HomeTek Technology Inc.

ADDRESS: No. 67-9, Shir Men Road, Tu Cheng City,
Taipei Hsien, Taiwan, R. O. C.
PHONE : 886-2-22608375 FAX : 886-2-22748013
E - mail : hometek@ms15.hinet.net

# FCC TEST REPORT
## FOR

| | | |
|---|---|---|
| APPLICANT | : | SMART CABLING & TRANSMISSION CORP. |
| ADDRESS | : | 7F-1, No. 168, Lien Cheng Rd., |
| | | Chung-Ho City, Taipei Hsien, Taiwan, R. O. C. |
| EUT | : | Power Converter |
| MODEL NO. | : | PC500XXX, PC300XXX |

NVLAP Lab Code:200331-0

Accredited by the National Voluntary Laboratory Accreditation Program
for the specific scope of accreditation under Lab Code 200331-0

MEASUREMENT PROCEDURE USED

FCC RULES AND CISPR 22 (DOCKET NO. 92-152, SEP. 1993) AND FCC / ANSI C63.4-2001

PREPARED BY :

HomeTek Technology Inc.

No. 67-9, Shir Men Road, Tu Cheng City,

Taipei Hsien. Taiwan, R. O. C.

Report # : FD4A028

# TABLE OF CONTENTS

EMC LAB
HomeTek
HomeTek Technology Inc.

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NVLAP
NVLAP Lab Code:200331-0

# VERIFICATION

## for

## FCC Part 15, Subpart B Class B

| | | |
|---|---|---|
| APPLICANT | : | SMART CABLING & TRANSMISSION CORP. |
| ADDRESS | : | 7F-1, No. 168, Lien Cheng Rd., |
| | | Chung-Ho City, Taipei Hsien, Taiwan, R. O. C. |
| Receipt Date | : | 01/12/2005 Final Test Date: 01/26/2005 |
| EUT | : | Power Converter |
| MODEL NO. | : | PC500XXX, PC300XXX |

MEASUREMENT PROCEDURE USED :
FCC RULES AND CISPR 22 (DOCKET NO. 92-152, SEP. 1993)
AND FCC / ANSI C63.4-2001
TEST PROCEDURE AND DATA ARE TRACEABLE TO NIST/USA,
TL or NML/TAIWAN.

- THE MAXIMUM EMISSION LEVELS WERE COMPARED TO THE CISPR 22 CLASS B LIMITS BOTH RADIATED AND CONDUCTED EMISSION.
- THE ABOVE DEVICE WAS TESTED BY HOMETEK TECHNOLOGY INC. TO SHOWS THE MAXIMUM EMISSION LEVEL FROM THE DEVICE.
- THIS TEST RESULTS OF THIS REPORT APPLIES TO ABOVE TESTED SAMPLE ONLY.
- THIS TEST REPORT SHALL NOT BE REPRODUCE IN PART WITHOUT WRITTEN APPROVAL OF HOMETEK TECHNOLOGY INC.
- THE REPORT MUST NOT BE USED BY THE CLIENT TO CLAIM PRODUCT ENDORSEMENT BY NVLAP OR ANY AGENCY OF THE U. S. GOVERNMENT.
- THE TEST RESULTS ARE TRACEABLE TO THE NATIONAL OR INTERNATIONAL STANDARD.

PREPARED BY : Ming Yu Li DATE : 2/2/2005
MING YU LI

CHECK BY : Albert Tsai DATE : 2/2/2005
ALBERT TSAI / Senior Engineer

APPROVED BY : Tommy Rau DATE : 2/2/2005
TOMMY RAU / Manager

## GENERAL INFORMATION

1 APPLICANT : SMART CABLING & TRANSMISSION CORP.

2 ADDRESS : 7F-1, No. 168, Lien Cheng Rd.,
Chung-Ho City, Taipei Hsien, Taiwan, R. O. C.

3 MANUFACTURER : SMART CABLING & TRANSMISSION CORP.

4 ADDRESS : 7F-1, No. 168, Lien Cheng Rd.,
Chung-Ho City, Taipei Hsien, Taiwan, R. O. C.

5 DESCRIPTION OF EUT :

EUT : Power Converter

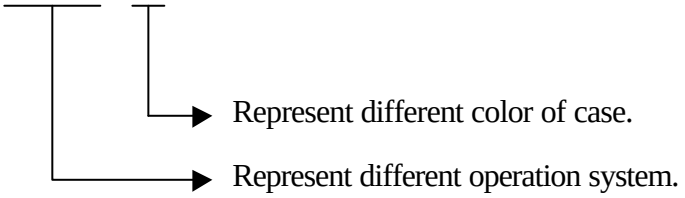
FCC ID : N/A

Model Number : PC500XXX, PC300XXX

Serial # : N/A

5.1 The difference between series of models PC500XXX and PC300XXX is shown as below:

P C 5 0 0 X X X




The worst case of EMI test model is PC500 and the final test data were shown in this test report.

6 FEATURES OF EUT :

**Please refer to user manual or product specification.**

**MODIFICATION LIST**

THE FOLLOWING ACCESSORIES WERE ADDED TO THE EUT DURING TESTING :

NO MODIFICATION BY HOMETEK TECHNOLOGY INC.

# CONDUCTED POWER LINE TEST

## 1 TEST PROCEDURE

According to **ANSI C63.4 - 2001 & CISPR 22**.

## 2 RESULT OF CONDUCTED EMISSION TEST

N/A (Conducted Power Line Test is not applicable to this EUT ( Model : PC500)).

## RADIATED EMISSION TEST

### 1 TEST INSTRUMENTS & FACILITIES

The following test Instruments was used during the radiated emission test :

| Item | Instruments /facilities | Specification | Manufacturer | Model # / S/N# | Date of Cal. |
|---|---|---|---|---|---|
| 1 | OPEN AREA TEST SITE | ☑ OATS 3 | | | JUL/2004 |
| 2 | EMI TEST RECEIVER | 30MHz ~ 1GHz | ROHDE & SCHWARZ | ESVS10 845165/017 | SEP/2004 |
| 3 | RF SPECTRUM ANALYZER | N/A | HEWLETT PACKARD | 8591E 3710A06158 | MAY/2004 |
| 4 | PRE-AMPLIFIER | 9KHz ~ 3000MHz | ADVANTEST | BB525C 90081001 | SEP/2004 |
| 5 | ANTENNA (BI-LOG) | 25MHz ~ 2GHz | SCHAFFNER | CBL6112B S/N : 2614 | MAY/2004 |
| 6 | Attenuation | 50Ω/6dB | JYE BAO | FAT-N (M-F) 001 | JUL/2004 |
| 7 | Cable | 10m | SUHNER | RG214/U OS3-003 | DEC/2004 |
| 8 | Cable | 14m | BELDEN | 9913 OS3-001 | DEC/2004 |
| 9 | EMI 32 (software) | N/A | AUDIX | 19991013-0923 | N/A |

Note : Items 1 ~ 8 were calibrated within period of 1 year.

# 2 TEST PROCEDURE

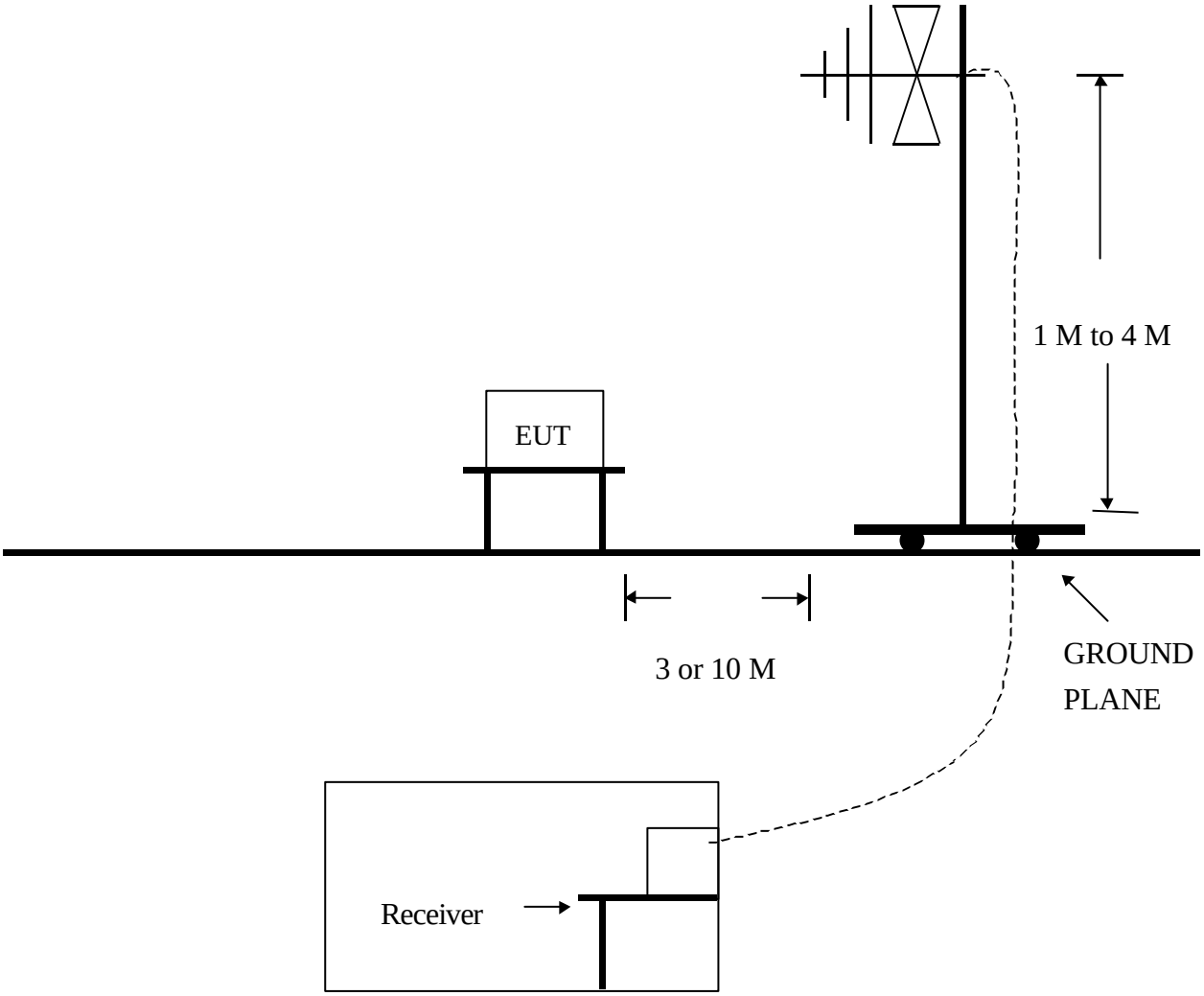
2.1 The EUT was test according to **ANSI C63.4 - 2001 & CISPR 22**.

2.2 The radiated test was performed at HomeTek Lab' s Open Site III.

2.3 The frequency range from 30 MHz to 1 GHz, the measurement were made at 10 meters, with a BI-log antenna.

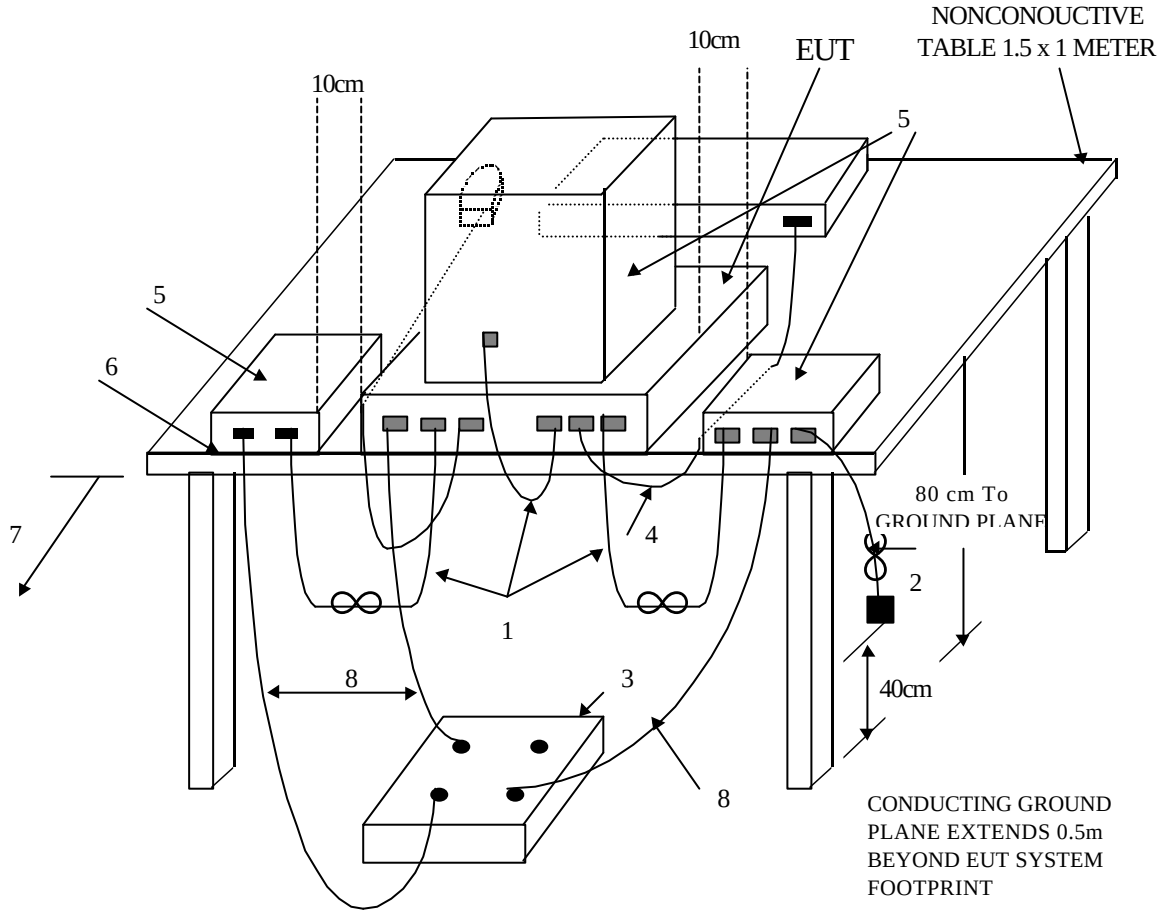
# 3 TEST SETUP

## 3.1 TEST SETUP OF OPEN SITE.



## 3.2 TEST SETUP OF EUT

ANSI
ELECTRICAL AND ELECTRONIC EQUIPMENT IN THE RANGE OF 9kHz TO 40 GHz C63.4-2001




(Details for setup configuration, please refer to appendix A.)

LEGEND:

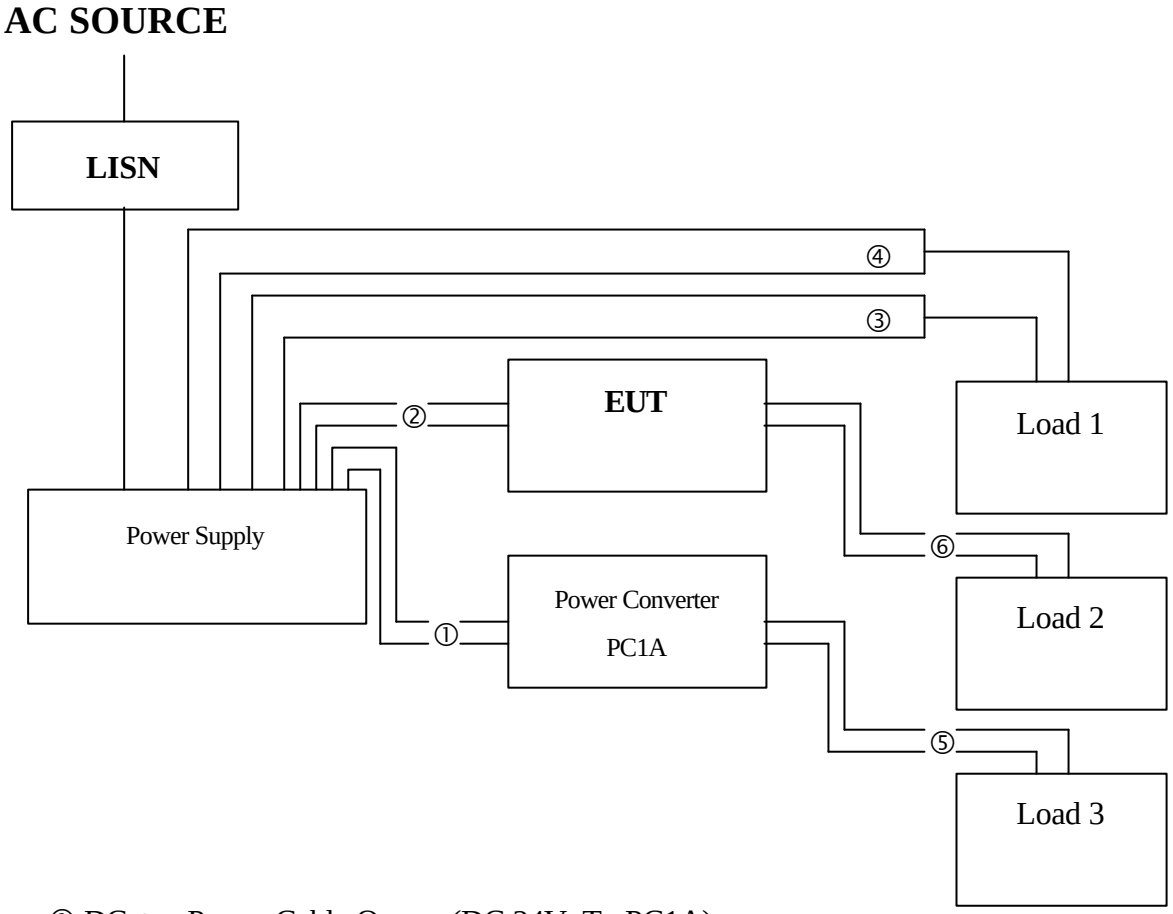
1. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth forming a bundle 30 to 40 cm long, hanging approximately in the middle between ground plane and table.
2. I/O cables that are connected to a peripheral shall be bundled in center. The end of the cable may be terminated if required using correct terminating impedance. The total length shall not exceed 1m.
3. If LISNs are kept in the test setup for radiated emissions, it is preferred that they be installed under the ground plane with the receptacle flush with the ground plane.
4. Cables of hand-operated devices, such as keyboards, mouses, etc., have to be placed as close as possible to the controller.
5. Non-EUT components of EUT system being tested.
6. The rear of all components of the system under test shall be located flush with the rear of the table.
7. No vertical conducting wall used.
8. Power cords drape to the floor and are routed over to receptacle.

**Test Configuration**

**Tabletop Equipment Radiated Emission**

# 4 CONFIGURATION OF THE EUT

The EUT was configured according to **ANSI C63.4 - 2001 & CISPR 22**. All I/O ports were connected to the appropriate peripherals. All peripherals and cables are listed below (including internal device) :




① DC,+, - Power Cable Output (DC 24V, To PC1A)
② DC,+, - Power Cable Output (DC 24V)
③ DC,+ Power Cable Output (DC 24V) x 6
④ DC,- Power Cable Output (DC 24V) x 6
⑤ DC,+, - Power Cable Output (DC 12V, To Load)
⑥ DC,+, - Power Cable Output (DC 12V, To Load)

Figure 1

4.1 EUT

| | | |
|---|---|---|
| EUT Type | : | ☐Proto Type ☑Engineer Type ☐Mass Production |
| Condition when received | : | ☑Good ☐Damage : _____ |
| Device | : | Power Converter |
| Applicant | : | SMART CABLING & TRANSMISSION CORP. |
| Manufacturer | : | SMART CABLING & TRANSMISSION CORP. |
| Model Number | : | PC500XXX, PC300XXX |
| Serial Number | : | N/A |
| FCC ID | : | N/A |
| Data Cable | : | N/A |
| Power Cord (DC 24V) | : | Un-Shielded, 1 m, 2 pin |
| Power Cord (DC 12V) | : | Un-Shielded, 0.2 m, 2 pin |
| Power Supply Type | : | From Power Supply |

4.2 PERIPHERALS

☑ Power Supply

| | | |
|---|---|---|
| Manufacturer | : | SMART CABLING & TRANSMISSION CORP. |
| Model Number | : | PW408 |
| Serial Number | : | N/A |
| FCC ID | : | N/A |
| Data Cable | : | N/A |
| Power Cord 1 | : | Un-Shielded, 1.8 m |
| Power Cord 2 | : | Un-Shielded, 1 m |

☑ Load 1

| | | |
|---|---|---|
| Manufacturer | : | HomeTek |
| Specification | : | DC 24V / 24R / 60W |
| Power Cord | : | Un-Shielded, 0.2 m |

☑ Power Converter

| | | |
|---|---|---|
| Manufacturer | : | SMART CABLING & TRANSMISSION CORP. |
| Model Number | : | PC1A |
| Serial Number | : | N/A |
| FCC ID | : | N/A |
| Data Cable | : | N/A |
| Power Cord | : | Un-Shielded, 1 m |

☑ Load 2 from PC1A (DC 24V Mode)

| | | |
|---|---|---|
| Manufacturer | : | HomeTek |
| Specification | : | DC 24V / 12R / 60W |
| Power Cord | : | Un-Shielded, 1 m |

☑ Load 3 from Power Supply PW408 (DC 24V Mode)

| | | |
|---|---|---|
| Manufacturer | : | HomeTek |
| Specification | : | DC 24V / 9.6R / 60W |
| Power Cord | : | Un-Shielded, 1 m |

4.3 REMARK : N/A

# 5 EUT OPERATING CONDITION

5.1 The operation frequency of the EUT is 35 KHz.

5.2 Configure the EUT according to the **ANSI C63.4 - 2001 & CISPR 22**.

5.3 Connect AC 110V power to input port of Support Unit1(Power Supply PW408).

5.4 DC24V output port of Support Unit1(Power Supply PW408) Connect to input port of Support Unit2(Power Converter PC1A) and input port of EUT and dummy load(9.6R/60W Resistor)

5.5 DC12V output port of Support Unit2(Power Converter PC1A) connect to dummy load(12R/60W Resistor)

5.6 DC12V output port of EUT connect to dummy load(24R/60W Resistor)

5.7 Monitor the status of output port of EUT during the test (For EMS Testing)

**5.8 The photos of conducted test configuration, please refer to appendix A.**

# 6 LIMIT OF RADIATED EMISSION CLASS B

## CISPR 22

| Frequency (MHz) | Measurement Distance | Limit (dBuV/m) |
|---|---|---|
| 30 - 230 | 10 (M) | 30 |
| 230 - 1000 | 10 (M) | 37 |

6.1 The tighter limit shall apply at the edge between two frequency bands.

6.2 Measurement distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or peripherals.

# 7 RESULT OF RADIATED EMISSION TEST

7.1 The frequency range from 30 MHz to 1 GHz was investigated.

7.2 All readings below or equal 1 GHz are quasi-peak or peak values with resolution bandwidth of 120 KHz.

7.3 All readings above 1 GHz are average or peak values with resolution bandwidth of 1 MHz

7.4 The measurements were made at 10 meters of HomeTek Lab's open site III.

7.5 Temperature : 33 ℃, Humidity : 55 % RH.

7.6 Deviation form the test standards and rules : None

7.7 The radiation emission result were gained by the following method :
Level = Reading Level + Probe Factor (Antenna Factor) + Cable Loss – Preamp Factor
Over Limit = Level – Limit Line

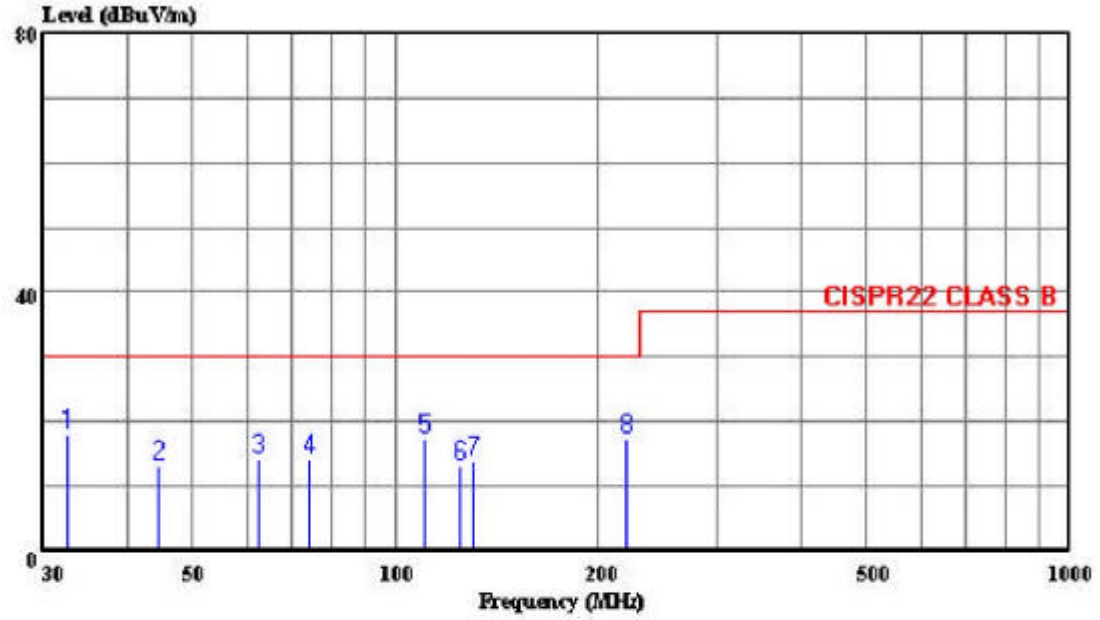
7.8 The radiated mission test was passed at minimum margin :
Vertical 110.63 MHz/ 20.95 dBuV/m, Antenna Height 1.5 Meter,
Turn Table 75 degree, The Model : PC500 .

7.9 Result : **PASSED**

# 8 RADIATED EMISSION TEST DATA (PAGE 1)

HomeTek Technology Inc.
No 67-9,Shi-Men Rd;,Tu-Chen City,
Taipei County, Taiwan R.O.C.
Tel:02-22608375
Fax:02-22749013

Data#: 2 File#: 4a028.emi Date: 2005-01-18 Time: 15:45:49




Trace: Ref Trace:

Condition: CISPR22 CLASS B 10m CHASE 2614 052604 HORIZONTAL
eut : Power Converter (PC500)
power: FROM Power Supply (110V/60Hz)
memo :

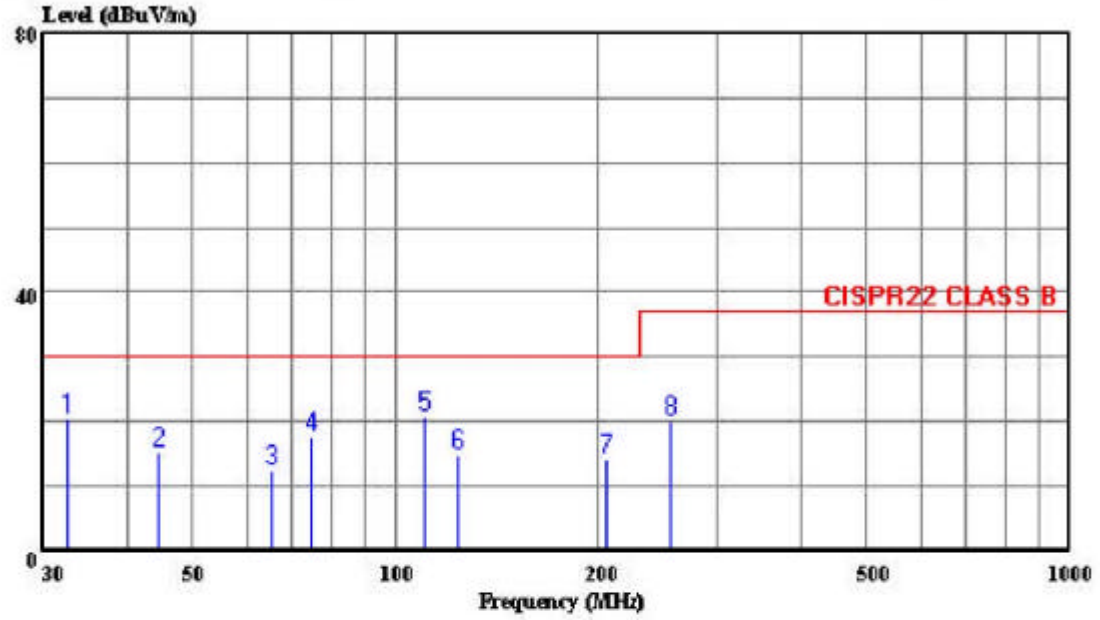
Page: 1

| | Freq | Level | Limit Line | Over Limit | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | |
| 1 | 32.514 | 18.04 | 30.00 | -11.96 | 30.52 | 16.62 | 0.79 | 29.89 | Peak |
| 2 | 44.370 | 13.02 | 30.00 | -16.98 | 31.16 | 10.85 | 0.90 | 29.89 | Peak |
| 3 | 62.374 | 14.31 | 30.00 | -15.69 | 37.27 | 5.66 | 1.04 | 29.66 | Peak |
| 4 | 74.517 | 14.18 | 30.00 | -15.82 | 36.26 | 6.26 | 1.13 | 29.47 | Peak |
| 5 | 110.270 | 17.47 | 30.00 | -12.53 | 33.69 | 11.51 | 1.38 | 29.10 | Peak |
| 6 | 124.520 | 13.31 | 30.00 | -16.69 | 29.48 | 11.56 | 1.46 | 29.19 | Peak |
| 7 | 130.524 | 13.77 | 30.00 | -16.23 | 30.14 | 11.36 | 1.49 | 29.22 | Peak |
| 8 | 220.170 | 17.22 | 30.00 | -12.78 | 36.25 | 8.56 | 2.02 | 29.60 | Peak |

# 9 RADIATED EMISSION TEST DATA (PAGE 2)

HomeTek Technology Inc.
No 67-9,Shi-Men Rd;,Tu-Chen City,
Taipei County, Taiwan R.O.C.
Tel:02-22608375
Fax:02-22749013

Data#: 1 File#: 4a028.emi Date: 2005-01-18 Time: 15:15:46




Trace: Ref Trace:

Condition: CISPR22 CLASS B 10m CHASE 2614 052604 VERTICAL
eut : Power Converter (PC500)
power: FROM Power Supply (110V/60Hz)
memo :

Page: 1

| | Freq | Level | Limit Line | Over Limit | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark |
|---|---|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB/m | dB | dB | |
| 1 | 32.540 | 20.54 | 30.00 | -9.46 | 33.02 | 16.62 | 0.79 | 29.89 | Peak |
| 2 | 44.362 | 15.22 | 30.00 | -14.78 | 33.36 | 10.85 | 0.90 | 29.89 | Peak |
| 3 | 65.374 | 12.45 | 30.00 | -17.55 | 35.37 | 5.63 | 1.06 | 29.62 | Peak |
| 4 | 74.956 | 17.61 | 30.00 | -12.39 | 39.62 | 6.32 | 1.13 | 29.46 | Peak |
| 5 | 110.637 | 20.95 | 30.00 | -9.05 | 37.16 | 11.51 | 1.38 | 29.10 | Peak |
| 6 | 123.320 | 14.92 | 30.00 | -15.08 | 31.05 | 11.60 | 1.45 | 29.19 | Peak |
| 7 | 205.743 | 14.29 | 30.00 | -15.71 | 33.36 | 8.62 | 1.93 | 29.61 | Peak |
| 8 | 255.164 | 20.19 | 37.00 | -16.81 | 35.51 | 12.00 | 2.25 | 29.56 | Peak |

## SAMPLE OF FCC LABEL

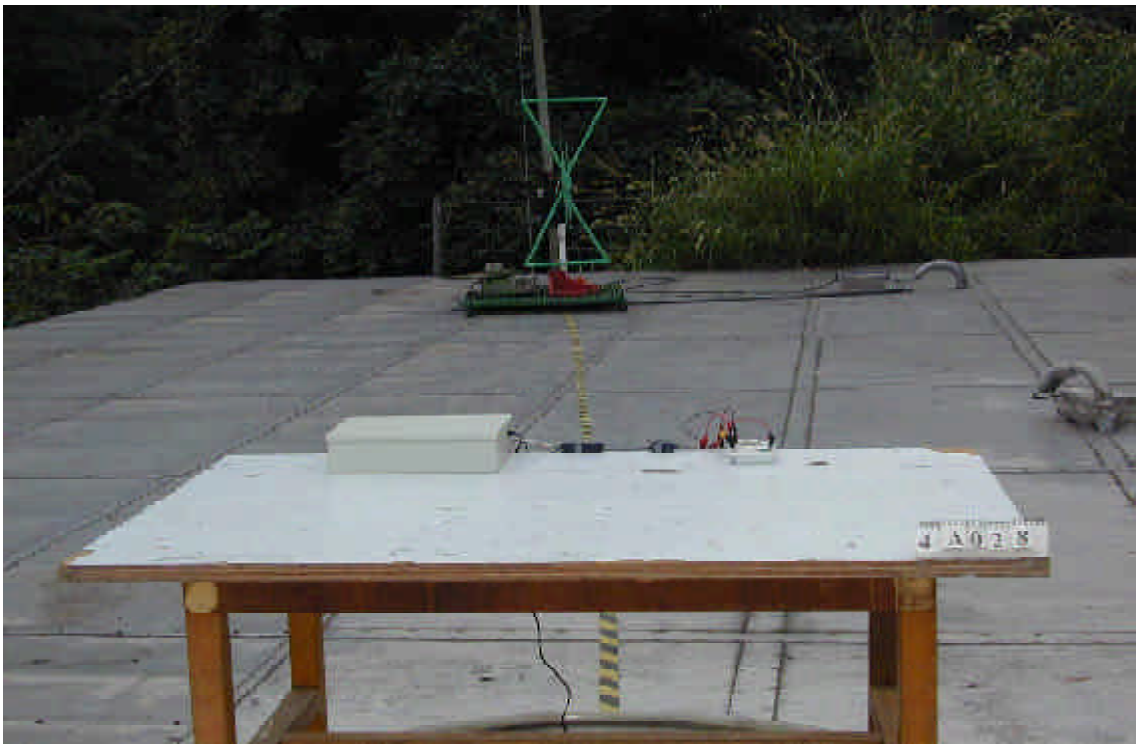
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference. And (2) this device must accept any interference received, including interference that may cause undesired operation.

# Appendix A

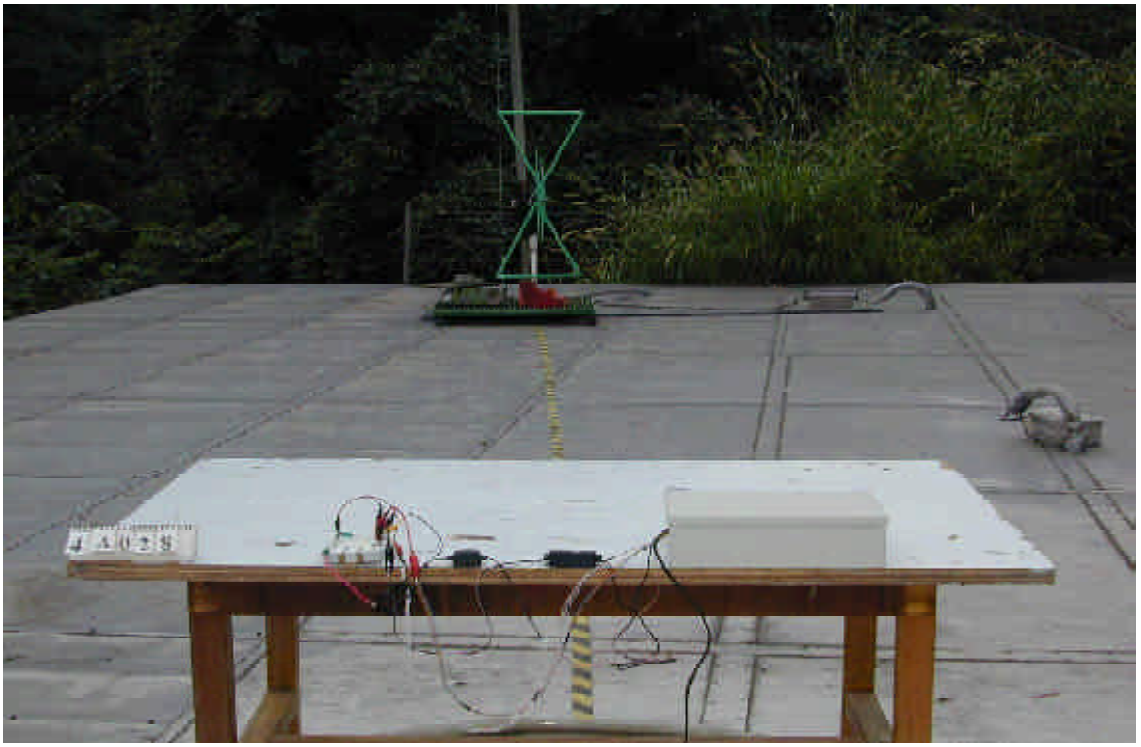
# PHOTOS OF TEST CONFIGURATION

# PHOTO OF RADIATED EMISSION TEST

Model: PC500



Front View



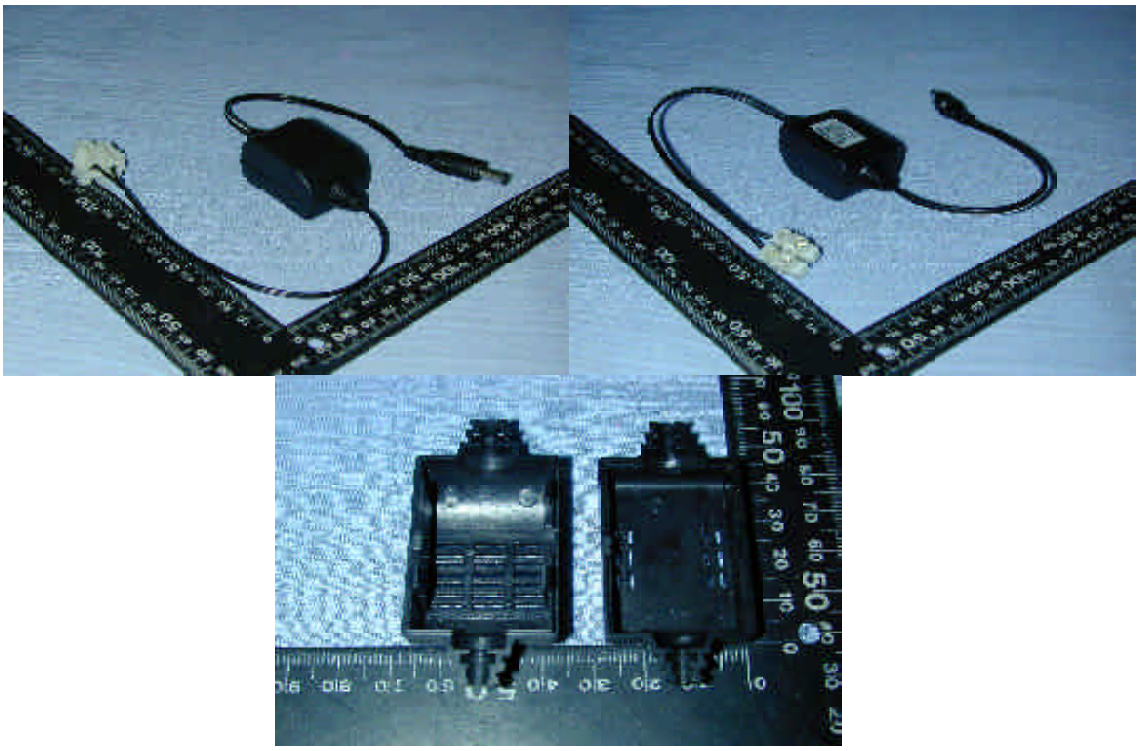
Rear View

# Appendix B

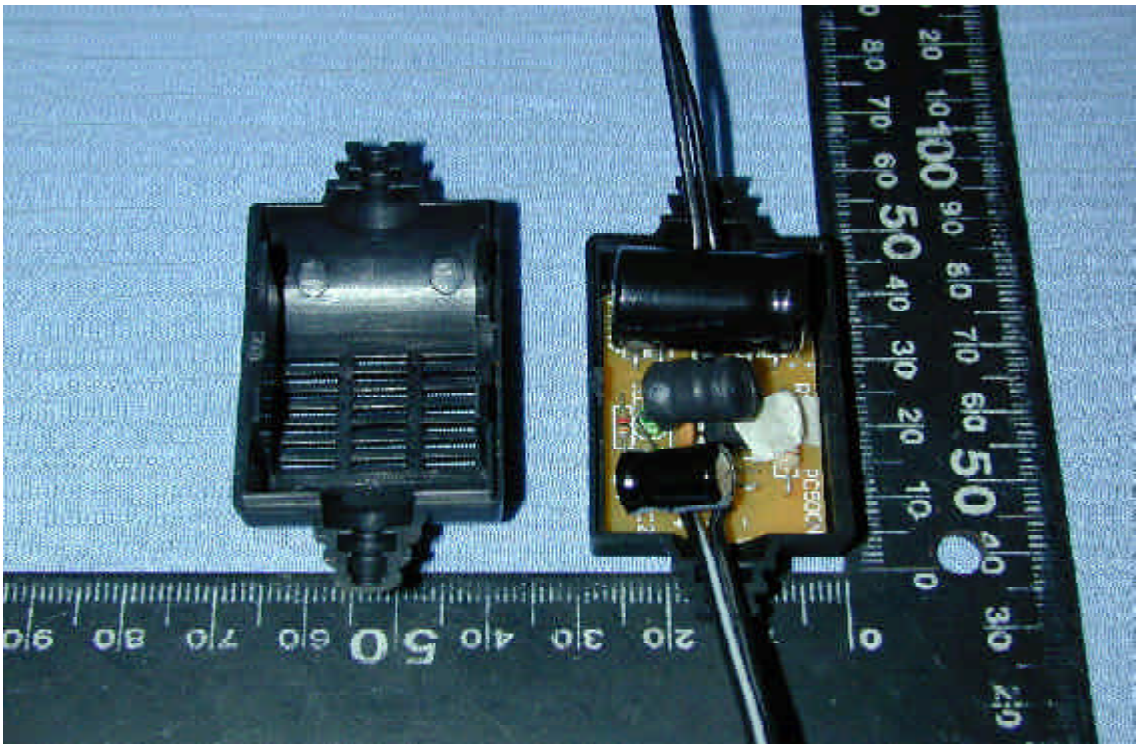
# PHOTOS OF EUT

## PHOTO OF EUT

Model : PC500



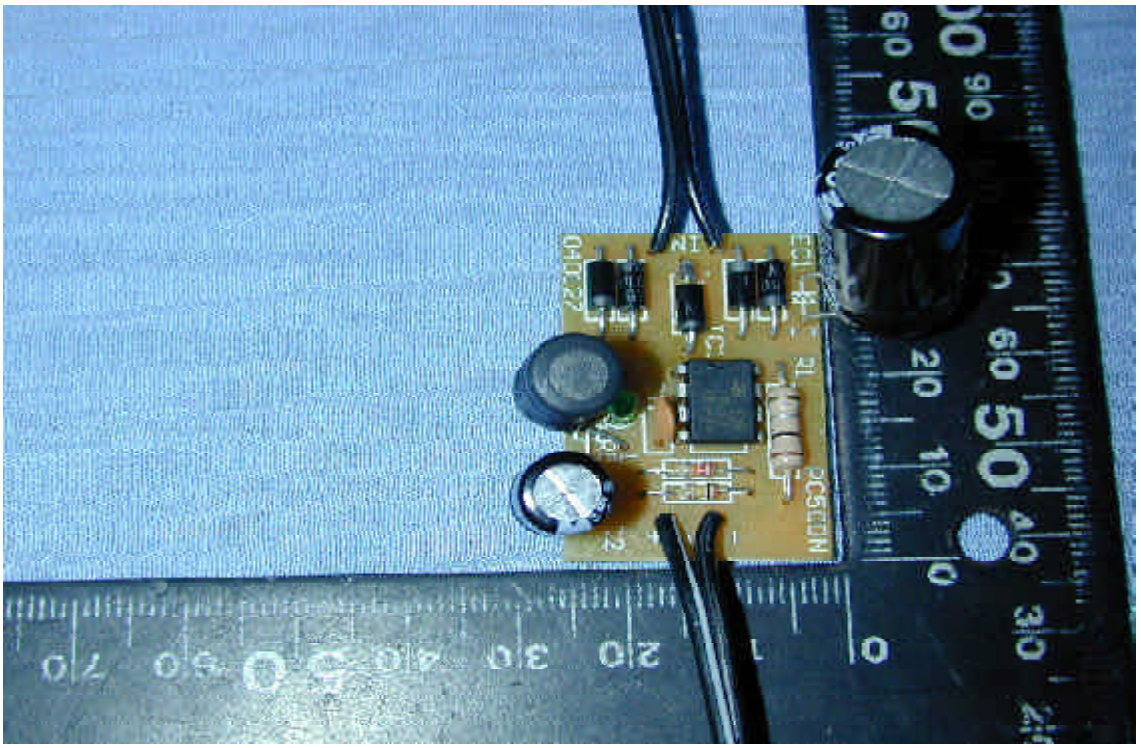
Full View of EUT



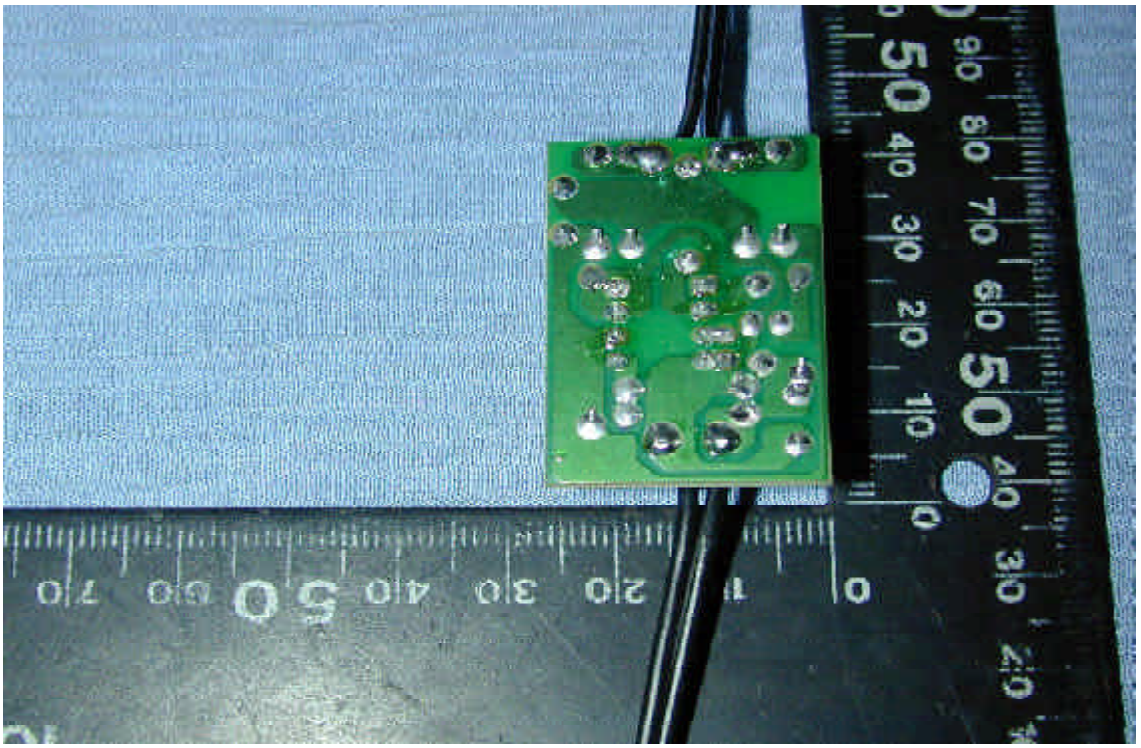
Inside View of EUT

## PHOTO OF EUT

Model : PC500



Component Side of Main Board



Solder Side of Main Board

United States Department of Commerce
National Institute of Standards and Technology

# NVLAP®

ISO/IEC 17025:1999
ISO 9002:1994

## Certificate of Accreditation

**HOMETEK TECHNOLOGY INC.**
TAIPEI SHIEN 236
TAIWAN

*is recognized by the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria set forth in NIST Handbook 150:2001, all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994. Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:*

**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

September 30, 2005
*Effective through*

*For the National Institute of Standards and Technology*
NVLAP Lab Code: 200331-0

NVLAP-01C (06-01)

National Institute of Standards and Technology

NVLAP®

National Voluntary Laboratory Accreditation Program

ISO/IEC 17025:1999
ISO 9002:1994

# Scope of Accreditation



**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

**NVLAP LAB CODE 200331-0**

**HOMETEK TECHNOLOGY INC.**
P.O Box: 13-131, Pan-Chiao City
No. 67-9 Shir Men Rd., Tu Chen City
Taipei Shien 236
TAIWAN
Mr. Grant Huang
Phone: 886-2-22608375 Fax: 886-2-22748013
E-Mail: hometek@ms15.hinet.net

| *NVLAP Code* | *Designation / Description* |
|---|---|
| **Emissions Test Methods:** | |
| 12/CIS22 | IEC/CISPR 22 (1997) & EN 55022 (1998) + A1(2000): Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22 (1993) and EN 55022 (1994): Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1 (1995) and Amendment 2 (1996) |
| 12/CIS22b | CNS 13438 (1997): Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/FCC15b | ANSI C63.4 (2001) with FCC Method 47 CFR Part 15, Subpart B: Unintentional Radiators |

September 30, 2005

*Effective through*

*For the National Institute of Standards and Technology*

National Institute of Standards and Technology

NVLAP®

National Voluntary Laboratory Accreditation Program

ISO/IEC 17025:1999
ISO 9002:1994

# Scope of Accreditation



**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

**NVLAP LAB CODE 200331-0**

**HOMETEK TECHNOLOGY INC.**

| *NVLAP Code* | *Designation / Description* |
|---|---|
| 12/T51 | AS/NZS CISPR 22 (2002) and AS/NZS 3548 (1997): Electromagnetic Interference - Limits and Methods of Measurement of Information Technology Equipment |

September 30, 2005

*Effective through*

*For the National Institute of Standards and Technology*