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Approval Sheet

Model Number : FSP550-60PLN(S201)

SPI P/N : 9PA5500217

Apply Rev : 1.00-a

Item	Contents
01	Specification
02	Mechanical Drawing
03	Safety Certificate

Apply Rev: X.YY-Z (X=PCB, YY=Modify, Z=Documents)

全漢企業股份有限公司

電氣規格書

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作者	:	陳婉立/winnie
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相關料號 :

9PA5500200

,FSP550-60PLN,IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP,W/PFC(A),9L1S,STD,INTEL,FULL RANGE,RD2

9PA5500201

,FSP550-60PLN,(F061),IPC,ATX,B,W/NK,WO/IO,WO/O,W/SS,FSP(F/S),W/PFC(A),7L2S,INTEL,FULL RANGE,RD2

9PA5500202

,FSP550-60PLN,(F041),IPC,ATX,B,W/NK,W/IO,WO/O,WO/SS,FSP(F/S),W/PFC(A),5L1S,INTEL,FULL RANGE,RD2

9PA5500203

,FSP550-60PLN,(I221),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,IEI,W/PFC(A),11L2S,INTEL,FULL RANGE,9PA5500200,RD2

9PA5500204

,FSP550-60PLN,(A271),IPC,ATX,B,W/NK,W/IO,WO/O,WO/SS,AOPEN,W/PFC(A),9L1S,INTEL,FULL RANGE,9PA5500201,RD2

9PA5500205

,FSP550-60PLN,(A272),IPC,ATX,B,W/NK,W/IO,WO/O,WO/SS,AOPEN,W/PFC(A),9L1S,INTEL,FULL RANGE,9PA5500201,RD2

9PA5500206

,FSP550-60PLN,(S031),IPC,ATX,B,W/NK,W/IO,WO/O,WO/SS,SPI,W/PFC(A),8L1S,INTEL,FULL RANGE,9PA5500200,RD2

9PA5500207

,FSP550-60PLN,(A273),IPC,ATX,B,W/NK,W/IO,WO/O,WO/SS,AOPEN,W/PFC(A),9L1S,INTEL,FULL RANGE,9PA5500205,RD2

9PA5500208

,FSP550-60PLN,(C151),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,SPI,W/PFC(A),8L1S,INTEL,FULL RANGE,9PA5500200,RD2

9PA5500209

,FSP550-60PLN,(F221),IPC,ATX,B,W/NK,W/IO,WO/O,WO/SS,FSP,W/PFC(A),5L1S,INTEL,FULL RANGE,9PA5500200,RD2

9PA5500210

,FSP550-60PLN,(M221),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP,W/PFC(A),9L1S,INTEL,FULL RANGE,9PA5500200,RD2

9PA5500211

,FSP550-60PLN,(F062),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP,W/PFC(A),7L2S,INTEL,FULL RANGE,9PA5500201,RD2

9PA5500212

,FSP550-60PLN,(U031),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,SPI,W/PFC(A),9L1S,INTEL,FULL RANGE,9PA5500200,RD2

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9PA5500213

,FSP550-60PLN,(F063),IPC,ATX,B,W/NK,WO/IO,WO/O,W/SS,FSP,W/PFC(A),7L2S,AMD,RULL RANGE,9PA5500201,RD2

9PA5500214

,FSP550-60PLN,(C241),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP,W/PFC(A),7L2S,INTEL,FULL RANGE,9PA5500211,RD2

9PA5500215

,FSP550-60PLN,(F181),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP,W/PFC(A),8L1S,INTEL,FULL RANGE,9PA5500200,RD2

9PA5500216

,FSP550-60PLN,(M111),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP(F/S),W/PFC(A),9L1S,INTEL,FULL RANGE,9PA5500200,RD2

9PA5500217

FSP550-60PLN,(S201),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP,W/PFC(A),7L1S,INTEL,FULL RANGE

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SPECIFICATION

FSP550-60PLN

9PA5500200

Main Feature:
Active PFC Circuit
Full Range Input

February 24, 2004
REV:04

MODEL: FSP550-60PLN

Revision History

Rev	Description	Date	Author
3	1. Revise 2.2 Safety---(Page 3) 2. Delete 10.SAFETY REQUIREMENTS	2003.08.27	Karl
4	1. Revise 2.2 Safety---(Page 3) 2.Revise 6.1 LEAKAGE CURRENT ---(Page11)	2004.02.24	Joyhare

1. GENERAL DESCRIPTION AND SCOPE

This is the specification of Model FSP550-60PLN; AC-line powered switching power supply with active PFC (Power Factor Correction) circuit, meet EN61000-3-2 and with Full Range Input features. Designed and manufactured by FSP GROUP.

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.

2.2 SAFETY

- NEMKO EN 60950
- TUV EN60950 OR VDE EN60950
- CSA-C22.2 NO.950-95
- IEC 60950
- UL 1950
- CE

  EN 55022:1998+A1: 2000, Class B
  EN 61000-3-2: 2000
  EN 61000-3-3: 1995+A1: 2001

  CISPR22: 1997+A1: 2000, Class B
  AS/NZS CISPR 22: 2002, Class B

  EN 55024: 1998+A1: 2001
  IEC 61000-4-2: 2001
  IEC 61000-4-3: 2002
  IEC 61000-4-4: 1995
  +A1:2000+A2: 2001
  IEC 61000-4-5: 2001
  IEC 61000-4-6: 2001
  IEC 61000-4-8: 2001
  IEC 61000-4-11: 2001

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 39-01-2240, 24 pin connector
P2 : The equivalent of MOLEX 39-01-2080, 8 pin connector
P4 - P7,P9 - P13 : The equivalent of AMP 1-480424-0, 4 pin connector
P8 :The equivalent of AMP 171822-4, 4 pin connector

3.3 CONNECTOR PIN DESIGNATIONS

The pin designations and color codes are defined as follows:

	P1 SYSTEM BOARD		P2 DISK DRIVER		P4-P7, P9 – P13 DISK DRIVER		P8 DISK DRIVER	
PIN1	+3.3V	ORANGE	COM	BLACK	+12V	YELLOW	+12V	YELLOW
PIN2	+3.3V	ORANGE	COM	BLACK	COM	BLACK	COM	BLACK
PIN3	COM	BLACK	COM	BLACK	COM	BLACK	COM	BLACK
PIN4	+5V	RED	COM	BLACK	+5V	RED	+5V	RED
PIN5	COM	BLACK	+12V	YELLOW/BLACK				
PIN6	+5V	RED	+12V	YELLOW/BLACK				
PIN7	COM	BLACK	+12V	YELLOW/BLACK				
PIN8	PWR-OK	GRAY	+12V	YELLOW/BLACK				
PIN9	+5VSB	PURPLE						
PIN10	+12V	YELLOW						
PIN11	+12V	YELLOW						
PIN12	+3.3V	ORANGE						
PIN13	+3.3V	ORANGE						
	+3.3V SENSE	BROWN						
PIN14	-12V	BLUE						
PIN15	COM	BLACK						
PIN16	PS_ON	GREEN						
PIN17	COM	BLACK						
PIN18	COM	BLACK						
PIN19	COM	BLACK						
PIN20	-5V	WHITE						
PIN21	+5V	RED						
PIN22	+5V	RED						
PIN23	+5V	RED						
PIN24	COM	BLACK						

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	Notes
1	+3.3V	+5% - 4%	50mV	0.4A	27.0 A	
2	+5V	+5% - 4%	50mV	3.0A	29.0 A	
3	-5V	±10%	120mV	0 A	0.3A	
4	+12V CPU	+5% - 4%	120mV	1.0A	18.0 A	Found on connector P2
5	+12V I/O	+5% - 4%	120mV	1.0A	18.0 A	Found on connector P1
6	-12V	+9% - 5%	120mV	0 A	0.8 A	
7	+5VSB	+5% - 4%	50mV	0 A	2.0A	

550W: The +3.3V and +5V total output shall not exceed 150watts, the +3.3V, +5V and +12V total output power shall not exceed 528W and the total output for this subject power supply is 550 watts(30℃). 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.

500W: The +3.3V and +5V total output shall not exceed 150watts, the +3.3V, +5V and +12V total output power shall not exceed 478W and the total output for this subject power supply is 500 watts(50℃). 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.

4.1.2. LOAD CAPACITY SPECIFICATIONS

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

550W:

LOAD	STM.	+3.3V	+5V	-5V	+12V CPU	+12V I/O	-12V
ALL MAX	HHHHHH	12.0A	17.0A	0.3A	17.0A	16.5A	0.8A
+5V MAX other MIN	LHLLLL	0.4 A	29.0 A	0.0A	1.0A	1.0A	0A
+3.3V MAX other MIN	HLLLLL	27.0 A	3.0 A	0.0 A	1.0A	1.0A	0A
+12V CPU MAX other MIN	LLLHLL	0.4 A	3.0 A	0.0 A	18.0A	1.0A	0A
+12V I/O MAX other MIN	LLLLHL	0.4 A	3.0 A	0.0 A	1.0A	18.0A	0A
ALL MIN	LLLLLL	0.4 A	3.0 A	0.0 A	1.0A	1.0A	0A

500W:

LOAD	STM.	+3.3V	+5V	-5V	+12V CPU	+12V I/O	-12V
ALL MAX	HHHHHH	12.0A	17.0A	0.3A	15.0A	14.5A	0.8A
+5V MAX other MIN	LHLLLL	0.4 A	29.0 A	0.0A	1.0A	1.0A	0A
+3.3V MAX other MIN	HLLLLL	27.0 A	3.0 A	0.0 A	1.0A	1.0A	0A
+12V CPU MAX other MIN	LLLHLL	0.4 A	3.0 A	0.0 A	18.0A	1.0A	0A
+12V I/O MAX other MIN	LLLLHL	0.4 A	3.0 A	0.0 A	1.0A	18.0A	0A
ALL MIN	LLLLLL	0.4 A	3.0 A	0.0 A	1.0A	1.0A	0A

4.1.3. HOLD-UP TIME (@FULL LOAD)

115V / 60Hz : 18 mSec. Minimum.
230V / 50Hz : 18 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 : 50ms Maximum

4.1.5.OVER VOLTAGE PROTECTION

Voltage Source	Protection Point
+3.3V	3.8V-4.5V
+5V	5.6V-6.5V
+12V	13.0-14.5V

4.1.6.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 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.

In the event of an output short circuit condition on –12V output, the power supply will not be damaged. The power supply shall return to normal operation as soon as the short circuit has been removed. and the power switch has been turned off for no more than 2 seconds.

4.1.7.OVERLOAD PROTECTION

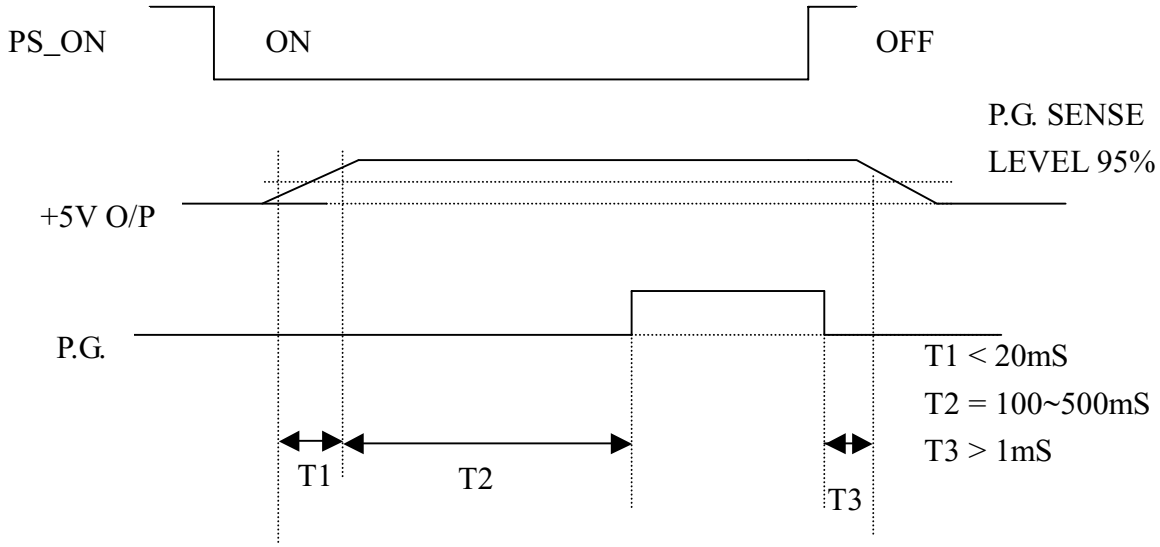
OUTPUT VOLTAGE	Max. overcurrent limit
+3.3V	45A
+5V	45A
+12V CPU	20A
+12V I/O	20A

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

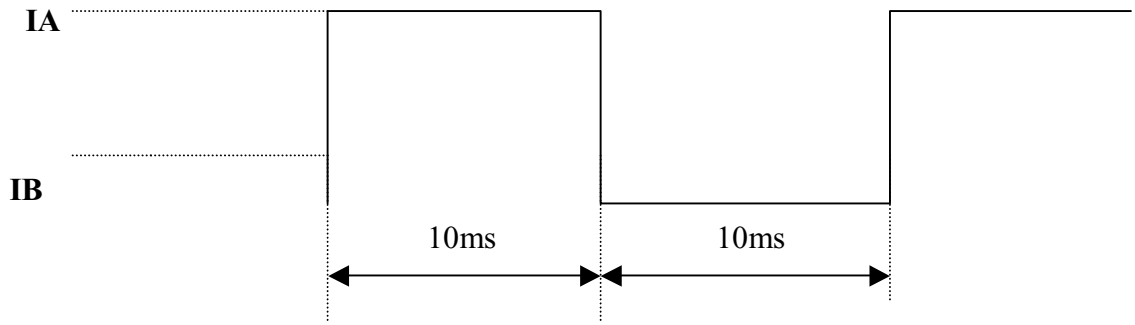
+5V and +12V must be within specification for a step change in current as specified below. The outputs will be tested one section at a time with all other sections at maximum load. The test transition will be from IA to IB and IB to IA. The step current will have a nominal transition time of 0.5 amp per microsecond for +5V and 0.1 amp per microsecond for +12V.

+5Vdc:

IA:	26.8amps
IB:	20.1amps
Volts variation:	400 mV max (p-p)
Setting time:	10 ms max

+12Vdc:

IA:	18.0 amps
IB:	14.0amps
Volts variation:	450 mV max (p-p)
Setting time:	10 ms max



4.3. INPUT ELECTRICAL SPECIFICATIONS

4.3.1. AC INPUT

Parameter	Min.	Nom.(1)	Max.	Unit
V_{in} (115VAC)	90	115	135	VAC_{rms}
V_{in} (230VAC)	180	230	265	VAC_{rms}
V_{in} Frequency	47	--	63	HZ

◆ Nominal voltages for test purposes are considered to be within ±1.0V of nominal.

4.3.2. INRUSH CURRENT

(Cold start – 25 deg. C)

115V	80 Amps - peak
230V	120 Amps - peak

4.3.3. INPUT LINE CURRENT

115V	10.0 Amps – rms maximum
230V	5.0 Amps – rms maximum

4.4. EFFICIENCY

115 VAC @Full Load	63% minimum

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.

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 μA)	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

550W Operating	0 to +30 deg. C
500W Operating	0 to +50 deg. C
Storage	-20 to +80 deg. C

5.2. HUMIDITY

Operating	5 –95% RH, Non-condensing
Storage	5 –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.

5.5 COOLING SPECIFICATIONS

5.5.1. The subject power supply is cooled by a self-contained, 80mm, 12VDC fan.

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. ELECTORMAGNETIC 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℃, maximum-output load, and nominal AC input voltage.

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外觀圖

料號	:	9PA5500217(,FSP550-60PLN,(S201),IPC,ATX,B,W/NK,WO/IO,WO/O,WO/SS,FSP,W/PFC(A),7L1S,INTEL,FULL RANGE,9PA5500200,RD2)
版次	:	1
文件編號	:	OAD04018710
附件版本	:	01
研發部門	:	RD2
作者	:	陳佩華/kelly
Model No/Type	:	FSP550-60PLN(S201)
機密	:	N
表單編號	:	7000P-0111
發行日期	:	2004/6/30-18:34:1
備註	:	

單位	姓名	單位	姓名	單位	姓名
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機構工程	angus 樂家龍	主管	Tj 莊同榮		

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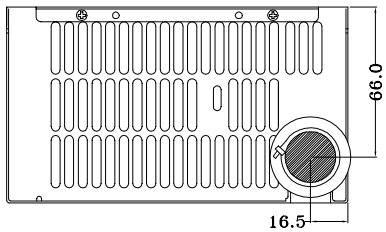
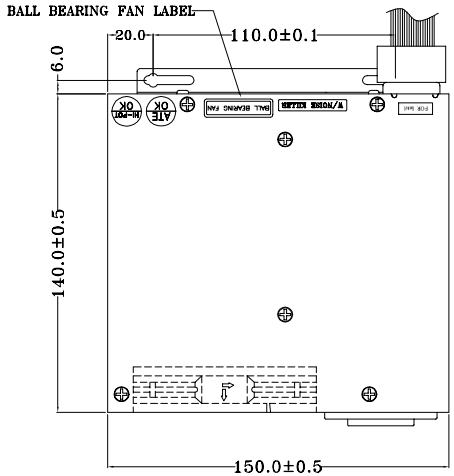
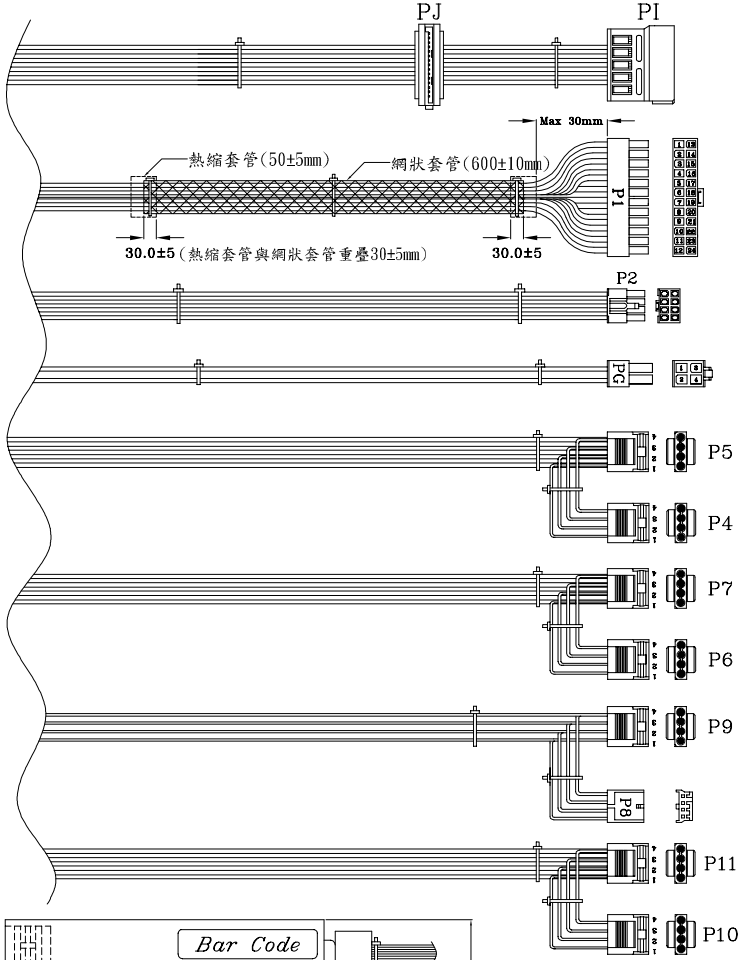
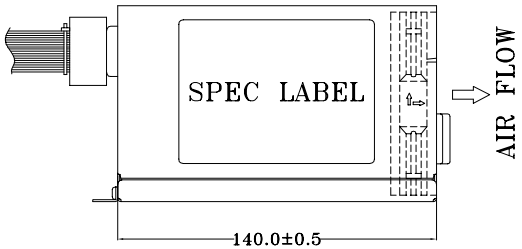
SPI Electronic Co., Ltd.

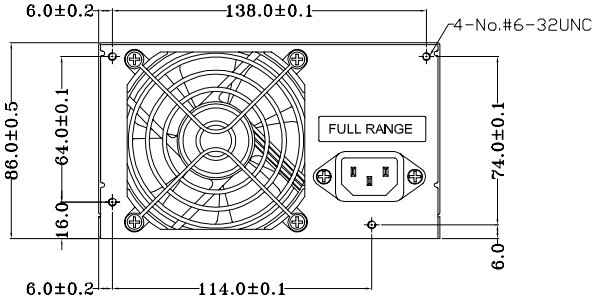
REF. ID.	PIN NO.	SIGNAL	WIRE COLOR	GAUGE	CONNECTOR TYPE	CABLE LENGTH
P1	1	+3.3VDC	ORANGE	18	MOLEX 39-01-2240 or EQUIV.	700±15mm
	2	+3.3VDC	ORANGE	18		
	3	COM	BLACK	18		
	4	+5VDC	RED	18		
	5	COM	BLACK	18		
	6	+5VDC	RED	18		
	7	COM	BLACK	18		
	8	PW-ON	GRAY	18		
	9	+5Vsb	PURPLE	18		
	10	+12VB	YELLOW	18		
	11	+12VB	YELLOW	18		
	12	+3.3VDC	ORANGE	18		
	13	+3.3VDC	ORANGE	18		
		+3.3VSense	BROWN	22		
	14	-12VDC	BLUE	18		
	15	COM	BLACK	18		
	16	PS-ON	GREEN	18		
	17	COM	BLACK	18		
	18	COM	BLACK	18		
	19	COM	BLACK	18		
	20	-5VDC	WHITE	18		
	21	+5VDC	RED	18		
	22	+5VDC	RED	18		
	23	+5VDC	RED	18		
	24	COM	BLACK	18		
P2	1	COM	BLACK	18	MOLEX 39-01-2080 or EQUIV.	700±15mm
	2	COM	BLACK	18		
	3	COM	BLACK	18		
	4	COM	BLACK	18		
	5	+12VA	YELLOW/BLACK	18		
	6	+12VA	YELLOW/BLACK	18		
	7	+12VA	YELLOW/BLACK	18		
	8	+12VA	YELLOW/BLACK	18		
P4 P6	1	+12VB	YELLOW	18	弋石廠商: P01001	155±10mm
	2	COM	BLACK	18		
	3	COM	BLACK	18		
	4	+5V	RED	18		
P5 P7	1	+12VB	YELLOW	18	弋石廠商: P01001	500±15mm
	2	COM	BLACK	18		
	3	COM	BLACK	18		
	4	+5V	RED	18		
P8	1	+12VB	YELLOW	22	AMP 171822-4 or EQIV.	155±10mm
	2	COM	BLACK	22		
	3	COM	BLACK	22		
	4	+5V	RED	22		
P9 P11	1	+12VB	YELLOW	18	弋石廠商: P01001	500±15mm
	2	COM	BLACK	18		
	3	COM	BLACK	18		
	4	+5V	RED	18		
P10	1	+12VB	YELLOW	18	弋石廠商: P01001	155±10mm
	2	COM	BLACK	18		
	3	COM	BLACK	18		
	4	+5V	RED	18		
PG	1	COM	BLACK	20	MOLEX 39-01-2040 or EQUIV.	700±15mm
	2	COM	BLACK	20		
	3	+12VB	YELLOW	20		
	4	+12VB	YELLOW	20		
PI	1	+12VB	YELLOW	18	CL1270H00-15P	155±10mm
	2	COM	BLACK	18		
	3	+5V	RED	18		
	4	COM	BLACK	18		
	5	+3.3VDC	ORANGE	18		
PJ	1	+12VB	YELLOW	18	CL1271HS0-15P	500±15mm
	2	COM	BLACK	18		
	3	+5V	RED	18		
	4	COM	BLACK	18		
	5	+3.3VDC	ORANGE	18		

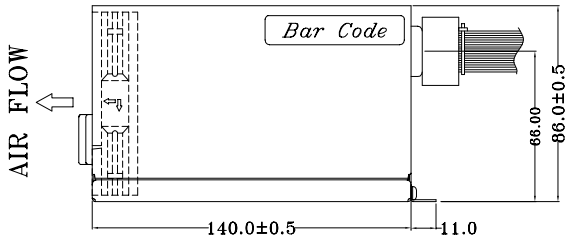












P/N.:9PA5500217

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. : FSP550-60PLN(S201)		TITLE: ASSY	SHEET: 1 OF 1	REV:01
R&D	PE	DRAWN	DATE	
			Jun.29.2004	
INTERIOR COUNTERSIGN:			樂家龍	

Mechanical Drawing(外觀/機構圖)表單編號7000P-0111

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)

Ref. Certif. No.
NO 18202

IEC SYSTEM FOR CONFORMITY TESTING TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT (IECEE)
CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE AUX NORMES DE SECURITE DE L'EQUIPMENT ELECTRIQUE (IECEE)
METHODE OC

CB TEST CERTIFICATE
CERTIFICATE D'ESSAI OC

Product *Produit*	**Power Supply for building-in**
Name and address of the applicant *Nom et adresse du demandeur*	**FSP Group Inc. No. 22, Jianguo E. Rd. Taoyuan City TAIWAN**
Name and address of the manufacturer *Nom et adresse du fabricant*	**FSP Group Inc. No. 22, Jianguo E. Rd. Taoyuan City TAIWAN**
Name and address of the factory *Nom et adresse de l'usine*	**See page 2**
Rating and principal characteristics *Valeurs nominales et caractéristiques principales*	**10A 100-240V 50-60Hz, Cl. I DC-outputs: 27.0A +3.3V, 29.0A +5V, 18.0A +12V I/O, 18.0A +12V CPU, 2.0A +5Vsb, 0.3A -5V (optional), 0.8A -12V. Max. output power: 550W (max. ambient 30°C) (+3.3V & +5V = 150W max.) (+3.3V, +5V & +12V = 528W max.) or max. output power: 500W (max. ambient 50°C) (+3.3V & +5V = 150W max.) (+3.3V, +5V & +12V = 478W max.)**
Trade mark (if any) *Marque de fabrique (si elle existe)*	**BRAND NAME: ICP**
Model/type Ref. *Ref. de type*	**ACE-850AP**
Additional information (if necessary) *Information complémentaire (si necéssaire)*	
A sample of the product was tested and found to be in conformity with *Un échantilléon de ce produit a été essayé et a été considéré conforme à la*	**IEC 60950 2nd Edition, 1991 + Amd. 1, 1992 + Amd. 2, 1993 + Amd. 3, 1995 + Amd. 4, 1996.**
as shown in the Test Report Ref. No. which forms part of this certificate *comme indiqué dans le Rapport d'essais numéro de référance qui constitute un partie de ce certificat*	**200301138**

This CB Test Certificate is issued by the National Certification Body
Ce Certificate d'essai OC est établi par l'Organisme National de Certification

Nemko
P.O. BOX 73, BLINDERN
N-0314 OSLO, NORWAY

Date **07 January 2003**

Signature **Skule Moe**
Certification Department

Nemko

CB TEST CERTIFICATE

Ref. No. **NO 18202**

Production sites:

Fortron/Source(China) Corp.
Building #25, Zone 37, Baoan District
Shenzhen, Guangdong, P.R. China

Wellex Technology Co., Ltd.
Zhenlian Building, County 74, Baoan
Shenzhen Guangdong P.R. China

Shenzhen Huili Electronics Co., Ltd.
Blk. C. Bldg, 7, County 73, Baoan
Shenzhen Guangdong, P.R. China

Fortron/Source(China) Corp.
F2, the 2nd industrial Area of Mabu
Xixiang, Baoan, Shenzhen, P.R. China

Zhonghan Electronics (Shenzhen) Co., Ltd.
Juyuan Industrial Zone, Tangwei Village, Fuyong Town,
Baoan District, Shenzhen City, China

Oslo, 07 January 2003

Issued by

Nemko

Skule Moe
Certification Department

Nemko AS
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974404532

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)

Ref. Certif. No.
NO 16536

IEC SYSTEM FOR CONFORMITY TESTING TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT (IECEE)
CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE AUX NORMES DE SECURITE DE L'EQUIPMENT ELECTRIQUE (IECEE)
METHODE OC

CB TEST CERTIFICATE
CERTIFICATE D'ESSAI OC

Product *Produit*	**Power Supply for building-in**
Name and address of the applicant *Nom et adresse du demandeur*	**FSP Group Inc.** **No. 22, Jianguo E. Rd., Taoyuan City 330** **TAIWAN R.O.C.**
Name and address of the manufacturer *Nom et adresse du fabricant*	**FSP Group Inc.** **No. 22, Jianguo E. Rd., Taoyuan City 330** **TAIWAN R.O.C.**
Name and address of the factory *Nom et adresse de l'usine*	**See page 2**
Rating and principal characteristics *Valeurs nominales et caractéristiques principales*	**10A 100-240V 50-60Hz. Cl. I, DC output: 27.0A/ +3.3V, 29.0A/ +5V, 18.0A/ +12.0V I/O, 18.0A/+12V CPU, 2.0A/ +5Vsb, 0.3A/ -5V, (optional), 0.8A/ -12V Max. output power: 550W (max. ambient 30° C) (+3.3V & +5V=150W max.) (+3.3V & +5V & +12V=528W max.) or max. output power: 500W (max. ambient 50° C) (+3.3V & +5V=150W max.) (+3.3V & +5V & +12V =478W max.)**
Trade mark (if any) *Marque de fabrique (si elle existe)*	**FSP**
Model/type Ref. *Ref. de type*	**FSP550-60PLN..**
Additional information (if necessary) *Information complémentaire (si necéssaire)*	**The dots in model name can be A to Z, 0 to 9 or blank, for marketing purpose only.**
A sample of the product was tested and found to be in conformity with *Un échantilléeon de ce produit a été essayé et a été considéré conforme à la*	**IEC 60950 2nd Edition, 1991 + Amd. 1, 1992 + Amd. 2, 1993 + Amd. 3, 1995 + Amd. 4, 1996.**
as shown in the Test Report Ref. No. which forms part of this certificate *comme indiqué dans le Rapport d'essais numéro de référance* *qui constitute un partie de ce certificat*	**200230270**

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Nemko
P.O. BOX 73, BLINDERN
N-0314 OSLO, NORWAY

Date **07 August 2002**

Signature **Lars Hjerpseth**
Principal Engineer

Issue 1993-06 / N - version

CB TEST CERTIFICATE

Ref. No. NO 16536

Factory Sites:

Fortron/Source(China) Corp.
Building #25, Zone 37, Baoan District
Shenzhen, Guangdong, P.R. China

Wellex Technology Co., Ltd.
Zhenlian Building, County 74, Baoan
Shenzhen Guangdong P.R. China

Shenzhen Huili Electronics Co., Ltd.
Blk. C. Bldg, 7, County 73, Baoan
Shenzhen Guangdong, P.R. China

Fortron/Source(China) Corp.
F2, the 2nd industrial Area of Mabu
Xixiang, Baoan, Shenzhen, P.R. China

Zhonghan Electronics (Shenzhen) Co., Ltd.
Juyuan Industrial Zone, Tangwei Village, Fuyong Town,
Baoan District, Shenzhen City, China

Oslo, 07 August 2002

Issued by

Lars Hjerpseth
Principal Engineer

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Enterprise number:
974404532

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)

Ref. Certif. No.
NO 16537

IEC SYSTEM FOR CONFORMITY TESTING TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT (IECEE)
CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE AUX NORMES DE SECURITE DE L'EQUIPMENT ELECTRIQUE (IECEE)
METHODE OC

CB TEST CERTIFICATE
CERTIFICATE D'ESSAI OC

Product *Produit*	**Power Supply for building-in**
Name and address of the applicant *Nom et adresse du demandeur*	**FSP Group Inc.** **No. 22, Jianguo E. Rd., Taoyuan City 330** **TAIWAN R.O.C.**
Name and address of the manufacturer *Nom et adresse du fabricant*	**FSP Group Inc.** **No. 22, Jianguo E. Rd., Taoyuan City 330** **TAIWAN R.O.C.**
Name and address of the factory *Nom et adresse de l'usine*	**See page 2**
Rating and principal characteristics *Valeurs nominales et caractéristiques principales*	**10A 100-240V 50-60Hz. Cl. I, DC output: 27.0A/ +3.3V, 29.0A/ +5V, 18.0A/ +12.0V I/O, 18.0A/+12V CPU, 2.0A/ +5Vsb, 0.3A/ -5V, (optional), 0.8A/ -12V Max. output power: 550W (max. ambient 30° C) (+3.3V & +5V=150W max.) (+3.3V & +5V & +12V=528W max.) or max. output power: 500W (max. ambient 50° C) (+3.3V & +5V=150W max.) (+3.3V & +5V & +12V =478W max.)**
Trade mark (if any) *Marque de fabrique (si elle existe)*	**BRAND NAME: SPI**
Model/type Ref. *Ref. de type*	**FSP550-60PLN..**
Additional information (if necessary) *Information complémentaire (si necéssaire)*	**The dots in model name can be A to Z, 0 to 9 or blank, for marketing purpose only.**
A sample of the product was tested and found to be in conformity with *Un échantilléon de ce produit a été essayé et a été considéré conforme à la*	**IEC 60950 2nd Edition, 1991 + Amd. 1, 1992 + Amd. 2, 1993 + Amd. 3, 1995 + Amd. 4, 1996.**
as shown in the Test Report Ref. No. which forms part of this certificate *comme indiqué dans le Rapport d'essais numéro de référance* *qui constitute un partie de ce certificat*	**200230270**

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Nemko
P.O. BOX 73, BLINDERN
N-0314 OSLO, NORWAY

Date **07 August 2002**

Signature **Lars Hjerpseth**
Principal Engineer

CB TEST CERTIFICATE

Ref. No. NO 16537

Factory Sites:

Fortron/Source(China) Corp.
Building #25, Zone 37, Baoan District
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Wellex Technology Co., Ltd.
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Shenzhen Guangdong P.R. China

Shenzhen Huili Electronics Co., Ltd.
Blk. C. Bldg, 7, County 73, Baoan
Shenzhen Guangdong, P.R. China

Fortron/Source(China) Corp.
F2, the 2nd industrial Area of Mabu
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Zhonghan Electronics (Shenzhen) Co., Ltd.
Juyuan Industrial Zone, Tangwei Village, Fuyong Town,
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Oslo, 07 August 2002

Issued by

Lars Hjerpseth
Principal Engineer

Nemko AS
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N-0314 Oslo, Norway

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Enterprise number:
974404532

INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)
COMMISSION ELECTROTECHNIQUE INTERNATIONALE (CEI)

Ref. Certif. No.
NO 16538

IEC SYSTEM FOR CONFORMITY TESTING TO STANDARDS FOR SAFETY OF ELECTRICAL EQUIPMENT (IECEE)
CB SCHEME

SYSTEME CEI D'ESSAIS DE CONFORMITE AUX NORMES DE SECURITE DE L'EQUIPMENT ELECTRIQUE (IECEE)
METHODE OC

CB TEST CERTIFICATE
CERTIFICATE D'ESSAI OC

Product *Produit*	**Power Supply for building-in**
Name and address of the applicant *Nom et adresse du demandeur*	**FSP Group Inc. No. 22, Jianguo E. Rd., Taoyuan City 330 TAIWAN R.O.C.**
Name and address of the manufacturer *Nom et adresse du fabricant*	**FSP Group Inc. No. 22, Jianguo E. Rd., Taoyuan City 330 TAIWAN R.O.C.**
Name and address of the factory *Nom et adresse de l'usine*	**See page 2**
Rating and principal characteristics *Valeurs nominales et caractéristiques principales*	**10A 100-240V 50-60Hz. Cl. I, DC output: 27.0A/ +3.3V, 29.0A/ +5V, 18.0A/ +12.0V I/O, 18.0A/+12V CPU, 2.0A/ +5Vsb, 0.3A/ -5V, (optional), 0.8A/ -12V Max. output power: 550W (max. ambient 30° C) (+3.3V & +5V=150W max.) (+3.3V & +5V & +12V=528W max.) or max. output power: 500W (max. ambient 50° C) (+3.3V & +5V=150W max.) (+3.3V & +5V & +12V =478W max.)**
Trade mark (if any) *Marque de fabrique (si elle existe)*	**Brand name: AOpen**
Model/type Ref. *Ref. de type*	**FSP550-60PLN..**
Additional information (if necessary) *Information complémentaire (si necéssaire)*	**The dots in model name can be A to Z, 0 to 9 or blank, for marketing purpose only.**
A sample of the product was tested and found to be in conformity with *Un échantilléon de ce produit a été essayé et a été considéré conforme à la*	**IEC 60950 2nd Edition, 1991 + Amd. 1, 1992 + Amd. 2, 1993 + Amd. 3, 1995 + Amd. 4, 1996.**
as shown in the Test Report Ref. No. which forms part of this certificate *comme indiqué dans le Rapport d'essais numéro de référance* *qui constitute un partie de ce certificat*	**200230270**

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P.O. BOX 73, BLINDERN
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Date **07 August 2002**

Signature **Lars Hjerpseth**
Principal Engineer

Issue 1993-06 / N - version