CE TEST REPORT

for

USB 2.0 Graphic Dock

Model No.: UVAD200

of

Applicant: **Magic Control Technology Corporation**

Address: 6F, No.120-11,Sec.3, Jhongshan Rd., Jhonghe City, Taipei 235, Taiwan, R.O.C.

Tested and Prepared
by

ETS Product Service (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679

A2LA Accredited No.: 2300.01

PTCRB Accredited Type Certification Test House

CE

Report No.: W6M20709-8534-E-11

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Testing laboratory

Location
ETS Product Service (Taiwan) Co., Ltd.
OATS
No.5-1, Shuang Sing Village,
LiShuei Rd., Wanli Township,
Taipei County 207, Taiwan (R.O.C.)
Company
ETS Product Service (Taiwan) Co., Ltd.
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Test location, where different from ETS Product Service (Taiwan) Co., Ltd.

Name	: ./.
Street	: ./.
Town	: ./.
Country	: ./.
Telephone	: ./.
Fax	: ./.

Details of applicant

Name	: Magic Control Technology Corporation
Street	: 6F, No. 120-11, Sec. 3, Jhongshan Rd., Jhonghe City,
Town	: Taipei 235,
Country	: Taiwan, R.O.C.
Telephone	: +886-2-3234-6616
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Test item

Description of test item

Type of product		: USB 2.0 Graphic Dock
Type identification		: UVAD200
Power supply	Input	: 100-240VAC 1.0A 50-60Hz
	Output	: 5VDC 3.0A

Test Standards
EN 55022 Class B (2006),
IEC/EN 61000-3-2 (2006), IEC/EN 61000-3-3 (1995+A1:2001+A2:2005)
EN 55024 (1998+A1 :2001+A2 :2003), (IEC/EN61000-4-2 (1995+A1:1998+A2: 2001)
/-3 (2006)/-4(2004)/-5(2006)/-6 (1996+A1: 2001)/-11 (2004))
Special statement: The standards applied to this test sample were under the demand of the applicant. Any deviation from the applicable product standards is the responsibility of the applicant. T-LISN does not need to test is according to customer's request.

Electro - Magnetic Compatibility

Test - Result

Device : USB 2.0 Graphic Dock
Model No : UVAD200
Manufacturer : Magic Control Technology Corporation
6F, No. 120-11, Sec. 3, Jhongshan Rd., Jhonghe City, Taipei 235, Taiwan, R.O.C.

☒ 1st test ☐ test after modification ☐ production test

Test Emission / Immunity			Done	Test passed	Test failed
Emission	Conducted Emission	EN 55022 Class B (2006)	☒	☒	☐
Emission	Radiated Emission	EN 55022 Class B (2006)	☒	☒	☐
Harmonics	Current Harmonics	IEC/EN 61000 - 3 - 2 (2006)	☒	☒	☐
Flicker	Voltage Fluctuations	IEC/EN 61000 - 3 - 3 (1995+A1:2001+A2:2005)	☒	☒	☐
ESD	Electrostatic Discharge	IEC/EN 61000 - 4 - 2 (1995+A1:1998+A2: 2001)	☒	☒	☐
RF - Field	Radiated Immunity	IEC/EN 61000 - 4 - 3 (2006)	☒	☒	☐
Burst	Electrical Fast Transients	IEC/EN 61000 - 4 - 4 (2004)	☒	☒	☐
Surge	Transients comm.& diff.mode	IEC/EN 61000 - 4 - 5 (2006)	☒	☒	☐
RF-common mode	RF continues conducted	IEC/EN 61000 - 4 - 6 (1996+A1: 2001)	☒	☒	☐
V-dips	Voltage dips and Interruption	IEC/EN 61000 - 4 - 11 (2004)	☒	☒	☐

Technical responsibility for area of testing: Tester:

Steven Chuang — Jay Chaing

Issue Date： October 09, 2007 October 09, 2007

Note:
1. The result of this test report is valid only in connection to the sample has been tested at the laboratory of ETS Product Service (Taiwan) Co., Ltd.
2. This test report shall always be duplicated in full pages unless the written approval of the testing laboratory is obtained.

Test equipment utilized

No.	Test equipment	Type	Serial No.	Manufacturer	Cal. Date	Next Cal. Date
ETSTW-CE 001	EMI TEST RECEIVER	ESHS10	842121/013	R&S	2007/10/15	2008/10/14
ETSTW-CE 002	PREREULATOR MODE DC POWER SUPPLY	None	None		Function Test	
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 004	ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK	ESH3-Z5	840731/011	R&S	2007/10/15	2008/10/14
ETSTW-CE 005	Line-Impedance Stabilisation Network	NNBM 8126D	137	Schwarzbeck	2007/10/15	2008/10/14
ETSTW-CE 006	IMPULSBEGRENZER PULSE LIMITER	ESH3-Z2	100226	R&S	In House Certificate	
ETSTW-CE 008	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2005/10/24	2007/10/23
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2007/8/2	2008/8/1
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2005/12/8	2007/12/7
ETSTW-CE 014	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T2-02	20241	FCC	2005/12/7	2007/12/6
ETSTW-CE 015	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T8-02	20307	FCC	2006/11/7	2008/11/6
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2006/11/21	2007/11/20
ETSTW-CS 003	COUPLING AND DECOUPLING NETWORK	CDN T400	19820	SCHAFFNER	2007/10/13	2008/10/12
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	SCHAFFNER	2007/10/9	2008/10/8
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	2007/10/9	2008/10/8
ETSTW-CS 008	6 dB Attenautor	HFP-5100-3/06 N M/F	2010876106		In House Certificate	
ETSTW-RE 002	Function Generator	33220A	MY43004982	Agilent	2007/10/13	2009/10/12
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2006/10/20	2007/10/19
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2006/10/30	2007/10/29
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2007/10/11	2008/10/12
ETSTW-RE 010	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070181	MOTECH	Function Test	
ETSTW-RE 011	PROGRAMMABLE LINEAR POWER SUPPLY	LPS-305	30503070165	MOTECH	Function Test	
ETSTW-RE 017	Log-Periodic Antenna	HL025	352886/001	R&S	2006/5/4	2008/5/3
ETSTW-RE 018	MICROWAVE HORN ANTENNA	AT4560	27212	AR	2004/11/8	2007/11/7
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 021	SWEEP GENERATOR	SWM05	835130/010	R&S	2007/10/9	2008/10/8
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	EMCO	In House Certificate	
ETSTW-RE 028	Log-Periodic DipoleArray Antenna	3148	34429	EMCO	2006/5/26	2008/5/25
ETSTW-RE 029	Biconical Antenna	3109	33524	EMCO	2006/5/26	2008/5/25
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	EMCO	2006/5/3	2008/5/2
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2007/10/9	2008/10/8

ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	2007/7/9	2008/7/8
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2007/10/16	2008/10/15
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2007/1/11	2009/1/10
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2006/5/8	2008/5/7
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2006/5/29	2008/5/28
ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2005/3/22	2008/3/21
ETSTW-RE 049	TRILOG Super Broadband test Antenna	VULB 9160	9160-3185	Schwarzbeck	2007/5/2	2009/5/1
ETSTW-RE 055	SPECTRUM ANALYZER	FSU-26	200074	R&S	2007/7/16	2008/7/15
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2007/7/2	2009/7/1
ETSTW-EMI 001	HARMONICS 1000	HAR 1000-1P	093	EMC-PARTNER	2007/9/11	2008/9/10
ETSTW-EMS 001	BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	2004/11/2	2007/11/1
ETSTW-EMS 002	Frequency Converter	YF-6020	308014	T-Power	Function Test	
ETSTW-EMS 003	EMC Immunity Test System	TRA2000IN6	579	EMC-PARTNER	2006/11/8	2007/11/7
ETSTW-EMS 004	ESD Simulator	ESD2000	16	EMC-PARTNER	2007/10/17	2008/10/16
ETSTW-EMS 008	Safety Test Solutions	ELT-400	E-0039	Narda	2005/5/4	2008/5/3
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	2004/12/3	2007/12/2
ETSTW-EMS 010	Coupling De-coupling Network	CDN-UTP8	14	EMC-PARTNER	2005/9/1	2008/8/31
ETSTW-EMS 011	Calibration Ficture	F-203I-CF-23MM	451	FCC	2006/7/29	2008/7/28
ETSTW-EMS 012	EM Injection Clamp	F-203I-23MM	476	FCC	2006/7/29	2008/7/28
ETSTW-EMS 014	Digital Thermo-Hygro Meter	0507	02	WISEWIND	2005/11/15	2007/11/14
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	2007/10/9	2008/10/8
ETSTW-RS 004	RF Power Amplifier	150W1000	307009	AR	2007/10/9	2008/10/8
ETSTW-RS 005	Electric Field Probe Type 8.3	2244/90.21	AF-0016	Narda	2007/9/3	2009/9/2
ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	2007/10/8	2008/10/7
ETSTW-RS 007	14" COLOR VIDEO MONITOR	HS-CM145A	0512011548		Function Test	

Spurious Emission (EN 55022)

Test Equipment

a) Biconical Antenna (HK116)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RE 042
b) Log-Periodic Dipole Antenna (HL223)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RE 043
c) TRILOG Super Broadband test Antenna (VULB 9160)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RE 049
d) SIGNAL GENERATOR (SML03)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RS 006
e) EMI TEST RECEIVER (ESI 26)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RE 003
f) EMI TEST RECEIVER (ESI 40)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RE 004

Test Procedures

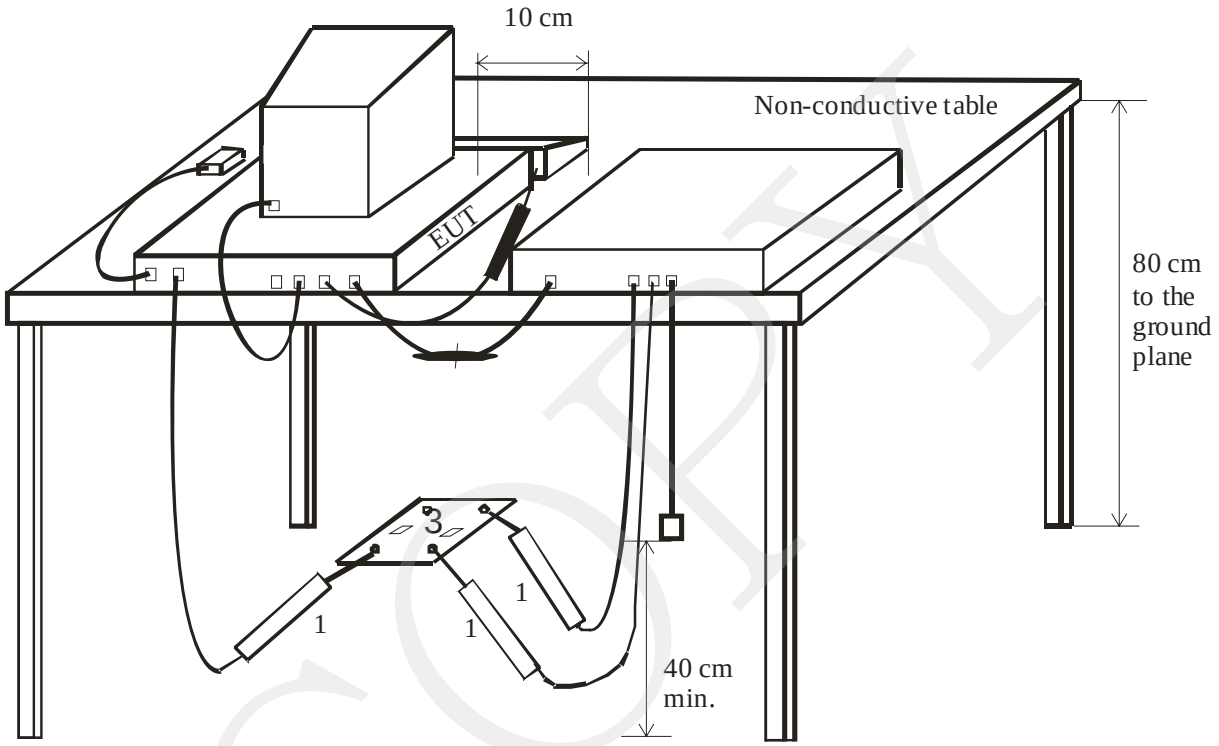
- Test configuration

The test configuration corresponds to the standard EN 55022. The equipment under test is placed on a non metallic table with 0,8m height. The power supply and the RF connection points are close to the equipment under test at the floor inside a connection box. The cables to this connection box are shielded and below the double floor. The receiving antenna is placed in a height at 1,0m to 4,0m, in a distance of 10m. The measurement receiver is placed in a special room. (see picture 1) The observation of the equipment under test is realized by 3 video cameras and by a microphone.

- Test parameters and marginal conditions

The test is carried out with horizontal and vertical polarisation of the antenna in a frequency range of 30 MHz to 1000 MHz. Further information please find in the test protocol.

Radiated Emission according to EN 55022



EUT = Equipment under test

1 = Ferrite clamp

Picture 1

Conducted Emission (EN 55022)

Test Equipment

a) ZWEILEITER-V-NETZNACHBILDUNG TWO-LINE V-NETWORK (ESH3-Z5)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CE 004
b) IMPULS-BEGRENZER PULSE LIMITER (ESH3-Z2)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CE 006
c) EMI TEST RECEIVER (ESHS10)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CE 001
d) AC Power Source (APS-9102)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CE 003
e) CISPR 22 Two Balanced Telecom Pairs Impedance Stabilization Network (FCC-TLISN-T4-02)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CE 013
f) CISPR 22 Two Balanced Telecom Pairs Impedance Stabilization Network (FCC-TLISN-T2-02)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CE 014
g) CISPR 22 Two Balanced Telecom Pairs Impedance Stabilization Network (FCC-TLISN-T8-02)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CE 015

Test Procedures

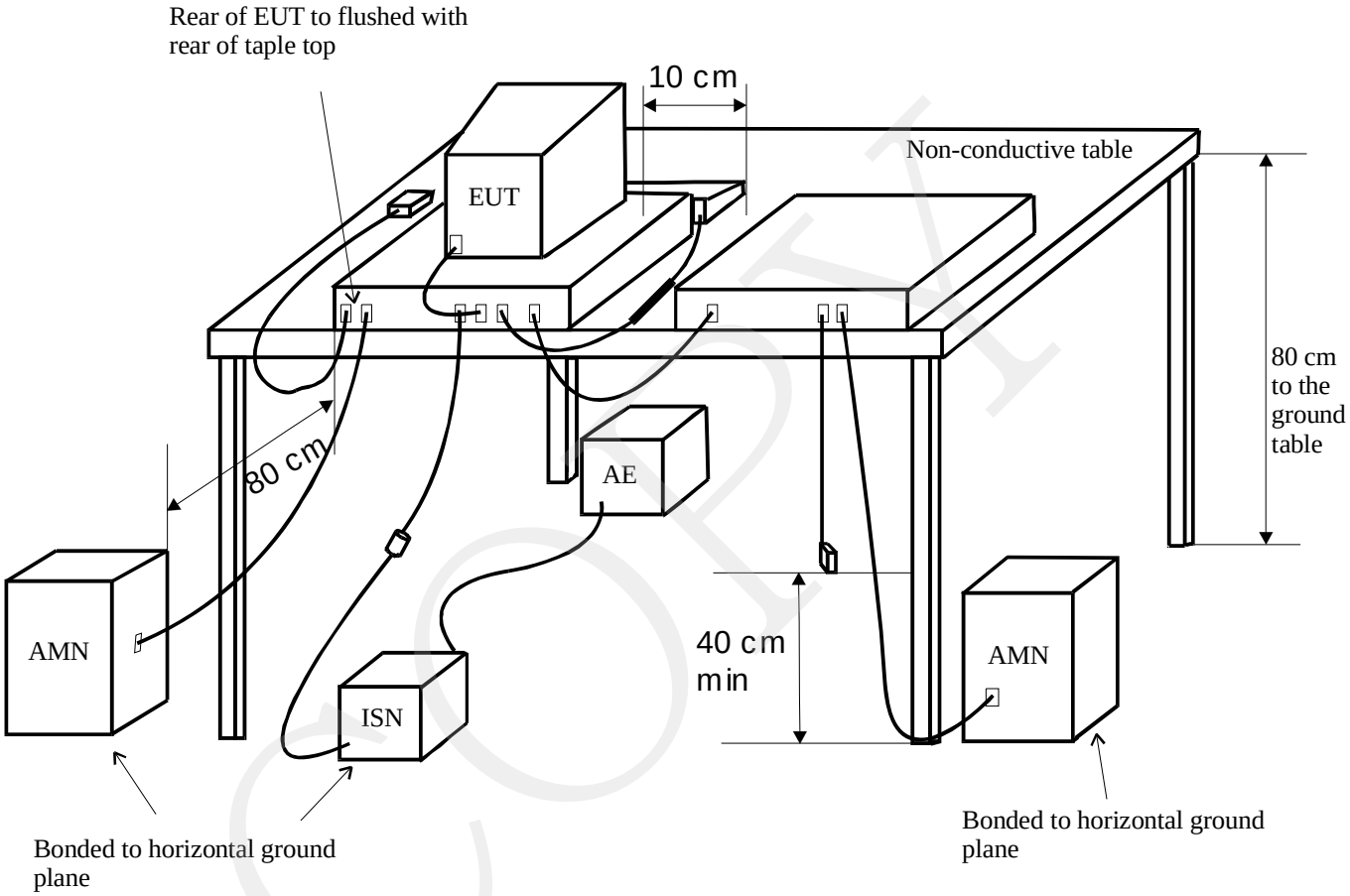
- Test configuration

The test configuration is contained inside of a shielded chamber and corresponds to the standard EN 55022. The equipment under test is placed in the facility on a wooden table 0.8m high. The equipment under test is connected with the artificial mains network (AMN) in a distance of 0,8m and also 0,8m from other subassembly and metallic area. (see picture 2) The observation of the equipment under test is realized by 3 video cameras and by a microphone.

- Test parameters and marginal conditions

The test is carried out with nominal impedance by 50Ω / 50μH of the AMN in a frequency range 150 kHz to 30 MHz. Further information please find in test report.

Conducted Emission according to EN 55022



AMN = Artificial mains network
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabiliyation network

Picture 2

Harmonic Current Emission /Voltage Fluctuations and Flicker (IEC/EN 61000-3-2/-3)

Test Equipment

a) HARMONICS 1000 (HAR 1000-1P)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMI 001
b) Frequency Converter (YF-6020)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 002

Test Procedures

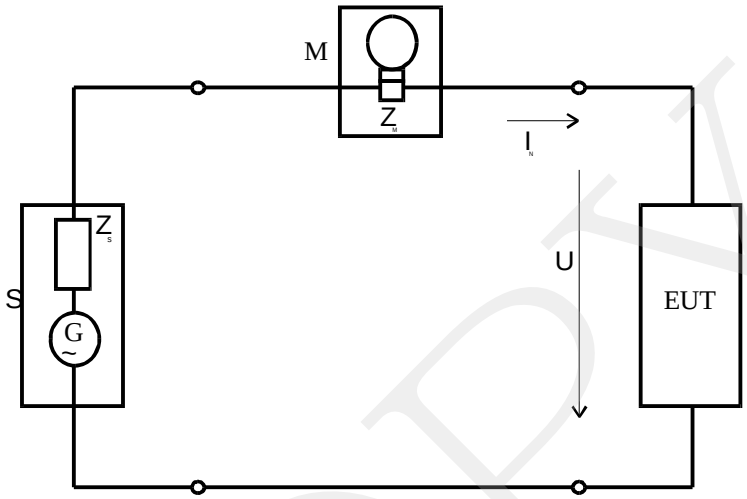
- Test configuration

The test configuration is correspondence to the standard IEC/EN 61000-3-2/-3. The equipment under test is placed on a wooden table with a height of 0,8m in the EMC lab.

- Test parameters and marginal conditions

The harmonic test are carried out in according the classification A, B, C, D of the standard IEC/EN 61000-3-2. The flicker test are carried out in according the time interval of the standard IEC/EN 61000-3-3. Both tests are carried out with above mentioned equipment with 230V and 50 Hz. (see picture 3) Further information please find in test protocol.

Current Harmonics and Flicker according to EN 61000 - 3 - 2, EN 61000 - 3 - 3



S	supply source
M	measuring equipment
EUT	equipment under test
U	test voltage
Z_M	input impedance of the measuring equipment
Z_S	internal impedance of the supply source
I_n	upper shrinkage portion of the conduction current order
G	open-circuit voltage of the supply source

Picture 3

Electrostatic Discharge

Test Equipment

a) ESD Simulator (ESD2000)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 004
b) EMC Immunity Test System (TRA2000IN6)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 003
c) Frequency Converter (YF-6020)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 002

Test Procedures

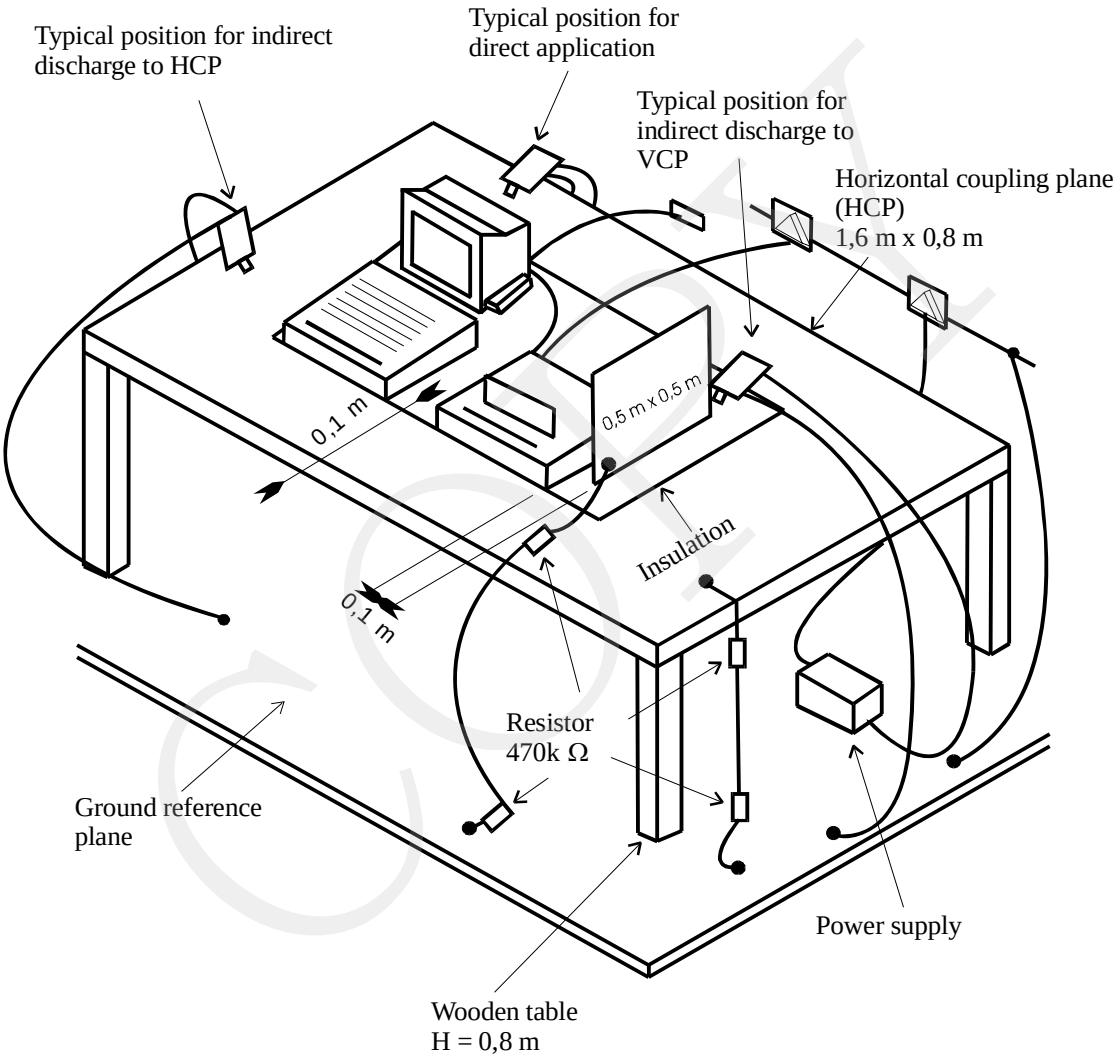
- Test configuration

The test configuration is in correspondence to the standard IEC/EN 61000-4-2. The equipment under test is placed on a wooden table with one metal plate on its top and one metal plate under the table, which is grounded. Both plates are connected with two 470 kΩ resistor in series. (see picture 4)

- Test parameters and marginal conditions

The test is carried out with ±2kV, ±4kV contact discharge and ±2kV, ±4kV and ±8kV air discharge.
Time between two discharges ≥ 1 second
Ten discharges for every point every voltage and polarity
The tested points please find in the test protocol.

Electrostatic Discharge according to EN 61000 - 4 - 2



Picture 4

RF Electromagnetic Field (80-1000 MHz)

Test Equipment

a) Biconical Antenna (3109)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RE 029
b) Log-Periodic Dipole Antenna (HL223)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RE 043
c) MICROWAVE HORN ANTENNA (AT4560)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RE 018
d) Biconical Antenna (HK116)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RE 042
e) SIGNAL GENERATOR (SML03)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RS 006
f) RF Power Amplifier (150W1000)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RS 004
g) Electric Field Probe Type 8.3 (EMR-20)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RS 005
h) Millivoltmeter (URV 55)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RE 032
i) Power Sensor (URV5-Z4)
For your reference please find it in our test equipment list at page 3 to 4 as number: ETSTW-RE 034

Test Procedures

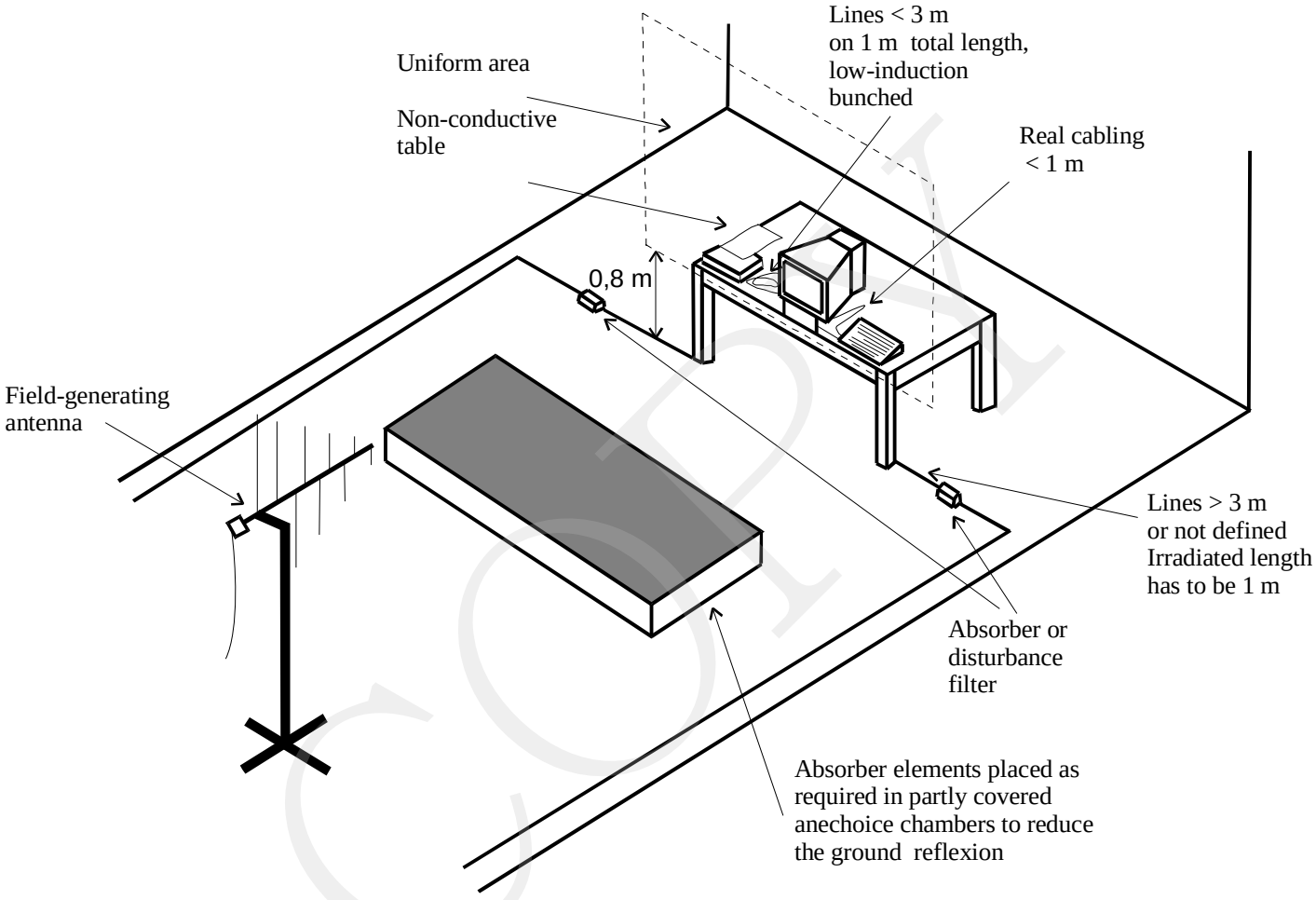
- Test configuration

The test configuration is contained inside of a shielded chamber and corresponds to the standard IEC/EN 61000-4-3. The equipment under test is placed in the facility on a wooden table 0.8m high on the centre axis of the chamber. The power supply and the RF connection points are close to the equipment under test at the floor of the chamber inside a connection box. The cables to this connection box are shielded and below the double floor. The transmitting antenna is placed in a height of 1.5m, in a distance of 3.0m. The RF-generators are placed in a special room adjacent to the chamber. (see picture 5) The observation of the equipment under test is realized by 3 video cameras and by a microphone. In order to establish the severity of the test for EUTs an wires which must be tested close to the earth reference plane or which have larger sides than 1,5m x 1,5 m, the intensity of the field is also recorded at 0,4 m height, and for the full width and height of the EUT.

- Test parameters and marginal conditions

The tests are carried out with field strength by 3 V/m (measured in the un-modulated field) with amplitude modulated signal by a depth of 80 % by a sinusoidal audio signal of 1 kHz. The logarithmic step was 1% and the dwell time was 1s dependent of the EUT cycle time. Further information please find in test protocol.

RF - Field according to EN 61000 - 4 - 3



Picture 5

Transients common mode

Test Equipment

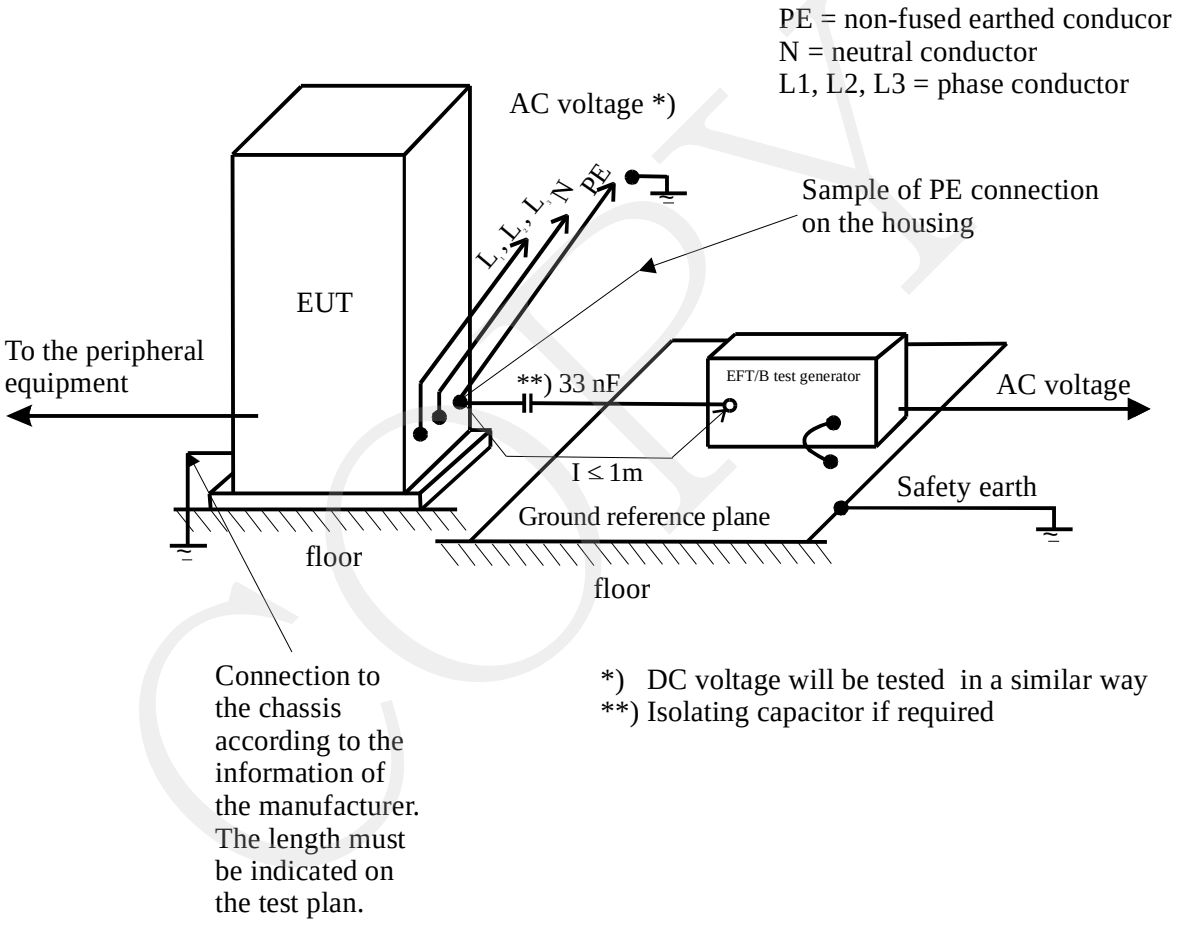
a) EMC Immunity Test System (TRA2000IN6)
   For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 003
b) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 002
c) BASELSTRASSE 160 CH-4242 LAUFEN (CN-EFT1000)
   For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 001

Test Procedures

• Test configuration
The test configuration is in correspondence to the standard IEC/EN 61000-4-4. The equipment under test is placed on a wooden table with a height of 0,8m ±0,08m. The table stands on metal plate which is grounded. (see picture 6)

• Test parameters and marginal conditions
The tests are carried out with 0,5 kV open circuit voltage on signal, control ports and DC power ports and with 1 kV open circuit voltage on AC mains power input. The applied voltage please find in the test protocol.

Electrical Fast Transients according to EN 61000 - 4 - 4



Picture 6

Transients surge common and differential mode

Test Equipment

a) EMC Immunity Test System (TRA2000IN6)
   For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 003
b) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 002

Test Procedures

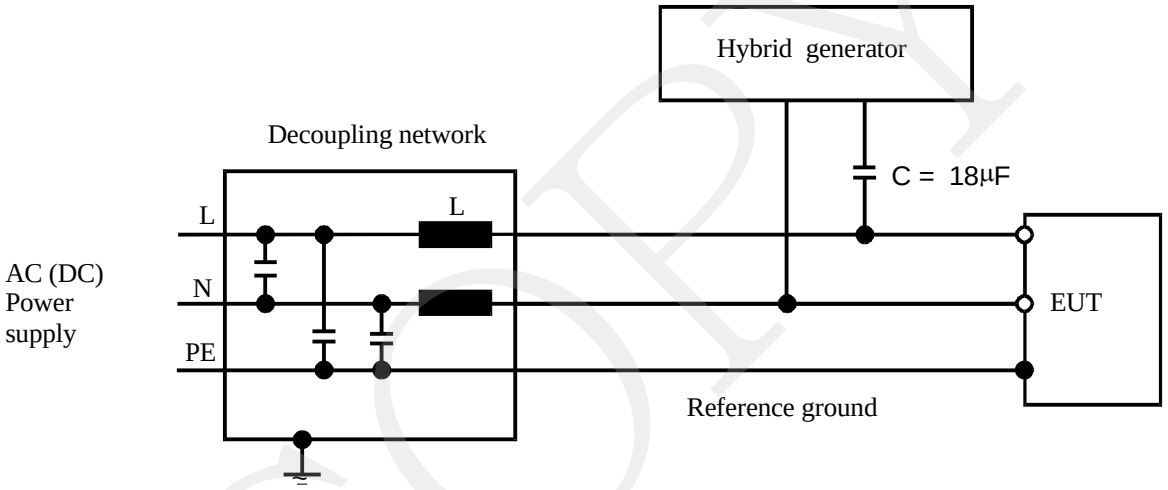
• Test configuration

The test configuration is in correspondence to the standard IEC/EN 61000-4-5. The equipment under test is placed on a wooden table with a height of 0,8m. The table stands on metal plate which is grounded.

• Test parameters and marginal conditions

The tests are carried out with 0.5, 1, 2 kV open circuit voltage for common mode and with 0.5, 1 kV open circuit voltage for differential mode. (see picture 7) Further information please find in the test protocol.

Transients common & differential mode according to EN 61000 - 4 - 5



Picture 7

Radio frequency common mode

Test Equipment

a) SIGNAL GENERATOR (SML03)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RS 006
b) RF Power Amplifier (100A250A)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CS 005
c) COUPLING AND DECOUPLING NETWORK(CDN T400, CDN M016)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CS 003 , ETSTW-CS 004
d) Power Sensor (URV5-Z4)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RE 034
e) Millivoltmeter (URV 55)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-RE 032
f) 6 dB Attenautor (HFP-5100-3/06 N M/F)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-CS 008
g) Frequency Converter (YF-6020)
For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 002

Test Procedures

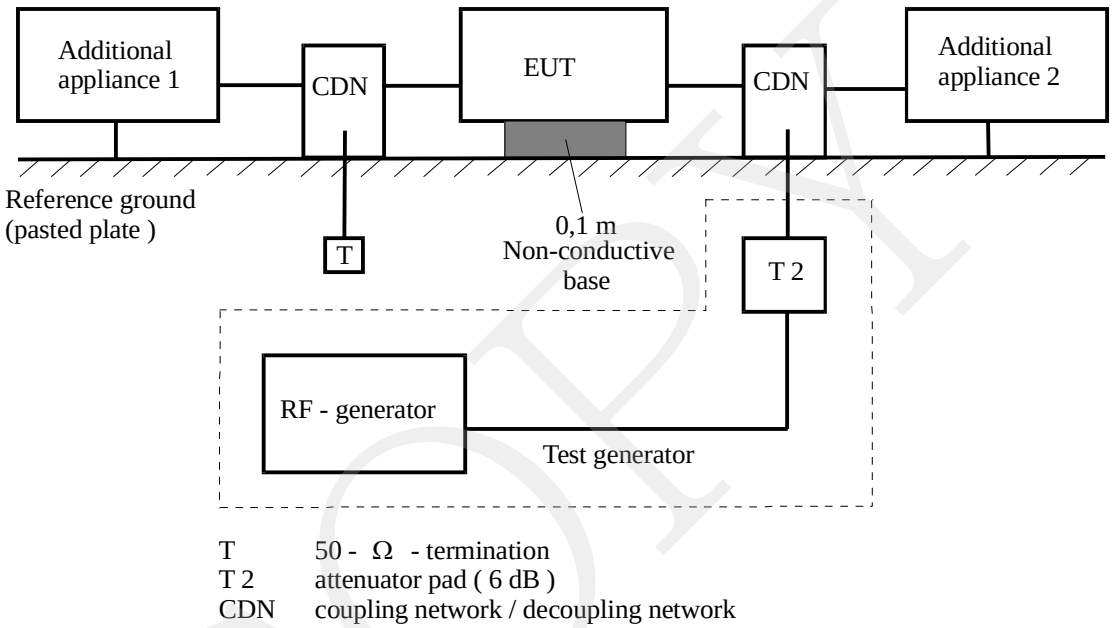
- Test configuration

The test configuration is in correspondence to the standard IEC/EN 61000-4-6. The test is carried out on a wooden table with a grounded metal plate on its top. The equipment under test is placed on an insulating support of 0,1m height above this metal plate. (see picture 8)

- Test parameters and marginal conditions

The tests are carried out with a Voltage of 3V RMS (measured un-modulated) with amplitude modulated signal by a depth of 80 % by a sinusoidal signal of 1 kHz. The frequency steps in the frequency range 150 kHz - 80 MHz increments with 1 % of the actual frequency. The dwell time was 1s dependent on the EUT cycle time. The tested ports please find in the test protocol.

RF- continues conducted according to EN 61000 - 4 - 6



T	50 - Ω - termination
T 2	attenuator pad (6 dB)
CDN	coupling network / decoupling network

Picture 8

Voltage dips and interruptions

Test Equipment

a) EMC Immunity Test System (TRA2000IN6)
   For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 003
b) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 3 to 4 as number : ETSTW-EMS 002

Test Procedures

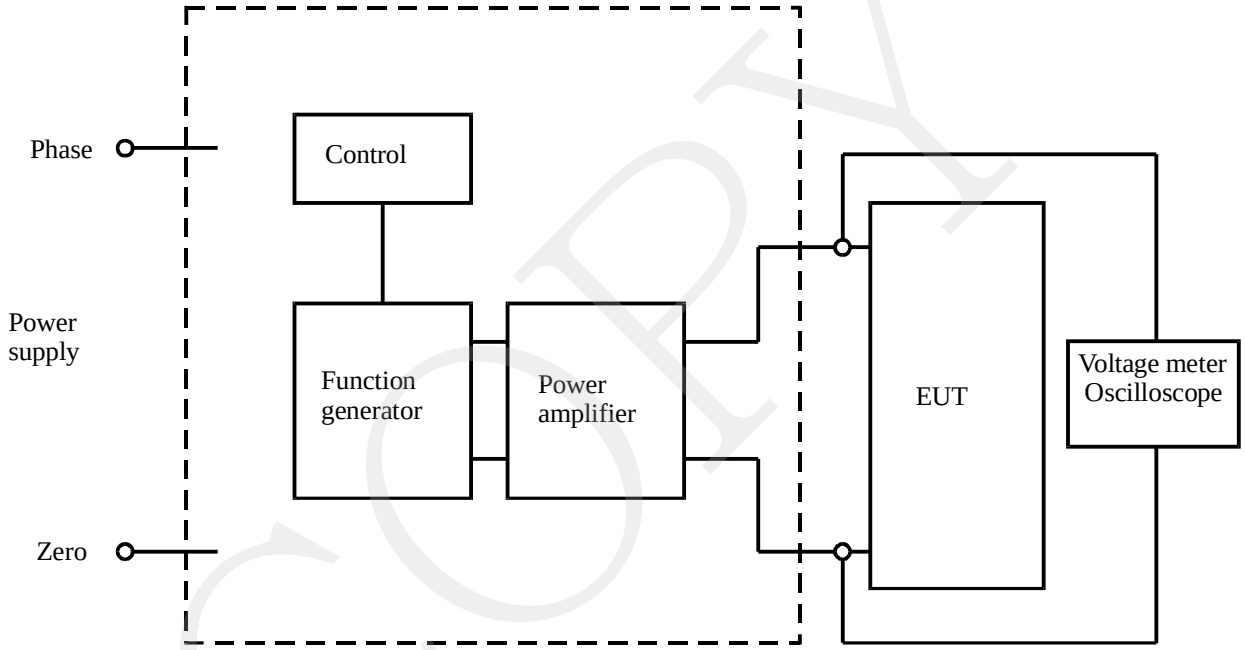
- Test configuration

The test configuration is in correspondence to the standard IEC/EN 61000-4-11. The equipment under test is placed on a wooden table with a height of 0,8 metre. (see picture 9)

- Test parameters and marginal conditions

The test levels corresponding to a reduction of the supply voltage of 30 % (for 500ms) > 95 % (for 10ms) and interruption > 95 % (5s). The applied voltage please find in the test protocol.

Voltage dips and interruption accordiing to EN 61000 - 4 - 11



Picture 9

Radio Noise Field Strength

Emission

Summary table with radiated data of the test plots

Model: UVAD200 Date: 2007/10/1
Mode: Temperature: 26 °C Engineer: Jason
Polarization: Horizontal Humidity: 60 %

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)	Note
143.09	13.35	QP	15.00	28.35	30.00	-1.65	100	320	
167.43	13.28	QP	15.10	28.38	30.00	-1.62	150	350	
215.59	15.95	QP	12.44	28.39	30.00	-1.61	188	250	
286.47	20.53	QP	14.97	35.50	37.00	-1.50	30	220	
429.06	14.54	peak	18.44	32.98	37.00	-4.02	120	120	
572.73	14.06	QP	21.37	35.43	37.00	-1.57	30	150	
716.63	9.93	peak	23.89	33.82	37.00	-3.18	150	122	
960.72	5.66	peak	27.24	32.90	37.00	-4.10	180	210	

Polarization: Vertical

Frequency (MHz)	Reading (dBuV)	Detector	Factor (dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Table Degree (Deg.)	Ant. High (cm)	Note
143.19	13.46	QP	15.00	28.46	30.00	-1.54	100	125	
166.89	13.16	QP	15.12	28.28	30.00	-1.72	120	120	
177.72	14.17	QP	14.23	28.40	30.00	-1.60	150	150	
240.04	20.85	QP	13.57	34.42	37.00	-2.58	100	250	
260.50	16.13	peak	14.10	30.23	37.00	-6.77	260	210	
479.56	15.63	QP	19.58	35.21	37.00	-1.79	185	350	
572.14	10.94	peak	21.36	32.30	37.00	-4.70	210	330	
960.72	5.97	peak	27.24	33.21	37.00	-3.79	220	400	

Note
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
2. **The formula of measured value as: Test Result = Reading + Correction Factor**
3. **Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
4. **All not in the table noted test results are more than 20 dB below the relevant limits.**
5. **See attached diagram as appendix.**

Conducted Emission

Emission

Model: UVAD200 Date: 2007/10/1
Mode: Temperature: 26 °C Engineer: Jason
Polarization: N Humidity: 60 %

Frequency (MHz)	Reading (dBuV) QP	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV) QP	Result (dBuV) Ave.	Limit (dBuV) QP	Limit (dBuV) Ave.	Margin (dB)	Note
0.1535	29.89	6.51	10.10	39.99	16.61	65.81	55.81	-25.82	
0.2584	33.84	22.46	10.10	43.94	32.56	61.48	51.48	-17.54	
0.3871	26.47	13.35	10.10	36.57	23.45	58.13	48.13	-21.56	
1.27	27.88	14.49	10.10	37.98	24.59	56	46	-18.02	
1.535	26.57	15.32	10.10	36.67	25.42	56	46	-19.33	
21.0556	21.28	14.30	10.10	31.38	24.40	60	50	-25.60	

Polarization: L1

Frequency (MHz)	Reading (dBuV) QP	Reading (dBuV) Ave.	Factor (dB) Corr.	Result (dBuV) QP	Result (dBuV) Ave.	Limit (dBuV) QP	Limit (dBuV) Ave.	Margin (dB)	Note
0.1527	29.87	9.27	10.10	39.97	19.37	65.85	55.85	-25.88	
0.2243	31.81	10.8	10.10	41.91	20.9	62.66	52.66	-20.75	
0.4343	27.65	11.29	10.10	37.75	21.39	57.17	47.17	-19.42	
1.005	23.45	9.36	10.10	33.55	19.46	56	46	-22.45	
1.5549	29.31	17.58	10.10	39.41	27.68	56	46	-16.59	
21.75	18.79	11.40	10.10	28.89	21.50	60	50	-28.50	

Note
1. **Correction Factor = Antenna factor + Cable loss - Preamplifier**
2. **The formula of measured value as: Test Result = Reading + Correction Factor**
3. **Detector function in the form : PK = Peak, QP = Quasi Peak, AV = Average**
4. **All not in the table noted test results are more than 20 dB below the relevant limits.**
5. **See attached diagram as appendix.**
6. **T-LISN does not need to test is according to customer's request.**

Electrostatic Discharge

ESD

Standard : IEC/EN 61000 - 4 - 2

Device : UVAD200

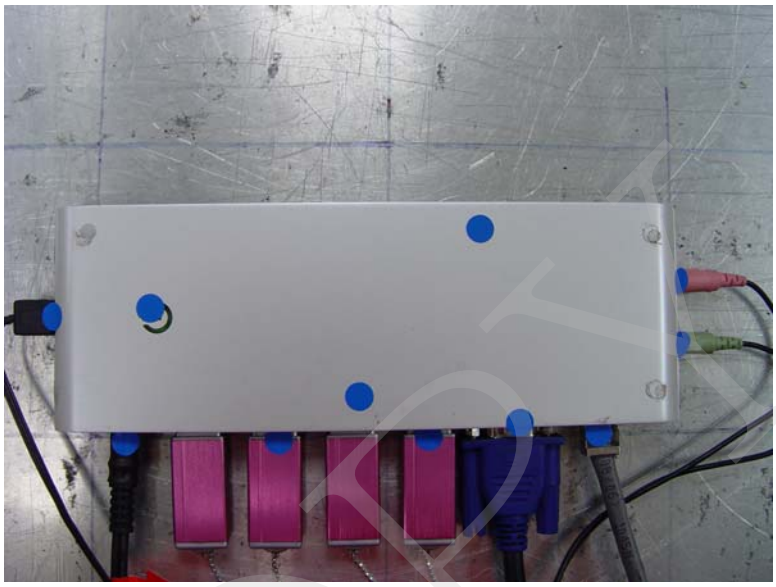
Date : October 08, 2007

Temperature : 24.8 °C
Pressure : 990 hPa
Rel. humidity: 50 %

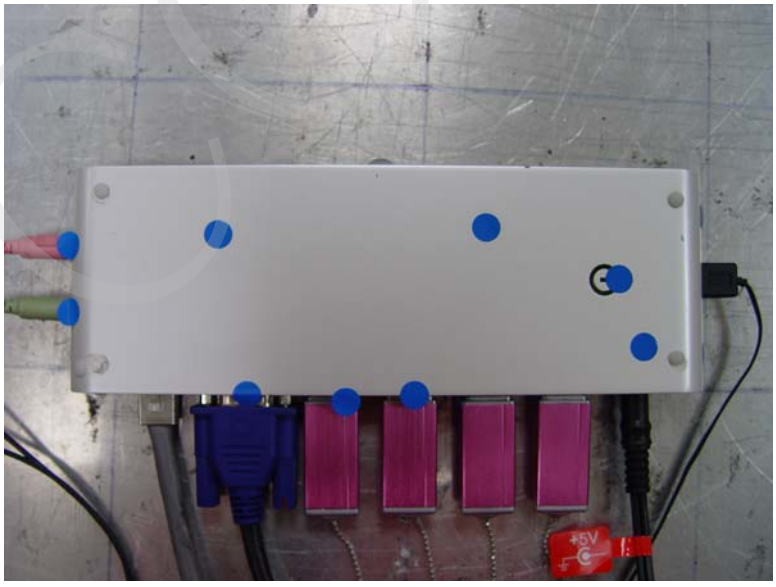
Test point	Table (T) Floor (F)	Contact (C) Air (A)	Voltage (kV)	Polarity (+ / -)	Note
Housing	T	A	2, 4, 8	+ / -	B
Housing	T	C	2, 4	+ / -	B
Indirect	T	C	2, 4	+ / -	B

ESD discharge points

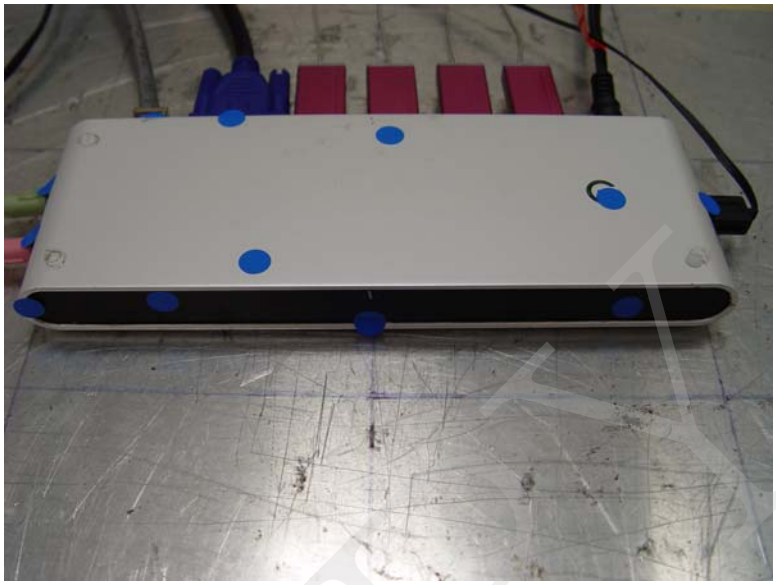
The top of EUT



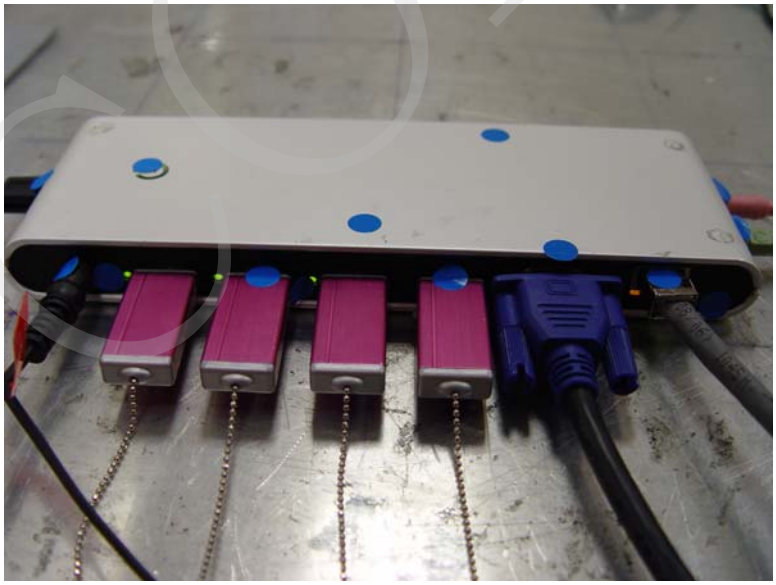
The bottom of EUT



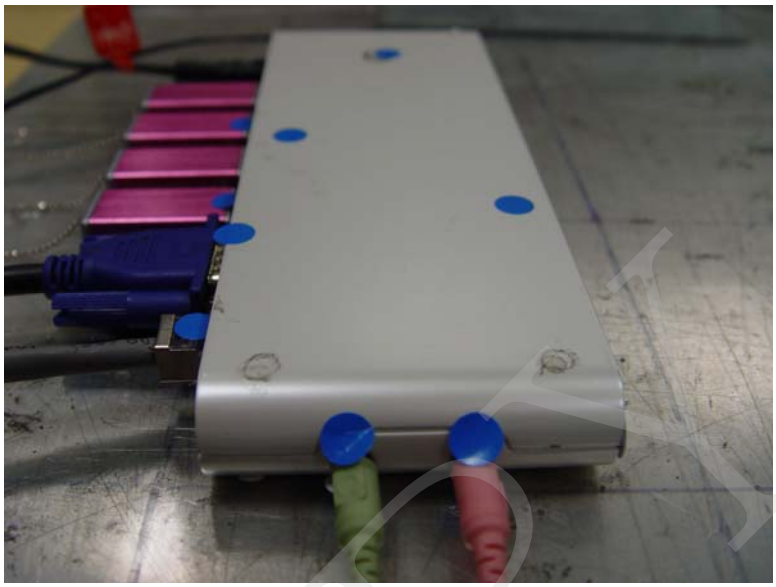
The front of EUT



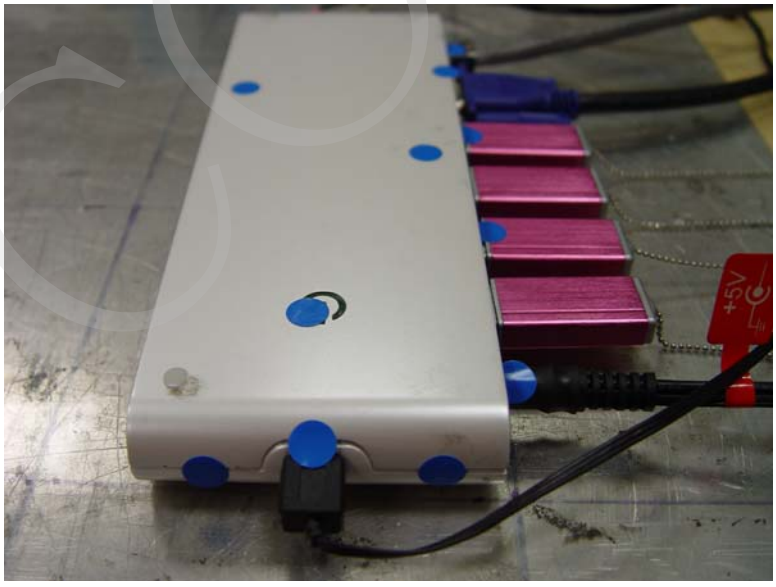
The back of EUT



The left of EUT



The right of EUT



Note:

- A: Normal performance within the specification.
- B: Temporary degradation or less of function or performance which is self recoverable
- C: Temporary degradation or loss of function or perform. which requires. operate intervention or system reset
- D: Degradation or loss of function which is not recoverable due to damage of equipment (components) or software, or loss of data.

NA: Not Applicable

Explanation: ./.

Interference Immunity Against Electromagnetic Irradiation

RF Field

Standard : IEC/EN 61000 – 4 – 3

Device : UVAD200

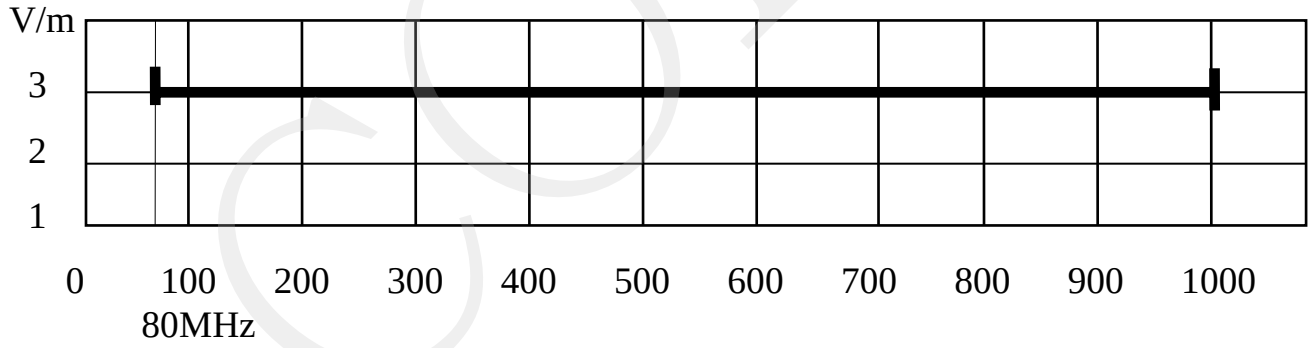
Date : October 08, 2007

Temperature	: 23.9	°C
Pressure	: 921	hPa
Rel. humidity	: 52	%

Testequipment : Anechoic Chamber, Generator SMG (R&S), Monitoring System, Amplifier 10W1000/150L (ar), Antenna SAS-200/521 (AHS)

Severity Level : 2 (3V/m) Modulation Frequency : 1kHz (80%AM)

Pulsmodulation : 1 Hz (0,5s on;0,5s off)



Note :

☒ A : No loss of performance or function

☐ B : Temporary loss of function or performance which is self recoverable

☐ C : Temporary loss of function or perform. which req. operator intervention or system reset

☐ D : Loss of function which is not recoverable

Electrical Fast Transients

Burst

Standard : IEC/EN 61000 – 4 – 4

Device : UVAD200

Date : October 08, 2007

Temperature : 23.9 °C
Pressure : 921 hPa
Rel. humidity: 52 %

Testport	Voltage (kV)	Polarity (+ / -)	Waveform T_r / T_h	Repetiton Frequency (kHz)	Note
AC-Power line	1	+ / -	5/50 ns	5	A

Note :
A : No loss of performance or function
B : Temporary loss of function or performance which is self recoverable
C : Temporary loss of function or perform. which req. operate. intervention or system reset
D : Loss of function which is not recoverable

Transients common & diff. mode

Surge

Standard : IEC/EN 61000 - 4 - 5

Device : UVAD200

Date : October 08, 2007

Temperature : 23.9 °C
Pressure : 921 hPa
Rel. humidity : 52 %

Test mode	Voltage (kV)	Waveform T_r / T_h	Note
AC-line to line	1	1.2/50 µs	A

Note :
A : No loss of performance or function
B : Temporary loss of function or performance which is self recoverable
C : Temporary loss of function or perform. which req. operate. intervention or system reset
D : Loss of function which is not recoverable

continues conducted

RF - common mode

Standard : IEC/EN 61000 - 4 - 6

Device : UVAD200

Date : October 08, 2007

Temperature : 23.9 °C
Pressure : 921 hPa
Rel. humidity : 52 %

Test port	Voltage (Vrms)	Modulation Frequency	Frequency Range	Note
AC-Power line	3	1 kHz	150 kHz - 80 MHz	A

Note :
A : No loss of performance or function
B : Temporary loss of function or performance which is self recoverable
C : Temporary loss of function or perform. which req. operate. intervention or system reset
D : Loss of function which is not recoverable

Voltage dips and interruption

V - Dips

Standard : IEC/EN 61000 - 4 - 11

Device : UVAD200

Date : October 08, 2007

Temperature : 23.9 °C
Pressure : 921 hPa
Rel. humidity: 52 %

Reduction of supply voltage of	Voltage in % (in V)	Duration in ms	Note
Interruption (> 95 %)	0% (0 V)	250 (5 s)	C
Dips (>95 %)	5% (12 V)	0,5 (10ms)	A
Dips (30 %)	70% (161 V)	25 (500 ms)	A

Note : A : No loss of performance or function
B : Temporary loss of function or performance which is self recoverable
C : Temporary loss of function or perform. which req. operate. intervention or system reset
D : Loss of function which is not recoverable

Current Harmonics

Harmonics

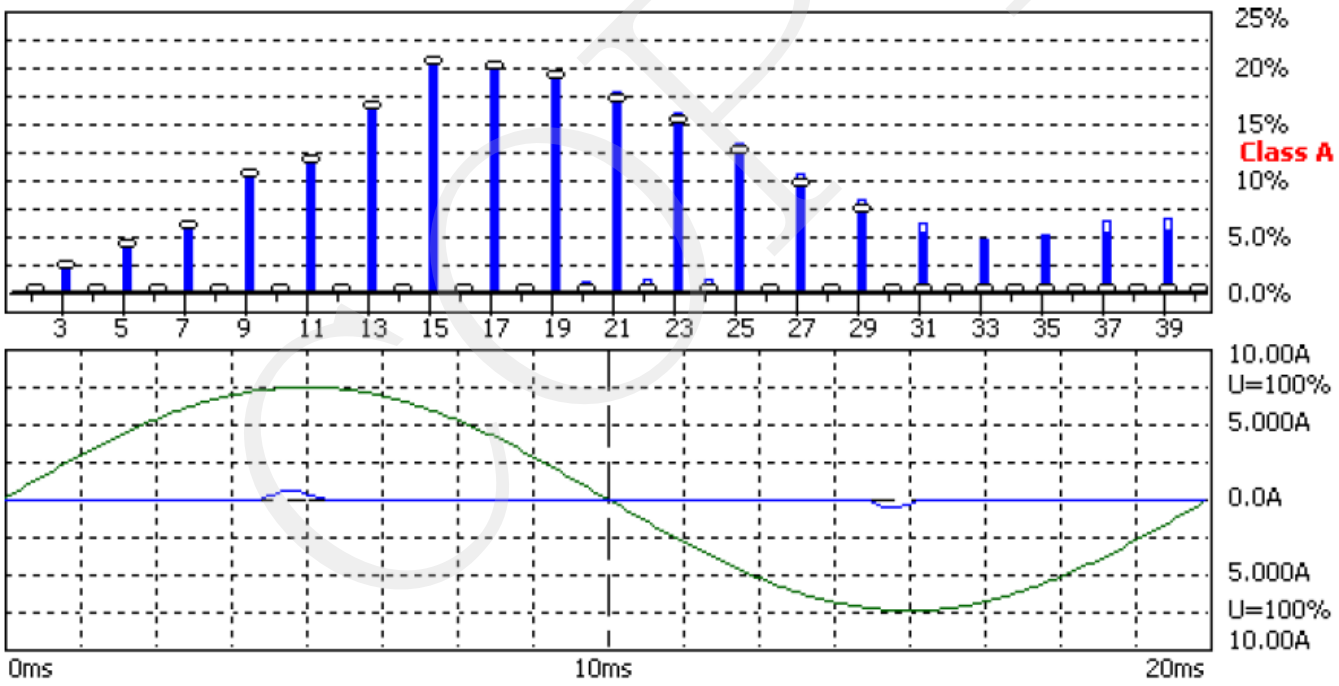
Standard : IEC/EN 61000 - 3 - 2

Device : UVAD200

Date : October 01, 2007

Class : A

Temperature	: 23.9	°C
Pressure	: 921	hPa
Rel. humidity	: 52	%



Passed : **yes** / no

Explanation: See attached diagram as next page

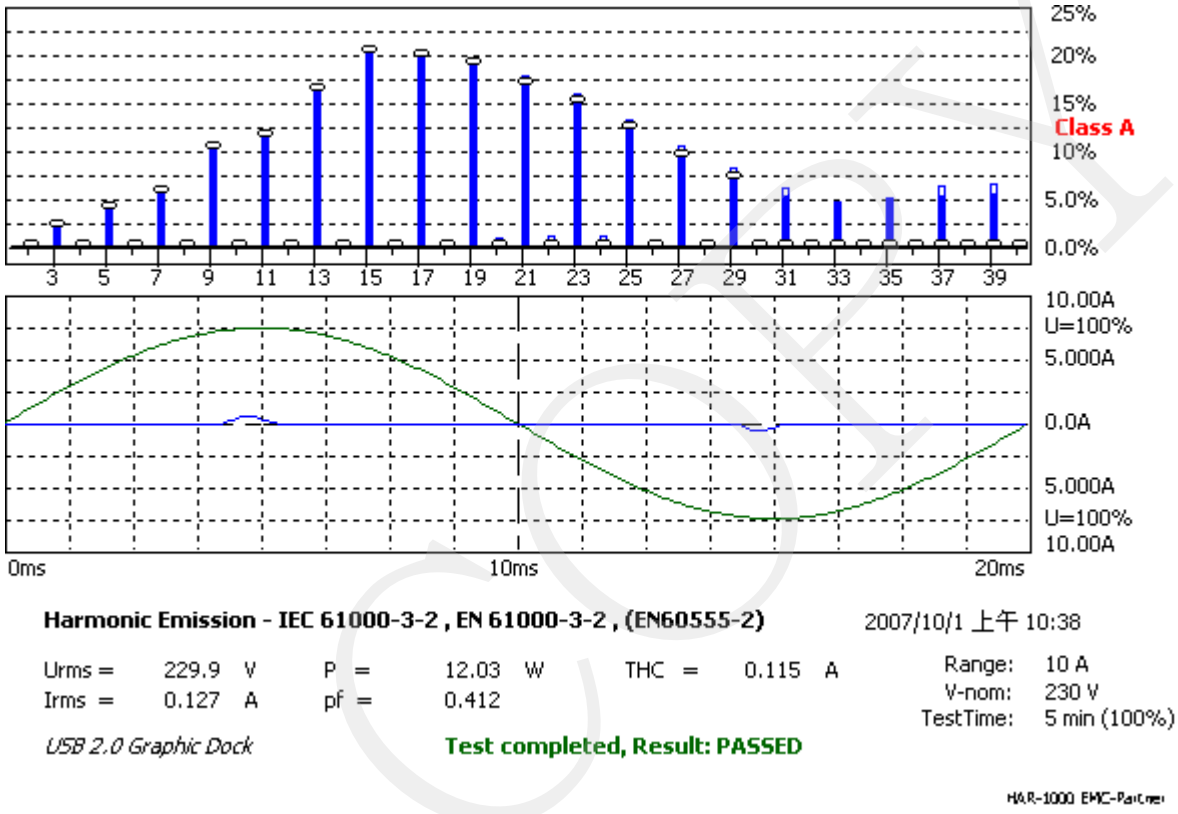
Harmonic Emission - IEC 61000-3-2 , EN 61000-3-2 , (EN60555-2)

Comply: IEC 61000-3-2 Ed.2.1 :2001 (incl. Amd.14) - IEC 61000-4-7 Ed.1.0 :1991

W6M20709-8534

HARCS Setup File : unnamed
HARCS Report File : unnamed

Operator : Jason
Unit : USB 2.0 Graphic Dock
Serialnumber : UVAD200
Remarks



Harmonic Emission - IEC 61000-3-2 , EN 61000-3-2 , (EN60555-2) 2007/10/1 上午 10:38

Urms =	229.9	V	P =	12.03	W	THC =	0.115 A
Irms =	0.127	A	pf =	0.412			

Range: 10 A
V-nom: 230 V
TestTime: 5 min (100%)

USB 2.0 Graphic Dock

Test completed, Result: PASSED

HAR-1000 EMC-Partner

Full Bar : Actual Values
Empty Bar : Maximum Values
Blue : Current , Green : Voltage , Red : Failed

Measurement

Date : 2007/10/1 ¤W¤È 10:38 V4.15

Urms =	229.9V	Freq =	50.000	Range:	10 A		
Irms =	0.127A	Ipk =	0.615A	cf =	4.846		
P =	12.03W	S =	29.19VA	pf =	0.412		

THDi = 90.8 % THDu = 0.10 % Class A

Test - Time : 5min (100 %)

Test completed, Result: PASSED

Order	Freq. [Hz]	Iavg [A]	Iavg%L [%]	Imax [A]	Imax%L [%]	Limit [A]	Status
1	50	0.0538		0.0549			
2	100	0.0000	0.0000	0.0000	0.0000	1.0800	
3	150	0.0469	2.0391	0.0476	2.0699	2.3000	
4	200	0.0000	0.0000	0.0000	0.0000	0.4300	
5	250	0.0457	4.0124	0.0464	4.0690	1.1400	
6	300	0.0000	0.0000	0.0000	0.0000	0.3000	
7	350	0.0436	5.6627	0.0446	5.7864	0.7700	
8	400	0.0000	0.0000	0.0000	0.0000	0.2300	
9	450	0.0411	10.287	0.0415	10.376	0.4000	
10	500	0.0000	0.0000	0.0000	0.0000	0.1840	
11	550	0.0381	11.546	0.0385	11.652	0.3300	
12	600	0.0000	0.0000	0.0000	0.0000	0.1533	
13	650	0.0344	16.404	0.0348	16.567	0.2100	
14	700	0.0000	0.0000	0.0000	0.0000	0.1314	
15	750	0.0306	20.387	0.0311	20.752	0.1500	
16	800	0.0000	0.0000	0.0000	0.0000	0.1150	
17	850	0.0265	20.035	0.0269	20.291	0.1324	
18	900	0.0000	0.0000	0.0000	0.0000	0.1022	
19	950	0.0226	19.048	0.0226	19.070	0.1184	
20	1000	0.0000	0.0000	0.0006	0.6634	0.0920	
21	1050	0.0184	17.145	0.0189	17.660	0.1071	
22	1100	0.0000	0.0000	0.0006	0.7298	0.0836	
23	1150	0.0147	14.978	0.0153	15.598	0.0978	
24	1200	0.0000	0.0000	0.0006	0.7961	0.0767	
25	1250	0.0111	12.298	0.0116	12.885	0.0900	
26	1300	0.0000	0.0000	0.0000	0.0000	0.0708	
27	1350	0.0080	9.6453	0.0085	10.254	0.0833	
28	1400	0.0000	0.0000	0.0000	0.0000	0.0657	
29	1450	0.0055	7.1404	0.0061	7.8668	0.0776	
30	1500	0.0000	0.0000	0.0000	0.0000	0.0613	
31	1550	0.0000	0.0000	0.0043	5.8865	0.0726	
32	1600	0.0000	0.0000	0.0000	0.0000	0.0575	
33	1650	0.0000	0.0000	0.0031	4.4759	0.0682	
34	1700	0.0000	0.0000	0.0000	0.0000	0.0541	
35	1750	0.0000	0.0000	0.0031	4.7472	0.0643	
36	1800	0.0000	0.0000	0.0000	0.0000	0.0511	
37	1850	0.0000	0.0000	0.0037	6.0221	0.0608	
38	1900	0.0000	0.0000	0.0000	0.0000	0.0484	
39	1950	0.0000	0.0000	0.0037	6.3477	0.0577	
40	2000	0.0000	0.0000	0.0000	0.0000	0.0460	

Important:
- without "1000-4-7 Ed. 2" (DFT-window is 16 periods)

Voltage Fluctuation

Flicker

Standard : IEC/EN 61000 - 3 - 3

Device : UVAD200

Date : October 01, 2007

Temperature : 23.9 °C
Pressure : 921 hPa
Rel. humidity: 52 %

P_{st}	0.07
$P_{lt} < 0,65$	pass
dc < 3,3%	pass
dt < 3%	pass
d max (%)	pass

Passed : **yes** / no

Explanation: See attached diagram as next page

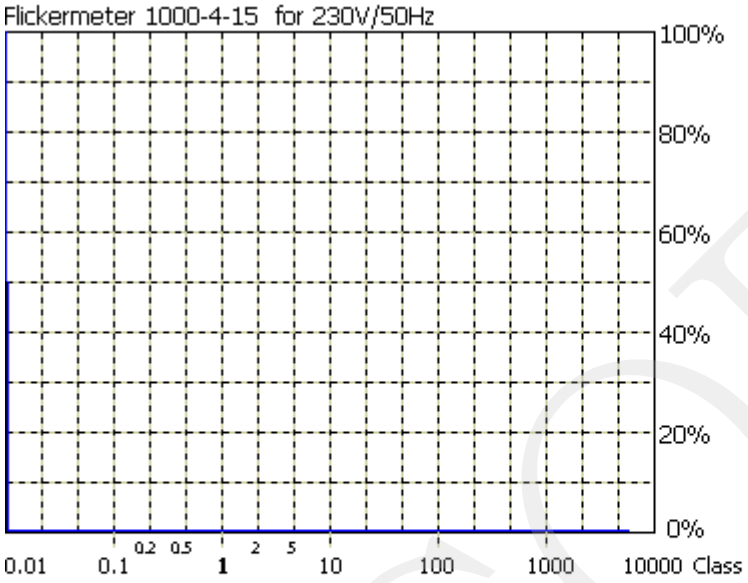
Flicker Emission - IEC 61000-3-3 , EN 61000-3-3 , (EN60555-3)

Comply: IEC 61000-3-3 Ed.1.1 :2002 (incl. Amd.1) - IEC 61000-4-15 Ed.1.0 :1997 (incl. Amd.1)

W6M20709-8534

HARCS Setup File : unnamed
HARCS Report File : unnamed

Operator : Jason
Unit : USB 2.0 Graphic Dock
Serialnumber : UVAD200
Remarks



Actual Flicker (Fli): 0.00

Short-term Flicker (Pst): 0.07
Limit (Pst): 1.00

Long-term Flicker (Plt): 0.06
Limit (Plt): 0.65

Maximum Relative Volt. Change (dmax): 0.00%
Limit (dmax): 4.00%

Relative Steady-state Voltage Change (dc): 0.06%
Limit (dc): 3.30%

Maximum Interval exceeding 3.30% (dt) 0.00ms
Limit (dt>Lim): 500ms

Flicker Emission - IEC 61000-3-3 , EN 61000-3-3 , (EN60555-3)

2007/10/1 上午 10:51

Urms = 229.9 V P = 14.73 W
Irms = 0.146 A pf = 0.437

Range: 50 A
V-nom: 230 V
TestTime: 120 min (852%)

USB 2.0 Graphic Dock

Test aborted, Result: PASSED

HAR-1000 EMC-Partner

Full Bar : Actual Values
Empty Bar : Maximum Values
Circles : Average Values
Blue : Current , Green : Voltage , Red : Failed

Measurement

Date : 2007/10/1 ¤W¤È 10:51 V4.15

Urms = 229.9V Freq = 50.000 Range: 50 A
Irms = 0.146A Ipk = 0.684A cf = 4.667

P = 14.73W S = 33.68VA pf = 0.437

Test - Time : 12 x 10min = 120min (852 %)

LIN (Line Impedance Network) : L: 0.24ohm +j0.15ohm N: 0.16ohm +j0.10ohm

Limits : Plt : 0.65 Pst : 1.00
dmax : 4.00 % dc : 3.30 %
dtLim: 3.30 % dt>Lim: 500ms

Test aborted, Result: PASSED

1
2

Appendix

A Measurement diagrams

1. Radiated Emission

(The measurement diagrams plots attached below are preliminary wideband scan with a peak detector and for reference only. The final test results are listed on page 23.)

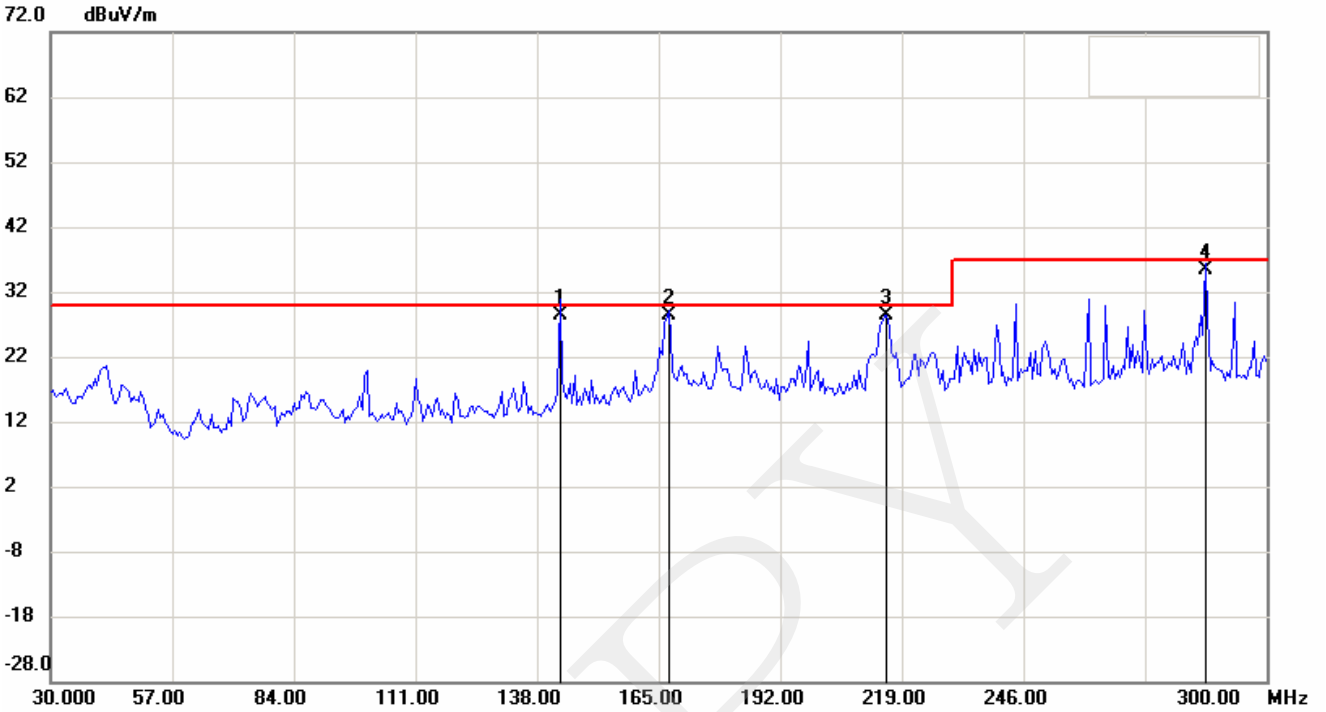
2 . Conducted Emission

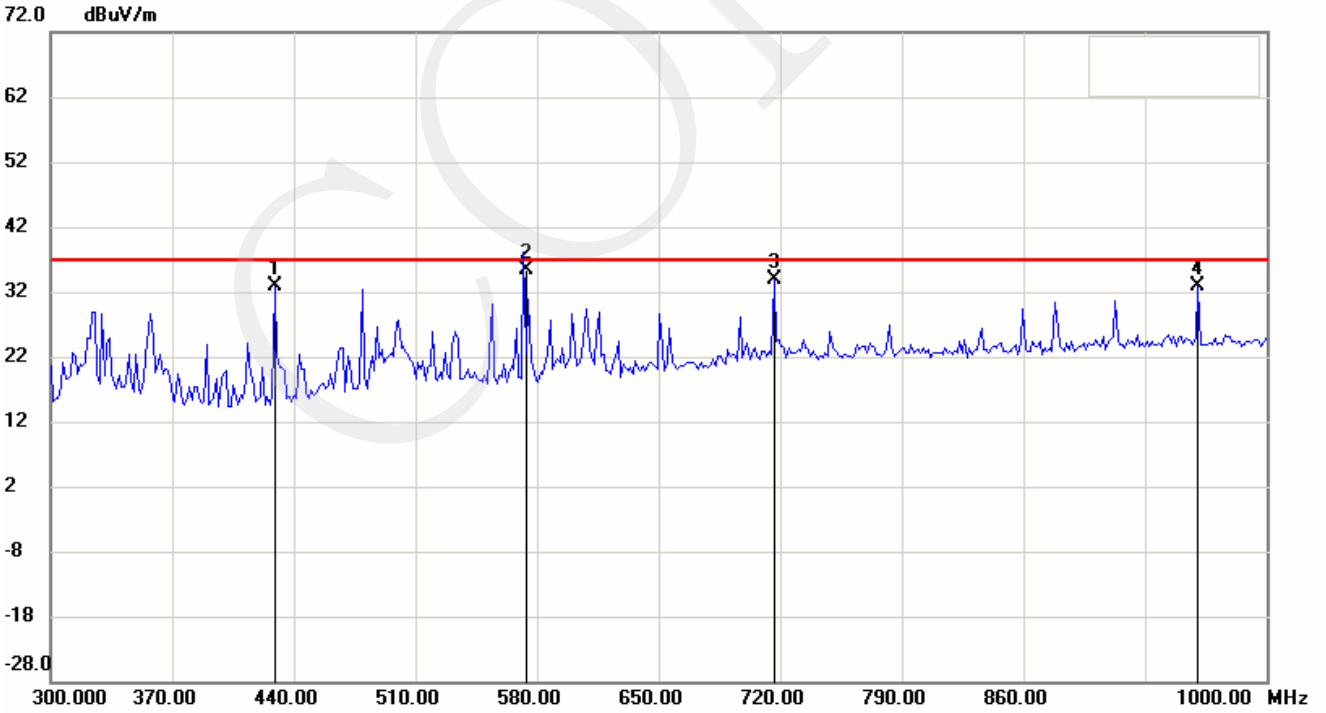
(The measurement diagrams plots attached below are preliminary wideband scan with a peak and average detector for reference only. The final test results are listed on page 24.)

B Photos

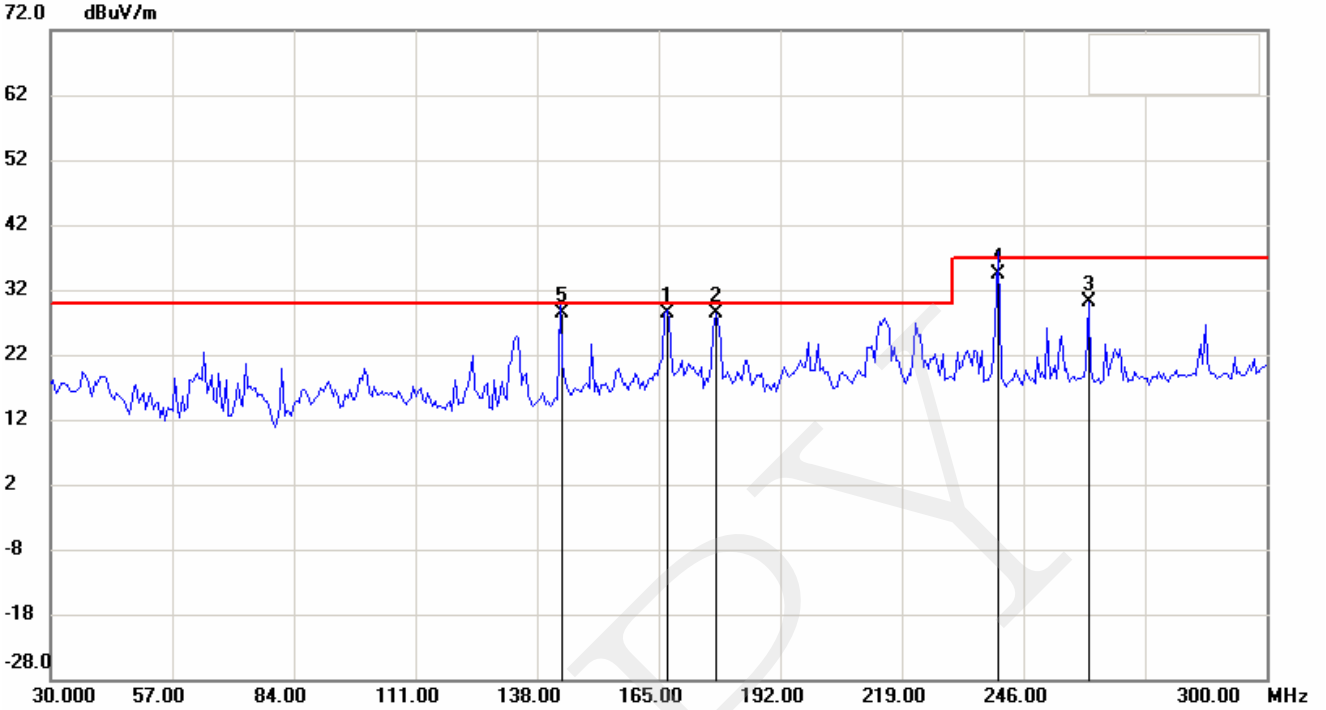
1. External Photos
2. Internal Photos
3. Set Up Photo of Radiated Emission
4. Set Up Photo of Conducted Emission
5. Set Up Photo of Current Harmonics& Voltage Fluctuations
6. Set Up Photo of ESD
7. Set Up Photo of RF-Field
8. Set Up Photo of EFT
9. Set Up Photo of Surge& DIP
10. Set Up Photo of CS

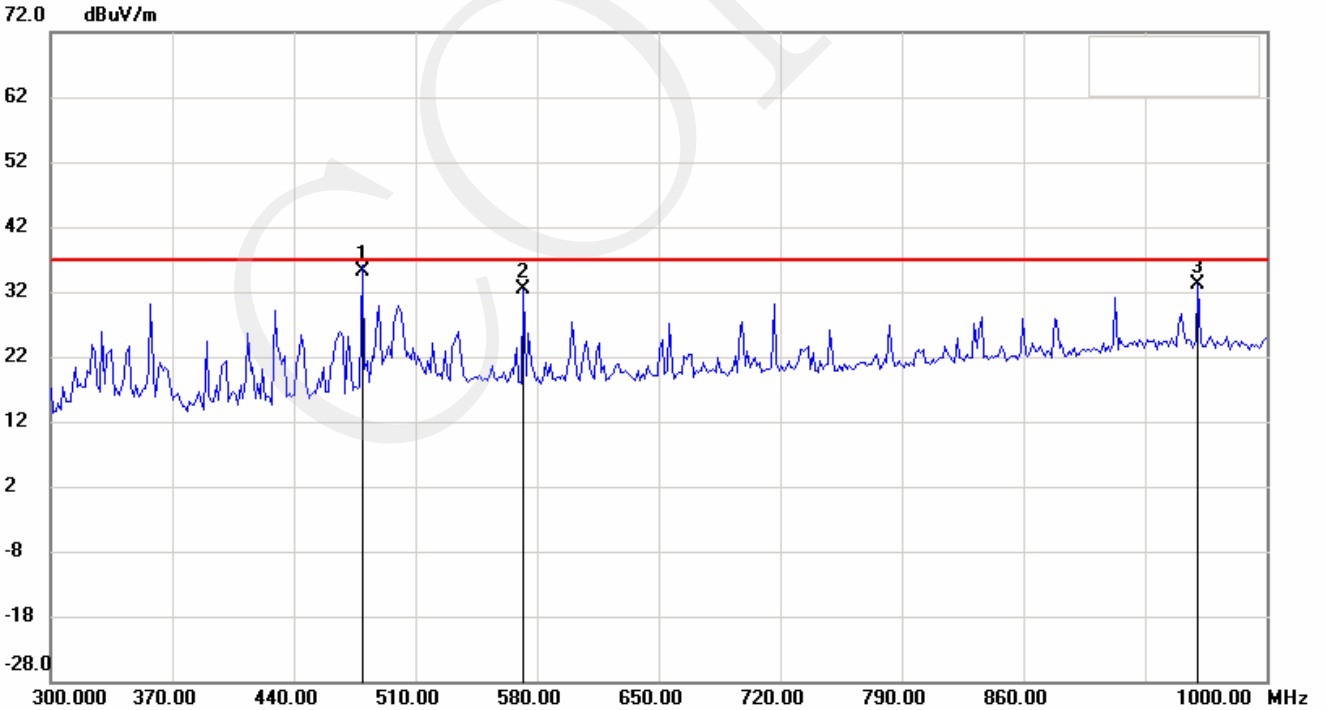
Radiated Emission
Antenna Polarization H





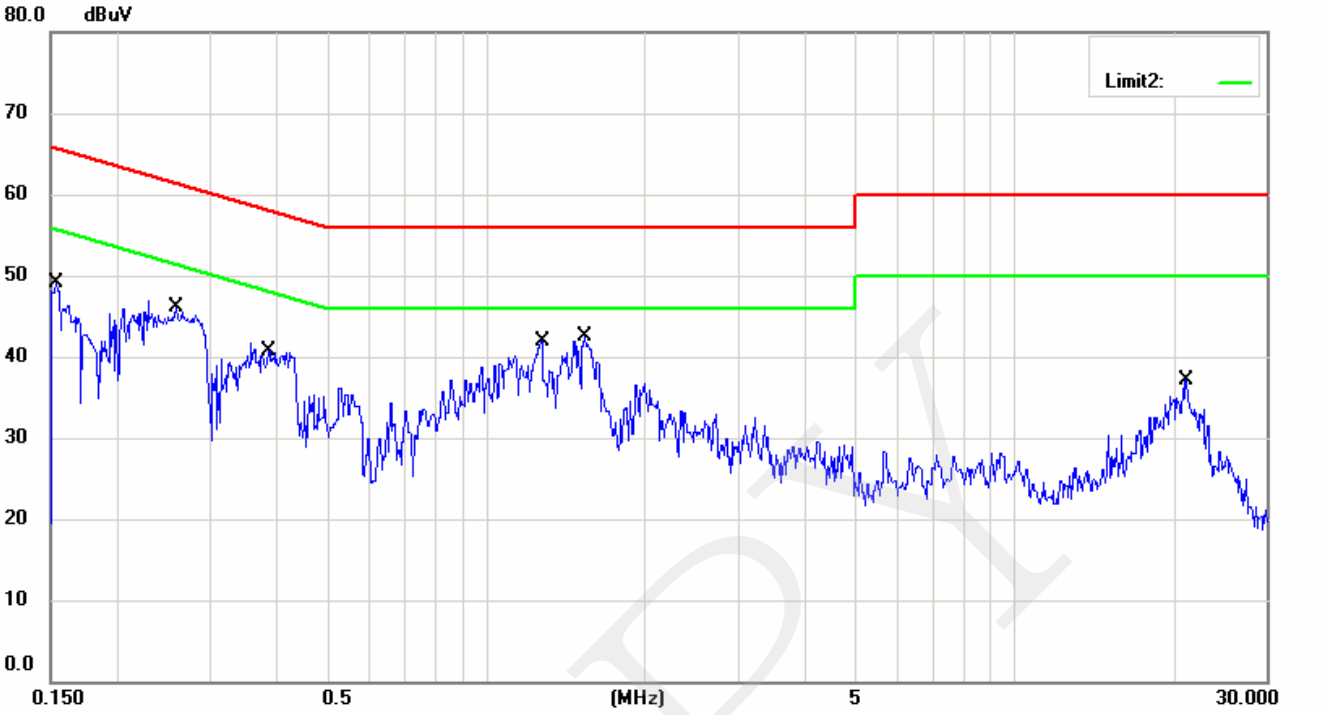
Antenna Polarization V



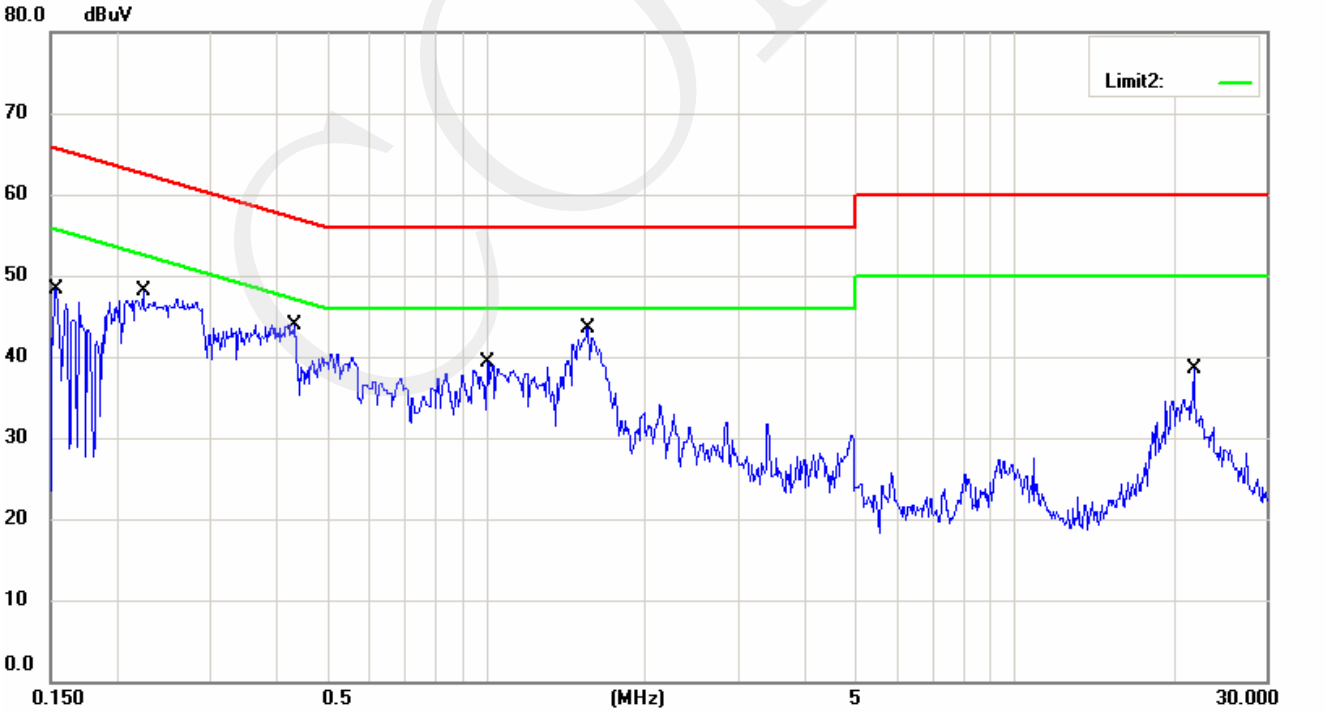


Conducted Emission

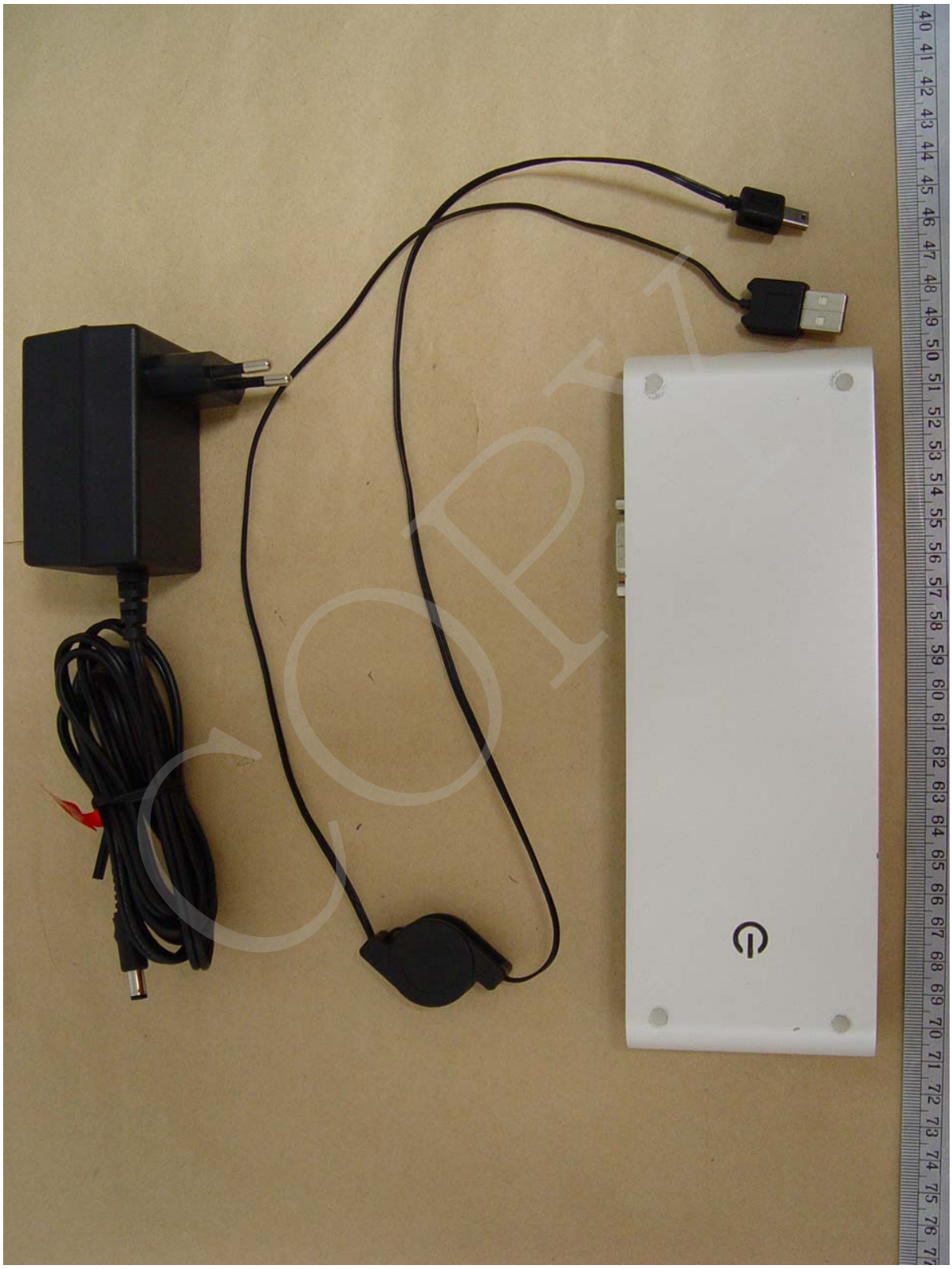
LISN N



LISN L1



External Photos

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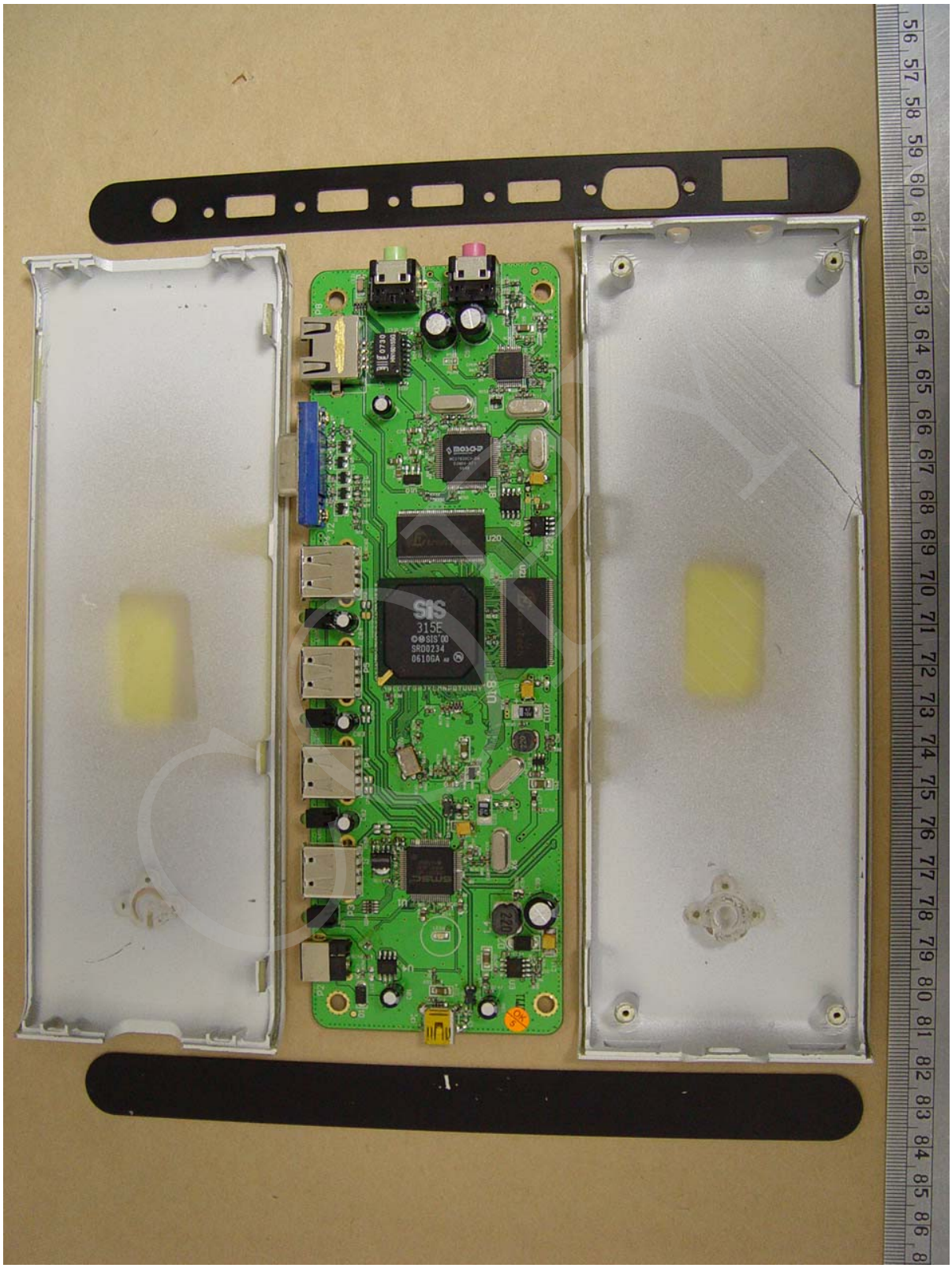
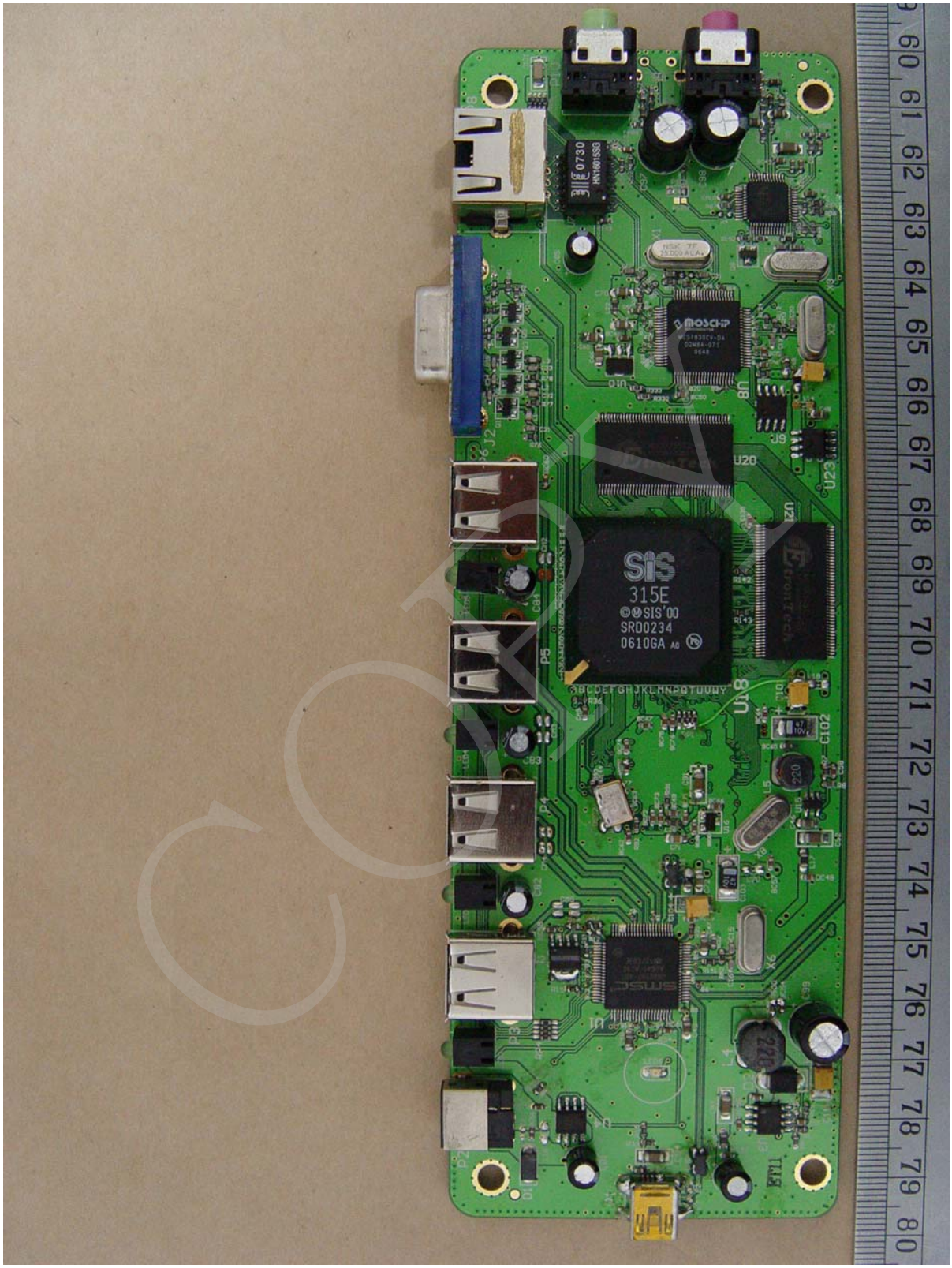
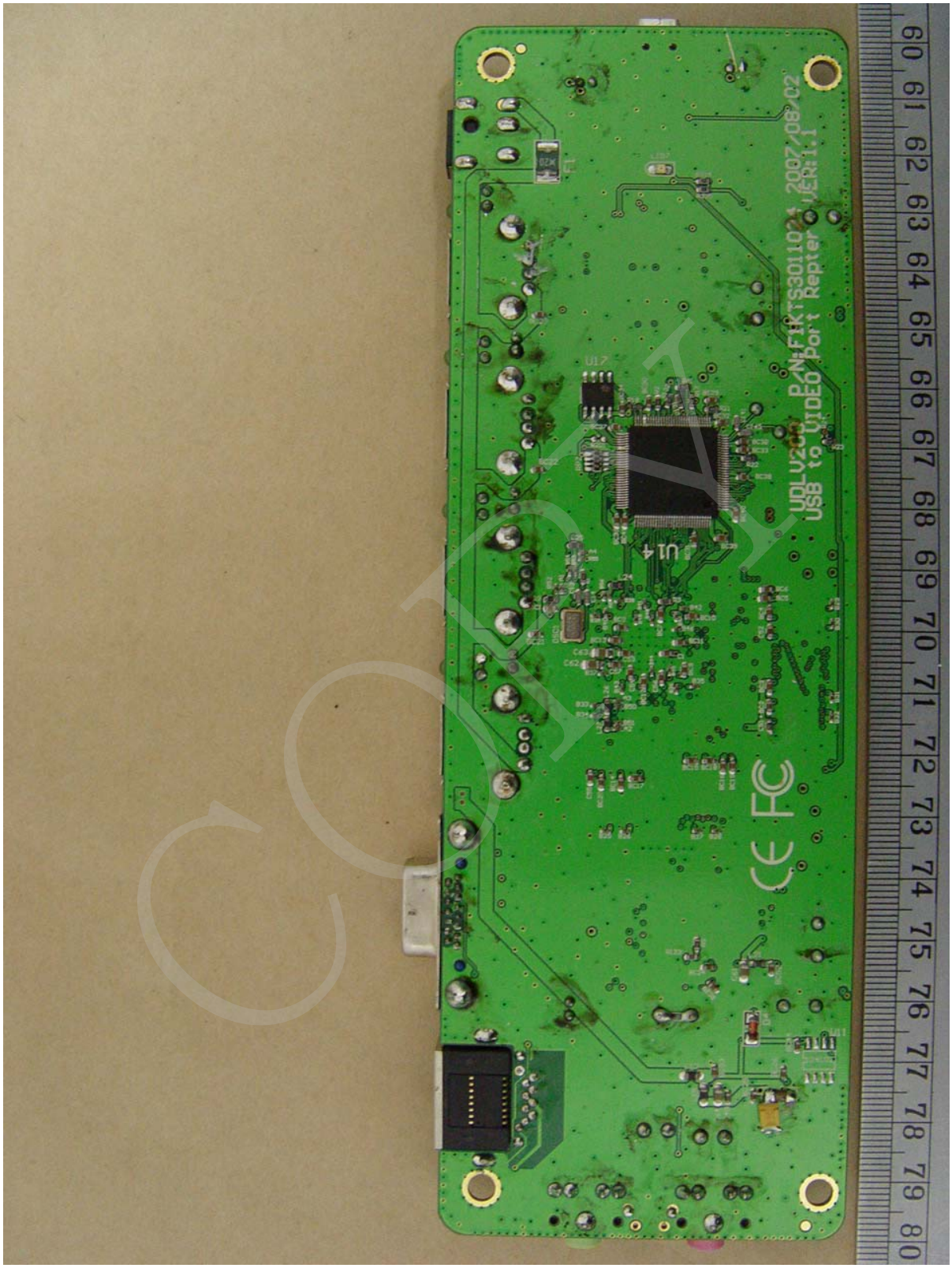
FAIRWAY
ELECTRONIC CO., LTD.
型號 MODEL: WN20U-050
A
輸入 INPUT: 100-240V~
1.0A max. 50-60Hz
LPS
LISTED
E199447
49EK
R33132
輸出 OUTPUT: +5V ⎓ 3.0A
Tested To Comply
With FCC Standards
FOR HOME OR OFFICE USE
I.T.E. Power Supply
ALSO LISTED AS
Audio/Video Apparatus
MADE IN CHINA "GX"
JET Brighton Net Co., Ltd.
INPUT : AC100-240V 50-60Hz 30-50VA
OUTPUT : DC5V 3A
F
JL
COPY

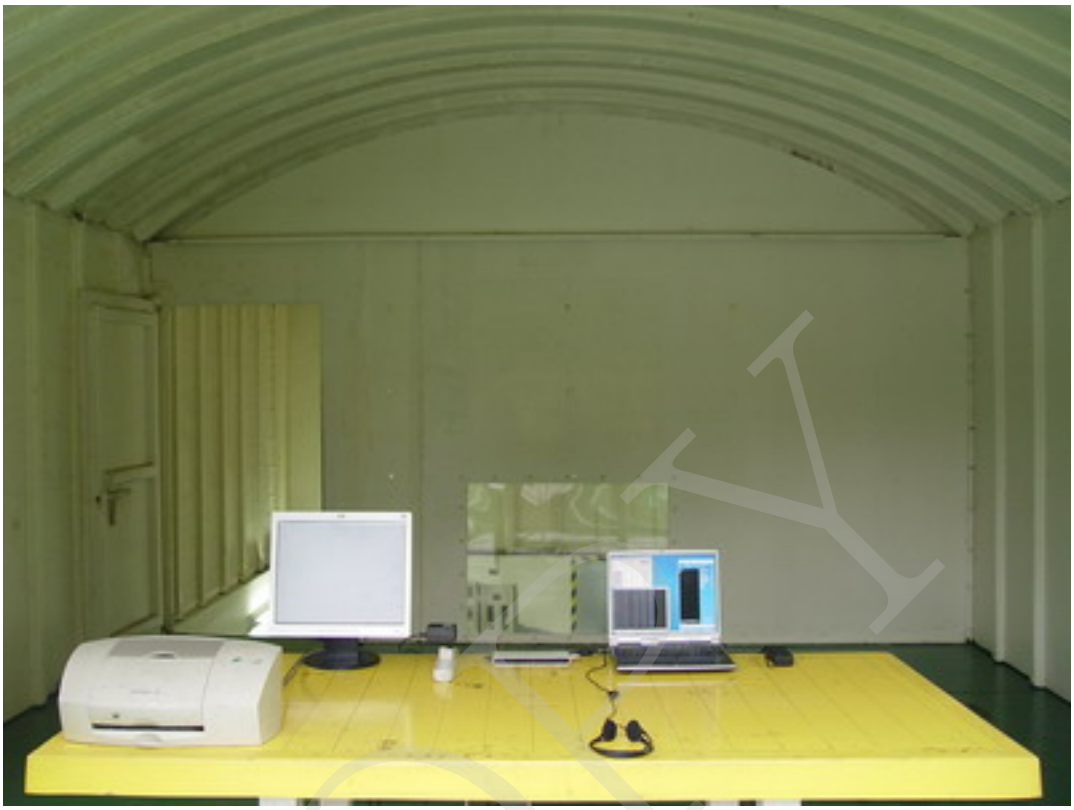
Internal Photos

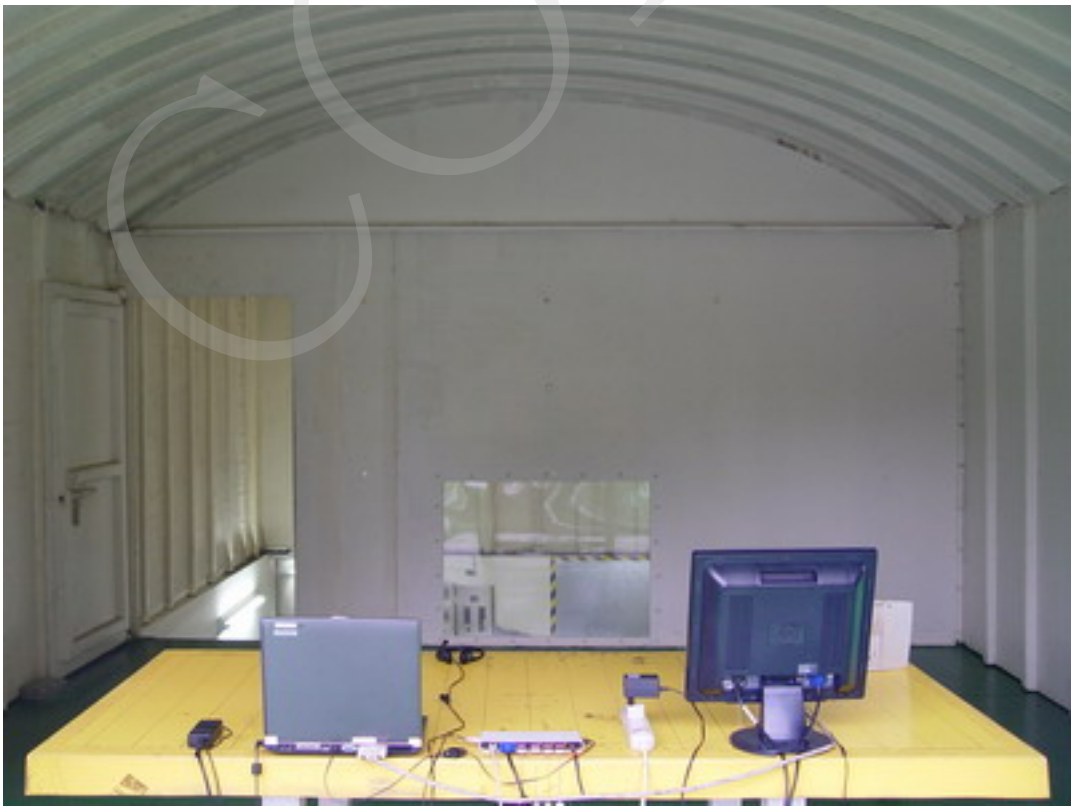




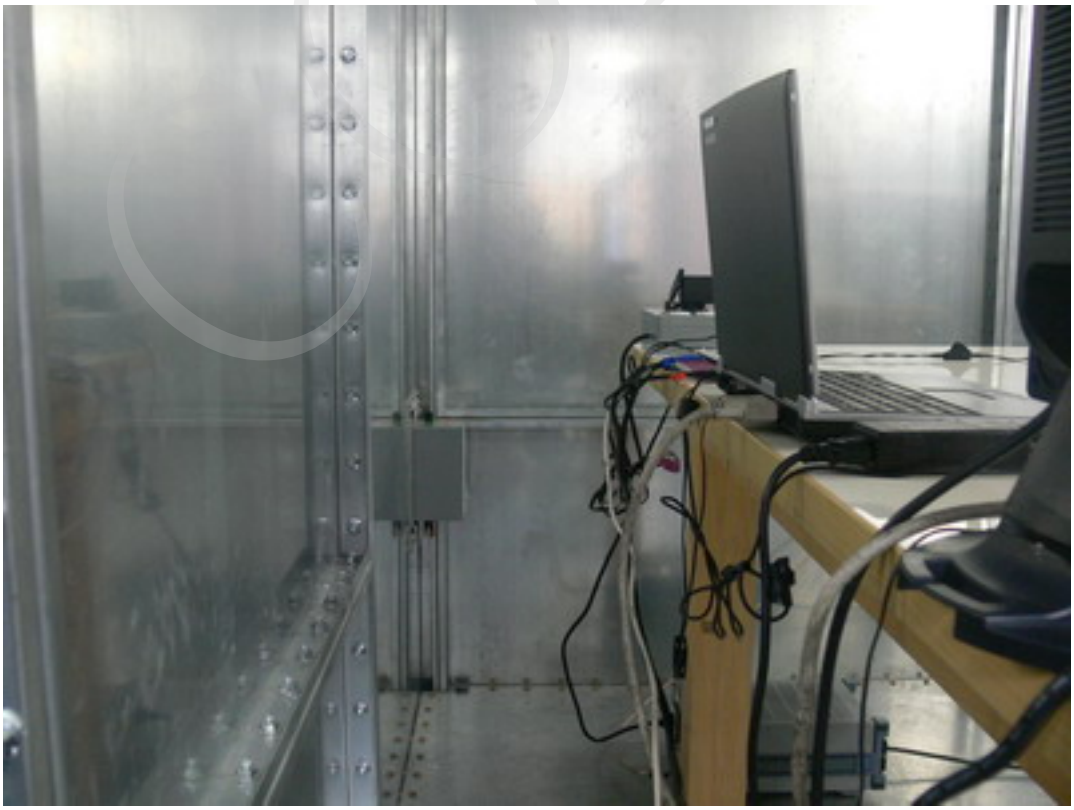


Set Up Photo of Radiated Emission



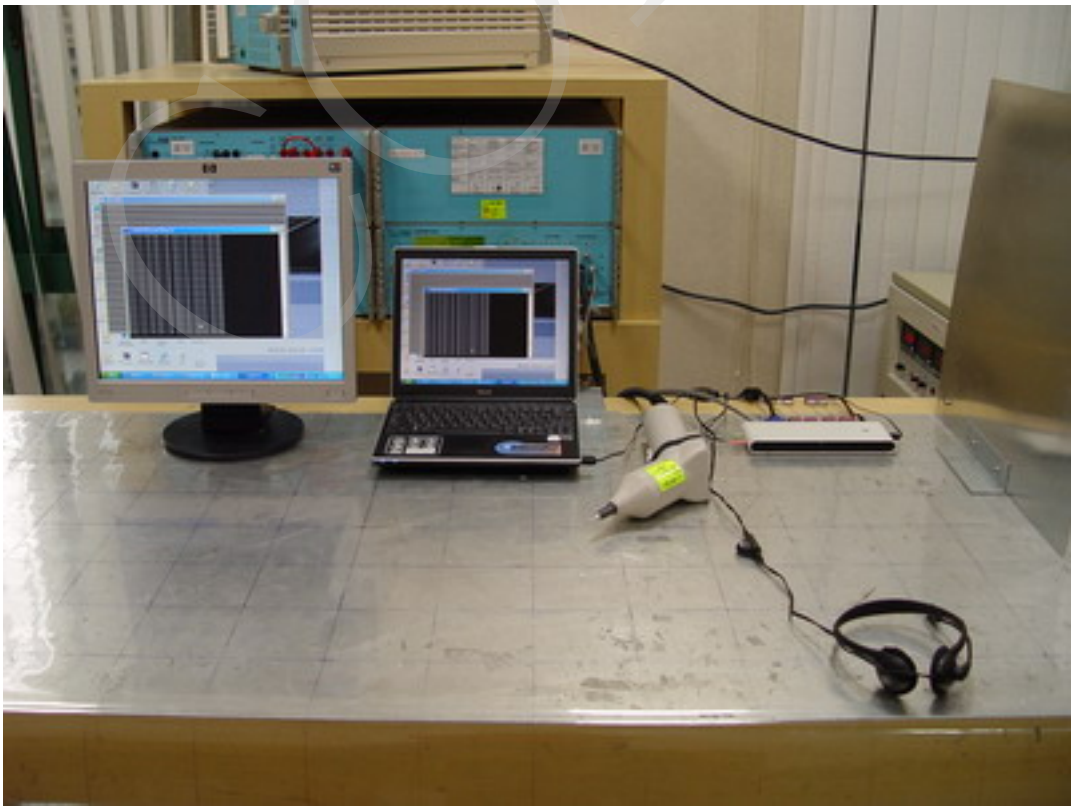


Set Up Photo of Conducted Emission

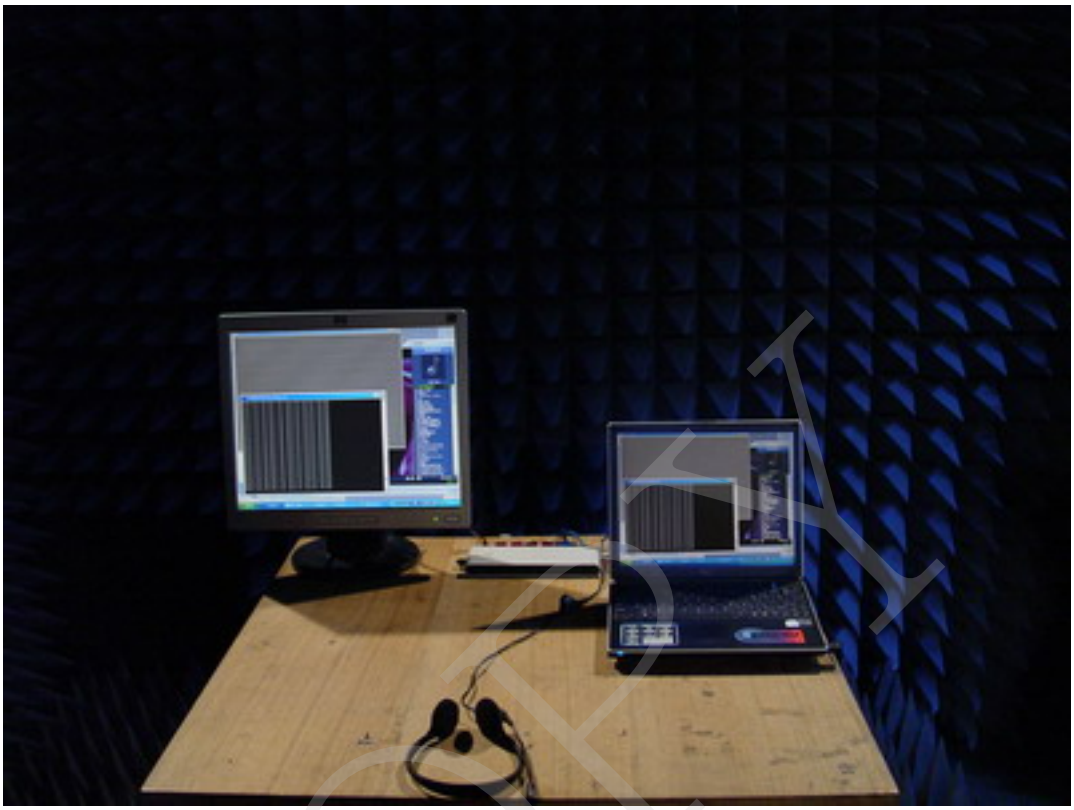


Set Up Photo of Current Harmonics& Voltage Fluctuations

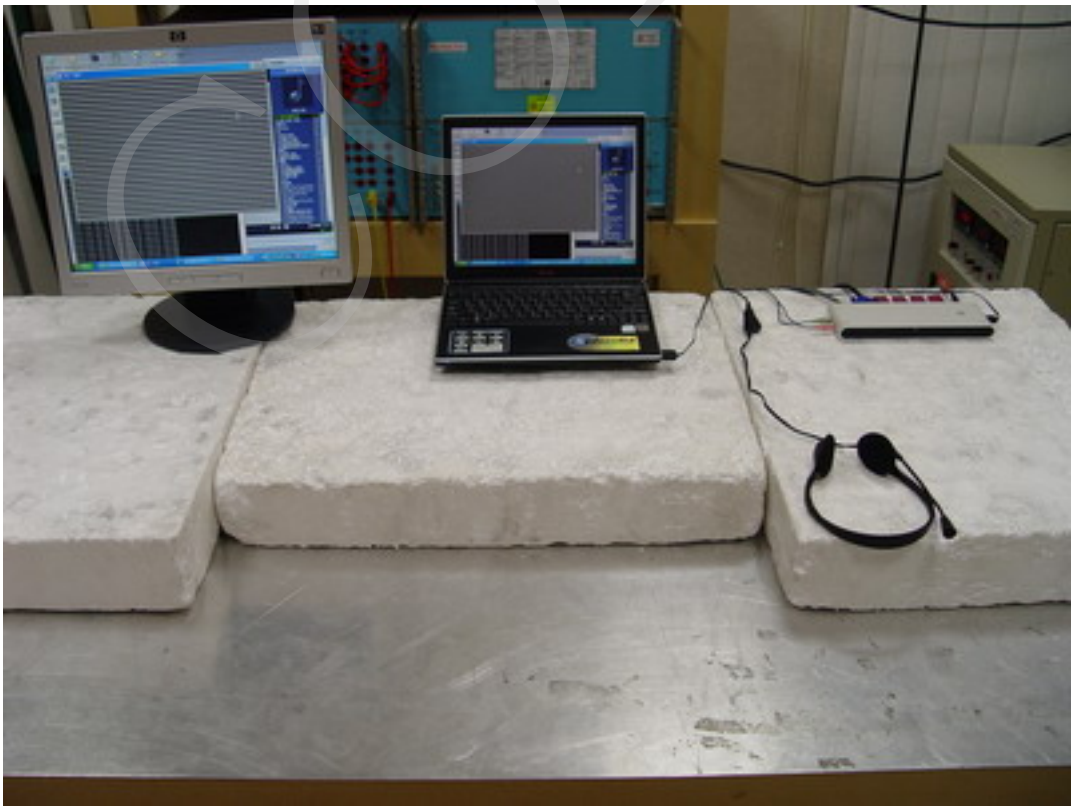
Set Up Photo of ESD



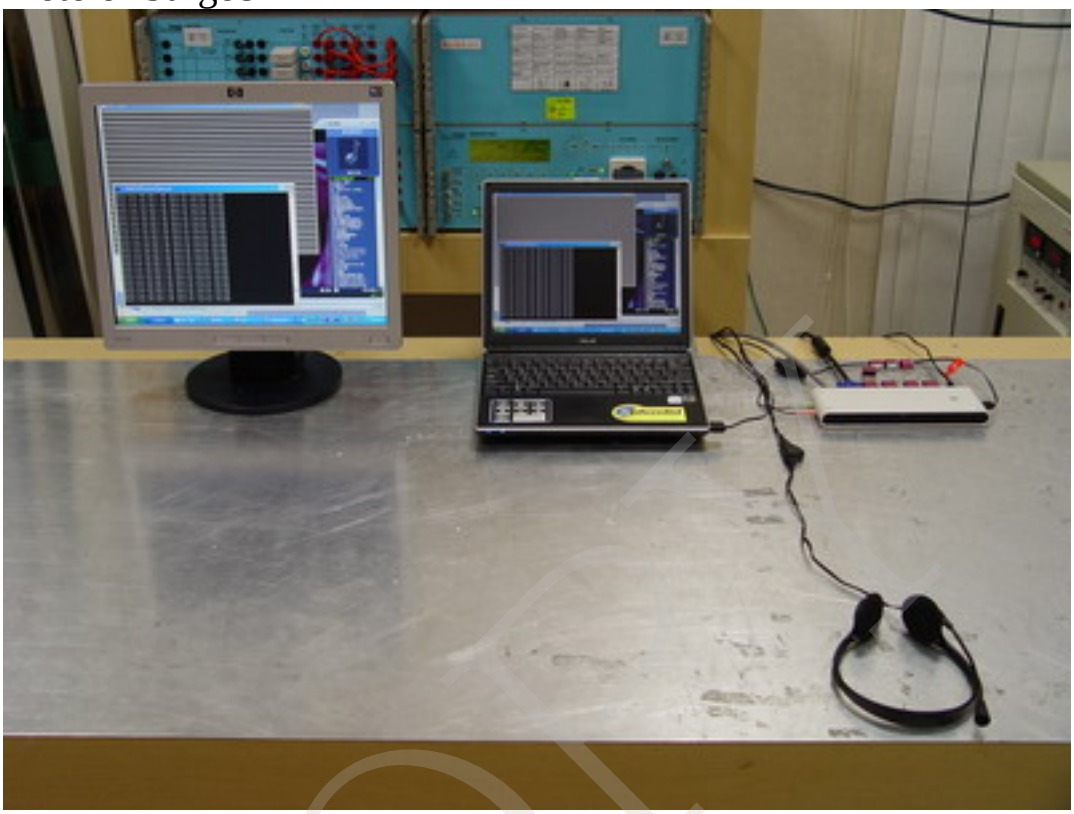
Set Up Photo of RF-Field



Set Up Photo of EFT



Set Up Photo of Surge& DIP



Set Up Photo of CS