



IEI Integration Corp.
威強電工業電腦

SPECIFICATION FOR APPROVAL

零件承認書

IEI Part Number :

(威強電料號)

XACE-A140A-R11

IEI Description :

(威強電料號描述)

IPC,ATX(80+ BRONZE),ErP,400W,BALL,WO/IO,WO/SS,

IEI,W/PFC(A),OEM,FULL RANGE

Manufacturer :

(製造商)

FSP TECHNOLOGY

Manufacturer Model Name :

(製造商型號)

ACE-A140A,FSP400-60PFG

Manufacturer Part Number :

(製造商料號)

9PA4008417

Manufacturer / Supplier Description :

(製造商/代理商料號描述)

IPC,ATX(80+BRONZE),ErP,400W,BALL,

WO/IO,WO/SS,IEI,W/PFC(A),OEM,FULL RANGE

RoHS or Halogen Free :

(符合 RoHS 或無鹵)

RoHS

Manufacturer/Supplier contact window & stamped

(製造商/代理商窗口資訊及用印)



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Tel: 03-375-9888#1238

Enclosure List (附件清單)

- One .Component approving sheet (零件承認書)** Y N
- 1.English file name.....
 (英文檔名)
2. Component Spec.....
 (零件規格)
3. Component Packing.....
 (零件包裝)
4. Component Dimension.....
 (零件尺寸)
5. Component material approving.....
 (零件材料承認)
6. Safety certificate of plastic material or component.....
 (塑膠材質安規或零件安規)
7. Quality assurance after the delivered..... 18M
 (零件出廠保存期限，指出貨到我司,未上線並存放於倉庫,不影響零件功能的時間) _____

Two .Component RoHS test report in one year (零件一年內 RoHS 檢測報告)

1. The third party test report...ex. SGS TEST REPORT.....
 (第 3 公正單位測試報告...例如: SGS,ICT)
2. If there's no test report, please add the announcement at the attachment
 (無第 3 公正單位測試報告,提供自我宣告書)
3. The better is to add the MSDS at the attachment.....
 (各原材料 MSDS)

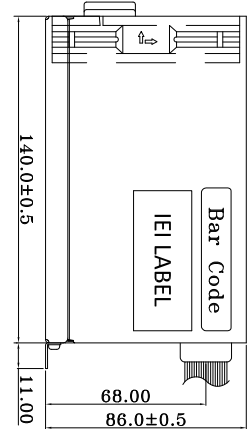
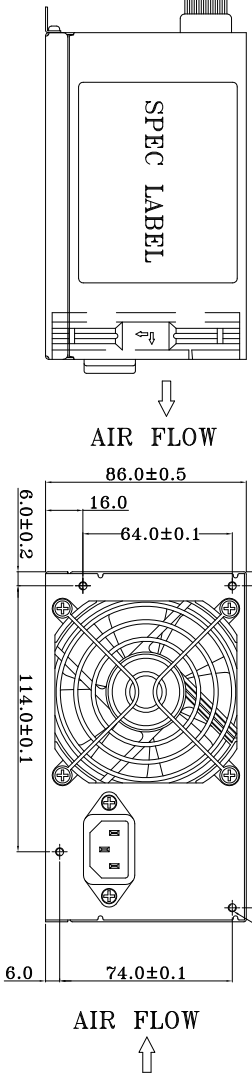
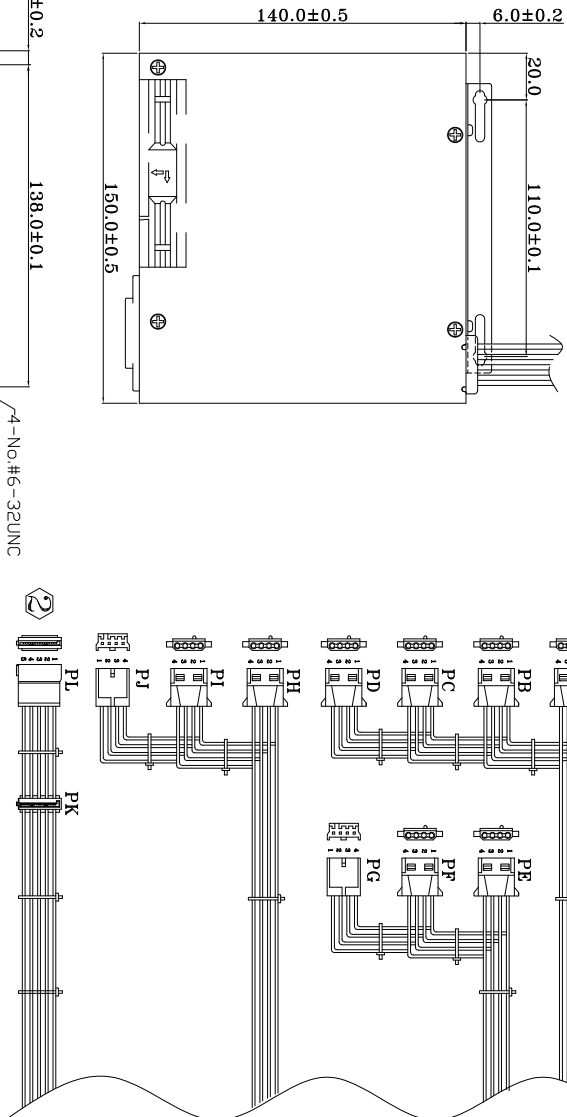
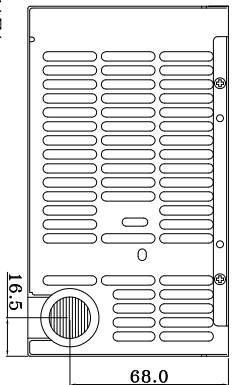
Three. Item Attributes(零件特性)

1. Operating Temperature(Max.)..... 50° C
 (最高使用溫度)
2. Operating Temperature(Min.)..... -5° C
 (最低使用溫度)
3. Storage Temperature(Max.)..... 80° C
 (最高儲存溫度)
4. Storage Temperature(Min.)..... -20° C
 (最低儲存溫度)
5. Meeting **IPC/JEDEC J-STD-20 MSL Classifications**..... N/A
 (符合 **IPC/JEDEC J-STD-20 MSL Classifications** 等級)
6. If not meeting Item5,that can meet N/A (standard) and attached documents for certifying.
 (如不符合上述第 5 項,可符合 N/A 標準，並提供相關資料說明)

REF. ID.	R/N	SIGNAL	WIRE	GAUGE	CONNECTOR	CABLE LENGTH
P1	1	+3.3VDC	ORANGE	18	PA0- 142008K1ID+ or REQUIV.	500±15mm
	2	+3.3VDC	ORANGE	18	PA0- 142008K1ID+ or REQUIV.	
	3	COM	BLACK	18	PA0- 142008K1ID+ or REQUIV.	
	4	+5VDC	RED	18	PA0- 142008K1ID+ or REQUIV.	
	5	COM	BLACK	18	PA0- 142008K1ID+ or REQUIV.	
	6	+5VDC	RED	18	PA0- 142008K1ID+ or REQUIV.	
	7	COM	BLACK	18	PA0- 142008K1ID+ or REQUIV.	
	8	+5VDC	RED	18	PA0- 142008K1ID+ or REQUIV.	
	9	+5VDC	PURPLE	18	PA0- 142008K1ID+ or REQUIV.	
	10	+5VDC	PURPLE	18	PA0- 142008K1ID+ or REQUIV.	
	11	+5VDC	YELLOW	18	PA0- 142008K1ID+ or REQUIV.	
P2	1	+3.3VDC	ORANGE	18	MOLEX 90031- 0010 or EQUIV.	500±15mm
	2	COM	BLACK	18	MOLEX 90031- 0010 or EQUIV.	
	3	COM	BLACK	18	MOLEX 90031- 0010 or EQUIV.	
	4	+3.3VDC	ORANGE	18	MOLEX 90031- 0010 or EQUIV.	
	5	+5VDC	RED	18	MOLEX 90031- 0010 or EQUIV.	
	6	+5VDC	RED	18	MOLEX 90031- 0010 or EQUIV.	
	7	COM	BLACK	18	MOLEX 90031- 0010 or EQUIV.	
	8	COM	BLACK	18	MOLEX 90031- 0010 or EQUIV.	
	9	+5VDC	RED	18	MOLEX 90031- 0010 or EQUIV.	
	10	+5VDC	RED	18	MOLEX 90031- 0010 or EQUIV.	
	P3	1	+5VDC	RED	18	
2		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
3		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
4		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
5		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
6		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
7		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
8		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
9		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
10		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
P4		1	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.
	2	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	3	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	4	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	5	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	6	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	7	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	8	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	9	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	10	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	P5	1	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.
2		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
3		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
4		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
5		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
6		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
7		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
8		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
9		+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
10		COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
P6		1	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.
	2	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	3	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	4	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	5	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	6	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	7	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	
	8	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	9	+5VDC	RED	18	MOLEX 3940- 2040 or EQUIV.	
	10	COM	BLACK	18	MOLEX 3940- 2040 or EQUIV.	

REF. ID.	R/N	SIGNAL	WIRE	GAUGE	CONNECTOR	CABLE LENGTH
PH	1	+12V1	Yel/Black	20	AMP 1-480424-0 or EQUIV.	400±15mm
	2	COM	BLACK	20	AMP 1-480424-0 or EQUIV.	
	3	COM	BLACK	20	AMP 1-480424-0 or EQUIV.	
	4	+5V	RED	20	AMP 1-480424-0 or EQUIV.	
PI	1	+12V1	Yel/Black	20	AMP 1-480424-0 or EQUIV.	200±10mm
	2	COM	BLACK	20	AMP 1-480424-0 or EQUIV.	
	3	COM	BLACK	20	AMP 1-480424-0 or EQUIV.	
	4	+5V	RED	20	AMP 1-480424-0 or EQUIV.	
PJ	1	+12V1	Yel/Black	22	AMP SD-67582 or EQUIV.	200±10mm
	2	COM	BLACK	22	AMP SD-67582 or EQUIV.	
	3	COM	BLACK	22	AMP SD-67582 or EQUIV.	
	4	+5V	RED	22	AMP SD-67582 or EQUIV.	
PK	1	+3.3VDC	ORANGE	20	MOLEX SD-97928 or EQUIV.	400±15mm
	2	COM	BLACK	20	MOLEX SD-97928 or EQUIV.	
	3	COM	BLACK	20	MOLEX SD-97928 or EQUIV.	
	4	+5V	RED	20	MOLEX SD-97928 or EQUIV.	
PL	1	+3.3VDC	ORANGE	20	MOLEX SD-67582 or EQUIV.	155±10mm
	2	COM	BLACK	20	MOLEX SD-67582 or EQUIV.	
	3	+5V	RED	20	MOLEX SD-67582 or EQUIV.	
	4	COM	BLACK	20	MOLEX SD-67582 or EQUIV.	
P7	1	+12V1	Yel/Black	20	AMP 1-480424-0 or EQUIV.	500±15mm
	2	COM	BLACK	20	AMP 1-480424-0 or EQUIV.	
	3	COM	BLACK	20	AMP 1-480424-0 or EQUIV.	
	4	+5V	RED	20	AMP 1-480424-0 or EQUIV.	
	5	+5V	RED	20	AMP 1-480424-0 or EQUIV.	

② P1由20P改為24P(20P+4P), 增加SATA
PE/PF & PH/PI改為20AWG



P/N.:9PA4008417

NOTE:

1. ALL THE LENGTH OF OUTPUT WIRES EXCLUDE HOUSING.
2. 產地標籤依業務指示加貼.

UNIT:mm

MODEL NO. : ACE-A140A(I22002)	TITLE: ASSY	SHEET: 1 OF 1	REV:02
R&D(2)	PE	DRAWN	DATE
INTERIOR COUNTERSIGN:		黃淑芳	APR.16.2015



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SPECIFICATION



Released Date:2014/02/10-09:29:55

SPECIFICATION

ACE-A140A

**Main Feature:
Active PFC Circuit
Full Range Input
ATX2.3 Version
80plus(Bronze)
Eup Lot 6**

MAY. 06. 2010

REV: 1.0

MODEL: ACE-A140A

Revision History

<u>Rev</u>	<u>Description</u>	<u>Date</u>	<u>Author</u>

1. GENERAL DESCRIPTION AND SCOPE

This is the specification of Model ACE-A140A; AC-line powered switching power supply with active PFC (Power Factor Correction) circuit, meet EN61000-3-2 and with Full Range Input features. Also, 5Vsb power is less than $1W_{input}$ at power off mode (PS_ON input at high state) which is comply with EuP Lot 6 year 2010 requirement.

The specification below is intended to describe as detailedly as possible the functions and performance of the subject power supply. Any comment or additional requirements to this specification from our customers will be highly appreciated and treated as a new target for us to approach.

2. REFERENCE DOCUMENTS

The subject power supply will meet the EMI requirements and obtain main safety approvals as following:

2.1 EMI REGULATORY

- FCC Part 15 Subpart J, Class 'B' 115 Vac operation.
- CISPR 22 Class 'B' 230 Vac operation.

3. PHYSICAL REQUIREMENTS

3.1 MECHANICAL SPECIFICATIONS

The mechanical drawing of the subject power supply, which indicate the form factor, location of the mounting holes, location, the length of the connectors, and other physical specifications of the subject power supply. Please refer to the attachment drawing.

3.2 CONNECTOR SPECIFICATIONS

The power supply connectors are:

- AC Inlet : Standard inlet socket 10A/250V, UL/CSA/VDE approved.
- P1 : The equivalent of MOLEX 39-01-2200, 20 pin connector
- PA,PB,PC,PD,PE,PF,PH,PI : The equivalent of AMP 1-480424-0, 4 pin connector
- PG,PJ :The equivalent of AMP 171822-4, 4 pin connector
- P2 :The equivalent of Molex 90331-0010, 6pin connector
- P3 :The equivalent of Molex 39-01-2040, 4pin connector

3.3 CONNECTOR PIN DESIGNATIONS

The pin designations and color codes are defined as follows:

	P1 SYSTEM BOARD		PA,PB,PC,PD,PE,PF,PG, PH,PI,PJ DISK DRIVER		P2 DISK DRIVER		P3 DISK DRIVER	
PIN1	+3.3V	ORANGE	+12V2	YELLOW	COM	BLACK	COM	BLACK
PIN2	+3.3V	ORANGE	COM	BLACK	COM	BLACK	COM	BLACK
PIN3	COM	BLACK	COM	BLACK	COM	BLACK	+12V1	YELLOW/BLACK
PIN4	+5V	RED	+5V	RED	+3.3V	ORANGE	+12V1	YELLOW/BLACK
PIN5	COM	BLACK			+3.3V	ORANGE		
PIN6	+5V	RED			+5V	RED		
PIN7	COM	BLACK						
PIN8	PWR- OK	GRAY						
PIN9	+5VSB	PURPLE						
PIN10	+12V2	YELLOW						
PIN11	+3.3V	ORANGE						
	+3.3VS	BROWN						
PIN12	-12V	BLUE						
PIN13	COM	BLACK						
PIN14	PS_ON	GREEN						
PIN15	COM	BLACK						
PIN16	COM	BLACK						
PIN17	COM	BLACK						
PIN18	-5V	WHITE						
PIN19	+5V	RED						
PIN20	+5V	RED						

4. ELECTRICAL REQUIREMENTS

4.1 OUTPUT ELECTRICAL REQUIREMENTS

The subject power supply will meet all electrical specifications below, over the full operation temperature range and dynamic load regulation.

4.1.1. OUTPUT RATING

Output	Nominal	Regulation	Ripple/Noise	Min	Max	peak
1	+3.3V	±5%	50mV	0.1A	21.0 A	
2	+5V	±5%	50mV	0.2A	20.0 A	
3	+12V1	±5%	120mV	0.1A	16.0 A	
4	+12V2	±5%	120mV	0.5 A	16.0 A	
5	-12V	±10%	120mV	0 A	0.5 A	
6	-5V	±10%	50mV	0 A	0.3A	
7	+5VSB	±5%	50mV	0 A	3.0A	3.5A

- (1) The +3.3V and +5V total output shall not exceed 130watts.
- (2) total output for this subject power supply is 400 watts.
- (3) Ripple and noise measurements shall be made under all specified load conditions through a single pole low pass filter with 20MHz cutoff frequency. Outputs shall bypassed at the connector with a 0.1uF ceramic disk capacitor and a 10uF electrolytic capacitor to simulate system loading.

(4) -5V option.

4.1.2. LOAD CAPACITY SPECIFICATIONS

The cross regulation defined as follows, the voltage regulation limits DC include DC Output ripple & noise.

LOAD	STM.	+3.3V	+5V	+12V1	+12V2	-12V
ALL MAX	HHHHH	16A	11.2A	11.2A	12A	0.3A
+5V MAX other MIN	LHLLL	0.5A	20.0 A	2.5A	2.5A	0A
+3.3V MAX other MIN	HLLLL	21.0 A	0.5 A	1.0A	1.0A	0A
+12V1 MAX other MIN	LLHLL	0.5 A	0.5 A	16.0A	1.0A	0A
+12V2 MAX other MIN	LLLHL	0.5 A	0.5 A	1.0A	16.0A	0A
ALL MIN	LLLLL	0.5 A	0.5 A	1.0A	1.0A	0A

4.1.3. HOLD-UP TIME (@FULL LOAD)

115V / 60Hz : 17 mSec. Minimum.

230V / 50Hz : 17 mSec. Minimum.

The output voltage will remain within specification, in the event that the input power is removed or interrupted, for the duration of one cycle of the input frequency. The interruption may occur at any point in the AC voltage cycle. The power good signal shall remain high during this test.

4.1.4. OUTPUT RISE TIME

(10% TO 90% OF FINAL OUTPUT VALUE, @FULL LOAD)

115V-rms or 230V-rms + 5Vdc : 20ms Maximum

4.1.5. OVER VOLTAGE PROTECTION

Voltage Source	Protection Point
+ 3.3 V _{dc}	3.5V-4.5V
+5V _{dc}	5.5V-6.82V
+12V _{1dc} +12V _{2dc}	13.4V-15.6V

4.1.6.OVER-CURRENT PROTECTION

OUTPUT VOLTAGE	Max. overcurrent limit
+3.3V	45A
+5V	45A
+12V1 DC	22A
+12V2 DC	22A

4.1.7.SHORT CIRCUIT PROTECTION

Output short circuit is defined to be a short circuit load of less than 0.1 ohm.

In the event of an output short circuit condition on +3.3V, +5V or +12V or -12V output, the power Supply will shutdown and latch off without damage to the power supply. The power supply shall return to normal operation after the short circuit has been removed and the power switch has been turned off for no more than 2 seconds.

4.1.8.POWER GOOD SIGNAL

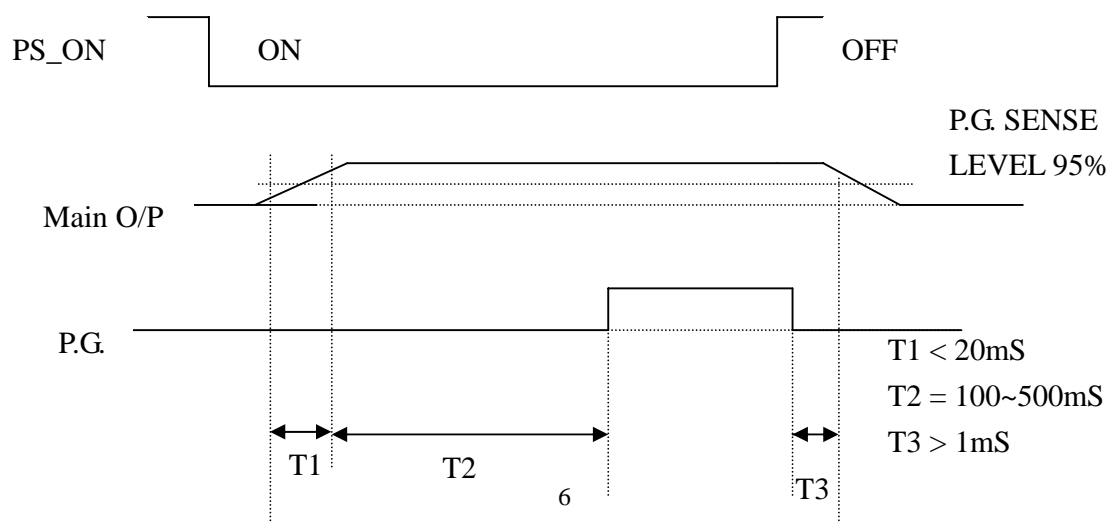
The power good signal is a TTL compatible signal for the purpose of initiating an orderly star-up procedure under normal input operating conditions. This signal is asserted (low) until +5Vdc has reached 4.75 volts during power up. Characteristics:

TTL signal asserted (low state) : less than 0.5V while sinking 10mA.

TTL signal asserted (high state): greater than 4.75V while sourcing 500uA.

High state output impedance: less or equal to 1Kohm from output to common.

POWER GOOD @ 115/230V,FULL LOAD	100 –500mSec.
POWER FAIL @ 115/230V, FULL LOAD	1 mSec. minimum



4.2. OUTPUT TRANSIENT LOAD RESPONSE

The output voltages shall remain within the limits specified in 4.1.1 output rating table in page 6 for the step loading and within the limits specified in Table 1 for the capacitive loading. The load transient repetition rate shall be tested between 50Hz and 5 kHz at duty cycles ranging from 10% -90%. The load transient repetition rate is only a test specification. The step load may occur anywhere within the MIN load to the MAX load shown in Table 1.

Table 1: Transient Load Requirements

Output	Step Load Size	Load Slew Rate	Capacitive Load
+3.3V	30% of max load	0.5A/us	2200uF
+5V	30% of max load	0.5A/us	1000uF
12V1+12V2	65% of max load	1.0A/us	2200uF
+5Vsb	25% of max load	0.5A/us	1uF

4.3. INPUT ELECTRICAL SPECIFICATIONS

4.3.1. VOLTAGE RANGE

PARAMETER		UNITS
V-in Range	90 - 264	V-rms

4.3.2. INPUT FREQUENCY

INPUT FREQUENCY	47-63Hz
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4.3.3. INRUSH CURRENT

(Cold start – 25 deg. C)

115V	NO damage
230V	NO damage

4.3.4. INPUT LINE CURRENT

115V	6.0 Amps – rms maximum
230V	3.0 Amps – rms maximum

4.4. EFFICIENCY

	Full load (100%)	Typical load (50%)	Light load (20%)
115VAC	82%	85%	82%
230VAC	82%	85%	82%

4.4.1 Standby Power Consumption (5Vsb):

Input Power < 1W @ 5Vsb/100mA & 230Vac input

PS_ON input signal @ High State

(loading shown in Amps) without -5V

Loading	+12V1	+12V2	+5V	+3.3V	-12V	+5Vsb
Full (100%)	11.96	11.96	11.48	12.06	0.37	2.24
Typical (50%)	5.98	5.98	5.74	6.03	0.19	1.12
Light (20%)	2.39	2.39	2.30	2.41	0.07	0.45

(loading shown in Amps) with -5V

Loading	+12V1	+12V2	+5V	+3.3V	-5V	-12V	+5Vsb
Full (100%)	11.93	11.93	11.45	12.02	0.22	0.37	2.24
Typical (50%)	5.96	5.96	5.73	6.01	0.11	0.19	1.12
Light (20%)	2.39	2.39	2.29	2.40	0.04	0.07	0.45

4.5. PS_ON#

PS_ON# is an active-low, TTL-compatible signal that allows a motherboard to remotely control the power supply in conjunction with features such as soft on/off, Wake on LAN+, or wake-on-modem. When PS_ON# is pulled to TTL low, the power supply should turn on the five main DC output rails: +12VDC, +5VDC, +3.3VDC, -5VDC, and -12VDC. When PS_ON# is pulled to TTL high or open-circuited, the DC output rails should not deliver current and should be held at zero potential with respect to ground. PS_ON# has no effect on the +5VSB output, which is always enabled whenever the AC power is present. Table 15 lists PS_ON# signal characteristics.

The power supply shall provide an internal pull-up to TTL high. The power supply shall also provide debounce circuitry on PS_ON# to prevent it from oscillating on/off at startup when activated by a mechanical switch. The DC output enable circuitry must be SELV-compliant.

Table 15. PS_ON# Signal Characteristics

	Min.	Max.
VIL, Input Low Voltage	0.0V	0.8V
IIL, Input Low Current (Vin = 0.4V)		-1.6mA
VIH, Input High Voltage (lin = -200 μ A)	2.0V	
VIH OPEN circuit, lin = 0		5.25V

5. ENVIRONMENTAL REQUIREMENTS

The power supply will be compliant with each item in this specification for the following Environmental conditions.

5.1. TEMPERATURE RANGE

Operating	-5 to +50 deg. C
Storage	-20 to +80 deg. C

5.2. HUMIDITY

Operating	85% RH, Non-condensing
Storage	95% RH, Non-condensing

5.3. VIBRATION

The subject power supply will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Vibration Operating – Sine wave excited, 0.25 G maximum acceleration, 10-250 Hz swept at one octave / min. Fifteen minute dwell at all resonant points, where resonance is defined as those exciting frequencies at which the device under test experiences excursions two times large than non-resonant excursions.

Plane of vibration to be along three mutually perpendicular axes.

5.4. SHOCK

The subject power supply will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Storage 40G, 11 mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Operating 10G, 11mSec. half-sine wave pulse in both directions on three mutually Perpendicular axes.

6. SAFETY

6.1. LEAKAGE CURRENT

The leakage current from AC to safety ground will not exceed 3.5 mA-rms at 264Vac, 50 Hz.

7. ELECTROMAGNETIC COMPATIBILITY

7.1 LINE CONDUCTED EMI

The subject power supply will meet FCC and VFG class B requirements under full load conditions.

7.2. RADIATED EMI

The subject power supply will meet FCC and CISPR 22 requirements under normal load conditions.

8. LABELLING

Label marking will be permanent, legible and complied with all agency requirements.

8.1. MODEL NUMBER LABEL

Labels will be affixed to the sides of the power supply showing the following:

- Manufacturer's name and logo.
- Model no., serial no., revision level, location of manufacturer.
- The total power output and the maximum load for each output.
- AC input rating.

8.2 DC OUTPUT IDENTIFICATION

Each output connector will be labeled.

9. RELIABILITY

9.1. MTBF

The power supply have a minimum predicted MTBF(MIL-HDBK-217) of 100,000 hours of continuous operation at 25°C, maximum-output load, and nominal AC input voltage.

MODEL NO. : ACE-A160A

TITLE: LABEL

SHEET: 2 OF 2

REV:01



Switching Power Supply
(交換式電源供應器/开关电源供应器)

MODEL NO (型號/型号): ACE-A140A

AC INPUT 交流輸入/交流輸入	100-240V~, 6-3A, 60-50Hz						
DC OUTPUT 直流輸出/直流輸出	+3.3V	+5V	+12V1	+12V2	+5Vsb	-12V	-5V
	21.0A	20.0A	16.0A	16.0A	3.0A	0.5A	0.3A
Max Wattage 最大輸出功率/最大輸出功率	130W Max						
Total output continuous shall not exceed 總輸出不可持續超過/總輸出不可持續超過	400W						



Tested to Comply
With FCC Standards



TUVus
E190414

警告！請勿打開盒蓋，內有危險高壓，請退回代理商維修。

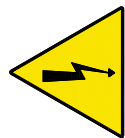
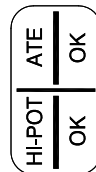
WARNING! HAZARDOUS AREA

SAFETY INSTRUCTIONS:
DO NOT REMOVE THE COVER
NO SERVICEABLE COMPONENTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

WARNING! GEFÄHRENZONE

SICHERHEITSHINWEISE:
VOR DEM ÖFFNEN DES GERÄTES NETZSTECKER ZIEHEN.
KEINE SERVICERELEVANTEN BAUTEILE ENTHALTEN.
SERVICEARBEITEN SOLLTEN NUR VON AUTORISIERTEM
FACHPERSONAL DURCHFÜHRT WERDEN.

警告！請勿打開盒蓋，內有危險高壓，請退回代理商維修。



製造商: 威強電工業電腦股份有限公司
MADE IN CHINA 中國製造/中國製造

BALL BEARING FAN / ErP 5Vsb < 1W Input / Active PFC / RoHS

6LL1376001GP



中国国家强制性产品认证证书

证书编号: 2010010907402741

委托人名称、地址

深圳辉力电子有限公司
广东省深圳市宝安区新安街道73区C7厂房

生产者(制造商)名称、地址

全汉企业股份有限公司
台湾省桃园市建国东路22号

生产企业名称、地址

深圳辉力电子有限公司
广东省深圳市宝安区新安街道73区金良工业区C4、C6、C7、C8、C9、C10、C11厂房

产品名称和系列、规格、型号

开关电源供应器

见附件(不带电线组件销售, 仅适用于海拔5000米及以下)

产品标准和技术要求

GB4943.1-2011; GB9254-2008; GB17625.1-2012

上述产品符合强制性产品认证实施规则
CNCA-01C-020: 2010的要求, 特发此证。

发证日期: 2013年07月26日

有效期至: 2017年09月18日

证书有效期内本证书的有效性依据发证机构的定期监督获得保持。

本证书为变更证书, 证书首次颁发日期: 2010年04月21日

本证书的相关信息可通过国家认监委网站www.cnca.gov.cn查询



主任:

中国质量认证中心

中国·北京·南四环西路188号9区 100070

<http://www.cqc.com.cn>



Q 0761409



CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

No. : 2010010907402741

NAME AND ADDRESS OF THE APPLICANT

ShenZhen HuiLi Electronics CO.,LTD
Blk C, Buiding 7 County 73, XinAn , Boan, Shenzhen, Guangdong, China.

NAME AND ADDRESS OF THE MANUFACTURER

FSP Group Inc.
No. 22, Jianguo E. Rd., Taoyuan City , Taiwan

NAME AND ADDRESS OF THE FACTORY

ShenZhen Huili Electronics CO.,LTD
Blk C, Buiding 4, 6, 7, 8, 9, 10, 11, County
73, XinAn , Boan, Shenzhen, Guangdong, China

NAME, MODEL AND SPECIFICATION

Switching Power Supply

See Appendix (Sale without cord set, Altitude up to 5000m)

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

GB4943.1-2011;GB9254-2008;GB17625.1-2012

This is to certify that the above mentioned products have met the requirements of implementation rules for compulsory certification(REF NO. CNCA-01C-020:2010).

Date of issue: Jul.26, 2013 Date of expiry: Sep.18, 2017

Validity of this certificate is subject to positive result of the regular follow up inspection by issuing certification body until the expiry date.

Date of original certification: Apr.21, 2010

This certificate can be verified through CNCA's website: www.cnca.gov.cn



President:

Wang Kejiao

CHINA QUALITY CERTIFICATION CENTRE

Section 9, No.188, Nansihuan Xilu, Beijing 100070 P.R.China

<http://www.cqc.com.cn>



Q 0761409



中国国家强制性产品认证证书

附录:

第 1 页 共 1 页

证书编号: 2010010907402741

纸号: 761409

型号规格列表:

型号	交流输入	直流输出
FSP500-60PFG; SPI500A8BB	100-240V~, 8-4A, 60-50Hz	+3.3V/24.0A, +5V/20.0A, -12V/0.5A, -5V/0.3A, +5Vsb/3.0A, +12V1/16.0A, +12V2/16.0A, (+3.3V & +5V=150W max.) 总输出功率: 500W
FSP460-60PFG; SPI460A8BB	100-240V~, 8-4A, 60-50Hz	+3.3V/24.0A, +5V/20.0A, -12V/0.5A, -5V/0.3A +5Vsb/3.0A, +12V1/16.0A, +12V2/16.0A (+3.3V & +5V=150W max.) 总输出功率: 460W
FSP400-60PFG; SPI400A8BB	100-240V~, 6-3A, 60-50Hz	+3.3V/21.0A, +5V/20.0A, -12V/0.5A, -5V/0.3A +12V1/16.0A, +12V2/16.0A, +5Vsb/3.0A (+3.3V & +5V=130W max.) 总输出功率: 400W
FSP350-60PFG; SPI350A8BB	100-240V~, 6-3A, 60-50Hz	+3.3V/21.0A, +5V/20.0A, -12V/0.5A, -5V/0.3A +5Vsb/3.0A, +12V1/16.0A, +12V2/16.0A, (+3.3V & +5V=130W max.) (+3.3V & +5V & +12V1 & +12V2=335W max.) 总输出功率: 350W

注: 此附录与证书同时使用时有效。



主任:

中国质量认证中心

中国·北京·南四环西路188号9区 100070

<http://www.cqc.com.cn>




中国国家强制性产品认证证书

变更结论

Modification Approval

证书编号Certificate No.: 2010010907402741

申请编号Application No.: A2013CCC0907-1562944

申请人Applicant: 深圳辉力电子有限公司 ShenZhen HuiLi Electronics CO.,LTD

证书编号Certificate No. (变更前Original): 2010010907402741

证书编号Certificate No. (变更后Present): 2010010907402741

变更产品名称 开关电源供应器

Name of Product Modified: Switching Power Supply

型号Model/Type: 见附件 (不带电线组件销售, 仅适用于海拔5000米及以下)

变更情况Situation of Modification:

见附件See Annex:

序号	项目Item	变更前Original	变更后Present
1	1. EMC认证标准	GB17625.1-2003	GB17625.1-2012
2	2. 海拔条件	仅适用于海拔2000米及以下	仅适用于海拔5000米及以下
3	3. PCB布局	详见原报告31-0907122232 (申请编号: A2013CCC0907-1387193)	本次申请针对PCB布局做了细微调整以适用于海拔5000m及以下, 详见本次申请安全描述报告31-0907131531-P-S1照片页。
4	4. 实施规则	CNCA-01C-020: 2007	CNCA-01C-020: 2010

Above Modification is approved. The present will replace the original.

现批准以上变更。

第 1 页 / 共 2 页



主任:

中国质量认证中心

中国·北京·南四环西路188号9区 100070

<http://www.cqc.com.cn>





中国国家强制性产品认证证书

变更结论

Modification Approval

证书编号Certificate No.: 2010010907402741

批准日期 (Date): 2013-07-26

第 2 页 / 共 2 页



主任:

中国质量认证中心

中国 · 北京 · 南四环西路 188 号 9 区 100070

<http://www.cqc.com.cn>





Ref. Certif. No.

JPTUV-031780

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

FSP Group Inc.
No. 22, Jianguo E. Road
Taoyuan 330 Taiwan

Name and address of the manufacturer
Nom et adresse du fabricant

FSP Group Inc.
No. 22, Jianguo E. Road
Taoyuan 330 Taiwan

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

I/P: AC 100-240V; 6-3A; 60-50Hz; Class I
O/P: refer to the test report

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

iEi

Model/type Ref.
Ref. de type

ACE-A140A

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

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
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

11018370 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



TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Suzuki-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: 13.04.2010

Signature:

W. Hsu
Dipl.-Ing. W. Hsu



Ref. Certif. No.

JPTUV-031780

PAGE 2 OF 2

1. Shenzhen Huili Elec. Co., Ltd.
Blk. C, Bldg. 7, County 73, Baoan
Shenzhen, Guangdong
P.R. China
2. Fortron/Source (China) Corp.
F2, The 2nd. Industrial Area
of Mabu, Xixiang, Baoan Area
Shenzhen, Guangdong
P.R. China
3. ZhongHan Electronics (ShenZhen)
Co., Ltd.
JuYuan Industrial Zone
TangWei Village, FuYong Town
BaoAn District, ShenZhen City 518103, P.R. China
4. Wuxi SPI Technology Co., Ltd.
No. 96, XinMei Road,
New District, Wuxi City, JiangSu
P.R. China
5. Wuxi ZhongHan Technology Co., Ltd.
Block 106-D, XinMei Road
Xin District Wuxi City, Jiangsu
P.R. China

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

Date: 13.04.2010

Signature:

Dipl.-Ing. W. Hsu

Zertifikat

Certificate

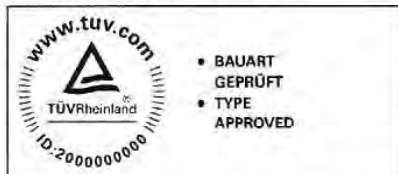


Zertifikat Nr. *Certificate No.* R 50179021
 Blatt *Page* 0001

Ihr Zeichen *Client Reference* YHC310310
 Unser Zeichen *Our Reference* ZTW1-NSY- 10027022 002
 Ausstellungsdatum *Date of Issue* 13.04.2010
 (day/mo/yr)

Genehmigungsinhaber *License Holder* IEI Technology Corp.
 5F, No. 29, Jhongsing Rd.
 Sijhih City, Taipei County 221
 Taiwan
 Fertigungsstätte *Manufacturing Plant* Hauptzertifikatsinhaber *Original license holder*
 332245
 FSP Group Inc.

Prüfzeichen *Test Mark* Geprüft nach *Tested acc. to*
 EN 60950-1:2006+A11



Zertifiziertes Produkt (Geräteidentifikation) *Certified Product (Product Identification)* Lizenzentgelte - Einheit *License Fee - Unit*

Einbau-Schaltnetzteil (Switching Power Supply)

Bezeichnung : ACE-A140A(iEi) 1
 (Type Designation)
 Nennspannung : AC 100-240V, 60-50Hz
 (Rated Voltage)
 Nennstrom : 6-3A
 (Rated Current)
 max. Umgebungstemperatur : 50°C
 (max. Ambient Temperature)
 Schutzklasse : I
 (Protection Class)
 Verschmutzungsgrad : 2
 (Pollution Degree)

Fortsetzung Blatt (continued on page) 02



1

Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
 This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
 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

Zertifikat**Certificate**

Zertifikat Nr. *Certificate No.*
R 50179021

Blatt *Page*
0002

Ihr Zeichen *Client Reference*
YHC310310

Unser Zeichen *Our Reference*
ZTW1-NSY- 10027022 002

Ausstellungsdatum
13.04.2010

Date of Issue
(day/mo/yr)

Genehmigungsinhaber *License Holder*

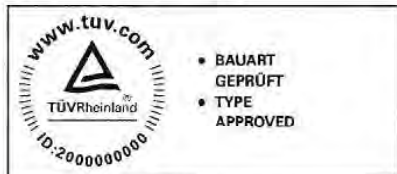
IEI Technology Corp.
5F, No. 29, Jhongsing Rd.
Sijhih City, Taipei County 221
Taiwan

Fertigungsstätte *Manufacturing Plant*

Hauptzertifikatsinhaber *Original license holder*
332245
FSP Group Inc.

Prüfzeichen *Test Mark*

Geprüft nach *Tested acc. to*
EN 60950-1:2006+A11



Zertifiziertes Produkt (Geräteidentifikation)
Certified Product (Product Identification)

Lizenzentgelte - Einheit
License Fee - Unit

Einbau-Schaltnetzteil (Switching Power Supply)

wie Blatt (as page) 01
Fortsetzung (Continuation)

Ausgang : DC +3.3V/21A, +5V/20A, +12V1/16A, +12V2/16A,
(Output) -12V/0.5A, -5V/0.3A, +5Vsb/3A
max. Ausgangsleistung für +3.3V & +5V: 130W
(max. Output Power for +3.3V & +5V)
max. Ausgangsleistung : 400W
(max. Output Power)

Vermerke: Primär- und Sekundärkreise sind gemäß Verfahren 1 nach Abschnitt 2.9.4 getrennt. Der Einbau muß gemäß der zugehörigen Einbauanweisung erfolgen. (Remarks: Primary and secondary circuits are separated according to method 1 of clause 2.9.4. The installation has to be carried out according to the attached installation instruction.)



Dem Zertifikat liegt unsere Prüf- und Zertifizierungsordnung zugrunde und es bestätigt die Konformität des Produktes mit den oben genannten Standards und Prüfgrundlagen. Zusätzliche Anforderungen in Ländern, in denen das Produkt in Verkehr gebracht werden soll, müssen zusätzlich betrachtet werden. Die Herstellung des zertifizierten Produktes wird überwacht.
This certificate is based on our Testing and Certification Regulation and states the conformity of the product with the standards and testing requirements as indicated above. Any additional requirements in countries where the product is going to be marketed have to be considered additionally. The manufacturing of the certified product is subject to surveillance.

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH - Tillystraße 2 - 90431 Nürnberg
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



AUDIX TECHNOLOGY CORPORATION

EMC DEPARTMENT

No. 53-11, Tin-Fu Tsun, Lin-Kou,
Taipei County, Taiwan, R.O.C.
Tel: 886-2-2609-9301~2 Fax: 886-2-2609-9303

HEAD OFFICE

No. 8, Lane 120, Sec. 1, Nei Hu Rd.,
Taipei, Taiwan, R.O.C.
Tel: 886-2-2659-4900 Fax: 886-2-2659-4833

Technical Compliance Statement

No. EM-E980429A

The following products has been tested by us with the listed standards and found in compliance with the council EMC directive 2004/108/EC. It is possible to use CE marking to demonstrate the compliance with this EMC Directive.

Submittor : FSP Group Inc.
No. 22, Jianguo E. Rd., Taoyuan City, Taiwan, R.O.C.

Product : Switching Power Supply
M/N ACE-A140A
Brand iEi

Test Standards	
EN 61204-3/2000	Low voltage power supplies, d.c. output Part 3: Electromagnetic compatibility (EMC)
EN 55022/2006 +A1/2007	Limits and methods of measurement of radio disturbance characteristics of information technology equipment
EN 61000-3-2/2006	Part 3 : Limits-Section 2 : Limits for harmonic current emission (equipment input current <=16A per phase)
EN 61000-3-3/2008	Part 3 : Limits-Section 3 : Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current <=16A
EN 55024/1998 +A1/2001 +A2/2003	Information technology equipment-Immunity characteristics Limits and methods of measurement
	IEC 61000-4-2/2008 Electrostatic discharge immunity test
	IEC 61000-4-3/2008 Radiated, radio-frequency electromagnetic field immunity test
	IEC 61000-4-4/2004 +Corr.1:2006 +Corr.2:2007 Electrical fast transient / burst immunity test
	IEC 61000-4-5/2005 Surge immunity test
	IEC 61000-4-6/2008 Immunity to conducted disturbances, induced by radio-frequency fields
	IEC 61000-4-8/2009 Power Frequency Magnetic field immunity test
	IEC 61000-4-11/2004 Voltage dips, short interruptions and voltage variations immunity test



Leon Liu Mar. 9 2010
Leon Liu/Deputy General Manager

The verification is based on a single evaluation of one sample 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.

Technical Compliance Statement



For the following information

Ref. File No.: C1M1003068

Product : Switching Power Supply
Model Number : ACE-A140A
Brand Name : iEi
Applicant : FSP Group Inc.
Manufacturer #1 : Shenzhen Huili Elec. Co., Ltd.
Manufacturer #2 : ZhongHan Electronics (ShenZhen) Co., Ltd.
Manufacturer #3 : Fortron/Source (China)Corp.
Standards : FCC 47 CFR Part 15 Subpart B/October 2009 and
CISPR 22/1997 (Class B Limit)

We hereby certify that the above product has been tested by us and complied with the FCC official limits. These products might be marketed at the US accordance to FCC Rule based on the standard 47 CFR Part 2 and Part 15 Class B Equipment Regulations. The test was performed accordance to the procedures from ANSI C63.4-2003. The test data & results are issued on the test report no. EM-F980775A.

Signature

A handwritten signature in black ink that reads "Leon Liu".

Leon Liu/Deputy General Manager

Date: Mar. 09, 2010

Test Laboratory:
AUDIX Technology Corporation, EMC Department
NVLAP Lab. Code: 200077-0
FCC OET Designation: TW1004
Web Site: www.audixtech.com



Lab. Code: 200077-0

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



全漢企業股份有限公司
FSP TECHNOLOGY INC.

台灣桃園市建國東路22號 統一編號：84239055
No. 22, Jianguo East Road., Taoyuan City, Taiwan, R.O.C.
TEL: +886-3-375-9888 Website: www.FSP-group.com
FAX: +886-3-375-6986 Email: sales@fsp-group.com.tw

FSP Green Product Declaration

We hereby guarantee that our power supply(part number listed below) are in compliant with RoHS directive "(2002/95/EC),
WEEE directive (2002/96/EC)" and other national and international statutory requirements.

We hereby conform and report the material and amount of "Environment of hazardous substance" in the concern product and part
as listed below :

Part name	FSP400-60PFG/9PA4008417 CUST P/N: ACE-A140A-R11	
Item	Substance/Material	Contain ppm
1	Cadmium and compounds	<100ppm
2	Lead and compounds	<1000ppm
		The RoHS Exemption *:Not required
3	Mercury and compounds	<1000ppm
4	Chrome(VI) and compounds	<1000ppm
5	Polybrominated biphenyls (PBBs)	<1000ppm
6	Polybrominated diphenylethers (PBDEs)	<1000ppm
end		

Remark:

1. The RoHS Exemption*: such as Leaded glass used in electronic components ; Lead (Pb) in high melting temperature type solders; Lead (Pb) in electronic ceramic parts and Lead (Pb) in Steel Alloys (0.35% or 3500 PPM), Aluminum Alloys (0.4% or 4000PPM) or Copper Alloys (incl. bronzes, brasses, 4.0% or 40,000 PPM). 2. N.D=Not detected.

AUTHORIZED SIGNATURE:

FSP Technology Inc.
2014/3/28
Date: _



X-ON Electronics

Largest Supplier of Electrical and Electronic Components

Click to view similar products for [Switching Power Supplies](#) category:

Click to view products by [IEI](#) manufacturer:

Other Similar products are found below :

[70841011](#) [73-551-0005](#) [73-551-0048](#) [PS3E-B12F](#) [PS3E-E12F](#) [AAD600S-4-OP](#) [R22095](#) [KD0204](#) [9021](#) [LDIN100150](#) [LPM000-BBAR-01](#)
[LPX17S-C](#) [EVS57-10R6/R](#) [FP80](#) [FRV7000G](#) [22929](#) [PS3E-F12F](#) [CQM1IA121](#) [40370121900](#) [VI-PU22-EXX](#) [40370121910](#) [LDIN5075](#)
[LPM615-CHAS](#) [LPX140-C](#) [09-160CFG](#) [70841025](#) [VPX3000-CBL-DC](#) [VI-LUL-IU](#) [LPM000-BBAR-05](#) [LPM000-BBAR-08](#) [LPM124-](#)
[OUTA1-48](#) [LPM000-BBAR-07](#) [LPM109-OUTA1-10](#) [LPM616-CHAS](#) [08-30466-1055G](#) [08-30466-2175G](#) [08-30466-2125G](#) [DMB-EWG](#)
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