

	Test Report issued under the responsibility of: UL International Demko A/S	 Underwriters Laboratories
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TEST REPORT
IEC 60950-1, First Edition
Information technology equipment-Safety
Part 1:General Requirements

Report Reference No : E137680-A20-CB-1

Date of issue : 2008-10-24

Total number of pages : 12

CB Testing Laboratory : UL International Polska Sp. z o.o.

Address : Aleja Krakowska 81, 05-090 Sekocin Nowy, Poland

Applicant's name : RADWARE LTD

Address : 22 RAOUL WALLENBERG ST. TEL AVIV, 69710, ISRAEL

Test specification:

Standard : IEC 60950-1:2001, First Edition

Test procedure : CB Scheme

Non-standard test method : N/A

Test Report Form No. : IEC60950_1B

Test Report Form originator : SGS Fimko Ltd

Master TRF : dated 2003-03

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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.

Test item description	Network Switch
Trade Mark	radware
Manufacturer	RADWARE LTD 22 RAOUL WALLENBERG ST. TEL AVIV, 69710, ISRAEL
Model/Type reference	On Demand Switch 3 (RODS3-DEFDUDC) On Demand Switch 3 (RODS3-S1-DEFDUDC) On Demand Switch 3 (RODS3-S2-DEFDUDC) ODS3 DC AppDirector DC LinkProof DC AppWall DC AppXcel DC AppXML DC SIP Director DC InFlight DC Virtual Director DC APSolute Vision DC DefensePro DC Content Inspection Director (CID) DC OnDemand Switch 3 DC
Rating	I/P: -42 - -72Vdc, 12 A

Testing procedure and testing location:	
<input checked="" type="checkbox"/> CB Testing Laboratory	
Testing location / address..... :	UL International Polska Sp. z o.o. Aleja Krakowska 81, 05-090 Sekocin Nowy, Poland
<input type="checkbox"/> Associated CB Test Laboratory	
Testing location / address..... :	
Tested by (name + signature)	Tomasz Cygielski
Approved by (+ signature)	Bartłomiej Zmijewski
<input type="checkbox"/> Testing Procedure: TMP	
Tested by (name + signature)	
Approved by (+ signature)	
Testing location / address..... :	
<input type="checkbox"/> Testing Procedure: WMT	
Tested by (name + signature)	
Witnessed by (+ signature)..... :	
Approved by (+ signature)	
Testing location / address..... :	
<input type="checkbox"/> Testing Procedure: SMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location / address..... :	
<input type="checkbox"/> Testing Procedure: RMT	
Tested by (name + signature)	
Approved by (+ signature)	
Supervised by (+ signature)	
Testing location / address..... :	

Summary of Testing:
No tests were conducted
Summary of Compliance with National Differences:
AR, AT, AU, BE, CA, CH, CN, CZ, DE, DK, EU, FI, FR, GB, GR, HU, IL, IN, IT, JP, KE, KR, MY, NL, NO, NZ, PL, SE, SG, SI, SK, US

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.
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Test item particulars :

Equipment mobility	movable
Operating condition	continuous
Mains supply tolerance (%)	DC Mains: +20%, -15%
Tested for IT power systems	No
IT testing, phase-phase voltage (V)	N/A
Class of equipment	Class I (earthed)
Mass of equipment (kg)	15.6 Kg
Protection against ingress of water	IPX0

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)

Testing:

Date(s) of receipt of test item	N/A
Date(s) of Performance of tests	N/A

General remarks:

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 testing laboratory.

"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

Throughout this report a point is used as the decimal separator.

GENERAL PRODUCT INFORMATION:

Report Summary

The original report was modified on 2010-10-28 to include the following changes/additions:
New model names ODS3 DC, AppDirector DC, LinkProof DC, AppWall DC, AppXcel DC, AppXML DC, SIP Director DC, InFlight DC, Virtual Director DC, APSolute Vision DC, DefensePro DC, Content Inspection Director (CID) DC, OnDemand Switch 3 DC were added.

Product name changed to Network Switch

CBTL was changed to UL Poland

Product Description

The unit was configured as follow: Electronic components were mounted on PWB, incorporated with one approved redundant DC power supply, HDD, CF card, and main board with CPU and then housed with in a metal enclosure.

Model Differences

Models On Demand Switch 3 (RODS3-S1-DEFDUDC) and On Demand Switch 3 (RODS3-S2-DEFDUDC) are identical to Model On Demand Switch 3 (RODS3-DEFDUDC) except for model designation.

Models ODS3 DC, AppDirector DC, LinkProof DC, AppWall DC, AppXcel DC, AppXML DC, SIP Director DC, InFlight DC, Virtual Director DC, APSolute Vision DC, DefensePro DC, Content Inspection Director (CID) DC, OnDemand Switch 3 DC are identical in construction to model On Demand Switch 3 (RODS3-DEFDUDC) except installed software, brand and color on the front panel.

Additional Information

- The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

- Additional investigation in accordance with EN 60950-1:2001+A11:2004 on the CB certificate.

- This report is copy from the file E205448-A40-CB-1, report date 2008-10-13.

- No tests were conducted due to, this test Report should be read and copy in conjunction with the original report No.:

1. E205448-A40-CB-1, issued 2008-10-13 with CB Certificate (DK-14318), issued 2008-10-13

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 40 degree C
- The means of connection to the mains supply is: Detachable power cord
- The product is intended for use on the following power systems: DC mains supply,
- The equipment disconnect device is considered to be: DC mains connector
- The class of laser product is: Incorporates previously certified Class I laser product (Fiber module)
- The product was investigated to the following additional standards: EN 60950-1:2001+A11:2004 (which includes all European national differences, including those specified in this test report).
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): USB connector
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Factory Location(s):

NEXCOM INTERNATIONAL CO LTD
3RD FL, 176 JIANYI RD, CHUNG HO TAIPEI HSIEN 235, TAIWAN

Attachments to Test Report

National Differences (0 pages)

Issue Date: 2008-10-24
Amendment 1 2010-10-28

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Report Reference #

E137680-A20-CB-1

Enclosures (0 pages)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Rated voltage(s) or voltage range(s) (V) :	-42 - -72Vdc	Pass
	Rated frequency or rated frequency range (Hz) :	DC powered equipment	N/A
	Rated current (mA or A) :	12 A	Pass
	Manufacturer's name or trademark or identification mark..... :	Radware	Pass
	Type/model or type reference :	On Demand Switch 3 (RODS3-DEFDUDC) On Demand Switch 3 (RODS3-S1-DEFDUDC) On Demand Switch 3 (RODS3-S2-DEFDUDC) ODS3 DC AppDirector DC LinkProof DC AppWall DC AppXcel DC AppXML DC SIP Director DC InFlight DC Virtual Director DC APolute Vision DC DefensePro DC Content Inspection Director (CID) DC OnDemand Switch 3 DC	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
01. Power supply cord (Optional)	--	--	A power supply cord suitable for the application and subject to country's national code and regulations is to be provided by the manufacturer; proper application is determined by the country's local Certification Body.	--	--, --	
02. Power Supply	Zippy Technology Corp.	DMRW-6400F	I/P: - 42 - -72 Vdc, 12A. O/P: +5V/32A, +12V/25A, +3.3V/0-25A, -5V/0-0.5A, -12V/0-1.2A, +5Vsb/0-2A, total output 400 W max., +5V, +3.3V and +12V total max. 375W.	UL 60950-1 IEC 60950-1	UL, TUV, CB Cert. No.:JPTUV- 016103	
02 Enclosure	--	--	Metal, 1 mm thick min., Overall 640 by 475 by 90 mm.	--	--, --	
03-1 Ventilation Openings for right side of Enclosure	--	--	Provided numerous square shape openings on five same areas, each areas overall 35 by 35mm , and each opening measured 5 by 5 mm.	--	--, --	
03-2 Ventilation Openings for left	--	--	Provided numerous oval-	--	--, --	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
side of Enclosure			shaped openings on three same areas, each areas overall 54 by 40mm , and each opening measured 4.95 by 40 mm.			
03-3 Ventilation Openings for power fan	--	--	Four same areas, each area overall dimension 38 by 38 mm, each opening measured 7.5 by 23 mm.	--	--, --	
04. Label	--	--	50 degree C if maximum surface temperature not specified.	UL 969 IEC 60950-1	UL, --	
05. Mainboard A	--	--	See below.	--	--, --	
05-1. RTC Battery (BAT1)	Spectrum Brands Inc	BR2032	3V, Maximum abnormal charging current 5mA, Battery is protected against charging current by D4 and R52(1K ohm).	UL 1642	UL, --	
05-1a. Alternate of RTC Battery (BAT1)	VIC-DAWN ENTERPRISE CO LTD	CR2032	3V, Maximum abnormal charging current 10mA, Battery is protected against charging current by D4 and R52(1K ohm).	UL 1642	UL, --	
05-1b. Alternate of RTC Battery (BAT1)	Panasonic Corp Panasonic Corp Of North America	CR2032	3V, Maximum abnormal charging current 10mA, Battery is protected against charging current by D4 and	UL 1642	UL, --	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
			R52(1K ohm).			
05-2. Polyswitch for USB and J2 Port (F1,F2,)	Polytronics Technology Corp.	SMD1812P260T F	6Vdc, Ih: 2.6A, It: 5.2A, CA: 3	UL 1434	UL, TUV	
05-3. DC Fan A (two provided as CPU fan #7, #8)	Sunonwealth Electric Machine Industry Co., Ltd.	GM1204PQB1- 8A	12Vdc, 0.22A, 15.3CFM.	UL 507 EN 60950-1	UL, TUV	
05-4 DC Fan B (two provided as CPU fan #9, #10)	Everflow	F126025DU	12Vdc, 0.26A, 24.49CFM maximum.	UL 507 EN 60950-1	UL, TUV	
05-5. DC Fan C (three provided as System fan #1, #2, #3)	Sunonwealth Electric Machine Industry Co., Ltd.	KDE1204PFVX	12Vdc, 0.15A, 11CFM max.	UL 507 EN 60950-1	UL, TUV	
05-6. DC Fan D Fan (three provided as System fan #4, #5, #6)	Sunonwealth Electric Machine Industry Co., Ltd.	KDE1204PKVX	12Vdc, 0.12A, 10.8CFM.	UL 507 EN 60950-1	UL, TUV	
05-7. DC Fan E (one provided as System fan #11)	Sunonwealth Electric Machine Industry Co., Ltd.	GB1205PHVX- 8AY	12Vdc, 0.17A, 4.7CFM.	UL 507 EN 60950-1	UL, TUV	
05-8. CPU Heatsink	--	--	See enclosure 4- 02 for detail	--	--, --	
05-9 Heat pipe A	--	--	See enclosure 4- 03 for detail	--	--, --	
05-10 Heat pipe B	--	--	See enclosure 4- 04 for detail	--	--, --	
06. Input/ Output Connectors (secondary ELV/SELV circuits)	--	--	Copper alloy pins housed in bodies of plastic rated V-2 minimum. ten RJ-45 ports, one RS232 port and one USB port, four fiber ports, four 10G fiber ports.	UL 94 498 UL 1977	UL, --	
06-1. Optical Transceiver (Optional, four provided)	APAC Opto Electronics Inc.	LM28-C3S-TC-N	3.3Vdc, Laser product class I	UL 60950-1, EN 60950-1, EN 60825-1	UL, TUV	
06-1a Alternalt of	Opnext Japan,	TRF2001EN-	3.3Vdc, Laser	UL 60950-1,	UL, TUV	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
10G Optical Transceiver (Optional, four provided)	Inc.	GA000	product class I	EN 60950-1, EN 60825-1		
07. Interconnecting Cable (optional)	--	--	Minimum 60 degree C, minimum 300V, maximum 3.05 m long, jacketed, VW-1 or FT-1	UL 758	UL, --	
08. Internal wiring ELV/SELV circuits	--	--	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1 minimum,; 30 V, 60 degree C, minimum, routed away from sharp edges, moving parts.	UL 758	UL, --	
09. PWB	--	--	V-1 minimum, 105 degree C.	UL 796	UL, --	
10. Internal Plastic Part Materials	--	--	V-2 minimum.	UL 94, UL 746C	UL, --	
11. Flexible Printed wiring	--	--	V-2 or VTM-2 min, when no components mounted on surface.	UL 94, UL746C, UL 746E, UL 796F	UL, --	
12. Hard Disk Drive(one provided) (Optional)	Seagate	ST3160815AS	5Vdc/12Vdc, 1.5A/1.5A maximum	UL 60950-1 EN 60950-1	UL, TUV	
12a. Alternate of Hard Disk Drive(one provided) (Optional)	Various	Various	5Vdc/12Vdc, 1.5A/1.5A maximum	UL 60950-1 EN 60950-1	UL, TUV	
13. LCD module	--	--	Cover by glass and plastic, Over all 83 by 27.5 by 2mm min.	--	--, --	
14. Decorative	--	--	HB min,	UL 94, UL	UL, --	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					Pass
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity ¹⁾	
plate (Front side)			measured overall 423 by 88 by 0.2 mm.	746C		
15. Protective earthing	--	--	terminal : screw type, diameter : 4.0 mm min.	--	--, --	
16. Air filter(optional)	--	--	HF-2 or V-2 minimum.	UL 94, UL 746C	UL, --	
¹⁾ an asterisk indicates a mark which assures the agreed level of surveillance						