



SILVERSTONE

HELA Series

HELA 1650R Platinum

Cybenetics Platinum 1650W ATX 3.1 & PCIe 5 Fully Modular ATX Power Supply

Supports 12V-2x6 PCIe connector with ATX 3.1 and PCIe Gen 5 standard

High efficiency with Cybenetics Platinum certification

24/7 continuous power output with 50°C operating temperature

Strict $\pm 2\%$ voltage regulation and low ripple & noise

Dual EPS 8pin with multiple PCI-E 8 / 6pin connectors support

Ultra silent 135mm FDB fan with intelligent semi-fanless operation

Compact design with a depth of 180mm for easy integration

SPECIFICATION

SilverStone HELA Series HELA 1650R Platinum

1650W
ATX12V / EPS 12V Switching Power Supply With
Active PFC
Cybenetics Platinum
PS/2

1.General

1.1 Scope

This specification defines the performance characteristics of a single phase 1650 watts, 5output power supply . This specification also defines worldwide safety and electromagnetic compatibility requirements for the power supply which is intended for use in computer products.

2.Input Characteristics

2.1 Input Voltage

Nominal Voltage

Voltage Variation Range

100 - 240 Vrms

90 - 264 Vrms

2.2 Input Frequency

Nominal Frequency

Frequency Variation Range

50-60 Hz

47 Hz to 63 Hz

* The power supply must operate at above frequency with 90-264 VACrms input voltage range.

2.3 Max. Input AC Current

Max. Input Current	Measuring Range
----- 20~16A	----- 100 - 240 Vrms

2.4 Inrush Current

The power supply must meet inrush requirements for any rated AC voltage, during turn on at any phase of AC voltage, during a single cycle AC dropout condition, during repetitive ON/OFF cycling of AC, and over the specified temperature range. The peak inrush current shall be less than the ratings of its critical components (including input fuse, bulk rectifiers, and surge limiting device).

2.5 Efficiency

Efficiency versus Load for ENERGY STAR*, at 115V/60Hz and 230V/50Hz

Loading	Full Load (100%)	Typical Load (50%)	Light Load (20%)	Low Load (2%)	PFC@ 50%Load
Minimum Efficiency	87%	90%	87%	60%	≥0.9

3. Output characteristics

3.1 Normal Operation Output

Output Voltage	Load MIN	Range MAX	Load Regulation	Total Regulation	Ripple & Noise P-P Max.
+5V	0.0A	25A	±3%	±5%	40mV
+12V	0.0A	137.5A	±3%	+5% /-7%	80mV
-12V	0.0A	0.3A	±5%	±10%	80mV
+5Vs	0.0A	3.0A	±5%	±5%	40mV
+3.3V	0.0A	25A	±3%	±5%	40mV

- Maximum continuous total DC output power should not exceed 1650W
- Maximum continuous combined load on +3.3VDC and +5VDC outputs shall not exceed 130W.
- Maximum combined load on +12V output rails shall not exceed 1650W

NOTE:

Noise test should be measured with 20 MHz bandwidth frequency oscilloscope. The output terminal shall add a tantalum capacitor of 10uF in parallel with a ceramic capacitor of 0.1uF.

3.2 Remote On/Off Controlled mode

The PS_ON# signal is required to remotely turn on/off the power supply, PS_ON# is an active low signal that turns on the output power rails. When this is not pulled low by the system, or left open, the outputs (except the +5VSB) turn off. This signal is pulled to a standby voltage by a pull-up resistor internal to the power supply.

TTL level "H" 2.0 V - 5.25 V
 "L" 0.0 V – 1.0 V

3.3 Regulation

The cross regulation defined as follows, the output regulation should be within the specified range.

Load	+5V	+3.3V	+12V	-12V	+5Vsb
Low Load	0.287A	0.287A	2.523A	0.0056A	0.055A
Light Load	2.87A	2.87A	25.23A	0.06A	0.55A
Typical Load	7.18A	7.18A	60.07A	0.14A	1.38A
Full Load	14.37A	14.37A	126.14A	0.28A	2.75A

3.4 Rise Time

DC output rise time is less than 20 mS at nominal line and full load.

3.5 +5V DC / +3.3V DC Power Sequencing

The +12V and +5V output levels must be equal to or greater than the +3.3V output at all times during power-up and normal operation. The time between any output of + 12V and +5V reaching its minimum in-regulation level and +3.3V reaching its minimum in-regulation level must be $\leq 20\text{mS}$.

3.6 Hold-up Time

PG output maintains at least 16mS is 60% load after power off which hold within para 3.1 under 115V/60Hz and 230V/50Hz condition.

3.7 5VSB

5VSB is required for the implementation of PS-ON described above. 5VSB is a standby voltage that may be used to power circuits that require power input during the powered-down state of all power rails. The 5 VSB pin should deliver $5\text{V} \pm 5\%$ at a minimum of 3.0 A for PC board circuits to operate. Conversely, PC board should draw no more than 3.0A maximum from this pin. This power may be used to operate circuits such as soft power control

3.8 PG-OK

PG-OK is a power good signal and should be asserted high by power supply to indicate that the +5 VDC and +3.3 VDC outputs are above the under-voltage thresholds of the power supply. When this signal is asserted high, there should be sufficient mains energy stored by the converter to guarantee continuous power operation within specification. Conversely, when either the +5VDC or the +3.3VDC output voltage falls below the under-voltage threshold, or when mains power has been removed for a time sufficiently long so that power supply operation is no longer guaranteed, PG-OK should be deasserted to a low state. See Figure 1 for a representation of the timing characteristics of the PG-OK, PS-ON, and germane power rail signals.

3.9 3.3V Sense

A default 3.3V sense line should be implemented pin 13 of the connector.

3.10 Capacitive Load

The power supply should be able to power up and operate normally with the following capacitances simultaneously present on the DC outputs.

Output	Capacitive load (uF)
+5V	3300
+12V	3300
+3.3V	3300
-12V	330
+5VS	3300

3.11 Support PCIe 12V-2x6 Power

3.11.1 PCI Express* 12V-2x6 Connector Power Limits

Initial Permitted Power at System Power Up	Maximum Sustain Power after Software Configuration	Support type
375 W	600 W	
225 W	450 W	
150 W	300 W	
100 W	150 W	

3.11.2 PCIe* AIC and PSU Power Budget used for Peak Power Excursion

% of PSU Rated Size PSU $\leq$ 450 Watts & PSUs without 12VHPWR Connector	Power Excursion % of PSU Rated Size PSU > 450 Watts & 12VHPWR Connector present	Time for Power Excursion (TE)	Testing Duty Cycle
100%	100%	Infinite	--
110%	120%	100ms	50%
135%	160%	10ms	25%
145%	180%	1ms	20%
150%	200%	100 us	10%

4. Protection

4.1 Input Protection

In primary circuit of the power supply , a protected fuse is inserted. Only internal fault of the power supply will cause the fuse blown. Any overload or short circuit at DC output will keep from fuse brown or fire hazard.

4.2 Output Protection

4.2.1 Under voltage protection

The +12V/+5V/+3.3V DC output are protected against the under voltage condition range value can't be exceed 10.3~11.0V at 12V terminal and 3.3~3.7V at 5V, 2.0~2.4V at 3.3V.

4.2.2 Over Voltage Protection

The +12V/+5V/+3.3V DC output are protected against the over voltage condition. Maximum value can't be over 15.6V at 12V terminal and 7.0V at 5V, 4.3V at 3.3V.

4.2.3 Over Power Protection

The power supply can be used electronic circuit to limit the output current against exceeding 30-70% of surge output power or protected against excessive power delivery since short circuit of any output or over total power at high line.

4.2.4 Short Circuit Protection

Short circuit placed on +5V,+12V,+3.3V,-12V will latch off. +5VSB will auto-recovery.

4.2.5 Over-Current Protection

Current protection should be designed to limit the current to operate within safe operating conditions. Over current protection schemes where only the voltage output that experiences the over current event is shut off may be adequate to maintain safe operation of the power supply and the system; however, damage to the motherboard or other system components may occur. The recommended over current protection scheme is for the power supply to latch into the shutdown state. The setting of over current protection for each output rail is as following.

+5V is less than or equal to 25.5~37.5A..

+3.3V is less than or equal to 25.5~37.5A.

+12V is less than or equal to 178.75~233.75A

4.2.6 Over-Temperature Protection

This power supply includes an over-temperature protection sensor, which can trip and shut down the power supply at $65^{\circ}\text{C} \pm 10^{\circ}\text{C}$

5. Start Stability

5.1 No Load Start

When power is applied to DA1650-G with no load connected or under minimum load connected, neither damage to power supply nor hazards to users will occur.

5.2 Cold Start

The power supply shall operate properly when first applied at normal input voltage and or so maximum load after 4 hours storage in 0°C environment.

6. Environments

6.1 Temperature and Humidity

6.1.1 Operating

Temperature	0 to 50°C
Relative Humidity	20 to 90 %

6.1.2 Storage

Temperature	-40 to 70°C
Relative Humidity	20 to 95 % noncondensing

6.2 Altitude

The power supply can operate normally at any altitude between 0 to 10000 feet.

6.3 Vibration and Shock

6.3.1 Sweep and resonance search for each of X,Y,Z, axis at the sweep. RATE of 1/OCTAVE/Min.

Frequency	Duration	Amplitude
5-55-10 Hz	30 minutes	0.35 mm

7. Conducted EMI

CE,FCC

8. Product Safety

8.1 Safety Requirement

cTUVus, CB,TUV

8.2 Leakage Current

The AC leakage current is less than 3.5mA when the power supply connect to 264Vac/50Hz .

8.3 Insulation Resistance

The insulation resistance should be not less than 30M ohm after applying of 500VDC for 1 minute.

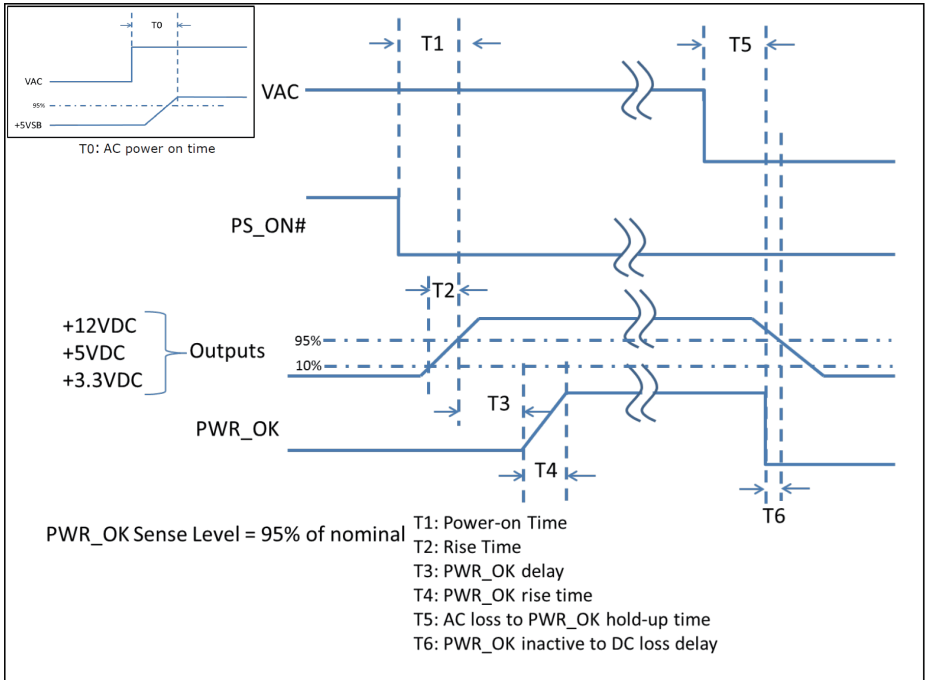
8.4 Dielectric Voltage Withstand

The power supply shall withstand for 1 minute without breakdown the application of a 60Hz 1500V AC voltage applied between both input line and chassis (20mA DC cut-off current). Main transformer shall similarly withstand 3000Vac applied between both primary and secondary windings for a minimum of one minute.

9. Power Good Signal

A TTL compatible signal for the purpose of initiating an orderly start-up procedure under normal input operating conditions. During power up, this signal is asserted (low) until +5V is under regulation and AC reaches min. line specification range. After all voltage are going appropriate level, the system may have a turn on delay of 100mS, but no greater than 250mS. During power off the signal should go to low level before +5V is out of regulation. The low level is 0 to 0.8V and high level is 4.75 to 5.25V. The " Power Good "signal can drive up to 6 standard TTL loads.

Figure 1 Time Diagram



- * T0 : AC Turn on time (2S. Max.)
- * T0: AC power on time (2S. Max)
- T1 : Turn on time (200mS. Max.)
- * T2 : Rise time (0.2~20 mS.)
- * T3 : PWR_OK delay (100~ 250 mS)
- * T4 : PWR_OK rise time (10mS. Max.)
- * T5 : AC loss to PWR_OK hold-up time (11mS Min)
- * T6 : PWR_OK inactive to DC loss delay (1 mS Min)
- * Power on-off cycle :

When the power supply is turned off for a minimum of 2.0 sec. and turn on again, the power good signal will be asserted.

10. MTBF

The MTBF of the power should be 100,000 hours min.

11. Burn-In

11.1 Input Voltage

Applying 230Vac .

11.2 Test Condition

Applying 80% loads for the power supply in 50 (+/-5) °C chamber for 4 hours.

12. Harmonics

The product shall meet requirement for EN61000-3-2 & EN61000-3-3 :2005 standard of class D, test at 230Vac 50Hz.

13. Power Factor

The power supply with active power factor correction, and meet the EN61000-3-2 standards, The power factor is greater than 0.95 at 230V/50Hz, Max. load.

14. Fanless Function

1. The fan does not turn when the load is less than 330W, but the fan will start to cool down when the temperature inside the machine exceeds the safe range.
2. when the load exceeds 330-495W, the fan starts.
3. Fan Delay Mode PS_ON# is turned off, the fan stops working 2 minute later.

15. Mechanical Specification

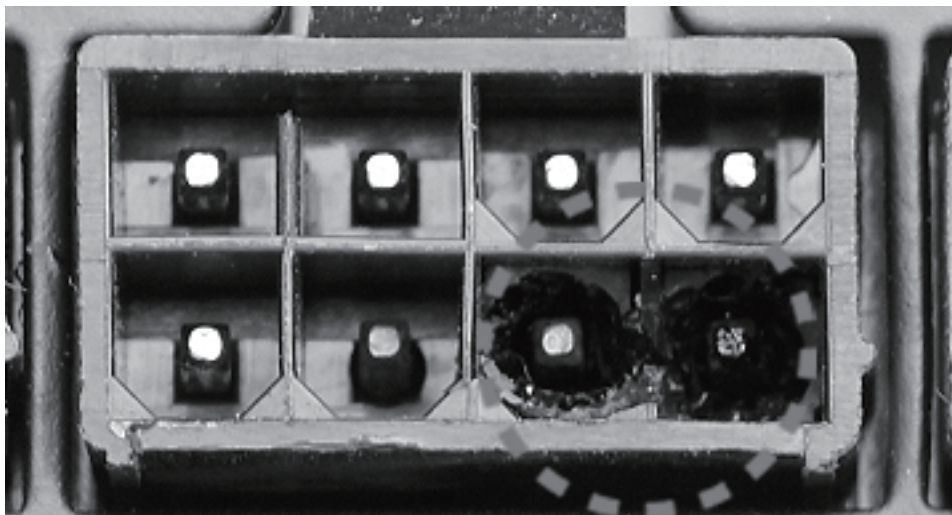
15.1 Outline Dimension

180 x 150 x 86.5 mm.

15.2 Weight

Maximum weight is 3.75Kg

16. POWER SUPPLY CONNECTOR OVERUSE DEFINITION



EN

Power supply connector overuse definition

A single PCIe 8pin cable and connector's maximum current rating is 12.5A, which is 150W (+12V x 12.5A). So SilverStone's warranty will not cover damages or malfunction resulting from the use of a graphics card or expansion card with a single PCIe 8pin connector that exceeds standard 225W total power draw (150W from PCIe 8pin connector + 75W from PCIe motherboard slot). Similarly, a graphics card or expansion card with dual PCIe 8pin connectors that exceed 375W total power draw (300W from two PCIe 8pin connectors + 75W from PCIe motherboard slot) will also not be covered under warranty.

Peripheral (molex) or SATA connector's maximum current rating is 5A, which is 60W (+12V x 5A) or 25W (+5V x 5A). Please ensure connected devices are operating under these limits. SilverStone's warranty will not cover damages or malfunction resulting from usages exceeding these connectors and their associated cables.

24pin motherboard connector's maximum current rating for its dual +12V metal pins are 5A each, which totals 120W (+12V x 5A x 2). Please ensure +12V drawing devices connected to the motherboard are operating under these limits. SilverStone's warranty will not cover damages or malfunction resulting from usages exceeding these connectors and their associated cables.

DE

Definition einer Überlastung des Netzanschlusses

Die maximale Stromstärke eines einzelnen 8-poligen PCIe-Kabels und Anschlusses beträgt 12,5 A, was 150 W (+12 V x 12,5 A) entspricht. Daher deckt die SilverStone-Garantie keine Schäden oder Fehlfunktionen durch den Einsatz einer Grafikkarte oder Erweiterungskarte mit einem einzigen 8-poligen PCIe-Anschluss ab, die die Standardleistungsaufnahme von insgesamt 225 W übersteigt (150 W vom 8-poligen PCIe-Anschluss + 75 W vom PCIe-Motherboard-Steckplatz). Ebenso wird die Verwendung einer Grafikkarte oder Erweiterungskarte mit zwei 8-poligen PCIe-Anschlüssen, die eine Leistungsaufnahme von insgesamt 375 W übersteigen (300 W von den beiden 8-poligen PCIe-Anschlüssen + 75 W vom PCIe-Motherboard-Steckplatz) nicht durch die Garantie abgedeckt.

Der maximale Nennstrom von Peripherie- (Molex) oder SATA-Anschluss beträgt 5 A, was 60 W (+12 V x 5 A) oder 25 W (+5 V x 5 A) entspricht. Bitte achten Sie darauf, dass verbundene Geräte unter diesen Grenzwerten arbeiten. Die Garantie von SilverStone deckt keine Schäden oder Fehlfunktionen aufgrund einer Nutzung ab, die diese Anschlüsse und ihre zugehörigen Kabel übersteigt.

Der maximale Nennstrom des 24-poligen Motherboard-Anschlusses für seine dualen +12-V-Metallkontakte beträgt jeweils 5 A, was insgesamt 120 W (+12 V x 5 A x 2) ergibt. Bitte stellen Sie sicher, dass mit dem Motherboard verbundene +12-V-Geräte unter diesen Grenzwerten arbeiten. SilverStones Garantie deckt keine Schäden oder Fehlfunktionen aufgrund einer Nutzung jenseits der Angaben dieser Anschlüsse und ihrer zugehörigen Kabel ab.

FR

Définition de l'utilisation excessive du connecteur d'alimentation électrique

Le courant nominal maximum d'un câble et d'un connecteur PCIe 8 broches unique est de 12,5 A, ce qui correspond à 150 W (+12 V x 12,5 A). La garantie de SilverStone ne couvre donc pas les dommages ou les dysfonctionnements résultant de l'utilisation d'une carte graphique ou d'une carte d'extension avec un connecteur PCIe 8 broches unique qui dépasse une consommation énergétique totale de 225 W standard (150 W provenant du connecteur PCIe 8 broches + 75 W provenant de l'emplacement de la carte mère PCIe). De même, une carte graphique ou une carte d'extension avec deux connecteurs PCIe 8 broches qui dépasse une consommation énergétique totale de 375 W (300 W provenant des deux connecteurs PCIe 8 broches + 75 W provenant de l'emplacement de la carte mère PCIe) ne sera également pas couverte dans le cadre de la garantie.

Le courant nominal maximum d'un périphérique (Molex) ou d'un connecteur SATA est de 5 A, ce qui correspond à 60 W (+12 V x 5 A) ou 25 W (+5 V x 5 A). Veuillez vous assurer que les appareils connectés fonctionnent dans ces limites. La garantie de SilverStone ne couvre pas les dommages ou les dysfonctionnements résultant d'utilisations dépassant ces connecteurs et leurs câbles associés.

Le courant nominal maximal des connecteurs 24 broches de la carte mère pour ses doubles broches métalliques +12 V est de 5 A chacun, ce qui représente au total 120 W (+12 V x 5 A x 2). Veuillez vous assurer que les dispositifs de tension +12 V connectés à la carte mère fonctionnent dans ces limites. La garantie de SilverStone ne couvre pas les dommages ou les dysfonctionnements résultant d'utilisations dépassant la capacité de ces connecteurs et de leurs câbles associés.

IT

Definizione di uso eccessivo del connettore di alimentazione

La corrente massima di un singolo cavo PCIe a 8 pin e del connettore è 12,5 A, corrispondente a 150 W (+12 V x 12,5 A). Pertanto, la garanzia di SilverStone non copre danni o malfunzionamenti derivanti dall'utilizzo di una scheda grafica o una scheda di espansione con un singolo connettore PCIe a 8 pin che supera l'assorbimento totale di 225 W (150 W da connettore PCIe a 8 pin + 75 W da slot PCIe). Analogamente, la garanzia non copre anche una scheda grafica o una scheda di espansione con doppi connettori PCIe a 8 pin che superano l'assorbimento totale di 375 W (300 W da doppi connettori PCIe a 8 pin + 75 W dalla scheda madre PCIe).

La corrente massima del connettore periferico (molex) o SATA è 5 A, corrispondente a 60 W (+12 V x 5 A) o 25 W (+5 V x 5 A). Assicurarsi che i dispositivi collegati funzionino entro questi limiti. La garanzia di SilverStone non copre danni o malfunzionamenti derivanti da uso eccessivo di questi connettori e dei relativi cavi.

La corrente massima del connettore a 24 pin per scheda madre per i suoi due pin di metallo +12 V è di 5 A ciascuno, per un totale di 120 W (+12 V x 5 A x 2). Assicurarsi che i dispositivi a +12 V collegati alla scheda madre funzionino con questi limiti. La garanzia di SilverStone non copre danni o malfunzionamenti derivanti da uso eccessivo di questi connettori e dei relativi cavi.

RU

Определение чрезмерной нагрузки на коннектор блока питания

Один кабель и коннектор PCIe 8pin поддерживает ток 12,5А, что равно 150Вт (+12В x 12,5А). Таким образом, гарантийные обязательства SilverStone не будут действовать если вы используете видеокарту или другую карту расширения с одним коннектором PCIe 8pin, которые превышают стандартную общую потребляемую мощность 225Вт (150Вт через коннектор PCIe 8pin + 75Вт через слот PCIe материнской платы). Аналогично, видеокарта или другая карта расширения с двумя коннекторами PCIe 8pin, которые превышают общую потребляемую мощность 375Вт (300Вт через коннектор PCIe 8pin + 75Вт через слот PCIe материнской платы), также не будут покрываться гарантией.

Максимальный номинальный ток периферийного (molex) или SATA разъема составляет 5А, что равно 60Вт (+12В x 5А) или 25Вт (+5В x 5А). Пожалуйста, убедитесь, что подключенные устройства работают в этих пределах. Гарантия SilverStone не будет распространяться на неисправности, возникающие в результате использования этих коннекторов или подключаемых к ним кабелей.

Максимальный номинальный ток 24pin коннектора материнской платы для его двойных металлических контактов +12В составляет 5А на каждый, что равно 120Вт (+12В x 5А x 2). Пожалуйста, убедитесь, что устройства, подключенные к линии +12В, работают в этих пределах. Гарантия SilverStone не будет распространяться на неисправности, возникающие в результате использования этих коннекторов или подключаемых к ним кабелей.

단일한 PCIe 8핀 케이블 및 커넥터의 최대 전류 정격은 12.5A로서 전력으로 환산하면 150W(+12V x 12.5A)입니다. SilverStone의 보증에서는 표준 225W의 총 소비 전력 (PCIe 8핀 커넥터의 150W와 PCIe 메인보드 슬롯의 75W의 합)을 초과하는 단일 PCIe 8핀 커넥터 탑재 그래픽 카드나 확장 카드를 사용하여 발생하는 손상 또는 오작동을 보장하지 않습니다. 이와 마찬가지로 375W의 총 소비 전력 (PCIe 8핀 커넥터 2개의 300W와 PCIe 메인보드 슬롯의 75W의 합)을 초과하는 듀얼 PCIe 8핀 커넥터 탑재 그래픽 카드나 확장 카드를 사용해도 보증에서 보장해주지 않습니다.

주변장치(molex) 또는 SATA 커넥터의 최대 전류 정격은 5A로서 전력으로 환산하면 60W(+12V x 5A) 또는 25W(+5V x 5A)입니다. 연결된 장치들은 이러한 제한 하에서만 작동시켜야 합니다. SilverStone의 보증에서는 이러한 커넥터 및 이와 연결되는 케이블의 정격을 초과하여 사용함으로써 발생하는 손상이나 오작동을 보장하지 않습니다.

듀얼 +12V 금속 핀에 사용되는 24핀 메인보드 커넥터의 정격 전류는 5A이며, 각각 합계가 120W(+12V x 5A x 2)입니다. 메인보드에 연결된 +12V 장치가 해당 한계 미만으로 작동되도록 하십시오. SilverStone은 이 커넥터나 관련 케이블의 한계를 초과해서 사용함으로써 발생하는 손상이나 고장에 대해서 보장하지 않습니다.

単一のPCIe 8ピンケーブルおよびコネクタの最大定格電流は12.5Aで150W(+12V x 12.5A)となります。それで定格225W合計電力消費(PCIe 8ピンコネクタからの150W + PCIeマザーボードスロットからの75W)を超える、単一PCIe 8ピンコネクタ装備のグラフィックスカードまたは拡張カード使用によって生じた損傷や故障の場合、SilverStoneの製品保証は適用外となります。同様に、375W合計電力消費(2基のPCIe 8ピンコネクタからの300W + PCIeマザーボードスロットからの75W)を超える、デュアルPCIe 8ピンコネクタ装備のグラフィックスカードまたは拡張カード使用によって生じた損傷や故障の場合も、製品保証適用外となります。

周辺用(molex)またはSATAコネクタの最大定格電流は5Aで、60W(+12V x 5A)または25W(+5V x 5A)となります。接続された装置がこれら限度以内で動作することを確認してください。これらコネクタおよび関連ケーブルの定格を超える使用法で生じた損傷や故障については、SilverStone製品保証対象外となりますのでご注意ください。

24ピンマザーボードコネクタのデュアル+12V金属ピンに対する最大定格電流はそれぞれ5Aなので合計は120W(+12V x 5A x 2)となります。接続される+12V入力のデバイスが、これら上限以内で動作することをご確認ください。これらコネクタおよび関連ケーブルでの限界を超えた使用で生じた損傷または故障は、SilverStoneによる製品保証対象外となります。

单条PCIe 8pin电源线与接头的最大额定电流为12.5A，瓦特数150W(+12V x 12.5A)。因此，银欣的电源保固不包括用于单条PCIe 8pin接头之显卡/扩充卡，在超过标准225W总功耗范围所造成的损坏或故障(150W的PCIe 8pin接头+ 75W的主板PCIe插槽)。以此类推，若具备双PCIe 8pin接头的显卡/扩充卡，负载一旦超过375W总功耗，视同不属保固范围内(300W来自两个PCIe 8pin接头+ 75W的主板PCIe插槽)。

大4pin(molex)或SATA接头的最大额定电流为5A，即60W(+12V x 5A)或25W(+5V x 5A)。请确保连接的设备皆低于此限制下运行。银欣不保固超出电源供应器接头及其相关线材之使用负载上限所造成的损坏或故障。

24pin主板接头的双+12V金属引脚最大额定电流为5A，即120W(+12V x 5A x 2)。请确保连接之+12V设备皆低于此限制下运行。

银欣不保固超出电源供应器接头及其相关线材之使用负载上限所造成的损坏或故障。

單條PCIe 8pin電源線與接頭的最大額定電流為12.5A，瓦特數150W(+12V x 12.5A)。因此，銀欣的電源保固不包括用於單條PCIe 8pin接頭之顯卡/擴充卡，在超過標準225W總功耗範圍所造成的損壞或故障(150W的PCIe 8pin接头+ 75W的主機板PCIe插槽)。以此類推，若具備雙PCIe 8pin接頭的顯卡/擴充卡，負載一旦超過375W總功耗，視同不屬保固範圍內(300W來自兩個PCIe 8pin接头+ 75W的主機板PCIe插槽)。

大4pin(molex)或SATA接頭的最大額定電流為5A，即60W(+12V x 5A)或25W(+5V x 5A)。請確保連接的設備皆低於此限制下運行。銀欣不保固超出電源供應器接頭及其相關線材之使用負載上限所造成的損壞或故障。

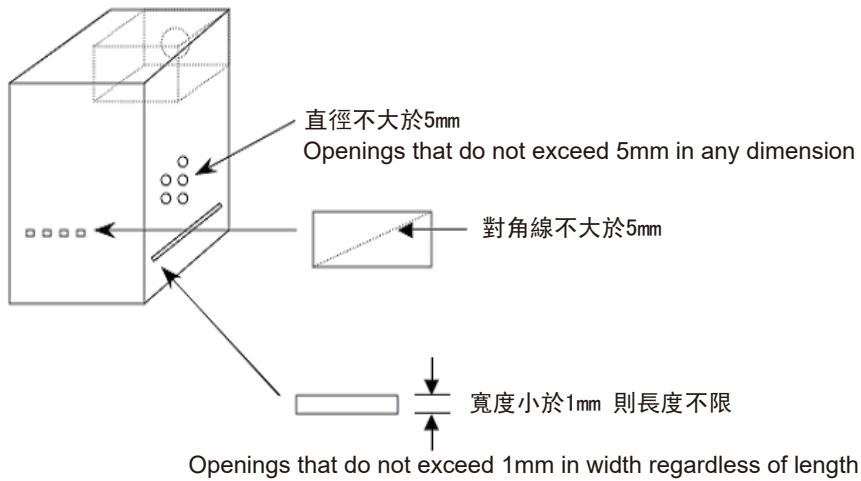
24pin主機板接頭的雙+12V金屬針腳最大額定電流為5A，即120W(+12V x 5A x 2)。請確保連接之+12V設備皆低於此限制下運行。銀欣不保固超出電源供應器接頭及其相關線材之使用負載上限所造成的損壞或故障。

สำหรับหัวเชื่อมต่อและสายไฟเลี้ยง PCIe 8 พินสามารถรองรับกระแสได้สูงสุด 12.5 แอมป์หรือหน่วยเป็น 150 วัตต์ (+12V x 12.5A) ดังนั้นการรับประกันจากทาง SilverStone จะไม่ครอบคลุมถึงความเสี่ยงหรือความผิดปกติซึ่งเกิดขึ้นกับกราฟิกการ์ดหรือการรองรับการขยายความยาวการใช้งานหัวเชื่อมต่อ PCIe 8 พิน ซึ่งมันมีการใช้พลังงานรวมกันถึงเกินกว่ามาตรฐานที่กำหนดคือ 225 วัตต์ (150 วัตต์ จาก PCIe 8 พิน + 75 วัตต์ จากสล็อต PCIe บนเมนบอร์ด) ครอบคลุมการรับประกันการขยายความยาวจากหัวเชื่อมต่อไฟเลี้ยง PCIe 8 พินจำนวน 2 ชุดซึ่งมีการใช้พลังงานทั้งสิ้น 375 วัตต์ (300 วัตต์ จากหัว PCIe 8 พิน 2 ชุด + 75 วัตต์ จากสล็อต PCIe บนเมนบอร์ด) ซึ่งไม่ครอบคลุมเช่นกัน

ภายใต้การรับประกัน หัวเชื่อมต่อ Peripheral หรือ Molex 4 พินและ SATA ไม่สามารถรองรับกระแสได้สูงสุด 5 แอมป์หรือหน่วยเป็น 60 วัตต์ (+12V x 5A) หรือ (+5V x 5A) กรุณาใช้หัวต่ออุปกรณ์ที่ใช้งานมีการใช้พลังงานเกินกว่าขีดจำกัดการรองรับ ดังนั้นการรับประกันจากทาง SilverStone จะไม่ครอบคลุมถึงความเสี่ยงหรือความผิดปกติจากอุปกรณ์ที่เชื่อมต่อแล้วมาจากตัวสายเชื่อมต่อซึ่งมีการใช้พลังงานเกินกว่าขีดจำกัด

การใส่ไฟเลี้ยงสูงสุดของหัวเชื่อมต่อแบบบอร์ด 24 พิน สำหรับพินไฟ +12V ดูรายละเอียดที่ 5A ซึ่งรวมกันเป็น 120W (+12V x 5A x 2) โปรดตรวจสอบให้แน่ใจว่าอุปกรณ์ตัวดึงพลังงาน +12V ที่เชื่อมต่อกับเมนบอร์ดสามารถทำงานภายใต้ขีดจำกัดเหล่านี้ได้ การรับประกันของ SilverStone ไม่ครอบคลุมความเสี่ยง หรือการเสียหายในผลจากการใช้กับขีดจำกัดของหัวเชื่อมต่อและสายไฟเลี้ยงหัวเชื่อมต่อเหล่านี้

1. 為了保護使用者及防火的目的，安裝此交換式電源供應器時，必須安裝於符合下列各項要求的外殼中，並且安裝妥善後，才可接上電源。
- 1-1. 外殼材質須為防火外殼。外壳材质须为防火外壳。
- 1-2. 外殼的上方及側邊之圓形開孔，最大內徑不可大於5mm。
- 1-3. 外殼的上方及側邊之長條型開孔，對角線距離不可大於5mm；若寬度小於1mm，則長度不受限制。
- 1-4. 外殼底部不可有開孔。外壳底部不可有开孔。



2. 本產品輸出含有危險能量，為避免操作時發生危險，須於裝入系統機殼並將所有設備安裝妥當後才可開啟電源。
3. 本產品之電源輸出非屬電力限制型電源，請連接使用具防火外殼之周邊，以避免火災危險發生。

BSMI ROHS 資訊
<http://www.silverstonetek.com/downloads/PSU/RSD.pdf>

开关电源供应器 有毒有害物质/元素及其化学含量表						
部件名称	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
外壳	○	○	○	○	○	○
接头	○	○	○	○	○	○
风扇	○	○	○	○	○	○
电子卡	○	○	○	○	○	○
线材	○	○	○	○	○	○
螺丝	○	○	○	○	○	○
包材	○	○	○	○	○	○
本表格依据SJ/T 11364的规定编制 ○：表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572 规定的限量要求以下。 ×：表示该有毒有害物质至少在该部件的某一均质材料中的含量超出GB/T 26572 规定的限量要求。						
				 产品合格证 检验员：8801 生产日期：见产品条码		

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.

- ・本製品は1650Wの出力が可能な高出力電源となります。
- ・100V環境の場合、1650Wの出力を行う場合には19A前後の電流が必要となるため、20Aを許容する環境にてご利用ください。
- ・一般家庭のコンセント(1500W)の場合は、1300W未満の消費電力でご利用ください。
- ・日本国内向けに販売されている本製品の付属電源ケーブルは100V(最大15A)専用となります。
- ・本製品に200V用電源ケーブル、および100V/20A用電源ケーブルの同梱はございません。
- ・100V/15A以外の環境でご利用の際は、安全の為、必要な電源ケーブルを別途ご用意ください。

Model (on safety): SST-AX1650MCPT-A

※付属の電源コードは当該製品専用です。他の機器に使用しないでください。

Please refer to SilverStone website for latest specifications updates.

SilverStone Technology Co., Ltd.

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