

FUYUAN ELECTRONIC (HK) CO., LIMITED

SPECIFICATION FOR APPROVAL

CUSTOMER: MUNDILEC, S.L.

DESCRIPTION: 12.6V/1.2A Li-ion Charger

CUSTOMER PART NO: 126-02-11

OUR MODEL NO: FY-1501500

DATE: 2016-03-15

APPROVED SIGNATURE		
DATE:	DATE:	DATE:

PLEASE RETURN TO US ONE COPY OF “SPECIFICATION FOR APPROVAL” WITH YOUR APPROVED SIGNATURE

FUYUAN ELECTRONIC (HK) CO., LIMITED

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CUSTOMER	MUNDILEC, S.L.	CUSTOMERPART	126-02-11			
MANUFACTURER	FUYUANELECTRONIC(HK)CO.,LIMITED.		PAGE	1-15	EDITION	A

Standard 3S Lithium ion Battery charger Specifications

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1、SCOPE:

The purpose of the document is to specify the functional requirements of a 18W switching power charger.

2、INPUT CHARACTERISTICS:

2.1 Input Voltage:

Variation Range: 90-264Vac

2.2 Input Frequency:

Nominal Frequency: 50/60Hz

Variation Frequency: 47-63Hz

2.3 Input Current:

1Arms max at any input voltage and rated, DC output rated load.

2.4 Inrush Current:

30Amps Max. Cold start at 230Vac input, with rated load and 25°C ambient.

3、OUTPUT CHARACTERISTICS:

3.1 Power Output:

<u>Voltage</u>	<u>Min. Load</u>	<u>Max. Load</u>	<u>Peak</u>	<u>Output Power</u>
12.6Vdc	0A	1.2A	1.25A	15.12W

3.2 Combined Load/Line Regulation:

<u>Voltage</u>	<u>Min. Voltage</u>	<u>Max. Voltage</u>	<u>Line Regulation</u>	<u>Load Regulation</u>
+12.6Vdc	12.45V	12.85V	±5%	±5%

3.3 Ripple And Noise:

The ripple and noise are as follows when measure with Max. Bandwidth of 20MHz and Parallel 47uF/0.1uF, crossed connected at testing point.

<u>Voltage</u>	<u>Ripple And Noise(Max.)</u>
+12.6Vdc	120mVp-p

3.4 Turn On Delay Time:

2 second Max. At 115Vac input and output Max. Load.

3.5 Rise Time:

40mS Max. At 115Vac input and output Max. Load.

3.6 Hold Up Time:

5mS Min. At 115Vac input and output Max. Load.

3.7 Efficiency:

75%Min.At 100Vac input and output Max. Load.

80%Min.At 240Vac input and output Max. Load.

3.8 Overshoot:

15%Max.When power supply at turn on or turn off.

4、Charging Function: CC/CV

Once the charger is attached to a lithium ion battery and then plugged in, the charging process will begin. The charger will subject the lithium ion battery to three steps of charging.

During the first step, the charger enters into 'fast charge' mode. During this step, the charger is in constant current mode with the current rate remaining at its maximum rating.

In step two, the battery will be nominally 80-95% charged, and the charger switches into constant voltage mode (current is no longer being provided at its maximum rate). The charger will continue to provide a constant voltage until the charge current decreases to the charge termination level.

In the third step, the charge process is complete. Charging has ceased as no current flows to the battery.

5、PROTECTION REQUIREMENT:

5.1 Short Circuit Protection:

The power supply will be auto recovered when short circuit faults remove.

5.2 Over current Protection:

The power supply will be auto recovered when over current faults remove.

5.3 Over Voltage Protection:

The power supply will not be auto recovered when faults remove.

6、ENVIRONMENTAL REQUIREMET:

6.1 Operating Temperature:

0°Cto40°C,Full load Normal operation.

6.2 Storage Temperature:

-20°Cto85°C, With package.

6.3 Relative Humidity:

5%(0°C)~90%(40°C)RH,72Hrs,Full load Normal operating.

6.4 Vibration:

1. Operating: IEC 721-3-3 3M3

5~9Hz, A=1.5mm 9~200Hz, Acceleration 5m/s²

2. Transportation: IEC 721-3-2 2M2

5-9Hz, A=3.5mm

9~200Hz, Acceleration=5m/S²

200~500HZ, Acceleration=15m/S²

3、 Axes, 10 cycles per axis.

No permanent damage may occur during testing.

The product has to return to its original situation after power off/on.)

6.5 Dropping (Packed):

1 corner, 3 edges, and 6 surfaces

Height: 76cm

7、 SAFETY AND REQUIREMENT:

7.1 SAFETY: PSE EK BS CB GS-TUV UL SAA CE

7.2 DIELECTRIC STRENGTH (H-Pot):

(Primary to secondary), 3000Vac/5mA/60s.

8、 MECHANICAL REQUIREMENT):

8.1 Enclosure:



Size: L90*W 41*H 26.5mm

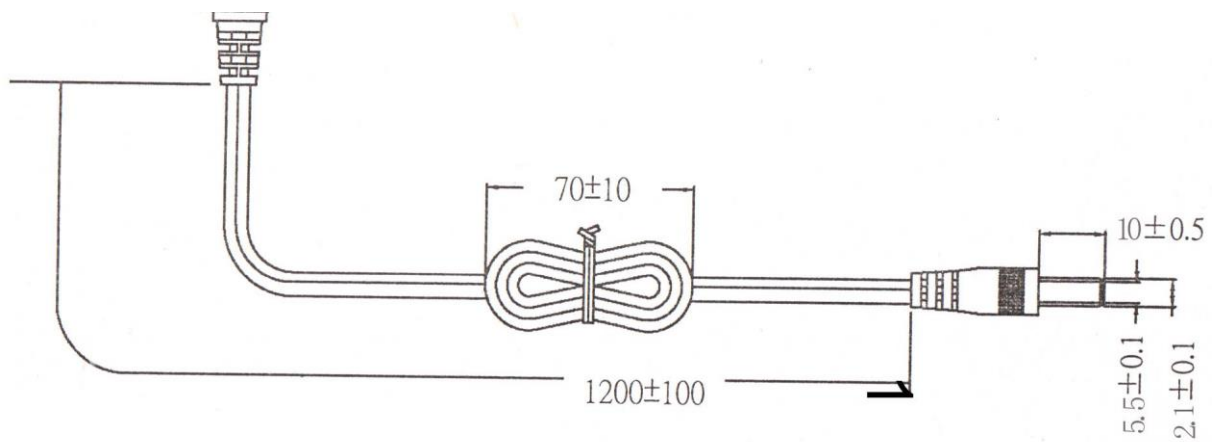
Color: Black

8.2 Input Connector:

Plug in Euro type

8.3 DC PLUG: 5.5*2.1 mm

8.4 DC CABLE: Black round 1.2M



9、Label:

Material: PET

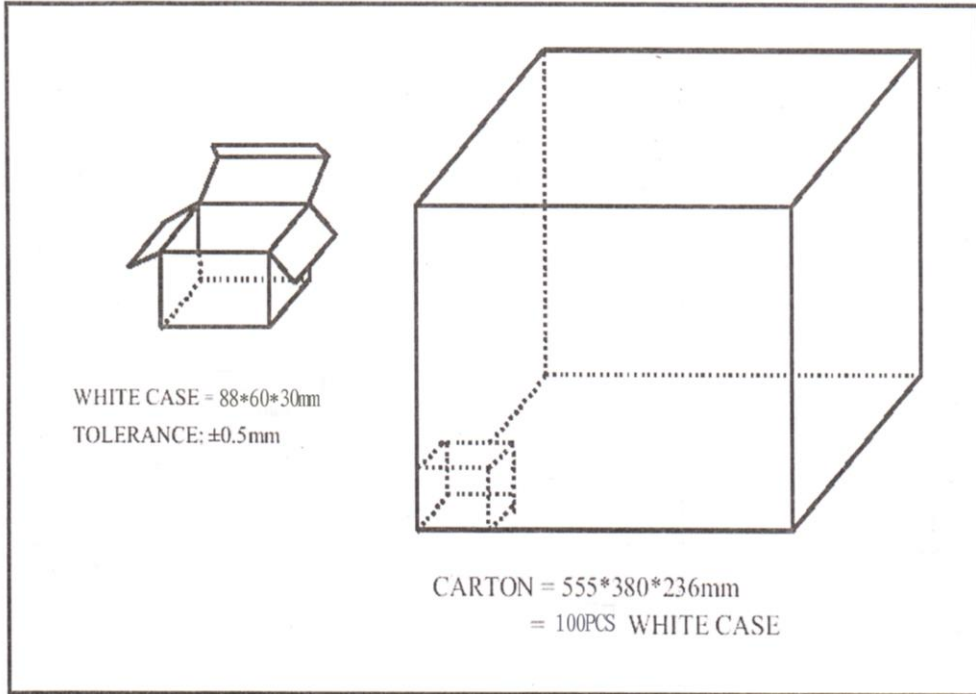
Endure heat above 110°C

Thickness: 0.2-0.3mm

Size: 21*18.8mm

10、 Packing: Small white case

UNIT:mm



Attestation of Conformity

No. E0612513

The following products has been tested by us with the listed standards and found in compliance with the requirement of following standards.

Applicant: Fuyuan Electronic Co., Ltd.
Address: Xiewu village, Hengshan, Shipai town, Dongguan, Guangdong, China
Manufacture: Fuyuan Electronic Co., Ltd.
Address: Xiewu village, Hengshan, Shipai town, Dongguan, Guangdong, China
Product : Switching Power Supply
Model No.: FYxxxxyyy series
Rating: 100-240V~; 50/60Hz; 2.5A

Test Standards	
AS/ NZS CISPR 22: 1997+A1: 2000+A2: 2002	Information technology equipment — Radio disturbance characteristic — Limits and methods of measurement

The statement is based on a single evaluation of representative samples of above mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo.

After preparation of the necessary technical documentation as well as the conformity declaration the C-tick marking as shown below can be affixed on the equipment.



Sally Liao
Manager
Date : Dec 12, 2006



Northbrook Division
333 Pfingsten Road
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File E304160

Vol X1

Issued: 2006-05-22

Revised:

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

POWER SUPPLIES, INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL
BUSINESS EQUIPMENT
(QQQ,QQQ7)

Manufacturer: SEE ADDENDUM FOR MANUFACTURER LOCATIONS

Applicant: SAME AS MANUFACTURER
(100097-201)

Listee: SAME AS MANUFACTURER
(100097-201)

This Procedure authorizes the above manufacturer to use the marking specified by Underwriters Laboratories Inc. only on products covered by this Procedure, in accordance with the applicable Follow-Up Service Agreement.

The prescribed Mark or Marking shall be used only at the above manufacturing location on such products which comply with this Procedure and any other applicable requirements.

The Procedure contains information for the use of the above named Manufacturer and representatives of Underwriters Laboratories Inc. and is not to be used for any other purpose. It is lent to the Manufacturer with the understanding that it is not to be copied, either wholly or in part, and that it will be returned to Underwriters Laboratories Inc. upon request.

This PROCEDURE, and any subsequent revisions, is the property of UNDERWRITERS LABORATORIES INC. and is not transferable.

UNDERWRITERS LABORATORIES INC.

Sajeev Jesudas
Chief Operating Officer

An independent organization working for a safer world with integrity, precision and knowledge.





Ref. Certif. No.

JPTUV-016468

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 Power Supply

Name and address of the applicant
Nom et adresse du demandeur

Fuyuan Electronic Co., Ltd.
Xiewu Village, Hengshan
Shipai Town, Dongguan, Guangdong 523335, P.R. China

Name and address of the manufacturer
Nom et adresse du fabricant

Fuyuan Electronic Co., Ltd.
Xiewu Village, Hengshan
Shipai Town, Dongguan, Guangdong 523335, P.R. China

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

Fuyuan Electronic Co., Ltd.
Xiewu Village, Hengshan
Shipai Town, Dongguan, Guangdong 523335, P.R. China

Rating and principal characteristics
Valeurs nominales et caractéristiques principales

Input : AC 100-240V; 50/60Hz; 2.5A; Class II
Output: refer to the test report

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

Fuyuang

Model/type Ref.
Ref. de type

FYxxxxxxx
(xxx, yyyy = refer to test report)

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

For model differences, refer to the test report.

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 60950-1:2001
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

12014620 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



TÜV Rheinland Group

TÜV Rheinland Japan Ltd.
Shin Yokohama Daini Center Bldg.
3-19-6, Shin Yokohama, Kohoku-ku
Yokohama 222-0033 Japan
Phone + 81 45 470-1050
Fax + 81 45 473-5221
Mail: info@jpr.tuv.com
Web: www.tuv.com

Signature:

Dipl.-Ing. S. Hartter

Date: 19.09.2006



전기용품안전인증서 Electrical Appliances Safety Certificate

안전인증번호: HU10419-9002A
(Certificate No.)
 제조업자명: Fuyuan Electronic Co., Ltd.
(Manufacturer)
 대표자명: Shao Cheng Huang
(President)
 제조공장의소재지: Xiewu village, Hengshan, Shipai town, Dongguan, Guangdong, China
(Factory Address)
 제품명: 직류전원장치 (AC/DC Adapter)
(Product)
 기본모델명: FY1906000
(Basic Model)
 정격: 100-240 V~, 50/60 Hz, 2.5 A (O/P : 19 Vdc / 6 A)
(Rating)
 파생모델명 (Series Model):

- | | |
|------------|------------|
| FY1706000 | FY1705000 |
| FY1704000 | FY1703000 |
| FY1702000 | FY1701000 |
| FY1700500 | FY1904750 |
| FY1904000 | FY1903150 |
| FY1603750 | FY15006000 |
| FY15005000 | FY15004000 |
| FY15003000 | FY15002000 |
| FY15001000 | FY1500500 |
| FY1267500 | 이면기재 |

적용기준: K 60950-1
(Standard) K00022 K00024

「전기용품안전 관리법 시행규칙」 제6조 제2항에 따라 위의 전기용품에 대하여 안전인증서를 발급합니다.

We Issue Electrical Appliances Safety Certification as adobe product by Article 6 Section 2 of the Electrical Appliances Safety Control Law Enforcement Regulation.



2009 년 7 월 3 일
(Year) (Month) (Day)

한국전기전자시험연구원
Korea Electric Testing Institute



※ 본 인증서는 「전기용품안전 관리법」 에 따른 전기제품 안전성확인에 한정된 것이며, 그 밖의 다른 법률이 적용되는 제품의 경우에는 해당 법률에 따라 추가적으로 인증·허가 등을 받아야 합니다.

- 첨부서류
1. 안전관리부품 및 재질목록 (List of Critical Components)
 2. 기본모델·파생모델의 내용 (General Descriptions of Certified Products)
 3. 전기용품안전인증의 변경현황 (Status of Certificate Revisions)

FY1266000
FY1264000
FY1262000
FY1260500
FY1207000
FY1205000
FY1203000
FY1201500
FY1200900
FY1200700
FY1200500
FY0906000
FY0904000
FY0902000
FY0901000
FY0856000
FY0854000
FY0852000
FY0851000

FY1265000
FY1263000
FY1261000
FY1207500
FY1206000
FY1204000
FY1202000
FY1201000
FY1200800
FY1200600
FY0907500
FY0905000
FY0903000
FY0901500
FY0900500
FY0855000
FY0853000
FY0851500
FY0850500

KETI



適合証明書

Certificate of Conformity



証明書番号 Certificate No.

ページ Page

JD 50195547

1

申請者照会番号 Applicant Reference

検査機関照会番号 Our Reference

発行年月日 Date of Issue

01-LIE-17018688 001

2011年01月06日

申請者 Applicant

Fuyuan Electronic Co., Ltd.
Xiewu village, Hengshan, Shipai town, Dongguan,
Guangdong 523335, P.R.China

製造工場 Factory

Fuyuan Electronic Co., Ltd.
Xiewu village, Hengshan, Shipai town, Dongguan,
Guangdong 523335, P.R.China



検査の方法 Inspection Method

- ・ 技術基準 省令第2項: J60950-1(H22), J55022(H22), J3000(H21)
Technical Requirements Clause 2: J60950-1(H22), J55022(H22), J3000(H21)
- ・ 施行規則別表第四 (交流用電気機械器具)
Appendix 4 of the Enforcement Regulations (AC Electric Appliances)

特定電気用品名

Name of Specified Electrical
Appliance and Material

: 直流電源装置
DC Power Supply Unit

型式の区分

Type Classification

: (「添付 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8」参照)
(Refer to "Attachment 1.0, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8")

海外製造事業者

Overseas Manufacturer

: Fuyuan Electronic Co., Ltd.
Xiewu village, Hengshan, Shipai town, Dongguan, Guangdong 523335,
P.R.China

証明書の有効期間

Validity of Certificate

: 本証明書は、施行令で規定された期間である 2016年01月05日まで有効です。
This certificate is effective until 05 January 2016, being the period stipulated by the Enforcement Ordinance.

これは、上記申請者より申請のあった上記特定電気用品及び製造工場が、電気用品安全法第八条第一項に規定する技術基準及び同法第九条第二項の経済産業省令で定める基準に適合していることを証明するものです。

This is to certify that the above-mentioned Specified Electrical Appliances and Materials and the factory which the above-mentioned applicant applied for have been complied with the Technical Requirements stipulated by Article 8, Paragraph 1 of the Electrical Appliance and Material Safety Law and the requirements stipulated by the METI Ordinance specified in Article 9, Paragraph 2 of the said law.

テュフ ラインランド 香港 リミテッド

TÜV Rheinland Hong Kong Ltd.

エンペラーインターナショナルスクエア 8-10F、
7フンタイロード、クロンベイ、クロン、香港
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7 Wang Tai Road, Kowloon Bay,
Kowloon, Hong Kong



発行者 Issued by

氏名 Name Olaf Schiller

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Tel : +86-755-2673 4311(7 lines); Fax : +86-755-2673 4059 <http://www.usai.cn> E-mail:sales@usai.cn



Verification of Conformity

No. E0604413

The following products has been reported by us with the listed standards and found in compliance with the FCC part 15 requirements. It is possible to use FCC marking to demonstrate the compliance with FCC regulations.

Applicant: Fuyuan Electronic Co.,Ltd

Address: Xiewu village, Hengshan, Shipai town, Dongguan,
Guangdong, China

Manufacture: Fuyuan Electronic Co.,Ltd

Address: Xiewu village, Hengshan, Shipai town, Dongguan,
Guangdong, China

Product : AC Switching adaptor

Model No.: FYXXYYYYY series

Rating: Input: 100-240Vac, 50/60Hz, Max. 2.5A
Output: Refer to the report

Test Standards

CFR, Title 47 FCC Part 15: 2004	Title 47 Of The Code Of Federal Regulations Federal Communications Commission Rules Part 15 Radio Frequency Devices
------------------------------------	---

The EUT described above is tested in Accurate Technology Co., Ltd. The EMC laboratory is listed on FCC with registration Number 253065. This lab is assumed full responsibility for the accuracy of the test results. This verification of conformity shows that the EUT technically complies with the FCC Part 15 requirements.

The verification of conformity applies to the tested sample above mentioned only and shall not imply an assessment of the whole production.



Sally Liao
Manager
Date : May 25, 2006



C E R T I F I C A T E



of Conformity
Low Voltage Directive 73/23/EEC
as last amended by EEC Directive 93/68/EEC

Registration No.: AN 50091861 0001

Report No.: 17004848 001

Holder: Fuyuan Electronic Co., Ltd.
Xiewu Village, Hengshan
Shipai Town
Dongguan, Guangdong 523335
P.R. China

Product: Netzgerät
(Switching Power Supply)

Identification: Type Designation: FYxxxxxxx
For detail of the variable xxxxyyy refer to TÜV
Rheinland license S1 50086826 pages 0001-0009.
Serial No.: n.a.
Remark: Issued in conjunction with above TÜV Rheinland
license page 0001.

This certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical Report and documentation are at the Licence Holder's disposal. This is to certify that the tested sample is in conformity with all revision of Annex I of Council Directive 73/23/EEC, in its latest amended version, referred to as the Low Voltage Directive. This certificate does not imply assessment of the series-production of the product and does not permit the use of a TÜV Rheinland mark of conformity. The holder of the certificate is authorized to use this certificate in connection with the EC declaration of conformity according to Annex III of the Directive.



Certification Body

Cologne, 05.09.2006

Dipl.-Ing. O. Schiller

TÜV Rheinland Product Safety GmbH - Am Grauen Stein - D-51105 Köln

CE The CE marking may be used if all relevant and effective EC Directives are complied with. CE

Zertifikat

Certificate



Zertifikat Nr. Certificate No.
91 50224721

Blatt Page
0001

Ihr Zeichen Client Reference
H.S.C.

Unser Zeichen Our Reference
02-CWH- 17004848 004

Längstens gültig bis Latest expiration date
(date/year)
17.04.2017

Genehmigungsinhaber License Holder
Fuyuan Electronic Co., Ltd.
Xiewu Village, Hengshan
Shipai Town
Dongguan, Guangdong 523335
P.R. China

Fertigungsstätte Manufacturing Plant
Fuyuan Electronic Co., Ltd.
Xiewu Village, Hengshan
Shipai Town
Dongguan, Guangdong 523335
P.R. China

Prüfzeichen Test Mark



Gepüft nach Tested acc. to
EN 60950-1:2006+A11+A1
ZEK 01.2-08/12.08

Der Anbieter / Der Hersteller 2006/95/EC zu entsprechen. Das Zertifikat kann im Rahmen der Konformitätserklärung nach Absatz III verwendet werden.
The provider / The manufacturer 2006/95/EC is complied with. The certificate can be used in connection with the declaration of conformity acc. to Annex III.

Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelt - Einheit
License Fee - Unit

Schaltnetzteil (Switching Power Supply)

Serienbezeichnung : FY0007YYY
(Series Type Designation)

14

XXX = 030-500

Dreistellige Zahl, steht für den 10 fachen
Wert der Ausgangsspannung in Volt (Three digits
indicating 10 times the output voltage value in volt)

YYYY = 0300-7530

Eine vierstellige Zahl, steht für Ausgangstrom in mA
(four digits indicating output current in mA)

Nenneingangswerte : AC 100-240V; 50/60Hz; Max. 2,5A
(Rated Input Values)

Schutzklasse : II
(Protection Class)

Umgebungstemperatur : 25°C
(Ambient Temperature)

Fortsetzung Blatt (continued on page): 0002

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ANLAGE (Appendix): 1

Dieses Zertifikat liegt (nach Prüf- und Zertifizierungsordnung) zugrunde.
Produkt und Fertigungsstätte erfüllen § 20 und § 21 des
Produktsicherheitsgesetzes.

This certificate is based on our Testing and Certification Regulation.
Product and production fulfil par § 20 and § 21 of the
Product Safety Law.

TÜV Rheinland LGA Products GmbH - Fillystraße 2 - 90431 Nürnberg
Tel: (+49)2118 06 - 11 71 e-mail: cert-validity@goc.tuv.com
Fax: (+49)2118 06 - 19 35 <http://www.tuv.com/valky>



Ing. M. Eichenseher

Ausstellungsdatum Date of Issue : 18.04.2012 (day/month/year)

Usai Technology Services Co., Ltd.

Rm. 1301, Shang Qi Building, No. 48 Qi Lin Rd., Nan Shan,
Shenzhen, Guang Dong, 518057, China

Tel : +86-755-2673 4311(7 lines); Fax : +86-755-2673 4059 <http://www.usai.cn> E-mail:sales@usai.cn



Certification of Conformity

No. E0604412

The following products has been tested by us with the listed standards and found in compliance with the council EMC directive 89/336/EEC and CE Marking Directive 93/68/EEC. It is possible to use CE marking to demonstrate the compliance with this EMC Directive.

Applicant: Fuyuan Electronic Co.,Ltd
Address: Xiewu village, Hengshan, Shipai town, Dongguan, Guangdong, China
Manufacturer: Fuyuan Electronic Co.,Ltd
Address: Xiewu village, Hengshan, Shipai town, Dongguan, Guangdong, China
Product : AC Switching adaptor
Model No.: FYXXYYYYY series
Rating: Input: 100-240Vac, 50/60Hz, Max. 2.5A
Output: Refer to the report

Test Standards	
EN55022: 1998+A1: 2000 + A2: 2003	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement
EN61000-6-3:2001	Electromagnetic compatibility (EMC) -- Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
EN61000-6-1:2001	Electromagnetic compatibility (EMC) -- Part 6-1: Generic standards - Immunity for residential, commercial and light-industrial environments
EN61000-3-2: 2000	Electromagnetic Compatibility (EMC) Part 3: Limits -- Section 2. Limits for harmonic current emission (equipment input currents16A per phase)
EN61000-3-3: 1995 + A1: 2001	Electromagnetic Compatibility (EMC) Part 3: Limits -- Section 3. Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems for equipment with rated currents16A

The statement is based on a single evaluation of representative samples of above mentioned products. It does not imply an assessment of the whole production and does not permit the use of the test lab. logo.

After preparation of the necessary technical documentation as well as the conformity declaration the CE marking as shown below can be affixed on the equipment as stipulated in Article 10.1 of the Directive. Other relevant Directives have to be observed.



Sally Liao
Manager

Date : May. 18, 2006

