI	PD-959	FCC Doc Approved	Shielded Signal (1.5m) Nonshielded Power (1.8m)
3	KEYBOARD	FORWARD	FDA-102GA	F4ZDA-104G	Shielded Signal (1.4m)
4	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.2m) Nonshielded Power (2.0m)
5	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded Signal (1.5m)
6	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (1.2m) Nonshielded Power (1.8m)
7	PERSONAL COMPUTER	NTI	PII-233	FCC Doc Approved	Nonshielded Power (1.8m)
8	MONITOR	ADI	PD-959	FCC Doc Approved	Shielded Signal (1.5m) Nonshielded Power (1.8m)
9	KEYBOARD	FORWARD	FDA-102GA	F4ZDA-104G	Shielded Signal (1.4m)
10	MOUSE	LOGITECH	M-S34	DZL210472	Shielded Signal (1.5m)
11	VGA CARD	GORDIA	DSV3365	LUT-DSV3365	N/A
12	LAN CARD	3COM	3C905B-TX	FCC Doc Approved	N/A

Note: The EUT was installed into support unit 1. Support unit 1-6 acted as Server PC and communicated with support units 7-12 which acted as HOST PC and systems of communication partner via an UTP cable (10m).

2.3 TEST METHODOLOGY AND CONFIGURATION

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4:1992. Radiated testing was performed at an antenna to EUT distance of 10 m on an open area test site. Please refer to the photos of test configuration in Item 5.



3. TEST INSTRUMENTS

3.1 TEST INSTRUMENTS (EMISSION)

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	8594E	3520A01861	Feb. 12, 1999
HP Preamplifier	8447D	2944A08118	June 28, 1999
ROHDE & SCHWARZ TEST RECEIVER	ESVS 10	840241/010	Sept. 10, 1999
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 25, 1999
CHASE BILOG Antenna	CBL6111A	1079	July 17, 1999
CHANCE Turn Table	U200	9701	N/A
CHANCE Tower	AT-100	CM-A003	N/A
Open Field Test Site	Site 3	ADT-R03	July 16, 1999

Note: 1. The measurement uncertainty is less than ± 3 dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months.
And the calibrations are traceable to NML/ROC and NIST/USA.

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESHS30	828109/007	July 22, 1999
ROHDE & SCHWARZ Artificial Mains Network	ESH2-Z5	892107/003	July 20, 1999
EMCO L.I.S.N.	3825/2	9504-2359	July 20, 1999
Shielded Room	Site 3	ADT-C03	N/A

Note: 1. The measurement uncertainty is less than ± 2.6 dB, which is calculated as per NAMA's document NIS81.

2. The calibration interval of the above test instruments is 12 months.
And the calibrations are traceable to NML/ROC and NIST/USA.



3.2 LIMITS OF CONDUCTED AND RADIATED EMISSION

LIMIT OF RADIATED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 10m)
	dBuV/m	dBuV/m
30 - 230	40	30
230 - 1000	47	37

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
Above 1000	300	49.5	500	54.0

Note: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

LIMIT OF CONDUCTED EMISSION OF CISPR 22

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

Note: (1) The lower limit shall apply at the transition frequencies.

(2) The limit decreases linearly with the logarithm of the frequency in the range 0.15 to 0.50 MHz

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



4. TEST RESULTS (EMISSION)

4.1 RADIO DISTURBANCE

Frequency Range : 0.15 - 30 MHz (Conducted Emission)
30 - 1000 MHz (Radiated Emission)
Input Voltage : 120 Vac, 60 Hz
Temperature : 18 °C
Humidity : 70 %
Atmospheric Pressure : 1008 mbar

TEST RESULT	Remarks
	Minimum passing margin of conducted emission: -13.5 dB at 0.685 MHz
	Minimum passing margin of radiated emission: -3.4 dB at 45.13 MHz

4.2 EUT OPERATING CONDITION

1. Turn on the power of all equipments.
2. Server PC (with EUT) and HOST PC runs a test program to enable all functions.
3. Server PC transmitted messages to and received messages from the HOST PC via the UTP cable connected between EUT and HOST PC.
4. Server PC sent "H" messages to monitor and monitor displayed "H" patterns on screen.
5. Server PC sent "H" messages to modem.
6. Server PC sent "H" messages to printer, then printer printed them on paper.
7. Repeat steps 3-7.



4.3 TEST DATA OF CONDUCTED EMISSION

EUT: NETFLASH CARDMODEL: NF 3000 Series6 dB Bandwidth: 10 kHz

Freq.	L Level		N Level		Limit		Margin [dB (μV)]			
[MHz]	[dB (μV)]		[dB (μV)]		[dB (μV)]		L		N	
	QP	AV	QP	AV	QP	AV	QP	AV	QP	AV
0.150	50.6	-	48.6	-	66.0	56.0	-15.4	-	-17.4	-
0.300	38.8	-	36.0	-	60.2	50.2	-21.4	-	-24.2	-
0.685	42.5	-	41.9	-	56.0	46.0	-13.5	-	-14.1	-
3.414	38.2	-	36.6	-	56.0	46.0	-17.8	-	-19.4	-
6.483	43.1	-	42.3	-	60.0	50.0	-16.9	-	-17.7	-
12.029	38.2	-	38.4	-	60.0	50.0	-21.8	-	-21.6	-

- Remarks:
1. "**": Undetectable
 2. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 3. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 4. The emission level of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value



4.4 TEST DATA OF RADIATED EMISSION

EUT: NETFLASH CARDMODEL: NF 3000 SeriesANT. POLARITY: HorizontalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
47.93	11.1	9.9	21.0	30.0	-9.0
87.02	8.8	16.1	24.9	30.0	-5.1
150.40	12.5	7.7	20.2	30.0	-9.8
193.30	12.2	6.1	18.3	30.0	-11.7
205.53	12.7	4.8	17.5	30.0	-12.5
220.00	13.4	5.6	19.0	30.0	-11.0

REMARKS :

1. Emission level (dBuV/m) = Correction Factor(dB/m) + Meter Reading (dBuV).
2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level - Limit value



TEST DATA OF RADIATED EMISSION

EUT: NETFLASH CARDMODEL: NF 3000 SeriesANT. POLARITY: VerticalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB/m)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)
45.13	12.7	13.9	26.6	30.0	-3.4
79.43	8.1	17.3	25.4	30.0	-4.6
83.90	8.2	17.0	25.2	30.0	-4.8
122.45	13.6	8.4	22.0	30.0	-8.0
193.00	12.0	8.2	20.2	30.0	-9.8
205.53	12.5	10.7	23.2	30.0	-6.8
218.05	13.2	8.4	21.6	30.0	-8.4

- REMARKS :
1. Emission level (dBuV/m) = Correction Factor(dB/m) + Meter Reading (dBuV).
 2. Correction Factor(dB/m) = Ant. Factor(dB/m)+Cable loss(dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level - Limit value

**6. ATTACHMENT 1 - TECHNICAL DESCRIPTION OF EUT****Specifications:****MECHANICAL**

Height	25 mm
Width	121 mm
Depth	180 mm
Weight	150gm

ENVIRONMENTAL

Operating Temperature	+ 5° C to + 50° C
Storage Temperature	- 20° C to + 65° C
Humidity	10% to 90% RH non condensing

ELECTRICAL

Power Consumption (max.)	1.5W
-----------------------------	------

NETWORK CONNECTION

10Base-T Interface	RJ-45 Modular 8 pin jack (for twisted pair cable)
10Base-2 (Optional)	BNC Connector (for thin coaxial cable)
IRQ Options	2/9,3,4,5,10,11,12,15
I/O Base Address Options	200,220,240,260,280,2A0,2C0,2E0,300, 320,340,360,380,3A0,3C0,3E0
Status Indicator	Green LED

VIDEO CONNECTION

SVGA compatible



7. APPENDIX - INFORMATION OF THE TESTING LABORATORY

Information of the testing laboratory

We, ADT Corp., is founded in 1988, to provide our best service in EMC and Safety consultation. Our laboratory is accredited by the following approval agencies according to ISO/IEC Guide 25 or EN 45001:

- | | |
|---------------|--------------------------------------|
| ● USA | FCC, UL, NVLAP |
| ● Germany | TUV Rheinland
TUV Product Service |
| ● Japan | VCCI |
| ● New Zealand | RFS |
| ● Norway | NEMKO |
| ● U.K. | INCHCAPE, SGS |
| ● R.O.C. | BCIQ |

Enclosed please find some certificates of our laboratory obtained from approval agencies. If you have any comments, please feel free to contact us with the following:

Lin Kou EMC Lab.:
Tel: 886-2-26032180
Fax: 886-2-26022943

Hsin Chu EMC Lab:
Tel: 886-35-935343
Fax: 886-35-935342

Lin Kou Safety Lab.:
Tel: 886-2-26093195
Fax: 886-2-26093184

Design Center:
Tel: 886-2-26093195
Fax: 886-2-26093184

E-mail: service@mail.adt.com.tw
<http://www.adt.com.tw>

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1595 (ext-218)
Facsimile: 301-344-3090

October 21, 1998

IN REPLY REFER TO
31040/SIT
1300F2

Advance Data Technology Corporation
12F, No. 1, Sec. 4
Nan-King East Rd.
Taipei, Taiwan, R.O.C.

Attention: Harris W. Lai

Re: Measurement facility located at above address, Site No. 1
(3 and 10 meters)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is published periodically and is also available on the Laboratory's Public Access Link as described in the enclosed Public Notice.

Sincerely,



Thomas W. Phillips
Electronics Engineer
Customer Service Branch

Enclosure:
PAL PN

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1595 (ext-218)
Facsimile: 301-344-3090

September 15, 1998

IN REPLY REFER TO
31040/SIT
1300F2

Advance Data Technology Corporation
12F, No. 1, Sec. 4
Nan-King E. Rd.
Taipei, Taiwan, R.O.C.

Attention: Harris Lai

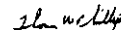
Re: Measurement facility located at Lin Kou, Sites 2 & 3
(3 & 10 meters)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has also been added to our list of those who perform these measurement services for the public on a fee basis. An up-to-date list is available on the Internet at the FCC Website www.fcc.gov under Electronic Filing.

Sincerely,



Thomas W. Phillips
Electronics Engineer
Customer Service Branch

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1595 (ext-218)
Facsimile: 301-344-3090

April 17, 1998

IN REPLY REFER TO
31040/SIT
1300F2

Advance Data Technology Corporation
12F, No. 1, Sec. 4
Nan-King E. Rd.
Taipei, Taiwan, R.O.C.

Attention: Harris W. Lai

Re: Measurement facility located at above address
Site No. 4 (3 and 10 meters)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is published periodically and is also available on the Laboratory's Public Access Link as described in the enclosed Public Notice.

Sincerely,



Thomas W. Phillips
Electronics Engineer
Customer Service Branch

Enclosure:
PAL PN

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1595 (ext-218)
Facsimile: 301-344-3090

October 21, 1998

IN REPLY REFER TO
31040/SIT
1300F2

Advance Data Technology Corporation
12F, No. 1, Sec. 4
Nan-King East Rd.
Taipei, Taiwan, R.O.C.

Attention: Harris W. Lai

Re: Measurement facility located at above address, Site No. 5
(3 and 10 meters)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is published periodically and is also available on the Laboratory's Public Access Link as described in the enclosed Public Notice.

Sincerely,



Thomas W. Phillips
Electronics Engineer
Customer Service Branch

Enclosure:
PAL PN

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1588 (ext-218)
Facsimile: 301-344-2000

February 23, 1998

IN REPLY REFER TO
31040/SIT
1300FZ

Advance Data Technology Corporation
12F, No. 1, Sec. 4, Nan-King E. Rd.
Taipei, Taiwan

Attention: Harris W. Lai

Re: Measurement facility located at above address, Site No. 6
(3 and 10 meters)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is updated monthly and is available on the Laboratory's Public Access Link (PAL) at 301-725-1072, and also on the Internet at the FCC Website www.fcc.gov/ovd/infodatabase/estdata/.

Sincerely,

Thomas W. Phillips
Thomas W. Phillips
Electronics Engineer
Customer Service Branch

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1588 (ext-218)
Facsimile: 301-344-2000

July 18, 1998

IN REPLY REFER TO
31040/SIT
1300FZ

Advance Data Technology Corporation
12F, No. 1, Sec. 4
Nan-King East Rd.
Taipei, Taiwan, R.O.C.

Attention: Harris W. Lai

Re: Measurement facility located at Hsin Chu (3 & 10 meter site)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has also been added to our list of those who perform these measurement services for the public on a fee basis. An up-to-date list is available on the Internet at the FCC Website www.fcc.gov/ovd/infodatabase/estdata/.

Sincerely,

Thomas W. Phillips
Thomas W. Phillips
Electronics Engineer
Customer Service Branch

FEDERAL COMMUNICATIONS COMMISSION

Equipment Authorization Division
7435 Oakland Mills Road
Columbia, MD 21046

December 23, 1998

Registration Number: 92753

Advance Data Technology Corporation
12F, No. 1, Sec. 4
Nan-King East Road
Taipei
Taiwan, R.O.C.

Attention: Harris Lai

Re: Measurement facility located at Hsin-Chu, Site B
3 & 10 meter site

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

If requested, the above mentioned facility has been added to our list of those who perform these measurement services for the public on a fee basis. An up-to-date list of such public test facilities is available on the Internet on the FCC Website at WWW.FCC.GOV, Electronic Filing, OET Equipment Authorization Electronic Filing.

Sincerely,

Thomas W. Phillips
Thomas W. Phillips
Electronics Engineer



Technischer Überwachungs-Verein Rheinland

Certificate

of
Appointment

No. 1-9763928-9707

The applicant:

Advances Data Technology (ADT) Corporation
No. 47, 14 Ling, Chia Pau Tsuen, Lin Kou Hsiang, Taipei Hsien,
Taiwan, R.O.C.

has been authorized to carry out EMC tests by order and under supervision of
TUV Rheinland according to

CISPR16, EN 55 011:1991, EN 55 014:1993, EN 55 015:1993, EN 55 022:1994/A1,
EN 55 104:1995, EN 55 105:1997, EN 61 000-3-1:1995, EN 61 000-3-3:1995,
EN 50 081-1:1992, EN 50 082-1:1992, EN 50 081-2:1993, EN 50 082-2:1993,
IEC 801-2:1991, IEC 801-3:1984, IEC 801-4:1988, IEC 801-5:1990, EN 61 000-4-2:1995,
EN 50 140:1993, EN 50 141:1993, IEC 1 000-4-3:1995, EN 61 000-4-4:1995,
EN 61 000-4-5:1995, EN 61 000-4-8:1993, EN 61 000-4-11:1994, EN 60 601-1-2:1993

An inspection of the facility was conducted according to the Document
"Approval of Test Site" with reference to EN 45 001 by a TUV Rheinland inspector.

Audit Report No. P 9763928E01, Rev. A

This certificate is valid until the next scheduled inspection or up to 15 months,
at the discretion of TUV Rheinland.

TUV Rheinland Taiwan Ltd.
Taipei, 16.07.1997

Dr.-Ing. G. Löhken
Dr.-Ing. G. Löhken
Vice General Manager
Product Safety Department

Dr. Ing. U. Meyer
Dr. Ing. U. Meyer
Auditor

The contents of this Form and Certificate Registration are an integral part of the certificate.



CERTIFICATE

Facility: NO. 1 SITE

(Radiation 3 and 10 meter site)

Company : Advance Data Technology Corp.

Address : No.47, CHIA PAU TSUEN, LIN KOU HSIANG,
TAIPEI HSIEN, TAIWAN

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures.*

Registration No. : R-236

Date of Registration : July 1, 1998

This Certificate is valid until September 30, 2001

Voluntary Control Council for Interference
Information Technology Equipment



CERTIFICATE

Facility: NO. 2 SITE

(Radiation 3 and 10 meter site)

Company : Advance Data Technology Corp.

Address : No.47, CHIA PAU TSUEN, LIN KOU HSIANG,
TAIPEI HSIEN, TAIWAN

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures.*

Registration No. : R-237

Date of Registration : July 1, 1998

This Certificate is valid until September 30, 2001

Voluntary Control Council for Interference
Information Technology Equipment



CERTIFICATE

Facility: NO. 2 SITE

(Conducted Interference Measurement)

Company : Advance Data Technology Corp.

Address : No.47, CHIA PAU TSUEN, LIN KOU HSIANG,
TAIPEI HSIEN, TAIWAN

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures.*

Registration No. : C-240

Date of Registration : July 1, 1998

This Certificate is valid until September 30, 2001

Voluntary Control Council for Interference
Information Technology Equipment



CERTIFICATE

Facility: No.3 Site

(Radiation 3 and 10 meter site)

Company : Advance Data Technology Corp.

Address : No.47 CHIA PAU TSUEN, LIN KOU HSIANG, TAIPEI
HSIEN, TAIWAN

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures*

Registration No. : R-269

Date of Registration : January 1, 1999

This Certificate is valid until March 31, 2002

Voluntary Control Council for Interference
Information Technology Equipment





CERTIFICATE

Facility: No.3 Site
 (Conducted Interference Measurement)
 Company: Advance Data Technology Corp.
 Address: No.47 CHIA PAU TSUEN, LIN KOU HSIANG, TAIPEI
 HSIEN, TAIWAN

*This is to certify that the following measuring facility
 has been registered in accordance with the Regulations
 for Voluntary Control Measures*

Registration No.: C-274
 Date of Registration: January 1, 1999
 This Certificate is valid until March 31, 2002

Voluntary Control Council for Interference by
 Information Technology Equipment



CERTIFICATE

Facility: No.4 Site
 (Radiation 3 and 10 meter site)
 Company: ADVANCE DATA TECHNOLOGY
 CORP.
 Address: No.47, CHIA PAU TSUEN, LIN KOU
 HSIANG, TAIPEI HSIEN, TAIWAN

*This is to certify that the following measuring facility
 has been registered in accordance with the Regulations
 for Voluntary Control Measures, Article 8.*

Registration No.: R-489
 Date of Registration: December 20, 1996
 This Certificate is valid until December 31, 1999

Voluntary Control Council for Interference by
 Information Technology Equipment



CERTIFICATE

Facility: No.5 Site
 (Radiation 3 and 10 meter site)
 Company: ADVANCE DATA TECHNOLOGY
 CORP.
 Address: No.47, CHIA PAU TSUEN, LIN KOU
 HSIANG, TAIPEI HSIEN, TAIWAN

*This is to certify that the following measuring facility
 has been registered in accordance with the Regulations
 for Voluntary Control Measures, Article 8.*

Registration No.: R-490
 Date of Registration: December 20, 1996
 This Certificate is valid until December 31, 1999

Voluntary Control Council for Interference by
 Information Technology Equipment



CERTIFICATE

Facility: ADVANCE DATA TECHNOLOGY
 CORPORATION
 (Conducted Interference Measurement)
 Company: ADVANCE DATA TECHNOLOGY
 CORPORATION
 Address: No.47, CHIA PAU TSUEN, LIN KOU
 HSIANG, TAIPEI HSIEN, TAIWAN

*This is to certify that the following measuring facility
 has been registered in accordance with the Regulations
 for Voluntary Control Measures, Article 8.*

Registration No.: C-506
 Date of Registration: December 20, 1996
 This Certificate is valid until December 31, 1999

Voluntary Control Council for Interference by
 Information Technology Equipment





CERTIFICATE

Facility: Advance Data Technology Corp Site 6
(Radiation 3 and 10 meter site)
Company : Advance Data Technology Corp.
Address : No.47, CHIA PAU TSUEN, LIN KOU HSIANG,
TAIPEI HSIEN, TAIWAN

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures.*

Registration No. : R-728
Date of Registration : May 19, 1998
This Certificate is valid until June 30, 2001

Voluntary Control Council for Interference by
Information Technology Equipment



CERTIFICATE

Facility: Advance Data Technology Corp Site A
(Radiation 3 and 10 meter site)
Company : Advance Data Technology Corp.
Address : NO. 81-1, LU LIAO KENG, 9 LING, WU LIANG TSUEN,
CHIUNG LIN HSIANG, HSIN CHU HSIEN, TAIWAN

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures*

Registration No. : R-782
Date of Registration : September 29, 1998
This Certificate is valid until September 30, 2001

Voluntary Control Council for Interference by
Information Technology Equipment



CERTIFICATE

Facility: Advance Data Technology Corp Shielded Room A
(Conducted Interference Measurement)
Company : Advance Data Technology Corp.
Address : NO. 81-1, LU LIAO KENG, 9 LING, WU LIANG TSUEN,
CHIUNG LIN HSIANG, HSIN CHU HSIEN, TAIWAN

*This is to certify that the following measuring facility
has been registered in accordance with the Regulations
for Voluntary Control Measures*

Registration No. : C-817
Date of Registration : September 29, 1998
This Certificate is valid until September 30, 2001

Voluntary Control Council for Interference by
Information Technology Equipment





Worldwide Testing and Certification

ELA 4

EMC Laboratory
Authorization

Aut. No. : ELA 112

EMC Laboratory: ADT Advance Data Technology Corporation
No. 47, 14 Ling, Chia Fui Taven,
Lin Kuo Hsiang, Taipei Hsien,
Taiwan R.O.C.

Scope of Authorization: All CENELEC standards (ENs) for EMC that are listed on the accompanying page, and, all of the corresponding CISPR, IEC, and ISO EMC standards that are listed on the accompanying page.

This Authorization Document confirms that the above mentioned EMC Laboratory has been validated against EN 45001 and found to be compliant. The laboratory also fulfills the conditions described in Nemko Document ELA 10. During Nemko's visit to the laboratory on 9. October 1996, an assessment was made of the relevant parts of your organisation - i.e. facilities, personnel qualifications, test equipment, and testing practices. It was found that the EMC Laboratory is capable of performing tests within the Scope of Authorization given on the accompanying page. Accordingly, Nemko will accept your test reports as a basis for attesting conformity to these EMC Standards for the products in question under either the European Union EMC Directive or the European Union Automotive EMC Directive (as applicable).

In case of applications for Product Certifications to be issued by Nemko, your EMC Laboratory's test reports will be accepted by Nemko if they are enclosed with the Application Form submitted by the manufacturer.

In order to maintain the Authorization, the information given in the enclosed ELA-INFOs (if any) must be carefully followed. Nemko is to be promptly notified about any changes in the situation at your EMC Laboratory which may affect the basis for this Authorization. The Authorization may at any time be withdrawn if the conditions are no longer considered to be fulfilled.

The Authorization is valid through February 28, 1999.

Oslo, 13 March 1998

For Nemko AS:

Kjell Bergh, Head of EMC Section

Postal address:

P.O. Box 11, Blindern

N-0407 OSLO, NORWAY

Telephone:

+47 22 44 00 00

Fax:

+47 22 44 00 00



Worldwide Testing and Certification

ELA 4

EMC Laboratory Authorisation

Aut. No. : ELA 112

(Page 2 of 2)

SCOPE OF AUTHORIZATION

GENERIC & PRODUCT-FAMILY STANDARDS

EN 50081-1, EN 50081-2	EN 50082-1, EN 50082-2	EN 55011, Gr. 1, CISPR 11
EN 55013, CISPR 13	EN 55014-1, CISPR 14-1	EN 55015, CISPR 15
EN 55022	EN 60555-2, IEC 555-2, EN 61000-3-2, IEC 61000-3-2	EN 60555-3, IEC 555-3, EN 61000-3-3, IEC 61000-3-3

BASIC STANDARDS

EN 61000-4-2, IEC 61000-4-2, IEC 801-2	EN 61000-4-3, ENV 50140, ENV 50204, IEC 61000-4-3, IEC 801-3	EN 61000-4-4, IEC 61000-4-4, IEC 801-4
EN 61000-4-5, IEC 61000-4-5	EN 61000-4-6, ENV 50141, IEC 61000-4-6	EN 61000-4-8, IEC 61000-4-8
EN 61000-4-11, IEC 61000-4-11		

Oslo, 13 March 1998

Kjell Bergh, Nemko EMC Services

Postal address:

P.O. Box 11, Blindern

N-0407 OSLO, NORWAY

Telephone:

+47 22 44 00 00

Fax:

+47 22 44 00 00

World-wide Testing and
Certification

ELA 4

EMC Laboratory
Authorization

Aut. No. : ELA 112-b

Hsin Chu EMC Laboratory

EMC Laboratory: ADT Advance Data Technology Corporation
Hsin Chu EMC Laboratory
No. 81-1, Lu Liao Kang, 9 Ling,
Wei Luang Tsoen, Chung Lin Hsiang,
Hsin Chu Hsien, Taiwan R.O.C.

Scope of Authorization: All CENELEC standards (ENs) for EMC that are listed on the accompanying page, and, all of the corresponding CISPR, IEC, and ISO EMC standards that are listed on the accompanying page.

This Authorization Document confirms that the above mentioned EMC Laboratory has been validated against EN 45001 and found to be compliant. The laboratory also fulfills the conditions described in Nemko Document ELA 10. Based on submitted material, an assessment has been made of the relevant parts of your organisation - i.e. facilities, personnel qualifications, test equipment, and testing practices. It was found that the EMC Laboratory is capable of performing tests within the Scope of Authorization given on the accompanying page. Accordingly, Nemko will accept your test reports as a basis for attesting conformity to these EMC Standards for the products in question under the European Union EMC Directive.

In case of applications for Product Certifications to be issued by Nemko, your EMC Laboratory's test reports will be accepted by Nemko if they are enclosed with the Application Form submitted by the manufacturer.

In order to maintain the Authorization, the information given in the enclosed ELA-INFOs (if any) must be carefully followed. Nemko is to be promptly notified about any changes in the situation at your EMC Laboratory which may affect the basis for this Authorization. The Authorization may at any time be withdrawn if the conditions are no longer considered to be fulfilled.

The Authorization is valid through February 28, 1999.

Oslo, 13 December 1998

For Nemko AS:

Kjell Bergh, Head of EMC Section

Postal address:

P.O. Box 11, Blindern

Telephone:

+47 22 44 00 00

Fax:

+47 22 44 00 00

World-wide Testing and
Certification

ELA 4

EMC Laboratory Authorisation

Aut. No. : ELA 112-b

Hsin Chu EMC Laboratory

(Page 2 of 2)

SCOPE OF AUTHORIZATION

GENERIC & PRODUCT-FAMILY STANDARDS

EN 50081-1, EN 50081-2	EN 50082-1, EN 50082-2	EN 55011, Gr. 1, CISPR 11
EN 55014-1, CISPR 14-1 (except electromagnetic noise)	EN 55014-2, CISPR 14-2	EN 55022, CISPR 22
EN 55024, CISPR 24	EN 60555-2, IEC 60555-2, EN 61000-3-2, IEC 61000-3-2	EN 60555-3, IEC 60555-3, EN 61000-3-3, IEC 61000-3-3

BASIC STANDARDS

EN 61000-4-2, IEC 61000-4-2	EN 61000-4-3, IEC 61000-4-3, ENV 50204	EN 61000-4-4, IEC 61000-4-4
EN 61000-4-5, IEC 61000-4-5	EN 61000-4-6, ENV 50141, IEC 61000-4-6	EN 61000-4-8, IEC 61000-4-8
EN 61000-4-11, IEC 61000-4-11		

Oslo, 13 December 1998

Kjell Bergh, Nemko EMC Services

Postal address:

P.O. Box 11, Blindern

Telephone:

+47 22 44 00 00

Fax:

+47 22 44 00 00

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Scope of Accreditation



Page 1 of 1

ELECTROMAGNETIC COMPATIBILITY
AND TELECOMMUNICATIONS

NVLAP LAB CODE 200102-0

ADVANCE DATA TECHNOLOGY CORPORATION

No. 47, 14 Ling, Chia Pzu Tsuen,

Lin Kou Hsiang

Taipei Hsien

TAIWAN

Mr. Harris W. Liu

Phone: 386-2-6032130 Fax: 386-2-6022943

NVLAP Code Designation / Description

International Special Committee on Radio Interference (CISPR) Methods

12/CIS22 IEC/CISPR 22:1993, Limits and methods of measurement of radio disturbance characteristics of information technology equipment

Federal Communications Commission (FCC) Methods

12/F01 FCC Method - 47 CFR Part 15 - Digital Devices

12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz

12/F01b Radiated Emissions

Australian Standards referred to by clauses in AUSTEL Technical Standards

12/T51 AS/NZS 3548: Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment

December 31, 1999

(Effective through)

[Signature]
For the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

NVLAP 013 (11/98)

United States Department of Commerce
National Institute of Standards and Technology



ISO/IEC GUIDE 25:1990
ISO 9002:1987

Certificate of Accreditation



ADVANCE DATA TECHNOLOGY CORPORATION

TAIPEI HSIEN

TAIWAN

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with requirements described in Title 15, Part 2544 of the Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002:1987 (AS/NZS 3548:1998) as suppliers of calibration of test results. Accreditation is awarded for specific services listed under the Scope of Accreditation for

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS
FCC

December 31, 1999

[Signature]
For the NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

NVLAP Lab Code 200102-0



ENG 3/8
AJD

6th January 1999

Advance Data Technology Corporation
No. 47
14 Ling
Chia Pzu Tsuen
Lin Kou Hsiang
Taiwan
R.O.C.

Attention: Ms Sharon Hsiung

Dear Ms Hsiung

LABORATORY APPROVAL

Thank you for your submission of 5th January regarding the re-certification of your testing laboratory to the Ministry of Commerce's laboratory approval criteria.

I am pleased to advise that your submission has been successful and your approval has been extended until 30th June 1999. At this time, the Approved Laboratory scheme will cease operation with the implementation of the new radio communications regulations. Test reports from your laboratory will be accepted under the new framework. Please find enclosed a copy of the Ministry's discussion paper, DP10, outlining the proposed compliance process from 1 January 1999.

If you have any further questions on this matter please do not hesitate to contact me.

Yours faithfully

[Signature]
Brian Emmett

Technical Officer (Regulatory)
e-mail: brian.emmett@moc.gov.tw

RADIO SPECTRUM MANAGEMENT GROUP

Telecommunications Branch, Unit 8, 32 Manurewa Street, Rotorua, 1. Hamilton, New Zealand
P.O. Box 4562, Telephone (07) 345 1245, Fax (07) 345 1219



Certificate of Assessment

This is to Certify

That **ADVANCE DATA TECHNOLOGY CORP.**

Has been approved as a supplier of
"EMC TESTING SERVICES"

and in particular for specifications implemented by

The EC DIRECTIVE on EMC

SGS EMC SERVICES

in accordance with

SGS Laboratory Approval Scheme

The scope of approval is detailed in the

Schedule of Assessment

SGS EMC Services
Smith Ind Est
Beverly
Ca Overham
DN6 5AD
UNITED KINGDOM

Issued
For and on behalf of
SGS EMC Services
[Signature]
J.S. WHALEY
General Manager
Date: 07/03/99

經濟部商品檢驗局(函)

中華民國八十五年十月四日
檢台八十五二字第 20823 號

受文者：誠信科技股份有限公司
行文單位：正本：誠信科技股份有限公司
副本：本局第二組(二份)、第三組、秘書室(檢四科)、檢驗處、各分局

主旨：有關貴公司電腦相容性測試實驗室申請本局電腦相容性測試可查，業經實地抽樣結果，同意認可登錄，請 查照。

說明：

一、復 貴公司八十五年十月四日未列字號函。

二、認可登錄範圍如下：

實驗室名稱：誠信科技股份有限公司電腦相容性測試實驗室

實驗室地址：台北縣林口鄉嘉寶村二鄰二號

認可代號：認可產品類別

認可代號：(一)資訊設備

認可代號：(二)廣播接收機與相關產品(收音機)

認可代號：(三)廣播接收機與相關產品(收音機)

認可代號：(四)廣播接收機與相關產品(收音機)

認可代號：(五)廣播接收機與相關產品(收音機)

認可代號：(六)廣播接收機與相關產品(收音機)

認可代號：(七)廣播接收機與相關產品(收音機)

認可代號：(八)廣播接收機與相關產品(收音機)

認可代號：(九)廣播接收機與相關產品(收音機)

認可代號：(十)廣播接收機與相關產品(收音機)

認可代號：(十一)廣播接收機與相關產品(收音機)

認可代號：(十二)廣播接收機與相關產品(收音機)

認可代號：(十三)廣播接收機與相關產品(收音機)

認可代號：(十四)廣播接收機與相關產品(收音機)

認可代號：(十五)廣播接收機與相關產品(收音機)

認可代號：(十六)廣播接收機與相關產品(收音機)

認可代號：(十七)廣播接收機與相關產品(收音機)

認可代號：(十八)廣播接收機與相關產品(收音機)

認可代號：(十九)廣播接收機與相關產品(收音機)

認可代號：(二十)廣播接收機與相關產品(收音機)

認可代號：(二十一)廣播接收機與相關產品(收音機)

認可代號：(二十二)廣播接收機與相關產品(收音機)

認可代號：(二十三)廣播接收機與相關產品(收音機)

認可代號：(二十四)廣播接收機與相關產品(收音機)

局長許鵬翔

檢閱分局負責規定檢閱單位主管執行

經濟部商品檢驗局(函)

中華民國八十六年二月二十一日
檢台八十六二字第 12954 號

受文者：誠信科技股份有限公司
行文單位：正本：誠信科技股份有限公司
副本：本局第二組(二份)、第三組、秘書室(檢四科)、檢驗處、各分局

主旨：有關貴公司電腦相容性測試實驗室申請本局電腦相容性測試可查，業經實地抽樣結果，同意認可登錄，請 查照。

說明：

一、復 貴公司八十六年二月二十一日未列字號函。

二、認可登錄範圍如下：

實驗室名稱：誠信科技股份有限公司電腦相容性測試實驗室

實驗室地址：台北縣林口鄉嘉寶村二鄰二號

認可代號：認可產品類別

認可代號：(一)資訊設備

認可代號：(二)廣播接收機與相關產品(收音機)

認可代號：(三)廣播接收機與相關產品(收音機)

認可代號：(四)廣播接收機與相關產品(收音機)

認可代號：(五)廣播接收機與相關產品(收音機)

認可代號：(六)廣播接收機與相關產品(收音機)

認可代號：(七)廣播接收機與相關產品(收音機)

認可代號：(八)廣播接收機與相關產品(收音機)

認可代號：(九)廣播接收機與相關產品(收音機)

認可代號：(十)廣播接收機與相關產品(收音機)

認可代號：(十一)廣播接收機與相關產品(收音機)

認可代號：(十二)廣播接收機與相關產品(收音機)

認可代號：(十三)廣播接收機與相關產品(收音機)

認可代號：(十四)廣播接收機與相關產品(收音機)

認可代號：(十五)廣播接收機與相關產品(收音機)

認可代號：(十六)廣播接收機與相關產品(收音機)

認可代號：(十七)廣播接收機與相關產品(收音機)

認可代號：(十八)廣播接收機與相關產品(收音機)

認可代號：(十九)廣播接收機與相關產品(收音機)

認可代號：(二十)廣播接收機與相關產品(收音機)

認可代號：(二十一)廣播接收機與相關產品(收音機)

認可代號：(二十二)廣播接收機與相關產品(收音機)

認可代號：(二十三)廣播接收機與相關產品(收音機)

認可代號：(二十四)廣播接收機與相關產品(收音機)

局長陳佐鎮

檢閱分局負責規定檢閱單位主管執行