



APPROVAL SHEET

USB Adapter

MODEL NO: SP-AD-511BK-EU



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Checked by	Drafted by
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Spire Corp.

Tel.: +86-755-26801567 Fax: +86-755-26801561

[Http://www.spire-corp.com](http://www.spire-corp.com)

[Http://www.spirepower.com](http://www.spirepower.com)

[Http://www.spirecoolers.com](http://www.spirecoolers.com)



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1 Description

This document details the electrical, mechanical and environmental specifications of a 100VAC~240VAC input, one output, voltage +5V, 5Watts switching power supply, model number SP-AD-511BK-EU

2 Specification

- 1.Input:AC100-240V
- 2.Output Voltage: 5V
- 3 Power:5W MAX

3 Input Characteristics

3.1 Input Voltage:

Nominal Voltage:100-240Vac
Variation Range :90-264Vac

3.2 Input Frequency:

Nominal Frequency:50-60Hz
Variation Frequency:47-63Hz

3.3 Input Current:

The maximum input current shall be less than 0.15A at 110Vac input

3.4 Inrush Current:

The inrush current will not exceed 20A at 110Vac input, cold start, 25°C



4 Output Characteristics

4.1 Static Load

Voltage	Minimum load	Maximum load
+5V	0A	1.0A

4.2 Output Voltage

The output voltage shall be statically regulated for all combinations of load, line and environment including cross regulation as shown.

Voltage	Range	Tolerance
+5V	+4.90V~5.20V	±5%

4.3 Ripple & Noise Voltage

Voltage	5V at full load	
Ripple & noise voltage	<100mVp-p	

Measuring is done by 20MHz bandwidth oscilloscope and terminated each output with a 10uF capacitor and a 0.1uF capacitor

4.4 Hold-UP Time

10 msec minimum from loss of nominal AC input at full load condition, 110VAC/60Hz input, output will remain within regulation

4.5 Efficiency

The efficiency (watts out / watts in) is higher than 70% typical while measuring at nominal line and rated load

4.6 Turn on delay time

During turn on and turn off, no voltage shall exceed its nominal voltage by more than 2% and no output will change its polarity with respect to its return line. All output shall reach their steady state values within 1 seconds of turn on.



5 Protection Requirement

5.1 Short Circuit Protection:

The adapter is protected that a short happened between the output terminals and shall not result in a fire hazard, any damage to this adapter and will be normal operation automatically while the short is removed.

5.2 Over Voltage Protection

The power supply shall be shutdown when 5V output voltage reaches to its over – voltage protection trigger point **9.0V Max**

5.3 Over – current protection

No damage to the power supply shall be sustained when operating any output under any line condition, into an over load condition for an indefinite period of time. The power supply shall be self – recovering when fault condition remove.

6 Environmental Requirement

6.1 Operating

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

Operating : 0°C ~ 40°C

6.1.1 Ambient Temperature: 0°C ~ 45°C

6.1.2 Relative Humidity : 20% ~ 90%

6.2 Non-Operating

6.2.1 Ambient Temperature: -20°C ~ 55°C

6.2.2 Relative Humidity : 20% ~ 90%.

7 Mechanical Requirement

7.1 Dimension: 73.7(L)*27.5(W)*80(H) mm

7.2 Weight: 60g

8 Pictures:





Spire Corp.

Spire Coolers Corp.
FL7/8 Building B houhai Blvd
Dongjiaotou Industrial Park Shekou
Nanshan, Shenzhen, China
Tel.: +86-0755-26801567
Fax: +86-0755-26801561
W.: www.spire-corp.com



RoHS Declaration of Conformity

Spire hereby declares under our sole responsibility that the product:

Part number: SP-AD-511BK-EU

Description:

1. Input: AC100-240V

2. Output Voltage: 5V

3. Power: 5W MAX



Is tested and approved in compliance with the EUROPEAN COUNCIL ROHS DERECTIVE.

(Restriction of Hazardous Substances) which will restrict the use of certain substances in electrical and electronic products: including lead (Pb), mercury, cadmium, hexavalent chromium, and certain halide-containing flame retardants. The directive applies to all electrical and electronic products, their component parts that are placed on the market after July 1, 2006.

Spire Coolers Corp.
PM Engineering Dept.

Nanshan, Shenzhen

