HomeTek Technology Inc.

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

# CE TEST REPORT
# FOR

| | | |
|---|---|---|
| APPLICANT | : | Smart Home Engineering Corp. |
| ADDRESS | : | 10F., No. 493, Chung-Cheng Rd., |
| | | Hsin-Tien City, Taipei 231, Taiwan, R. O. C. |
| Receipt Date | : | 01/12/2005 Final Test Date: 01/26/2005 |
| EUT | : | Power Converter |
| MODEL NO. | : | PC500XXX, PCXXX |

MEASUREMENT PROCEDURE USED

EN 61204-3 Class B GIVEN IN EUROPEAN COUNCIL DIRECTIVE 2004/108/EC

This test result of this report applies to above tested sample only.


PREPARED BY :

HomeTek Technology Inc.

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

Taipei Hsien. Taiwan

Report # : EB6K021

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

# CERTIFICATE OF COMPLIANCE

| | |
|---|---|
| EUT | : Power Converter |
| MODEL NO. | : PC500XXX, PCXXX |
| Receipt Date | : 01/12/2005 Final Test Date: 01/26/2005 |
| REPORT # | : EB6K021 |
| APPLICANT | : Smart Home Engineering Corp. |
| ADDRESS | : 10F., No. 493, Chung-Cheng Rd., Hsin-Tien City, Taipei 231, Taiwan, R. O. C. |

Measurement procedure used:

**EN 61204-3 (2000) Class B,**
**CISPR 22 Class B, EN 61000-3-2 (2000), EN 61000-3-3 (1995) + A1 (2001), IEC 61000-4-2 (2001), IEC 61000-4-3 (2002), IEC 61000-4-4 (2004), IEC 61000-4-5 (2001), IEC 61000-4-6 (2003) + A1 (2004), IEC 61000-4-11 (2004)**

We hereby show that:

The measurements shown in this test report were made in accordance with the procedures given in **EUROPEAN COUNCIL DIRECTIVE 2004/108/EC**, and the energy emitted by the equipment was found to be within the limits applicable. This product, which has been issued the test report listed as above in HomeTek Technology Inc., is based on single evaluation of one sample and confirmed to comply with the requirements of the above-mentioned EMC standard.

This test report is a duplicate of original one (report No. EB4A028, issued on 2005, 02, 02), applicant and model No. is modified.

APPROVED BY : 12/17/2007

ALAIN LIN / Assistant Manage

# DESCRIPTION OF UPGRADE OF TEST STANDARDS

Applicant: Smart Home Engineering Corp.

Product Name: Power Converter

Model Number: PC500XXX, PCXXX

The test standard of this report (No. EB6K021) is updated from original one (No. EB4A028) with the procedures given in **EUROPEAN COUNCIL DIRECTIVE 2004/108/EC: EN 61204-3 (2000) Class B: CISPR 22 Class B / EN 61000-3-2 (2000) / EN 61000-3-3 (1995) + A1 (2001), IEC 61000-4-2 (2001), IEC 61000-4-3 (2002), IEC 61000-4-4 (2004), IEC 61000-4-5 (2001), IEC 61000-4-6 (2003) + A1 (2004), IEC 61000-4-11 (2004)**. According to EUT's specification and operation manual, the test procedures of new version of standards are applied to EUT. Thus, we HomeTek issue a new certificate with new version of test standard.

HomeTek Inc.
December, 07, 2007

ALAIN LIN / Assistant Manager

## TEST REPORT CERTIFICATION

### EMC of electrical appliances

| | | |
|---|---|---|
| Report reference No. | : | EB6K021 |
| Date of issue | : | DEC., 07, 2007 |
| Applicant | : | Smart Home Engineering Corp. |
| Address | : | 10F., No. 493, Chung-Cheng Rd.,<br>Hsin-Tien City, Taipei 231, Taiwan, R. O. C. |
| Manufacturer | : | Smart Home Engineering Corp. |
| Type of test object | : | Power Converter |
| Model/type reference | : | PC500XXX, PCXXX |
| Rated Voltage | : | N/A |
| EUT Voltage | : | N/A |
| Test Result | : | Complied |
| Testing laboratory | : | HomeTek Technology Inc. |
| Address | : | No. 67-9, Shir Men Road, Tu Cheng City, Taipei Hsien, Taiwan, R. O. C. |
| TEL / FAX | : | +886-2-22608375 / +886-2-22748013 |
| E-mail | : | hometek@ms15.hinet.net |
| Standard | : | *EN 61204-3 (2000) Class B:*<br>*CISPR 22 Class B, EN 61000-3-2 (2000),*<br>*EN 61000-3-3 (1995) + A1 (2001), IEC 61000-4-2 (2001),*<br>*IEC 61000-4-3 (2002), IEC 61000-4-4 (2004),*<br>*IEC 61000-4-5 (2001), IEC 61000-4-6 (2003) + A1 (2004),*<br>*IEC 61000-4-11 (2004)* |

Tested by (+ signature) : *Jason Lin / Engineer* Jason Lin

Approved by (+ signature) : *Alain Lin / Assistant Manager*

## GENERAL INFORMATION

1 APPLICANT : Smart Home Engineering Corp.

2 ADDRESS : 10F., No. 493, Chung-Cheng Rd.,
Hsin-Tien City, Taipei 231, Taiwan, R. O. C.

3 MANUFACTURER : Smart Home Engineering Corp.

4 ADDRESS : 10F., No. 493, Chung-Cheng Rd.,
Hsin-Tien City, Taipei 231, Taiwan, R. O. C.

5 DESCRIPTION OF EUT :

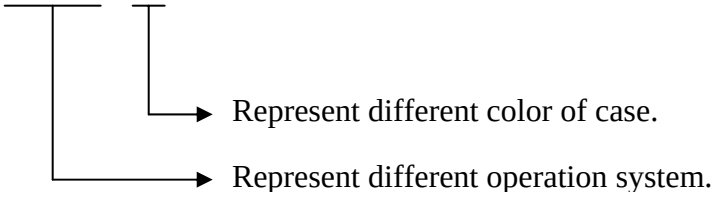
EUT : Power Converter

Model : PC500XXX, PCXXX

Serial # : N/A

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

P C 5 0 0 X X X




The worst case of EMC test model is PC500-5V 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 **EN 61204-3**.

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.

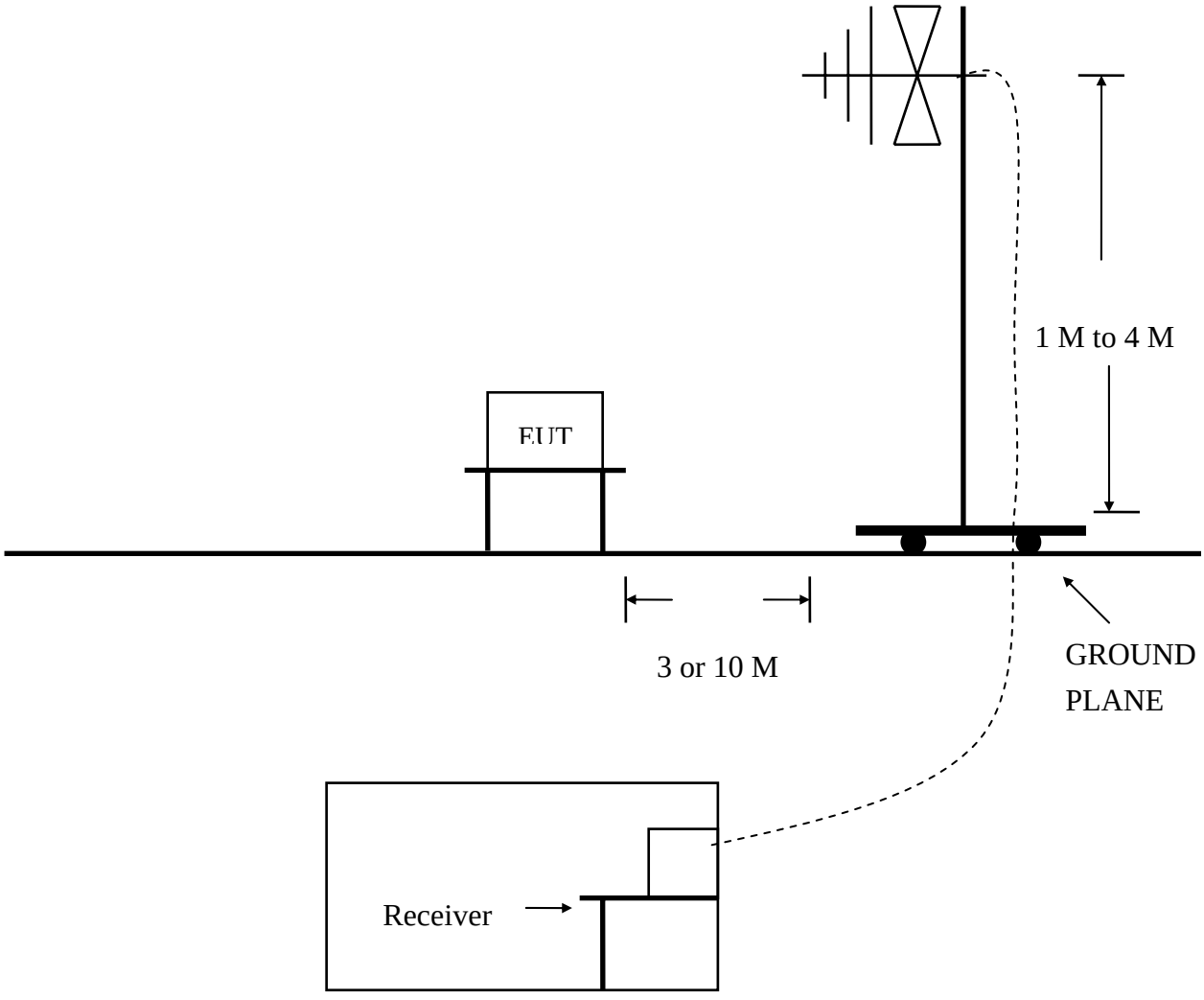
## 2 TEST PROCEDURE

2.1 The EUT was test according to **CISPR 22 Class B**.

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.

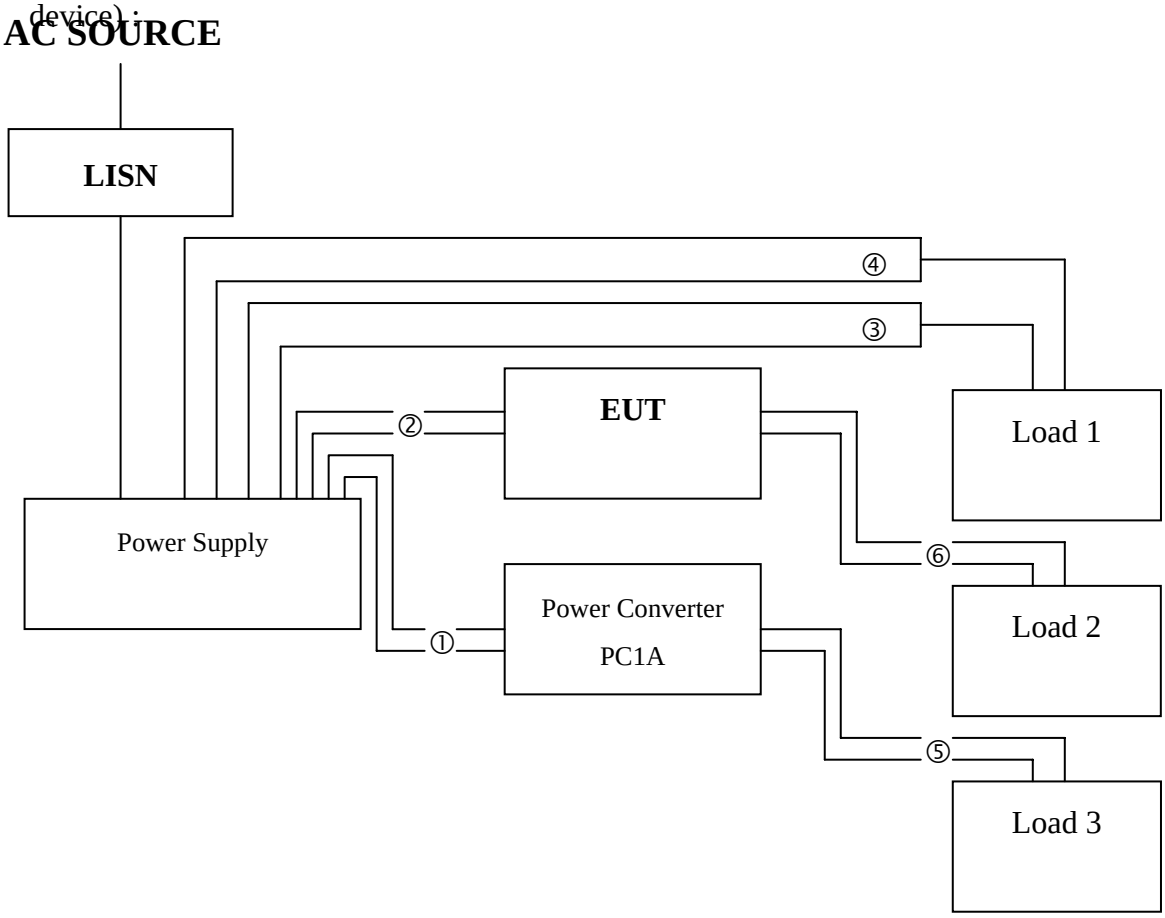
## 3 TEST SETUP




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

# 4 CONFIGURATION OF THE EUT

The EUT was configured according to **EN 61204-3**. 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 Home Engineering Corp. |
| Manufacturer | : | Smart Home Engineering Corp. |
| Model Number | : | PC500XXX, PCXXX |
| 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 **EN 61204-3**.

5.3 Connect AC 230V 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

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

# 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 The measurements were made at 10 meters of HomeTek Lab's open site 3.

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

7.5 Deviation form the test standards and rules : None.

7.6 The radiated emission result were gained by the following method :

Level = Reading Level + Probe Factor (Antenna Factor) + Cable Loss – Preamp Factor

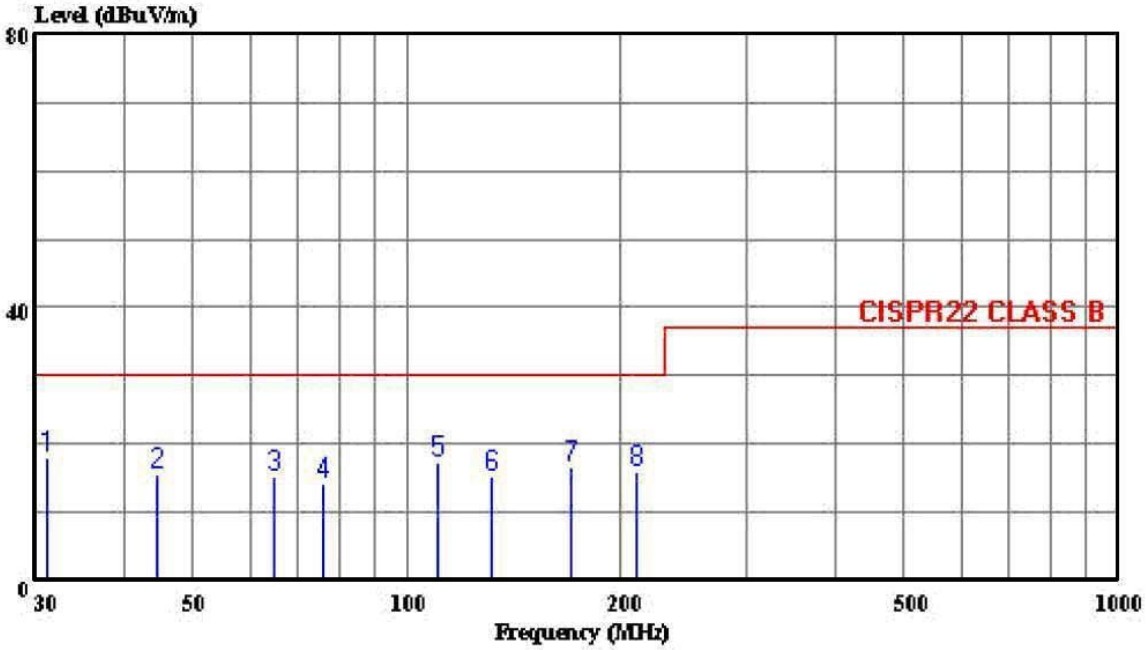
Over Limit = Level – Limit Line

7.7 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:02-22748013

Data#: 3 File#: 6K021.emi Date: 2005-01-18 Time: 16:23:23




Trace: Ref Trace:

Condition: CISPR22 CLASS B 10m CHASE 2614 052604 HORIZONTAL
eut : Power Converter (PC500-5V)
power: FROM Power Supply (230V/50Hz)
memo :

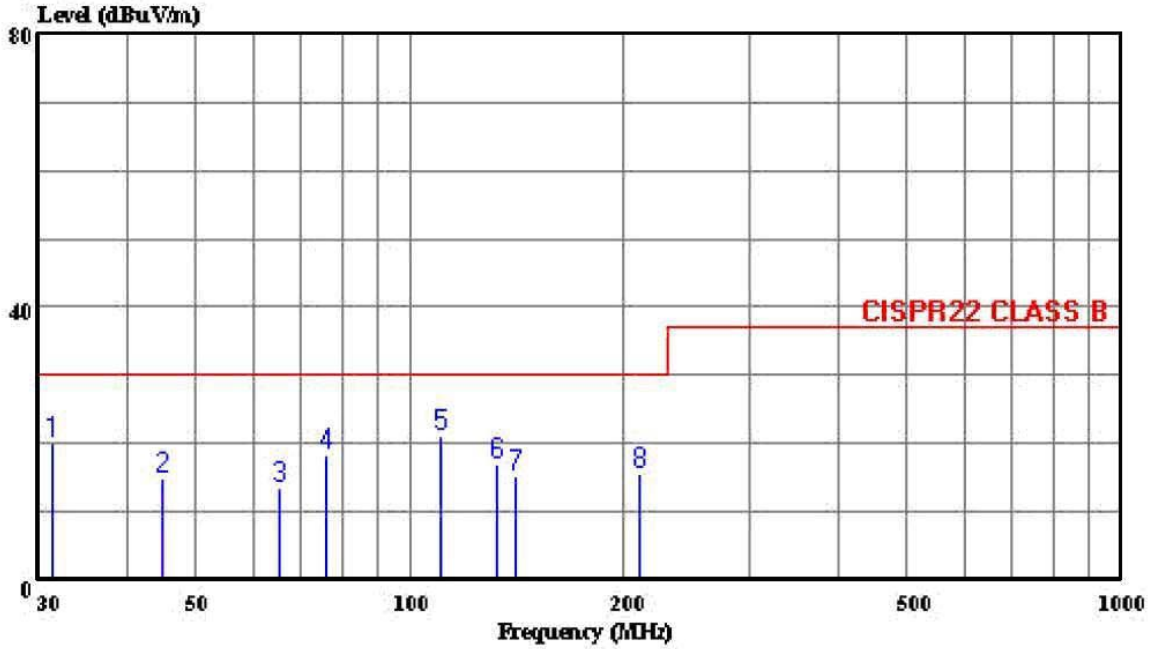
Page: 1

| | 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 | 31.247 | 18.08 | 30.00 | -11.92 | 30.25 | 16.94 | 0.78 | 29.89 | Peak |
| 2 | 44.521 | 15.42 | 30.00 | -14.58 | 33.61 | 10.80 | 0.90 | 29.89 | Peak |
| 3 | 65.135 | 15.18 | 30.00 | -14.82 | 38.11 | 5.64 | 1.06 | 29.62 | Peak |
| 4 | 76.405 | 14.35 | 30.00 | -15.65 | 36.16 | 6.48 | 1.14 | 29.43 | Peak |
| 5 | 110.517 | 17.43 | 30.00 | -12.57 | 33.64 | 11.51 | 1.38 | 29.10 | Peak |
| 6 | 131.051 | 15.30 | 30.00 | -14.70 | 31.71 | 11.32 | 1.49 | 29.22 | Peak |
| 7 | 170.034 | 16.58 | 30.00 | -13.42 | 35.71 | 8.60 | 1.72 | 29.45 | Peak |
| 8 | 210.574 | 15.99 | 30.00 | -14.01 | 35.15 | 8.50 | 1.96 | 29.61 | 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:02-22748013

Data#: 4 File#: 6K021.emi Date: 2005-01-18 Time: 16:47:15




Trace: Ref Trace:

Condition: CISPR22 CLASS B 10m CHASE 2614 052604 VERTICAL
eut : Power Converter (PC500-5V)
power: FROM Power Supply (230V/50Hz)
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 | 31.432 | 19.94 | 30.00 | -10.06 | 32.14 | 16.91 | 0.78 | 29.89 | Peak |
| 2 | 44.715 | 14.93 | 30.00 | -15.07 | 33.17 | 10.75 | 0.90 | 29.89 | Peak |
| 3 | 65.247 | 13.39 | 30.00 | -16.61 | 36.31 | 5.63 | 1.06 | 29.62 | Peak |
| 4 | 76.030 | 18.27 | 30.00 | -11.73 | 40.14 | 6.43 | 1.14 | 29.44 | Peak |
| 5 | 110.527 | 21.27 | 30.00 | -8.73 | 37.48 | 11.51 | 1.38 | 29.10 | Peak |
| 6 | 132.448 | 17.10 | 30.00 | -12.90 | 33.62 | 11.20 | 1.50 | 29.23 | Peak |
| 7 | 140.121 | 15.15 | 30.00 | -14.85 | 32.37 | 10.50 | 1.55 | 29.28 | Peak |
| 8 | 210.440 | 15.67 | 30.00 | -14.33 | 34.82 | 8.50 | 1.96 | 29.61 | Peak |

## HARMONICS TEST

1 TEST PROCEDURE

According to **EN 61000-3-2 (2000) Class A**

2 RESULT OF HARMONICS TEST

N/A (This standard is not applicable to this EUT ( Model : PC500-5V)).

# VOLTAGE FLUCTUATIONS TEST

## 1 TEST PROCEDURE

According to **EN 61000-3-3 (1995) + A1 (2001)**.

## 2 RESULT OF VOLTAGE FLUCTUATIONS TEST

N/A (This standard is not applicable to this EUT ( Model : PC500-5V)).

# ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

## 1 TEST INSTRUMENTS & FACILITIES

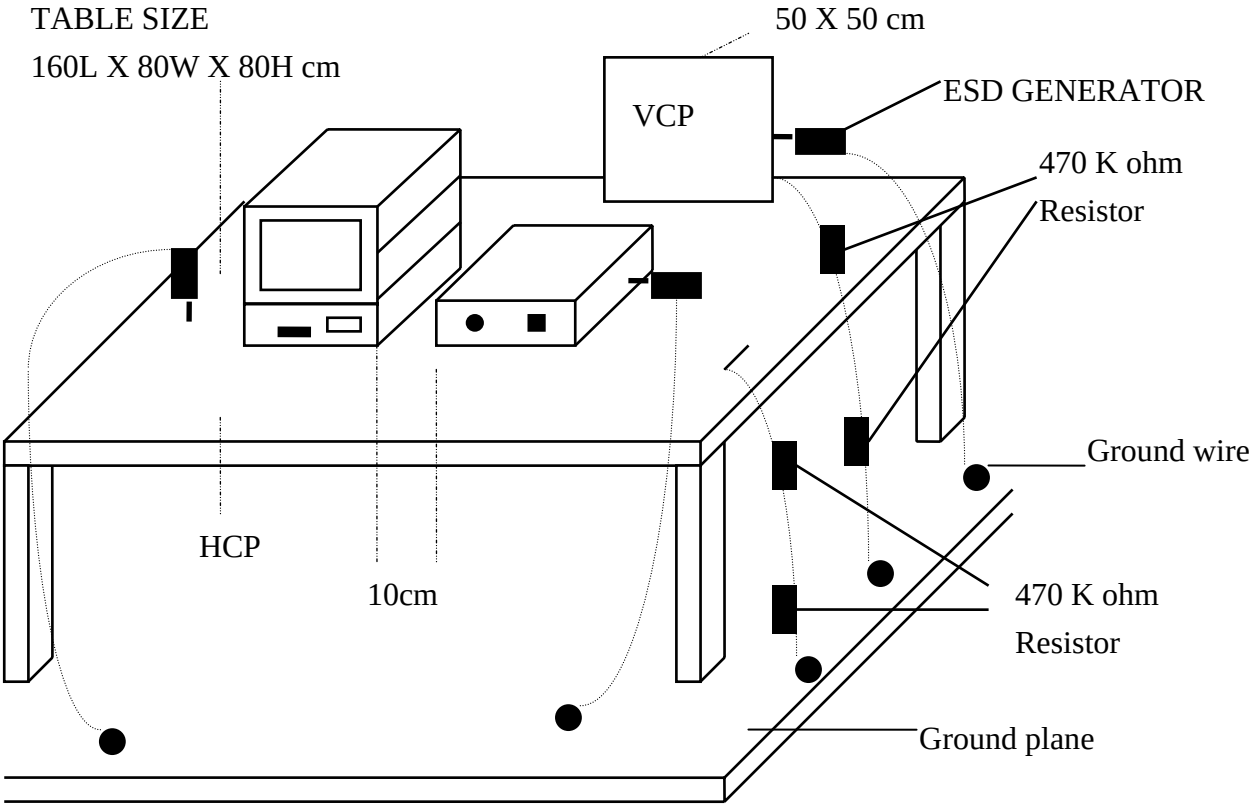
| Instruments/ Facilities | Manufacturer | Model # Serial # | Data Of Cal. |
|---|---|---|---|
| ESD TESTER | NOISEKEN | ESS-100L (A) | OCT/2004 |
| VCP | HOMETEK | -- | -- |
| | | | |

## 2 TEST PROCEDURE

According to **IEC 61000-4-2 (2001)**

According to **EN 61204-3 (2000)**

## 3 TEST SETUP




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

# 4 CONFIGURATION OF THE EUT

Same as “Conducted Power Line test”, section 4

# 5 EUT OPERATION CONDITION

Same as “Conducted Power Line test”, section 5

# 6 TEST CONDITION

6.1 Test Level :

(A) ±2, ±4, ±8KV for air discharge.

(B) ±2, ±4KV for contact discharge.

6.2 Number of test : 10 Discharges / Test point / Polarity / Level

6.3 Time between test : 1 sec.

6.4 Temperature : 22 ℃

6.5 Humidity : 56 % RH.

# 7 PERFORMANCE CRITERIA

A. Normal performance within the specification.

B. Temporary degradation or loss function or performance which is self-recoverable.

C. Temporary degradation or loss function or performance which requires operator intervention system reset.

D. Degradation or loss function which is not recoverable due to damage of EUT or software, or loss of data.

# 8 TEST RESULT

| Test Point | Air Discharge | Contact Discharge | Performance Criteria | Result |
|---|---|---|---|---|
| HCP | --- | ±2, ±4KV | A | PASSED |
| VCP | --- | ±2, ±4KV | A | PASSED |
| CASE | ±2, ±4, ±8KV | ±2, ±4KV | A | PASSED |

## 9 Photos of test configuration please refer to appendix A.

# RADIO FREQUENCY ELECTROMAGNETIC FILE IMMUNITY TEST (RS)

## 1 TEST INSTRUMENTS & FACILITIES

| Item | Instruments<br>Facilities | Manufacturer | Model #<br>Serial # | Data Of Cal. |
|---|---|---|---|---|
| 1 | SIGNAL GENERATOR | ROHDE & SCHWARZ | SMY02<br>845181/025 | MAR/2004 |
| 2 | AMPLIFIER | AMPLIFIER RESEARCH | 100W1000M1A | N/A |
| 3 | FIELD SENSOR | AMPLIFIER RESEARCH | FP2000 | AUG/2004 |
| 4 | FIELD MONITOR | AMPLIFIER RESEARCH | FM2000 | AUG/2004 |
| 5 | RF VOLTMETER | BOONTON | 9200C<br>361701AA | MAR/2004 |
| 6 | RF PROBE | BOONTON | 952001B<br>37082 | MAR/2004 |
| 7 | DIRECTION COUPLER | AMPLIFIER RESEARCH | DC6180<br>20521 | N/A |
| 8 | ANTENNA | EMCO | 3142B<br>S/N: 1789 | N/A |
| 9 | CONTROL PC | KB TECH | KB P586/133 | -- |

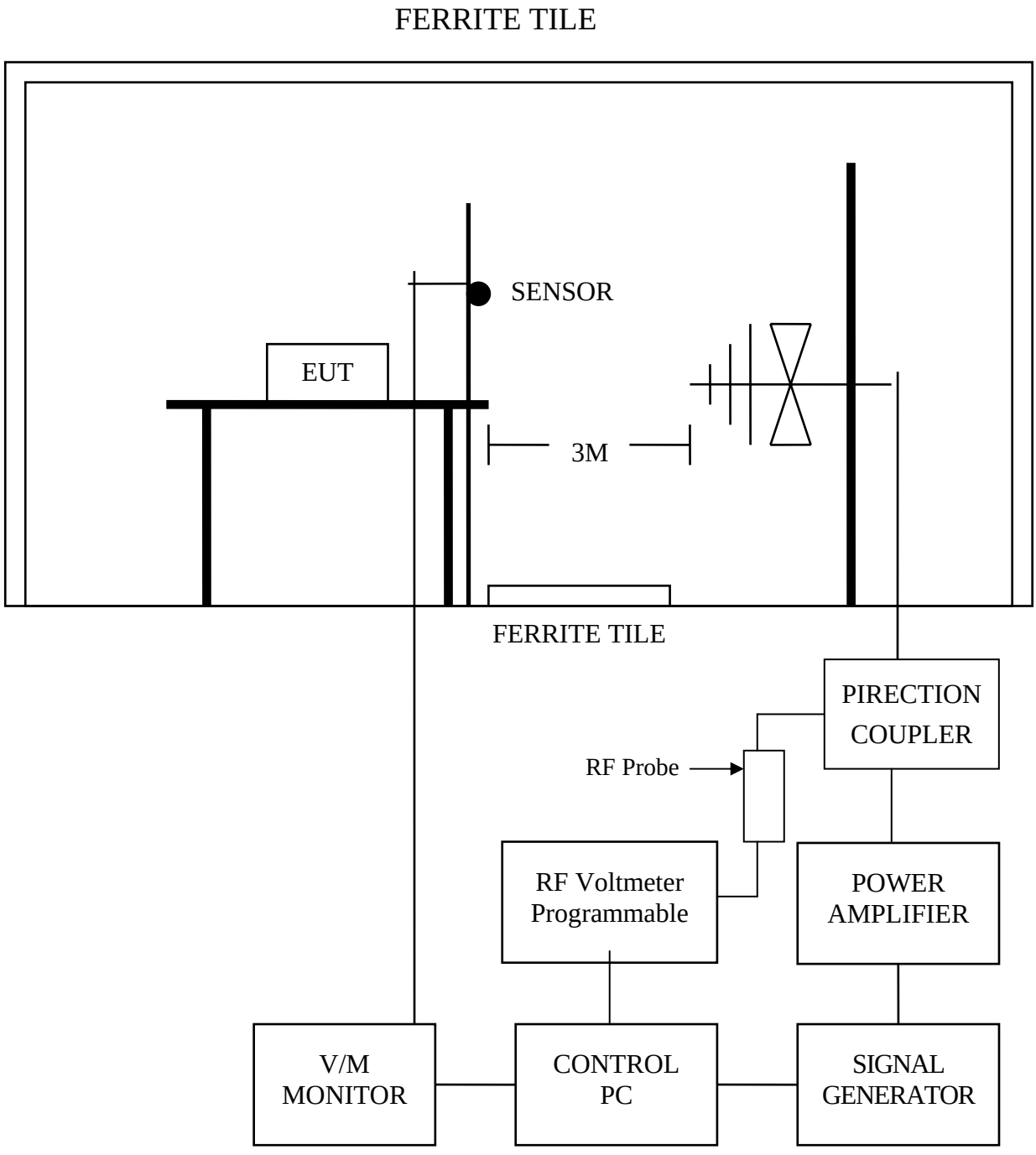
Note : Items 3 ~ 4 were calibrated with two years and verified before testing.

## 2 TEST PROCEDURE

According to **IEC 61000-4-3 (2002)**

According to **EN 61204-3 (2000)**

# 3 TEST SETUP




## 3.1 Chamber Size :

12M x 5M x 5M

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

# 4 TEST LEVELS

| Environmental Phenomenon | Test Item | Test Specification |
|---|---|---|
| Radio-frequency Electromagnetic Field Amplitude Modulated | Frequency Range | 80MHz ~ 1000MHz (Frequency Range : 1.4 GHz ~ 2.0 GHz is not applicable for EN61204:2000) |
| | Field Strength | 3V/m |
| | AM 1kHz | 80% |
| Radio-frequency Electromagnetic Field Keyed Carrier | Frequency Rang | 900 ± 5MHz |
| | Field Strength | 3V/m |
| | Duty Cycle | 50% |
| | Repetition Frequency | 200Hz |

# 5 CONFIGURATION OF THE EUT

Same as “Conducted Power Line test”, section 4

# 6 OPERATION CONDITION OF EUT

Same as “Conducted Power Line test”, section 5

# 7 TEST CONDITION

7.1 Frequency Step : 1 %, 3 sec. / each step size

7.2 Antenna Polarity : HORIZONTAL & VERTICAL

7.3 The four sides of EUT are tested
(FRONT, REAR, RIGHT, LEFT)

7.4 Temperature : 27 ℃

7.5 Humidity : 60 % RH

# 8 PERFORMANCE CRITERIA

A. Normal performance within the specification.

B. Temporary degradation or loss function or performance which is self-recoverable.

C. Temporary degradation or loss function or performance which requires operator intervention system reset.

D. Degradation or loss function which is not recoverable due to damage of EUT or software, or loss of data.

# 9 TEST RESULT

| ANT / SIDE | HORIZONTAL | VERTICAL | RESULT |
|---|---|---|---|
| FRONT | A | A | PASSED |
| REAR | A | A | PASSED |
| RIGHT | A | A | PASSED |
| LEFT | A | A | PASSED |

**9 Photos of test configuration please refer to appendix A.**

# ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT)

## 1 TEST INSTRUMENTS & FACILITIES

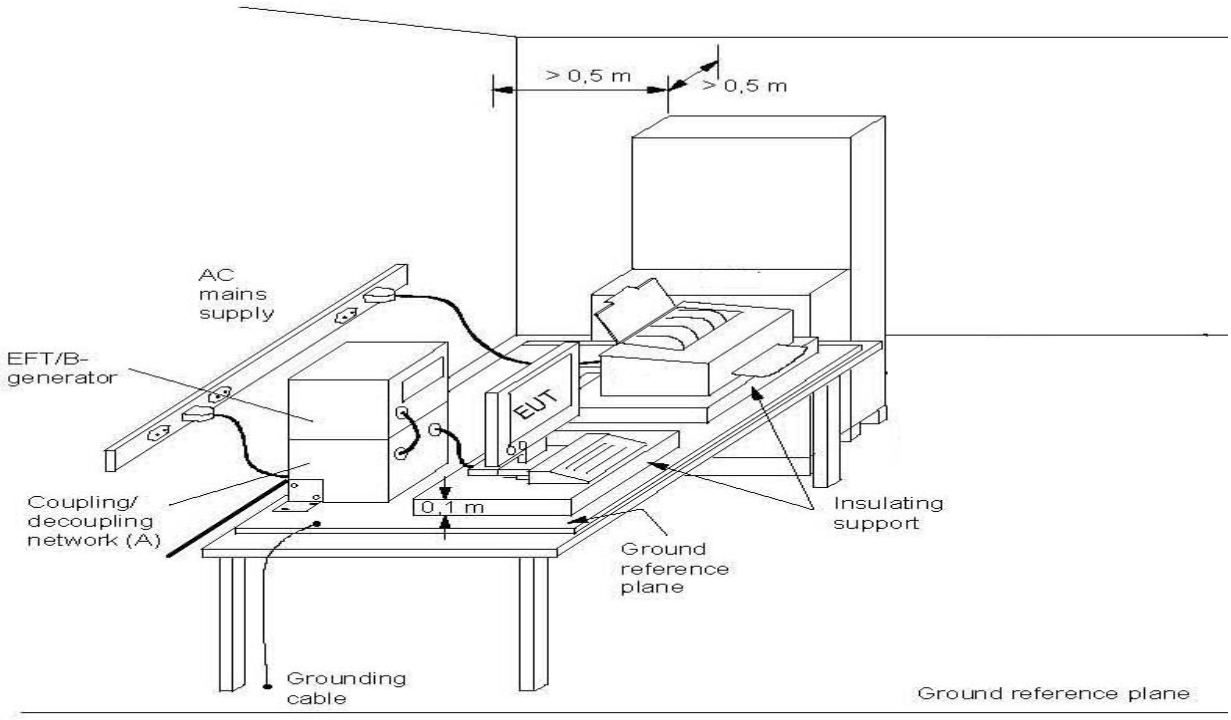
| Instruments/ Facilities | Manufacturer | Model # Serial # | Data Of Cal. |
|---|---|---|---|
| BURST-TESTER | HAEFELY | PEFT/JUNIOR | FEB/2004 |
| CONTROL PC | KB TECH | KB P586/133 | -- |
| | | | |

## 2 TEST PROCEDURE

According to **IEC 61000-4-4 (2004)**

According to **EN 61204-3 (2000)**

## 3 TEST SETUP




Note: length between clamp and the EUT to be tested (should be 0.5 m ± 0.05 m)

(A) location for supply line coupling

(B) location for signal line coupling

# 4 CONFIGURATION OF THE EUT

Same as “Conducted Power Line test”, section 4

# 5 OPERATION CONDITION OF EUT

Same as “Conducted Power Line test”, section 5

# 6 TEST CONDITION

6.1 Pulse Rise time & Duration : 5 nS / 50 nS

6.2 Pulse Repetition : 5 kHz

6.3 Polarity : POSITIVE / NEGATIVE

6.4 Test Voltage : ±0.5KV, ±1KV

6.5 Coupling of power line :
L, N, L+N

6.6 Temperature : 27 ℃

6.7 Humidity : 60 % RH

# 7 PERFORMANCE CRITERIA

A. Normal performance within the specification.

B. Temporary degradation or loss function or performance which is self-recoverable.

C. Temporary degradation or loss function or performance which requires operator intervention system reset.

D. Degradation or loss function which is not recoverable due to damage of EUT or software, or loss of data.

# 8 TEST RESULT

| TEST VOLTAGE | L | N | L+N |
|---|---|---|---|
| ±0.5KV | A | A | A |
| ±1KV | A | A | A |

8.1 Model : PC500-5V

8.2 Final Result : PASSED

8.3 Remark :

## 9 Photos of test configuration please refer to appendix A.

## SURGE IMMUNITY TEST

### 1 TEST INSTRUMENTS & FACILITIES

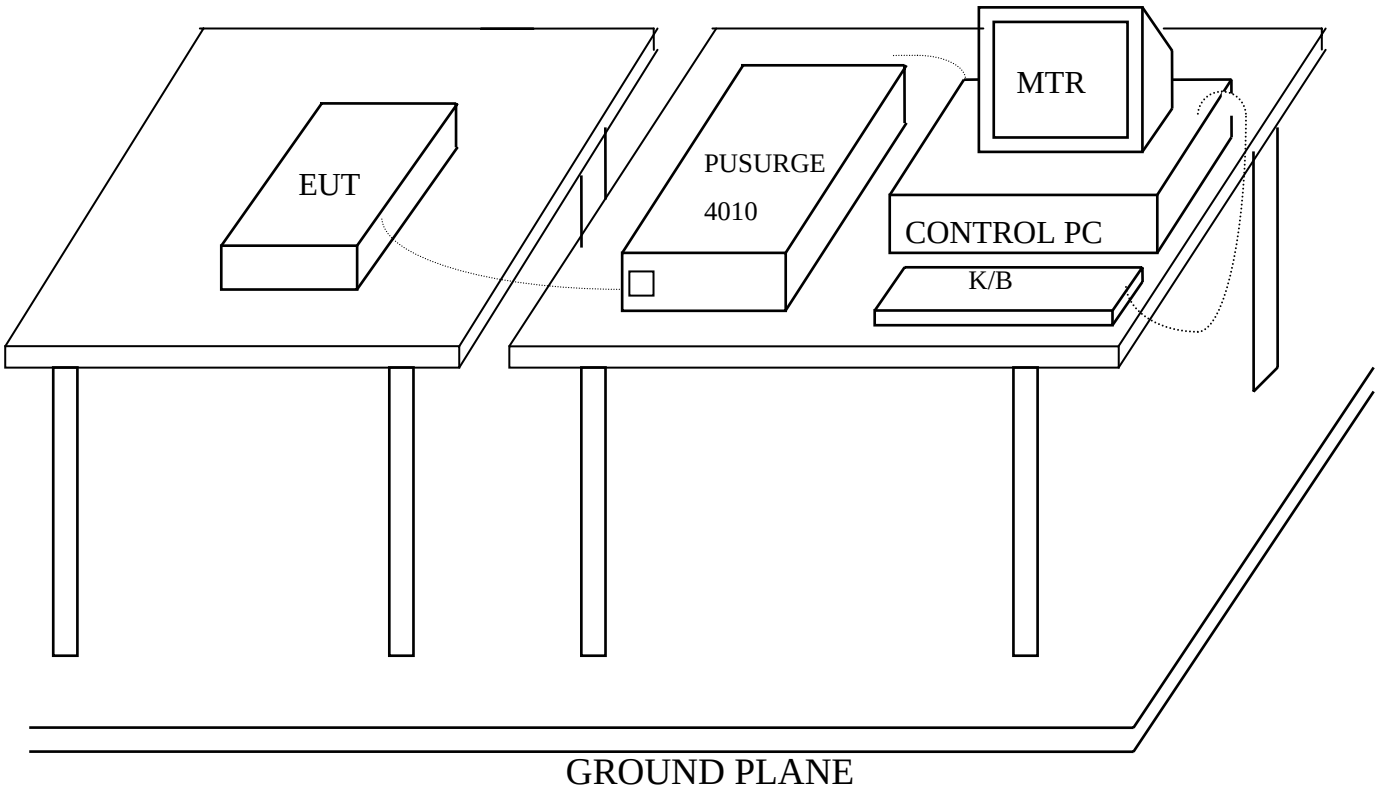
| Instruments/ Facilities | Manufacturer | Model # Serial # | Data Of Cal. |
|---|---|---|---|
| SURGER-TESTER | HAEFELY | PSURGE 4010 583334-38 | FEB/2004 |
| CONTROL PC | KB TECH | KB P586/133 | -- |
| | | | |

### 2 TEST PROCEDURE

According To **IEC 61000-4-5 (2001)**

According To **EN 61204-3 (2000)**

### 3 TEST SETUP



# 4 TEST LEVELS

☑ Input and Output AC Power Ports.
☐ DC Input and DC Output Power Ports.

| Environmental Phenomena | Test Specification | | Units | Performance Criteria |
|---|---|---|---|---|
| | AC | DC | | |
| Surges | 1.2 / 50 (8/20) | | Tr /Th us | |
| Line to Line | ±1 | ±0.5 | KV (Charge Voltage) | B |

# 5 CONFIGURATION OF THE EUT

Same as “Conducted Power Line test”, section 4

# 6 EUT OPERATION CONDITION

Same as “Conducted Power Line test”, section 5

# 7 CONDITIONS DURING TESTING

7.1 Coupling of power line :

(A) Line to Line ±1KV (AC) or ±0.5KV (DC)

7.2 Polarity : POSITIVE / NEGATIVE

7.3 Phase shifting in a range between 0°to 360°

7.4 Repetion rate at least 1 per min

7.5 Temperature : 27 ℃ (15℃ ~ 35℃)

Humidity : 60 % RH.(10 % ~ 75%)

## 8 PERFORMANCE CRITERIA

A. Normal performance within the specification limits.

B. Temporary degradation or loss of function or performance which is self-recoverable.

C. Temporary degradation or loss of function or performance which requires operator intervention or system reset.

D. Degradation or loss of function which is not recoverable due to damage of equipment (components).

## 9 TEST RESULT

| Environmental Phenomena | Test Specification | Units | Performance |
|---|---|---|---|
| Line to Line | ±1 | KV (Charge Voltage) | A |

9.1 Model : PC500-5V

9.2 Final Result : PASSED

9.3 Remark :

## 10 Photos of test configuration please refer to appendix A.

# IMMUNITY TEST TO CS CONDUCTED DISTURBANCE

## 1 TEST INSTRUMENTS & FACILITIES

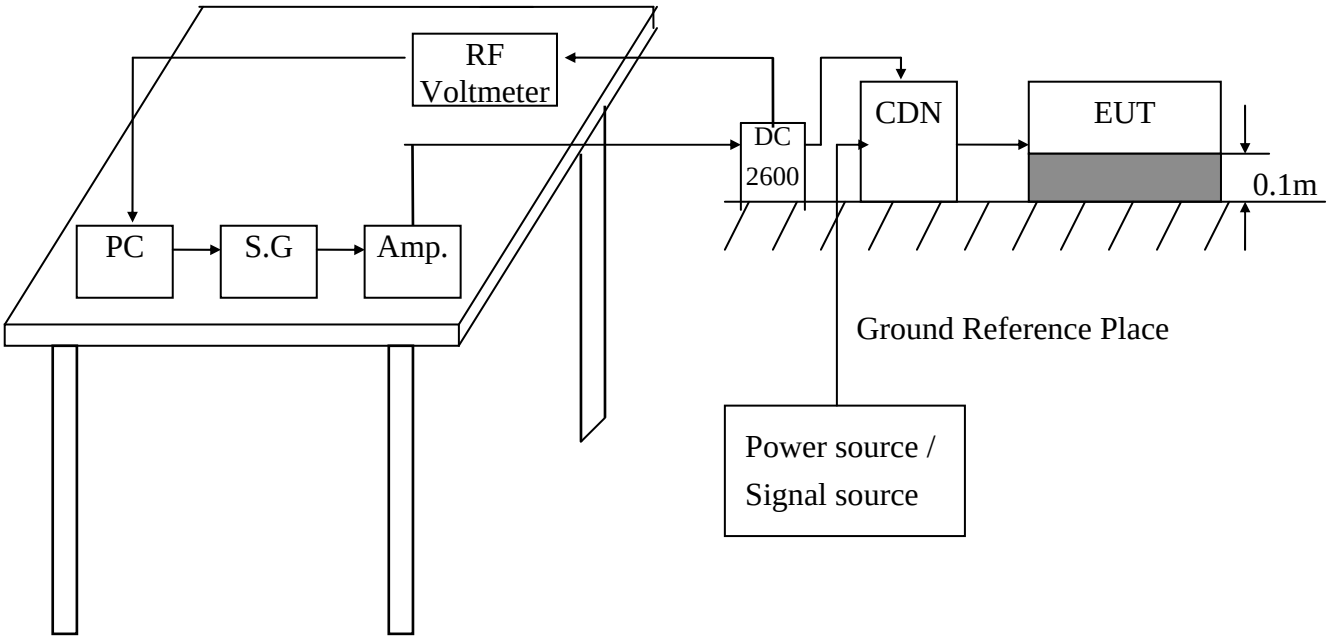
| Instruments/ Facilities | Manufacturer | Model # Serial # | Date Of Cal. |
|---|---|---|---|
| SIGNAL GENERATOR | ROHDE & SCHWARZ | SMY02 845181/025 | MAR/2004 |
| AMPLIFIER | AMPLIFIER RESEARCH | 75A250 25680 | N/A |
| RF VOLTMETER | BOONTON | 9200C 361701AA | MAR/2004 |
| RF PROBE | BOONTON | 952001B 37082 | MAR/2004 |
| DIRECTION COUPLER | AMPLIFIER RESEARCH | DC2600 20508 | N/A |
| COUPLING DECOUPLING NETWORK | FCC | FCC-801-M3-25A 9993 | FEB/2004 |
| CONTROL PC | KB TECH | KB P586/133 | -- |

## 2 TEST PROCEDURE

According To **IEC 61000-4-6 (2003) + A1 (2004)**

According To **EN 61204-3 (2000)**

# 3 TEST SETUP




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

# 4 TEST LEVELS

☐ Ports for signal lines and control lines.
☐ DC input and DC output power ports.
☑ Input and Output AC Power Ports.
☐ Functional earth Ports.

| Environmental | Test Specification | Units | Perfermance |
|---|---|---|---|
| Radio-frequency | 0.15 - 80 | MHz | |
| Common mode | 3 | V | A |
| | 80 | % AM (1KHz) | |

# 5 CONFIGURATION OF THE EUT

Same as “Conducted Power Line test”, section 4

# 6 EUT OPERATION CONDITION

Same as “Conducted Power Line test”, section 5

# 7 CONDITIONS DURING TESTING

7.1 The EUT tested type :

☑ Single unit

☐ Multiple unit

7.2 Dwell time : < 1%

7.3 Temperature : 27 ℃ (15℃ ~ 35℃)

Humidity : 60 % RH.(10 % ~ 75%)

## 8 PERFORMANCE CRITERIA

A. Normal performance within the specification limits.

B. Temporary degradation or loss of function or performance which is self-recoverable.

C. Temporary degradation or loss of function or performance which requires operator intervention or system reset.

D. Degradation or loss of function which is not recoverable due to damage of equipment (components).

## 9 TEST RESULT

| TEST Specification | Unit | Perfermance Criteria |
|---|---|---|
| 0.15 - 80 | MHz | |
| 3 | V | A |
| 80 | % AM (1KHz) | |

9.1 Model : PC500-5V

9.2 Final Result : PASSED

9.3 Remark :

**10 Photos of test configuration please refer to appendix A.**

# POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

## 1 TEST INSTRUMENTS & FACILITIES

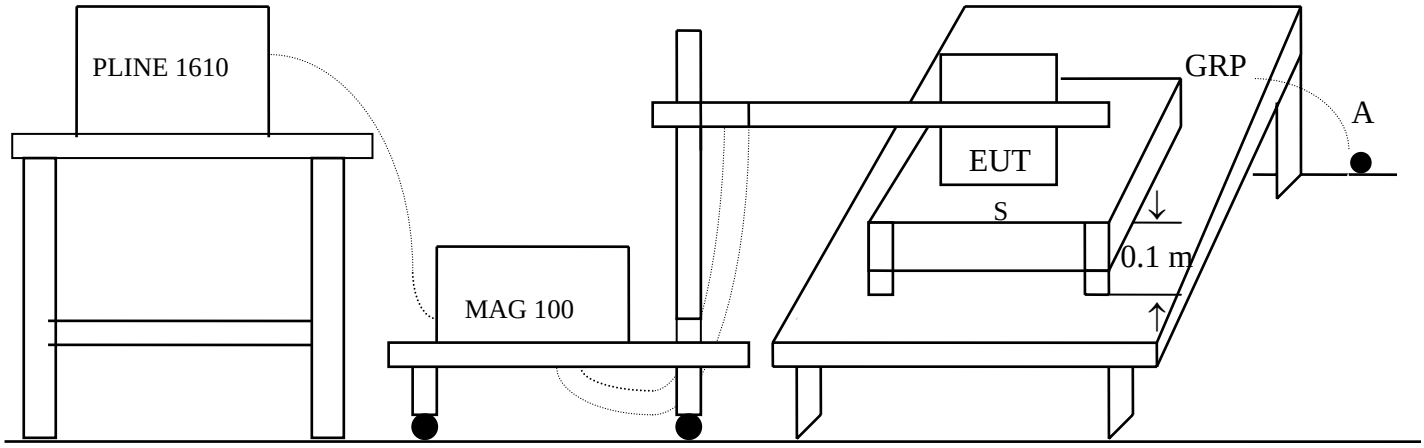
| Instruments/ Facilities | Manufacturer | Model # Serial # | Data Of Cal. |
|---|---|---|---|
| LINE INTERFERENCE TESTER | HAEFELY | PLINE 1610 080166-10 | MAR/2004 |
| MAGNETIC FIELD TESTER | HAEFELY | MAG 100.1 080206-01 | N/A |
| TRIAXIAL ELF MAGNETIC FIELD METER | F.W.BELL | 4080 9645 | JUN/2004 |
| CONTROL PC | KB TECH | KB P586/133 | -- |

## 2 TEST STANDARD

According to **IEC 61000-4-8 (2001)**

According to **EN 61204-3 (2000)**

## 3 TEST SETUP




S: Insulating support
A: Safety earth
GRP: Ground plane

# 4 TEST LEVELS

| Environmental Phenomena | Test Specification | Units | Performance Criteria |
|---|---|---|---|
| Power Frequency | 50 | HZ | |
| Magnetic Field | 3 | A/m | A |

# 5 CONFIGURATION OF THE EUT

Same as “Radiated Emission Test”, section 4

# 6 OPERATION CONDITION OF EUT

Same as “Radiated Emission Test”, section 5

# 7 CONDITIONS DURING TESTING

7.1 Temperature : 21 ℃ (15℃ ~ 35℃)

Humidity : 72 % RH.(25 % ~ 75%)

7.2 The induction coil shall be rotated by 90°

# 8 PERFORMANCE CRITERIA

A. Normal performance within the specification limits.

B. Temporary degradation or loss of function or performance which is self-recoverable.

C. Temporary degradation or loss of function or performance which requires operator intervention or system reset.

D. Degradation or loss of function which is not recoverable due to damage of equipment (components).

# 9 TEST RESULTS

| Environmental Phenomena | Test Specification | Units | Performance Criteria |
|---|---|---|---|
| Magnetic Field | 3 | A/m | A |

9.1 Model : PC500-5V

9.2 Final Results : PASSED

9.3 Remark :

# VOLTAGE DIPS, SHORT INTERRUPTIONS IMMUNITY TEST

## 1 TEST PROCEDURE

According to **IEC 61000-4-11 (2004)**

According to **EN 61204-3 (2000)**

## 2 RESULT OF VOLTAGE DIPS, SHORT INTERRUPTIONS IMMUNITY TEST

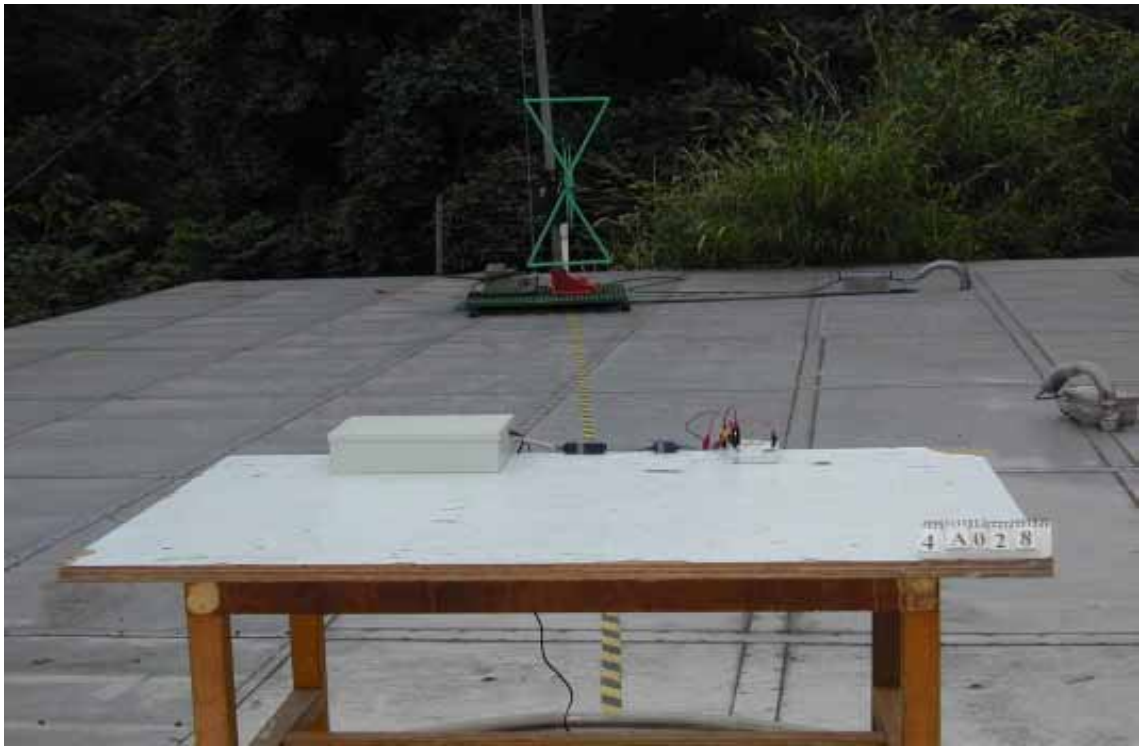
N/A (This standard is not applicable to this EUT ( Model : PC500-5V)).

# Appendix A

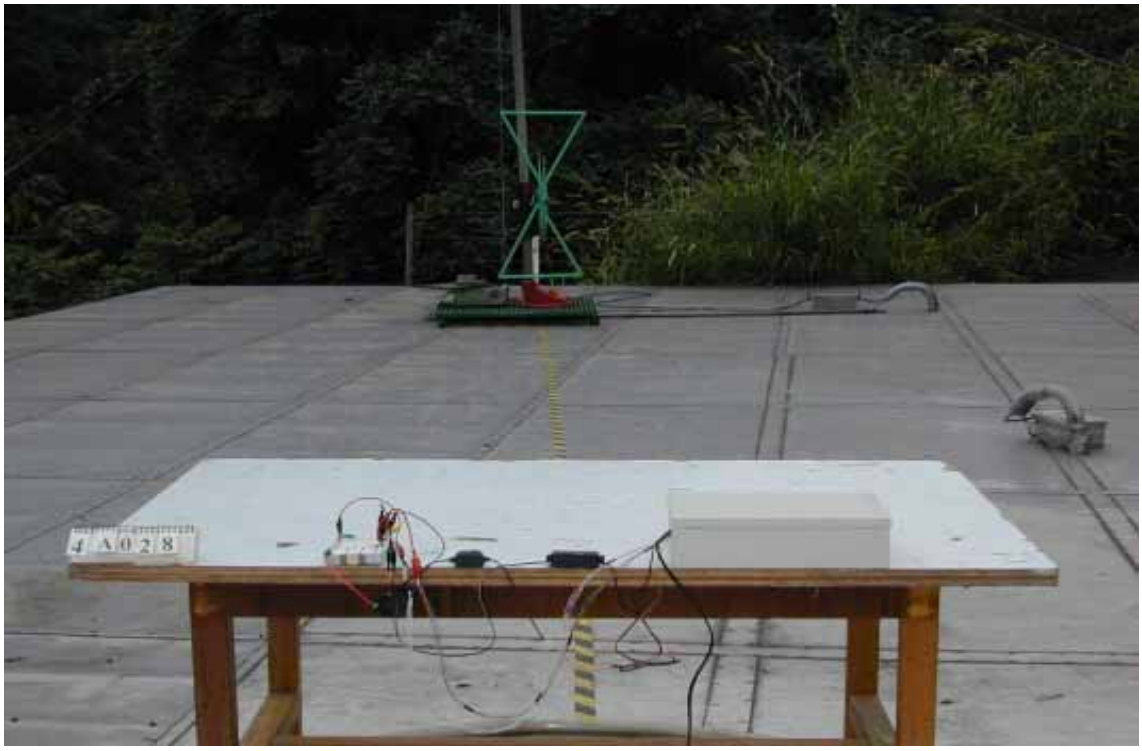
# PHOTOS OF TEST CONFIGURATION

# PHOTO OF RADIATED EMISSION TEST

Model : PC500-5V




Front View




Rear View

## PHOTO OF SURGE IMMUNITY TEST

Model : PC500-5V

## PHOTO OF ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

**PHOTO OF ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)**

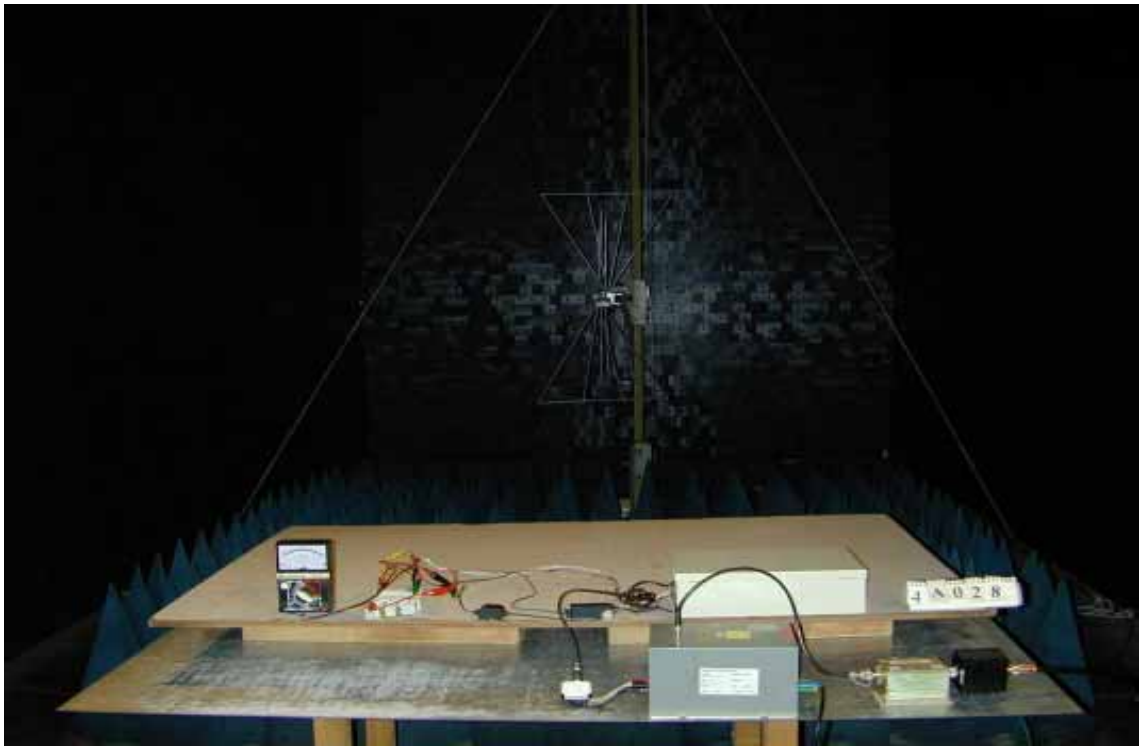
Model : PC500-5V

Front View

## PHOTO OF RADIO FREQUENCY ELECTROMAGNETIC FILE IMMUNITY TEST (RS)

Model : PC500-5V


## PHOTO OF CS CONDUCTED DISTURBANCE IMMUNITY TEST

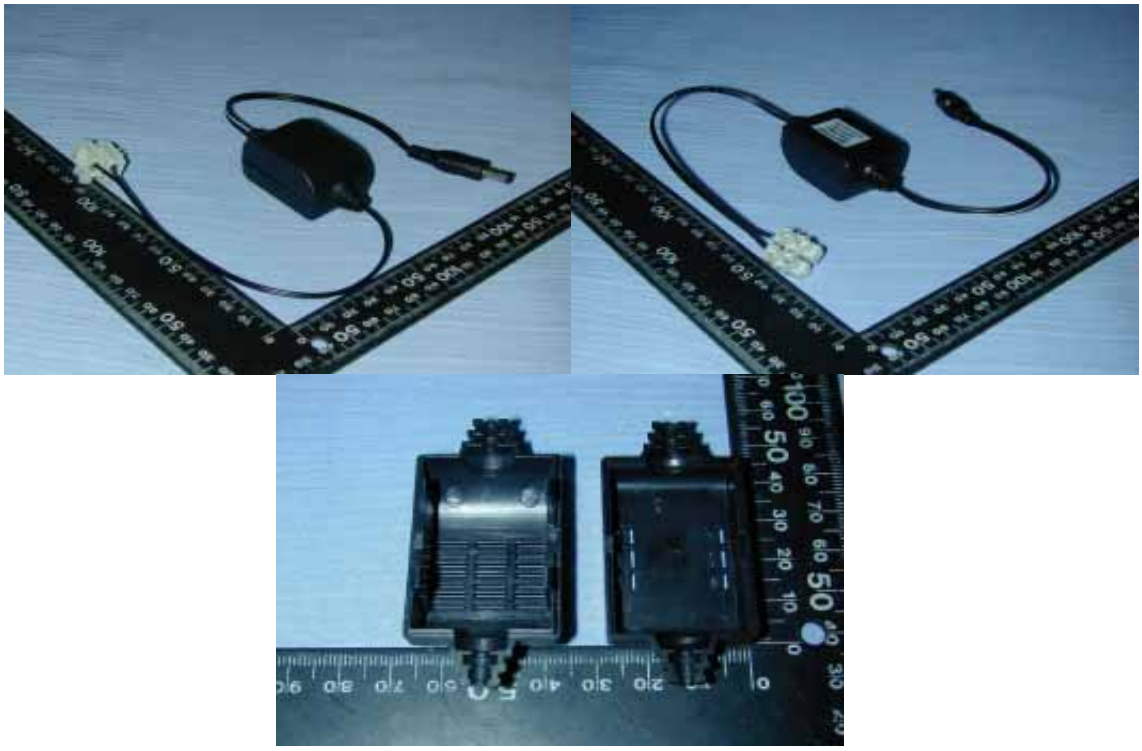


# Appendix B

# PHOTOS OF EUT

## PHOTO OF EUT

Model : PC500-5V

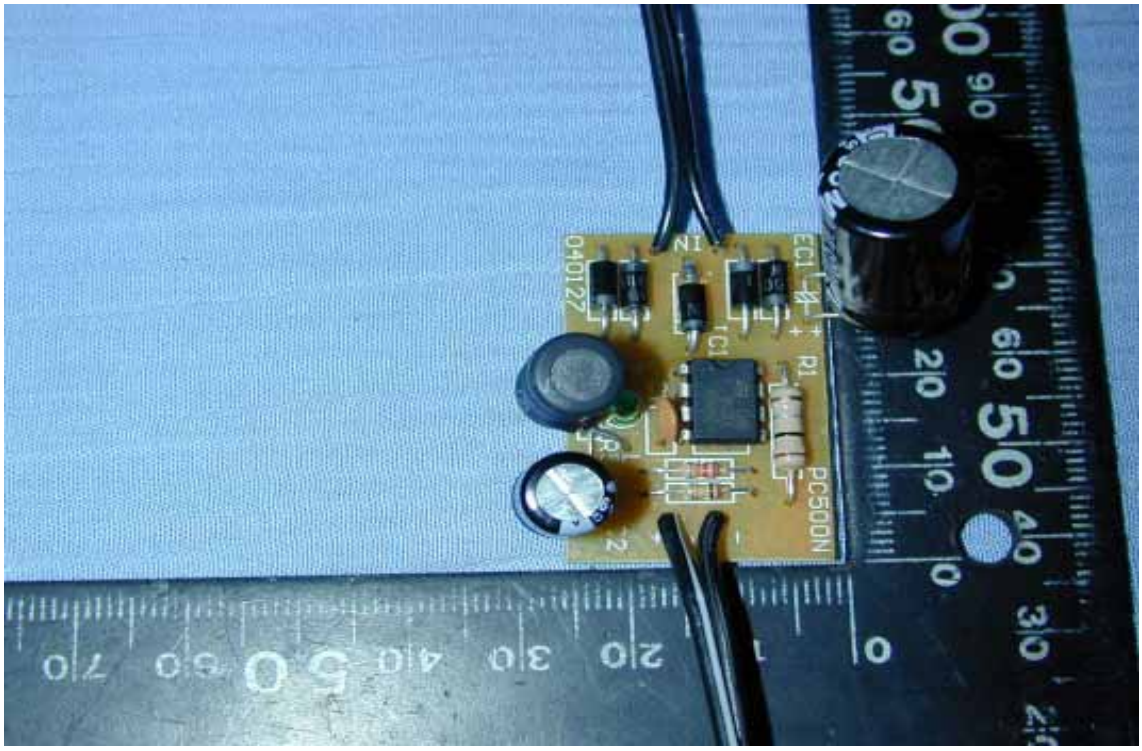


Full View of EUT

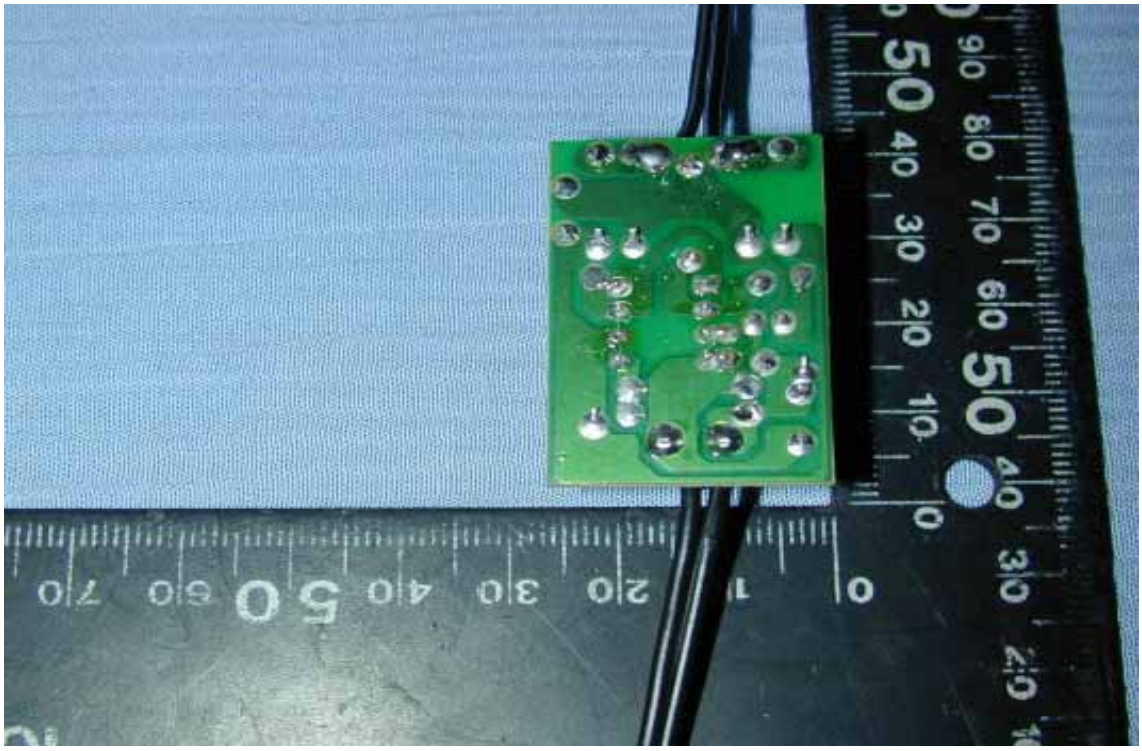
Inside View of EUT

## PHOTO OF EUT

Model : PC500-5V




Component Side of Main Board



Solder Side of Main Board

# Declaration of Conformity

We(Manufacturer/Importer)

(company name)

(address)

declares under our sole responsibility that the product

Product name : Power Converter

Model No. : PC500XXX, PCXXX

to which this declaration relates is in conformity with the following standard(s) or other normative document(s)

| | | | |
|---|---|---|---|
| ☑ EN 61204-3 | (2000) | | |
| ☑ CISPR 22 | (1997) | ☑ IEC 61000-4-2 | (2001) |
| ☑ EN 61000-3-2 | (2000) | ☑ IEC 61000-4-3 | (2002) |
| ☑ EN 61000-3-3 | (1995) | ☑ IEC 61000-4-4 | (2004) |
| + A1 | (2001) | ☑ IEC 61000-4-5 | (2001) |
| | | ☑ IEC 61000-4-6 | (2003) |
| | | + A1 | (2004) |
| | | ☑ IEC 61000-4-11 | (2004) |

following the provisions of 2004/108/EC Directive

Place: _____ Signature: _____

Date : _____ Full name: _____

CE Title: _____

EB6K021

TÜV Rheinland Taiwan Ltd.

TÜV

# Certificate

of

# Appointment

for the applicant:

**Hometek Technology Inc.**
**No. 67-9, Shir Men Rd., Tu-Cheng City,**
**Taipei Hsien 236, Taiwan, R.O.C.**

has been authorized to carry out EMC tests by order and under supervision of TÜV Rheinland. It has successfully demonstrated capability to conduct measurement and to process test data according to:

**European and International EMC Standards as listed in the Scope of Authorization on the attachment to this certificate**

An assessment of the facility was conducted by TÜV Rheinland auditors according to the TÜV Rheinland requirements for "Test Site Approval" with reference to

**ISO 17 025:1999**

**Certificate No. : 10012161-2004** **Valid until : Febuary 14, 2006**

TÜV Rheinland Taiwan Ltd.
**Taipei, December 21, 2004**

Dipl.-Ing. Andreas Klinker
Certification Body

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality

TÜV

Attachment to

# Certificate

of Appointment

SCOPE OF AUTHORIZATION

**Hometek Technology Inc.**
**No. 67-9, Shir Men Rd., Tu-Cheng City,**
**Taipei Hsien 236, Taiwan, R.O.C.**

## European Standards

| | | |
|---|---|---|
| EN 50081-1 | EN 61000-3-2 | ENV 50140 |
| EN 50081-2 | EN 61000-3-3 | ENV 50141 |
| EN 50082-1 | EN 61000-6-1 | ENV 50204 |
| EN 50130-4 | EN 61000-6-2 | |
| EN 50091-2 | EN 61000-6-3 | |
| EN 55011 | EN 61000-6-4 | |
| EN 55013 | EN 61000-3-11 | |
| EN 55014-1 | EN 61000-4-2 | |
| EN 55014-2 | EN 61000-4-3 | |
| EN 55022 | EN 61000-4-4 | |
| EN 55024 | EN 61000-4-5 | |
| EN 60601-1-2 | EN 61000-4-6 | |
| EN 60801 | EN 61000-4-8 | |
| EN 60945 | EN 61000-4-11 | |
| | EN 61204-3 | |

## International Standards

| | | |
|---|---|---|
| CISPR 11 | IEC 61000-4-2 | IEC 61000-3-2 |
| CISPR 13 | IEC 61000-4-3 | IEC 61000-3-3 |
| CISPR 14-1 | IEC 61000-4-4 | IEC 61000-3-11 |
| CISPR 14-2 | IEC 61000-4-5 | IEC 61000-6-1 |
| CISPR 22 | IEC 61000-4-6 | IEC 61000-6-2 |
| CISPR 24 | IEC 61000-4-8 | IEC 61000-6-3 |
| | IEC 61000-4-11 | IEC 61000-6-4 |
| IEC 801.2 | IEC 61000-4-12 | IEC 60945 |
| IEC 801.3 | | |
| IEC 801.4 | | |

**Certificate No. : 10012161-2004**

Taipei, December 21 , 2004

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality

TÜV Rheinland Taiwan Ltd.

TÜV

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**ISO 17 025:1999**

**Certificate No. : 10012161-2006** **Valid until : June 14, 2007**

TÜV Rheinland Taiwan Ltd.
**Taipei, April 13, 2006**

Dipl.-Ing. Andreas Klinker
Certification Body

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality

TÜV

Attachment to

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**No. 67-9, Shir Men Rd., Tu-Cheng City,**
**Taipei Hsien 236, Taiwan, R.O.C.**

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| | | |
|---|---|---|
| EN 50081-1 | EN 61000-3-2 | ENV 50140 |
| EN 50081-2 | EN 61000-3-3 | ENV 50141 |
| EN 50082-1 | EN 61000-6-1 | ENV 50204 |
| EN 50130-4 | EN 61000-6-2 | |
| EN 50091-2 | EN 61000-6-3 | |
| EN 55011 | EN 61000-6-4 | |
| EN 55013 | EN 61000-3-11 | |
| EN 55014-1 | EN 61000-4-2 | |
| EN 55014-2 | EN 61000-4-3 | |
| EN 55022 | EN 61000-4-4 | |
| EN 55024 | EN 61000-4-5 | |
| EN 60601-1-2 | EN 61000-4-6 | |
| EN 60801 | EN 61000-4-8 | |
| EN 60945 | EN 61000-4-11 | |
| | EN 61204-3 | |

## International Standards

| | | |
|---|---|---|
| CISPR 11 | IEC 61000-4-2 | IEC 61000-3-2 |
| CISPR 13 | IEC 61000-4-3 | IEC 61000-3-3 |
| CISPR 14-1 | IEC 61000-4-4 | IEC 61000-3-11 |
| CISPR 14-2 | IEC 61000-4-5 | IEC 61000-6-1 |
| CISPR 22 | IEC 61000-4-6 | IEC 61000-6-2 |
| CISPR 24 | IEC 61000-4-8 | IEC 61000-6-3 |
| | IEC 61000-4-11 | IEC 61000-6-4 |
| IEC 801.2 | IEC 61000-4-12 | IEC 60945 |
| IEC 801.3 | | |
| IEC 801.4 | | |

**Certificate No. : 10012161-2006**

Taipei, April 13, 2006

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality

TÜV Rheinland Taiwan Ltd.

TÜV

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**ISO 17025: 2005**

**Certificate No. : 10012161-2007** **Valid until : Sept. 7, 2008**

TÜV Rheinland Taiwan Ltd.
**Taipei, June 20, 2007**

i. V. F.
Dipl.-Ing. Andreas Klinker
Certification Body

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality

TÜV

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| EN 55011 | EN 61000-3-11 | |
| EN 55013 | EN 61000-4-2 | |
| EN 55014-1 | EN 61000-4-3 | |
| EN 55014-2 | EN 61000-4-4 | |
| EN 55022 | EN 61000-4-5 | |
| EN 55024 | EN 61000-4-6 | |
| EN 60601-1-2 | EN 61000-4-8 | |
| EN 60801 | EN 61000-4-11 | |
| EN 60945 | EN 61204-3 | |
| EN 61000-3-2 | EN 62040-2 | |

## International Standards

| | | |
|---|---|---|
| CISPR 11 | IEC 61000-4-2 | IEC 61000-3-2 |
| CISPR 13 | IEC 61000-4-3 | IEC 61000-3-3 |
| CISPR 14-1 | IEC 61000-4-4 | IEC 61000-3-11 |
| CISPR 14-2 | IEC 61000-4-5 | IEC 61000-6-1 |
| CISPR 22 | IEC 61000-4-6 | IEC 61000-6-2 |
| CISPR 24 | IEC 61000-4-8 | IEC 61000-6-3 |
| | IEC 61000-4-11 | IEC 61000-6-4 |
| IEC 801.2 | IEC 61000-4-12 | IEC 60945 |
| IEC 801.3 | | IEC 62040-2 |
| IEC 801.4 | | |

**Certificate No. : 10012161-2007**

Taipei, June 20, 2007

Dipl.-Ing. Bodo Kretzschmar
Product Safety and Quality