	MODEL NO.	AG2412-E281	SHEET NO	1
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE: REVISED DATE:	JUL/06/2007

APPROVAL SIGNATURE
DATE:

CUSTOMER : Phidgets Inc.

Model : AG2412-E281(2A0F) Phidgets

REV.00

AC Input	100-240Vac	DC Output	12V/2A	PC / NP
DC O/P cable	2468 20# 2.1X5.5X9.5mm 180° Tuning fork +Kink 6FT			
AC plug	EU 2Pin	Packaging	PE Bag	

	 <p>* Remain Updated *</p>
---	---

Jentec Technology Co., Ltd.
17F #2 Jian-Ba Rd., Chung-Ho City
Taipei Hsien , Taiwan.
Tel : 886-2-8226-2057
Fax: 886-2-8226-2077
www.jentec.com.tw

	MODEL NO.	AG2412-E281	SHEET NO	3
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE:	JUL/06/2007
			REVISED DATE:	

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11.0 LABEL/MARKING

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	MODEL NO.	AG2412-E281	SHEET NO	5
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE:	JUL/06/2007
			REVISED DATE:	

INTRODUCTION

This documents specifies ONE voltage +12V power supply for electronic data processing equipment. The power supply will provide power to all system components.

1.0 INPUT REQUIREMENTS

- 1.1 Input Voltage Designing Range: 90~264 VAC.
 1.2 Line Frequency Designing Range: 47 HZ to 63 HZ.
 1.3 In-Rush Current: 30 A max. less under 115V conditions.

Interruption of the input voltage for duration sufficient to cause the output voltage to drop below the regulation setting shall cause reactivation of in rush limiting capability. (Full-load 25°C Cold-start)

- 1.4 Input Current: 0.5 A max. at any line voltage specified in 2.1 at output full load condition.

2.0 OUTPUT REQUIREMENTS

2.1 Output Power (Rated Power)

The unit total output power from all voltage under steady state condition will not exceed 24W watts

2.2 Output Regulation

Label Information per Safety Agencies according to UL1950 and or EN60950 Requirements.

- 2.2.1 Input Rated Voltage Range: 100~240 VAC.
 2.2.2 Line Rated Frequency: 50 HZ to 60 HZ.
 2.2.3 Static Load

TABLE 2.2.3

Output	Voltage	Minimum Load	Maximum Load	Surge Current
1	+12V	0A	2A	-----

2.2.4 Output Voltage

The output voltage shall be statically regulated for all combinations of load (min./ max.), line and environment, including cross regulation (if any) as shown:


TABLE 2.2.4

Output #	Voltage	Range	Tolerance
1	+12V	+11.4V~+12.6V	-5%,+5%

NOTE: Test measurement will be made at the output connector on the power Supply output cord and well connected on the mating connector.

2.2.5 Ripple and Noise

Differential ripple and noise at the power supply output shall be as

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shown below when measured under constant load range of 0.01 ~2A with an oscilloscope with at bandwidth of 20MHz.

TABLE 2.2.5

Output #	Voltage	Maximum peak to peak ripple and noise
1	+12V	120 mV

NOTE: Test measurement will be made at the output connector on the power Supply output cord. With used an aluminum Electrolytic capacitor of 10uf and ceramic of 0.1uf parallel on output terminal can prevent unknown noise pick up.

2.3 Transient Response and Deviation

The load regulation for +12V is less than +/-10% while the measuring is down by changing the measured output loading from +20% to +80% of rated load .

2.4 Turn on, Hold up Time

During turn on and turn off, no voltage shall exceed its nominal voltage by more than 10% and no output will change its polarity with respect to its return line. All outputs shall reach their steady state values within 2 seconds of turn on and the hold up time for the output must be at least 10 mS tested at 110VAC/50HZ input with 80% maximum load on output.

2.5 Efficiency

The efficiency (watt out/watt in) shall be a minimum of 78.6 % under line input 115Vac/60Hz and full load.

3.0 PROTECTION

3.1 Input Current

An input fuse with a rating of 2A/250V Amps, shall be provided to protect the power supply and the input wiring. Note: The fuse shall be an unchangeable unit.

3.2 Output Voltage (OVP)

The power supply shall shut down all outputs when any output voltage reaches to it's over voltage protection trigger point. (Maximum=130% output voltage)


Note: This is not a repeatable test, when it triggers it is a perennial shut down.

3.3 Output Current (OCP)

Overload conditions shall cause both the output current and the output voltages to decrease. Removal of an output overload conditions shall permit automatic recovery of the output voltage. The over current protection point Maximum=300% for all outputs . Note : The total output power should not over Rated power to operate ,otherwise will caused the power supply to damage.

3.4 Short Circuit Protection (SCP)

The power supply shall be protected from damage of accidentally short on the output terminal.

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4.0 MECHANICAL

Introduction


The power supply will provide

Output power connector show as in

Table 4.1

FRONT VIEW OF OUTPUT CONNECTOR

Table 4.1 Pin out for DC Connector

PIN #	Output Voltage
	

4.2 General Requirements

The power supply must not exceed an audible noise level of 32 dB while operating under any combination of specified load and input voltages and frequencies. This noise level shall be measured according to IEC standards 651 type 1, with the sound level meter pointed directly at the power supply in a free-field condition, at a distance of 1 meter and by selecting nominal "A" weighting frequency attenuation.

4.3 Power Supply Dimensions

The dimensions of the power supply are shown : (75x 34.5x55 m/m)

4.4 Input / Output Connection

AC PLUG	EU 2PIN
DC OUTPUT	2468 20# 2.1X5.5X9.5mm 180° Tuning fork +Kink 6FT

4.5 Unit Color: BLACK

5.0 RELIABILITY

5.1 Reliability

The design and construction of this power supply shall exhibit a minimum mean time between failure of 50,000 hours full rated load operation at 25.0°C, According to the MIL-HDBK-217F.


5.2 Burn-in

The power supply will be performed 100% burn-in at 40°C (±5°C) under 80%-100% of full load on all power supplies.

6.0 ENVIRONMENT

6.1 Storage

The power supply shall be capable of withstanding the following environmental conditions for extended periods of time, without sustaining electrical and/or mechanical damage and subsequent operational deficiencies:

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6.1.1 Ambient temperature: -25°C ~ +85°C

6.1.2 Relative Humidity: 10% ~ 95%

6.2 Operation

The power supply shall be capable of operating continuously in any mode without performance deterioration in the following environmental conditions:

6.2.1 Ambient Temperature: 0°C ~ 40°C

6.2.2 Relative Humidity: 10% ~95%.

7.0 EMI EMISSIONS

The power supply meets the radiated and conducted emission requirements for a CISPR22(EN55022) class B

8.0 SAFETY

The power supply must be certified or meet of the following safety standards:

	Certified	Meet
TUV-GS	★	
CE	★	

8.1 Dielectric Strength (Hi-Pot) Test System:

Withstand AC 3 K V/10mA, for 2 sec./ min., primary to secondary.

8.2 Insulation Resistance:

Primary to secondary: 10 M OHM at 500 VDC .

8.3 Leakage current: \leq 0.25mA

9.0 ENVIROMENTAL PROTECTION


9.1 RoHS and WEEE

This product from design to production all the parts and process should meet the requirement of Restriction of the use of certain hazardous substances in electrical and electronic equipment RoHS directive 2002/95/EC and also meet the directive 2002/96/EC of Waste electrical and electronic equipment (WEEE) .

9.2 EPA/CEC/MEPS regulation

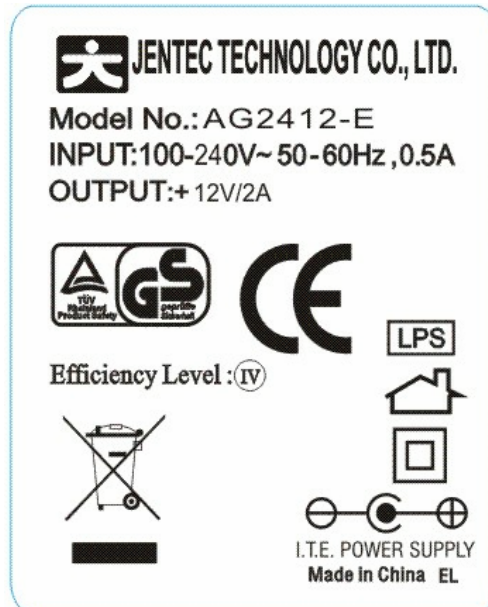
To meet the energy saving trend, this product has designed to meet the American EPA energy star program for the EPS regulation , or requirement of CEC 400-2006-002, AS/NZS/4665.2.2005 for Australia and New Zealand.

10.0 PACKAGING: PE Bag .

	MODEL NO.	AG2412-E281	SHEET NO	9
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE: REVISED DATE:	JUL/06/2007

11.0 LABEL/MARKING

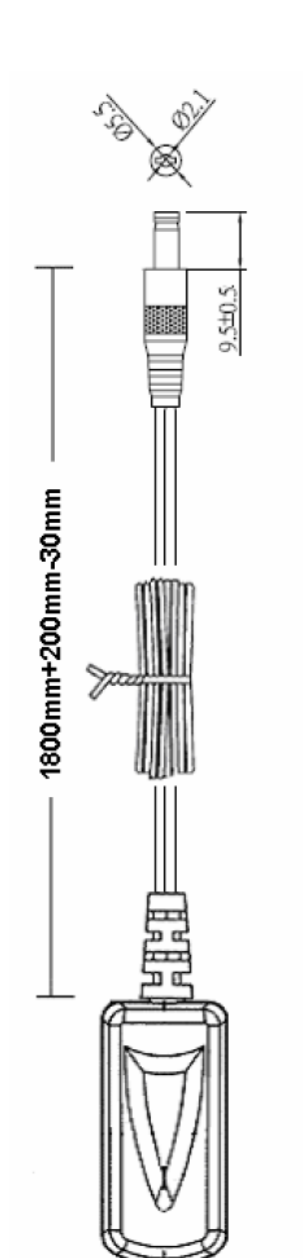
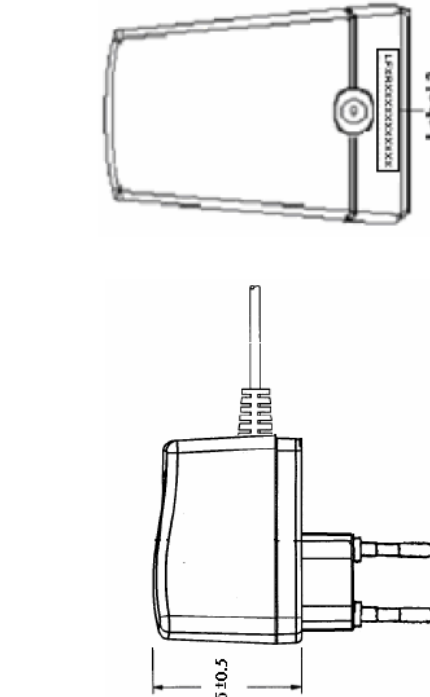
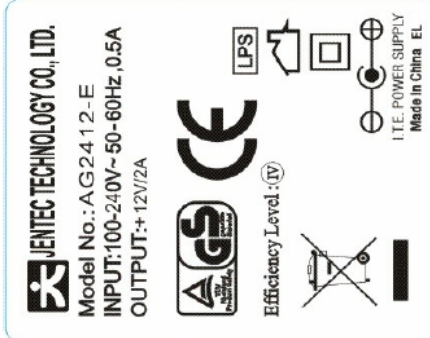
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* Remain Updated *

	MODEL NO.	AG2412-E281	SHEET NO	10
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE:	JUL/06/2007
			REVISED DATE:	





12.0 OUTLOOKING


	 <p>Note:</p> <ol style="list-style-type: none"> 1. Length : 1800mm±200mm-30mm 2. Type : UL 2468 20AWG 3. 180° molding plug type 4. Kink and Tuning Fork 5. Diameter Outside : 5.5mm ± 0.1 Inside : 2.1mm ± 0.1 6. Connector color : Black 			
Rev.	Description	Issuing date	Description : AG2412-E281(2A0F)	Mechanical Dimension Drawing
1. 00	Original	JUL/06/2007	Checked by : <i>Charles Huang</i> JUL/06/2007	MODEL NO : AG2412-E281(2A0F)
2.			Drawn by : <i>Charles Huang</i> JUL/06/2007	
3.				
4.				
5.				
6.				

 JENPEC TECHNOLOGY CO., LTD.

	MODEL NO.	AG2412-E281	SHEET NO	11
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE:	JUL/06/2007
			REVISED DATE:	

13.0 SAFETY CERTIFICATIONS

Zertifikat		Certificate			
Zertifikat Nr. <i>Certificate No.</i> S 50076520		Blatt <i>Page</i> 0001			
Ihr Zeichen <i>Client Reference</i> C148b0020/CSC		Unser Zeichen <i>Our Reference</i> ZTW1-HWH- 10015528 001		Längstens gültig bis <i>Latest expiration date</i> 20.12.2010 (day/mo/yr)	
Genehmigungsinhaber <i>License Holder</i> Jentec Technology Co., Ltd. 14F-9, No. 2, Jian-Ba Rd. Chung-Ho City, Taipei Hsien 235 Taiwan, R.O.C.			Fertigungsstätte <i>Manufacturing Plant</i> Super Union Industries Ltd. No. 2, Chang-Jin Rd. Chang-Jang-Bu Industries District Ho Au Chun, Heng Gang Zhen Lung Gang Qu, Guang Dong P.R. China		
Prüfzeichen <i>Test Mark</i>		Geprüft nach <i>Tested acc. to</i> EN 60950-1:2001+A11			
					
Zertifiziertes Produkt (Geräteidentifikation) <i>Certified Product (Product Identification)</i>			Lizenzentgelte - Einheit <i>License Fee - Unit</i>		
Schaltnetzteil (Switching Power Adapter)					
Bezeichnung : AF24XX-E			8		
(Type Designation)					
XX steht für (stands for) : 09 bis (to) 12			1		
Nennspannung : 1) AC 100-240V, 50-60Hz					
(Rated Voltage) : 2) AC 200-240V, 50-60Hz					
Nennstrom : 0.5A					
(Rated Current)					
Ausgang : siehe Aufbau-Übersicht					
(Output) (see constructional dataform)					
max. Umgebungstemperatur : 40°C					
(max. Ambient Temperature)					
Schutzklasse : II					
(Protection Class)					
Hinweis: Dieses Netzgerät ist geprüft und erfüllt die Anforderungen nach Abschnitt 2.5 als Stromquelle mit begrenzter Leistung. (Remark: The equipment is also tested and complies with sub-clause 2.5 as limited power source.)					
9					
ANLAGE (Appendix): 1					
Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde. Produkt und Fertigungsstätte erfüllen § 4 (1) bzw. (2) und § 7(1) des Geräte- und Produktsicherheitsgesetzes. <i>This certificate is based on our Testing and Certification Regulation. Product and production fulfill par 4 Art. 1 or Art. 2 and Par 7 Art. 1 of the German Equipment and Product Safety Law.</i>					
TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety					
Ausstellungsdatum <i>Date of Issue</i> : 21.12.2005 (day/mo/yr)					
			Zertifizierungsstelle  Dipl.-Ing. W. Hsu		

	MODEL NO.	AG2412-E281	SHEET NO	12
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE:	JUL/06/2007
			REVISED DATE:	

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
S 50076520

Blatt *Page*
0002

Ihr Zeichen <i>Client Reference</i>	Unser Zeichen <i>Our Reference</i>	Längstens gültig bis <i>Latest expiration date</i>	<i>(day/mo/yr)</i>
C148b0020/CSC	ZTW1-HWH- 10015528 001	20.12.2010	

Genehmigungsinhaber *License Holder*
Jentec Technology Co., Ltd.
14F-9, No. 2, Jian-Ba Rd.
Chung-Ho City, Taipei Hsien 235
Taiwan, R.O.C.

Fertigungsstätte *Manufacturing Plant*
Super Union Industries Ltd.
No. 2, Chang-Jin Rd.
Chang-Jang-Bu Industries District
Ho Au Chun, Heng Gang Zhen
Lung Gang Qu, Guang Dong
P.R. China

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11



Zertifiziertes Produkt *(Geräteidentifikation)*
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Schaltnetzteil (Switching Power Adapter)

wie Blatt (as page) 01
Ergänzung
(Addition)

Bezeichnung	: 1) AG24XX-E	1
(Type Designation)	2) AH24XX-E	1
XX steht für	: 1) 12 bis (to) 15	1
(stands for)	2) 15 bis (to) 24	1

Ausgang : siehe Aufbau-Übersicht
(Output) (see constructional dataform)



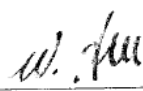
4

ANLAGE (Appendix): 1


Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Produkt und Fertigungsstätte erfüllen § 4 (1) bzw. (2) und § 7(1) des Geräte- und Produktsicherheitsgesetzes.
*This certificate is based on our Testing and Certification Regulation.
Product and production fulfill par 4 Art. 1 or Art. 2 and Par 7 Art. 1 of the German Equipment and Product Safety Law.*

Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety


Dipl.-Ing. W. Hsu

Ausstellungsdatum *Date of Issue* : 21.12.2005 (day/mo/yr)

	MODEL NO.	AG2412-E281	SHEET NO	13
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE:	JUL/06/2007
			REVISED DATE:	

Zertifikat

Certificate



Zertifikat Nr. *Certificate No.*
S 50076520

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0003

Ihr Zeichen <i>Client Reference</i>	Unser Zeichen <i>Our Reference</i>	Längstens gültig bis <i>Latest expiration date</i>	<i>(day/mo/yr)</i>
C148b0020-B1/CSC	ZTW1-HWH- 10015528 002	20.12.2010	

Genehmigungsinhaber *License Holder*
Jentec Technology Co., Ltd.
14F-9, No. 2, Jian-Ba Rd.
Chung-Ho City, Taipei Hsien 235
Taiwan, R.O.C.

Fertigungsstätte *Manufacturing Plant*
Super Union Industries Ltd.
No. 2, Chang-Jin Rd.
Chang-Jang-Bu Industries District
Ho Au Chun, Heng Gang Zhen
Lung Gang Qu, Guang Dong
P.R. China

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 60950-1:2001+A11



Zertifiziertes Produkt *(Geräteidentifikation)*
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Schaltnetzteil (Switching Power Adapter)

wie Blatt (as page) 01

Änderung für Bezeichnung : 1) AF24XX-E
(Change for Type Designation) 2) AG24XX-E
3) AH24XX-E

Bezeichnung : 1) AF24XX-Z
(Type Designation) 2) AG24XX-Z
3) AH24XX-Z

XX steht für (stands for) : 1) 09 bis (to) 12
2) 12 bis (to) 15
3) 15 bis (to) 24

Z steht für (stands for) : Y oder (or) E



1

1

ANLAGE (Appendix): 1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde.
Produkt und Fertigungsstätte erfüllen § 4 (1) bzw. (2) und § 7(1) des Geräte- und Produktsicherheitsgesetzes.
*This certificate is based on our Testing and Certification Regulation.
Product and production fulfill par 4 Art. 1 or Art. 2 and Par 7 Art. 1 of the German Equipment and Product Safety Law.*


Zertifizierungsstelle

TÜV Rheinland Product Safety GmbH, Am Grauen Stein, D-51105 Köln
Tel.: (+49/221)8 06 - 13 71 e-mail: cert-validity@de.tuv.com
Fax: (+49/221)8 06 - 39 35 http://www.tuv.com/safety

W. Hsu

Dipl.-Ing. W. Hsu

Ausstellungsdatum *Date of Issue* : 27.07.2006 (day/mo/yr)

	MODEL NO.	AG2412-E281	SHEET NO	14
	DESCRIPTION	SWITCHING MODE AC ADAPTER	ISSUED DATE: REVISED DATE:	JUL/06/2007



VERIFICATION OF COMPLIANCE

This Verification of Compliance is hereby issued to the product designated below.

Product ADAPTOR
 Model AX24XX-X (The first X = H, F, G; The other X = 0-9, A-Z)
 Trade name JENTEC
 Applicant Jentec Technology Co., Ltd.
 17F, No. 2, Jian-Ba Rd., Chung-Ho City,
 Taipei Hsien, Taiwan, R.O.C.

Applicable Standard(s) EN 55022: 1998 + A1: 2000 + A2: 2003
 EN 61000-3-2: 2000
 EN 61000-3-3: 1995 + A1: 2001
 EN 55024: 1998 + A1: 2001 + A2: 2003
 IEC 61000-4-2: 1995 + A1: 1998 + A2: 2000;
 IEC 61000-4-3: 2002 + A1: 2002;
 IEC 61000-4-4: 1995 + A1: 2000 + A2: 2001;
 IEC 61000-4-5: 1995 + A1: 2000; IEC 61000-4-6: 1996 + A1: 2000;
 IEC 61000-4-8: 1993 + A1: 2000; IEC 61000-4-11: 1994 + A1: 2000

Report No. 51027106-E
 Test Laboratory Compliance Certification Services Inc.
 No. 81-1, Lane 210, Bade Rd., 2, Luchu Hsiang,
 Taoyuan Hsien, Taiwan, R.O.C.
 Tel: +886-3-3240332/ Fax: +886-3-3245235

This device has been tested and found to comply with the stated standard(s), which is(are) required by the Council Directive of 89/336/EEC, Amended by 92/31/EEC and 93/68/EEC. The test results are indicated in the test report and are applicable only to the tested sample identified in the report.

Kurt Chen

Kurt Chen / Director of Linkou Laboratory
 Date: November 4, 2005