



HomeTek Technology Inc.

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CERTIFICATE OF COMPLIANCE

EUT : Twisted Pair Transmission
MODEL NO. : TPP0XXX
Receipt Date : 03/18/2004 Final Test Date: 03/30/2004
REPORT # : EA3C028
APPLICANT : SMART CABLING & TRANSMISSION CORP.
ADDRESS : 3F., No. 4, Lane 130, Min-Chung Rd.,
Hsin-Tien City, Taipei Hsien, Taiwan, R. O. C.

Measurement procedure used:

EMI: EN 55013 (2001),

EN 61000-3-2 (2000), EN 61000-3-3 (1995) + A1 (2001)

EMS: EN 61000-6-1 (2001):

IEC 61000-4-2 (1995), IEC 61000-4-3 (1995), IEC 61000-4-4 (1995), IEC 61000-4-5 (1995),
IEC 61000-4-6 (1996), IEC 61000-4-8 (1993), IEC 61000-4-11 (1994)

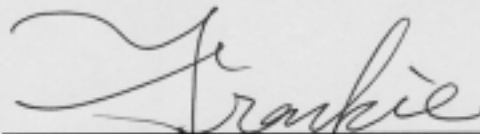
We hereby show that:

The measurements shown in this test report were made in accordance with the procedures given in **EUROPEAN COUNCIL DIRECTIVE 89/336/EEC**, and the energy emitted by the equipment was found to be within the limits applicable.

This test result 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.

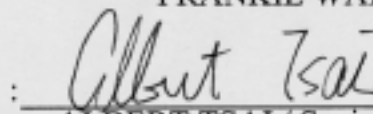
PREPARED BY :


FRANKIE WANG

DATE :

3/30/2004

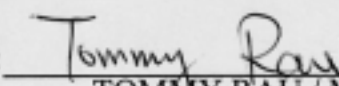
CHECK BY :


ALBERT TSAI / Senior Engineer

DATE :

3/30/2004

APPROVED BY :


TOMMY RAU / Manager

DATE :

3/30/2004



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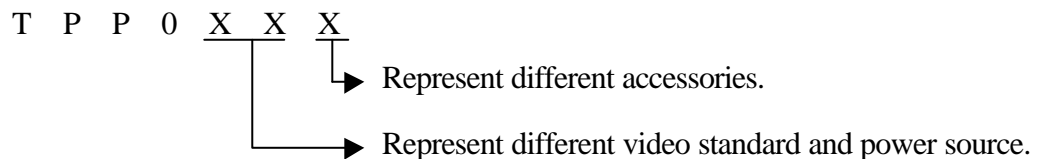


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GENERAL INFORMATION

- 1 APPLICANT : SMART CABLING & TRANSMISSION CORP.
- 2 ADDRESS : 3F., No. 4, Lane 130, Min-Chung Rd.,
Hsin-Tien City, Taipei Hsien, Taiwan, R. O. C.
- 3 MANUFACTURER : SMART CABLING & TRANSMISSION CORP.
- 4 ADDRESS : 3F., No. 4, Lane 130, Min-Chung Rd.,
Hsin-Tien City, Taipei Hsien, Taiwan, R. O. C.
- 5 DESCRIPTION OF EUT :
- EUT : Twisted Pair Transmission
- Model : TPP0XXX
- Serial # : N/A
- Data Cable : N/A

5.1 The difference between series of models TPP0XXX is shown as below:



The worst case of EMC test model is TPP016 and the final test data were shown in this test report.



6 FEATURES OF EUT :

Model No. TPP016

6.1	Video Input Port	16 Port, 1Vp-p, 75ohms (BNC Connector)
6.2	Video Output Port	16 Port (Terminal Block)
6.3	Recommend Cable	CAT 5 Cable 4 Pairs (24 AWG)
6.4	Power Adapter	Included
6.5	Material	Metal Black



HomeTek Technology Inc.

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 55013**.

2 RESULT OF CONDUCTED EMISSION TEST

N/A (This standard is not applicable to this EUT (Model : TPP016)).



RADIATED EMISSION TEST

1 TEST PROCEDURE

According to **EN 55013**.

2 RESULT OF RADIATED EMISSION TEST

N/A (This standard is not applicable to this EUT (Model : TPP016)).



DISTURBANCE VOLTAGE AT THE ANTENNA TERMINALS TEST

1 TEST PROCEDURE

According to **EN 55013**.

2 RESULT OF DISTURBANCE VOLTAGE AT THE ANTENNA TERMINALS TEST

N/A (This standard is not applicable to this EUT (Model : TPP016)).



CLAMP 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#	Location	Date of Cal.
1	Clamp Test Site	30MHz ~ 300MHz/6m	HomeTek	Clamp #1	Clamp Test Site	N/A
2	EMI TEST RECEIVER	30MHz ~ 1GHz	ROHDE & SCHWARZ	ESVS10 845165/017	Clamp Test Site	SEP/2003
3	RF SPECTRUM ANALYZER	N/A	HEWLETT PACKARD	8591E 3710A06158	Clamp Test Site	MAY/2003
4	PRE-AMPLIFIER	100KHz ~ 1.3GHz	HP	8447D 1937A03120	Clamp Test Site	MAR/2004
5	ABSORBING CLAMP	30MHz ~ 300MHz	ROHED & SCHWARZ	MDS21 845061/004	Clamp Test Site	DEC/2003
6	EMI 32 (software)	N/A	AUDIX	19991013-0923		N/A

Note : Items 2 ~ 5 upon which need to calibrated are with period of 1 year.



2 TEST PROCEDURE

2.1 The EUT was test according to **EN 55013**.

2.2 The disturbance power test was performed at HomeTek Lab' s CLAMP Test Site .

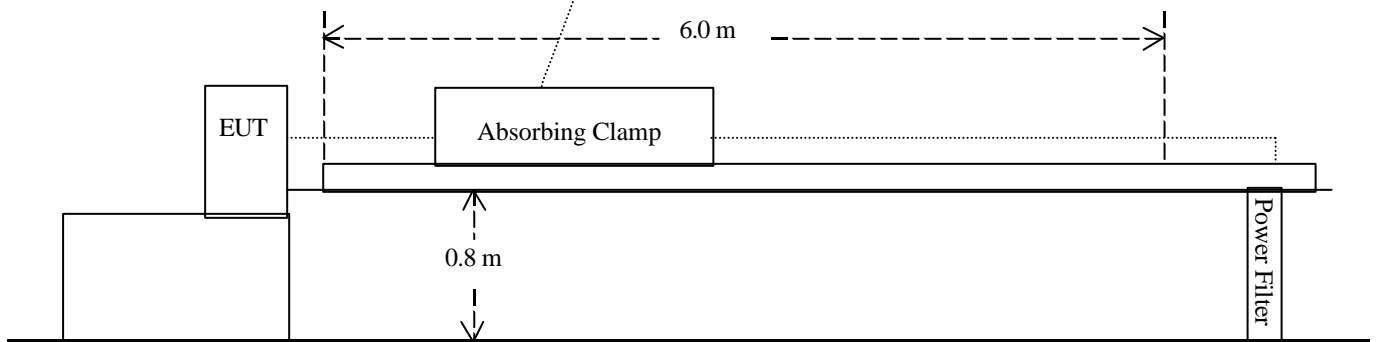
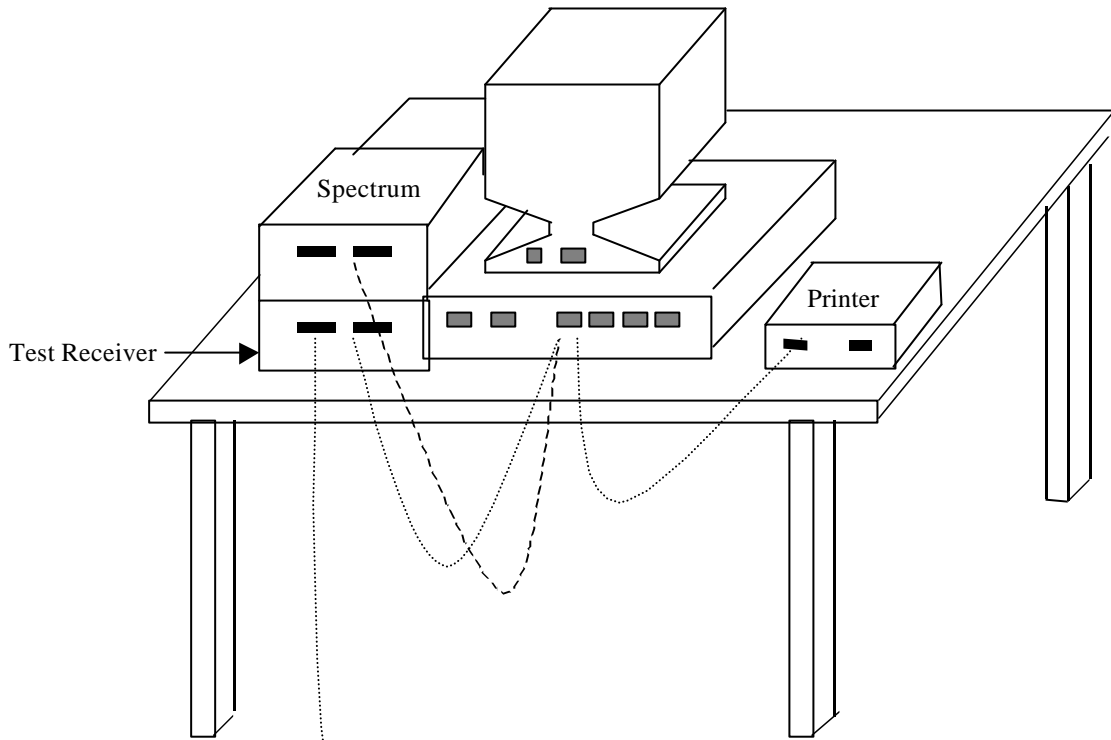
2.3 The frequency range from 30 MHz to 300 MHz, the measurement were made with absorbing clamp.

2.4 The EUT were investigated with all signal cables individually as below:

- Video Input toward EUT cable;
- Video Input toward support unit cable;
- Video output toward EUT cable;
- Video output toward support unit cable;

and the worst case of test data were shown in this test report.

3 TEST SETUP



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

AC Power

4 CONFIGURATION OF THE EUT

The EUT was configured according to **EN 55013**. All I/O ports were connected to the appropriate peripherals. All peripherals and cables are listed below (including internal device) :

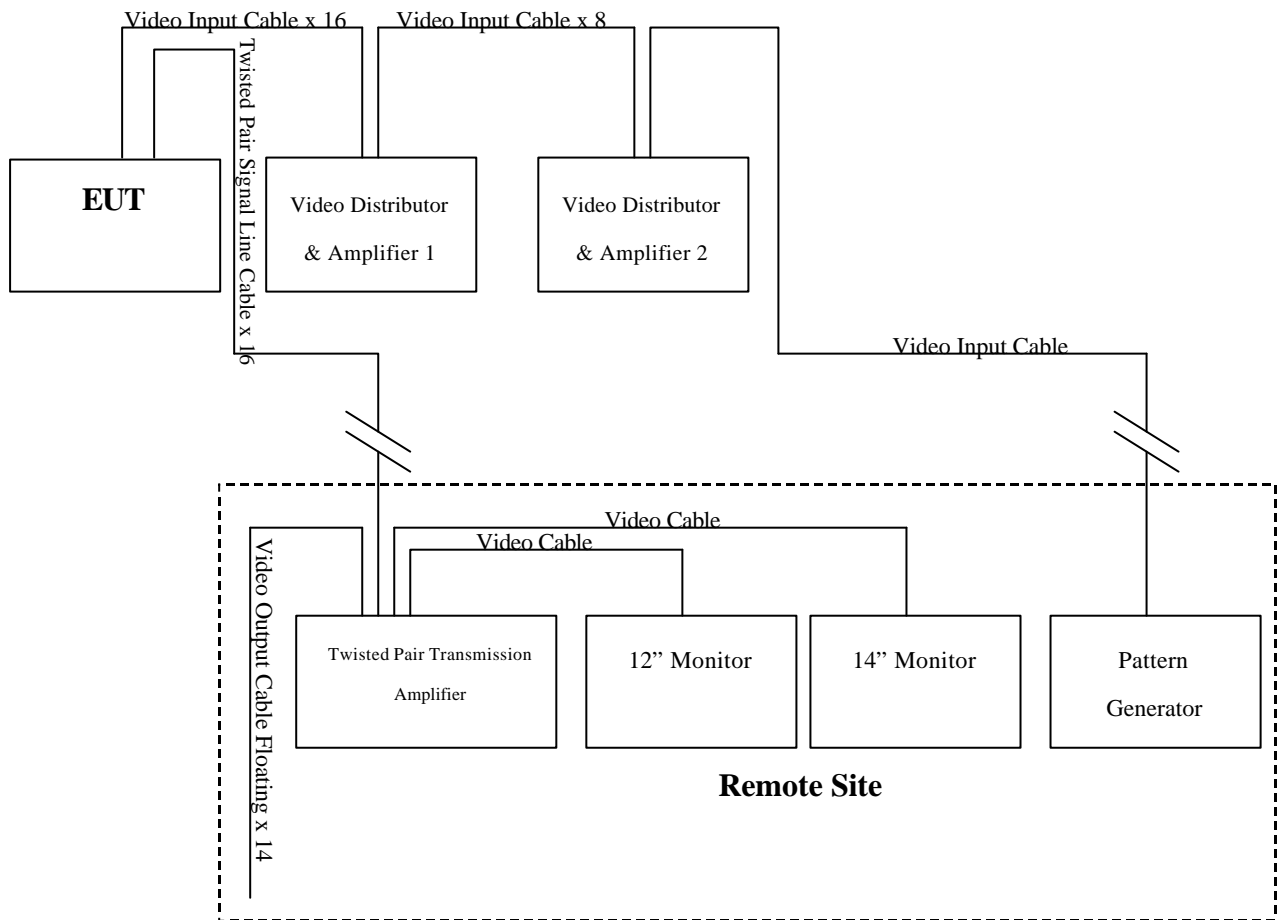


Figure 1



4.1 EUT

EUT Type : Proto Type Engineer Type Mass Production
Condition when received : Good Damage : _____
Device : Twisted Pair Transmission
Applicant : SMART CABLING & TRANSMISSION CORP.
Manufacturer : SMART CABLING & TRANSMISSION CORP.
Model Number : TPP0XXX
Serial Number : N/A
FCC ID : N/A
Data Cable1 (Video Input) : Shielded, 1.8 m, Metal Type
Data Cable2 : Un-Shielded, 6.0 m, Plastics Type
(Twisted Pair Signal Line)
Power Cord : N/A
Power Supply Type : N/A

4.2 PERIPHERALS

Video Distributor & Amplifier 1

Manufacturer : SMART CABLING
Model Number : CD108
Serial Number : N/A
FCC ID : N/A
Data Cable : Shielded, 1.8 m
Power Cord : Un-Shielded, 1.9 m



Video Distributor & Amplifier 2

Manufacturer : SMART CABLING
Model Number : CD816A
Serial Number : N/A
FCC ID : N/A
Data Cable : Shielded, 1.8 m
Power Cord : Un-Shielded, 1.9 m

Pattern Generator (Remote Site)

Manufacturer : LEADER
Model Number : 408
Serial Number : 3037775
FCC ID : FCC DoC
Data Cable : Shielded, 10 m
Power Cord : Un-Shielded, 1.8 m

Twisted Pair Transmission Amplifier (Remote Site)

Manufacturer : SMART CABLING
Model Number : TPA016
Serial Number : N/A
FCC ID : N/A
Data Cable : Un-Shielded, 6.0 m
Power Cord : Un-Shielded, 1.9 m



14" Monitor (Remote Site)

Manufacturer : YOKO
Model Number : YK-8111
Serial Number : N/A
FCC ID : N/A
Data Cable : Shielded, 1.8 m
Power Cord : Un-Shielded, 1.8 m

12" Monitor (Remote Site)

Manufacturer : YOKO
Model Number : YK-8102
Serial Number : N/A
FCC ID : N/A
Data Cable : Shielded, 1.8 m
Power Cord : Un-Shielded, 1.8 m

4.3 REMARK : N/A

5 EUT OPERATING CONDITION

- 5.1 The frequency of the EUT is none.
- 5.2 Configure the EUT according to the **EN 55013**.
- 5.3 Turn on all the power of EUT and peripheral.
- 5.4 Remote pattern generator send 1KHz audio and color bar signal to EUT.
- 5.5 Monitor the output signal of EUT during the test. (For EMS testing)
- 5.6 The photos of conducted test configuration, please refer to appendix A.**

6 LIMIT OF CLAMP EMISSION TEST :

Frequency (MHz)	Limit Values (dBpW)	
	QP	AV
30 – 300	45 - 55	35 - 45
300 – 1000	N/A	N/A

7 RESULT OF CLAMP EMISSION TEST

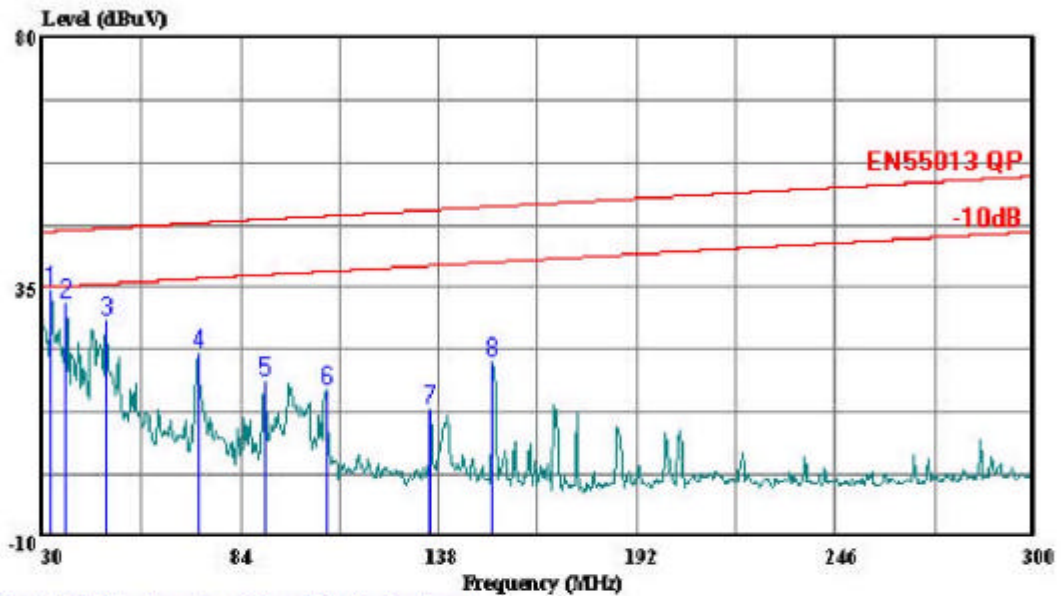
- 7.1 The frequency range from 30 MHz to 300 MHz, the measurement were made with absorbing clamp.
- 7.2 The disturbance power test was performed at HomeTek Lab' s CLAMP Test Site .
- 7.3 Temperature : 23 , Humidity : 55 % RH.
- 7.4 Test Mode : **Video Output toward EUT cable**
- 7.5 The clamp emission result were gained by the following method :
 Level = Reading Level + Probe Factor (Antenna Factor) + Cable Loss – Preamp Factor
 Over Limit = Level – Limit Line
- 7.6 The clamp mission test was passed at minimum margin :
32.43 MHz/ 34.29 dBuV/m, Antenna Height 2 Meter,
 The Mode : Video Output toward EUT cable , Model : TPP016 .
- 7.7 Result : **PASSED**



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Data#: 5 File#: 3c028.emi Date: 2004-03-30 Time: 09:44:28



HomeTek Technology Inc. (HomeTek Technology)

Trace: 1

Ref Trace:

Condition: EN55013 QP MDS-21 120403
cut : Twisted Pair Transmission
power: N/A
memo : TPP016 Video Output Toward EUT

Page:									
	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Factor	Remarks
			dB	dBuV	dBuV	dB	dB	dB	
1	32.430	34.29	-10.80	45.09	59.05	1.63	1.48	27.87	Peak
2	36.480	32.03	-13.21	45.24	57.85	0.44	1.57	27.83	Peak
3	47.280	28.96	-16.68	45.64	56.46	-1.55	1.78	27.73	Peak
4	72.390	23.18	-23.39	46.57	49.96	-1.29	2.26	27.75	Peak
5	90.480	18.20	-29.04	47.24	45.17	-1.71	2.52	27.79	Peak
6	107.490	16.66	-31.21	47.87	43.46	-1.82	2.76	27.73	Peak
7	135.840	12.92	-36.00	48.92	39.34	-2.02	3.14	27.53	Peak
8	152.580	21.48	-28.06	49.54	47.56	-1.97	3.32	27.43	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 : TPP016)).



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 : TPP016)).

ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

1 TEST INSTRUMENTS & FACILITIES

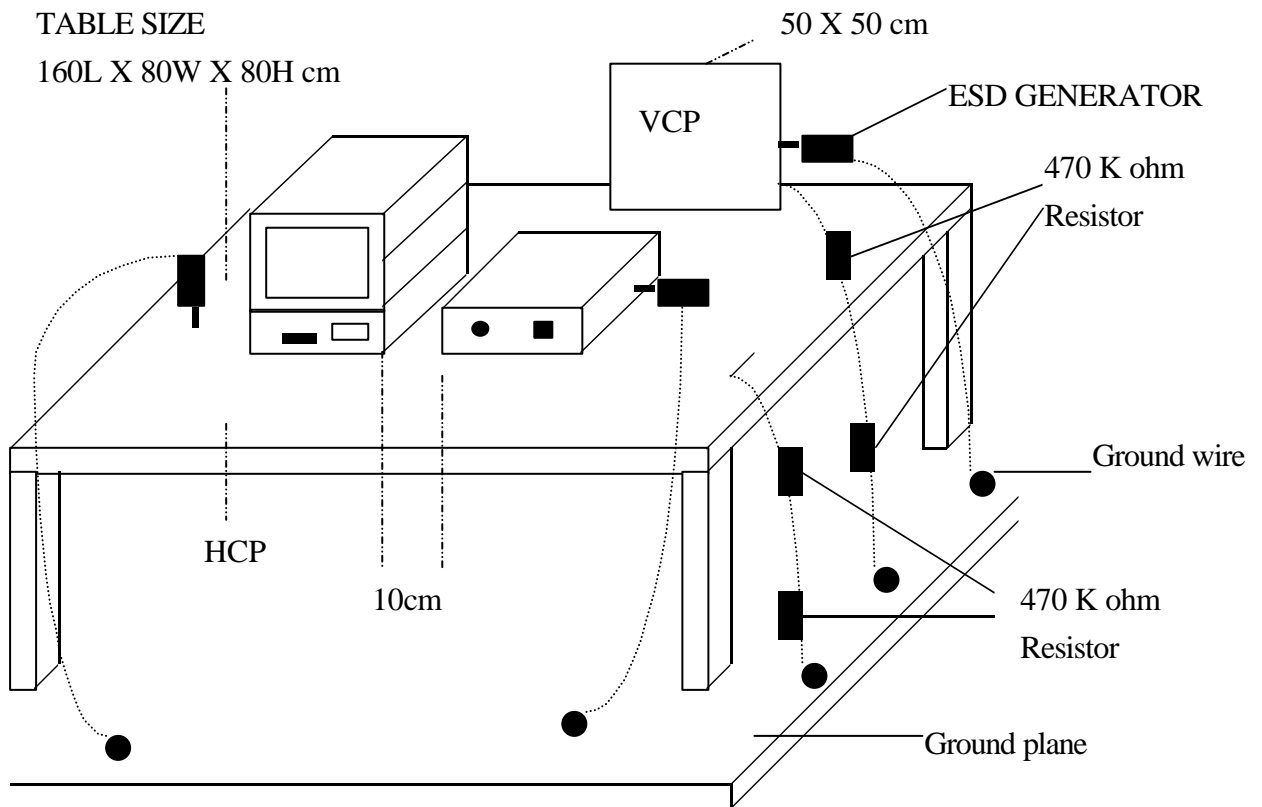
Instruments/ Facilities	Manufacturer	Model # Serial #	Data Of Cal.
ESD TESTER	NOISEKEN	ESS-100L (A)	OCT/2003
VCP	HOMETEK	--	--

2 TEST PROCEDURE

According to **IEC 1000-4-2 (1995)**

According to **EN 61000-6-1 (2001)**

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) $\pm 2, 4, 8$ KV for air discharge.

(B) $\pm 2, 4$ KV for contact discharge.

6.2 Number of test : 10 Discharges / Level

6.3 Time between test : 1 sec.

6.4 Temperature : 25

6.5 Humidity : 50 % 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, 4, 8KV	± 2, 4KV	A	PASSED
VCP	± 2, 4, 8KV	± 2, 4KV	A	PASSED
CASE	± 2, 4, 8KV	± 2, 4KV	A	PASSED
I/O PORTS	± 2, 4, 8KV	± 2, 4KV	A	PASSED
SCREWS	± 2, 4, 8KV	± 2, 4KV	A	PASSED

9 Photos of test configuration please refer to appendix A.



RADIO FREQUENCY ELECTROMAGNETIC FIELD IMMUNITY TEST (RS)

1 TEST INSTRUMENTS & FACILITIES

Item	Instruments Facilities	Manufacturer	Model # Serial #	Data Of Cal.
1	SIGNAL GENERATOR	ROHDE & SCHWARZ	SMY02 845181/025	MAR/2004
2	AMPLIFIER	AMPLIFIER RESEARCH	100W1000M1A	N/A
3	FIELD SENSOR	AMPLIFIER RESEARCH	FP2000	AUG/2002
4	FIELD MONITOR	AMPLIFIER RESEARCH	FM2000	AUG/2002
5	RF VOLTMETER	BOONTON	9200C 361701AA	MAR/2004
6	RF PROBE	BOONTON	952001B 37082	MAR/2004
7	DIRECTION COUPLER	AMPLIFIER RESEARCH	DC6180 20521	N/A
8	ANTENNA	EMCO	3142B 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.

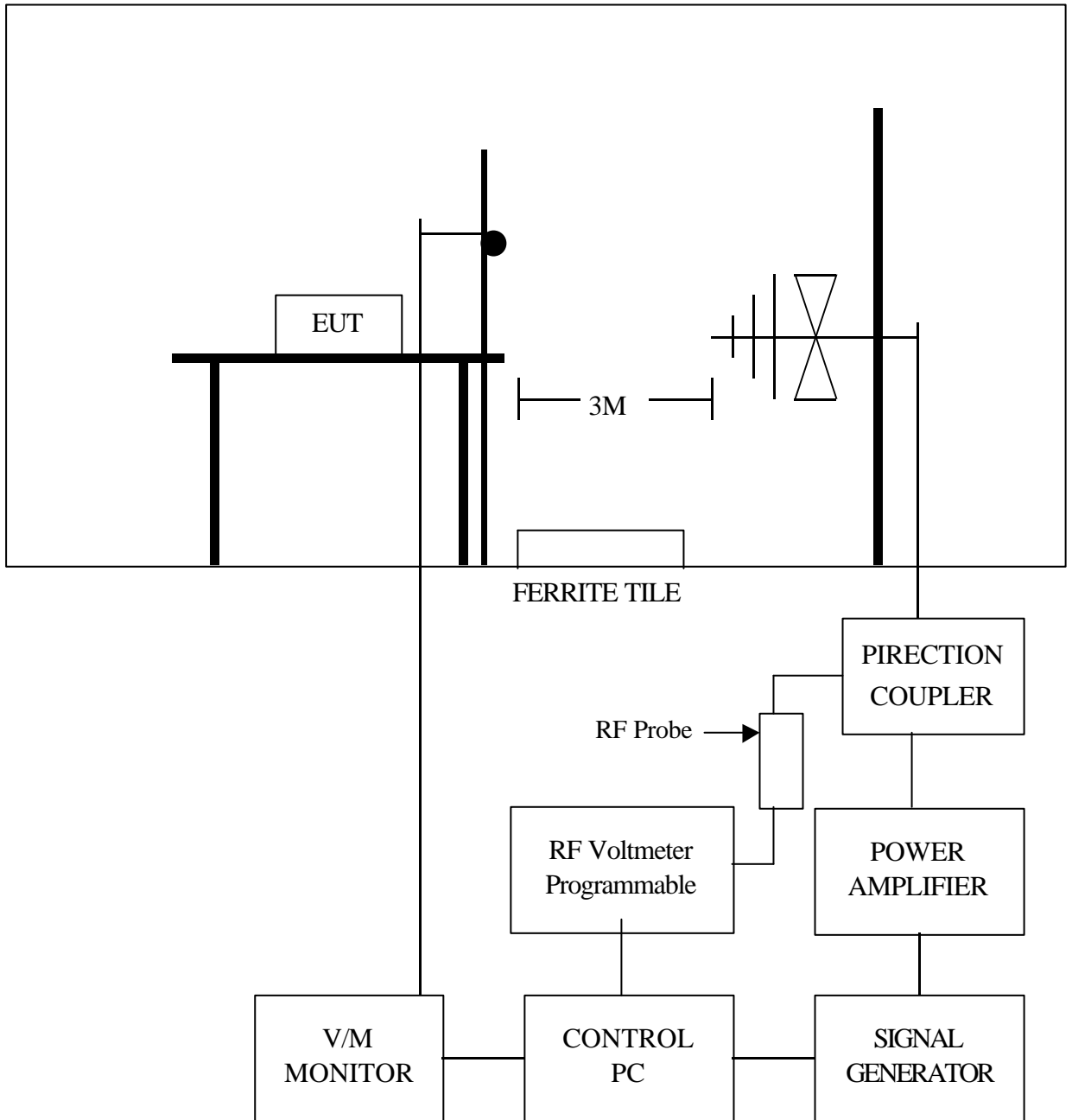
2 TEST PROCEDURE

According to **IEC 61000-4-3 (1995)**

According to **EN 61000-6-1 (2001)**

3 TEST SETUP

FERRITE TILE



3.1 Chamber Size :

12M x 5M x 5M

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

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 Frequency Range : 80 MHz ~ 1000 MHz

6.2 Field Strength : 3 V / M (1KHz 80% Modulation)

6.3 Frequency Step : 1 %

6.4 Antenna Polarity : HORIZONTAL & VERTICAL

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

6.6 Temperature : 20

6.7 Humidity : 72 % 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

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 PROCEDURE

According to **IEC 61000-4-4 (1995)**

According to **EN 61000-6-1 (2001)**

2 RESULT OF ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT)

N/A (This standard is not applicable to this EUT (Model : TPP016)).



SURGE IMMUNITY TEST

1 TEST PROCEDURE

According to **IEC 61000-4-5 (1995)**

According to **EN 61000-6-1 (2001)**

2 RESULT OF SURGE IMMUNITY TEST

N/A (This standard is not applicable to this EUT (Model : TPP016)).



IMMUNITY TEST TO RF CONDUCTED DISTURBANCE

1 TEST PROCEDURE

According to **IEC 61000-4-6 (1996)**

According to **EN 61000-6-1 (2001)**

2 RESULT OF IMMUNITY TEST TO RF CONDUCTED DISTURBANCE TEST

N/A (This standard is not applicable to this EUT (Model : TPP016)).



POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

1 TEST PROCEDURE

According to **IEC 61000-4-8 (1993)**

According to **EN 61000-6-1 (2001)**

2 RESULT OF POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

N/A (This standard is not applicable to this EUT (Model : TPP016)).



VOLTAGE DIPS, SHORT INTERRUPTIONS IMMUNITY TEST

1 TEST PROCEDURE

According to **IEC 61000-4-11 (1994)**

According to **EN 61000-6-1 (2001)**

2 RESULT OF VOLTAGE DIPS, SHORT INTERRUPTIONS IMMUNITY TEST

N/A (This standard is not applicable to this EUT (Model : TPP016)).



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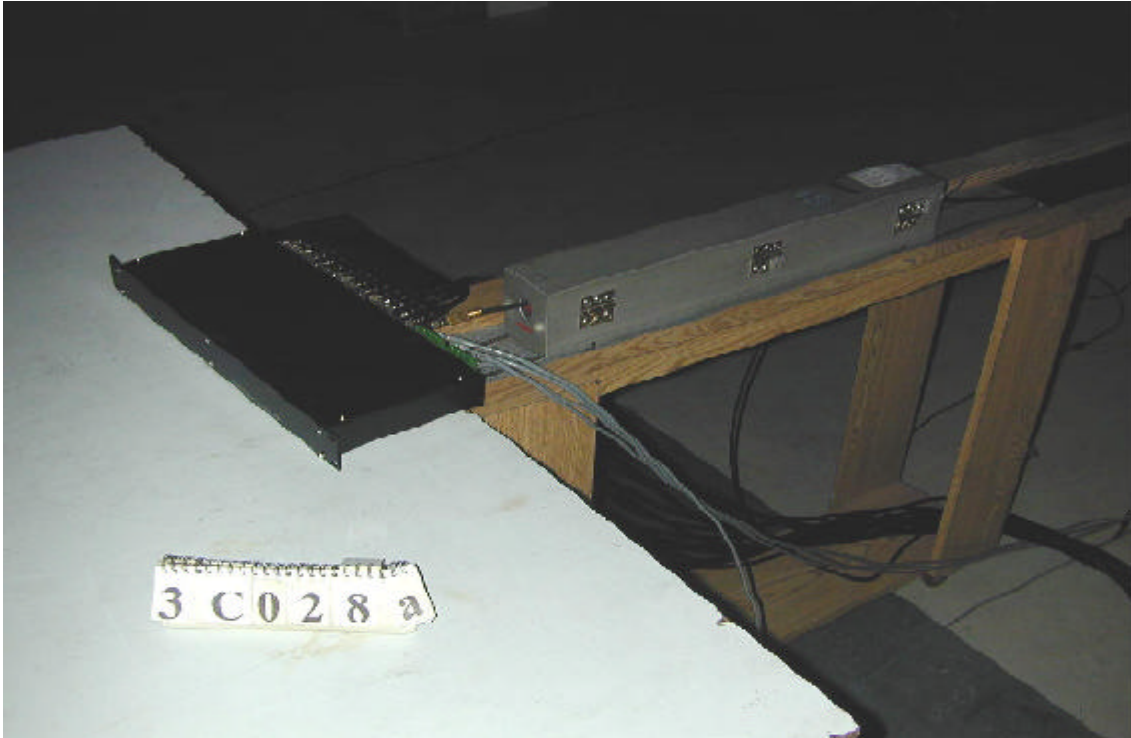
Appendix A

PHOTOS OF TEST CONFIGURATION



PHOTO OF CLAMP EMISSION TEST

Test Mode : VIDEO INPUT , Model : TPP016



Front View



Rear View

PHOTO OF ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

Model : TPP016

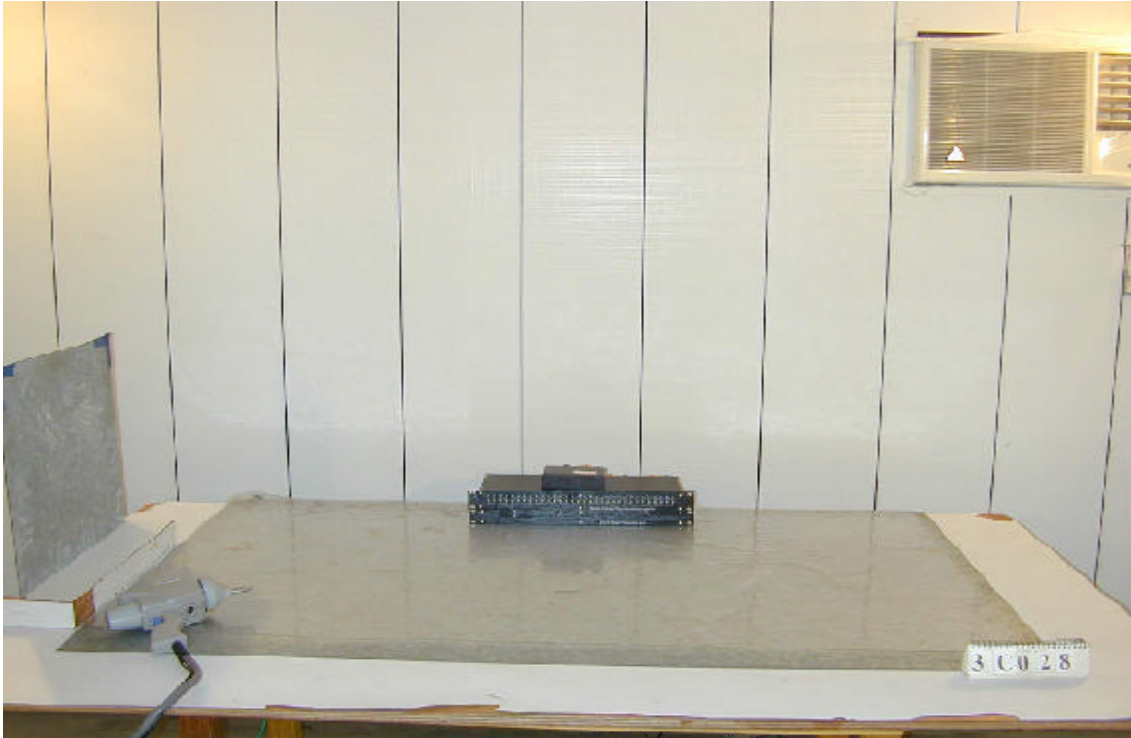


PHOTO OF POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

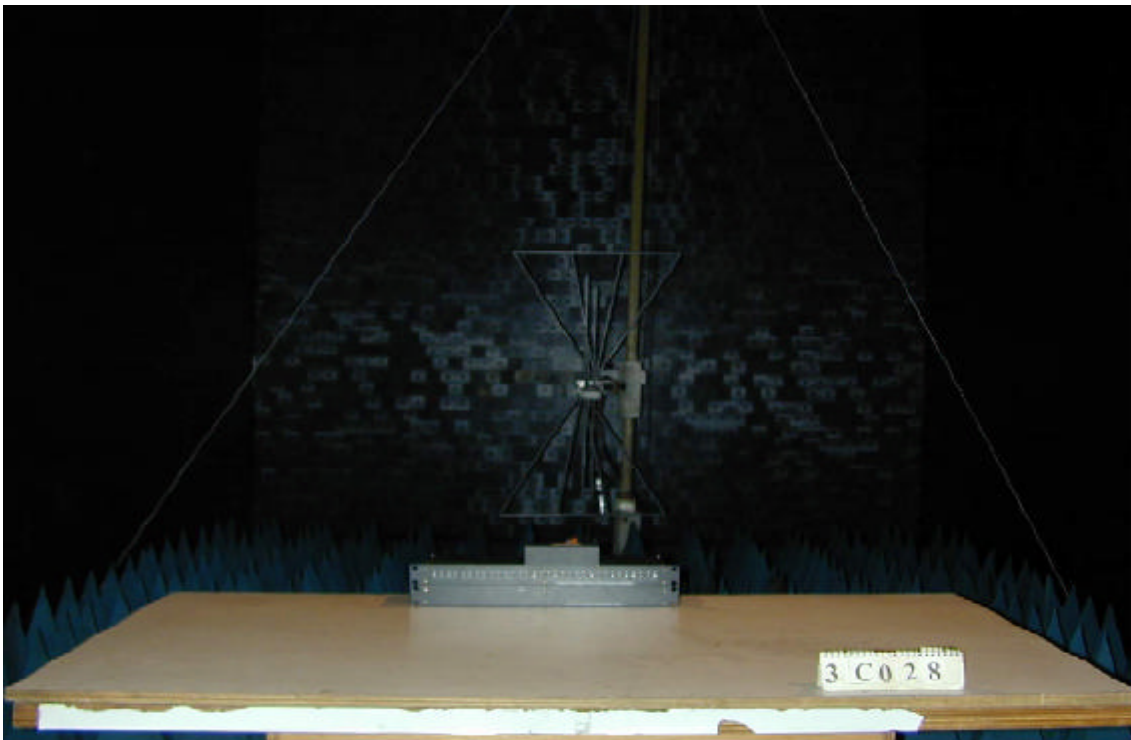




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**PHOTO OF RADIO FREQUENCY ELECTROMAGNETIC FILE
IMMUNITY TEST (RS)**

Model : TPP016





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Appendix B

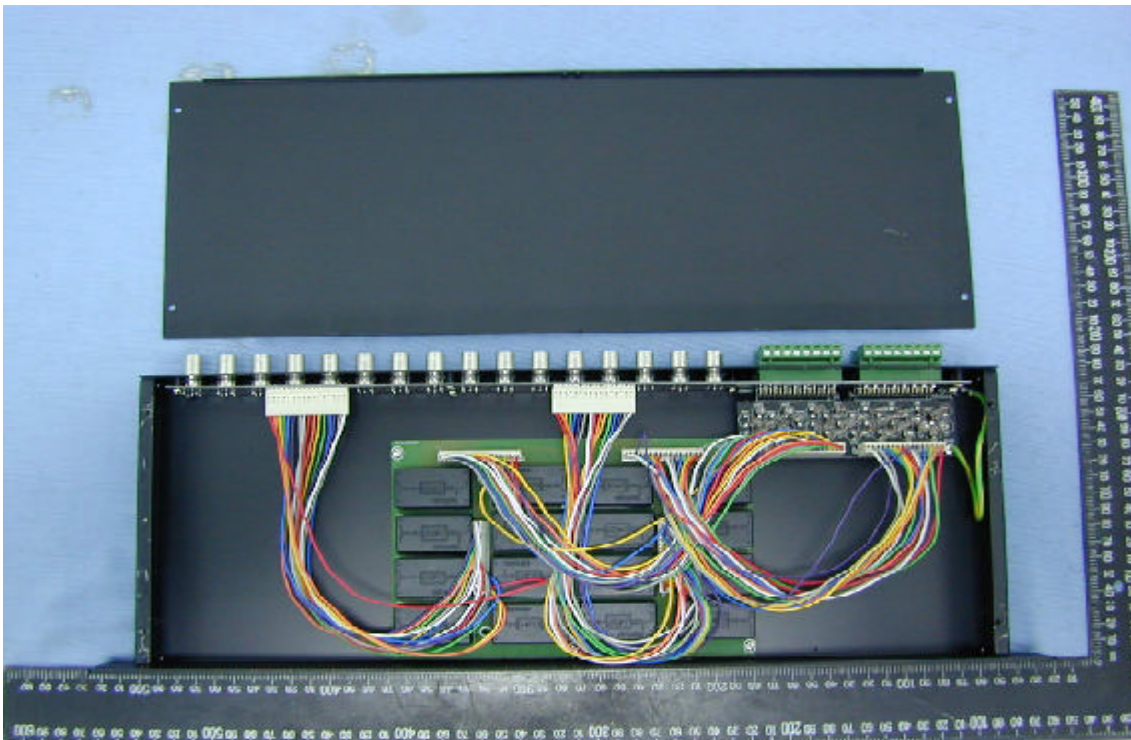
PHOTOS OF EUT

PHOTO OF EUT

Model : TPP016



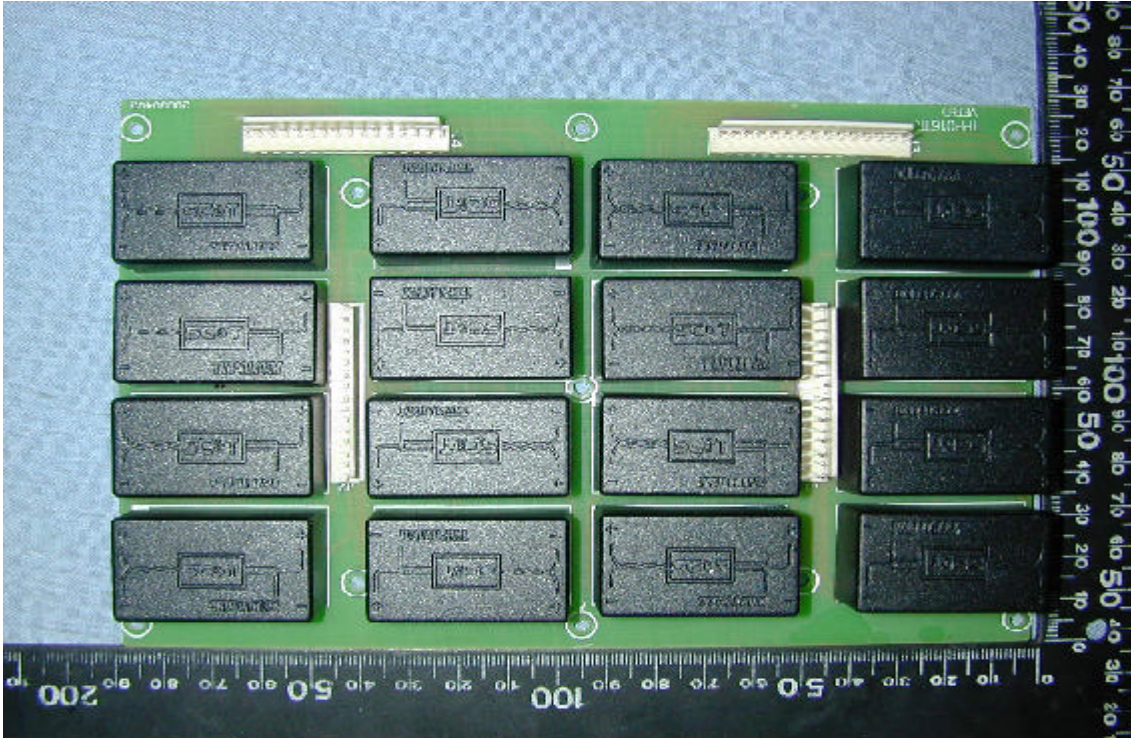
Full View of EUT



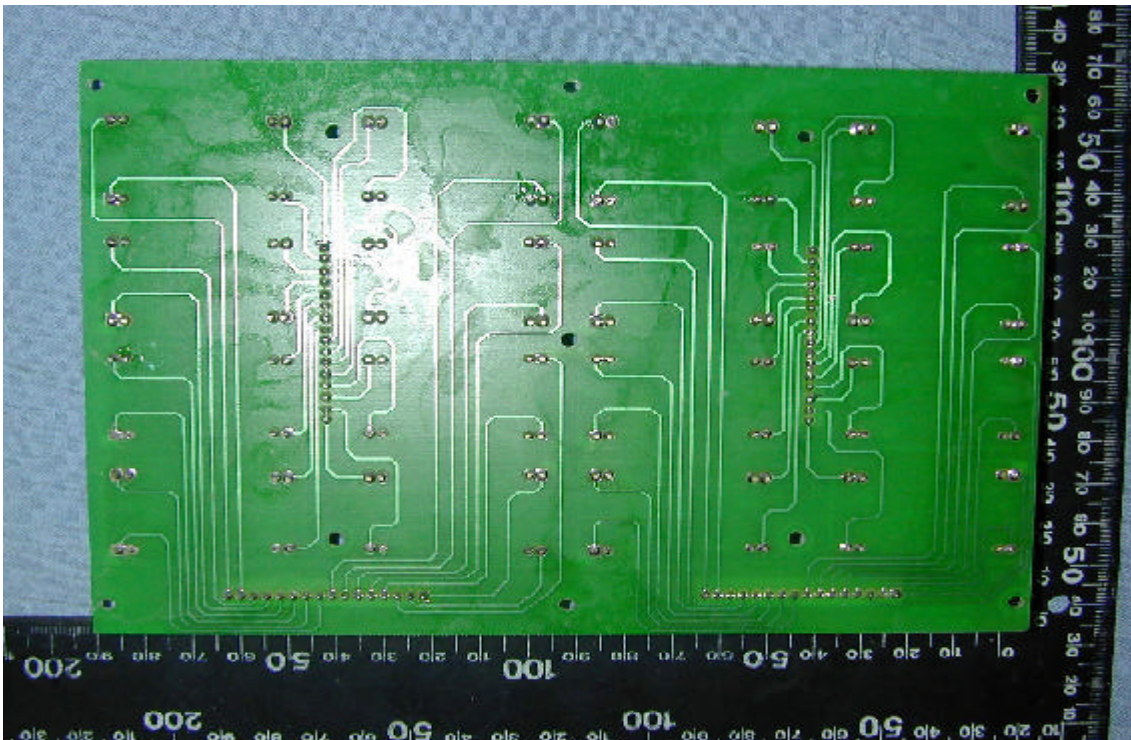
Inside View of EUT

PHOTO OF EUT

Model : TPP016



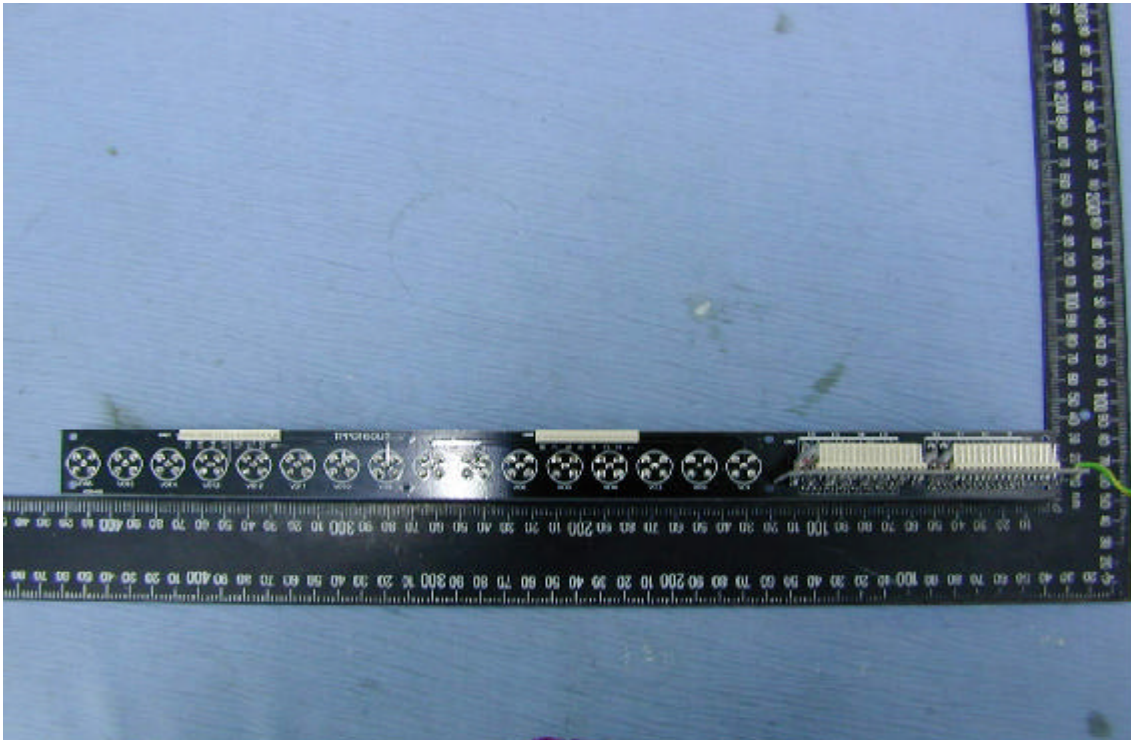
Component Side of Main Board - 1



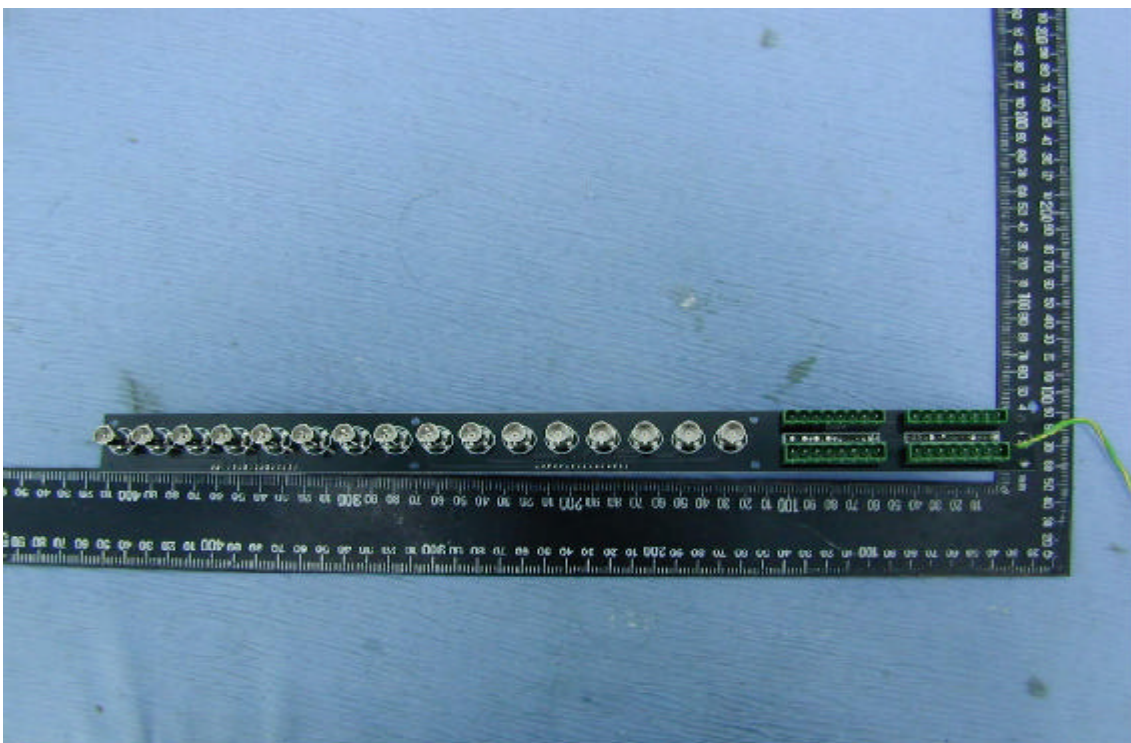
Solder Side of Main Board - 1

PHOTO OF EUT

Model : TPP016



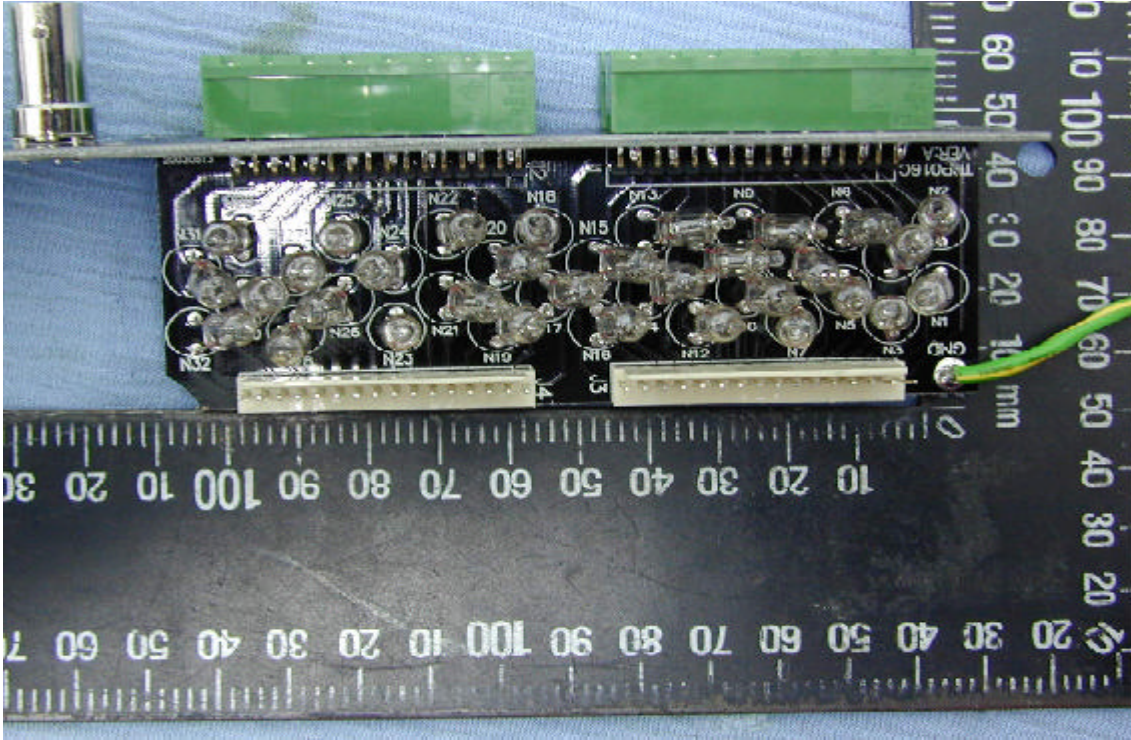
Component Side of Main Board - 2



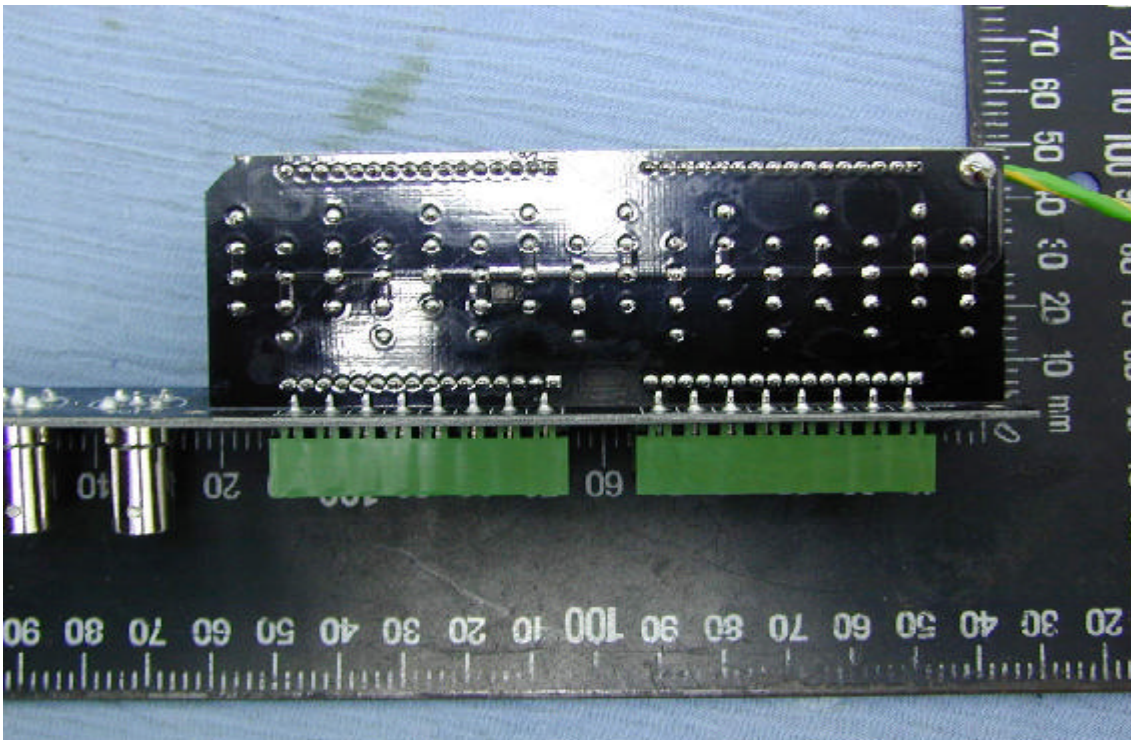
Solder Side of Main Board - 2

PHOTO OF EUT

Model : TPP016



Component Side of Main Board - 3



Solder Side of Main Board - 3

Declaration of Conformity

We(Manufacturer/Importer)

(company name)

(address)

declares under our sole responsibility that the product

Product name : Twisted Pair Transmission

Model No. : TPP0XXX

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

- | | |
|---|---|
| <input checked="" type="checkbox"/> EN 55013 (2001) | <input checked="" type="checkbox"/> EN 61000-6-1 (2001) |
| <input checked="" type="checkbox"/> EN 61000-3-2 (2000) | <input checked="" type="checkbox"/> IEC 61000-4-2 (1995) |
| <input checked="" type="checkbox"/> EN 61000-3-3 (1995) | <input checked="" type="checkbox"/> IEC 61000-4-3 (1995) |
| + A1 (2001) | <input checked="" type="checkbox"/> IEC 61000-4-4 (1995) |
| | <input checked="" type="checkbox"/> IEC 61000-4-5 (1995) |
| | <input checked="" type="checkbox"/> IEC 61000-4-6 (1996) |
| | <input checked="" type="checkbox"/> IEC 61000-4-8 (1993) |
| | <input checked="" type="checkbox"/> IEC 61000-4-11 (1994) |

following the provisions of 89/336/EEC Directive

Place: _____ Signature: _____

Date : _____ Full name: _____



Title: _____

EMC Laboratory Authorisation

Aut. No.: ELA 183

EMC Laboratory: **HomeTek Technology Inc.**
P.O.Box 13-131, Pan-Chiao City,
No. 67-9, Shi-Men Rd., Tu-Chen City,
Taipei Shien
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.**

Nemko has assessed the testing facilities, qualifications and testing practices and the relevant part of the organization. The above-mentioned EMC Laboratory has been validated against EN 45001 and ISO 17025 and found to be compliant. The laboratory also fulfils the conditions described in Nemko Document ELA-INFO-10. During Nemko's visit it was found that the EMC Laboratory is capable of performing tests within the Scope of Authorisation given on the accompanying page(s).

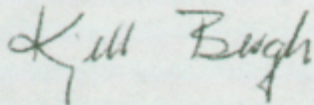
Accordingly, Nemko will accept test reports from the laboratory as a basis for attesting conformity to these EMC Standards under either the European Union EMC Directive (89/336/EEC) or, when applicable, the national standards of countries Nemko has been authorised to attest conformity with.

In order to maintain the Authorisation, the information given in the pertinent ELA-INFO-10 must be carefully followed. Nemko is to be promptly notified about any changes in the situation at the EMC Laboratory, which may affect the basis for this Authorisation. The Authorisation may be withdrawn at any time if the conditions are no longer considered to be fulfilled.

The Authorisation is valid through 31 December 2004.

Oslo, 28 November 2002

For Nemko AS:



Kjell Bergh, Nemko Group EMC Co-ordinator

EMC Laboratory Authorisation

Aut. No.: ELA 183

SCOPE OF AUTHORIZATION

GENERIC & PRODUCT-FAMILY STANDARDS

EN 50081-1:1992 EN 61000-6-3: 2001 IEC 61000-6-3:1996 (mod)	EN 50082-1 :1997 EN 61000-6-1:2001 IEC 61000-6-1:1997 (mod)	EN 61000-6-2:1999 IEC 61000-6-2:1999 EN 61000-6-2: 2001 IEC 61000-6-2:1999 (mod)
EN 50081-2:1993 EN 61000-6-4 : 2001 IEC 61000-6-4:1997 (mod)	EN 55014-1:1993 + A1:1997 + A2 :1999 CISPR 14:1993 + A1:1996 + A2 :1998 EN 55014-1 :2000 + A1 :2001 CISPR 14-1 :2000 + A1 :2001	EN 55014-2:1997 CISPR 14-2:1997
EN 61000-3-2:1995 + A1:1998 + A2:1998 + A14 :2000 IEC 61000-3-2:1995 + A1:1997 + A2:1998 EN 61000-3-2 :2000 IEC 61000-3-2 :2000 (mod) + A1 :2001	EN 61000-3-3 :1995 + A1 :2001 IEC 61000-3-3 :1994 + A1 :2001 EN 61000-3-11 :00 IEC 61000-3-11 :00	EN 55022:1994 + A1:1995 + A2:1997 CISPR 22:1993 + A1:1995 + A2:1996 EN 55022:1998 + A1 :2000 CISPR 22:1997 + A1 :2000
EN 55024:1998 + A1 :2001 CISPR 24:1997 + A1 :2001	EN 50091-2:1995	EN 60945:1997 IEC 60945:1996
EN 55013: 1990 + A12 :1994 + A13 :1996 + A14 :1999 CISPR 13 :1975 + A1 :1983 (mod) EN55013: 2001 CISPR 13 : 2001 (mod)		

BASIC STANDARDS

EN 61000-4-2:1995 + A1:98 IEC 61000-4-2:1995 + A1:98 EN 60801-1:1993 IEC 801.2:1991 IEC 801.2:1984	EN 61000-4-3:1996 + A1:98 IEC 61000-4-3:1995 + A1:98 IEC 801.3:1984 ENV 50140:1993 + ENV 50204:1995	EN 61000-4-4:1995 IEC 61000-4-4:1995 IEC 801.4:1990
EN 61000-4-5:1995 IEC 61000-4-5:1995 ENV 50142:1994	EN 61000-4-6:1996 IEC 61000-4-6:1996 ENV 50141:1993	EN 61000-4-8:1993 IEC 61000-4-8:1993
EN 61000-4-11:1994 IEC 61000-4-11:1994		

Oslo, 28 November 2002

Kjell Bergh, Nemko Group EMC Co-ordinator