Test Report issued under the responsibility of

VDE

TEST REPORT
IEC 60950-1: 2005 (2nd Edition) and/or EN 60950-1:2006 +A11:2009-03
Information technology equipment – Safety – Part 1: General requirements

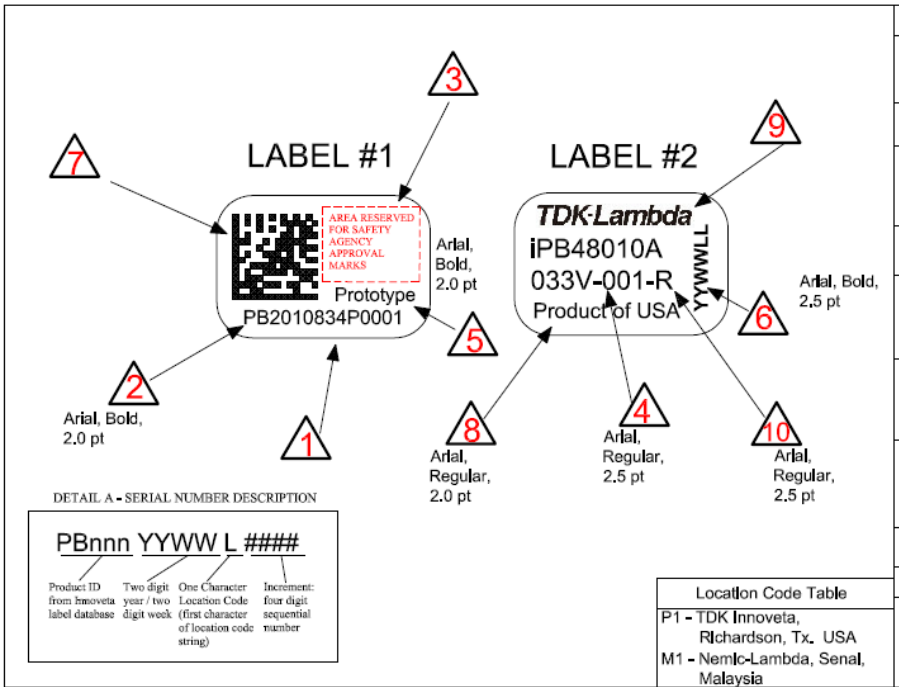
Report Reference No.....:	2520400-3336-0007 (143698) CB/DE1- 47826
Tested by (name + signature) .....:	Günter Straube
Approved by (name + signature).....:	Frank Richter
Date of issue.....:	2011-01-17
CB Testing Laboratory.....:	VDE Testing and Certification Institute
Address.....:	Merianstrasse 28, D-63069 Offenbach, Germany
Testing location / procedure .....:	CBTL ☐ RMT ☐ SMT ☐ WMT ☒ TMP ☐
Testing location / address.....:	TDK Innoveta Inc. 3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA WMT (TDAP File no. 2520400-9501-0001)
Applicant's name.....:	TDK Innoveta Inc.
Address.....:	3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA
Test specification:	
Standard .....:	IEC 60950-1:2005 (2nd Edition) ;EN 60950-1:2006+A11:2009-03 DIN EN 60950-1:2006 + A11 (VDE 0805 Teil 1 + A11): 2009-11
Test procedure .....:	CB – Scheme, VDE
Non-standard test method.....:	N/A
Test Report Form No.....:	IECEN60950_1C
Test Report Form(s) Originator .....:	SGS Fimko Ltd
Master TRF.....:	2006-06

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 ..... :	DC - DC Converter for building in
Trade Mark .....:	TDK.
Manufacturer .....:	TDK Innoveta Inc.
Model/Type reference.....:	iPB480 series (see model matrix – Appendix 1)
Serial Number……..:	
Ratings.....:	
Input:	DC 36 - 60 V (SELV) or 36 – 75 V (TNV-2) max. 2 A (see model matrix – Appendix 1)
Output:	SELV max. DC 20V, max. 15 A (see model matrix – Appendix 1)
Ambient:	max. 125 °C on Q105 (see installation instructions for details)

Copy of marking plate:

TEST SAMPLE IDENTIFICATION



Note	Note Description
1	Label Size: 0.30" x 0.20" Label material and compatible ribbon specified in referencing BOM.
2	Serial Number - See Detail A *(Number shown is for example only)*
3	Safety agency markings shall be included only if product is certified from that agency. Check database for latest certifications.
4	Product Code *(Number shown is for example only)*
5	Build Phase shall reflect the stage of the product. For pre-production and production builds, the Build Phase shall be left blank.
6	The Date Code shall be composed of the two digit year (YY), the two digit fiscal week (WW), and the location code (LL).
7	Barcode is Data Matrix, ECC200 Square format, with an X dimension of 8.2 mils, and contains the serial number.
8	Country of Origin - May be split over two lines if needed for fit.
9	TDK-Lambda Corporate Logo
10	RoHS Compliance Indicator (added to Product Code). *[Not shown unless product is completely compliant.]*

Summary of testing:			
Clause 1.5	Components :	☒ Pass	☐ N/A
Clause 1.6	Power interface :	☒ Pass	☐ N/A
Clause 1.7	Markings and instructions :	☒ Pass	☐ N/A
Clause 2.1	Protection from electric shock and energy hazards :	☒ Pass	☐ N/A
Clause 2.2	SELV circuits :	☒ Pass	☐ N/A
Clause 2.3	TNV circuits :	☒ Pass	☐ N/A
Clause 2.4	Limited current circuits :	☐ Pass	☒ N/A
Clause 2.5	Limited power sources :	☐ Pass	☒ N/A
Clause 2.6	Provisions for earthing and bonding :	☒ Pass	☐ N/A
Clause 2.7	Overcurrent and earth fault protection in primary circuits :	☒ Pass	☐ N/A
Clause 2.8	Safety interlocks :	☐ Pass	☒ N/A
Clause 2.9	Electrical insulation :	☒ Pass	☐ N/A
Clause 2.10	Clearances, creepage distances and distances through insulation :	☒ Pass	☐ N/A
Clause 3.1	Wirings :	☒ Pass	☐ N/A
Clause 3.2	Connection to an a.c. mains supply or a d.c. mains supply :	☒ Pass	☐ N/A
Clause 3.3	Wiring terminals for connection of external conductors :	☒ Pass	☐ N/A
Clause 3.4	Disconnection from the mains supply :	☐ Pass	☒ N/A
Clause 3.5	Interconnection of equipment :	☒ Pass	☐ N/A
Clause 4.1	Stability :	☐ Pass	☒ N/A
Clause 4.2	Mechanical strength :	☒ Pass	☐ N/A
Clause 4.3	Design and construction :	☒ Pass	☐ N/A
Clause 4.4	Protection against hazardous moving parts :	☐ Pass	☒ N/A
Clause 4.5	Thermal requirements :	☒ Pass	☐ N/A
Clause 4.6	Openings in enclosures :	☐ Pass	☒ N/A
Clause 4.7	Resistance to fire :	☒ Pass	☐ N/A
Clause 5.1	Touch current and protective conductor current :	☒ Pass	☐ N/A
Clause 5.2	Electric strength :	☒ Pass	☐ N/A
Clause 5.3	Abnormal operating and fault conditions :	☒ Pass	☐ N/A
Clause 6	Connection to telecommunication networks :	☒ Pass	☐ N/A
Clause 7	Connection to cable distribution systems :	☐ Pass	☒ N/A
Annex B	Motor Tests under abnormal conditions :	☐ Pass	☒ N/A
Annex C	Transformers :	☒ Pass	☐ N/A
Annex G	Alternative Method for determining minimum clearances :	☐ Pass	☒ N/A
Annex M	Criteria for telephone ringing signals :	☐ Pass	☒ N/A
Annex U	Insulated winding wires for use without interleaved insulation :	☐ Pass	☒ N/A

Test item particulars .....:	
Equipment mobility .....:	☐ movable ☐ hand-held ☐ stationary ☐ fixed ☐ transportable ☒ for building-in
Connection to the mains.....:	☐ pluggable equipment ☐ direct plug-in ☐ permanent connection ☒ for building-in
Operating condition .....:	☒ continuous ☐ short-time ☐ intermittent
Over voltage category .....:	☒ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV
Mains supply tolerance (%).....:	+ 10% and - 20 %
Tested for IT power systems .....:	☐ Yes ☒ No
IT testing, phase-phase voltage (V) .....:	--
Class of equipment .....:	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Mass of equipment (kg).....:	<18kg
Pollution degree .....:	☒ PD 2 ☐ PD 3
IP protection class .....:	IP---

Possible test case verdicts	
- test case does not apply to the test object ..... :	N/A (Not Applicable)
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement ..... :	F (Fail)

Testing ..... :	
Date of receipt of test item..... :	2011-12-12
Date(s) of performance of tests..... :	2011-12-12 to 2011-01-17

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 ☐ comma / ☒ point is used as the decimal separator.

Factory (for information only)	
Name .....:	TDK Innoveta Inc.
Address.....:	3320 Matrix Drive, Suite 100, Richardson, Texas 75082, USA
Name .....:	TDK-Lambda Malaysia
Address.....:	PL033 Kawasan perindustrian Senai , Locked Bag No. 110, 81400 Senai, Johor, Malaysia

General product information:

The product is a component type DC/DC power module, intended to be used as a component in an end-user's power system. These device is a DC-DC power supply with open frame for building-in.

Conditions of Installation:

Tests were performed on model iPB4810A033V-001, output DC 3.3 V / 10 A, for reference, since all models uses the same electrical circuits.The unit was tested with a maximum continuous output.

The modules comes in one input voltage range; a wide range 36 – 75Vdc input. Output current see model matrix.

The equipment shall be installed in compliance with the enclosure, mounting, spacing, casualty and segregation requirements of the end-use application.

The unit was tested with a maximum continuous output.
The Electrical and Fire Enclosures are to be provided by the end product.

This power supply provides Basic Insulation based on DC 75 V (TNV), between input and output.

Operating Conditions:

Units are components within customers end-use system.
Input to converters is DC 36 – 60 V (SELV) or DC 36 - 75 V (TNV)

A. If the input meets all requirements for ELV, then the output may be considered ELV

B. If the input meets all requirements for SELV, then the output may be considered SELV

C. If the input meets all requirements for TNV, then the output may be considered TNV

Complete details of construction and testing as well as supporting documentation such as photographs and schematics are included in the attachment.

The units were tested with a maximum continuous output.

The manufacturer specified max.125 °C on Q105.

The Electrical and Fire Enclosures are to be provided by the end product.

The DC-DC power supply input is protected by fuses, provided by the end product.

The label includes: Optional "-R" appended to product code to indicate ROHS compliance.
eg. iPBXXXXXXXXXX-### -R Series

Unit is Class I and designed for Pollution Degree 2 and Overvoltage Category 2.

See Product Description on the end of this report. The " Alcatel" models AFX00-Series are identical to the certified "TDK Innoveta" models

The product has been tested according to standard IEC 60950-1:2005 (2nd Edition) / EN 60950-1:2006 and those deviations taken into account of				
☒ CENELEC common modifications		☒ United Kingdom	☐	☐
☒ Finland	☒ Denmark	☒ Ireland	☐	☐
☒ Sweden	☒ Germany	☒ Spain	☐	☐
☒ Norway	☒ Switzerland	☐	☐	☐

☒ **CB Bull. NATIONAL DIFFERENCES IEC 60950-1(2nd Edition)**				
☒ Switzerland	☒ Spain	☒ Ireland	☒ Sweden	☒ USA
☒ Germany	☒ Finland	☒ Korea	☒ Group Differences	☐
☒ Denmark	☒ United Kingdom	☒ Norway	☒ Canada	☐

These tests fulfil the requirements of standard EN ISO/IEC 17025.

This test report includes the following Appendices:

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