DENON

D&M Holdings Inc.
2-1 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 Japan
Phone: +81-44-670-2665 Fax: +81-44-670-2697

DM-CE16004

EU Declaration of Conformity

We, D&M Holdings Inc., declare under our sole responsibility that the product;

Brand name: **DENON**

Product: **Wireless Speaker**

Model: **HEOS 3 HS2**

following the provisions of EC/EU directives and EC regulation as follows;

R&TTE: ***1999/5/EC***
LV: ***2006/95/EC***
EMC: ***2004/108/EC***
RoHS: ***2011/65/EU***
ErP: ***EC regulation 1275/2008 & 278/2009 and its frame work directive 2009/125/EC including amendment 801/2013***

to which this declaration relates is in conformity with the following standards for

* Standards applied

Safety: ***EN60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011***
EMC: ***EN55032:2012 + AC:2013***
EN55020:2007+A11:2011
EN55024:2010
EN61000-3-2:2014 Class A
EN61000-3-3:2013
EN301489-1 V1.9.2:2011
EN301489-17 V2.2.1:2012
Radio: ***EN300328 V1.9.1:2015***
EN301893 V1.8.1:2015
Health: ***EN62311:2008***
ErP: ***EN50564:2011***
RoHS: ***EN50581:2012***

CE Mark first affixed in 2016

Manufacturer:

Jun Sakurai, Director
Quality Assurance Dep.
D&M Holdings Inc.
2-1 Nisshin-cho, Kawasaki-ku,
Kawasaki-shi, Kanagawa,
210-8569 Japan

27-January-2016
Date:

EU Representative:

Oliver Kriete
Product Manager D&M Europe
D&M Germany GmbH
An der Kleinbahn 18, Nettetal
D-41334, Germany

27-January-2016
Date:

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-055260-M1

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

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Wireless Speaker
Name and address of the applicant Nom et adresse du demandeur	Tymphany HK Limited Room 1307-8 Dominion Centre 43-59 Queen's Road East, WanChai, Hong Kong
Name and address of the manufacturer Nom et adresse du fabricant	D&M Holdings Inc. 2-1 Nisshin-cho, Kawasaki-ku Kawasaki-shi, Kanagawa, 210-8569 JAPAN
Name and address of the factory Nom et adresse de l'usine	Premium Loudspeakers (HuiZhou) Co. Ltd. Tymphany Industrial Area, Xin Lian Village, Xin Xu Town, Hui Yang District, Hui Zhou City, Guangdong, P.R. China
Ratings and principal characteristics Valeurs nominales et charactéristiques principales	Input: DC18V , 2.0A
Trademark (if any) Marque de fabrique (si elle existe)	DENON
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	N/A
Model / Type Ref. Ref. de type	HEOS 3 HEOS 3 HS2
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la 2ème page)	For model differences, refer to the test report. Re-issue of JPTUV-055260 dated 20.02.2014, due to first modification
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60065:2001 + A1 + A2 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	16058834 002

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

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: 30.12.2015

Signature: Martin Wang

10/061 CB 05.12

TÜV Rheinland (China) Ltd.
Member of TÜV Rheinland Group

TÜVRheinland®
Precisely Right.

D&M Holdings Inc.

Date : 30.12.2015
Our ref. : SZ ZJ
Your ref.: 174043977

2-1 Nisshin-cho, Kawasaki-ku
Kawasaki-shi, Kanagawa
210-8569 JAPAN

Ref : CB Certificate Japan

Type of Equipment : Wireless Speaker
Model Designation : See Certificate
Certificate No. : JPTUV-055260-M1
Report No. : 16058834 002

Dear Ladies and Gentlemen,

Thank you very much for your interest in our services.

Please find enclosed your certification documents.

We appreciate your support and would like to offer our assistance in the approval of your future products through our extensive range of technical services.

Please feel free to contact us whatever your requirements may be.

With kind regards,

Certification Body

Martin Wang

CC: Tymphany HK Limited

Enclosure

证书的详细资料请登陆www.certipedia.com查阅，或拨打我司客服热线800 999 3668 / 400 883 1300咨询

TÜV Rheinland (China) Ltd.
莱茵检测认证服务（中国）有限公司
Unit 707, AVIC Bldg., No. 10B, Central Road, East 3rd Ring Road, Chaoyang District, Beijing, 100022, P.R.China
北京市朝阳区东三环中路乙10号 艾维克大厦707室 邮编：100022
Tel: (8610)6566 6660
Fax: (8610)6566 6667
e-mail: info@bj.chn.tuv.com
Internet: http://www.chn.tuv.com

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60065
Audio, video and similar electronic apparatus - Safety requirements

Report Number. ..... :	16058834 002
Date of issue..... :	2015-12-28
Total number of pages ..... :	7 pages
Applicant's name ..... :	Tymphany HK Limited
Address ..... :	Room 1307-8, Dominion Centre, 43-59 Queen's Road East, WanChai, Hong Kong
Test specification:	
Standard ..... :	IEC 60065:2001 (Seventh Edition) + A1:2005 +A2:2010
Test procedure ..... :	CB Scheme
Non-standard test method..... :	N/A
Test Report Form No..... :	IEC60065K
Test Report Form(s) Originator ..... :	Intertek Semko AB
Master TRF..... :	Dated 2010-10

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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 ..... :	Wireless Speaker
Trade Mark ..... :	DENON
Manufacturer ..... :	D&M Holdings Inc. 2-1 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 JAPAN
Model/Type reference ..... :	HEOS 3, HEOS 3 HS2
Ratings ..... :	Input: 18V ⎓, 2.0A

Testing procedure and testing location:		
☒	CB Testing Laboratory:	TÜV Rheinland (Guangdong) Ltd.
Testing location/ address ..... :		No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou, CHINA
☐	Associated CB Laboratory:	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	Susan Zheng
	Approved by (name + signature) ..... :	Ramble Xie
☐	Testing procedure: TMP	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Approved by (name + signature) ..... :	
☐	Testing procedure: WMT	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Witnessed by (name + signature).... :	
	Approved by (name + signature) ..... :	
☐	Testing procedure: SMT	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Approved by (name + signature) ..... :	
	Supervised by (name + signature)... :	
☐	Testing procedure: RMT	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Approved by (name + signature) ..... :	
	Supervised by (name + signature)... :	

List of Attachments (including a total number of pages in each attachment):
- Attachment 1: Photo documentation (3 pages)

Summary of testing:

Tests performed (name of test and test clause):	Testing location:
- 5.1 Input Current Test	TÜV Rheinland (Guangdong) Ltd. No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou, CHINA

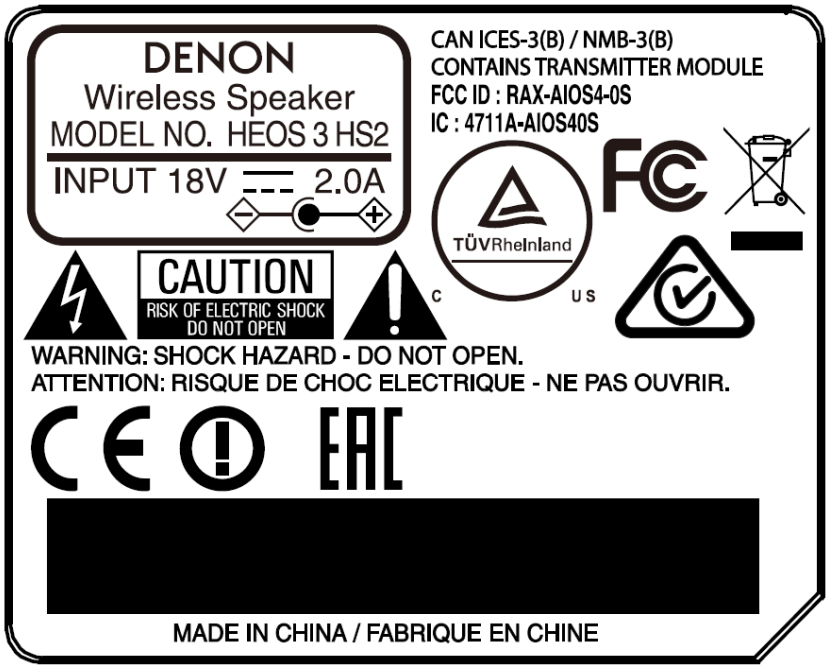
Summary of compliance with National Differences

For national difference, please see previous report 16058834 001.

Copy of marking plates:

For model HEOS 3, please see previous report 16058834 001.

For model HEOS 3 HS2:



Date code:

Please see previous report 16058834 001.

Test item particulars ..... :	
Classification of installation and use ..... :	Portable
Supply Connection ..... :	Not directly connected to the mains
..... :	
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 ..... :	2015-12-17
Date (s) of performance of tests ..... :	2015-12-17 to 2015-12-25

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.

Manufacturer's Declaration per sub-clause 6.2.5 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) ..... :	Premium Loudspeakers (Huizhou) Co., Ltd. Tymphany Industrial Area, Xin Lian Village, Xin Xu Town, Hui Yang District, Hui Zhou City, Guangdong, P.R. China

General product information:

Please see previous report 16058834 001.

Description of change:

1. Added one alternative main board and amply board, details see the photo document.
2. Added one new model HEOS 3 HS2. The new model HEOS 3 HS2 was identical with the old one HEOS 3 only except for the model name.

For the above described modification the following tests were considered to be necessary:

Modification	Testing	Comments	Result
1	- 5.1 Input Current Test	Details see following clauses and appended tables.	P

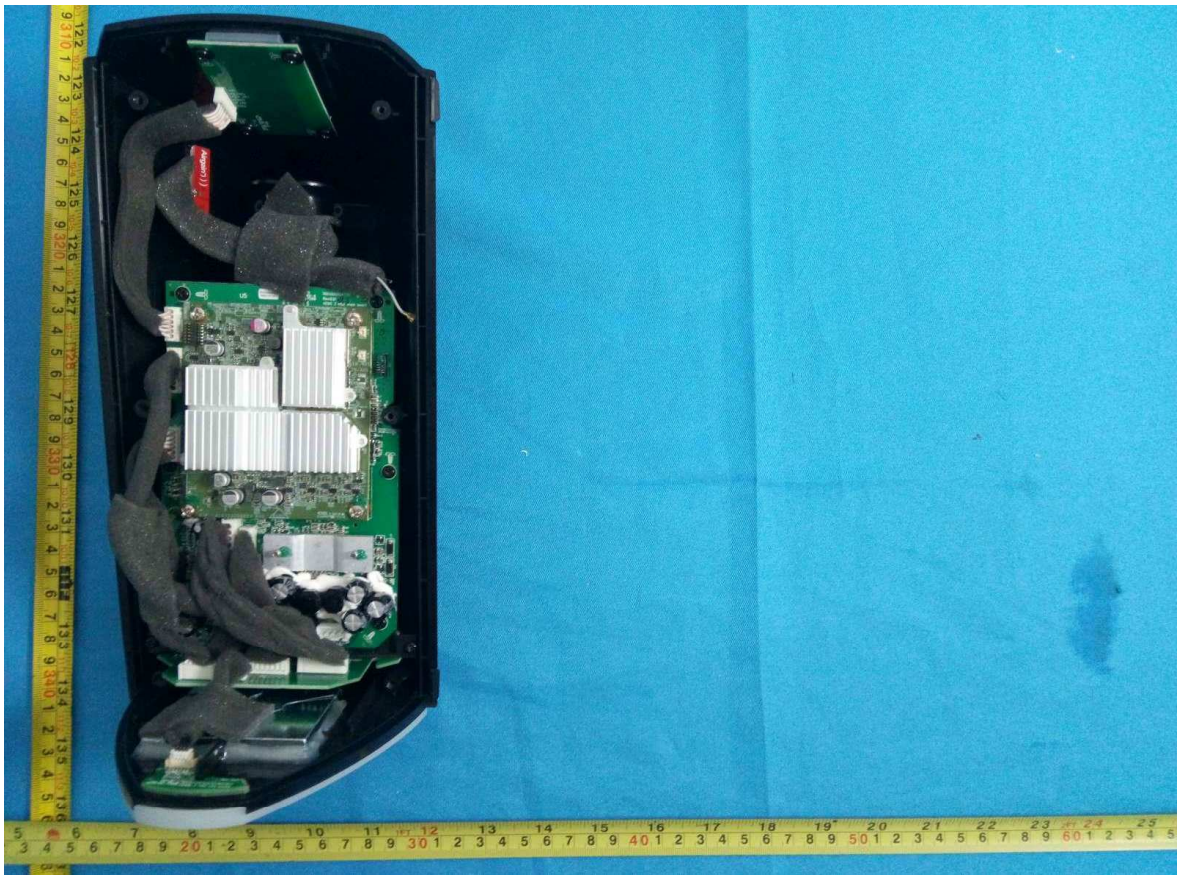
History of amendments and modifications:
Ref. No. 16058834 001, dated Feb., 19, 2014 (original test report)
Ref. No. 16058834 002, dated Dec., 28, 2015 (1st modification)

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.1	a) Identification, maker .....:	Trademark" DENON " and model no. are marked on the outer enclosure.	P
	b) Model number or type reference.....:	HEOS 3 HS2	P
	c) Class II symbol if applicable .....:	Not directly connected to the mains.	N/A
	d) Nature of supply.....:	IEC 60417-5031 symbol used.	P
	e) Rated supply voltage .....:	18V⎓	P
	f) Mains frequency if safety dependant .....:		N/A
	g) Rated current or power consumption for apparatus supplied by supply apparatus for general use .....:	2.0A	P
	Measured current or power consumption .....:	(See appended table 7.1)	P
	Deviation % (max 10%) .....:	(See appended table 7.1)	P
	h) Rated current or power consumption for apparat-us intended for connection to an a.c. mains supply.:		N/A
	Measured current or power consumption .....:		N/A
	Measured current or power consumption for Television set .....:	Not television set.	N/A
	Deviation % (max 10%) .....:		N/A

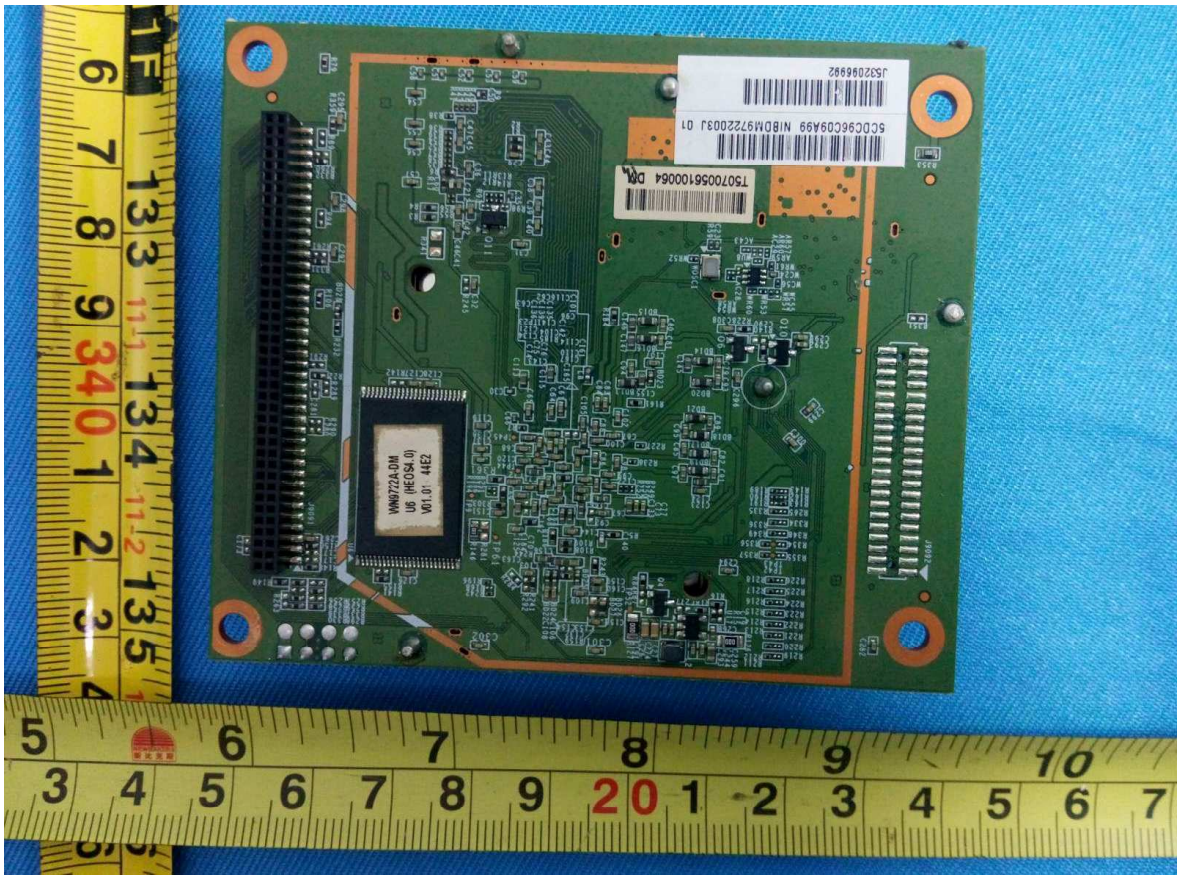
7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Cond.	Un (V)	Hz	In (A)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	0.28	12.1	--	--	Aux input mode, unit normal operation, supplied by an adaptor. 1/8 non-clipped output power to speakers. Adapter output: 18VDC, 0.85A. USB loading: 5V, 1A.
2	90	60	0.28	12.2	--	--	
3	100	50	0.26	12.2	--	--	
4	100	60	0.26	12.2	--	--	
5	240	50	0.12	12.6	--	--	
6	240	60	0.12	12.7	--	--	
7	264	50	0.12	12.6	--	--	
8	264	60	0.12	12.5	--	--	

Model: HEOS 3, HEOS 3 HS2

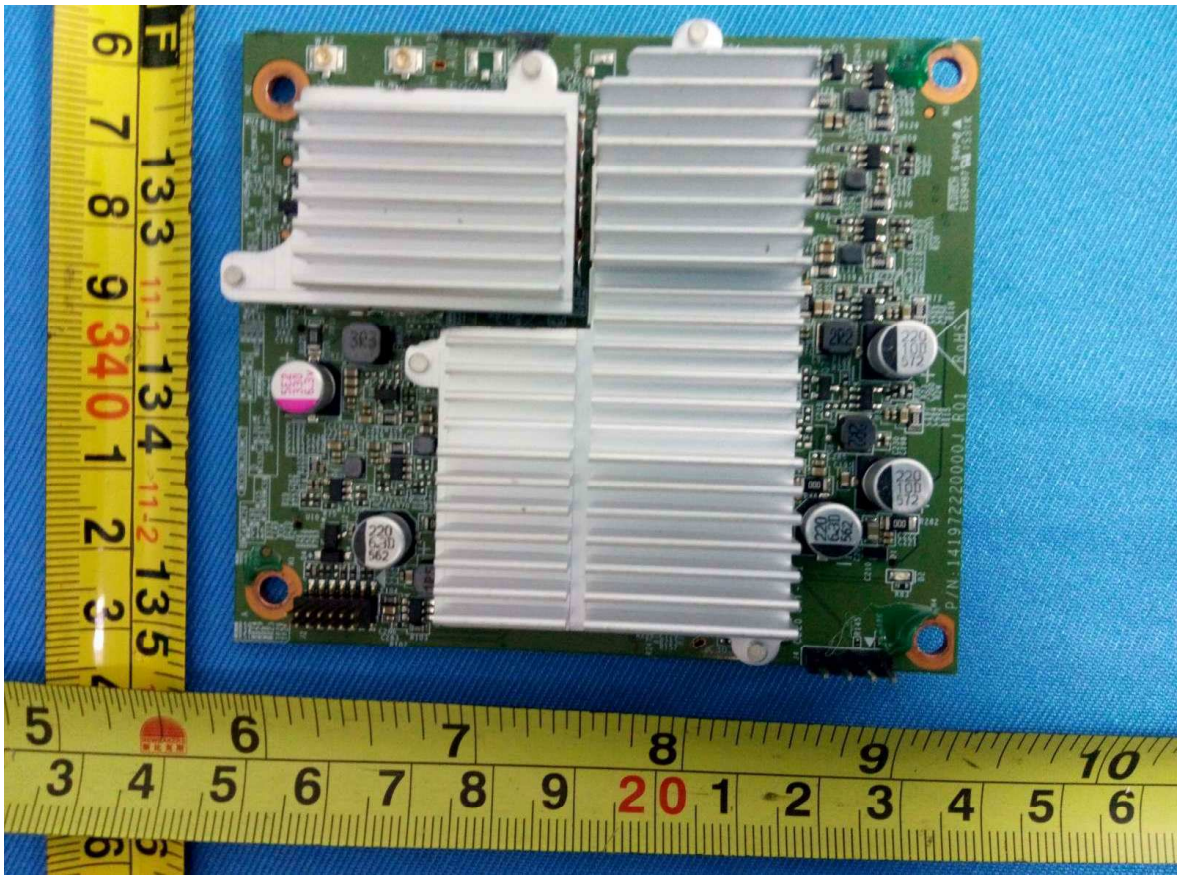


Picture 1

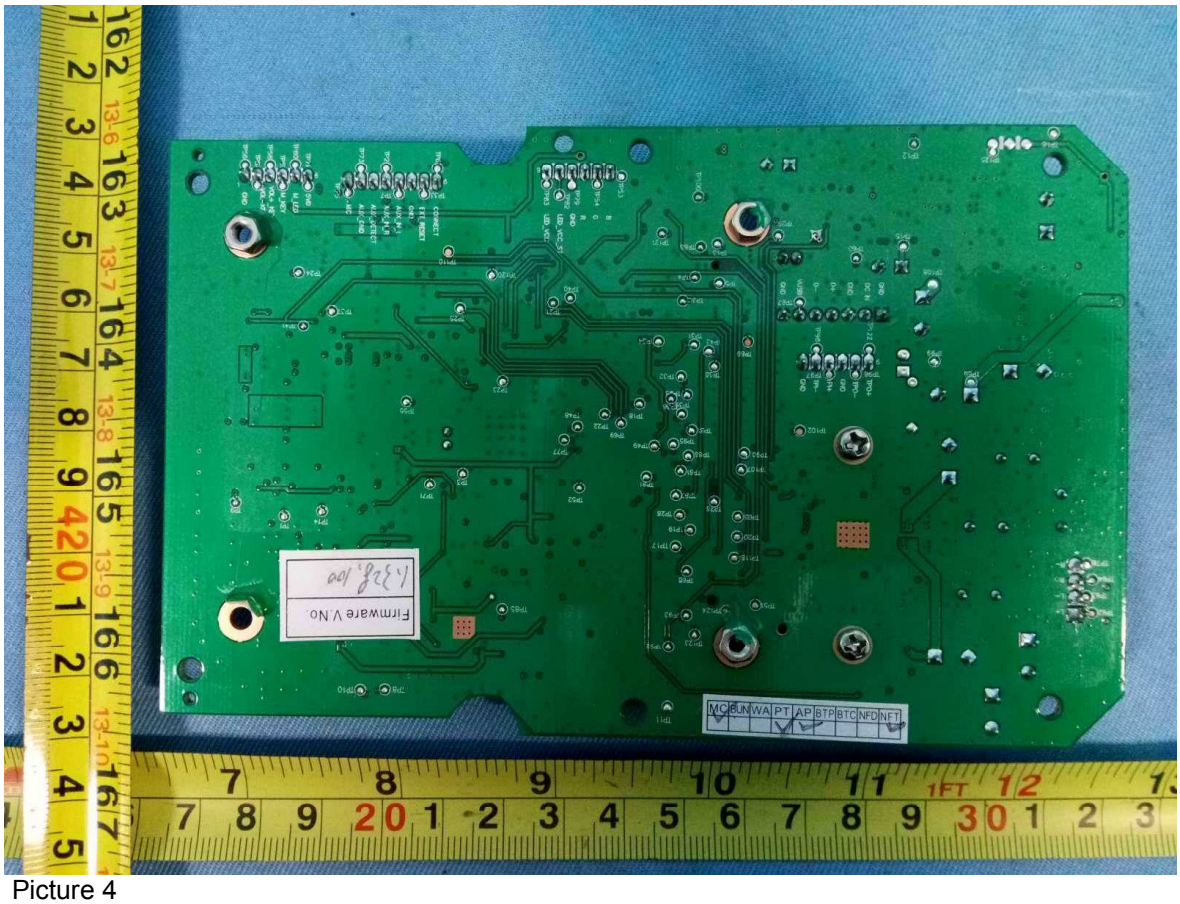


Picture 2

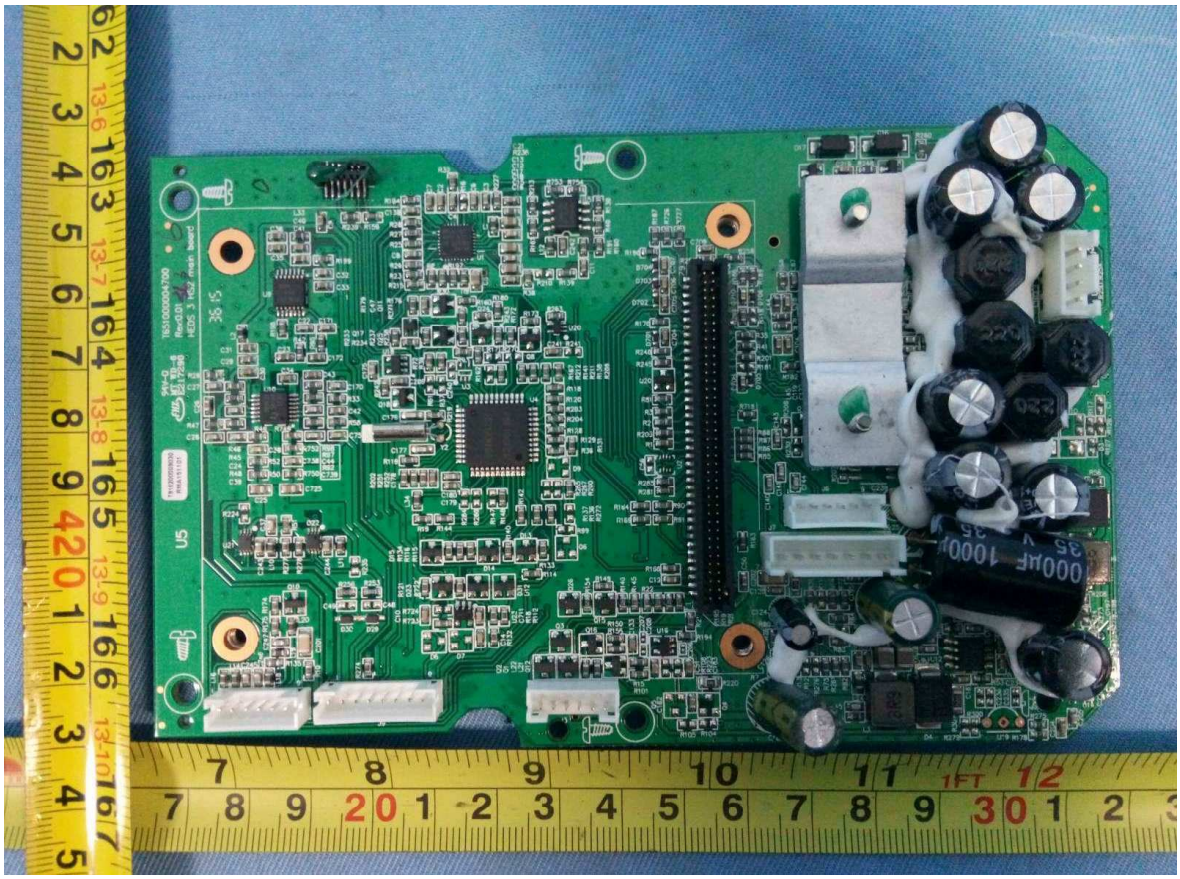
Model: HEOS 3, HEOS 3 HS2



Picture 3



Picture 4



Picture 5

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-055260

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

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE

CERTIFICAT D'ESSAI OC

Product Produit	Wireless Speaker
Name and address of the applicant Nom et adresse du demandeur	Tymphany HK Limited Room 1307-8 Dominion Centre 43-59 Queen's Road East, WanChai, Hong Kong
Name and address of the manufacturer Nom et adresse du fabricant	D&M Holdings Inc. D&M Building, 2-1 Nisshin-cho Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 JAPAN
Name and address of the factory Nom et adresse de l'usine	Premium Loudspeakers (HuiZhou) Co. Ltd. Tymphany Industrial Area, Xin Lian Village, Xin Xu Town, Hui Yang District, Hui Zhou City, Guangdong, P.R. China
Ratings and principal characteristics Valeurs nominales et charactéristiques principales	Input: DC18V , 2.0A
Trademark (if any) Marque de fabrique (si elle existe)	DENON
Type of Manufacturer's Testing Laboratories used Type de programme du laboratoire d'essais constructeur	N/A
Model / Type Ref. Ref. de type	HEOS 3
Additional information (if necessary may also be reported on page 2) Les informations complémentaires (si nécessaire, peuvent être indiqués sur la 2ème page)	
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60065:2001+A1+A2 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue partie de ce Certificat	16058834 001

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

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: 20.02.2014

Signature:

Dipl. Ing. (FH) T. Zimmer

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60065
Audio, video and similar electronic apparatus - Safety requirements

Report Number. ..... :	16058834 001
Date of issue ..... :	2014-02-19
Total number of pages ..... :	29 pages
Applicant's name..... :	Tymphany HK Limited
Address ..... :	Room 1307-8, Dominion Centre, 43-59 Queen's Road East, WanChai, Hong Kong
Test specification:	
Standard ..... :	IEC 60065:2001 (Seventh Edition) + A1:2005 +A2:2010
Test procedure..... :	CB Scheme
Non-standard test method..... :	N/A
Test Report Form No. ..... :	IEC60065K
Test Report Form(s) Originator..... :	Intertek Semko AB
Master TRF..... :	Dated 2010-10

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Test item description ..... :	Wireless Speaker
Trade Mark ..... :	DENON
Manufacturer..... :	D&M Holdings Inc. D&M Building, 2-1 Nisshin-cho, Kawasaki-ku, Kawasaki-shi, Kanagawa, 210-8569 JAPAN
Model/Type reference ..... :	HEOS 3
Ratings ..... :	Input: 18V ⎓, 2.0A

Testing procedure and testing location:		
☒	CB Testing Laboratory:	TÜV Rheinland (Guangdong) Ltd.
Testing location/ address ..... :		No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou, CHINA
☐	Associated CB Laboratory:	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	Barry He
	Approved by (name + signature) ..... :	Frank Wang
☐	Testing procedure: TMP	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Approved by (name + signature) ..... :	
☐	Testing procedure: WMT	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Witnessed by (name + signature).... :	
	Approved by (name + signature) ..... :	
☐	Testing procedure: SMT	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Approved by (name + signature) ..... :	
	Supervised by (name + signature)... :	
☐	Testing procedure: RMT	N/A
Testing location/ address ..... :		N/A
	Tested by (name + signature)..... :	
	Approved by (name + signature) ..... :	
	Supervised by (name + signature)... :	

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

- Attachment 1: National differences (64 pages)
- Attachment 2: Photo documentation (11 pages)

Summary of testing:

Tests performed (name of test and test clause):	Testing location:
- 5 Durability of Marking Test - 5.1 Input Current Test - 7 Heating under Normal Operations - 11.2 Heating under Fault Conditions - 12.1.2 Vibration Test - 12.1.3 Impact Test - 12.1.4 Drop Test - 12.1.5 Stress relief test - 17.1 Screw fixing Test The model HEOS 3 was selected for all testing and all the test above was conducted with an external IEC/EN 60065 approved adaptor.	TÜV Rheinland (Guangdong) Ltd. No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou, CHINA

Summary of compliance with National Differences

EU Group Differences, EU Special National Conditions, EU A-Deviations.

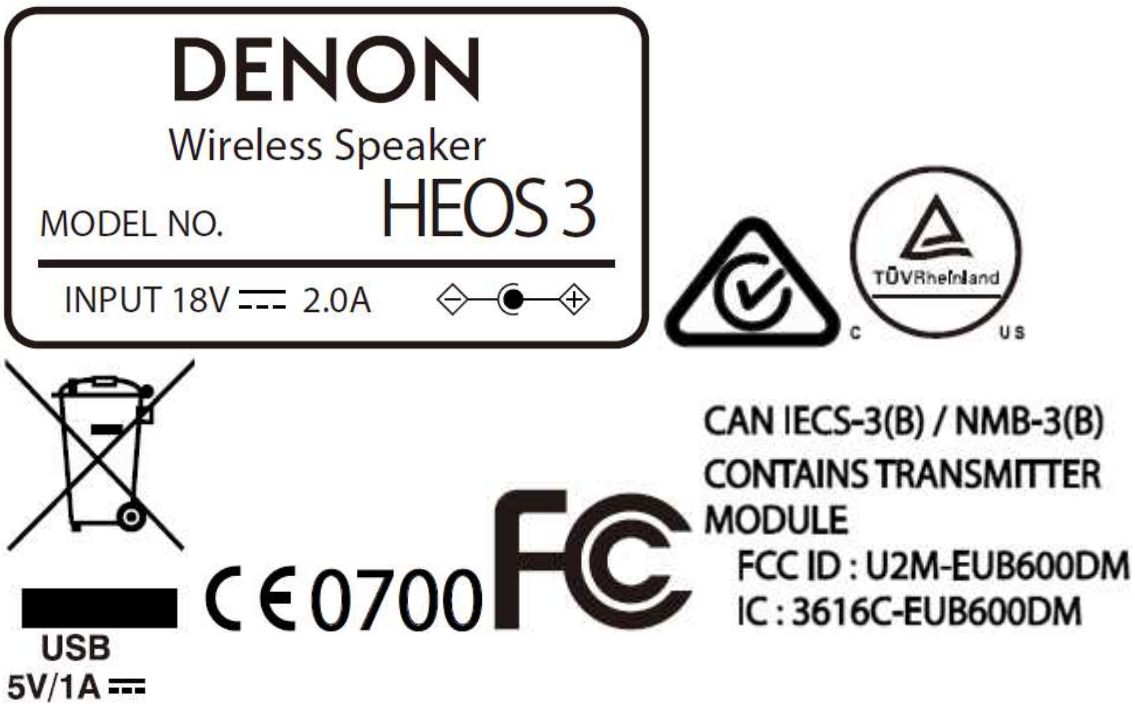
AT, AU, CA, CN, FI, JP, KR, PL, SE, US

AT=Austria, AU= Australia, CA=Canada, CN=China, FI=Finland, JP=Japan, KR=Korea, PL= Poland, SE=Sweden, US= United States of America

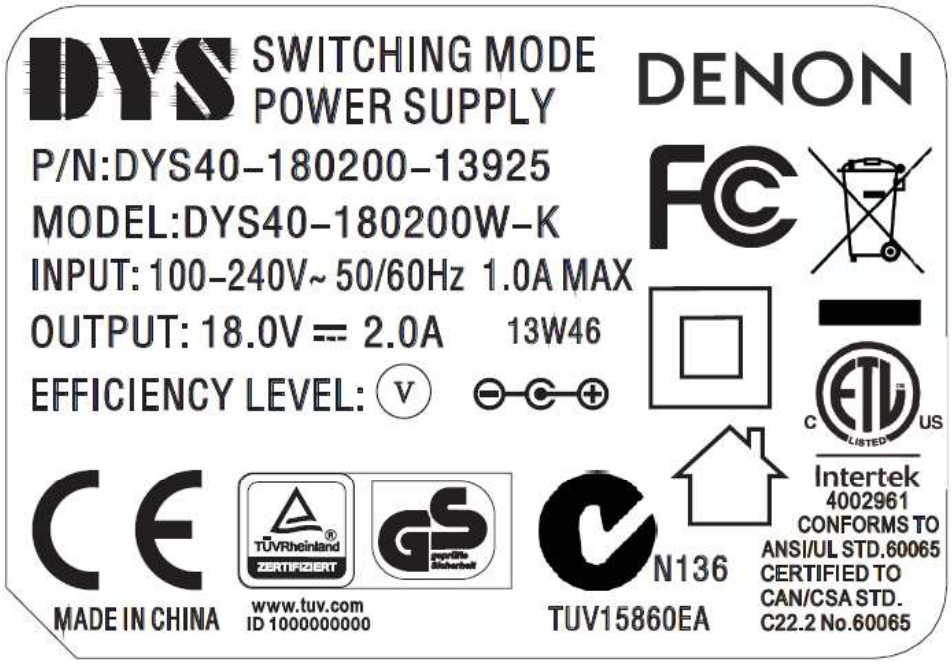
All national differences of EU group were considered according to EN 60065 7th ed. 2002+ A1+A11+A2+A12, Annex ZB and Annex ZC on attachment 1 pages 1-16;
All national differences of Australia and New Zealand were considered according to AS/NZS 60065:2012 on attachment 1 pages 17-22;
National differences of Canada were considered according to CAN/CSA C22.2 No. 60065: 03+A1: 2006+A2:2012 on attachment 1 pages 23-33;
National differences of China according to GB 8898-2011 on attachment 1 pages 34-38;
National differences of Japan according to J60065 (H23) on attachment 1 pages 39-50;
National differences of Korea according to K 60065 on attachment 1 page 51;
National differences of United State considered according to UL 60065 on attachment 1 pages 52-64.

Copy of marking plates:

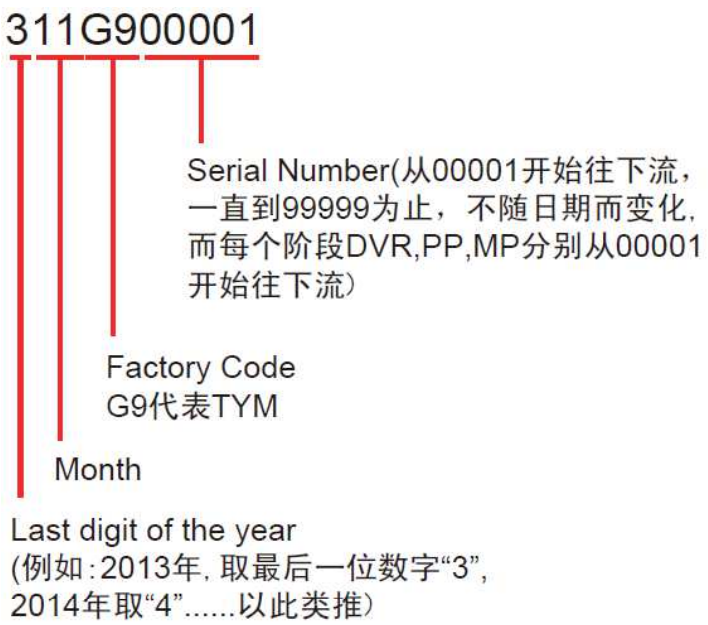
For model HEOS 3:



For adapter:



Date code:


311G900001
Serial Number(从00001开始往下流，
一直到99999为止，不随日期而变化，
而每个阶段DVR,PP,MP分别从00001
开始往下流）
Factory Code
G9代表TYM
Month
Last digit of the year
(例如：2013年，取最后一位数字“3”，
2014年取“4”.....以此类推）

Test item particulars..... :	
Classification of installation and use ..... :	Portable
Supply Connection ..... :	Not directly connected to the mains
..... :	
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 .....:	2013-12-09
Date (s) of performance of tests .....:	2013-12-10 to 2013-12-20
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.	
Manufacturer's Declaration per sub-clause 6.2.5 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 .....: When differences exist; they shall be identified in the General product information section.	☐ Yes ☒ Not applicable
Name and address of factory (ies).....:	Premium Loudspeakers (Huizhou) Co., Ltd. Tymphany Industrial Area, Xin Lian Village, Xin Xu Town, Hui Yang District, Hui Zhou City, Guangdong, P.R. China
General product information: 1. The appliance is portable Wireless Speaker, which includes two build-in speakers (Tweeter: 2 x 6Ω) in the chest. And the appliance was supplied by an external approved adapter, details see appended table 14. 2. The adapter was evaluated with max ambient temperature 40°C during CB approval. 3. Specified maximum ambient temperature is 45°C. 4. The main enclosure was plastic (the rated flammability was V-0). 5. The test samples are pre-production without serial numbers.	

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
3	General requirements		P
	Safety class of the apparatus .....:	Not directly connected to the mains.	P
4	General test conditions		P
4.1.4	Ventilation instructions require the use of the test box	Yes	P
5	Marking and instructions		P
	Comprehensible and easily discernible	All markings are printed on label pasted on outer enclosures of the appliance.	P
	Permanent durability against water and petroleum spirit	After rubbing test by water and petroleum spirit, the markings are still easily discernible, indelible and legible.	P
5.1	a) Identification, maker ..... :	Trademark" DENON" and model no. are marked on the outer enclosure.	P
	b) Model number or type reference ..... :	HEOS 3	P
	c) Class II symbol if applicable ..... :	Not directly connected to the mains.	N/A
	d) Nature of supply..... :	IEC 60417-5031 symbol used.	P
	e) Rated supply voltage ..... :	18V⎓	P
	f) Mains frequency if safety dependant ..... :		N/A
	g) Rated current or power consumption for apparatus supplied by supply apparatus for general use ..... :	2.0A	P
	Measured current or power consumption ..... :	(See appended table 7.1)	P
	Deviation % (max 10%) ..... :	(See appended table 7.1)	P
	h) Rated current or power consumption for apparat-us intended for connection to an a.c. mains supply :		N/A
	Measured current or power consumption ..... :		N/A
	Measured current or power consumption for Television set ..... :	Not television set.	N/A
	Deviation % (max 10%) ..... :		N/A
5.2	a) Earth terminal	Not directly connected to the mains.	N/A
	b) Hazardous live terminals	No such terminals provided.	N/A
	c) Markings on supply output terminals	USB " 5V/1A ⎓" marked near USB output terminal.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.3	a) Use of triangle with exclamation mark	The triangle symbols are used on the circuit diagram for the replaceable safety relevant components.	P
	b) marking on loudspeaker grille, IEC 60417-5036		N/A
5.4	Instructions for use	English. Instruction in other language shall be provided when national approvals.	P
5.4.1	a) Mains powered equipment not exposed to dripping or splashing. Warning concerning objects filled with liquid, etc.	See user manual.	P
	b) Hazardous live terminals, instructions for wiring	No such terminals provided.	N/A
	c) Instructions for replacing lithium battery	No such battery provided.	N/A
	d) Class I earth connection warning	Not directly connected to the mains.	N/A
	e) Instructions for multimedia system connection	Not multimedia system.	N/A
	f) Special stability warning for attachment of the apparatus to the floor/wall		N/A
	g) Warning: battery exposure to heat		N/A
	h) Warning: protective film on CRT face	No CRT provided.	N/A
5.4.2	a-b) Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings	Not directly connected to the mains.	N/A
	c) Instructions for permanently connected equipment	Not permanently connected equipment.	N/A
	Marking, signal lamps or similar for completely disconnection from the mains	Not directly connected to the mains.	N/A

6	Hazardous radiation		N/A
6.1	Ionizing radiation < 36 pA/kg (0,5 mR/h)	No ionizing radiation inside the EUT.	N/A
	Ionizing radiation under fault condition	See above.	N/A
6.2	Laser radiation, emission limits to IEC 60825-1:2007 .....:	No laser radiation inside the EUT.	N/A
	Emission limits under fault conditions .....:	See above.	N/A

7	Heating under normal operating conditions		P
7.1	Temperature rises not exceeding specified values; fuse links and other protective devices defeated	(see appended table)	P
7.1.1	Temperature rise of accessible parts	(see appended table)	P
7.1.2	Temperature rise of parts providing electrical insulation	(see appended table)	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
7.1.3	Temperature rise of parts acting as a support or as a mechanical barrier	(see appended table)	P
7.1.4	Temperature rise of windings	(see appended table)	P
7.1.5	Parts not subject to a limit under 7.1.1 to 7.1.4	(see appended table)	P
7.2	Softening temperature of insulating material supporting parts conductively connected to the mains carrying a current > 0,2 A at least 150 °C		N/A
8	Constructional requirements with regard to the protection against electric shock		N/A
8.1	Conductive parts covered by lacquer, paper, untreated textile oxide films and beads etc. considered to be bare	DC input, not directly connected to the mains.	N/A
8.2	No shock hazard when changing voltage setting device, fuse-links or handling drawers etc.	No such components used.	N/A
8.3	Insulation of hazardous live parts not provided by hygroscopic material	No hygroscopic material used.	N/A
8.4	No risk of electric shock from accessible parts or from parts rendered accessible following the removal of a cover which can be removed by hand		N/A
8.5	Class I equipment	Not directly connected to the mains.	N/A
	Basic insulation between hazardous live parts and earthed accessible parts		N/A
	Resistors bridging basic insulation complying with 14.1 a)		N/A
	Capacitors bridging basic insulation complying with 14.2.1 a)		N/A
	Protective earthing terminal		N/A
8.6	Class II equipment and Class II constructions within Class I equipment	Not directly connected to the mains.	N/A
	Double or reinforced insulation between hazardous live parts and accessible parts		N/A
	Components bridging double or reinforced insulation complying with 14.1 a) or 14.3		N/A
	Basic insulation bridged by components complying with 14.3.4.3.		N/A
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.1 a)		N/A
	Double or reinforced insulation being bridged with 2 capacitors in series complying with 14.2.1 a)		N/A
	Double or reinforced insulation being bridged with a single capacitor complying with 14.2.1 b)		N/A
8.7	This clause is void		—

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
8.8	Basic or supplementary insulation > 0,4 mm (mm) :		N/A
	Reinforced insulation > 0,4 mm (mm) ..... :		N/A
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)		N/A
	Basic or supplementary insulation, at least two layers, each meeting 10.3		N/A
	Basic or supplementary insulation, three layers any two of which meet 10.3		N/A
	Reinforced insulation, two layers each of which meet 10.3		N/A
	Reinforced insulation, three layers any two which meet 10.3	.	N/A
8.9	Adequate insulation between internal hazardous live conductors and accessible parts		N/A
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts		N/A
8.10	Double insulation between conductors connected to the mains and accessible parts.	Not directly connected to the mains.	N/A
	Double insulation between internal hazardous live parts and conductors connected to accessible parts.	See above.	N/A
8.11	Detaching of wires		N/A
	No undue reduction of creepages or clearance distances if wires become detached		N/A
	Vibration test carried out ..... :		N/A
8.12	This clause is void		—
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)		N/A
8.14	Adequate fastening of covers (push/pull test 50 N for 10 s)		N/A
8.15	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges		N/A
8.16	Only special supply equipment can be used		N/A
8.17	Insulated winding wire without additional interleaved insulation		N/A
8.18	Endurance test as required by 8.17	Test not required.	N/A
8.19	Disconnection from the mains	Not directly connected to the mains.	N/A
8.19.1	Disconnect device	See above.	N/A
	All-pole switch or circuit breaker with >3mm contact separation		N/A
8.19.2	Mains switch ON indication		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
8.20	Switch not fitted in the mains cord		N/A
8.21	Bridging components comply with clause 14	No such components provided.	N/A
8.22	Non-separable thin sheet material	No such components provided.	N/A
9	Electric shock hazard under normal operating conditions		N/A
9.1	Testing on the outside		N/A
9.1.1	For voltages >1000 V ac or >1500 V dc complies with clause 13.3.1 for basic insulation	Not directly connected to the mains.	N/A
9.1.1.1	a) Open circuit voltages		N/A
	b) Touch current measured from terminal devices using the network in annex D .....:		N/A
	c) Discharge not exceeding 45 µC		N/A
	d) Energy of discharge not exceeding 350 mJ		N/A
9.1.1.2	Test with test finger and test probe		N/A
9.1.2	No hazardous live shafts of knobs, handles or levers		N/A
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin		N/A
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032		N/A
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032		N/A
9.1.5	Pre-set controls tested with 2.5 mm x 100 mm test pin (10 N); test probe C of IEC 61032	No pre-set controls.	N/A
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s .....:	No X capacitor used.	N/A
	If C is not greater than 0,1 µF no test needed		N/A
9.1.7	Resistance to external forces		N/A
	a) Test probe 11 of IEC 61032 for 10 s (50 N)		N/A
	b) Test hook of fig. 4 for 10 s (20 N)		N/A
	c) 30 mm diameter test tool for 5 s (100 or 250 N)		N/A
9.2	No hazard after removing a cover by hand		N/A
10	Insulation requirements		N/A
10.1	Insulation resistance (MΩ) at least 2 MΩ min. after surge test for basic and 4 MΩ min. for reinforced insulation .....:	Not directly connected to the mains.	N/A
10.2	Humidity treatment 48 h or 120 h .....:		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
10.3	Insulation resistance and dielectric strength between mains terminals		N/A
	Insulation Resistance and dielectric strength across BASIC or SUPPLEMENTARY insulation (Class I)		N/A
	Insulation resistance and dielectric strength across REINFORCED insulation (Class II)		N/A
11	Fault conditions		P
11.1	No shock hazard under fault condition	Not directly connected to the mains.	N/A
11.2	Heating under fault condition	See below.	P
	Flames extinguish within 10 seconds	No such flames.	P
	No hazard from softening solder	No solder point became soft.	P
	Soldered terminations not used as protective mechanism		P
11.2.1	Measurement of temperature rises	(see appended table)	P
11.2.2	Temperature rise of accessible parts	(see appended table)	P
11.2.3	Temperature rise of parts, other than windings and printed boards, providing electrical insulation	(see appended table)	P
11.2.4	Temperature rise of parts acting as a support or mechanical barrier	(see appended table)	P
11.2.5	Temperature rise of windings	(see appended table)	P
11.2.6	Temperature rise of printed boards shall not exceed the limits of table 3 by max. 100 K for max. 5 min	No points on the PCB exceed the limit.	N/A
	Printed circuit boards (PCB) classified as V-0 according to 60695-11-10 or Clause G.1 may exceed the limit in table 3 in case a) and b):		N/A
	a) Temperature rise of printed circuit boards exceeding the limits of table 3 by not more than 100 K for an area not greater than 2 cm² .....:		N/A
	b) Temperature rise of printed circuit boards exceeding the limits of table 3 up to 300 K for an area not greater than 2 cm² for a maximum of 5 min		N/A
	Meets all the special conditions if conductors on printed circuit boards are interrupted		N/A
	Class I protective earthing maintained		N/A
11.2.7	Temperature rise of parts not subject to the limits of 11.2.1 to 11.2.6 shall not exceed the limits in table 3, item e), "Fault conditions".	(see appended table)	P
12	Mechanical strength		P
12.1.1	Bump test where mass >7 kg	Approx. 2.23 kg	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
12.1.2	Vibration test	No damage.	P
12.1.3	Impact hammer test	After test, dielectric strength test of clause 10.3 is performed. Result: no damage in the sense of the standard.	P
	Steel ball test	3.5J	P
12.1.4	Drop test for portable apparatus where mass ≤ 7 kg		P
12.1.5	Thermoplastic enclosures stress relief test	70°C, 7 hours for main unit and adaptor.	P
12.2	Fixing of knobs, push buttons, keys and levers		P
12.3	Remote controls with hazardous live parts	No remote controls provided.	N/A
12.4	Drawers (pull test 50 N, 10 s)	No drawers provided.	N/A
12.5	Antenna coaxial sockets providing isolation	No antenna coaxial sockets provided.	N/A
12.6	Telescoping or rod antennas construction	Not such a construction.	N/A
12.6.1	Telescoping or rod antennas securement		N/A
13	Clearances and creepage distances		N/A
13.1	Clearances in accordance with 13.3	Not directly connected to the mains.	N/A
	Creepage distances in accordance with 13.4		N/A
13.2	Determination of working voltage		N/A
13.3	Clearances		N/A
13.3.1	General		N/A
13.3.2	Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9 .....:		N/A
13.3.3	Circuits not conductively connected to the mains comply with table 10		N/A
13.3.4	Measurement of transient voltages		N/A
13.4	Creepage distances		N/A
	Creepage distances greater than table 11 minimum values		N/A
13.5	Printed boards		N/A
13.5.1	Clearances and creepage distances between conductors on printed circuit boards, one of which may be conductively connected to the mains, as in fig. 10		N/A
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4		N/A
	Conductive parts along reliably cemented joints comply with 8.8		N/A
	Temperature cycle test and dielectric strength test		N/A
	500V test for transformers, magnetic coupler and similar devices, if insulation is relied upon for safety		N/A
13.7	Enclosed, enveloped or hermetically sealed parts not conductively connected to the mains, clearances and creepage distances as in table 12		N/A
13.8	Parts filled with insulating compound, meeting the requirements of 8.8		N/A
14	Components		P
14.1	Resistors		N/A
	a) Resistors between hazardous live parts and accessible metal parts	No such resistors provided.	N/A
	b) Resistors, other than between hazardous live parts and accessible parts		N/A
	Resistors separately approved .....:		N/A
14.2	Capacitors and RC units	No such capacitors provided.	N/A
	Capacitors separately approved :		N/A
14.2.1	Y capacitors tested to IEC 60384-14:2005 ..... :		N/A
14.2.2	X capacitors tested to IEC 60384-14:2005 ..... :		N/A
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2 ..... :		N/A
14.2.5	Capacitors with volume exceeding 1750 mm³, where short-circuit current exceeds 0,2 A: compliance with IEC 60384-1, 4.38 category B or better ..... :		N/A
	Capacitors with volume exceeding 1750 mm³, mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60384-1, 4.38 category B or better .....:		N/A
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal .....:	Electrolytic capacitors provided with metal can.	P
14.3	Inductors and windings		N/A
	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.1.4		N/A
14.3.1	Transformers and inductors marked with manufacturer's name and type .....:		N/A
	Transformers and inductors separately approved .:		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.3.2	General		N/A
	Insulation material complies with clause 20.1.4		N/A
14.3.3	Constructional requirements		N/A
14.3.3.1	Clearances and creepage distances comply with clause 13		N/A
14.3.3.2	Transformers meet the constructional requirements		N/A
14.3.4	Separation between windings		N/A
14.3.4.1	Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation).....:	.	N/A
	Coil formers and partition walls > 0,4 mm		N/A
14.3.4.2	Class I transformers, with basic insulation and protective screening only if all 7 conditions of 14.3.4.2 are met		N/A
14.3.4.3	Separating transformers with at least basic insulation		N/A
14.3.5	Insulation between HAZARDOUS LIVE parts and ACCESSIBLE parts		N/A
14.3.5.1	Class II transformers have adequate insulation between hazardous live parts and accessible parts (double or reinforced insulation)		N/A
	Coil formers and partition walls > 0,4 mm		N/A
14.3.5.2	Class I transformers have adequate insulation between hazardous live parts and accessible conductive parts or those conductive parts or protective screens connected to a protective earth terminal		N/A
	Winding wires connected to protective earth have adequate current-carrying capacity		N/A
14.4	High voltage components	No component operating at voltages exceeding 4 kV.	N/A
	High-voltage components and assemblies: U > 4 kV (peak) separately approved		N/A
	Component meets category V-1 of IEC 60707		N/A
14.4.1	High voltage transformers and multipliers tested as part of the submission		N/A
14.4.2	High voltage assemblies and other parts tested as part of the submission		N/A
14.5	Protective devices	No such components provided.	N/A
	Protective devices used within their ratings		N/A
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.5.1.1	a) Thermal cut-outs separately approved		N/A
	b) Thermal cut-outs tested as part of the submission		N/A
14.5.1.2	a) Thermal links separately approved		N/A
	b) Thermal links tested as part of the submission		N/A
14.5.1.3	Thermal devices re-settable by soldering		N/A
14.5.2.1	Fuse-links in the mains circuit according to IEC 60127		N/A
14.5.2.2	Correct marking of fuse-links adjacent to holder ...:		N/A
14.5.2.3	Not possible to connect fuses in parallel .....:		N/A
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool .....:		N/A
14.5.3	PTC thermistors comply with IEC 60730-1:2007		N/A
	PTC devices (15 W) category V-1 or better		N/A
14.5.4	Circuit protectors have adequate breaking capacity and their position is correctly marked		N/A
14.6	Switches		N/A
14.6.1 a)	Separate testing to IEC 61058-1 including: - 10 000 operations - Normal pollution suitability - Make and break speed independent of speed of actuation V-0 compliance with annex G, G.1.1		N/A
14.6.1 b)	Tested in the apparatus:		N/A
	Switch controlling > 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.3, 14.6.4 and V-0 in annex G, G.1.1		N/A
	Switch controlling > 0.2A with open contact voltage < 35 V (peak)/24 V dc complying with 14.6.3 and V-0 in annex G, G.1.1		N/A
	Switch controlling < 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.4 and V-0 in annex G, G.1.1		N/A
14.6.2	Switch tested to 14.6.1 b) constructed to IEC 61058-1 subclause 13.1 and has making/breaking action independent of speed of actuation		N/A
14.6.3	Switch tested to 14.6.1 b) compliant with IEC 61058-1 subclause 16.2.2 d) and m) not attaining excessive temperatures in use		N/A
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N/A
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 61058-1		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Socket outlet current marking correct		N/A
14.7	Safety interlocks		N/A
	Safety interlocks to 2.8 of IEC 60950-1	No safety interlocks provided.	N/A
14.8	Voltage setting devices and the like		N/A
	Voltage setting device not likely to be changed accidentally		N/A
14.9	Motors		N/A
14.9.1	Endurance test on motors	No motors provided.	N/A
	Motor start test		N/A
	Dielectric strength test		N/A
14.9.2	Not adversely affected by oil or grease etc.		N/A
14.9.3	Protection against moving parts		N/A
14.9.4	Motors with phase-shifting capacitors, three-phase motors and series motors meet clause. B.8, B.9 and B.10 of IEC 60950-1, Annex B		N/A
14.10	Batteries		N/A
14.10.1	Batteries mounted with no risk of accumulation of flammable gases		N/A
14.10.2	No possibility of recharging non-rechargeable batteries		N/A
14.10.3	Recharging currents and times within manufacturers limits		N/A
	Lithium batteries discharge and reverse currents within the manufacturers limits		N/A
14.10.4	Battery mould stress relief		N/A
14.10.5	Battery drop test		N/A
14.11	Optocouplers	No such component used.	N/A
	a) Comply with 13.6 (jointed insulation) and N.2.1		N/A
	b) Comply with IEC 60747-5-5:2007		N/A
	Alternative to a) and b) optocoupler comply with 13.8		N/A
	a) Comply with 13.6 (jointed insulation) and N.2.1		N/A
14.12	Surge suppression varistors	No such component used.	N/A
	Comply with IEC 61051-2		N/A
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		N/A
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15	Terminals		P
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Not directly connected to the mains.	N/A
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets		N/A
	Overloading of internal wiring prevented if the apparatus has mains socket outlets		N/A
15.1.2	Connectors for antenna, earth, audio, video or data		P
	No risk of insertion in mains socket-outlets		P
	No risk of insertion into audio- or video- outlets marked with the symbol of 5.2		N/A
15.1.3	Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets		N/A
15.2	Provision for protective earthing		N/A
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment		N/A
	Protective earth conductors correctly coloured		N/A
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input		N/A
	Protective earth terminal resistant to corrosion		N/A
	Earth resistance test: < 0,1 Ω at 25 A .....:		N/A
15.3	Terminals for external flexible cords and for permanent connection to the mains supply		N/A
15.3.1	Adequate terminals for connection of permanent wiring		N/A
15.3.2	Reliable connection of non-detachable cords		N/A
	Not soldered to conductors of a printed circuit board		N/A
	Adequate clearances and creepage distances between connections should a wire break away		N/A
	Wire secured by additional means to the conductor		N/A
15.3.3	Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar	No such fixing.	N/A
15.3.4	Soldered conductors wrapped around terminal prior to soldering or held in place by additional means		N/A
	Clamping of conductor and insulation if not soldered or held by screws		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
15.3.5	Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment		N/A
15.3.6	Terminals to 15.3.3 have sizes required by table 16		N/A
15.3.7	Terminals clamp conductors between metal and have adequate pressure	No such terminals.	N/A
	Terminals designed to avoid conductor slipping out when tightened or loosened		N/A
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided		N/A
15.3.8	Terminals carrying a current more than 0,2 A: contact pressure not transmitted by insulating material except ceramic		N/A
15.3.9	Termination of non-detachable cords: wires terminated near to each other		N/A
	Terminals located and shielded: test with 8 mm strand		N/A
15.4	Devices forming a part of the mains plug		N/A
15.4.1	No undue strain on mains socket-outlets		N/A
15.4.2	Device complies with standard for dimensions of mains plugs		N/A
15.4.3	Device has adequate mechanical strength (tests a,b,c)		N/A
16	External flexible cords		N/A
16.1	Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords .....:	Not directly connected to the mains.	N/A
	Non-detachable cords for Class I have green/yellow core for protective earth		N/A
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment		N/A
16.3	a) Flexible cords not complying with 16.1, used for interconnections between separate units of equipment used in combination and carrying hazardous live voltages, have adequate dielectric strength		N/A
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60227-2)		N/A
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
16.5	Adequate strain relief on external flexible cords		N/A
	Not possible to push cord back into equipment		N/A
	Strain relief device unlikely to damage flexible cord		N/A
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor		N/A
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use		N/A
16.7	Transportable musical instruments and amplifiers fitted with detachable cord set with appliance inlet to IEC 60320-1		N/A
	Transportable musical instruments and amplifiers fitted with detachable cord sets or with means of stowage to protect the cord		N/A
17	Electrical connections and mechanical fixings		P
17.1	Torque test to table 20		P
	- screws into metal: 5 times		N/A
	- screws into non-metallic material: 10 times	Screws installed on the plasitc enclosure of the appliance are Ø3.55mm. Tested with 0.8Nm for 10 times.	P
17.2	Correct introduction into female threads in non-metallic material		P
17.3	Cover fixing screws: captive	No captive screws used.	N/A
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter		N/A
17.4	No loosening of conductive parts carrying a current > 0,2 A	All conductive parts are fixed on PCB by at least two soldering points.	P
17.5	Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A		P
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder		N/A
17.7	Cover fixing devices other than screws have adequate strength and their positioning is unambiguous	Screw was used for fixing enclosure.	N/A
17.8	Fixing devices for detachable legs or stands provided		N/A
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected	Tested with 2N force, no disconnection occurred.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
18	Mechanical strength of picture tubes and protection against the effects of implosion		N/A
18.1	Picture tube separately approved to IEC 61965 ....:	No picture tube.	N/A
	Picture tube separately approved to 18.2 .....:		N/A
18.2	Non-intrinsically protected tubes tested to 18.2		N/A
19	Stability and mechanical hazards		P
	Mass of the equipment exceeding 7 kg .....:	Approx. 2.23 kg	N/A
	Apparatus intended to be fastened in place – suitable instructions .....:	The apparatus is not intended to be fastened in place.	N/A
19.1	Test on a plane, inclined at 10° to the horizontal		N/A
19.2	100 N force applied vertically downwards		N/A
19.3	100 N force, or 13% of weight, applied horizontally to point of least stability	Less than 25Kg, less than 1m.	N/A
19.4	Edges or corners not hazardous	Edges or corners are smooth and rounded.	P
19.5	Glass surfaces (exc.laminated) with an area exceeding 0,1 m² or maximum dimension > 450 mm, pass the test of 19.5.1	No glass surface used.	N/A
19.6	Wall or ceiling mountings adequate		N/A
20	Resistance to fire		P
20.1	Electrical components and mechanical parts		P
	a) Exemption for components contained in an enclosure of material V-0 to IEC 60695-11-10 with openings not exceeding 1 mm in width		N/A
	b) Exemption for small components as defined in 20.1	Small components mounted on a PCB with rating as described in table 14. Furthermore, refer to sub-clause 20.1.4.	P
20.1.1	Electrical components meet the requirements of Clause 14 or 20.1.4	See subclauses 14 and 20.1.4.	P
20.1.2	Insulation of internal wiring working at voltages > 4 kV or leaving an internal fire enclosure, or located within the areas mentioned in Table 21, not contributing to the spread of fire	Internal wiring working at voltages not exceeding 4 kV.	N/A
20.1.3	Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400 V (peak) a.c. or d.c. meets V-1 or better to IEC 60707, unless used in a fire enclosure	DC input, Max. 18V inside the main unit.	N/A
	Material of printed circuit boards on which the available power exceeds 15 W at a voltage >400 V (peak) a.c. or d.c. meets V-0 to IEC 60707		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
20.1.4	Components and parts not covered by 20.1.1, 20.1.2 and 20.1.3 (other than fire enclosures) mounted nearer to a potential ignition source than the distances in Table 21 comply with the relevant flammability category in Table 21	DC input, Max. 18V inside the main unit.	N/A
	Components and parts as above but shielded from a potential ignition source, with the barrier area in accordance with Table 21 and fig. 13		N/A
	Apparatus with voltages >4kV under normal operating conditions and distances to the enclosure exceed those specified Table 21, flammability classification HB40 or better is required for the enclosure		N/A
20.2	Fire enclosure		N/A
20.2.1	Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to V-1	No such high voltage.	N/A
20.2.2	Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled		N/A
20.2.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure		N/A
A	Annex A, Additional requirements for apparatus with protection against splashing water		N/A
A.5	Marking and instructions	IPX0	N/A
A.5.1	j) Marked with IPX4 (IEC 60529), 5.4.1 a) does not apply		N/A
A.10	Insulation requirements		N/A
A.10.2	Splash and humidity treatment		N/A
A.10.2.1	Enclosure provides protection against splashing water		N/A
A.10.2.2	Humidity treatment carried out for 7 days		N/A
B	Annex B, Apparatus to be connected to the TELECOMMUNICATION NETWORKS		N/A
	Complies with IEC 62151 clause 1	No TNV.	N/A
	Complies with IEC 62151 clause 2		N/A
	Complies with IEC 62151 clause 3 but with 3.5.4 modified to 2.4.10 of this standard		N/A
	Complies with IEC 62151 clause 4 but with 4.1.2, 4.1.3 and 4.2.1.2 modified in accordance with annex B of this standard		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Complies with IEC 62151 cause 5 but with 5.3.1 modified in accordance with annex B of this standard		N/A
	Complies with IEC 62151 clause 6		N/A
	Complies with IEC 62151 clause 7		N/A
	Complies with IEC 62151 annex A, B and C		N/A
L	ANNEX L, Additional requirements for electronic flash apparatus for photographic purposes		N/A
L. 5	Marking and instructions		N/A
L. 5.4	Instructions for battery chargers and Supply apparatus indicating type or model number of flash apparatus with which it is to be used	No such equipment.	N/A
	Instructions for flash apparatus indicating type or model number of battery chargers or Supply apparatus with which it is to be used		N/A
L. 7	Heating under normal operating conditions		N/A
L7.1.5 & L11.2.7	Lithium batteries meet permissible temp rise in Table 3, unless comply with 6.2.2.1 or 6.2.2.2 of IEC 60086-4		N/A
L. 9	Electric shock hazard under normal operating conditions		N/A
L. 9.1.1	Terminals to connection to synchroniser not HAZARDOUS LIVE		N/A
L.10	Insulation requirements		N/A
L. 10.3.2	High frequency puls ignition		N/A
L. 12	Mechanical strength		N/A
L. 12.1.3	Windows for flash tubes are excluded from steel ball impact test		N/A
L. 14	Components		N/A
L14.6.6	Mains switch characteristics appropriate to its function under normal conditions		N/A
L. 20	Resistance to fire		N/A
L. 20.1 c)	Trigger coil for discharge purpose is not considered to be a POTENTIAL IGNITION SOURCE		N/A

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Cond.	Un (V)	Hz	In (A)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	0.35	16.91	--	--	Aux input mode, unit normal operation, supplied by an adaptor. 1/8 non-clipped output power to speakers. Adapter output: 18VDC, 0.85A. USB loading: 5V, 1A.
2	90	60	0.35	17.73	--	--	
3	100	50	0.32	16.80	--	--	
4	100	60	0.32	17.65	--	--	
5	240	50	0.16	16.85	--	--	
6	240	60	0.17	17.67	--	--	
7	264	50	0.15	16.94	--	--	
8	264	60	0.16	17.77	--	--	

	Loudspeaker impedance (Ω) ..... :	Tweeter: 2 x 6Ω	—
	Several loudspeaker systems ..... :	--	—
	Marking of loudspeaker terminals..... :	--	—

Temperature Rise dT of Part	dT (K)		Limit max dT (K)
Test Condition No.	Cond. 2	Cond. 7	--
External adapter			
Input wire	15.4	14.4	35
X-cap. (XC1)	20.7	19.4	55
Line filter winding (NF1)	26.4	23.1	85
PCB under BD1	28.1	24.6	85
E-cap. (C1)	21.3	20.1	60
PCB under Q1	21.5	22.8	85
Transformer winding (T1)	28.5	31.3	65
Transformer core (T1)	27.2	29.7	--
Y-cap. (YC1)	22.1	23.9	80
Opto-coupler (U2)	20.9	22.2	55
PCB under (D4)	25.8	28.6	85

E-cap. (C5)	21.8	25.5	60
Line filter winding (L1)	19.1	21.9	85
Line filter winding (NF2)	19.0	20.8	85
Output wire	13.7	14.4	35
Plastic enclosure near T1 inside	14.6	15.5	75
Plastic enclosure near T1 outside	12.6	13.1	50
Main unit			
Line filter winding (L15)	34.9	33.9	85
E-cap. (C111)	31.9	30.8	60
E-cap. (C225)	32.5	31.7	60
PCB under D5	34.9	34.0	85
PCB under U100	33.8	32.6	85
PCB under U300	32.7	31.4	85
Plastic enclosure near U100 inside	11.0	9.8	40
Plastic enclosure near U100 outside	10.4	9.1	50
Ambient (^{o}C)	25.2	25.8	--
Winding temperature rise measurements			
Ambient temperature t1 (^{o}C) .....:	--		—
Ambient temperature t2 (^{o}C) .....:	--		—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Note:

According to the user manual, the appliance is intended to be used in tropical climate, so the basic ambient temperature is 45°C, the max. temperature rise is calculated as follows:

- Winding components:
  Class B (by thermocouple method) → dTmax = (120-45)K-10K=65K
- Components with a maximum temperature of :
  - Input wire → dTmax = (80-45)K = 35K
  - X-cap. (XC1) → dTmax = (100-45)K = 55K
  - PCB → dTmax = (105-45)K = 60K
  - Line filter winding (NF1, L1, NF2, L15) → dTmax = (130-45)K = 85K
  - E-cap. (C1, C5, C111, C225) → dTmax = (105-45)K = 60K
  - Y-cap. (YC1) → dTmax = (125-45)K = 80K
  - Opto-coupler (U2) → dTmax = (100-45)K = 55K
  - Output wire → dTmax = (80-45)K = 35K
  - Plastic enclosure near T1 inside side → dTmax = (120-45)K = 75K
  - Plastic enclosure near U100 inside → dTmax = (85-45)K = 40K

- Touchable surfaces with:
  - Plastic enclosure near T1 outside → dTmax = 60K-(45-35)K=50K
  - Plastic enclosure near U100 outside → dTmax = 60K-(45-35)K=50K

Note: The limit max dT (K) of external adapter is referred to CB report 16040050 001 and 16040050 002.

7.2	TABLE: softening temperature of thermoplastics	N/A

Temperature T of part	T - normal conditions (°C)	T - fault conditions (°C)	Min T softening (°C)
--	--	--	--

10.3	TABLE: insulation resistance measurements	N/A

Insulation resistance R between:	R (MΩ)	Required R (MΩ)

Note: --

10.3	TABLE: electric strength measurements	N/A

Test voltage applied between:	Test voltage (V)	Breakdown

Note: --

11.2	TABLE: summary of fault condition tests		P
	Voltage (V) 0,9 or 1,1 times rated voltage :	See below.	—
	Frequency (Hz) ……..:	See below.	—
	Ambient temperature (°C) ..... :	45	—

No	Component	Fault	dT (K) / Component	Other results (include description and test duration)
1	Unit	Max. non-clipped output	External adapter: Input wire dt= 27.2K PCB under BD1 dt= 101.5K PCB under Q1 dt= 122.5K T1 winding dt= 111.8K T1 core dt= 109.3K PCB under D4 dt= 89.4K Output wire dt= 54.9K Enclosure near T1 outside dt= 44.3K Main unit: PCB under D5 dt= 56.8K PCB under U100 dt= 45.8K PCB under U300 dt= 44.3K Enclosure near U100 outside dt= 14K	Unit operated normally about 1 hour 44 minutes and then shut down, no hazards. Adapter input current: 0.16A → 0.44A→ 0.05A. Adapter output current: 3.06A→ 0.02A. Test duration: 2 hours 30 min.

2	Ventilation	Blocked	External adapter: Input wire dt= 16.4K PCB under BD1 dt= 29.3K PCB under Q1 dt= 24.8K T1 winding dt= 33.1K T1 core dt= 31.5K PCB under D4 dt= 30.3K Output wire dt= 16.3K Enclosure near T1 outside dt= 15.1K Main unit : PCB under D5 dt= 35.5K PCB under U100 dt= 34.5K PCB under U300 dt= 33.3K Enclosure near U100 outside dt= 11.3K	Unit operated normally, no damage, no hazards. Adapter input current: 0.16A. Adapter output current: 0.85A. Test duration: 1 hour 50 min.
3	One speaker (6Ω)	SC	External adapter: Input wire dt= 5.7K PCB under BD1 dt= 9.7K PCB under Q1 dt= 9.5K T1 winding dt= 13.9K T1 core dt= 12.3K PCB under D4 dt= 15.1K Output wire dt= 5.7K Enclosure near T1 outside dt= 5.2K Main unit : PCB under D5 dt= 47.3K PCB under U100 dt= 28.6K PCB under U300 dt= 26.9K Enclosure near U100 outside dt= 5.8K	Unit operated normally about 7 minutes and then shut down, no hazards. Adapter input current: 0.16A → 0.21A → 0.05A Adapter output current: 0.85A →0.01A. Test duration: 1 hour 10 min.
4	USB	OL	External adapter: Input wire dt= 20K PCB under BD1 dt= 34.3K PCB under Q1 dt= 31.6K T1 winding dt= 43K T1 core dt= 41.2K PCB under D4 dt= 38.7K Output wire dt= 19.9K Enclosure near T1 outside dt= 17.5K Main unit : PCB under D5 dt= 46.3K PCB under U100 dt= 40.2K PCB under U300 dt= 40K Enclosure near U100 outside dt= 12.4K	USB can overload to 2.4A, and unit shut down at 2.5A. Adapter input current: 0.16A → 0.20A → 0.24A → 0.11A. Adapter output current: 0.85A →0.99A →1.13A →0.66A. Test duration: 5 hours 56 min.

5	USB	SC	--	Unit shut down immediately, recoverable, no hazards. Adapter input current: 0.16A →0.09A. Adapter output current: 0.85A →0.58A. Test duration: 45 min.

Note:

According to the user manual, the appliance is intended to be used in tropical climate, so the basic ambient temperature is 45°C, the max. temperature rise is calculated as follows:

- Winding components:

  Class B (by thermocouple method) → dTmax = (175-45)K-10K=120K

  Components with a maximum temperature of :

  - Input wire → dTmax = (80-45)K = 35K
  - PCB → dTmax = (130-45+100)K = 185K (The area not exceeding value 2 cm², the limited value can plus 100K).
  - Output wire → dTmax = (80-45)K = 35K
  - Enclosure inside near Transformer T2 → dTmax = (80-45)K = 35K
  - Enclosure inside near U100 → dTmax = (80-45)K = 35K

  Touchable surfaces with:

  - Enclosure near T1 outside → dTmax = 65K-(45-35)K=55K
  - Enclosure near U100 outside → dTmax = 65K-(45-35)K=55K

Note:

1. Note: The limit max dT (K) of external adapter is referred to CB report 16040050 001 and 16040050 002.
2. OL= Overload, SC= Short circuit.

13	**TABLES: clearances and creepage distances**					**N/A**
Rated supply voltage:		Pollution degree:		Material Group:		
2 N force on internal parts applied:				Yes.		
30 N force on outside of conductive enclosure applied:				Yes.		
Location	Operating Voltage		Clearance (mm)		Creepage (mm)	
	V rms	V peak	Min	Actual	Min	Actual
Notes: --						

14	TABLE: list of critical components and materials				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
Plastic enclosure	Cheil industries inc chemicals div	NH-1017(p)	PC/ABS, V-0, 85°C, min. thickness 2.0mm	UL 94	UL E115797
PCB	Various	Various	Min. V-1, 130°C	UL 796	UL
Cotton fibre felt	Asia Lanneret Science & Technology Co Ltd.	2630	HF-1, 50°C	UL 94	UL E248065
(Alternative)	Various	Various	HF-1, 50°C	UL 94	UL
AC adapter	Dongguan Dongsong Electronic Co., Ltd.	DYS40-180200W-K	Input: 100-240V~, 50/60Hz, 1.0A MAX Output :18Vdc, 2.0A	IEC 60065:2001 + A1+ A2, EN 60065: 2002 + A1 + A11 +A2 + A12, UL 60065, 7th edition, Rev. 12, CAN/CSA NO. 60065:2003 + A1+A2	TUV RH CB certificate No. JPTUV-043577-M1 TUV RH GS S1 50229302 001 Intertek ETL certificate no: 4002961
Supplementary information: [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60065
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES

Audio, video and similar electronic apparatus – Safety requirements

Differences according to.....:	EN 60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011
Attachment Form No.....:	EU_GD_IEC60065K_II
Attachment Originator .....:	Intertek Semko AB
Master Attachment.....:	Date (2011-09)

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	IEC 60065, GROUP DIFFERENCES (CENELEC common modifications (EN))		
Clause	Requirement + Test	Result - Remark	Verdict
Contents	**Add** the following annexes: **Annex ZA** (normative) Other international publications quoted in this standard with the references of the relevant European publications (See the CB Bulletin) **Annex ZB** (nominative) Special national conditions **Annex ZC** (informative) A-deviations		—
Definition 2.2.Z1 (A11:2008)	**Add** after the definition 2.2.12 the following new definition: **PORTABLE SOUND SYSTEM** small battery powered audio equipment: • whose prime purpose is to listen to recorded or broadcasted sound; and • that uses headphones or earphones that can be worn in or on or around the ears; and • that allows the user to walk around NOTE Examples are mini-disc or CD players, MP3 audio players or similar equipment.		—
2.2 (A12:2011)	In EN 60065:2002/A11:2008 Delete the definition 2.2.Z1		—

European Group differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.1	**Add** the following indent at the end of the list - Exposure to excessive sound pressures from headphones or earphones NOTE A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 1: General method for ”one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		—
3.1 (A12:2011)	In EN 60065:2002 Delete the addition of indent regarding sound pressure excessive		—
3.Z1 (A2:2010)	After 3.2 **add** a new clause 3.Z1: To protect against excessive current, short-circuits and earth faults in MAINS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 11 shall be included as parts of the equipment; b) for components in series or parallel with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for equipment supplied via an industrial mains plug or for PERMANENTLY CONNECTED APPARATUS, to rely on dedicated over current and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for not via an industrial mains plug or for PERMANENTLY CONNECTED APPARATUS the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.	Equipment relies on 16A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Over-current protection is provided by the build-in fuse.	P
4.1.1	**Replace** the text of the note by: NOTE For ROUTINE TEST reference is made to EN 50514.		—

European Group differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1 za) (A11:2008)	**Modify** indent za) as follows: za) For a PORTABLE SOUND SYSTEM, a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Not such equipment.	N/A
5.4.1 (A12:2011)	In EN 60065:2002/A1:2006 and EN 60065;2002/A11:2008 Delete the modification in indent za) Add the following clause and annex to the excisting standard and amendments	Not such equipment.	N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: □□is designed to allow the user to listen to recorded or broadcast sound or video; and □□primarily uses headphones or earphones that can be worn in or on or around the ears; and □□allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: □□while the personal music player is connected to an external amplifier; or □□while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: □□hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. □□analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.	Not such equipment	N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	**Zx.2 Equipment requirements** No safety provision is required for equipment that complies with the following: □□equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and □□a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and c) provide a means to actively inform the user of the ncreased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1.		N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: □□□the symbol of Figure 1 with a minimum height of 5 mm; and □□□the following wording, or similar: "To prevent possible hearing damage, do not listen at high volume levels for long periods." **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A

European Group differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Cont.	**Zx.4 Requirements for listening devices (headphones and earphones)**		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed "programme simulation noise" described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.	Not such equipment.	N/A
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.	Not such equipment.	N/A

European Group differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
.	**Zx.4.3 Wireless listening devices** In wireless mode: □□with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and □□respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and □□with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above-mentioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.	Not such equipment.	N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1 (A11:2008)	**Replace** the entire subclause in EN 60065:2002 and EN 60065:2002/A1:2006 by: **Ionizing radiation** Apparatus including a potential source of ionizing radiation shall be so constructed that personal protection against ionizing radiation is provided under normal operating conditions and under fault conditions. *Compliance is checked by measurement under the following conditions*: *In addition to the normal operating conditions, all controls adjustable from the outside BY HAND, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE 1 Soldered joints and paint lockings are examples of adequate locking. *The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.* *Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.* *The dose-rate shall not exceed 1µSv/h (0,1 mR/h) taking account of the background level.* NOTE 2 These values appear in Directive 96/29/Euratom of 13th May 1996. *A picture is considered to be intelligible if the following conditions are met*: *- a scanning amplitude of at least 70 % of the usable screen width;* *- a minimum luminance of 50 cd/m² with locked blank raster provided by a test generator;* *- a horizontal resolution corresponding to at least 1,5 MHz in the centre, with a similar vertical degradation;* *- not more than one flashover per 5 min.*	No ionizing radiation.	N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Z1 (A11:2008)	**Add** the following new clause after Clause 20: **Z1 Resistance to candle flame ignition** A television set shall be so designed that the likelihood of ignition and the spread of fire caused by a candle flame is reduced. NOTE 1 An apparatus with a viewing screen is not regarded to be a television set if it is declared not to be so by the manufacturer. This requirement does not apply to the display screen of rear projection TV's. NOTE 2 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. NOTE 3 The frame around the screen is not exempted from the requirements. Wood and WOOD-BASED MATERIAL with a thickness of at least 6 mm is considered to fulfil the V-1 requirement when applying CLC/TS 62441. *Compliance is checked according to CLC/TS 62441.* NOTE 4 The term vertical, as used in the first dash of clause 5.2 of CLC/TS 62441, does not mean a perfectly vertical position. It should be interpreted as any surface that can be touched by the flame of a candle of 150 mm height and 20mm diameter while the candle is still touching the supporting surface. A typical candle used in the home is assumed to be 20 mm diameter. NOTE 5 It is expected that CLC/TS 62441 will in the future be replaced by a standard, at which time that standard will become applicable, subject to a vote by National Committees at the time.	Not television set.	N/A
General	13.3.1 **Delete** note 4. 14 **Delete** note 4 and note 5. 15.1.1 **Delete** notes 1 and 2. 15.2 **Delete** note 2. 16.1 **Delete** note 1. 16.2 **Delete** the note. 20 **Delete** note 2. Annex B **Replace** note 1 by: In the CENELEC countries listed in IEC 62151, special national conditions apply. Annex G **Delete** the note. Annex J.2 **Delete** the notes of Table J.1. Annex N **Add** after the introduction: For ROUTINE TEST reference is made to EN 50333. (Replaced by EN 50514)		

European Group differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2010)	In IEC 60065:2001/A2 **Delete** all the "country" notes according to the following list: 5.3 Note 5.4.1 Note 20 Note For special national conditions, see Annex ZB.		—
Bibliography	Additional EN standards.		—

ZA	**Normative references to international publications with their corresponding European publications**	P

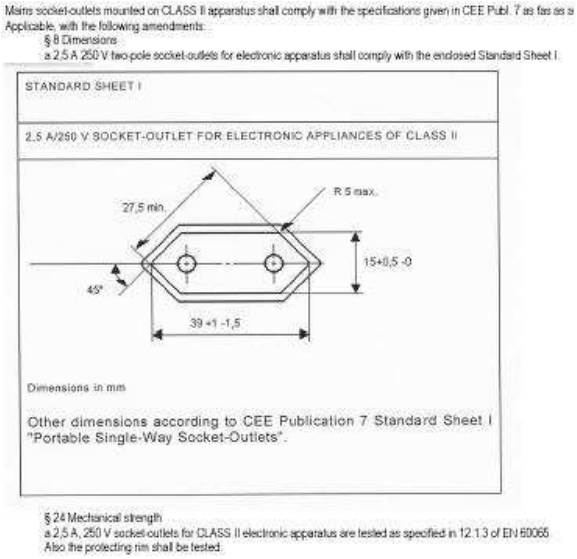
ZB	**ANNEX ZB TO EN 60065, SPECIAL NATIONAL CONDITIONS (EN)**		P
2.6.1	DK: The following is **added**: Certain types of CLASS I apparatus, see 15.1.1, may be provided with a plug not establishing earthing continuity when inserted in Danish socket-outlets *Justification:* Heavy Current Regulations, Section 107.	Not directly connected to the mains	N/A
3.Z1 (A2:2010)	**Denmark** **Add** to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification*: In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Not directly connected to the mains	N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.3 (A2:2010)	**Finland, Norway and Sweden** To the end of the subclause the following is **added**: CLASS I apparatus which is intended for connection to the building installation wiring via a plug or an appliance coupler, or both and in addition is intended for connection to other apparatus or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network TERMINALS and ACCESSIBLE parts, have a marking stating that the apparatus must be connected to an earthed MAINS socket-outlet. The marking text in the applicable countries shall be as follows: In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”	Not directly connected to the mains	N/A
5.4 (A11:2008)	**Finland, Norway and Sweden** To the end of 5.4 the following is **added**: CLASS I apparatus which is intended for connection to the building installation wiring via a plug or an appliance coupler, or both and in addition is intended for connection to other apparatus or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network TERMINALS and ACCESSIBLE parts, have a marking stating that the apparatus must be connected to an MAINS socket-outlet with protective earth. The marking text in the applicable countries shall be as follows: In Finland: “Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan” In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: "Apparaten skall anslutas till jordat uttag"	Not directly connected to the mains	N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.1 (A11:2008)	**Norway and Sweden** To the end of 5.4.1 (after the compliance statement) the following is **added**: The screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”	No cable distribution system	N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
13.3.1	NO: To the second paragraph the following is **added:** In Norway, due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault. *Justification:* Based on a use in Norway of an IT power distribution system where the neutral is not provided.	Not directly connected to the mains	N/A
15.1.1 (A11:2008)	**Denmark** The text of the Danish SNC in EN 60065:2002 has been **modified** as follows: To the first paragraph the following is added: In Denmark, supply cords of single-phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-D1. Appliances of CLASS I provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with the Heavy Current Regulations, Section 107-2-D1 standard sheet DK 2-1a. To the second paragraph the following is added: Socket outlets intended for providing power to CLASS II apparatus with a rated current of 2,5 A shall be in accordance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DKA 1-4a. Other current ratings socket outlets shall be in compliance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DKA 1-3a or DKA 1-3b. To the third paragraph the following is added: Mains socket-outlets with earthing contact shall be in compliance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DK 1-3a, DK 1-5a or DK 1-7a. Justification: Heavy Current Regulations, Section 107-2-D1	No socket outlet.	N/A
15.1.1	IE: Apparatus which is fitted with a flexible cable or cord shall be provided with a 13 A plug in accordance with Statutory Instrument 525:97, “13 A Plugs and Conversion Adapters for Domestic Use Regulations:1997. *Justification:* SI 525: 1997	Not directly connected to the mains	N/A

European Group differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
15.1.1	NO: Mains socket-outlets mounted on CLASS II apparatus shall comply with the specifications given in CEE Publ. 7 as far as a applicable, with the following amendments: § 8 Dimensions a 2.5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I.  § 24 Mechanical strength A 2,5 A 250 V socket-outlets for CLASS II electronic apparatus are tested as specified in 12.1.3 of EN 60065. Also the protecting rim shall be tested *Justification:* Act of 24 May 1929 relating to supervision of electrical installation (TEA 1929/FEL 1998).	Not directly connected to the mains	N/A
15.1.1	UK: Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug shall be fitted with a ”standard plug” in accordance with Statutory Instrument 1768: 1994: The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those Regulations. NOTE ”Standard plug” is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug. *Justification*: SI 1768: 1994		N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
J.2	NO: After Table J.1 the following is added: In Norway, due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault. *Justification*: Based on a use in Norway of an IT power distribution system where the neutral is not provided.		N/A

ZC	**ANNEX ZC TO EN 60065, A-DEVIATIONS (EN)**		P
5.1	IT: Additional markings on the outside of the TV receiver in Italian language		N/A
	IT:User instructions in Italian language including a conformity declaration		N/A
	IT: Certification number on the back cover		N/A
6.1	DE: The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification*: German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No cathode ray tube used.	N/A
14	SE: Switches containing mercury such as thermostats, relays and level controllers are not allowed. *Justification*: Ordinance (1990:944) on Prohibition in Connection with handling. Importation and exportation of Chemical Products (Certain Cases)	No such switch used.	N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
APPENDIX	Australia and New Zealand National Differences according to CB Bulletin (AS/NZS 60065:2012) (IEC Publication 60065 7th edition, 2001+ A1: 2005+A2:2010)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
ZZ	This Appendix provides variations between this Standard and IEC 60065, Ed.7.2 (2011).		P
Table 3	In Table 3 under item c) add an 201) in both columns against 'thermoplastic materials' and add the following new footnote: 201) As an alternative to the method described in footnote f) the following variation may be used where there is any doubt about the suitability of the material: The ball-pressure test described in AS/NZS 60695.10.2 may be carried out. To assess compliance under normal operating conditions, the test shall be made in a heating cabinet at a temperature of 40°C ±2°C plus the maximum temperature rise determined under normal operating conditions but, it shall be at least: - for external parts 75°C ±2°C - for materials supporting parts conductively connected to the mains 125°C ±2°C	Added.	N/A
7.2	After the second paragraph, add the following: The alternative method described in footnote 201) of Table 3 may be used.	Added.	N/A
15.1.1	After the second paragraph, add the following: Plugs for the connection of apparatus to mains-powered socket-outlets shall comply with AS/NZS 3112 or AS/NZS 3123. Apparatus with a plug portion, suitable for insertion into a 10 A 3-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements of AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.	Not directly connected to the mains	N/A
Table 15	In the second and third rows of the first column replace '6' with '7.5'.	Replaced	P
Table 18	In the second and third rows of the first column replace '6' with '7.5'.	Replaced	P
16.3	In item (b), add the following: A flexible cord complying with AS/NZS 3191 need not undergo this test.		N/A
19	Add the following new Clauses after 19.6	Added.	P

Australia and New Zealand National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
19.201	Mass of the television exceeding 7 kg .....:	Not television.	N/A
	Apparatus intended to be fastened in place – suitable instructions		N/A
19.201.1	Warning provided both in instruction and as a label on the apparatus **IMPORTANT INFORMATION** If a television is not positioned in a sufficiently stable location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple precautions such as: • Using cabinets or stands recommended by the manufacturer of the television. • Only using furniture that can safely support the television. • Ensuring the television is not overhanging the edge of the supporting furniture. • Not placing the television on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television to a suitable support. • Not standing the television on cloth or other materials placed between the television and supporting furniture. • Educating children about the dangers of climbing on furniture to reach the television or its controls.		N/A
19.201.2.1	Television receivers should be provided with a restraining device such as a fixing point to facilitate restraining the television from toppling forward.		N/A
19.201.2.2	Information of restraining device provided both in the instruction and as a label on the apparatus.		N/A
19.201.3	Television receivers, with a mass 18 kg or more, tested on a glass, inclined at 10^{o} to the horizontal. (Effective on 31 Jan 2013)		N/A
20	Add the following after the last paragraph: Alternatively the requirements are considered to be fulfilled if the apparatus complies with the requirements of Clause 20.201.	Added.	P
Table 21	In the third and fourth columns change both 'HB75' and 'No requirement' to 'V-1'.	Changed.	P
20.2.3	After this Clause, add the following variation:	Added.	P
20.201	Resistance to fire — Alternative tests		P
20.201.1	General Parts of non-metallic material shall be resistant to ignition and the spread of fire	For relevant sources of UL approved thermoplastic materials see table 14 for this report. Glow wire test Plastic enclosure: 550°C PCB: 750°C	P

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to propagate flames originating from inside the apparatus, or the following:		P
	a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length.		P
	b) The following parts which would contribute negligible fuel to a fire: - small mechanical parts, the mass of which does not exceed 4 g, such as mounting parts, gears, cams, belts and bearings; - small electrical components, such as capacitors with a volume not exceeding 1 750 mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1 or better according to AS/NZS 60695.11.10.		P
	NOTE – In considering how to minimize propagation of fire and what 'small parts' are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another.		P
	Compliance shall be checked by the tests of 20.201.2.1, 20.201.2.2. and 20.201.2.3		P
	For the base material of printed boards, compliance shall be checked by the test of 20.201.2.4.		P
	The tests shall be carried out on parts of non-metallic material which have been removed from the apparatus.		P
	When the glow-wire test is carried out, they are placed in the same orientation as they would be in normal use.		P
	These tests are not carried out on internal wiring.		P
20.201.2	Tests		P
20.201.2.1	Testing of non-metallic parts Part of non-metallic material shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C.	Glow wire test Plastic enclosure: 550°C PCB: 750°C	P

IEC60065 - ATTACHMENT

<table>
<tr><th>Clause</th><th>Requirement + Test</th><th>Result - Remark</th><th>Verdict</th></tr>
<tr><td></td><td>Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall not be carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was not thicker than the relevant part.</td><td></td><td>P</td></tr>
<tr><td>20.201.2.2</td><td>Testing of insulated parts
Part of insulating material supporting potential ignition sources shall be subject to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 750°C.</td><td>Plastic enclosure: 550°C
PCB: 750°C</td><td>P</td></tr>
<tr><td></td><td>The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection</td><td></td><td>P</td></tr>
<tr><td></td><td>NOTE – Contacts in components such as switch contacts are considered to be connections.</td><td></td><td>P</td></tr>
<tr><td></td><td>For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm shall be subjected to the needle-flame test.</td><td></td><td>P</td></tr>
<tr><td></td><td>However, parts shielded by a barrier which meets the needle-flame test need not be tested.</td><td></td><td>P</td></tr>
<tr><td></td><td>The needle-flame test shall be made in accordance with AS/NZS 60695.11.5 with the following modifications:
<table>
<tr><th>Clause of AS/NZS 60695.11.5</th><th>Change</th></tr>
<tr><td>9 Test Procedure</td><td></td></tr>
<tr><td>9.2 Application of needle-flame</td><td>Replace the second sentence of the first paragraph with:
The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1.
Add to the end of the first paragraph:
If possible, the flame shall be applied at least 10 mm from a corner.
Replace the second paragraph with:
The duration of application of the test flame shall be 30 ±1 s.</td></tr>
</table>
<table>
<tr><th>Clause of AS/NZS 60695.11.5</th><th>Change</th></tr>
<tr><td>9.3 Number of specimens</td><td>Replace with:
The test shall be made on one specimen. If the specimen does not withstand the test, the test may be repeated on two further specimens, both of which shall then withstand the test</td></tr>
<tr><td>11 Evaluation of test results</td><td>Replace with:
The duration of burning (t_b) shall not exceed 30 s. However, for printed circuit boards, it shall not exceed 15 s.</td></tr>
</table></td><td></td><td>P</td></tr>
</table>

Australia and New Zealand National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to AS/NZS 60695.11.10 provided that the sample tested was not thicker than the relevant part.		P
20.201.2.3	Testing by needle-flame test If parts, other than enclosures, do not withstand the glow wire tests of 20.201.2.2, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 20.201.2.2 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 20.201.2.2.		P
	Parts shielded by a separate barrier which meets the needle-flame test shall not be tested.		P
	NOTE 1 – If the enclosure does not withstand the glow-wire test the appliance is considered to have failed to meet the requirements of Clause 21.201 without the need for consequential testing. NOTE 2 – If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the apparatus, the apparatus is considered to have failed to meet the requirements of Clause 21.201 without the need for consequential testing NOTE 3 – Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting, in contact with, or in close proximity to, connections.		P
20.201.2.4	Testing of printed boards The base material of printed boards shall be subject to the needle-flame test of Clause 21.201.2.3.	Rated min. V-1 PCB used.	N/A
	The flame shall be applied to the edge of the board where the heatsink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge consisting of broken perforations, unless the edge is less than 3 mm from a potential ignition source.		N/A
	The test is not carried out if:		N/A
	The printed board does not carry any potential ignition source		N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	base material of printed boards, on which the available power at a connection exceeds 15 VA operating at a voltage exceeding 50 V and equal or less than 400 V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely		N/A
	base material of printed boards, on which the available power at a connection exceeds 15 VA operating at a voltage exceeding 400 V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10		N/A
	the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely		N/A
21.201.3	For open circuit voltages greater than 4 kV potential ignition sources with open circuit voltages exceeding 4 kV (peak) a.c. or d.c. under normal operating conditions shall be contained in a fire enclosure which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.	No such high voltage.	N/A
Annex B	After the Annex title add the following: For Australia only, this Annex is replaced by the requirements of the Telecommunications Labelling Notice issued under the Telecommunications Act 1997. NOTE – The Telecommunications Act 1997 is administered by the Australian Communications and Media Authority.	Not TNV circuit.	N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
APPENDIX	Canadian National Differences according to CB Bulletin (CAN/CSA C22.2 No. 60065: 03 + A1: 2006 + A2: 2012) (IEC Publication 60065 7th edition, 2001 + A1: 2005 + A2:2010)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.1.1	Add the following paragraph and note: This Standard applies to the safety of such equipment designed to be installed and used in accordance with the rules of the Canadian Electrical Code (CEC), Part I. Note 4A: Manufacturers designing products for use in Canada may find a helpful summary of the equipment-related requirement of the CEC, Part I, in CSA SPE-2000.		P
1.2	Normative references Where reference is made to CSA Publications, such reference shall be considered to refer to the latest edition and all amendments published to that edition. This Standard refers to the following Standards, and the years shown indicate the latest editions available at the time of printing. ANSI/IEEE Standard C62.1-1984, Surge Arresters for Alternating-Current Power Circuits CSA Standards C22.1-02, Canadian Electrical Code, Part 1 CAN/CSA-C22.2 No. 0-M91 (R2001), General Requirements - Canadian Electrical Code, Part II C22.2 No. 0.4-M1982 (R1999), Bonding and Grounding of Electrical Equipment (Protective Grounding) C22.2 No. 0.15-01, Adhesive Labels CAN/CSA-C22.2 No. 1-98, Audio, Video and Similar Electronic Equipment CAN/CSA-C22.2 No. 21-95 (R1999), Cord Sets and Power Supply Cords C22.2 No. 39-M1987 (R1999), Fuseholder Assemblies C22.2 No. 42-99, General Use Receptacles, Attachment Plugs, and Similar Wiring Devices		P

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	CAN/CSA-C22.2 No. 49-98, Flexible Cords and Cables CAN/CSA-C22.2 No. 94-M91 (R2001), Special Purpose Enclosures C22.2 No. 127-99, Equipment and Lead Wires C22.2 No. 209-M1985 (R1999), Thermal Cut-Offs CAN/CSA-C22.2 No. 210.2-M90 (R2001), Appliance Wiring Material Products CAN/CSA-C22.2 No. 223-M91 (1999), Power Supplies with Extra-Low-Voltage Class 2 Outputs CAN/CSA-C22.2 No. 228-92 (1999), Cathode Ray Tubes CAN/CSA-C22.2 No. 248.14-00, Low Voltage Fuses - Part 14 Spe-2000-94, Guide for Electrical Equipment for Installation and Use in Canada IEC Standards 60038:2002, IEC standard voltages 60083:1975, Plug and socket-outlets for domestic and similar general use. 60173:1964, Colours of the cores of flexible cables and cords. 60320 (all parts), Appliance couplers for household and similar general purposes. 60707:1981, Methods of test for the determination of the flammability of solid electrical insulating materials. 60884 (all parts), Plugs and socket-outlets for household and similar purposes. 60906-1:1986, IEC System of plugs and socket-outlets for household and similar purposes - Part 1: Plugs and socket-outlets 16A 250V ac. 60906-2:1997, IEC System of plugs and socket-outlets for household and similar purposes - Part 2: Plugs and socket-outlets 15A 125V ac. 60906-3:1994, IEC System of plugs and socket-outlets for household and similar purposes - Part 3: SELV plugs and socket-outlets 16A 6V, 12V, 24V, 48V ac and dc.		
3.2A	*Add the following clause* A component power supply complying with CAN/CSA – C22.2 No. 60950 is considered to comply with this construction and fault conditions of this Standard after taking into account any relevant conditions of acceptability.	No such power supply.	N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.2	Normal operating conditions		P
4.2.1	*Add the following after the fifth paragraph* For apparatus intended for use at nominal 120Vac the apparatus shall comply with this Standard at supply voltages between 108V and 125V. For apparatus intended for use at nominal 240Vac, the apparatus shall comply with this Standard at supply voltages between 216V and 250V.		P
4.2.10	*Add the following after the second paragraph* As an alternative, a supply apparatus for general use complying with CAN/CSA – C22.2 No. 223 or CAN/CSA – C22.2 No. 60950 shall be acceptable.	No such apparatus.	N/A
5	Marking and instructions *Add the following paragraph* Adhesive nameplates on commercial products shall comply with CSA Standard C22.2 No. 0.15.	Not commercial products.	N/A
5.1	Identification and supply ratings *Add the following item* hA) date of manufacture: a date or code identifying the period of manufacture shall be marked on the apparatus;	Marked on outer enclosure.	P
5.3A	*Add the following clause* Where a loudspeakeer grille, removable from the outside, is relied on as part of the enclosure (see Clause 9.2), the following marking or equivalent shall be visible on the enclosure after removal of the grille: “Caution – To prevent electric shock hazard, replace grille.” Alternatively, the symbol in Clause 5.2 b) shall be visible after removal of the grille, and tha caution wording above shall appear in the user instructions, accompanied by the symbol. Compliance is checked by inspection.		N/A
8	Constructional requirements with regard to protection against shock	Not directly connected to the mains	P
8.9	*Add the following title to this clause* Mains wiring *Add the following paragraph* Wiring in circuits with voltages higher than 42 V peak shall comply with CSA C22.2 No. 127 or CAN/CSA – C22.2 No. 210.2.		N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
9.1	Testing on the outside	Not directly connected to the mains	N/A
9.1.1A	Class I apparatus leakage *Add the following clause* For cord – connected Class I apparatus, the leakage current through the safety earthing conductor, expressed as voltages U_1 and U_2, shall not exceed U_1 = 105 V (peak) and U_2 = 1.05 V (peak) (1.5mA). Apparatus having a leakage current between 0.75 mA and 1.5 mA shall be provided with a caution label on the mains cord with the following, or equivalent: "CAUTION – TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTRE PIN OF THIS PLUG MUST BE MAINTAINED".		N/A
9.1.1.2	Determination of accessible parts *Add the following after the fourth paragraph* Moving parts of loudspeaker systems, such as dust caps, cones of drivers, or passive radiators, are not regarded as preventing accessibility		N/A
Note 1A:	See also Clause 13.3.1		N/A
9.2	Removal of protective covers *Add the following after the second paragraph* This requirement applies also to internal parts of louderspeaker systems that become accessible by removal of a louderspeaker grille from the outside either by hand or with the use of a tool, coin, or other object. In such cases, the apparatus shall be marked according to Clause 5.3A. *Replace the third paragraph with the following* Compliance is checked by inspections and by application of the tests of Clause 9.1.1, except that the measurements are made 2 s after removal of the cover or grille.		N/A
10	Insulation requirements		N/A
10.2A	Enclosure type designation and use *Add the following paragraph* If equipment is installed in environments where the enclosure is required to prevent ingress of water or dust, the enclosure shall be classified as a type recognized by the *Canadian Electrical Code, Part I*, and shall comply with the requirements of CAN/CSA – C22.2 No. 94.	Not such equipment.	N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
11.2	Heating *Add the following paragraph* Flammable gases shall not be emitted from a component for more than 10 s.	No flammable gases.	P
12	Mechanical strength		P
12.3A	Television Impacts *Add the following clause*	Not television.	N/A
12.3A.1	For television sets and similar apparatus using a cathode ray tube larger than 160 mm diagonally, the top, sides, front, and rear of the enclosure, including the safety screen where provided, shall be capable of withstanding a single impact of 7 J in accordance with Clause 12.3A.2 without developing any opening larger than 130 mm in the enclosure of the cathode ray tube, unless the minor dimension of 2 any opening is not more than 7 mm. When applied to a safety screen, the impact shall not result in damage to its mounting to the extent that it is mechanically unsuitable for reuse, nor shall tempered glass, if used, be cracked. When applied to the face of a directly viewed cathode ray tube, the impact shall not cause any opening in the face of the tube. Scaling and cracking of the glass shall be permissible. A cathode ray tube that has been shown to comply with CAN/CSA – C22.2 No. 228 or CAN/CSA – E 61965 shall be considered acceptable with no further tests.	Not TV.	N/A
12.3A.2	The impact specified in clause 12.3A.1 shall be caused by following a solid, smooth, steel sphere 51mm in diameter and weighing approximately 0.5kg to strike the enclosure with the specified impact in a direction perpendicular to the enclosure surface. If deemed necessary, the enclosure shall be tested with the proper cathode ray tube mounted.	No cathode ray tube was used.	N/A
13.3	Clearances		N/A
13.3.1	General *Add the following after the third paragraph* Clearances between a loudspeaker voice coil and adjacent conductive parts shall be disregarded.		N/A
14.2	Capacitors and RC - units		N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
14.2.1	*Add the following paragraph* As an alternative, an isolating capacitor complying with applicable requirements of CSA C22.2 No. 1 shall be acceptable for bridging basic or supplementary insulation.		N/A
14.2.2	*Add the following paragraph* As an alternative, a cross-line capacitor complying with applicable requirements of CSA C22.2 No. 1 shall be acceptable.		N/A
14.5.1	Thermal releases	No such components provided.	N/A
14.5.1.2	*Add the following paragraph* As an alternative, a thermal link complying with CSA C22.2 No. 209 shall be acceptable.		N/A
14.5.2	Fuse – links and fuse holders	No such components provided.	N/A
14.5.2.1	*Add the following paragraph* As an alternative, a fuse-link complying with CSA C22.2 No. 284.14 shall be acceptable.		N/A
14.5.2.4	*Add the following paragraph* As an alternative, a fuseholder assembly complying with CSA Standard C22.2 No. 39 shall be acceptable.		N/A
14.6	Switches	No such components provided.	N/A
14.6.1 to 14.6.5	*Add the following paragraph* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9 shall be acceptable.		N/A
14.11	Optocouplers *Add the following paragraph* As an alternative, an optocoupler complying with CSA C22.2 No. 1 shall be acceptable.	No optocouplers provided.	N/A
14.12	Surge supperssion varistors *Add the following paragraph* As an alternative, an varistor complying with CSA C22.2 No. 1 shall be acceptable.	No surge supperssion varistors provided.	N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
14.12A	Gas discharge tubes *Add the following clause* Gas discharge tubes complying with following tests may be connected to bridge basic or reinforced insulation. Ten samples of gas discharge tubes isolating the ac supply from exposed parts shall be subjected to the varistor pulse tests of Clause 14.12. Following the pulses, the device shall be allowed to return to room temperature. The dielectric breakdown voltage of the fas tube shall not decrease by more than 50%, and the gas discharge tube shall comply with the dielectric strength test of Clause 10.3, with the test voltage reduced to twice the mains voltage.	No gas discharge tubes.	N/A
15.1	Plugs and sockets		N/A
15.1.1	*Add the following paragraph* A receptacle provided for general purpose mains output shall comply with the requirements of CSA Standard C22.2 No. 42 (dimensional requirements are also specified in IEC 60906-2). The attachment plug cap shall be polarized type when the apparatus is provided with a manually operated, MAINS connected single pole switch for apparatus on-off operation, a socket screw shell lampholder, or a 15 or 20 ampere socket outlet.		N/A
15.1.2	*Add the following paragraph* Banana plugs shall be acceptable.	No such plug.	N/A
15.1.3	*Add the following title* Adapter output connectors *Replace the first paragraph with the following* Terminals and connectors used in output circuits of supply apparatus, whose output voltage is not a standard nominal mains voltage according to IEC 60038 (1), IEC 60320, IEC 60884, IEC 60906 (parts 1, 2, and 3), and CSA C22.2 No. 42.		N/A
15.2	Provisions for protective earthing *Replace the first paragraph with the following* Earthing connections shall comply with the test requirements of CSA C22.2 No. 0.4.	Not directly connected to the mains	N/A
15.3	Terminals for external flexible cords and for permanent connection to the mains supply	Not directly connected to the mains	N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
15.3.1A	*Add the following clause* Equipment intended for permanent connection to the mains shall have provisions for connection to the wiring system in accordance with the Canadian Electrical Code, Part I. The terminal parts and all other provisions for permanent connection to fixed wiring shall comply CSA Standard CAN/CSA-C22.2 No. 0.	Not intended for permanent connection to the mains.	N/A
15.4	Devices forming a part of the mains plug		N/A
15.4.2	*Add the following paragraphs* Mains plugs of non-permanently installed equipment shall comply with a) CSA C22.2 No. 21 for moulded-on type attachment plugs; and b) CSA C22.2 No. 42 for disassembly type attachment plugs (dimensional requirements are also specified in IEC 60906-2). Class II equipment provided with a general purpose mains outlet, or lampholder, shall be provided with a polarized-type plug. If the plug is a polarized type, single pole switches or over current protectors shall not be connected in the identified conductor.		N/A
16	External flexible cords	Not directly connected to the mains	N/A
16.1	*Replace this clause with the following* Flexible cord used for mains supply shall comply with the requirements of CSA C22.2 No. 49. The cord type shall be in accordance with Table 4 of CSA C22.2 No. 1. The attachment plug shall be rated not less than 125% of the apparatus rated current. Cord sets shall comply with the requirements of CSA C22.2 No. 21.		N/A
	Non-detachable flexible cables and cords of Class I apparatus shall be provided with a green/yellow core connected to the protective earthing terminal of the apparatus and, if a plug is provided, to the protective earthing contact of the plug. Compliance is checked by inspection. Note: The colour for cores of flexible mains cords is contained in IEC 60173 (4).		N/A
17	Electrical connections and mechanical fixings		N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
17.9A	Adhesive securement and conductive coatings *Add the following clause*	No such adhesive.	N/A
17.9A.1	Adhesive securement The following parts, the displacement of which may result in a fire or shock hazard, shall not be secured solely by adhesive, unless the adhesive system complies with the resistance to external forces test fo Clause 9.1.7, the bump test of Clause 12.1.1, and the impact test of Clause 12.1.3, after conditioning in accordance with Clause 17.9A.2: a) internal metal parts/conductive coatings; b) barriers; and c) required enclosure parts. Note: Cathode ray tubes are excluded from this test.		N/A
17.9A.2	Adhesive and conductive coating securement conditioning	No such adhesive or conductive coating.	N/A
17.9A.2.1	General Where required by Clause 17.9A.1, one sample of the apparatus or enclosure section shall be conditioned in accordance with the requirements of Clause 17.9A.2.2. Equivalent ageing test data supplied by the manufacturer will be considered in lieu of ageing.		N/A

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
17.9A.2.2	Ageing Day 1: Place in oven at 100±1°C for 1 week, or 82± 1°C for 8 weeks at the manufacturer's option. **Day 8 or Day 57:** 1. Remove from oven and leave at room temperature for 1h. 2. Place in freezer at –35°C for 2h. 3. Remove from freezer and allow to reach room temperature overnight. **Day 9 or Day 58:** 1. Place in a compartment at 96% relative humidity for 3h. 2. Remove and leave at room temperature and humidity for 1h. 3. Place in oven at a temperature selected in the first cycle for 3h. 4. Remove and allow to come to room temperature overnight. **Day 10 or Day 59:** 1. Place in Freezer at –35°C for 2h. 2. Remove and leave at room temperature for 1h. 3. Place in humidity chamber at 96% relative humidity for 3h. 4. Remove and allow to come to room temperature overnight. **Day 11 or Day 60:** 1. Place in oven at a temperature selected in the first cycle for 3h. 2. Remove for 1h. 3. Place in Freezer at –35°C for 2h. 4. Remove and allow to come to room temperature overnight. **Day 12 or Day 61:** 1. Place in humidity chamber at 96% relative humidity for 3h. 2. Remove and perform mechanical tests as required by Clause 17.10.1 or 17.10.2 as applicable.		N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
18	Mechanical strength of picture tubes and protection against the effects of implosion	No picture tube.	N/A
18.1A	*Add the following clause* A picture tube with a maximum face dimension exceeding 75mm either shall be intrinsically protected with respect to effects of implosion and to mechanical impact in accordance with CAN/CSA - C22.2 No. 228 or CAN/CSA – E61965, or the enclosure of the apparatus shall provide adequate protection against the effects of an implosion of the tube (see Clause 12)		N/A
19	Stability and mechanical hazards *Add the following after the second paragraph* The test of Clause 19.3 is only required for a) apparatus with a mass of 25kg or more b) apparatus, excluding loudspeaker systems, with a height of 1m or more, or c) apparatus, including loudspeaker systems, in combination with a supplied or recommended cart of stand with a total height of 1m or more. *Add the following paragraph* Apparatus not tested because it is intended to be fastened in place shall be provided with the following warning: "WARNING: This apparatus must be securely attached to the floor/wall per installation instruction. Tipping, shaking or rocking the machine may cause injury/death."		N/A
20.2 20.2.1A	Fire enclosure *Add the following clause* Enclosures of apparatus containing high voltage or projection lamps shall have a minimum flammability rating of category FV1 according to IEC 60707 at the minimum thickness used.	No such high voltage or projection lamp.	N/A
Annex B (normative)	Apparatus to be connected to the telecommunication networks *Replace this annex with the following* Apparatus intended for direct connection to a telecommunication network shall comply with a) Clause 19 of CSA C22.2 No.1; or b) CAN/CSA – C22.2 No. 60950.	No TNV.	N/A

Canadian National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
APPENDIX	China National Differences according to CB Bulletin (GB 8898-2011) (IEC Publication 60065 7th edition, 2001+A1: 2005)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.1.3	Amended the first paragraph: This standard applies to apparatus intended to be used basically at altitudes not exceeding 5 000 m, dry climate at warm temperate zone or tropical climates.		P
	The fourth paragraph replaced by following: For apparatus intended to be used in vehicles, ships or aircraft, or at altitudes exceeding 5 000m, additional requirements may be necessary.		N/A
5	At the end of the first paragraph ,added following: For apparatus intended to be used at altitude not exceeding 2000m, a warning label containing the following or a similar appropriate wording or a symbol as in annex R(see following) shall fixed to the equipment at readily visible place. "Only used at altitude not exceeding 2000m. If only symbol used, the explanation of the symbol shall be contained in the instruction manual. For apparatus intended to be used in not-tropical climate regions, a warning label containing the following or a similar appropriate wording or a symbol as in annex R shall fixed to the equipment at readily visible place. "Only used in not-tropical climate regions." If only symbol used, the explanation of the symbol shall be contained in the instruction manual. The statements above shall be given in a language acceptable to the regions where the apparatus is intended to be used.	Should be considered during the national approval.	N/A

China National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.1 e)	After the last paragraph, added: For single rated voltage, “220 V” or three-phase “380V” shall be marked only. For a rating range, 220 V or three-phase 380V shall be covered. For multiple rated voltages, one of them shall be 220 V or three-phase 380V and which default setting from manufacture shall be 220 V or three-phase 380V as well.	Added.	P
5.1 f）	After the first sentence, Added: for Rated MAINS frequency or frequency range shall be 50Hz or covered 50Hz.	Not directly connected to the mains	N/A
5.4	Replaced the second sentence of the first paragraph： This information shall be given in normative Chinese.	Should be considered during the national approval.	N/A
5.4.1i)	Added new paragraph i),after the h) paragraph: i) For apparatus incorporating antenna coaxial sockets witch is non-separated with CATV network, a warning wording or a similar shall be given in the instructions manual: “The CATV network connecting to this apparatus shall separate from protective earth, otherwise it may cause fire or other hazard.”	No such construction.	N/A
7 ,Table3	Note a) of table 3 replaced: This standard applies to apparatus intended to be used in tropical climates, permissible temperature rises are 10 K less than those specified in the table. For apparatus intended to be used in non-tropical climates the limits in Table 3 are satisfactory.	Not directly connected to the mains	N/A
7.1	Added Note 3: For apparatus intended to be operated at altitudes between 2 000m and 5 000m, temperature measuring conditions and maximum temperature limits are under consideration.		N/A
9.1.1.1	Delete the note 3 and renumber the existing note 4 as 3.		N/A
9.1.1.1	After the paragraph of d), added a paragraph: For apparatus intended to be used in tropical climates, the limits should be halved than the values given in a) and b) above.		N/A

China National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10	Added a paragraph after the second paragraph : The Insulation resistance between CATV antenna coaxial sockets and protective earth of apparatus shall comply with BASIC INSULATION. If it's possible that CLASS II apparatus with CATV antenna coaxial sockets connect with protective earth of another CLASS I apparatus by other terminals, the insulation resistance between them shall comply with BASIC INSULATION as well. Added Note: if antenna cable separated from the protective earth before connection to the apparatus, there is no requirements of Insulation resistance between them but 5.4.1i) requirements shall be meet.		N/A
10.1	Delete "on CLASS II apparatus" in the first paragraph.	Delete.	N/A
10.2	Replaced the fifth to seventh paragraphs by the following: The humidity treatment is carried out in a chamber containing air with a relative humidity of 93%±3 %. For apparatus, temperature of 40℃±2℃ and a relative humidity of 93%±3% shall be subjected. Apparatus intended to be used in non-tropical climates are subjected to a relative humidity of 93%±3%. The temperature in the chamber, at all places where samples located, shall be maintained within 2℃of any convenient value between 20℃ and 30℃, as long as no condensation occur.	Replaced	N/A
	Added Note 4: For apparatus intended to be operated at altitudes between 2 000m and 5 000m, the requirements for treatment of the insulating material are under consideration.	Added.	N/A
11.1	Delete note 2.	Deleted.	N/A
11.1	After the ninth paragraph added a paragraph: For apparatus intended to be used in tropical climates, halve the values given above.	Not directly connected to the mains	N/A
12.5	Amended the first paragraph : Antenna coaxial sockets to be mounted on the apparatus shall subject to mechanical stress caused in use, and the sockets incorporate with parts or components which isolated HAZARDOUS LIVE parts from ACCESSIBLE parts or protective earth from other terminals.	No such construction.	N/A

China National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
13.3.2 Table 8 Table9 Table 10	After the first paragraph, added a paragraph: The requirements apply to apparatus intended to be used at altitude not exceeding 2 000 m . For apparatus intended to be operated at altitudes between 2 000m and 5 000m , Minimum CLEARANCE limits shall multiply with multiplication factor 1.48 in table A.2 of GB/T 16935.1. For apparatus intended to be operated at altitude more than 5 000m , Minimum CLEARANCES limit shall multiply with relevant multiplication factor in table A.2 of GB/T 16935.1.	Not directly connected to the mains	N/A
	Bellow the headings of Table 8 Table 9 and Table 10 ,added : “（Applicable for altitude up to 2000m）” .		N/A
	Amended Table 9 Note 2: For operating voltage values exceeding of table 8, extrapolation is permitted.		N/A
13.3.3	After the first paragraph, added a paragraph: The requirements in table 10 apply to apparatus intended to be used at altitude not exceeding 2 000 m. For apparatus intended to be operated at altitudes between 2 000m and 5 000m , Minimum CLEARANCE limits shall multiply with multiplication factor 1.48 in table A.2 of GB/T 16935.1. For apparatus intended to be operated at altitude more than 5 000m , Minimum CLEARANCES limit shall multiply with corresponding multiplication factor in table A.2 of GB/T 16935.1.		N/A
15.1.1	After the first paragraph, added a paragraph: Plugs connected to the MAINS in apparatus shall comply with GB 1002 or GB 1003.	Should be considered during the national approval.	N/A
18	Delete the first paragraph except the first sentence.	Deleted.	
18.1	Replaced contents of two dashes in the fourth paragraph: ——for intrinsically protected tubes, including those having integral protective screens, compliance is checked according to GB27701. ——for tubes non-intrinsically protected checked by 18.2.	No such components.	N/A
18.2	Delete clause 18.2 and renumber the existing clause 18.3 as 18.2.		N/A

China National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex J.6	After the first paragraph, added a paragraph: For apparatus intended to be operated at altitudes between 2 000m and 5 000m, the Minimum CLEARANCES in table J.2 shall multiply with multiplication factor 1.48 in table A.2 of GB/T 16935.1. For apparatus intended to be operated at altitude more than 5 000m, Minimum CLEARANCES shall multiply with corresponding multiplication factor in table A.2 of GB/T 16935.1.	<2000m.	N/A
	Delete note 3 of table J.6.		N/A
Annex R (normative)	Added annex R: Instructions for the new safety warning labels. R.1 Altitude warning label Meaning of the label: Evaluation for apparatus only based on altitude not exceeding 2000m, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used at altitude above 2000m . R.2 Climate warning label Meaning of the label: Evaluation for apparatus only based on temperate climate condition, therefor it's the only operating condition applied for the equipment .There may be some potential safety hazard if the equipment is used in tropical climate region.	Should be considered during the national approval.	N/A
Annex S (informative)	Added annex S: Illustration relative to safety explanation in normative Chinese、Tibetan、Mongolian、Zhuang Language and Uighur.	Should be considered during the national approval.	N/A

China National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
APPENDIX	Japanese National Differences according to CB Bulletin (J60065 (H23)) (IEC Publication 60065 7th edition, 2001+A1: 2005)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.1.3	**Addition:** Add the following as a NOTE after the first sentence. NOTE 1 In Japan, the requirements for regions with moderate apply.	Added.	**P**
2.4.9	**Replacement:** In NOTE 1, replace “see 4.2.2 of IEC 62151” by “see 4.2.2 of IEC 62151 [27]”.	Replace.	**P**
2.6.2A	**Addition:** Add this sub clause. CLASS 0I EQUIPMENT: Equipment which has, as for protection against electric shock, - at least using BASIC INSULATION, and - providing a means of connecting to the protective earthing conductor in the building wiring those conductive parts that are otherwise capable of assuming HAZARDOUS VOLTAGES if the BASIC INSULATION fails, and - using a supply cord without earthing conductor or a plug without earthing pin. Apparatus provided with a cord set having a two-pin type plug with a lead wire for earthing or having three pin - tow pin adaptor is also regarded as Class 0I. NOTE Class 0I equipment may have a part constructed with Double Insulation or Reinforced Insulation.	Not CLASS 0I EQUIPMENT.	N/A
2.6.2A	**Addition:** Add this sub clause. CLASS 0I EQUIPMENT: Equipment which has, as for protection against electric shock, - at least using BASIC INSULATION, and	Not CLASS 0I EQUIPMENT.	N/A
3.2	**Addition:** Add the “Class 0I equipment” in the first sentence of this sub-clause.	Not CLASS 0I EQUIPMENT.	N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2	**Addition:** Add the following after the first sentence of this sub-clause. NOTE Equipment often transported and used should not be Class I equipment nor Class 0I equipment.	Not transportable equipment.	N/A
4.2.8	**Deletion:** Delete this clause.	Deleted.	**P**
4.3.4, b)	Replacement: Replace IEC 60730-1 by JIS C 9730-1 (corresponding to IEC 60730-1).	Replaced.	**P**
4.3.12	Deletion: Delete this clause.	Deleted.	P
4.3.13	**Replacement:** Replace “250 V a.c.” by “the maximum of the variable range”.	Replaced.	**P**
5.4.2A	**Addition:** For CLASS 0I EQUIPMENT, the following instruction shall be indicated where readily visible on the mains plug or the product: “WARNING: Provide an earthing connection” *Example in Japanese:* 警告 必ず接地接続を行ってください。 Moreover, for CLASS 0I EQUIPMENT, the following instruction shall be indicated where readily visible on the product or written in the operating instructions: “WARNING: Provide an earthing connection before the mains plug is connected to the mains. And, when disconnecting the earthing connection, be sure to disconnect after pulling out the mains plug from the mains.” *Example in Japanese:* 警告 接地接続は必ず、主電源プラグを主電源につなぐ前に行って下さい。また、接地接続を外す場合は、必ず主電源プラグを主電源から切り離してから行って下さい。	Not CLASS 0I EQUIPMENT.	N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.2	**Replacement:** In NOTE 1, replace IEC 61040 [10] by JIS C 6181:1995 [10].	Replaced.	P
7.1.5	**Addition:** Add the words, “without dimensions restrictions” after the figure, “65 K” in the first sentence of Condition “b” in Table 3 as follows. For parts not likely to be touched during intended use, temperature rises up to 65 K without dimensions restrictions are allowed under normal operating conditions.	Added.	P
	Addition: Add the following paragraph as 2nd paragraph of Condition “d “in Table 3. For materials which are not listed in Table 3, temperature rises in the normal operating conditions are considered satisfactory if these materials comply with item 3 of detailed regulations, 1.(1),b, Appendix 4 in the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material. Permissible temperature rise of “Supply cords and wiring insulation” is applicable only to the materials used in supply cords complying with JIS C 3662 (corresponding to IEC 60227) or JIS C 3663 (corresponding to IEC 60245). Materials used in other wiring shall comply with item 3 of detailed regulations, 1.(1).b, Appendix 4 in the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material.	Added.	P
	Addition: In the first paragraph of Condition “f” of Table 3, add ”JIS K 7206:1999 or” before the reference, ISO 306.	Added.	P
	Addition: In Condition “f,” 1) of Table 3, add ”JIS K 7206:1999 or” before the reference, ISO 306.	Added.	P
7.2	**Addition:** In NOTE 2, add ”or JIS standard (identical to or modified IEC)” after the word, IEC standard.	Added.	P
8.5	**Addition:** In the first paragraph, add “and Class 0I Equipment” after the words, Class I Equipment.	Added.	P

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
8.5	**Addition:** In the six paragraph (before NOTE 3), add the following to the end of the first sentence. CLASS 0I EQUIPMENT shall be provided with a protective earthing terminal at any point outside the apparatus where easily visible or a protective external earth wire from mains plug.	Not CLASS 0I EQUIPMENT.	N/A
8.11	**Addition:** In NOTE 2, c), add "or JIS C 2107, JIS C 2336, JIS C 2338" after the reference, IEC 60454.	Added.	P
9.1.1.1	**Addition:** In the last paragraph, add the following sentence after the first sentence. For CLASS 0I EQUIPMENT, the r.m.s. TOUCH-CURRENT to earth shall not be more than 1.0 mA.	Not CLASS 0I EQUIPMENT.	N/A
10	**Replacement:** In NOTE, replace "IEC 60664-1 and IEC 60664-4 [9]" by "JIS C 0664:2003 and IEC/TR3 60664-4 [8]"	Replaced.	**P**
10.1	**Addition:** Add "CLASS 0I EQUIPMENT and" to the head of the first paragraph.	Added.	P
10.3.2	**Addition:** In Table 5, add the following values to the sub-table of NOTE. Operating Voltage *U* (peak) | Test voltage (peak): Curve A | Curve B **142 V** | **1 414 V** | **2 828 V**	Added.	N/A
11.2.1	**Addition:** Add the following after the original NOTE. NOTE 2 Fuses except for the ones according to IEC 60127 shall be tested in consideration of the characteristic.	Added.	P
11.2.3	**Addition:** Add "and CLASS 0I" after the words, CLASS I.	Added.	P
13.4	**Replacement:** In NOTE 2 of Table 11, replace "IEC 60664-1" by "JIS C 0664:2003" (corresponding to IEC 60664-1).	Replaced.	P

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
14.3.3.2	**Addition:** In the second sentence of the first paragraph, add "or JIS C 2107, JIS C 2336 and JIS C 2338" after the reference, IEC 60454.	Added.	P
14.5.1.1	**Addition:** In item a), add "JIS C 9730 series or" before the reference, IEC 60730 series.	Added.	P
14.5.1.2	**Replacement:** In the first sentence of item a), replace "IEC 60691" by "IEC 60691, JIS C 6691:2003 or Appendix 3 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material".	Replaced.	P
14.5.2.1	**Replacement:** Replace the first and the second sentence as follows: Fuse-links, DIRECTLY CONNECTED TO THE MAINS, used in order to prevent the apparatus from becoming unsafe within the sense of this standard shall comply with - the relevant part of IEC 60127 or JIS C 6575, unless they have a rated current outside the range specified in that standard. In the latter case, they shall comply with the relevant part of IEC 60127 or JIS C 6575 as far as applicable, or - Appendix 3 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material (limited to Fuses with the rated current of 1 A or more).	Replaced.	P
14.5.2.2	**Addition:** Add the following sentence before the last paragraph. For fuses according to Appendix 3 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material, all that needs to be marked is the rated current.	Replaced.	P
14.5.3	**Replacement:** Replace "IEC 60730-1" by "JIS C 9730-1" (corresponding to IEC 60730-1).	Replaced.	P
14.5.4	**Replacement:** Replace "IEC 60127" by "IEC 60127 or JIS C 6575 ".	Replaced.	P

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
14.6.1	**Addition:** Add the following paragraph after NOTE. The following manually operated mechanical switches shall meet the requirements specified in item a) or b) below. - the controlling current exceeds 0.2 A r.m.s a.c. or d.c. - the voltage across the open switch contacts exceeds 35 Vpeak ac or 24 Vdc.	Added.	P
14.6.1	**Replacement:** In item a), replace “IEC 61058-1” by “IEC 61058-1 or JIS C 4526-1:1999”.	Replaced.	P
14.6.2	**Replacement:** Replace “IEC 61058-1” by “IEC 61058-1 or JIS C 4526-1:1999”.	Replaced.	P
14.6.3	**Replacement:** Replace “IEC 61058-1” by “ IEC 61058-1 or JIS C 4526-1:1999”.	Replaced.	P
14.6.5	**Replacement:** Replace “IEC 61058-1” by “ IEC 61058-1 or JIS C 4526-1:1999”.	Replaced.	P
14.7	**Replacement:** Replace “IEC 60950” by “JIS C 6950:2006”.	Replaced.	P

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
15.1.1	**Replacement:** Replace the first and second paragraph by the following. Plugs and appliance couplers for the connection of the apparatus to the MAINS and socket-outlets and interconnection couplers for providing MAINS power to other apparatus shall comply with the relevant JIS standards for plugs, socket-outlets, appliance couplers or interconnection couplers. If there is no appropriate JIS standard, they shall comply with the relevant IEC standards. Appliance connectors, interconnection outlets and interconnection plug-connectors compiled with Appendix 3 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance and Material are accepted. In that case, if due to the shape the contact parts are connectable to those specified in standard sheets of IEC 60320-1, they shall comply with dimensions and ratings specified in the relevant standard sheets of IEC 60320-1. Examples of relevant specifications and standards: - Plugs / Socket-outlets: Appendix 4 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance. Article 2 (corresponding to IEC 60884) of the Ordinance. - Appliance couplers: Appendix 4 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance. Article 2 (corresponding to IEC 60320-1) of the Ordinance. - Appliance inlets: IEC 60320-1 - Appliance outlets: Appendix 4 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance. IEC 60320-2-2. - Plug connectors: Appendix 4 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance. Delete NOTE 1 and NOTE 2.	Not directly connected to the mains.	N/A
15.1.1	**Replacement:** Replace the paragraph after NOTE 2 by the following. MAINS socket-outlets and interconnection couplers mounted on CLASS 0I and CLASS II apparatus shall not permit connection of CLASS I apparatus.	Not directly connected to the mains.	N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
15.1.1	**Replacement:** Replace the paragraph before NOTE 3 by the following. MAINS socket-outlets and interconnection couplers mounted on CLASS I apparatus shall be provided with protective earthing contacts which are reliably connected to the PROTECTIVE EARTHING TERMINAL or contact of the apparatus. If not, it shall not permit connection of CLASS I apparatus.	Replaced.	N/A
	Replacement: Replace NOTE 4 by the following. NOTE 4 Socket-outlets not allowing the connection of CLASS I apparatus can be designed, for instance, similar to IEC 60906-1, standard sheets 3-1 or 3-2, or according to IEC 60320-2-2, standard sheets D or H.	Replaced.	N/A
15.1.2	**Deletion:** Delete the following sentence in NOTE. An example of a connector not meeting the requirements of this sub clause is the so-called "banana" plug.	Delete.	N/A
15.1.3	**Replacement:** Replace the references, “IEC 60083 [1], IEC 60320, IEC 60884, IEC 60906” by “JIS C 8282 (corresponding to IEC 60884), JIS C 8303, IEC 60320 and IEC 60906”.	Replaced.	N/A
15.2	**Addition:** Add “and CLASS 0I EQUIPMENT” after the words, “CLASS I EQUIPMENT”	Added.	N/A
15.2	**Addition:** Add the following paragraphs after the first paragraph. The external earth wire of plug with an external earth wire shall not be earthed by a clip. Rated voltage of plug with an protective external earth wire shall be less 150 Vac.	Added.	N/A
	Deletion: Delete the following paragraph. In SUPPLY APPARATUS of CLASS I with non-HAZARDOUS LIVE output voltage, output circuits shall not be connected to the protective earthing conductor.	Delete.	N/A

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<table>
<tr><th colspan="4">IEC60065 - ATTACHMENT</th></tr>
<tr><th>Clause</th><th>Requirement + Test</th><th>Result - Remark</th><th>Verdict</th></tr>
<tr><td rowspan="3">15.3.1</td><td>Replacement:
In the first paragraph, replace “IEC 60998-2-2” by “ IEC 60998-2-2 or JIS C 2814-2-2:2001”.</td><td>Replaced.</td><td>N/A</td></tr>
<tr><td>Replacement:
In the first paragraph, replace “IEC 60999” by “IEC 60999-1”.</td><td>Replaced.</td><td>N/A</td></tr>
<tr><td>Replacement:
In the third paragraph, replace “IEC 60335-1” by “JIS C 9335-1:2003 (corresponding to IEC 60335-1)”.</td><td>Replaced.</td><td>N/A</td></tr>
<tr><td>15.3.3</td><td>Replacement:
Replace “ISO 261 or ISO 262” by “JIS B 0205-2:2001 or JIS B 0205-3:2001”.</td><td>Replaced.</td><td>N/A</td></tr>
<tr><td>15.3.5</td><td>Replacement:
In the second paragraph, replace “IEC 60950” by “JIS C 6950:2006”.</td><td>Replaced.</td><td>N/A</td></tr>
<tr><td>15.3.5</td><td>Replacement:
Replace Table 15 by the following.
<table>
<tr><th>RATED CURRENT CONSUMPTION of the apparatus [a]
A</th><th>Nominal cross-sectional area
mm^2</th></tr>
<tr><td>Up to and including 6</td><td>0.75 to 1</td></tr>
<tr><td>Over 6 up to and including 10</td><td>1 to 1.5</td></tr>
<tr><td>Over 10 up to and including 16</td><td>1.5 to 2.5</td></tr>
<tr><td colspan="2">[a] The RATED CURRENT CONSUMPTION includes currents which can be drawn from socket-outlets providing MAINS power for other apparatus.</td></tr>
</table></td><td>Replaced.</td><td>N/A</td></tr>
<tr><td>15.3.9</td><td>Addition:
Add the following to the last of the first paragraph.
This does not apply to CLASS 0I EQUIPMENT with a protective earthing terminal separately.</td><td>Not CLASS 0I EQUIPMENT.</td><td>N/A</td></tr>
<tr><td rowspan="2">15.4.1</td><td>Replacement:
In NOTE 1, replace “IEC 60884-1” by “JIS C 8282 (corresponding to IEC 60884-1)”.</td><td>Replaced.</td><td>N/A</td></tr>
<tr><td>Replacement:
In NOTE 2, replace “IEC 60083 [1]” by “JIS C 8303”.</td><td>Replaced.</td><td>N/A</td></tr>
</table>

Japanese National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
15.4.2	**Replacement:** In NOTE, replace “IEC 60083 [1]” by “JIS C 8303:1993 [1]”.	Replaced.	N/A
15.4.3	**Addition:** Add the following NOTE to Table 17. NOTE If mains plug is parallel blade, a pull force as given in “Over 10 A up to and including 16 A, 130/250 V” of Table 17 is applied.	Added.	N/A
16.1	**Addition:** Add the following to the last of first paragraph. Or mains cords shall be of the sheathed type complying with Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.. **Replacement:** Replace the second paragraph by the following. Compliance is checked by testing MAINS supply flexible cords in accordance with JIS C 3662 (corresponding to IEC60227) or JIS C 3663 (corresponding to IEC 60245), or Appendix 1 of Article 1 of the Ministerial Ordinance on stipulating technical requirements for the Electrical Appliance.	Not directly connected to the mains.	N/A
	Replacement: In this sub-clause, replace “IEC 60227” by “JIS C 3662 (corresponding to IEC 60227)”. In this sub-clause, replace “IEC 60245” by “JIS C 3663 (corresponding to IEC 60245)”.		N/A
	Addition: Add the following paragraph after the third paragraph. An external earth wire of Class 0I equipment shall be green/yellow, and the length of external earth wire of plug with an external earth wire shall be equal or more than 10 cm from the plug.	Not CLASS 0I EQUIPMENT.	N/A
16.2	**Replacement:** Replace the first paragraph by the following. Power supply cord conductors complied with JIS C 3662 (corresponding to IEC 60227) or JIS C 3663 (corresponding to IEC 60245) shall have a nominal cross-sectional area not less than those shown in table 18. If power supply cord conductors comply with other standards, it shall comply with relevant wiring requirements.	Not directly connected to the mains..	N/A

Japanese National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
16.2	**Replacement:** Replace Table 18 by the following. <table><tr><td>RATED CURRENT CONSUMPTION of the apparatus [a] A</td><td>Nominal cross-sectional area mm^2</td></tr><tr><td>up to and including 6 Over 6 up to and including 10 Over 10 up to and including 16</td><td>0,75 1 1,5</td></tr><tr><td colspan="2">[a] The RATED CURRENT CONSUMPTION includes currents which can be drawn from the socket-outlets providing MAINS power for other apparatus.</td></tr></table>	Replaced.	N/A
16.3	**Replacement:** In item a), replace “IEC 60885-1” by “JIS C 3661-1:1998”.	Replaced.	P
	Replacement: In item b), replace “IEC 60227-2” by “JIS C 3662-2 (corresponding to IEC 60227-2)”.	Replaced.	P
16.5	**Addition:** Add “or CLASS 0I EQUIPMENT used a plug with an external earth wire” after the words, CLASS I EQUIPMENT.	Added.	P
Annex B	**Replacement:** Replace normative by Informative.	Replaced.	P
Annex G	**Replacement:** Replace IEC 60707 by JIS C 0066:2001 Replace IEC 60695-2-2 by JIS C 60695-2-2:2000. Replace IEC 60695-11-10 by JIS Z 2391:1999.	Replaced.	P
Annex N	**Addition:** Add “- protective earthing lead wire, protective earthing contact of appliance inlet or external protective earthing terminal in case of Class 0I apparatus.” after the second dash of N.1.3.	Not CLASS 0I EQUIPMENT.	N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Replacement: Replace the first sentence and two dashes of N.2.2, as follows: The continuity of the protective earthing conecction between - the ACCESSIBLE conductive parts, including TERMINALS regarded as ACCESSIBLE (see 8.4), which should be connected to the PROTECTIVE EARTHING TERMINAL, and - the protective earthing contact of socket-outlets respectively, if provided to deliver power to other apparatus should be checked between - the protective earthing contact of the MAINS plug or appliance inlet, or the PROTECTIVE EARTHING TERMINAL in case of a PERMANENTLY CONNECTED APPARATUS, for CLASS I apparatus, and - the protective earthing lead wire, the protective earthing contact of appliance inlet, or external protective earthing terminal, for CLASS 0I apparatus.		
14.6.1	**Replacement:** In item a), replace IEC 61058-1 by “IEC 61058-1 or JIS C 4526-1:2005”.	Replaced.	P
14.6.2	**Replacement:** In item a), replace IEC 61058-1 by “IEC 61058-1 or JIS C 4526-1:2005”.	Replaced.	P
14.6.3	**Replacement:** In item a), replace IEC 61058-1 by “IEC 61058-1 or JIS C 4526-1:2005”.	Replaced.	P
14.6.5	**Replacement:** In item a), replace IEC 61058-1 by “IEC 61058-1 or JIS C 4526-1:2005”.	Replaced.	P
20.1	**Replacement:** In Note 3, replace each IEC 60065 and IEC 60707 by “JIS C 6065” and “JIS C 0066:2001 (IEC 60707).	Replaced.	P

Japanese National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
APPENDIX	Republic of Korea National Differences according to CB Bulletin (K 60065) (IEC Publication 60065 7th edition, 2001+A1: 2005+A2:2010)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
5.101	Other Marking: Wording 고압주의 or an information regulated in IEC Publication 417 giving high voltage warning to layman shall be marked, if an apparatus contains a part more than 600 volts.	No such high voltage.	N/A
15.1.1	Plugs for the connection of the apparatus to the supply mains and socket outlets for providing mains power to other apparatus shall comply with the Korean requirement (KSC8300 and 8305)	Should be considered during the national approval..	N/A
31.	Radio frequency interference The apparatus shall comply with the relevant CISPR requirements (EMC=EMI+EMS)	Should be considered during the national approval..	N/A

Korea National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
APPENDIX	US National Differences according to CB Bulletin (UL 60065) (IEC Publication 60065 7th edition, 2001+A1: 2005+A2: 2010)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.1.1	Delete reference to Annex L: Electronic flash apparatus for photographic purposes. Replace this with reference to UL 122.	Deleted.	P
1.1.1	Mains connected apparatus intended for field installation complies with the National Electrical Code, ANSI, NFPA 70.		P
1.1.3	Requirements of apparatus intended for outdoor use comply with applicable clause of Annex A	Indoor use only.	N/A
1.1.5	Some apparatus covered by these requirements may also be required to comply with applicable requirements in other appropriate standards :		P
1.1.6	Apparatus with nonmetallic enclosures intended to be installed in air-handling spaces shall additionally comply with UL 2043		N/A
4.2.1	The rated supply voltage for single phase apparatus is assumed to be 120V or 120/240V	Not directly connected to the mains.	N/A
4.2.4	a) Minimum audio output is not less than 0.5 W per channel unless the maximum audio output is less than 0.5 W per channel	Considered	P
4.2.4.1	An apparatus with multiple modes of operation, multiple signal input sources, or both, is operated according to the manufacturer's instructions to produce the maximum power input	No multiple modes of operation.	N/A
4.2.11	Table 2 - External supply sources are assumed to be capable of delivering 30 A, unless otherwise specified (UL 60065 no-load voltage and internal resistance values)		N/A
4.3.4	As an alternative, PTC thermistors may also comply with UL 1434.	No such component provided.	N/A
5	Test for conductive labels secured in place by adhesive.		P
5.1	Component power supplies and adapters complying with UL 1310, UL 1950, UL 60950, or UL 60950-1 are considered to fulfill items "a" through "i" of this clause.	Considered	P
5.1f	Rated mains frequency marking on apparatus	Not directly connected to the mains.	P

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.1j	Date of Manufacture marking	See the label.	P
5.1k	Factory origin identification marking	Only one factory.	N/A
5.1l	Combination of two graphical symbols and supplementary marking and/or single graphical symbol marking	See the label	P
5.1m	Equipment rack marking for audio/video systems	No rack.	N/A
5.1n	Class I apparatus having touch current levels greater than 0.75 MIU and equal to or less than 3.5 MIU must be marked with a high touch current marking.	Not directly connected to the mains.	N/A
5.1o	Marking on apparatus having grille/ventilation areas of the top surface that are permitted to have higher temperature rises according to Note b of Table 3		N/A
5.1p	Marking for apparatus intended to be installed in air-handling spaces	Not such apparatus.	N/A
5.2c	Output terminals are marked with voltage, frequency and current or power; output terminals installed or interconnected in the field must be marked with the class of wiring	See the label.	P
5.2d	Speaker terminals are marked "Class 1 Wiring", "Class 2 Wiring" or "Class 3 Wiring".	No such terminals provided.	N/A
5.2d	Operation manual explains risks and proper connecting and insulating techniques when connecting a speaker		N/A
5.3c	An explanation and illustration of safety related graphical symbols used on the apparatus are included in the user instructions preceding any operating instructions		N/A
5.4	Important safety instructions are packed with each apparatus	Not directly connected to the mains.	N/A
5.4.1	Outdoor use marking for apparatus having no protection against exposure to water	Indoor use only.	N/A
5.4.1e	Deleted.		N/A
5.4.1h	Reference to IEC 61695 is replaced by UL 61965	Replaced.	N/A
5.4.3	When user operation and installation instructions contains instructions for use by skilled persons, the instructions are separate informat and preceded by a precautionary warning statement		N/A

US National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1	Compliance is checked in accordance with the requirements in the U.S. Code of Federal Regulations, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3, and 1020.10 by measuring the radiation produced by the apparatus employing a production chassis	No such component used.	N/A
6.2	References to IEC 60825-1 are deleted	Deleted.	N/A
6.2	Apparatus is classified and labeled according to the Code of Federal Regulations, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3, 1040.10 and 1040.11.		N/A
6.2.2	Deleted.		N/A
7	Table 3: Delete reference to conditions h and i under Table item e for lithium batteries		N/A
7	Table 3: Temperature limits for various classes of insulation systems according to UL 60065		N/A
7	Table 3, Note a: Materials rated in accordance with UL 746B may be used within their rated temperature		N/A
7	Table 3, Note b: For grille/ventilation areas in the top surface directly above internal heatsinks, a temperature rise up to 65 K is allowed.		N/A
7.2	Applies to thermoplastic materials only. A material temperature rating can be accepted in lieu of the softening temperature		N/A
7.2	The softening test need not be performed on materials used in UL Listed or Recognized components		N/A
8.1	Metal parts are corrosion resistant.		P
8.9.1	Sleeving, tape, tubing, and wire insulation comply with UL 224, UL 510, or UL 1441	(see appended table)	P
8.10	Component power supplies and their internal insulation complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 are considered to fulfill the clause		P
8.17	As an option, winding wire insulation complies with the requirements in UL 2353.		P
8.19.1	An all-pole switch or circuit breaker is not required to have contact separation of 3 mm	No such component used.	N/A
8.23	Printed wiring boards involved with the risk of electric shock comply with the requirements in UL 796.	(see appended table)	P

US National differences and Special national conditions according to CB Bulletin.

IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
9.1.1.1a	For audio signals of professional and commercial apparatus, 120 V r.m.s.	Not directly connected to the mains.	N/A
9.1.1.1a	For audio signals other than professional and commercial apparatus, 71 V r.m.s.		N/A
9.1.1.1b	Touch current carried out in accordance with UL 101 with the measuring instrument described in Annex D shall not exceed 0.5 MIU. Delete Note 2.		N/A
9.1.1.2	UL articulated finger (figure 18) used instead of the test probe B (IEC 61032).		N/A
9.1.1.2	Reference to test probes 18 and 19 of IEC 61032 are deleted.		N/A
10	Table 5, Note 1: With respect to mains voltages in the range of 105-130 V (r.m.s.), the test voltages are considered to be 1414 Vpeak for basic and supplementary insulation and 2828 V peak for reinforced insulation.	Not directly connected to the mains.	N/A
11	Component power supplies and their power transformers complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1are considered to fulfill the clause.	Considered	P
11.1	The permissible touch current for terminal contacts has been increased to twice the value given in 9.1.1.1.	Considered	P
11.2.1	Additional fuse testing is not required if the temperature is limited by fuses.		N/A
12	Component power supply adaptors and their enclosures complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 are considered to fulfill the clause.	Considered	P
12.1.3	Impact test uses the 50 mm steel sphere only.		P
12.1.3	Table 6 - Impact test criteria detailing impact location, impact energy and additional pass/fail results applied according to UL 60065.		P
12.1.4	As an alternative, any number from one to three samples are permitted to be used in any combination that results in a total of three drops.		P
12.1.6	Handle strength test. When polymeric materials are involved, testing is to be conducted before and after the sub-clause 12.1.5 stress relief test.	No handle used.	N/A
12.8	Test for enclosures, barriers, components and leads that rely on adhesive	No adhesive.	N/A
13	Component power supplies and their power transformers complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 are considered to fulfill the clause.	Considered	P

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
13.4	The material group is verified according to UL 746A		P
13.4	Reference to the IEC 60112 PTI test is deleted		N/A
13.5.1	Reference to IEC 60249-2 is replaced by UL 796	All PCBs were approved under UL 796.	P
13.5.2	Coated printed wiring boards comply with UL 746C		N/A
13.5.3	Multilayer printed boards comply with relevant requirements in UL 60950-1.		P
14	Annex Y and additional component requirements applied according to UL 60065		P
14.1	Component power supplies and their resistors complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 are considered to fulfill the clause.		P
14.2	Component power supplies and their capacitors complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 are considered to fulfill the clause.		P
14.2.1	As an alternative, a component such as a capacitor, a combination capacitor and resistor, or a suppressor may comply with UL 1414.	No such components used.	N/A
14.2.2	As an alternative, a capacitor, a combination capacitor and resistor, or a varistor, or a suppressor may comply with UL 1414.	No such components used.	N/A
14.2.4	Components subjected to the requirements in 14.2.1 and 14.2.2 also comply with UL 1414 enclosure requirements.	No such components used.	N/A
14.3	Component power supplies and their inductors and windings complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 are considered to fulfill the clause.	No such power supplies.	N/A
14.3.2	Planar transformers comply with the requirements for multilayer printed boards.		N/A
14.4	High voltage materials are rated V-2 minimum.		N/A
14.4.1	High voltage arcing test replaces the High voltage transformers and multipliers test.		N/A
14.4.2	Deleted.		N/A
14.4.3	High voltage component part flame test.		N/A
14.5.1.1	Thermal cut-outs comply with UL 873 or UL 60730-2-9.	No such components used..	N/A
14.5.1.2	Thermal links comply with UL 60691.	No such components used.	N/A
14.5.1.3	Deleted.		N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
14.5.2.1	Fuse links comply with UL 248-14.	No such components used.	N/A
14.5.2.2	Reference to IEC 60127 is deleted.		N/A
14.5.2.2	Pre-arcing time/current characteristic and breaking capacity marking requirements are deleted.		N/A
14.5.3	As an alternative, a PTC thermistor may comply with requirements of UL 1434	No such components.	N/A
14.5.4	Reference to fuse-links is deleted		N/A
14.5.3A	Other protective devices directly connected to the mains have adequate breaking capacity and comply with UL 873, UL 1416, UL1417 or UL 2111		N/A
14.6.1	Switches and relays comply with UL 1054, UL 61058-1 or UL 508	No such components used.	N/A
14.6.1	Mains switch or relay are rated for the total rated current consumption of the apparatus.		N/A
14.6.1	Rating of a mains switch or relay in audio apparatus intended for commercial use.		N/A
14.6.2 - 4	Deleted.		N/A
14.6.5	A switch or relay that controls a mains socket-outlet have a rating equal to the rated current consumption of the apparatus plus the current rating of the socket-outlet.		N/A
14.6.6	Mains switches comply with (a), (b) or (c). The contacts of a mains relay complies with (a), (b) or (d). A switch that controls a mains receptacle complies with (b) and a relay that controls a mains receptacle complies with (b) or (d).		N/A
14.6.6a	Switch or relay contacts have an rms current rating equal to or greater than the peak inrush current of the apparatus divided by 1.414.		N/A
14.6.6a	Switch or relay contacts have an rms current rating equal to or greater than the peak inrush current of the apparatus divided by 10, when: - the rms current during normal operation controlled by the switch is less than or equal to ½ the rms rating of the switch, and - the switch has double or multiple poles controlling the mains current, either in series or switching each mains line.		N/A
14.6.6b	Switch or relay is TV rated.		N/A
14.6.6c	Switch is located on the back of apparatus and is not operable from a remote control.		N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
14.6.6d	Relay is to be subjected to the Relay endurance test.		N/A
14.6.6.1	Peak inrush current test.		N/A
14.6.6.2	Relay endurance test.		N/A
14.6.7	Double pole switch controlling a.c. and d.c. circuits.		N/A
14.7	The jointed test finger (figure 18) is used to determine accessibility and operation of the interlock.	No interlock used.	N/A
14.10.1	Internal rechargeable and non-rechargeable batteries that are replaceable by the user or skilled persons shall additionally comply with 14.10.2 – 14.10.5.		N/A
14.10.1	Test requirements from UL 2054 are added for special battery packs that are removable by the user from the apparatus and may be carried separately from the apparatus – Short circuit test, Abnormal charging test, Forced-discharge test, and 250-N steady force test.		N/A
14.10.1	Note: Consumer grade, non-rechargeable carbon-zinc or alkaline batteries are not subjected to the tests specified in 14.10.2 –14.10.5.		N/A
14.10.5	As an alternative, one sample may be subjected to three drops.		N/A
14.10.6	Location of overcurrent protective device		N/A
14.10.6	As an alternative, the overcurrent protective device in the apparatus battery-supply circuit is not required if the apparatus is intended to be connected to a vehicle power outlet using a UL 2089 vehicle battery adapter.		N/A
14.11	Component power supplies and their optocouplers complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 are considered to fulfill the clause.	No such components used.	N/A
14.11	Optocouplers comply with UL 1577.		N/A
14.11	Optocouplers bridging reinforced insulation comply with requirements for double protection as specified in UL 1577		N/A
14.11	External clearances and creepage distances of optocouplers comply with 13.1		N/A
14.12	Reference to IEC 61051-2 replaced by UL 1449.		N/A
14.12	Reference to IEC 60695-11-10 replaced by UL 94.		N/A
14.12	All references to IEC 60151 are deleted.		N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
15.1.1	Attachment plug current rating (no less than 125% of the current drawn under normal operating conditions) and voltage rating.		N/A
15.1.1	Configuration and electrical rating of an attachment plug for apparatus designed to be used on more than one supply voltage by means of a voltage selector.	No such construction.	N/A
15.1.1	Polarized attachment plug.	Not directly connected to the mains.	N/A
15.1.1	Wire gauge of conductors and internal wiring connecting mains socket-outlets		N/A
15.1.3.1	Means of output connections on an audio amplifier having an open-circuit audio output voltage not limited to 120 V that is permanently connected to the mains.		N/A
15.1.3.1	Quick Connect Terminals: a) Male tabs firmly mounted in place; b) Mating female connectors provided with the apparatus; c) Strain Relief Test of Clause 16.5; d) Installation instructions provided for assembly of terminal to a conductor and strain relief e) Terminals are appropriate for use with the size and type of wire specified.		P
15.1.3.2	Audio amplifiers having an audio output not limited to 120 V that are connected to the mains by a flexible cord.		N/A
15.2	Protective earthing conductor termination construction.	Not directly connected to the mains.	N/A
15.2	Cross-sectional area of the earthing conductor in a supply cord or in an interconnecting cable.		N/A
15.2	Earthing conductors may have green or green/yellow insulation		N/A
15.3.5	Reference to IEC 60950 is replaced by Article 310 of the National Electrical Code, ANSI/NFPA 70.		N/A
15.3.5	Table 15 - "AWG" replace mm2 values.		N/A
15.4	Component power supply adaptors complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 fulfill the clause.	Not direct plug-in apparatus.	N/A
15.4.2	NOTE – include references to UL 498 and ANSI/NEMA WD6 for mains plug dimensions.		N/A
15.4.2.1	Construction of the mains plug blade assembly complies with UL 1310.		N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
15.4.2.1	Direct plug-in units designed for use by travelers comply with UL 1310.		N/A
16.1	Reference in the first paragraph to “sheathed” flexible cords is deleted.	Not directly connected to the mains.	N/A
16.1	References to IEC 60227 and IEC 60245 are deleted.		N/A
16.1	Ampacity and VW-1 marking of mains supply flexible cords.		N/A
16.1	Table 17A - Cords for apparatus.		N/A
16.1	Table 17A: Certain supply apparatus may be provided with a supply cord having 0.5 m minimum length.		N/A
16.2	Power supply cord earthing conductor size.	Not directly connected to the mains.	N/A
16.2	Reference to IEC 60950, Table 3B is replaced by Article 400 of the National Electrical Code		N/A
16.2	Table 18 - Upper current limit in column 1 increased from 16 to 30 A and "AWG" wire sizes used.		N/A
16.3	c) Flexible cords not complying with 16.1, used as connection between the apparatus and other apparatus are marked VW-1.		N/A
16.5	When polymeric materials are involved, strain and twist testing is to be conducted before and after the sub-clause 12.1.5 stress relief test.		N/A
17.8	Expanded to include all cart/stand parts supplied by the manufacturer, such as casters and brackets. Suitable assembly instructions are required.	No cart/stand parts used.	N/A
17.8	Relevant fixing means are not required when installation is to be done by a skilled person.		N/A
17.10	Termination of aluminum conductors used as internal wiring.	No aluminum conductors.	N/A
17.11	An accessory was investigated to determine that: a) The accessory, and the combination of the accessory and the apparatus presents no hazard in the sense of this standard, and b) The accessory is provided with installation instructions.		N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
17.11.1	Installation of an accessory by a skilled person: a) The mechanical positioning is accomplished by means of tools normally available or by means of special tools provided as part of the installation kit, b) The electrical connections are made by using existing terminals and connections in the apparatus or the building wiring		N/A
18	Non-intrinsically protected picture tubes shall comply with 18.1, 18.2.2 and 18.3. Intrinsically protected picture tubes with a maximum face dimension exceeding 7.5 cm shall comply with UL 61965.	No picture tubes.	N/A
18	A bulb of a picture tube having a face diameter of 7.5 cm or more shall be mounted in an enclosure.		N/A
18	Enclosure opening dimensions.		N/A
18.1	All tubes are mounted such that the enclosure of the apparatus protects the tube against the effects of implosion.		N/A
18.1	Reference to IEC 61965 replaced by UL 61965.		N/A
19	The tests in 19.1, 19.2 and 19.3 do not cause the apparatus to overturn.		N/A
19	The test in 19.2.1 does not cause the apparatus to slide		N/A
19	When polymeric materials are involved, testing is to be conducted before and after the sub-clause 12.1.5 stress relief test.		N/A
19.1	References to an apparatus in combination with a supplied cart or recommended stand are deleted.		N/A
19.2	References to an apparatus in combination with a supplied cart or recommended stand are deleted.		N/A
19.2.1	Glass Slide test.		N/A
19.3	Horizontal force stability test using Table 20A values from UL 60065.		N/A
19.5	Reference to the impact hammer in the first compliance paragraph is deleted.		N/A
19.6	Includes Equipment rack mounting test.	No racking used.	N/A
20.1a	Delete.		N/A
20.1b	Exception for parts such as protection TV lenses, loudspeaker parts, external accessories, and fibrous materials.		N/A
20.1b	Reference to IEC 60695-11-10 is replaced by UL 94		N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
20.1.2	Sleeving, extruded tubing and insulation on wiring are rated VW-1: a) wiring located in a circuit that is considered a potential ignition source, or b) wiring not located in a circuit that is a potential ignition source but is in contact with wiring located in a circuit that is a potential ignition source.	(see appended table)	P
20.1.2	Tape in contact with parts of circuits that are potential ignition sources is flame retardant		P
20.1.3	Printed wiring boards, on which the available power as the connection exceeds 15 W or the operating voltage exceeds 50 V a.c. or d.c under normal operating conditions, is of flammability category V-1 or better.	(see appended table)	P
20.1.3	Reference to IEC 60695-11-10 replaced by UL 94.		P
20.1.3	Exception for printed boards housed in metal enclosures is deleted.		P
20.1.3	Option to use Clause G.1 of Annex G is deleted.		P
20.1.4	Components and parts comply with the relevant flammability category according to UL 94 as specified in table 21.	(see appended table)	P
20.1.4	Component power supplies complying with UL 1310, UL 1950 Third Edition, UL 60950, or UL 60950-1 fulfill the clause.	No such power supplies.	N/A
20.1.4	Table 21 - Flammability categories for components and parts.		P
20.2.1	Fire enclosure required: 1) circuits and components where the available power exceeds 15 W, 2) inductors and windings conductively connected to the mains, and 3) high-voltage products.		P
20.2.1	The fire enclosure complies with the flammability requirements of Table 22 according to UL 94 and 746C.	Plastic enclosure rated V-1	P
20.2.1	Reference to IEC 60695-11-10 or clause G.1 of annex G replaced by UL 94 or UL 746C.		P
20.2.1	Table 22 - Flammability categories for fire enclosures.		P
20.2.2	Internal fire enclosures openings and material requirements	No internal fire enclosure.	N/A
20.2.2	Compliance is checked by inspection and measurement and using the articulated finger probe, figure 18.		N/A

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IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
20.2.3	Outer enclosures have a minimum flammability rating of HB when an internal fire enclosure is provided.		N/A
Annex A	Apparatus intended for outdoor use or for wet locations has any of the following attributes: a) provided with a means to be transportable, b) has a mass less than 35 kg, c) can be battery operated, or d) associated literature states or implies such use.	Indoor used only.	N/A
Annex A	An apparatus as described in a), b), or c) above that is marked as specified in 5.4.1 a) is not intended for outdoor or wet location use		N/A
Annex A	Apparatus permanently installed outdoors is considered to be for permanent outdoor use.		N/A
A.5	Clauses A.5, A.5.1 and A.5.4.1 are deleted.		N/A
A.9.1.1	Touch current test after the water spray test described in A.11.1.1.		N/A
A.10	Clauses A.10, A.10.2 and A.10.2.1-2 are deleted.		N/A
A.11.1.1	Apparatus subjected to the water spray test specified in UL 1598.		N/A
A.16.1	Flexible cords are suitable for outdoor use.		N/A
A.20.2.1	Enclosures for an apparatus intended for permanent outdoor location comply with requirements for Type 3 enclosures in UL 50.		N/A
Annex B	IEC 62151 Clause 4 applies except for 4.1.2, 4.1.3, 4.2.1.1 and 4.2.1.2	No TNV circuit.	N/A
Annex B	The requirements of 4.2.1.1 are replaced by the requirements or 2.3.1 of UL 60950, Third Edition or UL 60950-1		N/A
Annex B	Voltages on the TNV-0 circuits, TNV-1 circuits and accessible conductive parts in the event of a single insulation fault		N/A
Annex B	Apparatus intended to be connected to telecommunication networks and having ringing voltages applied to the apparatus is subjected to touch current limits in accordance with clause 5.1.8.1.1 of UL 60950, Third Edition or 5.1.8.3 of UL 60950-1		N/A
Annex B	Telecommunication network that uses outside cable complies with the requirements for protection against overvoltage from power line crosses per 6.4 of UL 60950, Third Edition or UL 60950-1.		N/A
Annex B	UL 60950, Third Edition or UL 60950-1 Acoustic tests for apparatus containing an earphone held against the ear.		N/A

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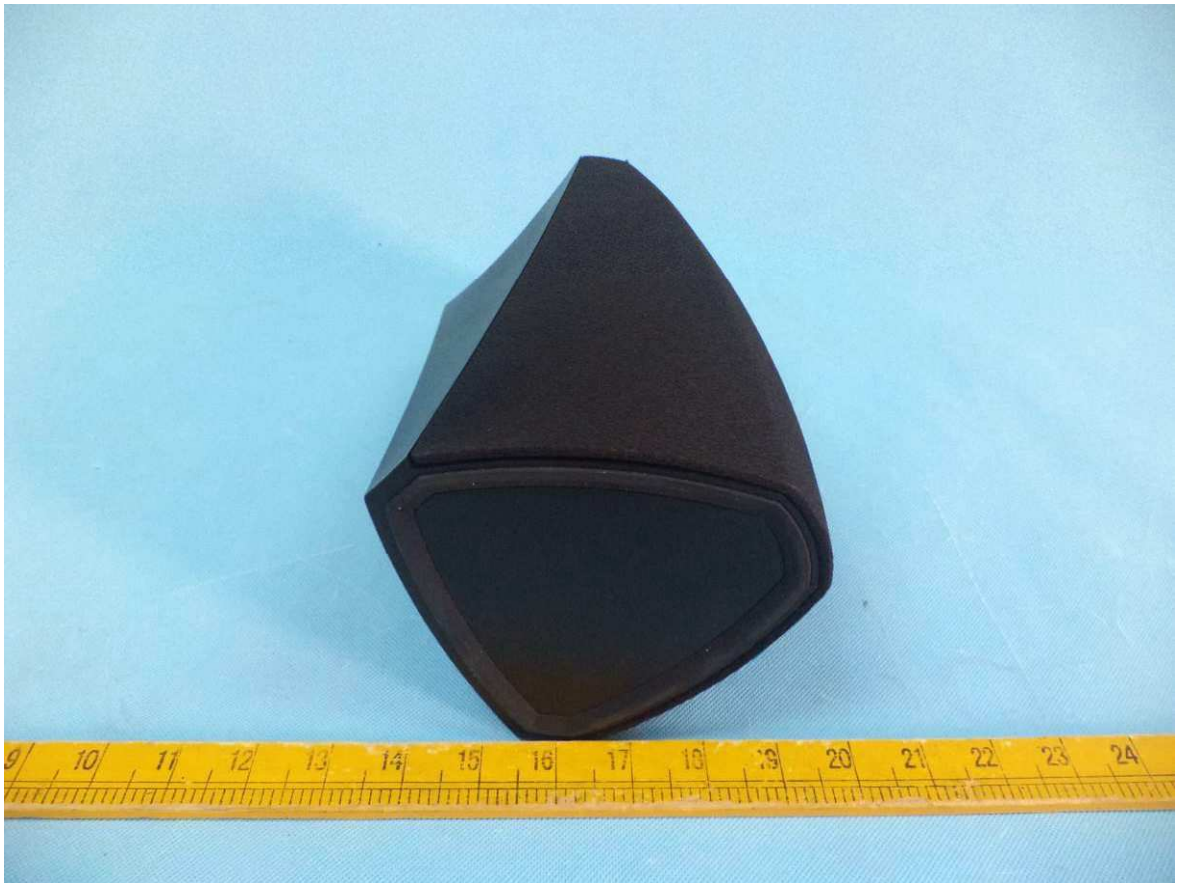
IEC60065 - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
Annex B	Apparatus provided with appropriate markings and instructions as described in Annex NAA of UL 60950, 3rd Edition or UL 60950-1.		N/A
Annex D	Reference to IEC 60990 replaced by UL 101.		P
Annex D	Add touch current value in MIU where MIU = U2 x 2 (r.m.s. value).		P
Annex G	Annex G is deleted.		N/A
Annex I	Safety requirements for coin/button cell batteries.	No such batteries used.	N/A
Annex L	Annex L is deleted.		N/A
Annex Q	Safety requirements for video apparatus for use in health care facilities.		N/A
Annex R	Safety requirements for under-cabinet apparatus.	Not such apparatus.	N/A
Annex S	Safety requirements for in-wall mounted apparatus.	Not such apparatus.	N/A
Annex T	Safety requirements for apparatus with projection lamps.	No projection lamps used.	N/A
Annex U	Safety requirements for permanently connected apparatus.	Not such apparatus.	N/A
Annex V	Safety requirements for carts, stands, and similar apparatus for use with specific apparatus covered by this standard.	Not such apparatus.	N/A
Annex W	Construction details for a 0.02-ohm shunt for use in the peak inrush-current measurement.		N/A
Annex X	Manufacturing and production-line tests and verification.		N/A
Annex Y	Standards for components		P

US National differences and Special national conditions according to CB Bulletin.

Picture 1.



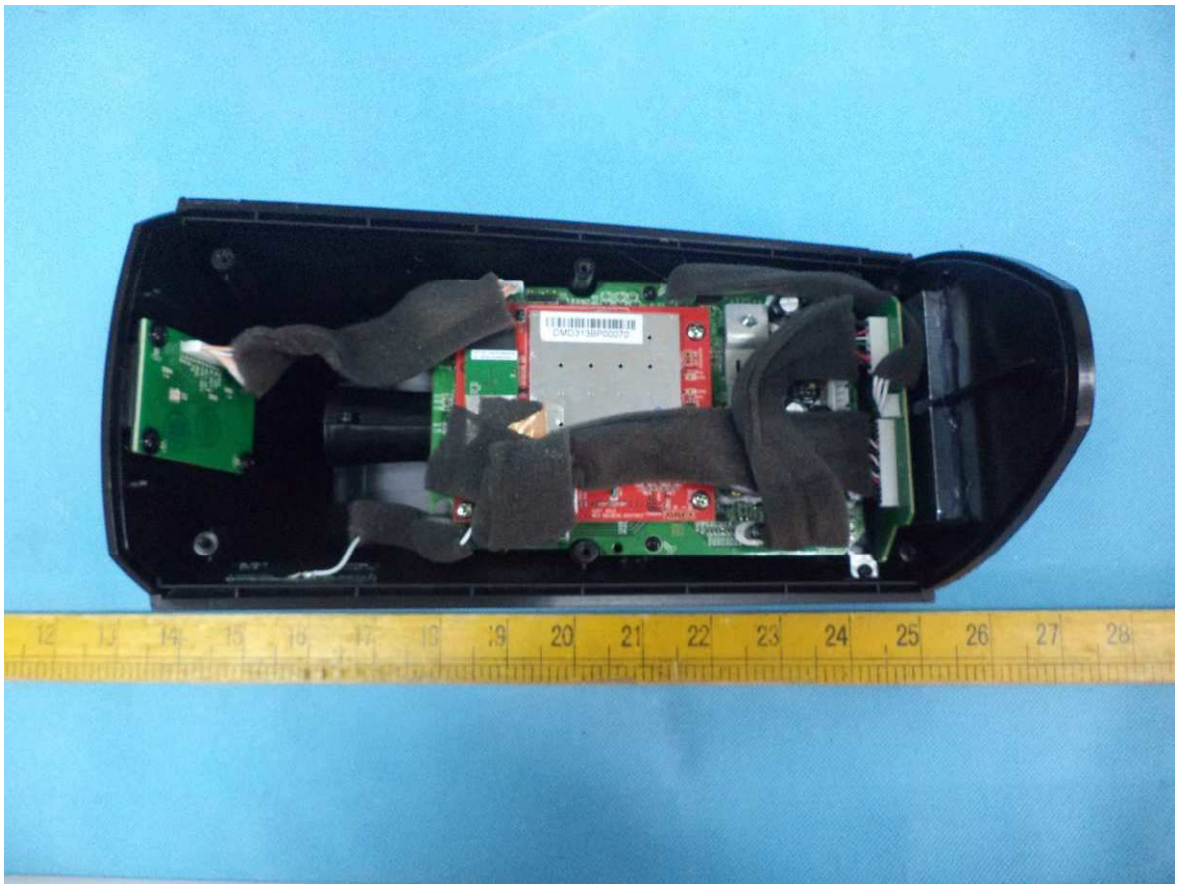
Picture 2.

Picture 3.

Picture 4.

Picture 5.

Picture 6.



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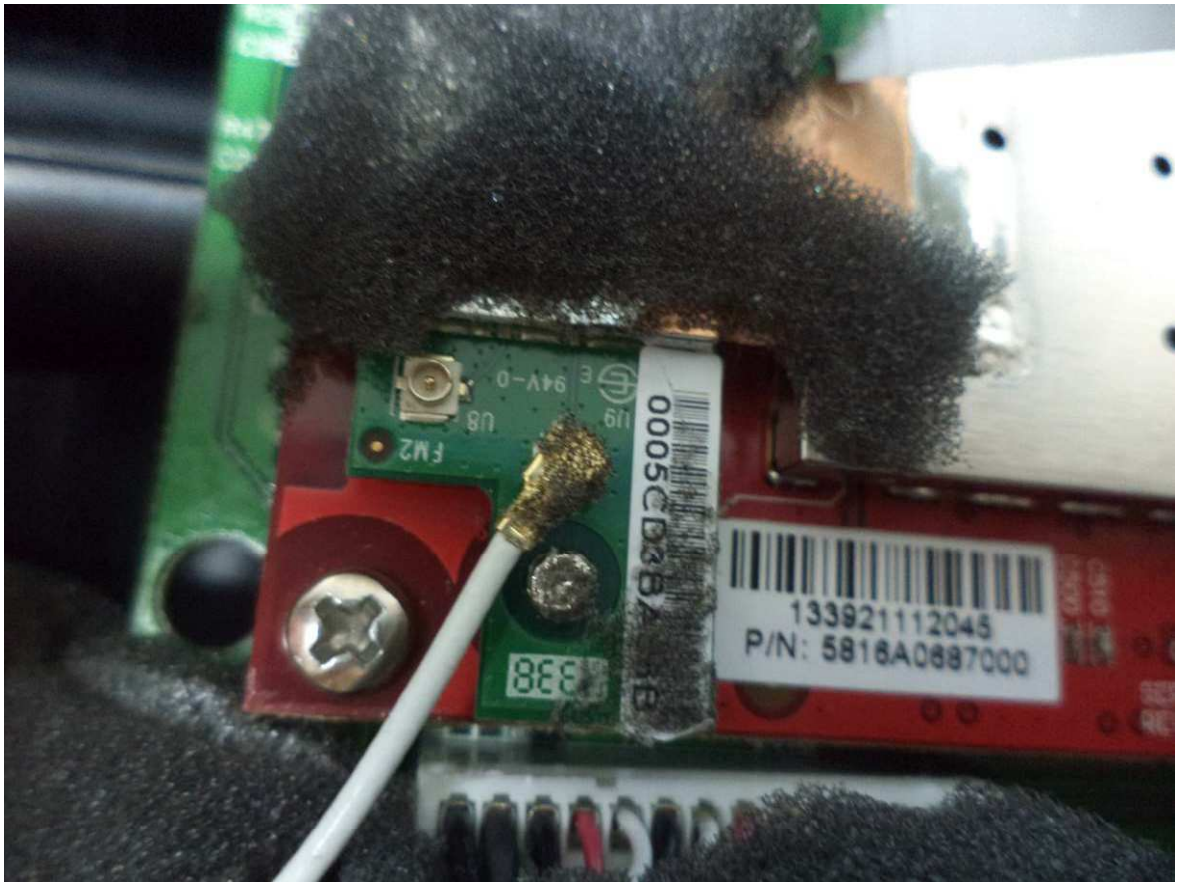

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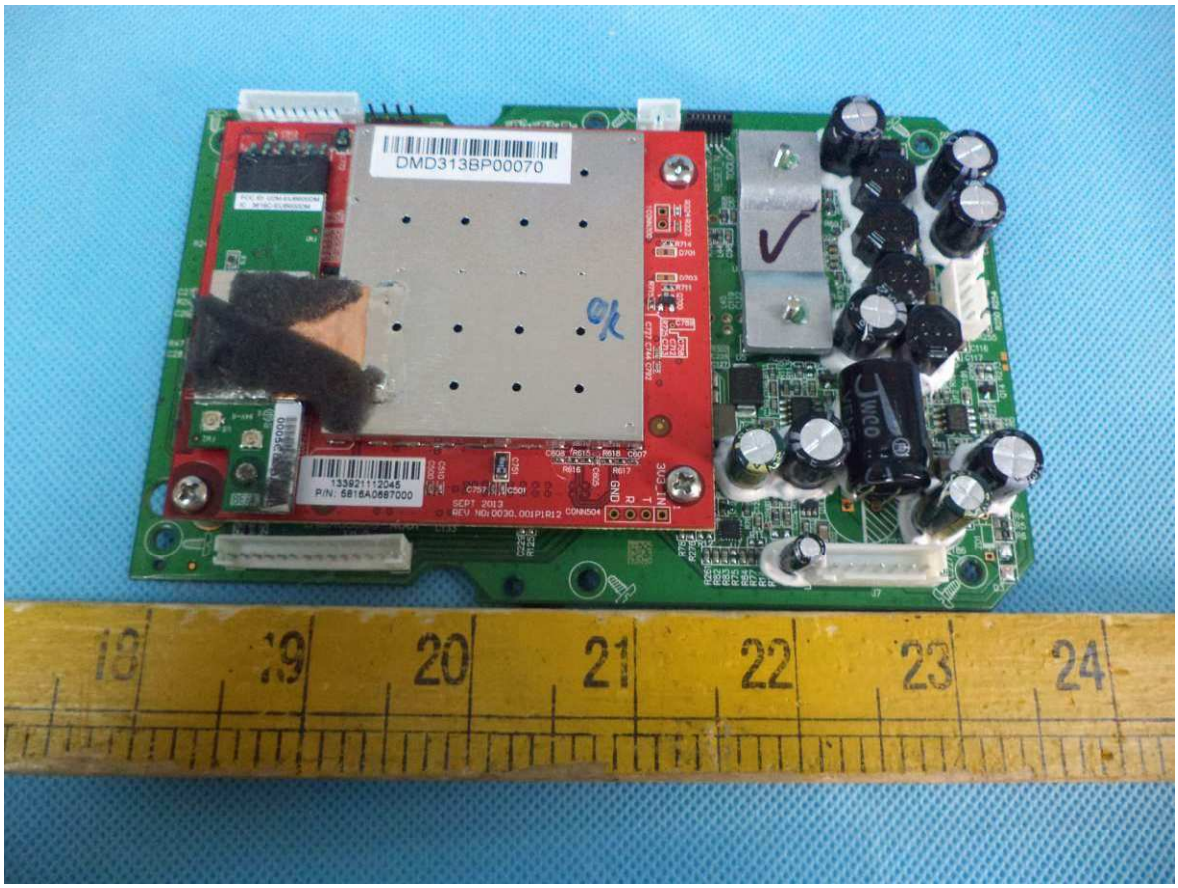
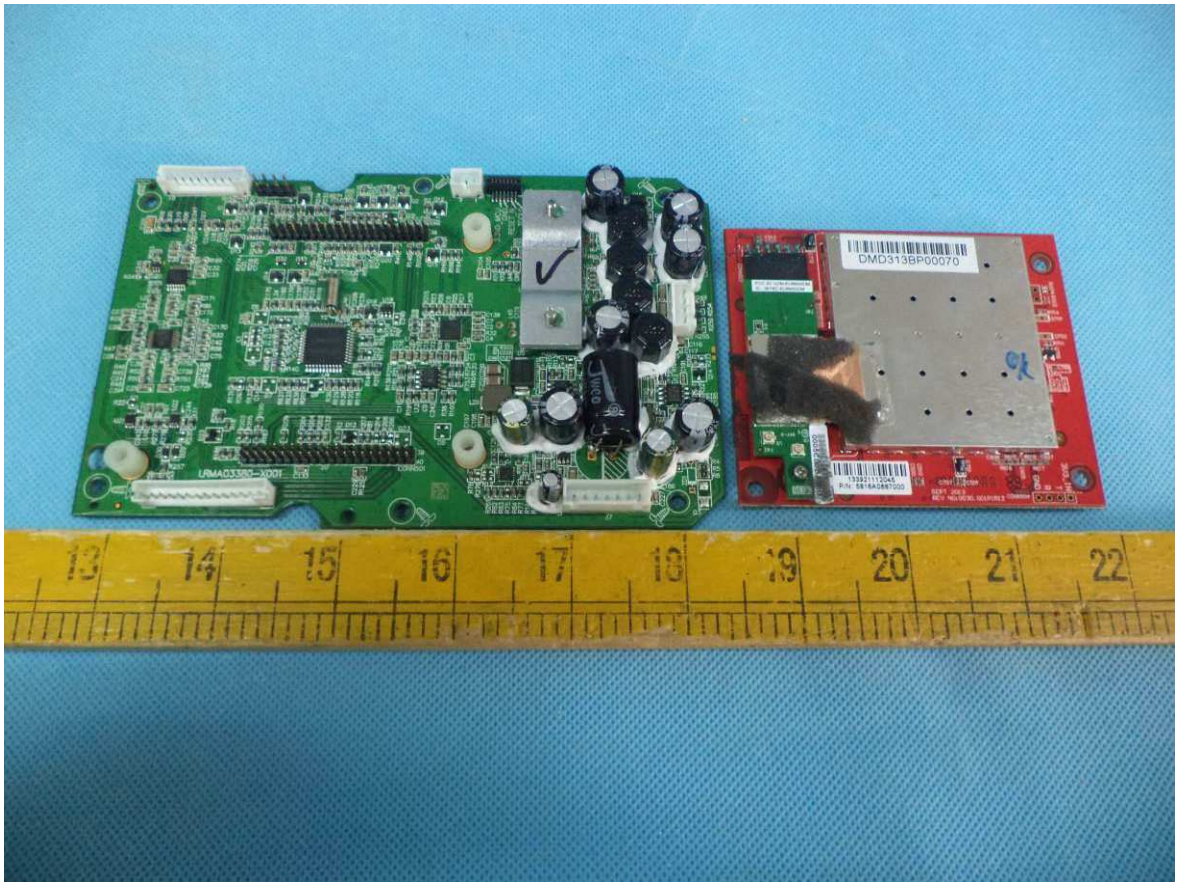
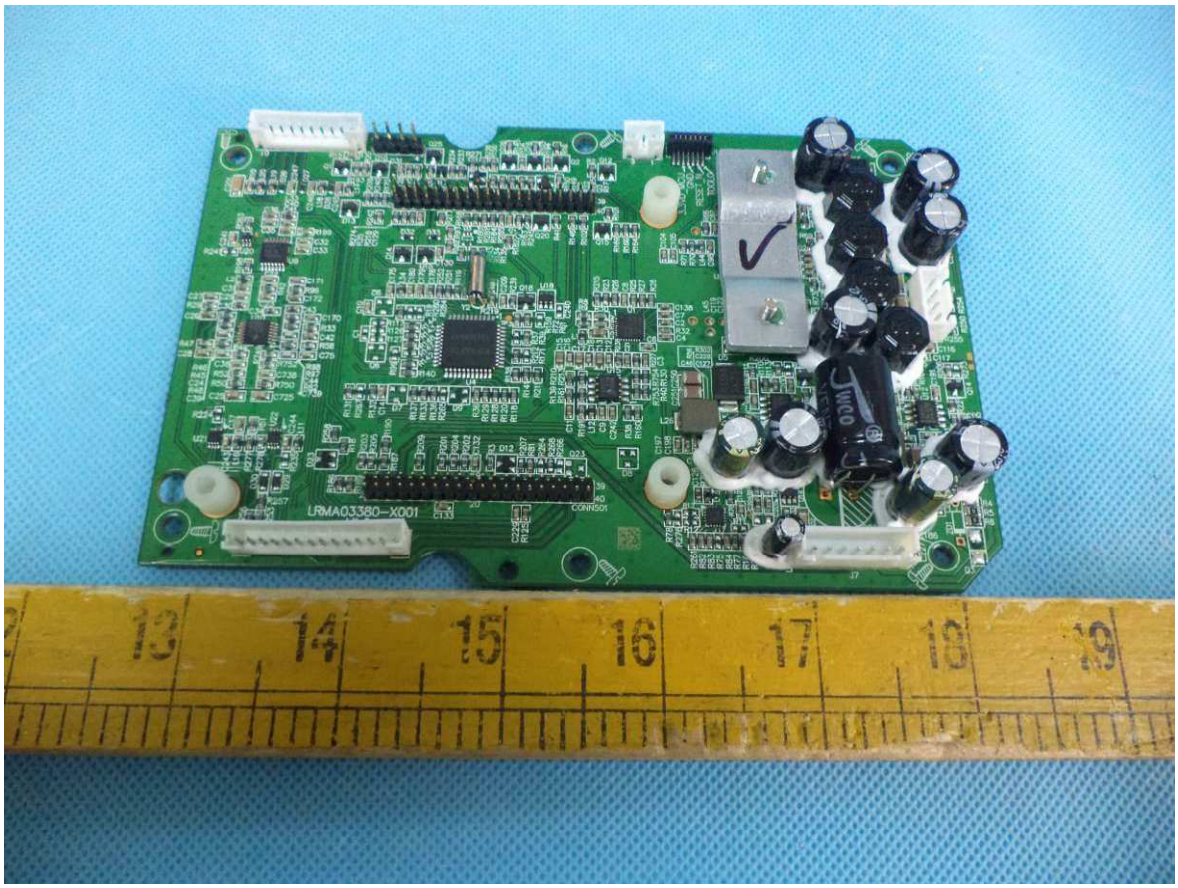


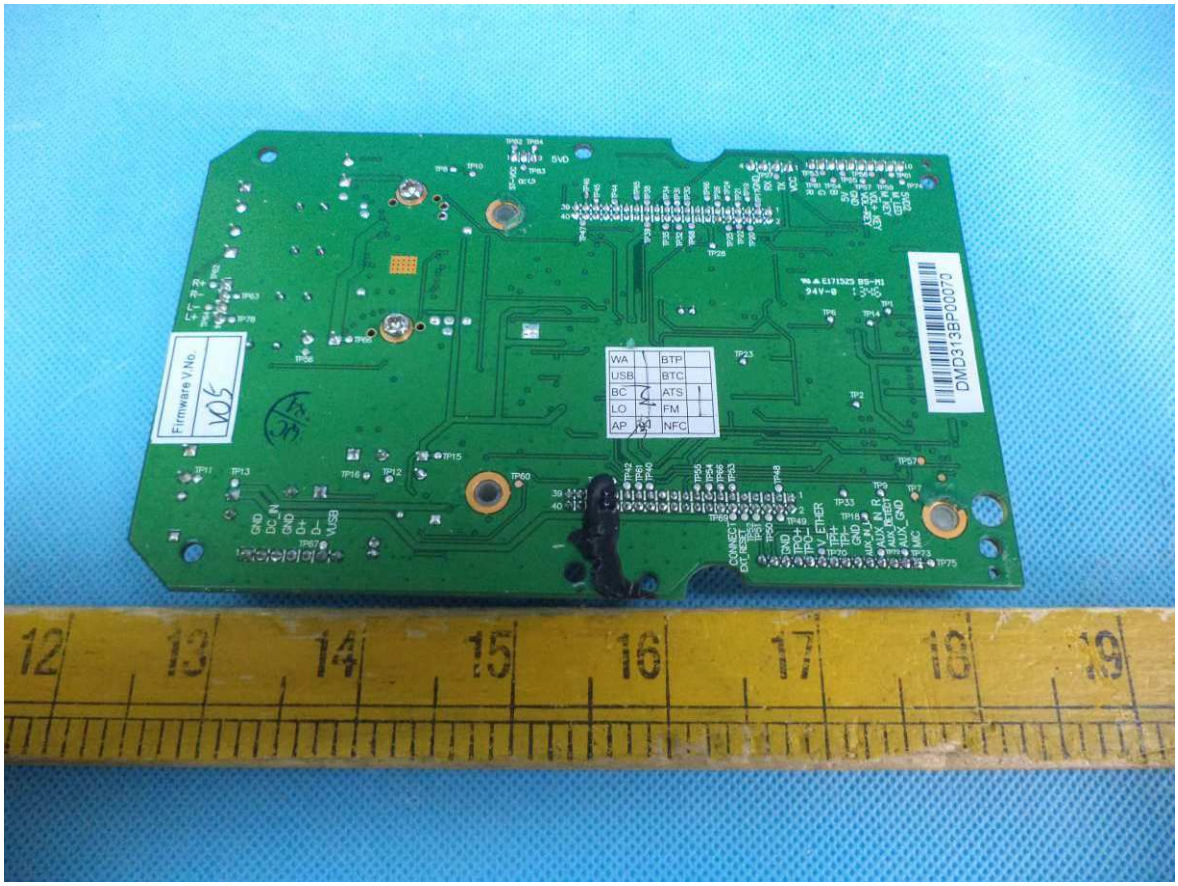
Picture 9.



Picture 10.



Picture 11.



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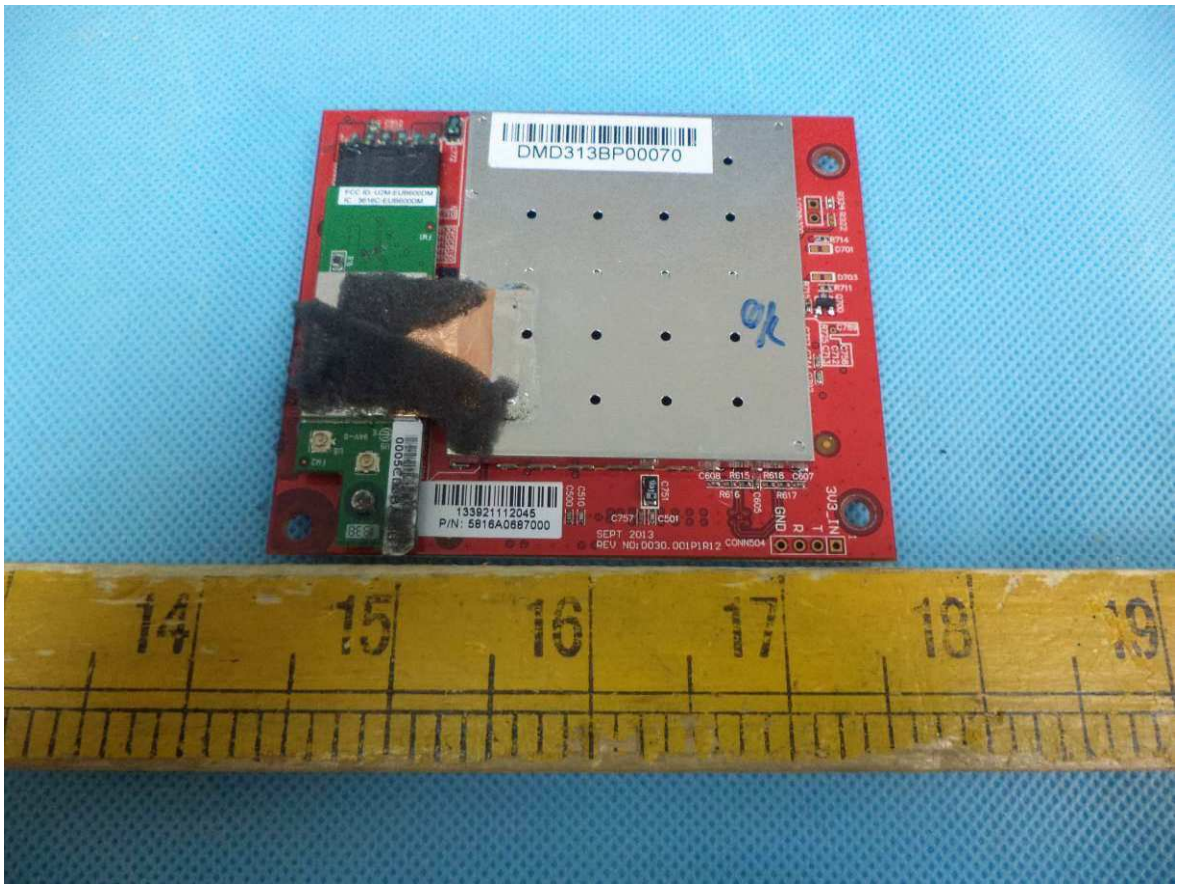

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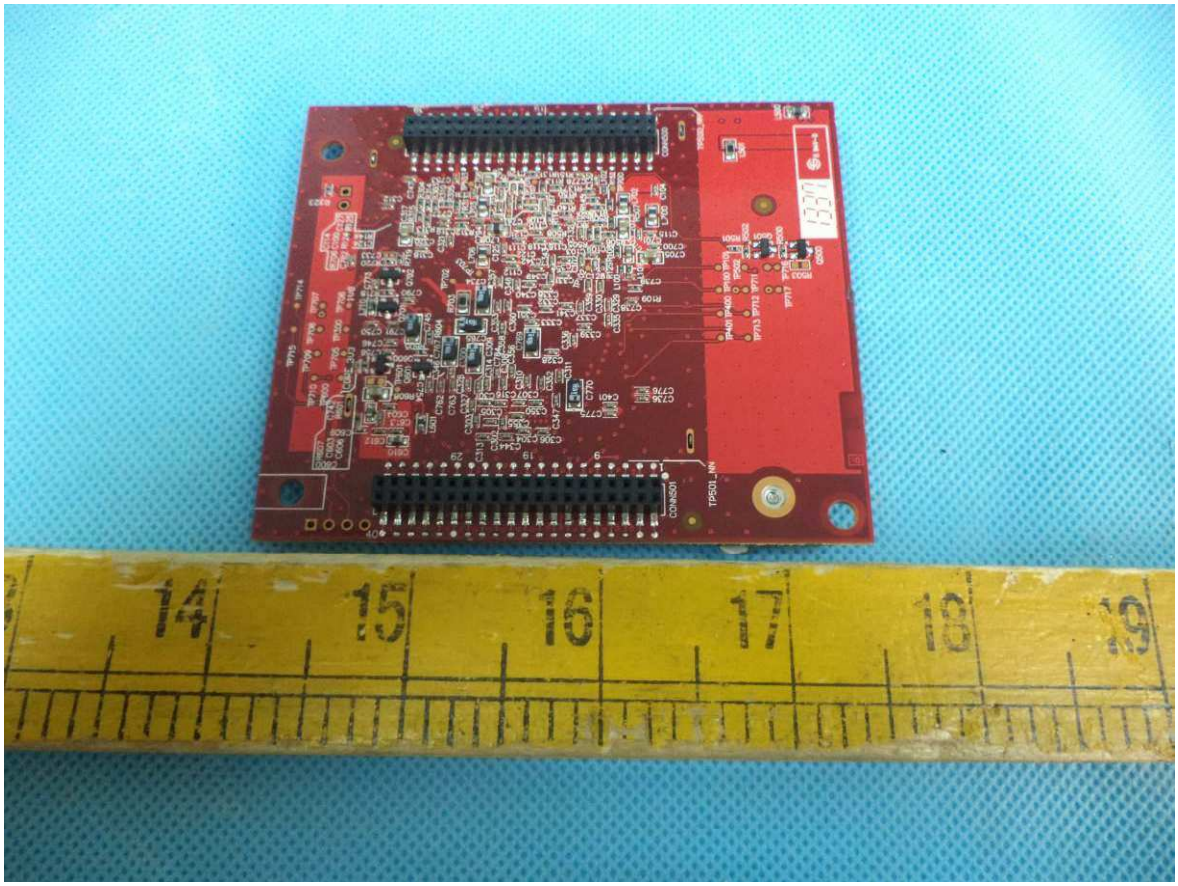

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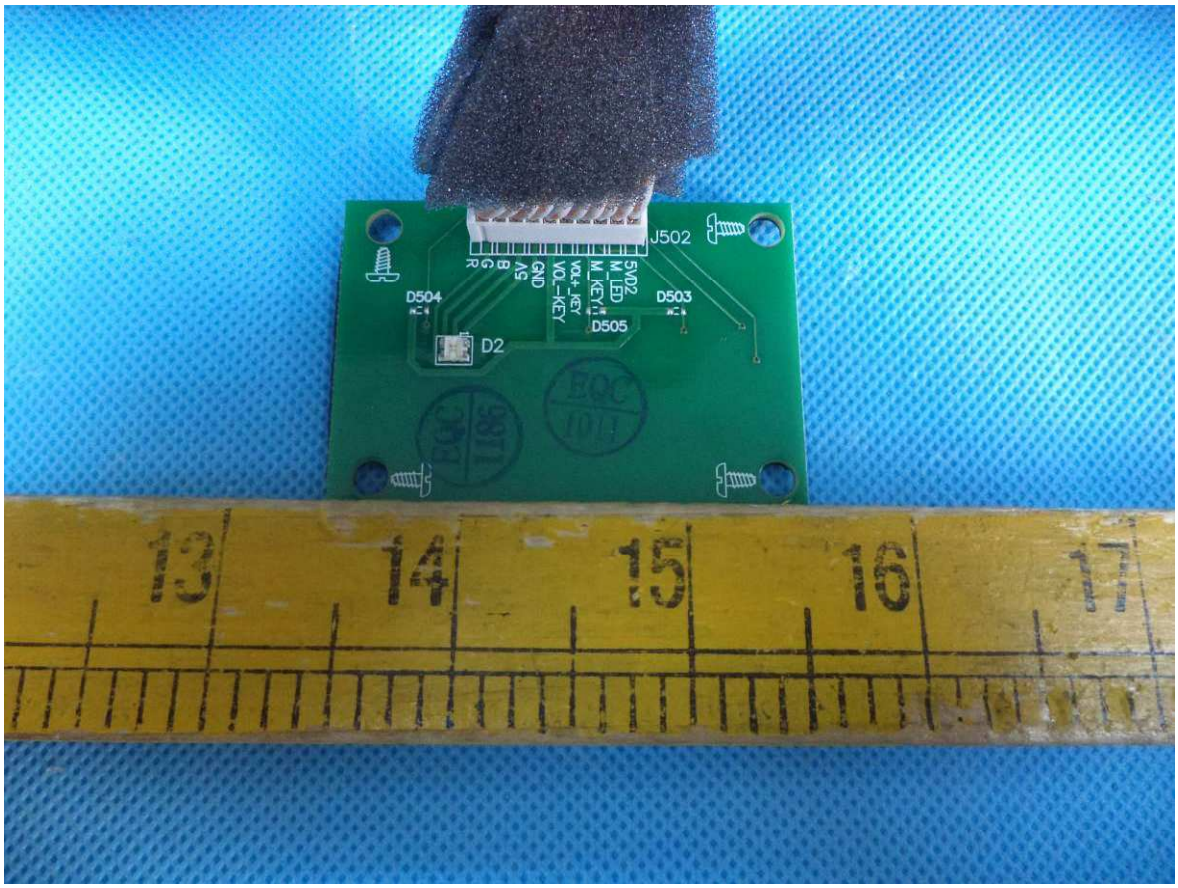

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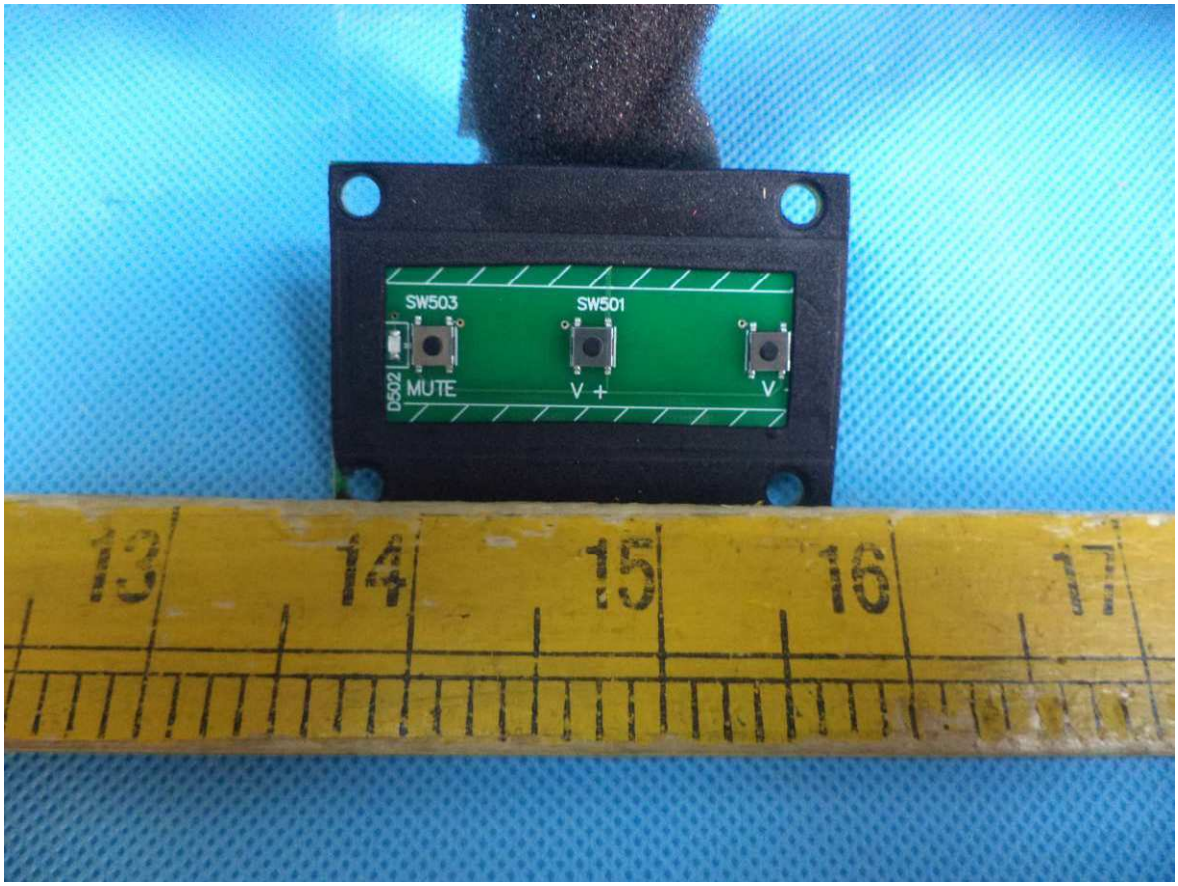
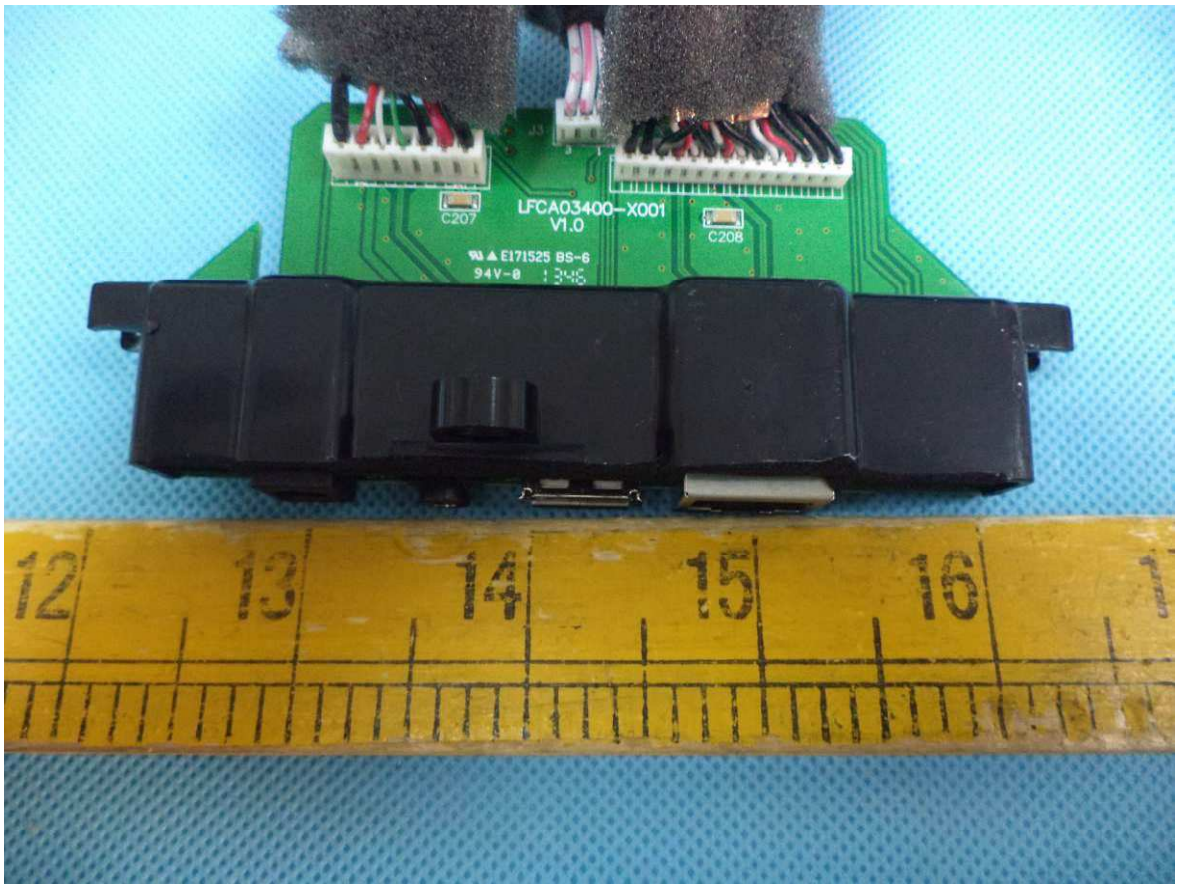


Picture 16.



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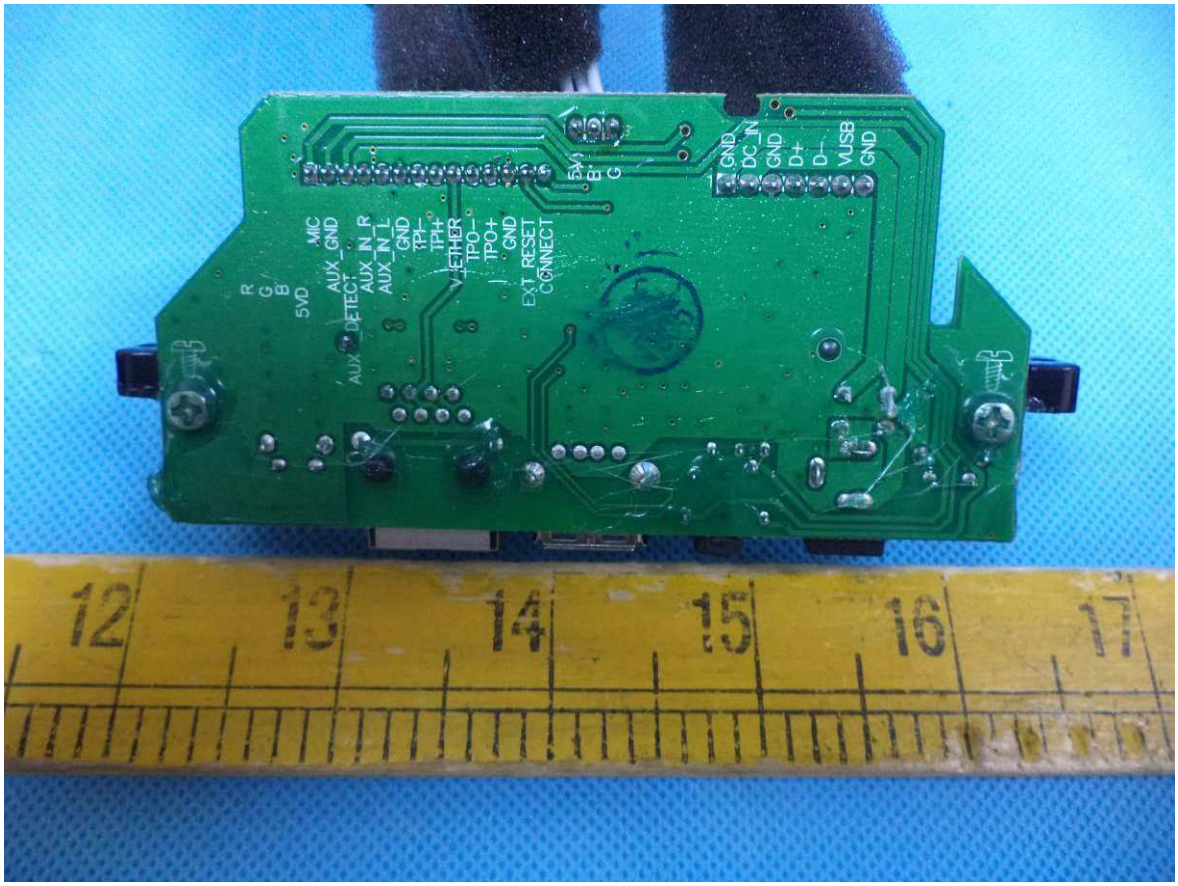

Picture 18.

Picture 19.

Picture 20.

Picture 21.

Picture 22.

IEC IECEE CB SCHEME

Ref. Certif. No.

JPTUV-043577-M1

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

SYSTEME CEI D'ACCEPTATION MUTUELLE DE CERTIFICATS D'ESSAIS DES EQUIPEMENTS ELECTRIQUES (IECEE) METHODE OC

CB TEST CERTIFICATE
CERTIFICAT D'ESSAI OC

Product Produit	Switching Mode Power Supply
Name and address of the applicant Nom et adresse du demandeur	Dongguan Dongsong Electronic Co., Ltd Dongsong Electronic Building No. 19, Xintian Street, Baizhoubian Village, East District, Dongguan, Guangdong, P.R. China
Name and address of the manufacturer Nom et adresse du fabricant	Dongguan Dongsong Electronic Co., Ltd Dongsong Electronic Building No. 19, Xintian Street, Baizhoubian Village, East District, Dongguan, Guangdong, P.R. China
Name and address of the factory Nom et adresse de l'usine	Dongguan Dongsong Electronic Co., Ltd Dongsong Electronic Building No. 19, Xintian Street, Baizhoubian Village, East District, Dongguan, Guangdong, P.R. China
Rating and principal characteristics Valeurs nominales et caractéristiques principales	Input : AC 100-240V; 50/60Hz; 1.0A Max.; Class II Output: refer to the test report
Trade mark (if any) Marque de fabrique (si elle existe)	DYS
Model/type Ref. Ref. de type	DYS40-xyWz, DYS40-xyW-K, HDP40-145248Wz HDP40-145248W, HDP40-145248W-K (x, y, z = refer to the test report)
Additional information (if necessary) Information complémentaire (si nécessaire)	For model differences, refer to the test report Re-issue of JPTUV-043577 dated 17.10.2012, due to first modification.
A sample of the product was tested and found to be in conformity with Un échantillon de ce produit a été essayé et a été considéré conforme à la	IEC 60065:2001 +A1 +A2 National differences see test report
As shown in the Test Report Ref. No. which forms part of this Certificate Comme indiqué dans le Rapport d'essais numéro de référence qui constitue une partie de ce Certificat	16040050 002

This CB Test Certificate is issued by the National Certification Body
Ce Certificat d'essai OC est établi par l'Organisme National de Certification

TÜVRheinland®

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Date: 18.10.2012

Signature: Dipl. Ing. (FH) T. Zimmer

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60065
Audio, video and similar electronic apparatus - Safety requirements

Report Number. ..... :	16040050 002
Date of issue..... :	Oct.11, 2012
Total number of pages..... :	13 pages
Applicant's name ..... :	**Dongguan Dongsong Electronic Co., Ltd.**
Address ..... :	Dongsong Electronic Building, No. 19, Xintian Street, Baizhoubian Village, East District, Dongguan, Guangdong, P.R. China
Test specification:	
Standard ..... :	IEC 60065:2001 (Seventh Edition) + A1:2005 +A2:2010
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60065K
Test Report Form(s) Originator..... :	Intertek Semko AB
Master TRF..... :	Dated 2010-10

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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..... :	Switching Mode Power Supply
Trade Mark ..... :	DYS
Manufacturer ..... :	Same as applicant
Model/Type reference..... :	DYS40-xyWz, DYS40-xyW-K, HDP40-145248Wz, HDP40-145248W, HDP40-145248W-K (x, y, z are variables, details see model list on pages 7 in report 16040050 001.)
Ratings ..... :	Input: 100-240Vac, 50/60Hz, 1.0A max.
	Output: See model list on page 7 in report 16040050 001.

Testing procedure and testing location:			
☒	CB Testing Laboratory:	TÜV Rheinland (Guangdong) Ltd.	
Testing location/ address ..... :		No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou China	
☐	Associated CB Laboratory:	N/A	
Testing location/ address ..... :		N/A	
	Tested by (name + signature)..... :	Ben Zeng	
	Approved by (name + signature) ..... :	Pony Xiong	
☐	Testing procedure: TMP	N/A	
Testing location/ address ..... :		N/A	
	Tested by (name + signature)..... :		
	Approved by (name + signature) ..... :		
☐	Testing procedure: WMT	N/A	
Testing location/ address ..... :		N/A	
	Tested by (name + signature)..... :		
	Witnessed by (name + signature).... :		
	Approved by (name + signature) ..... :		
☐	Testing procedure: SMT	N/A	
Testing location/ address ..... :		N/A	
	Tested by (name + signature)..... :		
	Approved by (name + signature) ..... :		
	Supervised by (name + signature)... :		
☐	Testing procedure: RMT	N/A	
Testing location/ address ..... :		N/A	
	Tested by (name + signature)..... :		
	Approved by (name + signature) ..... :		
	Supervised by (name + signature)... :		

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

- Attachment: Plug portion test(17 pages)
- Attachment: Photo documentation (2 pages)

Summary of testing:

Tests performed (name of test and test clause):	Testing location:
- 7.1 Heating under normal operating - 13.3 Clearance measurement - 13.4 Creepage distance measurement - 15.4 Devices forming a part of the Mains Plug Test - EU/AU/UK plug test Remark: The models DYS40-050600W-K, DYS40-120333W-K, DYS40-171233W-K, DYS40-240167W-K have been selected for multiple testing, if not specified, the model DYS40-240167W-K was the selected model for the tests.	TÜV Rheinland (Guangdong) Ltd. No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou China

Summary of compliance with National Differences:

Summary of compliance with National Differences to IEC 60065: 2001(7th)+ A1: 2005+A2: 2010 and EN 60065:2002+A1: 2006+A2:2010+A12:2011.

List of countries addressed:

EU Group Differences, EU Special National Conditions, AU, BE, CA, CH, CN, DE, DK, FI, FR, GB, IT, KR, NL, NO, PL, SE, SI, US, BR.
Explanation of used codes: AU=Australia, BE=Belgium, CA=Canada, CH=Switzerland, CN=China, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, IT=Italy, KR=Republic of Korea, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, US=United States of America, BR=Brazil.

All national differences refer to report 16040050 001.

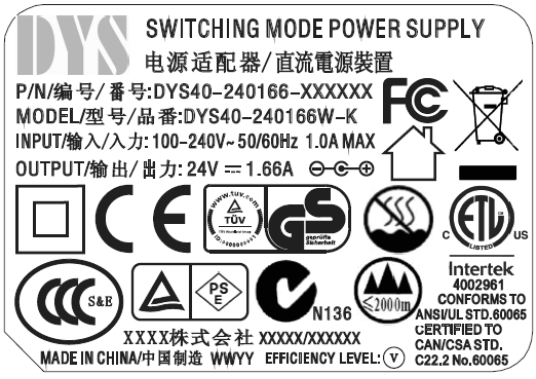
History of amendments and modifications:

Ref. No. 16040050 001, dated May 8, 2012 (Original test report)

Ref. No. 16040050 002, dated Oct. 11, 2012 (Modification)

Copy of marking plate

For replaceable plug models:



Note:

1. It is a representative label, the others are identical to it except for model name, output rating and trademark.

2. Other models label refer to report 16040050 001.

Test item particulars ..... :	
Classification of installation and use..... :	Transportable
Supply Connection..... :	Direct plug-in type or desktop type
..... :	
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..... :	Sep. 20, 2012
Date (s) of performance of tests ..... :	Sep. 20, 2012 - Sep. 29, 2012

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.

Manufacturer's Declaration per sub-clause 6.2.5 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) ..... : Same as applicant.

General product information:

Refer to report 16040050 001.

The construction of Switching adapter model DYS40-xyWz, DYS40-xyW-K, HDP40-145248Wz, HDP40-145248W, HDP40-145248W-K were modified as follows:

1. Added new models DYS40-xyW-K and HDP40-145248W-K both with replaceable plug. Models DYS40-xyW-K is identical to models DYS40-xyWz (with fixed plug type) except plug type, and models HDP40-145248W-K is identical to models DYS40-xyW-K except model name.

For the above described modification(s) the following testing was considered to be necessary:

Modification	Testing	Comments	Result
1	See summary test on page 3.	Details see relevant sub-clause and table.	**P**

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
7	Heating under normal operating conditions		P
7.1	Temperature rises not exceeding specified values; fuse links and other protective devices defeated	(see appended table)	P
7.1.1	Temperature rise of accessible parts	(see appended table)	P
7.1.2	Temperature rise of parts providing electrical insulation	(see appended table)	P
7.1.3	Temperature rise of parts acting as a support or as a mechanical barrier	(see appended table)	P
7.1.4	Temperature rise of windings	(see appended table)	P
7.1.5	Parts not subject to a limit under 7.1.1 to 7.1.4	(see appended table)	P
7.2	Softening temperature of insulating material supporting parts conductively connected to the mains carrying a current > 0,2 A at least 150 °C		N/A
15	Terminals		P
15.4	Devices forming a part of the mains plug	See below.	P
15.4.1	No undue strain on mains socket-outlets	Max. 0.10Nm(0.16kg for replaceable plug models)	P
15.4.2	Device complies with standard for dimensions of mains plugs	The plug portion tests: EU plug according to EN 50075, BS plug according to BS 1363+A1+A2+A3, AU plug according to AS/NZS 3112+A1, see attached partial test reports, the other plug portion tests should be evaluated during national approval.	P
15.4.3	Device has adequate mechanical strength (tests a,b,c)	No hazards after test.	P

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Model: Model: DYS40-050600W-K

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	758	38.85	4.81	27.8	Maximum normal load 5.0V 6.0A
2	90	60	765	39.08	4.81	27.7	Maximum normal load 5.0V 6.0A
3	100	50	694	38.38	4.81	27.8	Maximum normal load 5.0V 6.0A
4	100	60	675	38.47	4.81	27.7	Maximum normal load 5.0V 6.0A
5	240	50	318	37.42	4.81	27.8	Maximum normal load 5.0V 6.0A
6	240	60	321	37.54	4.81	27.7	Maximum normal load 5.0V 6.0A
7	264	50	290	37.56	4.81	27.8	Maximum normal load 5.0V 6.0A
8	264	60	297	37.73	4.81	27.7	Maximum normal load 5.0V 6.0A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems.....:	--	—
	Marking of loudspeaker terminals.....:	--	—

Temperature Rise dT of Part	dT (K)				Limit max dT (K)
Test Condition No.	Cond. 2		Cond. 7		--
--	Horizontal	Vertical	Horizontal	Vertical	--
Plug holder outside	6.9	9.1	5.3	6.4	--
Plug holder inside	29.8	32.0	22.1	23.6	--
Input wire	29.6	30.6	22.4	23.7	40
CN1 body	37.8	38.4	28.9	28.9	--
CX1 body	40.9	43.1	30.1	31.3	60
LF1 winding	63.8	66.1	40.2	41.4	90
PCB under BD1	64.2	65.0	40.9	41.0	90
C1 body	40.9	41.7	32.1	31.9	65
PCB under Q1	57.0	56.6	48.2	47.4	90
YC1 body	51.0	51.9	45.9	45.8	85
YC2 body	60.9	63.7	53.9	55.7	85
PC1 body	48.7	48.5	43.6	43.0	60
T1 winding	59.1	61.2	52.3	53.1	70
T1 core	57.5	59.3	51.5	52.5	70
PCB under D4	70.6	73.0	63.6	66.4	90
C5 body	62.2	62.6	57.5	58.2	65
NF2 winding	84.5	83.5	77.8	79.3	90

Output wire	37.7	36.1	34.9	33.1	40
Enclosure inside near T1	26.8	31.9	23.0	27.1	80
Enclosure outside near T1	17.0	23.1	14.8	19.2	55
Ambient	40.4°C	40.2°C	40.2°C	40.2°C	--

Winding temperature rise measurements

Ambient temperature t1 (°C) .....:	--	—
Ambient temperature t2 (°C) .....:	--	—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40°C, the max. temperature rise is calculated as follows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Model: DYS40-120333W-K

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	946	49.37	11.80	49.62	Maximum normal load 12.0V,3.33A
2	90	60	957	49.62	11.80	49.62	Maximum normal load 12.0V,3.33A
3	100	50	860	48.76	11.80	49.62	Maximum normal load 12.0V,3.33A
4	100	60	861	48.86	11.80	49.62	Maximum normal load 12.0V,3.33A
5	240	50	393	47.81	11.80	49.62	Maximum normal load 12.0V,3.33A
6	240	60	334	47.98	11.80	49.62	Maximum normal load 12.0V,3.33A
7	264	50	357	47.95	11.80	49.62	Maximum normal load 12.0V,3.33A
8	264	60	366	48.13	11.80	49.62	Maximum normal load 12.0V,3.33A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems.....:	--	—
	Marking of loudspeaker terminals.....:	--	—

Temperature Rise dT of Part	dT (K)	Limit max dT (K)

Test Condition No.	Cond. 2		Cond. 7		--
--	Horizontal	Vertical	Horizontal	Vertical	--
Plug holder outside	2.0	3.2	3.2	2.2	--
Plug holder inside	34.9	36.9	36.9	25.3	--
Input wire	36.7	38.2	38.2	26.9	40
CN1 body	37.0	37.7	37.7	26.6	--
CX1 body	44.7	46.6	46.6	31.7	60
LF1 winding	72.2	75.9	75.9	43.8	90
PCB under BD1	71.6	74.3	74.3	45.2	90
C1 body	47.2	48.8	48.8	35.9	65
PCB under Q1	50.2	50.4	50.4	46.1	90
YC1 body	59.3	60.2	60.2	48.8	85
YC2 body	57.3	58.8	58.8	54.2	85
PC1 body	47.9	47.4	47.4	42.2	60
T1 winding	61.3	62.7	62.7	58.4	70
T1 core	59.8	59.9	59.9	57.7	70
PCB under D4	60.4	61.8	61.8	58.1	90
C5 body	56.1	57.0	57.0	55.4	65
NF2 winding	51.0	49.3	49.3	47.0	90
Output wire	28.4	28.3	28.3	26.7	40
Enclosure inside near T1	27.5	29.5	29.5	26.4	80
Enclosure outside near T1	17.5	20.0	20.0	18.0	55
Ambient	40.4°C	40.5°C	40.5°C	40.2°C	--
Winding temperature rise measurements					
Ambient temperature t1 (°C) .....:	--				—
Ambient temperature t2 (°C) .....:	--				—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40°C, the max. temperature rise is calculated as follows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Model: Model: DYS40-171233W-K

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	907	47.42	16.93	39.5	Maximum normal load 17.1V 2.33A
2	90	60	909	47.22	16.93	39.5	Maximum normal load 17.1V 2.33A
3	100	50	822	46.89	16.93	39.5	Maximum normal load 17.1V 2.33A
4	100	60	814	46.71	16.93	39.5	Maximum normal load 17.1V 2.33A
5	240	50	383	46.26	16.93	39.5	Maximum normal load 17.1V 2.33A
6	240	60	387	46.12	16.93	39.5	Maximum normal load 17.1V 2.33A
7	264	50	350	46.48	16.93	39.5	Maximum normal load 17.1V 2.33A
8	264	60	358	46.30	16.93	39.5	Maximum normal load 17.1V 2.33A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems.....:	--	—
	Marking of loudspeaker terminals.....:	--	—

Temperature Rise dT of Part	dT (K)				Limit max dT (K)
Test Condition No.	Cond. 2		Cond. 7		--
--	Horizontal	Vertical	Horizontal	Vertical	--
Plug holder outside	7.7	8.8	6.1	7.0	--
Plug holder inside	28.8	31.1	22.0	21.6	--
Input wire	30.5	31.5	24.2	23.3	40
CN1 body	34.2	34.1	26.6	25.2	--
CX1 body	40.9	42.4	30.1	29.1	60
LF1 winding	65.8	65.9	38.9	38.9	90
PCB under BD1	64.5	63.4	41.1	40.6	90

C1 body	40.9	40.1	32.8	32.3	65
PCB under Q1	51.8	50.0	47.3	46.2	90
YC1 body	40.6	38.9	39.1	37.9	85
YC2 body	47.7	48.6	45.1	45.7	85
PC1 body	39.1	37.5	37.2	36.3	60
T1 winding	55.5	55.2	52.0	52.2	70
T1 core	50.4	49.7	50.6	50.5	70
PCB under D4	49.2	50.1	48.4	49.3	90
C5 body	37.5	37.2	38.0	37.8	65
NF2 winding	35.2	33.9	34.8	33.9	90
Output wire	17.6	17.0	17.3	16.7	40
Enclosure inside near T1	20.4	21.1	18.9	19.9	80
Enclosure outside near T1	12.4	14.1	11.9	12.9	55
Ambient	40.4°C	40.1°C	40.2°C	40.3°C	--

Winding temperature rise measurements		
Ambient temperature t1 (°C) .....:	--	—
Ambient temperature t2 (°C) .....:	--	—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40°C, the max. temperature rise is calculated as follows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Model: DYS40-240167W-K							
Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	901	47.23	23.85	39.8	Maximum normal load 24.0V,1.67A
2	90	60	908	47.11	23.85	39.8	Maximum normal load 24.0V,1.67A

Model: DYS40-240167W-K							
Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
3	100	50	817	46.76	23.85	39.8	Maximum normal load 24.0V,1.67A
4	100	60	812	46.63	23.85	39.8	Maximum normal load 24.0V,1.67A
5	240	50	378	46.02	23.85	39.8	Maximum normal load 24.0V,1.67A
6	240	60	383	45.98	23.85	39.8	Maximum normal load 24.0V,1.67A
7	264	50	345	46.06	23.85	39.8	Maximum normal load 24.0V,1.67A
8	264	60	352	46.03	23.85	39.8	Maximum normal load 24.0V,1.67A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems.....:	--	—
	Marking of loudspeaker terminals.....:	--	—

Temperature Rise dT of Part	dT (K)				Limit max dT (K)
Test Condition No.	Cond. 2		Cond. 7		--
--	Horizontal	Vertical	Horizontal	Vertical	--
Plug holder	2.3	2.2	2.4	1.2	--
	28.3	29.8	19.1	18.9	--
Input wire	27.7	28.8	19.1	19.0	40
CN1 body	31.9	32.5	21.8	21.4	--
CX1 body	36.3	38.2	24.1	24.1	60
LF1 winding	61.0	63.9	33.4	33.5	90
PCB under BD1	60.7	62.2	37.0	36.6	90
C1 body	39.2	40.1	27.2	27.1	65
PCB under Q1	50.1	50.5	39.3	38.9	90
YC1 body	37.6	36.6	34.3	33.0	85
YC2 body	40.3	39.9	38.0	37.1	85
PC1 body	35.5	34.7	31.4	30.4	60
T1 winding	48.6	48.4	47.4	46.6	70
T1 core	46.2	46.3	46.8	46.2	70
PCB under D4	39.7	39.9	38.0	37.8	90
C5 body	34.5	33.8	34.3	33.5	65
NF2 winding	29.5	28.5	28.4	27.1	90
Output wire	19.0	18.3	17.9	17.0	40
Enclosure inside near T1	19.5	20.2	18.1	18.5	80
Enclosure outside near T1	13.3	13.8	12.1	12.4	55
Ambient	40.1°C	40.3°C	40.3°C	40.2°C	--

Winding temperature rise measurements		
Ambient temperature t1 (°C) .....:	--	—
Ambient temperature t2 (°C) .....:	--	—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40°C, the max. temperature rise is calculated as follows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.

13	**TABLES: clearances and creepage distances**				**P**
Rated supply voltage:	100-240V	Pollution degree:	2	Material Group:	IIIa or IIIb
2 N force on internal parts applied:				Yes	
30 N force on outside of conductive enclosure applied:				Yes	

Location	Operating Voltage		Clearance (mm)		Creepage (mm)	
	V peak	V rms	Min	Actual	Min	Actual
Circuits conductively connected to the mains (use Tables 8, 9 and 11): see note below.						
For DYS40-xyW-K						
Basic/supplementary:						
---	--	--	--	--	--	--
Reinforced:						
Live part of plug pin to accessible edge of plug portion	420	250	4.0	6.0	5.0	6.0
Supplementary information: Relevant information refer to 16040050 001.						

14	TABLE: list of critical components and materials	P

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
EU Plug portion	Dongguan Dongsong Electronic Co., Ltd	DYS40K-EU	1.0A, 250Vac	EN 50075	Test with appliance
UK plug portion	Dongguan Dongsong Electronic Co., Ltd	DYS40K-UK	1.0A, 250Vac	BS 1363-1+A1+ A2+A3	Tested with appliance
AU plug portion	Dongguan Dongsong Electronic Co., Ltd	DYS40K-AU	1.0A, 250Vac	AS/NZS 3112+A1	Tested with appliance
Plug holder/pin sleeving material	E I DUPONT DE NEMOURS & CO INC	FR7(GG)(tt)	V-0, 120°C	--	UL E41938

Note: [1)] An asterisk indicates a mark which assures the agreed level of surveillance

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

European plug portion test report			
6	**Marking**		**P**
	Appliances shall be marked as follows:	Incorporated with adaptor.	**P**
	Rated current in amperes (A)		**P**
	Rated Voltage in volts (V)		**P**
	Symbol for nature of supply (~)		**P**
	Name, trade mark or idendification mark of manufacturer or responsible vendor		**P**
	Type reference		**P**

7	**Dimensions**			**P**
	Plug shall comply with Standard Sheet 1			**P**
	Between two pins (pin base)	18,0 - 19,2 mm	18.2 mm	**P**
	Between two pins (pin top)	17,0 - 18,0 mm	17.6 mm	**P**
	Diameter of pin (metallic part)	$4^{\pm 0,06}$ mm	4.0 mm	**P**
	Diameter of pin (pin base)	max. 4,0 mm	4.0 mm	**P**
	Diameter of pin (middle part)	max. 3,8 mm	3.5 mm	**P**
	Pin length	$19^{\pm 0,5}$ mm	19.3 mm	**P**
	Length of pin except metal part	$10^{+1,0}$ mm	10.3 mm	**P**
	Shape of pin top		Round shape	**P**
	Length of plug base	$35,3^{\pm 0,7}$ mm	35.4 mm	**P**
	Width of plug base	$13,7^{\pm 0,7}$ mm	13.6 mm	**P**
	Diagonal dimension of plug base within a distance of 18mm	<$26,1^{\pm 0,5}$ mm <$26,1^{\pm 0,5}$ mm	25.6 mm 25.6 mm	**P**

8	**Protection against electric shock**		**P**
8.1	Live parts of the plug not accessible (standard test finger)	Incorporated with adaptor.	**P**
8.2	No connection between one plug-pin and socket outlet		**P**
8.3	External parts of insulating material		**P**

9	**Construction**		**P**
9.1	Plugs are not replaceable	Incorporated with adaptor.	**P**
9.2	Switches, fuse, lampholder not incorporated		**P**

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
9.3	Solid pins	See clause 13	**P**
	Adequate mechanical strength		**P**
9.4	Pins locked against rotation	See clause 13.1 & 13.4	**P**
	Adequate fixed into the body		**P**
9.5	Kind of connection		**P**
9.6	Easily to be withdrawn from socket-outlet	Incorporated with adaptor	**P**
10	**Resistance to humidity**		**P**
	-Humidity treatment for 48 hours	Tested with adaptor.	**P**
11	**Insulation resistance and electric strength**		**P**
11.1	Insulation resistance (500V, min 5MΩ)	200MΩ	**P**
11.2	Electric strength (2000V)	(see appended table)	**P**
13	**Mechanical strength**		**P**
13.1	Pressed with 150N for 5 min		**P**
13.2	Tumbling barrel according to EN 61558 Number of cycles: 50	Number of cycles: 25	**P**
	No damages after the test		**P**
	Torque test on pins (0,4 Nm, 1 min)		**P**
	Requirements of clause 7 and 8.2 still fulfilled		**N/A**
13.3	Rubbing test of plug-pins: 10000 cycles, 4N		**P**
	No damage of the pins		**P**
13.4	Pull test at 70°C with 40N		**P**
	Pins not more than 1 mm displaced		**P**
14	**Resistance to heat and to aging**		**P**
14.1	Sufficient resistant to heat	Incorporated with adaptor.	**P**
14.1.1	After 1 h in heating cabinet at 100°C no damage shown	Tested with adaptor.	**P**
14.1.2	After 1 h in heating cabinet at 80°C and a force of 20N through the jaws no damage shown		**P**
14.2	Aging test		**P**
	-at 70°C for 168h		**P**
	-at room temperature for 96h		**P**

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	No traces of cloth at a force of 5N		**P**
	No damage leads to non-compliance		**P**
15	**Current-carrying parts and connections resistance to heat and to aging**		**P**
15.1	Connections withstand the mechanical stresses occurring in normal use		**P**
15.2	Contact pressure not through isolating material		**P**
15.3	Current carrying parts of copper		**P**
	No electroplated coating when part is subjected to mechanical wear		**P**
	Other metals having a mechanical strength, an electrical conductivity and a resistance to corrosion		**N/A**
16	**Creepage distances, clearances and distances through insulation**		**P**
	Live parts of different polarity: 3mm	13.6mm	**P**
	Through insulation between live parts and accessible surfaces: 1.5mm	4.7mm	**P**
17	**Resistance of insulation material to abnormal heat and fire**		**P**
	Insulating material not unduly affected by abnormal heat and by fire	(see appended table)	**P**

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

11.1	**TABLE: Insulation resistance measurements**		**P**
Measured between:		Result	
Pins connected together and the body (≥ 5MΩ)		200MΩ	**P**
Each pins in turn and the other, the latter being connected to the body (≥ 5M Ω)		200MΩ	**P**
Note: --			

11.2	**TABLE: electric strength measurements**		**P**
Test voltage applied between:		Test voltage (V)	Break down
Pins connected together and the body		2000VAC	No
Each pins in turn and the other, the latter being connected to the body		2000VAC	No
Note: --			

17.3	**TABLE: Resistance of insulating material to abnormal heat and to fire**	**P**
Parts that retain current-carrying parts in position: 750°C		**P**
Other parts: 650°C		**P**
Note: --		

BS 1363-1+A1+A2+A3 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

British plug portion test

12	**Construction**			**P**
12.1	Disposition of the pins is same as fig. 4			**P**
12.2	Plugs shall comply with fig. 4			**P**
	The height of engagement surface panel	min. 6.35 mm	8.24 mm	**P**
	Disposition of pins			**P**
	Between E and left plane	max. 25.37 mm	24.25 mm	**P**
	Between E and right plane	max. 25.37 mm	24.20 mm	**P**
	Between E and L	11.05~11.18mm	11.01 mm	**P**
	Between E and N	11.05~11.18mm	11.02 mm	**P**
	Between L or N and top plane	max. 34.6mm	31.27 mm	**P**
	Between E and L, N	22.10~22.36mm	22.17 mm	**P**
	Radius of top right corner	min. 15mm	18.50 mm	**P**
	Radius of top left corner	min. 15mm	18.50 mm	**P**
	Shape of earth pin			**P**
	Length	22.23~23.23mm	22.51 mm	**P**
	Width	7.75~8.05mm	7.97 mm	**P**
	Thickness	3.90~4.05mm	4.03 mm	**P**
	Length of chamfer	1.35~1.85mm	1.75 mm	**P**
	Angle of chamfer	58°~62°	60 °	**P**
	Shape of L and N pin			**P**
	Length	17.2~18.2mm	17.56 mm	**P**
	Width	6.22~6.48mm	6.28 mm	**P**
	Thickness	3.90~4.05mm	3.98 mm	**P**
	Length of insulating material	max. 9.5mm	9.36 mm	**P**
	Length of conductive material	max. 9.2mm	8.20 mm	**P**
	Length of chamfer	1.35~1.85mm	1.78 mm	**P**
	Angle of chamfer	58°~62°	60 °	**P**
	Maintenance of these dimensions not rely on the terminal screws			**P**
	The plug portion should enter the gauge fully with a force not exceeding 10N was applied to the centre of the sample at right angle.		Complied, sample was entered into the gauge fully with a force of 10N.	**P**

BS 1363-1+A1+A2+A3 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
12.3	No part of a line or neutral pin shall be less than 9,5mm from the periphery of the plug measured along the engagement surface.	Complied, both line and neutral pin are measured larger that 9.5mm	**P**
12.9	Plug pins were constructed of brass	Complied.	**P**
12.9.1	Exposed surface of plug pins were smooth and free from burrs or sharp edges and other irregularities, which could cause damage or excessive wear to sockets or shutters.	Complied.	**P**
12.9.4	The adaptor plug pins were tested as specified in the standard.	Complied. After being subjected to a forced of 1100N for the L/N pin and 400N for ISOD pin, the pin portion could fit the relevant gauge.	**P**
12.9.5	The adaptor plug pins were tested as specified in the standard.	Complied. After being subjected to 5000 insertions and withdraws, the shutters of the socket-outlet can operate satisfactorily and the socket contact is safely shielded.	**P**
12.9.6	Each pin of the adaptor was subjected to a torque of 1Nm for 60s as specified in the standard.	Complied. After the test, the pin portion could fit the relevant gauge.	**P**
12.11	The adaptors were tested as specified in the standard. After being placed in an oven at 70°C for 1 hour, each pin of the samples was subjected for 60 sec. to a pull of 100N in the oven.	Complied. After the above test, no plug pin was detached and the plug pins could fit the relevant gauge.	**P**
12.12	The degree of flexibility of mounting of the plug pins was checked according to 12.12.1	Complied. During the test, no declination was observed to the plug pins (limit: Max. 3° 30').	**P**
12.13	Suitable means shall be provided for withdrawing the plug without subjecting the flexible cord to stress.	Complied.	**P**
12.16	Line and neutral plug pin shall be fitted with insulating sleeves. The dimensions of the pin and sleeve shall fall within the specific limit.	Complied. Both line and neutral pins were fitted with insulating sleeves.	**P**
12.17.1	Plug pin sleeve shall be compliance with 12.17.2 to 12.17.4	Complied.	**P**
12.17.2	Electric strength test applied between the metal part of plug pin and the sleeve (1250±30V)	Complied. No breakdown and flashover occur.	**P**
12.17.3	Abrasion test for plug pin sleeve The plug pin sleeves were subjected to 20000 movements of abrasion as specified in the standard.	Complied. After the test, the sleeves showed no damage that impaired further use and could satisfy the electric strength test in 12.17.2	**P**

BS 1363-1+A1+A2+A3 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
12.17.4	Resistance to deformation The plug pins with sleeves were placed in a heating cabinet at 200°C and tested according to the standard for 120min.	Complied. After the tests, the thicknesses of sleeve of plug pins (line and neutral pins) remaining at the impression point were reduced by less than 5%.	**P**

Notes: clause 12.4, 12.5, 12.6, 12.7, 12.8, 12.9.2, 12.9.3, 12.10, 12.14, 12.15 were not applicable

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

The Australian plug was tested according to Annex J of AS/NZS 3112.

Appendix J			**P**
J1	Scope		**P**
	This Appendix applies to only the plug portion of equipment with integral pins and shall be read in conjunction with section 2 contained in the body of this standard. Where the term 'plug' is used in section 2 it shall be taken to mean the plug portion of equipment with integral pins.	Plug portion with integrated pins	**P**
J2	Requirements for plug portion		**P**
J2.1	definition		**P**
J2.2	requirments	See below.	**P**
J2.2.1	Plug pins of plug portions		**P**
	Material for pins	Copper alloy containing 62% copper.	**P**
	Assembly of pins		**P**
	Form of pin		**P**
	Insulation of plug pin		**P**
J2.2.2	Ratings and dimensions for low voltage plug portions	Dimension comply with 10A 250V two-pin plug.	**P**
	General		**P**
	Compliance with dimensional requirements of Figure 2.1	See attached dimension table.	**P**
J2.2.3	Internal connections for plug portions		**N/A**
J2.2.4	Arrangement of earthing connections for plug portions		**N/A**
J2.2.5	Configuration of plug portions		**P**
J2.2.6.1	General		**P**
J2.2.6.2	High voltage test (3112.2.13.3)		**P**
	The plug shall withstand without failure an a. c. voltage of the value indicated in Table 2.3, applied between the parts set our in Items (a) and (c) of Clause 2.13.2 for 1 min in each case.		**P**
	The plug shall further withstand, without failure, a voltage of 3500 V a. c. applied between the parts set out in Items (b) and (d) of Clause 2.13.2 for 1 min in each case.		**P**
	The insulation of insulated pin plugs shall withstand a voltage of 1 250V a. c. for 1 min applied in accordance with Clause 2.13.2(e).		**P**
J2.2.6.3	Mechanical strength of pin tests		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
J2.2.6.3.1	Tumbling barrel test (3112.2.13.7.1)		**P**
	The tumbling barrel test is applied to determine the mechanical strength of the plug pins.		**P**
	Three samples which have not been subjected to any previous test are tested to the requirements of Clause 2.13.7 however, the test is modified for plug portions of equipment with integral pins as follows:		**P**
	A sample of equipment with integral pins is dropped –		**P**
	a) 500 times if the mass of the specimen does not exceed 250 g. The pins being straightened after 100 drops and at the completion of the test to pass through the appropriate gauge of Figure A1, B1 or F1; and	Weight: 0.20Kg	**P**
	b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after 25 drops and at the completion of the test to pass through the appropriate gauge of Figure A1, B1 or F1		**N/A**
J2.2.6.3.2	Pin bending test		**P**
	The pins of the plug portion of three samples not subjected to any previous tests shall be tested for compliance with the pin bending test of clause 2.13.7.2.		**P**
	All flat-pins of plugs rated up to and including 15 A shall be subjected to a pin bending test.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	Three sample plugs not subjected to any previous tests shall be tested as follows: Pins of assembled plugs shall be tested by clamping the plug in a rigid holding block and applying a bending force, as shown in Figure 2.8, to the pin under test. The pins shall be straight at the beginning of the test. If there is any doubt about the straightness of the pin, it shall be checked by the appropriate plug gauge shown in Appendices A, B or F. The point of application of the force shall be 14±0.5 mm from the face of the plug. The direction of the force shall be along a line parallel to the face of the plug. Active and neutral pins shall be forced towards the centroid of the plug and then back to the starting point. On the first sample plug, any earth pin shall be forced but in one direction only and then back to the starting point. On the second sample plug, any earth pin shall be forced in the opposite direction to that used for testing the first sample plug. On the third sample plug, any earth pin shall be forced in the direction that gave the least favourable result during testing of the first two sample plugs. NOTE: This is intended to simulate damage that may occur when a plug is walked on and bent pins are straightened. The distance moved from the point of application shall be 7.5+/-0.3 mm, and then the pin shall be forced back to the starting point. Any ’spring-back' is ignored NOTE: ’Spring-back' means that the pin is allowed to move back to a position less than the travel distance, when the force is removed. The travel from the starting point, to the end point (7,5 mm), and back to the starting point is one cycle (i.e. one cycle is two separate movements). The speed of deflections shall be a maximum of 50 mm/s, without intentional delay between consecutive movements within each cycle.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	The pin shall not be broken off. NOTE: Cracking of the pin, less than full thickness, is not deemed to be broken off. If in doubt pins shall be disassembled from the plug and any insulation removed, NOTE: In some cases the break may be below the face of the plug or the insulation may hold the broken pieces together, retaining electrical contact.		**P**
J2.2.6.4	Temperature rise test (3112.2.13.8)	The test current have been specified and tested with the integral adaptor.	**P**
	2.13.8 Temperature rise test		**P**
	Plugs shall be so constructed that they comply with the following temperature rise test: Non-rewireable plugs are tested as delivered (specially prepared sample with access to terminals for temperature measurement). Rewireable plugs are fitted with polyvinyl chloride flexible cords with conductors having the minimum cross-sectional area specified in the manufacturers instructions.		**P**
	The terminal screws or nuts are tightened with a torque equal to two-thirds of that specified in test No.5. NOTE: To ensure normal cooling of the terminals, the conductors connected to plugs should have a length of at least 1 m.	No screws or nuts used.	**N/A**
	The test socket shall consist of a fixed socket outlet of a type complying with this Standard. NOTE: In the case of a dispute, the test should be repeated using a new socket outlet.	Direct plug-in equipment	**N/A**
	The fixed socket outlet shall be mounted in an appropriate metal-wall box installed in a draught free position, and fitted with PVC insulated conductors at least 2.5 m long, having nominal cross-sectional areas as shown in Table 3.4.	Direct plug-in equipment	**N/A**
	The cables supplying the socket outlet shall be enclosed for a distance of 1 m in conduit terminated at the wall box.	Direct plug-in equipment	**N/A**
	The plug is inserted into the socket outlet and an alternating current of 1.1 times rated current is passed for 1 h.		**P**
	The temperature of the flexible cord terminal is determined by means of melting particles, colour changing indicators or thermocouples, so chosen and positioned that they have negligible effect on the temperature being determined.	Direct plug-in equipment	**N/A**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

	The temperature rise of the terminals shall not exceed 45 K.		**P**
J2.2.6.5	Securement of pins (3112.2.13.9)		**P**
	Movement of pins (2.13.9.1)		**P**
	Plugs shall be tested for pin movement by clamping the pin or pins not under test in a rigid holding block positioned 5 ±0.5 mm from the plug face and applying a force of 18±1 N to the pin under test. The design of the block shall be such that the pin under test shall not come into contact with the block during the test.		**P**
	Except for non-rewireable plugs, the test shall be carried out without a cord attached to the plug, and with the terminal screws loosened sufficiently to allow a 1mm^2 conductor to be connected.		**N/A**
	The plug and test equipment shall be preconditioned at a temperature of 40±1ºC for 1 h, without the test force applied. Throughout the test, all parts of the plug and test equipment shall be maintained at this temperature.		**P**
	For all plugs, the point of application of the force of the plug along the pins, and the direction of the force shall be- a) in both directions along the line perpendicular to the plane of the pin, and passing through the centre of the pin; and b) in that plane in both directions along a line at right angles to that specified in Item(a).		**P**
	Over a period of 10 s, the force shall be gradually applied to each of the pins in the manner prescribed in Items (a) and (b), maintained at its maximum value for 10 s, and then released. The deflection of the pins shall be measured along the line of force relative to the face of the rigid holding block during the period when the force is applied. The maximum deflection shall not exceed 2.0 mm.	<table><tr><th></th><th>Direction of force</th><th>Deflection</th></tr><tr><td rowspan="4">L pin</td><td>Upward</td><td>0.6mm</td></tr><tr><td>Downward</td><td>0.7mm</td></tr><tr><td>Leftward</td><td>0.7mm</td></tr><tr><td>Rightward</td><td>0.6mm</td></tr><tr><td rowspan="4">N pin</td><td>Upward</td><td>0.6mm</td></tr><tr><td>Downward</td><td>0.5mm</td></tr><tr><td>Leftward</td><td>0.5mm</td></tr><tr><td>Rightward</td><td>0.6mm</td></tr></table>	**P**
	Following the test on all pins of a plug conforming to Figure 2.1, any distortion 5 min after the completion of the test on the last pin shall be such that it will not prevent the plug from being inserted in the appropriate standard gauges shown in Appendix A, Appendix B and Appendix F without the application of undue force.		**P**

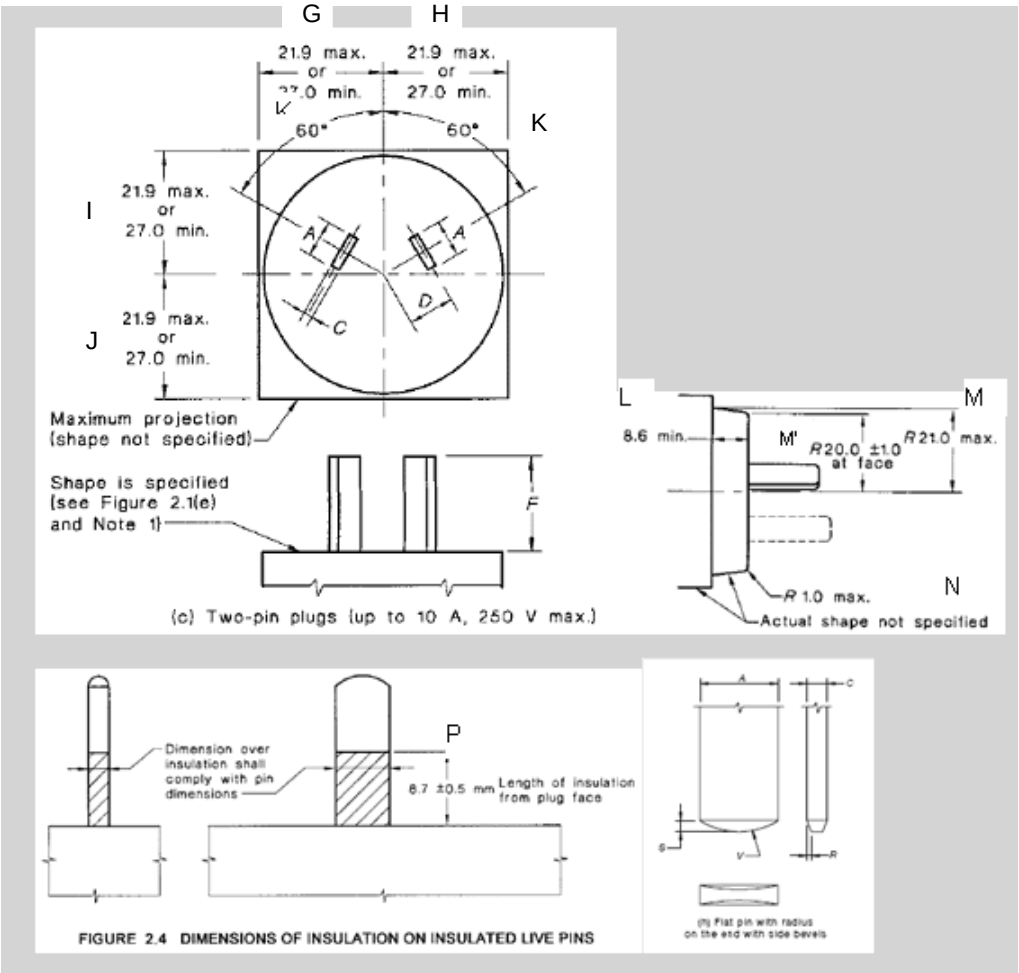
AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	For other types of plugs, any distortion after 5 min shall be such as will not prevent the plug being inserted into an appropriate socket-outlet without the application of undue force.		**N/A**
	Fixing of pins (2.13.9.2)		**P**
	A separate sample of a plug shall be heated to a temperature of 50±20ºC for 1 h and maintained at that temperature during the whole of tests, including the 5 min period after removal of the test load.		**P**
	The plug shall be held firmly in such a manner that there will be no undue squeezing or distortion of the body, and the means of holding shall not assist in maintaining the pins in their original position,		**P**
	Each pin, in turn, shall have applied to it a force which, over a period of 10 s, shall be increased steadily to 60±0.6N and held at this value for 10 min.		**P**
	Two tests on each pin shall be conducted, one with the direction of force along the length of the pin towards the body of the plug, and the other with the direction of force along the length o f the pin away from the body.		**P**
	The attachment of pins shall be considered inadequate if any pin is displaced relative to the adjacent material of the body by more than 2.4 mm at any time during these tests, or if any pin fails to return to within 0.8 mm of its nominal length specified in Figure 2.1 within 5 min of the removal of the test force,	<table><tr><th></th><th>Direction of force</th><th>Deflection</th></tr><tr><td rowspan="2">L pin</td><td>Toward body</td><td>0.7mm</td></tr><tr><td>Away from body</td><td>0.7mm</td></tr><tr><td rowspan="2">N pin</td><td>Toward body</td><td>0.8mm</td></tr><tr><td>Away from body</td><td>0.8mm</td></tr></table>	**P**
J2.2.6.6	Additional tests for plugs with insulated pins (3112.2.13.13)		**P**
	2.13.13 Additional tests on the insulation material of insulated pin plugs		**P**
	2.13.13.1 General		**P**
	The material of the pin-insulation shall be resistant to the stresses to which it may be subjected at the high temperature likely to occur in conditions approaching the bad connection conditions and at low temperatures in particular conditions of service.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	Compliance shall be checked by the tests of Clause 2.13.13.2 to 2.13.13.5		**P**
	(a) Pressure test at high temperature (2.13.13.2)		**P**
	A specimen of one insulated pin only shall be subjected to the following test by means of the apparatus shown in Figure 2.2. This apparatus shall have a blade having a round shape with a diameter of 6 mm and a thickness of 0.7 mm.		**P**
	The specimen shall be placed in position as shown in the Figure 2.5 and a force of 2.5 N shall be applied through the blade to specimen.		**P**
	The apparatus, with the specimen in position, shall be maintained for 2 h in a heating cabinet at a temperature of 200±5ºC. The specimen shall then be removed from the apparatus and within 10 s, cooled by immersion in cold water.		**P**
	The thickness of the insulation shall be measured immediately at the point of impression.		**P**
	The thickness within the area of the impression shall be not less than 50% of the thickness measured before the test.	Part1: Thickness before test: 1.66mm Thickness after test: 1.65mm Length of insulation after test: 8.72mm Part 2: Thickness before test: 1.65mm Thickness after test: 1.64mm Length of insulation after test: 8.73mm	**P**
	Visual inspection shall be made and no cracks on the insulation material shall be visible with normal, or corrected to normal, vision without additional magnification, and the dimension of the insulating material shall not have changed below the minimum size shown in Figure 2.4.		**P**
	(b) Static damp heat test (2.13.13.3)		**P**
	An insulated pin plug shall be subjected to two damp heat cycles in accordance with IEC 60068-2-30. Db (12+12 h cycle), 95% relative humidity, lower temperature 25±3ºC and upper temperature 40ºC.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	After this treatment and after recovery to room temperature, the specimen shall be subjected to- a. the insulation resistance test in accordance with CLAUSE 2.13.2(E); b. high voltage test in accordance with Clause 2.13.3 and; c. abrasion test in accordance with Clause 2.13.13.6. NOTE: At the manufacturer's option, the same sample may be used for this test and the low temperature test (see Clause 2.13.13.4) and a single abrasion test may be done.		**P**
	(c) Low temperature test (2.13.13.4)		**P**
	An insulated pin plug shall be maintained at –15±2ºC for at least 24 h and returned to room temperature.		**P**
	The specimen shall be subjected to – a. the insulation resistance test in accordance with Clause 2.13.2(e); b. high voltage test in accordance with Clause 2.13.3 and; c. abrasion test in accordance with Clause 2.13.13.6. NOTE: At the manufacturer's option, the same sample may be used for this test and the static damp heat test (see Clause 2.13.13.3) and a single abrasion test may be done.		**P**
	(d) Impact test at low temperature (2.13.13.5)		**P**
	A specimen of one insulated pin only shall be subjected to an impact test by means of the apparatus shown in Figure 2.6. The mass of the falling weight shall be 100±1 g.		**P**
	The apparatus, on a sponge rubber pad 40 mm thick, together with the specimen, shall be maintained at –15±20ºC for at least 24 h.		**P**
	At the end of this period, the specimen shall be placed in position, as shown in Figure 2.6, and the falling weight shall be allowed to fall from a height of 100mm. Four impacts shall be applied successively to the same specimen, rotating it through 90º between impacts.		**P**
	After the test the specimen shall be allowed to return to room temperature and then examined, No cracks of the insulating material shall be visible with normal, or corrected to normal, vision without additional magnification. NOTE: The cooling period of 14 h includes the time necessary to cool down the apparatus.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	(e) Abrasion test (2.13.13.6)		**P**
	An insulated pin of an insulated pin plug shall be subjected to the following test by means of an apparatus as shown in Figure 2.7.		**P**
	The test apparatus comprises a horizontally disposed beam, which shall be pivoted about its centre point. A short length of steel wire, 1 mm in diameter and bent into a U-shape, the base of the U being straight, shall be rigidly attached, at both ends, to one end of the beam, so that the straight part projects below the beam and shall be parallel to the axis of the beam pivot.		**P**
	The plug shall be held in a suitable clamp in such a position that the straight part of the steel wire rests on the major axis face of the plug pin, at right angles to it. The pin shall slope downwards at an angle of 10º to the horizontal.		**P**
	The beam shall be loaded so that the wire exerts a force of 4 N on the pin.		**P**
	The plug shall be moved backwards and forwards in horizontal direction in the plane of the axis of the beam, so that the wire rubs along the pin. The length of the pin thus abraded shall be approximately 9 mm, of which approximately 7 mm shall be over the insulation.		**P**
	The number of movement s shall be 20 000 (10 000 in each direction) and the rate of operation shall be 30 movements per min.		**P**
	After the test, the pins shall show no damage which may affect safety or impair the further use of the plug, in particular, the insulating sleeve shall not have punctured or rucked up.		**P**
J2.2.6.7	Equipment with integral pins intended to be supported by the contacts of a socket-outlet	Torque: 0.07Nm	**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict



Symbol	Requirement (mm)	Measured (mm)		Symbol	Requirement (mm)	Measured (mm)
A	6.2 – 6.5	6.40		L	> 8.6	9.18
C	1.58 – 1.78	1.63		M	R 21.0 max.	20.63
D	7.92	7.92		M’	R 19.0 – 21.0	20.63
F	16.66 – 17.46	16.77		N	< R 1.0	0.2
G	< 21.9 or > 27.0	20.69		P	8.2 – 9.2	8.49
H	< 21.9 or > 27.0	20.69		S	0.90±0.10	0.92
I	< 21.9 or > 27.0	20.69		V	6.0	6.0
J	< 21.9 or > 27.0	72.97		R	0.35±0.05	0.3
K	60 °	60 °				
The distance between a live pin of any plug and the edge of the moulding of the plug					Min. 9	11.92

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT
IEC 60065
Audio, video and similar electronic apparatus - Safety requirements

Report Number. ..... :	16040050 001
Date of issue ..... :	May 8, 2012
Total number of pages ..... :	127 pages
Applicant's name ..... :	**Dongguan Dongsong Electronic Co., Ltd.**
Address ..... :	Dongsong Electronic Building, No. 19, Xintian Street, Baizhoubian Village, East District, Dongguan, Guangdong, P.R. China
Test specification:	
Standard ..... :	IEC 60065:2001 (Seventh Edition) + A1:2005 +A2:2010
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60065K
Test Report Form(s) Originator ..... :	Intertek Semko AB
Master TRF ..... :	Dated 2010-10

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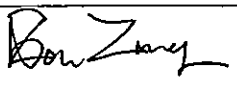
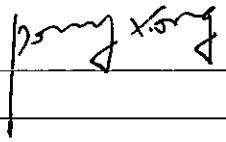
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description ..... :	Switching Mode Power Supply
Trade Mark ..... :	1) DYS 2) TDK
Manufacturer ..... :	Same as applicant
Model/Type reference ..... :	1)DYS40-xyWz, HDP40-145248Wz, HDP40-145248W (x, y, z are variables, details see model list on pages 7) 2) DYS40-xyWz, HDP40-145248Wz(z=blank) (x, y are variables, details see model list on pages 7)
Ratings ..... :	Input: 100-240Vac, 50/60Hz, 1.0A max. Output: see model list on pages 7. Output: See model list on page 7.

Testing procedure and testing location:			
☒	CB Testing Laboratory:	TÜV Rheinland (Guangdong) Ltd.	
Testing location/ address..... :		No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou China	
☐	Associated CB Laboratory:	N/A	
Testing location/ address..... :		N/A	
	Tested by (name + signature) .....:	Ben Zeng	
	Approved by (name + signature).....:	Pony Xiong	
☐	Testing procedure: TMP	N/A	
Testing location/ address..... :		N/A	
	Tested by (name + signature) .....:		
	Approved by (name + signature).....:		
☐	Testing procedure: WMT	N/A	
Testing location/ address..... :		N/A	
	Tested by (name + signature) .....:		
	Witnessed by (name + signature) ....:		
	Approved by (name + signature).....:		
☐	Testing procedure: SMT	N/A	
Testing location/ address..... :		N/A	
	Tested by (name + signature) .....:		
	Approved by (name + signature).....:		
	Supervised by (name + signature) ...:		
☐	Testing procedure: RMT	N/A	
Testing location/ address..... :		N/A	
	Tested by (name + signature) .....:		
	Approved by (name + signature).....:		
	Supervised by (name + signature) ...:		

List of Attachments (including a total number of pages in each attachment):
- Attachment: Photo documentation (14 pages)
- Attachment: National difference (61 pages)
- Attachment: Plug portion test(17 pages)

Summary of testing:

Tests performed (name of test and test clause):	Testing location:
- 5 Durability of marking test - 5.1 Input test - 7.1 Heating under normal operating - 9.1.1.1 Determination of hazardous live parts test - 9.1.1.2 Determination of accessible parts test - 9.1.7 Resistance to external force test - 10.1 Surge test - 10.2 Humidity treatment test - 10.3 Insulation resistance and dielectric strength test - 11.1 Touch current under fault condition - 11.2 Heating under fault conditions - 12.1.5 Stress relief test - 13.2 Determination of operating voltage - 13.3 Clearance measurement - 13.4 Creepage distance measurement - 15.4 Devices forming a part of the Mains Plug Test - 19 Stability and mechanical Test	TÜV Rheinland (Guangdong) Ltd. No.199 Kezhu Road, Guangzhou Science City 510663 Guangzhou China
Remark: The models DYS40-050600W-2, DYS40-120333W-2, DYS40-171233W-2, DYS40-240167W-2, DYS40-050600W, DYS40-120333W, DYS40-171233W and DYS40-240167W have been selected for multiple testing, if not specified, the model DYS40-240167W-2 was the selected model for the tests.	

Summary of compliance with National Differences:

Summary of compliance with National Differences to IEC 60065: 2001(7th)+ A1: 2005+A2: 2010 and EN 60065:2002+A1: 2006+A2:2010+A12:2011.

List of countries addressed:

EU Group Differences, EU Special National Conditions, AU, BE, CA, CH, CN, DE, DK, FI, FR, GB, IT, KR, NL, NO, PL, SE, SI, US, BR.
Explanation of used codes: AU=Australia, BE=Belgium, CA=Canada, CH=Switzerland, CN=China, DE=Germany, DK=Denmark, FI=Finland, FR=France, GB=United Kingdom, IT=Italy, KR=Republic of Korea, NL=The Netherlands, NO=Norway, PL=Poland, SE=Sweden, US=United States of America, BR=Brazil.

Summary of compliance with National Differences to IEC 60065: 2001(7th)+ A1: 2005 and J 60065(H23):

List of countries addressed:

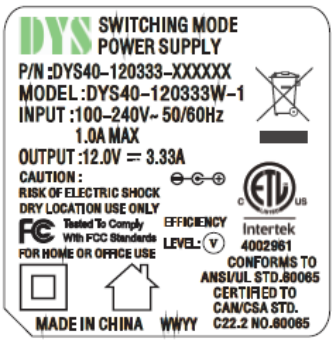
JP

Explanation of used codes: JP=Japan.

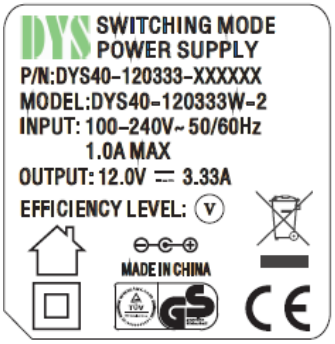
All national differences see corresponding pages.

Copy of marking plates

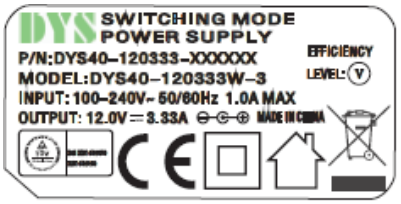
For US plug



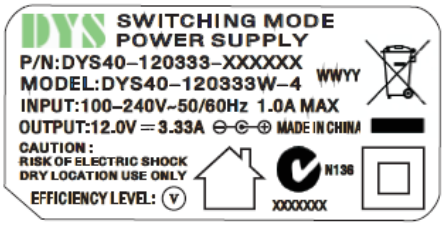
For EU plug



For UK plug

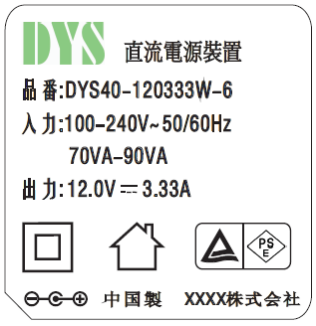


For AU plug



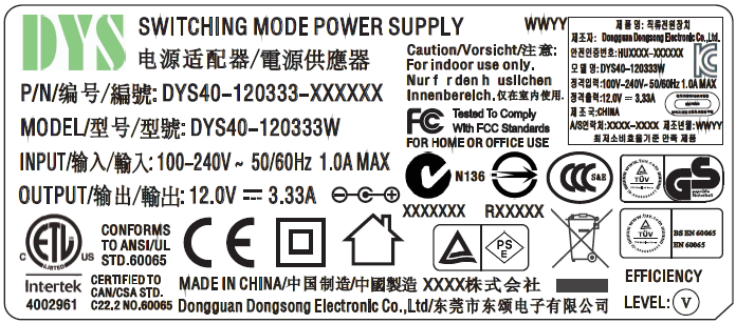
For CN plug

For JP plug

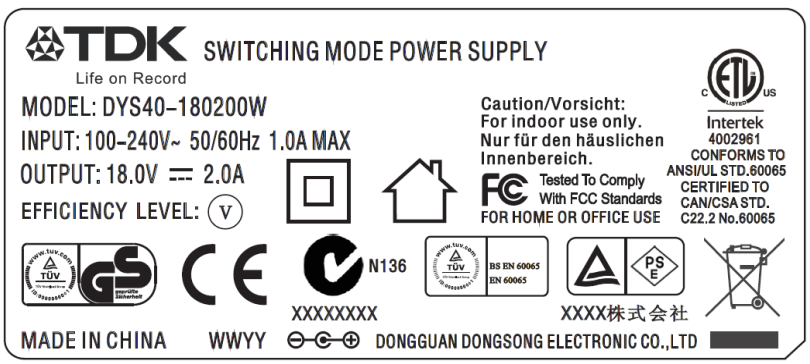


For KR plug

For desktop model with trademark DYS



For desktop model with trademark TDK



Note:

1. There are representative labels, the others are identical to them except for model name, output rating and trademark.

2. The artwork above may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks. Due to similarity of the rating labels, only above label is listed.

3. For US label, date code “WWYY”, “YY” represent year, for example, “YY=12” means 2012; “WW” represent week when product was manufactured, for example, “WW=01” means first week.

Test item particulars ..... :	
Classification of installation and use ..... :	Transportable
Supply Connection ..... :	Direct plug-in type or desktop type
..... :	
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 ..... :	Apr. 16, 2012
Date (s) of performance of tests ..... :	Apr. 16, 2012 - Apr. 29, 2012

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.

Manufacturer's Declaration per sub-clause 6.2.5 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) ..... : Same as applicant.

General product information:

1. The apparatus, models DYS40-xyWz, HDP40-145248Wz, HDP40-145248W are Class II switching adapter (desktop type or direct plug-in) used for DC supply of information technology equipment, output cord is non-detachable;
2. The adapter's top enclosure is secured to the bottom enclosure by ultrasonic welding;
3. The test samples are pre-production sample without serial numbers;
4. Specified maximum ambient temperature is 40℃;
5. For directly plug-in models, the plug pins of JP, AU, UK, CN, US, Taiwan plug are moulded into enclosure directly, For EU, KR plug, the plug pins fixed by screw in the plug holder. It is impossible to remain in the mains socket after removal of the adaptor, Details see photo document.

Difference between models:

1. R6-R9, R11, R12, R15-R22, ZR1, C1, C5, C6, D4, ZD1: The parameters of these components depend on output voltage and output current.
2. Transformer T1: The power supply with different output voltage have different secondary winding of

transformer, details see model list.
3. The models HDP40-145248Wz (fixed plug model) and HDP40-145248W (appliance inlet model) are identical to model DYS40-xyWz (x=145, y=248) only except for model name and connection method to the mains.

Model list:

For model DYS40-xyWz, HDP40-145248Wz, HDP40-145248W:

Model no.	Input	Output			Transformer no. and sec. winding
		V dc	Max. A	Max. VA(W)	
DYS40-xyWz	100-240Vac, 50/60Hz, 1.0A max	5.0~7.0V	6.0	30W max	DYS403-T01: 5Ts x 3p x Φ0.50mm
		7.1~9.0V	4.5	36W max	DYS403-T01: 5Ts x 3p x Φ0.50mm
		9.1~11.9V	3.9	36W max	DYS403-T02: 7Ts x 2p x Φ0.50mm
		12.0~17.0V	3.33	40W max	DYS403-T02: 7Ts x 2p x Φ0.50mm
		17.1~24.0V	2.33	40W max	DYS403-T03: Φ0.37mmx2px10Ts
HDP40-145248Wz, HDP40-145248W	100-240Vac, 50/60Hz, 1.0A max	14.5V	2.48	--	DYS403-T02: 7Ts x 2p x Φ0.50mm

Note:
'x' is 3 digit numbers which represent the output voltage in volt dividing by 10 in step of 0.1V, for example, 050 represent the output voltage is 5Vdc, 240 represent the output voltage is 24.0Vdc.

'y' is 3 digit number which represent the output current in Ampere after dividing by 100 in step of 0.01A, for example, 450 represent the output current is 4.5A, 600 represent the output current is 6.0A

By multiplication of output voltage and output current, the type designations are limited through the maximum output power and output current.

'z' can be blank, '-1', '-2', '-3', '-4', '-5', '-6'. '-7', '-8', '-9', '-10', '-11', '-12', '-13' for plug different national type;
For details:
blank represents appliance inlet type (C8 standard sheet),
'-1'= Taiwan plug type,
'-2'= European plug type,
'-3'= UK plug type,
'-4'= Australia plug type,
'-5'= Chinese plug type,
'-6'= Japanese plug type,
'-7'= Korea plug type,
'-8'= Russia plug type,
'-9'= Singapore plug type,
'-10'= Mexico plug type,
'-11'= Brazil plug type,
'-12'= Saudi Arabian plug type,
'-13'= United state plug type,

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
3	General requirements		
	Safety class of the apparatus .....:	Class II	P
4	General test conditions		P
4.1.4	Ventilation instructions require the use of the test box	Yes	P
5	Marking and instructions		P
	Comprehensible and easily discernible	All markings are printed on label pasted on outer enclosures of the appliance.	P
	Permanent durability against water and petroleum spirit	After rubbing test by water and petroleum spirit, the markings are still easily discernible, indelible and legible.	P
5.1	a) Identification, maker .....:	Trademark and model no. are marked on the outer enclosure.	P
	b) Model number or type reference.....:	See model list on page 7.	P
	c) Class II symbol if applicable .....:	Provided on the label.	P
	d) Nature of supply.....:	IEC 60417-5032 symbol used	P
	e) Rated supply voltage .....:	See model list on page 7.	P
	f) Mains frequency if safety dependant .....:	50/60Hz	P
	g) Rated current or power consumption for apparatus supplied by supply apparatus for general use .....:		N/A
	Measured current or power consumption .....:		N/A
	Deviation % (max 10%) .....:		N/A
	h) Rated current or power consumption for apparat-us intended for connection to an a.c. mains supply.:	1.0A	P
	Measured current or power consumption .....:	(See appended table 7.1)	P
	Measured current or power consumption for Television set .....:	Not Television set.	N/A
	Deviation % (max 10%) .....:	(See appended table 7.1)	P
5.2	a) Earth terminal	Class II equipment.	P
	b) Hazardous live terminals	No such terminals provided.	N/A
	c) Markings on supply output terminals	No such terminals provided	N/A
5.3	a) Use of triangle with exclamation mark	Circuit diagram add triangle	P
	b) marking on loudspeaker grille, IEC 60417-5036		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
5.4	Instructions for use	English. Instruction in other language shall be provided when national approvals.	P
5.4.1	a) Mains powered equipment not exposed to dripping or splashing. Warning concerning objects filled with liquid, etc.	See user manual.	P
	b) Hazardous live terminals, instructions for wiring	No such terminals provided.	N/A
	c) Instructions for replacing lithium battery	No batteries provided.	N/A
	d) Class I earth connection warning	See user manual.	P
	e) Instructions for multimedia system connection	Not multimedia system.	N/A
	f) Special stability warning for attachment of the apparatus to the floor/wall		N/A
	g) Warning: battery exposure to heat		N/A
	h) Warning: protective film on CRT face	No CRT provided.	N/A
5.4.2	a-b) Disconnect device: plug/coupler or all-pole mains switch location, accessibility and markings	The mains plug was used as disconnect device. See user manual.	P
	c) Instructions for permanently connected equipment	Not permanently connected equipment.	N/A
	Marking, signal lamps or similar for completely disconnection from the mains	The mains plug was used as disconnect device.	N/A
6	Hazardous radiation		N/A
6.1	Ionizing radiation < 36 pA/kg (0,5 mR/h)	No ionizing radiation inside the EUT.	N/A
	Ionizing radiation under fault condition	See above.	N/A
6.2	Laser radiation, emission limits to IEC 60825-1:2007 .....:	No laser radiation inside the EUT.	N/A
	Emission limits under fault conditions .....:	See above.	N/A
7	Heating under normal operating conditions		P
7.1	Temperature rises not exceeding specified values; fuse links and other protective devices defeated	(see appended table)	P
7.1.1	Temperature rise of accessible parts	(see appended table)	P
7.1.2	Temperature rise of parts providing electrical insulation	(see appended table)	P
7.1.3	Temperature rise of parts acting as a support or as a mechanical barrier	(see appended table)	P
7.1.4	Temperature rise of windings	(see appended table)	P
7.1.5	Parts not subject to a limit under 7.1.1 to 7.1.4	(see appended table)	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
7.2	Softening temperature of insulating material supporting parts conductively connected to the mains carrying a current > 0,2 A at least 150 °C		N/A
8	Constructional requirements with regard to the protection against electric shock		P
8.1	Conductive parts covered by lacquer, paper, untreated textile oxide films and beads etc. considered to be bare	Enamel coating of winding and the surface material of electrolytic capacitors are not considered as safety isolation.	P
8.2	No shock hazard when changing voltage setting device, fuse-links or handling drawers etc.	Tools are used.	P
8.3	Insulation of hazardous live parts not provided by hygroscopic material	No hygroscopic material used.	P
8.4	No risk of electric shock from accessible parts or from parts rendered accessible following the removal of a cover which can be removed by hand	No such cover which can be removed by hand.	N/A
8.5	Class I equipment	Class II appliance	N/A
	Basic insulation between hazardous live parts and earthed accessible parts		N/A
	Resistors bridging basic insulation complying with 14.1 a)		N/A
	Capacitors bridging basic insulation complying with 14.2.1 a)		N/A
	Protective earthing terminal		N/A
8.6	Class II equipment and Class II constructions within Class I equipment	See below.	P
	Double or reinforced insulation between hazardous live parts and accessible parts	Secondary circuit to primary circuit is separated by reinforced or double insulation. (The insulation system of transformer is double insulation system).	P
	Components bridging double or reinforced insulation complying with 14.1 a) or 14.3	The switch transformer has been tested during this approval.	P
	Basic insulation bridged by components complying with 14.3.4.3.		N/A
	Basic and supplementary insulation each being bridged by a capacitor complying with 14.1 a)		P
	Double or reinforced insulation being bridged with 2 capacitors in series complying with 14.2.1 a)		N/A
	Double or reinforced insulation being bridged with a single capacitor complying with 14.2.1 b)		N/A
8.7	This clause is void		—
8.8	Basic or supplementary insulation > 0,4 mm (mm) :		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Reinforced insulation > 0,4 mm (mm) .....:	Thickness of enclosure and opto-coupler see appended table 14.	P
	Thin sheet insulation (excluding non-separable thin sheet insulation. See 8.22)		N/A
	Basic or supplementary insulation, at least two layers, each meeting 10.3		N/A
	Basic or supplementary insulation, three layers any two of which meet 10.3		N/A
	Reinforced insulation, two layers each of which meet 10.3	2 layers insulation tape wrapped arround transformer near secondary as reinforced insulation. Each one layer meets electric strength of 10.3.	P
	Reinforced insulation, three layers any two which meet 10.3		N/A
8.9	Adequate insulation between internal hazardous live conductors and accessible parts	Adequate insulation between internal hazardous live conductors and accessible parts	P
	Adequate insulation between internal hazardous live parts and conductors connected to accessible parts	See above.	P
8.10	Double insulation between conductors connected to the mains and accessible parts.	See above	P
	Double insulation between internal hazardous live parts and conductors connected to accessible parts.	See above	P
8.11	Detaching of wires	See below.	P
	No undue reduction of creepages or clearance distances if wires become detached	The output cords are inserted into a hole in PCB before soldering. There's no risk of a wire becoming detached in the sense of this standard.	P
	Vibration test carried out .....:		P
8.12	This clause is void		—
8.13	Adequate fastening of windows, lenses, lamp covers etc. (pull test 20 N for 10 s)	No such parts that hazardous live parts are rendered accessible by their absence are used.	N/A
8.14	Adequate fastening of covers (push/pull test 50 N for 10 s)	Enclosure of appliance is tested with 50N for 10s, no access to hazardous live parts.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
8.15	No risk of damage to the insulation of internal wiring due to hot parts or sharp edges	Wires inside the appliance are well secured, no risk of damage to the internal wiring.	P
8.16	Only special supply equipment can be used	Supply from AC mains.	N/A
8.17	Insulated winding wire without additional interleaved insulation	Approved TIW used.	P
8.18	Endurance test as required by 8.17	Test not required.	N/A
8.19	Disconnection from the mains	The plug was used as disconnected device.	P
8.19.1	Disconnect device	The plug was used as disconnected device.	P
	All-pole switch or circuit breaker with >3mm contact separation	See above.	N/A
8.19.2	Mains switch ON indication		N/A
8.20	Switch not fitted in the mains cord		N/A
8.21	Bridging components comply with clause 14	No such components provided.	N/A
8.22	Non-separable thin sheet material	No such components provided.	N/A
9	Electric shock hazard under normal operating conditions		P
9.1	Testing on the outside		P
9.1.1	For voltages >1000 V ac or >1500 V dc complies with clause 13.3.1 for basic insulation	No such high voltage.	N/A
9.1.1.1	a) Open circuit voltages	Max. 23.97Vdc	P
	b) Touch current measured from terminal devices using the network in annex D .....:	Secondary voltages not exceeding 60V d.c. Touch current: L, N to output: U1=0.40V (peak); U2=0.17V (peak) L, N to enclosure: U1=0.09V (peak); U2=0.07V (peak) Limits: U1=35V (peak) U2=0.35V (peak) Test voltage: 264V at 60Hz, CY1= 2200pF.	P
	c) Discharge not exceeding 45 µC		N/A
	d) Energy of discharge not exceeding 350 mJ		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
9.1.1.2	Test with test finger and test probe	No access to hazardous live parts.	P
9.1.2	No hazardous live shafts of knobs, handles or levers	No such hazardous device.	P
9.1.3	Ventilation holes and other holes tested by means of 4 mm x 100 mm test pin		P
9.1.4	Terminal devices tested with 1 mm x 20 mm test pin (10 N); test probe D of IEC 61032	No such terminal	P
	Terminal devices tested with 1 mm x 100 mm straight wire (1 N); test probe D of IEC 61032	See above.	P
9.1.5	Pre-set controls tested with 2.5 mm x 100 mm test pin (10 N); test probe C of IEC 61032	No pre-set controls.	N/A
9.1.6	No shock hazard due to stored charge on withdrawal of the mains plug; voltage (V) after 2 s .....:	40V after 2s	P
	If C is not greater than 0,1 µF no test needed	XC1=0.33µF	P
9.1.7	Resistance to external forces		P
	a) Test probe 11 of IEC 61032 for 10 s (50 N)		P
	b) Test hook of fig. 4 for 10 s (20 N)		P
	c) 30 mm diameter test tool for 5 s (100 or 250 N)	100N Test was performed for all sources of enclosure material.	P
9.2	No hazard after removing a cover by hand	The enclosure of the appliance is fixed by ultrasonic welding, no risk of removing by hand.	N/A

10	Insulation requirements		P
10.1	Insulation resistance (MΩ) at least 2 MΩ min. after surge test for basic and 4 MΩ min. for reinforced insulation .....:	Plug and output terminals were subjected to 50 discharges (see appended table)	P
10.2	Humidity treatment 48 h or 120 h .....:	Performed for 120h at temperature between 40℃ and a relative humidity between 95%.	P
10.3	Insulation resistance and dielectric strength between mains terminals	(see appended table)	P
	Insulation Resistance and dielectric strength across BASIC or SUPPLEMENTARY insulation (Class I)		N/A
	Insulation resistance and dielectric strength across REINFORCED insulation (Class II)	(see appended table)	P

11	Fault conditions		P
11.1	No shock hazard under fault condition	No electric shock during fault operation. For details refer to appended table 11.2.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
11.2	Heating under fault condition	See below.	P
	Flames extinguish within 10 seconds	No such flames.	P
	No hazard from softening solder	No solder point became soft.	P
	Soldered terminations not used as protective mechanism		P
11.2.1	Measurement of temperature rises	(see appended table)	P
11.2.2	Temperature rise of accessible parts	(see appended table)	P
11.2.3	Temperature rise of parts, other than windings and printed boards, providing electrical insulation	(see appended table)	P
11.2.4	Temperature rise of parts acting as a support or mechanical barrier	(see appended table)	P
11.2.5	Temperature rise of windings	(see appended table)	P
11.2.6	Temperature rise of printed boards shall not exceed the limits of table 3 by max. 100 K for max. 5 min	(see appended table)	P
	Printed circuit boards (PCB) classified as V-0 according to 60695-11-10 or Clause G.1 may exceed the limit in table 3 in case a) and b):		N/A
	a) Temperature rise of printed circuit boards exceeding the limits of table 3 by not more than 100 K for an area not greater than 2 cm² .....:	(see appended table)	P
	b) Temperature rise of printed circuit boards exceeding the limits of table 3 up to 300 K for an area not greater than 2 cm² for a maximum of 5 min		N/A
	Meets all the special conditions if conductors on printed circuit boards are interrupted		N/A
	Class I protective earthing maintained	Class II appliance	N/A
11.2.7	Temperature rise of parts not subject to the limits of 11.2.1 to 11.2.6 shall not exceed the limits in table 3, item e), "Fault conditions".		P

12	Mechanical strength		P
12.1.1	Bump test where mass >7 kg	Less than 7kg.	N/A
12.1.2	Vibration test	Applied for desktop models.	P
12.1.3	Impact hammer test		N/A
	Steel ball test		N/A
12.1.4	Drop test for portable apparatus where mass ≤ 7 kg	No hazard after test.	P
12.1.5	Thermoplastic enclosures stress relief test	Enclosure is subjected to the test at 107°C for 7 hours.	P
12.2	Fixing of knobs, push buttons, keys and levers	No such parts provided.	N/A
12.3	Remote controls with hazardous live parts	No remote controls provided.	N/A
12.4	Drawers (pull test 50 N, 10 s)	No drawers provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
12.5	Antenna coaxial sockets providing isolation	No antenna coaxial sockets provided.	N/A
12.6	Telescoping or rod antennas construction	Not such a construction.	N/A
12.6.1	Telescoping or rod antennas securement		N/A
13	Clearances and creepage distances		P
13.1	Clearances in accordance with 13.3	Clearance measured according to annex E. Pollution degree 2 was considered.	P
	Creepage distances in accordance with 13.4	Creepage distances measured according to annex E. Pollution degree 2 was considered.	P
13.2	Determination of working voltage	For obtaining the operating voltages the EUT was connected to a 240V TN power system. The highest operating voltages are measured as follows: Location / Peak voltage (V) / RMS voltage (V) T1: 1 to 5,6 / 448 / 172 T1: 2 to 5,6 / 348 / 169 T1: 3 to 5,6 / 352 / 250 T1: 4 to 5,6 / **492** / **297** T1: 1 to 7,8 / 360 / 169 T1: 2 to 7,8 / 376 / 174 T1: 3 to 7,8 / 460 / 254 T1: 4 to 7,8 / 464 / 279 PC1:1 to 3 / 372 / 188 PC1:1 to 4 / 372 / 187 PC1:2 to 3 / 372 / 188 PC1:2 to 4 / 372 / 188 YC1 / 348 / 169 YC2 / 348 / 239	P
13.3	Clearances		P
13.3.1	General		P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
13.3.2	Circuits conductively connected to the mains comply with table 8 and, where applicable, table 9.....:	(see appended table)	P
13.3.3	Circuits not conductively connected to the mains comply with table 10		N/A
13.3.4	Measurement of transient voltages		N/A
13.4	Creepage distances	(see appended table)	P
	Creepage distances greater than table 11 minimum values		P
13.5	Printed boards		N/A
13.5.1	Clearances and creepage distances between conductors on printed circuit boards, one of which may be conductively connected to the mains, as in fig. 10		N/A
13.5.2	Type B coated printed circuit boards complying with IEC 60664-3 (basic insulation only)		N/A
13.6	Conductive parts along uncemented joints clearances and creepage distances comply with 13.3 and 13.4	No such parts provided.	N/A
	Conductive parts along reliably cemented joints comply with 8.8		N/A
	Temperature cycle test and dielectric strength test		N/A
	500V test for transformers, magnetic coupler and similar devices, if insulation is relied upon for safety	Not such a construction.	N/A
13.7	Enclosed, enveloped or hermetically sealed parts not conductively connected to the mains, clearances and creepage distances as in table 12		N/A
13.8	Parts filled with insulating compound, meeting the requirements of 8.8	No such parts provided.	N/A

14	Components		P
14.1	Resistors		N/A
	a) Resistors between hazardous live parts and accessible metal parts	No such resistors provided.	N/A
	b) Resistors, other than between hazardous live parts and accessible parts		N/A
	Resistors separately approved .....:		N/A
14.2	Capacitors and RC units		P
	Capacitors separately approved :	(see appended table)	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.2.1	Y capacitors tested to IEC 60384-14:2005 .....:	The capacitors (YC1, YC2) conductively connected between the line and secondary circuit was subclass Y1 capacitor approved according to IEC/EN 60384-14.	P
14.2.2	X capacitors tested to IEC 60384-14:2005 .....:	No such capacitors provided.	N/A
14.2.3	Capacitors operating at mains frequency but not connected to the mains: tests for X2 .....:	No such capacitors provided.	N/A
14.2.5	Capacitors with volume exceeding 1750 mm³, where short-circuit current exceeds 0,2 A: compliance with IEC 60384-1, 4.38 category B or better .....:	No such capacitors provided.	N/A
	Capacitors with volume exceeding 1750 mm³, mounted closer to a potential ignition source than table 5 permits: compliance with IEC 60384-1, 4.38 category B or better .....:		N/A
	Shielded by a barrier acc. to 20.1.4/ table 21 or metal .....:	Electrolytic capacitors provided with metal can.	P
14.3	Inductors and windings		P
	Comply with IEC 61558-1, IEC 61558-2 (as relevant) and clause 20.1.4		N/A
14.3.1	Transformers and inductors marked with manufacturer's name and type .....:	The transformer is marked with type and manufacturer information (as code), provided as label on the cores.	P
	Transformers and inductors separately approved .:	Tested with appliance.	N/A
14.3.2	General		P
	Insulation material complies with clause 20.1.4		P
14.3.3	Constructional requirements		P
14.3.3.1	Clearances and creepage distances comply with clause 13	(see appended table 13.3 and 13.4)	P
14.3.3.2	Transformers meet the constructional requirements		P
14.3.4	Separation between windings		P
14.3.4.1	Class II transformers have adequate separation between hazardous live parts and accessible parts (double or reinforced insulation).....:	Reinforced or double insulation between primary windings/parts and secondary windings/parts. Details see appended table 13.3 and 13.4.	P
	Coil formers and partition walls > 0,4 mm	See appended table.	P
14.3.4.2	Class I transformers, with basic insulation and protective screening only if all 7 conditions of 14.3.4.2 are met	Not a Class I transformer design.	N/A
14.3.4.3	Separating transformers with at least basic insulation	Not such a transformer design.	N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
14.3.5	Insulation between HAZARDOUS LIVE parts and ACCESSIBLE parts		P
14.3.5.1	Class II transformers have adequate insulation between hazardous live parts and accessible parts (double or reinforced insulation)	See subclause 14.3.4.1 above.	P
	Coil formers and partition walls > 0,4 mm		N/A
14.3.5.2	Class I transformers have adequate insulation between hazardous live parts and accessible conductive parts or those conductive parts or protective screens connected to a protective earth terminal	Not a Class I transformer design.	N/A
	Winding wires connected to protective earth have adequate current-carrying capacity		N/A
14.4	High voltage components	No component operating at voltages exceeding 4 kV.	N/A
	High-voltage components and assemblies: U > 4 kV (peak) separately approved		N/A
	Component meets category V-1 of IEC 60707		N/A
14.4.1	High voltage transformers and multipliers tested as part of the submission		N/A
14.4.2	High voltage assemblies and other parts tested as part of the submission		N/A
14.5	Protective devices		P
	Protective devices used within their ratings	Fuse used as protective device.	P
	External clearances and creepage distances meet requirement of clause 13 for the voltage across the device when opened	See subclause 14.5.2.1.	P
14.5.1.1	a) Thermal cut-outs separately approved	No thermal cut-outs provided.	N/A
	b) Thermal cut-outs tested as part of the submission		N/A
14.5.1.2	a) Thermal links separately approved	No thermal links provided.	N/A
	b) Thermal links tested as part of the submission		N/A
14.5.1.3	Thermal devices re-settable by soldering	No such component provided.	N/A
14.5.2.1	Fuse-links in the mains circuit according to IEC 60127	No such component provided.	N/A
14.5.2.2	Correct marking of fuse-links adjacent to holder ...:	Fuse marking provided on PCB: For F1: 2.5AL/250V	P
14.5.2.3	Not possible to connect fuses in parallel .....:	No such holders provided that would allow parallel connection.	P
14.5.2.4	Not possible to touch hazardous live parts when replacing fuse-links without the use of a tool .....:	No Fuse link can be replaced without use a tool.	P

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Clause	Requirement + Test	Result - Remark	Verdict
14.5.3	PTC thermistors comply with IEC 60730-1:2007	No such components provided.	N/A
	PTC devices (15 W) category V-1 or better		N/A
14.5.4	Circuit protectors have adequate breaking capacity and their position is correctly marked	Fuse marking provided on PCB: F1 2AL/250V;	P
14.6	Switches	No switch provided.	N/A
14.6.1 a)	Separate testing to IEC 61058-1 including: - 10 000 operations - Normal pollution suitability - Make and break speed independent of speed of actuation V-0 compliance with annex G, G.1.1		N/A
14.6.1 b)	Tested in the apparatus:		N/A
	Switch controlling > 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.3, 14.6.4 and V-0 in annex G, G.1.1		N/A
	Switch controlling > 0.2A with open contact voltage < 35 V (peak)/24 V dc complying with 14.6.3 and V-0 in annex G, G.1.1		N/A
	Switch controlling < 0.2A with open contact voltage > 35 V (peak)/24 V dc complying with 14.6.4 and V-0 in annex G, G.1.1		N/A
14.6.2	Switch tested to 14.6.1 b) constructed to IEC 61058-1 subclause 13.1 and has making/breaking action independent of speed of actuation		N/A
14.6.3	Switch tested to 14.6.1 b) compliant with IEC 61058-1 subclause 16.2.2 d) and m) not attaining excessive temperatures in use		N/A
14.6.4	Switch tested to 14.6.1 b) has adequate dielectric strength		N/A
14.6.5	Mains switch controlling mains socket outlets additional tests to IEC 61058-1		N/A
	Socket outlet current marking correct		N/A
14.7	Safety interlocks		N/A
	Safety interlocks to 2.8 of IEC 60950-1	No safety interlocks provided.	N/A
14.8	Voltage setting devices and the like	No voltage setting devices provided.	N/A
	Voltage setting device not likely to be changed accidentally		N/A
14.9	Motors		N/A
14.9.1	Endurance test on motors	No motors provided.	N/A
	Motor start test		N/A
	Dielectric strength test		N/A
14.9.2	Not adversely affected by oil or grease etc.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
14.9.3	Protection against moving parts		N/A
14.9.4	Motors with phase-shifting capacitors, three-phase motors and series motors meet clause. B.8, B.9 and B.10 of IEC 60950-1, Annex B		N/A
14.10	Batteries		N/A
14.10.1	Batteries mounted with no risk of accumulation of flammable gases	No batteries provided.	N/A
14.10.2	No possibility of recharging non-rechargeable batteries		N/A
14.10.3	Recharging currents and times within manufacturers limits		N/A
	Lithium batteries discharge and reverse currents within the manufacturers limits		N/A
14.10.4	Battery mould stress relief		N/A
14.10.5	Battery drop test		N/A
14.11	Optocouplers	Certified sources of optical isolators used. (see appended table 14 and sub-clause 8.8)	P
	a) Comply with 13.6 (jointed insulation) and N.2.1	(see appended table)	P
	b) Comply with IEC 60747-5-5:2007	(see appended table)	P
	Alternative to a) and b) optocoupler comply with 13.8		P
	a) Comply with 13.6 (jointed insulation) and N.2.1		P
14.12	Surge suppression varistors	Optional approved varistor used. See appended table 14.	P
	Comply with IEC 61051-2		P
	Not connected between mains and accessible parts except for earthed parts of permanently connected apparatus		P
	Complies with the current pulse, fire hazard and thermal stress requirements of 14.12		P
15	Terminals		P
15.1.1	Mains plug, appliance inlet, interconnection couplers and mains socket-outlet meet the appropriate standard	Mains plug or appliance inlet used. See sub-clause 15.4.2.	P
	Overloading of plugs or appliance inlets prevented if the apparatus has mains socket outlets	No mains socket outlets	N/A
	Overloading of internal wiring prevented if the apparatus has mains socket outlets	No mains socket outlets	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
15.1.2	Connectors for antenna, earth, audio, video or data		N/A
	No risk of insertion in mains socket-outlets	No such connectors.	N/A
	No risk of insertion into audio- or video- outlets marked with the symbol of 5.2		N/A
15.1.3	Output terminals of a.c. adaptors or similar devices not compatible with household mains socket-outlets	The output connector is not compatible with mains socket-outlet.	P
15.2	Provision for protective earthing		N/A
	Accessible conductive parts of Class I equipment reliably connected to earth terminal, within equipment	Class II appliance	N/A
	Protective earth conductors correctly coloured		N/A
	Equipment with non-detachable mains cord provided with separate protective earth terminal near mains input		N/A
	Protective earth terminal resistant to corrosion		N/A
	Earth resistance test: < 0,1 Ω at 25 A .....:		N/A
15.3	Terminals for external flexible cords and for permanent connection to the mains supply		N/A
15.3.1	Adequate terminals for connection of permanent wiring	Not permanent connection	N/A
15.3.2	Reliable connection of non-detachable cords		N/A
	Not soldered to conductors of a printed circuit board		N/A
	Adequate clearances and creepage distances between connections should a wire break away		N/A
	Wire secured by additional means to the conductor		N/A
15.3.3	Screws and nuts clamping conductors have adequate threads: ISO 261, ISO 262 or similar	No such fixing.	N/A
15.3.4	Soldered conductors wrapped around terminal prior to soldering or held in place by additional means		N/A
	Clamping of conductor and insulation if not soldered or held by screws		N/A
15.3.5	Terminals allow connection of appropriate cross-sectional area of conductors, for the rated current of the equipment	No such terminals.	N/A
15.3.6	Terminals to 15.3.3 have sizes required by table 16		N/A
15.3.7	Terminals clamp conductors between metal and have adequate pressure	No such terminals.	N/A
	Terminals designed to avoid conductor slipping out when tightened or loosened		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Terminals adequately fixed to avoid loosening when the clamping is tightened or loosened and stress on internal wiring is avoided		N/A
15.3.8	Terminals carrying a current more than 0,2 A: contact pressure not transmitted by insulating material except ceramic		N/A
15.3.9	Termination of non-detachable cords: wires terminated near to each other		N/A
	Terminals located and shielded: test with 8 mm strand		N/A
15.4	Devices forming a part of the mains plug	See below.	P
15.4.1	No undue strain on mains socket-outlets	Max. 0.07Nm	P
15.4.2	Device complies with standard for dimensions of mains plugs	The plug portion tests: EU plug according to EN 50075, BS plug according to BS 1363+A1+A2+A3, AU plug according to AS/NZS 3112+A1, see attached partial test reports, the other plug portion tests should be evaluated during national approval.	P
15.4.3	Device has adequate mechanical strength (tests a,b,c)	No hazards after test.	P
16	External flexible cords		N/A
16.1	Mains cords sheathed type, complying with IEC 60227 for PVC or IEC 60245 for synthetic rubber cords .....:	Direct plug in equipment.	N/A
	Non-detachable cords for Class I have green/yellow core for protective earth		N/A
16.2	Mains cords conductors have adequate cross-sectional area for rated current consumption of the equipment		N/A
16.3	a) Flexible cords not complying with 16.1, used for interconnections between separate units of equipment used in combination and carrying hazardous live voltages, have adequate dielectric strength		N/A
	b) Flexible cords not complying with 16.1, withstand bending and mechanical stress (3.2 of IEC 60227-2)		N/A
16.4	Flexible cords used for connection between equipment have adequate cross-sectional areas to avoid temperature rise under normal and fault conditions		N/A
16.5	Adequate strain relief on external flexible cords		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Not possible to push cord back into equipment		N/A
	Strain relief device unlikely to damage flexible cord		N/A
	For mains cords of Class I equipment, hazardous live conductors become taut before earth conductor		N/A
16.6	Apertures for external flexible cord: no risk of damage to the cord during assembly or movement in use		N/A
16.7	Transportable musical instruments and amplifiers fitted with detachable cord set with appliance inlet to IEC 60320-1	Not such apparatus.	N/A
	Transportable musical instruments and amplifiers fitted with detachable cord sets or with means of stowage to protect the cord		N/A
17	Electrical connections and mechanical fixings		P
17.1	Torque test to table 20	No screw used.	N/A
	- screws into metal: 5 times		N/A
	- screws into non-metallic material: 10 times		N/A
17.2	Correct introduction into female threads in non-metallic material		N/A
17.3	Cover fixing screws: captive	No captive screws used.	N/A
	Non-captive fixing screws: no hazard when replaced by a screw whose length is 10 times its diameter		N/A
17.4	No loosening of conductive parts carrying a current > 0,2 A	All conductive parts are fixed on PCB by at least two soldering points.	P
17.5	Contact pressure not transmitted through plastic other than ceramic for connections carrying a current > 0,2 A		N/A
17.6	Stranded conductors of flexible supply cords carrying a current > 0,2 A with screw terminals not consolidated by solder		N/A
17.7	Cover fixing devices other than screws have adequate strength and their positioning is unambiguous	No cover fixing devices other than screw provided.	N/A
17.8	Fixing devices for detachable legs or stands provided	No such components provided.	N/A
17.9	Internal pluggable connections, affecting safety, unlikely to become disconnected	No internal pluggable connection	N/A
18	Mechanical strength of picture tubes and protection against the effects of implosion		N/A
18.1	Picture tube separately approved to IEC 61965 ....:	No picture tube.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Picture tube separately approved to 18.2 .....:		N/A
18.2	Non-intrinsically protected tubes tested to 18.2		N/A
19	Stability and mechanical hazards		P
	Mass of the equipment exceeding 7 kg .....:	Measured max. weight is 0.18kg.	N/A
	Apparatus intended to be fastened in place – suitable instructions .....:	The apparatus is not intended to be fastened in place.	N/A
19.1	Test on a plane, inclined at 10^{o} to the horizontal		N/A
19.2	100 N force applied vertically downwards		N/A
19.3	100 N force, or 13% of weight, applied horizontally to point of least stability		N/A
19.4	Edges or corners not hazardous	Edges or corners are smooth and rounded.	P
19.5	Glass surfaces (exc.laminated) with an area exceeding 0,1 m² or maximum dimension > 450 mm, pass the test of 19.5.1	No glass surface used.	N/A
19.6	Wall or ceiling mountings adequate		N/A
20	Resistance to fire		P
20.1	Electrical components and mechanical parts		P
	a) Exemption for components contained in an enclosure of material V-0 to IEC 60695-11-10 with openings not exceeding 1 mm in width		N/A
	b) Exemption for small components as defined in 20.1	Small components mounted on a PCB with rating as described in table 14. Furthermore, refer to sub-clause 20.1.4.	P
20.1.1	Electrical components meet the requirements of Clause 14 or 20.1.4	See subclauses 14 and 20.1.4.	P
20.1.2	Insulation of internal wiring working at voltages > 4 kV or leaving an internal fire enclosure, or located within the areas mentioned in Table 21, not contributing to the spread of fire	Internal wiring working at voltages not exceeding 4 kV.	N/A
20.1.3	Material of printed circuit boards on which the available power exceeds 15 W at a voltage between 50 V and 400 V (peak) a.c. or d.c. meets V-1 or better to IEC 60707, unless used in a fire enclosure		N/A
	Material of printed circuit boards on which the available power exceeds 15 W at a voltage >400 V (peak) a.c. or d.c. meets V-0 to IEC 60707	Flammability of PCB: V-0.	P

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
20.1.4	Components and parts not covered by 20.1.1, 20.1.2 and 20.1.3 (other than fire enclosures) mounted nearer to a potential ignition source than the distances in Table 21 comply with the relevant flammability category in Table 21	(see appended table 14)	P
	Components and parts as above but shielded from a potential ignition source, with the barrier area in accordance with Table 21 and fig. 13	(see appended table 14)	P
	Apparatus with voltages >4kV under normal operating conditions and distances to the enclosure exceed those specified Table 21, flammability classification HB40 or better is required for the enclosure		N/A
20.2	Fire enclosure		N/A
20.2.1	Potential ignition sources with open circuit voltage > 4 kV (peak) a.c. or d.c. contained in a fire enclosure to V-1	No such high voltage.	N/A
20.2.2	Internal fire enclosures with openings not exceeding 1 mm in width and with openings for wires completely filled		N/A
20.2.3	Requirements of 20.2.1 and 20.2.2 met by an internal fire enclosure		N/A
A	Annex A, Additional requirements for apparatus with protection against splashing water		N/A
A.5	Marking and instructions	IPX0	N/A
A.5.1	j) Marked with IPX4 (IEC 60529), 5.4.1 a) does not apply		N/A
A.10	Insulation requirements		N/A
A.10.2	Splash and humidity treatment		N/A
A.10.2.1	Enclosure provides protection against splashing water		N/A
A.10.2.2	Humidity treatment carried out for 7 days		N/A
B	Annex B, Apparatus to be connected to the TELECOMMUNICATION NETWORKS		N/A
	Complies with IEC 62151 clause 1	No TNV.	N/A
	Complies with IEC 62151 clause 2		N/A
	Complies with IEC 62151 clause 3 but with 3.5.4 modified to 2.4.10 of this standard		N/A
	Complies with IEC 62151 clause 4 but with 4.1.2, 4.1.3 and 4.2.1.2 modified in accordance with annex B of this standard		N/A

IEC 60065			
Clause	Requirement + Test	Result - Remark	Verdict
	Complies with IEC 62151 cause 5 but with 5.3.1 modified in accordance with annex B of this standard		N/A
	Complies with IEC 62151 clause 6		N/A
	Complies with IEC 62151 clause 7		N/A
	Complies with IEC 62151 annex A, B and C		N/A
L	ANNEX L, Additional requirements for electronic flash apparatus for photographic purposes		N/A
L. 5	Marking and instructions		N/A
L. 5.4	Instructions for battery chargers and Supply apparatus indicating type or model number of flash apparatus with which it is to be used	No such equipment.	N/A
	Instructions for flash apparatus indicating type or model number of battery chargers or Supply apparatus with which it is to be used		N/A
L. 7	Heating under normal operating conditions		N/A
L7.1.5 & L11.2.7	Lithium batteries meet permissible temp rise in Table 3, unless comply with 6.2.2.1 or 6.2.2.2 of IEC 60086-4		N/A
L. 9	Electric shock hazard under normal operating conditions		N/A
L. 9.1.1	Terminals to connection to synchroniser not HAZARDOUS LIVE		N/A
L.10	Insulation requirements		N/A
L. 10.3.2	High frequency puls ignition		N/A
L. 12	Mechanical strength		N/A
L. 12.1.3	Windows for flash tubes are excluded from steel ball impact test		N/A
L. 14	Components		N/A
L14.6.6	Mains switch characteristics appropriate to its function under normal conditions		N/A
L. 20	Resistance to fire		N/A
L. 20.1 c)	Trigger coil for discharge purpose is not considered to be a POTENTIAL IGNITION SOURCE		N/A

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Model: Model: DYS40-050600W-2

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	693	37.38	4.63	27.8	Maximum normal load 5.0V 6.0A
2	90	60	672	37.22	4.61	27.7	Maximum normal load 5.0V 6.0A
3	100	50	617	36.92	4.63	27.8	Maximum normal load 5.0V 6.0A
4	100	60	597	36.79	4.61	27.7	Maximum normal load 5.0V 6.0A
5	240	50	309	36.21	4.63	27.8	Maximum normal load 5.0V 6.0A
6	240	60	294	36.04	4.61	27.7	Maximum normal load 5.0V 6.0A
7	264	50	287	36.32	4.63	27.8	Maximum normal load 5.0V 6.0A
8	264	60	285	36.13	4.61	27.7	Maximum normal load 5.0V 6.0A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems .....:	--	—
	Marking of loudspeaker terminals .....:	--	—

Temperature Rise dT of Part	dT (K)				Limit max dT (K)
Test Condition No.	Cond. 2		Cond. 7		--
DYS40-050600W-2	Horizontal	Vertical	Horizontal	Vertical	--
Plug holder	7.8	6.8	6.8	4.8	--
Input wire	17.8	19.3	19.3	13.8	40
CN1 body	22.5	23.0	23.0	17.6	--
CX1 body	37.6	38.6	38.6	28.7	60
LF1 winding	56.4	56.2	56.2	38.0	90
PCB under BD1	41.6	40.9	40.9	32.3	90
C1 body	60.9	58.4	58.4	41.5	65
PCB under Q1	50.9	49.1	49.1	43.8	90
YC1 body	51.0	49.1	49.1	44.9	85
YC2 body	54.0	52.5	52.5	47.8	85
PC1 body	48.6	46.9	46.9	42.8	60
T1 winding	59.4	57.8	57.8	51.6	70
T1 core	56.6	55.1	55.1	50.3	70
PCB under D4	59.8	59.0	59.0	54.7	90
C5 body	54.9	53.9	53.9	48.6	65
NF2 winding	67.9	65.5	65.5	63.2	90
Output wire	29.9	29.6	29.6	27.7	85*

Enclosure inside near T1	48.1	48.5	48.5	41.6	80
Enclosure outside near T1	26.4	27.7	27.7	22.8	55
Ambient	40.1°C	40.0°C	40.2°C	40.4°C	--
Model: DYS40-050600W	Label down	Label up	Label down	Label up	--
AC inlet	11.1	11.8	13.3	12.3	30
Input wire	17.3	22.6	18.2	22.0	40
CN1 body	24.6	29.1	17.8	24.8	--
CX1 body	38.3	43.1	27.8	33.0	60
LF1 winding	63.2	65.3	38.6	44.4	90
PCB under BD1	46.1	47.3	30.8	35.1	90
C1 body	68.2	66.9	42.6	46.0	65
PCB under Q1	57.9	55.9	45.9	48.0	90
YC1 body	60.5	58.4	48.9	51.6	85
YC2 body	64.8	64.5	52.3	58.1	85
PC1 body	57.4	55.1	46.3	48.4	60
T1 winding	67.9	68.3	54.9	61.6	70
T1 core	66.0	65.2	54.1	59.2	70
PCB under D4	74.3	72.2	62.9	66.6	90
C5 body	61.6	62.1	58.4	59.5	65
NF2 winding	64.0	61.9	67.3	69.0	90
Output wire	52.4	46.9	42.1	41.6	85*
Enclosure inside near T1	53.0	56.5	48.7	51.4	80
Enclosure outside near T1	25.1	37.4	38.5	43.1	55
Ambient	40.2°C	40.0°C	40.0°C	40.1°C	--

Winding temperature rise measurements

Ambient temperature t1 (^{o}C) ..... :	--	—
Ambient temperature t2 (^{o}C) ..... :	--	—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:
1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40℃, the max. temperature rise is calculated as fol lows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.
6. *Tube marked 125℃ used.

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Model: DYS40-120333W-2

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	916	48.62	11.42	38.0	Maximum normal load 12.0V,3.33A
2	90	60	881	48.40	11.34	37.8	Maximum normal load 12.0V,3.33A
3	100	50	797	48.01	11.42	38.0	Maximum normal load 12.0V,3.33A
4	100	60	775	47.90	11.34	37.8	Maximum normal load 12.0V,3.33A
5	240	50	392	47.62	11.42	38.0	Maximum normal load 12.0V,3.33A
6	240	60	375	47.68	11.34	37.8	Maximum normal load 12.0V,3.33A
7	264	50	362	47.83	11.42	38.0	Maximum normal load 12.0V,3.33A
8	264	60	350	47.47	11.34	37.8	Maximum normal load 12.0V,3.33A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems .....:	--	—
	Marking of loudspeaker terminals .....:	--	—

Temperature Rise dT of Part	dT (K)				Limit max dT (K)
Test Condition No.	Cond. 2		Cond. 7		--
Model: DYS40-120333W-2	Horizontal	Vertical	Horizontal	Vertical	--
Plug holder	2.5	5.6	2.2	4.7	--
Input wire	20.7	24.1	15.7	18.2	40
CN1 body	23.0	25.9	17.5	19.9	--
CX1 body	41.6	44.1	31.3	33.2	60
LF1 winding	65.0	66.7	42.4	44.0	90
PCB under BD1	66.1	66.2	44.3	45.1	90
C1 body	42.5	44.2	31.4	33.0	65
PCB under Q1	55.8	55.4	46.9	47.4	90

YC1 body	47.3	46.6	43.7	43.3	85
YC2 body	55.8	55.8	52.0	52.4	85
PC1 body	45.9	44.9	41.0	40.5	60
T1 winding	59.3	59.4	54.9	55.9	70
T1 core	54.5	55.2	52.8	54.1	70
PCB under D4	55.6	54.2	52.2	51.2	90
C5 body	47.3	45.9	44.8	43.6	65
NF2 winding	47.1	44.6	44.7	42.7	90
Output wire	29.0	27.7	27.5	26.3	85*
Enclosure inside near T1	36.0	38.9	33.7	37.0	80
Enclosure outside near T1	24.7	28.9	20.8	27.6	55
Ambient	40.5°C	40.2°C	40.2°C	40.2°C	--
Model: DYS40-120333W	Label down	Label up	Label down	Label up	
AC inlet	10.3	13.3	7.6	9.7	30
Input wire	18.6	21.2	13.6	15.8	40
CN1 body	22.0	29.0	16.5	21.9	--
CX1 body	38.0	41.8	27.5	31.4	60
LF1 winding	60.2	66.0	37.4	42.7	90
PCB under BD1	61.7	66.3	40.3	44.4	90
C1 body	40.4	43.0	29.7	31.7	65
PCB under Q1	53.2	55.3	44.6	46.2	90
YC1 body	45.4	48.2	41.7	44.2	85
YC2 body	50.6	57.6	47.3	53.6	85
PC1 body	44.3	46.5	39.5	41.5	60
T1 winding	54.5	59.3	51.1	54.8	70
T1 core	52.2	55.9	50.5	54.4	70
PCB under D4	55.9	58.9	53.4	55.4	90
C5 body	47.0	51.8	44.6	49.0	65
NF2 winding	46.5	50.3	44.2	47.7	90
Output wire	26.5	30.7	25.0	28.7	85*
Enclosure inside near T1	38.0	43.5	35.0	39.9	80
Enclosure outside near T1	33.9	39.2	31.8	36.8	55
Ambient	40.2°C	40.0°C	40.3°C	40.2°C	--
Winding temperature rise measurements					
Ambient temperature t1 (°C) ..... :	--				—
Ambient temperature t2 (°C) ..... :	--				—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40℃, the max. temperature rise is calculated as fol lows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.
6. *Tube marked 125℃ used.

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) .....:	0W/ --	

Model: Model: DYS40-171233W-2

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	879	47.02	16.32	38.0	Maximum normal load 17.1V 2.33A
2	90	60	839	46.71	16.25	37.9	Maximum normal load 17.1V 2.33A
3	100	50	763	46.41	16.32	38.0	Maximum normal load 17.1V 2.33A
4	100	60	741	46.23	16.25	37.9	Maximum normal load 17.1V 2.33A
5	240	50	388	46.19	16.32	38.0	Maximum normal load 17.1V 2.33A
6	240	60	362	46.04	16.25	37.9	Maximum normal load 17.1V 2.33A
7	264	50	355	46.29	16.32	38.0	Maximum normal load 17.1V 2.33A
8	264	60	339	46.24	16.25	37.9	Maximum normal load 17.1V 2.33A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems .....:	--	—
	Marking of loudspeaker terminals .....:	--	—

Temperature Rise dT of Part	dT (K)				Limit max dT (K)
Test Condition No.	Cond. 2		Cond. 7		--
Model: DYS40-171233W-2	Horizontal	Vertical	Horizontal	Vertical	--
Plug holder	5.7	5.6	4.9	4.7	--
Input wire	16.7	15.6	13.2	13.8	40

CN1 body	27.2	27.2	21.2	21.2	--
CX1 body	43.9	42.8	32.7	31.3	60
LF1 winding	70.6	68.5	43.3	41.4	90
PCB under BD1	73.1	69.7	49.5	46.6	90
C1 body	48.7	46.4	40.8	38.8	65
PCB under Q1	62.9	58.6	63.3	59.6	90
YC1 body	48.6	44.3	49.6	45.6	85
YC2 body	52.0	49.3	48.7	46.2	85
PC1 body	47.9	43.2	49.2	44.9	60
T1 winding	58.2	56.4	56.6	54.4	70
T1 core	55.4	53.1	55.7	53.8	70
PCB under D4	49.4	46.4	47.8	45.1	90
C5 body	44.4	41.9	44.1	41.7	65
NF2 winding	41.7	37.2	42.3	37.9	90
Output wire	24.8	23.4	25.3	23.7	85*
Enclosure inside near T1	31.0	32.6	30.5	31.9	80
Enclosure outside near T1	23.1	28.9	22.9	28.1	55
Ambient	40.1°C	40.2°C	40.2°C	40.4°C	--
Model: DYS40-171233W	Label down	Label up	Label down	Label up	
AC inlet	11.0	8.1	11.1	9.1	30
Input wire	31.8	21.8	28.6	23.4	40
CN1 body	31.6	25.5	33.2	27.3	--
CX1 body	49.4	34.5	46.8	36.8	60
LF1 winding	76.9	48.3	74.1	49.0	90
PCB under BD1	81.0	54.5	76.3	54.4	90
C1 body	57.6	44.0	52.4	45.4	65
PCB under Q1	72.2	65.5	65.7	69.0	90
YC1 body	57.0	53.8	53.4	55.7	85
YC2 body	55.9	53.8	57.3	55.8	85
PC1 body	56.9	52.6	51.7	54.5	60
T1 winding	64.3	62.3	65.2	65.9	70
T1 core	64.0	63.7	62.7	64.7	70
PCB under D4	53.4	52.6	54.3	54.5	90
C5 body	48.8	49.1	49.4	50.3	65
NF2 winding	48.2	47.5	46.8	49.2	90
Output wire	31.6	33.1	32.8	34.2	85*
Enclosure inside near T1	47.3	49.6	53.0	51.7	80

Enclosure outside near T1	39.1	40.7	43.0	42.5	55
Ambient	40.2°C	40.1°C	40.1°C	40.3°C	--

Winding temperature rise measurements		
Ambient temperature t1 (°C) ..... :	--	—
Ambient temperature t2 (°C) ..... :	--	—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40℃, the max. temperature rise is calculated as fol lows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.
6. *Tube marked 125℃ used.

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) ..... :	0W/ --	

Model: DYS40-240167W-2

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	865	45.81	23.65	39.3	Maximum normal load 24.0V,1.67A
2	90	60	826	45.57	23.67	39.3	Maximum normal load 24.0V,1.67A
3	100	50	759	45.36	23.65	39.3	Maximum normal load 24.0V,1.67A
4	100	60	728	45.17	23.67	39.3	Maximum normal load 24.0V,1.67A
5	240	50	381	44.70	23.65	39.3	Maximum normal load 24.0V,1.67A
6	240	60	353	44.59	23.67	39.3	Maximum normal load 24.0V,1.67A
7	264	50	343	44.82	23.65	39.3	Maximum normal load 24.0V,1.67A
8	264	60	333	44.73	23.67	39.3	Maximum normal load 24.0V,1.67A

	Loudspeaker impedance (Ω) ..... :	--	—
	Several loudspeaker systems ..... :	--	—
	Marking of loudspeaker terminals ..... :	--	—

Temperature Rise dT of Part	dT (K)	Limit max dT (K)

Test Condition No.	Cond. 2		Cond. 7		--
Model: DYS40-240167W-2	Horizontal	Vertical	Horizontal	Vertical	
Plug holder	4.3	3.8	19.1	3.0	--
Input wire	17.6	17.3	29.9	13.8	40
CN1 body	24.3	22.5	35.0	17.7	--
CX1 body	38.2	36.7	45.0	27.3	60
LF1 winding	58.3	55.7	53.2	34.5	90
PCB under BD1	65.3	61.3	62.6	43.1	90
C1 body	44.5	42.4	54.3	36.5	65
PCB under Q1	60.6	56.5	75.4	55.7	90
YC1 body	45.9	42.1	62.7	42.7	85
YC2 body	42.4	38.4	57.1	37.4	85
PC1 body	45.7	42.0	62.1	42.6	60
T1 winding	51.7	48.5	70.4	51.2	70
T1 core	50.7	47.5	67.1	48.1	70
PCB under D4	38.5	34.6	52.7	32.8	90
C5 body	34.6	31.3	50.1	30.8	65
NF2 winding	36.9	34.8	54.0	35.0	90
Output wire	23.7	23.7	40.6	23.6	85*
Enclosure inside near T1	32.6	30.1	48.7	30.2	80
Enclosure outside near T1	14.7	13.5	30.5	13.3	55
Ambient	40.1°C	40.2°C	40.2°C	40.4°C	--
Model: DYS40-240167W	Label down	Label up	Label down	Label up	
AC inlet	13.4	10.8	10.8	8.8	30
Input wire	28.3	22.4	22.7	18.2	40
CN1 body	28.5	26.9	23.2	22.1	--
CX1 body	41.8	34.1	32.6	27.0	60
LF1 winding	65.8	56.8	43.1	36.7	90
PCB under BD1	71.7	64.8	52.2	47.3	90
C1 body	48.0	45.3	42.1	40.6	65
PCB under Q1	63.3	60.5	63.2	61.8	90
YC1 body	49.8	47.0	50.5	48.5	85
YC2 body	48.8	41.3	47.3	41.0	85
PC1 body	49.4	46.8	49.5	48.0	60

T1 winding	56.7	52.9	59.8	56.5	70
T1 core	56.2	51.9	56.7	53.0	70
PCB under D4	43.4	36.7	41.3	35.4	90
C5 body	38.4	33.9	37.7	33.7	65
NF2 winding	40.1	37.8	40.5	38.9	90
Output wire	26.6	25.9	26.6	26.1	85*
Enclosure inside near T1	45.8	41.8	45.6	41.9	80
Enclosure outside near T1	27.9	30.8	27.7	31.3	55
Ambient	40.2°C	40.5°C	40.1°C	40.1°C	--

Winding temperature rise measurements

Ambient temperature t1 (°C) ..... :	--	—
Ambient temperature t2 (°C) ..... :	--	—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40℃, the max. temperature rise is calculated as fol lows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.
6. *Tube marked 125℃ used.

7.1	TABLE: temperature rise measurements:		P
	Power consumption in the OFF/Stand-by mode of the functional switch (W) ..... :	0W/ --	

Model: Model: DYS40-171233W-2

Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
1	90	50	879	47.02	16.32	38.0	Maximum normal load 17.1V 2.33A
2	90	60	839	46.71	16.25	37.9	Maximum normal load 17.1V 2.33A
3	100	50	763	46.41	16.32	38.0	Maximum normal load 17.1V 2.33A
4	100	60	741	46.23	16.25	37.9	Maximum normal load 17.1V 2.33A
5	240	50	388	46.19	16.32	38.0	Maximum normal load 17.1V 2.33A
6	240	60	362	46.04	16.25	37.9	Maximum normal load 17.1V 2.33A
7	264	50	355	46.29	16.32	38.0	Maximum normal load 17.1V 2.33A

Model: Model: DYS40-171233W-2							
Cond.	Un (V)	Hz	In (mA)	Pn (W)	Uout (V)	Pout (W)	Operating Condition / Status
8	264	60	339	46.24	16.25	37.9	Maximum normal load 17.1V 2.33A

	Loudspeaker impedance (Ω) .....:	--	—
	Several loudspeaker systems .....:	--	—
	Marking of loudspeaker terminals .....:	--	—

Temperature Rise dT of Part	dT (K)				Limit max dT (K)
Test Condition No.	Cond. 2		Cond. 7		--
Model: DYS40-171233W-2	Horizontal	Vertical	Horizontal	Vertical	
Plug holder	5.7	5.6	4.9	4.7	--
Input wire	16.7	15.6	13.2	13.8	40
CN1 body	27.2	27.2	21.2	21.2	--
CX1 body	43.9	42.8	32.7	31.3	60
LF1 winding	70.6	68.5	43.3	41.4	90
PCB under BD1	73.1	69.7	49.5	46.6	90
C1 body	48.7	46.4	40.8	38.8	65
PCB under Q1	62.9	58.6	63.3	59.6	90
YC1 body	48.6	44.3	49.6	45.6	85
YC2 body	52.0	49.3	48.7	46.2	85
PC1 body	47.9	43.2	49.2	44.9	60
T1 winding	58.2	56.4	56.6	54.4	70
T1 core	55.4	53.1	55.7	53.8	70
PCB under D4	49.4	46.4	47.8	45.1	90
C5 body	44.4	41.9	44.1	41.7	65
NF2 winding	41.7	37.2	42.3	37.9	90
Output wire	24.8	23.4	25.3	23.7	40
Enclosure inside near T1	31.0	32.6	30.5	31.9	80
Enclosure outside near T1	23.1	28.9	22.9	28.1	55
Ambient	40.1°C	40.2°C	40.2°C	40.4°C	--
Model: DYS40-171233W	Label down	Label up	Label down	Label up	--
AC inlet	11.0	8.1	11.1	9.1	30
Input wire	31.8	21.8	28.6	23.4	40
CN1 body	31.6	25.5	33.2	27.3	--
CX1 body	49.4	34.5	46.8	36.8	60

LF1 winding	76.9	48.3	74.1	49.0	90
PCB under BD1	81.0	54.5	76.3	54.4	90
C1 body	57.6	44.0	52.4	45.4	65
PCB under Q1	72.2	65.5	65.7	69.0	90
YC1 body	57.0	53.8	53.4	55.7	85
YC2 body	55.9	53.8	57.3	55.8	85
PC1 body	56.9	52.6	51.7	54.5	60
T1 winding	64.3	62.3	65.2	65.9	70
T1 core	64.0	63.7	62.7	64.7	70
PCB under D4	53.4	52.6	54.3	54.5	90
C5 body	48.8	49.1	49.4	50.3	65
NF2 winding	48.2	47.5	46.8	49.2	90
Output wire	31.6	33.1	32.8	34.2	85*
Enclosure inside near T1	47.3	49.6	53.0	51.7	80
Enclosure outside near T1	39.1	40.7	43.0	42.5	55
Ambient	40.2°C	40.1°C	40.1°C	40.3°C	--

Winding temperature rise measurements

Ambient temperature t1 (^{o}C) ..... :	--	—
Ambient temperature t2 (^{o}C) ..... :	--	—

Temperature rise dT of winding: $dT = \frac{(R_2 - R_1)}{R_1} \times (234.5 + t1) - (t2 - t1)$	R_1 (Ω)	R_2 (Ω)	dT (K)	Limit max (K)	Insulation class
--	--	--	--	--	--
--	--	--	--	--	--

Notes:

1. The temperatures were measured under worst case normal mode defined in sub-clause 4.2.1.
2. With a rated maximum ambient temperature of 40℃, the max. temperature rise is calculated as fol lows:
   Winding wire (providing safety isolation):
   - Class B → ΔTmax = (120-40)K – 10K = 70K
3. Touchable surfaces with:
   - max. temp. rise → ΔTmax = 60-(40-35)=55K
4. PVC type wire (Primary lead wire/output wire):
   - max. temp. rise → ΔTmax = 40K
5. For the components temperature limit, please refer to appended table 14.

7.2	TABLE: softening temperature of thermoplastics	N/A

Temperature T of part	T - normal conditions (^{o}C)	T - fault conditions (^{o}C)	Min T softening (^{o}C)
--	--	--	--

Note: --

10.3	TABLE: insulation resistance measurements	P

Insulation resistance R between:	R (MΩ)	Required R (MΩ)
Different polarity of power supply (Fuse/fusible resistor disconnection)	1000	2
Accessible terminals to hazardous live parts	1000	4
Accessible enclosure to hazardous live parts	1000	4
Transformer T1 primary to secondary	1000	4
Transformer T1 primary to core	1000	2
Transformer T1 core to secondary	1000	2
Note: The transformer core is considered as primary conductor.		

10.3	TABLE: electric strength measurements	P

Test voltage applied between:	Test voltage (V)	Breakdown
Different polarity of power supply (Fuse/fusible resistor disconnection)	AC 1500	No
Accessible terminals to hazardous live parts	AC 3000	No
Accessible enclosure to hazardous live parts	AC 3000	No
Transformer T1 primary to secondary	AC 3000	No
Transformer T1 primary to core	AC 1721	No
Transformer T1 core to secondary	AC 1721	No
Insulation tape (1 layers)	AC3000	No
Insulation sheet	AC1500	No
Note: The transformer core is considered as primary conductor.		

11.2	**TABLE: summary of fault condition tests**		P
	Voltage (V) 0,9 or 1,1 times rated voltage :	--	—
	Frequency (Hz) ……..:	--	—
	Ambient temperature (℃) ....:	--	—

No	Component	Fault	Test Voltage	Fuse	Other results(include description and test duration)
Model: DYS40-240167W-2					
1	BD1	s-c	264	F1	1 second, input: 0.343A/44.82W→0A/0W Fuse opened immediately, and No hazard.
2	C1	s-c	264	F1	1 second, input: 0.343A/44.82W→0A/0W Fuse opened immediately, and No hazard.
3	T1pin1-2	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.16A /3.27W Unit shut down immediately, recoverable and No hazard.
4	T1pin3-4	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.13A2.61W Unit shut down immediately, recoverable and No hazard.
5	T1pin5,6-7,8	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.09A1.13W Unit shut down immediately, recoverable and No hazard.

6	D4	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.09A1.13W Unit shut down immediately, recoverable and No hazard..
7	C5	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.09A1.13W Unit shut down immediately, recoverable and No hazard.
8	Q1 G-S	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.07A1.13W Unit shut down immediately, recoverable and No hazard.
9	Q1 G-D	s-c	264	F1	1 second, input: 0.343A/44.82W→0A/0W Fuse opened immediately,Q1 R6,R7,R8,U1 damaged, no hazard.
10	Q1 D-S	s-c	264	F1	1 second, input: 0.343A/44.82W→0A/0W Fuse opened immediately,Q1 R6,R7,R8,U1 damaged, no hazard.
11	R6	s-c	264	F1	1 second, input: 0.343A/44.82W→0A/0W Fuse opened immediately,Q1 ,U1 damaged, no hazard.
12	PC1 pin1-2	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.12A/1.57W Unit shut down immediately, recoverable and No hazard.
13	PC1 pin3-4	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.07A/0.87W Unit shut down immediately, recoverable and No hazard.
14	PC1 pin1	o-c	264	F1	30 minute, input:0.355A/46.29W→0.12A/1.57W Unit shut down immediately, recoverable and No hazard.
15	PC1 pin3	o-c	264	F1	30 minute, input: 0.343A/44.82W→0.07A/0.87W Unit shut down immediately, recoverable and No hazard.
16	U1 pin1-5	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.07A/0.87W Unit shut down immediately, recoverable and No hazard.
17	U1 pin2-5	s-c	264	F1	30 minute, input: 0.343A/44.82W→0.07A/0.87W Unit shut down immediately, recoverable and No hazard
18	Output	s-c	264	F1	30 minute, input:0.343A/44.82W→0.07A/2.21W Unit shut down immediately, recoverable and No hazard.

<table>
<tr><td>19</td><td>Output</td><td>o-l</td><td>264</td><td>F1</td><td>4 hours 45 minute,
input current: 0.343A→0.387A→0.128A
output current:: 1.67A →1.97A→1.20A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><th>Test points</th><th>dT(K)</th><th>Limit (K)</th></tr>
<tr><td>Input wire</td><td>15.2</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>50.0</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>62.2</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>59.2</td><td>125</td></tr>
<tr><td>T1 core</td><td>56.1</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>40.4</td><td>190*</td></tr>
<tr><td>Output wire</td><td>27.9</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>16.2</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>40.2</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Model: DYS40-050600W-2</td></tr>
<tr><td>20</td><td>Output</td><td>SC</td><td>264</td><td>F1</td><td>30 minute, input: :0.287A/36.32W→0.066A/2.68W
Unit shut down immediately, recoverable and No hazard.</td></tr>
<tr><td>21</td><td>Output</td><td>OL</td><td>264</td><td>F1</td><td>5 hours 5 minute,
input current: 0.287A→0.306A→0.073A
output current: 6.0A →7.0 A →7.2A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><th>Test points</th><th>dT(K)</th><th>Limit (K)</th></tr>
<tr><td>Input wire</td><td>18.1</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>41.4</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>55.5</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>64.2</td><td>125</td></tr>
<tr><td>T1 core</td><td>62.8</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>65.9</td><td>190*</td></tr>
<tr><td>Output wire</td><td>33.7</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>23.9</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>40.1</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Model: DYS40-120333W-2</td></tr>
<tr><td>22</td><td>Output</td><td>SC</td><td>264</td><td>F1</td><td>30 minute, input: 0.362A/47.83 W→0.075A/2.38W
Unit shut down immediately, recoverable and No hazard.</td></tr>
</table>

<table>
<tr><td>23</td><td>Output</td><td>OL</td><td>264</td><td>F1,</td><td>6 hours 48 minute,
input current: 0.362A→0.383A→0.089A
output current:: 3.33A→3.73A→3.78A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><th>Test points</th><th>dT(K)</th><th>Limit (K)</th></tr>
<tr><td>Input wire</td><td>19.0</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>50.8</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>56.8</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>62.0</td><td>125</td></tr>
<tr><td>T1 core</td><td>60.4</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>56.3</td><td>190*</td></tr>
<tr><td>Output wire</td><td>30.1</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>39.2</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>40.0</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Model: DYS40-171233W-2</td></tr>
<tr><td>24</td><td>Output</td><td>SC</td><td>264</td><td>F1</td><td>30 minute, input: :0.355A/46.29W→0.073A/2.33W
Unit shut down immediately, recoverable and No hazard.</td></tr>
<tr><td>25</td><td>Output</td><td>OL</td><td>264</td><td>F1</td><td>4 hours 52 minute,
input current: 0.355A→0.367A→0.072A
output current: 2.33A →2.53→2.60A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><th>Test points</th><th>dT(K)</th><th>Limit (K)</th></tr>
<tr><td>Input wire</td><td>15.8</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>53.1</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>69.0</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>60.6</td><td>125</td></tr>
<tr><td>T1 core</td><td>59.6</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>51.3</td><td>190*</td></tr>
<tr><td>Output wire</td><td>27.7</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>23.9</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>40.2</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Model: DYS40-050600W</td></tr>
<tr><td>26</td><td>Output</td><td>SC</td><td>264</td><td>F1</td><td>30 minute, input: :0.287A/36.32W→0.066A/2.68W
Unit shut down immediately, recoverable and No hazard.</td></tr>
</table>

<table>
<tr><td>27</td><td>Output</td><td>OL</td><td>264</td><td>F1</td><td>4 hours 53 minute,
input current: 0.287A→0.306A→0.073A
output current: 6.0A →7.0 A →7.2A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><th>Test points</th><th>dT(K)</th><th>Limit (K)</th></tr>
<tr><td>Input wire</td><td>22.2</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>45.5</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>62.2</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>76.6</td><td>125</td></tr>
<tr><td>T1 core</td><td>74.2</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>82.0</td><td>190*</td></tr>
<tr><td>Output wire</td><td>55.9</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>39.3</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>40.1</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Model: DYS40-120333W</td></tr>
<tr><td>28</td><td>Output</td><td>SC</td><td>264</td><td>F1</td><td>30 minute, input: 0.362A/47.83 W→0.075A/2.38W
Unit shut down immediately, recoverable and No hazard.</td></tr>
<tr><td>29</td><td>Output</td><td>OL</td><td>264</td><td>F1</td><td>3 hours 37 minute,
input current: 0.362A→0.383A→0.089A
output current:: 3.33A→3.73A→3.78A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><th>Test points</th><th>dT(K)</th><th>Limit (K)</th></tr>
<tr><td>Input wire</td><td>18.1</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>50.1</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>54.4</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>62.3</td><td>125</td></tr>
<tr><td>T1 core</td><td>61.6</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>62.1</td><td>190*</td></tr>
<tr><td>Output wire</td><td>44.9</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>38.7</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>40.2</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Model: DYS40-171233W</td></tr>
<tr><td>30</td><td>Output</td><td>SC</td><td>264</td><td>F1</td><td>30 minute, input: :0.355A/46.29W→0.073A/2.33W
Unit shut down immediately, recoverable and No hazard.</td></tr>
</table>

<table>
<tr><td>31</td><td>Output</td><td>OL</td><td>264</td><td>F1</td><td>5 hours 6 minute,
input current: 0.355A→0.367A→0.072A
output current: 2.33A →2.53→2.60A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><td>Test points</td><td>dT(K)</td><td>Limit (K)</td></tr>
<tr><td>Input wire</td><td>25.4</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>58.7</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>75.4</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>70.4</td><td>125</td></tr>
<tr><td>T1 core</td><td>72.1</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>58.0</td><td>190*</td></tr>
<tr><td>Output wire</td><td>37.1</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>47.4</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>27.5</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Model: DYS40-240167W</td></tr>
<tr><td>32</td><td>Output</td><td>SC</td><td>264</td><td>F1</td><td>30 minute, input:0.343A/44.82W→0.07A/2.21W
Unit shut down immediately, recoverable and No hazard</td></tr>
<tr><td>33</td><td>Output</td><td>OL</td><td>264</td><td>F1</td><td>5 hours 5 minute,
input current: 0.343A→0.387A→0.128A
output current:: 1.67A →1.97A→1.20A
Normal operation, temperature rise stable, and No hazard.
<table>
<tr><td>Test points</td><td>dT(K)</td><td>Limit (K)</td></tr>
<tr><td>Input wire</td><td>24.2</td><td>95</td></tr>
<tr><td>PCB under BD1</td><td>55.3</td><td>90</td></tr>
<tr><td>PCB under Q1</td><td>65.8</td><td>190*</td></tr>
<tr><td>T1 winding</td><td>65.7</td><td>125</td></tr>
<tr><td>T1 core</td><td>62.5</td><td>125</td></tr>
<tr><td>PCB under D4</td><td>45.7</td><td>190*</td></tr>
<tr><td>Output wire</td><td>30.8</td><td>95</td></tr>
<tr><td>Enclosure outside near T1</td><td>36.5</td><td>60</td></tr>
<tr><td>Ambient(°C)</td><td>27.5</td><td>--</td></tr>
</table></td></tr>
<tr><td colspan="6">Note:
1. SC = short-circuit, OL = overload, OC = open-circuit.
2. * PCB: 90K+100K=190K(since area exceeding value 90K is not more than 2 cm², limitation can be by 100K)</td></tr>
</table>

13	TABLES: clearances and creepage distances				P
Rated supply voltage:	100-240V	Pollution degree:	2	Material Group:	IIIa or IIIb
2 N force on internal parts applied:				Yes	
30 N force on outside of conductive enclosure applied:				Yes	
Location		Operating Voltage	Clearance (mm)		Creepage (mm)

	V peak	V rms	Min	Actual	Min	Actual
Circuits conductively connected to the mains (use Tables 8, 9 and 11): see note below.						
For DYS40-xyWz ('z'=blank, as appliance inlet type)						
Basic/supplementary:						
L, N on PCB before F1	420	250	1.5	3.0	2.5	3.0
Different polarity of fuse F1	420	250	1.5	3.3	2.5	3.3
L, N to primary circuit after fuse	420	250	1.5	2.8	2.5	10.0
Reinforced:						
Primary heat-sink to accessible enclosure (around)	420	250	4.0	10.0	5.0	10.0
Primary to Secondary trace (PCB under YC1)	420	250	4.0	6.4	5.0	6.7
Primary to Secondary trace (PCB under PC1)	420	250	4.0	6.4	5.0	6.7
Primary to Secondary trace (PCB under T1)	492	297	4.2	7.8	6.2	7.8
Primary winding to secondary winding of T1	492	297	4.2	6.3	6.2	6.3
Core to primary winding	492	297	2.2	3.3	3.2	3.3
Core to secondary winding	492	297	2.2	3.3	3.2	3.3
Core to primary component	492	297	2.2	6.9	3.2	6.9
Core to secondary component (C5)	492	297	2.2	4.2	3.2	4.2
Primary component to secondary heat-sink	420	250	4.0	7.0	5.0	7.0
For DYS40-xyWz ('z'=other than blank, as direct plug-in type)						
Basic/supplementary:						
L, N to PCB (EU/KR plug type)	420	250	1.5	6.6	2.5	8.2
L, N to PCB (UK plug type)	420	250	1.5	2.4	2.5	10.0
L, N to PCB (AU plug type)	420	250	1.5	2.6	2.5	10.0
L, N to PCB (JP/US/CN plug type)	420	250	1.5	10.0	2.5	10.0
Reinforced:						
Primary component (C1) to accessible enclosure	420	250	4.0	6.8	5.0	6.8
Supplementary information: 1) All internal wire are fixed connector, the component F1, C1 additionally fixed with glue. 2) 2 layers insulation tape wrapped on primary and secondary heat-sink. 3) 1 layer of insulation sheet provided between L, N pin terminal and primary circuit for some direct plug-in models (only for JP/US/CN/Taiwan plug models). 4) Varistor (ZR1) wrapped with heat-shrinkable tube. 5) The transformer construction refers to appended table C.2. 6) Unless otherwise specified, the worst conditions of Cl. & Cr. in above mentioned locations have been considered and listed.						

14	TABLE: list of critical components and materials	P

Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity[1)]
Plastic enclosure	Sabic Innovative Plastics US L L C	940(f1)	V-0, 120°C, minimum thickness 1.5mm	--	UL E121562
EU Plug portion	Dongguan Dongsong Electronic Co., Ltd	DYS-EU	1.0A, 250Vac	EN 50075	Test with appliance
UK plug portion	Dongguan Dongsong Electronic Co., Ltd	DYS-UK	1.0A, 250Vac	BS 1363-1+A1+ A2+A3	Tested with appliance
AU plug portion	Dongguan Dongsong Electronic Co., Ltd	DYS-AU	1.0A, 250Vac	AS/NZS 3112+A1	Tested with appliance
Plug holder/pin sleeving material	E I DUPONT DE NEMOURS & CO INC	FR7(GG)(tt)	V-0, 120°C	--	UL E41938
AC Connector (CN1)	Yueqing Boom Electronic Co Ltd	XH-3A	250V, 3A	--	UL E309635
- Material of AC connector	Ascend Performance Materials L L C	21SPC(a)(f2)	PA66, V-2, 130°C	--	UL E70062
Appliance inlet (For appliance inlet models)	Yeqing Leci	DB-8	AC250V, 2.5A, C8 type	IEC/EN 60320-1	VDE 40032028 UL E302229
(Alternative)	Zhe Jiang Bei Er Jia	ST-A03-005	AC250V, 2.5A, C8 type	IEC/EN 60320-1	VDE 40014833 UL E225980
(Alternative)	Steady	2123	AC250V, 2.5A, C8 type	IEC/EN 60320-1	VDE 40004001 UL E217193
(Alternative)	Tecx-Unions	SO-222	AC250V, 2.5A, C8 type	IEC/EN 60320-1	VDE 40020337 UL E181496
PCB	Guanzhou Zengcheng Jin Peng Electronics Factory	2D	V-0 or better, 130°C	--	UL E248992
(Alternative)	Various	Various	V-1 or better, 130°C	--	UL
Primary lead wire	DanYang	1007	VW-1, 300Vac, 80°C, min. 22AWG	--	UL E332522

(Alternative)	Various	Various	VW-1, 300Vac, 80°C, min. 22AWG	--	UL
Fuse (F1)	Lanson	3N	T2.5AL, AC250V, sub-miniature	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40016660 UL E221465
(Alternative)	Walter	ICP	T2.5AL, AC250V, sub-miniature	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40012824 UL E56092
(Alternative)	Dongguan Better	334-Serie	T2.5AL, AC250V, sub-miniature	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40025428 UL E300003
Varistor (ZR1) (optional)	Centra	CNR-14D471K	Min. 300Vac, Min. 385Vdc, fulfilled 6kV/3kA pulse test.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 40008220 UL E316325
(Alternative)	Thinking	TVR10471-V, TVR14471	Min. 300Vac, Min. 385Vdc, fulfilled 6kV/3kA pulse test.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 5944 UL E314979
(Alternative)	Joyin	14N471K	Min. 300Vac, Min. 385Vdc, fulfilled 6kV/3kA pulse test.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 5937 UL E325508
(Alternative)	Brightking	10D471K, 14D471K	Min. 300Vac, Min. 385Vdc, fulfilled 6kV/3kA pulse test.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 40027827 UL E327997
(Alternative)	Lien Shun	10D471K, 14D471K	Min. 300Vac, Min. 385Vdc, fulfilled 6kV/3kA pulse test.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 40005858 UL E315524
(Alternative)	Success	SVR10D471K, SVR14D471K	Min. 300Vac, Min. 385Vdc, fulfilled 6kV/3kA pulse test.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 40030401 UL E330256
(Alternative)	Xiamen Wanming	10D471K, 14D471K	Min. 300Vac, Min. 385Vdc, fulfilled 6kV/3kA pulse test.	IEC/EN 61051-1 IEC/EN 61051-2	VDE 40027412 UL E333988
X-Capacitor (XC1)	Ultra Tech Xiphi	HQX	Max.0.33µF, Min. 250Vac, 40/100/21, X2 type	IEC/EN 60384-14	VDE 40015608 UL E183780
(Alternative)	Tenta	MEX	Max.0.33µF, 300Vac, 40/100/21, X2 type	IEC/EN 60384-14	VDE 123198 UL E222911
(Alternative)	Jenn Fu	MPX	Max.0.33µF, 275Vac, 40/100/21, X2 type	IEC/EN 60384-14	VDE 40023085 UL E184650
(Alternative)	Shenzhen Su Rong	MPX/MKP	Max.0.33µF, 280Vac, 40/100/21, X2 type	IEC/EN 60384-14	VDE 40008924 UL E183620
Bleeding resistor (R1, R2)	Various	Various	3.0Mohm, 1/4W	--	--
Bleeding resistor (R1A, R2A)	Various	Various	3.0Mohm, 1/4W	--	--
Line chock (NF1)	Dongguan Dongsheng	DYS403-L01	N1=N2=Ø0.35mmx80 Ts, 130°C	--	Tested with appliance
Bridge rectifier (BD1)	Various	Various	Min. 2A, 600V	--	--

Electrolytic capacitor (C1)	Various	Various	Min. 33-68uF, 400V, 105℃	--	--
Heat shrinkable tube (for ZR1) (optional)	Dongguan Salipt	SALIPT S-901-600	VW-1, 600Vac, 125°C	--	UL E209436
(Alternative)	Various	Various	VW-1, 600Vac, 125°C	--	UL
Photo Coupler (PC1)	Cosmo	K1010, KPC817	Dti=0.5mm, int. dcr=5.3mm, ext. dcr=8.0mm	IEC/EN 60950-1	VDE 101347 UL E169586
(Alternative)	Bright Led	BPC-817B	Dti=0.4mm, Int. dcr=4.0mm, ext. dcr=8.0mm	IEC/EN 60950-1	VDE 40007240 UL E236324
(Alternative)	Lite-on	LTV817	Dti = 0.6mm, int. dcr. = 4.6mm ext. dcr. = 7.4mm	IEC/EN 60950-1	VDE 40015248 UL E113898
(Alternative)	Fairchild	H11A817, H11A817A	Dti=1.0 mm, ext.dcr.= 7.0mm	IEC/EN 60950-1	VDE 40026857 UL E90700
Y-Capacitor (YC1)	Jyh Chung	JD	Max. 2200PF, 250Vac, 30/125/21/C,Y1 type	IEC/EN 60384-14	VDE 40016598 UL E187963
(Alternative)	Hsuan Tai	CY	Max. 2200PF, 400Vac, 40/125/21/C,Y1 type	IEC/EN 60384-14	VDE 40008912 UL E199069
(Alternative)	Success	SB	Max. 2200PF, 250Vac, 30/125/56/C ,Y1 type	IEC/EN 60384-14	VDE 128833 UL E114280
(Alternative)	South Hongming	F	Max. 2200PF, 250Vac, 30/125/21/C ,Y1 type	IEC/EN 60384-14	VDE 118357 UL E154899
(Alternative)	Dongguan Easy-gather	DCF	Max. 2200PF, 250Vac, 30/125/21/C ,Y1 type	IEC/EN 60384-14	VDE 40022942 UL E252221
Y-Capacitor (YC2) (optional)	Jyh Chung	JD	Max. 470PF, 250Vac, 30/125/21/C,Y1 type	IEC/EN 60384-14	VDE 40016598 UL E187963
(Alternative)	Hsuan Tai	CY	Max. 470PF, 400Vac, 40/125/21/C,Y1 type	IEC/EN 60384-14	VDE 40008912 UL E199069
(Alternative)	Success	SB	Max. 470PF, 250Vac, 30/125/56/C ,Y1 type	IEC/EN 60384-14	VDE 128833 UL E114280
(Alternative)	South Hongming	F	Max. 470PF, 250Vac, 30/125/21/C ,Y1 type	IEC/EN 60384-14	VDE 118357 UL E154899
(Alternative)	Dongguan Easy-gather	DCF	Max. 470PF, 250Vac, 30/125/21/C ,Y1 type	IEC/EN 60384-14	VDE 40022942 UL E252221
Output cord	DanYang	2468	80°C,VW-1, 300Vac, min. 22AWG	--	UL E332522

(Alternative)	Various	Various	80°C,VW-1, 300Vac, min. 22AWG	--	UL
Insulation sheet (for US, JP, CN, Taiwan plug)	Yi-Hsin Plastech Co Ltd	YIMEX PP-17	PP, V-0, 115°C Min thickness 0.4mm	--	UL E300040
Transformer (T1)	Ain Hsin	(1) DYS403-T01 (2) DYS403-T02 (3) DYS403-T03	Pri. Winding: N1+ N4 (pin 3-4): Φ0.37mmx1px40Ts N5 (pin 2-1): (1)Φ0.25mmx1px10Ts (2)Φ0.25mmx1px8Ts (3)Φ0.25mmx1px8Ts Sec. Winding: N2, N3 (pin 5-7, 6-8): (1)Φ0.50mmx3px5Ts (2)Φ0.50mmx2px7Ts (3)Φ0.37mmx2px10Ts Class B	Applicable part of IEC/EN 60950-1 and according to IEC/EN 60085	Tested with appliance
Components used in transformer					
- Bobbin	Samyang	1500GN-30	PBT, V-0, 130℃, Min. 0.75mm thickness.	--	UL E116425
(Alternative)	Sumitomo Bakelite	PM-9630, PM-9820	150°C, V-0, PF, min. thickness: 0.8mm	--	UL E41429
- Magnet wire	Pacific	UEW/U	130°C	--	UL E201757
(Alternative)	Feng Ching	UEW	130°C	--	UL E172395
(Alternative)	Huizhou Golden Ocean	UEWN	130°C	--	UL E225143
(Alternative)	Tai-I	UEW	130°C	--	UL E85640
(Alternative)	Hoi Luen	UEW	130°C	--	UL E164409
- Insulation tape	Jingjiang Yahua	PZ	130°C	--	UL E165111
(Alternative)	3M	1350-1	130°C	--	UL E17385
- Margin tape	Jingjiang Yahua	WF	130°C	--	UL E165111
- Tubing	Great Holding	TFT	200°C, VW-1	--	UL E156256
(Alternative)	Changyuan	CB-TT	200°C, VW-1	--	UL E180908
(Alternative)	Sumitomo	Sumitube F2	200°C, VW-1	--	UL E48762
- Varnish	John C Dolph Co	BB-353, BC-346A	200℃	--	UL E51047
(Alternative)	HongDaTong	WE-386	155°C	--	UL E238459
Note: [1]) An asterisk indicates a mark which assures the agreed level of surveillance					

Appended table	**TABLE: transformers**						**P**
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
Primary winding to secondary winding	RI	492	297	3000Vac	4.2	6.2	0.4
Core to primary winding	BI	492	297	1740Vac	2.1	3.2	--
Core to secondary winding	SI	492	297	1740Vac	2.1	3.2	0.4
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
Primary winding to secondary winding	RI			3000Vac	6.3	6.3	2 layers tape
Core to primary winding	BI			1721Vac	3.3	3.3	2 layers tape
Core to secondary winding	SI			1721Vac	3.3	3.3	2 layers tape
Transformer description: Concentric windings on PF/PBT bobbin, outer winding is primary. 2 layer insulation tape between primary and secondary windings. Core is considered to be floating conductor. Tube added on all winding exits. Martin tape provided for each primary winding and secondary winding, and 2 layers of insulation tape provided on outside of transformer. More details see photo document.							

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60065 EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES Audio, video and similar electronic apparatus – Safety requirements	
Differences according to.....:	EN 60065:2002 + A1:2006 + A11:2008 + A2:2010 + A12:2011
Attachment Form No. .....:	EU_GD_IEC60065K_II
Attachment Originator .....:	Intertek Semko AB
Master Attachment .....:	Date (2011-08)
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	IEC 60065, GROUP DIFFERENCES (CENELEC common modifications (EN))		
Clause	Requirement + Test	Result - Remark	Verdict
Contents	Add the following annexes: Annex ZA (normative) Other international publications quoted in this standard with the references of the relevant European publications (See the CB Bulletin) Annex ZB (nominative) Special national conditions Annex ZC (informative) A-deviations		—
Definition 2.2.Z1 (A11:2008)	Add after the definition 2.2.12 the following new definition: PORTABLE SOUND SYSTEM small battery powered audio equipment: • whose prime purpose is to listen to recorded or broadcasted sound; and • that uses headphones or earphones that can be worn in or on or around the ears; and • that allows the user to walk around NOTE Examples are mini-disc or CD players, MP3 audio players or similar equipment.		—
2.2 (A12:2011)	In EN 60065:2002/A11:2008 Delete the definition 2.2.Z1		—
3.1	Add the following indent at the end of the list - Exposure to excessive sound pressures from headphones or earphones NOTE A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 1: General method for ”one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment – Maximum sound pressure level measurement methodology and limit considerations – Part 2: Guidelines to associate		—

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	sets with headphones coming from different manufacturers.		
3.1 (A12:2011)	In EN 60065:2002 Delete the addition of indent regarding sound pressure excessive		—
3.Z1 (A2:2010)	After 3.2 add a new clause 3.Z1: To protect against excessive current, short-circuits and earth faults in MAINS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 11 shall be included as parts of the equipment; b) for components in series or parallel with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for equipment supplied via an industrial mains plug or for PERMANENTLY CONNECTED APPARATUS, to rely on dedicated over current and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for not via an industrial mains plug or for PERMANENTLY CONNECTED APPARATUS the building installation shall be regarded	Equipment relies on 16A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Over-current protection is provided by the build-in fuse.	P
4.1.1	Replace the text of the note by: NOTE For ROUTINE TEST reference is made to EN 50514.		—
5.4.1 za) (A11:2008)	Modify indent za) as follows: za) For a PORTABLE SOUND SYSTEM, a warning that excessive sound pressure from earphones and headphones can cause hearing loss.	Not such equipment.	N/A
5.4.1 (A12:2011)	In EN 60065:2002/A1:2006 and EN 60065;2002/A11:2008 Delete the modification in indent za) Add the following clause and annex to the excisting standard and amendments	Not such equipment.	N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: - is designed to allow the user to listen to recorded or broadcast sound or video; and - primarily uses headphones or earphones that can be worn in or on or around the ears; and - allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: - while the personal music player is connected to an external amplifier; or - while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: - hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment. - analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies.		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
Cont.	For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply. Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: - equipment provided as a package (personal music player with its listening device), where the acoustic output LAeq,T is ≤ 85 dBA measured while playing the fixed “programme simulation noise” as described in EN 50332-1; and - a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level LAeq,T is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and c) provide a means to actively inform the user of the ncreased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be≤ 100 dBA measured while playing the fixed “programme simulation noise” described in EN 50332-1; and		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed “programme simulation noise” described in EN 50332-1. For music where the average sound pressure (long term LAeq,T) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term LAeq,T) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: the symbol of Figure 1 with a minimum height of 5 mm; and the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.” Figure 1 – Warning label (IEC 60417-6044) Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
Cont.	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.	Not such equipment.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.	Not such equipment.	N/A
	Zx.4.3 Wireless listening devices In wireless mode: - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the above-mentioned programme simulation noise, the acoustic output LAeq,T of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.	Not such equipment.	N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
6.1 (A11:2008)	Replace the entire subclause in EN 60065:2002 and EN 60065:2002/A1:2006 by: Ionizing radiation Apparatus including a potential source of ionizing radiation shall be so constructed that personal protection against ionizing radiation is provided under normal operating conditions and under fault conditions. *Compliance is checked by measurement under the following conditions*: *In addition to the normal operating conditions, all controls adjustable from the outside BY HAND, by any object such as a tool or a coin, and those internal adjustments or pre-sets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.* NOTE 1 Soldered joints and paint lockings are examples of adequate locking. *The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm², at any point 10 cm from the outer surface of the apparatus.* *Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.* *The dose-rate shall not exceed 1µSv/h (0,1 mR/h) taking account of the background level.* NOTE 2 These values appear in Directive 96/29/Euratom of 13th May 1996. *A picture is considered to be intelligible if the following conditions are met*: *- a scanning amplitude of at least 70 % of the usable screen width;* *- a minimum luminance of 50 cd/m² with locked blank raster provided by a test generator;* *- a horizontal resolution corresponding to at least 1,5 MHz in the centre, with a similar vertical degradation;* *- not more than one flashover per 5 min.*	No ionizing radiation.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
Z1 (A11:2008)	Add the following new clause after Clause 20: Z1 Resistance to candle flame ignition A television set shall be so designed that the likelihood of ignition and the spread of fire caused by a candle flame is reduced. NOTE 1 An apparatus with a viewing screen is not regarded to be a television set if it is declared not to be so by the manufacturer. This requirement does not apply to the display screen of rear projection TV's. NOTE 2 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. NOTE 3 The frame around the screen is not exempted from the requirements. Wood and WOOD-BASED MATERIAL with a thickness of at least 6 mm is considered to fulfil the V-1 requirement when applying CLC/TS 62441. *Compliance is checked according to CLC/TS 62441.* NOTE 4 The term vertical, as used in the first dash of clause 5.2 of CLC/TS 62441, does not mean a perfectly vertical position. It should be interpreted as any surface that can be touched by the flame of a candle of 150 mm height and 20mm diameter while the candle is still touching the supporting surface. A typical candle used in the home is assumed to be 20 mm diameter. NOTE 5 It is expected that CLC/TS 62441 will in the future be replaced by a standard, at which time that standard will become applicable, subject to a vote by National Committees at the time.	Not television set.	N/A
General	13.3.1 Delete note 4. 14 Delete note 4 and note 5. 15.1.1 Delete notes 1 and 2. 15.2 Delete note 2. 16.1 Delete note 1. 16.2 Delete the note. 20 Delete note 2. Annex B Replace note 1 by: In the CENELEC countries listed in IEC 62151, special national conditions apply. Annex G Delete the note. Annex J.2 Delete the notes of Table J.1. Annex N Add after the introduction: For ROUTINE TEST reference is made to EN 50333. (Replaced by EN 50514)		—

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
General (A2:2010)	In IEC 60065:2001/A2 Delete all the “country” notes according to the following list: 5.3 Note 5.4.1 Note 20 Note For special national conditions, see Annex ZB.		—
Bibliography	Additional EN standards.		—

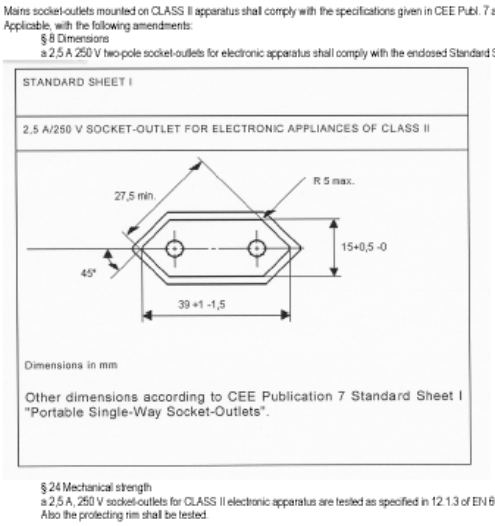
ZA	Normative references to international publications with their corresponding European publications	P

ZB	ANNEX ZB TO EN 60065, SPECIAL NATIONAL CONDITIONS (EN)		P
2.6.1	DK: The following is added: Certain types of CLASS I apparatus, see 15.1.1, may be provided with a plug not establishing earthing continuity when inserted in Danish socket-outlets *Justification:* Heavy Current Regulations, Section 107.		P
3.Z1 (A2:2010)	Denmark Add to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. *Justification*: In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Should be evaluated during national approval.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
5.3 (A2:2010)	Finland, Norway and Sweden To the end of the subclause the following is added: CLASS I apparatus which is intended for connection to the building installation wiring via a plug or an appliance coupler, or both and in addition is intended for connection to other apparatus or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network TERMINALS and ACCESSIBLE parts, have a marking stating that the apparatus must be connected to an earthed MAINS socket-outlet. The marking text in the applicable countries shall be as follows: In Finland: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: “Apparaten skall anslutas till jordat uttag”	Should be evaluated during national approval.	N/A
5.4 (A11:2008)	Finland, Norway and Sweden To the end of 5.4 the following is added: CLASS I apparatus which is intended for connection to the building installation wiring via a plug or an appliance coupler, or both and in addition is intended for connection to other apparatus or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network TERMINALS and ACCESSIBLE parts, have a marking stating that the apparatus must be connected to an MAINS socket-outlet with protective earth. The marking text in the applicable countries shall be as follows: In Finland: “Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan” In Norway: “Apparatet må tilkoples jordet stikkontakt” In Sweden: "Apparaten skall anslutas till jordat uttag"	Should be evaluated during national approval.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
5.4.1 (A11:2008)	Norway and Sweden To the end of 5.4.1 (after the compliance statement) the following is added: The screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)” NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”	No cable distribution system	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
13.3.1	NO: To the second paragraph the following is added: In Norway, due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault. *Justification:* Based on a use in Norway of an IT power distribution system where the neutral is not provided.	Added	P
15.1.1 (A11:2008)	Denmark The text of the Danish SNC in EN 60065:2002 has been modified as follows: To the first paragraph the following is added: In Denmark, supply cords of single-phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-D1. Appliances of CLASS I provided with socket-outlets with earth contact or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with the Heavy Current Regulations, Section 107-2-D1 standard sheet DK 2-1a. To the second paragraph the following is added: Socket outlets intended for providing power to CLASS II apparatus with a rated current of 2,5 A shall be in accordance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DKA 1-4a. Other current ratings socket outlets shall be in compliance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DKA 1-3a or DKA 1-3b. To the third paragraph the following is added: Mains socket-outlets with earthing contact shall be in compliance with the Heavy Current Regulation, Section 107-2-D1 standard sheet DK 1-3a, DK 1-5a or DK 1-7a. Justification: Heavy Current Regulations, Section 107-2-D1	No socket outlet.	N/A
15.1.1	IE: Apparatus which is fitted with a flexible cable or cord shall be provided with a 13 A plug in accordance with Statutory Instrument 525:97, “13 A Plugs and Conversion Adapters for Domestic Use Regulations:1997. *Justification:* SI 525: 1997	Should be considered during the national approval.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
15.1.1	NO: Mains socket-outlets mounted on CLASS II apparatus shall comply with the specifications given in CEE Publ. 7 as far as a applicable, with the following amendments: § 8 Dimensions a 2.5 A 250 V two-pole socket-outlets for electronic apparatus shall comply with the enclosed Standard Sheet I.  § 24 Mechanical strength A 2,5 A 250 V socket-outlets for CLASS II electronic apparatus are tested as specified in 12.1.3 of EN 60065. Also the protecting rim shall be tested *Justification:* Act of 24 May 1929 relating to supervision of electrical installation (TEA 1929/FEL 1998).	No socket outlet.	N/A
15.1.1	UK: Apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug shall be fitted with a ”standard plug” in accordance with Statutory Instrument 1768: 1994: The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those Regulations. NOTE ”Standard plug” is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug. *Justification*: SI 1768: 1994	Direct plug in equipment or appliance inlet equipment.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
J.2	NO: After Table J.1 the following is added: In Norway, due to the IT power distribution system used, the a.c. MAINS supply voltage is considered to be equal to the line-to-line voltage, and will remain 230 V in case of a single earth fault. *Justification*: Based on a use in Norway of an IT power distribution system where the neutral is not provided.	Considered.	P

ZC	ANNEX ZC TO EN 60065, A-DEVIATIONS (EN)		P
5.1	IT: Additional markings on the outside of the TV receiver in Italian language		N/A
	IT:User instructions in Italian language including a conformity declaration		N/A
	IT: Certification number on the back cover		N/A
6.1	DE: The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking. *Justification*: German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM. NOTE Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int+49-531-592-6320, Internet: http://www.ptb.de	No cathode ray tube used.	N/A
14	SE: Switches containing mercury such as thermostats, relays and level controllers are not allowed. *Justification*: Ordinance (1990:944) on Prohibition in Connection with handling. Importation and exportation of Chemical Products (Certain Cases)	No such switch used.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

APPENDIX	Australia National Differences to CB Bulletin AS/NZS 60065: 2003+A1 Audio, Video and similar electronic apparatus – safety requirements (IEC 60065: 2001 MOD) Variation to IEC 60065: 2001 for application in Australia the New Zealand Report (IEC Publication 60065 7th edition, 2001+A1: 2005)		P
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
ZZ.1	Introduction This Annex sets out variations between AS/NZS 60065:2003 and IEC 60065:2001. These variations indicate national variations for purposes of the IECEE CB Scheme and will be published in the IECEE CB Bulletin.	Considered.	P
ZZ.2	Variations The variations are as follows:		N/A
7.1.5	In Table 3 under item c) add an h) in both columns against 'thermoplastic materials' and add the following new footnote: h) As an alternative to the method described in footnote f) the following variation may be used where there is any doubt about the suitability of the material: The ball-pressure test described in AS/NZS 60695.10.2 may be carried out. To assess compliance under normal operating conditions, the test shall be made in a heating cabinet at a temperature of 40℃ ±2℃ plus the maximum temperature rise determined under normal operating conditions but, it shall be at least - for external parts 75℃ ±2℃ - for materials supporting parts conductively connected to the mains 125℃ ±2℃	Added.	N/A
7.2	After the second paragraph, add the following: The alternative method described in footnote h) of Table 3 may be used.	Added.	N/A
15.1.1	After the second paragraph, add the following: Plugs for the connection of apparatus to mains-powered socket-outlets shall comply with AS/NZS 3112 or AS/NZS 3123. Apparatus with a plug portion, suitable for insertion into a 10A 3 pin flat-pin flat-pin socket-outlet complying with AS/NZS 3112, shall comply with the requirements of AS/NZS 3112 for equipment with integral pins for insertion into socket-outlets.	See attached plug portion report.	P

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
15.3.5	In Table 15, in the second and third rows of the first column replace “6” with “7.5”.		P
16.2	In Table 18, in the second and third rows of the first column replace “6” with “7.5”.		P
16.3	After item (b) add the following variation: A flexible cord complying with AS/NZS 3191 need not undergo this test.		N/A
19.201	Add the following new Clauses after 19.6: 19.201 Additional stability requirements for television receivers Television receivers and display devices that may be used for television purposes, with a mass of 7kg or more, shall have additional stability requirements. Compliance is checked by inspection and by the tests of 19.201.2.2 and 19.201.3 as applicable. Apparatus designed for only fixing to a wall, ceiling or equipment rack are not required to be subjected to these additional requirements if the marking of 5.4.1 f) is provided on or with the apparatus.	Not such equipment	N/A
19.201.1	19.201.1 Warning notice* Television receivers and display devices that may be used for television purposes, shall be provided with information in the instructions for installation or use, containing the following information or similar: IMPORTANT INFORMATION If a television is not positioned in a sufficiently stable location, it can be potentially hazardous due to falling. Many injuries, particularly to children, can be avoided by taking simple precautions such as: • Using cabinets or stands recommended by the manufacturer of the television. • Only using furniture that can safely support the television. • Ensuring the television is not overhanging the edge of the supporting furniture. • Not placing the television on tall furniture (for example, cupboards or bookcases) without anchoring both the furniture and the television to a suitable support. • Not standing the televisions on cloth or other materials placed between the television and supporting furniture. • Educating children about the dangers of climbing on furniture to reach the television or its controls.	Not such equipment	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Such information should also be provided as a label on the apparatus. NOTE: The committee is considering a request from Regulatory Authorities that providing the information as a label on the apparatus should be mandatory. * Clause 19.201.1 forms part of the Standard 12 months from publication of Amendment No. 1.		
19.201.2	Restraining device	Not such device.	N/A
19.201.2.1	Television receivers should be provided with a restraining device such as a fixing point to facilitate restraining the television from toppling forward. NOTE: The committee is considering a request from Regulatory Authorities that providing a restraining device on the apparatus should be mandatory.		N/A
19.201.2.2	Where a restraining device is provided in accordance with 19.201.2.1information shall be provided in the instructions for installation or use, to ensure correct and safe installation. Such information should also be provided as a label on the television receiver. Any such restraining device shall be capable of withstanding a pull of 100 N in all directions without damage. Clause 19.201.2.2 forms part of the Standard 18 months from publication of Amendment No. 1.		N/A
19.201.3	Glass slide test Television receivers and display devices that may be used for television purposes, with a mass of 18 kg or more, are placed on a clean, dry, glass covered horizontal surface such that only the supporting feet are in contact with the glass. The glass-covered surface is then tilted in the most unfavourable direction through an angle of 10°. During the tests , the equipment shall not slide. Clause 19.201.3 forms part of the Standard 5 years from publication of Amendment No. 1.		N/A
20	Add the following after NOTE 2: For alternative test refer to Clause 20.201.	Added.	N/A
20.1.4	In Table 21, in the third and fourth columns *change* both “HB75” and “No requirement” to “V-1”.	Changed.	P
20.2.3	After this Clause, add the following variation: 20.201 Resistance to fire - Alternative tests 20.201.1 General Parts of non-metallic material shall be resistant to ignition and the spread of fire. This requirement does not apply to decorative trims, knobs and other parts unlikely to be ignited or to	For relevant sources of UL approved thermoplastic materials see table 14 for this report. Glow wire test Bobbin of transformer: 750°C PCB: 750°C	P

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	propagate flames originating from inside the apparatus, or the following: (a) Components that are contained in an enclosure having a flammability category of V-0 according to AS/NZS 60695.11.10 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. (b) The following parts which would contribute negligible fuel to a fire:	Enclosure: 550°C	
	- small mechanical parts, the mass of which does not exceed 4g, such as mounting parts, gears, cams, belts and belts and bearings. - small electrical components, such as capacitors with a volume not exceeding 1750mm^3, integrated circuits, transistors and optocoupler packages, if these components are mounted on material of flammability category V-1 or better according to AS/NZS 60695.11.10. NOTE – In considering how to minimize propagation of fire and what "small parts" are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. Compliance shall be checked by tests of 20.201.2.1, 20.201.2.2 and 20.201.2.3 For the base material of PRINTED BOARDS, compliance is checked by the test of 20.201.2.4. The test shall be carried out on parts of non-metallic material which have been removed from the apparatus. When the glow-wire test is carried out, they are placed in the same orientation as they would be in normal use. These tests are not carried out on internal wiring. 20.201.2 Test 20.201.2.1 Testing of non-metallic parts Parts of non-metallic material are subjected to the glow-wire test of AS/NZS 60695.2.11 which shall be carried out at 550°C. Parts for which the glow-wire test cannot be carried out, such as those made of soft or foamy material, shall meet the requirements specified in ISO 9772 for category FH-3 material. The glow-wire test shall not be carried out on parts of material classified at least FH-3 according to ISO 9772 provided that the sample tested was		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	not thicker than the relevant part. 20.201.2.2 Testing of insulated parts Part of insulating material supporting POTENTIAL IGNITION SOURCES shall be subject to the glow-wire test of AS/NZS 64695.2.11 which shall be carried out at 750°C		
	The test shall be also carried out on other parts of insulating material which are within a distance of 3 mm of the connection. NOTE-Contacts in components such as switch contacts are considered to be connections. For parts which withstand the glow-wire test but produce a flame, other parts above the connection within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm are subjected to the needle-flame test. However, parts shielded by a barrier which meets the needle-flame test need not be tested. The needle-flame test shall be made in accordance with AS/NZS 4695.2.2 with the following modifications: Clause of AS/NZS 4695.2.2 — Change 5 Severities — Replace with: The duration of application of the test flame is 30 s ± 1 s.		
	8 Test procedure 8.2 — Replace the first sentence with: The specimen shall be arranged so that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1. 8.4 — The first paragraph does not apply. 8.5 — Addition: If possible, the flame shall be applied at least 10 mm from a corner. Replace with: The test shall be made on one specimen. If the specimen does not withstand the test,		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	the test may be repeated on two further specimens, both of which shall then withstand the test.		
	10 Evaluation of test results Replace with: The duration of burning (tb) shall not exceed 30 s. However, for PRINTED BOARDS, it shall not exceed 15 s. The needle-flame test shall not be carried out on parts of material classified as V-0 or V-1 according to IEC 60695-11-10 provided that the sample tested was not thicker than the relevant part.		
	20.201.2.3 Testing by needle-flame test If parts, other than enclosures, do not withstand the glow wire tests of 20.201.2.2, by failure to extinguish within 30 s after the removal of the glow-wire tip, the needle-flame test detailed in 20.201.2.2 shall be made on all parts of non-metallic material which are within a distance of 50 mm or which are likely to be impinged upon by flame during the tests of 20.201.2.2. Parts shielded by a separate barrier which meets the needle-flame test shall not be tested. NOTE 1– If the enclosure does not withstand the glow-wire test the appliance is considered to have failed to meet the requirement of Clause 21.201 without the need for consequential testing. NOTE 2– If other parts do not withstand the glow-wire test due to ignition of the tissue paper and if this indicates that burning or glowing particles can fall onto an external surface underneath the apparatus, the apparatus is considered to have failed to meet the requirement of Clause 21.201 without the need for consequential testing. NOTE 3– Parts likely to be impinged upon by the flame are considered to be those within the envelope of a vertical cylinder having a radius of 10 mm and a height equal to the height of the flame, positioned above the point of the material supporting in contact with or in close proximity to connections. 20.201.2.4 Testing of printed boards The base material of PRINTED BOARDS shall		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	be subjected to the needle-flame test of Clause 21.201.2.3. The flame shall be applied to the edge of the board where the heatsink effect is lowest when the board is positioned as in normal use. The flame shall not be applied to an edge consisting of broken perforations, unless the edge is less than 3 mm from a POTENTIAL IGNITION SOURCE. The test is not carried out if the — - printed board does not carry any potential ignition source; - base material of printed boards, on which the available power at a connection exceeds 15VA operating at a voltage exceeding 50V and equal or less than 400V (peak) a.c. or d.c. under normal operating conditions, is of flammability category V-1 or better according to AS/NZS 60695.11.10, or the printed boards are protected by an enclosure meeting the flammability category V-0 according to AS/NZS 60695.11.10, or made of metal, having openings only for connecting wires which fill the openings completely; or		
	- base material of printed boards, on which the available power at a connection exceeds 15VA operating at a voltage exceeding 400V (peak) a.c. or d.c. under normal operating conditions, and base material of printed boards supporting spark gaps which provides protection against overvoltages, is of flammability category V-0 according to AS/NZS 60695.11.10 or the printed boards are contained in a metal enclosure, having openings only for connecting wires which fill the openings completely. Compliance shall be determined using the smallest thickness of the material. NOTE – Available power is the maximum power which can be drawn from the supplying circuit through a resistive load whose value is chosen to maximize the power for more than 2 min when the circuit supplied is disconnected. 21.201.3 For open circuit voltage greater than 4kV Potential ignition sources with open circuit voltages exceeding 4 kV(peak) a.c. or d.c. under normal operating conditions shall be contained in a fire enclosure which shall comply with flammability category V-1 or better according to AS/NZS 60695.11.10.		
Annex B	After the heading add: For Australia only, this Annex is replaced by the requirements of the Telecommunications Labelling	No TNV.	N/A

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Notice issued under the Telecommunications Act. NOTE – The Telecommunications Act us administered by the Australian Communications Authority.		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

APPENDIX	Canadian National Differences according to CB Bulletin No. 112A, December 2006 (CAN/CSA C22.2 No. 60065: 03) (IEC Publication 60 065 7th edition, 2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.1.1	Add the following paragraph and note: This Standard applies to the safety of such equipment designed to be installed and used in accordance with the rules of the Canadian Electrical Code (CEC), Part I. Note 4A: Manufacturers designing products for use in Canada may find a helpful summary of the equipment-related requirement of the CEC, Part I, in CSA SPE-2000.		**P**
1.2	**Normative references** Where reference is made to CSA Publications, such reference shall be considered to refer to the latest edition and all amendments published to that edition. This Standard refers to the following Standards, and the years shown indicate the latest editions available at the time of printing. **ANSI/IEEE Standard** C62.1-1984, Surge Arresters for Alternating-Current Power Circuits **CSA Standards** C22.1-02, Canadian Electrical Code, Part 1 CAN/CSA-C22.2 No. 0-M91 (R2001), General Requirements - Canadian Electrical Code, Part II C22.2 No. 0.4-M1982 (R1999), Bonding and Grounding of Electrical Equipment (Protective Grounding) C22.2 No. 0.15-01, Adhesive Labels CAN/CSA-C22.2 No. 1-98, Audio, Video and Similar Electronic Equipment CAN/CSA-C22.2 No. 21-95 (R1999), Cord Sets and Power Supply Cords C22.2 No. 39-M1987 (R1999), Fuseholder Assemblies C22.2 No. 42-99, General Use Receptacles, Attachment Plugs, and Similar Wiring Devices		**P**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	CAN/CSA-C22.2 No. 49-98, Flexible Cords and Cables CAN/CSA-C22.2 No. 94-M91 (R2001), Special Purpose Enclosures C22.2 No. 127-99, Equipment and Lead Wires C22.2 No. 209-M1985 (R1999), Thermal Cut-Offs CAN/CSA-C22.2 No. 210.2-M90 (R2001), Appliance Wiring Material Products CAN/CSA-C22.2 No. 223-M91 (1999), Power Supplies with Extra-Low-Voltage Class 2 Outputs CAN/CSA-C22.2 No. 228-92 (1999), Cathode Ray Tubes CAN/CSA-C22.2 No. 248.14-00, Low Voltage Fuses - Part 14 Spe-2000-94, Guide for Electrical Equipment for Installation and Use in Canada **IEC Standards** 60038:2002, IEC standard voltages 60083:1975, Plug and socket-outlets for domestic and similar general use. 60173:1964, Colours of the cores of flexible cables and cords. 60320 (all parts), Appliance couplers for household and similar general purposes. 60707:1981, Methods of test for the determination of the flammability of solid electrical insulating materials. 60884 (all parts), Plugs and socket-outlets for household and similar purposes. 60906-1:1986, IEC System of plugs and socket-outlets for household and similar purposes - Part 1: Plugs and socket-outlets 16A 250V ac. 60906-2:1997, IEC System of plugs and socket-outlets for household and similar purposes - Part 2: Plugs and socket-outlets 15A 125V ac. 60906-3:1994, IEC System of plugs and socket-outlets for household and similar purposes - Part 3: SELV plugs and socket-outlets 16A 6V, 12V, 24V, 48V ac and dc.		
3.2A	*Add the following clause* A component power supply complying with CAN/CSA – C22.2 No. 60950 is considered to comply with this construction and fault conditions of this Standard after taking into account any relevant conditions of acceptability.	No such power supply.	**N/A**
4.2	**Normal operating conditions**		**P**

Canadian National Differences according to CB Bulletin No. 112A, December 2006

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
4.2.1	*Add the following after the fifth paragraph* For apparatus intended for use at nominal 120Vac the apparatus shall comply with this Standard at supply voltages between 108V and 125V. For apparatus intended for use at nominal 240Vac, the apparatus shall comply with this Standard at supply voltages between 216V and 250V.	Input voltage: 100-240VAC Test voltage: 90VAC and 264VAC	**P**
4.2.10	*Add the following after the second paragraph* As an alternative, a supply apparatus for general use complying with CAN/CSA – C22.2 No. 223 or CAN/CSA – C22.2 No. 60950 shall be acceptable.	No such apparatus.	**N/A**
5	**Marking and instructions** *Add the following paragraph* Adhesive nameplates on commercial products shall comply with CSA Standard C22.2 No. 0.15.	Not commercial products.	**N/A**
5.1	**Identification and supply ratings** *Add the following item* hA) date of manufacture: a date or code identifying the period of manufacture shall be marked on the apparatus;	Marked on outer enclosure.	**P**
5.3A	*Add the following clause* Where a loudspeakeer grille, removable from the outside, is relied on as part of the enclosure (see Clause 9.2), the following marking or equivalent shall be visible on the enclosure after removal of the grille: “Caution – To prevent electric shock hazard, replace grille.” Alternatively, the symbol in Clause 5.2 b) shall be visible after removal of the grille, and tha caution wording above shall appear in the user instructions, accompanied by the symbol. Compliance is checked by inspection.	No grille.	**N/A**
8	**Constructional requirements with regard to protection against shock**	See below.	**P**
8.9	*Add the following title to this clause* **Mains wiring** *Add the following paragraph* Wiring in circuits with voltages higher than 42 V peak shall comply with CSA C22.2 No. 127 or CAN/CSA – C22.2 No. 210.2.	(see table 14)	**P**
9.1	**Testing on the outside**		**P**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
9.1.1A	**Class I apparatus leakage** *Add the following clause* For cord – connected Class I apparatus, the leakage current through the safety earthing conductor, expressed as voltages U and U, shall not exveed U = 105 V (peak) and U = 1.05 V (peak) (1.5mA). Apparatus having a leakage current between 0.75 mA and 1.5 mA shall be provided with a caution label on the mains cord with the following, or equivalent: “CAUTION – TO REDUCE THE RISK OF ELECTRIC SHOCK, GROUNDING OF THE CENTRE PIN OF THIS PLUG MUST BE MAINTAINED”.	Class II apparatus.	**N/A**
9.1.1.2	**Determination of accessible parts** *Add the following after the fourth paragraph* Moving parts of loudspeaker systems, such as dust caps, cones of drivers, or passive radiators, are not regarded as preventing accessibility	No such moving parts.	**N/A**
Note 1A:	See also Clause 13.3.1		**N/A**
9.2	**Removal of protective covers** *Add the following after the second paragraph* This requirement applies also to internal parts of louderspeaker systems that become accessible by removal of a louderspeaker grille from the outside either by hand or with the use of a tool, coin, or other object. In such cases, the apparatus shall be marked according to Clause 5.3A. *Replace the third paragraph with the following* Compliance is checked by inspections and by application of the tests of Clause 9.1.1, except that the measurements are made 2 s after removal of the cover or grille.	No such device.	**N/A**
10	**Insulation requirements**		**N/A**
10.2A	**Enclosure type designation and use** *Add the following paragraph* If equipment is installed in environments where the enclosure is required to prevent ingress of water or dust, the enclosure shall be classified as a type recognized by the *Canadian Electrical Code, Part I*, and shall comply with the requirements of CAN/CSA – C22.2 No. 94.	Not such equipment.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
11.2	**Heating** *Add the following paragraph* Flammable gases shall not be emitted from a component for more than 10 s.	No flammable gases.	**P**
12	**Mechanical strength**		**P**
12.3A	**Television Impacts** *Add the following clause*	Not television.	**N/A**
12.3A.1	For television sets and similar apparatus using a cathode ray tube larger than 160 mm diagonally, the top, sides, front, and rear of the enclosure, including the safety screen where provided, shall be capable of withstanding a single impact of 7 J in accordance with Clause 12.3A.2 without developing any opening larger than 130 mm in the enclosure of the cathode ray tube, unless the minor dimension of 2 any opening is not more than 7 mm. When applied to a safety screen, the impact shall not result in damage to its mounting to the extent that it is mechanically unsuitable for reuse, nor shall tempered glass, if used, be cracked. When applied to the face of a directly viewed cathode ray tube, the impact shall not cause any opening in the face of the tube. Scaling and cracking of the glass shall be permissible. A cathode ray tube that has been shown to comply with CAN/CSA – C22.2 No. 228 or CAN/CSA – E 61965 shall be considered acceptable with no further tests.	Not TV.	**N/A**
12.3A.2	The impact specified in clause 12.3A.1 shall be caused by following a solid, smooth, steel sphere 51mm in diameter and weighing approximately 0.5kg to strike the enclosure with the specified impact in a direction perpendicular to the enclosure surface. If deemed necessary, the enclosure shall be tested with the proper cathode ray tube mounted.	No cathode ray tube was used.	**N/A**
13.3	**Clearances**		**P**
13.3.1	**General** *Add the following after the third paragraph* Clearances between a loudspeaker voice coil and adjacent conductive parts shall be disregarded.		**N/A**
14.2	**Capacitors and RC - units**		**P**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
14.2.1	*Add the following paragraph* As an alternative, an isolating capacitor complying with applicable requirements of CSA C22.2 No. 1 shall be acceptable for bridging basic or supplementary insulation.	Considered.	**P**
14.2.2	*Add the following paragraph* As an alternative, a cross-line capacitor complying with applicable requirements of CSA C22.2 No. 1 shall be acceptable.	Considered.	**P**
14.5.1	**Thermal releases**	No thermal link used.	**N/A**
14.5.1.2	*Add the following paragraph* As an alternative, a thermal link complying with CSA C22.2 No. 209 shall be acceptable.		**N/A**
14.5.2	**Fuse – links and fuse holders**		**P**
14.5.2.1	*Add the following paragraph* As an alternative, a fuse-link complying with CSA C22.2 No. 284.14 shall be acceptable.	Considered.	**P**
14.5.2.4	*Add the following paragraph* As an alternative, a fuseholder assembly complying with CSA Standard C22.2 No. 39 shall be acceptable.	No fuse holder provided.	**N/A**
14.6	**Switches**	No switch.	**N/A**
14.6.1 to 14.6.5	*Add the following paragraph* As an alternative, a TV-rated switch complying with CSA C22.2 No. 1, Clause 9 shall be acceptable.		**N/A**
14.11	**Optocouplers** *Add the following paragraph* As an alternative, an optocoupler complying with CSA C22.2 No. 1 shall be acceptable.	Considered.	**P**
14.12	**Surge supperssion varistors** *Add the following paragraph* As an alternative, an varistor complying with CSA C22.2 No. 1 shall be acceptable.		**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
14.12A	**Gas discharge tubes** *Add the following clause* Gas discharge tubes complying with following tests may be connected to bridge basic or reinforced insulation. Ten samples of gas discharge tubes isolating the ac supply from exposed parts shall be subjected to the varistor pulse tests of Clause 14.12. Following the pulses, the device shall be allowed to return to room temperature. The dielectric breakdown voltage of the fas tube shall not decrease by more than 50%, and the gas discharge tube shall comply with the dielectric strength test of Clause 10.3, with the test voltage reduced to twice the mains voltage.	No gas discharge tubes.	**N/A**
15.1	**Plugs and sockets**		**P**
15.1.1	*Add the following paragraph* A receptacle provided for general purpose mains output shall comply with the requirements of CSA Standard C22.2 No. 42 (dimensional requirements are also specified in IEC 60906-2). The attachment plug cap shall be polarized type when the apparatus is provided with a manually operated, MAINS connected single pole switch for apparatus on-off operation, a socket screw shell lampholder, or a 15 or 20 ampere socket outlet.		**N/A**
15.1.2	*Add the following paragraph* Banana plugs shall be acceptable.	No such plug.	**N/A**
15.1.3	*Add the following title* **Adapter output connectors** *Replace the first paragraph with the following* Terminals and connectors used in output circuits of supply apparatus, whose output voltage is not a standard nominal mains voltage according to IEC 60038 (1), IEC 60320, IEC 60884, IEC 60906 (parts 1, 2, and 3), and CSA C22.2 No. 42.		**P**
15.2	**Provisions for protective earthing** *Replace the first paragraph with the following* Earthing connections shall comply with the test requirements of CSA C22.2 No. 0.4.	Class II apparatus.	**N/A**
15.3	**Terminals for external flexible cords and for permanent connection to the mains supply**		**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
15.3.1A	*Add the following clause* Equipment intended for permanent connection to the mains shall have provisions for connection to the wiring system in accordance with the Canadian Electrical Code, Part I. The terminal parts and all other provisions for permanent connection to fixed wiring shall comply CSA Standard CAN/CSA-C22.2 No. 0.	Not intended for permanent connection to the mains.	**N/A**
15.4	**Devices forming a part of the mains plug**		**P**
15.4.2	*Add the following paragraphs* Mains plugs of non-permanently installed equipment shall comply with a) CSA C22.2 No. 21 for moulded-on type attachment plugs; and b) CSA C22.2 No. 42 for disassembly type attachment plugs (dimensional requirements are also specified in IEC 60906-2). Class II equipment provided with a general purpose mains outlet, or lampholder, shall be provided with a polarized-type plug. If the plug is a polarized type, single pole switches or over current protectors shall not be connected in the identified conductor.	Should be evaluated during national approval.	**N/A**
16	**External flexible cords**		**N/A**
16.1	*Replace this clause with the following* Flexible cord used for mains supply shall comply with the requirements of CSA C22.2 No. 49. The cord type shall be in accordance with Table 4 of CSA C22.2 No. 1. The attachment plug shall be rated not less than 125% of the apparatus rated current. Cord sets shall comply with the requirements of CSA C22.2 No. 21.	Direct plug in equipment.	**N/A**
	Non-detachable flexible cables and cords of Class I apparatus shall be provided with a green/yellow core connected to the protective earthing terminal of the apparatus and, if a plug is provided, to the protective earthing contact of the plug. Compliance is checked by inspection. Note: The colour for cores of flexible mains cords is contained in IEC 60173 (4).		**N/A**
17	**Electrical connections and mechanical fixings**		**N/A**
17.9A	**Adhesive securement and conductive coatings** *Add the following clause*	No such adhesive.	**N/A**

Canadian National Differences according to CB Bulletin No. 112A, December 2006

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
17.9A.1	**Adhesive securement** The following parts, the displacement of which may result in a fire or shock hazard, shall not be secured solely by adhesive, unless the adhesive system complies with the resistance to external forces test fo Clause 9.1.7, the bump test of Clause 12.1.1, and the impact test of Clause 12.1.3, after conditioning in accordance with Clause 17.9A.2: a) internal metal parts/conductive coatings; b) barriers; and c) required enclosure parts. Note: Cathode ray tubes are excluded from this test.		**N/A**
17.9A.2	**Adhesive and conductive coating securement conditioning**	No such adhesive or conductive coating.	**N/A**
17.9A.2.1	**General** Where required by Clause 17.9A.1, one sample of the apparatus or enclosure section shall be conditioned in accordance with the requirements of Clause 17.9A.2.2. Equivalent ageing test data supplied by the manufacturer will be considered in lieu of ageing.		**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
17.9A.2.2	**Ageing** Day 1: Place in oven at 100±1℃ for 1 week, or 82 ±1℃ for 8 weeks at the manufacturer's option. **Day 8 or Day 57:** 1. Remove from oven and leave at room temperature for 1h. 2. Place in freezer at –35℃ for 2h. 3. Remove from freezer and allow to reach room temperature overnight. **Day 9 or Day 58:** 1. Place in a compartment at 96% relative humidity for 3h. 2. Remove and leave at room temperature and humidity for 1h. 3. Place in oven at a temperature selected in the first cycle for 3h. 4. Remove and allow to come to room temperature overnight. **Day 10 or Day 59:** 1. Place in Freezer at –35℃ for 2h. 2. Remove and leave at room temperature for 1h. 3. Place in humidity chamber at 96% relative humidity for 3h. 4. Remove and allow to come to room temperature overnight. **Day 11 or Day 60:** 1. Place in oven at a temperature selected in the first cycle for 3h. 2. Remove for 1h. 3. Place in Freezer at –35℃ for 2h. 4. Remove and allow to come to room temperature overnight. **Day 12 or Day 61:** 1. Place in humidity chamber at 96% relative humidity for 3h. 2. Remove and perform mechanical tests as required by Clause 17.10.1 or 17.10.2 as applicable.		**N/A**
18	**Mechanical strength of picture tubes and protection against the effects of implosion**	No picture tube.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
18.1A	*Add the following clause* A picture tube with a maximum face dimension exceeding 75mm either shall be intrinsically protected with respect to effects of implosion and to mechanical impact in accordance with CAN/CSA - C22.2 No. 228 or CAN/CSA – E61965, or the enclosure of the apparatus shall provide adequate protection against the effects of an implosion of the tube (see Clause 12)		**N/A**
19	**Stability and mechanical hazards** *Add the following after the second paragraph* The test of Clause 19.3 is only required for a) apparatus with a mass of 25kg or more b) apparatus, excluding loudspeaker systems, with a height of 1m or more, or c) apparatus, including loudspeaker systems, in combination with a supplied or recommended cart of stand with a total height of 1m or more. *Add the following paragraph* Apparatus not tested because it is intended to be fastened in place shall be provided with the following warning: "WARNING: This apparatus must be securely attached to the floor/wall per installation instruction. Tipping, shaking or rocking the machine may cause injury/death."	Mass: approx. 0.18Kg.	**N/A**
20.2 20.2.1A	**Fire enclosure** *Add the following clause* Enclosures of apparatus containing high voltage or projection lamps shall have a minimum flammability rating of category FV1 according to IEC 60707 at the minimum thickness used.	No such high voltage or projection lamp.	**N/A**
Annex B (normative)	**Apparatus to be connected to the telecommunication networks** *Replace this annex with the following* Apparatus intended for direct connection to a telecommunication network shall comply with a) Clause 19 of CSA C22.2 No.1; or b) CAN/CSA – C22.2 No. 60950.	No TNV.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

JIS C 6065 (H23) (Deviations from IEC 60065:2001+A1:2005) *Japanese unique deviations* in J60065(H23):2011(=JIS C 6065:2007)			
1.1.1	Add to the list of examples the following new item: - electronic flash apparatus for photographic purposes (see Annex L).	Added.	**N/A**
1.2	Replace the following items, Replace the date of IEC 60529 by 2011 in the note of JIS C 0920. Replace the following reference to JIS C 2134: 1996: - JIS C 2134:2007 Method for the determination of the proof and the comparative tracking indices of solid insulating materials - Note IEC 60112:2003 Method for determining the comparative and the proof tracking indices of solid insulating materials, with the same specification. Replace the following reference to JIS C 4526-1: 1999: - JIS C 4526:2005, switches for appliances – Part 1: General requirements - Note IEC 61058-1:2000+A1:2001, Switches for appliances – Part 1: General requirements and Amendment a (2001), with the same specification Add the following references: - JIS C 6963:2007 Brown, Mechanical safety of cathode ray tubes - Note IEC 61965:2003, Mechanical safety of cathode ray tubes, with the same specification Delete the reference to IEC 60068-2-3 Add the following references: - IEC 60068-2-78:2001, Environmental testing – Part 2: Tests – Test Cab: Damp heat, steady state - IEC 60068-4:2000, Primary batteries – Part 4: Safety of lithium batteries - IEC 60664-3:2003, Insulation coordination for equipment within low-voltage systems – Part 3: Use of coating, Potting or moulding for protection against pollution	Replaced.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
1.2	Add the following amendment to the reference to IEC 60851-3: Amendment 1 (1997) Add the following amendments to the reference to IEC 60851-5: Amendment 1 (1997) Amendment 2 (2004) Add the following amendment to the reference to IEC 61558-1: Amendment 1 (1998) Delete the reference to IEC 61965.	Added.	**N/A**
4.2.1	Replace the seventh paragraph by the following: Any type of supply for which the apparatus is designed to be used.	Replaced.	**N/A**
4.3	Replace, in the first paragraph, “in turn” by “one at a time”	Replaced.	**N/A**
4.3.1	Replace the existing text by the following: Short-circuit across CLEARANCES and CREEPAGE DISTANCES, if they are less than the values specified in Clause 13 for BASIC and SUPPLEMENTARY INSULATION, with the exception of insulation between parts of different polarity DIRECTLY CONNECTED TO THE MAINS. NOTE For CLEARANCES between parts of different polarity DIRECTLY CONNECTED TO THE MAINS reference is made to 13.1.	Replaced.	**N/A**
4.3.3	Replace, in the fourth dash, “in turn” by “one pair at a time”	Replaced.	**N/A**
4.3.10	Replace the existing text by the following The top, sides and the back of an apparatus, if such surfaces have ventilation openings, shall be covered one at a time with a piece of card of 200 g/m^2 density with dimensions not less than each tested surface, covering all openings. Openings on different surfaces on top of the apparatus (if any) are covered simultaneously by separate pieces of card. Openings on top of the apparatus, on a surface inclined at an angle greater than 30° and smaller than 60° to the horizontal, from which an obstruction is free to slide, are excluded. On the back and the sides of the apparatus, the card is attached to the upper edge and allowed to hang freely. NOTE There is no test for the bottom surface.	Replaced.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
5.4.1	Add the following items: g) A warning that batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like. h) If the apparatus is provided with a CRT with protective film attached to the faceplate as part of the safety implosion protection system in accordance to JIS C 6965, the following warning, or wording with a similar meaning, shall be given in the instructions: 警告 この機器の CRT（ブラウン管）の表示面には保護フィルムが張られています。 このフィルムは安全のためのもので，取り除いてはいけません。 取り除くと深刻な傷害の生じる危険性が増大します。	No barreries.	**N/A**
7.1	Replace in Table 3 under e) the line for lithium batteries as follows: Lithium batteries 40 h) 50 I) Add the following conditions to the table: h) Lithium batteries shall meet the permissible temperature rise, unless such batteries comply with the applicable electrical tests of 6.2.2.1 or 6.2.2.2 of IEC 60086-4. I) Lithium batteries shall meet the permissible temperature rise, unless such batteries comply with all electrical tests of 6.3.2 of IEC 60086-4.	Replaced.	**N/A**
8.7	Replace the text of this subclause with “Void.”	Replaced.	**N/A**
8.8	Add the following at the end of the list of requirements: For test specifications of non-separable thin sheet insulation, see 8.22. NOTE The purpose of the tests in 8.22 is to ensure that the material has adequate strength to resist damage when hidden in inner layers of insulation. Therefore, the tests are not applied to insulation in two layers. The tests are also not applied to SUPPLEMENTARY INSULATION.	No thin sheet provided.	**N/A**
8.12	Replace the text of this subclause with “Void.” Add the following new subclause:	Replaced.	**N/A**
8.22	**Test specifications of non-separable thin sheet material** Compliance is checked by subclause 26.3 in IEC 61558-1or by the following: Three test samples, each individual sample consisting of three or more layers of nonseparable thin sheet material forming REINFORCED INSULATION, are used. One sample at a time is fixed to the mandrel of the test fixture (Figure 14) as shown in Figure 15.	No non-separable thin sheet provided.	**N/A**

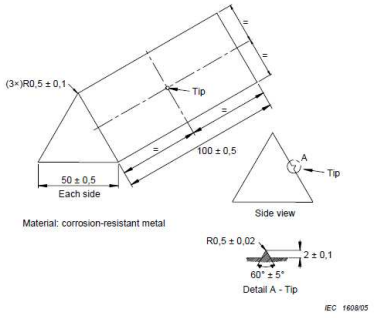
National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
8.22	A downward force of 150 N ± 10 N is applied to the free end of the sample (see Figure 16), using an appropriate clamping device. The mandrel is rotated by hand without jerks – from the initial position (Figure 15) to the final position (Figure 16) and back; – as above for the second time; – from the initial position to the final position. If a sample breaks during rotation where it is fixed to the mandrel or the clamping device, this does not constitute a failure and the test is repeated on a fresh sample. If a sample breaks at any other place, the test has failed. After this preconditioning, a sheet of metal foil, 0,035 mm ± 0,005 mm thick, at least 200 mm long, is placed along the surface of the sample, hanging down on each side of the mandrel (see Figure 16). The surface of the foil in contact with the sample shall be conductive, not oxidised or otherwise insulated. The foil is positioned so that its edges are not less than 18 mm from the edges of the sample (see Figure 17). The foil is then tightened by two equal weights, one at each end, using appropriate clamping devices.4) as shown in Figure 15. While the mandrel is in its final position, and within the 60 s following the final positioning, a dielectric strength test is applied between the mandrel and the metal foil in accordance with 10.3.2, using a test voltage of 1,5 times the value specified in Table 5 for REINFORCED INSULATION, but not less than 5 kV. The entire test procedure is repeated on the other two samples. No flashover or breakdown shall occur during the test; corona effects and similar phenomena being disregarded.		**N/A**
9.1.1.2	Add the following new paragraph after the fourth paragraph of 9.1.1.2. Moving parts of loudspeaker systems, such as dust caps or cones of drivers or passive radiators, are not regarded as preventing accessibility. NOTE See also 13.3.1.	No loudspeaker systems.	**N/A**

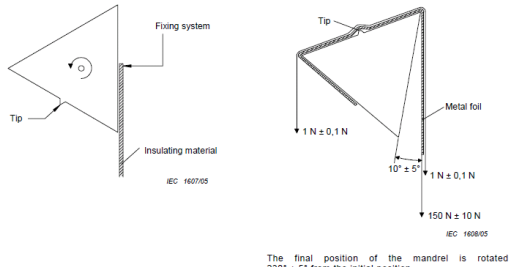
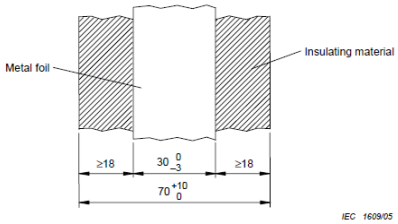
National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
13.2	Replace the first dashed item by the following: − the OPERATING VOLTAGE between any point in a circuit CONDUCTIVELY CONNECTED TO THE MAINS and earth, and between any point in a circuit CONDUCTIVELY CONNECTED TO THE MAINS and a circuit not CONDUCTIVELY CONNECTED TO THE MAINS, shall be assumed to be the greatest of the following: • the RATED SUPPLY VOLTAGE or the highest measured voltage between such points during operation at the RATED SUPPLY VOLTAGE, or • the upper voltage of the RATED SUPPLY VOLTAGE range or the highest measured voltage between such points during operation at any value within the RATED SUPPLY VOLTAGE range;	Considered.	**P**
13.3.1	Add the following as the new fifth compliance paragraph to 13.3.1. CLEARANCES between a loudspeaker voice coil and adjacent conductive parts shall be disregarded.	Added.	**N/A**
13.4	Replace the text of “JIS C 2134:1996” by “JIS C 2134:2007”. Add the following note at the end of the subclause: NOTE The presence of adhesive on insulation tapes should be considered in determining the CTI.	Added.	**N/A**
13.6	Replace the last three paragraphs, including the note by: One apparatus, component or subassembly is subjected to the relevant dielectric strength test of 10.3, without the humidity treatment of 10.2, however, the test voltage is multiplied by 1,6. This test is performed immediately after the 68 h temperature conditioning of the last cycle. Upon conclusion of the complete number of cycles, the two remaining apparatus, components or subassemblies are subjected to the relevant dielectric strength test of 10.3; however, the test voltages are multiplied by 1,6. NOTE The test voltage is higher than the normal test voltage in order to ensure that, if the surfaces are not cemented together, a breakdown occurs.	No such part provided.	**N/A**
13.7	Replace Table 12 Note 3 of “JIS C 2134:1996” by “JIS C 2134:2007”.	Replaced.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
14.1	Replace the fourth compliance paragraph by the following: Before test a) or b), the resistance of each sample is measured and the sample is then subjected to the damp heat test according to JIS C 60068-2-78:2004 with the following severity parameters: – Temperature: (40 ± 2) ℃, – Humidity: (93 ± 3) % RH, – Test duration: 21 days.	No such resistor used.	**N/A**
14.2	Replace the paragraph below b) of 14.2.5 by the following: This subclause is not applicable to metal-cased capacitors and RC-units. Thin coating or tubing in such a case is ignored.	Replaced.	**N/A**
14.6	Replace the text of “JIS C 4526-1:1999” by “JIS C 4526-1:2005”.	Replaced.	**N/A**
15.1	Replace the last paragraph of 15.1.1in the requirements, by the following: Conductors of internal wiring of socket-outlets providing MAINS power to other apparatus either directly or via a MAINS SWITCH shall have a nominal cross-sectional area as specified in 16.2 for external flexible cords, except where the apparatus complies with Clause 11 when 4.3.9 is applied.	No socket-outlets used.	**N/A**
15.2	Delete the sentence of “Reference from international specification…”, which is the next paragraph of “PROTECTIVE EARTHING TERMINAL…”.	Deleted.	**N/A**
18	Replace the paragraph by the following: Picture tubes shall comply with the requirements of 18.1. As an alternative, for intrinsically protected tubes, manufacturers may choose the picture tubes to comply with JIS C 6965.	Replaced.	**N/A**
18.1	Add the following as the second paragraph: A protective film, attached to the faceplate of the picture tube as part of the implosion protection system, shall be covered on all edges by the enclosure of the apparatus.	Replaced.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
19	Replace the text up to the paragraph beginning "During the tests…" by the following: Apparatus having a mass of 7 kg or more shall have adequate stability. In addition, the stability shall be ensured when legs, carts or stands supplied or recommended by the manufacturer are fitted. Compliance is checked by the tests of 19.1, 19.2 and 19.3. Apparatus intended to be fastened in place is not required to be subjected to these tests, and the test of 19.3 applies only to – apparatus with a mass of 25 kg or more, or – apparatus, excluding loudspeaker systems, with a height of 1 m or more, or – apparatus, excluding loudspeaker systems, in combination with a supplied or recommended cart or stand with a total height of 1 m or more. During the tests, the apparatus shall not overturn.	Weight of apparatus is less than 7 kg.	**N/A**
19.3	Replace the existing text by the following: The apparatus or apparatus in combination with a supplied or recommended cart or stand is placed on a horizontal non-skid surface. All doors, drawers, casters, adjustable feet and other moveable parts are arranged in any combination that results in the least stability. The apparatus or apparatus in combination with a supplied or recommended cart or stand shall be blocked, if necessary, by means of a stop of the smallest dimensions possible, to keep it from sliding or rolling. An externally applied horizontal force of 13 % of the weight of the apparatus or 100 N, whichever is less, is applied in a horizontal direction to that point on the apparatus that will result in the least stability. The force shall not be applied more than 1,5 m above floor level. If the apparatus or apparatus in combination with a supplied or recommended cart or stand becomes unstable, it shall not overturn at a tilt of less than 15° from the vertical.	Replaced.	**N/A**
19.5	Replace the compliance paragraph by the following: Compliance is checked by the test of 12.1.3 using the impact hammer only.	Replaced.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

20.1	Replace the text by the following: Electrical components and mechanical parts, with the exception of those in a) and b), shall comply with the requirements of 20.1.1, 20.1.2, 20.1.3 and 20.1.4. a) Components that are contained in an enclosure having a flammability category of V-0 according to JIS Z 2391 and having openings only for the connecting wires filling the openings completely, and for ventilation not exceeding 1 mm in width regardless of length. b) The following parts, which would contribute negligible fuel to a fire: – small mechanical parts, such as mounting parts, gears, cams, belts and bearings, if the mass of the non-metallic material of each part does not exceed 4 g, excluding metal, glass and ceramic; – small electrical components, such as: • integrated circuits, transistors, optocoupler packages; • capacitors with a volume not exceeding 1 750 mm^3, provided these components are mounted on material of flammability category V-1 or better according to JIS Z 2391. NOTE 1 Connectors are regarded as electrical components. NOTE 2 In considering how to minimise propagation of fire and what "small parts" are, account should be taken of the cumulative effect of small parts adjacent to each other for the possible effect of propagating fire from one part to another. NOTE 3 In the forthcoming JIS C 6065 (Amendment 2 of IEC 60065), other occurrences of JIS C 0066:2001 (IEC 60707) will be replaced.	Considered.	**P**
Figure 14	*Add the following figures:* *Dimensions in millimeters*  **Figure 14 – Mandrel**	Not used of this equipment.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Figure 14 – Mandrel  The final position of the mandrel is rotated 230° ± 5° from the initial position **Figure 15 – Initial position of mandrel** **Figure 16 – Final position of mandrel**  **Figure 17 – Position of metal foil on insulating material** NOTE 1 Figure 17 is the same as Figure 6c of IEC 61558-1. Figures 15 and 16 are slightly modified compared with Figure 6b from IEC 61558-1. NOTE 2 See 8.22.		
Annex L (normative)	Add, after Annex K, the following annex: **Annex L** (normative) **Additional requirements for electronic flash apparatus for photographic purposes** The requirements of this standard, supplemented or replaced by those contained in this annex, apply to electronic flash apparatus for photographic purposes. NOTE This annex replaces JIS C 9491.	Not such equipment.	**N/A**
L.1	General (2) Add the following to 1.1.1: (2) The clause numbering of this annex refers to the clauses of this standard.	Added.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
L.1.1.1	This annex applies to the following electronic flash apparatus for photographic purposes, having a stored energy not exceeding 2 000 J, together with associated apparatus and not intended to be subjected to dripping or splashing: – apparatus of the single-flash type which can have more than one flash head operating at the same time; – apparatus for the illumination of sequential photographic exposures; – battery chargers and SUPPLY APPARATUS to be used in connection with electronic flash apparatus for photographic purposes. These auxiliary units may form a part of the MAINS plug; – accessories specified in the instruction leaflet. This annex does not apply to stroboscopes. NOTE 1 As long as no appropriate requirements exist for apparatus having a stored energy exceeding 2 000 J, this annex may be used, in so far as it is applicable. Additional requirements may be necessary, for example, for explosion and thermal radiation. NOTE 2 This annex is intended to cover apparatus which can be used both in moderate and tropical climates. NOTE 3 For the modelling lamps combined with electronic flash apparatus for photographic purposes, additional requirements may be taken from IEC 60598-2-9 or IEC 60598-2-17, as far as applicable.		**N/A**
L.4	Add the following subclauses after 4.2.12:	Added	**N/A**
L.4.2.13	The apparatus is tested with or without connection of flash heads, capacitors and other accessories.		**N/A**
L.4.2.14	If the apparatus can be MAINS-operated, it is switched on for a period of 4 h without flashing; if only battery or rechargeable battery is supplied, it is switched on for 30 s. Thereupon as many consecutive flashes as can be produced, with a maximum of 40, are made as quickly as possible. The rate of flashing is determined by the indicator or, if no indicator, by the measured voltage on the flash capacitors, which should be 85 % of the maximum peak voltage. The apparatus is supplied at its RATED SUPPLY VOLTAGE. A battery charger is connected for 4 h to a fully discharged rechargeable battery for which the charger has been designed. Add the following dashed items to 4.3.3:		**N/A**
L.4.3.3	– interruption of filaments of lamps; – short and open circuiting of glow-discharge lamps (used for indication or regulation). Add the following item to 4.3.4:	Added	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

L.4.3.4	g) self-healing capacitors (for example, of the metallized paper type) as far as overheating is concerned.		**N/A**
L.5	Add the following to 5.4, after Note 2:	Added	**N/A**
L.5.4	Battery chargers and SUPPLY APPARATUS shall be accompanied by an instruction leaflet in which shall be indicated the type or model number of flash apparatus with which they are to be used. The flash apparatus shall be accompanied by an instruction leaflet in which shall be indicated the type or model number of SUPPLY APPARATUS or battery charger with which it is to be used. NOTE It is also permitted to give this information on the apparatus themselves. Compliance is checked by inspection.		**N/A**
L.7	Add the following to 7.1.5 after the first paragraph:	Added	**N/A**
L.7.1.5	Lithium batteries shall meet the permissible temperature rise in Table 3, “Normal operating conditions”, unless such batteries comply with the applicable electrical tests of 6.2.2.1 or 6.2.2.2 of IEC 60086-4.		**N/A**
L.9	Add the following to 9.1.1 after Note 1:	Added	**N/A**
L.9.1.1	TERMINALS for the connection to the synchronizer of the camera shall not be HAZARDOUS LIVE. Add the following to 9.1.1.1 after the first paragraph:		**N/A**
L.9.1.1.1	If possible, flashing is made during the measurements.		**N/A**
L.10	Add the following to 10.3.2 directly before Table 5:	Added	**N/A**
L.10.3.2	In the case of apparatus with high frequency pulse ignition, the ignition pulse is ignored in computing the test voltage if the duration of the pulse does not exceed 1 ms.		**N/A**
L.11	Add the following to 11.2.6 after the first paragraph:	Added	**N/A**
L.11.2.6	Lithium batteries shall meet the permissible temperature rise in Table 3, “Fault conditions”, unless such batteries comply with all electrical tests of 6.3.2 of IEC 60086-4.		**N/A**
L.12	Add the following after the fourth paragraph of 12.1.3:	Added	**N/A**
L.12.1.3	Windows for flash tubes are excluded from the steel ball impact test.		**N/A**
L.14	Add the following subclause at the end of 14.6:	Added	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
L.14.6.6	Furthermore, for MAINS SWITCHES, the characteristics of the switch, with reference to the marking, shall be appropriate for the function of the switch in the apparatus under normal conditions. Compliance is checked by inspection and by measurement. The rated MAINS current of a flash apparatus is determined by the following formula: $I_r = 1/3\sqrt{\hat{i}_o^2 + \hat{i}_o\hat{i}_1 + \hat{i}_1^2}$ where $\hat{i}_o$ is the maximum MAINS current (peak value) immediately after a flash has been made. $\hat{i}_1$ is the MAINS current (peak value) at the end of the re-charge period of the flash capacitor. The end of the re-charge period is determined by the indicator or, if there is no indicator, by the measured voltage on the flash capacitor, which shall be 85 % of the maximum peak voltage, the apparatus supplied at its RATED SUPPLY VOLTAGE. The apparatus is operated under normal operating conditions except that the apparatus is connected to its RATED SUPPLY VOLTAGE. $\hat{i}_o$ and $\hat{i}_1$ are measured when the apparatus is ready for flash operation and has been connected to the MAINS supply for at least 30 min. The peak surge current is the maximum peak value of the MAINS current when the flash apparatus is switched on, after the flash capacitor has been discharged completely. Current spikes up to 100 µs duration are disregarded. The measured peak surge current and calculated rated MAINS current (I_r) shall not exceed the marked current rating of the MAINS SWITCH.		**N/A**
L.20	Add the following to 20.1:	Added	**N/A**
L.20.1 c)	A trigger coil circuit for discharge purposes in a flash apparatus is not considered to be a POTENTIAL IGNITION SOURCE.		**N/A**
Bibliography	Add the following: IEC 60598-2-9:1987, Luminaires – Part 2: Particular requirements – Section 9: Photo and film luminaires (non-professional) Amendment 1 (1993) IEC 60598-2-17:1984, Luminaires – Part 2: Particular requirements – Section 17: Luminaires for stage lighting, television and film studios (outdoor and indoor) Amendment 2 (1990)	Added	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

APPENDIX	Korean National Differences according to CB Bulletin No. 112A, December 2006 (K 60065) (IEC Publication 60065 7th edition, 2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
5.101	Other marking; wording “Danger” (in Korean) or information regulated in IEC 60417 giving high voltage warning to layman shall be marked, if apparatus contains a part more than 600 volts.		**N/A**
15.1.1	Plugs for the connection of the apparatus to the supply mains and socket outlets for providing mains power to other apparatus shall comply with the Korean requirements (KSC 8300 and 8305)	Shall be evaluated during national approval.	**N/A**
31	Radio frequency interference The apparatus shall comply with the relevant CISPR requirements (EMC=EMI+EMS)	Shall be evaluated during national approval.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict

APPENDIX	US National Differences according to CB Bulletin No. 112A, December 2006 (UL 60065) (IEC Publication 60065 7th edition, 2001)		**P**
EXPLANATION FOR ABBREVIATIONS P=Pass, F=Fail, N/A=Not applicable. Placed in the column to the right.			
1.1.1	Scope clarification: The standard also covers commercial and professional apparatus; professional apparatus may also be investigated using UL 1419. Projection apparatus is not covered. Household games, household gaming and scoring machines, satellite receiver antenna positioners are covered by this standard but commercial games and commercial gaming and scoring machines, and other types of antenna positioners are covered by other standard. Add: Mains connected apparatus intended for field installation requires compliance with the National Electrical Code, ANSI, NFPA 70.		**P**
1.1.3	Protection against splashing water replaced with apparatus intended for outdoor use (See Annex A).	Indoor use only.	**N/A**
1.1.5	Add: Some equipment covered by these requirements may also be required to comply with applicable requirements in other standards	Added	**P**
1.2	Add references to ANSI, ASTM and UL standards.	Added.	**P**
4.2.1	Add Note: In the U.S. the RATED SUPPLY VOLTAGE for single-phase apparatus is assumed to be 120 V or 120/240 V.	Rated input voltage: 100-240VAC	**P**
4.2.4	Revision to sub-clause a): Minimum audio output is not less than 0.5 W per channel unless the maximum audio output is less than 0.5 W per channel.	No audio output.	**N/A**
4.2.4.1	Add: “An apparatus with multiple modes of operation, multiple signal input sources, or both, is to be operated using each mode of operation or signal input source separately, or in combination, according to the manufacturer’s instructions to produce the maximum power input”. Table 2: External supply sources are assumed to be capable of delivering 30 A, unless otherwise specified (no-load voltage and internal resistance values in the Table are modified).	No multiple modes of operation.	**N/A**
4.3.4	PTC thermistors may also comply with UL 1434.	No PTC thermistors.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
5.1	Add: Component power supplies and adapters complying with the construction and test requirements of UL 1310, UL 1950, or UL 60950 fulfill the requirements of items “a” through “i” of this clause.	Added.	**N/A**
5.1f	Add: Rated frequency is required on all apparatus.	50/60Hz	**P**
5.1g	Add: Rated current or power required on all apparatus.	1.0A	**P**
5.1j	Add: Date of Manufacture marking required on all apparatus.	Date of manufacture marking is shown on outer enclosure.	**P**
5.1k	Add: Manufacturing identification marking required.	Only one factory.	**N/A**
5.1l	Add: Combination of two graphical symbols and supplementary marking is required.	The enclosure of EUT is sealed by ultrasonic welding. No possibility for user to open by tools.	**N/A**
5.1m	Add: Equipment rack marking required for audio/video systems.	No rack.	**N/A**
5.1n	Add: Units having leakage current levels greater than 0.75 MIU and equal to or less than 3.5 MIU must be marked with a high leakage current marking.		**N/A**
5.2c	Modification: Output terminals must be marked with voltage, frequency and current or power; output terminals installed or interconnected in the field must be marked with the class of wiring.	The normal output voltage and current are marked on the name label.	**P**
5.2d	Add: Audio output connections shall be marked “Class 1 Wiring”, “Class 2 Wiring” or “Class 3 Wiring”. Operation manual shall discuss risks and proper connecting and insulation techniques when connecting a speaker.	No audio output connection provided.	**N/A**
5.3	Add: “An explanation and illustration of safety related graphical symbols used on the apparatus shall be included in the owner’s instructions preceding any operating instructions.		**N/A**
5.4	Add: Important Safety Instructions are to be packed with each apparatus and shall be verbatim.	See user manual.	**P**
5.4.1	Warning about Outdoor Use is required.	Indoor use only. See user manual.	**N/A**
5.4.3	Add: When apparatus contains instructions for use by service personnel the instructions are separate in format and preceded by a precautionary warning statement.	No use by service personnel.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
6.1	Starting from second paragraph replace all by: ”Compliance is checked in accordance with the requirements in the U.S. Code of Federal Regulation, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3 and 1020.10 by measuring the radiation produced by the apparatus employing a design center chassis.”		**N/A**
6.2	Starting from second paragraph replace all by: “Apparatus shall be classified and labeled in accordance with the Code of Federal Regulations, Title 21, Chapter 1, Subchapter J, Sections 1010.2, 1010.3, 1040.10 and 1040.11.”	No ionizing radiation or laser inside the equipment.	**N/A**
6.2.2	Deleted Table 3: Temperature limits added for various classes of insulation systems. Add to Note a): “Materials rated in accordance with UL 746B may be used at their rated higher temperature.”.7.2 – Add: A material temperature rating can be accepted in lieu of the softening temperature. The softening test need not be performed on materials used in UL Listed or Recognized parts.		**N/A**
8.1	Add: “A metal part that is not inherently resistant to corrosion shall be protected against corrosion when corrosion of that part is capable of contributing to or resulting in a risk of fire, shock, or injury to persons.”	Added.	**P**
8.9.1	Add: “Sleeving, tape, tubing, and wire insulation are suitable for the conditions of use, such as voltage and temperature, and comply with UL 224, UL 510, and UL 1441, as applicable.”	UL approval material used.	**P**
8.10	Add: “Component power supplies and their internal insulation complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.”	No such power supplies.	**N/A**
8.12	Modification: Conductors and internal wiring connecting mains socket-outlets shall comply with the wire size requirements in clause 16.2 based on the marked rating of the outlet but shall not be less than 18 AWG.	No socket-outlet.	**N/A**
8.17	As an option, winding wire insulation may comply with the requirements in UL Subject 2353.		**P**
8.19.1	Modification: An all-pole switch or circuit breaker is not required to have contact separation of 3 mm.	No switch provided.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
8.22	Add: “Printed wiring boards involved with the risk of electric shock shall comply with the requirements in UL 796.”	(see appended table)	**P**
9.1.1.1	Replace: For Class I apparatus the r.m.s. TOUCH-CURRENT to earth shall not be more than 3.5 MIU.	Class II apparatus.	**N/A**
9.1.1.1a	2nd dash replaced by: “For audio signals of professional and commercial apparatus, 120Vrms.” 3rd dash replaced by: ”For audio signals other than professional and commercial apparatus, 71Vrms.”	No audio signals.	**N/A**
9.1.1.1b	Modification: Touch current shall comply with the American National Standard for Leakage Current for Appliances, ANSI C101 and not exceed 0.5MIU for Class II Delete Note 2.	L/N to Enclosure: 0.02MIU; L/N to output terminal: 0.13MIU	**P**
9.1.1.2	UL articulated finger replaces IEC 61032 test probe B. Delete 3rd paragraph. Table 5 – Add Note 1: “With respect to mains voltages in the range of 105-130 V(rms), the test voltages are considered to be 1414 V peak for basic and supplementary insulation and 2828 V peak for reinforced insulation.”	Considered.	**P**
11	Add: “Component power supplies and their power transformers complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.”	No such power supplies.	**N/A**
11.1	Modification: The permissible touch current for terminal contacts has been increased to twice the value given in 9.1.1.1.	L/N to Enclosure: 0.02MIU; L/N to output terminal: 0.38MIU	**P**
11.2.1	Modification: Additional fuse testing not required if the temperature is limited by fuses.	Considered.	**P**
12	Add: “Component power supply adaptors and their enclosures complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.”	No such power supplies.	**N/A**
12.1.3	Delete the first two paragraphs. Impact test uses the 50mm steel sphere only. Table 6 – Replace title with “Apparatus impact test.” Table 6 modified to provide impact test criteria detailing impact location, impact energy and additional pass/fail results.”		**P**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
12.1.4	Add to the end of the 1st paragraph: “As an alternative, any number form one to three samples are permitted to be used in any combination that results in a total of three drops.”		**N/A**
12.1.6	Add: Handle strength test requirements.	No handle.	**N/A**
12.7	Add: Wall and ceiling mounting means test requirements.	Not wall and ceiling mounting.	**N/A**
12.8	Add test for enclosures, barriers, components and leads that rely on adhesive.	No adhesive.	**N/A**
12.8.1	Add test for conductive labels secured in place by adhesive.		**N/A**
13	Add: “Component power supplies and their power transformers complying with the construction and test requirements of UL 1310, UL1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.”	No such power supplies.	**N/A**
13.4	Modification: A material group is verified according to UL 746A.		**P**
13.5.1	Change standard reference from IEC 60249-2 to UL 796.	All PCBs were approved under UL 796.	**P**
13.5.2	Modification: Coated printed wiring boards shall comply with requirements in UL 746C Table 12 – note 3 revised to refer to UL 746A.		**N/A**
14	Delete Note 2. Add reference to Annex Y and additional component requirements. 14.1, 14.2 and 14.3 – Add: “Component power supplies and their resistors complying with the construction and test requirements of Clause 14.1 and 14.2.1 – 14.5.2..14.2.1 and 14.2.2 – Add: “As an alternative a component such as capacitor, a combination capacitor and resistor, a varistor, or a suppressor shall comply with the requirements for Across-the Line, Antenna-Coupling, or Double Protection in UL 1414.”	Added.	**P**
14.2.4	Replace text with: “Components subjected to the requirements in 14.2.1 and 14.2.2 shall also comply with the enclosure requirements of UL 1414.”	(see appended table)	**P**
14.4	Add to Note 2: “High voltage materials shall be rated 94V-2 minimum.”	No high transformer.	**N/A**
14.4.1	Replace with High voltage arcing test.		**N/A**
14.4.2	Deleted.		**N/A**
14.4.3	Add: High voltage component part flame test.		**N/A**

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National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
14.4.4	Add: High voltage isolation component insulation test.		**N/A**
14.5.1	Delete reference to 14.5.1.3.		**N/A**
14.5.1.1	Replace text with: Thermal cutouts shall comply with UL 873, UL 8730-2-9 or UL 60730-2-9.	No such components.	**N/A**
14.5.1.2	Replace text with: “Thermal links shall comply with UL 1020 or IEC 60691.”	No thermal link used.	**N/A**
14.5.1.3	Delete.		**N/A**
14.5.2.1	Modification: Fuse links shall comply with UL 248-14.	(see appended table)	**P**
14.5.2.2	Delete reference to IEC 60127 and breaking capacity marking requirements.		**P**
14.5.3	Add: As an option, a PTC thermistor may comply with UL 1434. Delete the 3rd and 4th paragraphs.	No such components.	**N/A**
14.5.3A	Add: Protective devices connected to the mains shall have adequate breaking capacity and comply with UL 873, UL1416, UL 1417 or UL 2111 as applicable.		**N/A**
14.5.4	Reference to fuse-links is deleted.	Deleted.	**N/A**
14.6.1	Add: “Switches and relays shall comply with UL 1054, UL 61058-1 or UL 508 as applicable. Mains switch or relay shall be rated for the total current through the switch or relay contacts.” Replace remaining text with: “A rating of a mains switch or relay, provided on a audio apparatus intended for commercial use, is to be equal to or greater than the maximum steady state current it controls under normal operating conditions except the audio output is adjusted to 1/3 maximum undistorted output or at 1/3 of the manufacturer’s rated output power, whichever is greater.’ 14.6.2, 14.6.3 and 14.6.4 are deleted.	No switch.	**N/A**
14.6.5	Modification: A switch or relay that controls a mains socket-outlet shall have a rating equal to the rated current consumption of the apparatus plus the current rating of the socket-outlet.		**N/A**
14.6.6	Add: A mains switch shall comply with (a), (b) or (c). The contacts of a mains relay shall comply with (a), (b) or (d). A switch that controls a mains receptacle shall comply with (b) and a relay that controls a mains receptacle shall comply with (b) or (d).		**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
14.6.6a	Add: Switch or relay contacts to have current rating equal to or greater than 1.414 times the inrush current of the apparatus.		**N/A**
14.6.6b	Add: Switch or relay to be TV rated.		**N/A**
14.6.6c	Add: Switch is located on the back of apparatus and is not operable from a remote control.		**N/A**
14.6.6d	Add: Relay is to be subjected to the endurance test.		**N/A**
14.6.6.1	Add: Peak inrush current test.		**N/A**
14.6.6.2	Add: Relay endurance test.		**N/A**
14.6.7	Add: Double pole switch controlling a.c. and d.c. circuits shall be suitable for the application.		**N/A**
14.7	Add to the end of the 2nd paragraph“...except that the jointed test finger to in 9.1.1 is used to determine accessibility (IEC 60950, 2.8.2) and interlock operation (IEC 60950, 2.8.3).”	No safety interlocks.	**N/A**
14.10.6	Add: “An apparatus intended for use with an external battery shall be provided with an overcurrent protective device in the battery-supply circuit.”	No battery.	**N/A**
14.11	Add: “Component power supplies and their optocouplers complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.” Optocouplers bridging reinforced insulation shall comply with requirements for double protection as specified in UL 1577. 4th paragraph reads: “External clearances and creepage distances of optocouplers shall comply with 13.1.”		**P**
14.12	Replace “IEC 61051-2” with “UL 1449” and “UL 94.” Delete all references to “IEC 60151” 15.1.1-		**P**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
15.1.1	Add: “Attachment plug shall have a current rating no less than 125% of the current drawn under normal operating conditions and a voltage rating appropriate for the rated voltage of the apparatus. Attachment plugs for use on more than one supply voltage by means of a voltage selector shall be rated for the voltage, which the apparatus is intended to be connected when it is shipped from the factory. Attachment plug cap shall be polarized when the apparatus is provided with a manually operated, line connected, single-pole switch; Edison-base lampholder; or a 15 or 20A socket outlet.”		**P**
15.1.2	Delete reference to “Banana” plug in the Note.		**N/A**
15.1.3.1	Add: “An audio amplifier having an open-circuit audio output voltage not limited to 120V that is permanently connected to the mains shall be provided with a means for connection complying with U.21.1.1-U.21.1.7 and wire-binding screws No. 6-32 or larger complying with U.21.3.1-U.21.3.5, or quick-connect terminals, or leads. Quick Connect Terminal shall comply with the following: a) Male tabs firmly mounted in place, b) Mating female connectors shall be provided with the apparatus, c) Strain Relief Test of Clause 16.5, d) Installation instructions shall be provided for assembly of terminal to a conductor and strain relief, e) Terminals shall be appropriate for use with the size and type of wire specified.”	Not audio amplifier.	**N/A**
15.1.3.2	Add: “Audio amplifiers having an audio output not limited to 120V that are connected to the mains by a flexible cord shall have suitable cord or provision for field installation or a receptacle for plug-in connections,”	Not audio amplifier.	**N/A**
15.2	Add after 3rd paragraph: “The earthing conductor in a supply cord, or in an interconnecting cable shall have an equivalent or large cross-sectional area that the current-carrying conductors in the supply cord or cable. With reference to earthing conductors, the insulation color may be green or green/yellow.	Class II equipment.	**N/A**
15.3.5	Revise 2nd paragraph to read: “For rated currents exceeding 13A, reference is made to Article 310 of the National Electrical Code, ANSI/NFPA 70.” Table 15 – Replace with: “Normal cross-sectional area AWG” and modify values.	Not exceed 13A.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
15.4	Add: ”Component power supply adaptors complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.”		**N/A**
16.1	Modification: Mains supply flexible cords shall comply with UL 817, be marked VW-1, and have an ampacity not less than the current drawn by the apparatus. Delete reference to IEC 60227, 60245 and 60173. Table 17A – Add: Types of cords and lengths for various types of apparatus.		**N/A**
16.2	An integral earthing conductor shall be at least the same size as the other cord conductors. Substitute “IEC 60950, table 3B” with “Article 400 of the National Electrical Code”. Table 18 – Replace with “Wire sizes of external flexible cords” Upper current limit in column 1 increased from 16 to 30A and “AWG” wire sizes added.		**N/A**
16.3	Add: c) Flexible cords not complying with 16.1, used as connection between the apparatus and other apparatus used in combination with it, shall be marked VW-1.		**N/A**
17.8	Expanded to include all cart/stand parts supplied by the manufacturer, such as casters and brackets. Suitable assembly instructions required. Add: “Relevant fixing means are not required when installation is to be done by a skilled person.”	No cart / stand parts.	**N/A**
17.10	Add: Aluminum conductors used as internal wiring shall be terminated by a method capable of being used in the combination of metals involved at the connection point.	No aluminum conductors.	**N/A**
17.11	Add: An accessory shall be investigated to determine that: a) The accessory, and the combination of the accessory and the apparatus shall present no hazard in the sense of this standard and b) The accessory is provided with installation instructions.	No accessory.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
17.11.1	Add: The installation of an accessory of a killed person shall be such that: a) The mechanical positioning is accomplished by means of tools normally available or by means of special tools provided by the organization responsible for providing the apparatus as part of the installation kit, and b) The electrical connections are made by using existing terminals and connections in the apparatus or the building wiring.		**N/A**
18	Modification: Non-intrinsically protected picture tubes shall comply with 18.1, 18.2.2 and 18.3. Intrinsically protected picture tubes shall comply with UL 1418 or UL 61965. Add: "A bulb of a picture tube having a face diameter of 7.5cm or more shall be mounted in an enclosure. The enclosure shall have no opening that exceeds 130 mm^2 unless the minor dimension of the opening is 10 mm or less."	No picture tubes.	**N/A**
18.1	All tubes shall be mounted such that the enclosure of the apparatus protects the tube against the effects of implosion. Delete reference to clause 18.2. 18.2, 18.2.1, and 18.2.3 are deleted..19-Add reference to 19.2.1. The test of 19.3 is conducted on 1) apparatus with direct view CRT with 48cm diagonal min., 2) apparatus, other than a speaker, with a mass greater than 47kg, and 3) apparatus, other than a speaker, with a mass or 25kg or greater and height of 1 m or more. The tests in 19.1, 19.2 and 19.3 shall not cause the apparatus to overturn. During the test of 19.2.1, the apparatus shall not slide.		**N/A**
19.2.1	Add: Slide test requirements.	Apparatus having a mass less than 7kg.	**N/A**
19.3	Replace by Horizontal force stability test requirements.	Apparatus having a mass less than 7kg.	**N/A**
Table 20	Add: "or equipment rack mounting".	No mounting rack.	**N/A**
20.1a	Delete		**N/A**
20.1b	Replace "IEC 60707" with "UL 94" Add: "-parts such as protection TV lenses, loudspeaker parts, external accessories, and fibrous materials less than 0.25mm thick."	Considered.	**P**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
20.1.2	Revise text to read: “Sleeving, extruded tubing and insulation on wiring shall be rated VW-1 under following conditions: a) wiring located in a circuit that is considered a potential ignition source” or b) wiring not located in a circuit that is a potential ignition source but is in contact with wiring located in a circuit that is a potential ignition source. “Tape should be flame retardant.” Delete Note and add: “Tape in contact with parts of circuits that are potential ignition source shall be flame retardant.”	(see appended table)	**P**
20.1.3	Replace 1st paragraph with: “Base material of printed wiring boards, or which the available power as the connection exceeds 15W or the operating voltage exceeds 50V a.c. or d.c. under normal operating conditions, shall be of flammability category V-1 or better according to UL 94.” In 2nd paragraph replace “IEC 60707” with “UL 94” and remove exception for printed boards housed in metal enclosures. In 3rd paragraph replace “IEC 60707” with “UL 94” and delete option to use Clause G.1 of Annex G.	(see appended table)	**P**
20.1.4	Replace with: components and parts shall comply with the relevant flammability category according to UL 94 as specified in Table 21. Delete all other text.	(see appended table)	**P**
20.1.4	Add: “Component power supplies complying with the construction and test requirements of UL 1310, UL 1950 Third Edition, or UL 60950 are considered to fulfill the test requirements on the clause.” Table 21 – Replace complete table with new table for “Flammability categories for components and parts.”		**N/A**
20.2.1	Modification: 1st paragraph: “Fire enclosure required for 1) circuits and components where the available power exceeds 15W, 2) inductors and windings conductively connected to the mains and 3) high-voltage products. The fire enclosure shall comply with the flammability requirements of Table 22 according to UL 94 and 746C. 2nd, 3rd, and 4th paragraphs are deleted. In 5th paragraph replace “IEC 60707 or clause G.1 of Annex G” with “UL 94 or UL 746C.” Table 22 – Add “Flammability categories for fire enclosures.”	Fire enclosure is required. See table 14.	**P**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
20.2.2	Revise text to read: “Internal fire enclosures shall not have openings that permit accessibility to components wiring, connections, or printed wiring board conductive patterns where the available power exceeds 15W and to inductors and windings conductively connected to the mains and shall comply with the material requirements in Table 22. Compliance is checked by inspection and measurement and using the jointed test finger.” 20.2.3 – Modification: Outer enclosures shall have a minimum flammability rating of HB, per UL 94, when an internal fire enclosure is provided. Modifications to figures: Fig 14 – Illustrates the articulated finger probe. Fig 15 – Illustrates the shock hazard marking and associated graphical symbols. Fig 16 – Illustrates the shock hazard graphical symbol. Fig 17 – Illustrates the portable cart marking. Fig 18 – High voltage spacings graph. Fig 19 – Class 105 insulation aging temperature graph. Fig 20 – Flowchart for horizontal force test. Annex A – Modification: Apparatus intended for outdoor use or wet locations has any of the following attributes: a) provided with a means to make it transportable, b) has a mass less than 35kg, c) can be battery operated, d) associated literature states or implies such use	No internal fire enclosure.	**N/A**

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Add: Apparatus a), b), or c) above is not considered for outdoor use or in wet locations if marked as specified in 5.4..A.5, A.5.4.1 are deleted. A9.1.1 – Add: Touch current test shall be conducted after the water spray test described in A.11.1.1 and the touch current shall not be more than 0.5MIU when the open-circuit potential between any accessible part and earth or any other accessible part is more than 21.2V peak. A.10, A10.2, A10.2.1, and A.10.2.2 are deleted. A.11.1.1 – Add: Apparatus shall be subjected to the water spray test according to UL 1571. A.16.1 – Add: Flexible cords shall be suitable for out door use. A.20.2.1 – Add: Enclosures for an apparatus intended for permanent outdoor location shall comply with requirements for Type 3 enclosures in UL 50. Annex B 5th paragraph – add reference to clause 4.2.1.1 in IEC 62151. Add to 12th paragraph. “The requirements of 4.2.1.1 shall be replaced by the requirements or 2.3.1 of UL 60950, Third Edition.” 13th paragraph, 2nd dash replace with: “In the event of a single insulation fault, the voltages on the TNV-0 circuits, TNV-1 circuits and accessible conductive parts shall not exceed the values given in clause 9.1.1.1a of this standard for more than 0.2s. Moreover, the limits values as given in 11.1 shall not be exceeded. After 0.2s the voltage limits of 4.1.2 (35 V peak, or 60 V d.c.) shall apply.” Add to 19th paragraph: “Apparatus intended to be connected to telecommunication networks and having ringing voltages applied to the apparatus ids subjected to touch current limits in accordance with clause 5.1.8.1.1 of UL 60950, Third Edition“ Add to 21st paragraph: ”Telecommunication network that uses outside cable shall comply with the requirements for protection against overvoltage from power line crosses per 6.4 of UL 60950, Third Edition”		

National Differences			
Clause	Requirement – Test	Result - Remark	Verdict
	Add to 22nd paragraph: “Acoustic test per 6.5 of UL 60950, Third Edition for apparatus containing earphone held against the ear.” Add to 24th paragraph: “Apparatus shall be provided with appropriate markings and instructions as described in Annex NAA of UL 60950, Third Edition.” Annex D – Figure D.1 & Note delete reference to IEC 60990 and add reference to ANSI C101. Add touch current value in MIU where MIU=U2x2 (r.m.s. value) Annex G – Deleted Annex Q – Add: Safety requirements for video apparatus for use in health care facilities Annex R – Add: Safety requirements for undercabinet apparatus Annex S – Add: Safety requirements for in-wall mounted apparatus Annex T – Add: Safety requirements for apparatus with projection lamps Annex U – Add: Safety requirements for permanently connected apparatus Annex V – Add: Safety requirements for carts, stands, and similar apparatus for use with specific apparatus covered by this standard Annex W – Add: Construction details for a 0.02-ohm shunt for use in the peak inrush-current measurement described in 14.6.11.1 Annex X – Add: Manufacturing and production-line tests Annex Y – Add: Normative standards for components.		

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

Fixed European plug portion test report			
6	**Marking**		**P**
	Appliances shall be marked as follows:	Incorporated with adaptor.	**P**
	Rated current in amperes (A)		**P**
	Rated Voltage in volts (V)		**P**
	Symbol for nature of supply (~)		**P**
	Name, trade mark or idendification mark of manufacturer or responsible vendor		**P**
	Type reference		**P**

7	**Dimensions**			**P**
	Plug shall comply with Standard Sheet 1			**P**
	Between two pins (pin base)	18,0 - 19,2 mm	18.2 mm	**P**
	Between two pins (pin top)	17,0 - 18,0 mm	17.6 mm	**P**
	Diameter of pin (metallic part)	$4^{\pm 0,06}$ mm	4.0 mm	**P**
	Diameter of pin (pin base)	max. 4,0 mm	4.0 mm	**P**
	Diameter of pin (middle part)	max. 3,8 mm	3.5 mm	**P**
	Pin length	$19^{\pm 0,5}$ mm	19.3 mm	**P**
	Length of pin except metal part	$10^{+1,0}$ mm	10.3 mm	**P**
	Shape of pin top		Round shape	**P**
	Length of plug base	$35,3^{\pm 0,7}$ mm	35.4 mm	**P**
	Width of plug base	$13,7^{\pm 0,7}$ mm	13.6 mm	**P**
	Diagonal dimension of plug base within a distance of 18mm	<$26,1^{\pm 0,5}$ mm <$26,1^{\pm 0,5}$ mm	25.6 mm 25.6 mm	**P**

8	**Protection against electric shock**		**P**
8.1	Live parts of the plug not accessible (standard test finger)	Incorporated with adaptor.	**P**
8.2	No connection between one plug-pin and socket outlet		**P**
8.3	External parts of insulating material		**P**

9	**Construction**		**P**
9.1	Plugs are not replaceable	Incorporated with adaptor.	**P**
9.2	Switches, fuse, lampholder not incorporated		**P**

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
9.3	Solid pins	See clause 13	**P**
	Adequate mechanical strength		**P**
9.4	Pins locked against rotation	See clause 13.1 & 13.4	**P**
	Adequate fixed into the body		**P**
9.5	Kind of connection		**P**
9.6	Easily to be withdrawn from socket-outlet	Incorporated with adaptor	**P**
10	**Resistance to humidity**		**P**
	-Humidity treatment for 48 hours	Tested with adaptor.	**P**
11	**Insulation resistance and electric strength**		**P**
11.1	Insulation resistance (500V, min 5MΩ)	200MΩ	**P**
11.2	Electric strength (2000V)	(see appended table)	**P**
13	**Mechanical strength**		**P**
13.1	Pressed with 150N for 5 min		**P**
13.2	Tumbling barrel according to EN 61558 Number of cycles: 50	Number of cycles: 25	**P**
	No damages after the test		**P**
	Torque test on pins (0,4 Nm, 1 min)		**P**
	Requirements of clause 7 and 8.2 still fulfilled		**N/A**
13.3	Rubbing test of plug-pins: 10000 cycles, 4N		**P**
	No damage of the pins		**P**
13.4	Pull test at 70°C with 40N		**P**
	Pins not more than 1 mm displaced		**P**
14	**Resistance to heat and to aging**		**P**
14.1	Sufficient resistant to heat	Incorporated with adaptor.	**P**
14.1.1	After 1 h in heating cabinet at 100°C no damage shown	Tested with adaptor.	**P**
14.1.2	After 1 h in heating cabinet at 80°C and a force of 20N through the jaws no damage shown		**P**
14.2	Aging test		**P**
	-at 70°C for 168h		**P**
	-at room temperature for 96h		**P**

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	No traces of cloth at a force of 5N		**P**
	No damage leads to non-compliance		**P**
15	**Current-carrying parts and connections resistance to heat and to aging**		**P**
15.1	Connections withstand the mechanical stresses occurring in normal use		**P**
15.2	Contact pressure not through isolating material		**P**
15.3	Current carrying parts of copper		**P**
	No electroplated coating when part is subjected to mechanical wear		**P**
	Other metals having a mechanical strength, an electrical conductivity and a resistance to corrosion		**N/A**
16	**Creepage distances, clearances and distances through insulation**		**P**
	Live parts of different polarity: 3mm	13.6mm	**P**
	Through insulation between live parts and accessible surfaces: 1.5mm	4.7mm	**P**
17	**Resistance of insulation material to abnormal heat and fire**		**P**
	Insulating material not unduly affected by abnormal heat and by fire	(see appended table)	**P**

EN 50075 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

11.1	**TABLE: Insulation resistance measurements**		**P**
Measured between:		Result	
Pins connected together and the body (≥ 5MΩ)		200MΩ	**P**
Each pins in turn and the other, the latter being connected to the body (≥ 5M Ω)		200MΩ	**P**
Note: --			

11.2	**TABLE: electric strength measurements**		**P**
Test voltage applied between:		Test voltage (V)	Break down
Pins connected together and the body		2000VAC	No
Each pins in turn and the other, the latter being connected to the body		2000VAC	No
Note: --			

17.3	**TABLE: Resistance of insulating material to abnormal heat and to fire**	**P**
Parts that retain current-carrying parts in position: 750℃		**P**
Other parts: 650℃		**P**
Note: --		

BS 1363-1+A1+A2+A3 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

British plug portion test

12	**Construction**			**P**
12.1	Disposition of the pins is same as fig. 4			**P**
12.2	Plugs shall comply with fig. 4			**P**
	The height of engagement surface panel	min. 6.35 mm	6.40 mm	**P**
	Disposition of pins			**P**
	Between E and left plane	max. 25.37 mm	25.15 mm	**P**
	Between E and right plane	max. 25.37 mm	25.15 mm	**P**
	Between E and L	11.05~11.18mm	11.06 mm	**P**
	Between E and N	11.05~11.18mm	11.06 mm	**P**
	Between L or N and top plane	max. 34.6mm	30.87 mm	**P**
	Between E and L, N	22.10~22.36mm	22.20 mm	**P**
	Radius of top right corner	min. 15mm	18.50 mm	**P**
	Radius of top left corner	min. 15mm	18.50 mm	**P**
	Shape of earth pin			**P**
	Length	22.23~23.23mm	22.45 mm	**P**
	Width	7.75~8.05mm	7.91 mm	**P**
	Thickness	3.90~4.05mm	3.91 mm	**P**
	Length of chamfer	1.35~1.85mm	1.75 mm	**P**
	Angle of chamfer	58°~62°	60 °	**P**
	Shape of L and N pin			**P**
	Length	17.2~18.2mm	17.54 mm	**P**
	Width	6.22~6.48mm	6.24 mm	**P**
	Thickness	3.90~4.05mm	3.93 mm	**P**
	Length of insulating material	max. 9.5mm	8.79 mm	**P**
	Length of conductive material	max. 9.2mm	8.75 mm	**P**
	Length of chamfer	1.35~1.85mm	1.78 mm	**P**
	Angle of chamfer	58°~62°	60 °	**P**
	Maintenance of these dimensions not rely on the terminal screws			**P**
	The plug portion should enter the gauge fully with a force not exceeding 10N was applied to the centre of the sample at right angle.		Complied, sample was entered into the gauge fully with a force of 10N.	**P**

BS 1363-1+A1+A2+A3 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
12.3	No part of a line or neutral pin shall be less than 9,5mm from the periphery of the plug measured along the engagement surface.	Complied, both line and neutral pin are measured larger that 9.5mm	**P**
12.9	Plug pins were constructed of brass	Complied.	**P**
12.9.1	Exposed surface of plug pins were smooth and free from burrs or sharp edges and other irregularities, which could cause damage or excessive wear to sockets or shutters.	Complied.	**P**
12.9.4	The adaptor plug pins were tested as specified in the standard.	Complied. After being subjected to a forced of 1100N for the L/N pin and 400N for ISOD pin, the pin portion could fit the relevant gauge.	**P**
12.9.5	The adaptor plug pins were tested as specified in the standard.	Complied. After being subjected to 5000 insertions and withdraws, the shutters of the socket-outlet can operate satisfactorily and the socket contact is safely shielded.	**P**
12.9.6	Each pin of the adaptor was subjected to a torque of 1Nm for 60s as specified in the standard.	Complied. After the test, the pin portion could fit the relevant gauge.	**P**
12.11	The adaptors were tested as specified in the standard. After being placed in an oven at 70℃ for 1 hour, each pin of the samples was subjected for 60 sec. to a pull of 100N in the oven.	Complied. After the above test, no plug pin was detached and the plug pins could fit the relevant gauge.	**P**
12.12	The degree of flexibility of mounting of the plug pins was checked according to 12.12.1	Complied. During the test, no declination was observed to the plug pins (limit: Max. 3° 30').	**P**
12.13	Suitable means shall be provided for withdrawing the plug without subjecting the flexible cord to stress.	Complied.	**P**
12.16	Line and neutral plug pin shall be fitted with insulating sleeves. The dimensions of the pin and sleeve shall fall within the specific limit.	Complied. Both line and neutral pins were fitted with insulating sleeves.	**P**
12.17.1	Plug pin sleeve shall be compliance with 12.17.2 to 12.17.4	Complied.	**P**
12.17.2	Electric strength test applied between the metal part of plug pin and the sleeve (1250±30V)	Complied. No breakdown and flashover occur.	**P**
12.17.3	Abrasion test for plug pin sleeve The plug pin sleeves were subjected to 20000 movements of abrasion as specified in the standard.	Complied. After the test, the sleeves showed no damage that impaired further use and could satisfy the electric strength test in 12.17.2	**P**

BS 1363-1+A1+A2+A3 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
12.17.4	Resistance to deformation The plug pins with sleeves were placed in a heating cabinet at 200℃ and tested according to the standard for 120min.	Complied. After the tests, the thicknesses of sleeve of plug pins (line and neutral pins) remaining at the impression point were reduced by less than 5%.	**P**

Notes: clause 12.4, 12.5, 12.6, 12.7, 12.8, 12.9.2, 12.9.3, 12.10, 12.14, 12.15 were not applicable

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict

The Australian plug was tested according to Annex J of AS/NZS 3112.

Appendix J			**P**
J1	Scope		**P**
	This Appendix applies to only the plug portion of equipment with integral pins and shall be read in conjunction with section 2 contained in the body of this standard. Where the term 'plug' is used in section 2 it shall be taken to mean the plug portion of equipment with integral pins.	Plug portion with integrated pins	**P**
J2	Requirements for plug portion		**P**
J2.1	definition		**P**
J2.2	requirments	See below.	**P**
J2.2.1	Plug pins of plug portions		**P**
	Material for pins	Copper alloy containing 62% copper.	**P**
	Assembly of pins		**P**
	Form of pin		**P**
	Insulation of plug pin		**P**
J2.2.2	Ratings and dimensions for low voltage plug portions	Dimension comply with 10A 250V two-pin plug.	**P**
	General		**P**
	Compliance with dimensional requirements of Figure 2.1	See attached dimension table.	**P**
J2.2.3	Internal connections for plug portions		**N/A**
J2.2.4	Arrangement of earthing connections for plug portions		**N/A**
J2.2.5	Configuration of plug portions		**P**
J2.2.6.1	General		**P**
J2.2.6.2	High voltage test (3112.2.13.3)		**P**
	The plug shall withstand without failure an a. c. voltage of the value indicated in Table 2.3, applied between the parts set our in Items (a) and (c) of Clause 2.13.2 for 1 min in each case.		**P**
	The plug shall further withstand, without failure, a voltage of 3500 V a. c. applied between the parts set out in Items (b) and (d) of Clause 2.13.2 for 1 min in each case.		**P**
	The insulation of insulated pin plugs shall withstand a voltage of 1 250V a. c. for 1 min applied in accordance with Clause 2.13.2(e).		**P**
J2.2.6.3	Mechanical strength of pin tests		**P**
J2.2.6.3.1	Tumbling barrel test (3112.2.13.7.1)		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	The tumbling barrel test is applied to determine the mechanical strength of the plug pins.		**P**
	Three samples which have not been subjected to any previous test are tested to the requirements of Clause 2.13.7 however, the test is modified for plug portions of equipment with integral pins as follows:		**P**
	A sample of equipment with integral pins is dropped –		**P**
	a) 500 times if the mass of the specimen does not exceed 250 g. The pins being straightened after 100 drops and at the completion of the test to pass through the appropriate gauge of Figure A1, B1 or F1; and	Weight: 0.18Kg	**P**
	b) 250 times if the mass of the specimen exceeds 250 g. The pins being straightened after 25 drops and at the completion of the test to pass through the appropriate gauge of Figure A1, B1 or F1		**N/A**
J2.2.6.3.2	Pin bending test		**P**
	The pins of the plug portion of three samples not subjected to any previous tests shall be tested for compliance with the pin bending test of clause 2.13.7.2.		**P**
	All flat-pins of plugs rated up to and including 15 A shall be subjected to a pin bending test.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	Three sample plugs not subjected to any previous tests shall be tested as follows: Pins of assembled plugs shall be tested by clamping the plug in a rigid holding block and applying a bending force, as shown in Figure 2.8, to the pin under test. The pins shall be straight at the beginning of the test. If there is any doubt about the straightness of the pin, it shall be checked by the appropriate plug gauge shown in Appendices A, B or F. The point of application of the force shall be 14±0.5 mm from the face of the plug. The direction of the force shall be along a line parallel to the face of the plug. Active and neutral pins shall be forced towards the centroid of the plug and then back to the starting point. On the first sample plug, any earth pin shall be forced but in one direction only and then back to the starting point. On the second sample plug, any earth pin shall be forced in the opposite direction to that used for testing the first sample plug. On the third sample plug, any earth pin shall be forced in the direction that gave the least favourable result during testing of the first two sample plugs. NOTE: This is intended to simulate damage that may occur when a plug is walked on and bent pins are straightened. The distance moved from the point of application shall be 7.5+/-0.3 mm, and then the pin shall be forced back to the starting point. Any 'spring-back' is ignored NOTE: 'Spring-back' means that the pin is allowed to move back to a position less than the travel distance, when the force is removed. The travel from the starting point, to the end point (7,5 mm), and back to the starting point is one cycle (i.e. one cycle is two separate movements). The speed of deflections shall be a maximum of 50 mm/s, without intentional delay between consecutive movements within each cycle.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	The pin shall not be broken off. NOTE: Cracking of the pin, less than full thickness, is not deemed to be broken off. If in doubt pins shall be disassembled from the plug and any insulation removed, NOTE: In some cases the break may be below the face of the plug or the insulation may hold the broken pieces together, retaining electrical contact.		**P**
J2.2.6.4	Temperature rise test (3112.2.13.8)	The test current have been specified and tested with the integral adaptor.	**P**
	2.13.8 Temperature rise test		**P**
	Plugs shall be so constructed that they comply with the following temperature rise test: Non-rewireable plugs are tested as delivered (specially prepared sample with access to terminals for temperature measurement). Rewireable plugs are fitted with polyvinyl chloride flexible cords with conductors having the minimum cross-sectional area specified in the manufacturers instructions.		**P**
	The terminal screws or nuts are tightened with a torque equal to two-thirds of that specified in test No.5. NOTE: To ensure normal cooling of the terminals, the conductors connected to plugs should have a length of at least 1 m.	No screws or nuts used.	**N/A**
	The test socket shall consist of a fixed socket outlet of a type complying with this Standard. NOTE: In the case of a dispute, the test should be repeated using a new socket outlet.	Direct plug-in equipment	**N/A**
	The fixed socket outlet shall be mounted in an appropriate metal-wall box installed in a draught free position, and fitted with PVC insulated conductors at least 2.5 m long, having nominal cross-sectional areas as shown in Table 3.4.	Direct plug-in equipment	**N/A**
	The cables supplying the socket outlet shall be enclosed for a distance of 1 m in conduit terminated at the wall box.	Direct plug-in equipment	**N/A**
	The plug is inserted into the socket outlet and an alternating current of 1.1 times rated current is passed for 1 h.		**P**
	The temperature of the flexible cord terminal is determined by means of melting particles, colour changing indicators or thermocouples, so chosen and positioned that they have negligible effect on the temperature being determined.	Direct plug-in equipment	**N/A**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	The temperature rise of the terminals shall not exceed 45 K.		**P**
J2.2.6.5	Securement of pins (3112.2.13.9)		**P**
	Movement of pins (2.13.9.1)		**P**
	Plugs shall be tested for pin movement by clamping the pin or pins not under test in a rigid holding block positioned 5 ±0.5 mm from the plug face and applying a force of 18±1 N to the pin under test. The design of the block shall be such that the pin under test shall not come into contact with the block during the test.		**P**
	Except for non-rewireable plugs, the test shall be carried out without a cord attached to the plug, and with the terminal screws loosened sufficiently to allow a 1mm^2 conductor to be connected.		**N/A**
	The plug and test equipment shall be preconditioned at a temperature of 40±1ºC for 1 h, without the test force applied. Throughout the test, all parts of the plug and test equipment shall be maintained at this temperature.		**P**
	For all plugs, the point of application of the force of the plug along the pins, and the direction of the force shall be- a) in both directions along the line perpendicular to the plane of the pin, and passing through the centre of the pin; and b) in that plane in both directions along a line at right angles to that specified in Item(a).		**P**
	Over a period of 10 s, the force shall be gradually applied to each of the pins in the manner prescribed in Items (a) and (b), maintained at its maximum value for 10 s, and then released. The deflection of the pins shall be measured along the line of force relative to the face of the rigid holding block during the period when the force is applied. The maximum deflection shall not exceed 2.0 mm.	<table><tr><th></th><th>Direction of force</th><th>Deflection</th></tr><tr><td rowspan="4">L pin</td><td>Upward</td><td>0.3mm</td></tr><tr><td>Downward</td><td>0.4mm</td></tr><tr><td>Leftward</td><td>0.4mm</td></tr><tr><td>Rightward</td><td>0.3mm</td></tr><tr><td rowspan="4">N pin</td><td>Upward</td><td>0.4mm</td></tr><tr><td>Downward</td><td>0.4mm</td></tr><tr><td>Leftward</td><td>0.3mm</td></tr><tr><td>Rightward</td><td>0.3mm</td></tr></table>	**P**
	Following the test on all pins of a plug conforming to Figure 2.1, any distortion 5 min after the completion of the test on the last pin shall be such that it will not prevent the plug from being inserted in the appropriate standard gauges shown in Appendix A, Appendix B and Appendix F without the application of undue force.		**P**

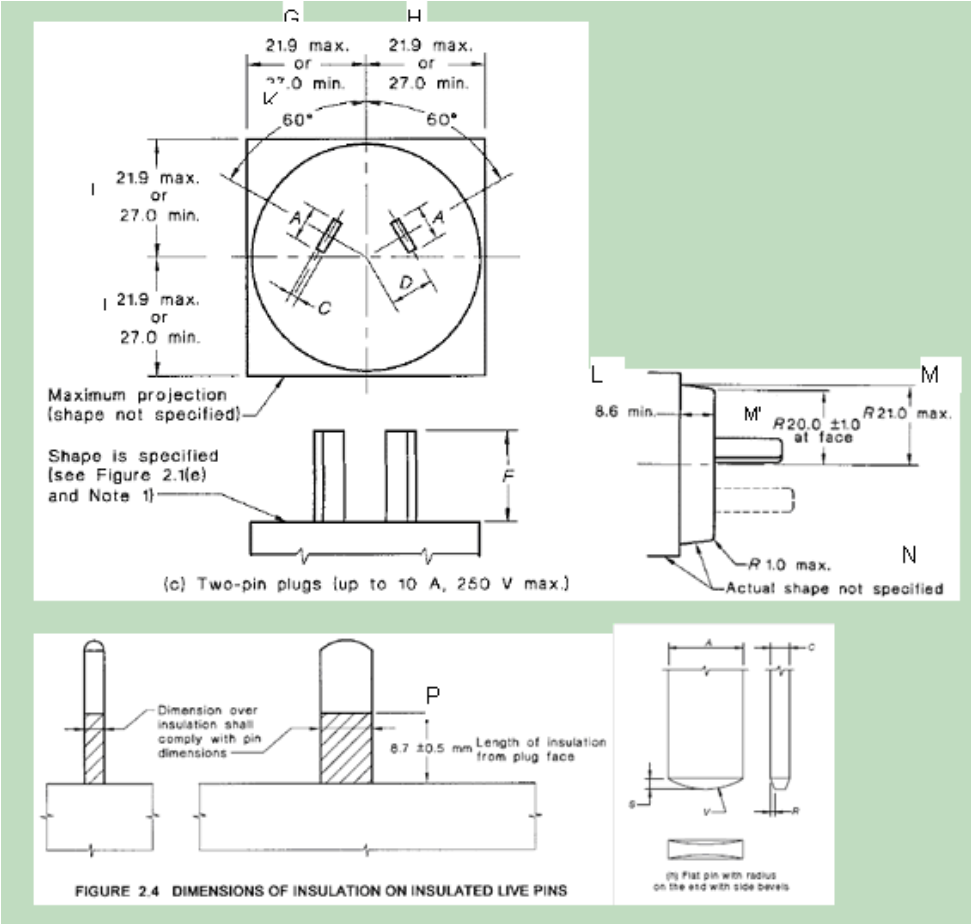
<table>
<tr><th colspan="4">AS/NZS 3112+A1 (Partial)</th></tr>
<tr><th>Clause</th><th>Requirement – Test</th><th>Result – Remark</th><th>Verdict</th></tr>
<tr><td></td><td>For other types of plugs, any distortion after 5 min shall be such as will not prevent the plug being inserted into an appropriate socket-outlet without the application of undue force.</td><td></td><td>N/A</td></tr>
<tr><td></td><td>Fixing of pins (2.13.9.2)</td><td></td><td>P</td></tr>
<tr><td></td><td>A separate sample of a plug shall be heated to a temperature of 50±20ºC for 1 h and maintained at that temperature during the whole of tests, including the 5 min period after removal of the test load.</td><td></td><td>P</td></tr>
<tr><td></td><td>The plug shall be held firmly in such a manner that there will be no undue squeezing or distortion of the body, and the means of holding shall not assist in maintaining the pins in their original position,</td><td></td><td>P</td></tr>
<tr><td></td><td>Each pin, in turn, shall have applied to it a force which, over a period of 10 s, shall be increased steadily to 60±0.6N and held at this value for 10 min.</td><td></td><td>P</td></tr>
<tr><td></td><td>Two tests on each pin shall be conducted, one with the direction of force along the length of the pin towards the body of the plug, and the other with the direction of force along the length o f the pin away from the body.</td><td></td><td>P</td></tr>
<tr><td></td><td>The attachment of pins shall be considered inadequate if any pin is displaced relative to the adjacent material of the body by more than 2.4 mm at any time during these tests, or if any pin fails to return to within 0.8 mm of its nominal length specified in Figure 2.1 within 5 min of the removal of the test force,</td><td><table><tr><th></th><th>Direction of force</th><th>Deflection</th></tr><tr><td rowspan="2">L pin</td><td>Toward body</td><td>0.7mm</td></tr><tr><td>Away from body</td><td>0.7mm</td></tr><tr><td rowspan="2">N pin</td><td>Toward body</td><td>0.8mm</td></tr><tr><td>Away from body</td><td>0.8mm</td></tr></table></td><td>P</td></tr>
<tr><td>J2.2.6.6</td><td>Additional tests for plugs with insulated pins (3112.2.13.13)</td><td></td><td>P</td></tr>
<tr><td></td><td>2.13.13 Additional tests on the insulation material of insulated pin plugs</td><td></td><td>P</td></tr>
<tr><td></td><td>2.13.13.1 General</td><td></td><td>P</td></tr>
<tr><td></td><td>The material of the pin-insulation shall be resistant to the stresses to which it may be subjected at the high temperature likely to occur in conditions approaching the bad connection conditions and at low temperatures in particular conditions of service.</td><td></td><td>P</td></tr>
</table>

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	Compliance shall be checked by the tests of Clause 2.13.13.2 to 2.13.13.5		**P**
	(a) Pressure test at high temperature (2.13.13.2)		**P**
	A specimen of one insulated pin only shall be subjected to the following test by means of the apparatus shown in Figure 2.2. This apparatus shall have a blade having a round shape with a diameter of 6 mm and a thickness of 0.7 mm.		**P**
	The specimen shall be placed in position as shown in the Figure 2.5 and a force of 2.5 N shall be applied through the blade to specimen.		**P**
	The apparatus, with the specimen in position, shall be maintained for 2 h in a heating cabinet at a temperature of 200±5ºC. The specimen shall then be removed from the apparatus and within 10 s, cooled by immersion in cold water.		**P**
	The thickness of the insulation shall be measured immediately at the point of impression.		**P**
	The thickness within the area of the impression shall be not less than 50% of the thickness measured before the test.	Part1: Thickness before test: 0.38mm Thickness after test: 0.30mm Length of insulation after test: 8.74mm Part 2: Thickness before test: 0.36mm Thickness after test: 0.30mm Length of insulation after test: 8.78mm	**P**
	Visual inspection shall be made and no cracks on the insulation material shall be visible with normal, or corrected to normal, vision without additional magnification, and the dimension of the insulating material shall not have changed below the minimum size shown in Figure 2.4.		**P**
	(b) Static damp heat test (2.13.13.3)		**P**
	An insulated pin plug shall be subjected to two damp heat cycles in accordance with IEC 60068-2-30. Db (12+12 h cycle), 95% relative humidity, lower temperature 25±3ºC and upper temperature 40ºC.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	After this treatment and after recovery to room temperature, the specimen shall be subjected to- a. the insulation resistance test in accordance with CLAUSE 2.13.2(E); b. high voltage test in accordance with Clause 2.13.3 and; c. abrasion test in accordance with Clause 2.13.13.6. NOTE: At the manufacturer's option, the same sample may be used for this test and the low temperature test (see Clause 2.13.13.4) and a single abrasion test may be done.		**P**
	(c) Low temperature test (2.13.13.4)		**P**
	An insulated pin plug shall be maintained at –15±2ºC for at least 24 h and returned to room temperature.		**P**
	The specimen shall be subjected to – a. the insulation resistance test in accordance with Clause 2.13.2(e); b. high voltage test in accordance with Clause 2.13.3 and; c. abrasion test in accordance with Clause 2.13.13.6. NOTE: At the manufacturer's option, the same sample may be used for this test and the static damp heat test (see Clause 2.13.13.3) and a single abrasion test may be done.		**P**
	(d) Impact test at low temperature (2.13.13.5)		**P**
	A specimen of one insulated pin only shall be subjected to an impact test by means of the apparatus shown in Figure 2.6. The mass of the falling weight shall be 100±1 g.		**P**
	The apparatus, on a sponge rubber pad 40 mm thick, together with the specimen, shall be maintained at –15±20ºC for at least 24 h.		**P**
	At the end of this period, the specimen shall be placed in position, as shown in Figure 2.6, and the falling weight shall be allowed to fall from a height of 100mm. Four impacts shall be applied successively to the same specimen, rotating it through 90º between impacts.		**P**
	After the test the specimen shall be allowed to return to room temperature and then examined, No cracks of the insulating material shall be visible with normal, or corrected to normal, vision without additional magnification. NOTE: The cooling period of 14 h includes the time necessary to cool down the apparatus.		**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict
	(e) Abrasion test (2.13.13.6)		**P**
	An insulated pin of an insulated pin plug shall be subjected to the following test by means of an apparatus as shown in Figure 2.7.		**P**
	The test apparatus comprises a horizontally disposed beam, which shall be pivoted about its centre point. A short length of steel wire, 1 mm in diameter and bent into a U-shape, the base of the U being straight, shall be rigidly attached, at both ends, to one end of the beam, so that the straight part projects below the beam and shall be parallel to the axis of the beam pivot.		**P**
	The plug shall be held in a suitable clamp in such a position that the straight part of the steel wire rests on the major axis face of the plug pin, at right angles to it. The pin shall slope downwards at an angle of 10º to the horizontal.		**P**
	The beam shall be loaded so that the wire exerts a force of 4 N on the pin.		**P**
	The plug shall be moved backwards and forwards in horizontal direction in the plane of the axis of the beam, so that the wire rubs along the pin. The length of the pin thus abraded shall be approximately 9 mm, of which approximately 7 mm shall be over the insulation.		**P**
	The number of movement s shall be 20 000 (10 000 in each direction) and the rate of operation shall be 30 movements per min.		**P**
	After the test, the pins shall show no damage which may affect safety or impair the further use of the plug, in particular, the insulating sleeve shall not have punctured or rucked up.		**P**
J2.2.6.7	Equipment with integral pins intended to be supported by the contacts of a socket-outlet	Torque: 0.07Nm	**P**

AS/NZS 3112+A1 (Partial)			
Clause	Requirement – Test	Result – Remark	Verdict



Symbol	Requirement (mm)	Measured (mm)		Symbol	Requirement (mm)	Measured (mm)
A	6.2 – 6.5	6.32		L	> 8.6	8.88
C	1.58 – 1.78	1.60		M	R 21.0 max.	19.94
D	7.92	7.92		M’	R 19.0 – 21.0	19.94
F	16.66 – 17.46	17.44		N	< R 1.0	0.2
G	< 21.9 or > 27.0	27.62		P	8.2 – 9.2	8.70
H	< 21.9 or > 27.0	27.62		S	0.90±0.10	0.82
I	< 21.9 or > 27.0	27.20		V	6.0	6.0
J	< 21.9 or > 27.0	55.32		R	0.35±0.05	0.34
K	60 °	60 °				
The distance between a live pin of any plug and the edge of the moulding of the plug					Min. 9	10.83

CERTIFICATE OF COMPLIANCE

This is to certify that the product listed in follows was (were) tested in the BTL EMC Laboratory to comply with the required criteria levels of the follow-mentioned Generic Standards or Product Family Standard(s) and/or Basic Standard(s) based-on the essential conformity requirements of EMC Directive of 2004/108/EC.

Equipment	**Wireless Speaker**
Model Name	**HEOS 3 HS2**
Brand Name	**DENON**
Applicant	**Tymphany HK Limited**
Address	**Room 1307-8, Dominion Centre, 43-59 Queen's Road East, WanChai, Hong Kong**
Standard(s)	**EN 55032: 2012+AC: 2013**
Report(s)	**BTL-EMC-1-1511C213**

The test data, data evaluation, and equipment configuration contained in our test report(s)above was(were) obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s). The test data contained in the referenced test report relate only to the EUT sample and item(s) tested.

Steven Lu
Authorized Signatory

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Testing Laboratory
2640

Certificado Certificado شهادة Zertifikat сертификат

EMC Test Report

Project No.	:	1511C213
Equipment	:	Wireless Speaker
Model Name	:	HEOS 3 HS2
Applicant	:	Tymphany HK Limited
Address	:	Room 1307-8, Dominion Centre, 43-59 Queen's Road East, WanChai, Hong Kong

Date of Receipt	:	Nov. 17, 2015
Date of Test	:	Nov. 17, 2015 ~ Dec. 09, 2015
Issued Date	:	Dec. 11, 2015
Tested by	:	BTL Inc.

Testing Engineer : _____
(Bill Zhang)

Technical Manager : _____
(James Chiu)

Authorized Signatory : _____
(Steven Lu)

BTL INC.

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