

Rosewill®

X
XTREME

POWER SUPPLY

XTREME Series SLI

USER Manual

RX750-D-B

RX750-D-S

RX750-S-B

RX750-S-S

RX850-D-B

RX850-D-S

RX850-S-B

RX850-S-S

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Features Descriptions

- Complies with ATX12V v2.2 & EPS12V v2.91

**ATX12V
v2.2**

**EPS12V
v2.91**

- Active PFC

ACTIVE

PFC

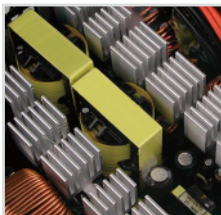
- Rubber screw for better silence



- 6 x SATA Connectors



- Four 12V Rails



- Silent 2 Ball-bearing Blue LED Fan



- 4 x PCI-Express Connectors for your SLI



- Mirror Black Finish



Specification

1. General Requirements

This power supply is designed for entry server computer systems. There are eight DC outputs: +5V, +12V1, +12V2, +12V3, +12V4, -12V, +3.3V & +5VSB and it will provide power to all system components.

2. DC Output

2.1 Harmonics

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

2.2 AC Inlet Connector

The AC input connector shall be an IEC 320 C-14 power inlet.

2.3 AC Input Voltage Specification

The power supply must operate within all specified limits over the following input voltage range. Harmonic distortion of up to 10% THD must not cause the power supply to go out of specified limits.

AC Input Rating

Parameter	Min.1	Min.2	Nom.	Max.	Unit
Voltage Input (Full range)	90-103	103-110	110-220	264	Voltage(RMS)
Voltage Input Frequency	47~63				Hz
Full Load	80%	100%	100%	100%	Watts
AC Current	15/7.5				Amp (RMS)

NOTE : Power factor correction (PFC) >0.95 at full load.

2.4 Efficiency

The power supply shall have a minimum efficiency of 80% at maximum load and over the specified AC voltage. Up to 85% efficiency.

2.5 AC Inrush Current

The maximum inrush current of the power supply shall be 60A@110Vac and 120A@220Vac respectively (25°C ambient temperature and cold start).

3. DC Output

3.1 Voltage /Current

RX750-S-B, RX750-S-S, RX750-D-B, RX750-D-S

DC OUTPUT	3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
MI.Current	1.5A	1.0A	0.8A	0.8A	0.5A	1.0A	0.0A	0.1A
MAX.Current	24A	30A	20A	20A	20A	20A	0.5A	3.0A
Combined Power	170W		720W(60A)				6W	15W
	729W							
Total Power	750W							
Regulation	±5%	±5%	±5%	±5%	±5%	±5%	±10%	±5%
Cross Reg.	±5%	±5%	±5%	±5%	±5%	±5%	±10%	±5%
Line Reg.	±1%	±1%	±1%	±1%	±1%	±1%	±2%	±1%
Noise & Ripple (mV)	50	50	120	120	120	120	120	50
Peak Power	850W / 30sec							

RX850-S-B, RX850-S-S, RX850-D-B, RX850-D-S

DC OUTPUT	3.3V	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+5VSB
MI.Current	0.8A	0.5A	0.5A	0.5A	0.9A	1.0A	0.0A	0.1A
MAX.Current	24A	30A	20A	20A	20A	20A	0.5A	3.0A
Combined Power	170W		760W(64A)				6W	15W
	829W							
Total Power	850W							
Regulation	±5%	±5%	±5%	±5%	±5%	±5%	±10%	±5%
Cross Reg.	±5%	±5%	±5%	±5%	±5%	±5%	±10%	±5%
Line Reg.	±1%	±1%	±1%	±1%	±1%	±1%	±2%	±1%
Noise & Ripple (mV)	50	50	120	120	120	120	120	50
Peak Power	930W / 12sec							

3.2 Remote On/Off Control

The power supply DC outputs (with the exception of +5 VSB which is always available) are enabled with an active-low, TTL-compatible signal ("PS-ON"). When PS-ON is pulled to TTL low, the DC outputs are enabled. When PS-ON is pulled to TTL high or open-circuited, the DC outputs are disabled. PS-ON may be active by either electronic means or a mechanical switch.

3.3 Rise Time

The output voltage shall rise from 10% to within regulation limits within 0.1 to 25ms.

3.4 Overshoot & Turn-On/Turn-Off

The output voltage overshoot upon the application or removal of the input voltage under the conditions specified in section 3.1 shall be less than 10% above the nominal voltage.

3.5 Hold-up Time

The power supply will maintain output regulation despite a loss of a minimum of 16 ms while under full load. Test to be performed at nominal input voltage.

3.6 Power Good Signal

A “power good” signal is asserted by the supply to indicate that the +5VDC output is within regulation limits.

Power Good Signal Characteristics:

Signal Type:	Open collector TTL compatible
Logic level low:	<0.8V while sinking 5mA
Logic level high:	>2.4V while sourcing 500uA
High state impedance:	1K (from output to common)
POK delay:	100-1000ms
Power fall warning time:	1ms minimum

4. Protection

4.1 Over Current Protection (OCP)

The power supply shall have current limit to prevent the +3.3V, +5V, and +12V outputs from exceeding the values shown in below enclosed table. If the current limits are exceeded the power supply shall shutdown and latch off. The latch will be cleared by toggling the PSON# signal or by an AC power interruption. The power supply shall not be damaged from repeated power cycling in this condition. -12V and 5VsB shall be protected under over current or shorted conditions so that no damage can occur to the power supply. All outputs shall be protected so that no damage occurs to the power supply under a shorted output condition.

Voltage	Over Current Limit
+3.3V	110% minimum, 150% maximum
+5V	110% minimum, 150% maximum
+12V	110% minimum, 150% maximum

4.2 240VA Protection

System designs may require user access to energized areas of the system. In these cases the power supply may be required to meet regulatory 240VA energy limits for any power rail. Since the +12V rail combined power exceeds 240VA it must be divided into separate channels +12V rails do not necessarily need to be independently regulated outputs. They can share a common power conversion stage. The +12V rail is split into four rails. Refer to section 6.4 for how the 12V rail is split between different output connectors.

Voltage	Over Current Limit
+3.3V	110% minimum, 150% maximum
+5V	110% minimum, 150% maximum
+12V1	Peak current minimum, 26A maximum
+12V2	Peak current minimum, 26A maximum
+12V3	Peak current minimum, 33A maximum
+12V4	Peak current minimum, 26A maximum

4.3 Over Voltage Protection

The power supply over voltage protection shall be locally sensed. 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. The below enclosed table contains over voltage limits. The values are measured at the output of the power supply's connector. 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.

Output Voltage	MIN(V)	MAX(V)
+3.3V	3.76	4.3
+5V	5.5	7.0
+12V1,2,3,4	13.4	15.6

4.4 Short Circuit Protection

A short circuit on any DC output will cause the power to latch. The power supply will withstand a continuous short circuit to the output without damage or overseers to the unit. The +5VSB can be shorted indefinitely and will recover automatically when the short is removed.

4.5 Over Power Protection (OPP)

The power supply shall go shutdown when the total output load is over 110~160% of rating.

5. PHYSICAL ENVIRONMENT

5.1 Operating Conditions

The power supply shall be capable of continuous operation and meet all electrical specification without need for adjustment when subjected to the following environmental conditions:

	Temp. vs. Load Condition	Humidity
Operation	0~30°C@Full Load	10%~90%RH
	40°C@90% Rated Load	
	50°C@80% Rated Load	
Storage	-20°C~80°C	5%~90%RH

* No degradation of the power supply shall occur during shipping or storage at the specified condition.

5.2 Shocks and Vibration

The power supply will withstand the following imposed conditions without experiencing non-recoverable failure or deviation from specified output characteristics.

Storage -40G, 11mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Operating -10G, 11mSec. half-sine wave pulse in both directions on three mutually perpendicular axes.

Vibration Operation-Sine wave excited, 0.25G maximum acceleration, 10-250 Hz, swept at one octave/minute. Fifteen-minute dwell at all frequencies at which the device under test experience excursions two times large than non-resonant excursions.

6. REGULATORY COMPLIANCE

6.1 Safety Requirements

- UL
- TUV
- CE
- FCC CLASS B

6.2 Dielectric Strength

Primary to Secondary: 1500 VAC for 1~3 seconds.

Primary to Frame Ground: 1500 VAC for 1~3 seconds.

6.3 Insulation Resistance

Primary to Secondary: 20 Meg. ohm Minimum.

Primary to Frame Ground: 20 Meg. ohm Minimum.

6.4 Ground Leakage Current

The power supply ground leakage current shall be less than 3.5mA.

The power supply grounding continuity shall be less than 100m Ω when the test current is at 25A.

7. Reliability

The power supply has a minimum predicted MTBF (MIL-STD-217E) of 100,000 hours of conditions operation at 25 $^{\circ}$ C, maximum-output load, and nominal AC input voltage.

Connectors

- 20+4 pin Main Connector x 1



- 4 pin ATX +12V Connector x 1



- 8 pin EPS +12V Connector x 1



- 6 pin PCI-Express Connector x 4



- 4 pin Peripheral Connector X 6



- 5 pin SATA Connector x 6



- 4 pin Floppy Connector x 2



Installation

1. Installing Power Supply

Affix the power supply to the case with screws.

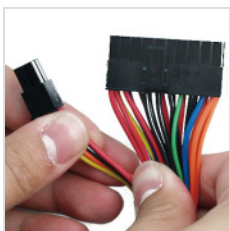


2. 20+4 pin Main Connector

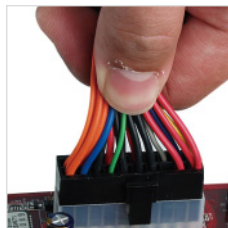
NOTE : 1. Confirm 20 pin or 24 pin main connector your motherboard needs before the installation.

2. 4 pin here is used for switching between 20 & 24 pin only.

20 pin



Take the 20 pin connector.

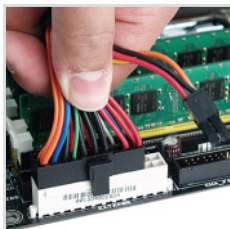


Plug the 20 pin connector onto the motherboard.

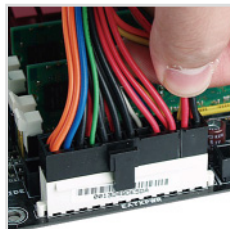
24 pin



Take the 24 pin connector



Plug the 20 pin part onto the motherboard



Plug the 4 pin part onto the motherboard

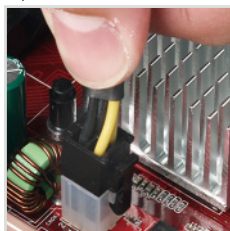
NOTE : You can also hold 20 pin and 4 pin connectors together then plug them into the 24 pin socket

3. 4 pin ATX +12V or 8 pin EPS +12V Connector

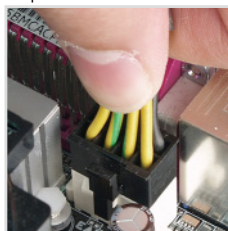
NOTE :

1. The 4 pin ATX +12V connector or 8 pin EPS +12V connector is used for motherboard.
2. Confirm 4 pin ATX +12V or 8 pin EPS +12V connector your motherboard needs before the installation.

4 pin ATX +12V connector

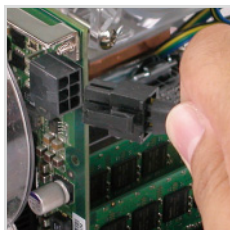


8 pin EPS +12V connector



4. 6 pin PCI-Express Connector.

The 6 pin PCI-Express connector used for video card only.



5. 4 pin Peripheral Connector

The 4 pin Peripheral connector used for HDD, Optical Drive and other devices needing it.



NOTE : Confirm if your video card needing the 6 pin PCI-Express connector or not before the installation. Not every video card needs it.

6. 4 pin Floppy Connector

The 4 pin Floppy connector used for Floppy disk or Zip drives.



7. 5 pin SATA Connector

5 pin SATA connector used for SATA HDD and Optical Drive.



8. Before starting your system

- Attach the power cord to the power supply
- Connect the power cord to a power source.



- Confirm the power supply is on



ON



OFF

Information

Thank you for purchasing a High-Quality Rosewill Product.

Please register your product at : **www.rosewill.com** for complete warranty information and future support for your product. If you have any question while using our products, please feel free to contact us at **techsupport@rosewill.com**

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