Applications Information

Power Supply Characteristics

986LCD-M/mITX

This note describes the power supply characteristics of the 986LCD-M/mITX board including static/dynamic power consumption and power-on load characteristics.

Revision history

Revision	Date	Description/changes
A	21-Sep-2006	Added S1,S3 & S4 Measurements
0	22-Jun-2006	Initial 968LCD-M/mITX Power Supply characteristics

Power Supply Characteristics of 986LCD-M/mITX

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 986LCD/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:

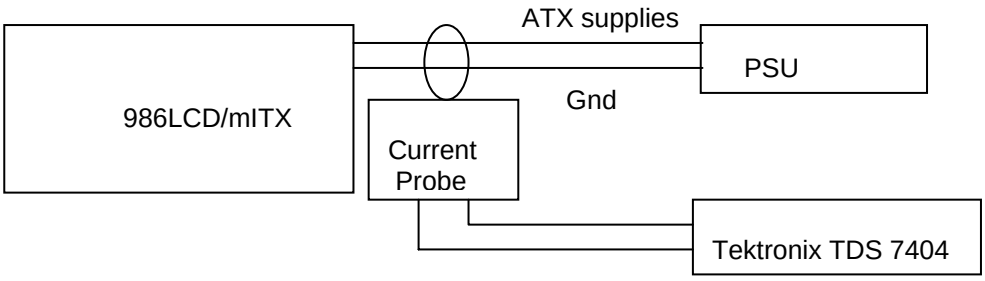
Supply	Min	Max	Note
Vcc3	3.168V	3.432V	Should be ±4% for compliance with the ATX specification
Vcc	4.75V	5.25V	Should be ±5% for compliance with the ATX specification
+12V	11.4V	12.6V	Should be ±5% for compliance with the ATX specification
–12V	–13.2V	–10.8V	Should be ±10% for compliance with the ATX specification
-5V	-5,50V	-4.5V	Not required for the 986LCD/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. 986LCD/mITX board mounted w/ 2.0GHz Core Duo (T2500) & 1GB DDR2 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, Fan and HD is not included.

Power Consumption Tests

The power consumption tests performed on the 986LCD/mITX Board are as follow:

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

The results are to be found on the next pages.

986LCD-M/mITX Power Consumption Test results

DOS, Idle, mean

Supply	Current draw	Power consumption
+12V	0.88A	10.56W
+5V	1.48A	7.4W
+3V3	1.22A	4.026W
-12V	0.05A	0.6W
5VSB	0A	0W
Total	X	22.586W

Windows XP, 3DMARK2000 & CPUBURN, mean

Supply	Current draw	Power consumption
+12V	2.34A	28.08W
+5V	1.73A	8.65W
+3V3	1.22A	4.026W
-12V	0.05A	0.6W
5VSB	0A	0W
Total	X	41.356W

Windows XP, 3DMARK2000 & CPUBURN, peak

Supply	Current draw	Power consumption
+12V	2.67A	32.04W
+5V	2.48A	12.4W
+3V3	1.28A	4.224W
-12V	0.08A	0.96W
5VSB	0A	0W
Total	X	49.624W

S1, mean

Supply	Current draw	Power consumption
+12V	0.83A	9.96W
+5V	1.17A	5.85W
+3V3	1.21A	3.99W
-12V	0.03A	0.36W
5VSB	0A	0W
Total	-	20.16W

S3, mean

Supply	Current draw	Power consumption
+12V	0	0W
+5V	0	0W
+3V3	0	0W
-12V	0.03A	0.36W
5VSB	0.64A	3.68W
Total	-	4.04W

S4, mean

Supply	Current draw	Power consumption
+12V	0	0W
+5V	0	0W
+3V3	0	0W
+-12V	0	0W
5VSB	0.64A	3.2W
Total	-	3.2W

Inrush, peak

Supply	Current draw
+12V	5.08A
+5V	2.48A
+3V3	3.52A
-12V	0.3A
5VSB	2.92A