# EMC

## TEST REPORT

REPORT NO. : CE88051402
MODEL NO. : IPC-622XXX-30RD
DATE OF TEST : May 17 ~ May 29, 1999

PREPARED FOR : ADVANTECH CO., LTD.

ADDRESS : FL. 4, NO. 108-3, MING-CHUAN ROAD,
SHING-TIEN CITY TAIPEI HSIEN, TAIWAN

PREPARED BY: ADVANCE DATA TECHNOLOGY CORPORATION

NVLAP®
Accredited Laboratory

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

This test report consists of 25 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

Issue date: Jun. 8, 1999

| | | | |
|---|---|---|---|
| Product | : | INDUSTRIAL COMPUTER | |
| Trade Name | : | ADVANTECH | |
| Model No. | : | IPC-622XXX-30RD | |
| Applicant | : | ADVANTECH CO., LTD. | |
| Standard | : | EN 55022:1994+A1: 1995+A2: 1997, Class A | **EN 50082-2: 1995**<br>EN 61000-4-2: 1995<br>EN 61000-4-3: 1996<br>EN 61000-4-4: 1995<br>EN 61000-4-6: 1996<br>EN 61000-4-8: 1993<br>ENV 50204: 1995 |

We hereby certify that one sample (IPC-622P4-30RD) of the designation has been tested in our facility from May 17 to May 29, 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.

TESTED BY ( Emission ) : _____ ( Kent Chen ) , DATE: _____

TESTED BY ( Immunity ) : _____ ( TM Yeung ) , DATE: _____

CHECKED BY : _____ ( Ariel Hsieh ) , DATE: _____

APPROVED BY : _____ ( Mike Su ) , DATE: _____

**ADVANCE DATA TECHNOLOGY CORPORATION**

Accredited Laboratory

# 2. GENERAL INFORMATION

## 2.1 GENERAL DESCRIPTION OF EUT

| | | |
|---|---|---|
| Product | : | INDUSTRIAL COMPUTER |
| Model No. | : | IPC-622XXX-30RD |
| Power Supply Type | : | 48Vdc from DC power supply) |
| Power Cord | : | NA |

Note: The EUT is an INDUSTRIAL COMPUTER, equipped with an advanced 1+1 redundant power supply to increase system reliability.

The XXX in model: IPC-622XXX-30RD represents different backplanes and the X could be defined as A ~ Z, 0 ~ 9 or blank according to different clients' requirement.

During the test, model: **IPC-622P4-30RD** was selected as the representative and therefore only its data is recorded in this report.

The EUT was tested under the following configuration:

* CHASSIS : ADVANTECH, model: IPC-622P4 series
* BACKPLANE : ADVANTECH, model: PCA-6120P4
* HDD : QUANTUM, model: 3.5 series
* FDD : TEAC, model: FD-235HF
* CPU BOARD : ADVANTECH, model: PCA-6175
* CPU : Intel Pentium II 333, 333MHz (66.6 MHz x 5)
* REDUNDANT POWER SUPPLY : ETASIS, model: EDR-2302H (x 2)

The video resolution of 1024 x 768 was used during the test.

For more detailed features description, please refer to manufacturer' s specification or User's Manual.

## 2.2 GENERAL DESCRIPTION OF APPLIED STANDARD

According to the manufacturer' s request, the EUT was tested with the requirements of the following standards:

EN 55022: 1994+A1: 1995+A2: 1997, Class A

**EN 50082-2: 1995**
EN 61000-4-2: 1995
EN 61000-4-3: 1996
EN 61000-4-4: 1995
EN 61000-4-6: 1996
EN 61000-4-8: 1994
ENV 50204: 1995

All tests are performed and recorded as per above standards.

## 2.3 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.

**FOR EMISSION TEST**

| No | Product | Brand | Model No. | Serial No. | I/O Cable |
|---|---|---|---|---|---|
| 1. | COLOR MONITOR | ADI | PD-959 | 730020U00100291 | Shielded Signal (1.2m)<br>Nonshielded Power (1.8m) |
| 2. | KEYBOARD | BTC | 5140 | 765020075 | Shielded Signal (1.4m) |
| 3. | KEYBOARD | FORWARD | FDA-104GA | FDKB8110112 | Shielded Signal (1.4m) |
| 4. | MOUSE | LOGITECH | M-M30 | LTR53500791 | Shielded Signal (2.0m) |
| 5. | MODEM | ACEEX | 1414 | 980020540 | Shielded Signal (1.2m)<br>Nonshielded Power (1.2m) |
| 6. | PRINTER | HP | 2225C+ | 3030S79116 | Shielded Signal (1.2m)<br>Nonshielded Power (1.2m) |
| 7. | AC-DC POWER SUPPLY | TOPWARDELE | 6603A | 667971 | Nonshielded Power (1.8m) |

Note: A nonshielded DC power cord (0.5m) was connected between EUT and support unit 7.

**FOR IMMUNITY TEST**

| No | Product | Brand | Model No. | Serial No. | I/O Cable |
|---|---|---|---|---|---|
| 1. | COLOR MONITOR | ACER | 7234e | NA | Shielded Signal (1.2m)<br>Nonshielded Power (1.8m) |
| 2. | KEYBOARD | BTC | 5140 | 75B110606 | Shielded Signal (1.5m) |
| 3. | KEYBOARD | HP | C3758A | C3758-60223 | Shielded Signal (1.8m) |
| 4. | MOUSE | DEXIN | A2R800A | 80110026 | Shielded Signal (1.5m) |
| 5. | MODEM | GVC | F-1128V1R6 | 96-191-113004 | Shielded Signal (1.2m)<br>Nonshielded Power (1.5m) |
| 6. | PRINTER | HP | C2145A | SG5BN160GY | Shielded Signal (1.4m)<br>Nonshielded Power (1.8m) |
| 7. | AC-DC POWER SUPPLY | TOPWARDELE | 6603A | 667971 | Nonshielded Power (1.8m) |

Note: A nonshielded DC power cord (0.5m) was connected between EUT and support unit 7.

## 2.4 TEST SETUP

Please refer to the photos of test configuration in Item 6.

# 3. TEST INSTRUMENTS

## 3.1 TEST INSTRUMENTS (EMISSION)

**RADIATED EMISSION MEASUREMENT**

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|---|---|---|---|
| HP Spectrum Analyzer | 8594E | 3412A01132 | Sept. 24, 1999 |
| CHASE Preamplifier | CPA9231A/4 | 3215 | Nov. 1, 1999 |
| HP Preamplifier | 8347A | 3307A01088 | Sept. 9, 1999 |
| ROHDE & SCHWARZ TEST RECEIVER | ESVS 10 | 846285/012 | Dec. 14, 1999 |
| SCHWARZBECK Tunable Dipole Antenna | VHA 9103<br>UHA 9105 | E101051<br>E101055 | Nov. 25, 1999 |
| CHASE BILOG Antenna | CBL6112 | 2074 | Dec. 25, 1999 |
| EMCO Double Ridged Guide Antenna | 3115 | 9312-4192 | April 5, 2000 |
| CHANCE Turn Table & Tower Controller | ACS-I | NA | NA |
| Open Field Test Site | Site 6 | ADT-R06 | Dec. 24, 1999 |

Note: 1. The measurement uncertainty is less than +/- 3dB, which is calculated as per NAMAS 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 TEST INSTRUMENTS (IMMUNITY)

| Description & Manufacturer | Model No. | Serial No. | Calibrated Until |
|---|---|---|---|
| KeyTek, ESD Test System | 2000 | 9105240/41 | Aug. 9, 1999 |
| KeyTek, ESD Simulator | MZ-15/EC | 92022232 | April 14, 2000 |
| KeyTek, EFT Generator | CE-40 | 9508257 | Sept. 8, 1999 |
| KeyTek, Capacitive Clamp | CE-40-CCL | 9508259 | Sept. 8, 1999 |
| ROHDE & SCHWARZ Signal Generator | SMY01 | 840490/009 | Sept. 30, 1999 |
| KALMUS Power Amplifier | LA1000V | 091995-1 | NA |
| KALMUS Power Amplifier | 757LC | 091995-2 | NA |
| HOLADAY Field Probe | HI-4422 | 89915 | Oct. 27, 1999 |
| EMCO BiconiLog Antenna | 3141 | 1001 | NA |
| FCC Coupling Decoupling Network | FCC-801-M3-25 | 48 | NA |
| FCC Coupling Decoupling Network | FCC-801-M2-25 | 20 | NA |
| FISCHER CUSTOM COMMUNICATIONS EM Injection Clamp | FCC-203I | 50 | NA |
| FCC Coupling Decoupling Network | FCC-801-M1-25 | 17 | NA |
| BOONTON RF Voltage Meter | 9200B | 331801AE | Dec. 17, 1999 |
| COMTEST Compact Full Anechoic Chamber (7x3x3 m) | CFAC | ADT-S01 | Aug. 4, 1999 |
| HAEFELY Magnetic Field Tester | MAG 100.1 | 083794-06 | NA |
| COMBINOVA Magnetic Field Meter | MFM10 | 224 | Aug. 26, 1999 |

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

## 3.3 LIMITS OF CONDUCTED AND RADIATED EMISSION

**LIMIT OF RADIATED EMISSION OF EN 55022**

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

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 EN 55022**

| FREQUENCY (MHz) | Class A (dBuV) | | Class B (dBuV)0 | |
|---|---|---|---|---|
| | 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

| | | |
|---|---|---|
| Product Family Standard | : | EN 55022+A1: 1995+A2: 1997, Class A |
| Frequency Range | : | 0.15 - 30 MHz (Conducted Emission) |
| | | 30 - 1000 MHz (Radiated Emission) |
| Input Voltage | : | 230 Vac, 50 Hz |
| Temperature | : | 28 degree C |
| Humidity | : | 55 % |
| Atmospheric Pressure | : | 990 mbar |

| TEST RESULT | Remarks |
|---|---|
| **PASS** | Minimum passing margin of radiated emission: -3.2 dB at 45.37 MHz |

## 4.2 EUT OPERATION CONDITION

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

## 4.3 TEST DATA OF RADIATED EMISSION

EUT: **INDUSTRIAL COMPUTER** MODEL: **IPC-622P4-30RD**

ANT. POLARITY: Horizontal

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

| Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|
| 55.90 | 9.2 | 17.3 | 26.5 | 40.0 | -13.5 | 400 | 21 |
| 167.02 | 10.8 | 13.9 | 24.7 | 40.0 | -15.3 | 400 | 256 |
| 200.89 | 11.2 | 6.2 | 17.4 | 40.0 | -22.6 | 400 | 336 |
| 215.12 | 12.5 | 14.9 | 27.4 | 40.0 | -12.6 | 400 | 38 |
| 233.86 | 14.3 | 22.2 | 36.5 | 47.0 | -10.5 | 319 | 260 |
| 267.26 | 17.0 | 25.2 | 42.2 | 47.0 | -4.8 | 400 | 260 |
| 300.66 | 16.2 | 16.9 | 33.1 | 47.0 | -13.9 | 235 | 164 |
| 334.07 | 18.0 | 15.7 | 33.7 | 47.0 | -13.3 | 285 | 307 |
| 400.89 | 21.8 | 17.6 | 39.4 | 47.0 | -7.6 | 246 | 186 |
| 534.51 | 24.4 | 14.7 | 39.1 | 47.0 | -7.9 | 190 | 51 |
| 668.17 | 26.0 | 11.0 | 37.0 | 47.0 | -10.0 | 207 | 246 |

REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (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: **INDUSTRIAL COMPUTER** MODEL: **IPC-622P4-30RD**

ANT. POLARITY: Vertical

DETECTOR FUNCTION: Quasi-peak 6 dB BANDWIDTH: 120 kHz

FREQUENCY RANGE: 30-1000 MHz MEASURED DISTANCE: 10 M

| Frequency (MHz) | Correction Factor (dB) | Reading Value (dBuV) | Emission Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Antenna Height (cm) | Table Angle (Degree) |
|---|---|---|---|---|---|---|---|
| 45.37 | 11.5 | 25.3 | 36.8 | 40.0 | -3.2 | 100 | 282 |
| 58.83 | 7.5 | 25.2 | 32.7 | 40.0 | -7.3 | 100 | 268 |
| 120.56 | 12.4 | 8.3 | 20.7 | 40.0 | -19.3 | 100 | 0 |
| 167.00 | 12.4 | 11.9 | 24.3 | 40.0 | -15.7 | 100 | 200 |
| 171.79 | 11.8 | 8.4 | 20.2 | 40.0 | -19.8 | 100 | 340 |
| 200.44 | 12.2 | 21.8 | 34.0 | 40.0 | -6.0 | 100 | 0 |
| 213.53 | 12.6 | 17.3 | 29.9 | 40.0 | -10.1 | 100 | 1 |
| 234.04 | 13.3 | 21.0 | 34.3 | 47.0 | -12.7 | 100 | 12 |
| 267.45 | 15.0 | 25.4 | 40.4 | 47.0 | -6.6 | 100 | 0 |
| 534.51 | 24.5 | 18.6 | 43.1 | 47.0 | -3.9 | 359 | 346 |
| 668.15 | 26.1 | 17.5 | 43.6 | 47.0 | -3.4 | 265 | 326 |

REMARKS:
1. Emission level (dBuV/m) = Correction Factor (dB) + Reading value (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

# 5. TEST RESULTS (IMMUNITY)

## 5.1 GENERAL DESCRIPTION

| | | | |
|---|---|---|---|
| Generic Standard | : | EN 50082-2: 1995 | |
| Basic Standard<br>Specification and<br>Performance Criteria | : | EN 61000-4-2 | (Electrostatic Discharge, ESD, 8kV air discharge, 4kV Contact discharge, Performance Criterion B) |
| | | EN 61000-4-3 | (Radio-Frequency Electromagnetic Field Susceptibility Test, RS, 80-1000 MHz, 10V/m, 80% AM (1kHz), Performance Criterion A) |
| | | EN 61000-4-4 | (Electrical Fast Transient/Burst, EFT, Power line: 2kV, Signal line: 1kV, Performance Criterion B) |
| | | EN 61000-4-6 | (Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 10V/m, 80% AM, 1kHz, Performance Criterion A) |
| | | EN 61000-4-8 | (Power Frequency Magnetic Field Test, 50 Hz, 30A/m, Performance Criterion A) |
| | | ENV 50204 | (Radio-Frequency Electromagnetic Field, Pulse modulated, 900+/-5 MHz, 10V/m, 50 % duty cycle, Rep. Frequency 200 Hz, Performance Criterion A) |
| Input Voltage | : | 48 Vdc | |
| Temperature | : | 21 degree C | |
| Humidity | : | 57 % | |
| Atmospheric Pressure | : | 990 mbar | |

## 5.2 PERFORMANCE CRITERIA DESCRIPTION

Criterion A - The apparatus shall continue to operate as intended. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.

Criterion B - The apparatus shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the apparatus is used as intended.

Criterion C - Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls.

## 5.3 EUT OPERATION CONDITION

Same as item **4.2.**

## 5.4 TEST RESULT OF ELECTROSTATIC DISCHARGE (ESD)

| | | |
|---|---|---|
| Basic Standard | : | EN 61000-4-2 |
| Discharge Impedance | : | 330 ohm / 150 pF |
| Discharge Voltage | : | Air Discharge - 8 kV (Direct)<br>Contact Discharge - 4 kV (Direct/Indirect) |
| Polarity | : | Positive/Negative |
| Number of Discharge | : | Minimum 10 times at each test point |
| Discharge Mode | : | Single Discharge |
| Discharge Period | : | 1-second minimum |

| Test Result | | Remarks |
|---|---|---|
| **Criterion A** | **PASS** | Model: IPC-622P4-30RD |

## OBSERVATION DESCRIPTION

| Direct Application | | | Test Result | |
|---|---|---|---|---|
| Discharge Level (kV) | Polarity (+/-) | Test Point | Contact Discharge | Air Discharge |
| 8 | +/- | 1 ~ 6 | NA | Note 1 |
| 4 | +/- | 7 ~ 8 | Note 1 | N/A |

**Description of test point: (Pls. refer to ESD test photo)**

1. LED panel
2. Power switch
3. Alarm reset switch
4. System reset switch
5. FDD
6. I/O ports
7. Metal case
8. Power supply

| Indirect Application | | | Test Result | |
|---|---|---|---|---|
| Discharge Level (kV) | Polarity (+/-) | Test Point | Horizontal Coupling | Vertical Coupling |
| 4 | +/- | 1 ~ 4 | Note 1 | Note 1 |

**Description of test point:**

1. Front side
2. Left side
3. Right side
4. Rear side

## Description of test result:

Note 1: There was no change compared with initial operation during the test.

## 5.5 TEST RESULT OF RADIATED ELECTROMAGNETIC FIELDS (RS)

| | | |
|---|---|---|
| Basic Standard | : | EN 61000-4-3 |
| Frequency range | : | 80 MHz - 1000 MHz |
| Field strength | : | 10 V/m |
| Modulation | : | 1kHz Sine Wave, 80%, AM Modulation |
| Frequency step | : | 1 % of fundamental |
| Polarity of Antenna | : | Horizontal and Vertical |
| Test distance | : | 3 m |

| Test Result | | Remarks |
|---|---|---|
| **Criterion A** | **PASS** | Model: IPC-622P4-30RD |

Note: Four sides of EUT are verified separately.

### Description of test result:

There was no change compared with initial operation during the test.

## 5.6 TEST RESULT OF ELECTRICAL FAST TRANSIENT (EFT)

| | | |
|---|---|---|
| Basic Standard | : | EN 61000-4-4 |
| Test Voltage | : | Power Line - 2 kV |
| | | Signal/Control Line - NA |
| Polarity | : | Positive/Negative |
| Impulse Frequency | : | 5 kHz |
| Tr / Tn | : | 5/50 ns |
| Burst Duration | : | 15 ms |
| Burst Period | : | 300 ms |
| Test Duration | : | Not less than 1 min. |

| Test Result | | Remarks |
|---|---|---|
| **Criterion B** | **PASS** | Model: IPC-622P4-30RD |

### OBSERVATION DESCRIPTION

| Test Point | Polarity | Test Level (kV) | Result |
|---|---|---|---|
| ANODE | +/− | 2 | Note 1 |
| CATHODE | +/− | 2 | Note 1 |
| GND | +/− | 2 | Note 1 |

### Description of test result:

Note 1: Keyboard looses its function during the test and recoverable after it is reset.

## 5.7 TEST RESULT OF CONDUCTED RADIO FREQUENCY DISTURBANCES (CS)

| | | |
|---|---|---|
| Basic Standard | : | EN 61000-4-6 |
| Frequency range | : | 0.15 MHz - 80 MHz |
| Field strength | : | 10 V/m |
| Modulation | : | 1kHz Sine Wave, 80%, AM Modulation |
| Frequency step | : | 1 % of fundamental |
| Coupled cable | : | DC power, Anode and Cathode (Unshielded) |
| Coupling device | : | CDN-M3 (3 wires) |

| Test Result | | Remarks |
|---|---|---|
| **Criterion A** | **PASS** | Model: IPC-622P4-30RD |

### OBSERVATION DESCRIPTION

There was no change compared with initial operation during the test.

## 5.8 TEST RESULT OF POWER FREQUENCY MAGNETIC FIELD

| | | |
|---|---|---|
| Basic Standard | : | EN 61000-4-8 |
| Frequency range | : | 50Hz |
| Field strength | : | 30 A/m |
| Observation Time | : | 1 minute |
| Inductance coil | : | Rectangular type, 1mx1m |

| Test Result | | Remarks |
|---|---|---|
| **Criterion A** | **PASS** | Model: IPC-622P4-30RD |

### OBSERVATION DESCRIPTION

There was no change compared with initial operation during the test.

## 5.9 TEST RESULT OF RADIO-FREQUENCY ELECTROMAGNETIC FIELD, PULSE MODULATED

| | | |
|---|---|---|
| Basic Standard | : | ENV 50204 |
| Frequency range | : | 900 +/- 5 MHz |
| Field strength | : | 10 V/m |
| Modulation | : | 200Hz, Square Wave, 50% Duty Cycle |
| Dwell Time | : | 30 second |
| Polarity of Antenna | : | Horizontal and Vertical |
| Test distance | : | 3 m |

| Test Result | | Remarks |
|---|---|---|
| **Criterion A** | **PASS** | Model: IPC-622P4-30RD |

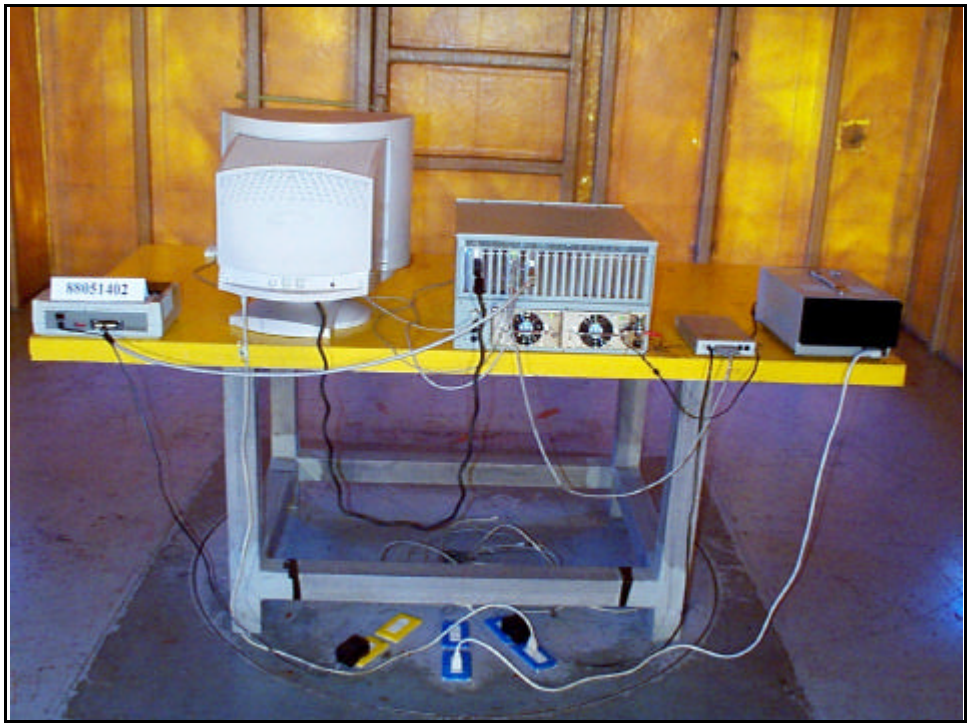
Note: Four sides of EUT are verified separately.

## OBSERVATION DESCRIPTION

There was no change compared with initial operation during the test.

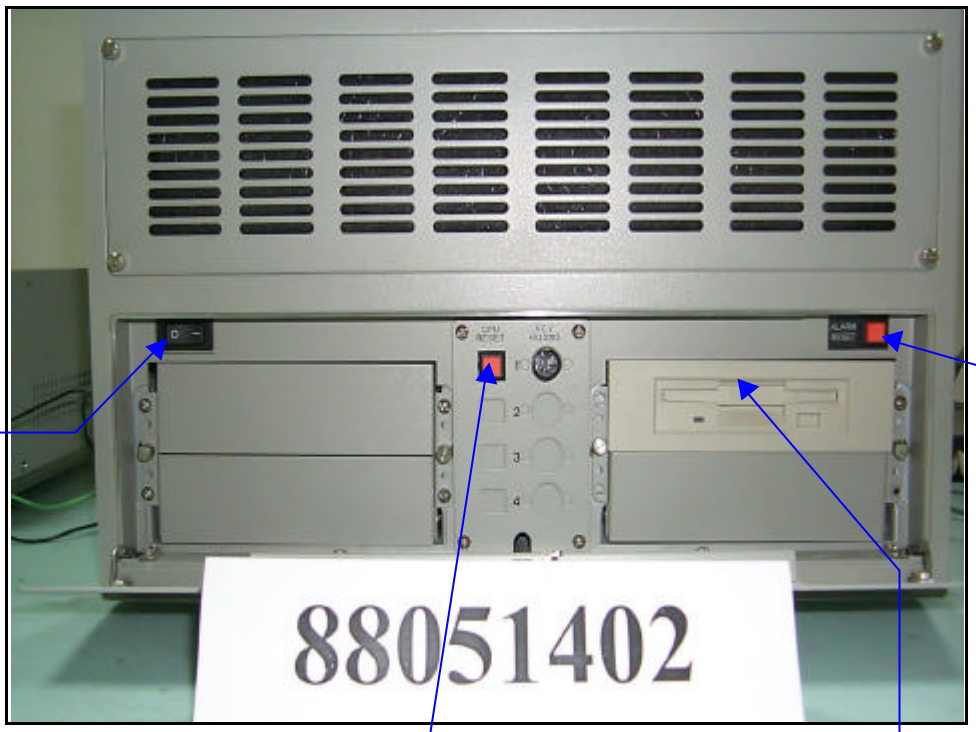
# 6. PHOTOGRAPHS OF THE TEST CONFIGURATION

## RADIATED EMISSION TEST



## ESD TEST


## ESD TEST

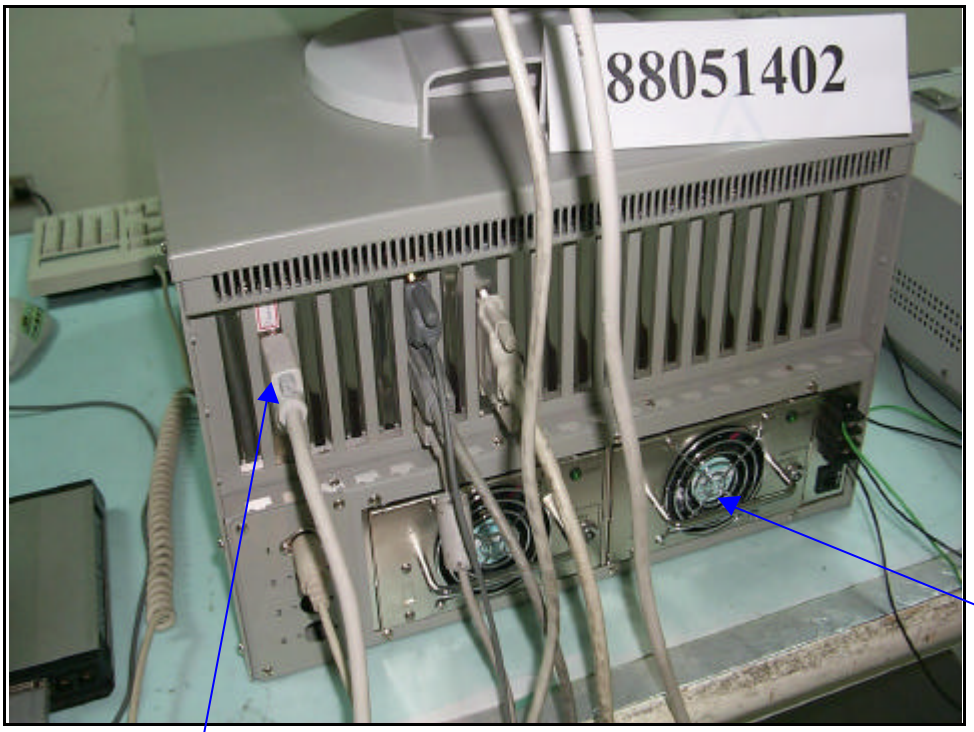



2

3

4

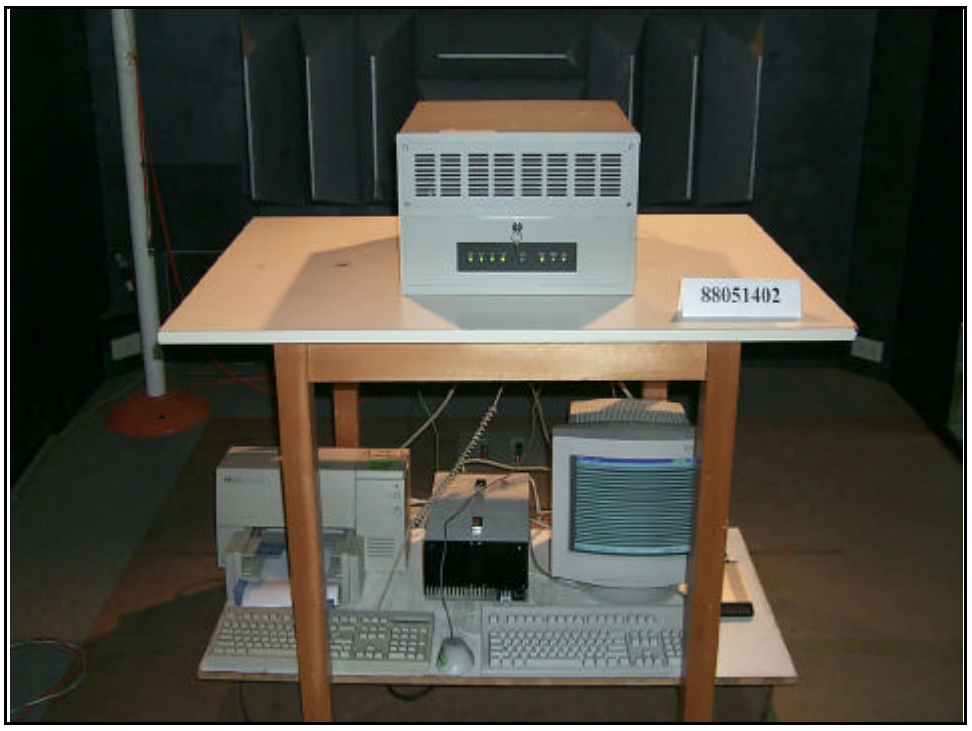
5

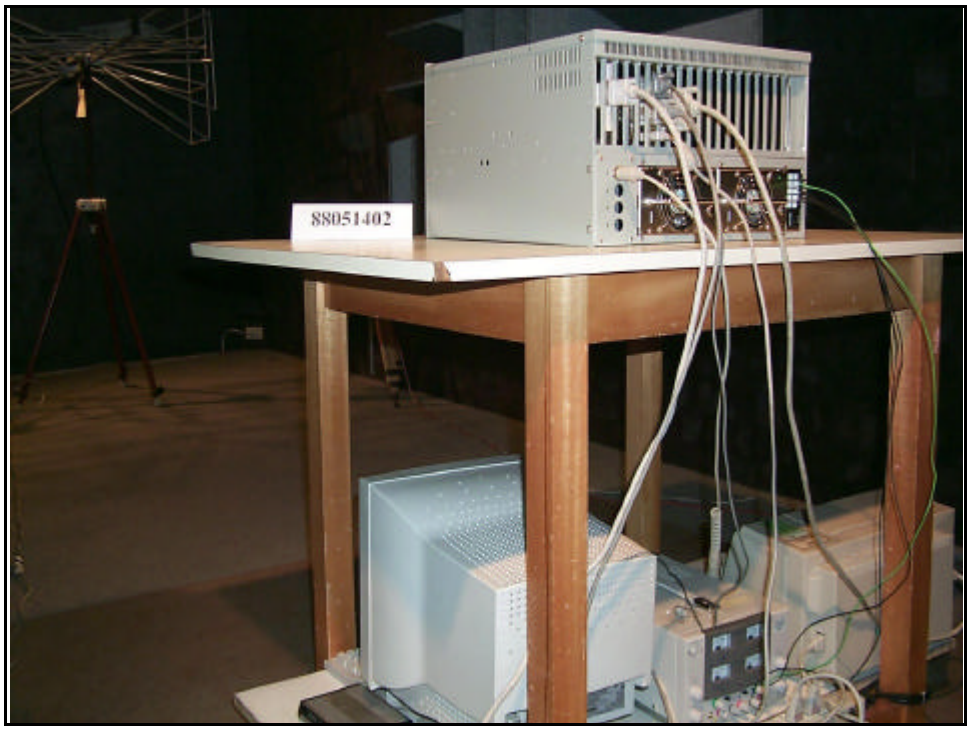



6

8

## RS TEST & PULSE MODULATION TEST

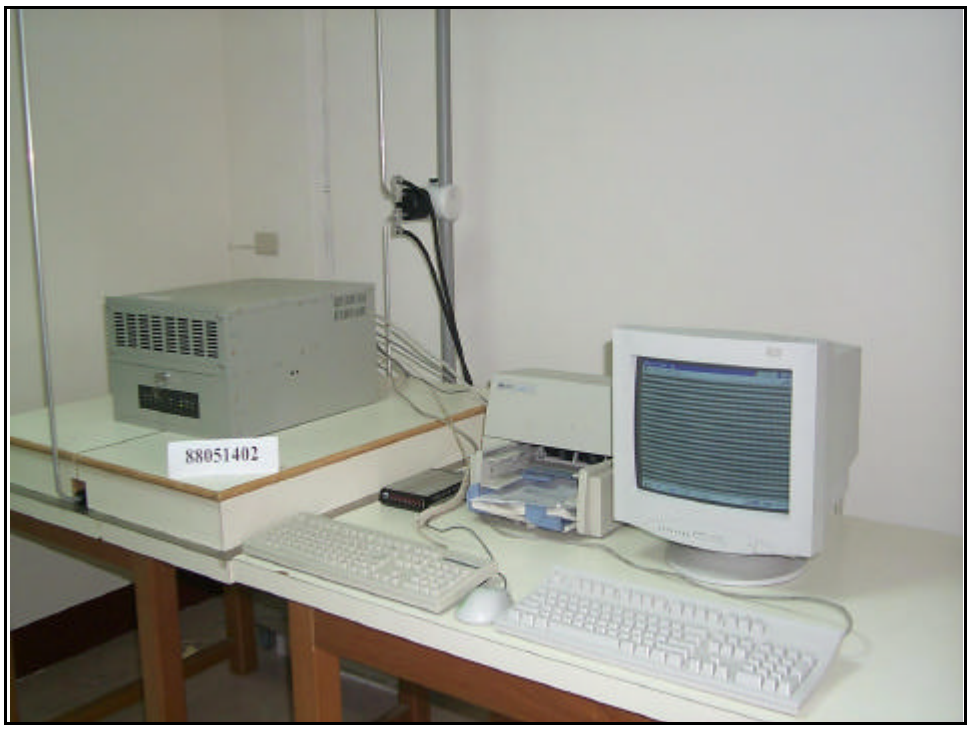


## EFT TEST


## CONDUCTED SUSCEPTIBILITY TEST

# MAGNETIC TEST



# 7. APPENDIX - INFORMATION OF THE TESTING LABORATORY

## Information of the testing laboratory

We, ADT Corp., are 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**