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SPECIFICATION



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Everest Pro 1100

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SPECIFICATION

Everest pro 1100

Main Feature:
Low Noise
High Efficiency
Active PFC Circuit
Full Range Input

Sept 28 ,2007

REV:1:01



全漢企業股份有限公司
SPI Electronic Co.,Ltd .

MODEL: Everest pro 1100

Revision History

<u>Rev</u>	<u>Description</u>	<u>Date</u>	<u>Author</u>
1.00	Original	200709/28	Jason
1.01	Revise 12V OVER CURRENT	2007/4/22	Jason

1. GENERAL DESCRIPTION AND SCOPE

This is the specification of Model Everest pro 1100; AC-line powered switching power supply with active PFC (Power Factor Correction) circuit, meet EN61000-3-2 and with Full Range Input features.

The specification below is intended to describe as detailedly as possible the functions and performance of the subject power supply. Any comment or additional requirements to this specification from our customers will be highly appreciated and treated as a new target for us to approach.

2. REFERENCE DOCUMENTS

The subject power supply will meet the EMI requirements and obtain main safety approvals as following:

2.1 EMI REGULATORY

- FCC Part 15 Subpart J, Class 'B' 115 Vac operation.
- CISPR 22 Class 'B' 230 Vac operation.

2.2 SAFETY (Optional)

- TUV EN60950 OR VDE EN60950
- CSA-C22.2 NO. 950-95
- IEC 60950
- UL 60950
- CE :
EN 55022:1998+A1: 2000, Class B
EN 61000-3-2: 2000
EN 61000-3-3: 1995+A1: 2001

CISPR22: 1997+A1: 2000, Class B
AS/NZS CISPR 22: 2002, Class B

3. INPUT ELECTRICAL SPECIFICATIONS

3.1. AC INPUT

Parameter	Min	Max	Unit
V_{in}	90	264	VAC _{rms}
V_{in} Frequency	47	63	HZ

◆ Nominal voltages for test purposes are considered to be within $\pm 1.0V$ of nominal.

3.2. INRUSH CURRENT

(Cold start – 25 deg. C)

115V	No damage
230V	No damage

Maximum inrush current from power-on (with power on at any point on the AC sine) and including, but not limited to, three line cycles, shall be limited to a level below the surge rating of the input line cord, AC switch if present, bridge rectifier, fuse, and EMI filter components. Repetitive ON/OFF cycling of the AC input voltage should not damage the power supply or cause the input fuse to blow.

3.3. INPUT LINE CURRENT

115V	15Amps – rms maximum
230V	7.5Amps – rms maximum

3.4. EFFICIENCY

3.4.1 General

Under the load conditions defined in Table 1 and Table 1. The loading condition for testing efficiency represents a fully loaded system. a ~ 50% (typical) loaded system. and a ~ 20% (light) loaded system.

Table .1 Loading Table for Efficiency Measurements

1100W(loading shown in Amps)										
Loading	5V	3.3V	12V1	12V2	12V3	12V4	12V5	12V6	-12V	+5Vs
Full(100%)	20	8.4	16	16	12	12	12	12	0.2	2.0
Typical(50%)	10	4.2	8	8	6	6	6	6	0.1	1.0
Light(20%)	5	5	2.5	2.5	2.5	2.5	2.5	2.5	0.1	0.2

Table 2. Minimum Efficiency Vs Load

Loading	Voltage	Full load	Typical load	Light load
Required Minimum Efficiency	115V	82%	85%	82%
Required Minimum Efficiency	230V	83%	86%	83%

(1) For this test, the detect probe shall be on the output terminal side of PSU and bypassed the AC power cord losses, if detect on the test fixture side, there will be 3% tolerance.

3.5 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.

4.0. OUTPUT ELECTRICAL REQUIREMENTS

4.1 OUTPUT VOLTAGE AND CURRENT RATING

Output	MINIMUM LOAD	NORMAL LOAD	MAXIMUM LOAD	LOAD REG	LINE REG.	RIPPLE+NOISE
+3.3V	0.5A	15A	30A	±5%	±1%	100mVp-p
+5V	0.5A	15A	30A	±5%	±1%	100mVp-p
+12V1~+12V6	1.0A	10	20 A	±5%	±1%	240mVp-p
-12V	0.1A	0.3A	0.6A	±10%	±1%	240mVp-p
+5VSB	0.2A	2.0A	4.0 A	±5%	±1%	100mVp-p

(1) +3.3V & +5V total output not exceed 180W.

(2) +12V1~+12V6 combined maximum load is 80A

(3) total output for this subject power supply is 1100 watt

(4) Output shall bypassed at the connector with a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor to simulate system loading

4.2 LOAD CAPACITY SPECIFICATIONS

The cross regulation defined as follows, the voltage regulation limits DC include DC Output ripple & noise

Load	5V	3.3V	12V1	12V2	12V3	12V4	12V5	12V6	-12V	+5Vs
MMHHHMMMLL	18A	15A	20A	20A	10A	10A	10A	10A	0.1A	0.2A
LLMMMHHHLL	0.5A	0.5A	10A	10A	10A	10A	20A	20A	0.1A	0.2A
HMMMMMMHH	30A	9A	12A	12A	12A	13A	13A	13A	0.6A	4.0A
MHMMMMMMHH	16A	30A	12.4A	12.4A	12.4A	12.4A	12.4A	12.4A	0.6A	4.0A
HLLLLLLLLL	30A	0.5A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	0.1A	0.2A
LHLLLLLLLLL	0.5A	30A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	0.1A	0.2A
LLLLLLLLHL	0.5A	0.5A	1.0A	1.0A	1.0A	1.0A	1.0A	1.0A	0.6A	0.2A
DC OFF	X	X	X	X	X	X	X	X	X	4A

- **H=MAX LOAD**
- M=MIDDLE LOAD**
- L=LIGHT LOAD**

4.3. HOLD-UP TIME (@FULL LOAD)

115V / 60Hz : 21 mSec. Minimum.

230V / 50Hz : 21 mSec. Minimum.

The output voltage will remain within specification, in the event that the input power is removed or interrupted, for the duration of one cycle of the input frequency. The interruption may occur at any point in the AC voltage cycle. The power good signal shall remain high during this test.

4.4.OUTPUT RISE TIME

(10% TO 95% OF FINAL OUTPUT VALUE, @FULL LOAD)

115V-rms or 230V-rms + 3.3Vdc : 20ms Maximum
 + 5Vdc : 20ms Maximum
 + 12Vdc : 20ms Maximum
 + 5Vsb : 25ms Maximum
 - 12Vdc : 20ms Maximum

4.5.OVER VOLTAGE PROTECTION

Voltage Source	Protection Point
+3.3V	3.76V-4.8V
+5V	5.6V-7.0V
+12V1~+12V6	13.0V-15.6V

4.6.OVER CURRENT PROTECTION

OUTPUT VOLTAGE	Max. over current limit
+3.3V	50.0A
+5V	45.0A
+12V1~+12V6 DC	40.0A

4.7.SHORT CIRCUIT PROTECTION

Output short circuit is defined to be a short circuit load of less than 0.05 ohm.

In the event of an output short circuit condition on +3.3V, +5V or +12V output, the power supply will shutdown and latch off without damage to the power supply. The power supply shall return to normal operation after the short circuit has been removed and the power switch has been turned off for no more than 2 seconds.

In the event of an output short circuit condition on -12V output, the power supply will not be damaged. The power supply shall return to normal operation as soon as the short circuit has been removed. and the power switch has been turned off for no more than 2 seconds.

4.8 OVER TEMPERATURE PROTECTION

The power supply includes an over-temperature protection sensor , which shuts down the power supply at a preset temperature point . The OTP can occur as a result . of a high ambient temperature , an abnormal load operation , an internal component failure , or a cooling fan failure , The OTP shall not be actuated at the rated load at an ambient temperature of 40 deg C . The OTP trip point is set when the sensor temperature exceeds 75 deg C with out damage

4.9 OVER POWER PROTECTION

The power supply shall be shutdown before the output power reached 130% of rated max power

4.10 POWER SIGNAL

POWER GOOD @ 115/230V, FULL LOAD	100 –500mSec.
POWER FAIL @115/230V, FULL LOAD	1 mSec. minimum

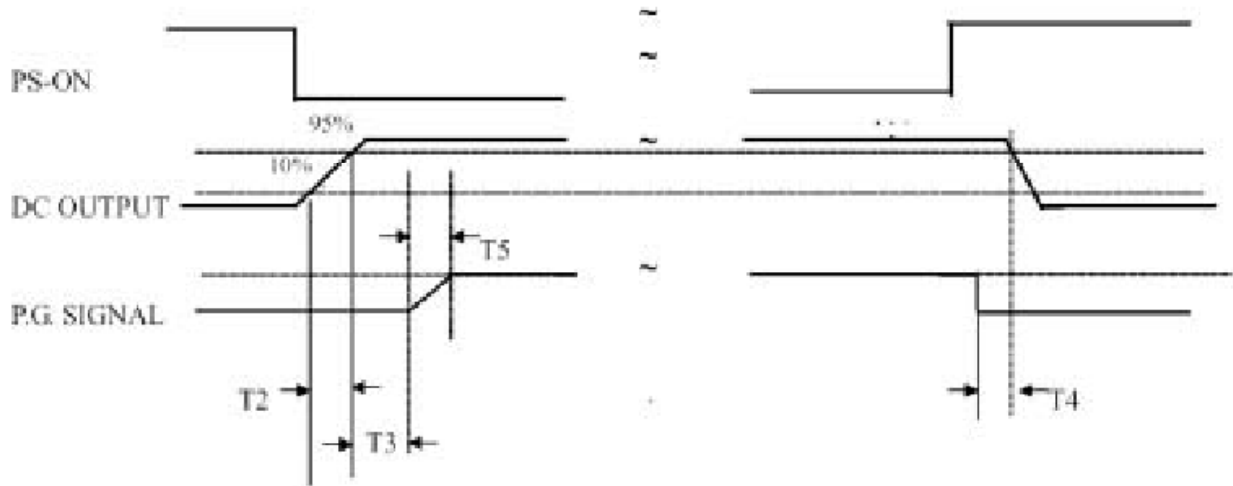


Figure 1

T2 : RISE TIME < 20mS

T3 : POWER GOOD DELAY TIME 100mS-500mS

T4 : POWER FAIL DELAY TIME > 1mS

T5 : POWER GOOD RISE TIME ≤ 10mS

5.0 FAN NOISE REQUIREMENTS

5.1. The subject power supply is cooled by a self-contained, 135mm, 12VDC fan.

5.2. FAN NOISE

AC INPUT	FULL (Table.1)	TYPICAL (Table.1)	LIGHT (Table.1)
115V	NOISE ≤ 45dB	NOISE ≤ 30dB	NOISE ≤ 25dB
230V	NOISE ≤ 45dB	NOISE ≤ 30dB	NOISE ≤ 25dB

6.0 ENVIRONMENTAL REQUIREMENTS

The power supply will be compliant with each item in this specification for the following Environmental conditions.

6.1. TEMPERATURE RANGE

Operating	0 to +40 deg. C
Storage	-20 to +80 deg. C

6.2. HUMIDITY

Operating	5 –95% RH, Non-condensing
Storage	5 –95% RH, Non-condensing

6.3. VIBRATION

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

Vibration Operating – Sine wave excited, 0.25 G maximum acceleration, 10-250 Hz swept at one octave / min. Fifteen minute dwell at all resonant points, where resonance is defined as those exciting frequencies at which the device under test experiences excursions two times large than non-resonant excursions.

Plane of vibration to be along three mutually perpendicular axes.

6.4 GROUND LEAKAGE CURRENT

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

6.5 RELIABILITY

The power supply reliability, when calculated by MIL-HDBK-217;latest revision, are exceed 100,000 hours with all output at maximum load and an ambient temperature of 25°C.

6.6 DIELECTRIC STRENGTH

Primary to Frame Ground : 1800 Vac for 1 sec.

Primary to Secondary : 1800Vac for 1 sec

6.7 INSULATION RESISTANCE

Primary to Frame Ground : 20 Meg.ohms Minimum

Primary to Secondary : 20 Meg.ohms Minimum

7.0. LABELLING

Label marking will be permanent, legible and complied with all agency requirements.

7.1. MODEL NUMBER LABEL

Labels will be affixed to the sides of the power supply showing the following:

- Manufacturer's name and logo.
- Model no., serial no., revision level, location of manufacturer.
- The total power output and the maximum load for each output.
- AC input rating.