EMC Test Report

for

External RAID Storage

Model No.: DR8-TB2

of

Applicant: **RAIDON TECHNOLOGY INC.**
Address: **7F-9, No.16, Lane. 609, Sec.5, Chung-Hsin Rd., San-Chung Dist., New Taipei City, Taiwan (R.O.C.)**

Tested and Prepared

by

Worldwide Testing Services (Taiwan) Co., Ltd.

FCC Registration No.: 930600

Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

A2LA Accredited No.: 2732.01

Report No.: W6M21610-16308-E-11

6F, NO. 58, LANE 188, RUEY-KUANG RD., NEIHU TAIPEI 114, TAIWAN, R.O.C.
TEL: 886-2-66068877 FAX: 886-2-66068879 E-mail: wts@wts-lab.com

Details of applicant

Name	: RAIDON TECHNOLOGY INC.
Street	: 7F-9, No.16, Lane. 609, Sec.5, Chung-Hsin Rd., San-Chung Dist.,
Town	: New Taipei City,
Country	: Taiwan (R.O.C.)
Telephone	: +886-2-2278-9697
Fax	: +886-2-2278-9659

Description of tested equipment

Type of product	: External RAID Storage
Type identification	: DR8-TB2
Brand name	: ./.
Multi-listing model no.	: DR8-TB2-B
Power supply	: 230 Va.c.

Date of testing processing

Date of receipt of test item	: October 18, 2016
Date of test	: from October 19, 2016 to October 26, 2016
Other Information	: None

Manufacturer (if different from applicant)

Name	: ./.
Street	: ./.
Town	: ./.
Country	: ./.

Test Standards

EN 55032 Class B (2012/AC:2013),
IEC/EN 61000-3-2 (2014), IEC/EN 61000-3-3 (2013)
EN 55024 (2010/A1:2015), (IEC/EN61000-4-2(2009)/-3(2006+A2:2010)/-4(2012)/-5(2014)/-6(2014)/-8(2010)/-11(2004))

Technical responsibility for area of testing: Kevin Wang

Issue Date： October 26, 2016

Tester: Syuan

October 26, 2016

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

Testing laboratory

Location

Worldwide Testing Services (Taiwan) Co., Ltd.
OATS
No.5-1, Lishui, Shuang Sing Village,
Wanli Dist., New Taipei City 207,
Taiwan (R.O.C.)
3 meter semi-anechoic chamber
No.35, Aly. 21, Ln. 228, Ankang Rd., Neihu Dist., Taipei City 114, Taiwan (R.O.C.)
TEL:886-2-6613-0228
FAX:886-2-2791-5046
Company
Worldwide Testing Services (Taiwan) Co., Ltd.
6F, NO. 58, LANE 188, RUEY-KUANG RD.
NEIHU, TAIPEI 114, TAIWAN R.O.C.
Tel : 886-2-66068877
Fax : 886-2-66068879

Details of accreditation status

Accredited testing laboratory
A2LA accredited number: 2732.01
FCC filed test laboratory Reg. No. 930600
Industry Canada filed test laboratory Reg. No. IC 5679A-1, IC 5107A-1

Test location, where different from Worldwide Testing Services (Taiwan) Co., Ltd.

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

Modification Information

No modification was made during the all test items been performed.

Test configuration

The EUT powered by power supply and connected to MAC, processed reading and writing to EUT through MAC until the test finished.

Electro - Magnetic Compatibility

Test – Result

☒ 1st test ☐ test after modification ☐ production test

Test Emission / Immunity			Done	Test passed	Test failed
Emission	Radiated Emission	EN 55032 Class B (2012/AC:2013)	☒	☒	☐
Emission	Conducted Emission	EN 55032 Class B (2012/AC:2013)	☒	☒	☐
Harmonics	Current Harmonics	IEC/EN 61000-3-2 (2014)	☒	☒	☐
Flicker	Voltage Fluctuations	IEC/EN 61000-3-3 (2013)	☒	☒	☐
ESD	Electrostatic Discharge	IEC/EN 61000-4-2 (2009)	☒	☒	☐
RF - Field	Radiated Immunity	IEC/EN 61000-4-3 (2006+A2:2010)	☒	☒	☐
Burst	Electrical Fast Transients	IEC/EN 61000-4-4 (2012)	☒	☒	☐
Surge	Transients comm.& diff.mode	IEC/EN 61000-4-5 (2014)	☒	☒	☐
RF-common mode	RF continues conducted	IEC/EN 61000-4-6 (2014)	☒	☒	☐
Magn-Field	Magnetic field immunity	IEC/EN 61000-4-8 (2010)	☒	☒	☐
V-dips	Voltage dips and Interruption	IEC/EN 61000-4-11 (2004)	☒	☒	☐

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	2016/5/20	2017/5/19
ETSTW-CE 003	AC POWER SOURCE	APS-9102	D161137	GW	Function Test	
ETSTW-CE 008	HF-EICHLEITUNG RF STEP ATTENUATOR 139dB DPSP	334.6010.02	844581/024	R&S	Function Test	
ETSTW-CE 009	TEMP.&HUMIDITY CHAMBER	GTH-225-40-1P-U	MAA0305-009	GIANT FORCE	2016/7/15	2017/7/14
ETSTW-CE 013	CISPR 22 TWO BALANCED TELECOM PAIRS IMPEDANCE STABILIZATION NETWORK	FCC-TLISN-T4-02	20242	FCC	2016/8/17	2017/8/16
ETSTW-CE 016	TWO-LINE V-NETWORK	ENV216	100050	R&S	2016/9/12	2017/9/11
ETSTW-CE 024	IMPEDANCE STABILIZATION NETWORK	ISN T800	29454	TESEQ	2016/1/18	2017/1/17
ETSTW-CE 026	Current Probe	FCC-33-4	141522	FCC	2016/1/19	2017/1/18
ETSTW-CE 027	COUPLING AND DECOUPLING NETWORK	CDN ST08AS	38087	TESEQ	Function Test	
ETSTW-CS 004	COUPLING AND DECOUPLING NETWORK	CDN M016	20053	SCHAFFNER	2016/8/17	2017/8/16
ETSTW-CS 005	RF Power Amplifier	100A250A	306547	AR	Function Test	
ETSTW-CS 010	6 dB Attenuator	SA3N1007-06	None	AISI	Function test	
ETSTW-RE 003	EMI TEST RECEIVER	ESI 26	831438/001	R&S	2016/5/20	2017/5/19
ETSTW-RE 004	EMI TEST RECEIVER	ESI 40	832427/004	R&S	2016/5/25	2017/5/24
ETSTW-RE 005	EMI TEST RECEIVER	ESVS10	843207/020	R&S	2016/7/4	2017/7/3
ETSTW-RE 010	ABSORBING CLAMP	MDS 21	3469	Schwarzbeck	2016/9/12	2017/9/11
ETSTW-RE 012	TUNABLE BANDREJECT FILTER	D.C 0309	146	K&L	Function Test	
ETSTW-RE 013	TUNABLE BANDREJECT FILTER	D.C 0336	397	K&L	Function Test	
ETSTW-RE 019	MICROWAVE HORN ANTENNA	22240-25	121074	FM	2016/3/31	2017/3/30
ETSTW-RE 020	MICROWAVE HORN ANTENNA	AT4002A	306915	AR	Function Test	
ETSTW-RE 027	Passive Loop Antenna	6512	00034563	ETS-Lindgren	2016/6/29	2017/6/28
ETSTW-RE 028	Log-Periodic Dipole Array Antenna	3148	34429	ETS-Lindgren	Function Test	
ETSTW-RE 029	Biconical Antenna	3109	33524	ETS-Lindgren	Function Test	
ETSTW-RE 030	Double-Ridged Guide Horn Antenna	3117	00035224	ETS-Lindgren	2016/3/23	2017/3/22
ETSTW-RE 032	Millivoltmeter	URV 55	849086/013	R&S	2016/9/9	2017/9/8
ETSTW-RE 033	WaveRunner 6000A Serise Oscilloscope	WAVERUNNER 6100A	LCRY0604P14508	LeCroy	2016/7/13	2017/7/12
ETSTW-RE 034	Power Sensor	URV5-Z4	839313/006	R&S	2016/9/9	2017/9/8
ETSTW-RE 042	Biconical Antenna	HK116	100172	R&S	2016/1/25	2017/1/24
ETSTW-RE 043	Log-Periodic Dipole Antenna	HL223	100166	R&S	2016/3/28	2017/3/27
ETSTW-RE 044	Log-Periodic Antenna	HL050	100094	R&S	2016/4/14	2017/4/13
ETSTW-RE 045	ESA-E SERIES SPECTRUM ANALYZER	E4404B	MY45111242	Agilent	Pre-test Use	

ETSTW-RE 048	Triple Loop Antenna	HXYZ 9170	HXYZ 9170-134	Schwarzbeck	2016/1/14	2017/1/13
ETSTW-RE 050	Attenuator 10dB	50HF-010-1	None	JFW	2016/2/25	2017/2/24
ETSTW-RE 051	Attenuator 6dB	50HF-006-1	None	JFW	2016/2/25	2017/2/24
ETSTW-RE 053	Attenuator 3dB	50HF-003-1	None	JFW	2016/2/25	2017/2/24
ETSTW-RE 055	SPECTRUM ANALYZER	FSU 26	200074	R&S	2016/2/27	2017/2/26
ETSTW-RE 060	Attenuator 30dB	5015-30	F651012z-01	ATM	2016/2/25	2017/2/24
ETSTW-RE 061	Amplifier Module	CHC 1	None	ETS	2016/5/13	2017/5/12
ETSTW-RE 062	Amplifier Module	CHC 2	None	KMIC	2016/4/13	2017/4/12
ETSTW-RE 064	Bluetooth Test Set	MT8852B-042	6K00005709	Anritsu	Function Test	
ETSTW-RE 065	Amplifier	AMF-6F-18002650-25-10P	941608	MITEQ	2016/4/1	2017/3/31
ETSTW-RE 069	Double-Ridged Guide Horn Antenna	3117	00069377	ETS-Lindgren	Function Test	
ETSTW-RE 072	CELL SITE TEST SET	8921A	3339A00375	HP	2016/9/8	2017/9/7
ETSTW-RE 073	Power Meter	N1911A	MY45100769	Agilent	2016/1/14	2017/1/13
ETSTW-RE 074	Power Sensor	N1921A	MY45241198	Agilent	2016/1/14	2017/1/13
ETSTW-RE 099	DC Block	50DB-007-1	None	JFW	2016/2/25	2017/2/24
ETSTW-RE 112	AC POWER SOURCE	TFC-1005	T-0A023536	T-Power	Function test	
ETSTW-RE 115	2.4GHz Notch Filter	N0124411	473874	MICROWAVE CIRCUITS	2016/1/13	2017/1/12
ETSTW-RE 120	RF Player	MP9200	MP9210-111022	ADIVIC	Function test	
ETSTW-RE 122	SIGNAL GENERATOR	SMF100A	102149	R&S	2016/5/23	2017/5/22
ETSTW-RE 125	5GHz Notch filter	5NSL11-5200/E221.3-O/O	1	K&L Microwave	2016/8/10	2017/8/9
ETSTW-RE 126	5GHz Notch filter	5NSL12-5800/E221.3-O/O	1	K&L Microwave	2016/8/10	2017/8/9
ETSTW-RE 127	RF Switch Box	RFS-01	None	WTS	2016/2/25	2017/2/24
ETSTW-RE 128	5.3GHz Notch filter	N0153001	SN487233	Microwave Circuits	2016/8/10	2017/8/9
ETSTW-RE 129	5.5GHz Notch filter	N0555984	SN487234	Microwave Circuits	2016/8/10	2017/8/9
ETSTW-RE 130	Handheld RF Spectrum Analyzer	N9340A	CN0147000204	Agilent	Pre-test Use	
ETSTW-RE 133	EXA Signal Analyzer	N9010A	MY53470566	Agilent	2016/4/13	2017/4/12
ETSTW-RE 134	RF Vector Signal Generator	N5182B	MY53050664	Agilent	2016/4/11	2017/4/10
ETSTW-RE 135	RF Analog Signal Generator	N5171B	MY53050476	Agilent	2016/4/11	2017/4/10
ETSTW-RE 136	USB Wideband Power Sensor	U2021XA	MY54070006	Agilent	2016/3/21	2017/3/20
ETSTW-RE 137	USB Wideband Power Sensor	U2021XA	MY54020004	Agilent	2016/3/21	2017/3/20
ETSTW-RE 138	USB Wideband Power Sensor	U2021XA	MY54110003	Agilent	2016/3/21	2017/3/20
ETSTW-RE 139	USB Wideband Power Sensor	U2021XA	MY54110004	Agilent	2016/3/21	2017/3/20
ETSTW-RE 140	Simultaneous sampling DAQ	U2531A	TW54063509	Agilent	Function Test	
ETSTW-RE 143	Humidity Temperature Meter	TES-1260	110104623	TES	2016/8/19	2017/8/18
ETSTW-RE 146	Preamplifier	JPA-10M1G	15090004	JPT	2016/4/7	2017/4/6
ETSTW-RE 148	Bi-log Hybrid Antenna	MCTD 2786B	BLB16M04006	ETC	2016/3/31	2017/3/30

ETSTW-EMI 001	HARMONICS 1000	HAR1000-1P	093	EMC-PARTNER	2016/2/3	2017/2/2
ETSTW-EMI 010	AC Power Source	PS3	0219	EMC PARTNER	2016/2/3	2017/2/2
ETSTW-EMI 011	USB Compact Modulator	SFC-U	101689	R&S	2016/5/4	2017/5/3
ETSTW-EMS 001	BASELSTRASSE 160 CH-4242 LAUFEN	CN-EFT1000	354	EMC-PARTNER	Function Test	
ETSTW-EMS 002	Frequency Converter	YF-6020	0308014	None	Function Test	
ETSTW-EMS 003	Humidity Temperature Meter	TES-1260	579	EMC-PARTNER	2016/8/24	2017/8/23
ETSTW-EMS 009	Magnetic Field Antenna	MF1000-1	104	EMC-PARTNER	Function Test	
ETSTW-EMS 010	Coupling De-coupling Network	CDN-UTP8	014	EMC-PARTNER	Function Test	
ETSTW-EMS 012	EM Injection Clamp	F-203I-23MM	476	FCC	2016/6/13	2017/6/12
ETSTW-EMS 016	EMF Tester	1390	071208732	TES	2016/8/18	2017/8/17
ETSTW-EMS 017	Multimeter	DM-1220	518614	HOLA	2016/8/19	2017/8/18
ETSTW-EMS 019	Electrostatic Discharge Simulator	ESS-2002	ESS06Y6300	NoiseKen	2016/9/12	2017/9/11
ETSTW-EMS 022	Transient Test System	TRANSIENT -3000 S	1303	EMC-PARTNER	2016/8/24	2017/8/23
ETSTW-EMS 024	Humidity Temperature Meter	TES-1260	160304437	TES	2016/8/31	2017/8/30
ETSTW-RS 003	RF Power Amplifier	30S1G3	306933	AR	Function Test	
ETSTW-RS 006	SIGNAL GENERATOR	SML03	101551	R&S	2016/2/19	2017/2/18
ETSTW-RS 007	14" COLOR VIDEO MONITOR	HS-CM145A	0512011548	None	Function Test	
ETSTW-RS 009	SIGNAL GENERATOR	8648C	3642U01656	HP	2016/1/15	2017/1/14
ETSTW-RS 010	Broadband Field Meter	NBM-520	C-0195	Narda	2016/9/29	2017/9/28
ETSTW-RS 011	RF Power Amplifier	150W1000	0464490	AR	Function Test	
ETSTW-GSM 002	Universal Radio Communication Tester	CMU 200	109439	R&S	2016/3/4	2017/3/3
ETSTW-GSM 003	Radio Communication Analyzer	MT8820C	6201342073	Anritsu	2016/2/3	2017/2/2
ETSTW-GSM 019	Band Reject Filter	WRCTF824/849-822/851-40 /12+9SS	3	WI	2016/1/13	2017/1/12
ETSTW-GSM 020	Band Reject Filter	WRCD1747/1748-1743/1752-32/5SS	1	WI	2016/1/13	2017/1/12
ETSTW-GSM 021	Band Reject Filter	WRCD1879.5/1880.5-1875.5/1884.5-32/5SS	3	WI	2016/1/13	2017/1/12
ETSTW-GSM 022	Band Reject Filter	WRCT901.9/903.1-904.25-50/8SS	1	WI	2016/1/13	2017/1/12
ETSTW-GSM 023	Power Divider	4901.19.A	None	SUHNER	2016/9/14	2017/9/13
ETSTW-Cable 002	Microwave Cable	SUCOFLEX 104（S_Cable 7）	238093	HUBER+SUHNER	2016/5/13	2017/5/12
ETSTW-Cable 003	Microwave Cable	SUCOFLEX 104（S_Cable 11）	209953	HUBER+SUHNER	2016/5/13	2017/5/12
ETSTW-Cable 010	BNC Cable	5 M BNC Cable	None	JYE BAO CO.,LTD.	2016/9/12	2017/9/11
ETSTW-Cable 011	BNC Cable	BNC Cable 1	None	JYE BAO CO.,LTD.	Pre-test Use NCR	
ETSTW-Cable 012	N TYPE To SMA Cable	Cable 012	None	JYE BAO CO.,LTD.	2016/9/12	2017/9/11
ETSTW-Cable 063	N type Cable (5m)	RG214/U	1249271	HUBER+SUHNER	Function Test	
ETSTW-Cable 016	BNC Cable	Switch Box	B Cable 1	Schwarz beck	2016/2/24	2017/2/23
ETSTW-Cable 017	BNC Cable	X Cable	B Cable 2	Schwarz beck	2016/2/24	2017/2/23

ETSTW-Cable 018	BNC Cable	Y Cable	B Cable 3	Schwarz beck	2016/2/24	2017/2/23
ETSTW-Cable 019	BNC Cable	Z Cable	B Cable 4	Schwarz beck	2016/2/24	2017/2/23
ETSTW-Cable 020	N TYPE Cable	OATS Cable 1	N30N30-L335-15M	JYE BAO CO.,LTD.	2016/4/22	2017/4/21
ETSTW-Cable 022	N TYPE Cable	5006	0002	JYE BAO CO.,LTD.	2016/4/7	2017/4/6
ETSTW-Cable 023	BNC Cable	BNC Cable 3	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 024	BNC Cable	BNC Cable 4	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 025	BNC Cable	BNC Cable 5	None	JYE BAO CO.,LTD.	Function Test	
ETSTW-Cable 026	Microwave Cable	SUCOFLEX 104	279075	HUBER+SUHNER	2016/2/25	2017/2/24
ETSTW-Cable 027	Microwave Cable	SUCOFLEX 104	279083	HUBER+SUHNER	2016/5/13	2017/5/12
ETSTW-Cable 030	Microwave Cable	SUCOFLEX 104 （S_Cable 9）	279067	HUBER+SUHNER	2016/2/25	2017/2/24
ETSTW-Cable 031	Microwave Cable	SUCOFLEX 104 （S_Cable 10）	238092	HUBER+SUHNER	2016/4/13	2017/4/12
ETSTW-Cable 039	Microwave Cable	SUCOFLEX 104	325519	HUBER+SUHNER	2016/5/13	2017/5/12
ETSTW-Cable 042	Microwave Cable	SUCOFLEX 104 （S_Cable 22）	279847	HUBER+SUHNER	Function Test	
ETSTW-Cable 043	Microwave Cable	SUCOFLEX 104	317576	HUBER+SUHNER	2016/4/13	2017/4/12
ETSTW-Cable 048	Microwave Cable	SUCOFLEX 104	325518	HUBER+SUHNER	2016/4/13	2017/4/12
ETSTW-Cable 051	BNC Cable	BNC Cable 6	None	JYE BAO CO.,LTD.	2016/3/9	2017/3/8
ETSTW-Cable 052	BNC Cable	Clamp Cable	None	Schwarz beck	2016/3/9	2017/3/8
ETSTW-Cable 058	Microwave Cable	SUCOFLEX 104	none	HUBER+SUHNER	2016/4/7	2017/4/6
ETSTW-Cable 065	N type Cable (5m)	RG214	None	DRAKA	Function Test	
WTSTW-SW 001	EMI TEST SOFTWARE	Harmonics-1000	None	EMC PARTNER	HARCS Version 4.20 Firmware Version 2.20	
WTSTW-SW 002	EMI TEST SOFTWARE	EZ_EMC	None	Farad	Version ETS-03A1	
WTSTW-SW 003	EMS TEST SOFTWARE	i2	None	AUDIX	Version 3.2007-8-17b	
WTSTW-SW 004	Agilent.EN300328.V181.Test	Agilent	None	Agilent	Version 1.0.0.0	
WTSTW-SW 005	Signal studio	Agilent	None	Agilent	Version 1.0.0.1	

Spurious Emission (EN 55032)

Test Equipment

a) EMI TEST RECEIVER (ESI 40)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 004
b) EMI TEST RECEIVER (ESVS 10)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 005
c) Double-Ridged Guide Horn Antenna (3117)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 030
d) Amplifier Module (CHC 2)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 062
e) Preamplifier (JPA-10M1G)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 146
f) Bi-log Hybrid Antenna (MCTD 2786B)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 148

Test Procedures

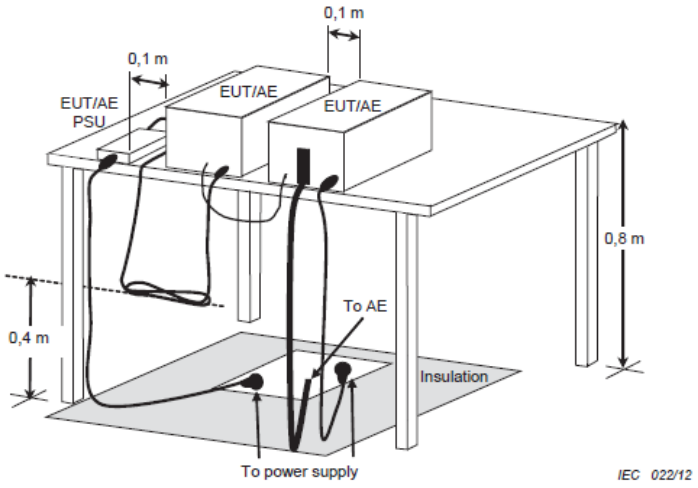
- Test configuration

The test configuration corresponds to the standard EN 55032. 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 (below 1GHz) and 3m (Above 1GHz). 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 6000 MHz. Further information please find in the test protocol.

Radiated Emission according to EN 55032



Picture 1

Conducted Emission (EN 55032)

Test Equipment

a) TWO-LINE V-NETWORK (ENV216)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-CE 016
b) EMI TEST RECEIVER (ESHS10)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-CE 001
c) 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 4 to 7 as number : ETSTW-CE 013
d) IMPEDANCE STABILIZATION NETWORK (ISN T800)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-CE 024

Test Procedures

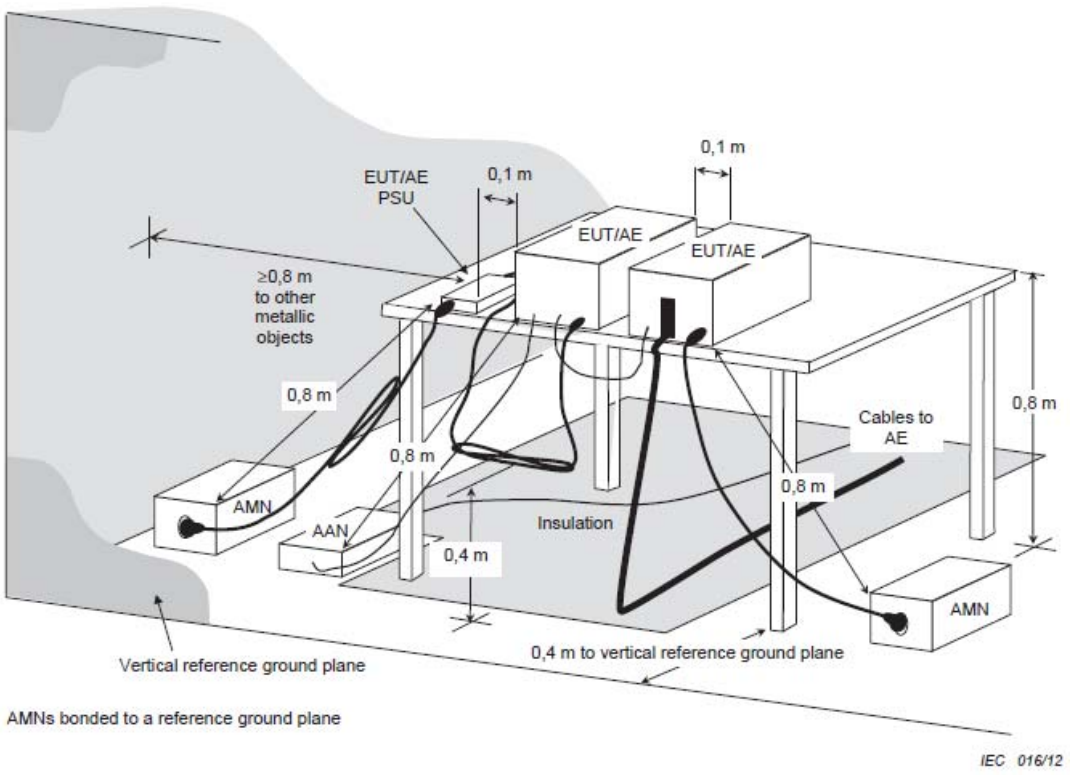
- Test configuration

The test configuration is contained inside of a shielded chamber and corresponds to the standard EN 55032. The equipment under test is placed in the facility on a wooden table 0.8m height. 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 55032



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 4 to 7 as number : ETSTW-EMI 001
b) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 002

Test Procedures

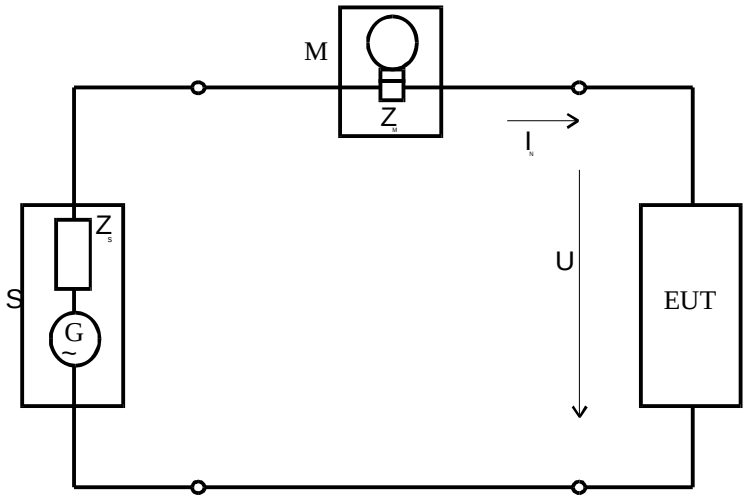
- Test configuration

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 is carried out in according the classification A,B,C,D of the standard IEC/EN 61000-3-2. The flicker test is 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) Electrostatic Discharge Simulator (ESS-2002)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 019
b) Frequency Converter (YF-6020)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 002
c) EMC Immunity Test System (TRA2000IN6)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 003

Test Procedures

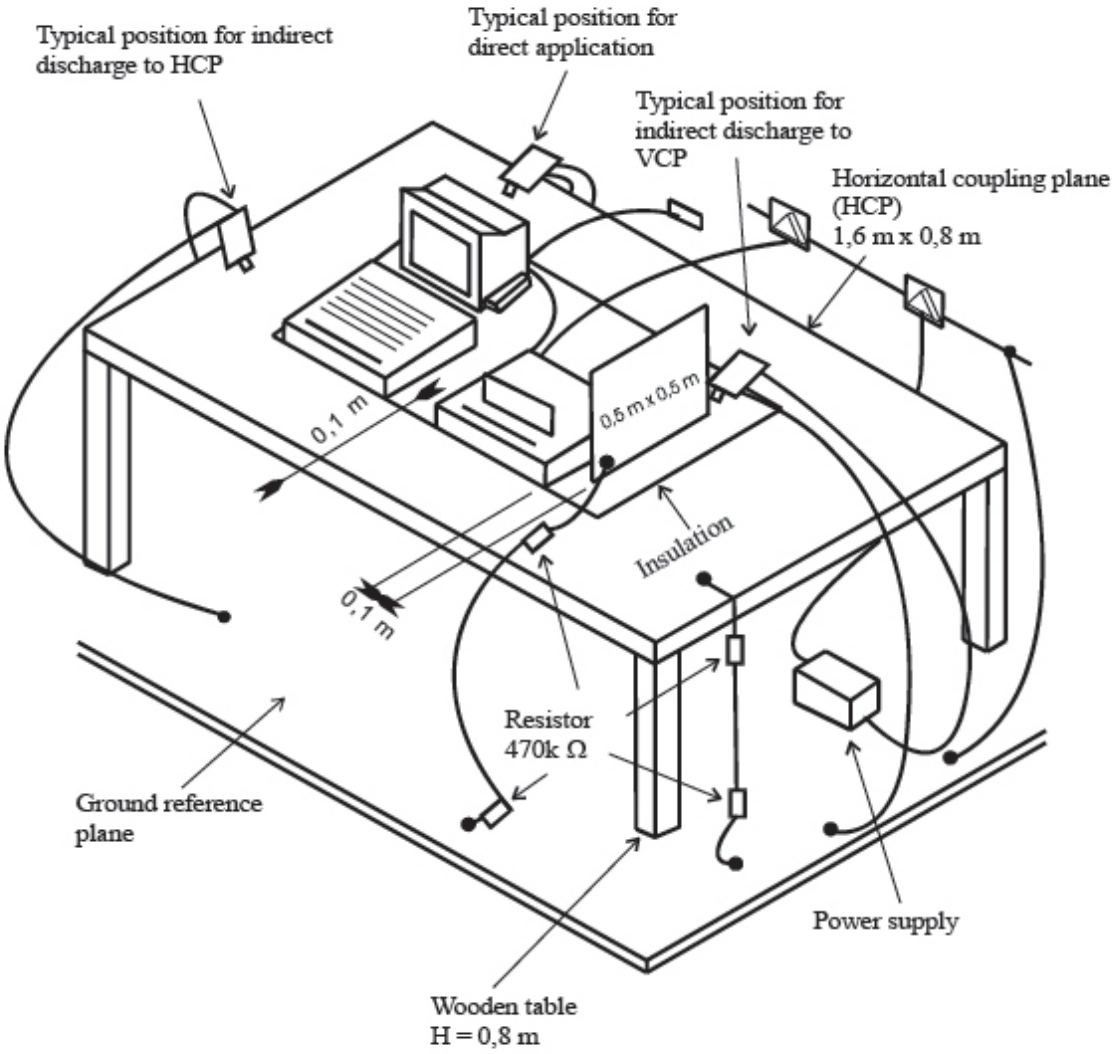
- Test configuration

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 $\geq$ 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 4 to 7 as number: ETSTW-RE 029
b) Log-Periodic Dipole Array Antenna (3148)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RE 028
c) MICROWAVE HORN ANTENNA (AT4002A)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RE 020
d) RF Power Amplifier (30S1G3)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RS 003
e) SIGNAL GENERATOR (8648C)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RS 009
f) RF Power Amplifier (150W1000)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RS 011
g) Broadband Field Meter (NBM-520)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RS 010
h) Millivoltmeter (URV 55)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RE 032
i) Power Sensor (URV5-Z4)
For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-RE 034

Test Procedures

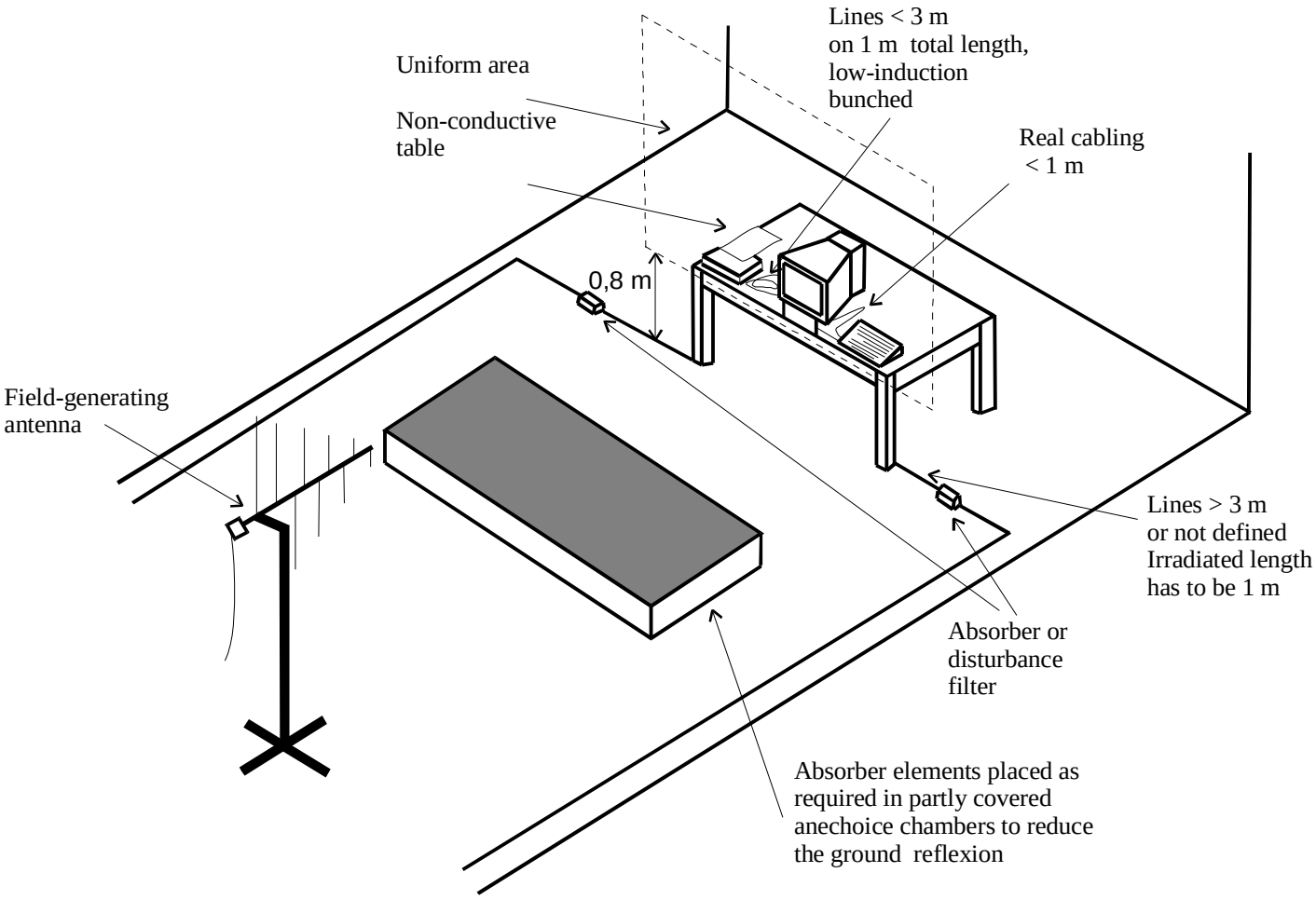
- Test configuration

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 height 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 EUT 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 a field strength by 3 V/m (measured in the unmodulated 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

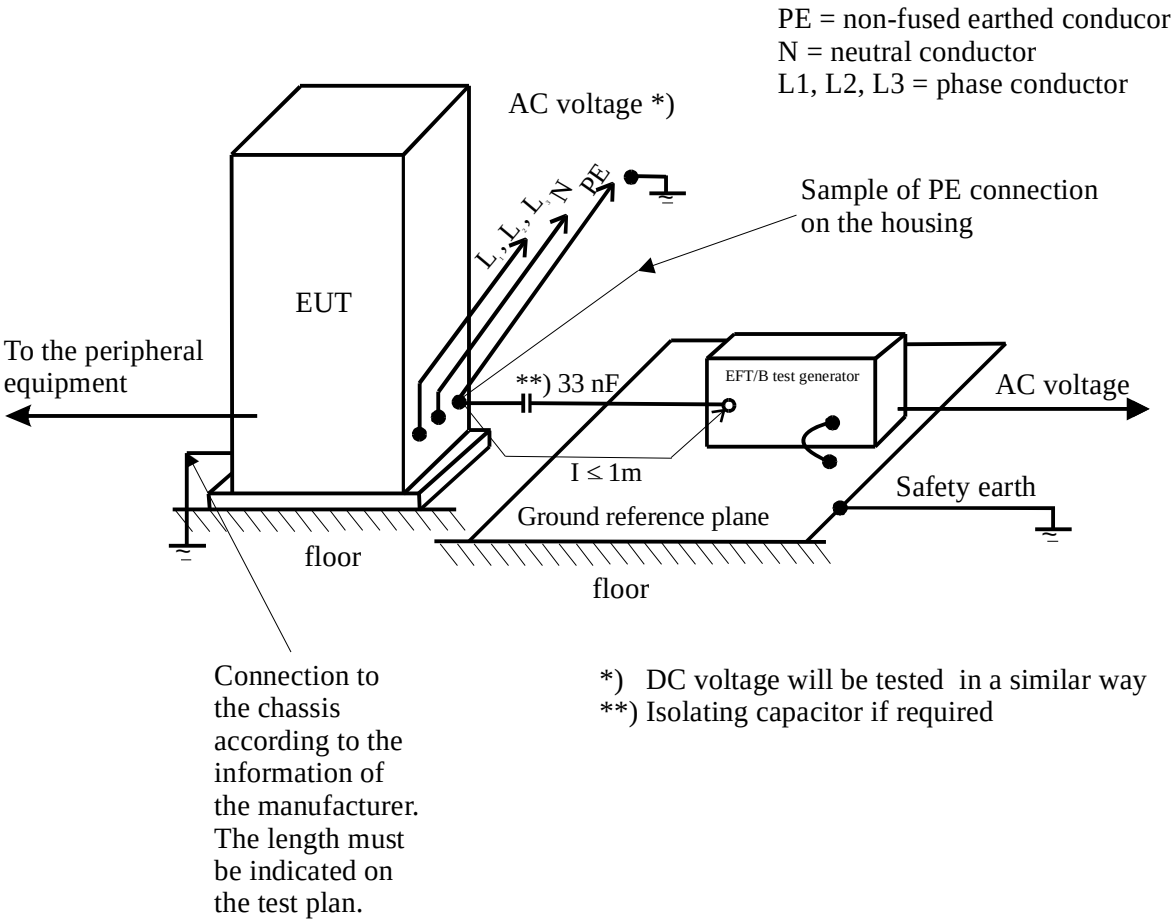
a) EMC Immunity Test System (TRA2000IN6)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 003
b) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 002
c) BASELSTRASSE 160 CH-4242 LAUFEN (CN-EFT1000)
   For your reference please find it in our test equipment list at page 4 to 7 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) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 002
b) Transient Test System (TRANSIENT-3000 S)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 022

Test Procedures

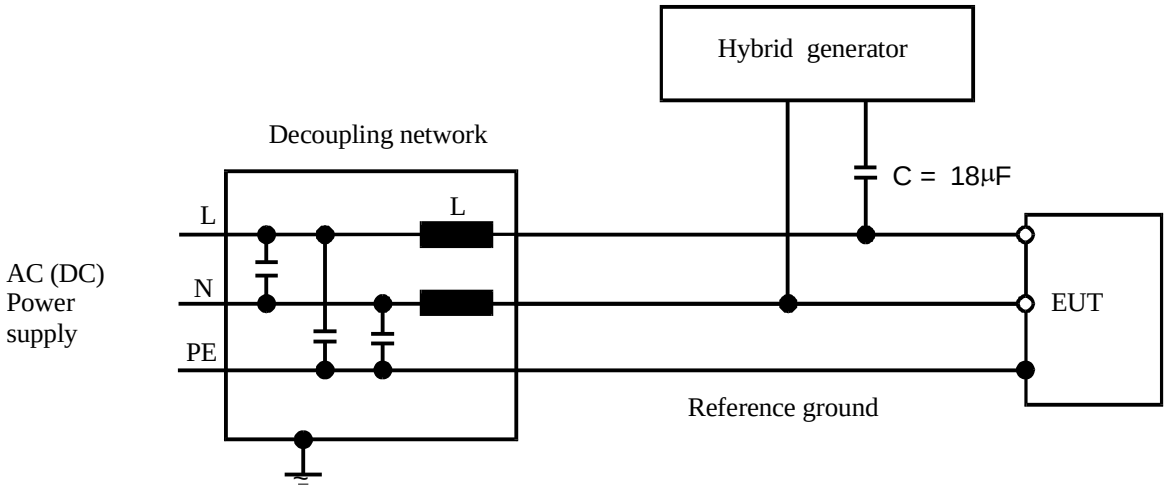
• Test configuration

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 (SML 03)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RS 006
b) RF Power Amplifier (100A250A)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-CS 005
c) COUPLING AND DECOUPLING NETWORK (CDN M016)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-CS 004
d) Power Sensor (URV5-Z4)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 034
e) Millivoltmeter (URV 55)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-RE 032
f) 6 dB Attenuator (HFP-5100-3/06 N M/F)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-CS 010
g) Frequency Converter (YF-6020)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 002
h) EM Injection Clamp (F-203I-23MM)
For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 012

Test Procedures

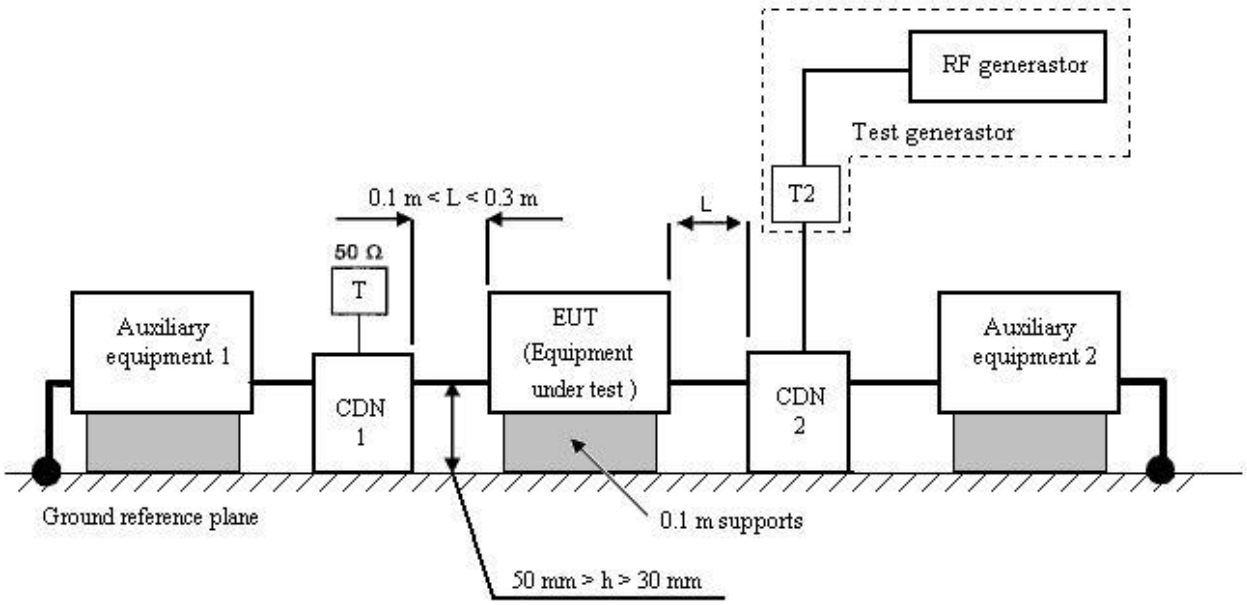
• Test configuration

The test configuration is in correspondence to the standard IEC/EN 61000-4-6. The test was carried out on a wooden table with a grounded metal plate on its top. The equipment under test was placed on an insulating support of 0.1m height above this metal plate ,and all cables exiting the EUT was supported at a height of between 30mm and 50mm.Where coupling and/or decoupling devices are required, they was located between 0.1m and 0.3m from the EUT. (see picture 8)

• Test parameters and marginal conditions

The tests were carried out with a Voltage of 3V RMS (measured unmodulated) 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 preceding frequency value. The dwell time was in case no less than 0.5s dependent on the EUT operating time. The tested ports please find in the test protocol.

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



T : Termination 50 Ω
T2: Power attenuator (6 dB)
CDN: Coupling and decoupling network

Picture 8

Power frequency magnetic field

Test Equipment

a) Magnetic Field Antenna (MF1000-1)
   For your reference please find it in our test equipment list at page 4 to 7 as number: ETSTW-EMS 009
b) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 002
c) EMF Tester (1390)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 016

Test Procedures

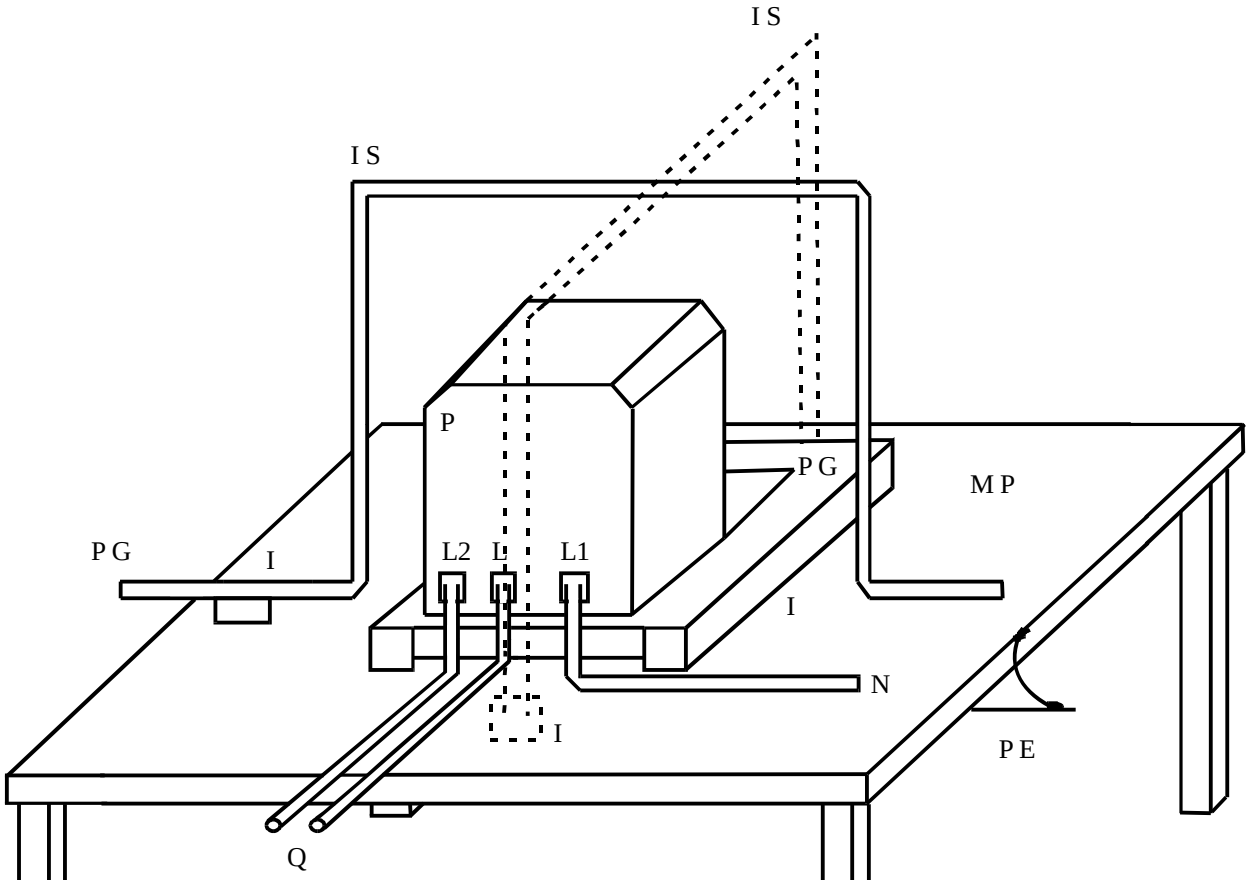
• Test configuration

The test configuration is in correspondence to the standard IEC/EN 61000-4-8. The equipment under test shall be arranged and connected to satisfy its functional requirements, and shall be placed at the center of the coil system. (see picture 9)
The cables supplied by the equipment manufacturer shall be used or, in their absence, suitable alternative cables of the type appropriate to the signals involved shall be used.

• Test parameters and marginal conditions

The tests are carried out with a frequency of 50 Hz and a magnetic field of 1 A/m (r.m.s.). Additional information please find in the test protocol.

Example for set-up for immunity test to magnetic field according to EN 61000-4-8



M P	pasted plate
P E	safety earth
I	isolation
P	EUT
I S	induction spark coil
E	mass connection
L1	power line
L2	signal line
L	communication line
N	net
Q	to the signal source, to the simulator
P G	to the test generator

Picture 9

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 4 to 7 as number : ETSTW-EMS 003
b) Frequency Converter (YF-6020)
   For your reference please find it in our test equipment list at page 4 to 7 as number : ETSTW-EMS 002

Test Procedures

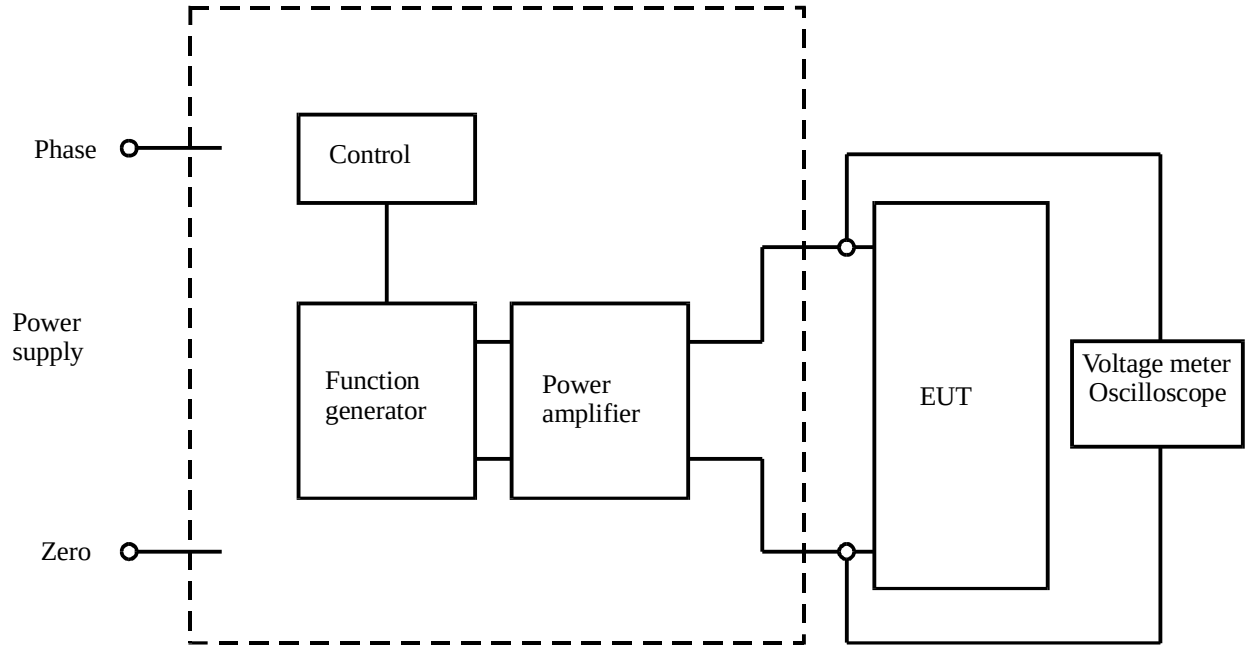
• Test configuration

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 10)

• 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.

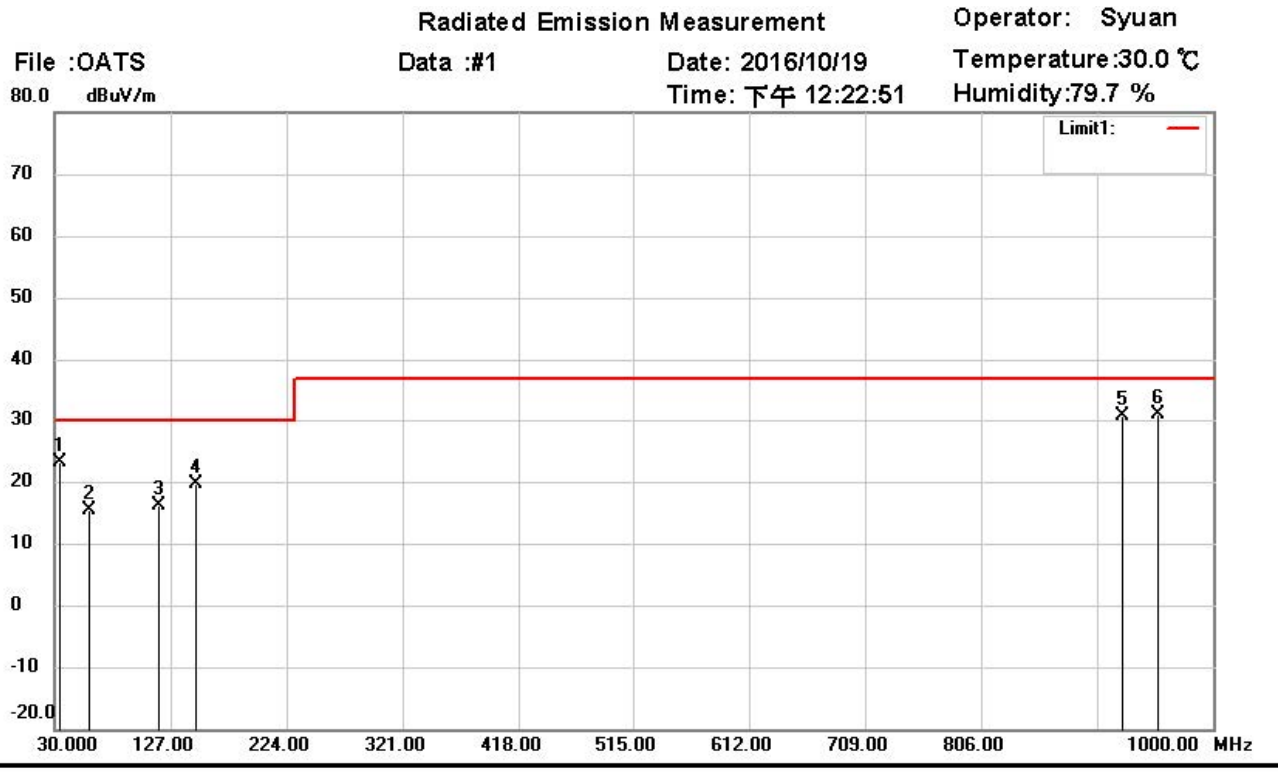
Voltage dips and interruption accordiing to EN 61000 - 4 - 11



Picture 10

Radio Noise Field Strength

Emission



Site : Open Area Test Site
Condition : CISPR32 RE-Class B 10M
EUT : W6M21610-16308
M/N:
Test Mode :
Note :

Polarization: *Horizontal*
Power : 230 Va.c.
Distance: 10m

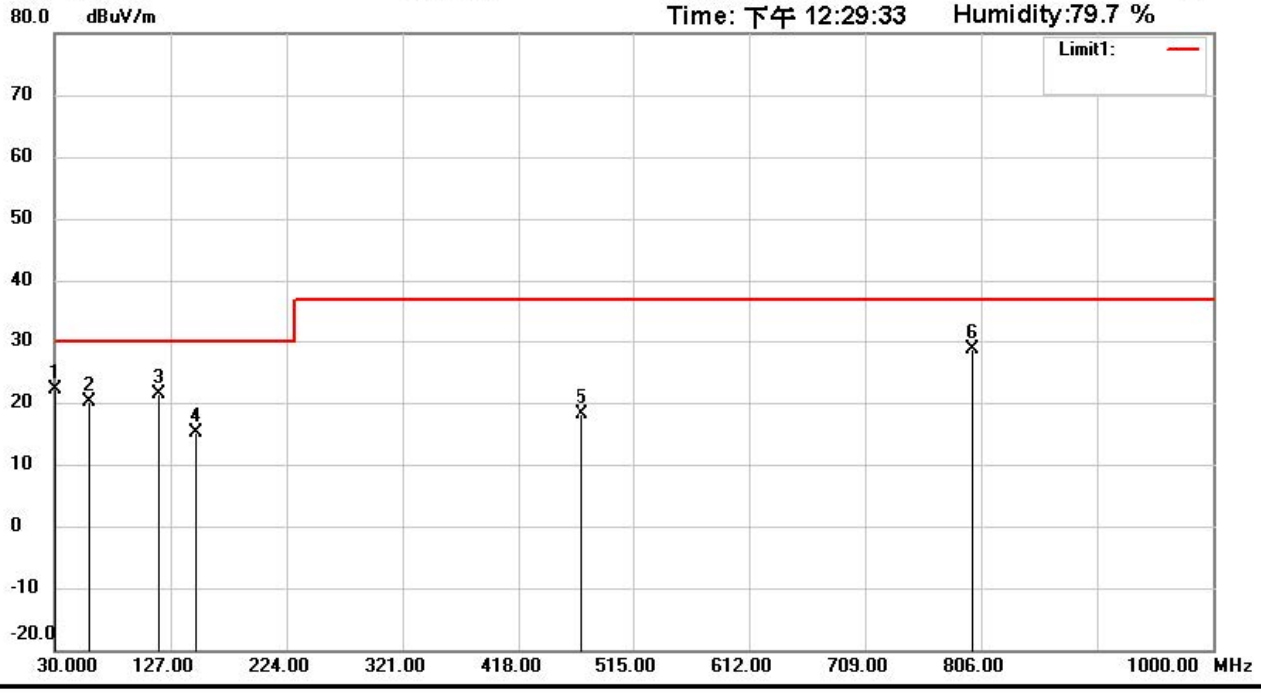
Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	32.5115	35.80	QP	-12.62	23.18	30.00	400	55	-6.82	
	59.0951	32.10	QP	-16.61	15.49	30.00	400	160	-14.51	
	116.8178	28.10	QP	-11.96	16.14	30.00	400	270	-13.86	
	148.8060	33.40	QP	-13.81	19.59	30.00	380	180	-10.41	
	922.5613	32.30	QP	-1.76	30.54	37.00	100	135	-6.46	
*	953.2660	31.40	QP	-0.55	30.85	37.00	140	255	-6.15	

Radiated Emission Measurement

Operator: Syuan

File :OATS Data :#2 Date: 2016/10/19 Temperature:30.0 ℃

Time: 下午 12:29:33 Humidity:79.7 %



Site : Open Area Test Site

Condition : CISPR32 RE-Class B 10M

EUT : W6M21610-16308

M/N:

Test Mode :

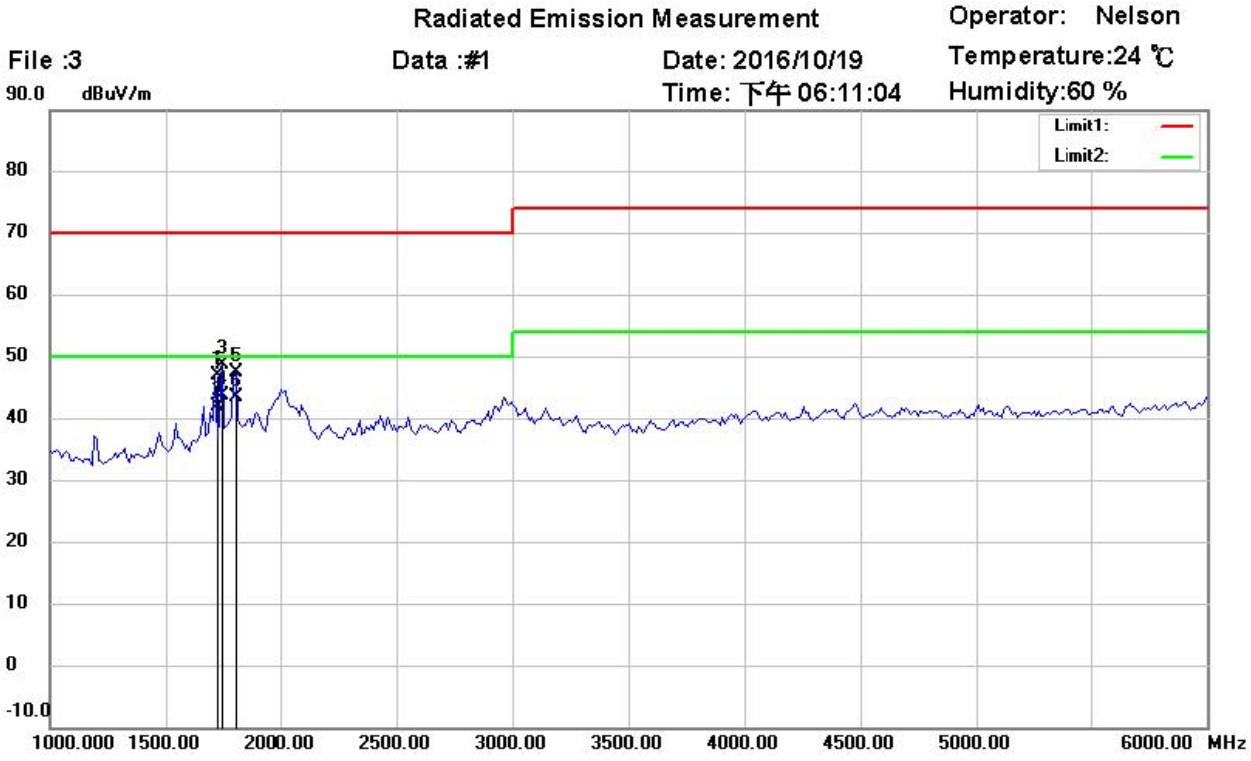
Note :

Polarization: *Vertical*

Power : 230 Va.c.

Distance: 10m

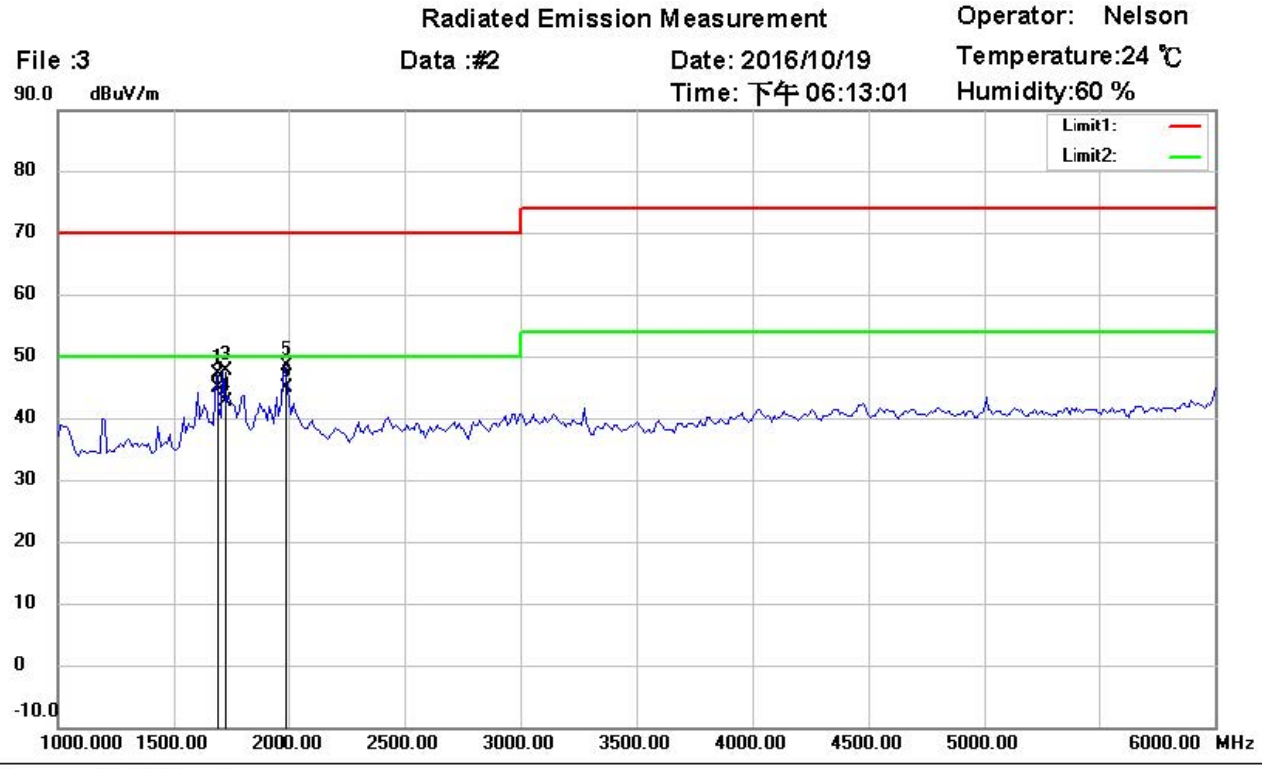
Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
*	30.1061	34.60	QP	-12.42	22.18	30.00	115	60	-7.82	
	57.0460	36.40	QP	-16.23	20.17	30.00	120	155	-9.83	
	116.2131	33.49	QP	-12.00	21.49	30.00	100	280	-8.51	
	148.1658	28.80	QP	-13.75	15.05	30.00	130	170	-14.95	
	469.0684	25.90	QP	-7.87	18.03	37.00	400	110	-18.97	
	797.0692	32.30	QP	-3.79	28.51	37.00	355	340	-8.49	



Site : 966 Chamber
Condition : CISPR 32 RE-Class B Above 1G PK
EUT : W6M21610-16308
M/N:
Test Mode :
Note :

Polarization: *Horizontal*
Power : 230 Va.c.
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1711.423	53.96	peak	-7.12	46.84	70.00	100	140	-23.16	
	1711.423	48.95	AVG	-7.12	41.83	50.00	100	140	-8.17	
	1741.483	55.65	peak	-7.04	48.61	70.00	100	250	-21.39	
*	1741.483	50.65	AVG	-7.04	43.61	50.00	100	250	-6.39	
	1801.603	54.24	peak	-6.86	47.38	70.00	100	80	-22.62	
	1801.603	50.29	AVG	-6.86	43.43	50.00	100	80	-6.57	



Site : 966 Chamber
Condition : CISPR 32 RE-Class B Above 1G PK
EUT : W6M21610-16308
M/N:
Test Mode :
Note :

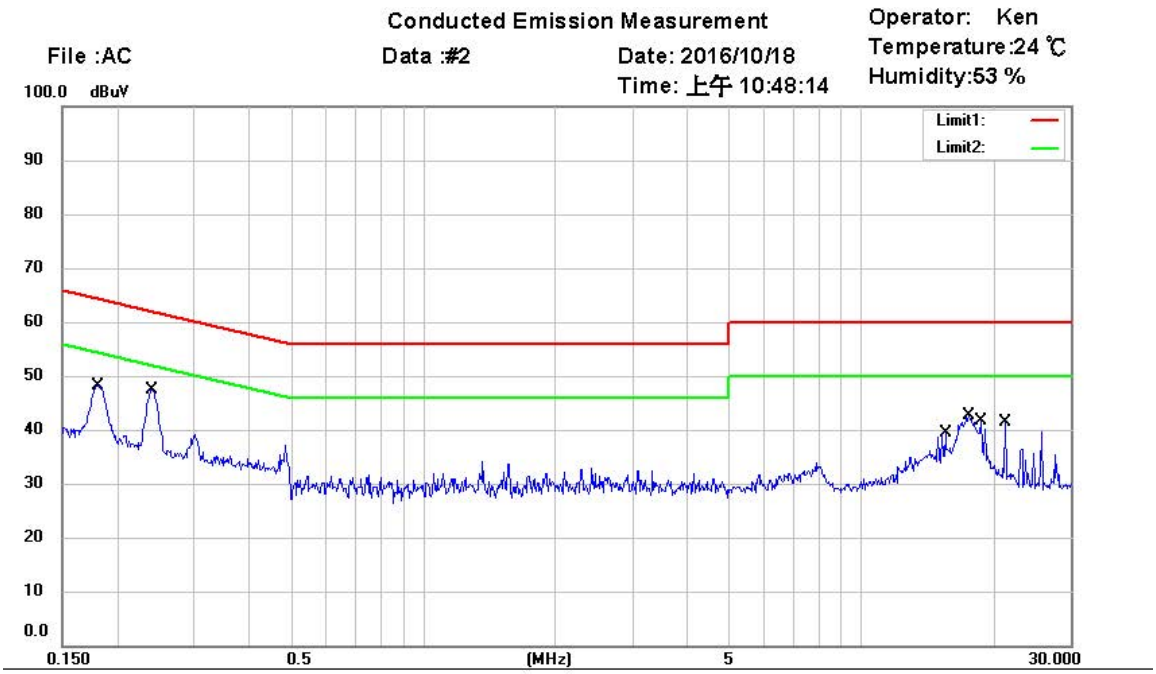
Polarization: *Vertical*
Power : 230 Va.c.
Distance: 3m

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corr. factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Ant.Pos (cm)	Tab.Pos (deg.)	Margin (dB)	Comment
	1681.363	54.53	peak	-7.34	47.19	70.00	100	190	-22.81	
*	1681.363	52.31	AVG	-7.34	44.97	50.00	100	190	-5.03	
	1711.423	54.63	peak	-7.12	47.51	70.00	100	60	-22.49	
	1711.423	49.65	AVG	-7.12	42.53	50.00	100	60	-7.47	
	1981.964	53.94	peak	-5.59	48.35	70.00	100	45	-21.65	
	1981.964	50.56	AVG	-5.59	44.97	50.00	100	45	-5.03	

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. **Measurement uncertainty below 1GHz: 30-1000 MHz = ± 6.10 dB ;**
   Measurement uncertainty above 1GHz: 1-18 GHz = ± 4.78 dB, 18-40 GHz = ± 2.44 dB ; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.
6. **Up Line: PK Limit Line, Down Line: Ave Limit Line.**

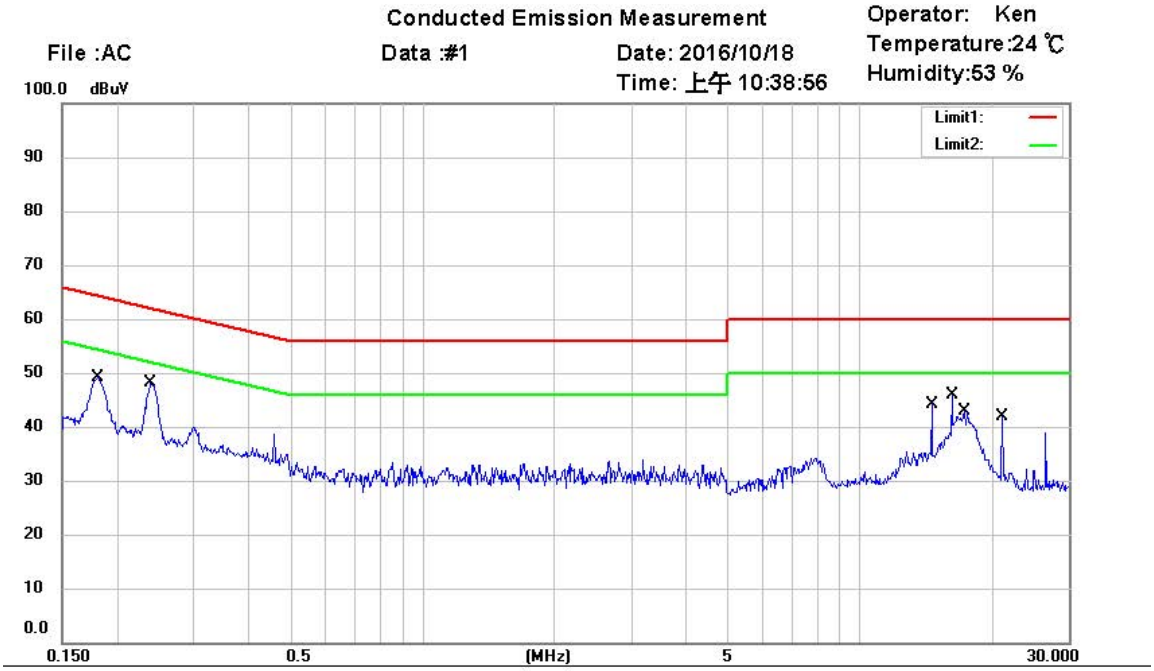
Conducted Emission

Emission



Site : Chamber_03
Condition : CISPR32 Class B Conduction(QP)
Phase: N
EUT : W6M21610-16308
Power : 230 Va.c.
M/N:
Test Mode :
Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.1806	37.69	QP	9.68	47.37	64.46	-17.09	
*	0.1806	33.73	AVG	9.68	43.41	54.46	-11.05	
	0.2405	33.70	QP	9.67	43.37	62.08	-18.71	
	0.2405	25.95	AVG	9.67	35.62	52.08	-16.46	
	15.5250	15.81	QP	10.19	26.00	60.00	-34.00	
	15.5250	9.42	AVG	10.19	19.61	50.00	-30.39	
	17.5000	25.15	QP	10.21	35.36	60.00	-24.64	
	17.5000	17.59	AVG	10.21	27.80	50.00	-22.20	
	18.6500	20.45	QP	10.22	30.67	60.00	-29.33	
	18.6500	12.80	AVG	10.22	23.02	50.00	-26.98	
	21.2000	11.59	QP	10.26	21.85	60.00	-38.15	
	21.2000	4.27	AVG	10.26	14.53	50.00	-35.47	



Site : Chamber_03
Condition : CISPR32 Class B Conduction(QP)
Phase: L1
EUT : W6M21610-16308
Power : 230 Va.c.
M/N:
Test Mode :
Note :

Mk.	Frequency (MHz)	Reading (dBuV)	Detector	Corrected factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Comment
	0.1806	38.12	QP	9.72	47.84	64.46	-16.62	
*	0.1806	33.78	AVG	9.72	43.50	54.46	-10.96	
	0.2400	33.72	QP	9.71	43.43	62.10	-18.67	
	0.2400	26.35	AVG	9.71	36.06	52.10	-16.04	
	14.5500	19.20	QP	10.09	29.29	60.00	-30.71	
	14.5500	12.21	AVG	10.09	22.30	50.00	-27.70	
	16.2000	20.43	QP	10.11	30.54	60.00	-29.46	
	16.2000	14.00	AVG	10.11	24.11	50.00	-25.89	
	17.3000	24.67	QP	10.11	34.78	60.00	-25.22	
	17.3000	17.68	AVG	10.11	27.79	50.00	-22.21	
	21.0875	11.45	QP	10.14	21.59	60.00	-38.41	
	21.0875	4.16	AVG	10.14	14.30	50.00	-35.70	

Note 1. The formula of measured value as: Test Result = Reading + Correction Factor
2. The Correction Factor = Cable Loss + LISN Insertion Loss + Pulse Limit Loss
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. Measurement uncertainty = ±1.14 dB; Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of k = 2.
6. Up Line: QP Limit Line, Down Line: Ave Limit Line.

Current Harmonics

Harmonics

Standard : IEC/EN 61000 - 3 - 2

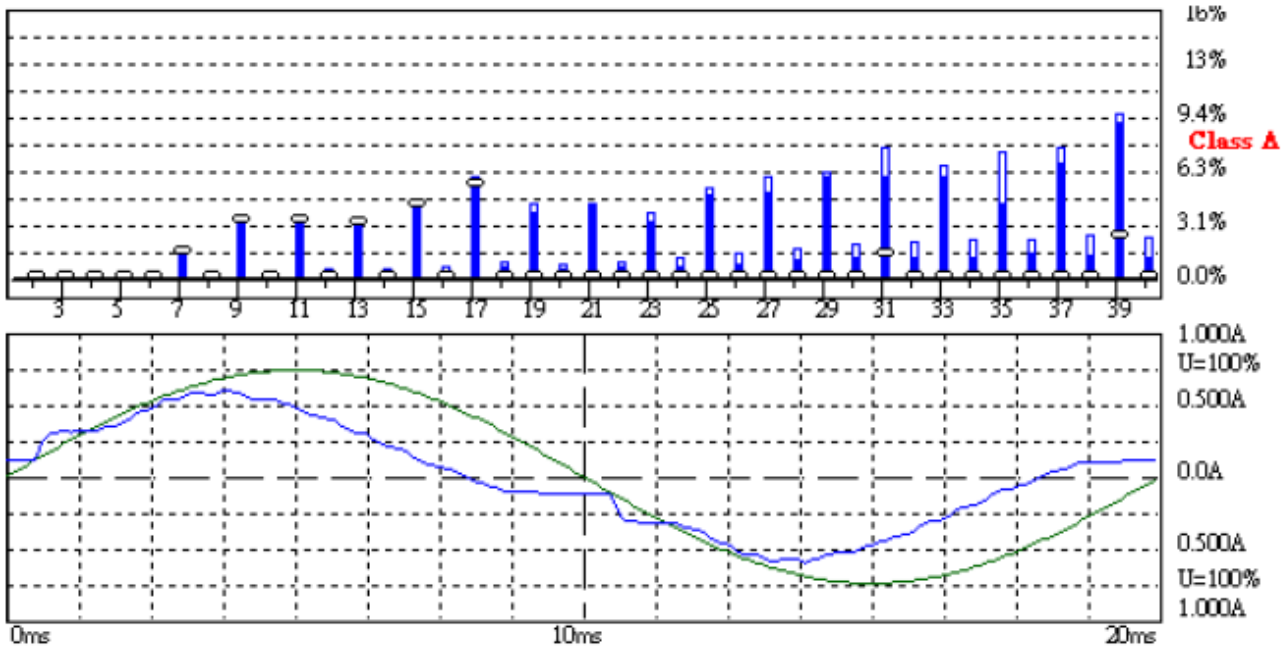
Device : DR8-TB2

Date : October 24, 2016

Class : A

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity : 53.2 %

Operator Syuan
Unit
Serial Number
Remarks



Harmonic Emission - IEC 61000-3-2 , EN 61000-3-2 , (EN60555-2) 2016/10/24 上午 10:3

Urms =	228.9	V	P =	65.87	W	THC =	0.073	A	
Irms =	0.336	A	pf =	0.855					

Range: 1 A
V-nom: 230 V
TestTime: 5 min (100%)

Test completed, Result: PASSED

Registration number: W6M21610-16308-E-11

Voltage Fluctuation

Flicker

Standard : IEC/EN 61000 - 3 - 3

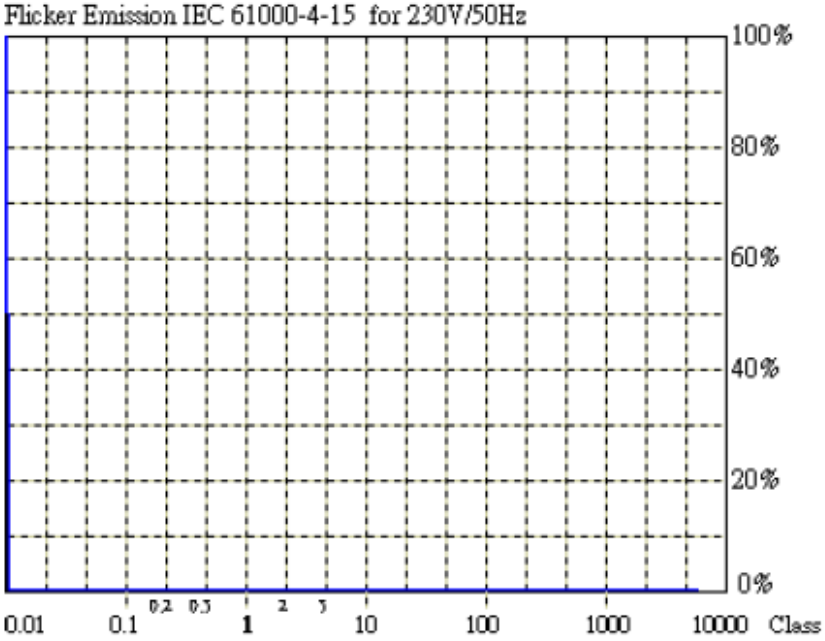
Device : DR8-TB2

Date : October 24, 2016

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity : 53.2 %

Operator Syuan
Unit
Serial Number
Remarks

Flicker Emission IEC 61000-4-15 for 230V/50Hz



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):	**0.01%**
Limit (dc):	3.30%
Tmax 3.30% (dt):	**0.00ms**
Limit (dt>Lim):	500ms

Flicker Emission - IEC 61000-3-3 , EN 61000-3-3

2016/10/24 上午 10:5

Urms =	228.7	V	P =	72.25	W
Irms =	0.381	A	pf =	0.828	

Range:	1 A
V-nom:	230 V
TestTime:	120 min (945%)

Test aborted, Result: PASSED

Registration number: W6M21610-16308-E-11

Electrostatic Discharge

ESD

Standard : IEC/EN 61000 - 4 - 2

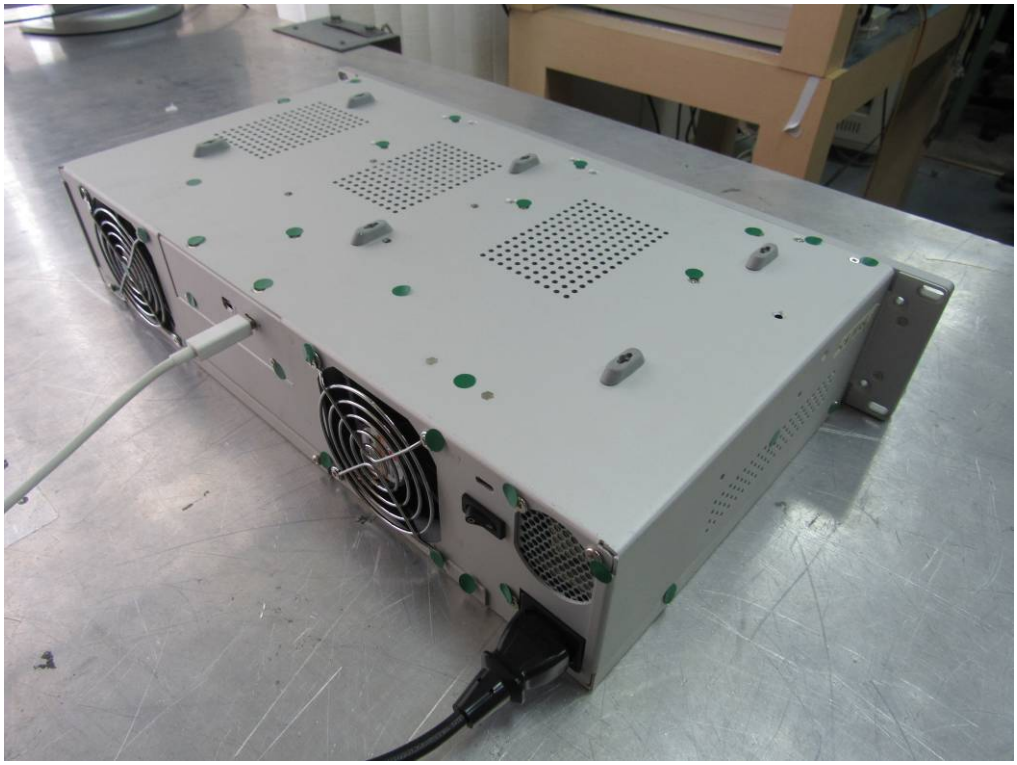
Device : DR8-TB2

Date : October 24, 2016

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity : 53.2 %

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

ESD discharge points



Performance criteria :

- 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

NA: Not Applicable

Explanation: The EUT was interrupted but it recovered automatically when performing ESD Housing ±4kV(C)、±8kV(A) test.

Interference Immunity Against Electromagnetic Irradiation

RF Field

Standard : IEC/EN 61000 – 4 – 3

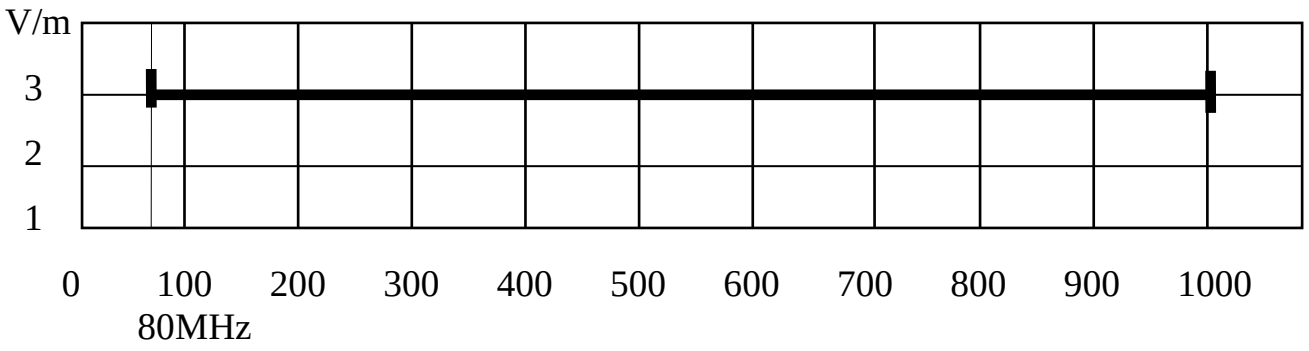
Device : DR8-TB2

Date : October 24, 2016

Temperature	:	23.1 °C
Pressure	:	990 hPa
Rel. humidity	:	53.2 %

Test equipment : 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)



Performance criteria :

☒ 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 : DR8-TB2

Date : October 24, 2016

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity : 53.2 %

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

Performance criteria :

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 : DR8-TB2

Date : October 24, 2016

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity: 53.2 %

Test mode	Voltage (kV)	Waveform T_r / T_h	Performance criteria
AC-line to line	1	1.2/50 µs	A
AC-line to line to ground	2	1.2/50 µs	A

Performance criteria :

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 : DR8-TB2

Date : October 24, 2016

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity : 53.2 %

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

Performance criteria :

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

Magnetic field frequency

Magn-Field

Standard : IEC/EN 61000 - 4 - 8

Device : DR8-TB2

Date : October 24, 2016

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity : 53.2 %

Magnetic field direction	Passed	Failed	Performance criteria
X-Axis	☒	☐	A
Y-Axis	☒	☐	A
Z-Axis	☒	☐	A

Explanation: The Magnetic field frequency tests in 50 Hz.

The Continuous magnetic field strength is 1 A/m.

Performance criteria:

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 recover

Voltage dips and interruption

V - Dips

Standard : IEC/EN 61000 - 4 - 11

Device : DR8-TB2

Date : October 24, 2016

Temperature : 23.1 °C
Pressure : 990 hPa
Rel. humidity : 53.2 %

Reduction of supply voltage of	Voltage in % (in V)	Duration in ms	Performance criteria
Interruption (> 95 %)	0% (0 V)	250 (5 s)	B
Dips (>95 %)	5% (12 V)	0.5 (10ms)	A
Dips (30 %)	70% (161 V)	25 (500 ms)	A

Performance criteria :

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

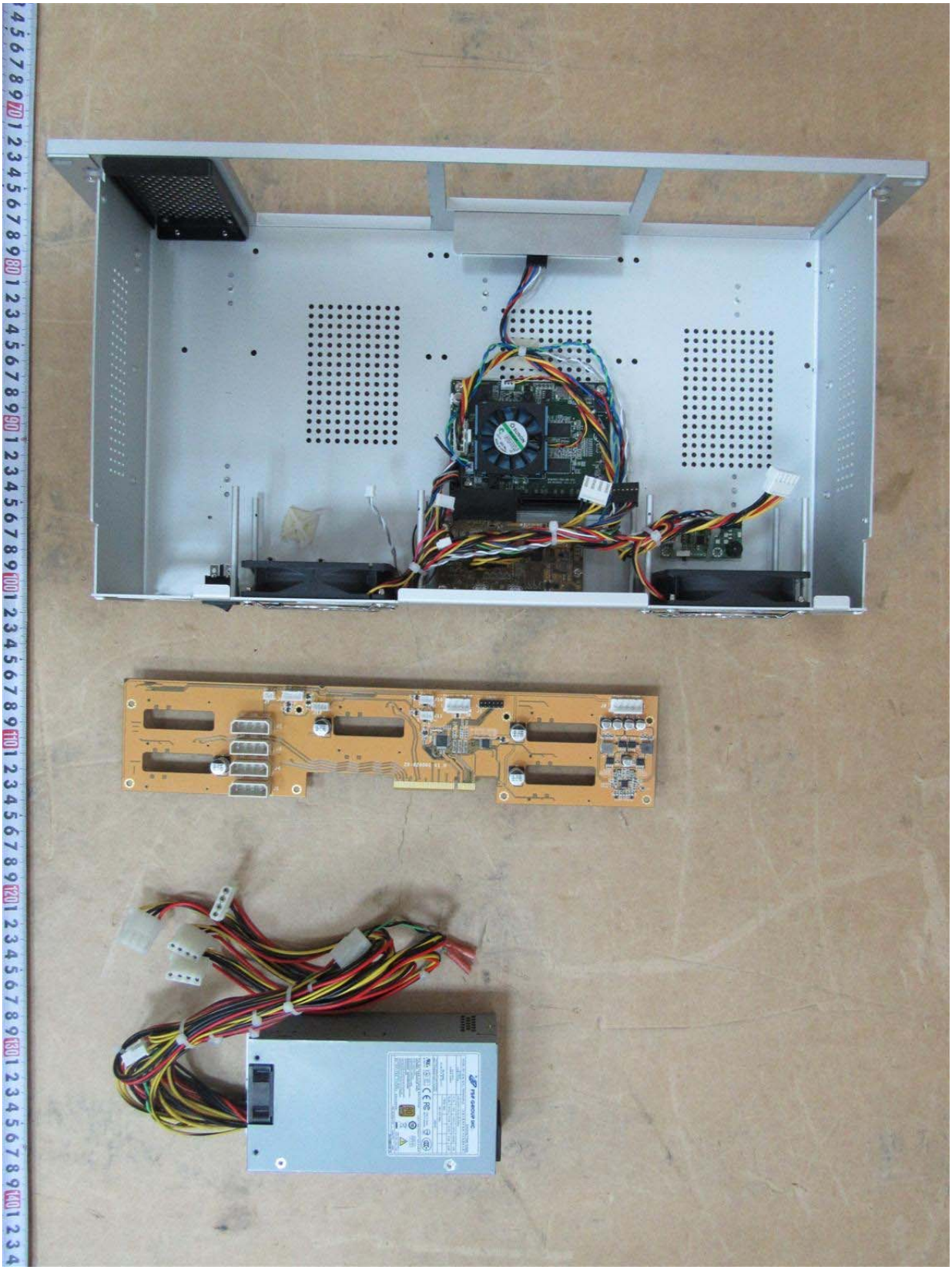
Appendix

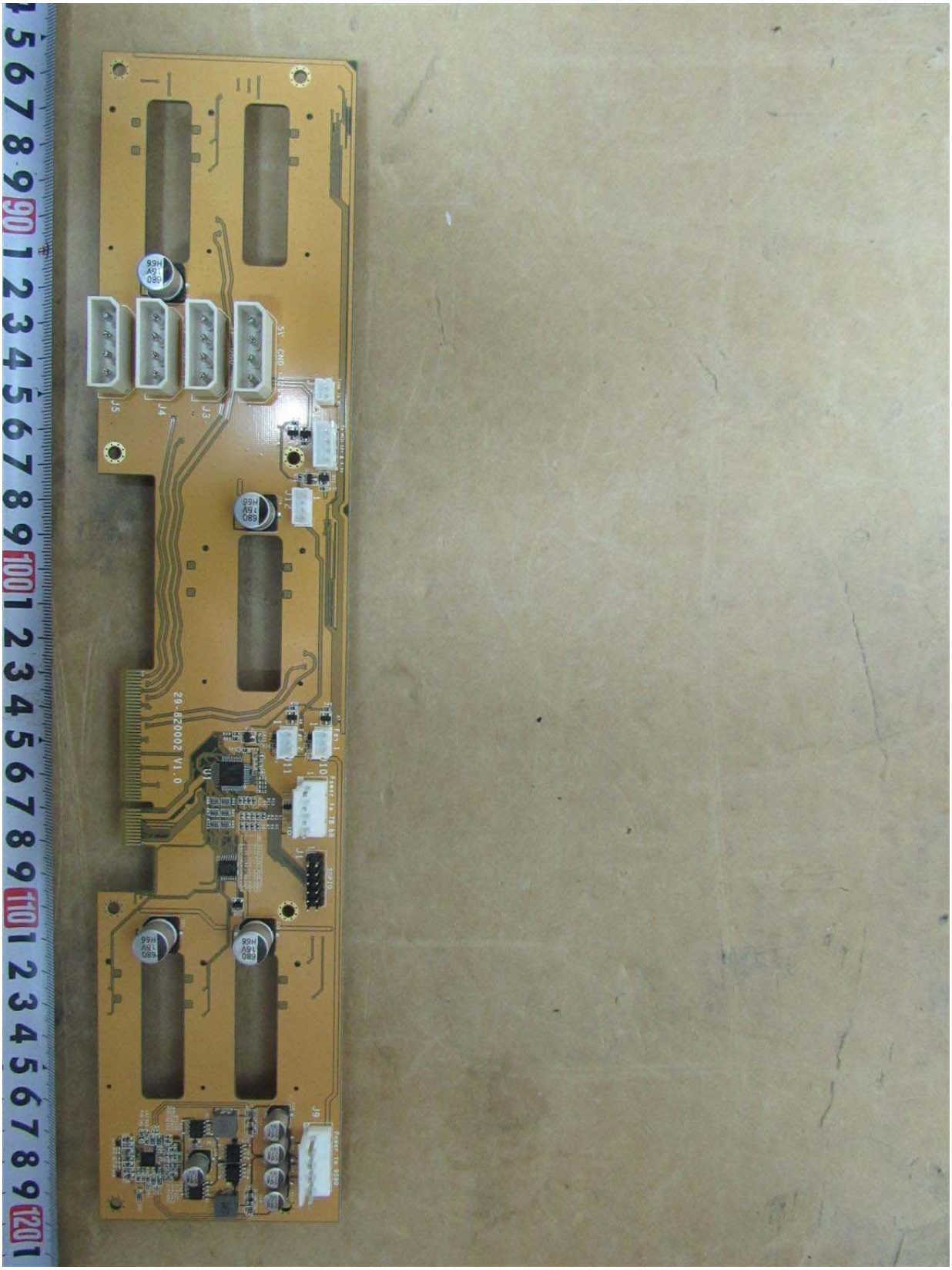
Photos

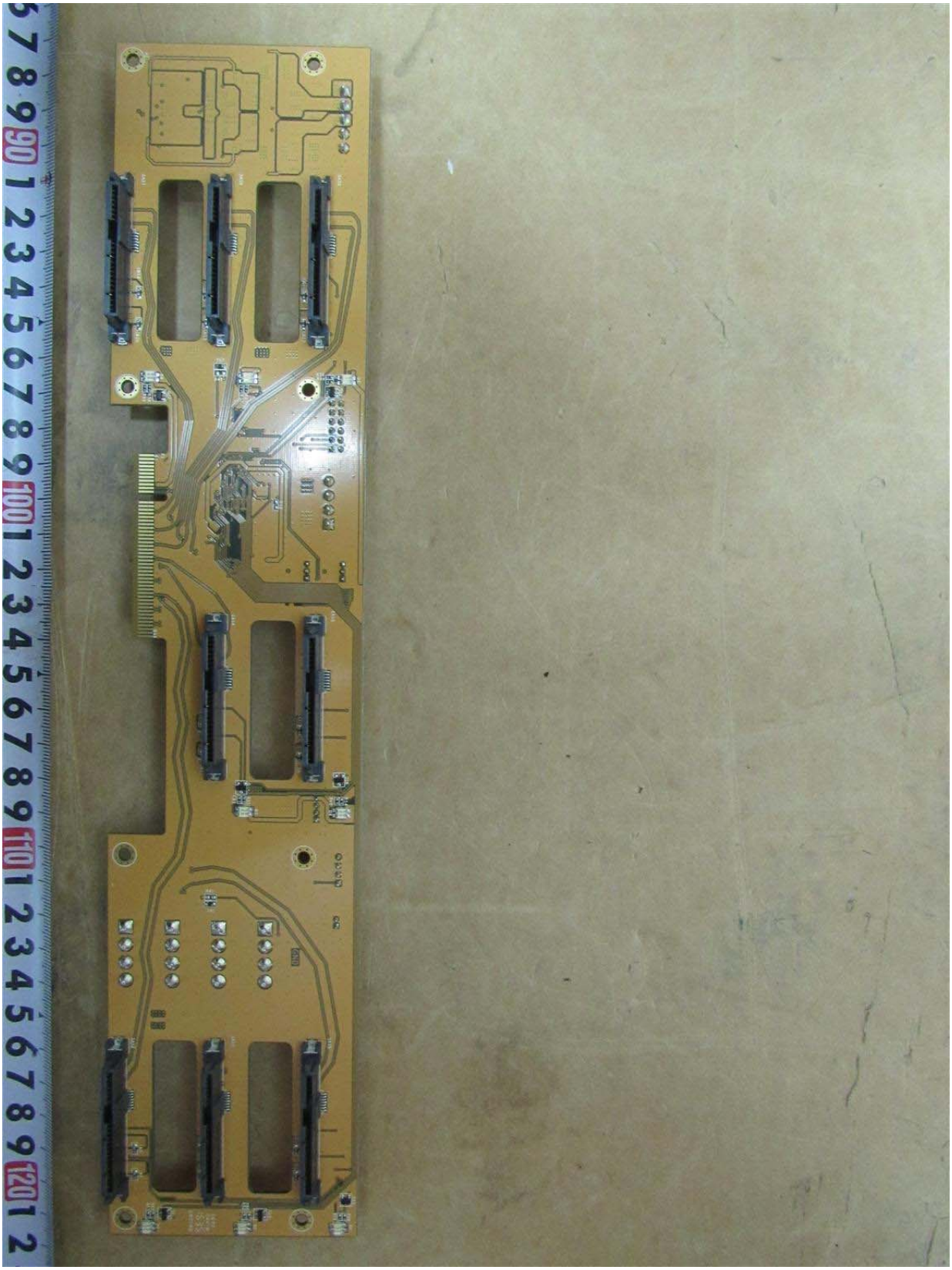
1. External Photos
2. Internal Photos
3. Set Up Photo of Radiated Emission
4. Set Up Photo of Conducted Emission
5. Set Up Photo of Current Harmonics& Voltage Fluctuations
6. Set Up Photo of ESD
7. Set Up Photo of RF-Field
8. Set Up Photo of EFT
9. Set Up Photo of Surge
10. Set Up Photo of CS
11. Set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

External Photos

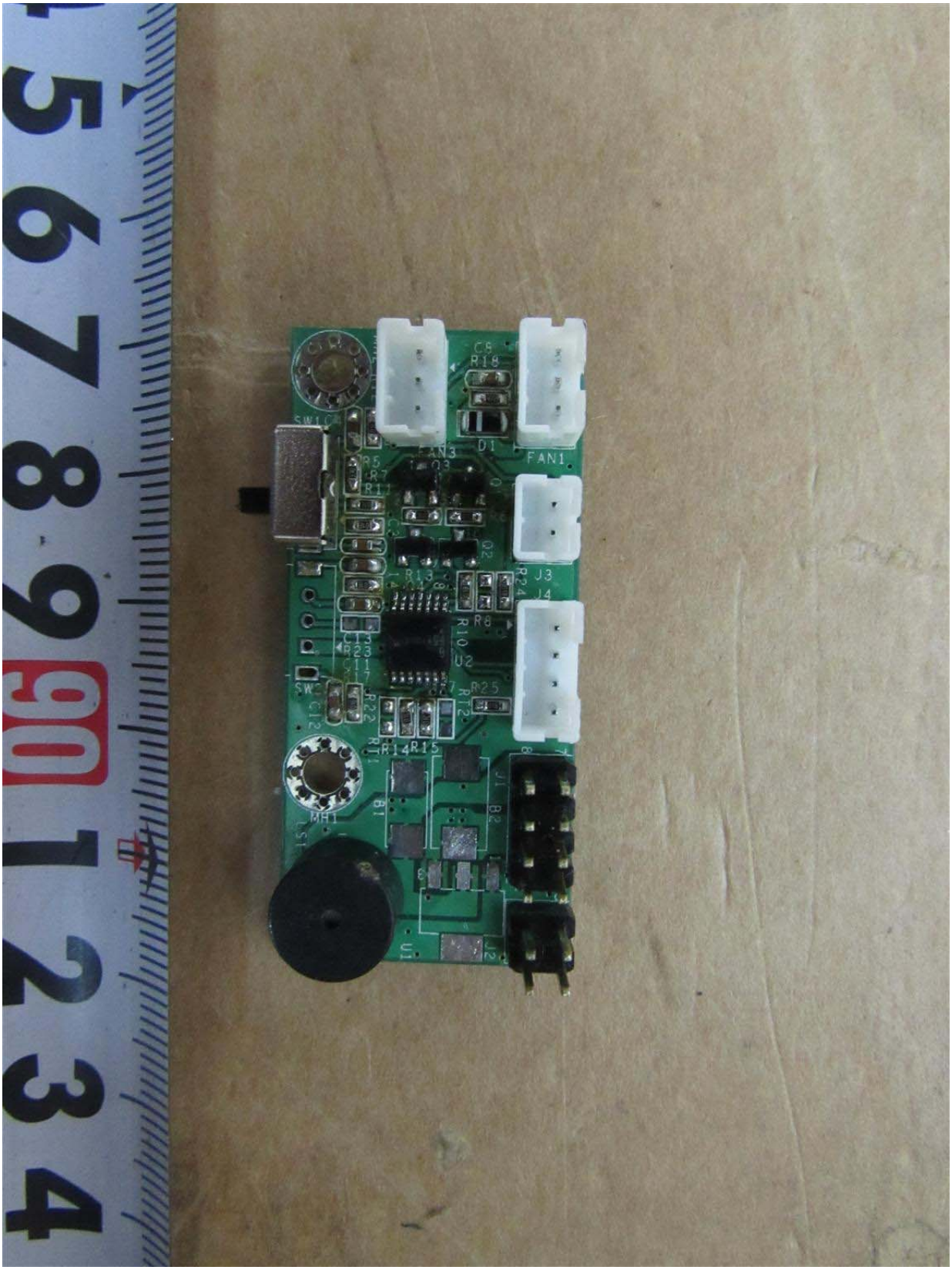
Internal Photos

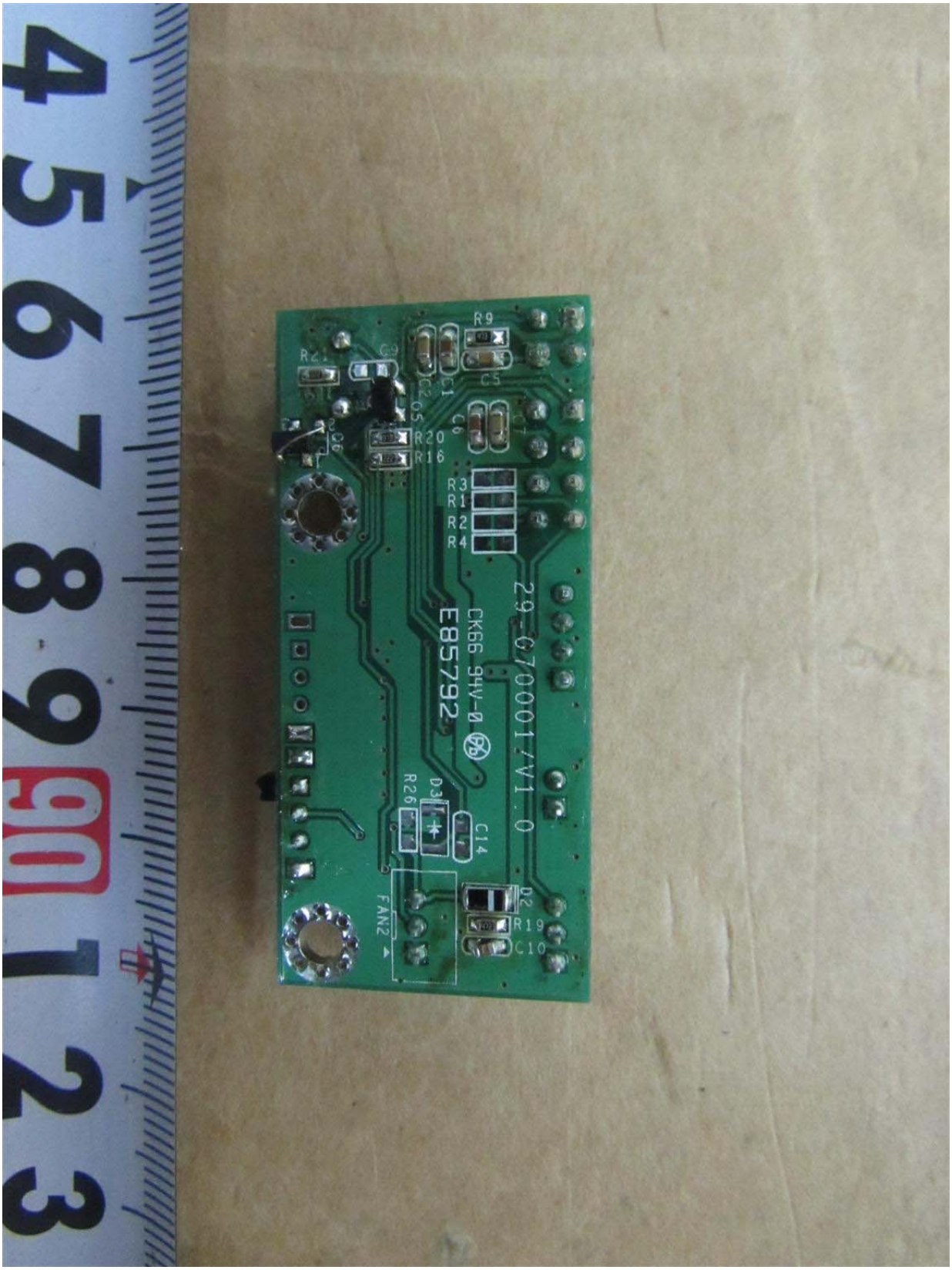







DR8300-TB2-MB-V01
29-810001 ver:1.0

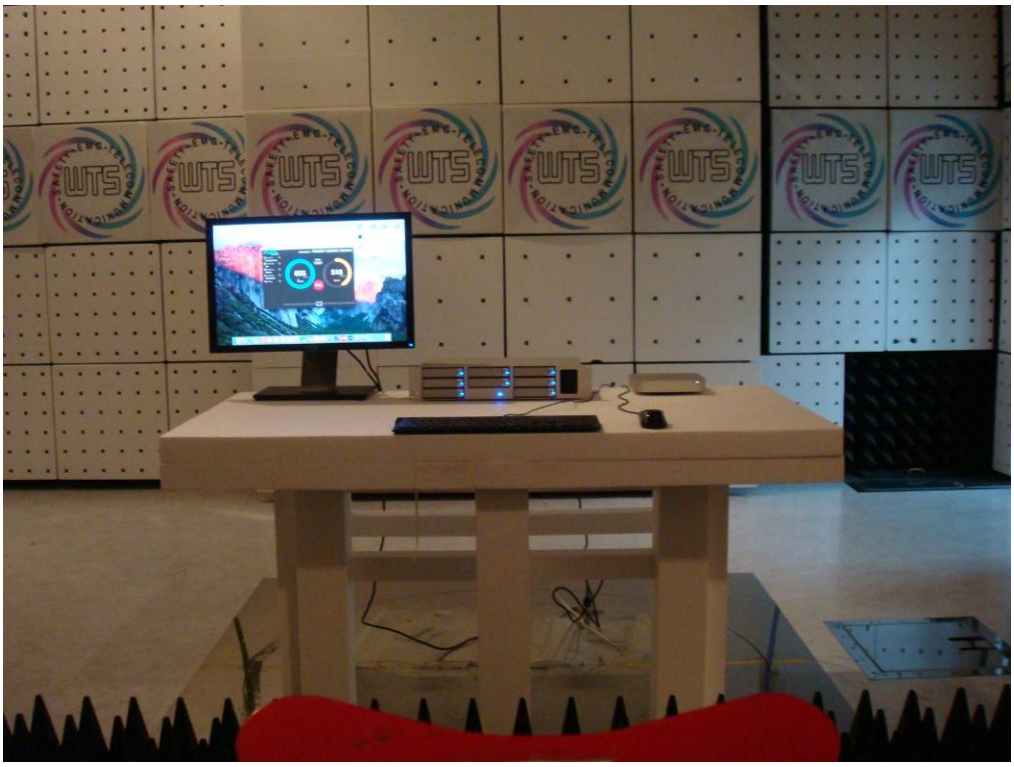

FAN1
J3
J4
U2
MH1


R9
C5
C1
C2
C6
R20
R16
R3
R1
R2
R4
E85792
CK66 94V-0
29-070001/V1.0
D3
R26
C14
D2
R19
C10
FAN2

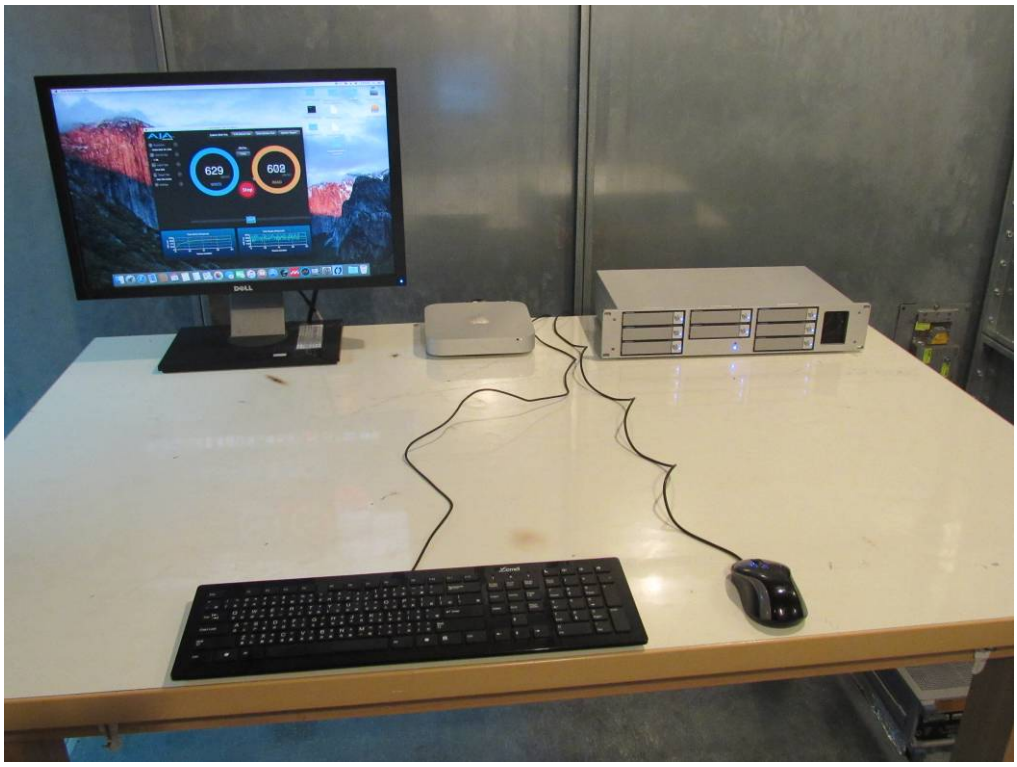

FSP GROUP INC.
Switching Power Supply
MODEL NO (型號/型号): FSP300-60LG
100-240V~ /5-3A,60-50Hz
+3.3V +5V +12V1 +12V2 +5Vsb -12V
16.0A 18.0A 15.0A 15.0A 3.0A 0.5A
130W Max
281.5W Max
300W
WARNING! HAZARDOUS AREA
80 PLUS BRONZE

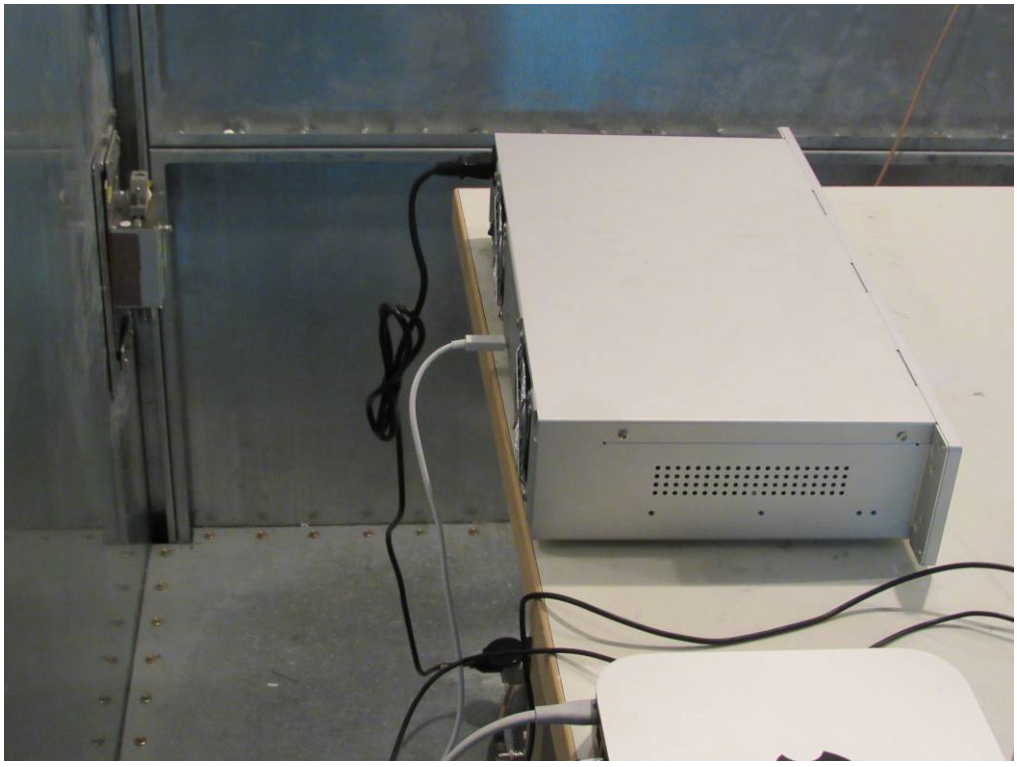
Set Up Photo of Radiated Emission
Below 1GHz

Above 1 GHz



Set Up Photo of Conducted Emission



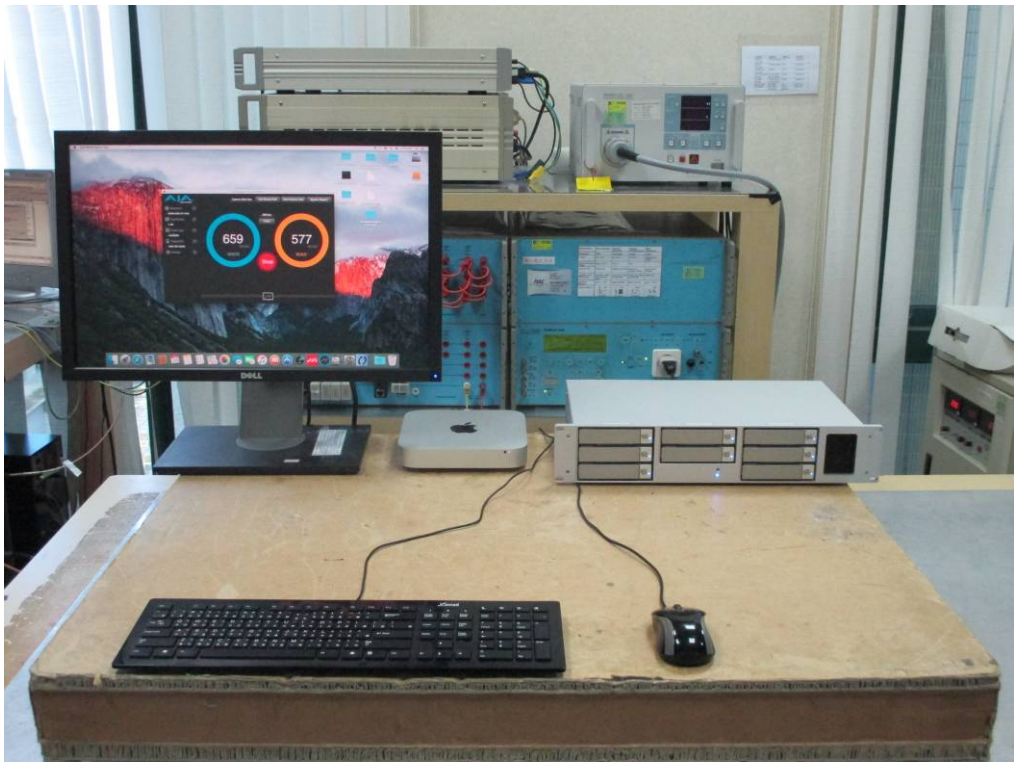


Set Up Photo of Current Harmonics& Voltage Fluctuations

Set Up Photo of ESD

Set Up Photo of RF-Field

Set Up Photo of EFT



Set Up Photo of Surge

Set Up Photo of CS

Set Up Photo of Magn-Field

Set Up Photo of V-DIPS