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POWER SYSTEM ARCHITECTURE

AC ADAPTER
IN
PG 32

INRUSH LIMITER
+24V_PBUS
PG 32

BUCK
VCC REGULATOR
(LTC1625)
PG 33

RUN 5V - 3V
MAIN 3V/5V
DC/DC
(LTC3707)
PG 34
STBYMD
SHUTDOWN: STOPPED
SLEEP: RUNNING
RUN: RUNNING

3S 2P 18650 CELLS
BATTERY CHARGER
(MAX1772)
PG 32

+3V_PMU
LDO
PG 33

+5V_MAIN
+3V_MAIN
+1.5V_MAIN
+2.5V_MAIN
+4.6V_BU
+5V_SLEEP
+3V_SLEEP
+2.5V_SLEEP
+1.5V_SLEEP
+5V_MAIN
+3V_MAIN
+1.5V_MAIN
+5V_MAIN
+3V_MAIN
+1.5V_MAIN

DIMENSIONS
OFTHT
UNITS

DC/DC (LTC3411)
PG 36

SHUTDOWN: STOPPED
SLEEP: RUNNING
RUN: RUNNING

DC/DC (LTC1778)
PG 35

SHUTDOWN: STOPPED
SLEEP: D3COLD
RUN: RUNNING

DC/DC (LTC1625)
PG 33

SHUTDOWN: STOPPED
SLEEP: RUNNING
RUN: RUNNING

MAXBUS
DC/DC (MAX1717)
PG 36

SHUTDOWN: STOPPED
SLEEP: STOPPED
RUN: RUNNING

POWER BLOCK DIAGRAM

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APPLE COMPUTER INC.

WEBSITE: www.vinafix.vn
**PCB SPECS**

- **Thickness:** 1.2 MM / 0.047 IN
- **1/2 oz Cu Thickness:** 0.7 MILS
- **1.0 oz Cu Thickness:** 1.4 MILS
- **Impedance:** 50 OHMS +/- 10%
- **Dielectric:** FR-4
- **Layer Count:** 10
- **Signal Trace Width:** 4 MILS
- **Signal Trace Spacing:** 4 MILS
- **Prepreg Thickness:** 2-3 MILS

SEE PCB CAD FILES FOR MORE SPECIFIC INFO.

**Board Stack-Up and Construction**

<table>
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<tr>
<th>Layer</th>
<th>Description</th>
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<tr>
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<td>Prepreg (3 MIL)</td>
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<td>3</td>
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<td>9</td>
<td>Prepreg (3 MIL)</td>
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<tr>
<td>10</td>
<td>Prepreg (3 MIL)</td>
</tr>
</tbody>
</table>

**Board Holes**

- **Chassis Mounts**
- **Asics Heatsink Mounts**
- **Inverter**
- **Mech. Holes**
- **Ground Vias**

**Board Information**

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DRAWING NUMBER

REV.

SCALE

SIZE

1-9/16 INCH MINIMUM/30MM MINIMUM VISIBLE IN THIS DRAWING

12345678
Weak pulldowns ensure CKEs stay low after 2.5V I/O to Intrepid shuts off.
SEL = LOW; HOST = B PORT; A PORT = 100OHM TO GND
SEL = HIGH; HOST = A PORT; B PORT = 100OHM TO GND
NOTE: The SODIMM connector footprint has a through-hole slot on the PCB for additional mounting.
AGP PULL-UPS/PULL DOWNS

AGP I/O REFERENCE

SERIES RESISTORS FOR BOOTROM CONTROL SIGNALS
PLACE CLOSE TO INTREPID SIDE

INTREPID AGP/PCI

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GPU PLL - 1.8V

MEMORY CORE - 2.5V

LVDS PLL - 1.8V

MEMORY I/O

1.8V DVO POWER (EXT. TMD)

3.3V IO SUPPLY

M11 POWER

GPU POWER SOURCES - 1.5V, 1.8V, 2.5V & 3.3V
LEFT LIGHT SENSOR CONNECTOR

LMU/RIGHT SENSOR CONNECTOR

SLEEP LED

KEYBOARD PULLUPS

USB Trackpad Connector

DEBUG HELPERS

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<th>Propagation Delay</th>
<th>Minimum Spread</th>
<th>Maximum Spread</th>
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**CLOCK LINE CONSTRAINTS**

**INTEGRIC CLOCKS**

**MIL 4 OSC**

**CRYSTAL**

**SOUND ETHERNET**

**FIREWIRE**

**SIGNAL CONSTRAINTS - PAGE**

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*To modify the documents in accordance with the instructions provided.*

*For any questions or comments, please contact us.*
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### Functional Test Points

#### Scan/Test

- B
- S-Video
- PWR/GND
- INT I2C

#### Functional Test Points

- PROBES ARE ON BOTTOM SIDE. MINIMUM PAD/HOLE SIZE IS 25 MIL.

#### LVDS/L0P 1000

- TV_Y TRUE 2000
- LMD/ALS

#### LVDS_L2P 1000

- TV_GND2 2000

#### CBUS_DET_2_L 2000 TRUE

- +2_5V_MAIN
- +24V_PBUS TRUE
- INT_I2C_CLK1 TRUE
- INT_TST_MONOUT_TP TRUE
- CPU_CHKSTP_OUT_L TRUE
- JTAG_CPU_TRST_L TRUE
- JTAG_CPU_TDO_TP TRUE
- CPU_HRESET_L TRUE
- JTAG_ASIC_TRST_L TRUE
- JTAG_ASIC_TMS TRUE

#### BATTERY

- OPTICAL
- BATTERY

#### Ethernet

- LVDS
- L10
- INVERTER

#### Firewire

- USB
- BT. USB
- WIRELESS

#### Trackpad

- MODEM/SERIAL
- KEYBOARD

#### Firewire (CONT.)

- DC PWR IN
- EIDE_OPTICAL_CS1_L
- EIDE_OPTICAL_DATA<0..15>

#### Miscellaneous

- MISC.
- SCALE
- SIZE

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REVISION HISTORY

EVT2 RELEASE

08/13/04 - 1. CHANGE EXT_TMDS SWING RESISTORS TO 510 OHM (R869, R876), REMOVE S1_RESET PULL HIGH
2. CHANGE RGB SIGNAL IMPEDANCE (R341, R342, R346, R456, R458, R462)
3. ADD 2 RESISTORS (NO STUFF) BETWEEN FAN_PWM AND FAN_PWM_L OF FAN1 AND FAN2
4. CHANGE 2 CAPS (C233, C803) TO IMPROVE FEEDBACK PROTECTION AND PBUS CURRENT LIMIT CIRCUIT
5. MODIFY CPU_VCORE VID AND CPU_VCORE SETTING

08/16/04 - 1. MODIFY CPU_AVDD SETTING
08/20/04 - 1. ADD TRACKPAD POWER +5V_TPAD CONTROL CIRCUIT
09/01/04 - 1. CHANGE ALL POINTS INTO SMALL ONES
09/02/04 - 1. MODIFY CPU_VCORE VID AND CPU_VCORE SETTING AGAIN
2. MODIFY CPU_AVDD SETTING AGAIN
3. CHANGE INT TMDS DAMPING RESISTORS (R760-R767) TO 0 OHM
09/03/04 - 1. ADD MMM CIRCUIT, ARRANGE 2 INTREPID GPIOS FOR MM_FFIRQ_L, MM_SIRQ_L AND PULL UP RESISTORS R801, R802
2. ADD R803 BETWEEN D6 AND DCDC_IN
3. ADD R804 AND SUPERCAP C692 ON +4.6V_BU
4. CHANGE TRACKPAD CONNECTOR J10 AND PIN OUT
09/06/04 - 1. ADD EMI SOLUTION L12
09/07/04 - 1. CHANGE TRACKPAD CONNECTOR PIN OUT
09/08/04 - 1. ADD BATTERY CURRENT SENSOR CIRCUIT
09/09/04 - 1. ADD EMI SOLUTION R816; ADD MMM RESET CIRCUIT
09/10/04 - 1. MODIFY FIREWIRE PORTO POWER CIRCUIT
2. ADD NET FROM BATTERY CURRENT SENSOR CIRCUIT TO PMU
09/13/04 - 1. ADD CURRENT LIMITER R821 BETWEEN PMU(029) AND U33
2. ADD PULL UP AND PULL DOWN RESISTORS FOR MMM SENSOR

DVT RELEASE

09/27/04 - 1. ADD ST MMM SENSOR CIRCUIT
10/14/04 - 2. ADD FIREWIRE POWER PROTECT CIRCUIT
10/15/04 - 3. CHANGE EXT_TMDS TERMINAL RESISTERS AND V SWING RESISTOR
10/22/04 - 4. CHANGE FAN CONTROLLER FROM ADT7460 TO ADT7467
11/02/04 - 5. CHANGE BBANG IC TO ATTINY2313

PVT RELEASE

12/17/04 - 1. REMOVE ALL OPEN JUMPER
12/17/04 - 2. SCHEMATIC RELEASE FOR PRODUCTION

PVT RELEASE (REV C)

02/11/05 - 1. CHANGE FW F3 TO 740S0018

PRODUCTION RELEASE (REV D)

04/12/05 - 1. ADD MPU R1.4
2. CHANGE B8E1111 B1(338S0223) TO PRIMARY AND B0 (338S0079) TO SECONDARY

PRODUCTION RELEASE (REV E)

08/24/05 - 1. ADD MPU R1.5 (337S3217 AND 337S3218)
08/25/05 - 1. ADD 341S1792 (BOOTROM,4.9.1F3)