

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT  
(IECEE) CB SCHEME

## CB TEST CERTIFICATE

Product

Network Switch

Name and address of the applicant

Radware Ltd.  
22 Raoul Wallenberg St.  
6971917 Tel Aviv, Israel

Name and address of the manufacturer

Radware Ltd.  
22 Raoul Wallenberg St.  
6971917 Tel Aviv, Israel

Name and address of the factory

See additional page(s)

Ratings and principal characteristics

100-240Vac; 50-60Hz; 5-3A (with AC single PS)  
100-240Vac; 50-60Hz; 5-3A x 2 (with AC dual PS)  
-36 - -72Vdc; 12-6A (with DC single PS)  
-36 - -72Vdc; 12-6A x 2 (with DC dual PS); Class I

Trademark (if any)

RADWARE

Customer's Testing Facility (CTF) Stage used

N/A

Model / Type Ref.

ODS-LS2

Additional information (if necessary may also be reported on page 2)

Re-issue of JPTUV-100394 dated 12.09.2019,  
due to non-technical change.

A sample of the product was tested and found to be in conformity with

IEC 62368-1:2014  
See Test Report for National Differences

As shown in the Test Report Ref. No. which forms part of this Certificate

50271998 002

This CB Test Certificate is issued by the National Certification Body



TÜVRheinland®

TÜV Rheinland Japan Ltd.  
Global Technology Assessment Center  
4-25-2 Kita-Yamata, Tsuzuki-ku  
Yokohama 224-0021 Japan  
Phone + 81 45 914-3888  
Fax + 81 45 914-3354  
Mail: info@jpn.tuv.com  
Web: www.tuv.com

Date: 26.09.2019

Signature:

  
Jason C. H. Chang

1. NEXCOM International Co., Ltd.  
5F, 7F, 8F, 9F, 10F&12F,  
No. 63, Sec. 1, Sanmin Rd.,  
Banqiao Dist, New Taipei City  
Taiwan
2. NEXCOM International Co., Ltd.  
(Hua-Ya Factory)  
2F., No.50, Huaya 3rd Rd.,  
Guishan Dist., Taoyuan City 333  
Taiwan


**Additional information (if necessary)**  
**Information complémentaire (si nécessaire)**

Report Ref. No.: 50271998 002

Date:

26.09.2019

Signature:



Jason C. H. Chang



Test Report issued under the responsibility of:



## TEST REPORT

### IEC 62368-1

## Audio/video, information and communication technology equipment

### Part 1: Safety requirements

Report Number ..... : 50271998 002

Date of issue ..... : 2019-09-25

Total number of pages ..... : 6

Applicant's name ..... : Radware Ltd.

Address ..... : 22 Raoul Wallenberg St. 6971917 Tel Aviv, Israel

#### Test specification:

Standard ..... : IEC 62368-1:2014 (Second Edition)

Test procedure ..... : CB Scheme

Non-standard test method ..... : N/A

Test Report Form No. .... : IEC62368\_1B

Test Report Form(s) Originator..... : UL(US)

Master TRF ..... : 2014-03

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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

**This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.**

#### General disclaimer:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test Item description .....	Network Switch	
Trade Mark .....	RADWARE	
Manufacturer.....	Same as applicant	
Model/Type reference .....	ODS-LS2	
Ratings .....	100-240Vac, 50-60Hz, 5-3A (with AC single PS) 100-240Vac, 50-60Hz, 5-3A x 2 (with AC dual PS) -36 - -72Vdc, 12-6A (with DC single PS) -36 - -72Vdc, 12-6A x 2 (with DC dual PS)	
Testing procedure and testing location:		
<input checked="" type="checkbox"/> CB Testing Laboratory:	TÜV Rheinland Taiwan Ltd., Taichung Branch	
Testing location/ address .....	No. 9, Ln. 36, Sec. 3, Minsheng Rd., Daya District, Taichung City 428, Taiwan CHINESE TAIPEI	
<input type="checkbox"/> Associated CB Testing Laboratory:		
Testing location/ address .....		
Tested by (name + signature).....		X  Project Engineer Signed by: Paul LM Lin
Approved by (name + signature) .....		X  Reviewer Signed by: Simon Yu
Testing procedure: CTF Stage 1		
Testing location/ address .....		
Tested by (name + signature).....		
Approved by (name + signature) .....		
Testing procedure: CTF Stage 2		
Testing location/ address .....		
Tested by (name + signature).....		
Witnessed by (name + signature).....		
Approved by (name + signature) .....		
Testing procedure: CTF Stage 3		
Testing procedure: CTF Stage 4		
Testing location/ address .....		
Tested by (name + signature).....		
Approved by (name + signature) .....		
Supervised by (name + signature).....		

**List of Attachments (including a total number of pages in each attachment):**

- N/A

**Summary of testing:****Tests performed (name of test and test clause):**

All applicable tests as described in Test Case and Measurement Sections were performed.

- N/A

**Testing location:**

N/A

**Summary of compliance with National Differences:****List of countries addressed:**

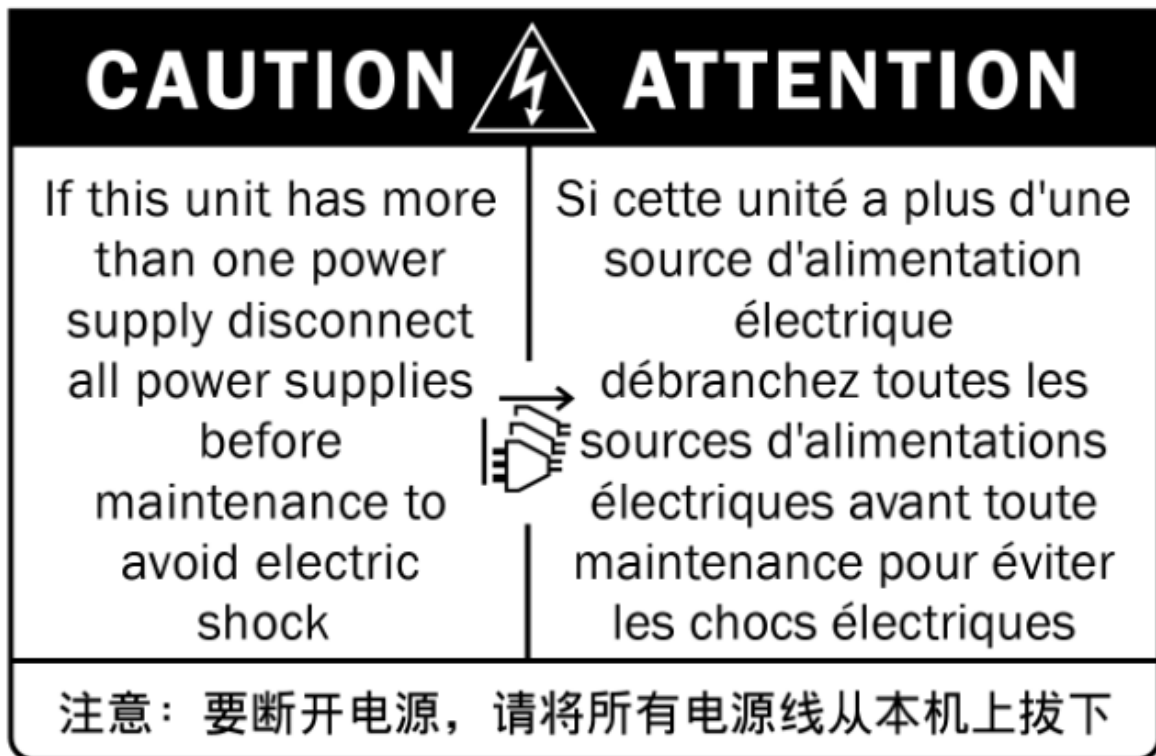
EU Group Differences, EU Special National Conditions, AU, CA, DK, US, JP.

Explanation of used codes: AU=Australia, CA = Canada, DK = Denmark, US = United States of America, JP = Japan.

☒ The product fulfils the requirements of **EN 62368-1:2014+A11:2017 and AS/NZS 62368.1:2018**

**Copy of marking plate**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



TEST ITEM PARTICULARS:	
Classification of use by .....	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input type="checkbox"/> Children likely to be present
Supply Connection .....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input checked="" type="checkbox"/> External Circuit - not Mains connected - <input checked="" type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input checked="" type="checkbox"/> +10%/-10% (for AC mains) <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +____%/ -____% <input checked="" type="checkbox"/> None (for DC input)
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input checked="" type="checkbox"/> other: terminal block
Considered current rating of protective device as part of building or equipment installation .....	16 or 20 A Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input checked="" type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient .....	45°C
IP protection class .....	<input checked="" type="checkbox"/> IPX0
Power Systems .....	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input checked="" type="checkbox"/> IT - <u>230</u> V L-L
Altitude during operation (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> 5000m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> 7.5 Max.
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....	N/A
- test object does meet the requirement.....	P (Pass)
- test object does not meet the requirement .....	F (Fail)

<b>TESTING:</b>		
Date of receipt of test item .....		N/A
Date (s) of performance of tests .....		N/A
<b>GENERAL REMARKS:</b>		
<p>“(See Enclosure #)” refers to additional information appended to the report.  “(See appended table)” refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p> <p>Where statement of conformity is provided in this test report, if not otherwise indicated, “accuracy method” described in IEC GUIDE 115 has been taken to address uncertainty of measurement.</p>		
<b>Manufacturer’s Declaration per sub-clause 4.2.5 of IEC 60335-1:</b>		
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>	
<b>When differences exist; they shall be identified in the General product information section.</b>		
Name and address of factory (ies) .....	1. <b>NEXCOM International Co., Ltd. (Hua-Ya Factory)</b> <b>2F., No.50, Huaya 3rd Rd., Guishan Dist., Taoyuan City 333, Taiwan</b> 2. <b>NEXCOM International Co., Ltd.</b> <b>5F, 7F, 8F, 9F, 10F&amp;12F, No.63, Sec.1, Sanmin Rd., Banqiao Dist., New Taipei City, Taiwan</b>	
<b>GENERAL PRODUCT INFORMATION:</b>		
<b>Product Description –</b> <b>Description of change(s):</b>  1. Correction typo for Name and address of factory (ies). 2. Change Caution label.		
For the above described change(s) the following was considered to be necessary:		
Change	Testing	Comments
1.	• <b>N/A</b>	See information of “ <b>Name and address of factory (ies)</b> ” in bold types.
2.	• <b>N/A</b>	See <b>Copy of marking plate</b> for details.
History of amendments and modifications: Ref. No. 50271998 001, dated Sep. 03, 2019 (original test report) Ref. No. 50271998 002, dated Sep. 25, 2019 (amendment)		

**List of test equipment used:**

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date

Information:

"No listing of test equipment used necessary for chosen test procedure".



IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT  
(IECEE) CB SCHEME

## CB TEST CERTIFICATE

Product

Network Switch

Name and address of the applicant

Radware Ltd.  
22 Raoul Wallenberg St.  
6971917 Tel Aviv, Israel

Name and address of the manufacturer

Radware Ltd.  
22 Raoul Wallenberg St.  
6971917 Tel Aviv, Israel

Name and address of the factory

See additional page(s)

Ratings and principal characteristics

100-240Vac; 50-60Hz; 5-3A (with AC single PS)  
100-240Vac; 50-60Hz; 5-3A x 2 (with AC dual PS)  
-36 - -72Vdc; 12-6A (with DC single PS)  
-36 - -72Vdc; 12-6A x 2 (with DC dual PS); Class I

Trademark (if any)

RADWARE

Customer's Testing Facility (CTF) Stage used

N/A

Model / Type Ref.

ODS-LS2

Additional information (if necessary may also be reported on page 2)

Re-issue of JPTUV-100423 dated 12.09.2019,  
due to non-technical change.

A sample of the product was tested and found to be in conformity with

IEC 60950-1:2005+A1+A2  
See Test Report for National Differences

As shown in the Test Report Ref. No. which forms part of this Certificate

50276983 002

This CB Test Certificate is issued by the National Certification Body



TÜVRheinland®

TÜV Rheinland Japan Ltd.  
Global Technology Assessment Center  
4-25-2 Kita-Yamata, Tsuzuki-ku  
Yokohama 224-0021 Japan  
Phone + 81 45 914-3888  
Fax + 81 45 914-3354  
Mail: info@jpn.tuv.com  
Web: www.tuv.com

Date: 26.09.2019

Signature:

  
Jason C. H. Chang

1. NEXCOM International Co., Ltd.  
5F, 7F, 8F, 9F, 10F&12F,  
No. 63, Sec. 1, Sanmin Rd.,  
Banqiao Dist, New Taipei City  
Taiwan
2. NEXCOM International Co., Ltd.  
(Hua-Ya Factory)  
2F., No.50, Huaya 3rd Rd.,  
Guishan Dist., Taoyuan City 333  
Taiwan

**Additional information (if necessary)**  
**Information complémentaire (si nécessaire)**

Report Ref. No.: 50276983 002

Date: 26.09.2019

Signature:



  
Jason C. H. Chang



Test Report issued under the responsibility of:



<b>TEST REPORT</b> <b>IEC 60950-1</b> <b>Information technology equipment – Safety –</b> <b>Part 1: General requirements</b>	
<b>Report Number.</b> .....	50276983 002
<b>Date of issue</b> .....	Sep. 25, 2019
<b>Total number of pages</b> .....	6
<b>Applicant's name</b> .....	Radware Ltd.
<b>Address</b> .....	22 Raoul Wallenberg St. 6971917 Tel Aviv, Israel
<b>Test specification:</b>	
<b>Standard</b> .....	IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013
<b>Test procedure</b> .....	CB Scheme
<b>Non-standard test method</b> .....	N/A
<b>Test Report Form No</b> .....	IEC60950_1F
<b>Test Report Form(s) Originator</b> .....	SGS Fimko Ltd
<b>Master TRF</b> .....	Dated 2014-02
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<b>This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.</b>	
<b>General disclaimer:</b>	
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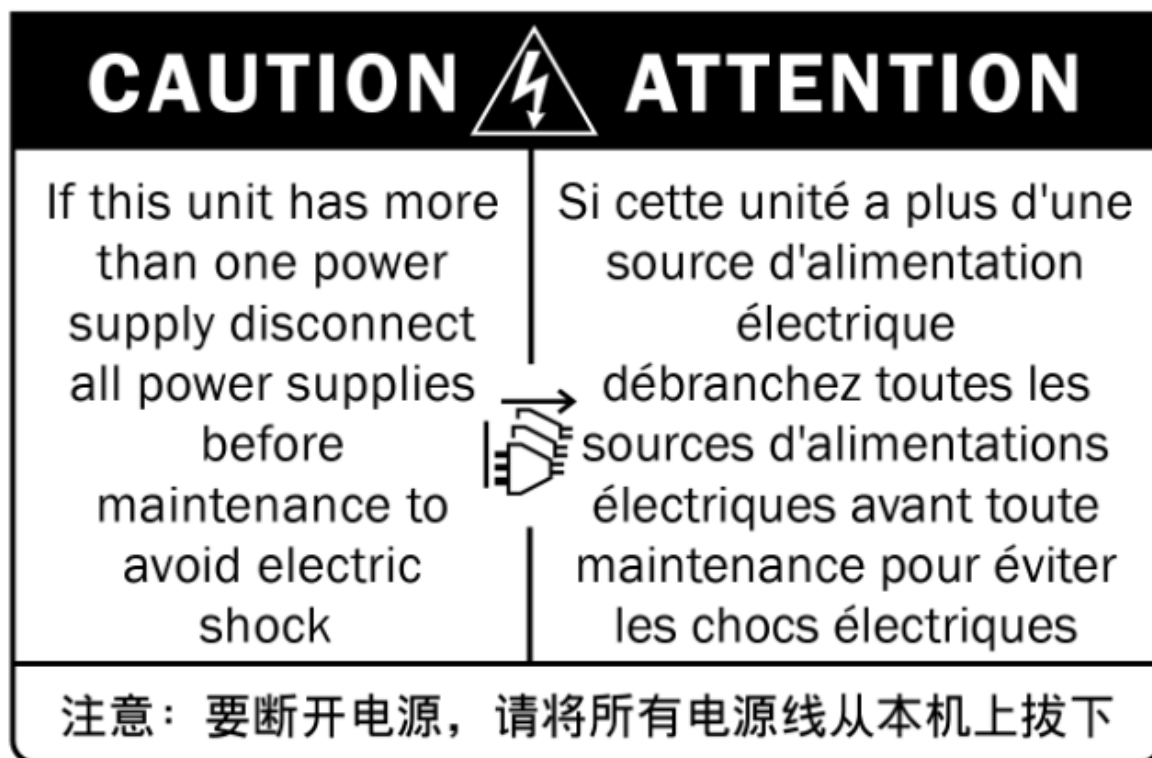
<b>Test item description .....</b>		Network Switch	
<b>Trade Mark .....</b>		RADWARE	
<b>Manufacturer.....</b>		Same as applicant	
<b>Model/Type reference .....</b>		ODS-LS2	
<b>Ratings .....</b>		100-240Vac, 50-60Hz, 5-3A (with AC single PS)	
		100-240Vac, 50-60Hz, 5-3A x 2 (with AC dual PS)	
		-36 - -72Vdc, 12-6A (with DC single PS)	
		-36 - -72Vdc, 12-6A x 2 (with DC dual PS)	
<b>Testing procedure and testing location:</b>			
<input checked="" type="checkbox"/>	<b>CB Testing Laboratory:</b>	TÜV Rheinland Taiwan Ltd., Taichung Branch	
<b>Testing location/ address .....</b>		No. 9, Ln. 36, Sec. 3, Minsheng Rd., Daya District, Taichung City 428, Taiwan CHINESE TAIPEI	
<input type="checkbox"/>	<b>Associated CB Testing Laboratory:</b>		
<b>Testing location/ address .....</b>			
<b>Tested by (name + signature).....</b>			X  Project Engineer Signed by: Paul L.M. Lin
<b>Approved by (name + signature).....</b>			X  Reviewer Signed by: Simon Yu
<input type="checkbox"/>	<b>Testing procedure: TMP/CTF Stage 1:</b>		
<b>Testing location/ address .....</b>			
<b>Tested by (name + signature).....</b>			
<b>Approved by (name + signature).....</b>			
<input type="checkbox"/>	<b>Testing procedure: WMT/CTF Stage 2:</b>		
<b>Testing location/ address .....</b>			
<b>Tested by (name + signature).....</b>			
<b>Witnessed by (name + signature) .....</b>			
<b>Approved by (name + signature).....</b>			
<input type="checkbox"/>	<b>Testing procedure: SMT/CTF Stage 3 or 4:</b>		
<b>Testing location/ address .....</b>			
<b>Tested by (name + signature).....</b>			
<b>Witnessed by (name + signature) .....</b>			
<b>Approved by (name + signature).....</b>			
<b>Supervised by (name + signature) .....</b>			

<b>List of Attachments (including a total number of pages in each attachment):</b>	
- N/A	
<b>Summary of testing:</b>	
<b>Tests performed (name of test and test clause):</b> <ul style="list-style-type: none"> <li>N/A</li> </ul>	<b>Testing location:</b> N/A
<b>Summary of compliance with National Differences</b> <b>List of countries addressed:</b> EU Group Differences, EU Special National Conditions, AU, CA, NZ, US. Explanation of used codes: AU = Australia, CA = Canada, NZ = New Zealand, US = United States of America. <input checked="" type="checkbox"/> The product fulfils the requirements of <u>EN 60950-1:2006 + A11:2009 + A1:2010+A12:2011+A2:2013 and AS/NZS 60950.1:2015</u>  <b>List of countries addressed (for IEC 60950-1:2005+A1:2009):</b> DE, FI, IL, KR. Explanation of used codes: DE = Germany, FI = Finland, IL = Israel, KR = Republic of Korea.	

**Copy of marking plate**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

(Additional requirements for markings. See 1.7 NOTE)



<b>Test item particulars</b> .....	
<b>Equipment mobility</b> .....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in
<b>Connection to the mains</b> .....	<input checked="" type="checkbox"/> pluggable equipment <input checked="" type="checkbox"/> type A <input type="checkbox"/> type B <input type="checkbox"/> permanent connection <input checked="" type="checkbox"/> detachable power supply cord (AC mains) <input type="checkbox"/> non-detachable power supply cord <input checked="" type="checkbox"/> not directly connected to the mains (DC power source)
<b>Operating condition</b> .....	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> rated operating / resting time:
<b>Access location</b> .....	<input checked="" type="checkbox"/> operator accessible <input type="checkbox"/> restricted access location
<b>Over voltage category (OVC)</b> .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other:
<b>Mains supply tolerance (%) or absolute mains supply values</b> .....	±10 (AC mains)
<b>Tested for IT power systems</b> .....	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<b>IT testing, phase-phase voltage (V)</b> .....	230
<b>Class of equipment</b> .....	<input checked="" type="checkbox"/> Class I <input type="checkbox"/> Class II <input type="checkbox"/> Class III <input type="checkbox"/> Not classified
<b>Considered current rating of protective device as part of the building installation (A)</b> .....	16A (or 13A for UK, 20A for North America)
<b>Pollution degree (PD)</b> .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
<b>IP protection class</b> .....	IPX0
<b>Altitude during operation (m)</b> .....	5000
<b>Altitude of test laboratory (m)</b> .....	Not over 500
<b>Mass of equipment (kg)</b> .....	Max. 7.5
<b>Possible test case verdicts:</b>	
- test case does not apply to the test object.....: N/A	
- test object does meet the requirement .....: P (Pass)	
- test object does not meet the requirement.....: F (Fail)	
<b>Testing</b> .....	
<b>Date of receipt of test item</b> .....	
<b>Date(s) of performance of tests</b> .....: N/A	
<b>General remarks:</b>	
<p>"(see Enclosure #)" refers to additional information appended to the report.</p> <p>"(see appended table)" refers to a table appended to the report.</p> <p><b>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</b></p> <p>Where statement of conformity is provided in this test report, if not otherwise indicated, "accuracy method" described in IEC GUIDE 115 has been taken to address uncertainty of measurement.</p>	

**Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:**

The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :

- ☒ **Yes**  
☐ **Not applicable**

**When differences exist; they shall be identified in the General product information section.**

**Name and address of factory (ies)..... :** 1. **NEXCOM International Co., Ltd. (Hua-Ya Factory)**  
**2F., No.50, Huaya 3rd Rd., Guishan Dist., Taoyuan City 333, Taiwan**  
 2. NEXCOM International Co., Ltd.  
**5F, 7F, 8F, 9F, 10F&12F, No.63, Sec.1, Sanmin Rd., Banqiao Dist., New Taipei City, Taiwan**

**Description of change(s):**

1. Correction typo for Name and address of factory (ies).
2. Change Caution label.

**For the above described change(s) the following was considered to be necessary:**

Change	Testing	Comments
1.	N/A	See information of " <b>Name and address of factory (ies)</b> " in bold types.
2.	N/A	See <b>Copy of marking plate</b> for details.

## History of amendments and modifications:

Ref. No. 50276983 001, dated Aug. 27, 2019 (original test report)

Ref. No. 50276983 002, dated Sep. 25, 2019 (amendment)

## Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)