



SILVERSTONE

Gemini Series Gemini 900A Gold

Cybenetics Gold 900W ATX Redundant Power Supply

- 900W+900W 24hour and well working performance at 50°C fully continuous power output
 - ATX form factor
 - Cybenetics Gold Certification
 - 1+1 ATX redundant configuration
- All Japanese electrolytic capacitors
 - Hot swappable design
 - Convenient pull-out handle bars

SPECIFICATION

SilverStone Gemini Series

Gemini 900A Gold

SST-GM900A-GF / SST-GM900A-GFU

1+1 ATX Redundant Switching Power Supply
Cybenetics Gold efficiency certified.
900W+900W

1.GENERAL DESCRIPTION AND SCOPE

The PS/2 redundant is a power sub-system made up of a cage and redundant, hot swappable power supply modules. The cage is intended to be mounted in the system and not redundant or hot swappable. The exterior face of the cage accepts hot swappable power supply modules. The distribution board within the cage distributes output power from the modules to a wire harness. Cooling fans, EMI filtering, and IEC inlet connector(s) may be located in the modules.

2.AC Input Requirements

The power supply modules shall incorporate universal power input with active power factor correction, which shall reduce line harmonics in accordance with the EN61000-3-2 and JEIDA MITI standards.

2.1 AC Inlet Connector

The AC input connector shall be an IEC 320 C-14 power inlet. This inlet is rated for 10A/250 VAC.

2.2 AC Input Voltage Specification

The power supply must operate within all specified limits over the following input voltage range.

Table1: AC Input Rating

PARAMETER	MIN	RATED	MAX
Voltage (110)	90	100-127 Vrms	140 Vrms
Voltage (220)	180	200-240 Vrms	264 Vrms
Frequency	47 Hz	--	63 Hz

2.3 Power Factor

The power factor shall be greater than 0.95 at full load / 100 Vrms input voltage conditions, and 0.9 at full load / 240Vrms input voltage conditions

2.4 Input Under Voltage

Brown-out(AC UVP)

The power supply shall power off if the AC input is below VAC low_limit and shall start (auto recover) if VAC recover is reached. Input of VAC below VAC recover shall not cause any damage to the power supply, including the input fuse.

VAC recover (Brown in)	VAC low_limit (Brown out)
82VAC \pm 4VAC	75VAC \pm 5VAC

2.5 Hold-up Time

The power supply holdup time requirements to 80% of maximum load.

2.6 Efficiency

Efficiency shall be tested at AC input voltages of 115VAC and 230VAC. And only insert one power module into the power cage. The voltage should measure on the back plane. It could be support 80 Plus Gold efficiency

2.7 AC Line Dropout

An AC line dropout is defined to be when the AC input drops to 0 VAC at any phase of the AC line for any length of time. During an AC dropout of one cycle or less the power supply must meet dynamic voltage regulation requirements up to 75% of the rated output load. An AC line dropout of one cycle or less shall not cause any tripping of control signals or protection circuits. If the AC dropout lasts longer than one cycle or the load is greater than 75%, the power supply should recover and meet all turn on requirements. The power supply must meet the AC dropout requirement over rated AC voltages, frequencies, and output loading conditions. Any dropout of the AC line shall not cause damage to the power supply. In the case of redundant AC inputs, the AC line dropout may occur on either or both AC inlet.

2.8 AC Line Fuse

The power supply shall incorporate one input fuse on the LINE side for input over-current protection to prevent damage to the power supply and meet product safety requirements. Fuses should be slow blow type or equivalent to prevent nuisance trips. AC inrush current shall not cause the AC line fuse to blow under any conditions. All protection circuits in the power supply shall not cause the AC fuse to blow unless a component in the power supply has failed. This includes DC output load short conditions.

2.9 AC Inrush

An additional inrush current limit is recommended for some system applications that require multiple systems on a single AC circuit. Under all other conditions, power supply should not be damaged.

(Cold start – 25 deg. C)

115V	40A
230V	80A

2.10 AC Line Transient Specification

AC line transient conditions shall be defined as “sag” and “surge” conditions. Sag conditions (also referred to as “brownout” conditions) will be defined as the AC line voltage dropping below nominal voltage. Surge conditions will be defined as the AC line voltage rising above nominal voltage. The power supply shall meet the requirements under the following AC line sag and surge conditions.

Table 2: AC Line Sag Transient Performance

AC Line Sag				
Duration	Sag	Operating AC Voltage	Line Frequency	Performance Criteria
Continuous	10%	Nominal AC Voltage ranges	50/60 Hz	No loss of function or performance
0 to 1 AC cycle	70%	Nominal AC Voltage ranges	50/60 Hz	No loss of function or performance
>1 AC cycle	>10%	Nominal AC Voltage ranges	50/60 Hz	Loss of function acceptable, self-recoverable

Table 3: AC Line Surge Transient Performance

AC Line Surge				
Duration	Surge	Operating AC Voltage	Line Frequency	Performance Criteria
Continuous	10%	Nominal AC Voltages	50/60 Hz	No loss of function or performance
0 to ½ AC cycle	30%	Mid-point of nominal AC Voltages	50/60 Hz	No loss of function or performance

3.DC Output Specification

3.1 Output Power/Currents

The following tables define the power and current ratings for different recommended power levels.

Table 4: 900 W Load Ratings

Voltage	Minimum Continuous	Maximum Continuous
+3.3 V	0 A	20.0 A
+5 V	0 A	20.0 A
+12V	1A	75 A
-12 V	0 A	0.5A
+5 VSB	0 A	3 A

1. Maximum continuous total DC output power should not exceed 900 W.
2. Maximum continuous combined load on +3.3 VDC and +5 VDC outputs shall not exceed 130 W

3.1.1 Standby Outputs

The 5 VSB output shall be present when an AC input greater than the power supply turn on voltage is applied.

3.2 Voltage Regulation

The power assembly output voltages must stay within the following voltage limits when operating at steady state and dynamic loading conditions. These limits include the peak-peak ripple/noise specified in Section 5.10. All outputs are measured with reference to the return remote sense (ReturnS) signal. The 5 V, 12V, -12 V, and 5 VSB outputs are measured at the power assembly connectors referenced to ReturnS. The +3.3 V is measured at its remote sense signal (3.3VS) located at the signal connector.

Table 6: Voltage Regulation Limits

Parameter	MIN	NOM	MAX	Units	Tolerance
+3.3 V	+3.135	+3.30	+3.46	V _{rms}	+5/-5%
+5 V	+4.75	+5.00	+5.25	V _{rms}	+5/-5%
+12V	+11.40	+12.00	+12.60	V _{rms}	+5/-5%
-12 V	-10.80	-12.00	-13.20	V _{rms}	+10/-10%
+5 VSB	+4.75	+5.00	+5.25	V _{rms}	+5/-5%

3.3 Dynamic Loading

The output voltages shall remain within the limits specified in Table 9 for the step loading and within the limits specified in for the capacitive loading. The load transient repetition rate shall be tested between 50 Hz and 5kHz at duty cycles ranging from 10%-90%. The load transient repetition rate is only a test specification. The step load may occur anywhere within the MIN load to the MAX load shown in Table 7 and Table 8.

Table 9: Transient Load Requirements

Output	. Step Load Size	Load Slew Rate	Capacitive Load
+3.3 V	20% of max load	0.5 A/μs	1000 μF
+5 V	20% of max load	0.5 A/μs	1000 μF
+12V	30% of max load	0.5 A/μs	6600 μF
+5 VSB	25% of max load	0.5 A/μs	1 μF

3.4 Capacitive Loading

The power supply shall be stable and meet all requirements, except dynamic loading requirements, with the following capacitive loading ranges.

Note: Up to 10,000 μF of the +12V capacitive loading may be on the +12V output.

Table 10: Capacitive Loading Conditions

Output	MIN	MAX	Units
+3.3 V	10	12,000	μF
+5 V	10	12,000	μF
+12 V	10	33,000	μF
-12 V	1	350	μF
+5 VSB	1	350	μF

3.5 Ripple and Noise

Table 11: Ripple and Noise

+3.3 V	+5 V	+12 V	-12 V	+5 VSB
50 mVp-p	50 mVp-p	120 mVp-p	200 mVp-p	50 mVp-p

3.6 Load sharing

The +12 V output shall have active load sharing. When operating at 50% of full load, the output current of any 1+1 power supplies shall be within (+/-10%). For example, if power supply #1 is operating at 20A, then all other power supplies within the system shall be operating between 18A to 22A (+/- 10% of 20A)

3.7 Hot Swap Requirements

The power supply modules shall be hot swappable. Hot swapping a power supply is the process of inserting and extracting a power supply from an operating power system. During this process the output voltages shall remain within the limits specified in Table 6 with the capacitive load specified. The hot swap test must be conducted when the sub-system is operating under both static and dynamic conditions. The sub-system shall not exceed the maximum inrush current as specified in Table 7 and Table 8. The power supply can be hot swapped by the following methods:

AC connecting separately to each module. Up to two power supplies may be on a single AC power source. Extraction: The AC power will be disconnected from the power supply first and then the power supply is extracted from the sub-system. This could occur in standby mode or powered on mode. Insertion: The module is inserted into the cage and then AC power will be connected to the power supply module.

For power modules with AC docking at the same time as DC. Extraction: The module is extracted from the cage and both AC and DC disconnect at the same time. This could occur in standby or power on mode. No damage or arcing shall occur to the DC or AC contacts which could cause damage. Insertion: The AC and DC connect at the same time as the module is inserted into the cage. No damage to the connector contacts shall occur. The module may power on or come up into standby mode.

Many variations of the above are possible. Supplies need to be compatible with these different variations depending upon the sub-system construction. In general, a failed (off by internal latch or external control) supply may be removed, then replaced with a good power supply, however, hot swap needs to work with operational as well as failed power supplies. The newly inserted power supply may get turned on by inserting the supply into the system or by system management recognizing an inserted supply and explicitly turning it on.

3.8 Timing Requirements

These are the timing requirements for the power supply operation. The output voltages must rise from 10% to within regulation limits (T_{vout_rise}) within 1 to 70ms. The +3.3V, +5V and +12V output voltages should start to rise approximately at the same time. All outputs must rise monotonically. Each output voltage shall reach regulation within 50ms (T_{vout_on}) of each other during turn on of the power supply. Each output+ voltage shall fall out of regulation within 400msec (T_{vout_off}) of each other during turn off. Refer to Figure 1 Power Supply Timing. Figure 2 Turn-on Turn-off Timing shows the timing requirements for the power supply being turned on and off via the AC input with PSON held low, and the power supply being turned on and off with the PSON signal after AC input is applied.

Table: 12 Output Voltage Timing

ITEM	DESCRIPTION	MIN	MAX	UNITS
T_{vout_rise}	Output voltage rise time from each main output.	1	70	msec
T_{vout_on}	All main outputs must be within regulation of each other within this time.		50	msec
T_{vout_off}	All main outputs must leave regulation within this time.		400	msec

Figure 1: Power Supply Timing

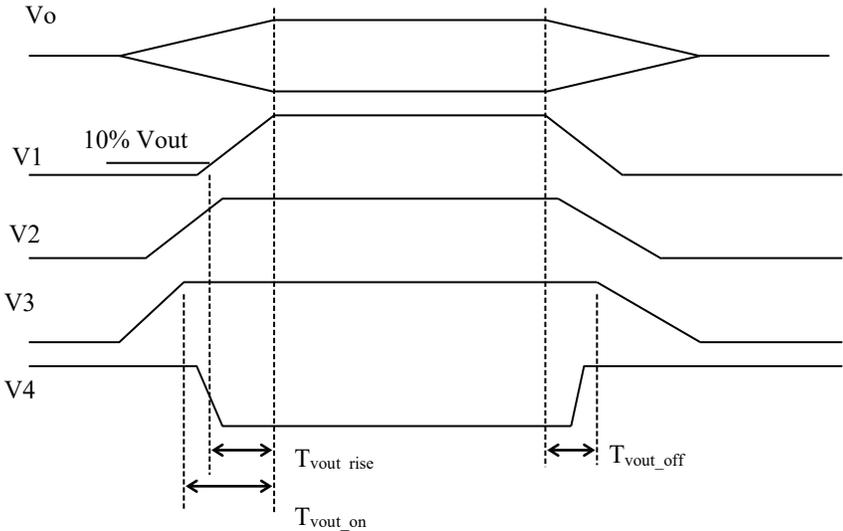
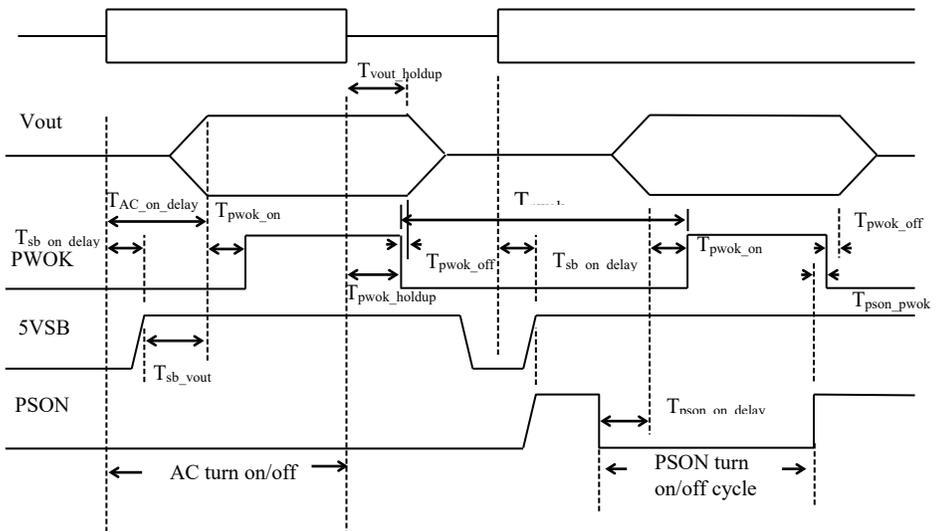


Table 13: Turn On/Turn Off Timing

ITEM	DESCRIPTION	MIN	MAX	UNIS
$T_{sb_on_delay}$	Delay from AC being applied to 5VSB being within regulation.		3000	msec
$T_{ac_on_delay}$	Delay from AC being applied to all output voltages being within regulation.		4500	msec
T_{vout_holdup}	Time all output voltages stay within regulation after loss of AC.	17		msec
T_{pwok_holdup}	Delay from loss of AC to deassertion of PWOK.	16		msec
$T_{pson_on_delay}$	Delay from PSON# active to output voltages within regulation limits.	5	400	msec
T_{pson_pwok}	Delay from PSON# deactive to PWOK being deasserted.		100	msec
T_{pwok_on}	Delay from output voltages within regulation limits to PWOK asserted at turn on.	100	500	msec
T_{pwok_off}	Delay from PWOK deasserted to output voltages (3.3V, 5V, 12V) dropping out of regulation limits.	1		msec
T_{pwok_low}	Duration of PWOK being in the deasserted state during an off/on cycle using AC or the PSON signal.	100		msec
T_{sb_vout}	Delay from 5VSB being in regulation to O/Ps being in regulation at AC turn on.	50	1000	msec

AC Input

Figure 3: Timing Diagram



4. Protection Circuits

Protection circuits inside the power supply shall cause only the power supply's main outputs to shutdown. If the power supply latches off due to a protection circuit tripping, an AC cycle OFF for 15 s and a PSON# cycle HIGH for 1 s must be able to reset the power supply.

4.1 Over Current Protection and Short Circuit Protection

The Over Current Condition shall be measured internal to the power supply on all outputs (Main and Auxiliary OutputAR), and preventing outputs to exceed current limits specified in below table. The power supply shall shutdown and latch off after an Over Current condition on main outputs, the auxiliary output shall be auto recover (VsBAR) after the OCP/SCP had been removed.

The latch on the main output can be cleared by asserting PSON# signal or by an Input Power interruption. The power supply shall alert the system of the OCP/SCP condition via SMB Alert# and fail LED indicator.

The power supply shall not be damaged from repeated power cycling in this condition.

Table 15: Over Current/Short Circuit Protection

Voltage	Over Current Limit (Iout limit)
+3.3 V	24A---32A
+5 V	24A---32A
+12 V	83A---95A

4.2 Over Voltage Protection

The power supply over voltage protection shall be locally sensed in the hot swap modules. The power supply shall shutdown and latch off after an over voltage condition occurs. This latch shall be cleared by toggling the PSON# signal or by an AC power interruption. Table 16 contains the over voltage limits. The values are measured at the output of the power supply's connectors. The voltage shall never exceed the maximum levels when measured at the power pins of the power supply connector during any single point of fail. The voltage shall never trip any lower than the minimum levels when measured at the power pins of the power supply connector.

Table 16: Over Voltage Limits

Output Voltage	MIN (V)	MAX (V)
+3.3 V	3.5	4.5
+5 V	5.5	6.82
+12V	13.4	15.6

4.3 Leakage current

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

4.4 Over Temperature Protection

The power supply shall have minimum of two thermal sensors to measure the environmental (Tenv) and critical component (Tcomp) temperature. The thermal sensors shall be part of a protection circuit to protected against overtemperature conditions caused by loss of fan cooling or excessive ambient temperature. In an critical Over temperature condition, specified in below table, the PSU shall be shutdown with the exception of the auxiliary output (VsBAR).

The Thermal CLST shall be part of the OTPAR.

The power supply shall alert the system of the OTPAR condition via SMBAlert# and fail LED indicator. The power supply will auto recover from this condition, when the temperature is dropping within specification again. If the OTPAR is caused due to a defective fan, the power supply shall latch off and not auto recover.

Table 17: Over Temperature ProtectionAR

Condition	Warning in °C	Critical in°C	Timing for SMBAlert#/LED
Tenv	75	80	1msec

The thermal sensors shall have an accuracy of max. 1°C per step and a tolerance of $\pm 2\%$. Ambient temperature: 50°C

4.5 Fan Failure Protection

The power supply shall have a circuit internal to monitor the power supply internal fan. The fan failure protection shall monitor the fan speed and should assert SMBAlert# in case the fan Rotation Per Minute (RPM) drop lower threshold or set PWM Δ as defined in below table.

The protection circuit shall shutoff the main outputs only and let them auto recover when the fan failure had been cleared.

Table 18: Fan Failure Protection

Condition	FAN RPM	Timing for LED
Warning	1500	20sec
Critical	1500	30sec

4.6 Over Power Protection

The power supply must protect itself by Over Power Protection, no any components damaged.

4.7 Under Voltage Protection

The power supply shall shutdown and latch off after an under voltage condition occurs. This latch shall be cleared by toggling the PSON# signal or by an AC power interruption. Table 18.1 contains the under voltage limits.

Table 18.1: Under Voltage Limits

Output Voltage	MIN (V)	MAX (V)
+3.3V	2.5	3.0
+5V	3.9	4.6
+12V	8.5	10.9

5.Control and Indicator Functions

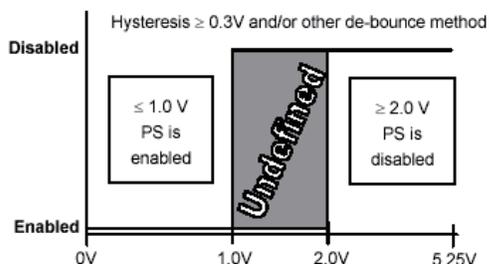
The following sections define the input and output signals from the power supply. Signals that can be defined as low true use the following convention:
 signal# = low true

5.1 PSON#

The PSON# signal is required to remotely turn on/off the power supply. PSON# is an active low signal that turns on the +3.3 V, +5 V, +12 V, and -12 V power rails. When this signal is not pulled low by the system, or left open, the outputs (except the +5 VSB and Vbias) turn off. This signal is pulled to a standby voltage by a pull-up resistor internal to the power supply. Refer to Figure 2 for timing diagram.

Table 19: PSON# Signal Characteristic

Signal Type	Accepts an open collector/drain input from the system. Pull-up to VSB located in power supply.	
PSON# = Low, PSKILL = Low	ON	
PSON# = Open, PSKILL = Low or Open	OFF	
PSON# = Low, PSKILL = Open	OFF	
	MIN	MAX
Logic level low (power supply ON)	0V	0.8V
Logic level high (power supply OFF)	2.0V	5.25V
Source current, Vpson = low		4mA
Power up delay: $T_{pson_on\ delay}$	5msec	400msec
PWOK delay: T_{pson_pwok}		50msec



5.2 PWOK (Power OK)

PWOK is a power OK signal and will be pulled HIGH by the power supply to indicate that all the outputs are within the regulation limits of the power supply. When any output voltage falls below regulation limits or when AC power has been removed for a time sufficiently long so that power supply operation is no longer guaranteed, PWOK will be pull to a LOW state. See Figure 2 for a representation of the timing characteristics of PWOK. The start of the PWOK delay time shall be inhibited as long as any power supply output is in current limit.

Table 20: PWOK Signal Characteristics

Signal Type	Open collector/drain output from power supply. Pull-up to VSB located in power supply.	
PWOK = High	Power OK	
PWOK = Low	Power Not OK	
	MIN	MAX
Logic level low voltage, Isink=4mA	0V	0.4V
Logic level high voltage, Isource=200µA	2.4V	5.25V
Sink current, PWOK = low		4mA
Source current, PWOK = high		2mA
PWOK delay: T_{pwok_on}	100ms	500ms
PWOK rise and fall time		100µsec
Power down delay: T_{pwok_off}	1ms	200msec

5.3 Power Supply LED Indicators

There will be a single bi-color LED to indicate power supply status. Refer to Table 21 LED Indicators for conditions of the LED.

CONDITION			STATUS		MODULE1(M1) LIGHT CONDITION		MODULE2(M2) LIGHT CONDITION		BUZZER (ON CAGE)
PS- ON	AC-OK		Failure	Warning	Green LED	Red LED	Green LED	Red LED	
	M1	M2							
ON	YES	YES	Module Identification.		Green and Red led blink Alternately.		Green and Red led blink alternately.		OFF
OFF	YES	NO	NIL	NIL	Blinking	OFF	OFF	Blinking	OFF
	NO	YES			OFF	Blinking	Blinking	OFF	
	YES	YES			Blinking	OFF	Blinking	OFF	
ON	YES	NO	YES	YES	OFF	ON	OFF	ON	ON
	NO	YES			OFF	ON	OFF	ON	
	YES	NO	NO	YES	Blinking	Blinking	Blinking	Blinking	
	NO	YES			Blinking	Blinking	Blinking	Blinking	
	YES	NO	NO	NO	ON	OFF	OFF	Blinking	
	NO	YES			OFF	Blinking	ON	OFF	
ON	YES	YES	NO	NO	ON	OFF	ON	OFF	OFF
			NO	YES	OFF	Blinking when warning	OFF	Blinking when warning	OFF
			YES	YES	OFF	ON when failure	OFF	ON when failure	ON

Table 21: LED and buzzer control rules

The LED shall be visible on the power supply's exterior face. LED shall be securely mounted in such a way that incidental pressure on the LED shall not cause it to become displaced.

5.4 Alarm Sound (RESET BUTTON)

This is an alarm to report the one of the single module is fail in redundant mode. It will be to sound the alarm till the PGIB signal is recovery or push the RESET button.

6.MTBF

MTBF > 100,000 Hrs at 25°C, nominal input.

7. ENVIRONMENTAL REQUIREMENTS

7.1 Temperature Requirements

The operation ambient temperature shall be 0°C to 50°C.

The non-operation ambient temperature shall be -20°C to 80°C.

7.2 Relative Humidity

Operating: 5% to 90 % relative humidity (non-condensing)

Non-operating: 5% to 90 % relative humidity(non-condensing)

8. 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

Dimensions: 150mm (W) × 86mm (H) × 190mm

9. How to install the Gemini ATX redundant monitor software?

Before install the monitor software on your system, please check the below point.

1.This software support SST-GM900A-GF and SST-GM900A-GFU PSU only.

2.The software has been tested and could be using on the below Microsoft

Windows system.

- Microsoft Windows 7
- Microsoft Windows 10
- Microsoft Windows 11

3.We used the compression software to collect the all tool. Therefore, please make sure your system has been install the compression software when you using our monitor software.

4.Our monitor software has two version, which included 32 bit software and 64 bit software. Please follow your original operation system to install the right version of monitor software.

Software install guideline

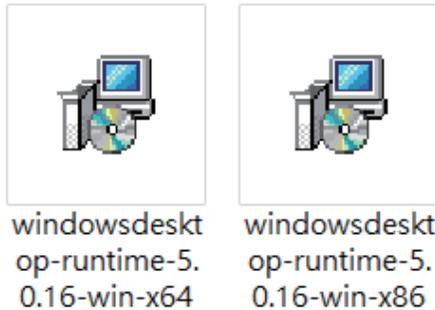
STEP1.

You will see the below three folders when you used compression software to make the unzip all files.



STEP 2

Please choose the Driver folder and you will see the two software as below. Please follow your original operation system to install the right version of monitor software. If your operation system is 32 bit, please install the x86 version. If your operation system is 64 bit, please install the x64 version.



STEP 3

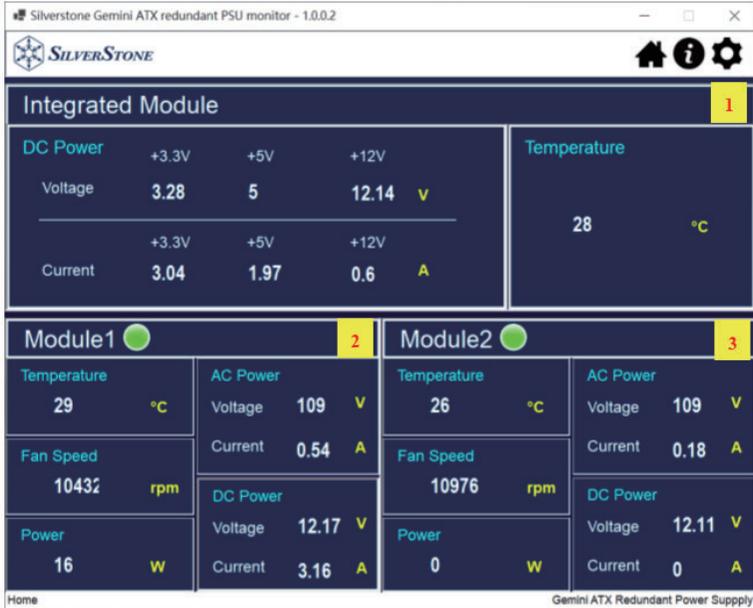
Please go back to the previos step and double click the right PSU monitor. If your operation system is 32 bit, please double click the folder of PSU Montior_32bit. If your operation system is 64 bit, please double click the folder of PSU Montior_64bit.



STEP 4

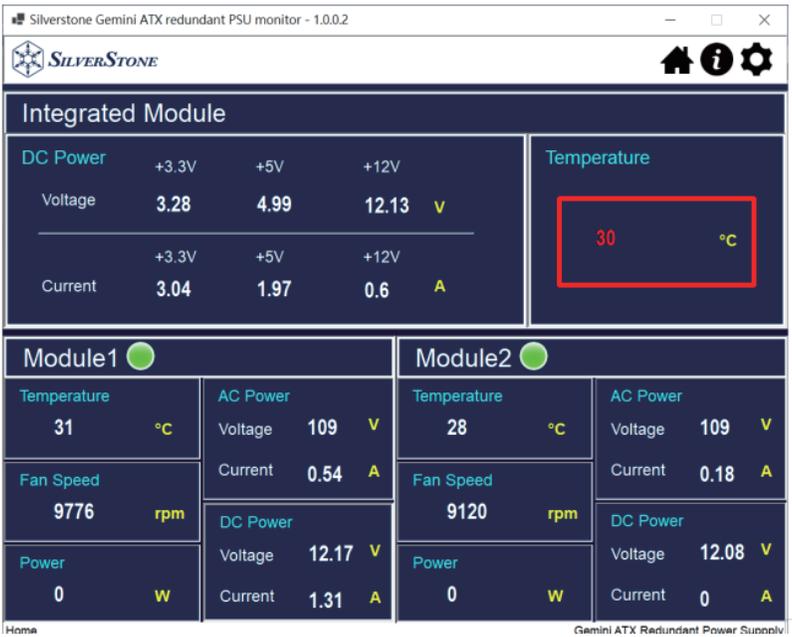
Please double click the setup.exe file and follow the install step to install the Silverstone Gemini ATX redundant PSU monitor. It will create the shortcut on the desktop when you finish all install step.

GUI Software



1. Display Integrated Module Power status
 - +3.3V \ +5V \ +12V voltage and current
 - Temperature
2. Display Module1 Power status
 - Temperature (°C)
 - Fan speed (RPM)
 - Power output(W)
 - Input voltage and current (AC Power)
 - Output voltage and current (DC Power)
3. Display Module2 Power status
 - Temperature (°C)
 - Fan speed (RPM)
 - Power output(W)
 - Input voltage and current (AC Power)
 - Output voltage and current (DC Power)

*Temperature warning: When the temperature exceeds the set temperature, the temperature will be displayed in red, as shown in the figure.



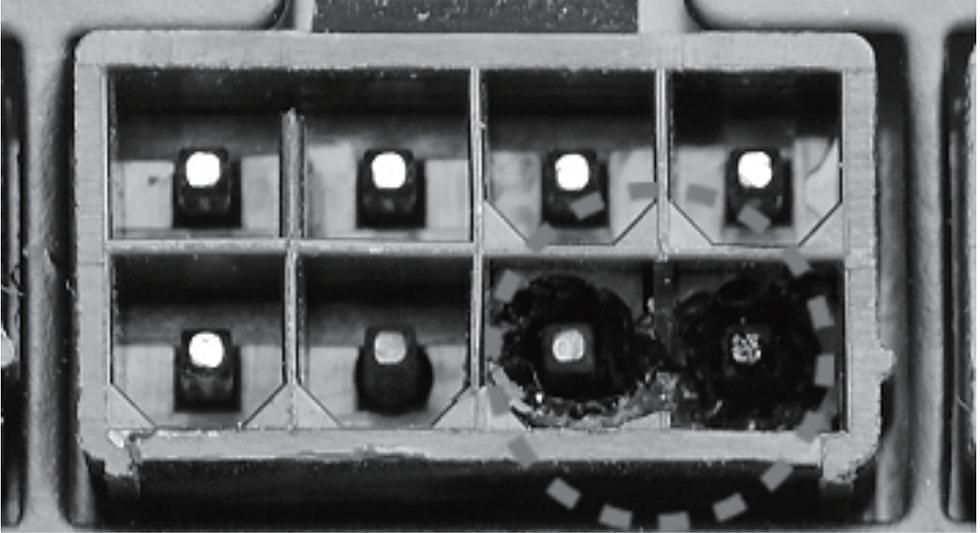
* When the program is minimized, it will be displayed in the toolbar



* When the program is minimized, the temperature warning will be displayed as a notification, as shown in the figure below.



10. 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 a +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.

ES**Definición de uso excesivo del conector de la Fuente de alimentación**

La corriente máxima de un solo cable PCIe de 8 pines es 12,5A, lo que son 150W (+12V x 12,5A). Por tanto, la garantía de SilverStone no cubrirá daños o fallos provocados por el uso de una tarjeta gráfica o de expansión con un único conector PCIe de 8 pines que exceda el total estándar de 225W (150W del conector PCIe de 8 pines + 75W del zócalo PCIe de la placa base). De igual modo, una tarjeta gráfica o de expansión con conectores duales PCIe de 8 pines que superen 375W de potencia (300W de los dos conectores PCIe de 8 pines + 75W del zócalo de la placa base) tampoco será cubierta por la garantía.

La corriente máxima del conector de periféricos (molex) o SATA es 5A, que son 60W (+12V x 5A) o 25W (+5V x 5A). Por favor, asegúrese de que los dispositivos conectados funcionan dentro de estos límites. La garantía de SilverStone no cubrirá daños o fallos a resultados de un uso excesivo de estos conectores y sus cables asociados.

La corriente máxima del conector de 24 pines de la placa base para sus pines de metal duales de +12V es de 5A cada uno, para un total de 120W (+12V x 5A x 2). Por favor, asegúrese de que los dispositivos de +12V conectados a la placa base funcionan dentro de estos límites. La garantía de SilverStone no cubrirá daños o averías a resultados de un uso excesivo para estos conectores y sus cables asociados.

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 разъёма составляет 5А, что равно 60Вт (+12В x 5А) или 25Вт (+5В x 5А). Пожалуйста, убедитесь, что подключаемые 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.

KR**전원 공급 커넥터 과용 정의**

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 장치는 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.

JP

電力供給コネクタの使用限度超過に関する説明

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金属製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。

CN

电源供应器接头过度使用定义

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，若具属双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金属针脚最大额定电流为5A，即120W (+12V x 5A x 2)。请确保连接的+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。

警告:

-  仅适用于海拔2000m及以下地区安全使用。
- 本产品不得受水滴或水溅，设备上不应放置诸如花瓶一类的等装满液体的物品。
- 类似结构的设备应当连接到带保护接地连接的电网电源输出插座上。
- 本产品以器具耦合器作为断开装置，在设备正常使用时要确保断开装置能方便及到。
- 在居住环境中，运行此设备可能会造成无线干扰。

TW

電源供應器接頭過度使用定義

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接頭+ 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接頭 + 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)。請確保連接的+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。

TH

ขีดจำกัดการรองรับการใช้งานของหัวต่อจากพาวเวอร์ซัพพลาย

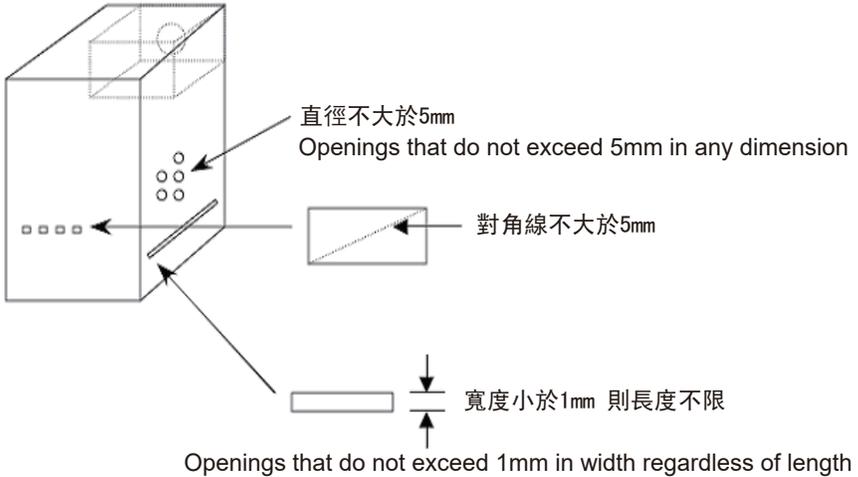
สำหรับหัวต่อแต่ละสายไฟ PCIe 8 พินสามารถรองรับกระแสไฟสูงสุด 12.5 แอมป์หรือมากกว่า 150 วัตต์

(+12V x 12.5A) ดังนั้นการรับประกันจากทาง SilverStone จึงไม่ครอบคลุมถึงความเสียหายหรือความผิดปกติซึ่งเกิดขึ้นกับทรัพยากรการรองรับการกระจายความยาวที่ใช้งานหัวต่อ PCIe 8 พิน ซึ่งมีมีการใช้พลังงานรวมกันที่เกินกว่ามาตรฐานที่กำหนดคือ 225 วัตต์ (150 วัตต์ จาก PCIe 8 พิน + 75 วัตต์ จากสล็อต PCIe บนเมนบอร์ด) อันรวมถึงการพิจารณาการกระจายความยาวที่ใช้หัวต่อไฟ PCIe 8 พินจำนวน 2 ชุดซึ่งมีการใช้พลังงานทั้งสิ้น 375 วัตต์ (300 วัตต์ จากหัว PCIe 8 พิน 2 ชุด + 75 วัตต์ จากสล็อต PCIe บนเมนบอร์ด) จึงไม่ครอบคลุมเช่นกัน

ภายใต้การรับประกัน หัวต่อแล้ว Peripheral หรือ Molex 4 พินเช่น SATA นั้นสามารถรองรับกระแสไฟสูงสุด 5 แอมป์หรือมากกว่า 60 วัตต์ (+12V x 5A) หรือ (+5V + 5A) กรุณาใช้หัวต่ออุปกรณ์ที่ใช้งานมีการใช้พลังงานไม่เกินกว่าขีดจำกัดการรองรับ ดังนั้นการรับประกันจากทาง SilverStone จึงไม่ครอบคลุมถึงความเสียหายหรือความผิดปกติจากอุปกรณ์หัวต่อซึ่งมีการใช้พลังงานเกินกว่าขีดจำกัด

กรณีไฟพ่วงสูงสุดของหัวต่อบนบอร์ด 24 พิน สำหรับพินไฟ: +12V ชุดละไม่เกิน 5A ซึ่งรวมถึงรวมเป็น 120W (+12V x 5A x 2) โปรดตรวจสอบให้แน่ใจว่าอุปกรณ์ตัวต่อพลังงาน +12V ที่ใช้เป็นตัวกับเมนบอร์ดสามารถทำงานภายใต้ขีดจำกัดเหล่านี้ได้ การรับประกันของ SilverStone ไม่คุ้มครองความเสียหาย หรือการเสื่อมที่สืบผลจากการใช้เกินกว่าขีดจำกัดแต่ละสายเคเบิลที่ใช้หัวต่อเหล่านี้

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

<https://www.silverstonetek.com/upload/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
检测员: 邱明
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.

Model (safety certification):SST-AR0900FCGD-A

The equipment a Class | Switching Power Supply intended to use for information technology equipment or Audio and Video equipment.

※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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support@silverstonetek.com

NO.G11247190