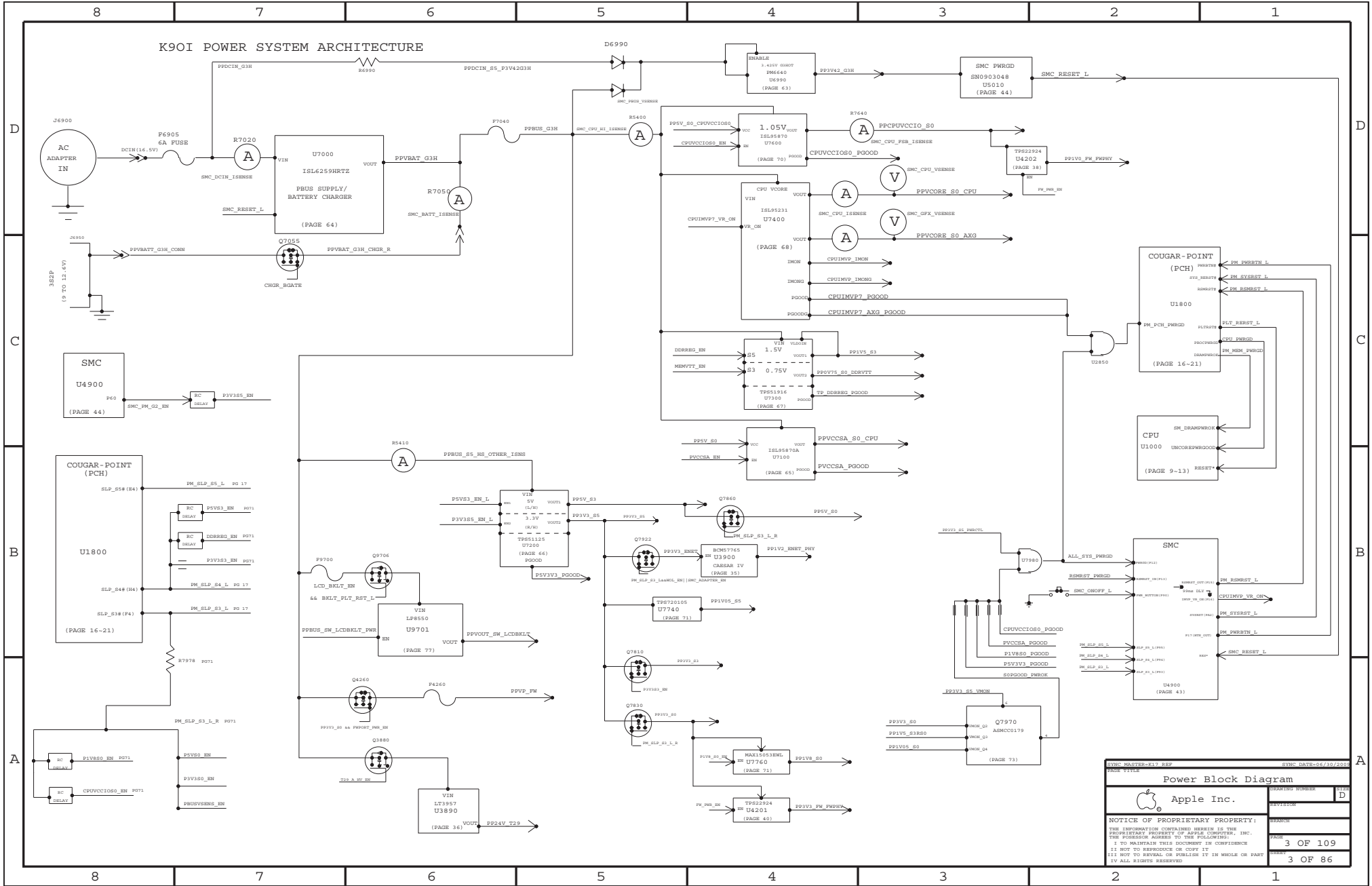
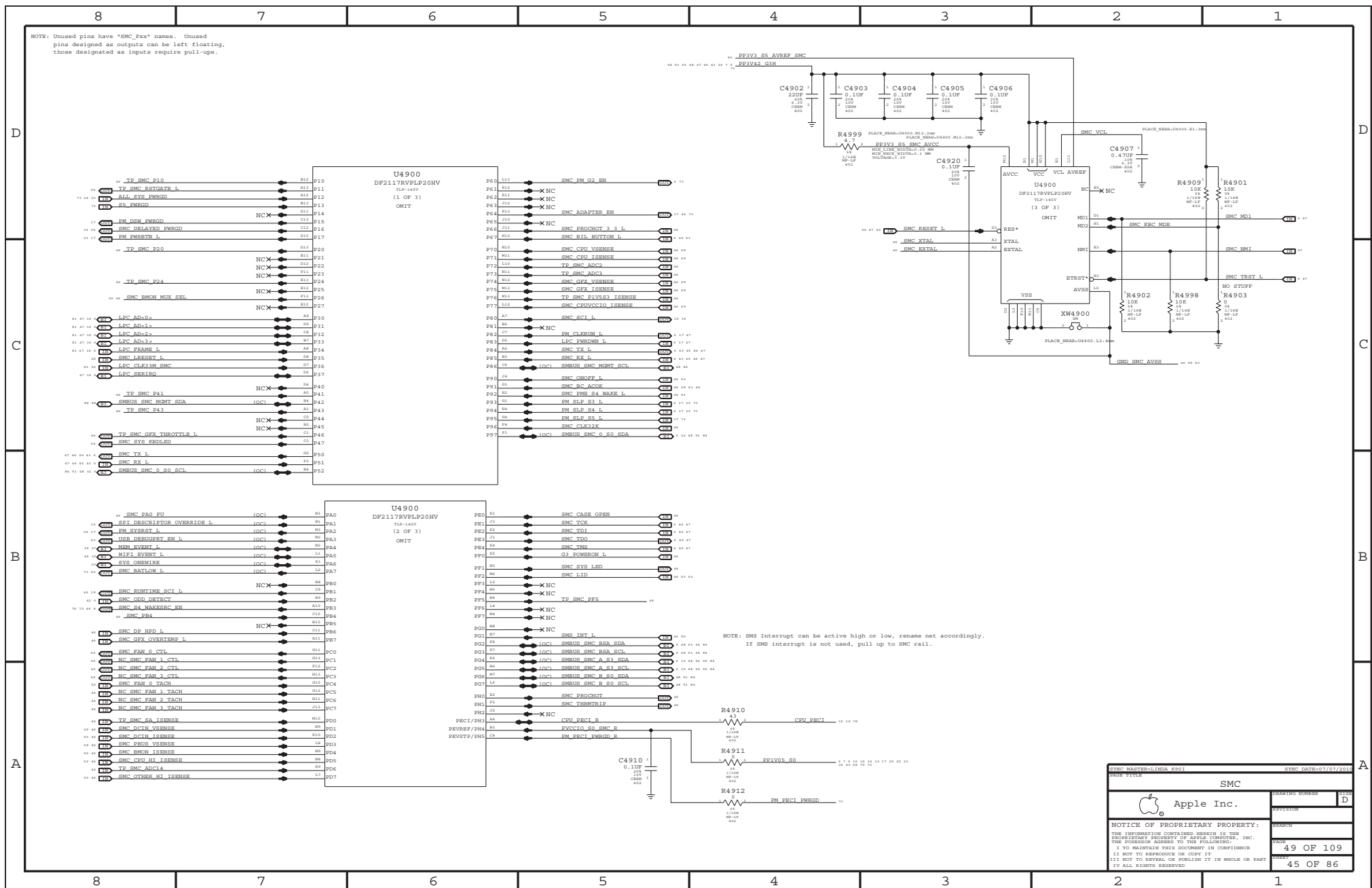
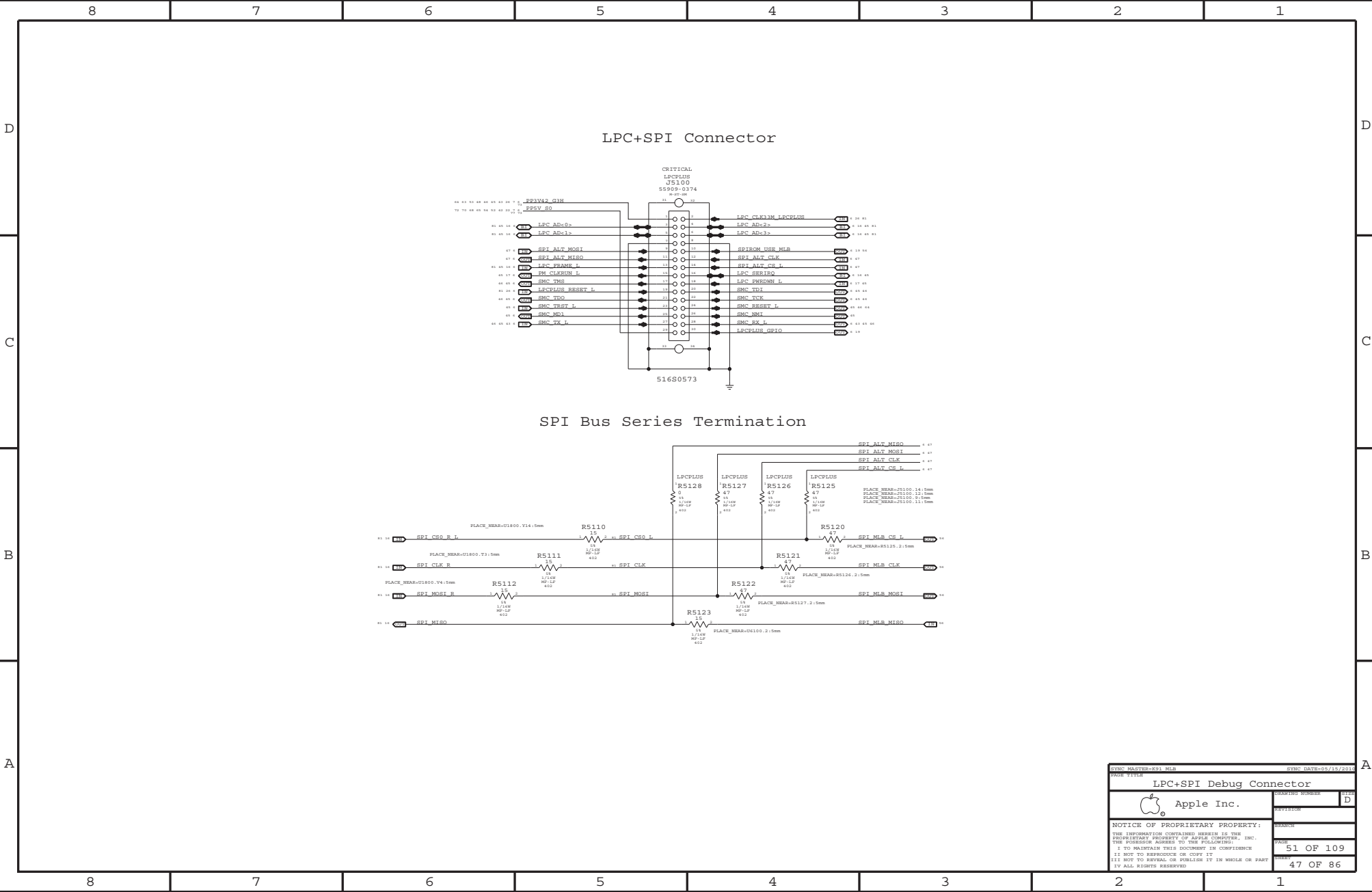


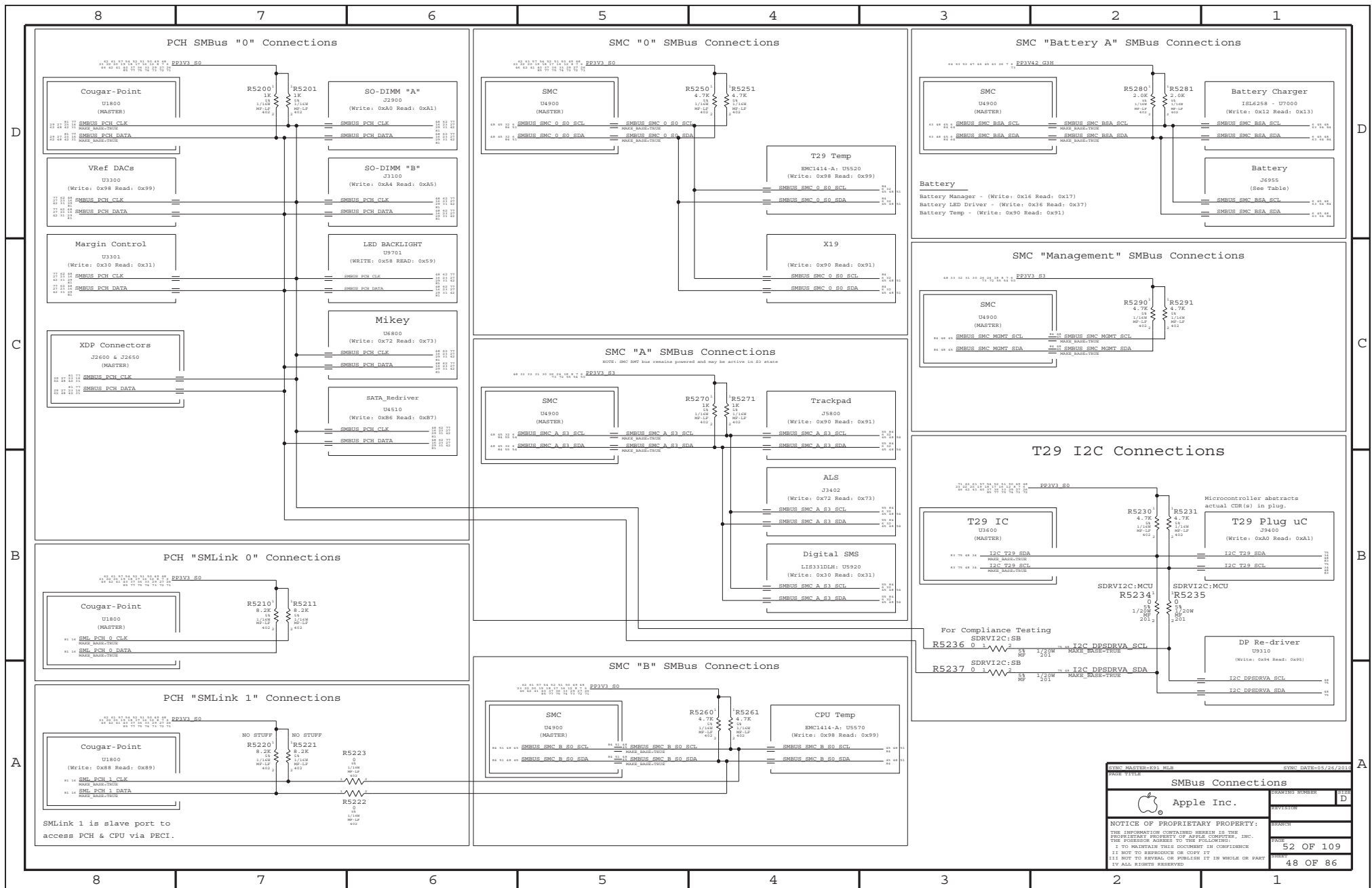
K90I POWER SYSTEM ARCHITECTURE



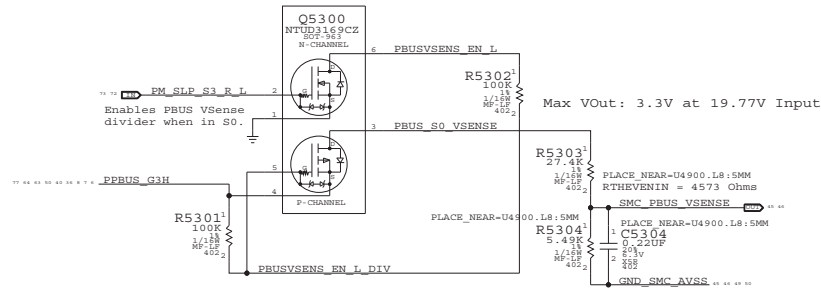
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| SYNO-MASTED-K17-BEP | | SYNO-DATE-06/10/2003 | |
| PAGE TITLE | | | |
| Power Block Diagram | | | |
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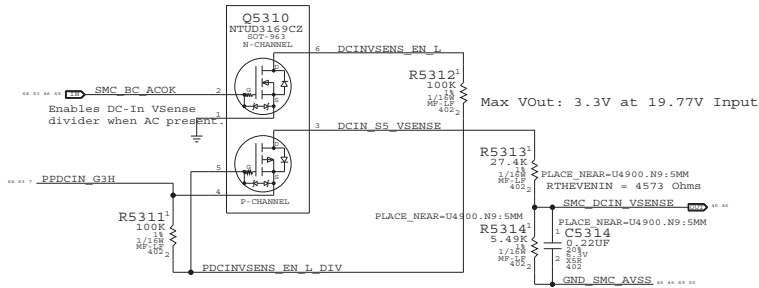




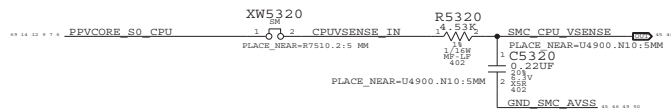
PBUS Voltage Sense Enable & Filter



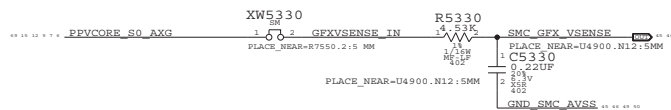
DC-In Voltage Sense Enable & Filter



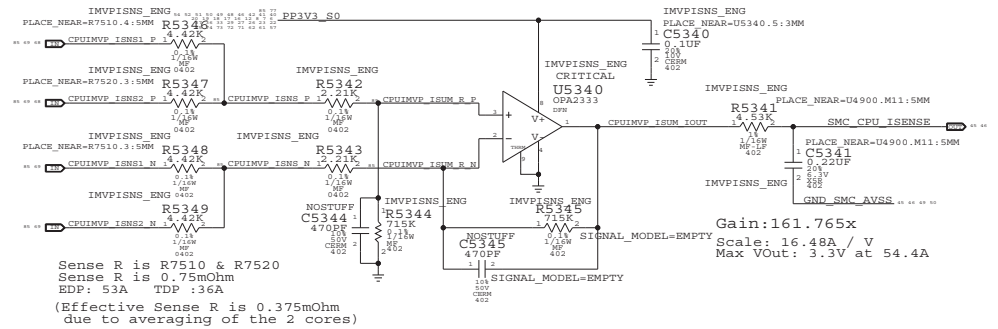
CPU Vcore Voltage Sense / Filter



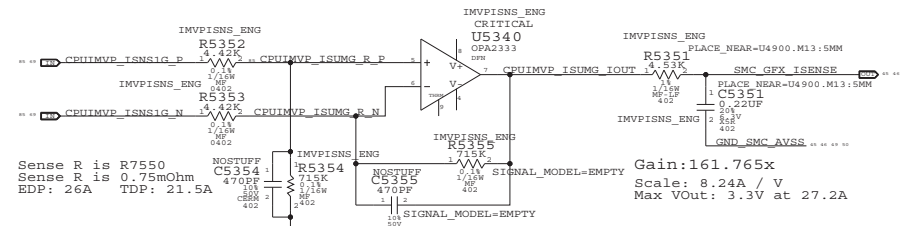
GFX/IG Vcore Voltage Sense / Filter



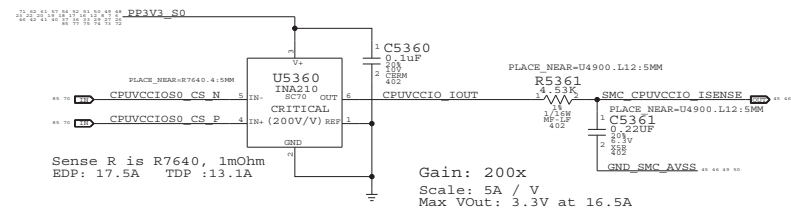
CPU VCore Load Side Current Sense / Filter



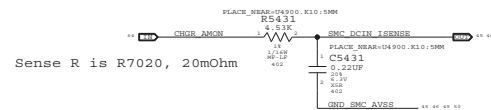
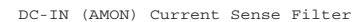
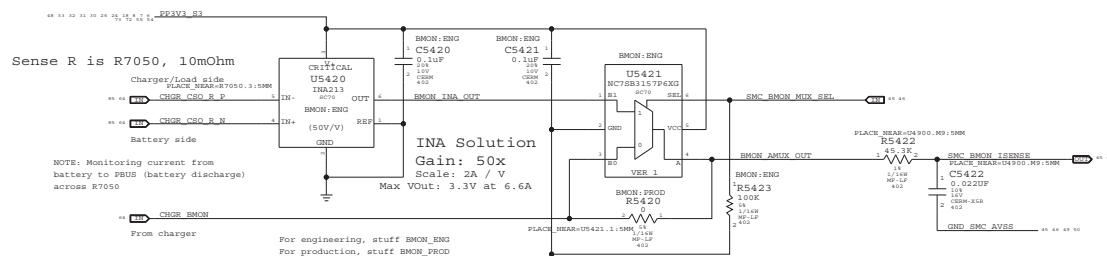
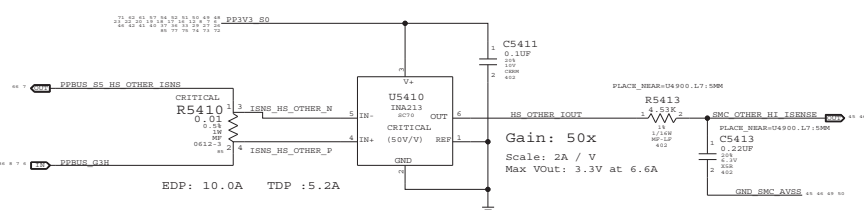
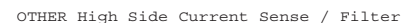
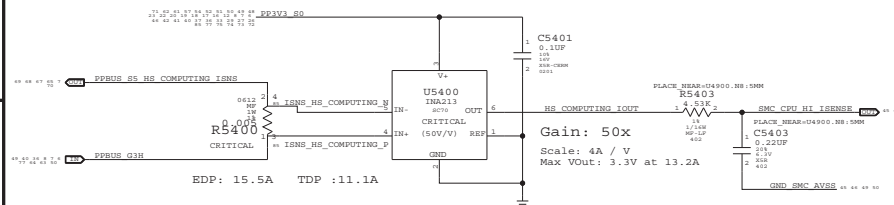
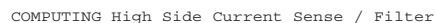
GFX/IG VCore Load Side Current Sense / Filter



CPU 1.05V VCCIO Current Sense / Filter




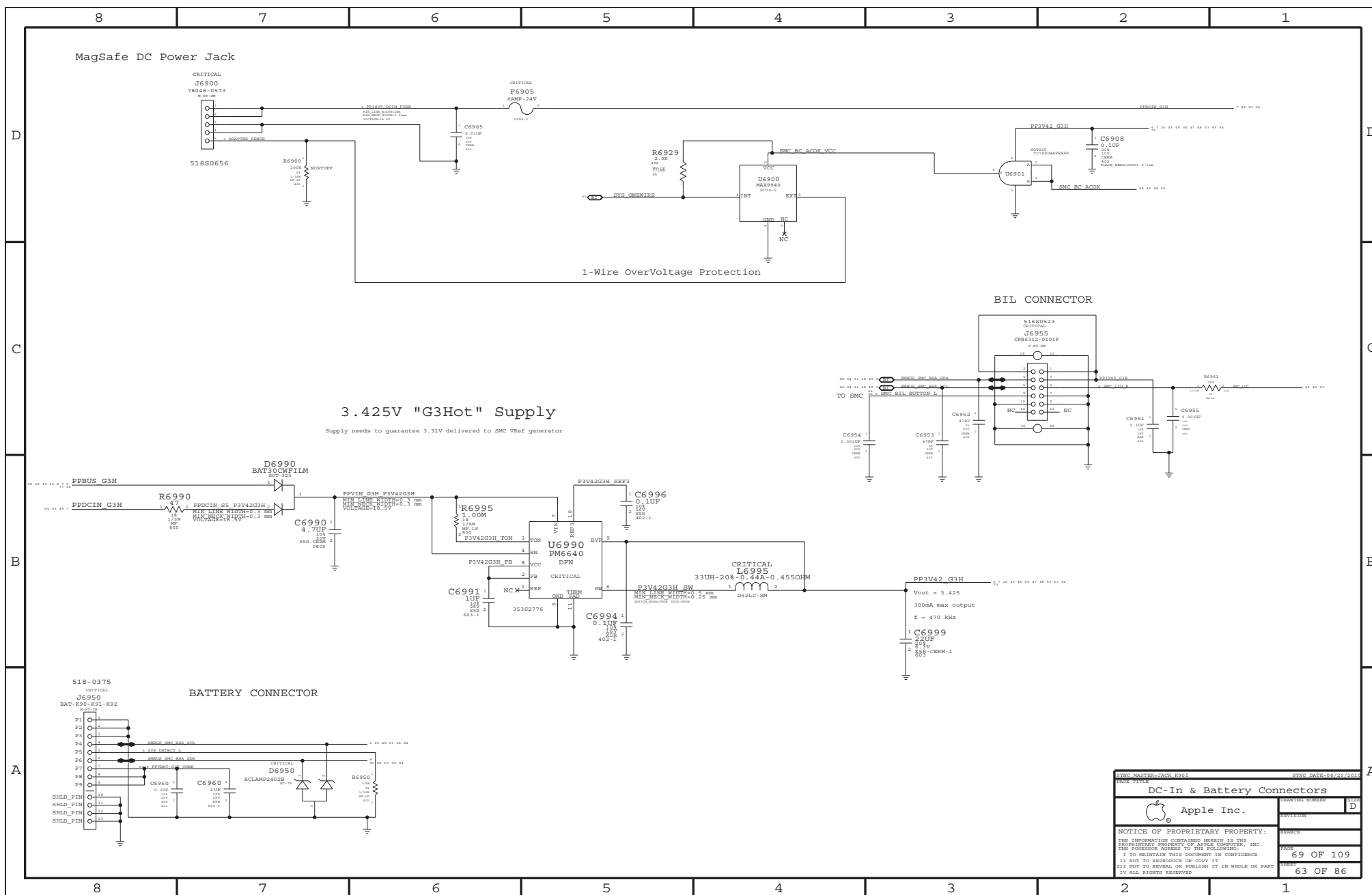
| | | | |
|---|--|-----------------------|-----------|
| SYNC MASTER: LINDA K901 | | SYNC DATE: 10/27/2010 | |
| Voltage & Load Side Current Sensing | | REVISION | REV D |
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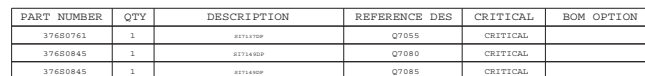


INA (Engineering) Solution
Gain: 50x
Scale: 2A / V
Max VOut: 3.3V at 6.6A

Charger BMON (Production) Solution
ISL6259 Gain: 36x
Scale: 2.78A / V
Max VOut: 3.3V at 9.167A

| | | | |
|---|--|------------------------|--|
| SYNCH MASTER-LINKA K901 | | SYNCH DATE: 06/22/2011 | |
| MODE TYPE | | | |
| <h1>High Side Current Sensing</h1> | | | |
|  Apple Inc. | | DRAWING NUMBER | |
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| PAGE | | 54 OF 109 | |
| SERIES | | 50 OF 86 | |





| PART NUMBER | QTY | DESCRIPTION | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|-------------|---------------|----------|------------|
| 376S0966 | 1 | AJED3E12D0 | Q7030 | CRITICAL | |
| 376S0966 | 1 | AJED3E12D0 | Q7035 | CRITICAL | |

TO SYSTEM

TO/FROM BATTERY

| PART# | QTY | DESCRIPTION | REFERENCE DESIGNATOR(S) | CRITICAL | BOM OPTION |
|----------|-----|-----------------------------|-------------------------|----------|------------|
| 10750129 | 1 | RES,5MOHM,1%,1W,0612,4-TERM | R7050 | CRITICAL | BATT 25 |

D



B

5V_S3/3.3V_S5 POWER SUPPLY

VOUT = (2 * RA / RB) + 2

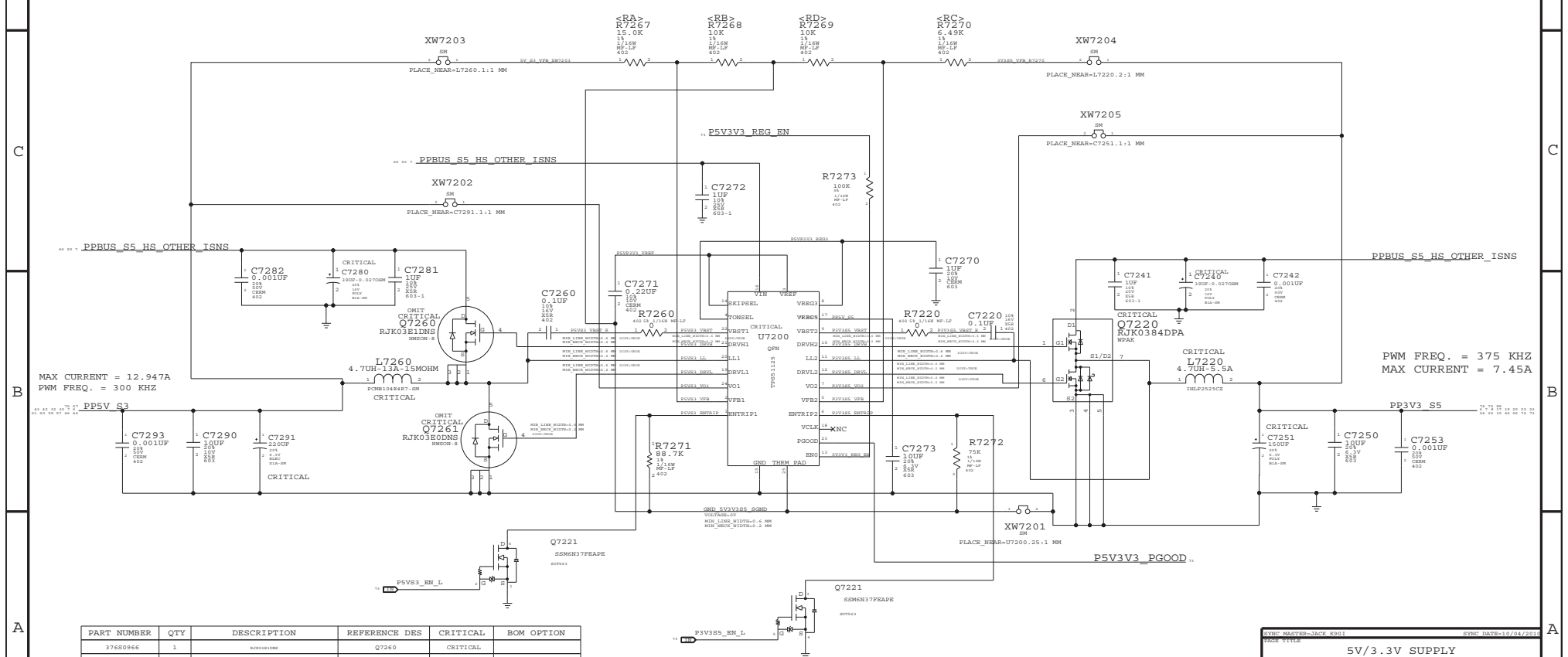
VOUT = (2 * RC / RD) + 2

| PART NUMBER | QTY | DESCRIPTION | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|-------------|---------------|----------|------------|
| 376S0966 | 1 | RJXK03E1DMS | Q7260 | CRITICAL | |
| 376S0895 | 1 | RJXK03E0DMS | Q7261 | CRITICAL | |

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$$V_{OUT} = (2 * R_C / R_D) + 2$$

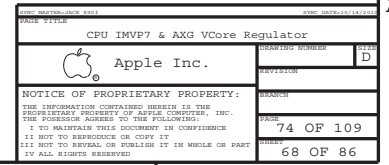


| PART NUMBER | QTY | DESCRIPTION | REFERENCE DES | CRITICAL | BOM OPTION |
|-------------|-----|-------------|---------------|----------|------------|
| 376S0966 | 1 | R200R1000 | Q7260 | CRITICAL | |
| 376S0895 | 1 | R200R1000 | Q7261 | CRITICAL | |

SEPERATED MASTER FOOD FOR BOTH 5V AND 3V3

| | | | |
|---|--|--|--|
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| PAGE TITLE | | 5V/3.3V SUPPLY | |
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Need symbol to be re-drawn to clean up this page



CPU VCCIO (1.05V S0) Regulator

U7600 ISL95870 VQFN

Q7630 FDS3602S

R7640 L7630

Vout = 1.05V
18A Max Output
f = 300 kHz

CPUVCCIO (1.05V) Power Supply


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$$\begin{aligned} \text{OCP} &= R_{7641} \times 8.5\mu\text{A} / R_{7640} \\ \text{OCP} &= 22.695\text{A} \\ \text{Vout} &= 0.5\text{V} \times (1 + R_a / R_b) \end{aligned}$$

| | | | |
|---|--|---|--|
| SYNCH MASTER-JAN 8901 | | SYNCH DATE-08/19/2011 | |
| PAGE TITLE | | | |
| CPUVVCCO (1.05W) Power Supply | | | |
|  | | LEADING NUMBER 015 | |
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