3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.

* PAGES WHERE MASTER PAGE IS IN A DIFFERENT SCHEMATIC
<table>
<thead>
<tr>
<th>REF DES</th>
<th>PART NUMBER</th>
<th>DESCRIPTION</th>
</tr>
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<tbody>
<tr>
<td>U2900</td>
<td>603-6016</td>
<td>PCB,SCHEM,MLB</td>
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<tr>
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<td>603-6015</td>
<td>IC,FLASH,1MX8,3.3V,90NS</td>
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<td>U3343S0321</td>
<td>343S0284</td>
<td>BARCODE LABEL, MLB, Q45</td>
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<td></td>
<td>825-6447</td>
<td>HEAT SINK ASSEMBLY 20 IN</td>
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<tr>
<td></td>
<td>341T1395</td>
<td>HEAT SINK ASSEMBLY 17 IN</td>
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<tr>
<td></td>
<td>341T1366</td>
<td>PURCH ASSY, SMU BIG</td>
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</tbody>
</table>

**TABLE 5 HEAD**

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<tr>
<th>SIZE</th>
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<td>103</td>
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**COMMENTS:**

**APPLE COMPUTER INC.**
PWM INPUT FROM SMU

PLACE THESE PARTS CLOSE TO SMU IC

MAKE_BASE=TRUE

C2118 0.47UF

C2106 603 0.47UF 1/16W

RGB_LED 402 5%

R2117 200K 1/16W

R2110 RGB_LED

R2113 200K

R2104 25.5

R2105 39K

Q2114

Q2108

Q2102 2N3904

SM

SM-1

RES, 18.2 OHM, 1%, 402

R2100,R2113,R2126

R2106 56.2 MF

R2103 1K

CERM

CERM

SYS_LED

SYS_LED_IN

400-OHM-EMI

WHITE_LED

WHITE_LED

QTY

REFERENCE DESIGNATOR(S)

SYSTEXT_5_ITEM

SYSTEXT_5_ITEM

SYSTEXT_5_ITEM

SYSTEXT_5_ITEM

TOTAL COPY EXCLUDING COMMENT + ITS MICROdots
NOTE:

SET OUTPUT=1.5VDC FOR U3LITE CORE

VDD=VREF+(R2203+R2205)/(R2205+1.5VDC)

7.73A OF PEAK CURRENT DRAW ON PCORE_NB

VOUT=VREF*(R2203+R2205)/R2205=1.53VDC

VOLTAGE=1.2V

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APPAREL COMPUTER INC.
Power aliases required by this page:
- _PPVPCORE_PWRON_SB (1.2V)

Power aliases required by this page:
- _PPVPCORE_PWRON_SB (1.2V)

**NOTE:** PCI pads use the VDD supply to meet different drive timing
appropriate PCI bus voltage and spec for 5V vs. 3.3V operation.

Shasta max (est 06/30/03) current:
- Digital - 1.2V - 950 mA (1175 mW)
- VDDPs    - 2.5V - 100 mA (250 mW)
- I/O      - 3.3 - 220 mA (770 mW)
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### RAM

<table>
<thead>
<tr>
<th>Signal</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>RAM_A_R&lt;8&gt;</td>
<td>Row Address Input</td>
</tr>
<tr>
<td>RAM_RAS_L_R</td>
<td>Row Active Select</td>
</tr>
<tr>
<td>RAM_CS_L_R&lt;8&gt;</td>
<td>Chip Select</td>
</tr>
<tr>
<td>RAM_DQ_R&lt;39&gt;</td>
<td>Data Output</td>
</tr>
<tr>
<td>RAM_CKE&lt;5&gt;</td>
<td>Clock Enable</td>
</tr>
<tr>
<td>RAM_DQ&lt;36&gt;</td>
<td>Data Output</td>
</tr>
<tr>
<td>RAM_CLK_C_N_R</td>
<td>Clock</td>
</tr>
<tr>
<td>RAM_CLK_D_P</td>
<td>Clock</td>
</tr>
<tr>
<td>RAM_DQ&lt;125&gt;</td>
<td>Data Output</td>
</tr>
<tr>
<td>RAM_DQS&lt;0&gt;</td>
<td>Data Strobe/Output Shift</td>
</tr>
<tr>
<td>RAM_CLK_E_P</td>
<td>Clock</td>
</tr>
<tr>
<td>RAM_CLK_C_P_R</td>
<td>Clock</td>
</tr>
</tbody>
</table>

### ELECTRICAL_CONSTRAINT_SET

- **RAM_CAD SPACING IS 10MIL**

### SERIES_TERM

- **RAM_CLK**
- **RAM_CLK_C_R**
- **RAM_CLK0**
- **RAM_CLK1**
- **RAM_CLK2**
- **RAM_CLK3**
- **RAM_DQS1**
- **RAM_DQS2**
- **RAM_DQS3**
- **RAM_DQS4**
- **RAM_DQS5**
- **RAM_DQS6**
- **RAM_DQS7**
- **RAM_DQS8**
- **RAM_DQS9**
- **RAM_DQS10**
- **RAM_DQS11**
- **RAM_DQS12**
- **RAM_DQS13**
- **RAM_DQS14**
- **RAM_DQS15**

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PLACE R'S CLOSE TO MEMORY

<table>
<thead>
<tr>
<th>R5303</th>
<th>R5306</th>
<th>R5307</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16W</td>
<td>1/16W</td>
<td>1/16W</td>
</tr>
</tbody>
</table>

PLACE R'S CLOSE TO GFX

<table>
<thead>
<tr>
<th>R5303</th>
<th>R5306</th>
<th>R5307</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16W</td>
<td>1/16W</td>
<td>1/16W</td>
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</tbody>
</table>

PLACE R'S CLOSE TO RAM

<table>
<thead>
<tr>
<th>R5303</th>
<th>R5306</th>
<th>R5307</th>
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<tbody>
<tr>
<td>1/16W</td>
<td>1/16W</td>
<td>1/16W</td>
</tr>
</tbody>
</table>

FROM Q27 PAGE 24

FB TERMINATION

APPLE COMPUTER INC.
SDRAM_DDR_4MX32

C5434 0.1UF
C5430 0.001UF 50V
C5412 0.1UF 20%
C5432 0.001UF 50V

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HYNIX

REFERENCES

<table>
<thead>
<tr>
<th>PART NUMBER</th>
<th>DCX</th>
<th>DESCRIPTION</th>
<th>REFERENCE DESC</th>
<th>CRITICAL</th>
<th>NON OPTION</th>
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<tbody>
<tr>
<td>11232962</td>
<td>J11232962</td>
<td>SDRAM_DDR_4MX32_DDR, SDRAM_DDR, SDRAM_DDR_4MX32_DDR, SDRAM_DDR_4MX32</td>
<td>SDRAM_DDR_4MX32_DDR, SDRAM_DDR_4MX32, SDRAM_DDR, SDRAM_DDR_4MX32, SDRAM_DDR_4MX32_DDR, SDRAM_DDR</td>
<td>CRITICAL</td>
<td>NON OPTION</td>
</tr>
</tbody>
</table>
SAME CONNECTORS & PINOUT AS

Q37 HYPERTRANSPORT BETWEEN GOLEM AND K2

SAME CONNECTORS & PINOUT AS
ALL RESISTOR PACKS ARE 47 OHM 1/16W 5%

70x70, 66 holes, see number
AD<27> IS IDSEL FOR USB
AD<17> IS IDSEL FOR AIRPORT

PLACE CLOSE TO SHAFTS

PCI SERIES TERMINATION

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NOTE: This page does not specify a BootROM.

Power aliases required by this page:
- PP3V3_PCI

Signal aliases required by this page:

BOM options provided by this page:

- BootROM

NOTE: This page does not specify a BootROM.

Part numbers provided by this page:
- U7500

NOTE: This page does not specify a BootROM.

To intercept ROM chip select

Allows ROM override module

ROM_CS_L

1/16W
10K
5%

R7501

10K
1/16W
5%

ROM_WP_L

ROM_WE_L

ROM_OE_L

C7500

C7502

C7500

C7502

PCI_AD<20>

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PCI_AD<6>

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PCI_AD<3>

PCI_AD<2>

PCI_AD<1>

PCI_AD<0>

WP

WE

OE

CE

A20

A19

A18

A17

A16

A15

A13

A12

A11

A10

A9

A7

A6

A4

A3

A2

A1

A0

VPP VCC

FEPR-1MX8

11 31 30

U7500

90.0ns

OMIT

GND

TSOP
**Page Notes**

- **PowerPinouts Required by This Page:**
  - USB2_PWREN<2>
  - USB2_PWREN<1>
  - USB2_PWREN<0>
- **SIGNALS AlIAS Required by This Page:**
  - USB2_OC<4>
  - USB2_OC<3>
  - USB2_OC<2>
  - USB2_OC<1>
- **DIFFERENTIAL_PAIR AlIAS Required by This Page:**
  - USB2_PORT1_F
  - USB2_PORT1_P
  - USB2_PORT2_F
  - USB2_PORT2_N
  - USB2_PORT2_P
  - USB2_PORT2_N_F
  - USB2_PORT3_F
  - USB2_PORT3_P_F
- **RESISTORS:**
  - R9200 1/16W MF
  - R9211 1/16W MF
  - R9230 1/16W MF
- **CAPACITORS:**
  - C9214 150uF 402 15% 6.3V POLY
  - C9221 10uF 20% 1210 X5R 10% 16V
  - C9224 0.01uF 402 20% 50V
  - C9230 33pF 402 5%
  - C9231 33pF 402 5%
  - C9232 0.01uF 402 20%

**External USB Ports**

- **Q37 BlueTooth Connector**

**USB Device Interfaces**

- **NOTICE OF PROPRIETARY PROPERTY**
  - APPLE COMPUTER INC.
  - 051-6482

**Miniaturization Notice:**

- MINIATURE SIZE

**Symmetry Indications:**

- LEFT TO RIGHT
  - SMT
  - NO STUFF

**Symbolic Indications:**

- GND_USB2_PORT3
  - GND_USB2_PORT2
  - GND_USB2_PORT1
  - GND_CHASSIS_USB

**Electrical Constraints Provided by This Page:**

- MIN_NECK_WIDTH=20MIL
  - MIN_LINE_WIDTH=25MIL
  - VOLTAGE=0V

**NeoBorg Implementation Notes:**

- This design does not provide power control on USB ports 0-4. Separate boundary modules will indicate single-pin connections.

**Power Pinouts:**

- USB2_PWREN<2>
- USB2_PWREN<1>
- USB2_PWREN<0>

**Signal Pinouts:**

- USB2_OC<4>
- USB2_OC<3>
- USB2_OC<2>
- USB2_OC<1>
MicroDash Modem Connector

Page Notes

Power aliases required by this page:
- _PP3V3_PWRON_MODEM

Signal aliases required by this page:

94 _PP3V3_PWRON_MODEM
76 76 94 25 6 6 6 6 6 6 6 6 6 6 231 1 1
29 - AC97_MSTRCLK
21 - 3.3Vmain
11 - CD_RIGHT
19 - GND
17 - 3.3Vaux
25 - AC97_RESET#
5 - AUXA_RIGHT
3 - GND
7 - AUXA_LEFT
1 - MONO_OUT/PC_BEEP

From Intel Mobile Audio/Modem
Daughter Card Specification
Rev 1.0, February 22, 1999

Modem Interface