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Product Service

Attestation of Compliance

No. E8N 14 09 60807 004

Holder of Certificate: **AMERICAN POWER CONVERSION HOLDINGS INC.**
3F., NO. 205, SEC 3, BEIXIN RD.,
XINDIAN DIST.,
231 NEW TAIPEI CITY
TAIWAN

Name of Object: **Uninterruptable power supply**

Model(s): **BX650LIYYY**
(Y can be 0 to 9, A to Z, a to z, "-", "_" or blank for marketing purpose)

Description of Object:

Rated Input :	230VAC, 50/60Hz, 2.8A, 1Ø, Icc:<=1kA
Rated Output :	230VAC, 50/60Hz, 650VA, 325W, 1Ø
Protection Class :	I

Tested according to: EN 62040-2:2006

This Attestation of Compliance is issued according to the Directive 2004/108/EC relating to electromagnetic compatibility on a voluntary basis. It confirms that the listed apparatus complies with all essential requirements of the EMC directive and applies only to the sample and its technical documentation submitted to TÜV SÜD Product Service GmbH for testing and certification. See also notes overleaf.

Test report no.: 687601417701

Date, 2014-09-25 (Paul Yu)

659002

CE After preparation of the necessary technical documentation as well as the EC conformity declaration the required CE marking can be affixed on the product. Other relevant directives have to be observed.

TÜV®

EMC TEST REPORT

Report Number	:	**68.760.14.177.01**	Date of Issue:	12 Aug 2014
Model No.	:	**BX650LIYYY (Y can be 0 to 9, A to Z, a to z, "-", "_" or blank for marketing purpose, see detail description in page 7)**		
Product Type	:	Uninterruptible Power Systems		
Applicant	:	AMERICAN POWER CONVERSION HOLDINGS INC.		
Address	:	3F., NO.205, SEC. 3, BEIXIN RD., XINDIAN DIST., NEW TAIPEI CITY 231, TAIWAN		
Production Facility	:	AMERICAN POWER CONVERSION HOLDINGS INC.		
Address	:	3F., NO.205, SEC. 3, BEIXIN RD., XINDIAN DIST., NEW TAIPEI CITY 231, TAIWAN		
Test Result	:	■ **Positive** ☐ **Negative**		
Total pages including Appendices	:	40		

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1 General Information

1.1 Notes

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Prepared By Project Engineer	**2014-08-12** **Date**	**Jessie He** **Name**	 **Signature**

Approved by EMC Project Manager	**2014-08-12** **Date**	**Laurent Yuan** **Name**	 **Signature**

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1.2 Testing Laboratory

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Test location:

China Shenzhen Academy of Metrology and Quality Inspection,
Metrology and Quality Inspection building, Central Section of LongZhu Road, Nan Shan, Shenzhen, P.R.C.
Tel: 86 755 2694 1599
Fax: 86 755 2694 1545

Shenzhen Emtek Co., Ltd.,
Bldg. 69, Majialong Industry Zone, Nanshan District,
Shenzhen, China

Tel: 86 755 26954280
Fax: 86 755 26954282

1.3 Details of Applicant

CLIENT: AMERICAN POWER CONVERSION HOLDINGS INC.

ADDRESS: 3F., NO.205, SEC. 3, BEIXIN RD., XINDIAN DIST., NEW TAIPEI CITY 231, TAIWAN

PRODUCT DESCRIPTION: Uninterruptible Power Systems

MANUFACTURERS MODEL NUMBER: BX650LIYYY (Y can be 0 to 9, A to Z, a to z, "-", "_" or blank for marketing purpose)

1.4 Application Details

Date of test: 14 July, 2014---16 July, 2014

1.5 Test Item

Refer to table 1.

1.6 Applied Standard

APPLIED PRODUCT STANDARD: EN 62040-2 :2006

1.7 Test environment condition

Ambient temperature	25°C
Relative humidity	56%
Atmospheric pressure	101kPa

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2 Summary of Results

Table 1 below shows a brief summary of the results obtained.

Table 1 Summary of results

Test Items	Test Configuration	Required Performance Criteria	Result
Emission			
Radiated Emissions Enclosure Port	TC1, TC2,	N/A	Pass
Conducted Emissions ☒AC mains port ☐AC output port*1 ☐DC power port ☐Telecommunications /network port	TC1, TC2	N/A	Pass
Harmonics Test ☒ AC mains port	TC1	N/A	Pass
Immunity			
Power-Frequency Magnetic Fields Enclosure Port	TC1	A	Pass
Radio-frequency Electromagnetic Fields Enclosure Port	TC1	A	Pass
Electrostatic Discharge Enclosure Port	TC1	B	Pass
Fast Transient Bursts ☒ AC input and output power ports ☐DC power port ☐Signal and control ports	TC1	B	Pass
Surges ☒AC input and output power ports ☐ Signal and control ports	TC1	B	Pass
Conducted Radio-Frequency Common Mode ☒ AC input and output power ports ☐ Signal and control ports	TC1	A	Pass
Voltage dips, Short interruptions and Voltage variations ☒ AC input power ports	TC1	IEC62040-3	Pass
Immunity to Low-frequency Signals ☒ AC input power ports	TC1	IEC61000-2-2	Pass
Power Line Unbalance	TC1	IEC61000-2-2	Pass

Note1:
1: Measurement taken is within the measurement uncertainty of measurement system.
2: TC = Test configuration
3: ☒ The item has been tested; ☐ The item has not been tested.
Note2:

*1: applicable only to UPS where the output cable, as declared by manufacturer, in his user's instructions, can exceed 10m in length.

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3 Equipment Specification

1. General information:

BX650LI**YYY**
a b

a) SERIES
b) SOCKET type (Y can be 0 to 9, A to Z, a to z, "-", "_" or blank for marketing purpose)
blank: IEC SOCKET
-MS: Universal SOCKET
-UK: BS SOCKET
-GR: SCHUKO SOCKET

Mains Input: 230VAC, 2.8A, 50/60Hz, 1Φ
Output: 230/VAC, 50/60Hz, 650VA, 325W, 1Φ

2. UPS Category: Category C2 UPS

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4 System Configuration and test environment during EMC Test

The Equipment under Test (EUT) was functioning correctly during all tests. The EUT was installed within the test site and was configured to simulate a typical user installation.

4.1 Cables Used during Test

Table 2 Cable Used during Test

Port	Length	Type of Cable
AC input power cable for UPS	>2m	Unshielded cable
AC output power cable for UPS	<3m	Unshielded cable
DC input power cable for UPS	<3m	Unshielded cable

4.2 Test Configurations and Test Connections

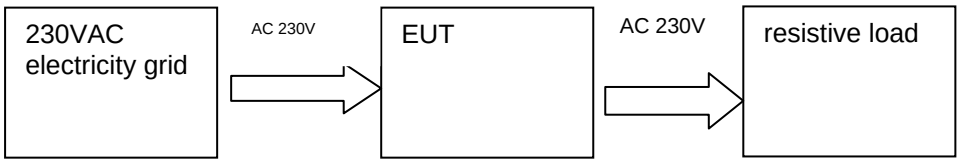
4.2.1 Test Configurations

Table 3 Configuration table

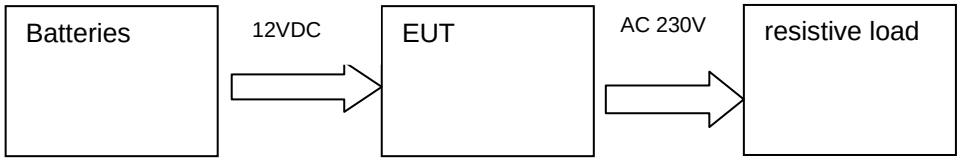
Configuration	Configuration Describe
TC1	BX650LI were powered by 230VAC (1 phase) electricity grid.
TC2	BX650LI were powered by 12VDC battery.

4.2.2 Test Connections

Test connection of TC1:



Test connection of TC2:



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5 Immunity Performance Criteria

The Uninterruptible Power Systems is to be monitored for compliance against the performance criteria as appropriate for the particular test applied. The "pass/fail" performance criterion to be used during test is detailed below:

Table 4 Criteria to prove the acceptance of a EUT against electromagnetic disturbances

	Criterion A	Criterion B
Output characteristics	Voltage permitted to vary only within the steady-state characteristics applicable (≥100 m sec limits in Figures 1, 2 or 3 of IEC 62040-3)	Voltage permitted to vary within the inverse time characteristics applicable (<100 m sec limits in Figures 1, 2 or 3 of IEC 62040-3)
External and internal indications and metering	Change only during test	Change only during test
Control signals to external devices	No change	Change only temporarily in consistency with the actual UPS mode of operation
Mode of operation	No change	Change only temporarily

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6 Emission

6.1 Radiated Disturbance 30MHz to 1000MHz

6.1.1 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.4 (2003).The test distance was 10m. The set-up and test methods were according to EN62040-2

A preliminary scan and a final scan of the emissions shall be made from 30 MHz to 1GHz by using a Quasi-Peak Detector. The maximal emission value was acquired by adjusting the antenna height, polarisation and turntable azimuth in accordance with the software setup. Normally, the height range of antenna was 1m to 4m, the azimuth range of turntable was 0°to 360°, The receive antenna has two polarizations V and H.

6.1.2 Test Results

The EUT has met the requirements of Radiated Emission of enclosure port.
The test data see section 9.1 of this report.

Table 5 Test Limits

Frequency range	30 ~ 1000MHz
Classification	Category C2 UPS
Measuring distance	10m
Limits	30MHz~230MHz 40dBμV/m 230MHz~1GHz 47dBμV/m

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6.2 Conducted Disturbance 0.15 MHz to 30MHz

6.2.1 Test Procedure

The EUT was configured as described in section 4 for this test. The mains cable of the EUT being measured shall be connected to LISN, The LISN shall be placed 0.8 m from the boundary of EUT and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance is between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8 m from the LISN.

All telecommunication and signal ports must be correctly terminated using either appropriate associated equipment or a representative termination during the measurement of the conducted disturbances at the mains.

Ground connections, where required for safety purposes, shall be connected to the reference ground point of the LISN and, where not otherwise provided or specified by the manufacturer, shall be of same length as the mains cable and run parallel to the mains connection at a separation distance of not more than 0.1 m.

6.2.2 Test Results

The EUT has met requirements of Conducted disturbance.
The test data see section 9.2 of this report.

Table 6 Test Limit of AC power port

Frequency range	150kHz~ 30MHz	
Classification	Category C2 UPS	
Limit	Voltage limits	
	QP	AV
0.15MHz~0.5MHz	79dBµV	66dBµV
0.5MHz~5.0MHz	73dBµV	60dBµV
5.0MHz~30MHz	73dBµV	60dBµV

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6.3 Current Harmonics Emissions

6.3.1 Test Procedure

The EUT is to be powered from a clean (low distortion) 230V 50Hz ac power source. The EUT was configured as described in section 4 for this test. The set-up and test methods were according to EN 61000-3-2/IEC 61000-3-2.

6.3.2 Test Results

The EUT has met the requirements (class A) of EN 61000-3-2 for harmonics of AC power ports.
The test data see section 9.3 of this report.

7 Immunity requirements

7.1 Immunity to Electrostatic Discharge

7.1.1 Test Procedure

The EUT was configured as described in section 4 for this test. The set-up and test methods were according to IEC 61000-4-2.

The test environment conditions recorded were:

Table 7 Test Environment Condition during ESD Test

Ambient temperature	25°C
Relative humidity	56%
Atmospheric pressure	101kPa

7.1.2 Test Results

The EUT has met the requirements of Performance Criterion B for Immunity to Electrostatic Discharge of enclosure port.
Details of the points tested were presented in Table 8 below.

Table 8 Test Results

Test Points	Specification Level				Conclusion
	±4kV Contact Discharges		±8kV Air Discharges		
	Positive	Negative	Positive	Negative	
Horizontal Coupling Plane-front	A	A	N/A	N/A	pass
Horizontal Coupling Plane-rear	A	A	N/A	N/A	pass
Horizontal Coupling Plane-left	A	A	N/A	N/A	pass
Horizontal Coupling Plane-right	A	A	N/A	N/A	pass
Vertical Coupling Plane-front	A	A	N/A	N/A	pass
Vertical Coupling Plane-rear	A	A	N/A	N/A	pass
Vertical Coupling Plane-left	A	A	N/A	N/A	pass
Vertical Coupling Plane-right	A	A	N/A	N/A	pass
Metallic Enclosure	N/A	N/A	N/A	N/A	pass
Buttons	N/A	N/A	A	A	pass
gaps	N/A	N/A	A	A	pass

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7.2 Immunity to Radiated Electric Fields 80MHz to 1000MHz

7.2.1 Test Procedure

The EUT was configured as described in section 4 for this test. The set-up and test methods were according to IEC 61000-4-3. All sides of the EUT (front, rear, left and right) were tested by antenna with vertical and horizontal polarization.

7.2.2 Test Results

The EUT has met the requirements of Performance Criterion A for Immunity to Radiated Electric Fields of enclosure port.

Table 9 Test Results

Test side of EUT	Front, Rear, Left, Right
Frequency range & Test Level	80MHz – 1000MHz test level：10 V/m(Un-modulated, rms)
Modulation	80% AM, 1kHz
Conclusion	Pass

7.3 Immunity to Electrical Fast Transient Bursts

7.3.1 Test Procedure

The EUT was configured as described in section 4 for this test. A series of Fast Transient Bursts meeting the specification were applied for a period of 120 seconds. The Transient Bursts were applied for both Positive and Negative Burst Trains to each type of Signal and Telecommunication Line in turn via a Capacitive Coupling Plate. The set-up and test methods were according to IEC 61000-4-4.

7.3.2 Test Results

The EUT has met the requirements of Performance Criterion A for Immunity to Electrical Fast Transient Bursts.

Table 10 Test Results

Ports	Measuring condition	Couple mode	Description	Conclusion
AC input and output power ports	Level: ±2.0kV, 5kHz, during 2 minute	CDN	No fail detected	Pass

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7.4 Immunity to Surges

7.4.1 Test Procedure

The EUT was configured as described in section 4 for this test. A series of High Energy Surges were applied to each type of signal and telecommunication line and AC power port. The set-up and test methods were according to IEEE C62.41 and IEC 61000-4-5.

7.4.2 Test Results

The EUT has met the requirements of Performance Criterion B for Immunity to Surges.

Table 11 Test Results

Ports	Measuring condition	Description	Conclusion
AC input power ports	Line to Line, Level:±2kV, Tr/Th:1.2/50 (8/20)μs, R=2 Ω, Interval: 60 seconds, Line to Earth, Level:±4kV, Tr/Th: 1.2/50 (8/20)μs, R=2 Ω, Interval: 60 seconds,	No fail detected	Pass
AC output power ports	Line to Line, Level:±2kV, Tr/Th: 1.2/50 (8/20)μs, R=2 Ω, Interval: 60 seconds, Line to Earth, Level:±4kV, Tr/Th: 1.2/50 (8/20)μs, R=12 Ω, Interval: 60 seconds,	No fail detected	Pass

7.5 Immunity to Conducted radio-frequency common mode 0.15MHz to 80MHz

7.5.1 Test Procedure

The EUT was configured as described in section 4 for this test. The applied level was Amplitude Modulated by a 1 kHz sinusoidal signal to a modulation depth of 80%. The set-up and test methods were according to IEC 61000-4-6.

7.5.2 Test Results

The EUT has met the requirements of Performance Criterion A for Immunity to Continuous Conducted Interference.

Table 12 Test Results

Ports	Measuring condition	Inject method	Description	Conclusion
AC input and output power ports	Frequency range: 0.15 MHz to 80 MHz Induced voltage :10V (rms), 80% AM(1kHz)	CDN	No fail detected	Pass

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7.6 Immunity to Power-frequency magnetic field

7.6.1 Test Procedure

The EUT was configured as described in section 4 for this test. The set-up and test methods were according to IEC 61000-4-8. The induction coil has been rotated by 90° in order to expose the EUT to the test field with different orientations.

7.6.2 Test Results

The EUT has met the requirements of Performance Criterion A for Immunity to Power-frequency magnetic field of enclosure port.

Table 13 Test Results

Test Level for continuous field	Distribution network frequency: 50, 60Hz test level: 30A/m
Conclusion	Pass

7.7 Immunity to voltage dips and short interruptions and voltage variations

7.7.1 Test Procedure

The EUT was configured as described in section 4 for this test. The set-up and test methods were according to IEC62040-3 and IEC 61000-4-11.

7.7.2 Test Results

The EUT has met the requirements of Performance Criterion A or B for Immunity to voltage deviation (variations, changes, fluctuations), dips and short interruptions.

Table 14 Test Results

Ports	Phenomenon	Reference document	Level	Performance (acceptance) criterion	Conclusion
AC input power ports	Voltage dips and short interruptions	IEC 62040-3 and IEC 61000-4-11	5%U/10ms	A	Pass
			40%U/200ms	A	Pass
			70%U/500ms	A	Pass
			0%U/5s	B	Pass

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7.8 Immunity to low-frequency signals

7.8.1 Test Procedure

The EUT was configured as described in section 4 for this test. The applied level was presented in the below table 17. The set-up and test methods were according to IEC61000-2-2.

7.8.2 Test Results

The EUT has met the requirements of Performance Criterion A for Immunity to the low-frequency conducted disturbances and signalling in the mains for mains compatibility.

Table 15 Test Results

Ports	Phenomenon	Reference document	Level	Performance (acceptance) criterion	Conclusion
AC input power ports	The low-frequency signals	IEC 61000-2-2	Disturbing voltage: 10V; Frequency: from 140Hz to 360Hz	A	Pass
AC input power ports	Power Line unbalance	IEC 61000-2-2	Amplitude unbalance: 230:5; Phase unbalance: 400:5	A	Pass

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8 Main Test Instruments

Table 16 Main Test Equipments

Test Item	Test Instrument	Manufacturer	Model	CAL. DUE DATE
Radiated emission (10m chamber)	EMI Test Receiver	Rohde & Schwarz	ESI26	2015-01-20
	Broadband antenna	Chase	CBL6112B	2015-01-20
	Horn Antenna	Rohde & Schwarz	HF906	2015-01-20
	Chamber _NSA	Albatross	10m chamber	2014-10-08
Conducted emission	EMI Test Receiver	Rohde & Schwarz	ESCS30	2015-01-20
	AMN	Rohde & Schwarz	ESH3-Z5	2015-01-20
	AMN	Rohde & Schwarz	ENV216	2015-01-20
Harmonics	Harmonic flicker test system	CI	5001ix-CTS-400	2015-01-03
	Three Phase Harmonic flicker test system	CI	PACS-3	2015-01-03
	Power	CI	5001ix-CTS-400-NO	2015-01-03
	Power	CI	5001ix-CTS-400-NO	2015-01-03
Electrostatic discharge	ESD tester	SCHNAFFNER	NSG435	2015-01-13
Immunity to radio-frequency electromagnetic field(3m chamber)	Signal Generator	Rohde & Schwarz	SMT03	2015-01-15
	Power Meter	Rohde & Schwarz	NRP	N/A
	Voltage Probe	Rohde & Schwarz	URV5-Z2	2015-01-15
	Voltage Probe	Rohde & Schwarz	URV5-Z2	2015-01-15
	Power Amplifier	AR	150W1000	2015-01-20
	Power Amplifier	AR	25S1G4AM1	2015-05-12
	Field Probe	Holaday	HI6005	2015-01-20
	Broadband antenna	Chase	CBL6111C	2015-01-20
	Anechoic chamber	Albatross Projects	MCDC	2014-10-08

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Fast transient bursts	Immunity simulator	EMTEST	UCS500M4	2015-01-20
	Three Phase Coupling Network	EMTEST	CNI5036	2015-01-20
Surge	Immunity simulator	EMTEST	VCS 500 N10	2015-01-20
	Coupling Network	EMTEST	CNV503S9	2015-01-20
Immunity to conducted radio-frequency common mode	CW sine Generator	EMTEST	CWS500	2015-01-20
	CDN	EMTEST	CDN-M2	2015-01-20
	CDN	EMTEST	CDN-M3	2015-01-20
Voltage dips and short interruptions of AC power ports	Immunity simulator	EMTEST	UCS500M4	2015-01-20
	Motor driven AC source	EMTEST	MV2616	2015-01-20
Immunity to power frequency magnetic field	Immunity simulator	EMTEST	UCS500M4	2015-01-23
	Magnetic Field Loop	FCC	F-1000-4-8/9/10-L-1M	2014-08-05
Immunity to low-frequency signals	Programmable AC Source	CHROMA	65930	2015-05-29

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9 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

Table 17 System Measurement Uncertainty

Items		Extended Uncertainty
RE	Field strength (dBμV/m)	4.2dB
CE	Disturbance Voltage(dBμV)	3.5dB
Harmonics	100 Hz- 1000 Hz	0.2 % Reading + 4 mA
	1050 Hz - 2000 Hz	0.2 % Reading+ 6 mA
	2050 Hz - 2400 Hz	0.2 % Reading+ 8 mA
ESD	Voltage(V)	The immunity measurement system uncertainty is within standard requirement and is based on a standard uncertainty multiplied by a coverage factor k = 2, providing a level of confidence of approximately 95%.
RS	Field strength(V/m)	
EFT	Voltage(V)	
Surge	Voltage(V)	
CS	Voltage(V)	
PFMF	Field strength(A/m)	
Dips	Voltage(V)	

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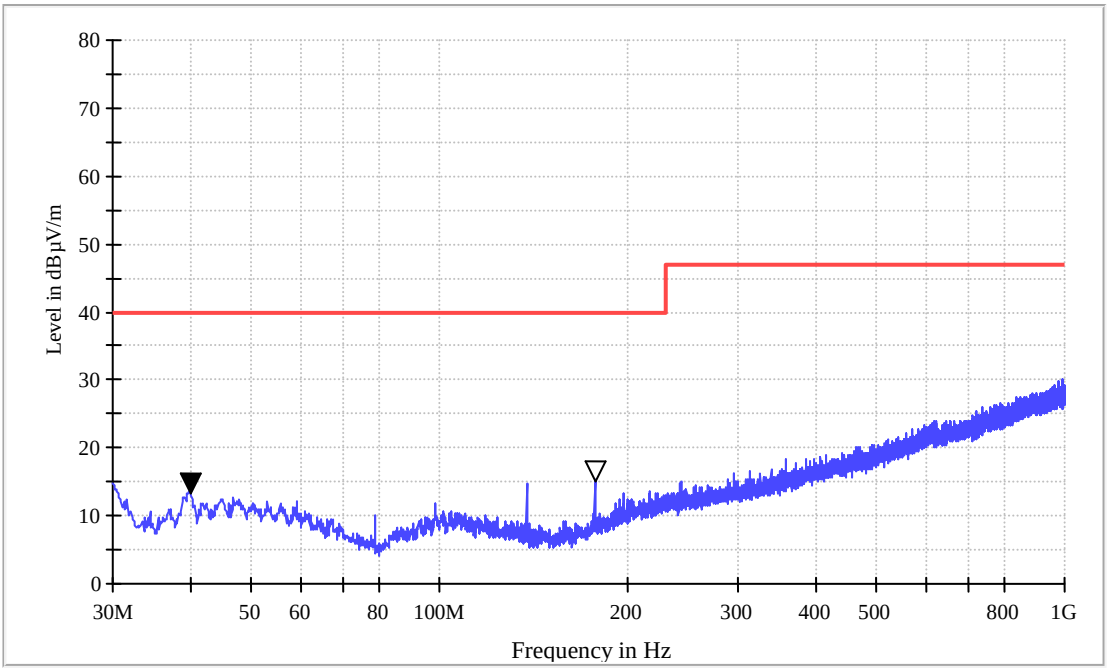
9.1 Radiated Disturbance

M/N: BX650LI
Operating Condition: Charging
Test Specification: Horizontal
Comment: AC 230V/50Hz

Normal Sweep_TT6m



Frequency MHz	Horizontal dBµV/m	Limit dBµV/m	Margin dB
39.942	13.6	40.0	26.4
177.197	15.2	40.0	24.8

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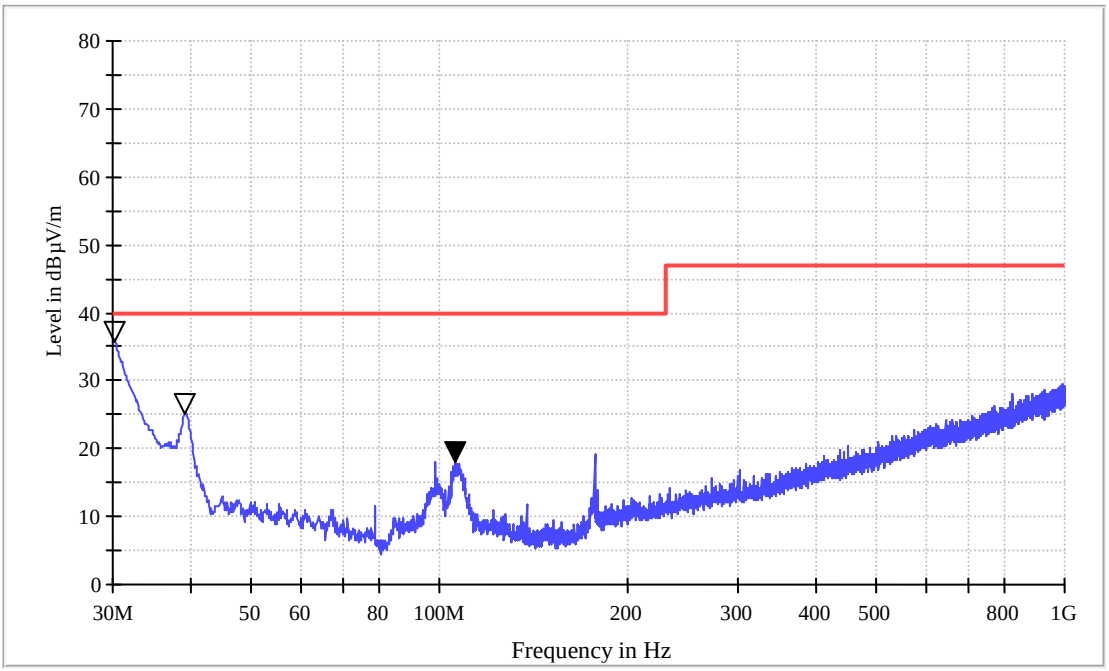
M/N:	BX650LI
Operating Condition:	Charging
Test Specification:	Vertical
Comment:	AC 230V/50Hz

Normal Sweep_TT6m



Frequency MHz	Vertical dBµV/m	Limit dBµV/m	Margin dB
30.121	35.9	40.0	4.1
39.215	25.3	40.0	14.7
105.781	18.2	40.0	21.8

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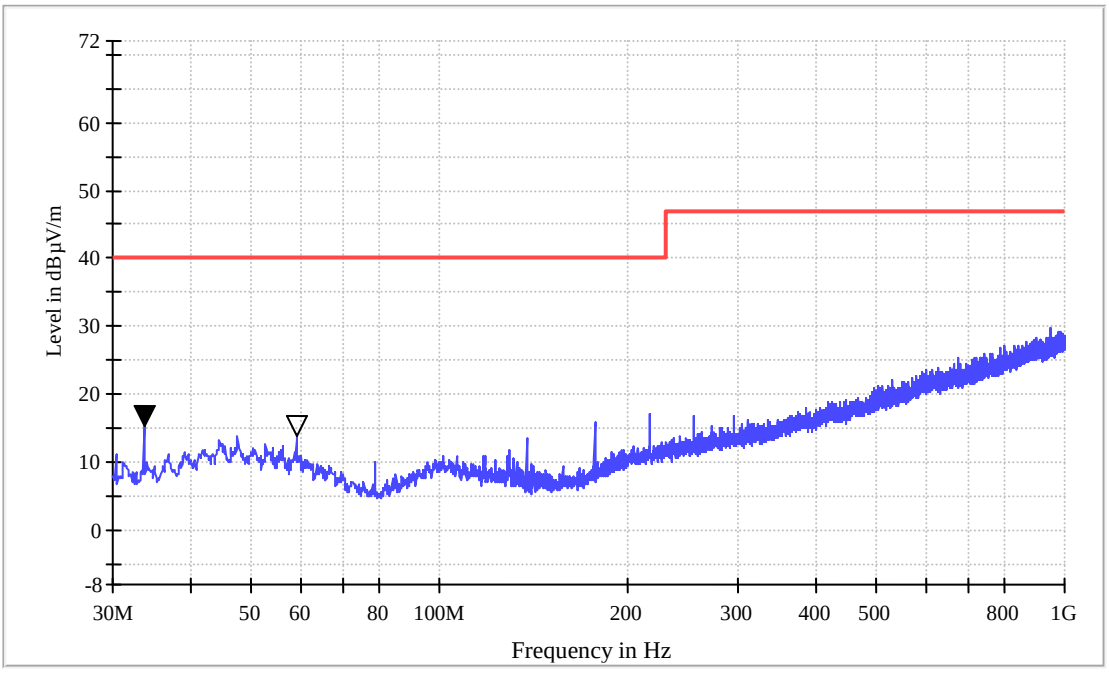
M/N: BX650LI
Operating Condition: discharging
Test Specification: Horizontal
Comment: DC12V

Normal Sweep_TT6m



Frequency MHz	Horizontal dBµV/m	Limit dBµV/m	Margin dB
/	/	/	/

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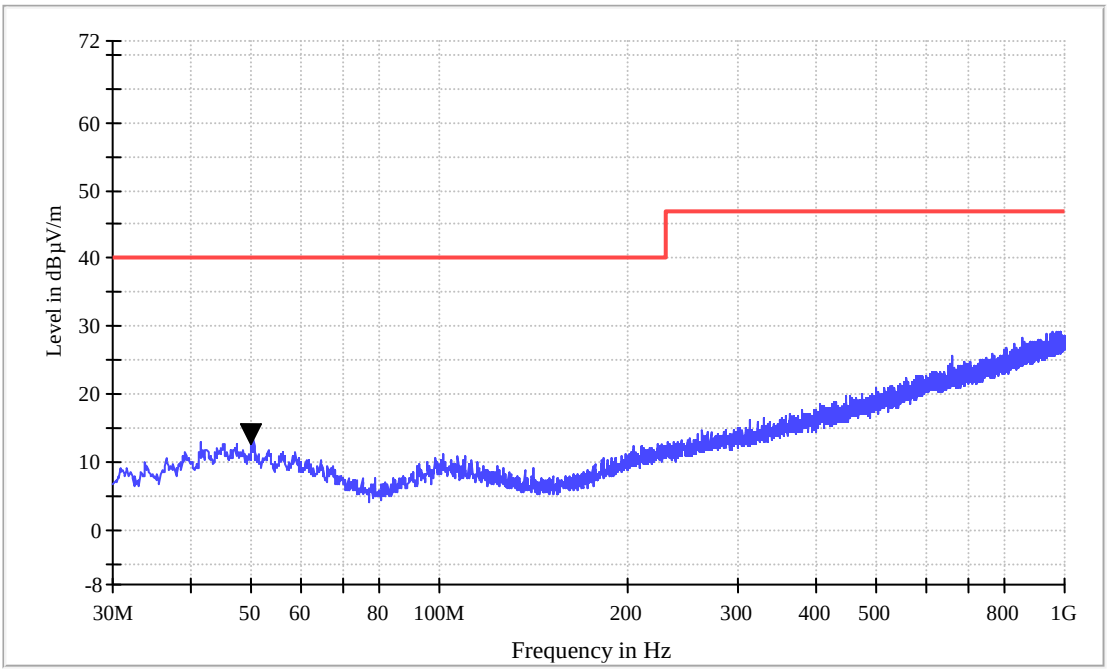
M/N: BX650LI
Operating Condition: discharging
Test Specification: Vertical
Comment: DC12V

Normal Sweep_TT6m



Frequency MHz	Vertical dBµV/m	Limit dBµV/m	Margin dB
/	/	/	/

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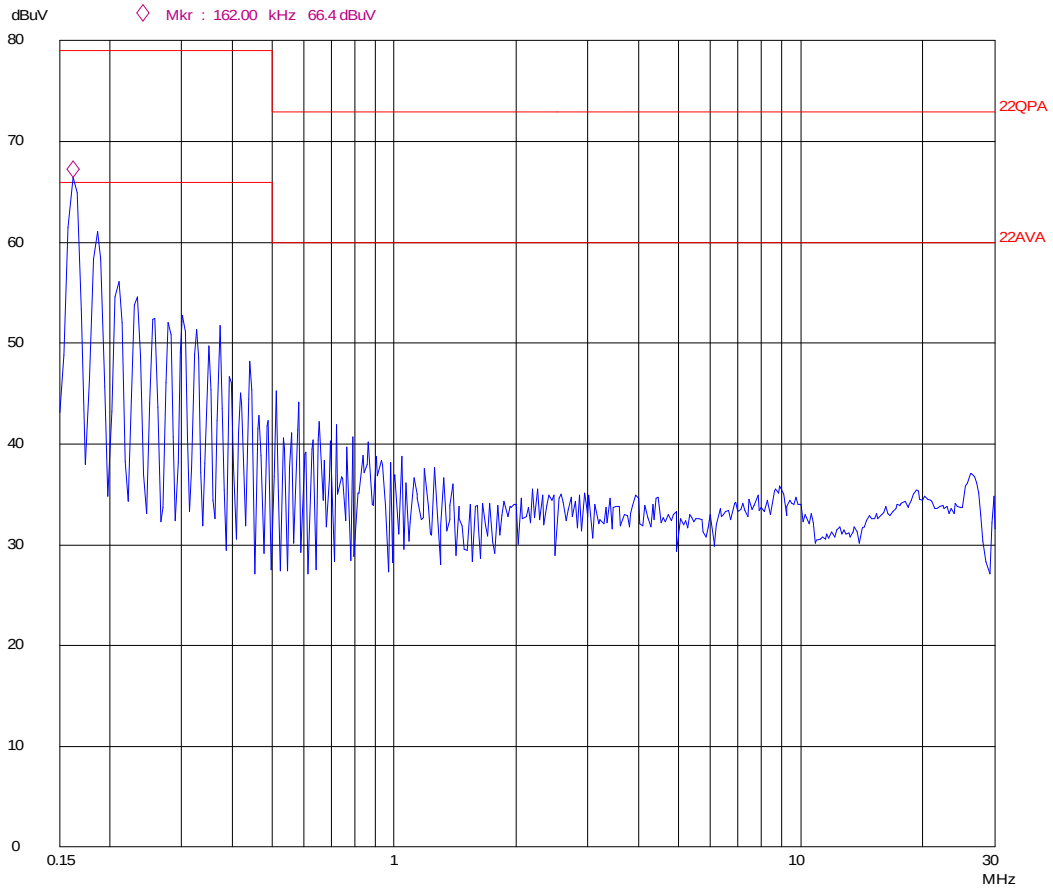
9.2 Conducted Disturbance

M/N: BX650LI
Operating Condition: Charging
Test Specification: L
Comment: AC 230V/50Hz



Frequency MHz	QP Test result dBµV	QP Limit dBµV	Margin dB
0.162	65.1	79.0	13.9

Frequency MHz	AV Test result dBµV	AV Limit dBµV	Margin dB
0.162	60.0	66.0	6.0

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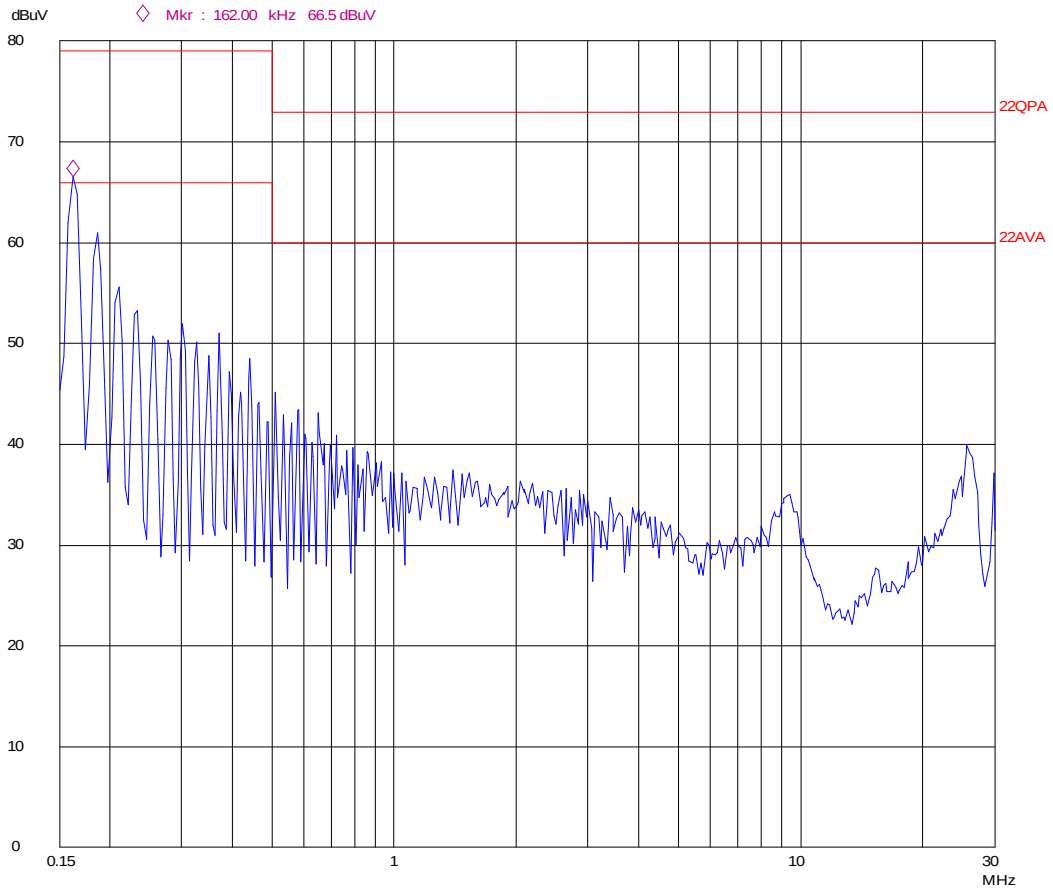
M/N:	BX650LI
Operating Condition:	Charging
Test Specification:	N
Comment:	AC 230V/50Hz



Frequency MHz	QP Test result dBµV	QP Limit dBµV	Margin dB
0.162	65.2	79.0	13.8

Frequency MHz	AV Test result dBµV	AV Limit dBµV	Margin dB
0.162	61.1	66.0	4.9

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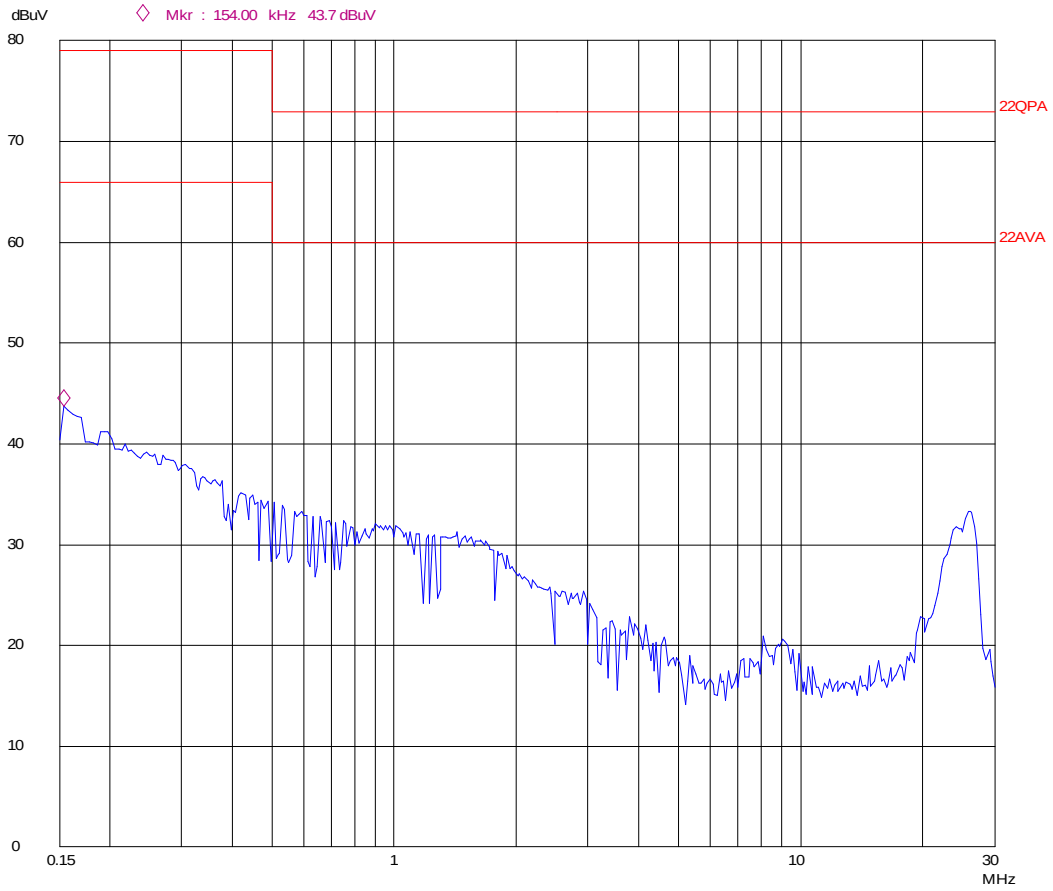
M/N: BX650LI
Operating Condition: discharging
Test Specification: L
Comment: DC12V



Frequency MHz	QP Test result dBµV	QP Limit dBµV	Margin dB
/	/	/	/

Frequency MHz	AV Test result dBµV	AV Limit dBµV	Margin dB
/	/	/	/

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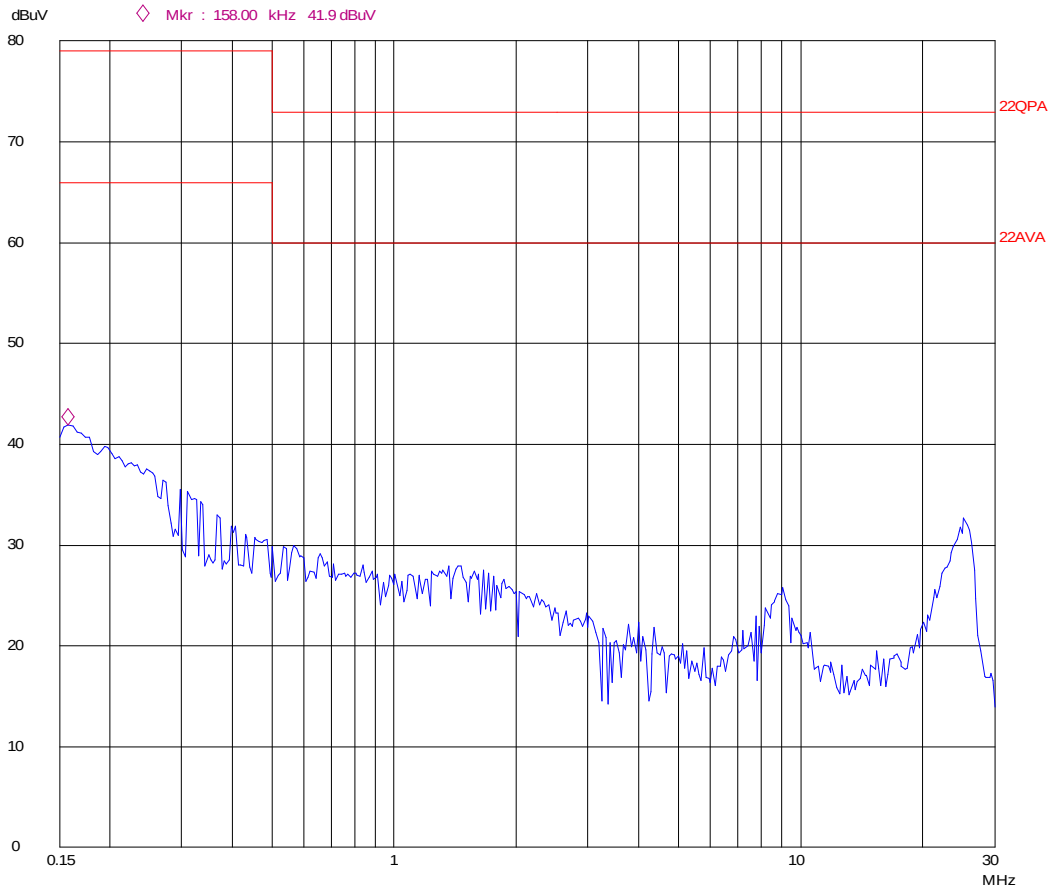
M/N: BX650LI
Operating Condition: discharging
Test Specification: N
Comment: DC12V



Frequency MHz	QP Test result dBµV	QP Limit dBµV	Margin dB
/	/	/	/

Frequency MHz	AV Test result dBµV	AV Limit dBµV	Margin dB
/	/	/	/

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9.3 Input current harmonics

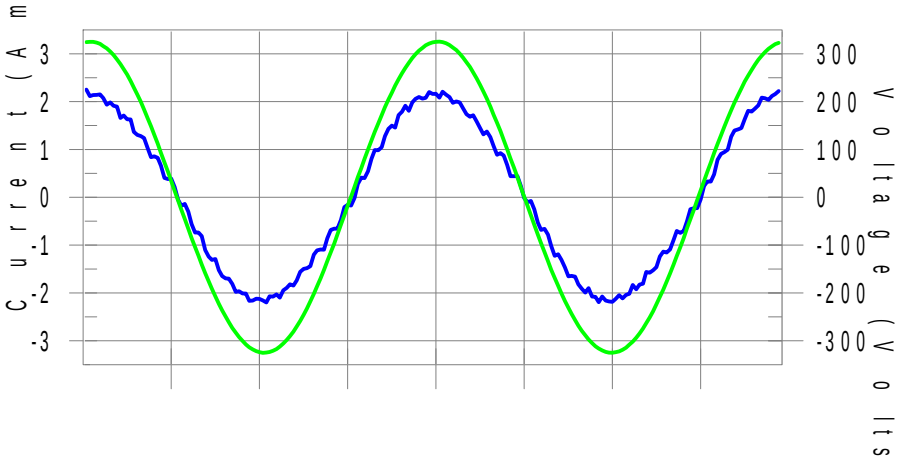
EUT: BX650LI **Tested by: Laurent Yuan**
Test category: Class-A per Ed. 3.2 (2009) (European limits) **Test Margin: 100**
Test date: 7/14/2014 **Start time: 5:47:12 PM** **End time: 5:50:03 PM**
Test duration (min): 2.5 **Data file name: H-000097.cts_data**
Comment: Charging and Discharging
Customer: American Power Conversion Holding Inc.

Test Result: Pass **Source qualification: Normal**
THC(A): 0.05 **I-THD(%): 2.99** **POHC(A): 0.000** **POHC Limit(A): 0.320**
Highest parameter values during test:

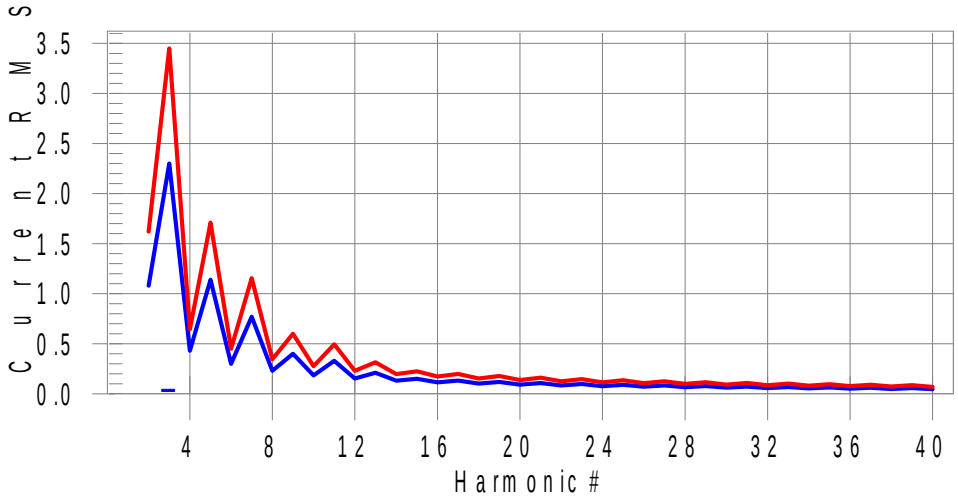
V_RMS (Volts):	230.03	Frequency(Hz):	50.00
I_Peak (Amps):	2.251	I_RMS (Amps):	1.516
I_Fund (Amps):	1.513	Crest Factor:	1.488
Power (Watts):	347.9	Power Factor:	0.999

Conducted Emission Test 150kHz – 30MHz

Current & voltage waveforms



Harmonics and Class A limit line **European Limits**



Test result: Pass Worst harmonic was #3 with 1.90% of the limit.

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Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.002	1.080	0.0	0.004	1.620	0.24	Pass
3	0.044	2.300	1.9	0.045	3.450	1.30	Pass
4	0.002	0.430	0.0	0.002	0.645	0.36	Pass
5	0.011	1.140	1.0	0.012	1.710	0.69	Pass
6	0.001	0.300	0.0	0.001	0.450	0.22	Pass
7	0.003	0.770	0.0	0.003	1.155	0.24	Pass
8	0.001	0.230	0.0	0.001	0.345	0.29	Pass
9	0.001	0.400	0.0	0.002	0.600	0.27	Pass
10	0.000	0.184	0.0	0.001	0.276	0.30	Pass
11	0.001	0.330	0.0	0.001	0.495	0.23	Pass
12	0.000	0.153	0.0	0.001	0.230	0.33	Pass
13	0.000	0.210	0.0	0.001	0.315	0.26	Pass
14	0.000	0.131	0.0	0.001	0.197	0.39	Pass
15	0.000	0.150	0.0	0.001	0.225	0.36	Pass
16	0.000	0.115	0.0	0.001	0.173	0.46	Pass
17	0.000	0.132	0.0	0.001	0.199	0.41	Pass
18	0.000	0.102	0.0	0.001	0.153	0.49	Pass
19	0.000	0.118	0.0	0.001	0.178	0.44	Pass
20	0.000	0.092	0.0	0.001	0.138	0.55	Pass
21	0.000	0.107	0.0	0.001	0.161	0.48	Pass
22	0.000	0.084	0.0	0.001	0.125	0.61	Pass
23	0.000	0.098	0.0	0.001	0.147	0.53	Pass
24	0.000	0.077	0.0	0.001	0.115	0.64	Pass
25	0.001	0.090	0.0	0.001	0.135	0.67	Pass
26	0.000	0.071	0.0	0.001	0.106	0.95	Pass
27	0.001	0.083	0.0	0.001	0.125	0.85	Pass
28	0.001	0.066	0.0	0.001	0.099	1.01	Pass
29	0.000	0.078	0.0	0.001	0.116	0.83	Pass
30	0.000	0.061	0.0	0.001	0.092	1.14	Pass
31	0.000	0.073	0.0	0.001	0.109	0.91	Pass
32	0.001	0.058	0.0	0.001	0.086	1.27	Pass
33	0.000	0.068	0.0	0.001	0.102	1.02	Pass
34	0.000	0.054	0.0	0.001	0.081	1.30	Pass
35	0.000	0.064	0.0	0.001	0.096	1.12	Pass
36	0.000	0.051	0.0	0.000	0.077	0.62	Pass
37	0.000	0.061	0.0	0.001	0.091	0.56	Pass
38	0.000	0.048	0.0	0.001	0.073	1.68	Pass
39	0.001	0.058	0.0	0.001	0.087	1.61	Pass
40	0.000	0.046	0.0	0.001	0.069	1.76	Pass

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Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.133	0.460	28.83	OK
3	0.526	2.070	25.41	OK
4	0.073	0.460	15.81	OK
5	0.079	0.920	8.63	OK
6	0.054	0.460	11.82	OK
7	0.042	0.690	6.13	OK
8	0.043	0.460	9.26	OK
9	0.038	0.460	8.35	OK
10	0.031	0.460	6.72	OK
11	0.046	0.230	19.91	OK
12	0.018	0.230	7.67	OK
13	0.012	0.230	5.14	OK
14	0.012	0.230	5.13	OK
15	0.010	0.230	4.32	OK
16	0.011	0.230	4.61	OK
17	0.010	0.230	4.13	OK
18	0.012	0.230	5.32	OK
19	0.008	0.230	3.54	OK
20	0.023	0.230	9.97	OK
21	0.012	0.230	5.39	OK
22	0.013	0.230	5.55	OK
23	0.009	0.230	3.98	OK
24	0.008	0.230	3.47	OK
25	0.009	0.230	3.80	OK
26	0.014	0.230	6.23	OK
27	0.013	0.230	5.51	OK
28	0.013	0.230	5.50	OK
29	0.011	0.230	4.83	OK
30	0.013	0.230	5.76	OK
31	0.009	0.230	4.10	OK
32	0.011	0.230	4.99	OK
33	0.010	0.230	4.16	OK
34	0.009	0.230	3.81	OK
35	0.008	0.230	3.62	OK
36	0.009	0.230	3.80	OK
37	0.006	0.230	2.58	OK
38	0.005	0.230	2.02	OK
39	0.023	0.230	10.20	OK
40	0.013	0.230	5.66	OK

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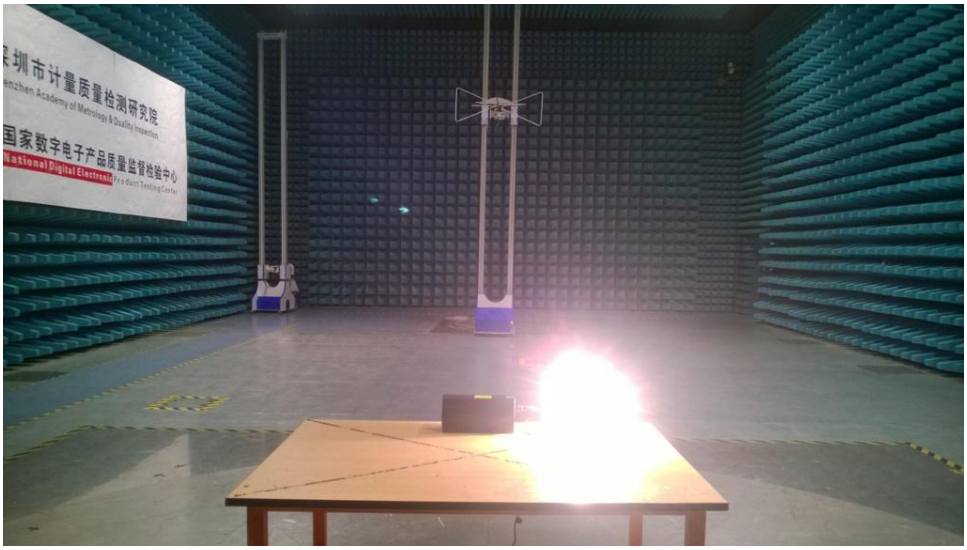
10 Photographs of Test Set-ups

10.1 Emissions



Radiated Emission

Conducted Emissions

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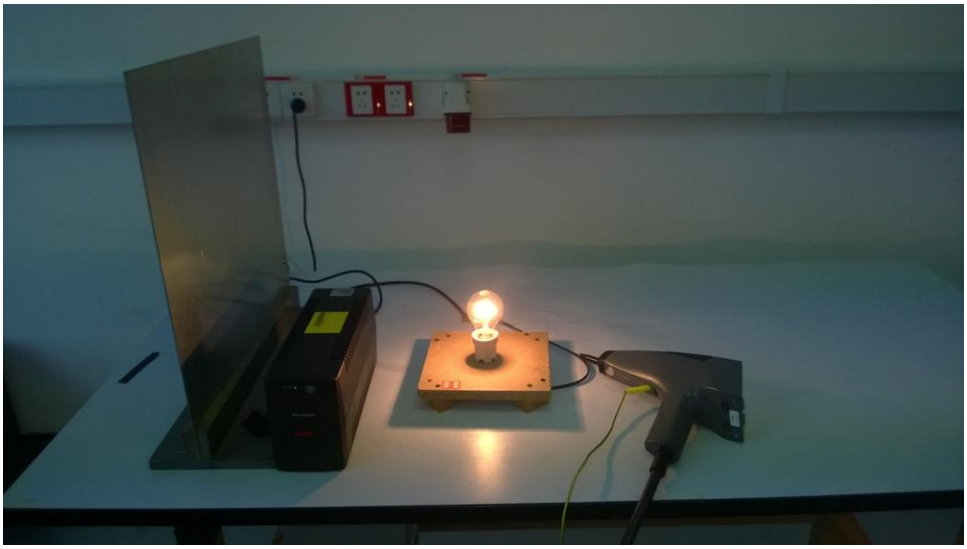
Input current harmonics

10.2 Immunity



Immunity to Electrostatic Discharge

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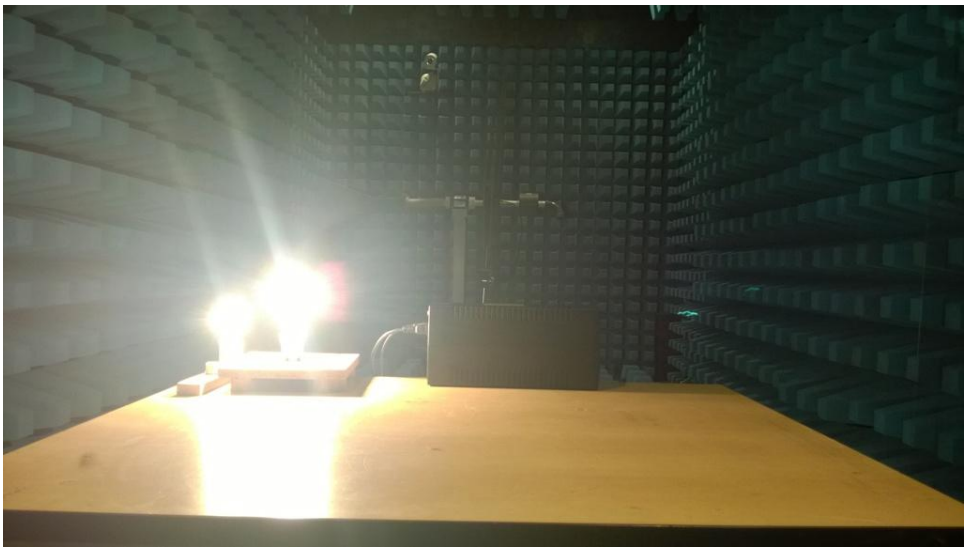

Immunity to Radio-frequency electromagnetic field

Immunity to conducted radio-frequency common mode

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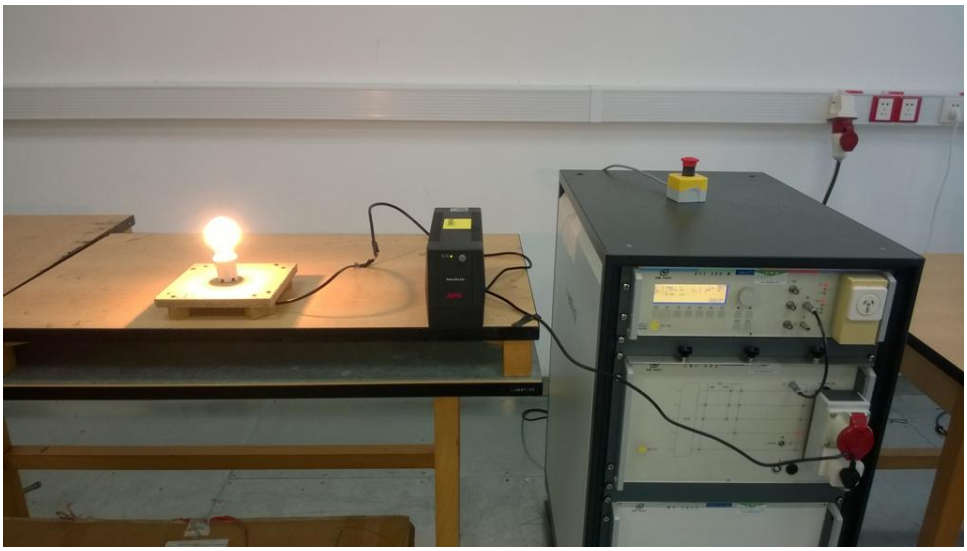

Immunity to Fast Transient Burst

Immunity to Surge

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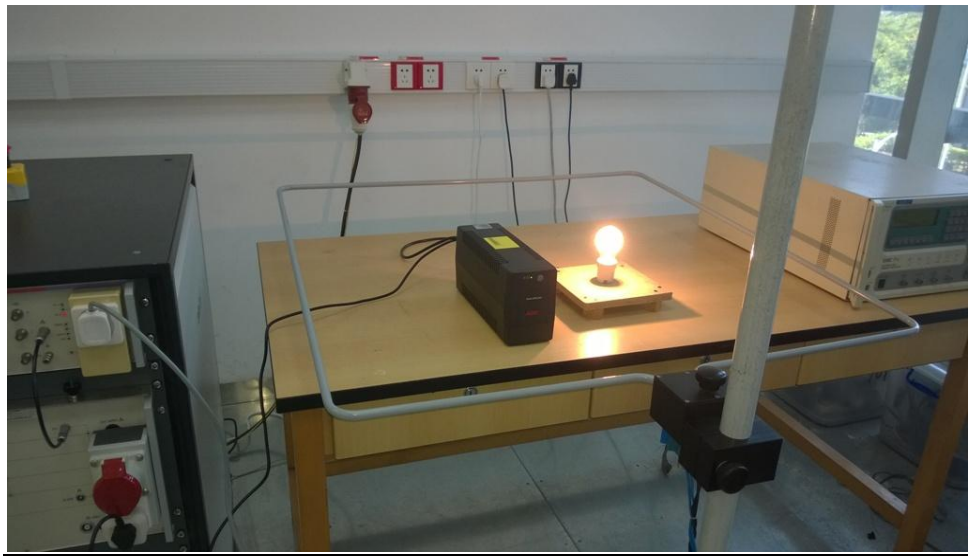

Immunity to Power-frequency magnetic field

Immunity to low-frequency signals

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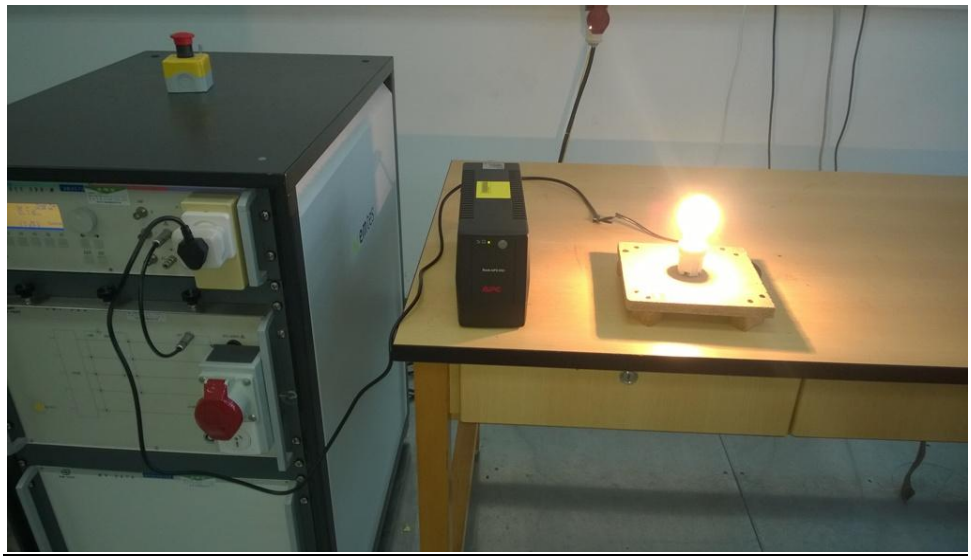

Immunity to Voltage dips, short interruptions and voltage variations

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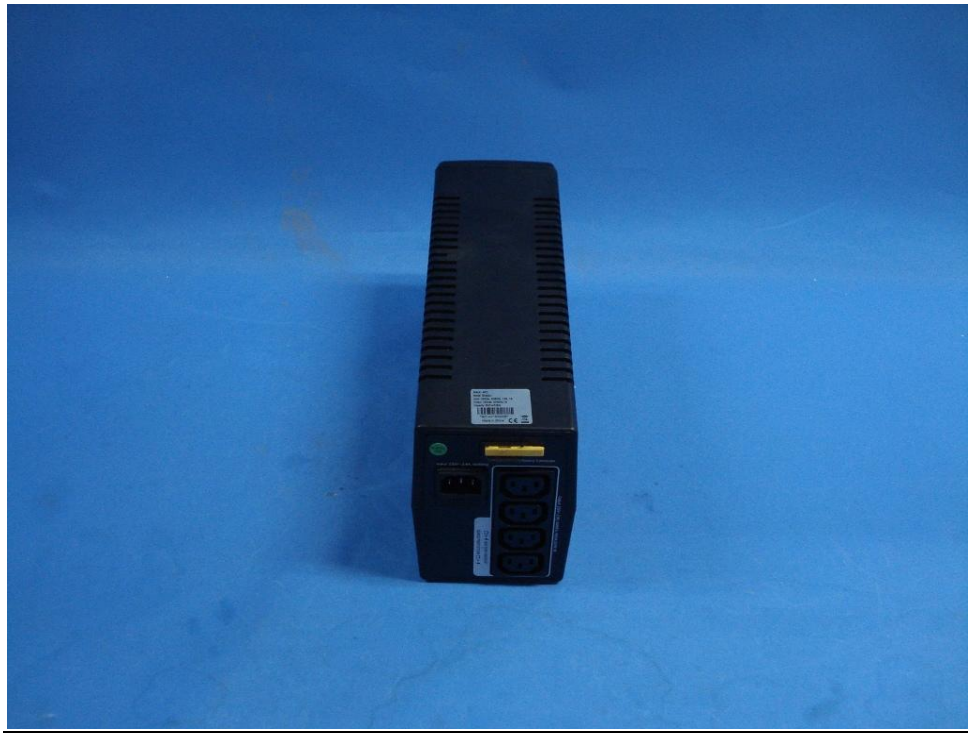
11 Photographs of Product



Outside view for IEC SOCKET

Outside view for BS SOCKET

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Outside view for SCHUKO SOCKET

Outside view

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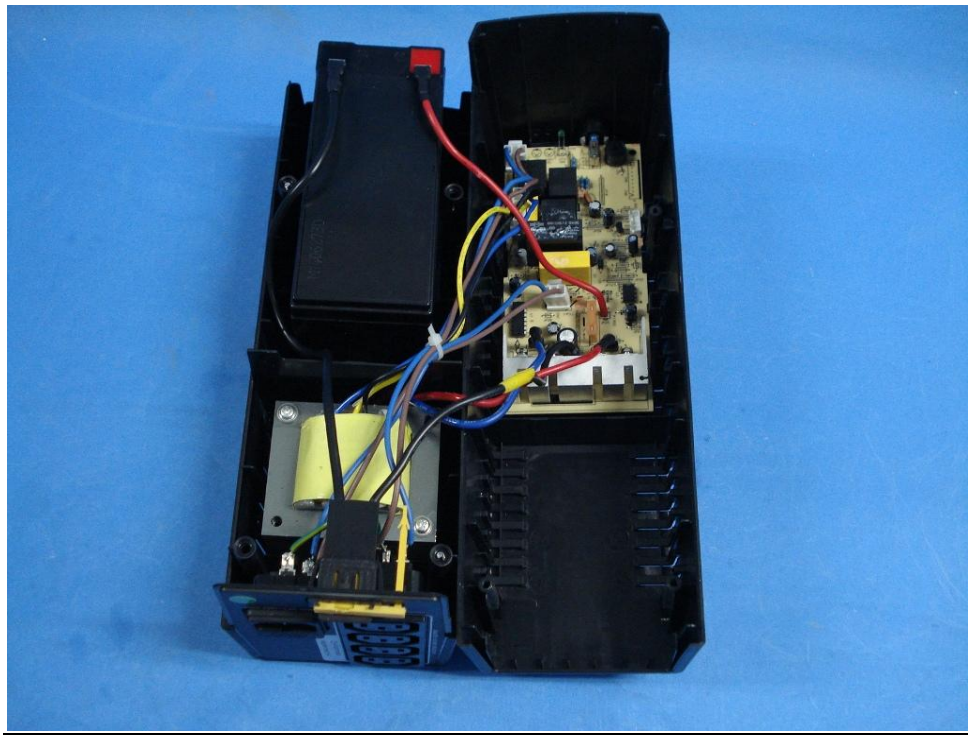
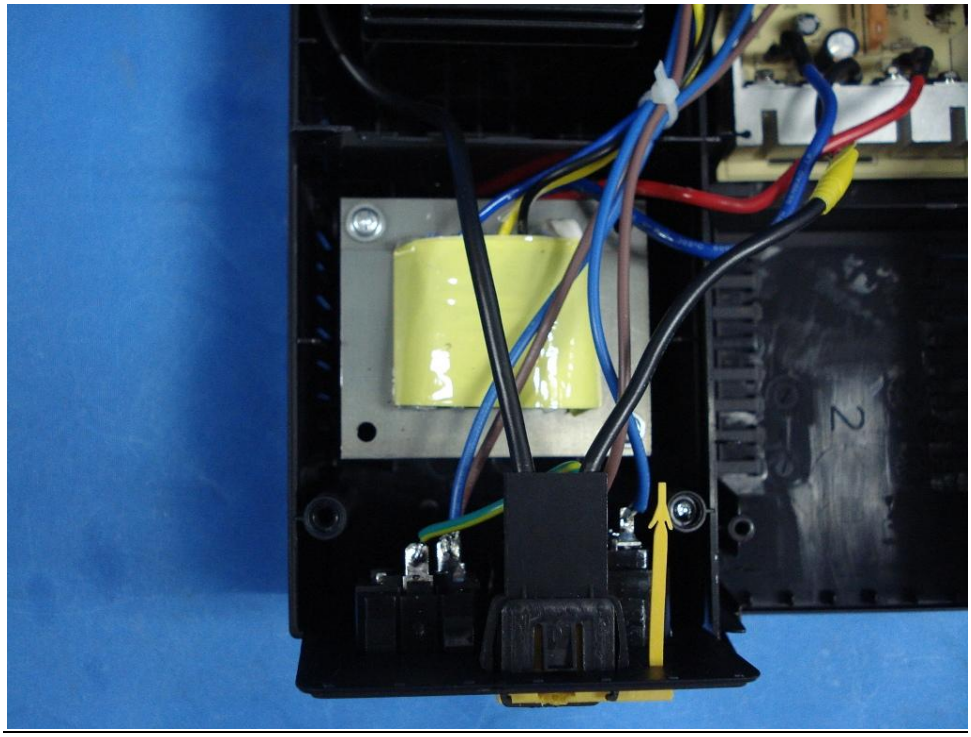


Internal view 1



Internal view 2

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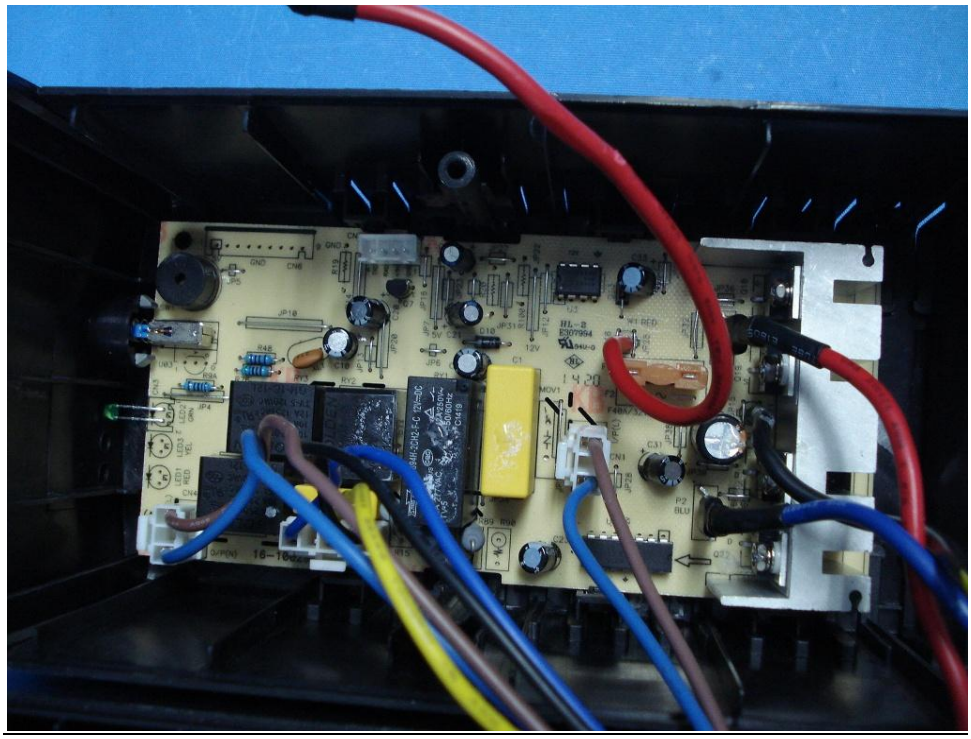
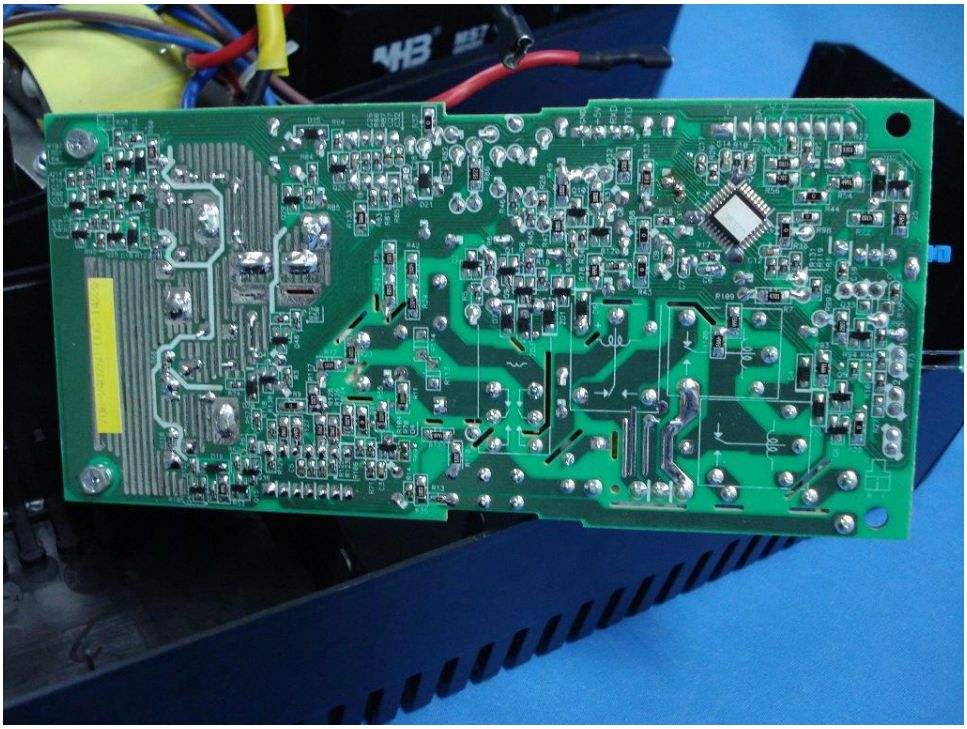


PCB view 1



PCB view 2

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