SPECIFICATION

For

SWITCHING POWER SUPPLY

M/N: MPM-842P-F

Revision Index

REV.	Apr. 14th 2006	Extending from MPM-842P.
REV.	Apr. 3rd 2007	Adding fan control curve.
REV.	Jan. 3rd 2008	Adding cover page and additional note of fan control mode description.
REV.	Jan. 30th 2008	Removing the fan control curve and update mechanical drawing.
REV.	Feb. 19th 2008	Update the application note of fan control mode description.
REV.	Feb. 27th 2008	Update the application note of fan control mode description
REV.	Mar. 28th 2011	Update the safety approved status.
REV.	Aug. 6th 2013	Updated mechanical drawing and remove EN60950-1 in safety standard.

FEATURES

- 450W peak power and 400W continue Medical ATX power supply with Active PFC for Medical equipment application
- Fan controlled by thermal sensor
- Power Good/Power Fail signal
- +5V Stand by & Remote On/Off
- Thermal protection
- Design to meet ATX 12V V2.0

1. Description

MPM-842P-F is a 450W peak power and 400W continue ATX power supply with active PFC for medical equipment application. Build-in fan controlled function by the thermal sensor. It meets IEC 60601-1, UL 60601-1, and EN 60601-1 medical standards.

Output Voltage	Mini. Output Current	Rated Output Current	Max output Current	Peak output Current (Note 1)	Line Regulation	Load Regulation	Ripple & Noise p-p (Note 2)	Initial Setting Accuracy (Note 3)
+5V	1A	16A	21A		±1%	±5%	50mV	4.75V to 5.25V
+12V	1A	21A	22A	25A	±1%	±5%	120mV	11.4V to 12.6V
-12V	0A	0.8A			±1%	±10%	120mV	-10.80V to -13.20V
+3.3V	0.5A	16A	22A		±1%	±5%	50mV	3.14V to 3.47V
+5Vsb	0A	0.75A	1.5A		±1%	±5%	120mV	4.75V to 5.25V

Total Output Power: 450W peak and continue at 400W at 50°C environment temperature (Note 4).

Note: 1) +12V Peak current cannot over 10 seconds.
2) Measured by a 20MHz bandwidth limited oscilloscope and the each output is connected with a 10µF Electrolytic Capacitor and a 0.1µF Ceramic Capacitor, output at rated load and nominal input, and environment at 25°C.
3) Initial Setting Accuracy is at Input 110VAC and all output at 60% rated load.
4) The total DC continuous power shall be kept with 400W and peak power at 450W for maximum 10 seconds at input voltage at 100-264VAC. With input voltage 90-99VAC the total DC continuous power shall be kept with 300W max. Maximum 150W for 3.3V and 5V combined output power and maximum 383W for 3.3V, 5V, and 12V.

2. Input Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Input Voltage	Continuous input range.	90	115/230	264	VAC
Input Frequency	AC input.	47		63	Hz
Hold Up Time	Nominal AC Input Voltage (115VAC/230VAC), rated load.	16			ms
Input Current	Nominal AC Input Voltage (90VAC), rated load.			8	A
Inrush Current	Nominal AC Input Voltage (115VAC/230VAC), one cycle at 25°C.			40/80	A
Input Protect	Non-user serviceable internally located AC input L and N fuses.				

3. Output Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Efficiency	Rated load, 115VAC. Varies with distribution of loads among output.		75		%
Minimum load			See Chart of Description		
Line Regulation	Less than ±1% at rated load with ±10% changing in input voltage.		See Chart of Description		
Load Regulation	Measured from 60% to 100% rated load and from 60% to 20% rated load (60% ±40% rated load) for each output, and others voltage setting at 60%.		See Chart of Description		

4. Interface Signals and Internal Protection

Parameter	Conditions/Description
Power On/Off	The power supply will be turned on when the power On/Off pin is connected to secondary GND.

Power Good Signal	When power is turned on, the power good signal will go high 100ms to 500ms after all output DC voltages are within regulation limits.				
Power Fail Signal	The power fail signal will go low at least 1 mS before any of the output voltages fall below the regulation limits.				
Short Circuit Protection	Fully protected against short circuit. Auto-recovery modes upon of short circuit condition, except 3.3V latch off mode.				
Over Voltage Protection	+3.3V +5V +12V at rated load and nominal input. Latch-off mode when over voltage occurred.	3.76 5.74 13.4	4.2 6.3 15.0	4.9 7.5 15.6	VDC
Over Temperature Protection	When the power supply operating over the temperature or over load limit, the power supply will be shut down automatically to protect itself.				
Fan control	A SELV fan control daughter board with a thermal switch to sense the temperature of the secondary heat sink. The fan acts with two steps: slow speed when the temperature is low and get into high speed when the heat sink temperature over the limit. (find application note for details.)				

5. Safety Approvals, EMI and EMS Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Safety Approvals	IEC 60601-1: 1988+A1+A2 UL 60601-1, 1st Edition, 2006-04-26 CAN/CSA-C22.2 No. 601.1-M90, 2005		TUV approved UL approved cUL approved		
EMI	EN 60601-1-2	B			Class
PFC	EN 61000-3-2 & EN 610003-3	D			
EMS	IEC 61000-4-2, 8KV air discharge	3			Level
	IEC 61000-4-3, 3V/m	3			
	IEC 61000-4-4, 2KV line & PE	3			
	IEC 61000-4-5, 2KV	3			
	IEC 61000-4-6, 3V/m	3			
	IEC 61000-4-8, 3A/M	3			
	IEC 61000-4-11				

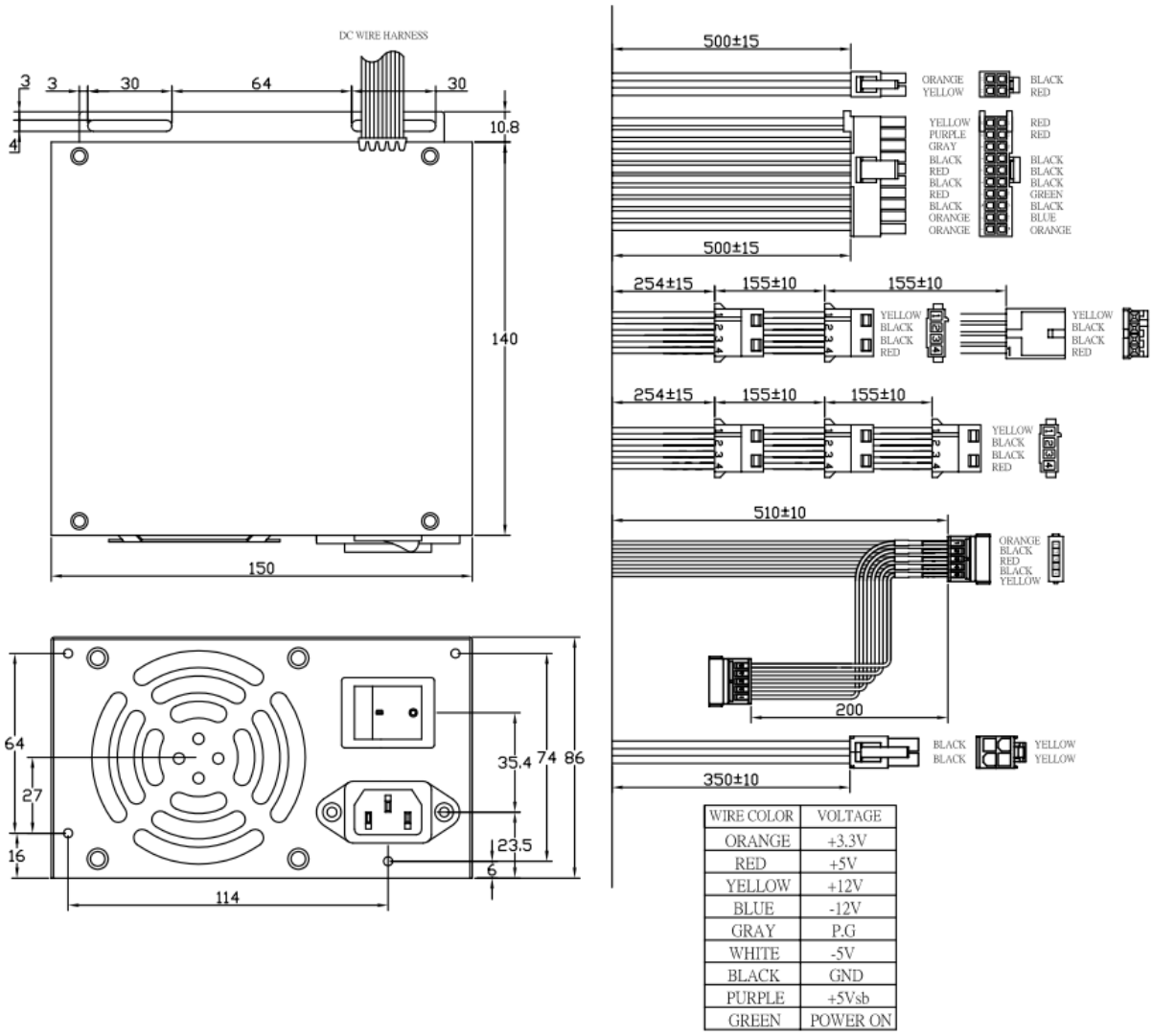
6. Environment Specification

Parameter	Conditions/Description	Min.	Nom.	Max.	Units
Operating Temperature	Derate linearly above 50˚C by 2.5% per ˚C At 100% load: to a maximum temperature of 70˚C At 50% load:	0		50 70	˚C
Storage Temperature		-20		+70	˚C
Relative Humidity	Non-condensing at 50˚C	5		95	%RH

7. Mechanical Specification

Parameter	Conditions/Description	
Dimension	150 (L) x 140 (W) x 86 (H) mm, Tolerance +/- 0.4mm.	
AC inlet and switch	AC inlet: IEC 320C 320/CEE 22 standard AC switch: Rocker switch	
DC connector	ATX:	WST P20-I42002K11 + P4-I42002K11B or equivalent.
	Disk drive:	AMP 1-480424-0 or equivalent.
	3 1/2” floppy driver:	AMP 171822-4 or equivalent.
	P4 connector:	Molex 39-01-2045 or equivalent.
	SATA:	WST P5-I12707 or equivalent.

◆ Dimension

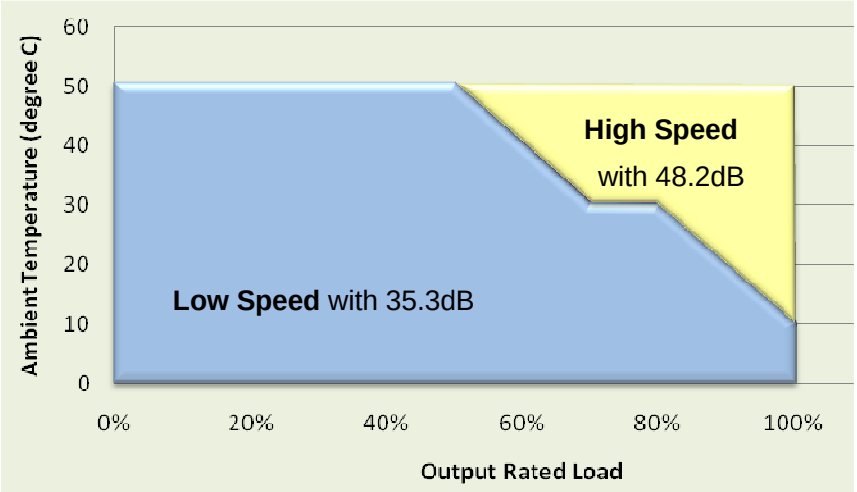


WIRE COLOR	VOLTAGE
ORANGE	+3.3V
RED	+5V
YELLOW	+12V
BLUE	-12V
GRAY	P.G
WHITE	-5V
BLACK	GND
PURPLE	+5Vsb
GREEN	POWER ON

Application Note

Input voltage: 115VAC / 60Hz & 230VAC / 50Hz

Rated Output current: 5V/16A, 12V/21A, -12V/0.8A, 3.3V/16A, +5Vsb/0.75A



● *Emission Sound Pressure Level Measurement Test by SGS Taiwan Ltd.*