



EMC TEST REPORT

REPORT NO.: WJF-13SE0010VNTY-A2

MODEL NO.: SX3650CIYYYYYY

RECEIVED: Aug. 19, 2013

ISSUED: Sep. 02, 2013

APPLICANT: Schneider Electric Taiwan Co., Ltd.

ADDRESS: 2F., No.37, Jihu Rd., Neihu District, Taipei City

ISSUED BY: BUREAU VERITAS ADT (Shanghai) Corporation

LAB LOCATION: 2F, Building C, No.1618, Yishan Rd., 201103,
Shanghai, China

This test report consists of 49 pages in total. It may be duplicated completely for legal use with the approval of the applicant. It should not be reproduced except in full, without the written approval of our laboratory. The client should not use it to claim product certification, approval, or endorsement by A2LA, CNAS, or any government agency. The test results in the report only apply to the tested item. The test results in this report are traceable to the national or international standards.





Table of Contents

1	CERTIFICATION.....	4
2	SUMMARY OF TEST RESULTS	5
2.1	MEASUREMENT UNCERTAINTY	7
3	GENERAL INFORMATION	8
3.1	GENERAL DESCRIPTION OF EUT	8
3.2	DESCRIPTION OF TEST MODES	8
3.3	DESCRIPTION OF SUPPORT UNITS	9
4	EMISSION TEST	10
4.1	CONDUCTED EMISSION MEASUREMENT.....	10
4.1.1	LIMITS OF CONDUCTED EMISSION MEASUREMENT	10
4.1.2	TEST INSTRUMENTS.....	10
4.1.3	TEST PROCEDURE.....	10
4.1.4	TEST SETUP.....	10
4.1.5	TEST RESULTS	11
4.2	RADIATED EMISSION MEASUREMENT.....	15
4.2.1	LIMITS OF RADIATED EMISSION MEASUREMENT	15
4.2.2	TEST INSTRUMENTS.....	15
4.2.3	TEST PROCEDURE.....	15
4.2.4	TEST SETUP.....	15
4.2.5	TEST RESULTS	16
4.3	HARMONICS CURRENT MEASUREMENT.....	20
4.3.1	LIMITS OF HARMONICS CURRENT MEASUREMENT	20
4.3.2	TEST INSTRUMENTS.....	20
4.3.3	TEST PROCEDURE.....	20
4.3.4	TEST RESULTS	21
4.4	VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT	25
4.4.1	LIMITS OF VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT	25
4.4.2	TEST INSTRUMENTS.....	25
4.4.3	TEST PROCEDURE.....	25
4.4.4	TEST RESULTS	26
5	IMMUNITY TEST	27
5.1	ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)	27
5.1.1	TEST SPECIFICATION.....	27
5.1.2	TEST INSTRUMENTS.....	27
5.1.3	TEST PROCEDURE.....	27
5.1.4	TEST SETUP.....	27
5.1.5	TEST RESULTS	28
5.2	RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS)	32
5.2.1	TEST SPECIFICATION.....	32
5.2.2	TEST INSTRUMENTS.....	32
5.2.3	TEST PROCEDURE.....	33
5.2.4	TEST SETUP.....	33
5.2.5	TEST RESULTS	33



5.3	ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT)	35
5.3.1	TEST SPECIFICATION.....	35
5.3.2	TEST INSTRUMENTS.....	35
5.3.3	TEST PROCEDURE.....	35
5.3.4	TEST SETUP	35
5.3.5	TEST RESULTS	36
5.4	SURGE IMMUNITY TEST	37
5.4.1	TEST SPECIFICATION.....	37
5.4.2	TEST INSTRUMENTS.....	37
5.4.3	TEST PROCEDURE.....	38
5.4.4	TEST SETUP	38
5.4.5	TEST RESULTS	38
5.5	IMMUNITY TO CONDUCTED DISTURBANCES INDUCED BY RF FIELDS (CS)	39
5.5.1	TEST SPECIFICATION.....	39
5.5.2	TEST INSTRUMENTS.....	39
5.5.3	TEST PROCEDURE.....	40
5.5.4	TEST SETUP	40
5.5.5	TEST RESULTS	40
6	PHOTOGRAPHS OF THE TEST CONFIGURATION	41
7	PHOTOGRAPHS OF THE EUT	47
8	APPENDIX - INFORMATION ON THE TESTING LABORATORIES	49



1 CERTIFICATION

PRODUCT: UPS
MODEL NO.: SX3650CIYYYYYY
TEST ITEMS: N/A
APPLICANT: Schneider Electric Taiwan Co., Ltd.
TESTED: Nov. 15 ~ 18, 2010
STANDARDS: AS 62040.2:2008

We, BUREAU VERITAS ADT (Shanghai) Corporation, declare that the equipment above has been tested in our facility and found compliance with the requirement limits of applicable standards. The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate under the standards herein specified.

PREPARED BY : Sally Wan, **DATE:** Sep. 02, 2013
Sally WAN
Report Engineer

TECHNICAL ACCEPTANCE : Joy ZHU, **DATE:** Sep. 02, 2013
Joy ZHU
Testing Manager

APPROVED BY : Zhaobian YU, **DATE:** Sep. 02, 2013
Zhaobian YU
Lab Manager



2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

EMISSION			
Standard	Test Type	Result	Remarks
AS 62040.2	Conducted Test	PASS	Meets Class B Limit Minimum passing margin is -3.54dB at 11.55MHz
	Radiated Test	PASS	Meets Class B Limit Minimum passing margin is -5.99 dB at 91.60 MHz
IEC 61000-3-2	Harmonic current emissions	PASS	Meets the requirements
IEC 61000-2-2	Low frequency conducted disturbances	PASS	Meets the requirements
IEC 61000-3-3	Voltage fluctuations & flicker	PASS	Meets the requirements



IMMUNITY			
Standard	Test Type	Result	Remarks
IEC 61000-4-2	Electrostatic discharge immunity test	PASS	Meets the requirements of Performance Criterion B
IEC 61000-4-3	Radiated, radio-frequency, electromagnetic field immunity test	PASS	Meets the requirements of Performance Criterion A
IEC 61000-4-4	Electrical fast transient / burst immunity test.	PASS	Meets the requirements of Performance Criterion B
IEC 61000-4-5	Surge immunity test	PASS	Meets the requirements of Performance Criterion B
IEC 61000-4-6	Immunity to conducted disturbances, induced by radio-frequency fields	PASS	Meets the requirements of Performance Criterion A

This is a co-report base on the original report 101117CTA01, EUT in this report is identical as the one in original, only different is the model name changed. And the applicant and holder of the report are different as the original report. All test data were refer to the original report 101117CTA01.



2.1 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 Ed 1.0.

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.

This lab's measurement uncertainty U_{Lab} , is low than U_{Cispr} , Table 1 – Values of U_{Cispr} of CISPR 16-4-2 Ed. 1.0, therefore compliance is deemed to occur if no measured disturbance exceeds the disturbance limit.

Measurement		Value
Conducted emissions		2.55 dB
Conducted emissions at telecom port		2.60 dB
Radiated emissions	30 MHz ~ 1GHz	3.22 dB
	Above 1GHz	2.89 dB



3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	UPS
MODEL	SX3650CIYYYYYY
POWER SUPPLIED	230Vac, 50Hz
POWER ADAPTER SUPPLIED	N/A

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

3.2 DESCRIPTION OF TEST MODES

The final test modes of test items were as follows:

TEST MODE	TEST CONDITION
1	AC ONLINE MODE(FULL LOAD)
2	BACK UP MODE(FULL LOAD)



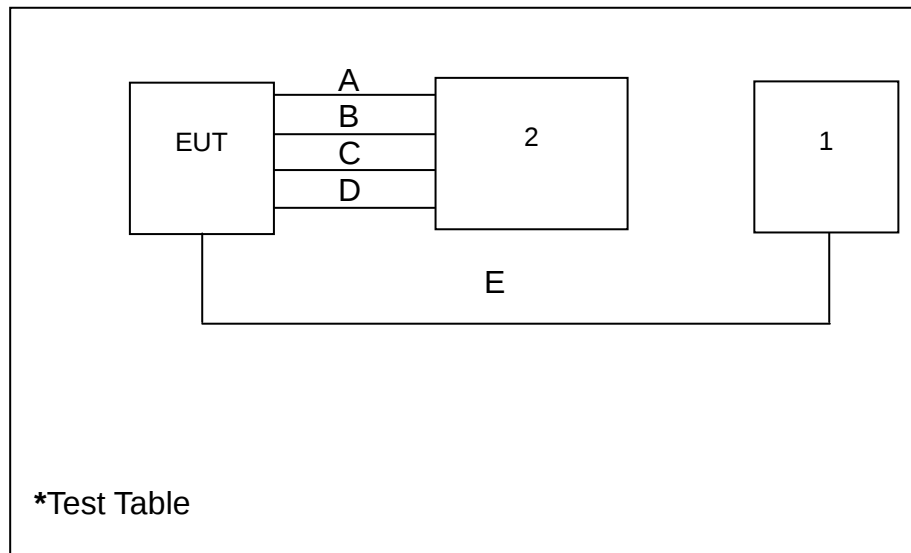
3.3 DESCRIPTION OF SUPPORT UNITS

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.

NO.	PRODUCT	BRAND	MODEL NO.
1	PC	Lenovo	JS8705AB7L3F0468
2	Load	N/A	N/A

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
A	1.2m non-shielded power cable.
B	1.2m non-shielded power cable.
C	1.2m non-shielded power cable.
D	1.2m non-shielded power cable.
E	1.5m shielded USB cable.

TEST SETUP CHART





4 EMISSION TEST

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY (MHz)	Limit (dBuV)			
	CATEGORY C2 UPS		CATEGORY C1 UPS	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	E1R1002	Jan. 19, 2011
LISN ROHDE & SCHWARZ	ENV216	E1L1011	Apr. 11, 2011
Software ADT	ADT_Cond_V7.3.0	N/A	N/A

4.1.3 TEST PROCEDURE

Refer AS 62040.2

4.1.4 TEST SETUP

Refer AS 62040.2

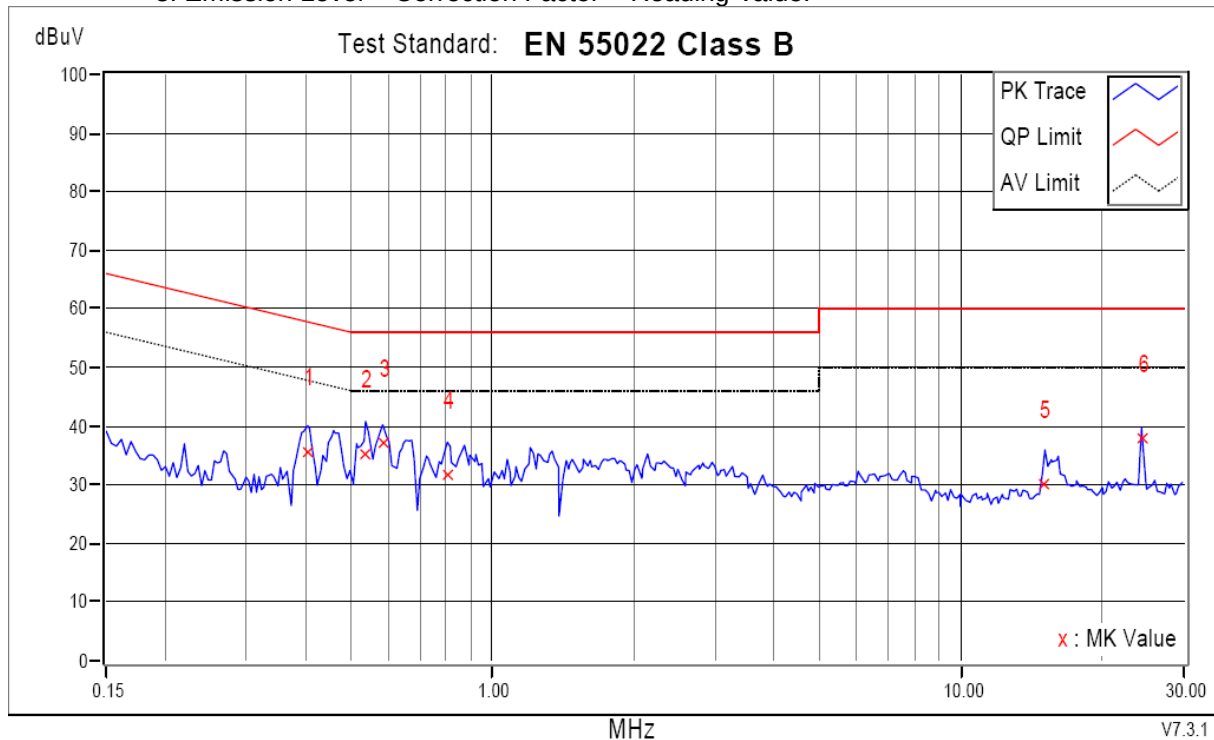
For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

4.1.5 TEST RESULTS

EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 1	6dB BANDWIDTH	9kHz
INPUT POWER	230Vac, 50Hz	PHASE	Line (L1)
ENVIRONMENTAL CONDITIONS	23deg. C, 55% RH, 101 kPa	TESTED BY: Ted FAN	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.40415	9.64	25.90	17.50	35.54	27.14	57.77	47.77	-22.23	-20.63
2	0.53709	9.63	25.70	17.93	35.33	27.56	56.00	46.00	-20.67	-18.44
3	0.58401	9.62	27.59	18.11	37.21	27.73	56.00	46.00	-18.79	-18.27
4	0.80297	9.61	21.85	12.02	31.46	21.63	56.00	46.00	-24.54	-24.37
5	15.16120	9.93	20.21	19.53	30.14	29.46	60.00	50.00	-29.86	-20.54
6	24.37707	9.72	28.15	28.87	37.87	38.59	60.00	50.00	-22.13	-11.41

REMARKS: 1. Margin value = Emission level - Limit value
2. Correction factor = Insertion loss + Cable loss
3. Emission Level = Correction Factor + Reading Value.

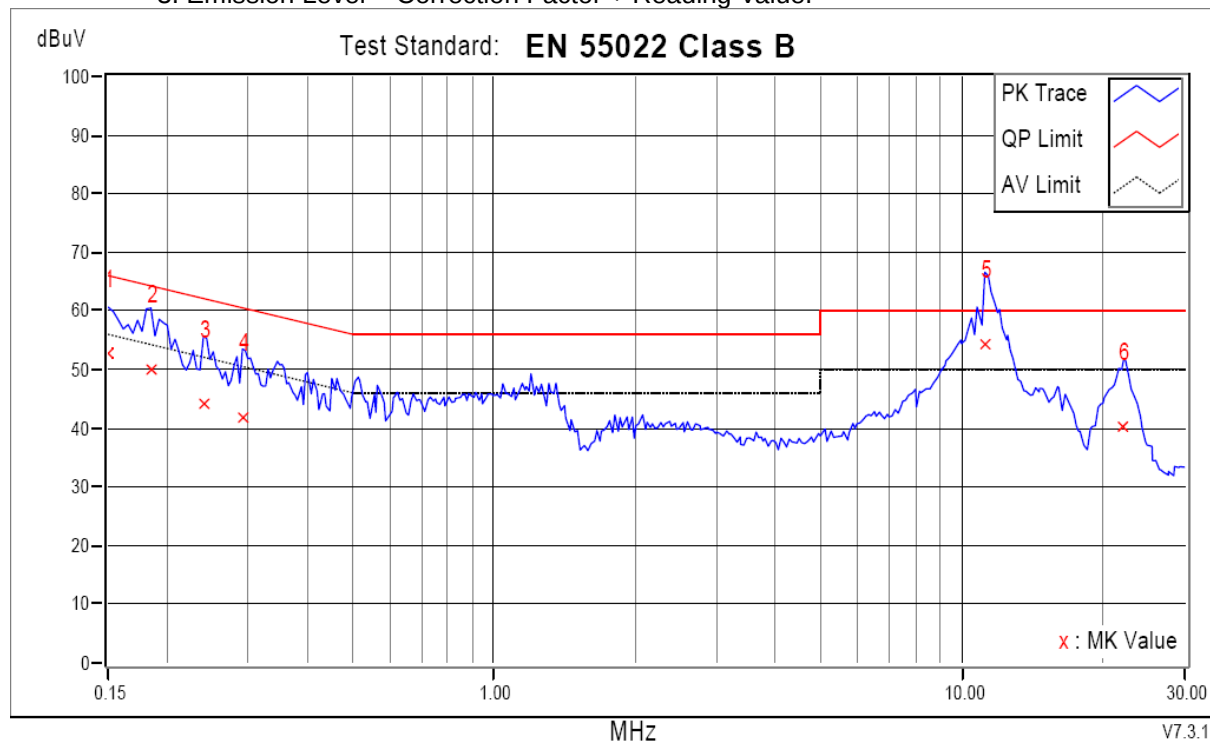




EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 1	6dB BANDWIDTH	9kHz
INPUT POWER	230Vac, 50Hz	PHASE	N
ENVIRONMENTAL CONDITIONS	23deg. C, 55% RH, 101 kPa	TESTED BY: Ted FAN	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.73	43.01	15.39	52.74	25.12	66.00	56.00	-13.26	-30.88
2	0.18519	9.66	40.28	11.78	49.94	21.44	64.25	54.25	-14.31	-32.81
3	0.23993	9.63	34.61	5.93	44.24	15.56	62.10	52.10	-17.86	-36.54
4	0.29076	9.63	32.12	4.57	41.75	14.20	60.50	50.50	-18.76	-36.31
5	11.22383	9.96	44.38	13.81	54.34	23.77	60.00	50.00	-5.66	-26.23
6	22.20311	10.00	30.19	7.31	40.19	17.31	60.00	50.00	-19.81	-32.69

REMARKS: 1. Margin value = Emission level - Limit value
2 Correction factor = Insertion loss + Cable loss
3. Emission Level = Correction Factor + Reading Value.

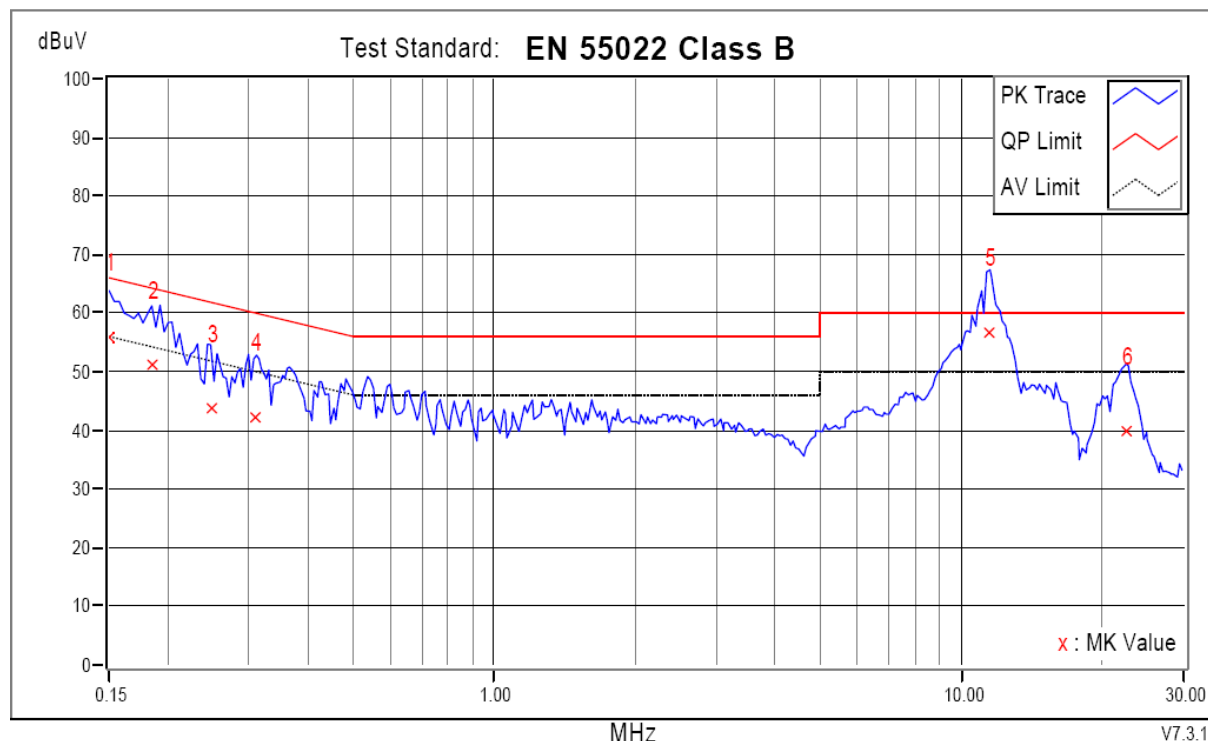




EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 2	6dB BANDWIDTH	9kHz
INPUT POWER	N/A	PHASE	Line (L1)
ENVIRONMENTAL CONDITIONS	23deg. C, 55% RH, 101 kPa	TESTED BY: Ted FAN	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.76	45.92	18.73	55.68	28.49	66.00	56.00	-10.32	-27.51
2	0.18519	9.66	41.59	13.86	51.25	23.52	64.25	54.25	-13.00	-30.73
3	0.24775	9.62	33.94	6.30	43.56	15.92	61.83	51.83	-18.27	-35.91
4	0.31031	9.62	32.39	5.06	42.01	14.68	59.96	49.96	-17.95	-35.28
5	11.54836	9.92	46.54	15.97	56.46	25.89	60.00	50.00	-3.54	-24.11
6	22.58238	9.80	30.15	7.78	39.95	17.58	60.00	50.00	-20.05	-32.42

REMARKS: 1. Margin value = Emission level - Limit value
2 Correction factor = Insertion loss + Cable loss
3. Emission Level = Correction Factor + Reading Value.

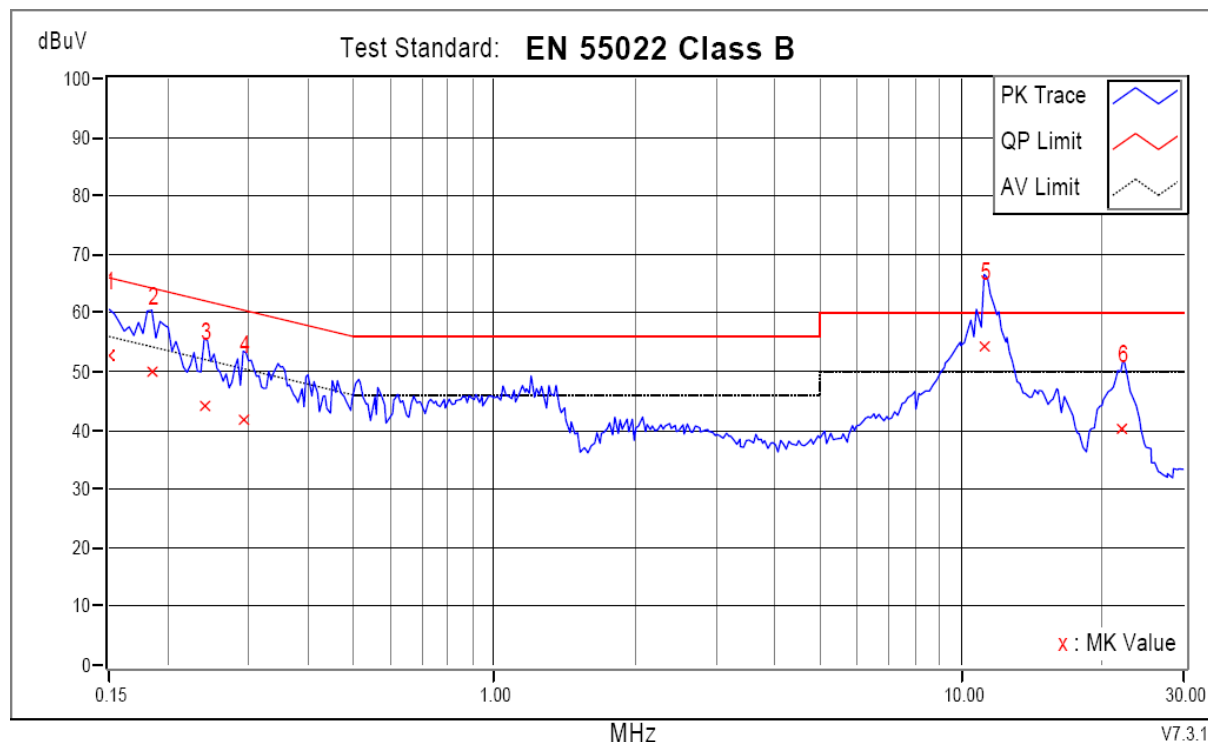




EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 2	6dB BANDWIDTH	9kHz
INPUT POWER	N/A	PHASE	N
ENVIRONMENTAL CONDITIONS	23deg. C, 55% RH, 101 kPa	TESTED BY: Ted FAN	

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.15000	9.73	43.01	15.39	52.74	25.12	66.00	56.00	-13.26	-30.88
2	0.18519	9.66	40.28	11.78	49.94	21.44	64.25	54.25	-14.31	-32.81
3	0.23993	9.63	34.61	5.93	44.24	15.56	62.10	52.10	-17.86	-36.54
4	0.29076	9.63	32.12	4.57	41.75	14.20	60.50	50.50	-18.76	-36.31
5	11.22383	9.96	44.38	13.81	54.34	23.77	60.00	50.00	-5.66	-26.23
6	22.20311	10.00	30.19	7.31	40.19	17.31	60.00	50.00	-19.81	-32.69

REMARKS: 1. Margin value = Emission level - Limit value
2 Correction factor = Insertion loss + Cable loss
3. Emission Level = Correction Factor + Reading Value.





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

FREQUENCY (MHz)	Quasi-peak limits dB μ V/m		
	Category C1 UPS	Category C2 UPS	Category C3UPS
30 – 230	30	40	50
230 – 1000	37	47	60

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Spectrum Agilent	E4403B	E1S1001	Aug. 01, 2011
Receiver R&S	ESCS30	E1R1001	Mar. 07, 2011
Trilog Broadband Antenna Schwarzbeck	VULB 9168	E1A1001	Aug. 08, 2011
Preamplifier Agilent	HP 8447D	E1A2001	Nov. 12, 2011

4.2.3 TEST PROCEDURE

Refer AS 62040.2

4.2.4 TEST SETUP

Refer AS 62040.2

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

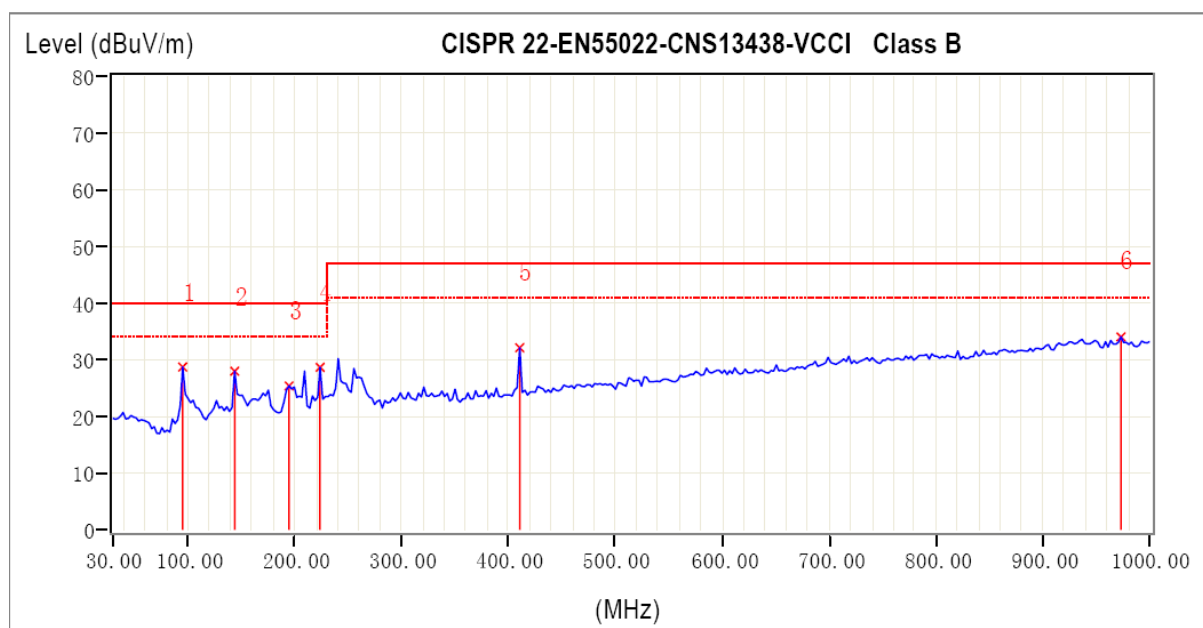
4.2.5 TEST RESULTS

EUT	UPS	MODEL NO.	SX3650CIYYYYYY
MODE	Mode 1	INPUT POWER	230Vac, 50Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 50 % RH, 1010 hPa	TESTED BY: Ted.ZHU	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	95.47	12.20	16.50	28.70	40.00	-11.30	--	--
2	143.97	16.52	11.45	27.97	40.00	-12.03	--	--
3	194.90	13.20	12.17	25.37	40.00	-14.63	--	--
4	224.00	14.12	14.53	28.65	40.00	-11.35	--	--
5	410.73	19.00	13.10	32.10	47.00	-14.90	--	--
6	973.33	27.72	6.30	34.02	47.00	-12.98	--	--

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

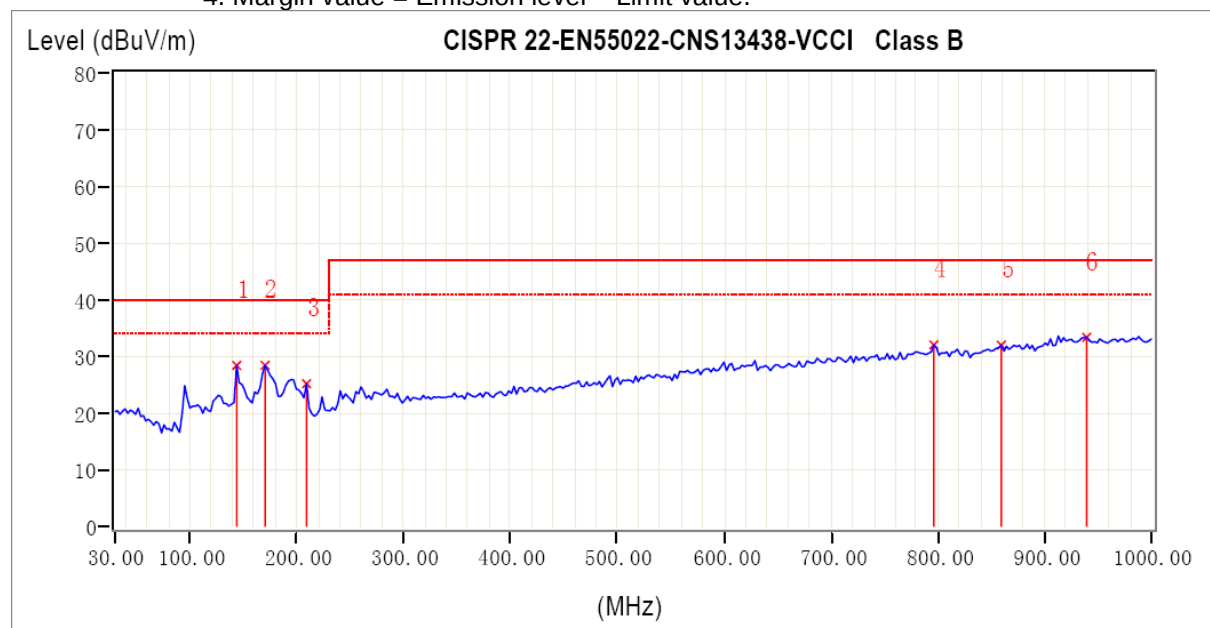




EUT	UPS	MODEL NO.	SX3650CIYYYYYY
MODE	Mode 1	INPUT POWER	230Vac, 50Hz
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 50 % RH, 1010 hPa	TESTED BY:	Ted. ZHU

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	143.97	16.52	11.90	28.42	40.00	-11.58	--	--
2	170.65	16.01	12.43	28.45	40.00	-11.55	--	--
3	209.45	13.11	12.10	25.21	40.00	-14.79	--	--
4	796.30	25.79	6.26	32.05	47.00	-14.95	--	--
5	859.35	26.28	5.72	32.00	47.00	-15.00	--	--
6	939.37	27.76	5.61	33.37	47.00	-13.63	--	--

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

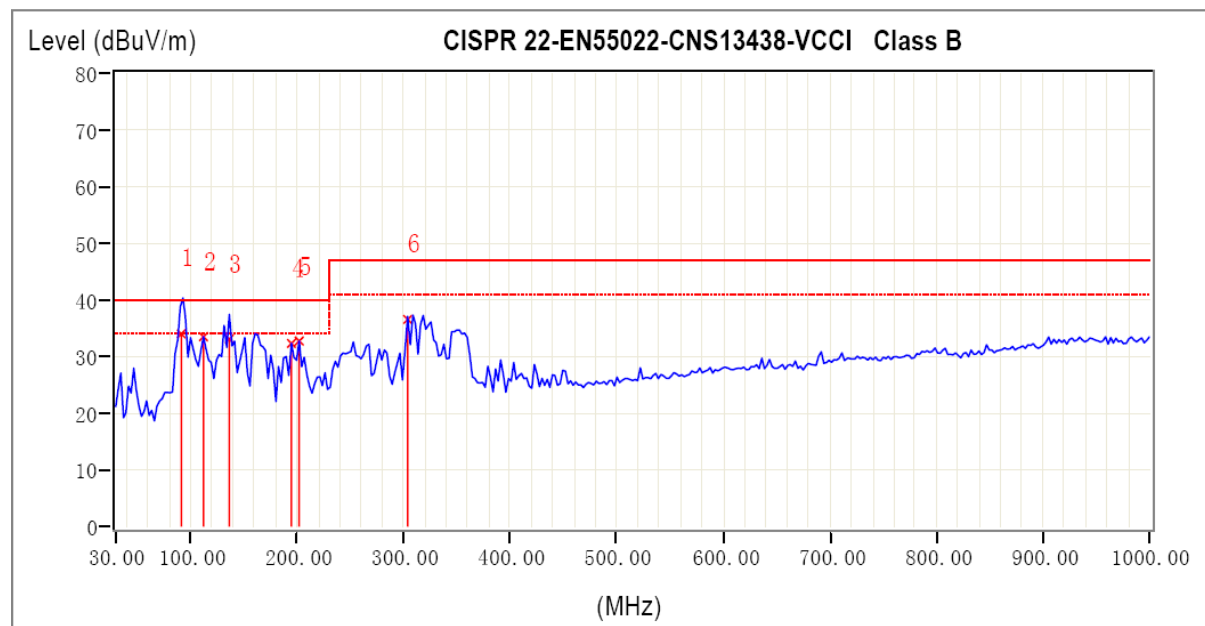




EUT	UPS	MODEL NO.	SX3650CIYYYYYY
MODE	Mode 2	INPUT POWER	N/A
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 50 % RH, 1010 hPa	TESTED BY:	Ted. ZHU

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	91.60	11.90	22.11	34.01	40.00	-5.99	100	244
2	112.45	13.86	19.64	33.50	40.00	-6.50	--	--
3	136.70	15.94	17.16	33.10	40.00	-6.90	100	256
4	194.90	13.20	19.11	32.31	40.00	-7.69	--	--
5	202.18	12.99	19.74	32.73	40.00	-7.27	--	--
6	304.02	16.61	19.94	36.55	47.00	-10.45	100	0

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.

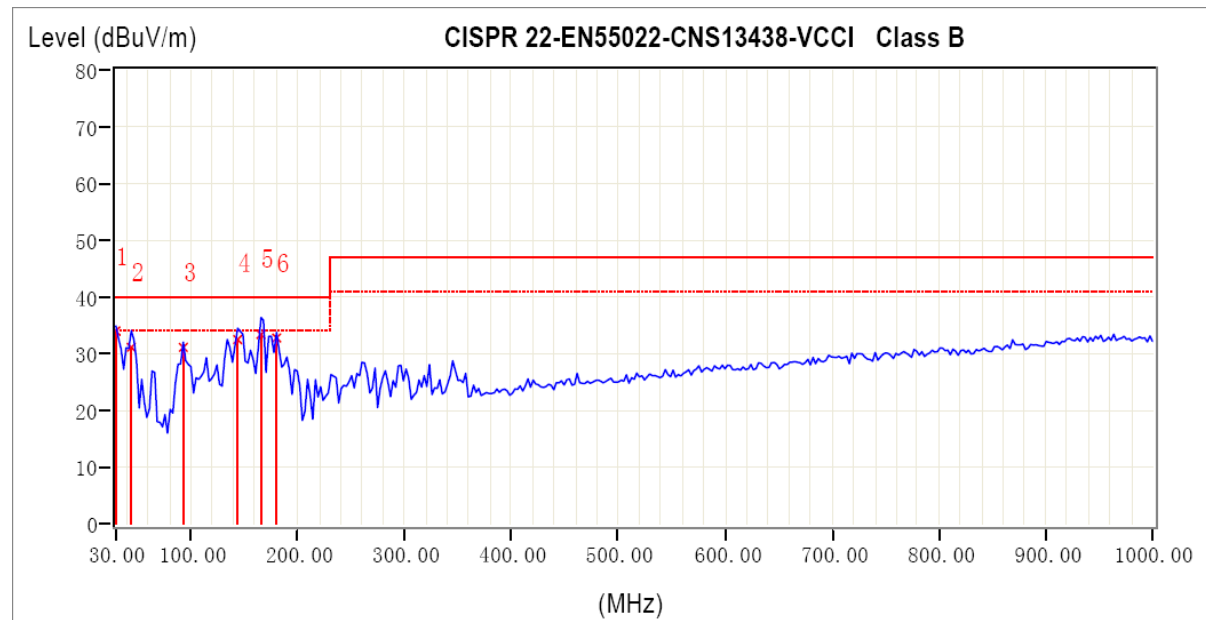




EUT	UPS	MODEL NO.	SX3650CIYYYYYY
MODE	Mode 2	INPUT POWER	N/A
FREQUENCY RANGE	30-1000 MHz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	20 deg. C, 50 % RH, 1010 hPa	TESTED BY:	Ted. ZHU

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	30.00	14.99	18.99	33.98	40.00	-6.02	100	150
2	44.55	15.55	15.56	31.11	40.00	-8.89	100	10
3	93.05	12.01	19.10	31.11	40.00	-8.89	100	120
4	143.97	16.52	15.96	32.48	40.00	-7.52	100	111
5	165.80	16.51	16.88	33.39	40.00	-6.61	100	250
6	180.35	14.60	18.16	32.76	40.00	-7.24	100	0

- REMARKS:**
1. Emission level (dBuV/m) = Raw Value (dBuV) + Correction Factor (dB/m)
 2. Correction Factor (dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.





4.3 HARMONICS CURRENT MEASUREMENT

4.3.1 LIMITS OF HARMONICS CURRENT MEASUREMENT

Limits for Class A equipment		Limits for Class D equipment		
Harmonics Order n	Max. permissible harmonics current A	Harmonics Order n	Max. permissible harmonics current per watt mA/W	Max. permissible harmonics current A
Odd harmonics		Odd Harmonics only		
3	2.30	3	3.4	2.30
5	1.14	5	1.9	1.14
7	0.77	7	1.0	0.77
9	0.40	9	0.5	0.40
11	0.33	11	0.35	0.33
13	0.21	13	0.30	0.21
15 ≤ n ≤ 39	0.15x15/n	15 ≤ n ≤ 39	3.85/n	0.15x15/n
Even harmonics				
2	1.08			
4	0.43			
6	0.30			
8 ≤ n ≤ 40	0.23x8/n			

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
AC Power Source	NSG 1007	E1HF 001	Aug. 10, 2011
Signal Conditioning Unit	CCN100-1	E1HF 002	Aug. 10, 2011

4.3.3 TEST PROCEDURE

Refer IEC 61000-3-2 Annex A, B



4.3.4 TEST RESULTS

MODEL NO.	SX3650CIYYYYYY	TEST MODE	MODE 1
FUNDAMENTAL VOLTAGE	229.38 Vrms	POWER FREQUENCY	50Hz
RATED POWER CONSUMPTION	1119.9W	POWER FACTOR	1.000
ENVIRONMENTAL CONDITIONS	22 deg. C, 52% RH, 1010 hPa	TESTED BY: Ted FAN	

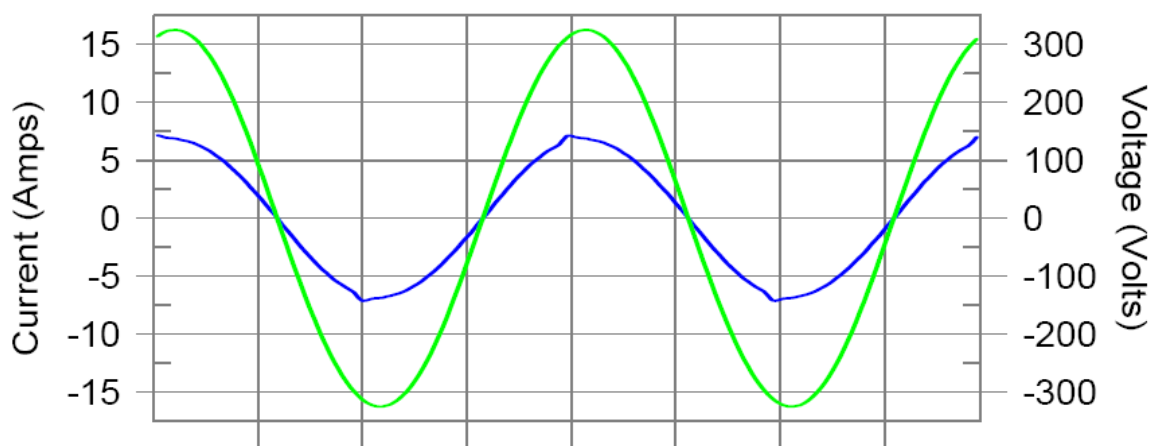


Harmonics – Class-A per Ed. 3.2 (2009)(Run time) incl. inter-harmonics

Test Result: Pass

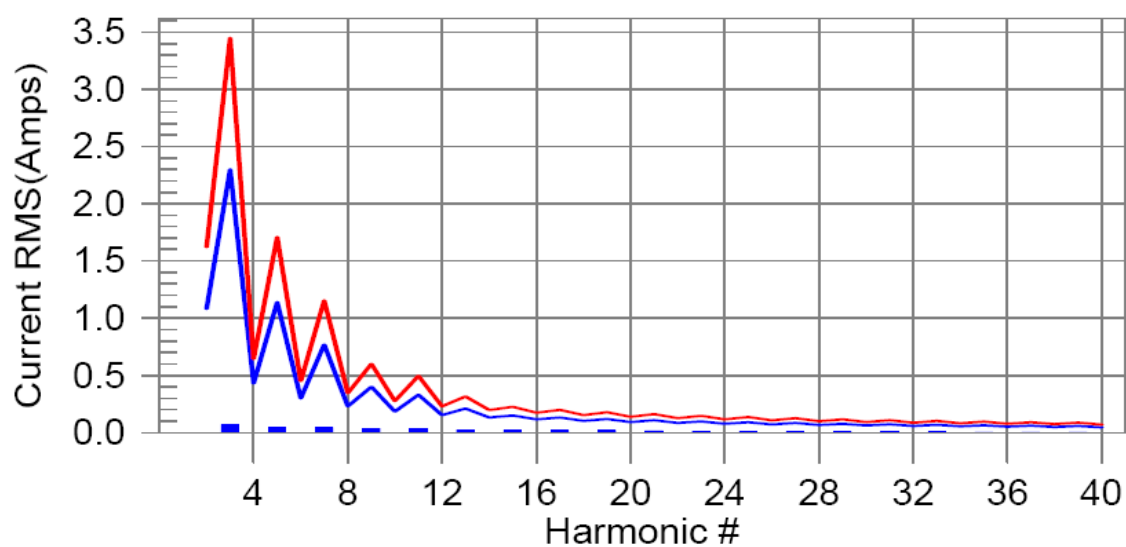
Source qualification: Normal

Current & voltage waveforms



Harmonics and Class A limit line

European Limits



Test result: Pass Worst harmonic was #19 with 13.85% of the limit.



Current Test Result Summary (Run time)

Test Result: Pass

Source qualification: Normal

THC(A): 0.11

I-THD(%): 2.28

POHC(A): 0.025

POHC Limit(A): 0.277

Highest parameter values during test:

V_RMS (Volts): 229.88

Frequency(Hz): 50.00

I_Peak (Amps): 7.172

I_RMS (Amps): 4.873

I_Fund (Amps): 4.872

Crest Factor: 1.477

Power (Watts): 1119.9

Power Factor: 1.000

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	0.0	0.001	1.620	0.07	Pass
3	0.068	2.300	3.0	0.070	3.450	2.03	Pass
4	0.001	0.430	0.0	0.002	0.645	0.26	Pass
5	0.041	1.140	3.6	0.041	1.710	2.43	Pass
6	0.001	0.300	0.0	0.001	0.450	0.27	Pass
7	0.042	0.770	5.4	0.042	1.155	3.66	Pass
8	0.001	0.230	0.0	0.001	0.345	0.30	Pass
9	0.035	0.400	8.6	0.035	0.600	5.79	Pass
10	0.001	0.184	0.0	0.001	0.276	0.34	Pass
11	0.029	0.330	8.7	0.029	0.495	5.86	Pass
12	0.001	0.153	0.0	0.001	0.230	0.58	Pass
13	0.025	0.210	11.9	0.025	0.315	8.01	Pass
14	0.001	0.131	0.0	0.001	0.197	0.60	Pass
15	0.021	0.150	13.7	0.021	0.225	9.29	Pass
16	0.001	0.115	0.0	0.001	0.173	0.79	Pass
17	0.018	0.132	13.8	0.019	0.199	9.32	Pass
18	0.001	0.102	0.0	0.002	0.153	1.05	Pass
19	0.016	0.118	13.8	0.017	0.178	9.38	Pass
20	0.000	0.092	0.0	0.001	0.138	0.74	Pass
21	0.015	0.107	13.7	0.015	0.161	9.26	Pass
22	0.001	0.084	0.0	0.001	0.125	1.05	Pass
23	0.013	0.098	13.2	0.013	0.147	8.94	Pass
24	0.001	0.077	0.0	0.001	0.115	0.89	Pass
25	0.011	0.090	11.7	0.011	0.135	7.93	Pass



26	0.001	0.071	0.0	0.001	0.106	0.95	Pass
27	0.008	0.083	10.2	0.009	0.125	6.90	Pass
28	0.001	0.066	0.0	0.001	0.099	0.80	Pass
29	0.006	0.078	7.9	0.006	0.116	5.38	Pass
30	0.000	0.061	0.0	0.001	0.092	0.61	Pass
31	0.004	0.073	0.0	0.004	0.109	4.02	Pass
32	0.000	0.058	0.0	0.001	0.086	0.67	Pass
33	0.003	0.068	0.0	0.003	0.102	3.26	Pass
34	0.000	0.054	0.0	0.000	0.081	0.47	Pass
35	0.003	0.064	0.0	0.003	0.096	2.88	Pass
36	0.000	0.051	0.0	0.000	0.077	0.51	Pass
37	0.003	0.061	0.0	0.003	0.091	2.92	Pass
38	0.000	0.048	0.0	0.000	0.073	0.50	Pass
39	0.002	0.058	0.0	0.002	0.087	2.80	Pass
40	0.000	0.046	0.0	0.000	0.069	0.51	Pass



4.4 VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT

4.4.1 LIMITS OF VOLTAGE FLUCTUATION AND FLICKS MEASUREMENT

TEST ITEM	LIMIT	NOTE
P_{st}	1.0	P_{st} means short-term flicker indicator.
P_{lt}	0.65	P_{lt} means long-term flicker indicator.
T_{dt} (ms)	500	T_{dt} means maximum time that dt exceeds 3.3 %.
d_{max} (%)	4%	d_{max} means maximum relative voltage change.
dc (%)	3.3%	dc means relative steady-state voltage change

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Signal Conditioning Unit	CCN100-1	E1HF002	Aug. 10, 2011
AC Power Source	NSG 1007	E1 HF001	Aug. 10, 2011
Software	Shchaffner Win 2100V3	N/A	N/A

4.4.3 TEST PROCEDURE

Refer IEC 61000-3-3 Annex A, B



4.4.4 TEST RESULTS

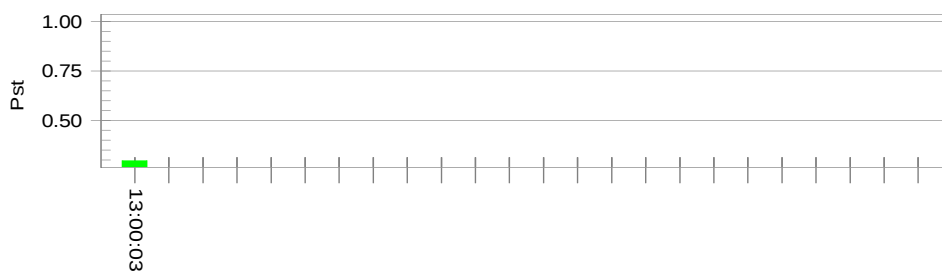
EUT	UPS	MODEL NO.	SX3650CIYYYYY Y
FUNDAMENTAL VOLTAGE	230 V	POWER FREQUENCY	50 Hz
OBSERVATION PERIOD (Tp)	10 min	TEST MODE	Mode 1
ENVIRONMENTAL CONDITIONS	25 deg. C, 50% RH, 101 kPa	TESTED BY	Ted FAN

Test Result: Pass

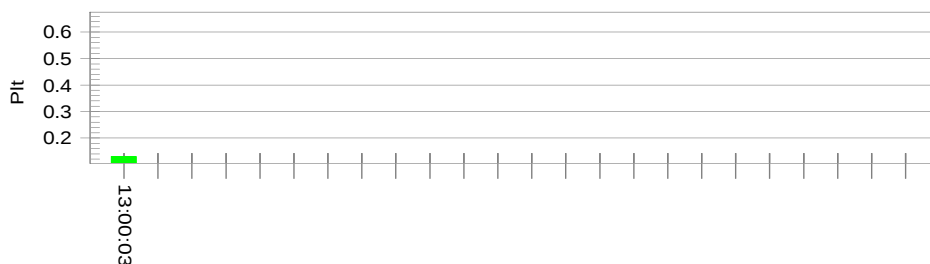
Status: Test Completed

Pst_i and limit line

European Limits



Plt and limit line



Parameter values recorded during the test:

Vrms at the end of test (Volt):	228.34			
Highest dt (%):	-2.52	Test limit (%):	3.30	Pass
Time(mS) > dt:	0.0	Test limit (mS):	500.0	Pass
Highest dc (%):	-0.66	Test limit (%):	3.30	Pass
Highest dmax (%):	-2.50	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.297	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.130	Test limit:	0.650	Pass



5 IMMUNITY TEST

5.1 ELECTROSTATIC DISCHARGE IMMUNITY TEST (ESD)

5.1.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-2
Discharge Impedance:	330 ohm / 150 pF
Discharge Voltage:	Air Discharge –8kV (Direct) Contact Discharge –4kV(Indirect)
Polarity:	Positive & Negative
Number of Discharge:	Air Discharge: min. 25 times at each test point Contact Discharge: min. 25 times at each test point
Discharge Mode:	Single Discharge
Discharge Period:	1 second minimum

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ESD Simulator	MZ-15/EC	E1ES002	Mar.07, 2011

5.1.3 TEST PROCEDURE

Refer IEC 61000-4-2 Clause 8

5.1.4 TEST SETUP

Refer IEC 61000-4-2 Clause 7



5.1.5 TEST RESULTS

EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 1 & 2	INPUT POWER	230Vac, 50Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 55% RH, 101 kPa	TESTED BY: Ted. FAN	

TEST RESULTS OF DIRECT APPLICATION					
Discharge Level (kV)	Polarity	Test Point	Contact Discharge	Air Discharge	Performance Criterion
2, 4, 8	+/-	1~24	N/A	Note1	B
2, 4	+/-	25~26, 28~31	Note1	N/A	B
2, 4	+/-	27	Note2	N/A	B

Description of test point: Please refer to ESD test photo for representative mark only.

TEST RESULTS OF INDIRECT APPLICATION					
Discharge Level (kV)	Polarity	Test Point	Horizontal Coupling Plane	Vertical Coupling Plane	Performance Criterion
2, 4	+/-	25~31	Note1	Note1	B

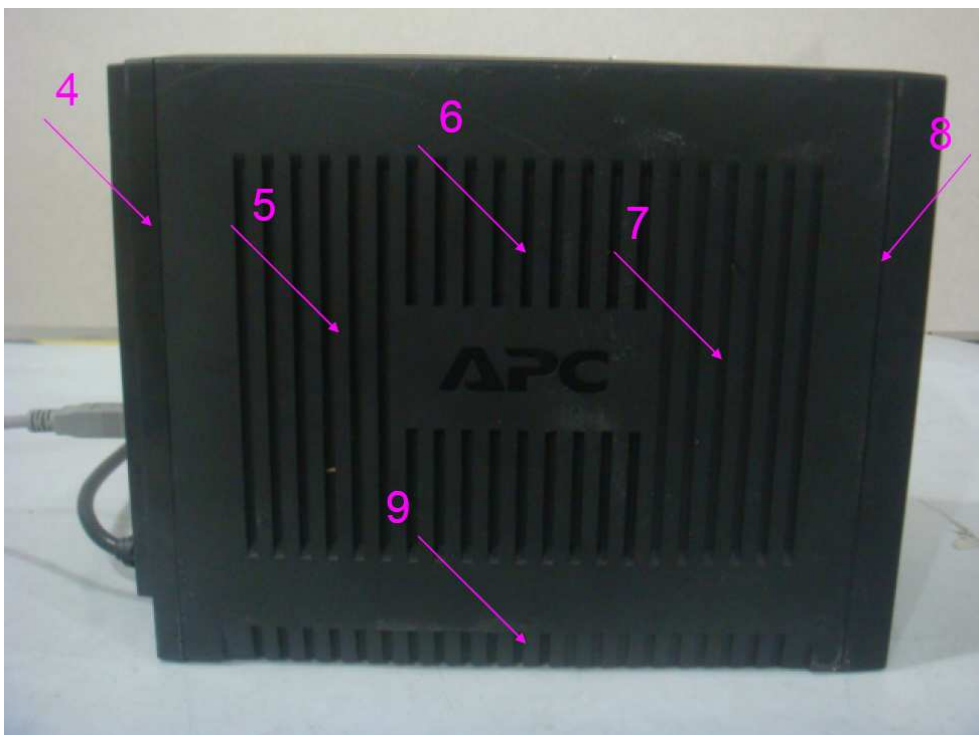
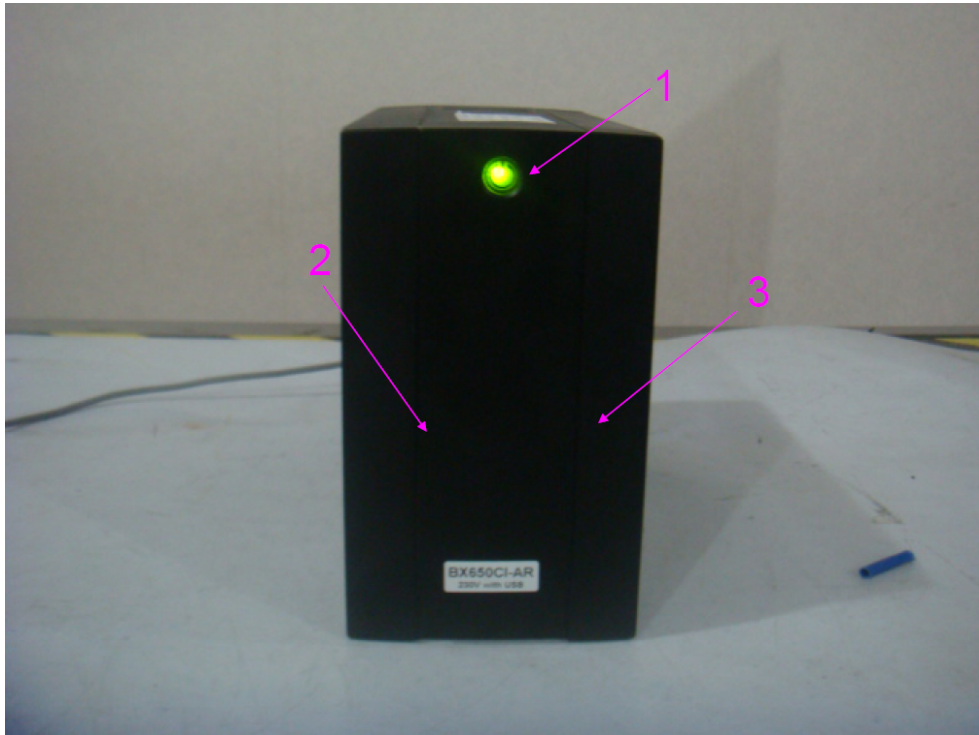
Description of test point:

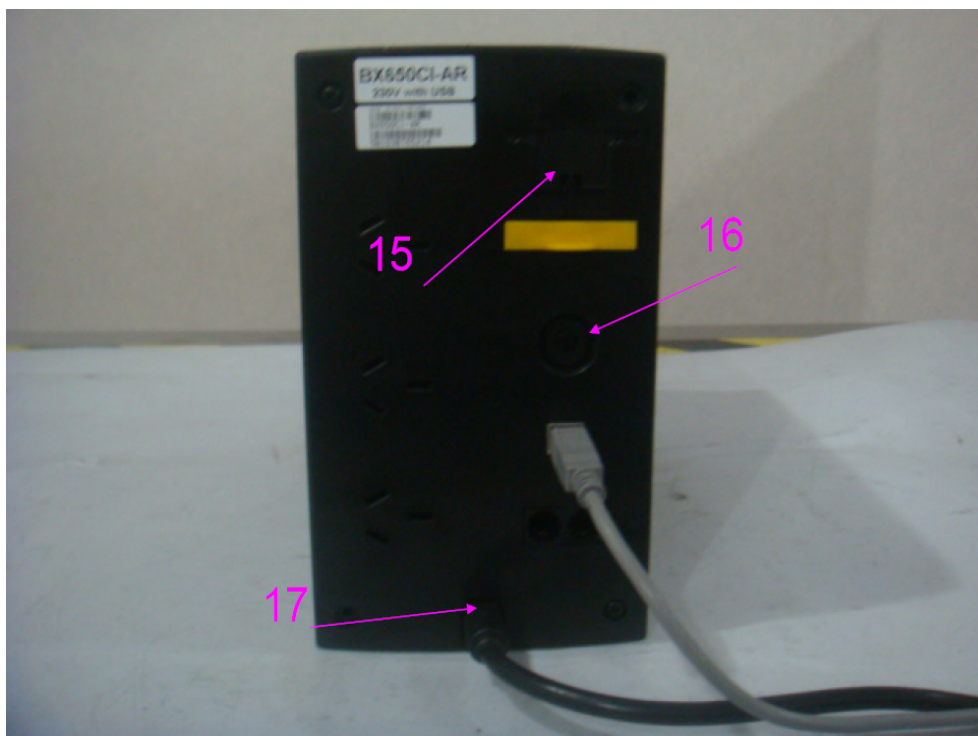
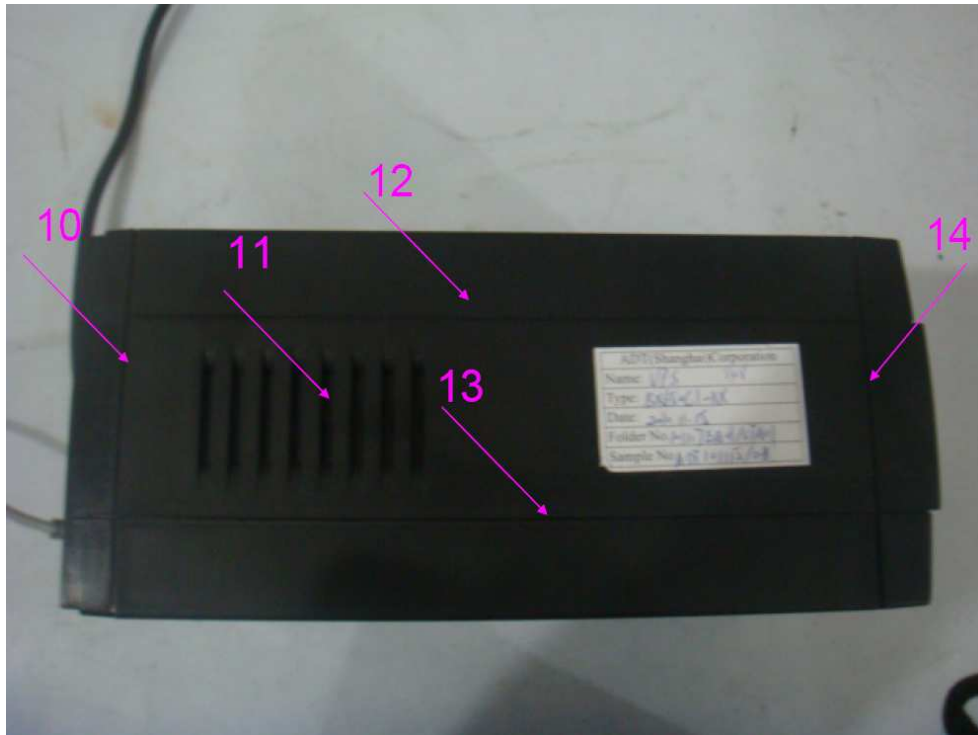
1. Left side
2. Right side
3. Front side
4. Rear side

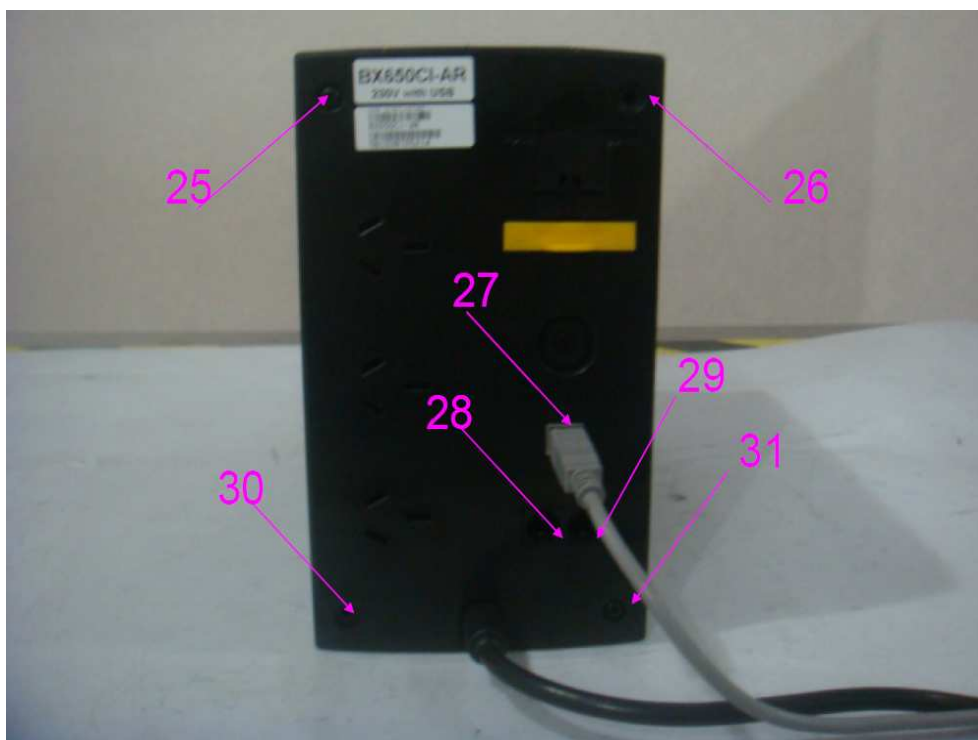
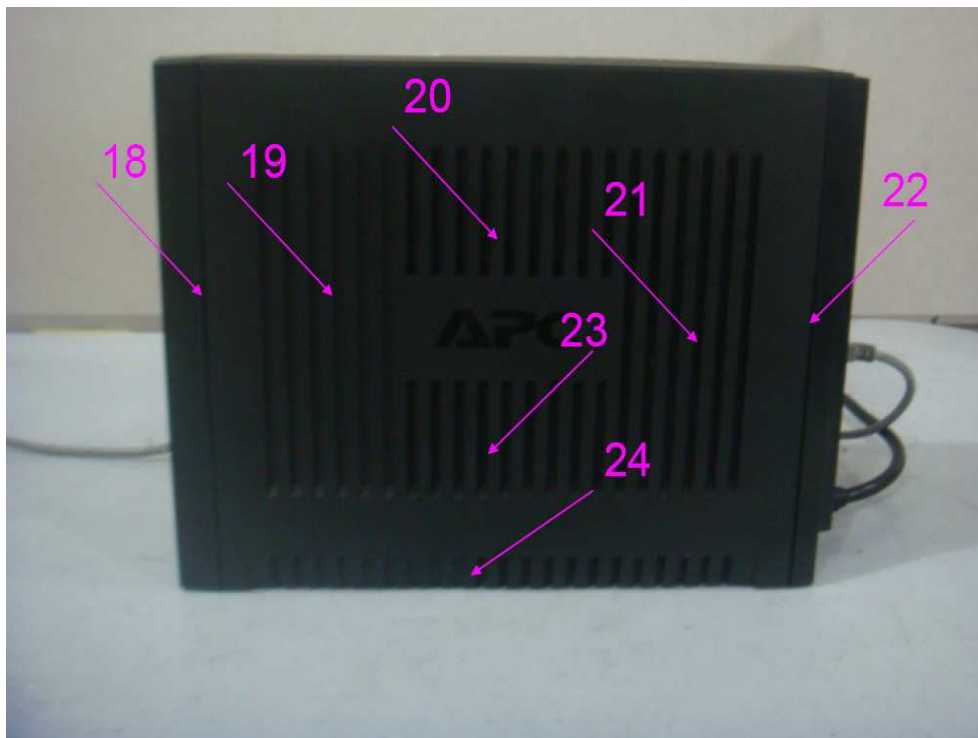
NOTE1: There was no change compared with the initial operation during the test.

NOTE2: During the test, there is instantaneous change of motor speed and loss of light. After the test, any changes were self-recoverable.

ESD TEST POINT









5.2 RADIATED, RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY TEST (RS)

5.2.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-3
Frequency Range:	80 MHz – 2700 MHz
Field Strength:	3V/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:	1.5m
Dwell Time:	at least 3 seconds

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Signal Generator IFR	MG3692B	E1S9001	Apr. 11, 2011
RF Power Amplifier PRANA	AP32 MT255	E1P4003	Aug. 05, 2012
Field Probe Holaday	HI-6105	E1F3002	Oct. 29, 2011
BiconiLog Antenna SCHWARZBECK	VULP 9118 E	E1A1005	Aug. 05, 2012
Power Amplifier	AP32 SW210	E1P4002	Sep.08,2011
High Gain Horn Antenna	AT4510	E1A1011	Sep.21,2011
Directional coupler	7144A	E1A3008	Sep.08,2011
Software	ADT_RS_V7.5.1	N/A	N/A



5.2.3 TEST PROCEDURE

Refer IEC 61000-4-3 Clause 8

5.2.4 TEST SETUP

Refer IEC 61000-4-3 Clause 7

5.2.5 TEST RESULTS

EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 1	INPUT POWER	230Vac, 50Hz
ENVIRONMENTAL CONDITIONS	21deg. C, 50% RH, 100 kPa	TESTED BY: John ZHOU	

Frequency (MHz)	Polarity	Azimuth	Field Strength (V/m)	Observation	Performance Criterion
80 – 2700	H&V	0°	3	Note	A
80 – 2700	H&V	90°	3	Note	A
80 – 2700	H&V	180°	3	Note	A
80 – 2700	H&V	270°	3	Note	A

NOTE: There was no change compared with the initial operation during the test.



EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 2	INPUT POWER	N/A
ENVIRONMENTAL CONDITIONS	21deg. C, 50% RH, 100 kPa	TESTED BY: John ZHOU	

Frequency (MHz)	Polarity	Azimuth	Field Strength (V/m)	Observation	Performance Criterion
80 – 2700	H&V	0°	3	Note	A
80 – 2700	H&V	90°	3	Note	A
80 – 2700	H&V	180°	3	Note	A
80 – 2700	H&V	270°	3	Note	A

NOTE: There was no change compared with the initial operation during the test.



5.3 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST (EFT)

5.3.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-4
Test Voltage:	Power Line – 1 kV; Signal line – 0.5kV
Polarity:	Positive & Negative
Impulse Frequency:	5 kHz
Impulse Waveshape :	5/50 ns
Burst Duration:	15 ms
Burst Period:	300 ms
Test Duration:	Not less than 1 min.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
EFT Generator Thermo KeyTEK	EMCPRO	E1ES001	Dec. 12, 2011
Software	CEWare32	N/A	N/A

5.3.3 TEST PROCEDURE

Refer IEC 61000-4-4 Clause 8

5.3.4 TEST SETUP

Refer IEC 61000-4-4 Clause 7



5.3.5 TEST RESULTS

EUT	UPS	MODEL NO.	SX3650CIYYYYYY
TEST MODE	Mode 1	INPUT POWER	230Vac, 50Hz
ENVIRONMENTAL CONDITIONS	25deg. C, 55% RH, 100 kPa	TESTED BY: Ted. FAN	

Test Point	Polarity	Test Level (kV)	Observation	Performance Criterion
L1	+ / -	1	NOTE	B
L1 – L2	+ / -	1	NOTE	B
L1 – PE	+ / -	1	NOTE	B
L1 – L2– PE	+ / -	1	NOTE	B
L2	+ / -	1	NOTE	B
L2 – PE	+ / -	1	NOTE	B
PE	+ / -	1	NOTE	B

NOTE: There was no change compared with the initial operation during the test.



5.4 SURGE IMMUNITY TEST

5.4.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-5
Wave-Shape:	Combination Wave 1.2/50 us Open Circuit Voltage 8 /20 us Short Circuit Current
Test Voltage:	Power Line – L1-L2:1KV / L1-PE & L2-PE: 2KV Signal Line – 1KV
Surge Input/Output:	L1-PE, L2-PE, L1-L2
Generator Source Impedance:	2 ohm between networks 12 ohm between network and ground
Polarity:	Positive/Negative
Phase Angle:	0/90°180°270°
Pulse Repetition Rate:	1 time / min. (maximum)
Number of Tests:	5 positive and 5 negative at selected points

5.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Surge Generator Thermo KeyTEK	EMCPro	E1ES001	Dec. 12, 2011
Software	CEWare32	N/A	N/A



5.4.3 TEST PROCEDURE

Refer IEC 61000-4-5 Clause 8

5.4.4 TEST SETUP

Refer IEC 61000-4-5 Clause 7

5.4.5 TEST RESULTS

EUT	UPS	MODEL NO.	SX3650CIYYYY YY
TEST MODE	Mode 1	INPUT POWER	230Vac, 50Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 55% RH, 100 kPa	TESTED BY: Ted. FAN	

VOLTAGE (kV)	TEST POINT	POLARITY (+/-)	OBSERVATION	PERFORMANCE CRITERION
1	L1 - L2	+/-	Note	B
2	L1 – PE	+/-	Note	B
2	L2 – PE	+/-	Note	B

NOTE: There was no change compared with the initial operation during the test.



5.5 IMMUNITY TO CONDUCTED DISTURBANCES INDUCED BY RF FIELDS (CS)

5.5.1 TEST SPECIFICATION

Basic Standard:	IEC 61000-4-6
Frequency Range:	0.15 MHz -80 MHz
Field Strength:	3 V _{r.m.s.}
Modulation:	1kHz Sine Wave, 80%, AM Modulation
Frequency Step:	1 % of fundamental
Coupled Cable:	Power Mains and Pendant Cable, Unshielded
Coupling Device:	CDN and Clamp

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Compact RF Simulator Teseq	NSG 4070-30	E1ES017	Feb.28, 2011



5.5.3 TEST PROCEDURE

Refer IEC 61000-4-6 Clause 8

5.5.4 TEST SETUP

Refer IEC 61000-4-6 Clause 7

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.5.5 TEST RESULTS

EUT	UPS	MODEL NO.	SX3650CIYYYYY
TEST MODE	Mode 1	INPUT POWER	230Vac, 50Hz
ENVIRONMENTAL CONDITIONS	23deg. C, 53% RH, 100 kPa	TESTED BY: Ted. FAN	

Freq. (MHz)	Field Strength (V_{r.m.s.})	Cable	Injection Method	Observation	Performance Criterion
0.15 – 80	3	AC Power	CDN-M3	Note	A

NOTE: There was no change compared with the initial operation during the test.

6 PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION





HARMONIC TEST & FLICKS TEST

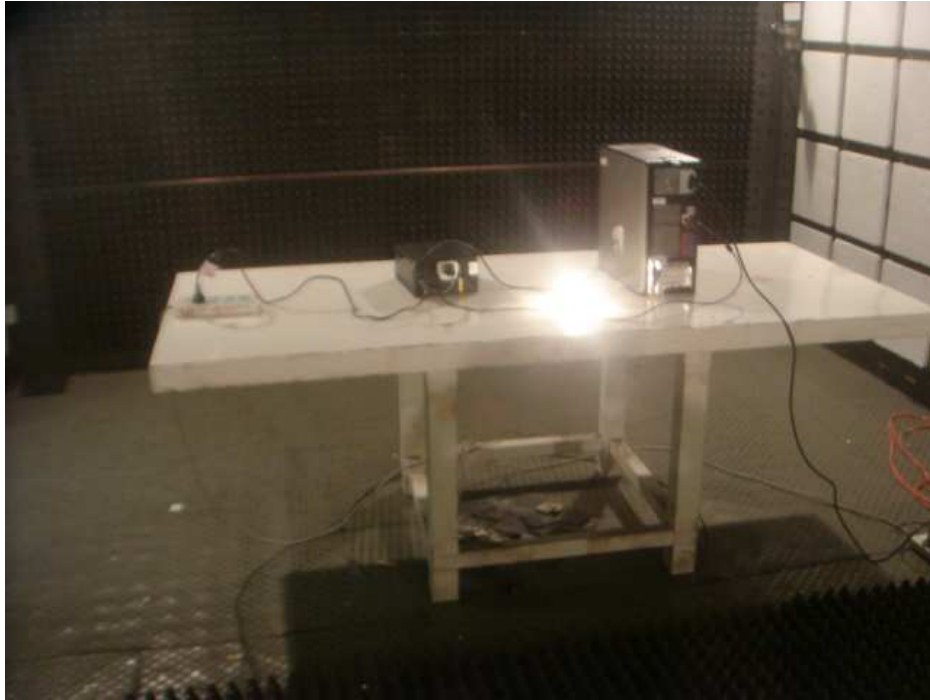


ESD TEST





RS TEST



EFT TEST





BUREAU
VERITAS

SURGE TEST



CONDUCTED SUSCEPTIBILITY TEST





7 PHOTOGRAPHS OF THE EUT







8 APPENDIX - INFORMATION ON THE TESTING LABORATORIES

We, BUREAU VERITAS ADT (Shanghai) Corporation, were founded in 2004 to provide our best service in EMC, Radio and Vehicle consultation. Our laboratories are accredited by the following accreditation bodies according to ISO/IEC 17025 (2005) .

USA	A2LA Certificate No.: 2343.01
China	CNAS Certificate No.: L2810

Copies of accreditation certificates could be inquired from our office. If you have any comments, please feel free to contact us at the following:

EMC / RF / Vehicle Lab:

Tel: +86 21 6465 9091

Fax: +86 21 6465 9092

Email: bvadtshmail@cn.bureauveritas.com

--- END ---