



Ref. Certif. No.

JPTUV-040183-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

LCD Monitor

Name and address of the applicant
Nom et adresse du demandeur

Top Victory Electronics (Taiwan) Co., Ltd.
10F., No. 230, Liancheng Rd.
Zhonghe City, Taipei County 23553 Taiwan

Name and address of the manufacturer
Nom et adresse du fabricant

NEC Display Solutions, Ltd.
4-13-23 Shibaura
Minato-ku, Tokyo, 108-0023 JAPAN

Name and address of the factory
Nom et adresse de l'usine

See additional page(s)

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

- 1) AC 100-240V; 50/60Hz; 0.95-0.50A; Class I
- 2) AC 100-240V; 50/60Hz; 0.80-0.45A; Class I

Trade mark (if any)
Marque de fabrique (si elle existe)

NEC

Model/type Ref.
Ref. de type

- 1) L270UL, EA273WM(C), EA273WM-BK(C)
- 2) L240UM, EA243WM(C), EA243WM-BK(C)

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

For model differences, refer to the test report.
Re-issue of JPTUV-040183 dated 13.09.2011,
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 60950-1:2005+A1
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

11025976 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

Signature:

Dipl.-Ing. R. Stöckel

Date: 26.10.2011

1. TPV Technology (Beijing) Co., Ltd.
No. 10, Jiu Xian Qiao Rd.
Chao Yang District, Beijing 100016
P.R. China
2. Tatung Mexico S.A. de. C.V.
Ave. Rosa Ma. Fuentes #7050
Complejo Industrial Fuentes
C.P. 32320, Cd. Juarez. Chih,
MEXICO
3. TPV Display Technology (Wuhan)
Co., Ltd.
Unique No. 11, Zhuankou Development
District of Economic Technological
Development Zone, Wuhan City 430056, P.R. China
4. TPV Electronics (Fujian) Co., Ltd.
Yuan Hong Rd., Shang-Zheng Hong-Lu
Fuqing City Fujian 350301
P.R. China
5. Envision Industry of Electronic
Products Ltd.
895, Joao Marcos Pozzetti Street,
Industrial District II,
69.075-215 Manaus, Am, Brazil
6. Tatung Czech s.r.o
U Nove Hospody 4
30100 Plzen
Czech Republic
7. TPV Technology (Suzhou) Co., Ltd.,
Zhujiang Branch
No. 161, Zhujiang Road, Suzhou
New District, Suzhou City, Jiangsu
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8. Envision Industry of Electronic
Products Ltd.
Rodovia Anhanguera S/N-KM 49
13.205-700 Tijuco Preto-Jundiaí-SP-
Brazil
9. TPV Displays Polska Sp. z o.o.
ul. Zlotego Smoka 9
66-400 Gorzów Wlkp.
Poland

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

Date: 26.10.2011

Signature:

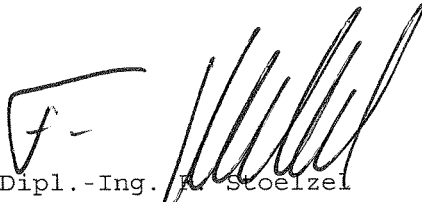
Dipl.-Ing. F. Schaezel

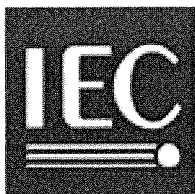
10. L&T Display Technology (Fujian) Ltd.
Optoelectronic Park, Rongqiao
Economic and Technological
Development Zone
Fuqing, Fujian 350301, P.R. China
11. TPV Display Technology (Beihai)
Co., Ltd.
China Electronic Beihai Industry
Park, Northeast of the Crossing
Between Taiwan Road and Jilin Road, Beihai City, Guangxi, P.R. China
12. Envision Industry of Electronic
Products Ltd.
Av Torquato Tapajós 7503,
Galpão : II Bloco: B-Condomínio
de Galpões-Tarumã-Manaus, AM, Brazil

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

Date: 26.10.2011

Signature:


Dipl.-Ing. R. Stoelzel



Test Report issued under the responsibility of:



TEST REPORT IEC 60950-1 Information technology equipment – Safety – Part 1: General requirements	
Report Number	11025976 002
Date of issue	October 21, 2011
Total number of pages	12
CB Testing Laboratory	TÜV Rheinland Taiwan Ltd., Taichung Laboratory
Address	No. 9, Ln. 36, Sec. 3, Minsheng Rd., Daya District, Taichung City 428, Taiwan
Applicant's name	Top Victory Electronics (Taiwan) Co., Ltd.
Address	10F., No. 230, Liancheng Rd., Zhonghe City, Taipei County 23553 Taiwan
Manufacturer's name	NEC Display Solutions, Ltd.
Address	4-13-23 Shibaura, Minato-ku, Tokyo, 108-0023 JAPAN
Test specification:	
Standard	IEC 60950-1:2005 (2nd Edition); Am 1:2009
Test procedure	CB Scheme
Non-standard test method	N/A
Test Report Form No.	IEC60950_1B
Test Report Form(s) Originator	SGS Fimko Ltd
Master TRF	Dated 2010-04
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If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.	
This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.	
Test item description	LCD Monitor
Trade Mark	NEC
Manufacturer	See above manufacturer
Model/Type reference	1) L270UL, EA273WM (C), EA273WM-BK(C) ; 2) L240UM, EA243WM(C), EA243WM-BK(C)
Ratings	1) 100-240 Vac, 50/60 Hz, 0.95 – 0.50 A ; 2) 100-240 Vac, 50/60 Hz, 0.80 – 0.45 A

Testing procedure and testing location:		
☒	CB Testing Laboratory:	See cover page
Testing location/ address..... :		See cover page
☐	Associated CB Laboratory:	
Testing location/ address..... :		
Tested by (name + signature).....:		<i>Picky (Lia)</i>
Approved by (name + signature)		<i>Jacky Chin</i>
☐	Testing procedure: TMP	
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature)		
☐	Testing procedure: WMT	
Testing location/ address..... :		
Tested by (name + signature).....:		
Witnessed by (name + signature).....:		
Approved by (name + signature)		
☐	Testing procedure: SMT	
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature)		
Supervised by (name + signature).....:		
☐	Testing procedure: RMT	
Testing location/ address..... :		
Tested by (name + signature).....:		
Approved by (name + signature)		
Supervised by (name + signature).....:		

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

- Photo documentation (5 pages).

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

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

- The load condition used as below during testing:
The equipment operated at full raster screen with maximum brightness, minimum contrast of LED backlight and maximum non-clipped volume of speakers with 1 KHz signal, provided loading 0.5 A to each USB port.
- The test samples are pre-production without serial numbers.
- The equipment has been evaluated according to the specified by the manufacturer maximum operating altitude of 3658 m (correction factor for clearances according to IEC 60664:1992+A1:2000+A2:2002 of 1.24 is considered).
- Specified maximum ambient temperature for operation is +40 °C.
- Unless otherwise specified, the tests were performed on model L270UL to represent other similar models.

Testing location:

All tests as described in Test Case and Measurement Sections were performed at the laboratory described on cover page.

Summary of compliance with National Differences

List of countries addressed:

EU Group Differences, EU Special National Conditions, CA*, DE, FI, IL, KR, US*.

Explanation of used codes: CA = Canada, DE = Germany, FI = Finland, IL = Israel, KR = Republic of Korea, US = United States.

* National differences to IEC 60950-1:2005 evaluated.

Other National differences refer to report no. 11025976 001.

☒ The product fulfils the requirements of EN 60950-1:2006+A11:2009+A1:2010

Copy of marking plate

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

(Additional requirements for markings. See 1.7 NOTE)

NEC MultiSync EA243WM LCD MONITOR VOLTS 定額電圧: 100-240V~, AMPERES 定額電流: 0.80-0.45A(1.0A for Mexico), FREQUENCY 定額周波数: 50/60Hz (Model: L240UM)

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE ENCLOSURE. NO USER-SERVICEABLE PARTS INSIDE.
ATTENTION: AFIN DE PREVENIR DE TOUT CHOC ELECTRIQUE, NE PAS OUVRIR CE BOITIER.
 AUCUNE PIECE INTERNE NE PEUT-ETRE CHANGEE PAR L'UTILISATEUR.
ACHTUNG: ZUR TRENNUNG VOM NETZ IST DER NETZSTECKER AUS DER STECKDOSE ZU ZIEHEN.
 GERÄT NICHT ÖFFNEN. ES SIND KEINE DURCH DEN BENUTZER AUSWECHSELBAREN TEILE IM GERÄT VORHANDEN.
PRECAUCIÓN: PARA PREVENIR DESCARGA ELÉCTRICA, NO QUITAR EL RECINTO.
 NINGUNAS PIEZAS DEL USUARIO SERVICABLE ADENTRO.
VARNING: APPARATEN SKALL ANSLUTAS TILL JORDAT UTTAG.
VAROITUS: LAITE ON LITETTÄVÄ SUOJAMAADOITUSKOSKETTIMILLA VARUSTETTUUN PISTORASIAAN.
ADVARSEL: APPARATET MÅ TILKOPLES JORDET STIKKONTAKT.

 **SAFETY MARK**
XXXX-XXX

 **HDMI**

 **UL LISTED**

 **N56**

 **FC**

 **VCCI**

 **G**

 **CE**

 **RoHS**

 **TUV**

 **GS**

 **ENERGY STAR**

 **TCO**

 **P-G**

For Japan only

警告
高圧注意
サービスマン以外の方は分解しないでください。内部には高電圧部分があり、万一さわると危険です。

感電注意
電源コードのアースリード線は必ず接地してください。故障のときに感電の原因になります。

THIS CLASS B DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS, CET APPAREIL NUMÉRIQUE DE LA CLASSE B RESPECTE TOUTES LES EXIGENCES DU RÈGLEMENT SUR LE MATÉRIEL BROUILLER DU CANADA.

8202

NEC Display Solutions, Ltd. 4-13-23 Shibaura, Minato-ku, Tokyo, 108-0023, Japan

MADE IN CHINA Fabricado en China
XXXXXXXX XXXXXXXX-XXX-XX TPV

NEC MultiSync EA243WM 液晶显示器 / LCD MONITOR

型号: EA243WM(C)

VOLTS 输入电压: 100-240V~, AMPERES 电流: 0.80-0.45A, FREQUENCY 工作频率: 50/60Hz

注意: 本显示器内有高压, 非专业人员, 请勿自行打开后盖, 以免危险!

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE ENCLOSURE.
NO USER-SERVICEABLE PARTS INSIDE.

 **10**

 **CCC**

生产厂: 福建捷联电子有限公司
生产地址: 福建省福州市元洪路上郊

中国制造 / Made in China

NEC Display Solutions, Ltd. 4-13-23 Shibaura, Minato-ku, Tokyo, 108-0023, Japan

XXXXXXXX XXXXXXXX-XXX-XX

NEC MultiSync EA243WM 液晶显示器 / LCD MONITOR

型号: EA243WM-BK(C)

VOLTS 输入电压: 100-240V~, AMPERES 电流: 0.80-0.45A, FREQUENCY 工作频率: 50/60Hz

注意: 本显示器内有高压, 非专业人员, 请勿自行打开后盖, 以免危险!

CAUTION: TO PREVENT ELECTRIC SHOCK, DO NOT REMOVE THE ENCLOSURE.
NO USER-SERVICEABLE PARTS INSIDE.

 **10**

 **CCC**

生产厂: 福建捷联电子有限公司
生产地址: 福建省福州市元洪路上郊

中国制造 / Made in China

NEC Display Solutions, Ltd. 4-13-23 Shibaura, Minato-ku, Tokyo, 108-0023, Japan

XXXXXXXX XXXXXXXX-XXX-XX

Test item particulars:	
Equipment mobility.....:	☒ movable (for unit with base stand) ☐ hand-held ☐ transportable ☒ stationary (for unit without base stand) ☐ for building-in ☐ direct plug-in
Connection to the mains	☒ pluggable equipment ☒ type A ☐ type B ☐ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition.....:	☒ continuous ☐ rated operating / resting time:
Access location	☒ operator accessible ☐ restricted access location
Over voltage category (OVC)	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values	±10
Tested for IT power systems	☒ Yes ☐ No
IT testing, phase-phase voltage (V)	230 Vac
Class of equipment	☒ Class I ☐ Class II ☐ Class III ☐ Not classified
Considered current rating of protective device as part of the building installation (A)	16 (20 for North America)
Pollution degree (PD)	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class	IPX0
Altitude during operation (m)	Up to 3658
Altitude of test laboratory (m)	Less than 2000
Mass of equipment (kg)	1) Approx. 6.91 (with base stand) ; 2.82 (for base stand) for models L270UL, EA273WM (C), EA273WM-BK(C). 2) Approx. 6.77 (with base stand) ; 2.82 (for base stand) for models L240UM, EA243WM(C), EA243WM-BK(C).
Possible test case verdicts:	
- test case does not apply to the test object : N/A (or N)	
- test object does meet the requirement..... : P (Pass)	
- test object does not meet the requirement..... : F (Fail)	
Testing:	
Date of receipt of test item : October, 2011	
Date(s) of performance of tests : October, 2011	
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 IEC60950-1:

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) : Refer to report no. 11025976 001.

General product information:

All new models are identical to each other except for model designation.

Description of change(s):

1. Add new models as L240UM, EA243WM(C), EA243WM-BK(C) (trademark of NEC), which are similar to previous model L270UL except for the following different:
 - a). Source of LCD Panel.
 - b). Model designation.
 - c). Input current rating.
 - d). Size of Plastic enclosure (definition type B).
 - e). Size of Metal enclosure (definition type B).
2. Add an alternative source of Transformer (T901) for all models.
3. Changed the switching power supply with LED driver board layout (definition type B) for all models.
4. Changed the decoding board type from 715G5104 to 715G5242 for all models.

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

Change	Testing	Comments
--------	---------	----------

1. to 3.	• Input test • Humidity test • SELV Reliability test • Electric Strength test	The new models information see above mention, others see copy of marking plate and sub-clause 1.7.1.1 and 1.7.1.2 for details. Although changed the size of plastic enclosure and metal enclosure but the ventilation openings did not change which details see photos as illustrated and results of input test similar to previous result, hence further temperature rise test skipped. The new layout (definition type B) is similar to previous (definition type A) except for remove component for Y-capacitor (C925), diode (D801) and add component diode (D802), therefore slightly changed the PCB layout, but this modification did not impact the distance of clearance/creepage requirement, protective circuitry and photos as illustrated, hence no further construction check necessary. The new source of transformer is similar to previous except model designation and material of margin tape (type 35660Y, manufacturer by Symbio Inc). For test results see following appended tables and source see appended table 1.5.1 for details.
4.	• N/A	Changed the model designation only, no construction changed, hence no further tests consider necessary.

History of amendments and modifications:

Ref. No. 11025976 001, dated September 08, 2011 (original test report)

Ref. No. 11025976 002, dated October 21, 2011 (modification)

Abbreviations used in the report:

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

Indicate used abbreviations (if any)

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1.1	Power rating marking	See copy of marking plate	P
	Multiple mains supply connections.....:		N/A
	Rated voltage(s) or voltage range(s) (V) :	See copy of marking plate	P
	Symbol for nature of supply, for d.c. only..... :		N/A
	Rated frequency or rated frequency range (Hz) :	See copy of marking plate	P
	Rated current (mA or A) :	See copy of marking plate	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark :	See copy of marking plate	P
	Model identification or type reference :	See copy of marking plate	P
	Symbol for Class II equipment only :	The equipment is Class I equipment.	N/A
	Other markings and symbols :	Other markings and symbols do not give rise to misunderstanding.	P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	Tested for 120 hrs.	P
	Relative humidity (%), temperature (°C) :	93 %, 40 °C	—
2.9.3	Grade of insulation	Basic, supplementary, double insulation, reinforced or functional insulation.	P

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: list of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity	
LCD panel (for model L240UM)	Samsung	LT*240***** (* = 0-9, A-Z, a-z or blank)	24" TFT-LCD (LED backlight type)	--	--	
Transformer (T901)	TPV	80GL32P-6-V	Class 130 material (B)	Applicable parts of IEC 60950-1 and according to IEC 60085	Accepted by TÜV Rheinland	
Supplementary information:						
1. An asterisk indicates a mark that assures the agreed level of surveillance.						

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V/Hz)	I (mA)	I _{rated} (A)	P (W)	Fuse #	I _{fuse} (mA)	Condition/status	
For model L270UL							
DVI mode							
90/50	986	--	52.2	F901	986	Maximum normal load	
90/60	979	--	52.1	F901	979	Maximum normal load	
100/50	897	0.95	51.8	F901	897	Maximum normal load	
100/60	887	0.95	51.8	F901	887	Maximum normal load	
240/50	441	0.5	51.2	F901	441	Maximum normal load	
240/60	436	0.5	51.2	F901	436	Maximum normal load	
264/50	411	--	51.2	F901	411	Maximum normal load	
264/60	408	--	51.1	F901	408	Maximum normal load	
For model L240UM							
DVI mode							
90/50	799	--	43.7	F901	799	Maximum normal load	
90/60	792	--	43.6	F901	792	Maximum normal load	
100/50	732	0.80	43.3	F901	732	Maximum normal load	
100/60	723	0.80	43.2	F901	723	Maximum normal load	
240/50	370	0.45	42.7	F901	370	Maximum normal load	
240/60	365	0.45	42.6	F901	365	Maximum normal load	
264/50	346	--	42.8	F901	346	Maximum normal load	
264/60	341	--	42.8	F901	341	Maximum normal load	

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

1. The measured input current at rated voltage shall be ≤ 110 % of rated current.
2. See summary of testing in the test report for the detail max. normal condition.

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict
2.2	TABLE: evaluation of voltage limiting components in SELV circuits		P
Component (measured between)		max. voltage (V) (normal operation)	Voltage Limiting Components
		V peak V d.c.	
For model L270UL			
For LED driver board			
After L802 to Rtn	70.0	--	
After D801 to Rtn	--	58.8	D801
For model L240UM			
For LED driver board			
After L802 to Rtn	63.2	--	
After D801 to Rtn	--	53.2	D801
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)	
D801 short for model L270UL		16.4 Vpeak	
D801 short for model L240UM		16.4 Vpeak	
supplementary information:			
Input Voltage is 240 Vac, 60 Hz			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Transformer:				
T901 primary to secondary		AC	3000	No
T901 primary to core		AC	1707	No
T901 secondary to core		AC	1707	No
Unit:				
Primary to secondary		DC	4242	No
Primary to earth (metal chassis/enclosure)		DC	2414	No
Primary to outer plastic enclosure with metal foil		DC	4242	No
Thin sheet material:				
One layer of insulation tape used in T901		AC	3000	No
Supplementary information:				
1. Test was performed on all sources of transformer and tape.				

IEC 60950-1/Am1			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:

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

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