

# 客户承认书

## SPECIFICATION FOR APPROVAL

CUSTOMER/ 客户 : \_\_\_\_\_

CUSTOMER P.N./客户物料号 : \_\_\_\_\_

MODEL NO./ 产品型号 : HKA09019047-6DAPPROVAL NO./ 承认编号 : WI-F-20091019PREPARED DATE/拟定日期 : 2009-11-11

CUSTOMER AUTHORIZED SIGNATURE/客户承认签核		

Please return to us one copy of "SPECIFICATION FOR APPROVAL" with you approved signature./ 客户确认签字，盖章后请回传一份承认书给我司。

ADD: Huntkey Park, Banxue Road, Bantian, Shenzhen,  
Guangdong, P. R. China

TEL: 0755-89606666

P.C.: 518129

FAX: 0755-89606333

<http://www.huntkey.com>

拟 制 :

审 核 :

批 准 :



## Contents/目录

1. SCOPE/概述.....	3
2. Input Characteristics/输入特性.....	4
3. Output Characteristics/输出特性.....	5
4. Protection Requirements/保护要求.....	5
5. Environment Requirements/环境要求.....	6
6. Reliability Requirements/可靠性要求.....	6
7. EMI/EMS Standards/EMI/EMS 标准.....	7
8. Safety Standards/安规标准.....	7
9. Mach. Outline Drawing/外观图.....	8
10. Label Drawing/标贴图.....	9
11. Package Drawing/包装示意图.....	10

### 1. SCOPE/概述

The document details the electrical, mechanical and environmental specifications of a SMPS, the power supply provides 90 W continuous output power.

资料详细描述了一  
关电源的电气性,结构性

The power  
RoHS requirements.

此款电源符合

Description/描

SMPS

插墙式适配器

SMPS Adaptor(Desk-top)/桌面型适配器

Open Frame/开放式结构

SMPS Unit (With Case)/带铁壳型

Others/其他

No-load/Light-load (空载/轻载)	
Output Load	Maximum Input Load
0W	0.5W
0.5W	1.0W
1.0W	1.7W
1.5W	2.4W

款 90W(连续输出功率)开  
及环境等要求.

supply shall meet the

RoHS 要求.

述:

Adaptor(Wall mount)/

## 2. Input Characteristics/输入特性

### 2.1. Input Voltage & Frequency/输入电压与频率

The range of input voltage is from 90Vac to 264Vac with a single phase.

输入电压范围: 从 90Vac 到 264Vac, 单相输入.

	Minimum/最小	Rating/额定值	Maximum/最大
Input Voltage/输入电压	90Vac	100Vac~240Vac	264Vac
Input Frequency/输入频率	47Hz	60Hz/50Hz	63Hz

### 2.2. Input AC Current/输入交流电流

1.5Amax. @ 90Vac input & Full load/在 90Vac 输入和满载条件下最大 1.5A

### 2.3. AC Receptacle/交流输入插座

The inlet receptacle shall comply with IEC 320 standard sheet C6(3 pin inlet) and be certified, Recognized or approved by CSA, UL, VDE.

输入交流插座符合 IEC 320 规范 C6 要求(3 pin 梅花座), 满足 CSA、UL、VDE 安规认证要求.

### 2.4. Inrush Current (cold start)/浪涌电流(冷启动)

Power supply inrush current shall be less than the ratings of its critical components (including bulk rectifiers, fuses, and surge limiting device) under all conditions of line voltage of Section 2.1.

在 2.1 中所有输入条件下, 浪涌应小于关键器件的额定值(包括保险丝、桥整等浪涌限制元件)

### 2.5. Average Efficiency /平均效率

While input 115Vac and 230Vac, the average efficiency is more than 87%. The test point is at 25%, 50%, 75% and 100% of max load respectively.

在输入 115Vac 和 230Vac 条件下, 平均效率不小于 87%。测试点分别是最大载的 25%, 50%, 75% 和 100%。

### 2.6. No-Load/Light-Load Input Power Dissipation/ 空载轻载输入功率损耗

While input 115Vac/60Hz or 230Vac/50Hz and the output is no load/light load, the input power loss requirement must be specified below.

当输出空载和轻载时, 在输入电压 115Vac/60Hz 和 230Vac/50Hz 条件下测量, 输入功率损耗定义如下:

### 3. Output Characteristics/输出特性

#### 3.1. Static Output Characteristics <Vo & R+N>/静态输出特性<输出&纹波+噪音>

Output	Rated Load/额定负载		Peak Load	Output Range 输出电压范围	R+N 纹波与噪声	Remark 备注
Rating	Min. Load	Max. Load				
+19.0V	0.0A	4.74A	/	18.05V ~ 19.95V	300mVp-p	

Ripple & Noise: Tested by a oscilloscope using 20MHz bandwidth and the output is paralleled a 0.1uF ceramic capacitor and a 10uF electrolysis capacitor. (Under the input Voltage 100~240Vac)

纹波与噪声: 量测时示波器选用 20MHz 带宽限制,输出端要并联一颗 0.1uF 的陶瓷电容和一颗 10uF 的电解电容(输入电压 100~240Vac)

#### 3.2. Line/ Load Regulation/线性/负载调整率

Output	Load Condition/负载条件		Line Regulation 线性调整率	Load Regulation 负载调整率	Remark 备注
Rating	Min. Load	Max. Load			
+19.0V	0.0A	4.74A	±2%	5%	

#### 3.3. Turn - on Delay Time/开机延迟时间

3S max. @ 90Vac input & Full load/在 90Vac 输入和满载条件下最大 3S

#### 3.4. Hold-up Time/关机维持时间

10mS min. @ Full load & 115Vac/60Hz input turn off at worst case

在 115Vac 输入, 满载同时最差情况下关机, 最小 10mS

20mS min. @ Full load & 230Vac/50Hz input turn off at worst case

在 230Vac 输入, 满载同时最差情况下关机, 最小 20mS

#### 3.5. Rise Time/上升时间

30mS max. @ Full load/在满载条件下最大 30mS

#### 3.6. Fall Time/下降时间

20mS max. @ Full load/在满载条件下最大 20mS

#### 3.7. Output Overshoot / Undershoot/输出过冲/欠冲

10% max. When the power on or off/当电源开、关机时最大 10%

#### 3.8. Output Load Transient Response/输出负载瞬态响应

Output voltage is within 18.05~19.95V while the load step is from 20% to 80% of max load, R/S: 0.5A/uS, frequency: 100Hz, and 8mS duration at 80% of max load.

输出电压在 18.05~19.95V 之间,负载变化: 从最大载的 20%到 80%,斜率: 0.5A/uS,频率: 100Hz, 80%负载持续时间为 8mS.

#### 3.9. Capacitance Load/容性负载

While input 100~240Vac and capacitance load is 2200uF, the adapter can turn on normally and the output is in the rated range.

在输入 100~240Vac, 2200uF 容性负载条件下, 适配器能正常开机。并且输出电压范围在额定范围内。

### 4. Protection Requirements/保护要求

#### 4.1. Over Current Protection/过流保护

OCP Point Limited: 110%~160% of Max. Load/保护点限制: 小于最大负载的 110%~160%

The output shall hiccup when the over current applied to the output, and shall be self-recovery when the fault condition is removed

当过电流时,输出将进入打嗝模式,当过流情况解除后,产品将会自动恢复正常

#### 4.2. Short Circuit Protection/短路保护

The input power shall decrease when the output is short to GND, the power supply shall not damage, and shall be self-recovery when the fault condition is removed

当输出对地短路时,产品输入功率降低且不会损伤,当短路情况解除后,产品将会自动恢复正常

#### 4.3. Over Voltage Protection/过压保护

The power supply shall be protected when the output is over voltage exceeds 26V, and the power supply shall not be damaged

当输出过压超过 26V 时,产品保护且不会损伤。

#### 4.4. Over Temperature Protection 过温保护

A temperature sensor and associated protection circuitry are installed inside the adapter to detect the case internal temperature and provide protection against damage to the adapter.

过温保护电路被设置在适配器内部,避免适配器损坏。

### 5. Environment Requirements/环境要求

#### 5.1. Operating Temperature and Relative Humidity/操作温度和湿度要求

Operating Ambient temperature: 0□ to +40□

Relative Ambient humidity: 20%RH to 80%RH

Sea level shall below or no more than 10,000 feet

在海拔小于或等于 10,000 英尺的条件下,工作环境温度为 0□ ~ +40□,湿度为 20% ~ 80%。

#### 5.2. Storage Temperature and Relative Humidity/存储温度和湿度要求

Storage Ambient Temperature : -30□ to +70□

Storage Ambient Relative Humidity : 10%RH to 90%RH (non-condensing)

Sea level shall below 30,000 feet

在海拔低于 30,000 英尺的条件下,低温存储下限为-30□(无结冰环境);高温存储上限为 +70□,相对湿度为 10%RH ~ 90%RH。

### 6. Reliability Requirements/可靠性要求

#### 6.1. MTBF Qualification/平均间隔故障时间估算

The MTBF shall be at least 50,000 hours at 25□, Full load and normal input condition

平均间隔故障时间: 至少 50,000 小时, 25□ 环境及额定输入与满载条件下

#### 6.2. Vibration/振动

10 to 300Hz sweep at a constant acceleration of 1.0G (Breadth: 3.5mm) for 1Hour for each of the perpendicular axes X, Y, Z

扫描频率: 10 to 300Hz, 加速度: 1.0G(位移: 3.5mm), X, Y, Z 三垂直坐标轴向各振动 1 小时

## 7. EMI/EMS Standards/EMI/EMS 标准

### 7.1. EMI Standards/EMI 标准

EN 55022:1998, +A1:2000 +A2:2003, Class B  
CISPR 22:2003, Class B  
AS/NZS CISPR 22: 2004, Class B

### 7.2. EMS Standards/EMS 标准

EN 61000-3-2	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EN 61000-4-2	Electrostatic Discharge(ESD): 8kV air discharge, 6kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient/Burst-EFT: $\pm 1$ kV on AC power port.
EN 61000-4-5	Surge Immunity Test: AC Power Line: line to line 1kV, line to earth 2kV
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips: >95% dip, 0.5 period; 30% dip.

## 8. Safety Standards/安规标准

### 8.1. Dielectric Strength(Hi-pot)/介电耐压强度(高压)

Primary to Secondary: 1500Vac / 3.5mA / 60 seconds(3 seconds for production)  
or 2121Vdc / 3.5mA / 60 seconds(3 seconds for production)

初级对次级: 1500Vac / 3.5mA / 60 秒(生产时高压测试时间: 3 秒)

或 2121Vdc / 3.5mA / 60 秒(生产时高压测试时间: 3 秒)

### 8.2. Leakage Current/漏电流

0.25mAmax. at 240Vac / 50Hz input/在输入 240Vac/50Hz 的条件下最大 0.25mA

### 8.3. Insulation Resistance/绝缘阻抗

100M $\Omega$  min. @ primary to secondary add a 500Vdc test voltage

在初级与次级间加 500Vdc 进行测试,最小 100M $\Omega$

### 8.4. Regulatory Standards/安规标准

Type	Country	Standard	Type	Country	Standard
<input checked="" type="checkbox"/> UL/CUL	USA	UL60950-1	<input type="checkbox"/> PSB	Singapore	IEC60950-1
<input type="checkbox"/> TUV	Europe	EN60950-1	<input type="checkbox"/> PSE	Japan	J60950
<input type="checkbox"/> CCC	China	GB4943	<input type="checkbox"/> NOM	Mexico	NOM-001
<input checked="" type="checkbox"/> CE	Europe	EN60950-1	<input type="checkbox"/> GOST	Russia	MEK60950

## 9. Mach. Outline Drawing/外观图

