



EMC

TEST REPORT

REPORT NO. : F88041308

MODEL NO. : KWD-825

DATE OF TEST : Apr. 15, 1999

PREPARED FOR: UNIKEY ELECTRONICS CO., LTD.

ADDRESS: 6F, NO. 25, WU-GONG 6TH RD.,
WU-KU INDUSTRIAL PARK,
TAIPEI HSIEN, TAIWAN, R.O.C.

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION



Accredited Laboratory

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

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1.

CERTIFICATION

Issue date: Apr. 17, 1999

Product : KEYBOARD
Trade Name : UNIKEY
Model No. : KWD-825
Applicant : UNIKEY ELECTRONICS CO., LTD.
Standard : FCC Part 15, Subpart B, Class B
CISPR 22: 1993+A1: 1995+A2: 1996
ANSI C63.4-1992

We hereby certify that one sample of the designation has been tested in our facility on Apr. 15, 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 : Johnny Liu , DATE: 4/17/99
(Johnny Liu)

CHECKED BY : Ariel Hsieh , DATE: 4/17/99
(Ariel Hsieh)

APPROVED BY : Mike Su , DATE: 4/17/99
(Mike Su)

ADVANCE DATA TECHNOLOGY CORPORATION**NVLAP**

Accredited Laboratory



2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Product	:	KEYBOARD
Model No.	:	KWD-825
Power Supply Type	:	Switching (DC 5V from PC)
Data Cable	:	Shielded (1.6 m)

Note: The EUT is a keyboard with Win98 hot keyboard function.

For more detailed features description, please refer to manufacturer's specification 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-233T	FCC DoC Approved	Nonshielded Power (1.8m)
2.	COLOR MONITOR	ADI	PD-959	FCC DoC Approved	Shielded Signal (1.5m) Nonshielded Power (1.8m)
3.	PRINTER	HP	2225C+	DSI6XU2225	Shielded Signal (2.0m) Nonshielded Power (1.0m)
4.	MODEM	ACEEX	1414	IFAXDM1414	Shielded Signal (1.0m) Nonshielded Power (1.0m)
5.	MOUSE	DEXIN	A2P800A	NIYA2P800A	Shielded Signal (1.5m)
6.	SPEAKER	JAZZ HIPSTER	J-008	NA	Nonshielded Signal (1.2m)
7.	SOUND CARD	YA HSIN	AUDIO 1869	FCC DoC Approved	NA

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)

CONDUCTED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE & SCHWARZ Test Receiver	ESH3	893495/006	July 15, 1999
ROHDE & SCHWARZ Spectrum Monitor	EZM	893787/013	July 16, 1999
ROHDE & SCHWARZ Artificial Mains Network	ESH3-Z5	839135/006	July 14, 1999
EMCO-L.I.S.N.	3825/2	9204-1964	July 14, 1999
Shielded Room	Site 2	ADT-C02	NA

Note: 1. The measurement uncertainty is less than +/- 2.6dB, 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.

RADIATED EMISSION MEASUREMENT

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
HP Spectrum Analyzer	8594A	3144A00308	Sept. 3, 1999
HP Preamplifier	8447D	2944A08119	July 20, 1999
HP Preamplifier	8347A	3307A01088	Sept. 9, 1999
ROHDE & SCHWARZ TEST RECEIVER	ESVP	893496/030	July 15, 1999
SCHWARZBECK Tunable Dipole Antenna	VHA 9103 UHA 9105	E101051 E101055	Nov. 25, 1999
CHASE Bilog Antenna	CBL6112A	2329	Sept. 19, 1999
EMCO Double Ridged Guide Antenna	3115	9312-4192	April 5, 2000
EMCO Turn Table	1060	1195	NA
EMCO Tower	1051	1163	NA
Open Field Test Site	Site 2	ADT-R02	Sept. 18, 1999

Note: 1. The measurement uncertainty is less than +/- 3dB, 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

* Detector Function: Quasi-Peak

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

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	Peak	Average	Peak	Average
Above 1000	80.0	60.0	74.0	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 : 27 °C
Humidity : 65 %
Atmospheric Pressure : 1002 mbar

TEST RESULT	Remarks
PASS	Minimum passing margin of conducted emission: -8.8 dB at 3.540 MHz Minimum passing margin of radiated emission: -5.8 dB at 288.04 MHz

4.2 EUT OPERATION CONDITION

1. Turn on the power of all equipment.
2. PC runs a test program to enable all functions.
3. PC reads and writes messages from FDD and HDD.
4. EUT sends "H" characters to PC.
5. PC sends "H" messages to monitor and monitor displays "H" patterns on screen.
6. PC sends "H" messages to modem.
7. PC sends "H" messages to printer and then printer prints them on paper
8. PC sends audio messages to speaker.
9. Repeat steps 3-9.

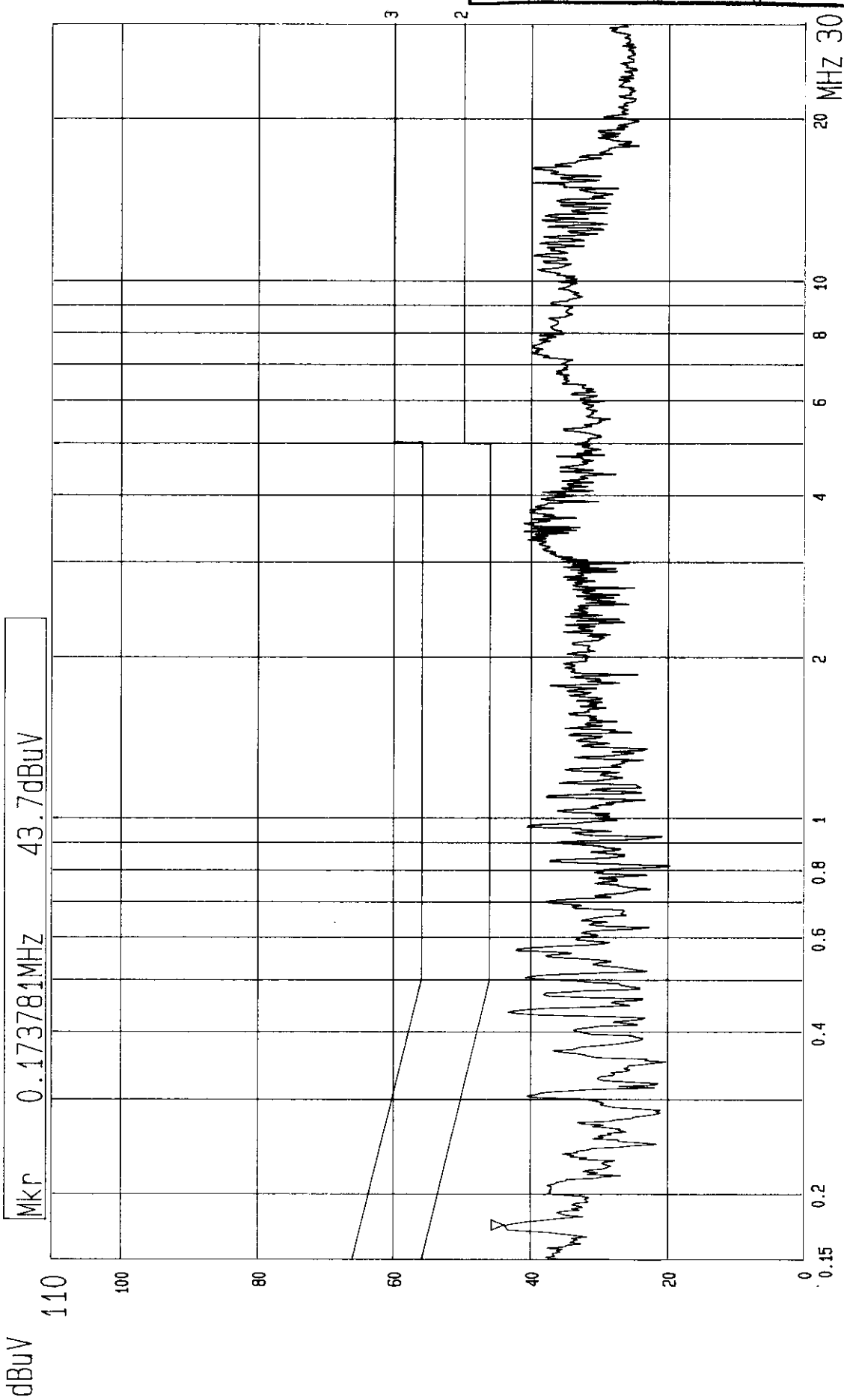


4.3 TEST DATA OF CONDUCTED EMISSION

EUT: KEYBOARDMODEL: KWD-8256 dB Bandwidth: 10 kHzPHASE: LINE (L)

Freq.	Meter Reading [dB (uV)]					Limit		Margin	
[MHz]	Corr.	Reading Data		Total		[dB (uV)]		[dB (uV)]	
	Factor	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.173	0.2	43.7	-	43.9	-	64.8	54.8	-20.9	-
0.304	0.2	40.4	-	40.6	-	60.1	50.1	-19.5	-
0.567	0.2	42.0	-	42.2	-	56.0	46.0	-13.8	-
3.540	0.3	46.9	-	47.2	-	56.0	46.0	-8.8	-
7.346	0.6	40.0	-	40.6	-	60.0	50.0	-19.4	-
16.263	1.0	40.0	-	41.0	-	60.0	50.0	-19.0	-

- 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 levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value



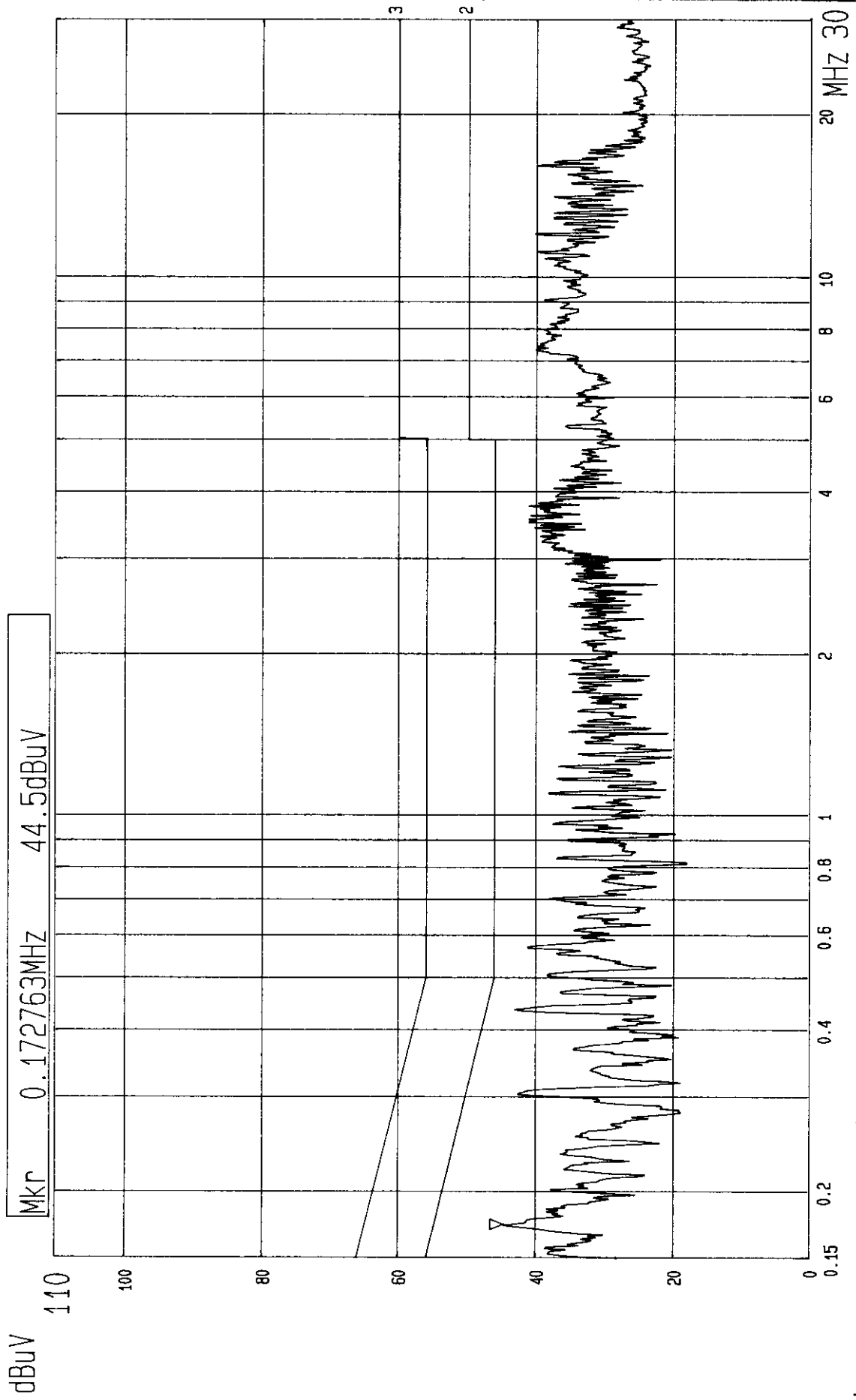


TEST DATA OF CONDUCTED EMISSION

EUT: KEYBOARDMODEL: KWD-8256 dB Bandwidth: 10 kHzPHASE: NEUTRAL (N)

Freq.	Meter Reading [dB (uV)]					Limit		Margin	
[MHz]	Corr.	Reading Data		Total		[dB (uV)]		[dB (uV)]	
	Factor	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.173	0.2	44.5	-	44.7	-	64.8	54.8	-20.1	-
0.304	0.2	42.3	-	42.5	-	60.1	50.1	-17.6	-
0.567	0.2	40.9	-	41.1	-	56.0	46.0	-14.9	-
3.540	0.3	40.9	-	41.2	-	56.0	46.0	-14.8	-
7.346	0.6	40.1	-	40.7	-	60.0	50.0	-19.3	-
16.263	0.9	39.0	-	39.9	-	60.0	50.0	-20.1	-

- 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 levels of other frequencies were very low against the limit.
 5. Margin value = Emission level - Limit value





4.4 TEST DATA OF RADIATED EMISSION

EUT: KEYBOARDMODEL: KWD-825ANT. POLARITY: HorizontalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height	Table Angle
69.97	7.6	9.8	17.4	30.0	-12.6	400	206
120.01	14.4	7.4	21.8	30.0	-8.2	400	106
178.83	11.5	5.3	16.8	30.0	-13.2	400	281
184.85	11.6	3.6	15.2	30.0	-14.8	400	71
202.83	12.1	6.9	19.0	30.0	-11.0	400	247
244.08	15.1	6.8	21.9	37.0	-15.1	400	137
249.11	15.4	7.2	22.6	37.0	-14.4	400	333
272.06	16.5	8.6	25.1	37.0	-11.9	306	243
288.04	16.3	14.9	31.2	37.0	-5.8	263	252

- REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB)
+Meter Reading (dBuV).
 2. Correction Factor (dB) = Ant. Factor (dB)+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: **KEYBOARD**MODEL: **KWD-825**ANT. POLARITY: VerticalDETECTOR FUNCTION: Quasi-peak6 dB BANDWIDTH: 120 kHzFREQUENCY RANGE: 30-1000 MHzMEASURED DISTANCE: 10 M

Frequency (MHz)	Correction Factor (dB)	Reading Data (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height	Table Angle
49.20	7.3	14.3	21.6	30.0	-8.4	100	6
70.43	6.6	13.8	20.4	30.3	-9.6	100	7
108.65	12.2	8.0	20.2	30.0	-9.8	100	323
120.03	14.4	8.4	22.8	30.0	-7.2	100	268
151.53	12.7	3.0	15.7	30.0	-14.3	100	190
174.08	11.4	4.3	15.7	30.0	-14.3	100	224
180.53	11.4	6.9	18.3	30.0	-11.7	100	194
243.41	14.7	11.6	26.3	37.0	-10.7	100	354
264.06	16.1	7.9	24.0	37.0	-13.0	100	207
288.06	16.0	14.3	30.3	37.0	-6.7	100	358

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



6. 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, DNV |
| ● U.K. | INCHCAPE, SGS |
| ● R.O.C. | BSMI |

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: 301-725-1585 (ext-218)
Facsimile: 301-344-2395

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 2.946 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
Thomas W. Phillips
Electronics Engineer
Customer Service Branch

Enclosure:
PAL PN

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1585 (ext-218)
Facsimile: 301-344-2395

September 15, 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 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 2.946 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 been also 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
Thomas W. Phillips
Electronics Engineer
Customer Service Branch

FEDERAL COMMUNICATIONS COMMISSION

Equipment Authorization Division
7435 Oakland Mills Road
Columbia, MD 21046

March 04, 1999

Reference Number: 98424

Advance Data Technology Corp.
11F, No. 1, Sec. 4
Nan-King East Road
Taipei,
Taiwan, R.O.C.

Attention: Tommy Wu

Re: Measurement facility located at Taipei, Site No. 4
3 & 10 meter site
Date of Listing: March 04, 1999

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 2.946 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.

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

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1585 (ext-218)
Facsimile: 301-344-2395

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 2.946 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
Thomas W. Phillips
Electronics Engineer
Customer Service Branch

Enclosure:
PAL PN

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1000 (ext-210)
Facsimile: 301-344-3000

February 25, 1998

IN REPLY REFER TO
31040/SIT
1300F2

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/efiling/databases/testsite/.

Sincerely,

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

FEDERAL COMMUNICATIONS COMMISSION

7435 Oakland Mills Road
Columbia, MD 21046
Telephone: 301-725-1000 (ext-210)
Facsimile: 301-344-3000

July 16, 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 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 under Electronic Filing.

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:

Advance Data Technology (ADT) Corporation
No. 47, 14 Ling, Chia Pao 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 60 555-2:1997, EN 61 000-3-2:1995, EN 61 000-3-3:1995,
EN 50 081-1:1992, EN 50 082-1:1993, EN 50 081-2:1993, EN 50 082-2:1995,
IEC 801-2:1991, IEC 801-3:1994, IEC 801-4:1996, IEC 801-5:1996, 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 60 601-1-3:1993

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. G. Lübben
Dr. G. Lübben
Vice General Manager
Product Safety Department

U. Meyer
Dipl.-Ing. U. Meyer
Auditor



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

(Conducting 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-505
 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
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, LI LIAO KENG, 9 LING, WU LUNG TSUEN,
CHIUNG LIN HSIANG, HSIEN 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
Information Technology Equipment



CERTIFICATE

Facility: Advance Data Technology Corp Shielded Room A
(Conducted Interference Measurement)
Company : Advance Data Technology Corp.
Address : NO. 81-1, LI LIAO KENG, 9 LING, WU LUNG TSUEN,
CHIUNG LIN HSIANG, HSIEN 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
Information Technology Equipment





Worldwide Testing and Certification

ELA 4

EMC Laboratory
Authorization

Aut. No.: ELA 112

EMC Laboratory: ADT Advanced Data Technology Corporation
No. 47, 14 Ling, Chia Pan Trees,
Lia Kee 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 Certification(s) to be issued by Nemko, your EMC Laboratory's test report(s) 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
Kjell Bergh, Head of EMC Section

Postal address:
P.O. Box 75 Blindern
N-0407 OSLO, NORWAY

Telephone:
+47 22 30 00 00
Fax:
+47 22 30 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 301-2	EN 61000-4-3, ENV 50140, ENV 50204, IEC 61000-4-3, IEC 301-3	EN 61000-4-4, IEC 61000-4-4, IEC 301-4
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
Kjell Bergh, Nemko EMC Services

Postal address:
P.O. Box 75 Blindern
N-0407 OSLO, NORWAY

Telephone:
+47 22 30 00 00
Fax:
+47 22 30 00 00

World-wide Testing and
Certification

ELA 4

EMC Laboratory
AuthorizationAut. No.: ELA 112-b
Hsin Chu EMC Laboratory

EMC Laboratory: ADT Advanced Data Technology Corporation
Hsin Chu EMC Laboratory
No. 41-1, Lu Lin Kong, 3 Ling,
Wei Lung Treen, 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 Certification(s) to be issued by Nemko, your EMC Laboratory's test report(s) 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, 15 December 1998

For Nemko AS:

Kjell Bergh
Kjell Bergh, Head of EMC Section

Postal address:
P.O. Box 75 Blindern

Telephone:
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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 disconnection 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, 15 December 1998

Kjell Bergh
Kjell Bergh, Nemko EMC Services

Postal address:
P.O. Box 75 Blindern

Telephone:
+47 22 30 00 00
Fax:
+47 22 30 00 00

000-000/000/99

經濟部商品檢驗局(通)
中華民國三十三年十月五日
檢字八十五三字第
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(均無附件)

主旨：有關貴公司電磁相容性測試實驗室申請本局電磁相容性測試認可案，業經實地評鑑結果，同意認可登錄，請查照。

說明：
一、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：

認可領域代號	認可產品類別	報告簽署人
SI-2-1-03	(1) 資訊設備	賴輝煌
SI-2-1-03	(1) 家庭用電器產品	賴輝煌
SI-2-1-03	(1) 增具產品	賴輝煌

- 評核標準：ISO Guide 25 (1990年版)
- 本實驗室認可期限三年，自八十五年十月二十二日起至八十八年十月二十一日止，評核連登頻率每年乙次，得視需要增加檢查次數，惟首次連登作業於六個月內執行。
 - 上開已認可領域如有變更事項，請於變更日起二週內函送相關資料至本局辦理。
 - 貴中心執行本局指定之檢驗業務，依「商品檢驗法」第二十六條規定以執行公務，且貴中心應依規定履行相關之責任與義務。
 - 檢送「商品電磁相容性試驗認可管理作業表」乙份。
 - 檢送「商品電磁相容性試驗報告」格式乙份，請自行印製使用。

局長許鵬翔
依照分層負責規定授權單位主管執行

經濟部商品檢驗局(通)
中華民國三十三年十月五日
檢字八十六三字第
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、貴誠室(請刊登於網際網路)、秘書室(檢四科)檢附登錄檢驗結果、檢驗處、各分局(均無附件)

主旨：有關貴公司電磁相容性測試實驗室申請本局電磁相容性測試認可案，業經實地評鑑結果，同意認可登錄，請查照。

說明：
一、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：

認可領域代號	認可產品類別	報告簽署人
SI-2-1-03	(1) 廣播接收機與相關產品(收音機)	賴輝煌
SI-2-1-03	(1) 廣播接收機與相關產品(收音機)	賴輝煌

- 評核標準：ISO Guide 25 (1990年版)
- 本實驗室認可期限自八十六年七月七日起至八十八年十月二十一日止，評核連登頻率每年乙次，得視需要增加檢查次數，惟首次連登作業於六個月內執行。
 - 上開已認可領域如有變更事項，請於變更日起二週內函送相關資料至本局辦理。
 - 貴公司執行本局指定之檢驗業務，依「商品檢驗法」第二十六條規定以執行公務，且貴公司應依規定履行相關之責任與義務。
 - 檢送「商品電磁相容性試驗報告」格式乙份，請自行印製使用。

局長陳佐鎮
依照分層負責規定授權單位主管執行



DET NORSKE VERITAS STATEMENT OF RECOGNITION

STATEMENT No. 413 - 99 - LAB12
The statement consists of 3 pages

This is to confirm that the
EMC AND SAFETY LABORATORIES

uses
ADT

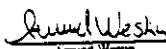
The main office with legal identity
**ADT Corporation, No. 47, 14 Ling, Chiapen Tseu,
Lin Kuo Hsing, Taipei Hsien, Taiwan, R.O.C.**

has been found to comply with the requirements of DNV towards subcontractors of EMC
and Safety testing services in conjunction with the EMC and Low Voltage Directives and in
the voluntary field.

The acceptance is based on a formal Quality Audit and follow-ups according to relevant parts of
EN 45001 and ISO/IEC Guide 25, in accordance with the requirements of the DNV Laboratory
Quality Manual towards subcontractors.

Place and date
Havik, 23 February, 1999
for Det Norske Veritas AS
(Notified Body no. 375/434)

This Statement is valid until
23 February, 2000


Arne Lunde
Head of Section




Arne Lunde
Lead Auditor

*Note: This Statement is issued in terms and conditions outlined, any recipient accepting this statement hereby agrees to the quality system that underlies this statement.

DET NORSKE VERITAS AS
Postboks 25, 2008
Haugesund, Norway

VERITASVERITAS 1 1998 HAVIK, NORWAY

TEL: +47 57 57 50 50

FAX: +47 57 57 50 50

Page 1 of 3



Statement No. 413 - 99 - LAB12

Audit information

Initial audit:

- Date of Audit: 1998-11-18 and 1998-11-19
- Initial Audit Report: 1998-11-22
- Closing of Non-conformities: 99-02-12

Sites Audited

Lin Kuo EMC Laboratory:
No. 47, 14 Ling, Chiapen Tseu, Lin Kuo Hsing, Taipei Hsien, Taiwan, R.O.C.

Hsin Chu EMC Laboratory:
No. 81-1, Lu Lin Kung, 9 Ling, Wu Lung Tseu, Chung Lin Hsing, Hsin Chu, Hsien,
Taiwan, R.O.C.

Lin Kuo Safety Laboratory:
No. 46, Lane 504, Chang Hsiao Road, Lin Kuo Hsing, Taipei, Taiwan, R.O.C.

Scope of recognition

EMC testing according to the following standards:

- EN 50081-1/-2
- EN 50082-1/-2
- EN 55011 / CISPR 11
- EN 55013 / CISPR 13
- EN 55014-1/-2 / CISPR 14-1/-2
- EN 55015 / CISPR 15
- EN 55022 / CISPR 22
- EN 61000-3-2 / IEC 1000-3-2 / EN 60555-2 / IEC 555-2
- EN 61000-3-3 / IEC 1000-3-3 / EN 60555-3 / IEC 555-3
- EN 61000-4-2 / IEC 1000-4-2 / IEC 801-2
- EN 61000-4-3 / IEC 1000-4-3 / EN 50140 / IEC 801-3
- EN 61000-4-4 / IEC 1000-4-4 / IEC 801-4
- EN 61000-4-5 / IEC 1000-4-5 / EN 50142
- EN 61000-4-6 / IEC 1000-4-6 / EN 50141
- EN 61000-4-8 / IEC 1000-4-8
- EN 61000-4-11 / IEC 1000-4-11

Safety testing according to the following standards:

- EN 60065 / IEC 65
- EN 60950 / IEC 950

Applications/Limitations

Testing of single- and three phase systems

DET NORSKE VERITAS AS

Postboks 25, 2008

VERITASVERITAS 1 1998 HAVIK, NORWAY

TEL: +47 57 57 50 50

FAX: +47 57 57 50 50

Page 2 of 3



TEL:(02)2603-2180-3

FAX:(02)2602-2943

TEST REPORT & CERTIFICATION SERVICES QUESTIONNAIRE

We, ADT Corp., would like to provide you a high quality report and certification in a timely manner. To achieve this goal, we would like you to response to the brief questions listed below in this questionnaire. Therefore your feed back is vital to us in order to determine how good our services are, and what areas could be improved.

Please indicate beside each question what you feel is the rating. Also, feel free to make comments and suggestions directly on this questionnaire, or by attaching separate sheet. The completed form should then be returned by mail or FAX to Harris W. Lai, Director. Your cooperation and effort are truly appreciated.

TEST REPORT NUMBER : _____

	YES	NO
1. Was the information presented clearly	☐	☐
2. Was the report complete ?	☐	☐
3. Was the report timely ?	☐	☐
4. Did the report satisfy your requirement ?	☐	☐
5. Was the Certification (if any) completed in the scheduled time ?	☐	☐
Your working field ?	☐ Engineering	☐ Manufacturing
	☐ Marketing	☐ Other

YOUR CONTACT INFORMATION (OPTIONAL) : _____

OPTIONAL COMMENTS : _____