SURE STAR COMPUTER CO., LTD 添誠資訊股份有限公司
http://www.surestar.com.tw Tel:+886 2 2682 2505
E-mail:info@surestar.com.tw Fax:+886 2 2682 2515
NO.2-1, DAAN ROAD, SHULIN .DIST., NEW TAIPEI CITY 238, TAIWAN

SPECIFICATION

Model Name：

R4S-400G1V2

Description：

400W+400W Mini Redundant Power Supply (PSII)

Version：A1

Issued Date : 20140801

Content：

1. General Description
2. Input Characteristic
2.1. AC Input Voltage and Frequency
2.2. Input Current and Inrush Current
2.3. Power Factor
3. Power Efficiency
4. Output Characteristic
4.1. Output Voltage & Current Regulation
4.2. DC Output Ripple & Noise
4.3. Hold Up Time
4.4. Rise Time
4.5. Dynamic Load Response Time
4.6. Remote On/Off Control
5. Power Good Signal
6. Protection
6.1. Over Voltage Protection
6.2. Under Voltage Protection
6.3. Over Current Protection
6.4. Short Circuit Protection
6.5. Thermal Protection
7. Power System Signal Status
7.1. Buzzer Status
7.2. LED Indicator
7.3. TTL Signal
8. Load Sharing

9. Isolation
9.1. Insulation Resistance
9.2. Dielectric Withstand Voltage
9.3. Leakage Current
10. Safety
11. EMC
12. Environmental Requirement
12.1. Temperature
12.2. Humidity
12.3. Altitude
12.4. Cooling Method
13. Reliability
13.1. MTBF
14. Mechanical 2D Drawing and Output Cable
14.1. Physical Dimension (crutch optional)
14.2. Output Cable (could be customization)
14.3. Customization Note

1. General Description

This specification describes the performance characteristics of a 400 watts hot swappable, 1+1 power system with +3.3V,+5V,+12V, -12V main DC outputs, and 5V standby output. The system is configured to hold two identical 500W power supply modules, ***SURE STAR*** model R4S-400G1V2.

2. Input Characteristic

2.1. AC Input Voltage and Frequency

Minimum	Nominal	Maximum	Measure
90	100~240	264	Vac
47	50~60	63	Hz

2.2. Input Current and Inrush Current

AC Input Voltage	MAX. Input Current Per Power Supply Module	Inrush Current Per Power Supply Module
115Vac	8A	25A
230Vac	4A	50A

2.3. Power Factor

90Vac	115Vac	230Vac	264Vac
＞0.99	＞0.98	＞0.95	＞0.92

3. Power Efficiency

The minimum efficiency of power supply is 80% with full load and 115Vac/60Hz input.

4. Output Characteristic

4.1. Output Voltage & Current Regulation

Output Voltage	Min. Current	Rated Current	Regulation
+3.3V	1A	25A	±5%
+5V	1A	25A	±5%
+12V	1A	33A	±5%
-12V	0A	0.8A	±5%
+5VSB	0.5A	3.5A	±5%

Note：The combined total power from +5V & +3.3V shall not exceed 170W.

4.2. DC Output Ripple & Noise

Output Voltage	Ripple & Noise (Max.)
+3.3V	60mVp-p
+5V	60mVp-p
+12V	120mVp-p
-12V	120mVp-p
+5VSB	50mVp-p

Note：1. Ripple & Noise bandwidth is set to 20MHz.

2. Use a 0.1uF ceramic capacitor in parallel with a 10uF electrolytic capacitor at output connector terminals for ripple & noise measurement.

4.3. Hold Up Time

Output Voltage	115Vac Input	230Vac Input
+3.3V	＞16ms	＞16ms
+5V	＞16ms	＞16ms
+12V	＞16ms	＞16ms
-12V	＞16ms	＞16ms
+5VSB	＞16ms	＞16ms

Note：All output shall be with full load.

4.4. Rise Time

Output Voltage	115/230Vac Input & Full Load
+3.3V	20ms (max.)
+5V	20ms (max.)
+12V	20ms (max.)
-12V	20ms (max.)
+5VSB	20ms (max.)

Note：Rise time measurement shall be with any output voltage rise from 10% to 90%.

4.5. Dynamic Load Response Time

The following shall apply to the +3.3V, +5V, and +12V output.

Output voltage for each output shall recover to within 5 % of its steady state level in less than 1 ms under the following condition：

AC Input Voltage：90Vac ~ 264Vac			
Repetition rate of 100Hz with 50 % duty cycle			
Output	Step Load Size	Load Slew Rate	Capacitive Load
+3.3V	30% to 100% to 30% load	0.5A / μ sec	6000uF
+5V	30% to 100% to 30% load	0.5A / μ sec	6000uF
+12V	60% to 100% to 60% load	1A / μ sec	6000uF
+5VSB	0% to 100% to 0% load	0.5A / μ sec	350uF

4.6. Remote On/Off Control

Main output of this power supply (+3.3V,+5V,+12V,-12V) shall be energized when input signal*PSON is active. *PSON is an active low TTL compatible signal referenced to +5V standby common. This input signal shall be an open collector signal capable of sinking a minimum of 1.6mA. When *PSON becomes inactive, main output shall be disabled.

	PSU On	PSU Off
PSON Signal	LOW (0.8V max.)	HI (2V min.)

5. Power Good Signal

This power supply shall have an active high TTL compatible signal capable of sinking 1mA and sourcing 100μA. The signal shall become active within 100 to 500 ms from the instant +5V output reaches a steady state level within the specified regulation limit. It shall become inactive at least 1 ms before +5V drops to below the lower regulation limit.

Power good @ 115/230VAC , Full Load	200ms ~ 500ms
Power Fail @ 115/230VAC , Full Load	1ms (min.)

6. Protection

6.1. Over Voltage Protection

Output	Min.	Max.	Comment
+3.3V	3.75V	4.3V	PSU shutdown
+5V	5.7V	6.9V	PSU shutdown
+12V	13V	14.3V	PSU shutdown

Note：Power supply shall be tested with minimum load.

6.2. Under Voltage Protection

Output	Min.	Max.	Comment
+3.3V	2.0V	2.4V	PSU shutdown
+5V	3.3V	3.7V	PSU shutdown
+12V	8.5V	9.5V	PSU shutdown

Note：Power supply shall be tested with minimum load.

6.3. Over Current Protection

Output	Over Current (Type)	Over Current (Max.)	Comment
+3.3V	≧27.5A	37.5A	PSU shutdown
+5V	≧27.5A	37.5A	PSU shutdown
+12V	≧36.3A	49.5A	PSU shutdown

Note：Over current protection should be tested with other rated load.

6.4. Short Circuit Protection

Output	Comment
+3.3V	PSU shutdown
+5V	PSU shutdown
+12V	PSU shutdown

Note：Short circuit protection should be tested with other rated load.

6.5. Thermal Protection

The power supply shall go into thermal protection as the case temperature exceeds 75℃ (±5℃).The output shall recover only when temperature becomes normal and input power is turned on again.

7. Power System Signal Status

7.1. Buzzer Status

Power Supply Condition	Buzzer Status
No AC power to all PSU	OFF
AC present/only standby output on	OFF
Power supply DC outputs ON and OK	OFF
Power supply failure	Beeping

7.2. LED indicator

Power Supply Condition	Power System Status		Per Power Module Status
LED Color	RED	GREEN	ORANGE
No AC power to all PSU	OFF	OFF	OFF
AC present/only standby output on	ON	OFF	OFF
Power supply DC output ON and OK	OFF	ON	ON
Power supply failure	OFF	Blinking	OFF

7.3. TTL Signal

Power Supply Condition	Output Condition	
	Min.	Max.
Normal (Power Supply ON)	3V	5.25V
Failure (Power Supply OFF)	0V	1V

8. Load Sharing

Output Voltage	Load Current	Load Share Voltage
+12V	1A	+0.48V ~ +0.52V

9. Isolation

9.1. Insulation Resistance

Input To Output	500Vdc、50M ohm Min. (at room temperature)
Input To FG	500Vdc、50M ohm Min. (at room temperature)
Output To FG	Not Available

9.2. Dielectric Withstand Voltage

Input To Output	3000Vac (10mA) for 1 minute
Input To FG	1800Vac (10mA) for 1 minute
Output To FG	Not Available

9.3. Leakage current

Maximum 3.5mA at 240Vac/60Hz.

10. Safety

CB、CE、TUV、UL、BSMI、CCC。

Please visit our website and get the latest safety certificate.

11. EMC

CE、FCC、BSMI、CCC。(Class B)
Please visit our website and get the latest EMC certificate.

12. Environmental Requirement

12.1. Temperature
Operating：0℃ to +50℃
Non Operating：-20℃ to +70℃

12.2. Humidity
Operating：5% to 95%，non-condensing
Non Operating：20% to 90%，non-condensing

12.3. Altitude
Altitude during operation：Up to 5000m
Altitude of test laboratory：Below 2000m

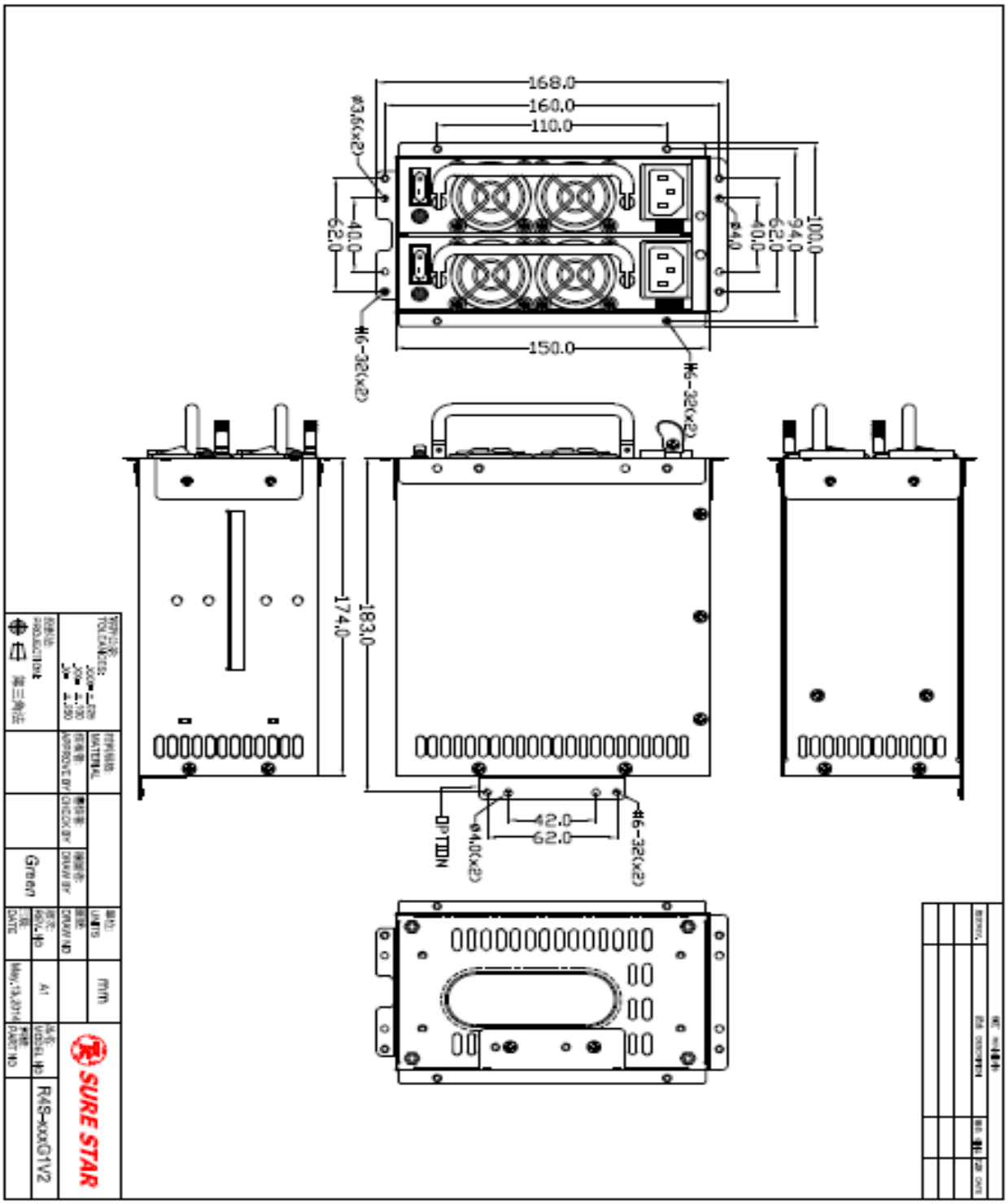
12.4. Cooling Method
By ball bearing DC fan.

13. Reliability

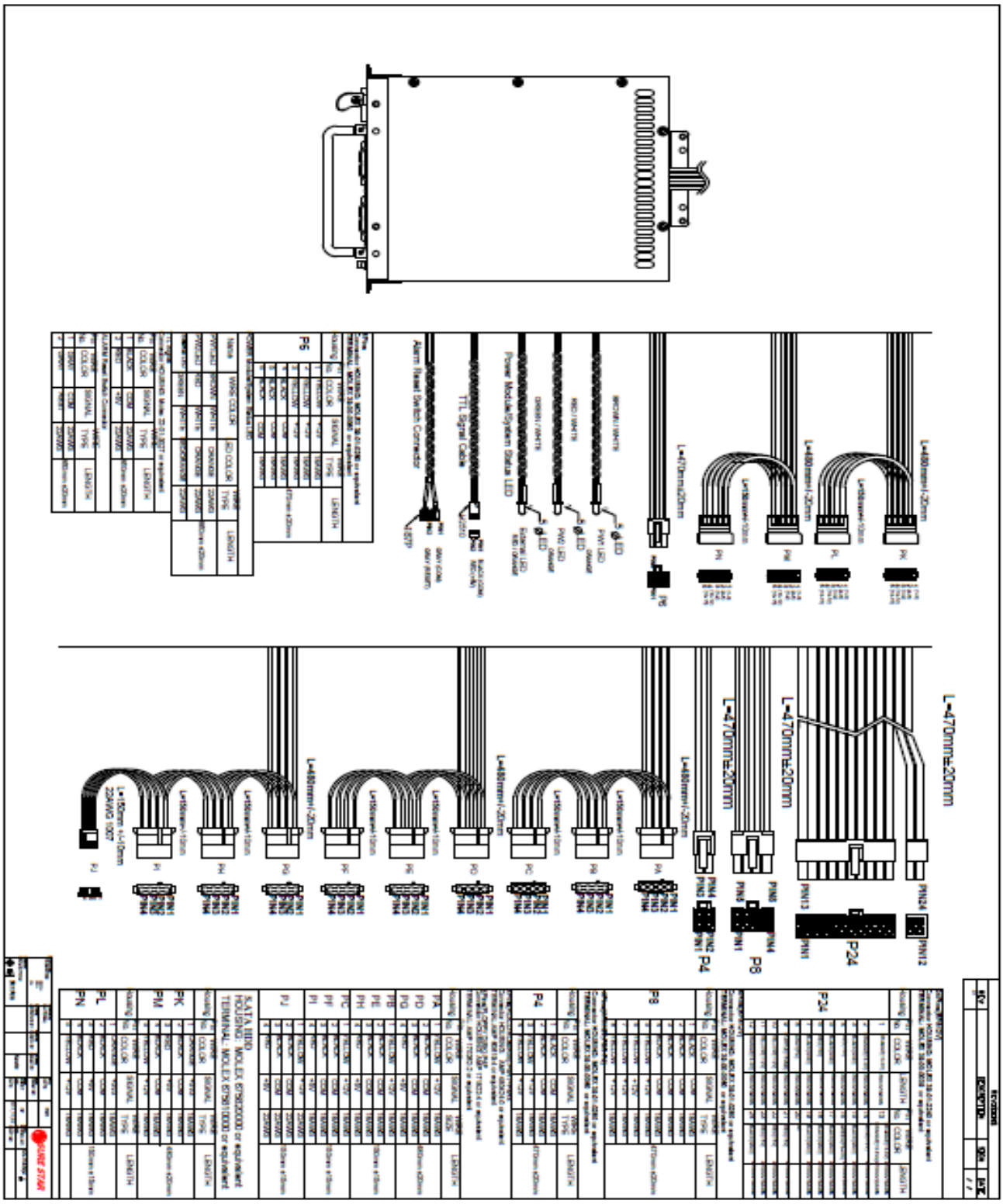
13.1. MTBF
Using MIL - HDBK -217F the calculated MTBF＞100,000 hours at 25℃.

14. Mechanical 2D Drawing and Output Cable

14.1. Physical Dimension (crutch optional)：174(D)*150(W)*86(H)mm



14.2. Output Cable (could be customization)：



14.3. Customization Note：

Customization note shall be listed here.

End of File