Applications Information

Power Supply Characteristics

886LCD-M/mITX ULV@800MHz

This note describes the power supply characteristics of the 886LCD-M/mITX board including static/dynamic power consumption and power-on load characteristics.

Revision history

Revision	Date	Description/changes
0	27-Jun-2006	Initial 868LCD-M/mITX ULV Power Characteristics

Power Supply Characteristics of 886LCD- M/mITX ULV@800MHz

In order to ensure safe operation of the board, the ATX power supply must monitor the supply voltage and shut down if the supplies are out of range – refer to the hardware manual for actual power specification.

The 886LCD-M/mITX board is powered through the ATX connector and the additional 12V separate supply for CPU as specified in the ATX specification; besides this the power supplied to the board must be within the ATX specification.

The requirements to the supply voltages are as follows:

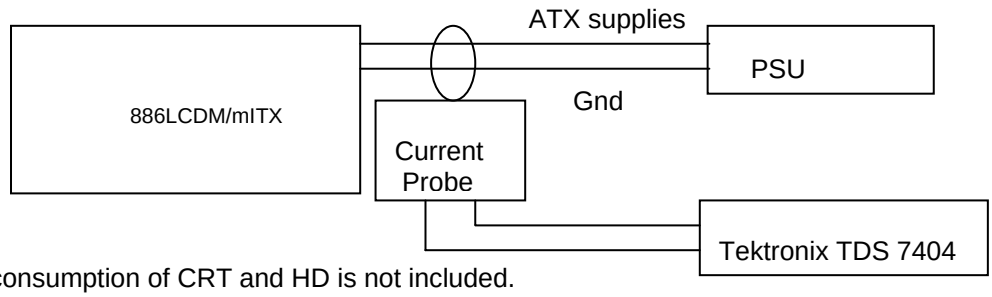
Supply	Min	Max	Note
Vcc3	3.168V	3.432V	Should be ±4% for compliance with the ATX specification
Vcc	4.75V	5.25V	Should be ±5% for compliance with the ATX specification
+12V	11.4V	12.6V	Should be ±5% for compliance with the ATX specification
–12V	–13.2V	–10.8V	Should be ±10% for compliance with the ATX specification
-5V	-5,50V	-4.5V	Not required for the 886LCD/mITX board
5VSB	4.75V	–5.25V	Should be ±5% for compliance with the ATX specification

Test system configuration

The following items were used in the test setup:

1. 886LCD_M/mITX board mounted w/ 800MHz (ULV) Pentium M & 512MB DDR Ram
2. 12V active cooler
3. PS/2 keyboard & mouse
4. CRT
5. HD
6. ATX PSU
7. Tektronix TDS 7404, P6345 probes
8. Fluke Current Probe 80i-100S AC/DC

Test setup



Note: The Power consumption of CRT and HD is not included.

Static Power Consumption

The power consumption of the 886LCD_M/mITX Board is measured under:

1- DOS, idle, mean
2- WindowsXP, Running 3DMARK & CPU BURN, mean
3- WindowsXP, Running 3DMARK & CPU BURN, peak
4- S1, mean
5- S3, mean
6- S4, mean
7- Inrush, peak

886LCD-M/mITX

DOS, Idle, mean

Supply	Current draw	Power consumption
+12V	0.13A	1.56W
+5V	1.89A	9.45W
+3V3	0.51A	1.683W
-12V	0.07A	0.84W
5VSB	0.06A	0.03W
Total	X	13.563W

Windows XP, 3DMARK2000 & CPUBURN, mean

Supply	Current draw	Power consumption
+12V	0.15A	1.8W
+5V	2.41A	12.05W
+3V3	0.54A	1.782W
-12V	0.07A	0.84W
5VSB	0.06A	0.03W
Total	X	16.502W

Windows XP, 3DMARK2000 & CPUBURN, peak

Supply	Current draw	Power consumption
+12V	0.22A	2.64W
+5V	3.32A	16.6W
+3V3	0.62A	2.046W
-12V	0.08A	0.96W
5VSB	0.08A	0.40W
Total	X	22.646W

S1, mean

Supply	Current draw	Power consumption
+12V	0.14A	1.68W
+5V	1.55A	7.75W
+3V3	0.38A	1.254W
-12V	0.06A	0.72W
5VSB	0.06A	0.03W
Total	X	12.688W

S3, mean

Supply	Current draw	Power consumption
+12V	X	0W
+5V	X	0W
+3V3	X	0W
-12V	X	0W
5VSB	0.18A	0.9W
Total	X	0.9W

S4, mean

Supply	Current draw	Power consumption
+12V	X	0W
+5V	X	0W
+3V3	X	0W
-12V	X	0W
5VSB	0.18A	0.9W
Total	X	0.9W

Inrush, peak

Supply	Current draw
+12V	0.8A
+5V	3.50A
+3V3	3.46A
-12V	N/A
5VSB	2.01A