康舒科技
ACBEL POLYTECH INC.

Approval Sheet

Model No. : **FSE001 Option 4QAG**

Hardware Rev. : **A02**

Customer : **PCICase UK Ltd.**

Customer PN : **PS-000000085_A01**

Approval by : *Smith Lu*

Prepare by : **Sonia Chuang**

Date: 03/23/2021

康舒科技
ACBEL POLYTECH INC.

Contents

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Contents

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Specification

ACBEL POLYTECH INC.

Specification for 400W
Flex ATX Power Supply
Production NO: FSE001-000G

Revision: A

Date: 2015/06/10

Prepared By: Jack Wang

Approved By: Robert Lin

Revision History

Revision	Description	Date
A	Initial	2015/06/10

* * TABLE OF CONTENTS * *

1. Input Requirements

1-1. Input condition:

Range Select	Nominal	Units
Vin	100 - 240	VAC
Frequency	50 - 60	Hz
AC input current	6A / $115V_{AC}$, 3A / $230V_{AC}$	AMPS

1-2. Inrush Current

Maximum inrush current from power-on (with power on at any point on the AC sine) shall be limited to the peak surge current of the input line cord, bridge diode, fuse and EMI filter components according to I^2t. Receptive ON/OFF cycling of the AC input voltage shall not damage the PSU or cause the input fuse to blow.

1-3. Efficiency

The minimum efficiency of power supply should be over than **87%** under the maximum and 20% load and should be over **90%** under the half load. Load measurements are performed at 115VAC/230Vac input.

The PF should be over than 0.9 under 20% load at 115VAC.

It is better to meet the 80 plus requirement .as the web site as follow:

http://www.80plus.org/

Efficiency test condition as below

Table 1: Efficiency load condition

Load	+5V	+3.3V	+12V	+5Vs	-12V	Total (W)
20% Load	2.15A	1.4A	5.2A	0.3A	0.06	80W
50% Load	5.46A	3.3A	13A	0.8A	0.15	200W
100% Load	11A	6.5A	26A	1.6A	0.3	400W

Note: The Efficiency should allow of 1% tolerance.

1-4 Harmonic Current Compliance With EN 61000-3-2

The power supply shall be passed 115V/60HZ and 230V/ 50HZ class D on EN61000-3-2.

1-5. Energy Star (Compliance With (EU) No 617/2013)

In standby mode, +5Vsb efficiency should perform as follow: (230V/50HZ)

Table 2: Energy Star load condition

Output	Efficiency
50 mA	≧50%
100 mA	≧50%
250 mA	≧60%
≧1A	≧70%

1-6. Output Voltage and Ripple Noise Requirements

Table 3 Output Voltage and Ripple Noise Requirements

Output Voltage	MIN	MAX	Regulation (%)	Ripple Max
+5V	4.75	5.25	+5% ~ -5%	50mV
+3.3V	3.135	3.465	+5% ~ -5%	50mV
+12V	11.4	12.6	+5% ~ -5%	120mV
+5Vs	4.75	5.25	+5% ~ -5%	50mV
-12V	10.8	13.2	+10% ~ -10%	120mV

Note: 1). The output voltage should be measured at output connector terminals.
2). The output Ripple Noise should be tested with 10 μF of tantalum and 0.1 μF ceramic disk capacitors to simulate system loading.

2. Output Requirements

2-1. DC Load Requirements

Table 4: DC Load Requirements

Output Voltage	Minimum	Maximum	Combined	Total
5V	**0.2A**	**16A**	**386.4W**	**400W**
3.3V	**0.1A**	**10A**		
12V	**0.1A**	**32A**		
5VS	**0.05A**	**2A**	**10W**	
-12V	**0.05A**	**0.3A**	**3.6W**	

Note: 1. The total continuous output power shall not exceed 400W.
2. The total output of 5V&3.3V should not exceed 100W.
3. The total output of main should not exceed 386.4W
4. The +12V peak current is 36A and the timing keep 12ms, And output voltage tolerance is ±10% .

2-2. Cross Regulation

Table 5: Cross Regulation

The cross regulation is defined in the matrix below:

Load	+5V	+3.3V	+12V	+5Vs	-12V	Total
1	0.2	0.1	0.1	0.05	0.05	13.0
2	5.46	3.3	13	0.8	0.15	200.0
3	16	5.6	24	2	0.3	400.0
4	13.1	10	24	2	0.3	400.0
5	0.22	0.4	32	2	0.3	400.0

2-3. Output Transient Response

- The output voltage will remain within the regulation after applying following load changes.
- Simultaneous load step on the +5V, +3.3V,-12V,and +12V outputs.(all steps occurring in the same direction.)
- Load –changing repetition rate of 50Hz to 10KHz.

Table 6: Output Transient Response

Low Step	High Step	Output	Output Range	Max Load Step	Slew Rate (A/uS)	Min. Dynamic Capacitive load
Static Load (1)	Static Load (3)	+5V	0.2A to 16A	4.8A	1	10,000uF
Static Load (1)	Static Load (4)	+3.3V	0.1A to 10A	3A	1	10,000uF
Static Load (1)	Static Load (5)	+12V	0.1A to 32A	14A	0.5	3300uF
Static Load (1)	Static Load (4)	+5Vs	0.05A to 2A	0.6A	1	6000uF
Static Load (1)	Static Load (4)	-12V	0.05A to 0.3A	0.1A	0.1	350uF

The dynamic load transient response test must follow 2-2.

2-4. Output Closed-loop Stability

The power supply shall be unconditionally stable under all line/load/transient load conditions including capacitive loads. A minimum of 45 degrees phase margin and 6dB gain is recommended at both the maximum and minimum load.

2-5. Over Shoot

The output voltage overshoot upon the application or removal of the input voltage, or the assertion /de-assertion of PS_ON#, under the condition specified in Section 1-6, shall be less than 10% above the nominal voltage. No voltage of opposite polarity shall be present on any output during turn-on or turn-off.

3. Timing

- *3-1. Power supply Time:*

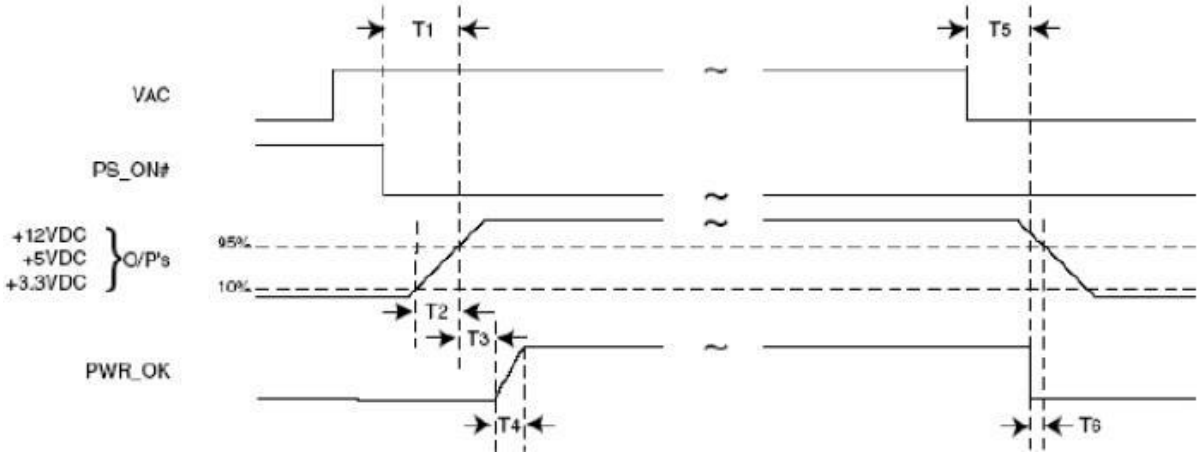

Table 7: Timing

Parameter	Description	Value
T1	Power-on time	<500mS
T2	Rise time	0.2 – 20mS
T3	PWR_OK delay time	100 – 500mS
T4	PWR_OK rise time	<1mS
T5	AC loss to PWR_OK hold-up time	16mS
T6	Power-down warning	>1mS

NOTE: The power supply with 80% load at 115Vac/ 60Hz or 230V/50Hz for T5.

- ***3-2. Hold-up Time***

The power supply with 80% load at 115Vac/ 60Hz or 230V/50Hz should supply regulated output for at least 16mS after the loss of the AC input voltage.

Test condition as below.

Load	+5V	+3.3V	+12V	+5Vs	-12V	Total
80% Load	9.5A	5A	20.65A	1.3A	0.15A	320W

4. Power Good Signal

4-1. Power Good Signal

The power supply should provide a “Power-Good” signal to reset system logic, indicate proper operation of the power supply and give advance warning of impending loss of regulation at turn off.

It should be an up level during normal operation, or a down level when fault conditions occur or during turn off. When the power supply is turned off for a minimum of 3.0 sec. and then turned on the power good signal should be generated.

4-2. Power Good Signal Characteristics

Signal Type	+5V TTL compatible
Logic level low	< 0.4V while sinking 4mA
Logic level high	Between 2.4V and 5V output while sourcing 200uA
High-state output impedance	1k ohms from output to common
Max Ripple/Noise	400 mV pk-pk

5. Protections

5-1. Over Voltage Protection

OVP	Max.
12V	16.0V
5V	7.0V
3.3V	4.5V

5-2. Over Current Protection

The power supply should provide +5V, +3.3Vand +12V OCP and should shutdown of each output power and no components damage. For testing purposes, the overload currents of each tested output rail should be ramped at a minimum rate of 10A/sec.

5-3. Short Circuit Protection

The short circuit placed on +3.3V, +5V, + 12V,-12V and 5Vs output shall cause no damage and the power supply shall shut down or latch.

5-4. Protection Reset

When the power supply latches into shutdown condition due to a fault on output (Over-Current, Over-Voltage, Short circuit, OTP), the protection latch must reset within 7 seconds after the fault has been removed and the on/off signal has switched state.

6. No Load Operation

The power supply should be normal operation.

7. Fan Speed Control

The power supply shall contain a thermal sensing circuitry capable of varying fan speed.

8. Environment

8-1. Operating Temperature Range

Operation ambient : 0 ℃ to + 50℃

Non-operating ambient : -40℃ ～ +70℃

8-2. Thermal Shock (Shipping)

Non-operating : -40 ～ 70℃ (15℃/min≦dT/dt≦30℃/min)

8-3. Altitude

Operating To 5000 m

Non-operating To 15,000 m

8-4. Random Vibration

Sine sweep, 5 Hz~200 Hz , 1g.

Sweep rate : 1 Oct/Min, three axes.

Dwell natural frequency,2G , per point 15 minutes.(non-operating)

8-5. MTBF and Cap Life

100,000 Hours “80% Load at 25℃,115V / 60Hz or 230V / 50Hz” for MTBF.

26,280 Hours “80% Load at 25℃,115V / 60Hz or 230V / 50Hz” for Capacitor life.

8-6. Mechanical Shock

Sqare wave ,50G ; velocity 167 in/s per face three times. (non-operating)

9. Safety

The power supply will have the following safety approvals with most current editions shipping:

9-1. UL/CAN/CSA

9-2. TUV/EN

9-3. IEC/CB

9-4. CE

9-5. FCC

9-6. BSMI

9-7. CCC

10.EMI Requirements

The power supply shall comply with CISPR 22, Class B. Tests shall be conducted using a shielded DC output cable to a shielded load. The load shall be adjusted as follows condition: Test with system; Tests will be performed at 115VAC/60Hz, and 220VAC/50Hz.

11.Electrostatic Discharge Requirement (ESD)

The objective of ESD test is to determine the susceptibility and immunity of products to electrostatic discharge to which the products may be exposed, when operating under all potential environmental conditions.

11-1. **Air Discharge:**

Test Volt	Requirements
8KV	No allowed error
12.5KV	Restart & damage error are not allowed
15KV	Damage error is not allowed restart is allowed

11-2. **Contact Discharge :**

Test Volt	Requirements
2~4KV	No allowed error
6KV	Restart & damage error are not allowed
8KV	Damage error is not allowed restart is allowed

The above test discharge time is 1 time / sec and repeat each test ten times.

12.Lightning Surge Immunity

The purpose of lightning surge immunity test is to verify if the power supply can withstand lightning surge wave. This is to follow the norm of IEC61000-4-5 requirements.

13.Hi-Pot test:

100% production testing for Hi-pot and Ground continuity must be performed, Units passing these tests must be mark accordingly.

14.Fan:

Size: 40x20mm, speed: 13000rpm

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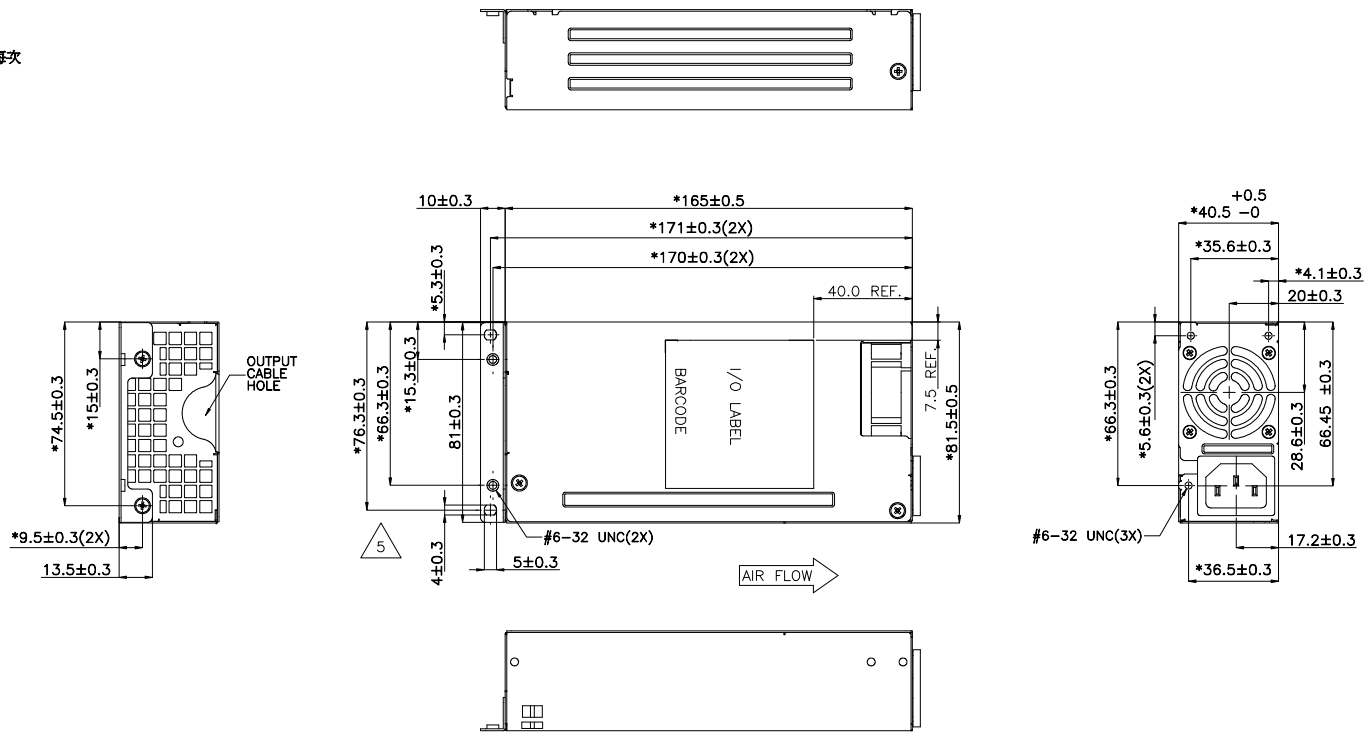
Mechanical Outline Drawing

NOTE :

1. UNIT : MM. **單位 : 毫米**
2. CONNECTOR PIN ASSIGNMENT : SEE CHART
   連接器各孔位線材顏色及輸出定義 : 參閱表格
3. NET WEIGHT: 1240 GRAMS±3%
   淨重 : 1240 克 ± 3%
4. " * " CRITICAL DIMENSION. THE SUPPLIER MUST BE INSPECTED THIS DIMENSION FOR EVERY SHIPMENT.
   " * " 表示該(尺寸/位置)為設計之重點尺寸,供應商每次出貨前必須檢驗合格後,方可出貨.
5. THESE MATERIAL/PART/ASSEMBLY MUST COMPLY TO ACBEL SPEC "CRITERIA FOR ENVIRONMENT-RELATED SUBSTANCES" .
   材質/零件/製程均必須符合康舒"環境管理物質規範".



REV	DESCRIPTION	BY	DATE
6	UPDATE PB-PE & ADD PF,PG	Woody	12/25/17
5	ADD BRACKET	Woody	12/12/17
4	REMOVE 4+4P	Woody	08/29/17

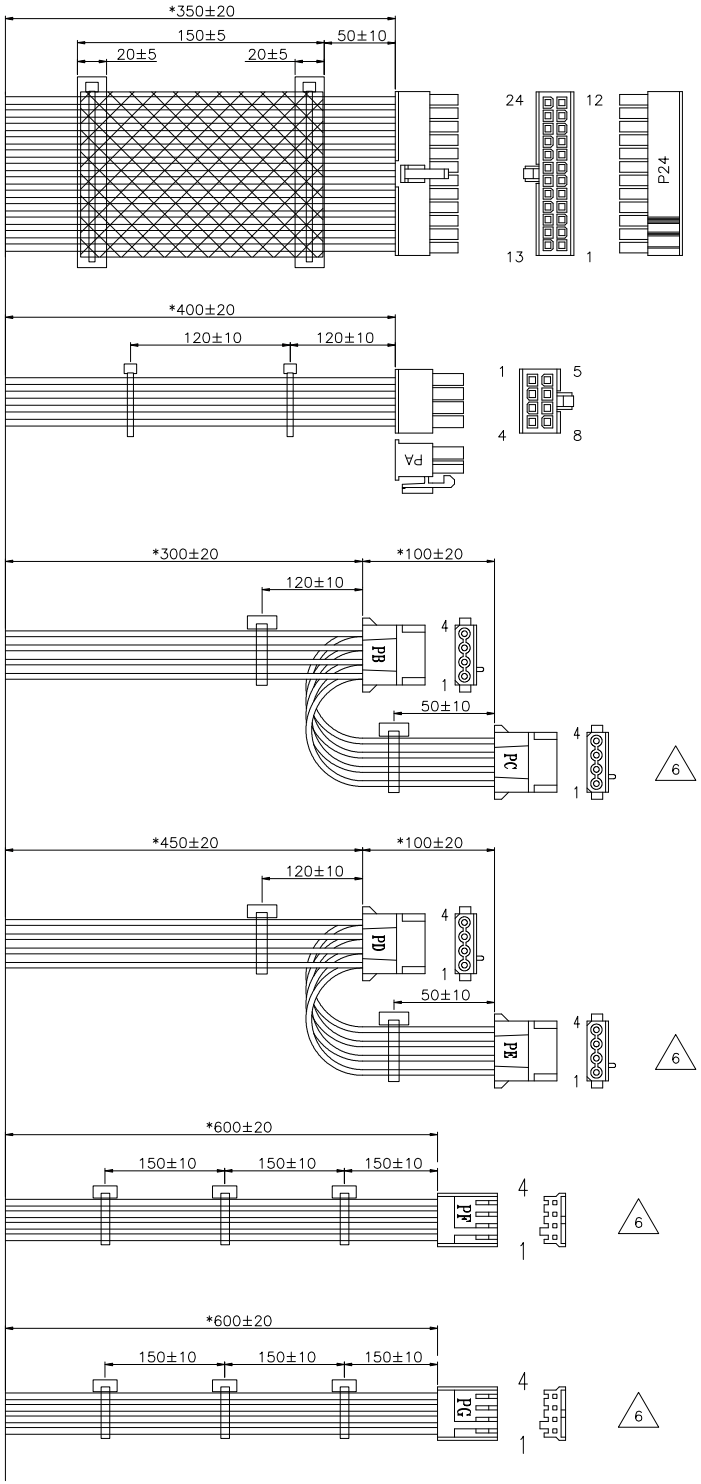
NON-RELEASE			
試作圖面			REV: 6
ENG.	Woody	APPR.	
QTY	依技轉備料數量為準.	DATE	12/25/17

⚠ 注意: 此圖面僅供試產使用,
量產請以資料室正式發行圖面為準 .

ACBEL POLYTECH INC.

MODEL NO.	FSE001-4QAG
PART NO.	
DWG NO.	MO-FSE001-4QAG_6
TITLE	MECHANICAL OUTLINE
DESIGNER	Woody 12/25/17
CHECKED	
APPROVED	

SI | Metric | A1 | THIRD ANGLE PROJECTION | SCALE 1:1 | SHEET 1 OF 2



CONN.	PIN	OUTPUT	COLOR	AWG
P24 MINI-FIT 24PIN	1	+3.3V	ORANGE	20
	2	+3.3V	ORANGE	20
	3	GND	BLACK	20
	4	+5V	RED	20
	5	GND	BLACK	20
	6	+5V	RED	20
	7	GND	BLACK	20
	8	P.G	GRAY	22
	9	+5Vsb	PURPLE	20
	10	+12V	YELLOW	18
	11	+12V	YELLOW	18
	12	+3.3V	ORANGE	20
	13a	+3.3V	ORANGE	20
	13b	+3.3VSE	BROWN	22
	14	-12V	BLUE	22
	15	GND	BLACK	20
	16	PS-ON	GREEN	22
	17	GND	BLACK	20
	18	GND	BLACK	20
	19	GND	BLACK	20
	20			
	21	+5V	RED	20
	22	+5V	RED	20
	23	+5V	RED	20
	24	GND	BLACK	20

CONN.	PIN	OUTPUT	COLOR	AWG
PA MINI-FIT 8PIN	1	GND	BLACK	20
	2	GND	BLACK	20
	3	GND	BLACK	20
	4	GND	BLACK	20
	5	+12V	YELLOW	20
	6	+12V	YELLOW	20
	7	+12V	YELLOW	20
	8	+12V	YELLOW	20

CONN.	PIN	OUTPUT	COLOR	AWG
PB-PE HDD	1	+12V	YELLOW	18
	2	GND	BLACK	18
	3	GND	BLACK	18
	4	+5V	RED	18

CONN.	PIN	OUTPUT	COLOR	AWG
PF/PG FDD	1	+5V	RED	22
	2	GND	BLACK	22
	3	GND	BLACK	22
	4	+12V	YELLOW	22

NON-RELEASE			
試作圖面			REV: 6
ENG.	Woody	APPR.	
QTY	依技轉備料數量為準.	DATE	12/25/17

⚠ 注意: 此圖面僅供試產使用,
量產請以資料室正式發行圖面為準 .

ACBEL POLYTECH INC.

MODEL NO.	FSE001-4QAG
PART NO.	
DWG NO.	MO-FSE001-4QAG_6
TITLE	MECHANICAL OUTLINE
DESIGNER	Woody 12/25/17
CHECKED	
APPROVED	

S1 | Metric A1 | THIRD ANGLE PROJECTION | SCALE NONE | SHEET 2 OF 2

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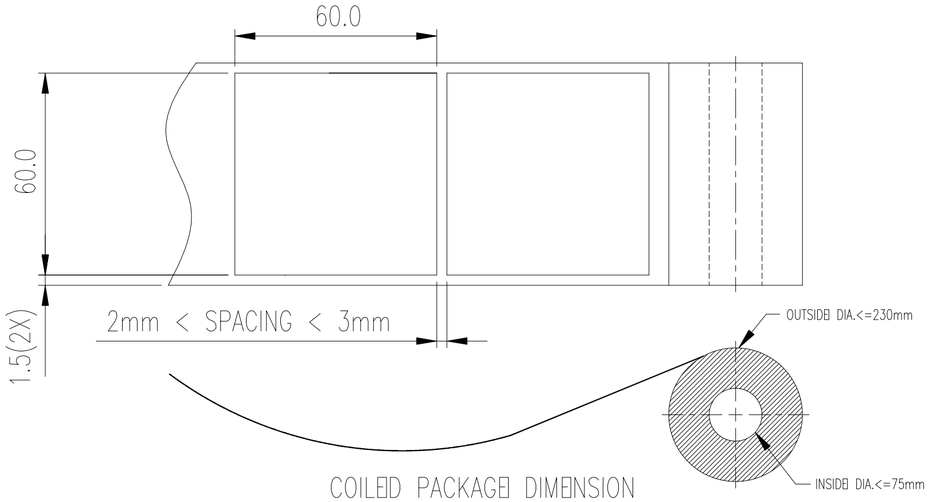
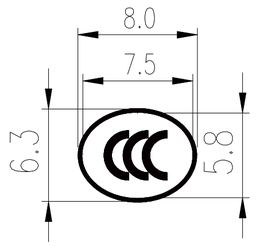
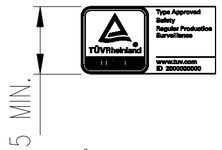
ACBEL POLYTECH INC.

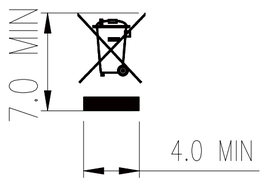
I/O Label Drawing



COILED PACKAGE DIMENSION

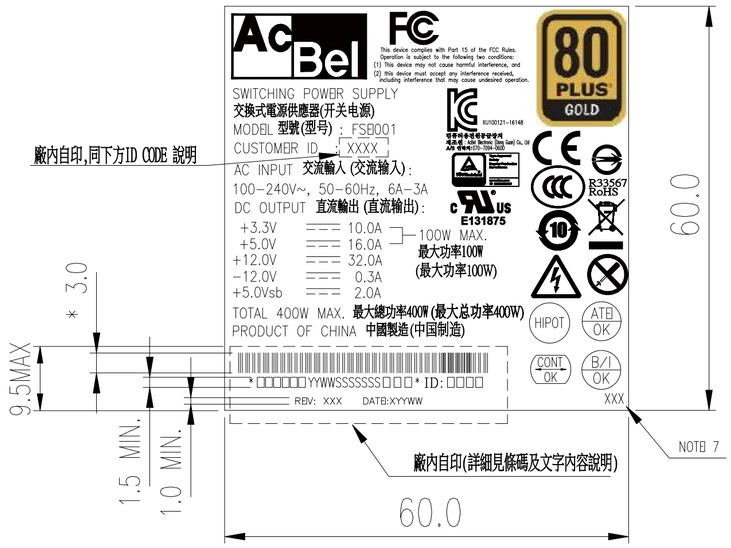


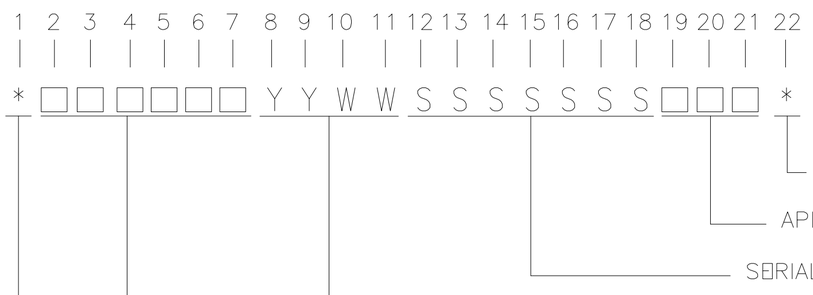




DEFINITION OF 80PLUS LOGO
THE RADIUS IS 2.5MM
COLOR : PANTONE 142C

廠內自印,同下方ID CODE 說明





NOTES:

1. UNIT : MM.
   单位 : 毫米.
2. MATERIAL :
   2.1 FACE STOCK 底材:
   WHITE POLYESTER,THICKNESS = 0.05 MM.
   白色麦拉片,厚度= 0.05毫米
   2.2 OVERLAMINATION 保护膜:
   ☐ A TRANSPARENT FILM 透明胶膜 ■ NONE 无
   2.3 ADHESIVE 背胶: PRESSURE SENSITIVE ACRYLIC 压克力压膜胶
   THICKNESS 厚度= 0.025 MM
   2.4 BACKED WITH RELEASE LINER. 背面附离型纸
   2.5 LABEL TO BE AFFIXED TO AND MAXIMUM
   TEMPERATURE RATING 贴纸所贴附之材质与最大耐温等级
   ■GALVANIZED STEEL 镀锌钢 ☐ ALUMINUM 铝
   ☐NICKEL PLATED METAL 镀镍金属
   ☐ ZINC PLATED METAL WITH CHROMATE POST
   TREATMENT 后处理之镀铬酸锌金属
   ■100°C 摄氏100度
   2.6 MATERIAL MUST BE UL RECOGNIZED AND COMPLY TO UL 969 STANDARD.
   材质必须符合 UL 认证,并且遵从 UL 969 标准.
3. LABEL MUST BE MADE BY A UL RECOGNIZED AND CSA APPROVED VENDOR.
   贴纸之制造商必须是 UL 与 CSA 所认证.
4. TOLERANCE : XX = +/- 0.5 XX.X = +/- 0.2
   XX.XX = +/- 0.15
   公差 : XX = +/- 0.5 XX.X = +/- 0.2
   XX.XX = +/- 0.15
5. "*"CRITICAL DIMENSION SYMBOL,SUPPLIER MUST INSPECT THIS DIMENSION FOR EVERY SHIPMENT
   "*"表示该(尺寸/位置)为设计之重点尺寸,供应商每次出货前必须检验合格后,方可出货.
6. ALL PRODUCTS MUST BE THE SAME AS ENGINEERING API MECHANICAL ENGINEERING APPROVED SAMPLES,ANY MODIFICATION MUST BE APPROVED BY ACBEL MECHANICAL ENGINEERING SECTION.
   所有产品必须与认可的样品一致,任何的修改都必须经由康舒机构工程师同意及认可.
7. LABEL MUST CONTAIN THE VENDOR'S ID MARK LOCATED IN THE AREA INDICATED. ID MARK LETTER HEIGHT TO BE 1.5MM.
   贴纸必须印制厂商代码,代码字高为 1.5 毫米.
8. CHARACTER HEIGHT : 1.5 MM ,UNLESS OTHERWISE SPECIFIED.
   图面未标示之字体高度皆为 1.5 毫米
9. PRINTED COLOR :
   BLACK - TEXT, GRAPHICS, IMAGE, LOGO SURROUND SHAPE.
   WHITE - BACKGROUND.
   列印颜色 :
   黑色 - 文字、图形、图象、标志、外围图形
   白色 - 背景
10. THESE MATERIAL/PART/ASSEMBLY MUST COMPLY TO ACBEL SPEC"CRITERIA FOR ENVIRONMENT-RELATED SUBSTANCES".
    材质/零件/制程均必须符合康舒"环境管理物质规范".
11. BARCODE TYPE :128
    BARCODE HEIGHT: 5 mm
    QUIER ZONES : 3 mm MIN.
    WIDE TO NARROW RATIO : 2.0:1 TO 3.0:1
    CPI : 9.38 MIN.
    NARROW ELEMENT : 0.085 TO 0.254 MM
    条码形式 : 128
    条码高度 : 5 毫米
    空白区域 : 最小 3 毫米
    宽窄比例 : 2.0:1 TO 3.0:1
    CPI : 最小 9.38
    宽区宽度 : 0.085 TO 0.254 毫米
12. REV : X X X
    REV S1=OS1 ; REV S2=OS2 ; REV A=A00...
13. DATE : XYYWW
    YYWW IS PRODUCTION DATE CODE (YY-YEARS,WW-WEEKS)
    X MAY BE B,T or W IS FACTOR CODE
    康舒东莞厂生产即印制 B ,康展东莞厂生产即印制 T ,康舒电子武汉生产即印制 W

RELEASE			
正式發行圖面			REV: F
ENG.	Stone	APPR.	

REV	DESCRIPTION	BY	DATE
F	MODIFY WARNING DESCRIPTION AND FCC LOGO	Stone	10/08/18
E	ADD FCC WAINGING INTO LABEL AND LOGO	Stone	10/02/18
D	MODIFY SAFETY LOGO	Stone	07/10/18
C	MODIFY BSMI LOGO & API REV CODE	Stone	11/13/17

ACBEL POLYTECH INC.

MODEL NO.	FSE001-00AG
PART NO.	R01AAA-7446ID
DWG. NO :	R01AAA-7446ID_F
TITLE	I/O LABEL (COMPLY TO RoHS)

SI Metric A3 | SCALE NONE | SHEET 1 OF 1 | THIRD ANGLE PROJECTION | mm 0 25

DESIGNER	Stone	10/08/18
CHECKED		
APPROVED		


AcBel
This device complies with Part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received,
including interference that may cause undesired operation.
80 PLUS GOLD
SWITCHING POWER SUPPLY
交換式電源供應器(开关电源)
MODEL 型號(型号) : FSE001
CUSTOMER ID : 4QAG
AC INPUT 交流輸入(交流输入):
100-240V~, 50-60Hz, 6A-3A
DC OUTPUT 直流輸出(直流输出):
+3.3V 10.0A
+5.0V 16.0A
+12.0V 32.0A
-12.0V 0.3A
+5.0Vsb 2.0A
100W MAX.
最大功率100W
(最大功率100W)
TOTAL 400W MAX. 最大總功率400W(最大总功率400W)
PRODUCT OF CHINA 中國製造(中国制造)
XU100121-16148
E131875
R33567
RoHS
HIPOT
ATE OK
CONT OK
B/I OK
* FSE0011904R00002A02 * ID : 4QAG
REV : A02 DATE : B1904
TR

康舒科技
ACBEL POLYTECH INC.

Safety

IEC IECEE CB SCHEME	Ref. Certif. No.
	JPTUV-105456

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT (IECEE) CB SCHEME

CB TEST CERTIFICATE

Product	Switching Power Supply
Name and address of the applicant	Acbel Polytech Inc. No. 159, Sec. 3, Danjin Rd., Tamsui Dist., New Taipei City 251 Taiwan
Name and address of the manufacturer	Acbel Polytech Inc. No. 159, Sec. 3, Danjin Rd., Tamsui Dist., New Taipei City 251 Taiwan
Name and address of the factory	See additional page(s)
Ratings and principal characteristics	Input : AC 100-240V; 6A-3A; 50-60Hz; Class I Output: refer to the test report
Trademark (if any)	AcBel
Customer's Testing Facility (CTF) Stage used	CTF Stage 1
Model / Type Ref.	FSE001
Additional information (if necessary may also be reported on page 2)	
A sample of the product was tested and found to be in conformity with	IEC 62368-1:2014 See Test Report for National Differences
As shown in the Test Report Ref. No. which forms part of this Certificate	50342043 001

This CB Test Certificate is issued by the National Certification Body

TÜVRheinland®

TÜV Rheinland Japan Ltd.
Global Technology Assessment Center
4-25-2 Kita-Yamata, Tsuzuki-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: 25.02.2020

Signature: Dipl.-Ing. F. Stoelzel

1. Acbel Electronic (Dong Guan) Co., Ltd.
   No. 17-28, Horng Yeh Road, Horng Yeh Ind. District, Tang Xia Town
   Dongguan, Guangdong 523710, P. R. China

2. Acbel Polytech Inc.
   No. 159, Sec. 3, Danjin Rd.,
   Tamsui Dist., New Taipei City 251
   Taiwan

3. ACBEL ELECTRONIC (WUHAN) CO., LTD
   No. 1, DuTai North Road
   Economic Development Zone
   XianTao City, HuBei Province
   P. R. China

4. Acbel Polytech(Philippines) INC.
   No. 2 Tagaytay Ridge Drive,
   Carmelray Industrial Park II,
   Km. 54 National Highway,
   Calamba City, Laguna 4027, Philippines

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

Report Ref. No.: 50342043 001

Date: 25.02.2020

Signature: Dipl.-Ing. F. Stoelzel

Industrial Services, Mobility and Transport,
Product Safety and Quality, Education and
Consulting, IT Services and Innovation

TÜVRheinland®
Precisely Right.

Acbel Polytech Inc.
Mr. Howard Lin, Safety Engineer
Safety. DQ Dept.
No. 159, Sec. 3, Danjin Rd.,
Tamsui Dist., New Taipei City 251
Taiwan

Date : 26.02.2020
Our ref. : WYP ZTW1
Your ref.: T191023_Evonne

Ref : R TÜV-Mark Approval

Type of Equipment : Switching Power Supply
Model Designation : See Certificate
Certificate No. : R 50307506 0007
Report No. : 10050456 003

Dear Mr. Howard Lin,

The above specified equipment has been tested and found to be in accordance with the relevant requirements.

Please find enclosed your certificate as specified above.

If cancellation of the certificate is submitted by 15 November in a given year, no fee will be charged for the following year.

The certificate is issued with the reservation that the license holder applies all information required in § 6 of the ProdSG related to name and address of the manufacturer or his authorized representative / importer, including their respective contact addresses on the product prior to marketing of the product in the European Economic Area.

With kind regards,

Certification Body

Dipl.-Ing. F. Stoelzel

Enclosure

TÜV RHEINLAND TAIWAN LTD.

11F., No. 758, Sec. 4, Bade Rd.,
Songshan Dist., Taipei City 105,
Taiwan, R. O. C.
Tel. (02) 2172-7000
Fax (02) 2172-1322
http: //www.tuv.com

NEW TAIPEI BRANCH:
No. 458-18 & 458-19,
Sec. 2, Fenliao Rd., Linkou Dist.,
New Taipei City 244,
Taiwan, R. O. C.
Tel. (02) 2172-1000
Fax (02) 2172-1322

TAICHUNG BRANCH:
No. 9, Lane 36, Sec. 3, Minsheng Rd.,
Daya Dist., Taichung City 428,
Taiwan, R. O. C.
Tel. (04) 2521-8888
Fax (04) 2521-8899

KAOHSIUNG BRANCH:
27F-3, No.80, Minzu 1st Rd.,
Sanmin Dist., Kaohsiung City 807,
Taiwan, R. O. C.
Tel. (07) 262-6000
Fax (07) 380-0577

Zertifikat *Certificate*

TÜVRheinland®

Zertifikat Nr. *Certificate No.*
R 50307506

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0007

Ihr Zeichen *Client Reference*	**Unser Zeichen** *Our Reference*	**Ausstellungsdatum**	*Date of Issue* (day/mo/yr)
T191023_Evonne	ZTW1-WYP- 10050456 003	26.02.2020	

Genehmigungsinhaber *License Holder*
Acbel Polytech Inc.
No. 159, Sec. 3, Danjin Rd.,
Tamsui Dist., New Taipei City 251
Taiwan

Fertigungsstätte *Manufacturing Plant*
Acbel Polytech Inc.
No. 159, Sec. 3, Danjin Rd.,
Tamsui Dist., New Taipei City 251
Taiwan

Prüfzeichen *Test Mark*

TÜVRheinland® ZERTIFIZIERT
Bauart geprüft
Sicherheit
Regelmäßige Produktions-überwachung
www.tuv.com
ID 2000000000

Geprüft nach *Tested acc. to*
EN 62368-1:2014+A11

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

Lizenzentgelte - Einheit
License Fee - Unit

Einbau-Schaltnetzteil (Switching Power Supply)

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Änderung
(Change)

Prüfgrundlage : siehe oben
(Test Requirement) (see above)

ANLAGE (Appendix): 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.

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

Zertifizierungsstelle

TÜV Rheinland LGA Products GmbH TÜVRheinland® Zertifizierungsstelle

Dipl.-Ing. F. Stoelzel

CERTIFICATE OF COMPLIANCE

Certificate Number	E131875
Report Reference	E131875-20200402
Issue Date	2020-APRIL-13
Issued to:	ACBEL POLYTECH INC No159 Sec 3 Danjin Rd TamSui District, New Taipei 251 TAIWAN
This certificate confirms that representative samples of	COMPONENT - POWER SUPPLIES FOR USE WITH AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT Switching Power Supply FSE001
	Have been investigated by UL in accordance with the component requirements in the Standard(s) indicated on this Certificate. UL Recognized components are incomplete in certain constructional features or restricted in performance capabilities and are intended for installation in complete equipment submitted for investigation to UL LLC.
Standard(s) for Safety:	UL 62368-1 & CSA C22.2 No. 62368-1-14 - Audio/video, Information and Communication Technology Equipment - Part 1: Safety Requirement
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Recognized Component Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Recognized Component Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Recognized Component Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

Certificate Certificado شهادة Zertifikat сертификат

CE CERTIFICATE OF COMPLIANCE

This is to certify that the product listed in follows was (were) tested in the BTL EMC Laboratory to comply with the required criteria levels of the follow-mentioned Generic Standards or Product Family Standard(s) and/or Basic Standard(s) based-on the essential conformity requirements of EMC Directive of 2004/108/EC.

Equipment	**Switching Power Supply**
Model Name	**FSE001**
Brand Name	**AcBel**
Applicant	**Acbel Polytech Inc.**
Address	**No.159, Sec. 3, Danjin Rd., Tamsui Dist., New Taipei City 251, Taiwan**
Standard(s)	**EN 55022: 2010+AC: 2011 Class B** **AS/NZS CISPR 22:2009+A1:2010 Class B / CISPR 22: 2008 Class B** **EN 61000-3-2: 2006+A1: 2009 +A2: 2009 Class D / EN 61000-3-3: 2013** **EN 55024: 2010** **EN 61000-4-2: 2009 / IEC 61000-4-2:2008 ED 2.0** **EN 61000-4-3: 2006+A1:2008+A2:2010 / IEC 61000-4-3:2010 ED 3.2** **EN 61000-4-4: 2012 / IEC 61000-4-4:2012 ED 3.0** **EN 61000-4-5: 2014 / IEC 61000-4-5:2014 ED 3.0** **EN 61000-4-6: 2014 / IEC 61000-4-6:2013 ED 4.0** **EN 61000-4-8: 2010 / IEC 61000-4-8:2009 ED 2.0** **EN 61000-4-11: 2004 / IEC 61000-4-11:2004 ED 2.0**
Report(s)	**BTL-EMC-1-1504011**

The test data, data evaluation, and equipment configuration contained in our test report(s) above was (were) obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TUV NORD and TAF according to the ISO-17025 quality assessment standard and technical standard(s). The test data contained in the referenced test report relate only to the EUT sample and item(s) tested.

Andy Chiu

Authorized Signatory

BTL INC.

B1, No. 37, Lane 365, Yang-Guang St.,
Nei-Hu District, Taipei City 114, Taiwan.

TEL:+886-2-2657-3299

FAX:+886-2-2657-3331

Certificate Certificado شهادة Zertifikat сертификат

CERTIFICATEOF COMPLIANCE

Authorized under Declaration of Conformity according to 47 CFR, Part 2 and Part 15 of the FCC Rules. The product listed in follows was (were) tested in the BTL EMC Laboratory to comply with the criteria limits Class B of conducted and radiated emissions of the Technical Standards FCC Part 15, Subpart B, established by the FCC, USA.

Equipment	**Switching Power Supply**
Model Name	**FSE001**
Brand Name	**AcBel**
Applicant	**Acbel Polytech Inc.**
Address	**No.159, Sec. 3, Danjin Rd., Tamsui Dist., New Taipei City 251, Taiwan**
Standard(s)	**FCC Part 15, Subpart B: 2014** **ANSI C63.4-2009** **ICES-003 Issue 5: 2012** **CISPR 22: 2008** **CAN/CSA-CISPR 22-10**
Report(s)	**BTL-FCCE-1-1504011**

The test data, data evaluation, and equipment configuration contained in our test report(s) above was (were) obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of TAF according to the ISO-17025 quality assessment standard and technical standard(s). The test data contained in the referenced test report relate only to the EUT sample and item(s) tested.

Andy Chiu

Authorized Signatory

BTL INC.

B1, No. 37, Lane 365, Yang-Guang St.,
Nei-Hu District, Taipei City 114, Taiwan.
TEL:+886-2-2657-3299
FAX:+886-2-2657-3331

中国国家强制性产品认证证书

证书编号：2015010907773812

委托人名称、地址

康舒科技股份有限公司

台北市松山区南京东路 5 段 99 号 11 楼

生产者（制造商）名称、地址

康舒科技股份有限公司

台北市松山区南京东路 5 段 99 号 11 楼

生产企业名称、地址

康舒电子（东莞）有限公司

广东省东莞市塘厦镇宏业工业区宏业大道 17-28 号

产品名称和系列、规格、型号

开关电源

FSE001：输入：100-240Vac 50-60Hz, 6A-3A ；输出：DC +3.3V/10.0A, +5.0V/16.0A, +12.0V/32.0A, -12.0V/0.3A, +5.0Vsb/2.0A; +3.3V and +5.0V 输出功率相加最大 100W ，总输出功率 400W (仅适用于海拔 5000 米及以下)(不带电线组件销售)

产品标准和技术要求

GB17625.1-2012;GB4943.1-2011;GB/T9254-2008

上述产品符合强制性产品认证实施规则 CNCA-C09-01:2014 的要求，特发此证。

发证日期：2020 年 03 月 27 日　　**有效期至：**2025 年 03 月 27 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：2015 年 05 月 14 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。

经中国合格评定国家认可委员会认可 CNAS C001-P

主　任：

中国质量认证中心

CERTIFICATE FOR CHINA COMPULSORY PRODUCT CERTIFICATION

CERTIFICATE NO.: 2015010907773812

NAME AND ADDRESS OF THE APPLICANT

Acbel Polytech Inc.

11F., N0. 99, Sec. 5, Nan-King E. Road. Sungshan Chiu, Taipei, Taiwan, Province Of China

NAME AND ADDRESS OF THE MANUFACTURER

Acbel Polytech Inc.

11F., N0. 99, Sec. 5, Nan-King E. Road. Sungshan Chiu, Taipei, Taiwan, Province Of China

NAME AND ADDRESS OF THE FACTORY

Acbel Electronic (Dong Guan) Co., Ltd.

No. 17-28, Horng Yeh Road, Horng Yeh Ind. District, Tang Xia Town, Dongguan, Guangdong 523710, P.R. China

PRODUCT NAME, MODEL AND SPECIFICATION

Switching Power Supply

FSE001：输入：100-240Vac 50-60Hz, 6A-3A ；输出：DC +3.3V/10.0A, +5.0V/16.0A, + 12.0V/32.0A, -12.0V/0.3A, +5.0Vsb/2.0A; +3.3V and +5.0V 输出功率相加最大 100W ，总输出功率 400W (仅适用于海拔 5000 米及以下)(不带电线组件销售)

THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS

GB17625.1-2012;GB4943.1-2011;GB/T9254-2008

This is to certify that the above mentioned product(s) complies with the requirements of implementation rules for compulsory certification(REFNO.CNCA-C09-01:2014).

Valid from: Mar.27,2020 **Valid until:** Mar.27,2025

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

Date of original issued: May.14,2015

The certificate information is available through CNCA's website: www.cnca.gov.cn

Accredited by China National Accreditation Service for Conformity Assessment CNAS C001-P

President: 陆梅

Lu Mei

CHINA QUALITY CERTIFICATION CENTRE 中国质量认证中心

CHINA QUALITY CERTIFICATION CENTRE

http://www.cqc.com.cn Section 9, No. 188, Nansihuan Xilu, Beijing 100070 P. R. China Tel: +86 10 83886666

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.：　2015010907773812

申请编号 Application No.：　A2020CCC0907-3425467

申请人（委托人）Applicant：　康舒科技股份有限公司 / Acbel Polytech Inc.

证书编号 Certificate No.(变更前 Original)：2015010907773812

变更产品名称：开关电源

Name of Product Modified: Switching Power Supply

变更情况 Situation of Modification（见下表 See table below）：

序号	项目 Item	变更前 Original	变更后 Present
1	元器件变更	详见申请编号为 A2020CCC0907-3425467 的检测机构变更确认表	详见申请编号为 A2020CCC0907-3425467 的检测机构变更确认表

现批准以上变更。

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

批准日期（Date）：2020 年 04 月 21 日

主　任：

中国质量认证中心

http://www.cqc.com.cn　中国・北京・南四环西路188号9区 100070　电话：+86 10 83886666

經 濟 部 標 準 檢 驗 局

BUREAU OF STANDARDS,METROLOGY AND INSPECTION,
MINISTRY OF ECONOMIC AFFAIRS

Product Certification
PCD01

商 品 驗 證 登 錄 電 子 證 書

CERTIFICATE OF THE REGISTRATION OF PRODUCT CERTIFICATION

證書號碼： CI334065675250 號 99
Certificate No.

茲據 康舒科技股份有限公司 申請驗證登錄，經審查結果符合規定，准予登錄並使用商品安全標章 及識別號碼： R33567 。其登錄事項如下：
The application made by for Registration of Product Certification has been reviewed and found to be in compliance with related regulations. Therefore, registration is granted with the Product Safety Mark and the Identification No. R33567 . Details of the registration are follows :

申 請 人 ：康舒科技股份有限公司　　統一編號：12341051
Applicant　　Uniform No.

地　　址 ：臺北市松山區南京東路5段99號11樓
Address

生產廠場 ：詳如附表
Factory

廠　　址 ：詳如附表
Factory Address

商品種類名稱：
Type/name of product

商品分類號列： 8504.40.91.00.7-A
C.C.C Code

中文名稱 ： 交換式電源供應器
Chinese name

英文名稱 ： Switching Power Supply
English name

型　　式： FSE001
Type

系列型式 ： 空白
Series of the type

依據標準 ： CNS13438（095/06/01年版）、CNS14336-1（099/09/30年版）、符合CNS 15663 第5節「含有標示」規定. 102年7月
Standards

標準檢驗局發證（發證地址：100臺北市中正區濟南路1段4號）
This certificate is issued by the BSMI. (No.4, Sec. 1, Jinan Rd., Zhongzheng Dist., Taipei City 100, Taiwan)

本證書以電子文件行之，所載內容若有不符之處，以標準局電腦資料為主，查詢驗證資料網址:http://bsmi.gov.tw

登錄日期：中華民國	104	年	05	月	27	日
Registration Date	2015	(year)	05	(month)	27	(day)
本證書有效期限至	110	年	05	月	26	日
Expiration Date	2021	(year)	05	(month)	26	(day)
發證日期：中華民國	107	年	04	月	03	日
Date of issue	2018	(year)	04	(month)	03	(day)

註1：持本證書進口驗證登錄商品時，進口人須與本證書名義人相同。

註2：次年度商品驗證登錄年費繳納期限為當年11月30日，逾期未繳納者，經限期繳納屆期未繳納，即依商品檢驗法第42條第7款規定廢止驗證登錄，並自次年度1月1日起生效。

經 濟 部 標 準 檢 驗 局

BUREAU OF STANDARDS,METROLOGY AND INSPECTION,
MINISTRY OF ECONOMIC AFFAIRS

商 品 驗 證 登 錄 電 子 證 書

CERTIFICATE OF THE REGISTRATION OF PRODUCT CERTIFICATION

證書號碼： CI334065675250 號 99
Certificate No.

生產廠場：
Factory：

1. AcTel Electronic (Dong Guan) Co., Ltd./康展電子(東莞)有限公司
   No. 13-16, Hong Yeh 11 Rd., Hong Yeh Industrial District, Tang Xia Town, DongGuan City, Guang Dong, P.R. China/廣東省東莞市塘廈鎮宏業工業區宏業11路13-16號

2. Acbel Polytech (Philippines) Inc.
   No. 2 Tagaytay Ridge Drive, Carmelray Industrial Park II, Km. 54 National Highway, Calamba City, Laguna 4027, Philippines

3. Acbel Electronic (Dong Guan) Co., Ltd./康舒電子(東莞)有限公司
   No. 17-28, Horng Yeh Road, Horng Yeh Ind. District, Tang Xia Town, Dongguan, Guangdong 523710, P.R. China/廣東省東莞市塘廈鎮宏業工業區宏業大道17-28號

4. ACBEL ELECTRONIC (WUHAN) CO., LTD / 康舒電子（武漢）有限公司
   No.1, DuTai North Road, Economic Development Zone, XianTao City, HuBei Province, People's Republic Of China / 湖北省仙桃市經濟開發區杜台北路1號

5. Acbel Polytech Inc./康舒科技股份有限公司
   No. 159, Sec. 3, Danjin Rd., Tamsui Dist., New Taipei City 251, Taiwan / 新北市淡水區淡金路3段159號

（以下空白）

전기용품안전 관리법 시행규칙 [별지 제11호서식]

접수번호 : 20160222-0003

안 전 확 인 신 고 증 명 서
Confirmation Letter of Declaration

신고번호: (Application No.) XU100121-16148A **유효기간 만료일:** (Validity Period) 2026.03.21

신고업체명: (Applicant) Acbel Electronic (Dongguan) Co.,Ltd.

대표자명: (President) David Kao

소 재 지: (Address) No.17-28 (Hong Yeh Rd) Hong Yeh Industrial District, Tang Xia Town, Dongguan, Guangdong, China

제 품 명: (Product) 컴퓨터용 전원공급장치

기본모델명: (Basic Model) FSE001

제품정격: (Rating) I/P: 100-240 V, 50-60 Hz, 6 A-3 A(Please refer to the technical document.)

파생모델명 (Series Model):

안전기준: (Standard) K 60950-1(2011-12)

본 확인신고는 **제 조 국 :** 중국
제조업자: Acbel Electronic (Dongguan) Co.,Ltd.
의 제품에 한함

「전기용품안전 관리법 시행규칙」 제19조제3항에 따라 위의 전기용품에 대하여 안전확인신고증명서를 발급합니다.
We issue this Confirmation Letter of Declaration of the Safety Confirmation for the above electrical appliance in accordance with Article 19(3) of the Enforcement Rule of the Electrical Appliances Safety Control Act.

2016 년 (Year) 03 월 (Month) 22 일 (Day)

한국기계전기전자시험연구원장
Korea Testing Certification

※ 이 신고증명서는 「전기용품안전 관리법」에 따른 전기용품 안전성 확인에 한정된 것이며, 그 밖의 다른 법률이 적용되는 제품의 경우에는 해당 법률에 따라 추가로 인증 · 허가 등을 받아야 합니다.

첨부서류 1. 안전관리부품 및 재질목록 (List of Critical Components)
2. 기본모델 · 파생모델의 내용 (Descriptions of the basic and series model)
3. 안전확인신고 내용의 변경 현황 (Revisions Status)