



CERTIFICATE OF COMPLIANCE

This is to certify that the product listed in follows was (were) tested in the BTL EMC Laboratory to comply with the required criteria levels of the follow-mentioned Generic Standards or Product Family Standard(s) and/or Basic Standard(s) based-on the essential conformity requirements of EMC Directive 2014/30/EU.

Equipment Switching Adapter
Model Name SYS1561-1212
(More models please refer to page 2 of 2)
Brand Name SUNNY
Applicant Sunny Electronics Corp.
Address 1st Fl, #2, Lane 115, Sec. 2, Jung Yang Road, Tu Cheng Taipei Hsien 236

Standard(s) EN 55032: 2015 Class B
EN 61000-3-2: 2014 Class A
EN 61000-3-3: 2013
EN 55024: 2010

Report(s) BTL-EMC-1-1510C184A
Date of Issue Apr. 24 2017

The test data, data evaluation, and equipment configuration contained in our test report(s) above was(were) obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s). The test data contained in the referenced test report relate only to the EUT sample and item(s) tested.

Steven Lu

Authorized Signatory



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CERTIFICATE OF COMPLIANCE

Model list

SYS1561-0105, SYS1561-0205, SYS1561-0305, SYS1561-0405, SYS1561-0505, SYS1561-0605, SYS1561-0705, SYS1561-0805, SYS1561-0905, SYS1561-1005, SYS1561-1105, SYS1561-1105-1, SYS1561-0105-2, SYS1561-0205-2, SYS1561-0305-2, SYS1561-0405-2, SYS1561-0505-2, SYS1561-0605-2, SYS1561-0705-2, SYS1561-0805-2, SYS1561-0905-2, SYS1561-1005-2, SYS1561-0106, SYS1561-0206, SYS1561-0306, SYS1561-0406, SYS1561-0506, SYS1561-0606, SYS1561-0706, SYS1561-0806, SYS1561-0906, SYS1561-1006, SYS1561-0112, SYS1561-0212, SYS1561-0312, SYS1561-0412, SYS1561-0512, SYS1561-0612, SYS1561-0712, SYS1561-0812, SYS1561-0912, SYS1561-1012, SYS1561-1112



EMC Test Report

Project No. : 1510C184A
Equipment : Switching Adapter
Model Name : SYS1561-1212
Series Model : Please refer to Note 2 of page 12 to page 13
Applicant : Sunny Electronics Corp.
Address : 1st Fl, #2, Lane 115, Sec. 2, Jung Yang Road, Tu
Cheng Taipei Hsien 236

Date of Receipt : Oct. 26, 2015, Apr. 10, 2017
Date of Test : Oct. 26, 2015 ~ Dec. 04, 2015
Apr. 11, 2017 ~ Apr. 19, 2017
Issued Date : Apr. 24, 2017
Tested by : BTL Inc.

Testing Engineer : Simon Ling
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Declaration

BTL represents to the client that testing is done in accordance with standard procedures as applicable and that test instruments used has been calibrated with standards traceable to international standard(s) and/or national standard(s).

BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

Table of Contents	Page
REPORT ISSUED HISTORY	6
1 . CERTIFICATION	7
2 . SUMMARY OF TEST RESULTS	8
2.1 TEST FACILITY	10
2.2 MEASUREMENT UNCERTAINTY	10
3 . GENERAL INFORMATION	12
3.1 GENERAL DESCRIPTION OF EUT	12
3.2 DESCRIPTION OF TEST MODES	14
3.3 EUT OPERATING CONDITIONS	15
3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	15
3.5 DESCRIPTION OF SUPPORT UNITS	15
4 . EMC EMISSION TEST	16
4.1 RADIATED EMISSION	16
4.1.1 LIMITS	16
4.1.2 MEASUREMENT INSTRUMENTS LIST	17
4.1.3 TEST PROCEDURE	18
4.1.4 DEVIATION FROM TEST STANDARD	18
4.1.5 TEST SETUP	18
4.1.6 MEASUREMENT DISTANCE	19
4.1.7 TEST RESULTS (UP TO 1 GHZ)	20
4.2 CONDUCTED EMISSION MEASUREMENT AT AC MAINS POWER PORTS	28
4.2.1 LIMITS	28
4.2.2 MEASUREMENT INSTRUMENTS LIST	28
4.2.3 TEST PROCEDURE	29
4.2.4 DEVIATION FROM TEST STANDARD	29
4.2.5 TEST SETUP	29
4.2.6 TEST RESULTS	30
4.3 HARMONICS CURRENT MEASUREMENT	38
4.3.1 LIMITS OF HARMONICS CURRENT MEASUREMENT	38
4.3.2 MEASUREMENT INSTRUMENTS LIST	38
4.3.3 TEST PROCEDURE	39
4.3.4 DEVIATION FROM TEST STANDARD	39
4.3.5 TEST SETUP	39
4.3.6 EUT OPERATING CONDITIONS	39
4.3.7 TEST RESULTS	40
4.4 VOLTAGE FLUCTUATION AND FLICKERS MEASUREMENT	46
4.4.1 LIMITS OF VOLTAGE FLUCTUATION AND FLICKERS MEASUREMENT	46
4.4.2 MEASUREMENT INSTRUMENTS LIST	46

Table of Contents	Page
4.4.3 TEST PROCEDURE	46
4.4.4 DEVIATION FROM TEST STANDARD	46
4.4.5 TEST SETUP	47
4.4.6 EUT OPERATING CONDITIONS	47
4.4.7 TEST RESULTS	48
5 . EMC IMMUNITY TEST	50
5.1 STANDARD COMPLIANCE/SEVERITY LEVEL/CRITERIA	50
5.2 GENERAL PERFORMANCE CRITERIA	52
5.3 GENERAL PERFORMANCE CRITERIA TEST SETUP	52
5.4 ESD TESTING	53
5.4.1 TEST SPECIFICATION	53
5.4.2 MEASUREMENT INSTRUMENTS	53
5.4.3 TEST PROCEDURE	53
5.4.4 DEVIATION FROM TEST STANDARD	54
5.4.5 TEST SETUP	54
5.4.6 TEST RESULTS	55
5.4.7 PHOTO(S) SHOWN THE LOCATION(S) OF ESD EVALUATED	56
5.5 RS TESTING	58
5.5.1 TEST SPECIFICATION	58
5.5.2 MEASUREMENT INSTRUMENTS	58
5.5.3 TEST PROCEDURE	58
5.5.4 DEVIATION FROM TEST STANDARD	59
5.5.5 TEST SETUP	59
5.5.6 TEST RESULTS	60
5.6 EFT/BURST TESTING	61
5.6.1 TEST SPECIFICATION	61
5.6.2 MEASUREMENT INSTRUMENTS	61
5.6.3 TEST PROCEDURE	61
5.6.4 DEVIATION FROM TEST STANDARD	61
5.6.5 TEST SETUP	62
5.6.6 TEST RESULTS	63
5.7 SURGE TESTING	64
5.7.1 TEST SPECIFICATION	64
5.7.2 MEASUREMENT INSTRUMENTS	64
5.7.3 TEST PROCEDURE	65
5.7.4 DEVIATION FROM TEST STANDARD	65
5.7.5 TEST SETUP	65
5.7.6 TEST RESULTS	66
5.8 INJECTION CURRENT TESTING	67
5.8.1 TEST SPECIFICATION	67
5.8.2 MEASUREMENT INSTRUMENTS	67

Table of Contents	Page
5.8.3 TEST PROCEDURE	68
5.8.4 DEVIATION FROM TEST STANDARD	68
5.8.5 TEST SETUP	68
5.8.6 TEST RESULTS	69
5.9 POWER FREQUENCY MAGNETIC FIELD TESTING	70
5.9.1 TEST SPECIFICATION	70
5.9.2 MEASUREMENT INSTRUMENTS	70
5.9.3 TEST PROCEDURE	70
5.9.4 DEVIATION FROM TEST STANDARD	70
5.9.5 TEST SETUP	71
5.9.6 TEST RESULTS	72
5.10 VOLTAGE INTERRUPTION/DIPS TESTING	73
5.10.1 TEST SPECIFICATION	73
5.10.2 MEASUREMENT INSTRUMENTS	73
5.10.3 TEST PROCEDURE	73
5.10.4 DEVIATION FROM TEST STANDARD	73
5.10.5 TEST SETUP	74
5.10.6 TEST RESULTS	75
6 . EUT TEST PHOTO	76

REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-EMC-1-1510C184	Original Report.	Dec. 07, 2015
BTL-EMC-1-1510C184A	Compared with the previous report (BTL-EMC-1-1510C184), the EN 55022 is updated to the EN 55032, so the EMI test items have been re-evaluated and recorded in the test report.	Apr. 24, 2017

1. CERTIFICATION

Equipment : Switching Adapter
Brand Name : SUNNY
Model Name : SYS1561-1212
Series Model : Please refer to Note 2 of page 12 to page 13
Applicant : Sunny Electronics Corp.
Manufacturer : Sunny Electronics Corp.
Address : 1st Fl, #2, Lane 115, Sec. 2, Jung Yang Road, Tu Cheng Taipei Hsien 236
Factory : Sunny computer Technology Co., Ltd.
Address : HengLi New Town Zone, Dong Guan City, GuangDong 523477,P.R.China
Date of Test : Oct. 26, 2015 ~ Dec. 04, 2015
Apr. 11, 2017 ~ Apr. 19, 2017
Test Sample : Engineering Sample
Standard(s) : EN 55032: 2015 Class B
EN 61000-3-2: 2014
EN 61000-3-3: 2013
EN 55024: 2010
EN 61000-4-2:2009
EN 61000-4-3: 2006+A1:2008+A2:2010
EN 61000-4-4:2012
EN 61000-4-5:2014
EN 61000-4-6: 2014+AC :2015
EN 61000-4-8:2010
EN 61000-4-11:2004

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-EMC-1-1510C184A) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s).

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Emission					
Standard(s)	Test Item		Limit	Judgment	Remark
EN 55032: 2015	Radiated emissions up to 1 GHz		Class B	PASS	-----
	Radiated emissions above 1 GHz		Class B	N/A	NOTE (1) NOTE (2)
	Radiated emissions from FM receivers		-----	N/A	NOTE (1) NOTE (6)
	Conducted emissions AC mains power port		Class B	PASS	NOTE (7)
	Asymmetric mode conducted emissions	AAN	-----	N/A	NOTE (1) NOTE (8)
		Current Probe	-----	N/A	
		CVP	-----	N/A	
	Conducted differential voltage emissions		-----	N/A	NOTE (1) NOTE (9)

Standard	Test Item	Limit	Judgment	Remark
EN 61000-3-2: 2014	Harmonic Current Emission	Class A	PASS	
EN 61000-3-3: 2013	Voltage Fluctuations & Flicker	-----	PASS	

Immunity EN 55024: 2010				
Section(s)	Test Item	Performance Criterion	Judgment	Remark
EN 61000-4-2:2009	Electrostatic discharge immunity	B	PASS	
EN 61000-4-3: 2006+A1:2008+A2:2010	Radiated, radio-frequency, electromagnetic field immunity	A	PASS	
EN 61000-4-4:2012	Electrical fast transient/burst immunity	B	PASS	
EN 61000-4-5:2014	Surge immunity	B/C	PASS	NOTE(4)
EN 61000-4-6: 2014+AC :2015	Immunity to conducted disturbances, induced by radio-frequency fields	A	PASS	
EN 61000-4-8:2010	Power frequency magnetic field immunity	A	PASS	
EN 61000-4-11:2004	Voltage dips, short interruptions and voltage variations immunity	B / C / C	PASS	NOTE(5)

NOTE:

- (1) "N/A" denotes test is not applicable to this device.
- (2) The EUT's max operating frequency is 65kHz which does not exceed 108 MHz, so the test will not be performed.
- (3) If the power consumption is less than 75W, there is no limit applied.
- (4) Performance Criterion C for signal ports and telecommunication ports.
Performance Criterion B for input d.c. power port and a.c. power ports.
- (5) Voltage Dips: >95% reduction – Performance Criterion B
Voltage Dips: 30% reduction – Performance Criterion C
Voltage Interruptions: >95% reduction – Performance Criterion C
- (6) If the EUT has FM function the test will be performed.
- (7) If the EUT has AC power mains port the test will be performed.
- (8)

Cable Type	Number of pairs	Measurement type	Procedures
Balanced Unscreened	1 (2 wire) ;2 (4 wire); 3 (6 wire) ;4 (8 wire)	Voltage	AAN
Balanced Unscreened	See a)	Voltage and Current	CP+CVP
Screened or Coaxial	n/a	Voltage	AAN
Screened or Coaxial	n/a	Voltage or Current	CP or CVP
Unbalanced cables	n/a	Voltage and Current	CP+CVP

Ports connected to cables with more than 4 balanced pairs or where the port is unable to function correctly when connected through an AAN.

- (9) If the EUT has tuner port the test will be performed.
- (10) The requirement followed by the client's specification.

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

2.2 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2, The BTL measurement uncertainty is less than the CISPR 16-4-2 U_{CISPR} requirement.

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95%**.

A. Radiated emissions up to 1 GHz measurement:

Test Site	Method	Measurement Frequency Range	Ant. H / V	U, (dB)
DG-CB02 (3m)	CISPR	30MHz ~ 200MHz	V	3.83
		30MHz ~ 200MHz	H	3.79
		200MHz ~ 1,000MHz	V	4.04
		200MHz ~ 1,000MHz	H	4.02

B. Conducted emissions AC mains power port measurement:

Test Site	Method	Measurement Frequency Range	U, (dB)
DG-C02	CISPR	150 kHz ~ 30MHz	2.32

C. Harmonic/ Flicker Measurement:

Test Site	Method	Test item	U(%)
C01	EN 61000-3-2	Voltage	0.774
	EN 61000-3-3	Current	0.782

D. Immunity Measurement:

Test Site	Method	Test Item	U
SR02	EN 61000-4-2	Voltage (2kV/4kV/6kV/8kV/15kV/25kV/30kV)	1.0%
		Peak Current	6.0%
		30/60ns Current	6.0%
		Rise time	6.4%
CB05	EN 61000-4-3	80MHz~1GHz	2.175 dB
SR05	EN 61000-4-4	Impulse Voltage	4.0 %
		Impulse Rise Time	4.5 %
		Impulse duration Time	4.0 %
SR05	EN 61000-4-5	Impulse Voltage	4.0 %
		Impulse Rise Time	4.5 %
		Impulse duration Time	4.0 %
CB06	EN 61000-4-6	CDN: 150kHz~230MHz	2.509 dB
		EM Clamp: 150kHz~230MHz	3.094 dB
SR05	EN 61000-4-8	Magnetic Field Level	3 %
SR05	EN 61000-4-11	Impulse Amplitude	4 %
		Timing	3 %

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	Switching Adapter
Brand Name	SUNNY
Model Name	SYS1561-1212
Series Model	Please refer to Note 2 of page 12 to page 13
Model Difference	Please refer to Note 2.
Power Source	AC Mains.
Power Rating	Please refer to Note 2.

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 2.

model	input voltage	output	Max. output power	transformer	Output port
SYS1561-0105	100-240Vac	5V,0.2A	1W	04B489	DC cord or USB port
SYS1561-0205	100-240Vac	5V,0.4A	2W		
SYS1561-0305	100-240Vac	5V,0.6A	3W		
SYS1561-0405	100-240Vac	5V,0.8A	4W		
SYS1561-0505	100-240Vac	5V,1A	5W		
SYS1561-0605	100-240Vac	5V,1.2A	6W		
SYS1561-0705	100-240Vac	5V,1.4A	7W		
SYS1561-0805	100-240Vac	5V,1.6A	8W		
SYS1561-0905	100-240Vac	5V,1.8A	9W		
SYS1561-1005	100-240Vac	5V,2A	10W		
SYS1561-1105	100-240Vac	5V,2.1A	10.5W		

model	input voltage	output	Max. output power	transformer	Output port
SYS1561-1105-1	100-240Vac	5.35V, 2A	10.7W	04B489	DC cord or USB port
SYS1561-0105-2	100-240Vac	5.9V, 0.16A	1W		
SYS1561-0205-2	100-240Vac	5.9V, 0.33A	2W		
SYS1561-0305-2	100-240Vac	5.9V, 0.50A	3W		
SYS1561-0405-2	100-240Vac	5.9V, 0.67A	4W		
SYS1561-0505-2	100-240Vac	5.9V, 0.84A	5W		
SYS1561-0605-2	100-240Vac	5.9V, 1.01A	6W		
SYS1561-0705-2	100-240Vac	5.9V, 1.18A	7W		
SYS1561-0805-2	100-240Vac	5.9V, 1.35A	8W		
SYS1561-0905-2	100-240Vac	5.9V, 1.52A	9W		
SYS1561-1005-2	100-240Vac	5.9V, 1.69A	10W		
SYS1561-0106	100-240Vac	6V, 0.16A	1W		
SYS1561-0206	100-240Vac	6V, 0.33A	2W		
SYS1561-0306	100-240Vac	6V, 0.5A	3W		
SYS1561-0406	100-240Vac	6V, 0.66A	4W		
SYS1561-0506	100-240Vac	6V, 0.83A	5W		
SYS1561-0606	100-240Vac	6V, 1A	6W		
SYS1561-0706	100-240Vac	6V, 1.16A	7W		
SYS1561-0806	100-240Vac	6V, 1.33A	8W		
SYS1561-0906	100-240Vac	6V, 1.5A	9W		
SYS1561-1006	100-240Vac	6V, 1.66A	10W		
SYS1561-0112	100-240Vac	12V, 0.08A	1W	04B194	DC cord
SYS1561-0212	100-240Vac	12V, 0.16A	2W		
SYS1561-0312	100-240Vac	12V, 0.25A	3W		
SYS1561-0412	100-240Vac	12V, 0.33A	4W		
SYS1561-0512	100-240Vac	12V, 0.41A	5W		
SYS1561-0612	100-240Vac	12V, 0.5A	6W		
SYS1561-0712	100-240Vac	12V, 0.58A	7W		
SYS1561-0812	100-240Vac	12V, 0.66A	8W		
SYS1561-0912	100-240Vac	12V, 0.75A	9W		
SYS1561-1012	100-240Vac	12V, 0.83A	10W		
SYS1561-1112	100-240Vac	12V, 0.91A	11W		
SYS1561-1212	100-240Vac	12V, 1A	12W		

3.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	FULL LOAD

For Radiated Test	
Final Test Mode	Description
Mode 1	FULL LOAD

For Conducted Test	
Final Test Mode	Description
Mode 1	FULL LOAD

For Harmonic and Flicker Test	
Final Test Mode	Description
Mode 1	FULL LOAD

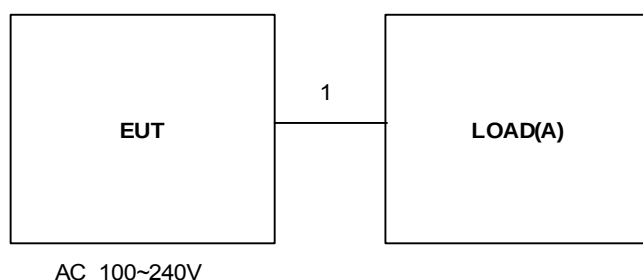
For EMS Test	
Final Test Mode	Description
Mode 1	FULL LOAD

3.3 EUT OPERATING CONDITIONS

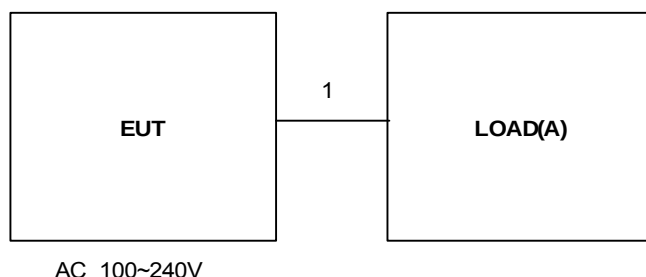
The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use.

3.4 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

SYS1561-1212



SYS1561-1105-1



3.5 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
A	LOAD	N/A	N/A	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.5m	DC Cable
2	NO	NO	1m	USB Cable

4. EMC EMISSION TEST

4.1 RADIATED EMISSION

4.1.1 LIMITS

Class A equipment up to 1000MHz

Table clause	Frequency range MHz	Measurement			Class A limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type/ bandwidth	
A2.1	30-230	OATS/SAC	10	Quasi peak / 120 kHz	40
	230-1000				47
A2.2	30-230	OATS/SAC	3		50
	230-1000				57
A2.3	30-230	FAR	10	Quasi peak / 120 kHz	42 to 35
	230-1000				42
A2.4	30-230	FAR	3		52 to 45
	230-1000				52

Apply only A2.1 or A2.2 or A2.3 or A2.4 across the entire frequency range.

Class B equipment up to 1000MHz

Table clause	Frequency range MHz	Measurement			Class B limits dB(μV/m)
		Facility (see Table A.1)	Distance m	Detector type/ bandwidth	
A4.1	30-230	OATS/SAC	10	Quasi peak / 120 kHz	30
	230-1000				37
A4.2	30-230	OATS/SAC	3		40
	230-1000				47
A4.3	30-230	FAR	10	Quasi peak / 120 kHz	32 to 25
	230-1000				32
A4.4	30-230	FAR	3		42 to 35
	230-1000				42

Apply only table clause A4.1 or A4.2 or A4.3 or A4.4 across the entire frequency range. These requirements are not applicable to the local oscillator and harmonics frequencies of equipment covered by Table A.6.

Notes:

- (1) The limit for radiated test was performed according to as following: EN 55032
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).
- (4) The test result calculated as following:
 Measurement Value = Reading Level + Correct Factor
 Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain(if use)
 Margin Level = Measurement Value - Limit Value

Required highest frequency for radiated measurement

Highest internal frequency (F_x) MHz	Highest measured frequency MHz
$F_x \leq 108$	1000
$108 < F_x \leq 500$	2000
$500 < F_x \leq 1000$	5000
$F_x > 1000$	5 th up to a maximum 6 GHz,

Note for FM and TV broadcast receiver, F_x is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies.

4.1.2 MEASUREMENT INSTRUMENTS LIST

Up to 1GHz:

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 26, 2018
2	Double Ridged Horn Antenna	ARA	DRG-118A	16554	Mar. 26, 2018
3	Amplifier	Agilent	8449B	3008A02274	Feb. 22, 2018
4	Amplifier	HP	8447D	1937A02847	Feb. 22, 2018
5	RF Pre-selector	Agilent	N9039A	MY46520201	Sep. 04, 2017
6	Cable	emci	LMR-400(30MHz-1GHz)(10m+2.5m)	N/A	Jun. 27, 2017
7	Cable	emci	EMC104-SM-SM-10000 (1GHz – 26.5GHz)(10m)	N/A	Jun. 30, 2017
8	Controller	CT	SC100	N/A	N/A
9	Measurement Software	Farad	EZ-EMC Ver.NB-03A 1-01	N/A	N/A
10	Spectrum Analyzer	Agilent	E4447A	MY48250208	Sep. 04, 2017

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.

All calibration period of equipment list is one year.

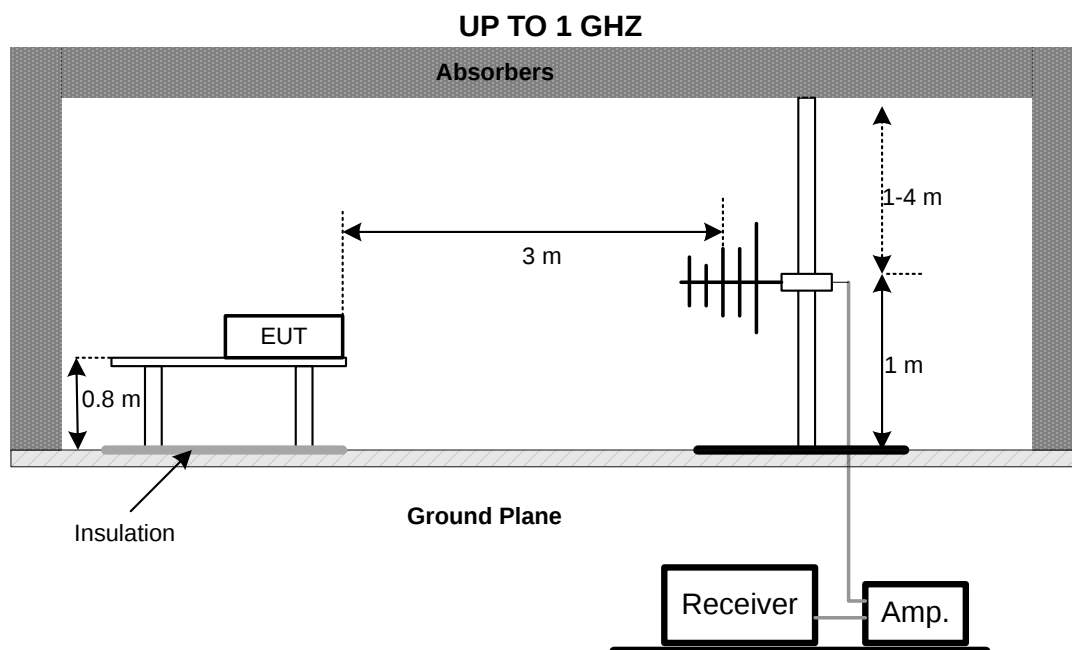
4.1.3 TEST PROCEDURE

- The measuring distance of 3 m shall be used for measurements. The EUT was placed on the top of a rotating table 0.8 meter above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.(below 1GHz).
- The height of the equipment or of the substitution antenna shall be 0.8 m, the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting radiated emission data is a receiver peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- All readings are Peak unless otherwise stated QP in column of Note. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform. (below 1GHz)
- For the actual test configuration, please refer to the related Item - Block Diagram of system tested (please refer to 3.3).

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 TEST SETUP



Note: The antenna can be moved between 1 to 4 meters above the ground.

4.1.6 MEASUREMENT DISTANCE

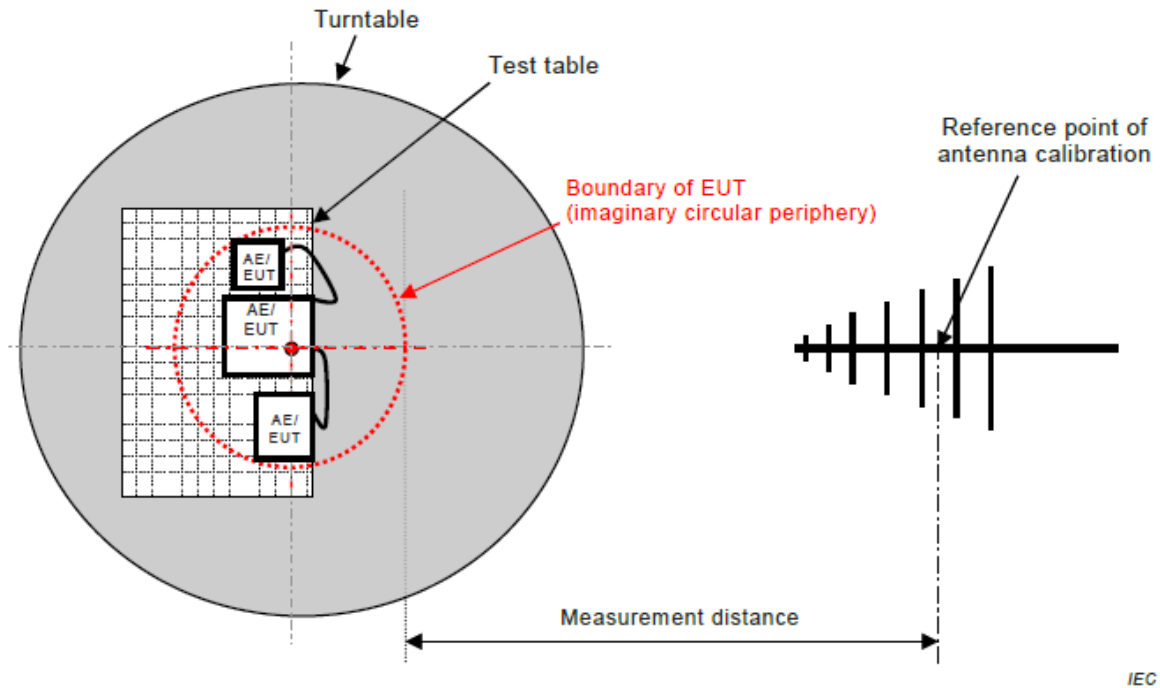


Figure C.1 – Measurement distance

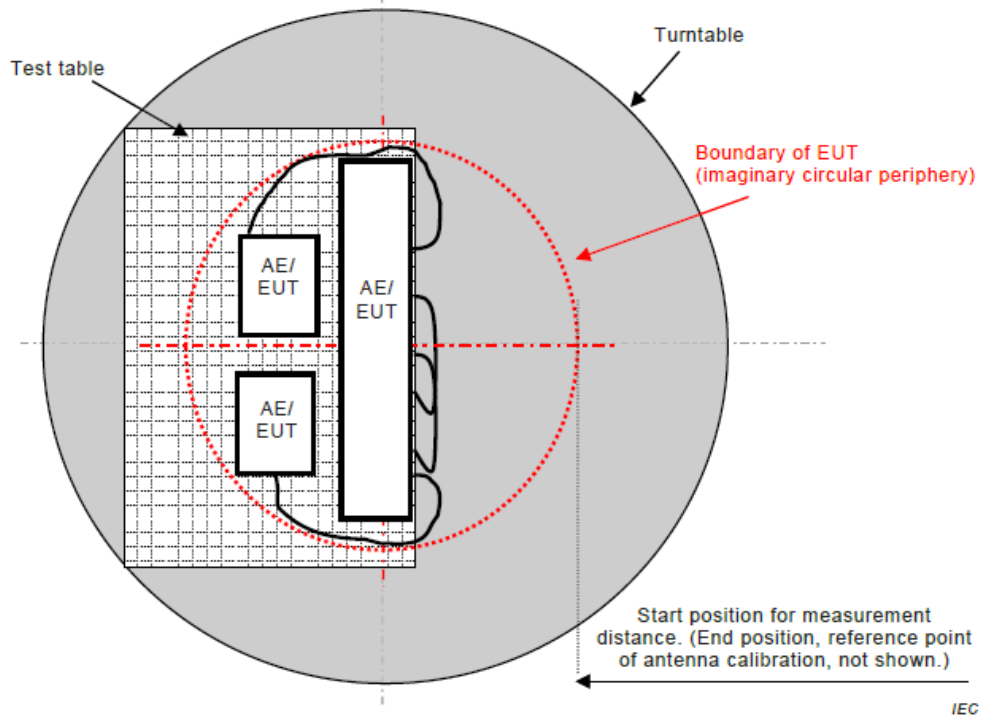
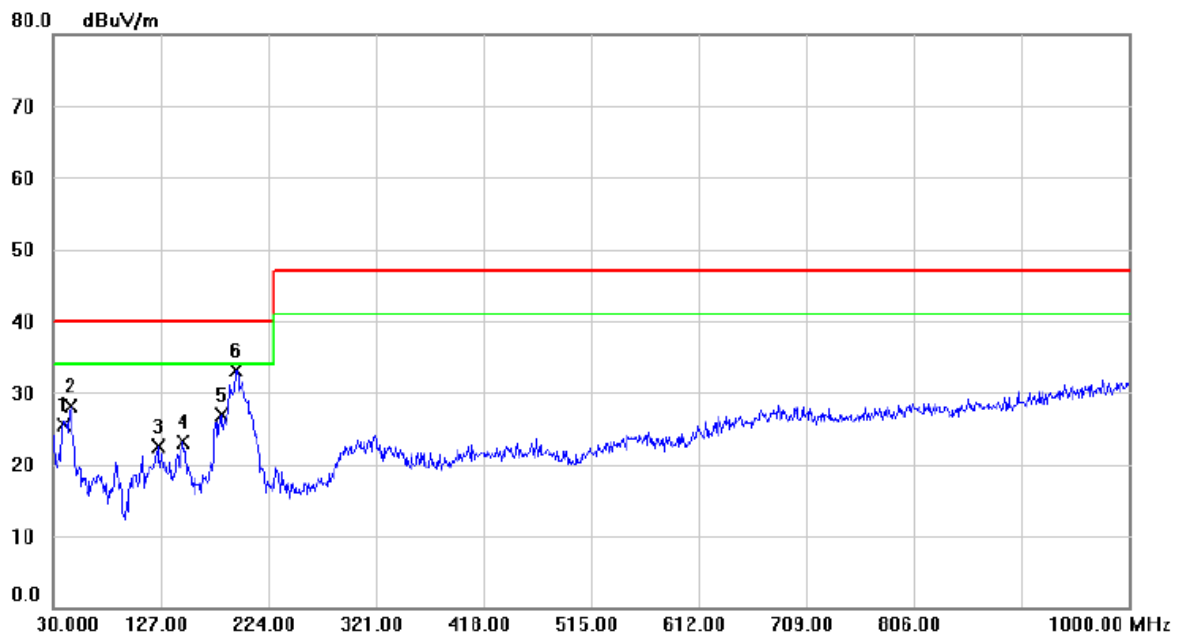


Figure C.2 – Boundary of EUT, Local AE and associated cabling

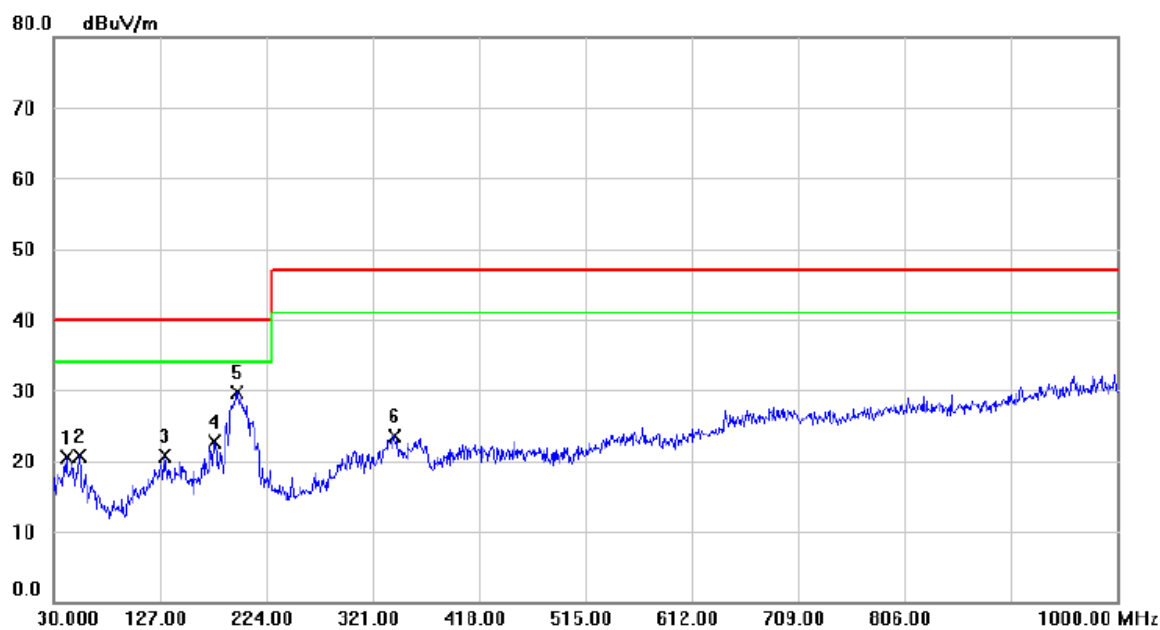
4.1.7 TEST RESULTS (UP TO 1 GHZ)

EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Vertical
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



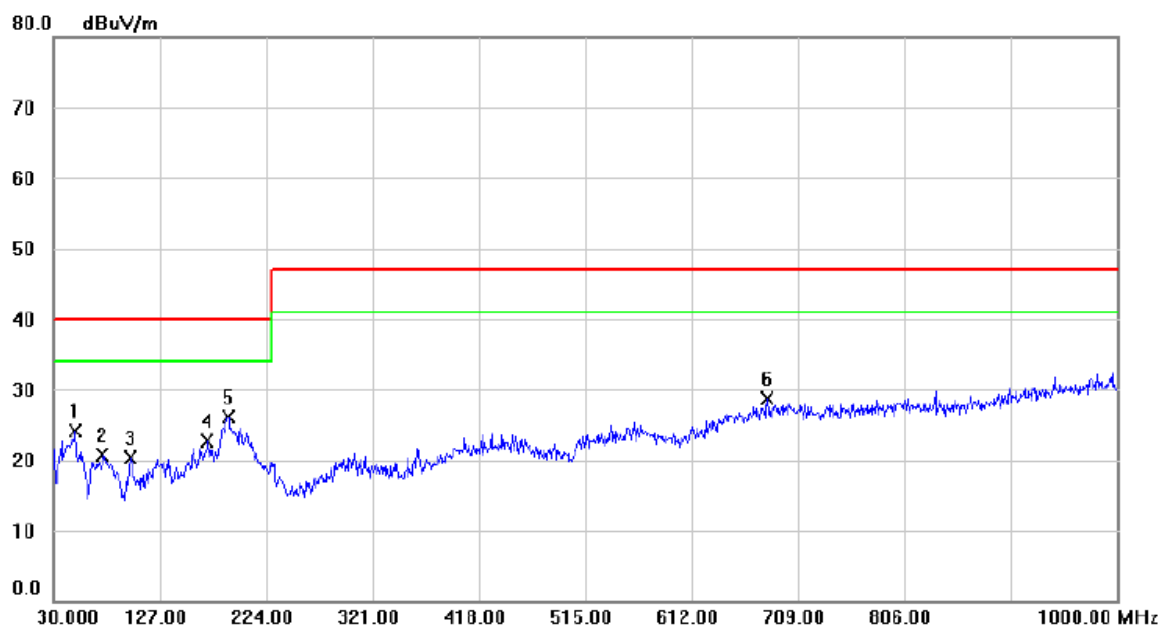
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		39.2150	38.20	-12.64	25.56	40.00	-14.44	QP	
2		46.4900	40.24	-12.17	28.07	40.00	-11.93	QP	
3		124.5750	34.48	-11.94	22.54	40.00	-17.46	QP	
4		147.3700	34.92	-11.91	23.01	40.00	-16.99	QP	
5		181.8050	39.20	-12.34	26.86	40.00	-13.14	QP	
6	*	195.3850	46.49	-13.43	33.06	40.00	-6.94	QP	

EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Horizontal
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



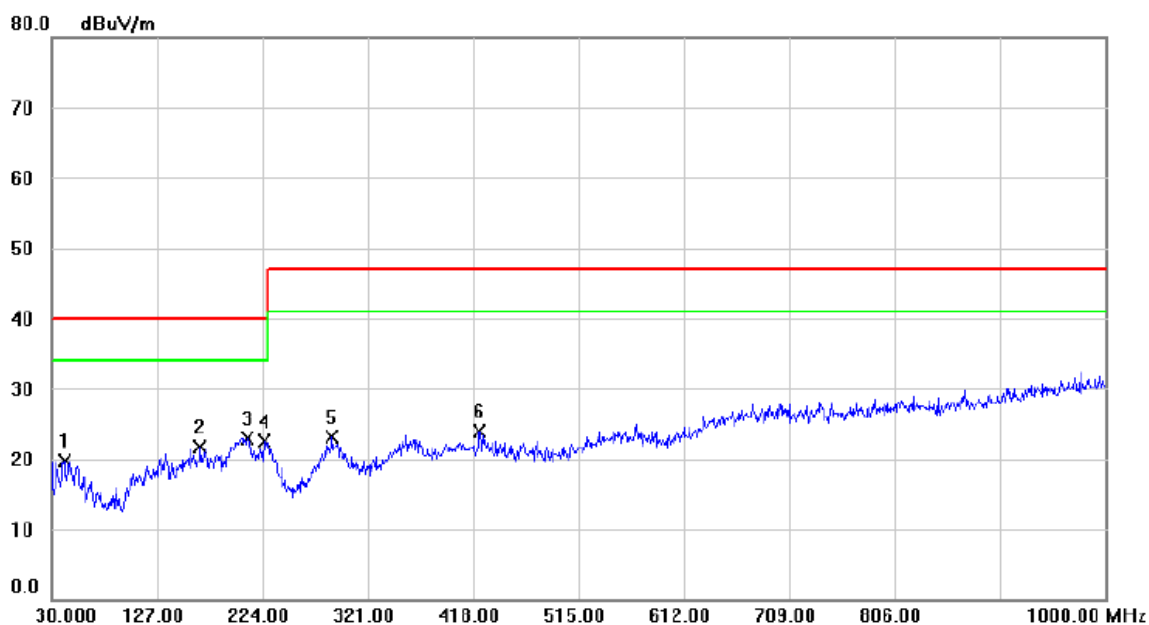
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		41.6400	32.78	-12.18	20.60	40.00	-19.40	QP	
2		53.2800	33.05	-12.32	20.73	40.00	-19.27	QP	
3		131.8500	31.96	-11.28	20.68	40.00	-19.32	QP	
4		176.9550	34.51	-11.71	22.80	40.00	-17.20	QP	
5	*	197.3250	43.18	-13.52	29.66	40.00	-10.34	QP	
6		340.4000	34.10	-10.62	23.48	47.00	-23.52	QP	

EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Vertical
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



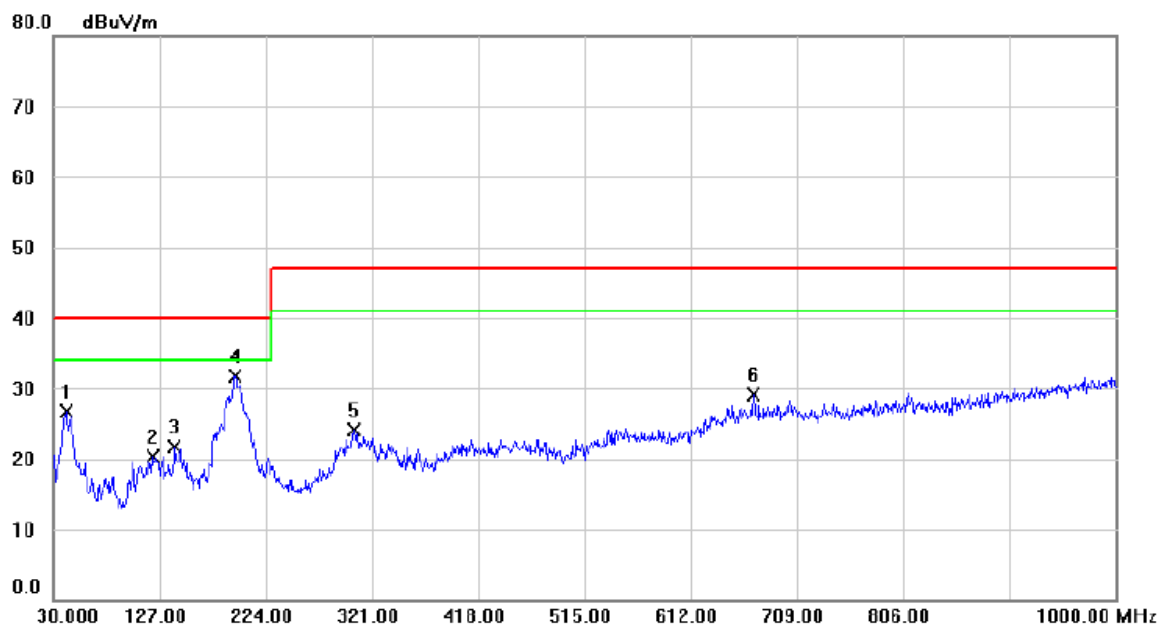
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		50.3700	36.31	-12.12	24.19	40.00	-15.81	QP	
2		75.1050	36.98	-16.19	20.79	40.00	-19.21	QP	
3		99.8400	34.87	-14.58	20.29	40.00	-19.71	QP	
4		170.6500	33.44	-10.80	22.64	40.00	-17.36	QP	
5	*	189.5650	39.16	-13.15	26.01	40.00	-13.99	QP	
6		681.3550	29.70	-1.04	28.66	47.00	-18.34	QP	

EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Horizontal
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



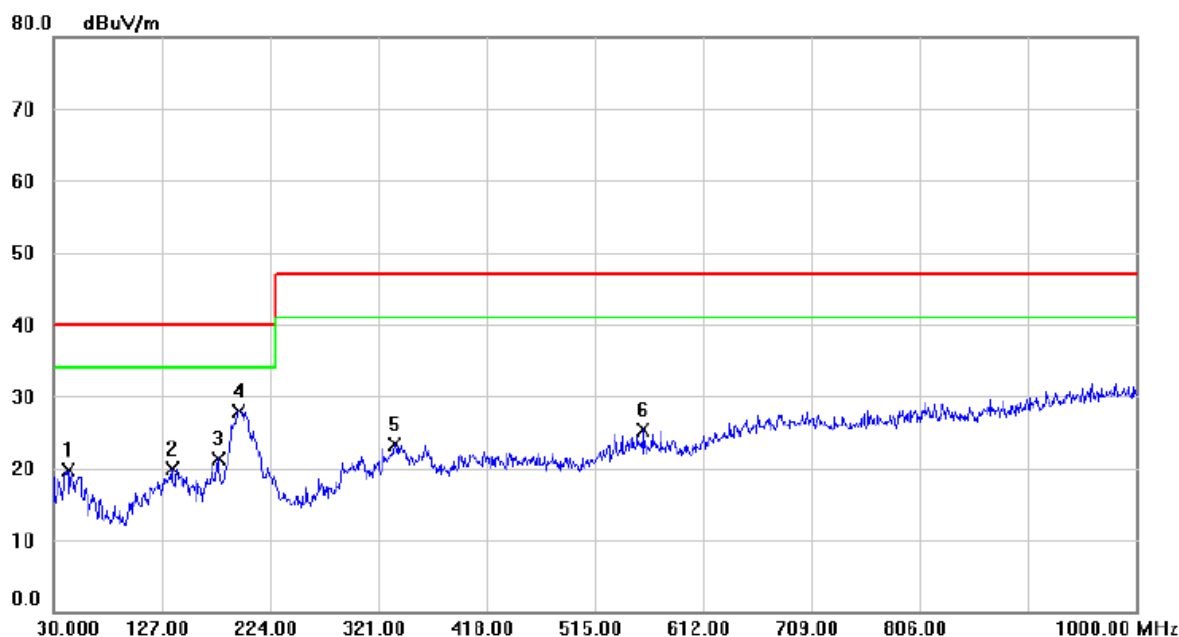
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		41.6400	31.90	-12.18	19.72	40.00	-20.28	QP	
2		166.7700	33.09	-11.31	21.78	40.00	-18.22	QP	
3	*	210.4200	37.02	-14.10	22.92	40.00	-17.08	QP	
4		225.4550	35.94	-13.39	22.55	40.00	-17.45	QP	
5		288.5050	33.29	-10.24	23.05	47.00	-23.95	QP	
6		424.3050	31.11	-7.14	23.97	47.00	-23.03	QP	

EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Vertical
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



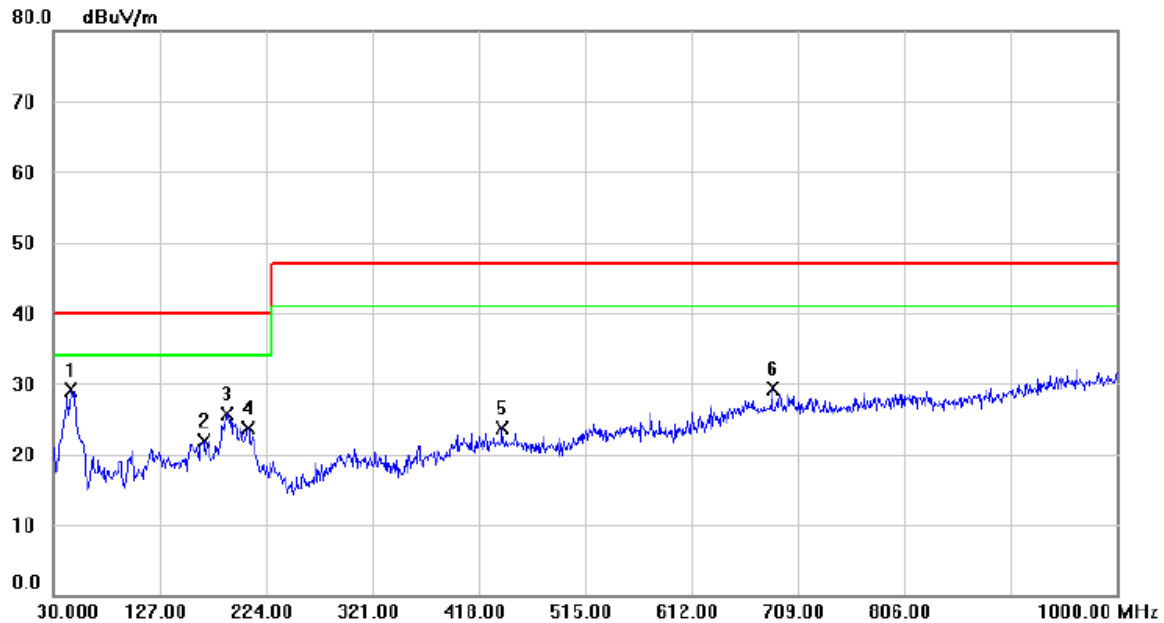
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	42.1250	38.80	-12.07	26.73	40.00	-13.27	QP	
2	120.6950	32.77	-12.50	20.27	40.00	-19.73	QP	
3	140.5800	33.56	-11.88	21.68	40.00	-18.32	QP	
4 *	195.8700	45.06	-13.45	31.61	40.00	-8.39	QP	
5	304.9950	34.04	-10.02	24.02	47.00	-22.98	QP	
6	669.2300	30.31	-1.29	29.02	47.00	-17.98	QP	

EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Horizontal
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



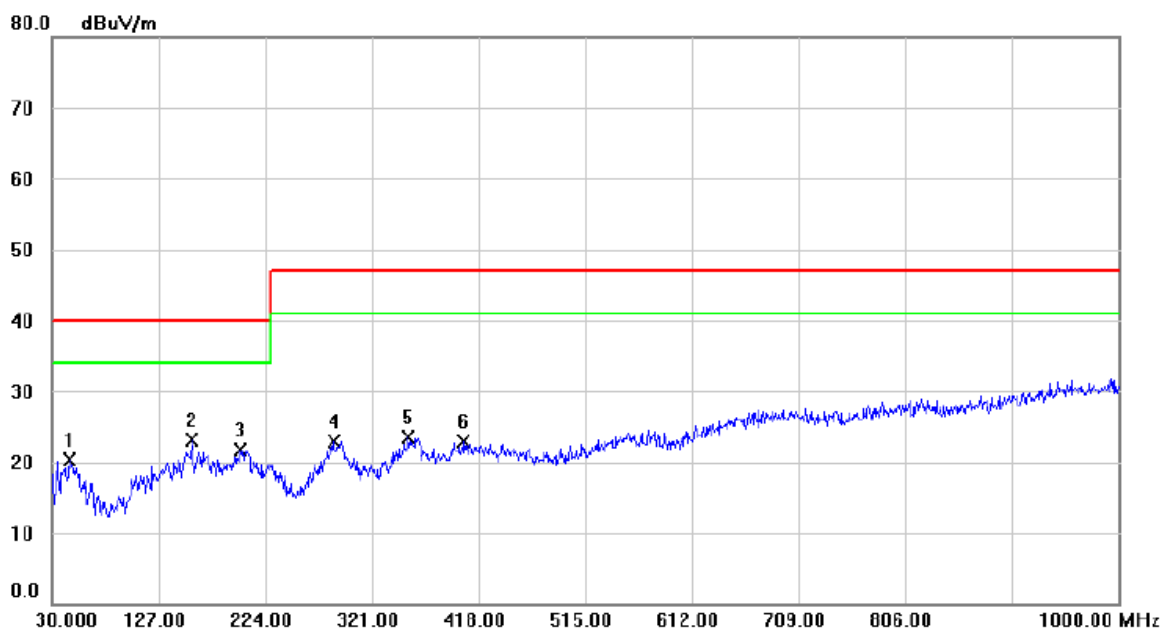
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		43.0950	31.64	-11.88	19.76	40.00	-20.24	QP	
2		136.2150	31.55	-11.60	19.95	40.00	-20.05	QP	
3		177.9250	33.17	-11.85	21.32	40.00	-18.68	QP	
4	*	195.8700	41.38	-13.45	27.93	40.00	-12.07	QP	
5		336.0350	33.82	-10.54	23.28	47.00	-23.72	QP	
6		558.6500	29.72	-4.50	25.22	47.00	-21.78	QP	

EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Vertical
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	46.4900	41.27	-12.17	29.10	40.00	-10.90	QP	
2		167.2550	33.19	-11.21	21.98	40.00	-18.02	QP	
3		188.5950	38.84	-13.06	25.78	40.00	-14.22	QP	
4		207.5100	37.62	-13.99	23.63	40.00	-16.37	QP	
5		439.8250	30.84	-7.10	23.74	47.00	-23.26	QP	
6		686.2050	30.30	-0.93	29.37	47.00	-17.63	QP	

EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Horizontal
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		46.0050	32.29	-12.07	20.22	40.00	-19.78	QP	
2	*	157.5550	35.43	-12.40	23.03	40.00	-16.97	QP	
3		200.7200	35.35	-13.68	21.67	40.00	-18.33	QP	
4		286.5650	33.50	-10.58	22.92	47.00	-24.08	QP	
5		353.9800	34.03	-10.49	23.54	47.00	-23.46	QP	
6		404.9050	30.13	-7.19	22.94	47.00	-24.06	QP	

4.2 CONDUCTED EMISSION MEASUREMENT AT AC MAINS POWER PORTS

4.2.1 LIMITS

Requirements for conducted emissions from AC mains power ports of Class A equipment

Table clause	Frequency Range MHz	Coupling Device	Detector Type / bandwidth	Class A Limits (dB(μV))
A9.1	0.15 - 0.5	AMN	Quasi Peak / 9 kHz	79
	0.5 - 30			73
A9.2	0.15 - 0.5	AMN	Average / 9 kHz	66
	0.5 - 30			60

Apply A9.1 and A9.2 across the entire frequency range.

Requirements for conducted emissions from AC mains power ports of Class B equipment

Table clause	Frequency Range MHz	Coupling Device	Detector Type / bandwidth	Class B Limits (dB(μV))
A10.1	0.15 - 0.5	AMN	Quasi Peak / 9 kHz	66-56
	0.5 - 5			56
	5 - 30			60
A10.2	0.15 - 0.5	AMN	Average / 9 kHz	56-46
	0.5 - 5			46
	5 - 30			50

Apply A10.1 and A10.2 across the entire frequency range.

NOTE:

(1) The test result calculated as following:

Measurement Value = Reading Level + Correct Factor

Correct Factor = Insertion Loss + Cable Loss + Attenuator Factor(if use)

Margin Level = Measurement Value – Limit Value

4.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Measurement Software	Farad	EZ-EMC Ver.NB-03A 1-01	N/A	N/A
2	LISN	EMCO	3816/2	00052765	Mar. 26, 2018
3	50Ω Terminator	SHX	TF2-3G-A	08122901	Mar. 26, 2018
4	TWO-LINE V-NETWORK	R&S	ENV216	101447	Mar. 26, 2018
5	Cable	emci	RG223(9K Hz-30MHz) (5m)	N/A	Mar. 07, 2018
6	EMI Test Receiver	R&S	ESCI	100382	Mar. 26, 2018

Remark: "N/A" denotes no model name, no serial no. or no calibration specified.

All calibration period of equipment list is one year.

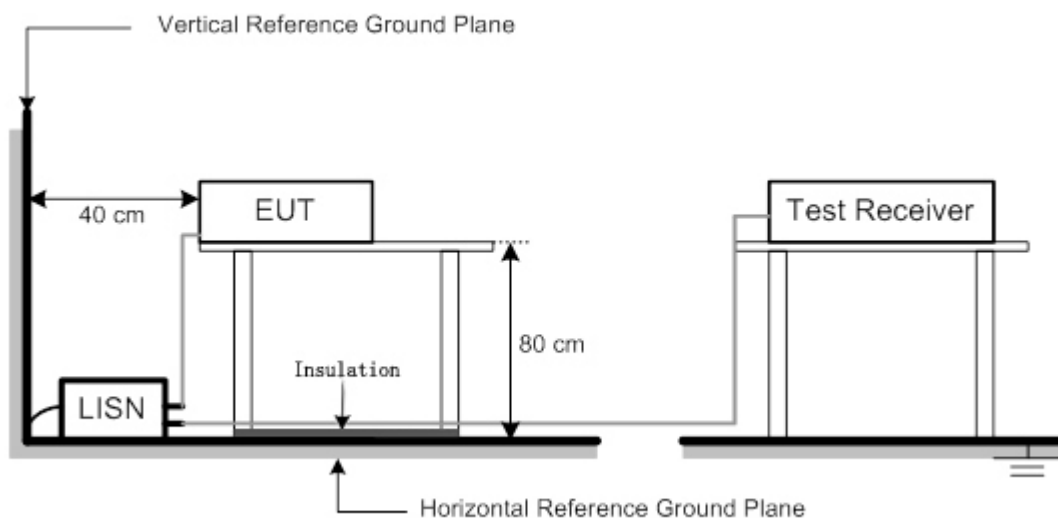
4.2.3 TEST PROCEDURE

- The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- LISN at least 80 cm from nearest part of EUT chassis.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.2.4 DEVIATION FROM TEST STANDARD

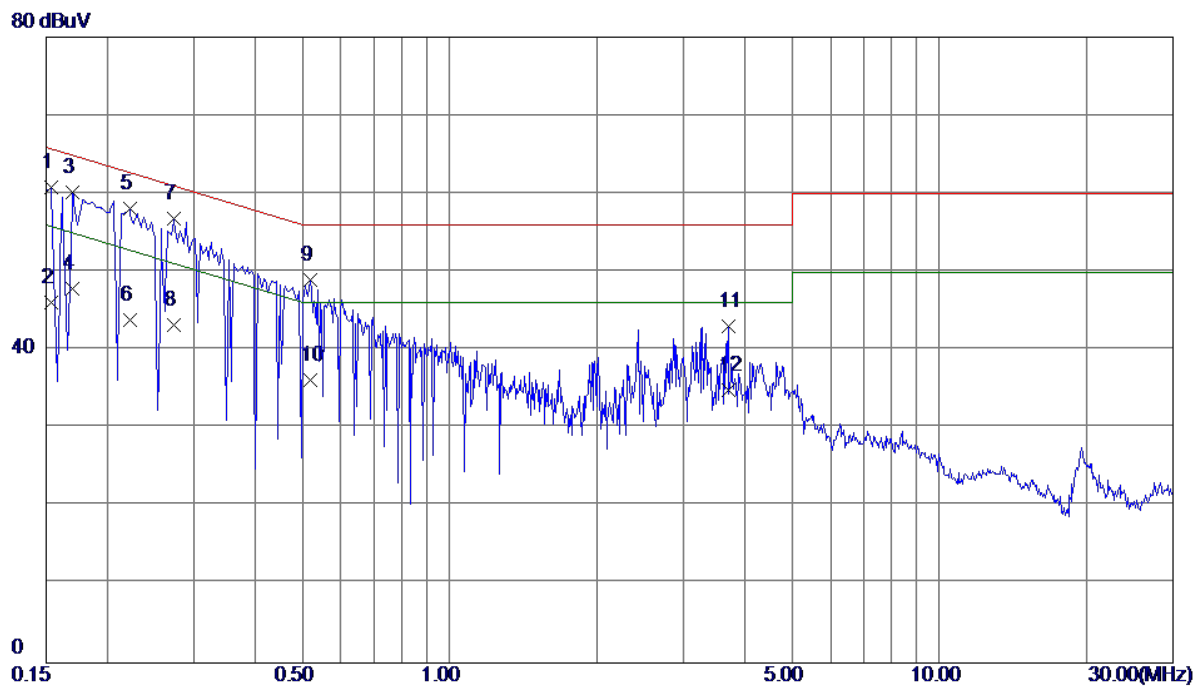
No deviation

4.2.5 TEST SETUP



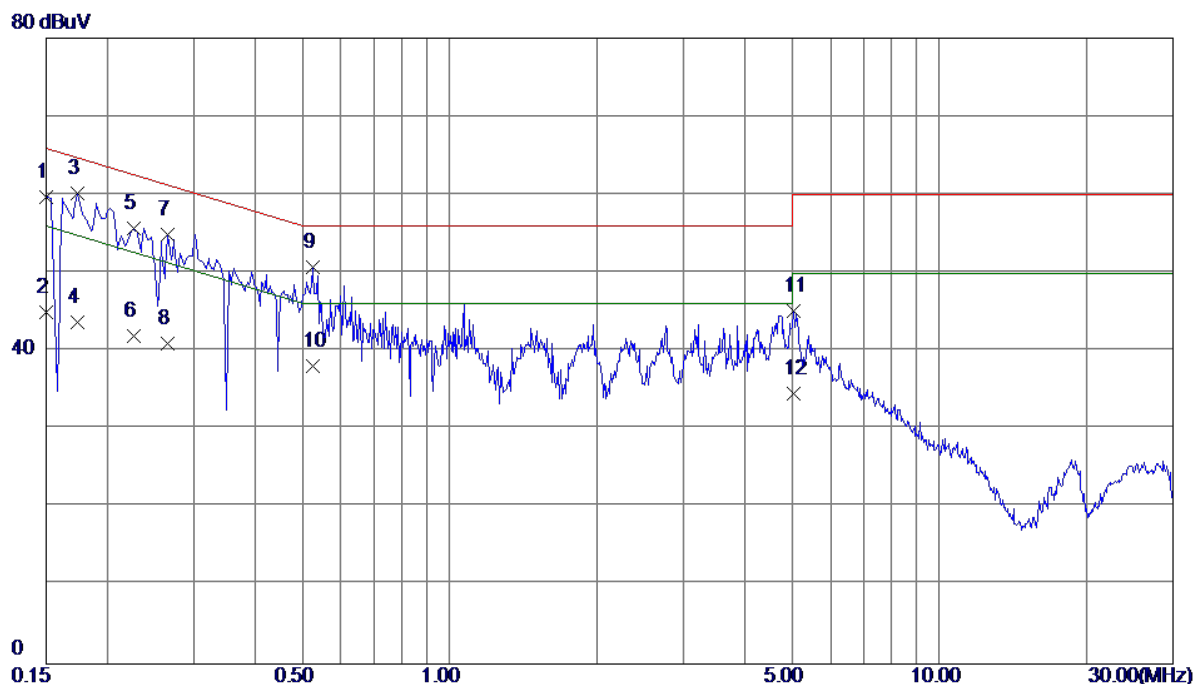
4.2.6 TEST RESULTS

EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



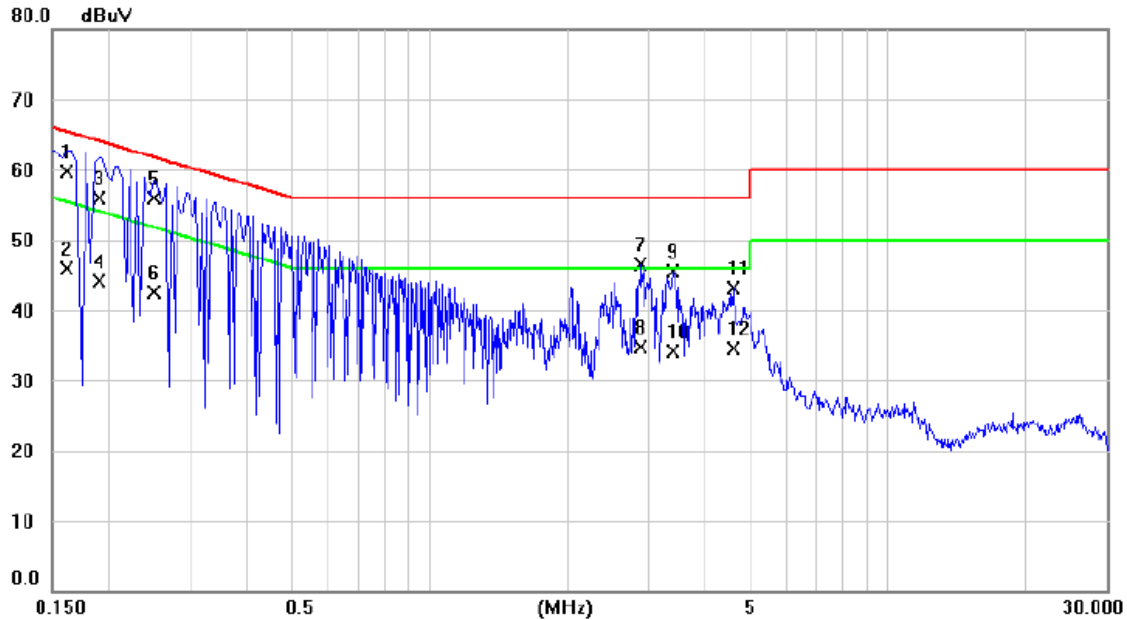
No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector
1	0.1539	51.22	9.57	60.79	65.79	-5.00	QP
2	0.1539	36.45	9.57	46.02	55.79	-9.77	AVG
3	0.1700	50.52	9.57	60.09	64.96	-4.87	QP
4	0.1700	38.30	9.57	47.87	54.96	-7.09	AVG
5	0.2220	48.46	9.57	58.03	62.74	-4.71	QP
6	0.2220	34.25	9.57	43.82	52.74	-8.92	AVG
7 *	0.2740	47.19	9.57	56.76	61.00	-4.24	QP
8	0.2740	33.64	9.57	43.21	51.00	-7.79	AVG
9	0.5180	39.32	9.69	49.01	56.00	-6.99	QP
10	0.5180	26.45	9.69	36.14	46.00	-9.86	AVG
11	3.7140	32.66	10.35	43.01	56.00	-12.99	QP
12	3.7140	24.60	10.35	34.95	46.00	-11.05	AVG

EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



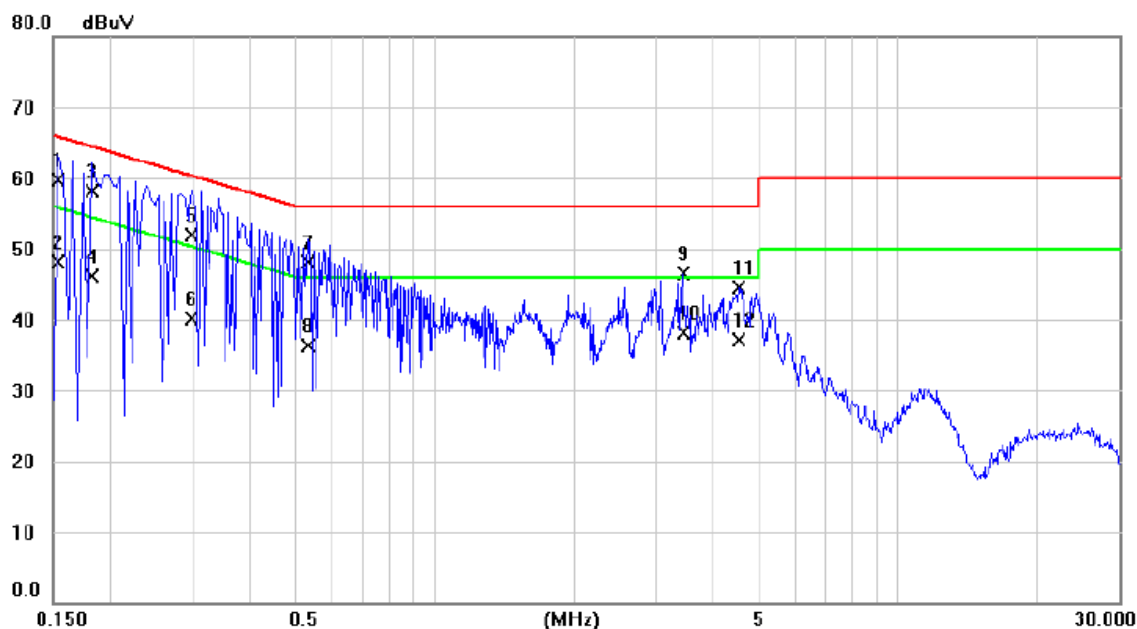
No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector
1	0.1500	50.13	9.57	59.70	66.00	-6.30	QP
2	0.1500	35.45	9.57	45.02	56.00	-10.98	AVG
3 *	0.1740	50.74	9.48	60.22	64.77	-4.55	QP
4	0.1740	34.25	9.48	43.73	54.77	-11.04	AVG
5	0.2260	46.14	9.57	55.71	62.60	-6.89	QP
6	0.2260	32.31	9.57	41.88	52.60	-10.72	AVG
7	0.2660	45.29	9.57	54.86	61.24	-6.38	QP
8	0.2660	31.45	9.57	41.02	51.24	-10.22	AVG
9	0.5260	41.21	9.49	50.70	56.00	-5.30	QP
10	0.5260	28.64	9.49	38.13	46.00	-7.87	AVG
11	5.0340	34.91	10.24	45.15	60.00	-14.85	QP
12	5.0340	24.28	10.24	34.52	50.00	-15.48	AVG

EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Line
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1620	50.12	9.57	59.69	65.36	-5.67	QP	
2		0.1620	36.34	9.57	45.91	53.36	-9.45	AVG	
3		0.1900	46.35	9.57	55.92	64.04	-8.12	QP	
4		0.1900	34.45	9.57	44.02	54.04	-10.02	AVG	
5		0.2500	46.35	9.57	55.92	61.76	-5.84	QP	
6		0.2500	32.87	9.57	42.44	51.76	-9.32	AVG	
7		2.8900	36.16	10.25	46.41	56.00	-9.59	QP	
8		2.8900	24.52	10.25	34.77	46.00	-11.23	AVG	
9		3.3900	35.26	10.31	45.57	56.00	-10.43	QP	
10		3.3900	23.78	10.31	34.09	46.00	-11.91	AVG	
11		4.5900	32.78	10.30	43.08	56.00	-12.92	QP	
12		4.5900	24.30	10.30	34.60	46.00	-11.40	AVG	

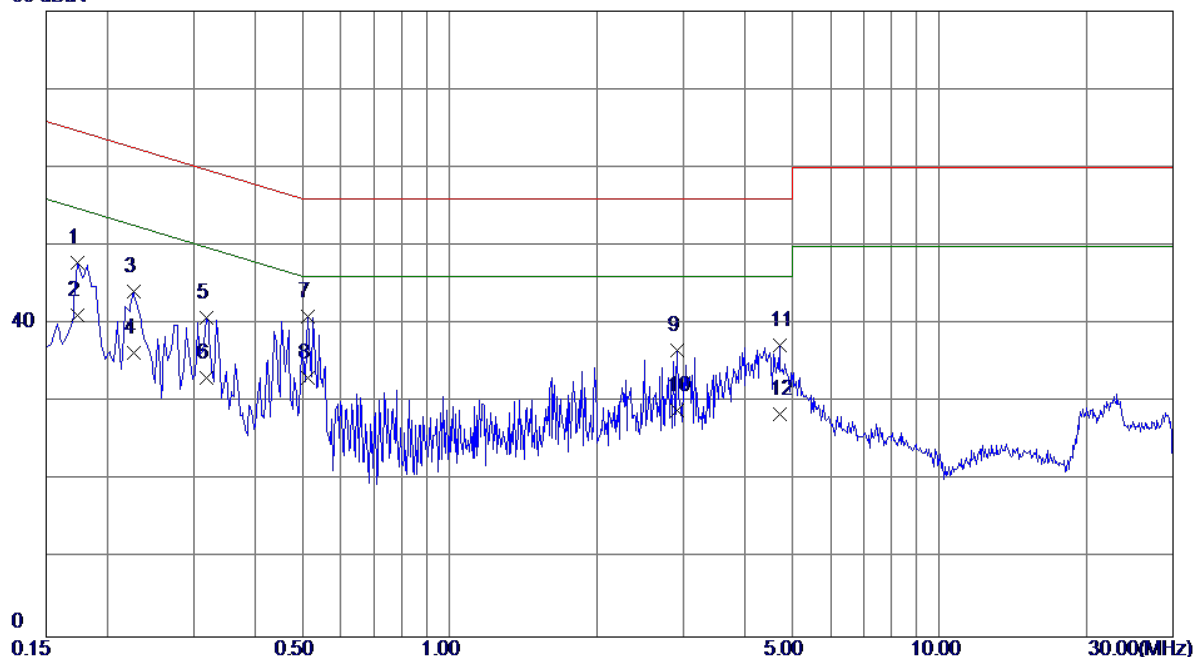
EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 230V/50Hz	Phase	Neutral
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1	*	0.1540	50.21	9.55	59.76	65.78	-6.02	QP	
2		0.1540	38.64	9.55	48.19	55.78	-7.59	AVG	
3		0.1820	48.63	9.51	58.14	64.39	-6.25	QP	
4		0.1820	36.54	9.51	46.05	54.39	-8.34	AVG	
5		0.2980	42.32	9.58	51.90	60.30	-8.40	QP	
6		0.2980	30.54	9.58	40.12	50.30	-10.18	AVG	
7		0.5340	38.64	9.49	48.13	56.00	-7.87	QP	
8		0.5340	26.87	9.49	36.36	46.00	-9.64	AVG	
9		3.4300	36.48	10.01	46.49	56.00	-9.51	QP	
10		3.4300	28.10	10.01	38.11	46.00	-7.89	AVG	
11		4.5380	34.39	10.17	44.56	56.00	-11.44	QP	
12		4.5380	26.90	10.17	37.07	46.00	-8.93	AVG	

EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Line
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		

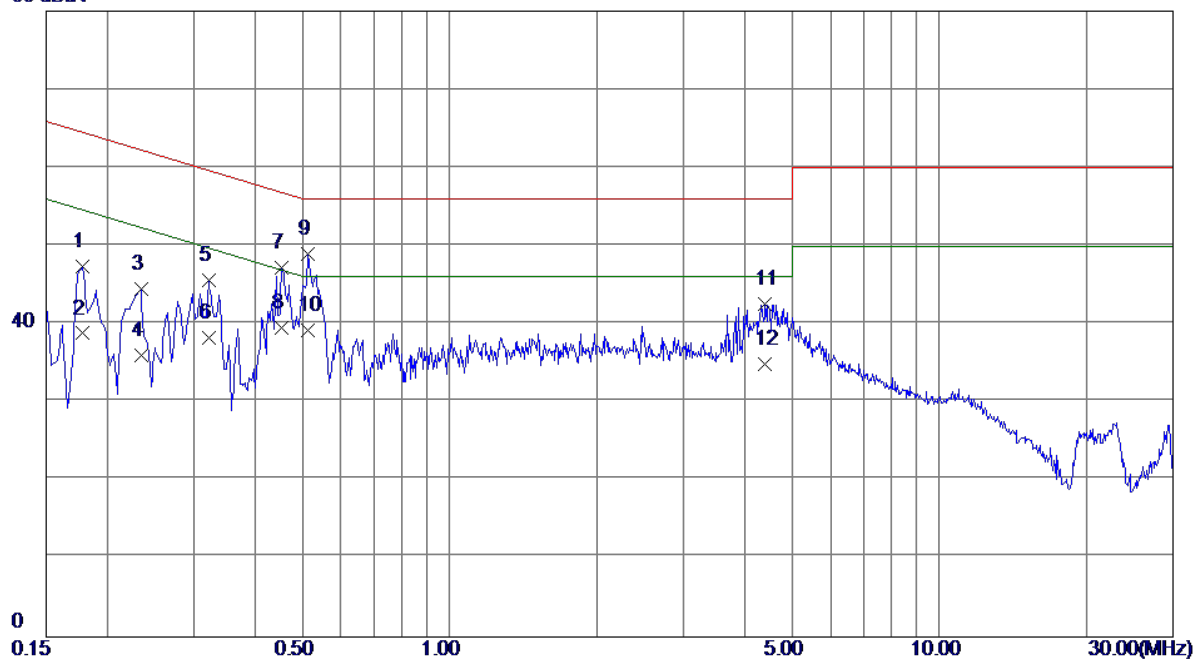
80 dBuV



No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector
1	0.1740	38.28	9.57	47.85	64.77	-16.92	QP
2	0.1740	31.50	9.57	41.07	54.77	-13.70	AVG
3	0.2260	34.57	9.57	44.14	62.60	-18.46	QP
4	0.2260	26.80	9.57	36.37	52.60	-16.23	AVG
5	0.3180	31.19	9.58	40.77	59.76	-18.99	QP
6	0.3180	23.60	9.58	33.18	49.76	-16.58	AVG
7	0.5140	31.21	9.69	40.90	56.00	-15.10	QP
8 *	0.5140	23.40	9.69	33.09	46.00	-12.91	AVG
9	2.9219	26.41	10.26	36.67	56.00	-19.33	QP
10	2.9219	18.70	10.26	28.96	46.00	-17.04	AVG
11	4.7140	26.95	10.28	37.23	56.00	-18.77	QP
12	4.7140	18.21	10.28	28.49	46.00	-17.51	AVG

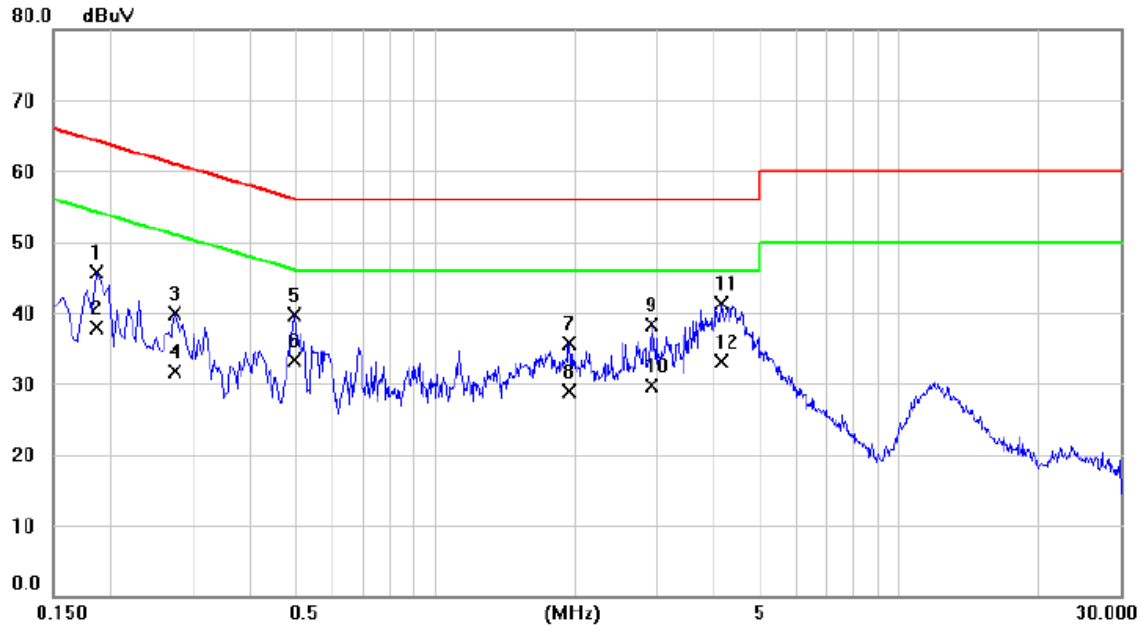
EUT	Switching Adapter	Model Name	SYS1561-1212
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Neutral
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		

80 dBuV



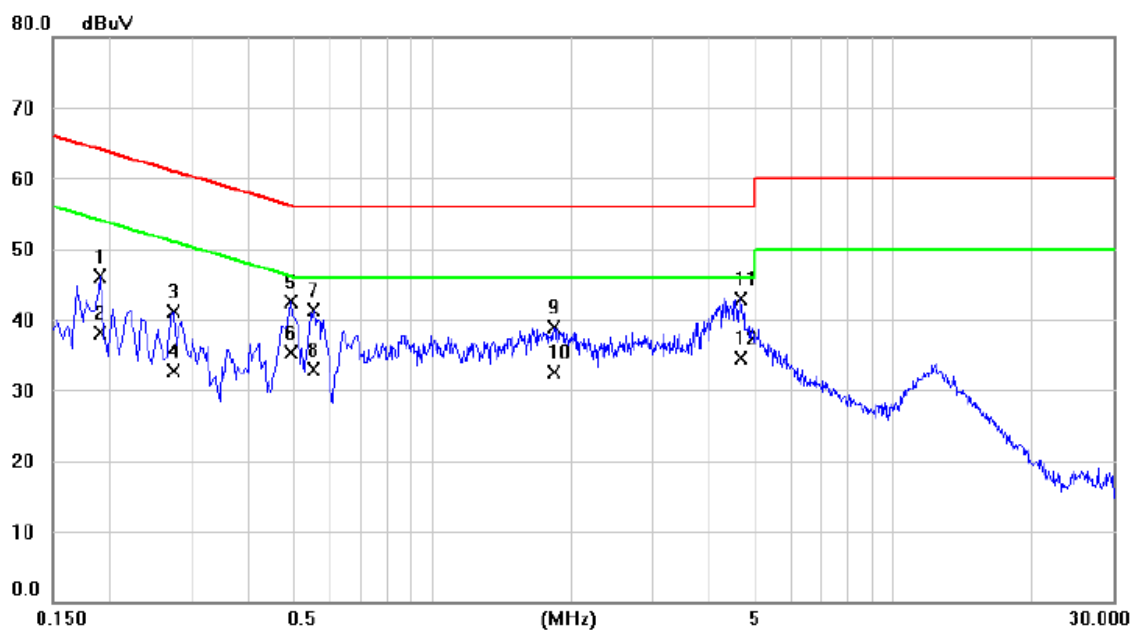
No.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure ment dBuV	Limit dBuV	Margin dB	Detector
1	0.1780	37.90	9.50	47.40	64.58	-17.18	QP
2	0.1780	29.30	9.50	38.80	54.58	-15.78	AVG
3	0.2340	34.91	9.57	44.48	62.31	-17.83	QP
4	0.2340	26.50	9.57	36.07	52.31	-16.24	AVG
5	0.3220	36.08	9.58	45.66	59.66	-14.00	QP
6	0.3220	28.60	9.58	38.18	49.66	-11.48	AVG
7	0.4540	37.75	9.49	47.24	56.80	-9.56	QP
8	0.4540	30.10	9.49	39.59	46.80	-7.21	AVG
9	0.5140	39.45	9.49	48.94	56.00	-7.06	QP
10 *	0.5140	29.70	9.49	39.19	46.00	-6.81	AVG
11	4.4100	32.45	10.15	42.60	56.00	-13.40	QP
12	4.4100	24.70	10.15	34.85	46.00	-11.15	AVG

EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Line
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1860	36.16	9.57	45.73	64.21	-18.48	QP	
2		0.1860	28.30	9.57	37.87	54.21	-16.34	AVG	
3		0.2740	30.34	9.57	39.91	61.00	-21.09	QP	
4		0.2740	22.10	9.57	31.67	51.00	-19.33	AVG	
5		0.4980	30.05	9.69	39.74	56.03	-16.29	QP	
6	*	0.4980	23.60	9.69	33.29	46.03	-12.74	AVG	
7		1.9460	25.76	10.01	35.77	56.00	-20.23	QP	
8		1.9460	18.90	10.01	28.91	46.00	-17.09	AVG	
9		2.9260	27.97	10.26	38.23	56.00	-17.77	QP	
10		2.9260	19.40	10.26	29.66	46.00	-16.34	AVG	
11		4.1260	30.93	10.37	41.30	56.00	-14.70	QP	
12		4.1260	22.70	10.37	33.07	46.00	-12.93	AVG	

EUT	Switching Adapter	Model Name	SYS1561-1105-1
Temperature	24°C	Relative Humidity	60%
Test Voltage	AC 110V/60Hz	Phase	Neutral
Test Mode	FULL LOAD		
Test Engineer	Simon Ling		



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Margin dB	Detector	Comment
1		0.1900	36.49	9.54	46.03	64.04	-18.01	QP	
2		0.1900	28.50	9.54	38.04	54.04	-16.00	AVG	
3		0.2740	31.47	9.57	41.04	61.00	-19.96	QP	
4		0.2740	23.10	9.57	32.67	51.00	-18.33	AVG	
5		0.4940	33.02	9.49	42.51	56.10	-13.59	QP	
6	*	0.4940	25.90	9.49	35.39	46.10	-10.71	AVG	
7		0.5540	31.86	9.50	41.36	56.00	-14.64	QP	
8		0.5540	23.50	9.50	33.00	46.00	-13.00	AVG	
9		1.8300	29.08	9.80	38.88	56.00	-17.12	QP	
10		1.8300	22.70	9.80	32.50	46.00	-13.50	AVG	
11		4.6540	32.68	10.19	42.87	56.00	-13.13	QP	
12		4.6540	24.30	10.19	34.49	46.00	-11.51	AVG	

4.3 HARMONICS CURRENT MEASUREMENT

4.3.1 LIMITS OF HARMONICS CURRENT MEASUREMENT

EN 61000-3-2						
Equipment Category	Harmonic Order	Max. Permissible Harmonic Current	Equipment Category	Harmonic Order	Max. Permissible Harmonic Current	
	n	A		n	A	mA/w
Class A	Odd Harmonics		Class D	Odd Harmonics only		
	3	2.30		3	2.30	3.4
	5	1.14		5	1.14	1.9
	7	0.77		7	0.77	1.0
	9	0.40		9	0.40	0.5
	11	0.33		11	0.33	0.35
	13	0.21		13	0.21	0.30
	15≤n≤39	0.15 x 15/n		15≤n≤39	0.15 x 15/n	3.85/n
	Even Harmonics					
	2	1.08				
	4	0.43				
	6	0.30				
	8≤n≤40	0.23 x 8/n				

4.3.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Harmonic & Flicker	California	PACS-1	72344	Jan. 16, 2016
2	Power Source	California	3001iX	56309	Jan. 16, 2016
3	Measurement Software	California	CTS3.0 Version 3.2.0.35	N/A	N/A

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

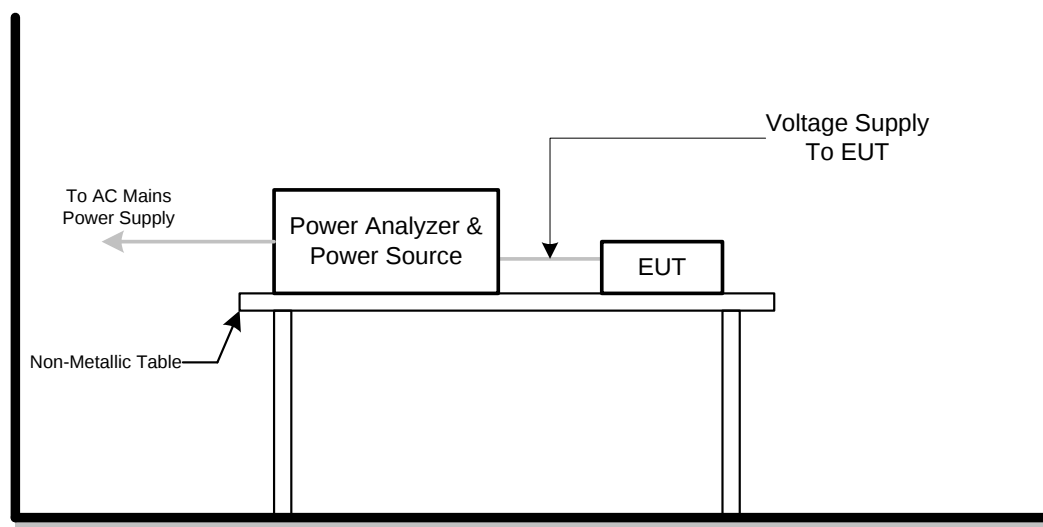
4.3.3 TEST PROCEDURE

- a. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions.
- b. The classification of EUT is according to section 5 of EN 61000-3-2. The EUT is classified as follows:
 - Class A: Balanced three-phase equipment, Household appliances excluding equipment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.
 - Class B: Portable tools. Arc welding equipment which is not professional equipment.
 - Class C: Lighting equipment.
 - Class D: Equipment having a specified power less than or equal to 600 W of the following types: Personal computers and personal computer monitors and television receivers.
- c. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.
- d. For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



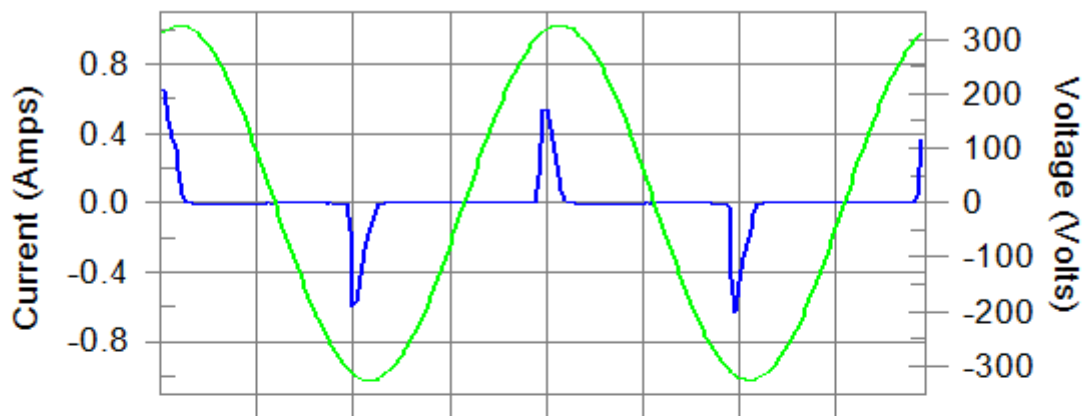
4.3.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **3.3** unless otherwise a special operating condition is specified in the follows during the testing.

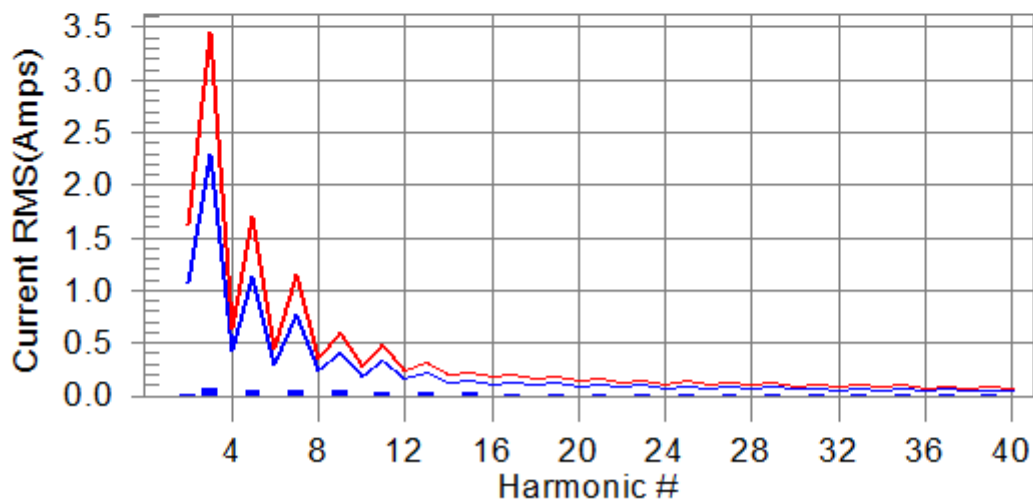
4.3.7 TEST RESULTS

Harmonics – Class-A per Ed. 4.0(Run time)			
E.U.T :	Switching Adapter	Model Name:	SYS1561-1212
Temperature :	24°C	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

Current & voltage waveforms



Harmonics and Class A limit line European Limits



Test result: Pass **Worst harmonic was #15 with 9.5% of the limit.**

Current Test Result Summary (Run time)

E.U.T :	Switching Adapter	Model Name:	SYS1561-1212
Temperature :	24°C	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

THC(A): 0.122 I-THD(%): 191.8 POHC(A): 0.027 POHC Limit(A): 0.251

Highest parameter values during test:

V RMS (Volts): 230.10	Frequency(Hz): 50.00
I Peak (Amps): 0.681	I RMS (Amps): 0.139
I Fund (Amps): 0.064	Crest Factor: 4.916
Power (Watts): 14.5	Power Factor: 0.457

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.001	1.620	N/A	Pass
3	0.061	2.300	2.7	0.063	3.450	1.8	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.056	1.140	4.9	0.057	1.710	3.3	Pass
6	0.000	0.300	N/A	0.000	0.450	N/A	Pass
7	0.050	0.770	6.5	0.050	1.155	4.4	Pass
8	0.000	0.230	N/A	0.000	0.345	N/A	Pass
9	0.043	0.400	10.7	0.043	0.600	7.1	Pass
10	0.000	0.184	N/A	0.000	0.276	N/A	Pass
11	0.035	0.330	10.6	0.035	0.495	7.1	Pass
12	0.000	0.153	N/A	0.000	0.230	N/A	Pass
13	0.028	0.210	13.1	0.028	0.315	8.8	Pass
14	0.000	0.131	N/A	0.000	0.197	N/A	Pass
15	0.021	0.150	14.2	0.021	0.225	9.5	Pass
16	0.000	0.115	N/A	0.000	0.173	N/A	Pass
17	0.017	0.132	12.7	0.017	0.198	8.5	Pass
18	0.000	0.102	N/A	0.000	0.153	N/A	Pass
19	0.014	0.118	11.8	0.014	0.178	7.9	Pass
20	0.000	0.092	N/A	0.000	0.138	N/A	Pass
21	0.012	0.107	11.7	0.013	0.161	7.8	Pass
22	0.000	0.084	N/A	0.000	0.125	N/A	Pass
23	0.012	0.098	11.8	0.012	0.147	7.9	Pass
24	0.000	0.077	N/A	0.000	0.115	N/A	Pass
25	0.011	0.090	11.9	0.011	0.135	8.0	Pass
26	0.000	0.071	N/A	0.000	0.107	N/A	Pass
27	0.010	0.083	11.7	0.010	0.125	7.8	Pass
28	0.000	0.066	N/A	0.000	0.099	N/A	Pass
29	0.009	0.078	11.1	0.009	0.116	7.4	Pass
30	0.000	0.061	N/A	0.000	0.092	N/A	Pass
31	0.008	0.073	10.4	0.008	0.109	7.0	Pass
32	0.000	0.058	N/A	0.000	0.086	N/A	Pass
33	0.007	0.068	9.7	0.007	0.102	6.5	Pass
34	0.000	0.054	N/A	0.000	0.081	N/A	Pass
35	0.006	0.064	8.9	0.006	0.096	6.0	Pass
36	0.000	0.051	N/A	0.000	0.077	N/A	Pass
37	0.005	0.061	N/A	0.005	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.004	0.058	N/A	0.004	0.087	N/A	Pass
40	0.000	0.046	N/A	0.000	0.069	N/A	Pass

Voltage Source Verification Data (Run time)			
E.U.T :	Switching Adapter	Model Name:	SYS1561-1212
Temperature :	24°C	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

Highest parameter values during test:

Voltage (Vrms): 230.10

I Peak (Amps): 0.681

I Fund (Amps): 0.064

Power (Watts): 14.5

Frequency(Hz): 50.00

I RMS (Amps): 0.139

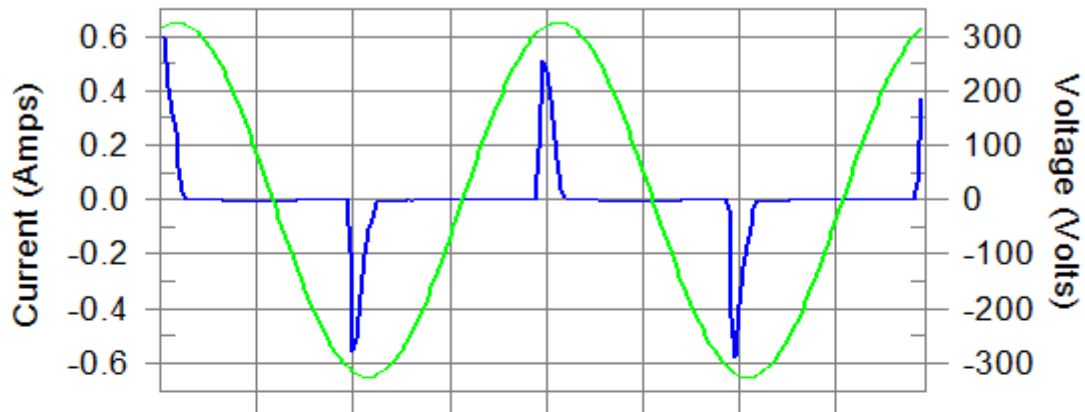
Crest Factor: 4.916

Power Factor: 0.457

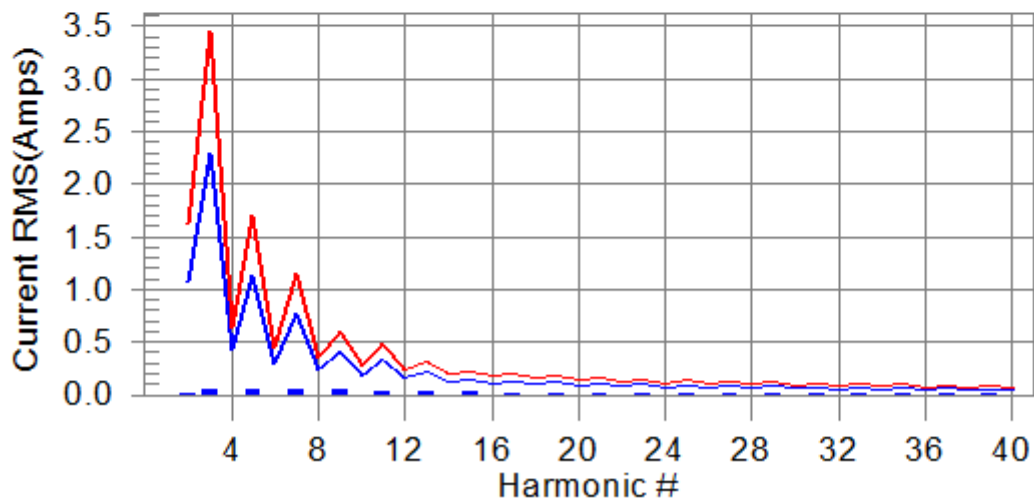
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.135	0.460	29.33	OK
3	0.585	2.070	28.28	OK
4	0.054	0.460	11.68	OK
5	0.068	0.920	7.41	OK
6	0.021	0.460	4.47	OK
7	0.045	0.690	6.55	OK
8	0.020	0.460	4.25	OK
9	0.046	0.460	9.92	OK
10	0.022	0.460	4.74	OK
11	0.026	0.230	11.22	OK
12	0.014	0.230	6.25	OK
13	0.016	0.230	6.98	OK
14	0.009	0.230	3.88	OK
15	0.024	0.230	10.29	OK
16	0.012	0.230	5.05	OK
17	0.023	0.230	10.00	OK
18	0.014	0.230	5.91	OK
19	0.013	0.230	5.52	OK
20	0.015	0.230	6.59	OK
21	0.022	0.230	9.74	OK
22	0.016	0.230	6.92	OK
23	0.014	0.230	6.01	OK
24	0.007	0.230	3.26	OK
25	0.017	0.230	7.49	OK
26	0.011	0.230	4.72	OK
27	0.016	0.230	7.02	OK
28	0.009	0.230	4.09	OK
29	0.012	0.230	5.29	OK
30	0.008	0.230	3.59	OK
31	0.015	0.230	6.72	OK
32	0.008	0.230	3.32	OK
33	0.008	0.230	3.57	OK
34	0.005	0.230	2.32	OK
35	0.010	0.230	4.55	OK
36	0.005	0.230	2.20	OK
37	0.011	0.230	4.86	OK
38	0.004	0.230	1.66	OK
39	0.009	0.230	3.87	OK
40	0.007	0.230	2.84	OK

Harmonics – Class-A per Ed. 4.0(Run time)			
E.U.T :	Switching Adapter	Model Name:	SYS1561-1105-1
Temperature :	24°C	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

Current & voltage waveforms



Harmonics and Class A limit line European Limits



Test result: Pass Worst harmonic was #15 with 9.4% of the limit.

Current Test Result Summary (Run time)

E.U.T :	Switching Adapter	Model Name:	SYS1561-1105-1
Temperature :	24°C	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

THC(A): 0.110 I-THD(%): 199.2 POHC(A): 0.024 POHC Limit(A): 0.251

Highest parameter values during test:

V RMS (Volts): 230.10	Frequency(Hz): 50.00
I Peak (Amps): 0.630	I RMS (Amps): 0.124
I Fund (Amps): 0.056	Crest Factor: 5.108
Power (Watts): 12.6	Power Factor: 0.445

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.001	1.620	N/A	Pass
3	0.053	2.300	2.3	0.054	3.450	1.6	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.050	1.140	4.4	0.050	1.710	2.9	Pass
6	0.000	0.300	N/A	0.000	0.450	N/A	Pass
7	0.045	0.770	5.8	0.045	1.155	3.9	Pass
8	0.000	0.230	N/A	0.000	0.345	N/A	Pass
9	0.039	0.400	9.7	0.039	0.600	6.5	Pass
10	0.000	0.184	N/A	0.000	0.276	N/A	Pass
11	0.033	0.330	9.9	0.033	0.495	6.6	Pass
12	0.000	0.153	N/A	0.000	0.230	N/A	Pass
13	0.026	0.210	12.6	0.027	0.315	8.4	Pass
14	0.000	0.131	N/A	0.000	0.197	N/A	Pass
15	0.021	0.150	14.0	0.021	0.225	9.4	Pass
16	0.000	0.115	N/A	0.000	0.173	N/A	Pass
17	0.017	0.132	12.6	0.017	0.198	8.5	Pass
18	0.000	0.102	N/A	0.000	0.153	N/A	Pass
19	0.014	0.118	11.5	0.014	0.178	7.7	Pass
20	0.000	0.092	N/A	0.000	0.138	N/A	Pass
21	0.012	0.107	10.9	0.012	0.161	7.3	Pass
22	0.000	0.084	N/A	0.000	0.125	N/A	Pass
23	0.010	0.098	10.6	0.010	0.147	7.1	Pass
24	0.000	0.077	N/A	0.000	0.115	N/A	Pass
25	0.009	0.090	10.5	0.009	0.135	7.0	Pass
26	0.000	0.071	N/A	0.000	0.107	N/A	Pass
27	0.009	0.083	10.2	0.009	0.125	6.9	Pass
28	0.000	0.066	N/A	0.000	0.099	N/A	Pass
29	0.008	0.078	9.8	0.008	0.116	6.6	Pass
30	0.000	0.061	N/A	0.000	0.092	N/A	Pass
31	0.007	0.073	9.2	0.007	0.109	6.2	Pass
32	0.000	0.058	N/A	0.000	0.086	N/A	Pass
33	0.006	0.068	8.6	0.006	0.102	5.8	Pass
34	0.000	0.054	N/A	0.000	0.081	N/A	Pass
35	0.005	0.064	8.0	0.005	0.096	5.4	Pass
36	0.000	0.051	N/A	0.000	0.077	N/A	Pass
37	0.004	0.061	N/A	0.005	0.091	N/A	Pass
38	0.000	0.048	N/A	0.000	0.073	N/A	Pass
39	0.004	0.058	N/A	0.004	0.087	N/A	Pass
40	0.000	0.046	N/A	0.000	0.069	N/A	Pass

Voltage Source Verification Data (Run time)			
E.U.T :	Switching Adapter	Model Name:	SYS1561-1105-1
Temperature :	24°C	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

Highest parameter values during test:

Voltage (Vrms): 230.10
 I Peak (Amps): 0.630
 I Fund (Amps): 0.056
 Power (Watts): 12.6

Frequency(Hz): 50.00
 I RMS (Amps): 0.124
 Crest Factor: 5.108
 Power Factor: 0.445

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.140	0.460	30.48	OK
3	0.574	2.071	27.70	OK
4	0.055	0.460	12.05	OK
5	0.069	0.920	7.45	OK
6	0.022	0.460	4.86	OK
7	0.046	0.690	6.66	OK
8	0.021	0.460	4.54	OK
9	0.045	0.460	9.89	OK
10	0.021	0.460	4.50	OK
11	0.026	0.230	11.46	OK
12	0.015	0.230	6.34	OK
13	0.013	0.230	5.70	OK
14	0.009	0.230	3.80	OK
15	0.024	0.230	10.51	OK
16	0.013	0.230	5.51	OK
17	0.021	0.230	9.34	OK
18	0.013	0.230	5.75	OK
19	0.012	0.230	5.38	OK
20	0.016	0.230	7.02	OK
21	0.021	0.230	9.08	OK
22	0.015	0.230	6.31	OK
23	0.011	0.230	4.80	OK
24	0.008	0.230	3.45	OK
25	0.017	0.230	7.26	OK
26	0.011	0.230	4.75	OK
27	0.012	0.230	5.38	OK
28	0.010	0.230	4.20	OK
29	0.011	0.230	4.66	OK
30	0.008	0.230	3.68	OK
31	0.014	0.230	5.93	OK
32	0.007	0.230	3.22	OK
33	0.009	0.230	3.72	OK
34	0.005	0.230	2.36	OK
35	0.011	0.230	4.90	OK
36	0.005	0.230	2.09	OK
37	0.009	0.230	3.75	OK
38	0.004	0.230	1.56	OK
39	0.011	0.230	4.69	OK
40	0.007	0.230	2.92	OK

4.4 VOLTAGE FLUCTUATION AND FLICKERS MEASUREMENT

4.4.1 LIMITS OF VOLTAGE FLUCTUATION AND FLICKERS MEASUREMENT

Test	Limits	Descriptions
	EN 61000-3-3	
Pst	≤ 1.0 , Tp= 10 min.	Short Term Flicker Indicator
Plt	≤ 0.65 , Tp=2 hr.	Long Term Flicker Indicator
dc	$\leq 3.3\%$	Relative Steady-State V-Chang
dmax	$\leq 4\%$	Maximum Relative V-change
d (t)	$\leq 3.3\%$ for > 500 ms	Relative V-change characteristic

4.4.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Harmonic & Flicker	California	PACS-1	72344	Jan. 16, 2016
2	Power Source	California	3001iX	56309	Jan. 16, 2016
3	Measurement Software	California	CTS3.0 Version 3.2.0.35	N/A	N/A

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

4.4.3 TEST PROCEDURE

a. Fluctuation and Flickers Test:

Tests was performed according to the Test Conditions/Assessment of Voltage Fluctuations specified in Clause 6.0/4.0 of EN 61000-3-3 depend on which standard adopted for compliance measurement.

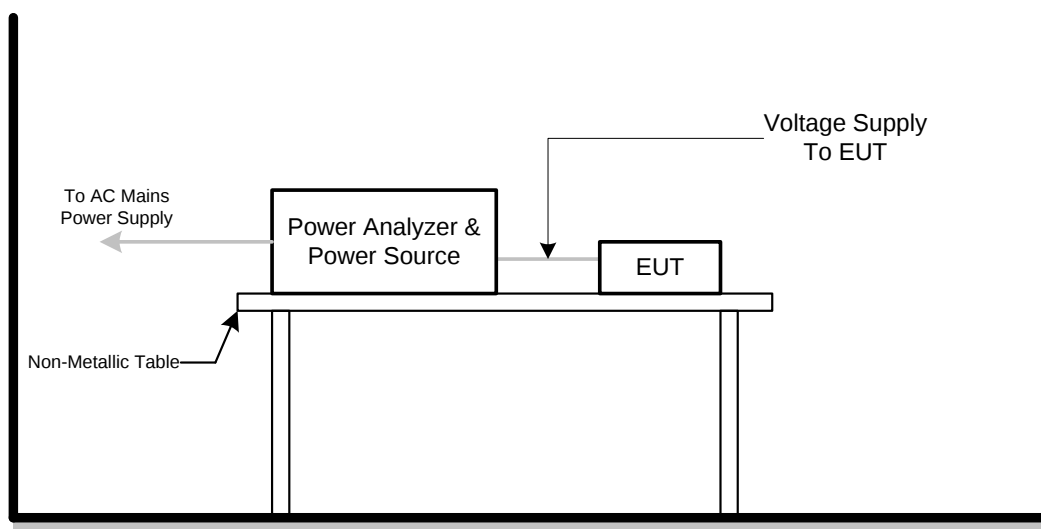
b. All types of harmonic current and/or voltage fluctuation in this report are assessed by direct measurement using flicker-meter.

c. For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

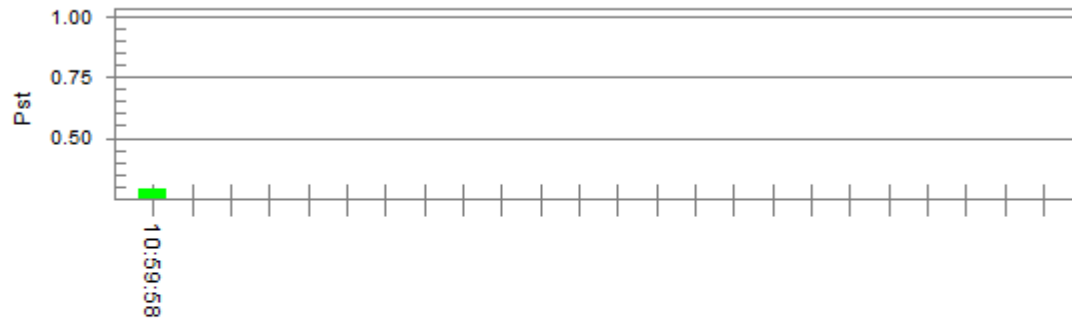
The EUT tested system was configured as the statements of **3.3** unless otherwise a special operating condition is specified in the follows during the testing.

4.4.7 TEST RESULTS

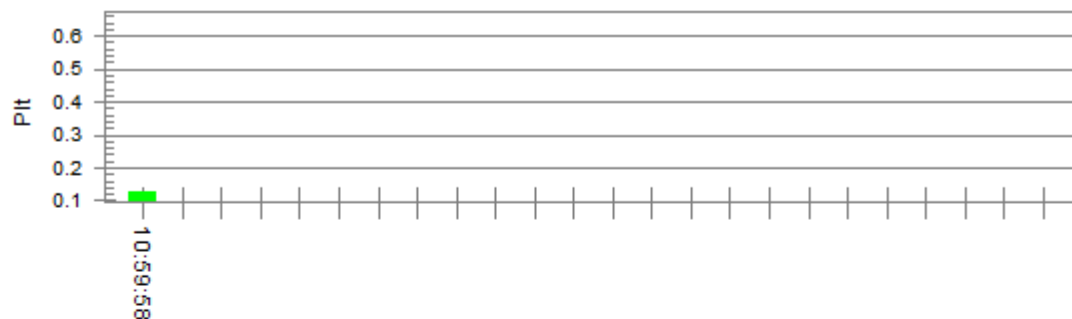
E.U.T :	Switching Adapter	Model Name:	SYS1561-1212
Temperature :	24°C	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

Pst and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

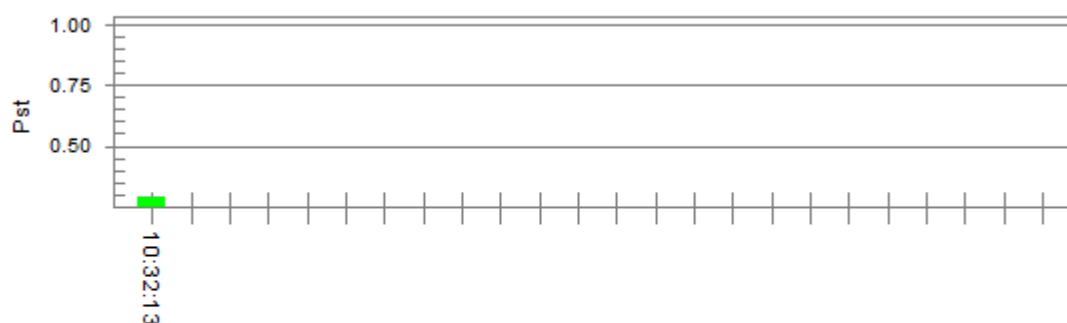
Vrms at the end of test (Volt): 230.04
 Highest dt (%): 0.00
 T-max (mS): 0
 Highest dc (%): 0.00
 Highest dmax (%): 0.04
 Highest Pst (10 min. period): 0.288
 Highest Plt (2 hr. period): 0.126

Test limit (%):	N/A	N/A
Test limit (mS):	500.0	Pass
Test limit (%):	3.30	Pass
Test limit (%):	4.00	Pass
Test limit:	1.000	Pass
Test limit:	0.650	Pass

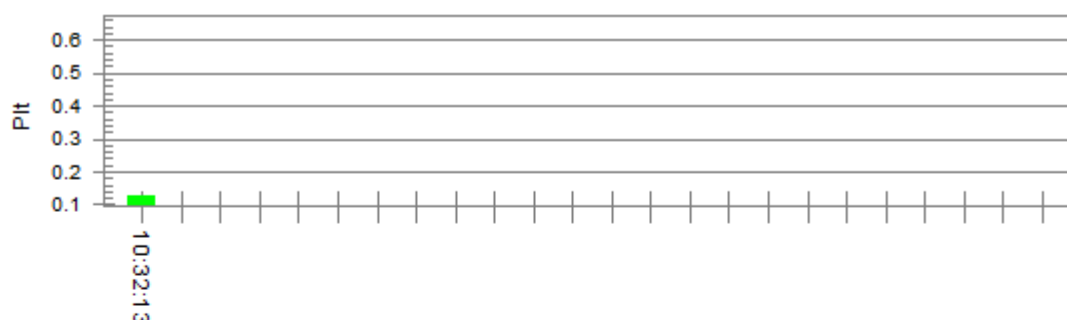
E.U.T :	Switching Adapter	Model Name:	SYS1561-1105-1
Temperature :	24℃	Relative Humidity :	53 %
Pressure :	1011 hPa	Test Voltage :	AC 230V/50Hz
Test Mode :	FULL LOAD		

Pst and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.98	Test limit (%):	N/A	N/A
Highest dt (%):	0.00	Test limit (mS):	500.0	Pass
T-max (mS):	0	Test limit (%):	3.30	Pass
Highest dc (%):	0.00	Test limit (%):	4.00	Pass
Highest dmax (%):	-0.04	Test limit:	1.000	Pass
Highest Pst (10 min. period):	0.288	Test limit:	0.650	Pass
Highest Plt (2 hr. period):	0.126			

5. EMC IMMUNITY TEST

5.1 STANDARD COMPLIANCE/SEVERITY LEVEL/CRITERIA

Tests Standard No.	Test Specification Level / Test Mode	Test Ports	Criteria
Electrostatic discharge EN 61000-4-2 (ESD)	±8 kV air discharge ±4 kV contact discharge (Direct Mode)	Enclosure	B
	±4kV HCP discharge ±4kV VCP discharge (Indirect Mode)	Enclosure	B
Radiated, radio-frequency, electromagnetic field immunity EN 61000-4-3 (RS)	80 MHz to 1000 MHz 3V/m(unmodulated, r.m.s), 1 kHz, 80%, AM modulated	Enclosure	A
Electrical fast transient/burst immunity EN 61000-4-4 (EFT/Burst)	±0.5kV(peak) 5/50ns Tr/Th 5kHz Repetition Frequency (100kHz Repetition Frequency for xDSL equipment)	Signal ports and telecommunication ports (Only applicable to cable length>3 m)	B
	±0.5kV(peak) 5/50ns Tr/Th 5kHz Repetition Frequency	DC Power Ports	B
	±1 kV(peak) 5/50ns Tr/Th 5kHz Repetition Frequency	AC Power Ports	B
Surge immunity EN 61000-4-5 (Surges)	±1 kV(peak) 10/700 Tr/Th μs(NOTE) (without primary protection)	Signal ports and telecommunication ports (applicable only to ports connect directly to outdoor cables)	C
	±4 kV(peak) 10/700 Tr/Th μs(NOTE) (with primary protectors fitted)		C
	±0.5 kV(peak) 1.2/50(8/20) Tr/Th μs	DC Power Ports (applicable only to ports connect directly to outdoor cables)	B
	±1 kV(peak) 1.2/50(8/20) Tr/Th μs (line to line)	AC Power Ports	B
	±2 kV(peak) 1.2/50(8/20) Tr/Th μs (line to earth or ground)		B

Immunity to conducted disturbances, induced by radio-frequency fields EN 61000-4-6 (Injected Current)	0.15 MHz to 80 MHz 3V(unmodulated, r.m.s), 1kHz 80%, AM 150Ω source impedance	Signal ports and telecommunication ports (Only applicable to cable length>3 m)	A
	0.15 MHz to 80 MHz 3V(unmodulated, r.m.s), 1kHz 80%, AM 150Ω source impedance	DC Power Ports	A
	0.15 MHz to 80 MHz 3V(unmodulated, r.m.s), 1kHz 80%, AM 150Ω source impedance	AC Power Ports	A
Power frequency magnetic field immunity EN 61000-4-8 (PFMF)	50 Hz or 60Hz, 1A/m(r.m.s) μs	Enclosure	A
Voltage dips, short interruptions and voltage variations immunity EN 61000-4-11 (Voltage Interruption/Dips)	Voltage reduction > 95% 0.5 period Voltage reduction 30% 25 periods Voltage reduction > 95% 250 periods	AC Power Ports	B C C

Note.

Where the coupling network for the 10/700 μs waveform affects the functioning of high speed data ports, the test shall be carried out using a 1,2/50 (8/20) μs waveform and appropriate coupling network.

5.2 GENERAL PERFORMANCE CRITERIA

According to **EN55024** standard, the general performance criteria as following:

Criterion A	The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion B	After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomenon below a performance level specified by the manufacturer, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. During the test, degradation of performance is allowed. However, no change of operating state if stored data allowed to persist after the test. If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
Criterion C	Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

5.3 GENERAL PERFORMANCE CRITERIA TEST SETUP

The EUT tested system was configured as the statements of **3.3** unless otherwise a special operating condition is specified in the follows during the testing.

5.4 ESD TESTING

5.4.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Required Performance	B
Discharge Voltage:	Air Discharge: $\pm 2\text{kV}/\pm 4\text{kV}/\pm 8\text{kV}$ (Direct) Contact Discharge: $\pm 2\text{kV}/\pm 4\text{kV}$ (Direct/Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: min. 20 times at each test point Contact Discharge: min. 200 times in total
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

5.4.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	ESD Generator	TESEQ AG	NSG 437	450	Oct. 28, 2016

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

5.4.3 TEST PROCEDURE

The test generator necessary to perform direct and indirect application of discharges to the EUT in the following manner:

- a. Contact discharge was applied to conductive surfaces and coupling planes of the EUT.
During the test, it was performed with single discharges. For the single discharge time between successive single discharges was at least 1 second. The EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points. One of the test points shall be subjected to at least 50 indirect discharges to the center of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct contact discharges.

If no direct contact test points are available, then at least 200 indirect discharges shall be applied in the indirect mode. Test shall be performed at a maximum repetition rate of one discharge per second.

Vertical Coupling Plane (VCP):

The coupling plane, of dimensions 0.5m x 0.5m, is placed parallel to, and positioned at a distance 0.1m from, the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge.

Horizontal Coupling Plane (HCP):

The coupling plane is placed under to the EUT. The generator shall be positioned vertically at a distance of 0.1m from the EUT, with the Discharge Electrode touching the coupling plane.

The four faces of the EUT will be performed with electrostatic discharge.

- b. Air discharges at insulation surfaces of the EUT.

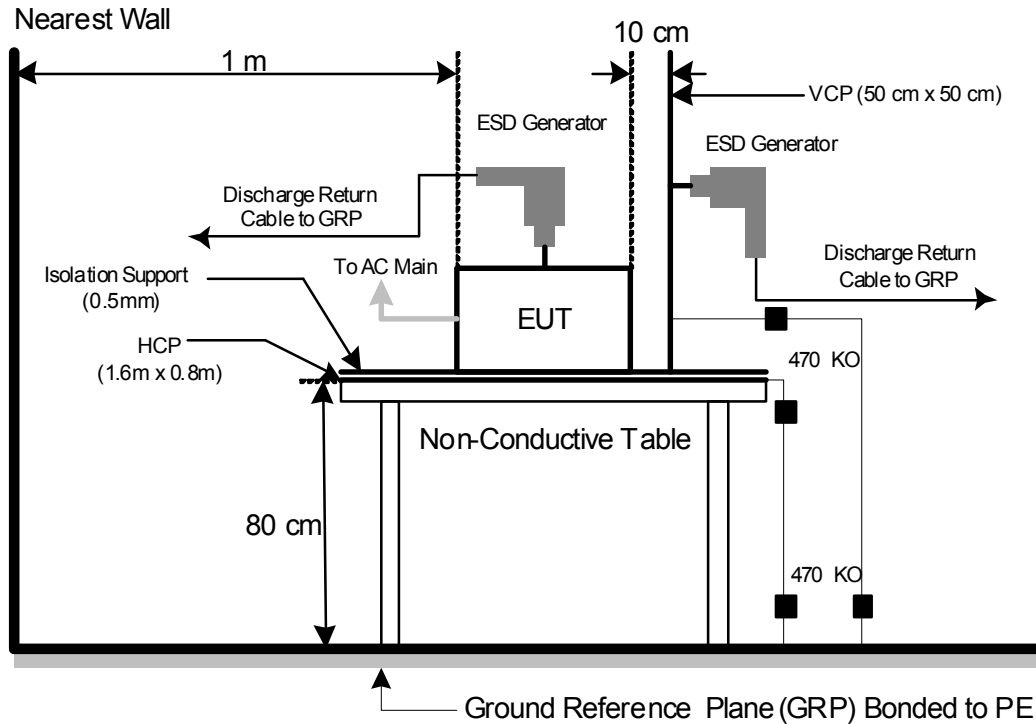
It was at least ten single discharges with positive and negative at the same selected point.

- c. For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940k total impedance. The equipment under test, was installed in a representative system as described in section 7 of EN 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of 1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of EN 61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

5.4.6 TEST RESULTS

EUT:	Switching Adapter	Model Name:	SYS1561-1212, SYS1561-1105-1
Temperature:	25°C	Relative Humidity:	44%
Pressure:	1012 hPa	Test Voltage :	AC 230V/50Hz
Test Mode:	FULL LOAD		

Mode	Air Discharge								Contact Discharge							
	2kV		4kV		8kV		-kV		2kV		4kV		-kV		-kV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
1	A	A	A	A	A	A	-	-	A	A	A	A	-	-	-	-
2	A	A	A	A	A	A	-	-	-	-	-	-	-	-	-	-
3	A	A	A	A	A	A	-	-	-	-	-	-	-	-	-	-
4	A	A	A	A	A	A	-	-	-	-	-	-	-	-	-	-
Criteria	B								B							
Result	A								A							
Judgment	PASS								PASS							

Mode	HCP Discharge								VCP Discharge							
	2kV		4kV		-kV		-kV		2kV		4kV		-kV		-kV	
Location	P	N	P	N	P	N	P	N	P	N	P	N	P	N	P	N
1	A	A	A	A	-	-	-	-	A	A	A	A	-	-	-	-
2	A	A	A	A	-	-	-	-	A	A	A	A	-	-	-	-
3	A	A	A	A	-	-	-	-	A	A	A	A	-	-	-	-
4	A	A	A	A	-	-	-	-	A	A	A	A	-	-	-	-
Criteria	B								B							
Result	A								A							
Judgment	PASS								PASS							

Note:

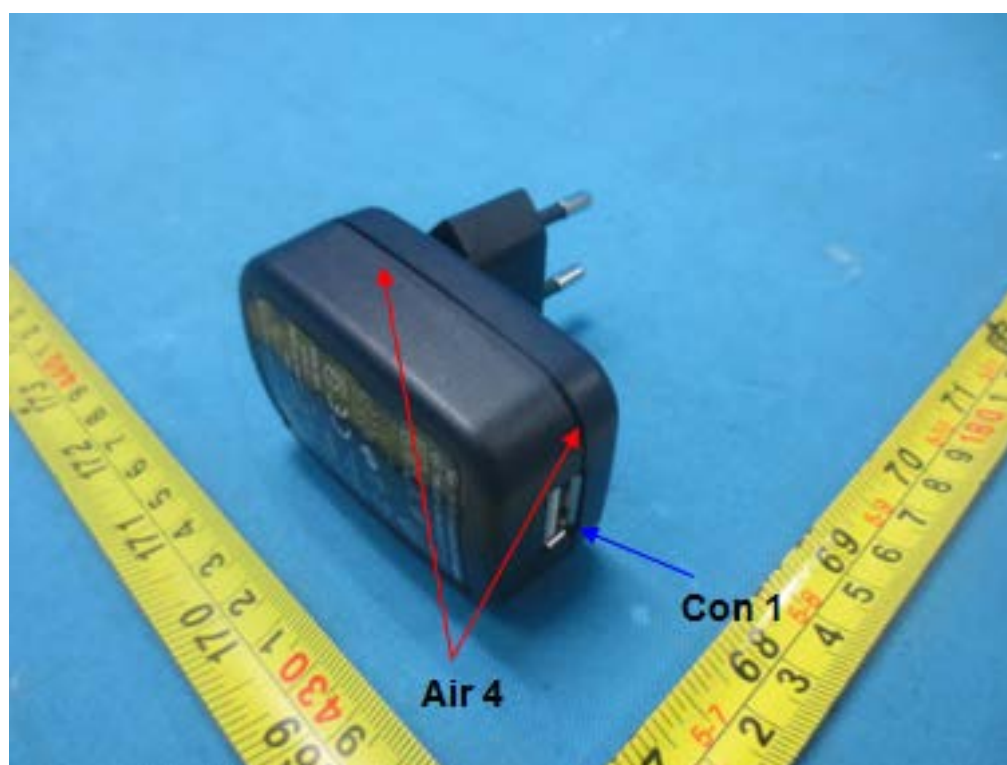
- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) Test condition:
Direct / Indirect (HCP/VCP) discharges: Minimum 50 times (Positive/Negative) at each point. Air discharges: Minimum 10 times (Positive/Negative) at each point.
- 3) Test location(s) in which discharge (Air and contact discharge) to be applied illustrated by photos shown in next page(s)
- 4) The Indirect (HCP/VCP) discharges description of test point as following:
1.left side 2.right side 3.front side 4.rear side
- 5) N/A - denotes test is not applicable in this test report
- 6) Criterion A: No observation of any performance degradation.
- 7) Criterion B: Some degradation of performance is observed but the equipment continues to operate as intended.
- 8) Criterion C: Loss of functionality, but self-recoverable by user, without loss of information or settings.

5.4.7 PHOTO(S) SHOWN THE LOCATION(S) OF ESD EVALUATED

Model: SYS1561-1212



Model: SYS1561-1105-1



5.5 RS TESTING

5.5.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-3
Required Performance	A
Frequency Range:	80 MHz - 1000 MHz
Field Strength:	3 V/m
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Polarity of Antenna:	Horizontal and Vertical
Test Distance:	3 m
Antenna Height:	1.5 m
Dwell Time:	at least 3 seconds

5.5.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Digital Signal Generator	HP	ESG-D3000A	US36260188	Mar. 28, 2016
2	Antenna	ETS	3142C	00047662	Mar. 28, 2016
3	Power amplifier	MILMEGA	80RF1000-250	N/A	Nov. 02, 2016
4	Amplifier	AR	50S1G4A	326720	Mar. 28, 2016
5	Measurement Software	TOYO	IM5/R Ver 3.8.050	N/A	N/A

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

5.5.3 TEST PROCEDURE

The EUT and support equipment, which are placed on a table that is 0.8 meter above ground and the testing was performed in a fully-anechoic chamber.

The testing distance from antenna to the EUT was 3 meters.

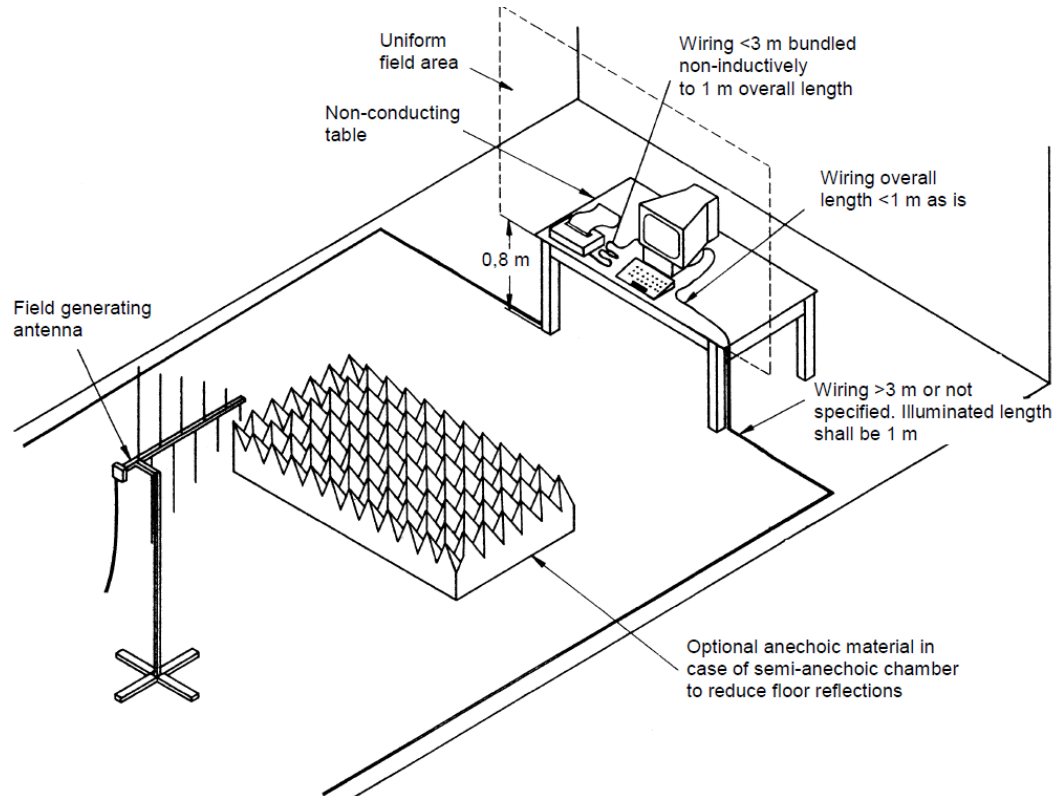
The other condition as following manner:

- The field strength level was 3V/m.
- The frequency range is swept from 80 MHz to 1000 MHz, with the signal 80% amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.
- For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The EUT installed in a representative system as described in section 7 of EN 61000-4-3 was placed on a non-conductive table 0.8 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of EN 61000-4-3 was placed on a non-conductive wood support 0.1 meters in height. The system under test was connected to the power and signal wire according to relevant installation instructions.

5.5.6 TEST RESULTS

EUT:	Switching Adapter	Model Name:	SYS1561-1212, SYS1561-1105-1
Temperature:	25°C	Relative Humidity:	56%
Pressure:	1012 hPa	Test Voltage :	AC 230V/50Hz
Test Mode:	FULL LOAD		

Frequency Range (MHz)	RF Field Position	R.F. Field Strength	Azimuth	Criteria	Results	Judgment
80 - 1000	H / V	3 V/m (rms) AM Modulated 1000Hz, 80%	0°	A	A	PASS
			90°			
			180°			
			270°			

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) N/A - denotes test is not applicable in this test report.
- 3) Criterion A: No observation of any performance degradation.
- 4) Criterion B: Some degradation of performance is observed but the equipment continues to operate as intended.
- 5) Criterion C: Loss of functionality, but self-recoverable by user, without loss of information or settings.

5.6 EFT/BURST TESTING

5.6.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-4
Required Performance	B
Test Voltage:	Power Line:±1 kV
Polarity:	Positive & Negative
Impulse Frequency:	5 kHz
Impulse Wave shape :	5/50 ns
Burst Duration:	15 ms
Burst Period:	300 ms
Test Duration:	Not less than 1 min.

5.6.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	THE MODULAR SOLUTION FOR 6 KV APPLICATIONS	Teseq	NSG 3060	1423	Oct. 11, 2016
2	Measurement Software	Teseq	Win 3000 Version 1.2.0	N/A	N/A

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

5.6.3 TEST PROCEDURE

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.

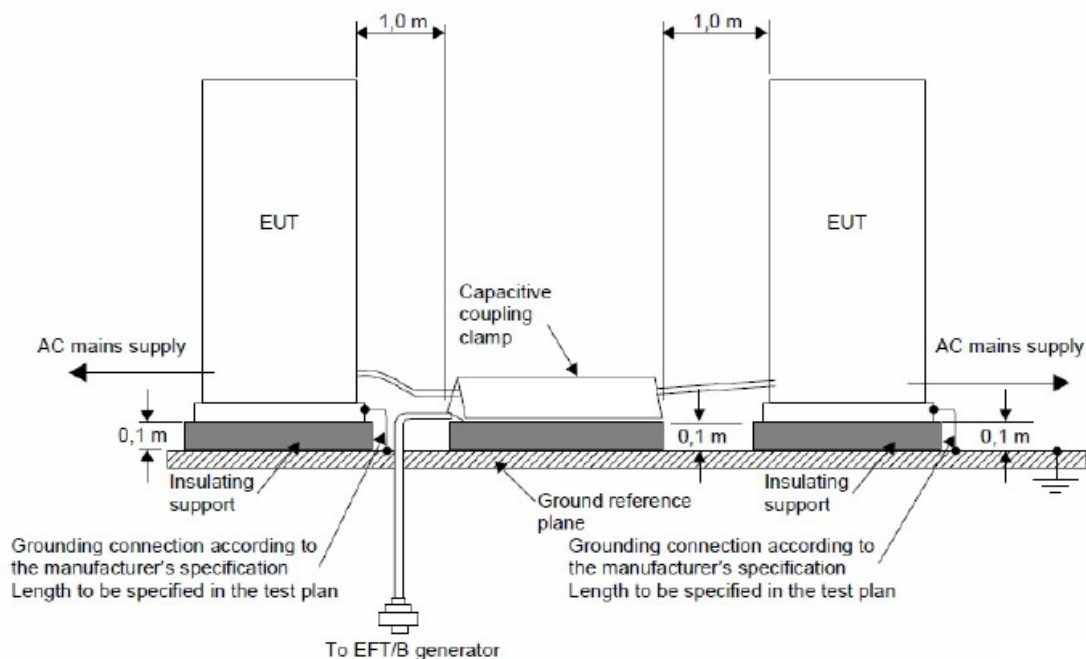
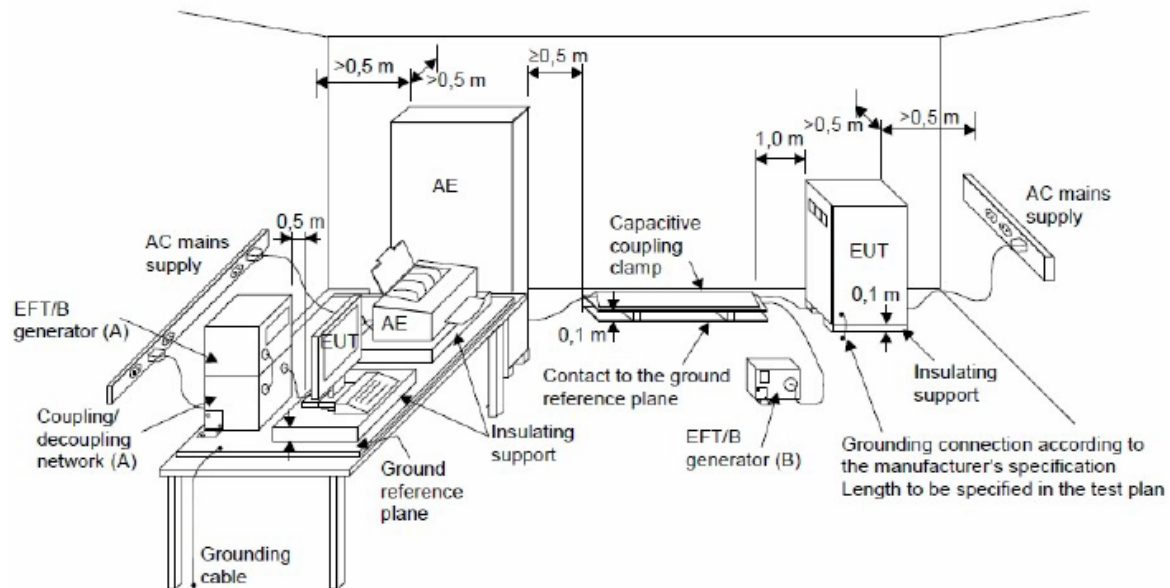
The other condition as following manner:

- The length of power cord between the coupling device and the EUT should not exceed 1 meter.
- Both positive and negative polarity discharges were applied.
- The duration time of each test sequential was 1 minute
- For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table (0.8m high) standing on the Ground Reference Plane and should be located 0.1m+/-0.01m above the Ground Reference Plane. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system. A minimum distance of 0.5m was provided between the EUT and the walls of the laboratory or any other metallic structure.

FLOOR-STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of EN 61000-4-4 and its cables, were isolated from the Ground Reference Plane by an insulating support that is 0.1-meter thick. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system.

5.6.6 TEST RESULTS

EUT:	Switching Adapter	Model Name:	SYS1561-1212, SYS1561-1105-1
Temperature:	25°C	Relative Humidity:	56%
Pressure:	1012 hPa	Test Voltage :	AC 230V/50Hz
Test Mode:	FULL LOAD		

Mode	(V) AC Power Line		() DC Power Line		() Signal/Control Line	
Test Level	1kV		0.5kV		0.5kV	
Port(s)	Polarity	Results	Polarity	Results	Polarity	Results
Line (L)	P	A	P	-	P	-
	N	A	N	-	N	-
Neutral (N)	P	A	P	-	P	-
	N	A	N	-	N	-
Ground (PE)	P	-	P	-	P	-
	N	-	N	-	N	-
Signal/Control Line(N/A)	P	-	P	-	P	-
	N	-	N	-	N	-
Criteria	B		B		B	
Result	A		N/A		N/A	
Judgment	PASS		N/A		N/A	

Note:

- 1) P/N denotes the Positive/Negative polarity of the output voltage.
- 2) N/A - denotes test is not applicable in this test report
- 3) Criterion A: No observation of any performance degradation.
- 4) Criterion B: Some degradation of performance is observed but the equipment continues to operate as intended.
- 5) Criterion C: Loss of functionality, but self-recoverable by user, without loss of information or settings.

5.7 SURGE TESTING

5.7.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-5
Required Performance	B
Wave-Shape:	Combination Wave 1.2/50 us Open Circuit Voltage 8 /20 us Short Circuit Current
Test Voltage:	Power Line: ± 0.5 kV, ± 1 kV
Surge Input/Output:	L-N
Generator Source Impedance:	2 ohm between networks
Polarity:	Positive/Negative
Phase Angle:	AC Power Port: 0 /90/180/270
Pulse Repetition Rate:	1 time / min. (maximum)
Number of Tests:	5 positive and 5 negative at selected points

5.7.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	THE MODULAR SOLUTION FOR 6 KV APPLICATIONS	Teseq	NSG 3060	1423	Oct. 11, 2016
2	Measurement Software	Teseq	Win 3000 Version 1.2.0	N/A	N /A

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

5.7.3 TEST PROCEDURE

a. For EUT power supply:

The surge is to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks shall be 2meters in length (or shorter).

b. For test applied to unshielded unsymmetrically operated interconnection lines of EUT:

The surge is applied to the lines via the capacitive coupling. The coupling /decoupling networks shall not influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

c. For test applied to unshielded symmetrically operated interconnection /telecommunication lines of EUT:

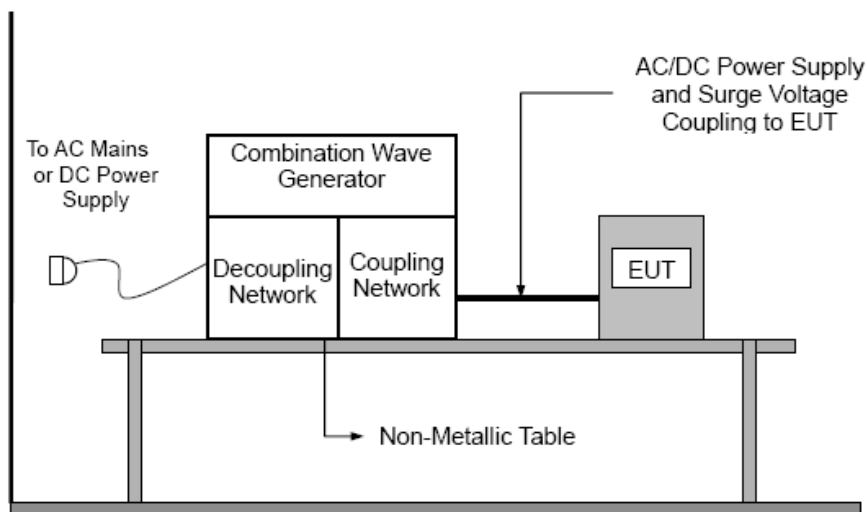
The surge is applied to the lines via gas arrestors coupling. Test levels below the ignition point of the coupling arrestor cannot be specified. The interconnection line between the EUT and the coupling/decoupling networks shall be 2 meters in length (or shorter).

d. For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

5.7.4 DEVIATION FROM TEST STANDARD

No deviation

5.7.5 TEST SETUP



5.7.6 TEST RESULTS

EUT:	Switching Adapter	Model Name:	SYS1561-1212, SYS1561-1105-1
Temperature:	25°C	Relative Humidity:	56%
Pressure:	1012 hPa	Test Voltage :	AC 230V/50Hz
Test Mode:	FULL LOAD		

Wave Form EUT Ports Tested	1.2/50(8/20)Ti/Th us						Criteria	Results	Judgment
	Polarity	Phase	Voltage						
			0.5kV	1kV	-kV	-kV			
L - N	+/-	0°	A	A	-	-	B	A	PASS
	+/-	90°	A	A	-	-			
	+/-	180°	A	A	-	-			
	+/-	270°	A	A	-	-			
L - PE	+/-	0°	-	-	-	-	B	N/A	N/A
	+/-	90°	-	-	-	-			
	+/-	180°	-	-	-	-			
	+/-	270°	-	-	-	-			
N - PE	+/-	0°	-	-	-	-	B	N/A	N/A
	+/-	90°	-	-	-	-			
	+/-	180°	-	-	-	-			
	+/-	270°	-	-	-	-			
Signal Line (N/A)	+/-	N/A	-	-	-	-	B	N/A	N/A

Note:

- 1) Polarity and Numbers of Impulses:5 Pst / Ngst at each tested mode
- 2) N/A - denotes test is not applicable in this Test Report
- 3) Criterion A: No observation of any performance degradation.
- 4) Criterion B: Some degradation of performance is observed but the equipment continues to operate as intended.
- 5) Criterion C: Loss of functionality, but self-recoverable by user, without loss of information or settings.

5.8 INJECTION CURRENT TESTING

5.8.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-6
Required Performance	A
Frequency Range:	0.15 MHz - 80 MHz
Field Strength:	3 Vr.m.s.
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Dwell Time:	at least 3 seconds

5.8.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Signal Generator	HP	8648A	3636A02964	Mar. 28, 2016
2	Power Amplifier	Teseq	CBA230M-080	T43748	Mar. 28, 2016
3	Power CDN	FCC	FCC-801-M2/M3-16A	100271	Mar. 28, 2016
4	Measurement Software	TOYO	IM5/C Ver 3.7.028	N/A	N/A

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

5.8.3 TEST PROCEDURE

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.

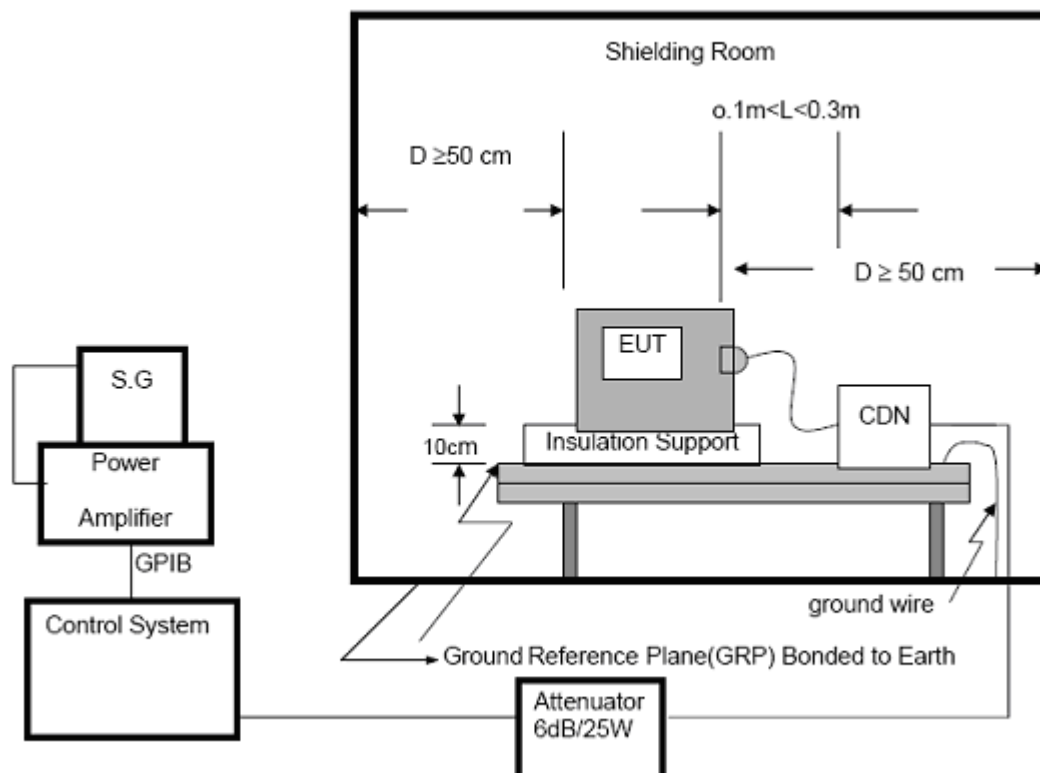
The other condition as following manner:

- The field strength level was 3V.
- The frequency range is swept from 150 KHz to 80 MHz, with the signal 80% amplitude modulated with a 1kHz sine wave. The rate of sweep did not exceed 1.5×10^{-3} decade/s. Where the frequency range is swept incrementally, the step size was 1% of fundamental.
- The dwell time at each frequency shall be not less than the time necessary for the EUT to be able to respond.
- For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

5.8.4 DEVIATION FROM TEST STANDARD

No deviation

5.8.5 TEST SETUP



NOTE:

FLOOR-STANDING EQUIPMENT

The equipment to be tested is placed on an insulating support of 0.1 meters height above a ground reference plane. All relevant cables shall be provided with the appropriate coupling and decoupling devices at a distance between 0.1 meters and 0.3 meters from the projected geometry of the EUT on the ground reference plane.

5.8.6 TEST RESULTS

EUT:	Switching Adapter	Model Name:	SYS1561-1212, SYS1561-1105-1
Temperature:	25°C	Relative Humidity:	56 %
Pressure:	1025 hPa	Test Voltage :	AC 230V/50Hz
Test Mode:	FULL LOAD		

Test Ports (Mode)	Freq. Range MHz)	Field Strength	Criteria	Results	Judgment
Input/ Output AC. Power Port	0.15 ---80	3V(rms) AM Modulated 1000Hz, 80%	A	A	PASS
Input/ Output DC. Power Port	0.15 --- 80		A	N/A	N/A
Signal Line (N/A)	0.15 --- 80		A	N/A	N/A

Note:

- 1) N/A - denotes test is not applicable in this Test Report.
- 2) Criterion A: No observation of any performance degradation.
- 3) Criterion B: Some degradation of performance is observed but the equipment continues to operate as intended.
- 4) Criterion C: Loss of functionality, but self-recoverable by user, without loss of information or settings.

5.9 POWER FREQUENCY MAGNETIC FIELD TESTING

5.9.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-8
Required Performance	A
Frequency Range:	50/ 60Hz
Field Strength:	1 A/m
Observation Time:	1 minute
Inductance Coil:	Rectangular type, 1mx1m

5.9.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Magnetic Field Test Generator	FCC	F-1000-4-8-G-125A	04032	Mar. 28, 2016
2	Magnetic Field immunity loop	Thermo KeyTek	F-1000-4-8/9/10-L-1M	04024	Mar. 28, 2016

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

5.9.3 TEST PROCEDURE

The EUT and support equipment, are placed on a table that is 0.8 meter above a metal ground plane measured 1m*1m min. and 0.65mm thick min.

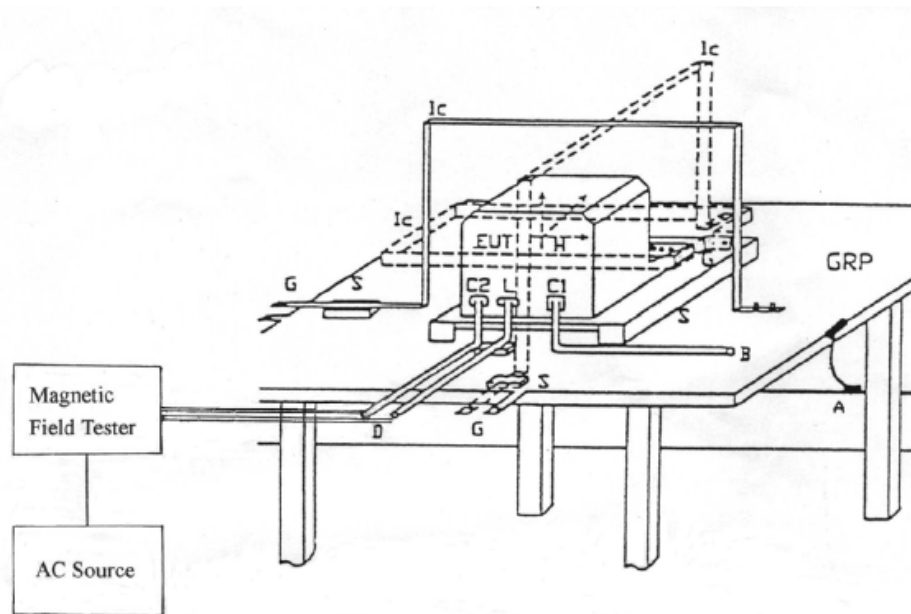
The other condition as following manner:

- The equipment cabinets shall be connected to the safety earth directly on the GRP via the earth terminal of the EUT.
- The cables supplied or recommended by the equipment manufacturer shall be used. 1 meter of all cables used shall be exposed to the magnetic field.
- For the actual test configuration, please refer to the related Item –Block Diagram of system tested (please refer to 3.3).

5.9.4 DEVIATION FROM TEST STANDARD

No deviation

5.9.5 TEST SETUP



Note:

TABLE-TOP EQUIPMENT

The equipment shall be subjected to the test magnetic field by using the induction coil of standard dimension (1 m x 1 m). The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

FLOOR-STANDING EQUIPMENT

The equipment shall be subjected to the test magnetic field by using induction coils of suitable dimensions. The test shall be repeated by moving and shifting the induction coils, in order to test the whole volume of the EUT for each orthogonal direction. The test shall be repeated with the coil shifted to different positions along the side of the EUT, in steps corresponding to 59 % of the shortest side of the coil. The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

5.9.6 TEST RESULTS

EUT:	Switching Adapter	Model Name:	SYS1561-1212, SYS1561-1105-1
Temperature:	25°C	Relative Humidity:	56%
Pressure:	1012 hPa	Test Voltage :	AC 230V/50Hz
Test Mode:	FULL LOAD		

50Hz

Test Mode	Test Level	Antenna aspect	Duration (s)	Criteria	Results	Judgment
Enclosure	1 A/m	X	60	A	A	PASS
Enclosure	1 A/m	Y	60	A	A	PASS
Enclosure	1 A/m	Z	60	A	A	PASS

60Hz

Test Mode	Test Level	Antenna aspect	Duration (s)	Criteria	Results	Judgment
Enclosure	1 A/m	X	60	A	A	PASS
Enclosure	1 A/m	Y	60	A	A	PASS
Enclosure	1 A/m	Z	60	A	A	PASS

Note:

- 1) N/A - denotes test is not applicable in this test report
- 2) Criterion A: No observation of any performance degradation.
- 3) Criterion B: Some degradation of performance is observed but the equipment continues to operate as intended.
- 4) Criterion C: Loss of functionality, but self-recoverable by user, without loss of information or settings.

5.10 VOLTAGE INTERRUPTION/DIPS TESTING

5.10.1 TEST SPECIFICATION

Basic Standard:	EN 61000-4-11
Required Performance	B (For >95% Voltage Dips) C (For 30% Voltage Dips) C (For >95% Voltage Interruptions)
Test Duration Time:	Minimum three test events in sequence
Interval between Event:	Minimum ten seconds
Phase Angle:	0°/45°/90°/135°/180°/225°/270°/315°/360°
Test Cycle:	3 times

5.10.2 MEASUREMENT INSTRUMENTS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	THE MODULAR SOLUTION FOR 6 KV APPLICATIONS	Teseq	NSG 3060	1423	Oct. 11, 2016
2	Measurement Software	Teseq	Win 3000 Version 1.2.0	N/A	N/A

Remark: " N/A" denotes no model name, serial No. or no calibration specified.

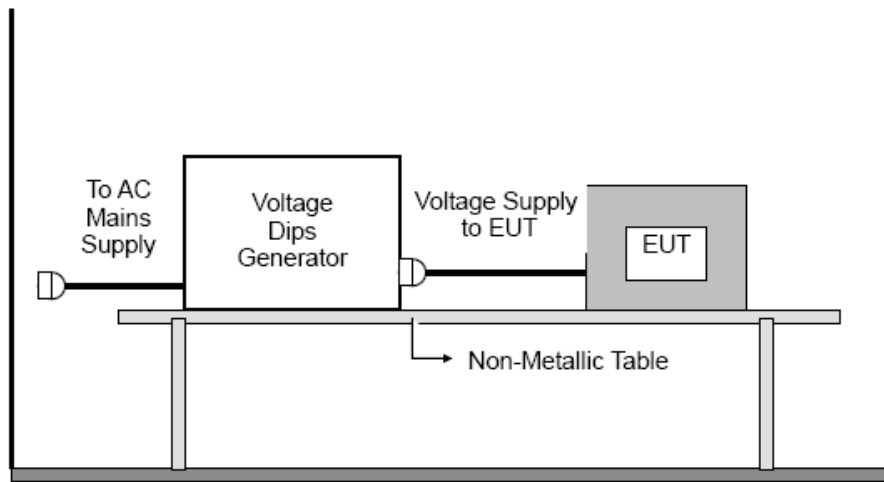
5.10.3 TEST PROCEDURE

The EUT shall be tested for each selected combination of test levels and duration with a sequence of three dips/interruptions with intervals of 10 s minimum (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

5.10.4 DEVIATION FROM TEST STANDARD

No deviation

5.10.5 TEST SETUP



For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.10.6 TEST RESULTS

EUT:	Switching Adapter	Model Name:	SYS1561-1212, SYS1561-1105-1
Temperature:	25°C	Relative Humidity:	56%
Pressure:	1012 hPa	Test Voltage :	AC 230V/50Hz
Test Mode:	FULL LOAD		

AC 230V/50Hz				
Voltage Reduction	Periods	Criteria	Results	Judgment
Voltage dip > 95%	0.5	B	A	PASS
Voltage dip 30%	25	C	A	PASS
Interruption > 95%	250	C	C	PASS

AC 240V/50Hz				
Voltage Reduction	Periods	Criteria	Results	Judgment
Voltage dip > 95%	0.5	B	A	PASS
Voltage dip 30%	25	C	A	PASS
Interruption > 95%	250	C	C	PASS

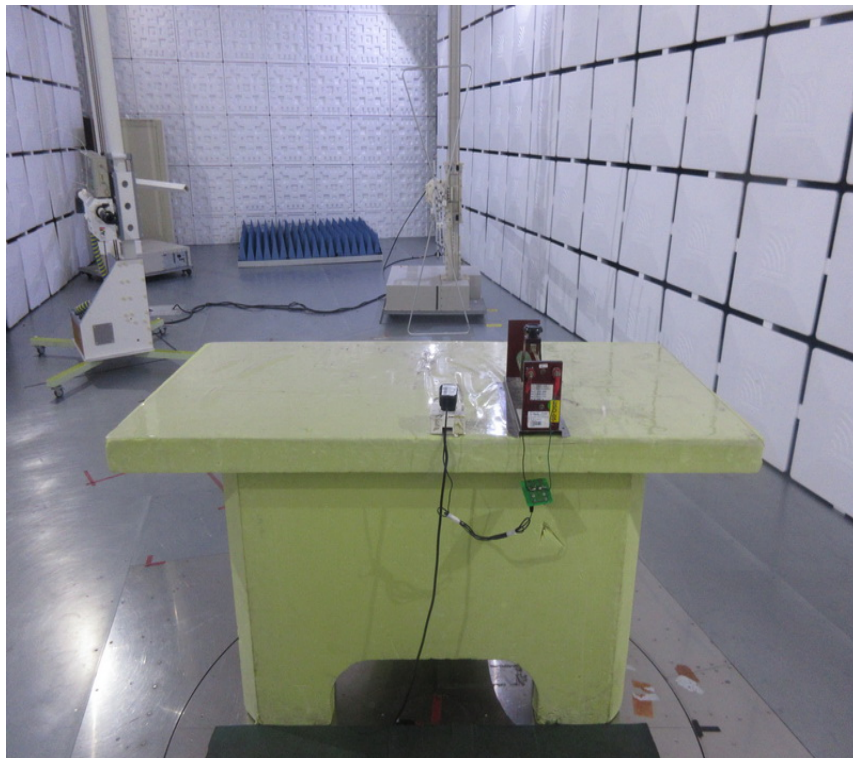
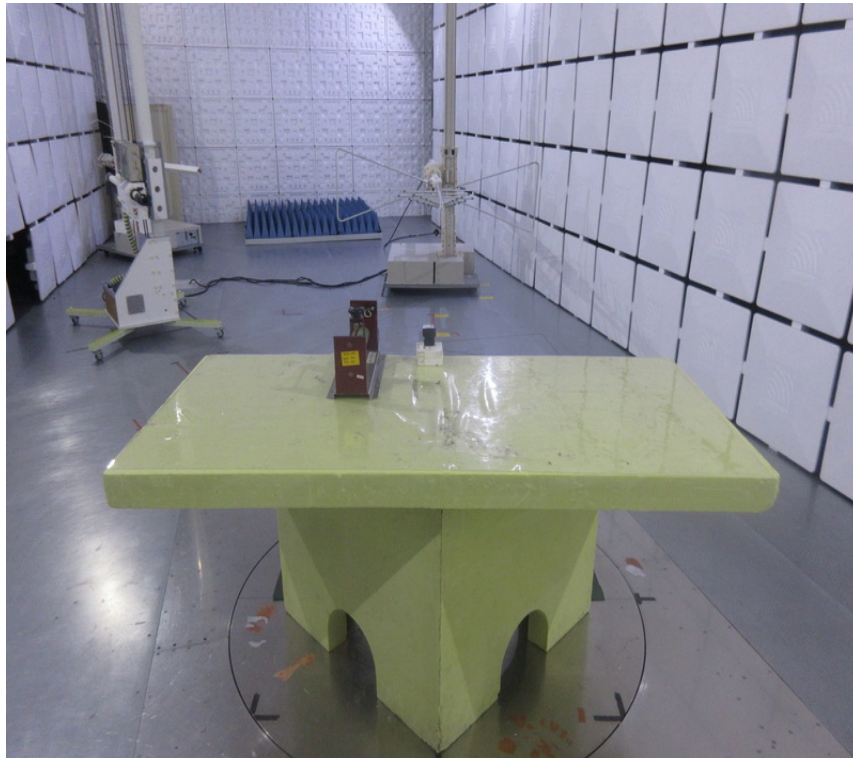
AC 100V/50Hz				
Voltage Reduction	Periods	Criteria	Results	Judgment
Voltage dip > 95%	0.5	B	A	PASS
Voltage dip 30%	25	C	A	PASS
Interruption > 95%	250	C	C	PASS

Note:

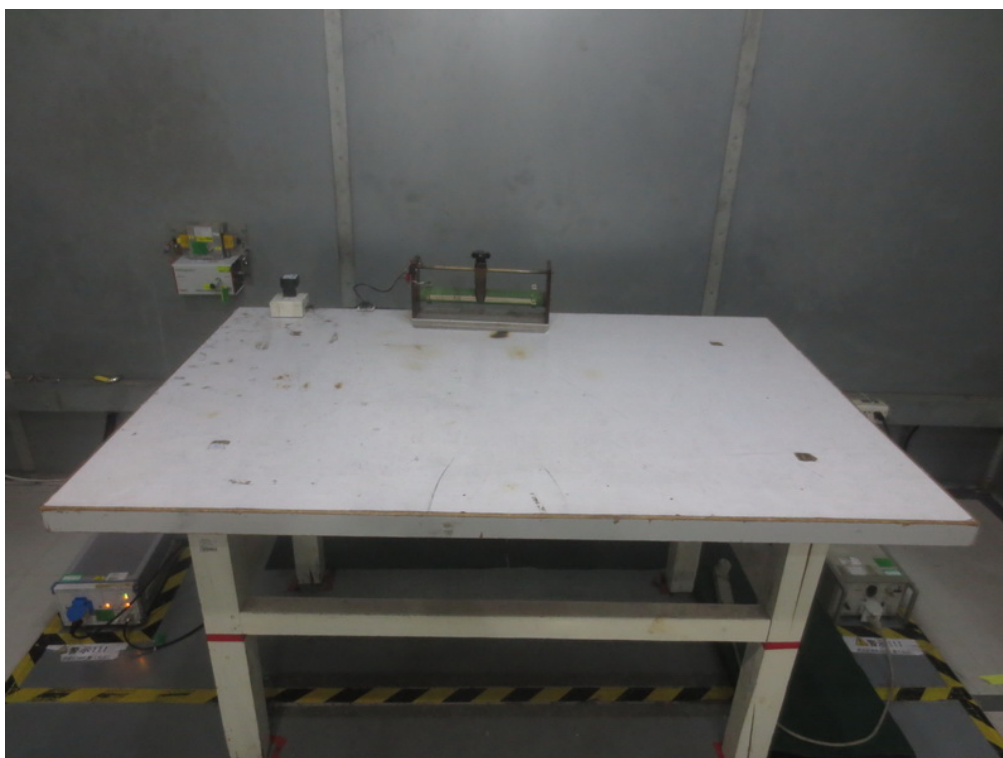
- 1). N/A - denotes test is not applicable in this test report.
- 2) Criterion A: No observation of any performance degradation.
- 3) Criterion B: Some degradation of performance is observed but the equipment continues to operate as intended.
- 4) Criterion C: Loss of functionality, but self-recoverable by user, without loss of information or settings.

6. EUT TEST PHOTO

Radiated emissions up to 1 GHz



Conducted emissions AC mains power port



ATTACHMENT

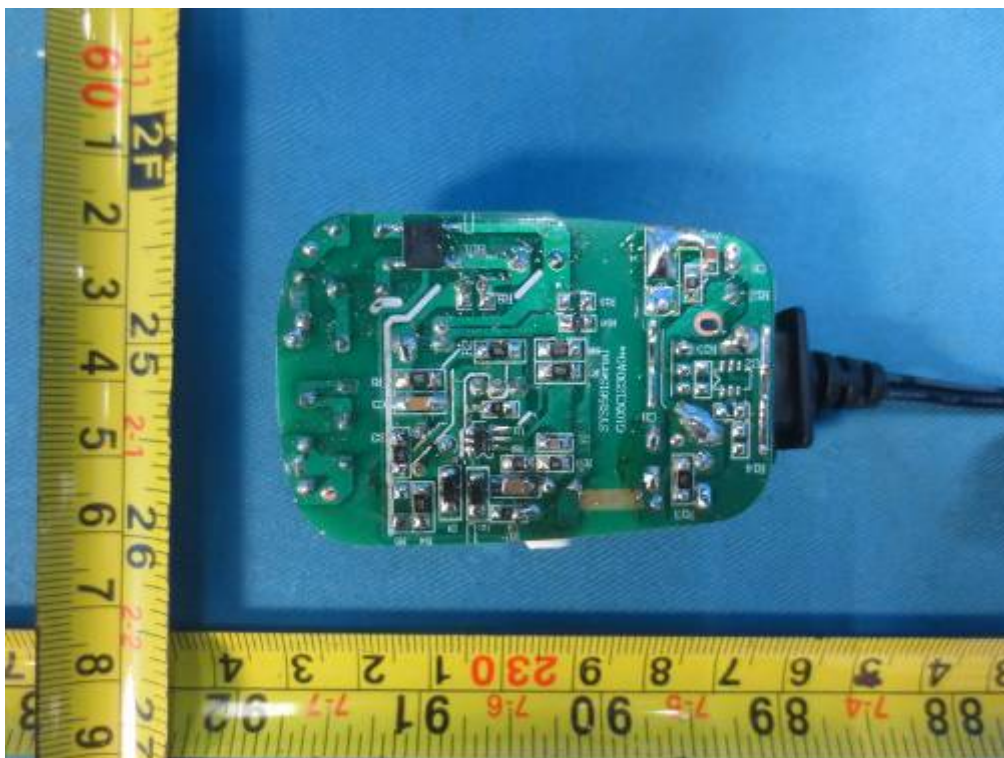
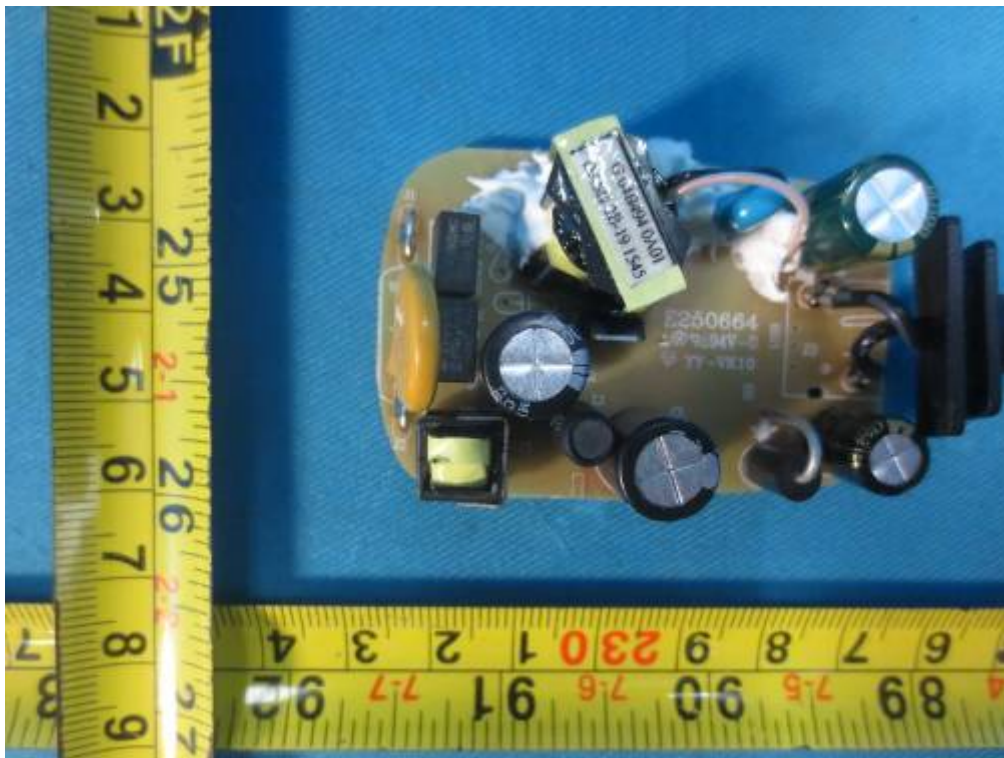
PHOTOGRAPHS OF EUT

Model: SYS1561-1212









Model: SYS1561-1105-1





